

In the matter of the
Commissions Of Inquiry Act 1950

Commission of Inquiry Order (No. 1) 2011

QUEENSLAND FLOODS COMMISSION OF INQUIRY

**CLAYTON UTZ-(Ipswich City Council -
POCOCK)**

**Response to Req #1731247
#1747427- 1747475 File 539764/1**

Volume 1 OF 3 ORIGINAL

Witness Statement of Joanne Mary Pocock

Development Planning Manager

Ipswich City Council

(Volume 1 of 3)

QFCI

Date:

JM
18/10/11

Exhibit Number:

833

Statement of Joanne Mary Pocock

This written statement is provided in response to a Requirement, dated 23 September 2011, pursuant to section 5(1)(d) of the *Commissions of Inquiry Act 1950* (Qld) to provide a written statement, under oath or affirmation, to the Queensland Floods Commission of Inquiry.

I, Joanne Mary Pocock, Development Planning Manager of [REDACTED] Ipswich, in the Statement of Queensland swear as follows:

INTRODUCTION AND QUALIFICATIONS

1. I am employed by Ipswich City Council (ICC) as Development Planning Manager for the City of Ipswich. I work in the Planning and Development Department. I report to the ICC City Planner, Mr John Adams.
2. I discuss further below the structure of the Development Planning Branch, which reports to me, and set out an overview of the ICC development assessment process.
3. I hold the following qualifications:
 - Bachelor of Built Environment (Urban & Regional Planning) with distinction from the Queensland University of Technology given under seal 27 March 1998;
 - Graduate Diploma of Urban and Regional Planning with distinction from the Queensland University of Technology given under seal 26 March 1999;
 - Masters of Urban and Regional Planning with distinction from the Queensland University of Technology given under seal 24 February 2003;
 - Diploma in Business (Frontline Management) (2003); and
 - Certificate IV Training and Assessment (2009).
4. I am a full member of the Planning Institute of Australia.
5. I commenced employment with ICC in July 2001. Prior to that, from November 1998 to July 2001 I worked for Maroochy Shire Council as a development assessment officer assessing development applications.
6. The positions that I have held with ICC, and the related responsibilities are:

[REDACTED]

[REDACTED]
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- (a) July 2001 - late 2003: Senior Development Planner and Development Planner in the Central West development team. In this capacity I was involved in the assessment of development applications;
- (b) Late 2003 - January 2011: Development Team Coordinator for the West (geographic) team. In this position I was responsible for the assessment and determination by the West team (formerly the Central West team) of development applications made pursuant to the Ipswich Planning Scheme and for the day-to-day management of the planners in that team;
- (c) 25 January 2011 to present: Development Planning Manager. In this role I am the Branch Manager for the Development Planning branch of the Planning and Development Department. I have management responsibility for the Development Planning branch consisting of three planning based development assessment teams, a technical support team and an administration team. In this role I assist with and have managerial oversight of the Council's determination of development applications made pursuant to the Ipswich Planning Scheme.

7. In this statement I will provide a brief description of:

- the structure of the ICC Planning and Development Department;
- the ICC development assessment process; and
- some threshold matters relevant to each of the Commission Requirement notices.

8. I will then respond to the Commission's Requirement in relation to the following development sites:

- 84/100 Chubb Street and 8 Georgette Street, One Mile;
- 2 Haig Street, Brassall; and
- 70A Chubb Street, One Mile.

I was personally involved in the development assessment process for each of these sites.

9. The sources of information for the matters set out in this statement are:

- (a) my personal knowledge and recollection of relevant events;
- (b) my review of the relevant ICC development application files a copy of which I understand have been produced to the Commission pursuant to a Requirement notice dated 5 August 2011; and



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- (c) my understanding of the ICC development assessment process, the relevant ICC planning scheme and any other relevant codes and policies.

STRUCTURE OF THE ICC PLANNING DEVELOPMENT DEPARTMENT AND DEVELOPMENT PLANNING BRANCH

10. The ICC Planning and Development Department is one of six operational departments within ICC. The department is overseen by the City Planner, Mr Adams, who reports to the ICC Chief Executive Officer, Mr Wulff.
11. Within the Planning and Development Department there are five branches:
- Strategic Planning
 - Development Planning
 - Engineering and Environment
 - Building and Plumbing
 - Business Support.
12. Each branch has a manager. As noted, I am the Development Planning Manager.
13. Within the Developing Planning branch there are three geographic based planning assessment teams, a development application compliance/technical support team and an administrative support team.
14. Each planning assessment team comprises a team coordinator, senior development planners, development planners and assistant development planners and other support staff.
15. Over the years there have been slight changes to the description and structure of the geographic planning regions. The current planning assessment teams and their coordinators are:
- Development Assessment Central - Ms Natalie Plumbe;
 - Development Assessment West - Mr Brett Davey; and
 - Development Assessment East - Mr Tim Foote.
16. Approximately 120 people are employed within the Planning and Development Department. I am responsible for approximately 35 of these people within the Development Planning branch.

OVERVIEW OF THE ICC DEVELOPMENT ASSESSMENT PROCESS

17. In this section of my statement I set out for the assistance of the Commission a high level summary overview of the ICC Development Assessment process. There has been no material



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change in this process since 2004.

Pre-lodgment Meeting (if requested)

18. In some cases a development application is preceded by a pre-lodgment meeting. These meetings are held with relevant Council officers at the request of an applicant to discuss the proposal, development concepts, proposed uses, planning scheme issues, development constraints, relevant codes, potential policy implications and the such like. Although Council officers will take notes of the meeting, the meeting has no formal status and no formal minutes are produced, although officers notes are recorded in the corporate record keeping system against the relevant properties. Since about July 2009, a register of all pre-lodgement meeting discussions has been maintained in Council's corporate property and application management software system, Pathway.

Development application

19. Development applications are lodged electrically or in hard copy, and, upon registration in the Council database, are referred to the relevant development planning team coordinator (based on geography) for initial review.

Assessment officer allocation

20. The team coordinator will allocate an assessment officer to be responsible for the coordination of the assessment of the application. Allocation is generally determined based on the complexity of the application and workload.

Integrated Development Assessment Panel (IDAP) presentation

21. The assessment officer presents the application to an internal panel known as IDAP (Integrated Development Assessment Panel). IDAP meets twice a week, each Tuesday and Thursday, and considers all applications received by Council. Each meeting agenda is sent to all technical staff within the Development Planning branch and the Engineering and Environment branch, as well as to the City Planner and the Strategic Planning Manager.
22. The Tuesday IDAP meetings focus on major and complex applications. Thursday's meetings are for minor and lower complexity applications.
23. At IDAP the strategic principles for the assessment are discussed, including any flood related issues. The need for the application to be referred to other internal specialist officers is identified and any immediately obvious issues or deficiencies in the application are raised or discussed. Through the IDAP process strategic guidance is provided to the assessment officer.

Acknowledgement Notice (if required)

24. If it is determined at IDAP or in the early application assessment process that an Acknowledgement Notice is required for the application pursuant to the *Sustainable Planning Act 2009* (SP Act) the notice is prepared and issued to the applicant. Should the application require referral to concurrence, advice agencies or third party advice agencies as identified in the Acknowledgement Notice, it is the responsibility of the applicant to undertake the appropriate action.

Application internal referral

25. If internal referral is required, this is actioned. Primarily such referrals are sent to the Engineering and Environment branch. Allocation to officers within the Engineering and Environment branch are also generally effected by reference to the geographic area relevant to the application, mirroring the approach taken within the Development Planning branch.

Information/referral stage requirements

26. The planning officer and internal referral officers assess the application to identify any outstanding information requirements and to determine whether a further information request is required to be issued to the applicant. If required, an information request is prepared for review and signing by the team coordinator or senior planner. Preparation of the information request is undertaken in accordance with the timeframes specified in the SP Act, and the applicant then has six months to respond to Council.
27. Any referring agencies may make separate information requests, which are copied to Council.

Public Notification (if required)

28. For impact assessable applications, the applicant is responsible for carrying out the public notification requirements in accordance with the SP Act, and for supplying Council with a notice of compliance.

Council development application assessment

29. The planning officer and internal referral officers assess the application based on the application material which includes any responses to information requests, public notification submissions, referral agency responses and conditions (if applicable), and consider all relevant planning scheme matters.
30. Internal referral officers forward their completed assessment, including any recommendations for conditions or reasons for refusal to the planning officer who cross-references all information and completes their assessment against the Planning Scheme and provides a report

and recommendation about the application to the relevant Delegate. The planning officer report includes a summary, recommended conditions, relevant decision details and the completed planning scheme assessment report checklist.

Recommendation review

31. The delegate reviews the planning officer's report, asks questions and provides feedback. Once the delegate is satisfied with the report and recommendation these are sent to the relevant divisional Councillor and to the Chair of the Council Planning Committee for consultation. When the Chair of the Planning Committee is also the relevant Divisional Councillor, a substitute Chair (generally the Depute Mayor) considers the application.
32. This consultation is required under the conditions of the planning officer's delegations. The consultation email includes a summary of the planning assessment report and attaches a copy of the report and recommendation.
33. The Councillors can respond in one of 5 ways:
 - (a) *I note the delegated power []*. In this instance the delegate will proceed to determine the application;
 - (b) *I request the matter be referred to the Planning & Development Committee []*;
 - (c) *I wish to declare a material personal interest in the matter []*. In this instance the delegate will proceed to determine the application;
 - (d) *I request the matter be held pending clarification of issue(s) below []*. In this instance the relevant delegate will discuss any questions with the relevant Councillor; and
 - (e) *I wish to declare a conflict of interest in the matter []*. In this instance the delegate will proceed to determine the application.

Referral to planning & development committee

34. If an application is referred to the Development & Planning Committee, I will prepare a committee report for the City Planner. At committee it may be decided to:
 - (a) remove the report from the agenda if, after discussion, the committee is satisfied with the original proposal decision;
 - (b) agree with the recommendation, but pass the recommendation by a resolution of Council; or



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- (c) change the recommendation by a resolution of Council, in which case the *Local Government Act* requires that the Council give its reasons for doing so.

Application determination

35. Within five (5) business days of determination of an development application a decision notice is issued to the applicant and any referral agencies (and if appropriate, any submitters). An applicant may seek to negotiate an approval in accordance with the relevant provisions of the SP Act, or appeal the decision in the event of refusal.

When approval takes effect

36. Following the expiry or waiver of all appeal periods the approval takes effect.

THRESHOLD ISSUES

1974 Flood advice in Decision Notices

37. In a number of the Commission's Requirement notices issued to ICC planning officers, the Commission seeks information as to the basis for the following statement appearing in the Council Decision notice:

"Advice

*The following advices are offered for your information only
and should not be viewed as mandatory conditions of this approval.*

...

Flooding

The subject site was fully inundated in the 1974 flood. Council, and its servants and agents, accept no liability or responsibility for any loss or damage to person or property of whatever nature or however caused as a direct or indirect consequence of the granting of the approval herein contained. Such approval has been granted at the request of the Developer and in reliance of (sic) information submitted by the Developer in support thereof".

38. This advice is included as a generic notification for information and advice purposes only in respect of sites the subject of development approvals which were affected by the 1974 flood. The statement as to the 1974 flood level has no policy relevance to the assessment by Council of development applications throughout the period under consideration (2004 - January 2011) as the regulated flood line throughout this period was the 1 in 100 flood line mapped under the Ipswich Planning Scheme.

39. The flooding advice notification is one of a number of such generic notifications included within decision approval notices where appropriate. Other notifications commonly included in such notices relate to "Portable Long Service Leave" and "Fire Ants".

40. For some locations within Ipswich there is a similar such notification in relation to "Mining" which reads:

"Mining

The land to which this approval relates may have been worked by underground coal mining operations. Council, and its servants and agents, accept no liability or responsibility for any loss or damage to person or property of whatever nature or however caused as the direct or indirect consequence of the granting of the approval herein contained. Such approval has been granted at the request of the developer and in reliance of information submitted by the developer in support thereof."

41. I am unable to assist the Commission as to the genesis of these generic statements. The statement as to the 1974 flood level has been included as a standard advice in decision notices for as long as I have been employed by ICC. Based on discussion with other Council officers I believe the notification has been included for many years prior to my joining Council in 2001. However, I am unable to say when or why the statement was first included.

42. My understanding of the purpose of the notification is to alert applicants that their site flooded in 1974, even though, for development assessment purposes, the relevant consideration for flooding issues is the flood line mapped under the Planning Scheme.

DEVELOPMENT ASSESSMENT CHECKLISTS

43. A standard inclusion in all ICC planning officer assessment reports is the completion of an assessment checklist. The checklist is a "ready reckoner" that all matters relevant to the assessment of the application have been addressed. This ensures that all formalities are attended to, and that no issues inadvertently "fall through the cracks". The completed checklist is signed by the planner responsible for the assessment and by the planning team coordinator.

44. The checklist is an initiative that was introduced shortly after the introduction of the 2004 Ipswich Planning Scheme. The actual checklist document was developed by myself and Mr [REDACTED]. Mr [REDACTED] is now a Senior Technical Support Officer in the Development Planning Department. Attached to my statement and marked "JMP-1" is a copy of the pro-forma ICC assessment checklist.

45. For the assistance of young or newly appointed planners, the process outlined in the development assessment checklist sets out the order of assessment for a development application pursuant to the Planning Scheme. It is difficult to have a training manual for young or newly appointed planners specific to how to assess a particular development application, owing to the nature of the every application being different and every site being different. However, all newly appointed planners are assigned a Senior Development Planner as a peer mentor within their team. They also receive formal training in relation to the Council's Corporation Applications Systems, GIS Mapping Products and Data Management Systems. The peer mentor is responsible for their day-to-day on the job training, assisted by the Team Coordinator and other team members.

84/100 CHUBB STREET, 8 GEORGETTE STREET, ONE MILE - 437/05CA

Application Background and Overview

46. I was the Delegated Officer and Team Coordinator for a development application concerning properties at 84 Chubb Street, 100 Chubb Street and 8 Georgette Street, One Mile. The Planning Officer primarily involved in the assessment was Mr Michael Ellery.
47. The subject site is large, comprising 7.71 hectares. The site abuts Chubb Street to the west of the site, and extends 300 metres to the Bremer River to the east. Residential development abuts the higher portion of the site to the north and to the west. Also to the north is the vacant lot comprising 70A Chubb Street, itself the subject of a development application discussed later in this statement.
48. Each of the subject lots has a different zoning. 8 Georgette Street is zoned Residential Low Density (RL2), 84 Chubb Street is zoned Recreation (in recognition of its previous use as an indoor gymnasium and outdoor sports centre) and 100 Chubb Street is zoned Large Lot Residential. The whole of the application site could be adequately serviced by urban infrastructure and was generally suitable for residential purposes.
49. The application was lodged on 1 February 2005. It was a combined application for a Material Change of Use and Reconfiguring a Lot. The material change of use component sought a development permit for 118 aged accommodation units and an ancillary recreation facility, which included a communal facilities building, a swimming pool, tennis court and lawn bowls. A total of 48 visitor parking spaces were proposed for the site. Two vehicular access points were proposed to Chubb Street, located on the elevated portion of the site. No vehicular access to Georgette Street was proposed.
50. The proposal to reconfigure 3 lots into 2 lots sought to excise an area of 6,830m² of linear open space along the Bremer River that would be dedicated to Council and connect with two existing lots owned by Council. The remainder of the development site was then proposed to

be amalgamated into a single lot to be developed for the aged accommodation and ancillary recreational facilities.

51. The existing 100 Chubb Street site contained a dam to be adapted for use as a detention basin as part of the site's stormwater solution.
52. The application was impact assessable. However, only one submission unrelated to flooding issues was received.
53. The site is affected by both the Q100 and Q20 flood lines. The application proposed balance cut and fill to ensure that all unit sites were located above the adopted Q100 flood line.
54. The site was inundated in 1974 and partially inundated in 2011. However, the inundation experienced in 2011 did not extend to the location of the proposed unit sites.
55. Council required, as part of its assessment process, that a Stormwater Management and Flooding Report be obtained. The report produced by Cardno concluded that:
 - (a) the development could proceed without adversely impacting on flood levels;
 - (b) although the impact of the proposed development produced a maximum increase of 5mm in flood levels within the site for the 100 year ARI local flood event, the peak water levels for the Q100 developed case were generally less than those for the base case 100 year ARI flood level of 23.8m AHD quoted by Council by as much as 41mm, indicating that the development could proceed without adversely impacting on flood levels;
 - (c) the impact of proposed filling of the site (limited to areas at or above 20m AHD, which is above the defined Q20 level of 18.9m AHD) would be offset by the excavation of a volume greater than that filled, thereby creating additional flood storage capacity on the site;
 - (d) the works would have negligible impact on the duration or velocity of flooding or warning times; and
 - (e) the geology of the site was not likely to be affected by the development, nor were soil creep and slips likely on the site, but these issues would need to be considered as part of the detailed design.
56. All accommodation units were located above the Q100 flood line, with the ancillary recreation facility, including two tennis courts and a bowling green, related shelter structures, a communal vegetable and herb garden, pedestrian pathways and passive recreation areas located within the Q20 flood line.

57. Based on the information provided by the applicant and subsequently approved by Council, the finished pad levels of the multi dwelling units were all located above the Q100 flood level of 23.8m AHD. This was in part due to the cut and fill arrangement on the site, compensatory in nature, whereby the volume of cut was greater than the volume of fill, thus creating additional flood storage.
58. The applications were uncontroversial and on 17 March 2006 were approved subject to conditions. The approval was not sought to be negotiated.
59. The material change of use component of the approval has not yet been complied with.
60. On 31 August 2006 an application was lodged for Operational Works (municipal and internal works stage 1). On 22 February 2007 sub-staging of the development was approved. The Operational Works application relates to stage 1 of the development and is addressed further below.
61. A subsequent development permit 323/10 dated 13 September 2010 was approved to sub-divide the land and create a Community Management Scheme for the approved Multiple Residential. No intensification of the use was established by this approval.
62. As at the date of this statement, the Operational Works have commenced, but no buildings have been constructed on the site in conjunction with the proposed use.
63. Attached to my statement are copies of the following key documents relating to this application:

JMP-2: Development application and enclosed assessment report lodged 1 February 2005

JMP-3: ICC Information Request dated 30 March 2005

JMP-4: Letter David Brett & Associates to ICC in response to ICC Information Request dated 25 August 2005

JMP-5: Cardno (Qld) Pty Ltd Stormwater Management Plan and Flooding Report dated 9 August 2005

JMP-6: Memorandum Assistant Development Engineer to Development Team Coordinator dated 9 March 2006

JMP-7: Memorandum Senior Development Planner to Development Team Coordinator dated 16 March 2006

JMP-8: ICC Assessment Checklist - Impact Assessable Development



JMP-9: ICC Development Application Decision Notice dated 20 March 2006.

Question 1: The known Q100 and Q20 flood levels at or around the time of the application

64. The levels are:
- 100 year ARI event - 23.8m AHD
 - 20 year ARI event - 18.9m AHD.

Question 2: The known site level or levels

65. Council records indicate that the site levels range from RL7.0m AHD at its eastern boundary (the left bank of the Bremer River) up to RL25.0m AHD at the western boundary (Chubb Street) of the site.

Question 3: What assessment propose was followed specific to flood impacts

66. The assessment process followed was in accordance with the process I have outlined in paragraphs 17 and following of this statement.
67. Upon lodgment of the development application I nominated Senior Development Planner, Michael Ellery as the assessing officer for the application. The proposal was forwarded to the IDAP meeting at which time it was identified that the OV5 1 in 20 and the 1 in 100 flood lines affected the site, and that no flood study had been submitted with the application. It was therefore identified that the proposal would necessitate internal referral to ICC's Development Engineers to undertake a preliminary assessment to determine the specific information required. The application was referred to the appropriate geographically based engineering team, where it was allocated to an Assistant Development Engineer for review.
68. It was also noted that due to the proposed filling below the flood line, the application triggered State Government referral as notified in Council's Acknowledgement Notice dated 8 February 2005. Referral coordination was undertaken by the Planning Services section of the then Department of Local Government, Planning, Sport and Recreation who referred the application to the following State agencies:
- Environmental Protection Agency;
 - Department of Natural Resources and Mines; and
 - Department of Primary Industries and Fisheries.
69. Council's Information Request to the Department of Local Government, Planning, Sport and Recreation dated 24 March 2005 requested information regarding flooding and stormwater quality, as well as information concerning other matters unrelated to flood. All of Council's



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information request items were included on the referral coordination information request issued by the Department on 30 March 2005.

70. Though not directly relevant to flooding, the Department of Primary Industries and Fisheries requested information about the impact of the development on the local marine environment in the locality.
71. A flood study prepared by Cardno (Qld) Pty Ltd dated 9 August 2005 was submitted as part of the applicant's response to the Council's Information Request, together with a Stormwater Management Plan to address the stormwater discharge from the site as a result of the development. The adequacy of this report was reviewed and no outstanding issues were raised.
72. Council's Assistant Development Engineer finalised his assessment of the application, including as to stormwater management and flood related matters. He concluded that from an engineering technical viewpoint the application could be supported subject to the imposition of appropriate conditions. This report was endorsed by the Assistant Development Manager - Engineering.
73. A final planning report including the ICC Development Checklist was prepared by the Development Planner. This report included an approval recommendation and conditions formulated on the basis of Council's assessment of the application, including internal referral feedback and feedback from the third party agencies. This report was reviewed by me as the Delegate and on 16 March 2006 I approved the development in accordance with the recommendation. I have annexed to my statement the key documents relating to this approval process.

Question 4: What consideration was given to:

- (a) the proximity of the site to the Bremer River;
- (b) the flood risk or potential impact of flood on the proposed use for the site;
- (c) the frequency with which flooding has occurred at the site in the past.

(a) Proximity to Bremer River

74. The site shares its eastern boundary with the top of the western bank of the Bremer River. The flood study and Stormwater Management Plan prepared by Cardno addressed the flood and stormwater discharge issues relevant to the development. The adequacy of this report was reviewed by the Council's Assistant Development Engineer and no outstanding issues were raised.



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75. The Stormwater Management Plan proposed measures to prevent bank erosion by piping stormwater (1 in 100 event) from the development to the river in order to avoid discharge of water over the bank which would cause erosion and impacts into the riparian vegetation area along the river.
76. To reduce the peak flow discharged from the site in order that flood levels in the Bremer River not be affected, it was proposed that the existing dam on the site be increased in the size and constructed as a detention basin for the development. Directing stormwater runoff from the site to the detention basin also resulted in a cleaner water discharge into the river from the basin immediately after traversing the bio-retention areas.

(b) Potential flood risk

77. The Cardno flood study demonstrated there was minimal impact to the flood levels in the post development situation. Council's Assistant Development Engineer concurred that the flood risk was minimal and that the proposed use could be supported subject to the imposition of reasonable and relevant conditions of approval.
78. The flood modelling of the proposed development and compensatory earthworks indicated that for the 100 year ARI storm event, the development caused a maximum increase of 5mm in the flood levels within the site. However, as a result of the development the flood levels were generally decreased by up to 41mm.

(c) The frequency of past flooding at the site

79. It is my understanding that the frequency with which flooding has occurred at the site in the past was a policy consideration in the formulation of the 1 in 100 flood line. This flood line, as it relates to the site, was applied in considering the application.
80. It maybe that historical river heights in relation to the site can be sourced from the Bureau of Meteorology or other sources. However, this information was not obtained for the purposes of considering the application, the relevant policy consideration for those purposes being the location of the Q100 flood line.

Question 5: The measures proposed to mitigate the potential for flooding at the site by reference to the location of proposed habitable floor levels

81. As discussed in paragraph 57, it was demonstrated to Council's satisfaction that the Q100 flood level did not impact the proposed habitable areas.
82. Further measures proposed to mitigate the potential for flooding at the site included:

- (a) Condition 2 of the development permit required that the proposed development of the site be undertaken generally in accordance with plan no. 20038-03A, prepared by the PMM Group and dated July 2005. That plan, which is annexed to the Development Permit, identifies the location of all proposed sites and hence all habitable flood levels above the Q100 flood line;
- (b) Conditions 17(g), (h) and (i) of the approval which specify:
 - (g) development of the property with buildings or other structures below the flood level associated with an ARI of 20 years will not be permitted.
 - (h) there shall be no filling or removal of material in the flood area below the flood level associated with an ARI of 20 years. The extent of earthworks on the site shall be limited to the area and scope as defined in the Stormwater Management Plan and Flooding Report prepared by Cardno.
 - (i) pollutant control devices and/or bio-retention areas shall be installed in the stormwater system.
- (c) the site development design provides for access and egress from Chubb Street with the result that the available access routes (and if necessary evacuation routes) for the site are located above the 1 in 100 flood line.

Question 6: What process the Council used to assess the adequacy of any expert reports

- 83. Ipswich Planning Scheme Policy 2 - "Information Local Government May Request" outlines in section 1(8) the requirements for the information to be contained in expert reports to address the Planning Scheme requirements with respect to Flooding and Stormwater Flow Paths. This Planning Scheme Policy guides applicants in the preparation of development application what they should submit, and how issues such as flooding and drainage should be addressed.
- 84. The Assistant Development Engineer, Mr Katt, who undertook the engineering assessment of the proposal concurred that the proposal could be supported from an engineering technical viewpoint and advised of conditions of approval to be applied should the application be approved.
- 85. I am advised by Mr Katt that the process generally followed to assess the adequacy of expert reports such as flood studies and the compliance with relevant codes is to ensure firstly that the study has been prepared by a RPEQ who is suitably qualified and experienced. The flood study is then reviewed by Council to determine that generally the following items are contained or have been addressed and found to be satisfactory:

- (a) specific software used to model the existing and post development flood impact;
- (b) the methodology used;
- (c) the parameters of the study and assumptions made to create the model are acceptable;
- (d) if an existing model is used the source of the model; and
- (e) pre and post development site profile is reflected accurately against the proposal plans.

Question 7: What conditions were included with respect to protection from the impacts of flooding

86. The following conditions were included in the approval with respect to protection from the impacts of flooding.

Stormwater

- (a) The Developer shall provide all necessary stormwater drainage (both internal and external to the development) and such drainage works (except for roofwater systems) shall be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

Overland flow paths shall be suitably designed to cater for the water from a storm event with an ARI of 100 years. In the case where the piped system is carrying part of the flow, the overland flow paths shall be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system, noting the requirements of QUDM.

- (b) No ponding, concentration or redirection of stormwater shall occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.
- (c) Due consideration shall be given in the design and construction of the development in relation to the effect of the developed catchment flows on the downstream discharge receival areas. Suitable stormwater control devices are to be provided to ensure that there is no increase in velocity in watercourses. Such control devices are to be designed so as to integrate the landscaping, recreational, infrastructural and drainage roles of watercourses.



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- (d) All stormwater runoff from the developed areas of the site shall be discharged through the proposed detention basin and outlet in a manner and to a point to be approved by the Senior Development Engineer. Any piped infrastructure conveying stormwater flows shall have an appropriately designed outlet at the low water level in the adjacent Bremer River.
- (e) Stormwater drainage plans and calculations are to be submitted and approved by the Senior Development Engineer, in conjunction with the submission of an Operational Works application.
- (f) The Developer shall develop the site from a stormwater management perspective in line with the recommendations contained in the Stormwater Management Plan and Flooding Report, prepared by Cardno (Qld) Pty Ltd dated 9 August 2005 subject to the inclusion/provision of the following:
- (i) The increased stormwater runoff volume (post-development) associated with a Q5 storm event shall be retained on site;
 - (ii) Detailed on-site flood routing and detention/retention basin and/or easement sizing shall be provided as part of the Operational Works application;
 - (iii) Accommodation of Council approved water quality treatment measures;
 - (iv) Adoption/incorporation of Council approved hydraulic/river bank stability study recommendations; and
 - (v) A Level V roofwater and interallotment drainage system, in accordance with QUDM, shall be provided for this development.

The Developer shall comply with all requirements of Council approved design inclusions and alterations in association with the above mentioned items.

- (g) Development of the property with buildings or other structures below the flood level associated with an ARI of 20 years will not be permitted.



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(h) There shall be no filling or removal of material in the flood area below the flood level associated with an ARI of 20 years. The extent of earthworks on the site shall be limited to the area and scope as defined in the Stormwater Management Plan and Flooding Report, prepared by Cardno (Qld) Pty Ltd dated 9 August 2005.

(i) Pollutant control devices and/or bioretention areas shall be installed in the stormwater system. Locations and types of the devices or treatment areas shall be submitted with the Operational Works Application for approval.

In addition to the requirements of Condition 5 of the Reconfiguring a Lot approval (that forms part of this approval 437/05), there shall be no clearing of vegetation below the adopted flood level unless otherwise approved by the Development Manager. Stormwater drainage outlets shall be the subject of detailed design in the preparation of plans for each stage of the development.

(j) The Developer shall provide a rainwater retention system for the purpose of on-site landscape irrigation. The minimum retention capacity shall be 1,000 litres/proposed dwelling.

(k) Runoff, including pipe discharge, from the development site down the embankment shall be controlled to a maximum velocity of 1.8m/s or unless otherwise accommodated in design and agreed with the Senior Development Engineer.

(l) It is noted that the discharge pipe from the detention basin is proposed to extend and discharge into Council's land, Lot 94 on RP859820. The Developer shall obtain the written consent of the Conservation, Parks and Sport Manager for any such pipe prior to the submission of any application for operational works. Alternatively, the Developer may chose to relocate the pipe so that it discharges within the subject site.

Erosion & Silt Management

(a) The Developer shall be responsible for the installation and maintenance of silt management facilities from the time of commencement of construction until this development has been completed. All silt management facilities are to be in accordance with the document "Soil Erosion and Sediment Control" published by the Institution of Engineers Australia, or equivalent.

- (b) Diversion drains and ponds, as necessary, shall be installed on the site before any other work is undertaken on site to ensure that "dirty water" is contained and/or isolated.
- (c) A procedure shall be submitted with the engineering drawings for approval for maintaining the facilities, setting out the frequency of attention, with inspections to be made after each significant rainfall event.
- (d) The Developer shall lodge a \$10,000 siltation and erosion performance bond with Council, prior to the commencement of works, which shall only be released by Council at the termination of the maintenance period. Where Council determines that a draw-down of the bond is required, the Developer shall restore the bond to its full amount within 10 days of a notice from Council to that effect. Such bond shall guarantee adequate performance in the circumstances (i) and (ii) below:
 - (i) In the event that instructions issued to the Consulting Engineer by the Senior Development Engineer for the installation of erosion control measures, are not complied with within 24 hours, Council will call upon the bond to the extent required to carry out the necessary works.
 - (ii) If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.

Should the Developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council shall complete the work and recover all costs from the Developer associated with that work.

Plan of Survey

- (a) The Developer shall grant, free of cost to or compensation payable by Council, minimum 4.0 m wide easements located centrally over proposed and existing stormwater drains, water mains and sewerage rising mains, where they are located within private property.



Solicitor

The documentation associated with these easements may be prepared by the Developer in a form satisfactory to Council's City Solicitor, or the Developer may submit easement plans, only where Council is party to the easements, to Council for the preparation of easement documents at the Developer's expense.

- (b) Easements shall be centrally located over the alignment of stormwater paths and be of a width sufficient to encompass the overland flow from a storm event with an ARI of 100 years.
- (c) Easements shall be of sufficient width to contain any fitting, access chamber etc located on stormwater drains, water mains, and sewerage rising mains.
- (d) All pre-existing easements crossing the site shall be pegged where they cross each property boundary and at every change of direction.
- (e) All land (excluding that contained within approved parkland) below the flood level associated with an ARI of 10 years shall be dedicated as Drainage Reserve at no cost to Council. Land below this level shall not be considered as parkland contribution.
- (f) Existing Easement A on RP859820 shall be relinquished prior to the approval of any application for Building or Operational Works for the subject site. The easement shall not be relinquished until such time as the plan of survey dedicating the required additional open space as shown on the approved plan and as conditioned by the Reconfiguring a Lot component of this approval has been registered by the Department of Natural Resources and Mines.

General

- (a) All disturbed verge areas and allotments shall be graded, grassed and left in a mowable condition. The grass cover shall be obtained as early as possible during the development and an acceptable grass cover shall be achieved before the development can be accepted "Off Maintenance".
- (b) With reference to any works, on land under other private ownership, written permission for the works shall be obtained and forwarded to Council. Similarly, written clearances shall be obtained after the works are completed, unless otherwise accepted by the Senior Development Engineer.



Solicitor

- (c) All works required for this development shall take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works shall be altered at the cost of the Developer.
- (d) Any filling for a greater depth than 500 mm shall be conducted in accordance with Australian Standard 3798. Test results as required by Australian Standard 3798, and a certificate of quality and uniformity of fill shall be provided by a RPEQ. The level of responsibility shall be Level 1.
- (e) A certificate from a RPEQ shall be issued to Council certifying that any retaining wall greater than 800 mm in height is structurally sound and capable of withstanding any likely surcharge loads. Retaining walls greater than 1.0 m in height are to be provided with railings or other barriers to provide pedestrian safety.
- (f) Retaining walls shall be designed so that there are no imposed loads placed upon Council's underground services. This may include extending the footing to a level 300 mm below the invert of the pipe.
- (g) For batters resulting from cutting and filling of the site and producing slopes greater than 1:6, Council requires a RPEQ to certify that they are stable and properly drained.
- (h) A hydraulic and river bank stability study shall be undertaken in regard to the site by a RPEQ. Such study shall be comprehensive taking into account all matters relating to the site and shall include, but shall not be limited to, the following:
- Geology of the site and any related problems;
 - Instability features such as slips, soil creep etc;
 - Effects of existing vegetation and of any possible removal and or modification of same;
 - Effects of any fill material and the types of fill material recommended;
 - Water eg: ground water; scour potential in flood situations including the effects of turbulence; effects of rapid draw down of water level.

Such studies shall include any necessary recommendations in regard to the proposed development to ensure long term stability.



Solicitor

- (i) Approval of the Senior Development Engineer is required for any fill intended to be placed over Council's underground services.

Question 8: The basis for the Council's statement in its decision notice in relation to the 1974 flood "advice"

87. In response to this question I refer to the matters set out in paragraphs 37 - 42 above.

84-100 CHUBB STREET, 8 GEORGETTE STREET, ONE MILE - OPERATIONAL WORKS APPLICATION 5752/06

88. By its Requirement dated 23 September 2011 the Commission has asked that I provide information in relation to OA5752/06 (carrying out operational and municipal works) in connection with the 84 Chubb Street site.

89. I had no direct involvement in the assessment of the operational works matters, but have reviewed the relevant Council files and am able to comment on the matters raised by the Commission on the basis of that review, and on the basis of my general knowledge of the site.

90. Attached to my statement are copies of the following key documents relating to this application:

JMP-10: Letter DKS Queensland Consulting to ICC dated 28 August 2006 and attached Development Application for Operational Works (lodged 31 August 2006)

JMP-11: Letter ICC to David Brett & Associates Pty Ltd dated 22 February 2007 approving sub-staging of the development

JMP-12: ICC Outstanding Issues Request dated 23 February 2007

JMP-13: Memorandum Development Engineer to Senior Development Engineer dated 15 March 2007

JMP-14: ICC Development Application Decision Notice dated 19 March 2007

A full copy of the relevant file has previously been produced to the Commission in response to the Commission's Requirement notice dated 5 August 2011.

91. The operational works application relates only to the carrying out of municipal and operational works in relation to Stage 1 of the proposed development. Stage 1 comprises 41 of the proposed 118 units, and is located on the western side of the site abutting Chubb Street.



Solicitor

92. This location is situated well above the Q100 flood line, and as a result there were no flood related considerations relevant to the approval.
93. The operational works the subject of the application do not involve construction of the approved units. They are works in the nature of road works, footpaths, car park, refuse collection, stormwater drainage and sewerage.
94. The Council included as a condition of its approval of the application that the proposed detention basin also be constructed in Stage 1 so as to enable stormwater runoff from the areas of the site to be developed as part of the Stage 1 operational works to be discharged through the detention basin in the manner proposed in Council's original development approval.
95. The application for operational works was lodged on 31 August 2006. The Council approved sub-staging of the development on 22 February 2007. Additional information was sought by the Council in an outstanding issues letter dated 23 February 2007 and on 15 March 2007 a recommendation was made by the Development Engineer to the Senior Development Engineer to approve the operational works for Stage 1 subject to conditions. The Council decision notice then issued on 19 March 2007.
96. To the best of my knowledge the Q100 and Q20 flood levels for the site at the time of the operational works application were consistent with those at the time of the earlier MCU and RAL application.
97. No additional flood or drainage reports were obtained for the purpose of the Stage 1 operational works application as, having regard to the location of the proposed works, these would not have been considered necessary or relevant to the assessment of the application.

2 HAIG STREET, BRASSALL - APPLICATION NO. 195/06/MCU

Application background and overview

98. I was the Delegated Officer and Team Coordinator for a development application concerning 2 Haig Street, Brassall. Council's consideration of the application extended over some years from early 2006 to late 2009. The planning officer primarily involved in the assessment was [REDACTED] who took over responsibility for the application in 2007, following the resignation of the planning officer who had originally been appointed to undertake the assessment.
99. The subject site comprises an area of 1.28 hectares. It is bounded by Haig Street to the north, Collins Street to the west, Workshops Street to the south and the Bremer River to the east. A large proportion of the site, towards the north and west, is relatively flat, at a level between

RL19m AHD and RL21m AHD, but the site slopes away to the east towards the river, with a site level at the eastern boundary of RL15m AHD.

100. The application was lodged on 12 January 2006. It was originally lodged as 52 multiple residential units (town houses), later modified, as a result of the applicant's response to Council's information request, to 48 residential units, to be constructed in six stages.
101. The type of development was material change of use of premises. It was an impact assessable development. However, no submissions were received.
102. The application was subjected to detailed consideration over an extended period. A final response to information request was received on 4 December 2009 and an approval decision made on 23 December 2009.
103. The approval was not sought to be negotiated and has not yet been taken up. To date no development has been undertaken on the site.
104. The Q100 flood level at the site is 18.9m AHD. Approximately two thirds of the site is situated above this level and one third of the site sits between the Q100 and Q20 flood levels. The site sustained partial inundation in the 2011 flood event.
105. At the time of the application the land was included within the Recreation zone of the 2004 Ipswich Planning Scheme, reflecting the previous use of the land as a tennis centre. That use had been abandoned prior to the lodgment of the development application.
106. The adopted flood level was Q100. The site is affected by both the 100 year ARI and 20 year ARI flood events. The assessment of the application was an iterative process, with a considerable focus on flood and stormwater management related issues. This assessment underwent extensive review and analysis, with a number of updated expert reports obtained as the assessment process progressed. The applicant undertook rigorous technical reporting to support the proposed development, including a flood study, a stormwater management plan and an assessment of river bank stability to ensure the proposed development was physically suitable for the site and did not detrimentally impact on the river bank.
107. In response to Council's information request multiple flood studies (4) were undertaken for the site by Cardno (Qld) Pty Ltd. In response to issues raised by Council the applicant, through Cardno, also produced a number (7) of updated stormwater management plans.
108. The applicant produced an assessment on river bank stability by Morrison Geotechnic Pty Ltd (this report was also reviewed and updated through a number of iterations) to ensure the proposed development was physically suitable for the site and to demonstrate that the development would not detrimentally impact upon the river bank or increase flood hazard by

way of increased depth or velocity of flood waters for the development or upstream or downstream properties.

109. For stability purposes the approval permitted the building footings for 14 units to be constructed within the extent of the Q100 flood line, but expressly required that the habitable floor levels of the units be designed to be constructed to achieve a minimum of 250mm freeboard above the Q100 flood event in compliance with Planning Scheme requirements. The other 34 units in the proposed development were all to be constructed above the Q100 flood line.

110. A portion of the site was proposed to be partially filled to a level 500mm higher than the 100 year ARI level, with compensatory earth works proposed to ensure that there was no net loss of flood plain storage as a result of the development. Hydrodynamic modelling of the proposed development was undertaken to substantiate the earth works.

111. Attached to my statement are copies of the following key documents relating to this application:

JMP-15: Development Application and supporting Planning Assessment Report lodged 12 January 2006

JMP-16: ICC Information Request dated 2 February 2006

JMP-17: Letter David Brett & Associates to ICC dated 1 February 2007 in response to the ICC Information Request, enclosing Carndo (Qld) Pty Ltd Flood Study dated 8 August 2006

JMP-18: Letter ICC to David Brett & Associates dated 14 March 2007 re outstanding issues

JMP-19: Letter David Brett & Associates to ICC dated 30 July 2007 in response to outstanding issues letter and enclosing:

- Morrison Geotechnic Bremer River Bank Stability Assessment Report dated 23 July 2007
- Cardno response to Flood Issues dated 1 June 2007
- Cardno conceptual Stormwater Management Plan - Version 1 - dated 17 July 2007

JMP-20: Letter David Brett & Associates to ICC providing further information and reports (this attachment excludes the enclosures) dated 20 March 2009

JMP-21: Letter ICC to David Brett & Associates dated 19 May 2009 re outstanding issues

JMP-22: Letter David Brett & Associates to ICC dated 9 October 2009 in response to outstanding issues letter and enclosing:

- revised Morrison Geotechnic River Bank Stability Assessment Report dated 31 August 2009
- Cardno Stormwater Management Plan - Version 7 dated 7 October 2009
- Cardno Flood Study - Version 4 dated 7 October 2009

JMP-23: Further revised Morrison Geotechnic River Bank Stability Assessment Report dated 23 October 2009

JMP-24: Memorandum ICC Development Engineer to Senior Engineering Officer dated 9 November 2009

JMP-25: Memorandum ICC Development Planner to Team Coordinator dated 22 December 2009

JMP-26: ICC Assessment Checklist - Impact Assessable Development

JMP-27: ICC Development Application amended Decision Notice dated 23 December 2009

A full copy of the relevant file has previously been produced to the Commission in response to the Commission's Requirement notice dated 5 August 2011.

QUESTION 1: The known Q100 and Q20 flood levels at or around the time of the application

112. These levels are:

- 100 year ARI event - 18.9m AHD
- 20 year ARI event - 15.0m AHD.

QUESTION 2: The known site level or levels

113. Council records indicate that the site levels range from RL15 metres AHD at its eastern boundary (the left bank of the Bremer River) up to RL21 metres AHD at the western boundary of the site.

QUESTION 3: What assessment process was followed specific to flood impacts

114. The assessment process followed was in accordance with the process I have outlined in paragraphs 17 and following of this statement.




Solicitor

115. Upon lodgment of the development application I nominated Paul Rice as the assessing officer for the application. The proposal was forwarded to the IDAP meeting at which time it was identified that the OV5 1 in 20 and the 1 in 100 flood lines affected the site, and that no flood study had been submitted with the application. It was therefore identified that the proposal would necessitate internal referral to ICC's Development Engineers to undertake a preliminary assessment to determine the information necessary to assess the application against the relevant parts of the Planning Scheme, in particular OV5. The application was referred to the appropriate geographically based engineering team, where it was allocated to the Senior Engineering Officer, Mr Katt, for review.
116. It was determined by the Senior Engineering Officer that it would be necessary to request further information from the proponent to address the flood impacts. This request was included in an Information Request issued to the applicant by the Council on 2 February 2006.
117. A flood study prepared by Cardno was included in the applicant's response to Council's Information Request on 1 February 2007.
118. The review of this material identified some outstanding issues resulting in an outstanding issues request being sent to the applicant on 14 March 2007. In relation to the Cardno flood study, Council sought additional information as set out in appendix A to the outstanding issues letter (annexure JMP-18). This included, at item 6 of appendix A, that the submitted flood study be referred to a third party for review.
119. A response was received from the applicant on 30 July 2007, which included a further report from Cardno dated 1 June 2007. With their report Cardno attached a CD comprising the model files produced for their flood analysis for review by others. The model files were reviewed internally within the Council Engineering Services Department and considered to be relevant and appropriate, with the result that the Council Engineers did not consider it necessary to proceed with third party review of the study.
120. Relevant to the issue of flooding and stormwater, the applicant also provided with its 30 July 2007 response a stormwater management plan produced by Cardno and a Bremer River bank stability assessment report by Morrison Geotechnic, to demonstrate that the proposed development was physically suitable for the site and that it would not detrimentally impact upon the river bank or increase flood hazard by way of increased depth or velocity of flood waters for the development of upstream or downstream properties.
121. This material was referred to Council's engineers for further review. In the meantime, the applicant had requested that the application be placed on hold.

122. On 13 November 2007 Ms Taylor, the Council Engineer (Mr Katt) and I met with the applicant's representatives and advised them that the development design and its impacts on river bank stability and flood related issues had not been satisfactorily addressed. The applicant undertook to address the outstanding issues.
123. A further response was received from the applicant on 7 March 2008 which incorporated a River Bank Stability Assessment from Morrison Geotechnic dated 6 December 2007, a revised Stormwater Management Plan prepared by Cardno dated 16 January 2008 and a revised Flood Report prepared by Cardno dated 10 January 2008.
124. Another meeting was requested by Council regarding the adequacy of the further reports and to discuss the hydraulics report and bank stability issues. This meeting was held on 18 March 2008 and attended by Ms Taylor, Mr Katt and myself, together with the applicants consultants and experts. The meeting was substantially concerned with flooding, stormwater management and bank stability issues.
125. On 19 June 2008 Council received further material from the applicant regarding the issues raised in this meeting. This material included a revised Stormwater Management Plan. The information was still determined to be unsatisfactory. Further outstanding issues letters were issued to the applicant on 31 July 2008, 16 September 2008 (by email) and 19 May 2009.
126. On 9 October 2009 the applicant produced an updated Cardno Flood Study, updated Cardno Stormwater Management Plan and updated River Bank Stability Assessment Report by Morrison Geotechnic. This last report was further updated on 23 October 2009.
127. The latest material was considered by the Council engineers to satisfactorily address the remaining outstanding issues. An engineering report prepared by the Development Engineer and endorsed by the Senior Engineering Officer on 9 November 2009 recommended that the development proposal could be supported subject to recommended conditions of approval.
128. A final planning report including the ICC development checklist was prepared by the Development Planner. This report included an approval recommendation and conditions formulated on the basis of Council's assessment of the application. This report was reviewed by me as Delegate. I approved the application in accordance with the recommendation on 23 December 2009. I have annexed to my statement the key documents relating to this approval process.

QUESTION 4: What consideration was given to:

- (a) the proximity of the site to the Bremer River;
- (b) the flood risk or potential impact of flooding on the use proposed for the site;

(c) the frequency with which flooding has occurred at the site in the past.

(a) Proximity to the Bremer River

129. The site shares its eastern boundary with the top of the western bank of the Bremer River. It is affected by both the 100 year ARI and 20 year ARI flood events. As a result, multiple flood and related studies were undertaken and submitted to Council, as discussed in my response to question 3.

(b) Potential Flood Risk

130. The Cardno flood study submitted to Council demonstrated that there is minimal impact to the flood levels in the post development situation. On that basis the Council's development engineers considered that the potential impact of flooding on the use proposed for the site was minimal, and that the use could be supported subject to the imposition of reasonable and relevant conditions of approval.

(c) The frequency of past flooding at the site

131. As previously noted in my statement, it is my understanding that the frequency with which flooding has occurred in the past was a policy consideration in the formulation of the 1 in 100 flood line. Information as to historical river heights in relation to the site was not obtained for the purpose of considering the application. The assessment with respect to flooding was undertaken in accordance with the requirements of the planning scheme.

Question 5: The measures proposed to mitigate the potential for flooding at the site by reference to the location of proposed habitable floor levels.

132. Condition 20(h) of the Council's approval expressly requires that the floor levels of any habitable rooms of all dwellings proposed for the site be located a minimum of 250mm above the 100 year ARI flood event in accordance with part 11, section 4 sub-section 7(c)(v) of the 2004 Planning Scheme.

Question 6: Whether the impact on upstream and/or downstream properties was taken into account when assessing the development application, particularly with respect to:

(a) the impacts of any land filling or excavation work carried out as part of the application;

(b) the impacts of any stormwater or overland flow management facilities.

(a) Land filling or excavation work

133. To provide flood immunity for the development, it was proposed to fill the site areas located
[REDACTED] below the 100 year ARI flood level to a level 500mm above that level. This was to be

achieved by compensatory excavation works, proposed to be undertaken concurrently to increase the available storage for large flood events and to augment the flood immunity for the site. Expert hydrodynamic modelling of the proposed development and compensatory earthworks indicated that for the 100 year ARI storm event, the development caused a maximum increase of 2mm in the flood levels within the site, which was considered negligible as it does not impact upstream or downstream of the site and does not result in any loss of flood plain storage. Similarly, the 20 year ARI storm event causes a maximum increase of 3mm in the flood levels within the site, which was also considered to be negligible.

(b) The impact of any stormwater or overland flow management facilities

134. The development was conditioned to provide all necessary stormwater drainage for the development to be in accordance with the Queensland Urban Drainage Manual (QUDM) to cater for an ARI 100 storm event. Conditions 20(d) to 20(g) of the approval specified the conditions in relation to these aspects.
135. The assessment by Council's development engineers was that the stormwater management infrastructure required to be constructed on the site, and the stormwater discharge would not adversely affect any flood levels in the Bremer River.

Question 7: What process the Council used to assess the adequacy of any expert reports

136. The Council's Senior Engineering Officer, Mr Katt, who oversaw the engineering assessment of the proposal identified in his report dated 9 November 2009 that the following documents had been considered in his assessment of the application:
- (a) Ipswich Planning Scheme Policy 2 – Local Government Information;
 - (b) Ipswich Planning Scheme Policy 3 – General Works;
 - (c) Ipswich Planning Scheme Part 12, Div 6 – Residential Code;
 - (d) Ipswich Planning Scheme Part 12, Div 9 – Parking Code;
 - (e) Ipswich Planning Scheme Part 12, Div 15 – Earthworks Code (Including lot filling);
 - (f) Queensland Urban Drainage Manual Volume 1 Second Edition 2007;
 - (g) Australian Rainfall and Runoff (Engineers Australia);
 - (h) Ipswich City Council Standard Drawings;
 - (i) Australian Standard 2890.1 - Off-Street Car Parking;
 - (j) Australian Standard 2890.2 - Commercial Vehicle Facilities;
 - (k) Australian Standard 3798 - Guidelines on Earthworks for Commercial and Residential Developments;
 - (l) Water Supply (Safety and Reliability) Act 2008;

137. Additionally, his assessment report stated that *“the proposal generally complies with or has been conditioned to comply with the above codes”*. This report also made the recommendation that the proposal could be supported, and advised of conditions of approval to be applied should the application be supported.

138. I am advised by Mr Katt that the process generally followed to assess the adequacy of reports such as flood studies and to determine compliance with the relevant codes is to ensure firstly that the study has been certified by a RPEQ who is suitably qualified and experienced. The flood study is then reviewed by Council to determine that generally the following items are contained or have been addressed and found satisfactory:-

- (a) Specific software used to model the existing and post development flood impact
- (b) The methodology used
- (c) The parameters and assumptions made to create the model are acceptable
- (d) If an existing model is used, the source of the model; and
- (e) Pre and post development site profile is reflected accurately against the proposal plans.

Question 8: What conditions were included in the approval with respect to protection from the impacts of flooding

139. The following conditions were included in the approval with respect to protection from the impacts of flooding:

Stormwater

Stormwater Quality

- (a) The quality of stormwater leaving the developed site must achieve the following reductions in average annual pollutant load:
 - 80% for total suspended solids
 - 60% for total phosphorus
 - 45% for total nitrogen
 - 90% for gross pollutants
- (b) The water quality objectives listed in (a) must be achieved through the implementation of the nine (9) bio-retention basins generally in accordance with the Stormwater Management Plan Version 7 dated 15 October 2009 prepared by Cardno Pty Ltd subject to the following amendments:




Solicitor

- (i) The nine (9) bio-retention basins must each have a drainage layer depth of 200mm and a transition layer depth of 100mm. The filter media median particle size for all bio-retention basins must be 0.45mm with a hydraulic conductivity of 180mm/hr. All other parameters for the bio-retention basins must be in accordance with the modelled parameters represented in Table 1 below:

Bioretention Basin	Extended detention depth (m)	Surface Area (m ²)	Filter Area (m ²)	Filter Media Depth (m)
A	0.2	66.0	33.7	0.7
B	0.2	26.9	5.9	0.7
C	0.2	75.4	42.4	0.7
D	0.2	70.3	31.7	0.7
E	0.2	79.9	37.3	0.7
F	0.2	22.8	3.7	0.7
G	0.2	21.9	3.6	0.7
H	0.2	21	4.1	0.7
I	0.2	20.9	3.1	0.7

- (ii) A high flow bypass must be incorporated into the design of the bio-retention basins to ensure that only flows up to the 3 month ARI storm event are treated through the bio-retention basins;
- (iii) Geofabric must not be used between the bio-retention swale layers and the filter media layer
- (iv) Detail pre-treatment to bio-retention basins to ensure scour protection and removal of gross pollutants
- (v) Bioretention basins A, D, E, F, G, H and I must include an impermeable liner to prevent exfiltration to the surrounding soils. Details of the lining must be submitted with application for operational works relevant to each stage.
- (vi) Bioretention basin under drain design is to be in accordance with Section 5.3.5 of the Water Sensitive Urban Design Technical Design Guidelines (WSUD TDG) for South East Queensland and Section 3.4.5 of the

Construction and Establishment Guidelines - Swales, Bioretention Systems and Wetlands, Version 1 dated February 2009, prepared by Healthy Waterways. A copy of the calculations used to size the drainage must be provided at the time of lodging the operational works application. Similarly calculations must be provided to demonstrate that the pipes which are connected downstream of the drainage pipes are suitably sized so as not to become the hydraulic control and filter media is free draining.

- (vii) Underdrainage must consist of either slotted PVC pipe or flexible perforated pipe (e.g. Ag pipe) and not presocked ag pipe.
- (viii) Provide a uPVC riser with screw cap lid at the head of each slotted pipe for maintenance flushing. The plan must include a detail in accordance with BCC drawing UMS153 with a note that states that risers are not to be slotted.
- (ix) Detailed planting plans for bioretention areas demonstrating compliance with the plant species and densities outlined in Appendix A of the WSUD TDG (version current at the time of operational works detailed design for each relevant stage.
- (x) Specify on the plan the grade at which drainage pipes are to be laid and the relevant width of the drainage pipe slots. It should be noted that a minimum of 0.5% slope is required and depending on the length of the bioretention this may impact significantly on the depth of the drainage layer. The length of all 100mm slotted drainage pipes must not exceed 25m. For longer lengths the pipe size must be increased or duplicated to increase conveyance
- (xi) Provide the bioretention filter media levels ensuring that the surface of the filter is flat to allow even absorption through the filter
- (xii) All inlets to the bioretention basins must be as near to the outlet as possible to minimise mixing of high flows with first flush
- (xiii) The drawings must include a note which refers to the Healthy Waterways Bioretention Basin Construction and Establishment Sign-off

Forms (including the Pre-start meeting form and Forms A-G) for use throughout construction.

- (c) Prior to lodgement of detailed operational works drawings for each stage, the Developer must receive certification from the consulting engineers who prepared the approved Stormwater Management Plan certifying that the detailed drawings are in accordance with the approved Stormwater Management Plan, these conditions of approval and the WSUD TDG. A copy of the certification, and completed copies of the WSUD TDG Design Assessment Checklist and Calculation Summary Checklist, must be lodged in conjunction with an operational works application.

Stormwater Quantity

- (d) The developer must provide all necessary internal and external stormwater drainage to service the development. Such drainage works (except for building gutters and downpipes) must be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

In the case where the piped system is carrying part of the flow, the overland flow paths must be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system.

- (e) Appropriate works must be carried out to ensure that stormwater drainage from the new kerb and channel discharges suitably into the existing drainage system.
- (f) A suitable roofwater and internal drainage system must be designed in accordance with QUDM for the development. The design must be not less than QUDM Level IV.
- (g) Ponding, concentration or redirection of stormwater must not occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.
- (h) The floor levels of any habitable rooms of all dwellings must be located a minimum of 250 mm above the 100 year ARI flood event.



Solicitor

- (i) Construction of buildings or other structures is not permitted below the flood level associated with an ARI of 100 years with the exemption of Units 1 to 14 as part of this approval.
- (j) There must be no filling or removal of material in the flood area below the flood level associated with an 100 ARI of years with the exception of what has been specified in Flood Study Version 4 for 2 Haig Street Brassall prepared by Cardno dated 7 October 2009. There must be no disturbance to vegetation in the flood area, without prior written approval of the Senior Development Engineer.
- (k) For stormwater management purposes the development must be designed and constructed in accordance with the Stormwater Management Plan (SMP) submitted by Cardno and dated 15 October 2009 and Flood Study submitted by Cardno and dated 7 October 2009 and otherwise conditioned as part of this approval. Pipe discharge arrangement to Bremer river from the development must be in accordance with Section 5 of the above mentioned Stormwater Management Plan.
- (l) Compensatory earthwork drawings and calculations must be submitted as required by Condition 22 'Earthworks' below. This submission must also include the following recommendations outlined in the above mentioned Flood Study report and River Bank Stability Assessment submitted by the Developer.
- Maximum height of fill must not exceed 500mm above the flood event equivalent to the ARI of 100 years
 - Maximum depth of cut must not exceed 1m between the proposed retaining wall profile and property boundary and batters must not be steeper than 1:4
- (m) All stormwater runoff from the development must be discharged in a manner and to a point to be approved by the Senior Development Engineer. In this instance all stormwater runoff from impervious areas (including roofwater) for associated storm events up to and including ARI of 100 years must be piped to a single discharge point located below the low level tide mark in the Bremer River.
- (n) Stormwater headwall structures must be constructed in accordance with the relevant DMR standard drawings for reinforced concrete headwalls and aprons, unless agreed otherwise with the Senior Development Engineer.



Solicitor

- (o) Stormwater drainage plans and calculations are to be submitted and approved by the Senior Development Engineer, in conjunction with the submission of first operational works application.
- (p) The developer, prior to the commencement of use of each stage, must submit to Council, certification from an RPEQ that the stormwater infrastructure and overland flow for that stage is connected to the outlet system as stated above.

Earthworks

- (a) Compensatory earthworks drawings must be submitted with the first operational works application addressing the following as a minimum and as required by Condition 21(l) '*Stormwater*' above.
 - (i) Cut/fill depths, batter slopes, retaining wall heights
 - (ii) Cross sections indicating Q100 flood line, reduced level of top of the bank, reduced level of proposed retaining wall etc
 - (iii) Indicate expected total fill height and extend
 - (iv) Batter slopes of fill/cut
 - (v) Total height of retaining wall
 - (vi) Quantify cut/fill volumes at each section
- (b) As part of the operational works application an RPEQ must certify that the submission as detailed above is in accordance with the above mentioned Flood Study report.

Site Stability

- (a) In terms of earthworks and construction of in-ground services, all works including retaining wall construction must generally be designed and undertaken to account for recommendations and requirements in accordance with "River Bank Stability Assessment" report prepared by Morrison Geotechnic Pty Ltd and dated 23 October 2009 and to the satisfaction of the Senior Development Engineer.
- (b) Retaining walls and batters resulting from cutting and filling require RPEQ certification for Riverbank stability and proper drainage.

Building Requirement

Proposed Units 1-11 along the crest of the bank must not exceed design surcharge loading of 10kPa as recommended in "River Bank Stability Assessment" report prepared by Morrison Geotechnic Pty Ltd and dated 23 October 2009.

Retaining Walls

- (a) The developer must obtain written comments from adjoining property owners with respect to any proposed earthworks and retaining walls within three (3) metres of the site boundary, in accordance with Ipswich *Planning Scheme Part 12, Division 15 – Earthworks Code (Section 12.15.4.19)*. The written comments must be submitted to Council for consideration as part of the operational works application.
- (b) Finished heights of all retaining walls must be shown on the relevant drawings. The maximum height of gravity boulder retaining walls must be 1.25m. If further height is required, the retaining structure is to be designed and certified by a structural engineer. The total maximum height of any retaining wall is to be 2.5m. Retaining walls over 1.25m high must be constructed with an engineer designed and certified concrete foundation, with an initial retained height of 1.25m, then a minimum set back of 0.6m prior to another maximum retained height of 1.25m to total a maximum height of 2.5m.
- (c) A certificate from a RPEQ must be issued to Council certifying that any retaining wall greater than 1.0m in height is structurally sound and capable of withstanding any likely surcharge loads. The design and construction of retaining walls must comply with the following minimum requirements unless agreed otherwise with the Senior Development Engineer:
 - (i) The minimum design surcharge loading must be 10kPa.
 - (ii) Retaining walls must be designed so that there are no imposed loads placed upon Council's underground services. Retaining walls crossing over services must have support footings extending at least 300mm below the invert of the service pipe.
 - (iii) All retaining walls must be provided with Council approved subsoil and surface drainage systems.
 - (iv) Backfill to retaining walls must be comprised of approved drainage material contained within a geo-fabric wrap.

- (v) A drainage system in the form of a mounded V-drain or similar which discharges to a legal point of discharge must be constructed along the top of all gravity retaining walls to prevent stormwater sheeting or concentrating over retaining structures.
- (vi) Retaining walls in public areas that are 1.0m or greater in height must be provided with railings or other barriers to provide pedestrian safety.

Question 9: The basis for the Council's statement in relation to the 1974 flood "advice"

140. In response to this question I refer to the matters set out at paragraphs 37 - 42 of my statement.

70A CHUBB STREET, ONE MILE

Application Background and Overview

141. I was the Delegated Officer and Development Team Coordinator for a development application concerning 70A Chubb Street, One Mile (although, at the time of approval of the application I was attending a State PIA conference in Longreach and Mr Tim Foote as Development Team Coordinator for another geographical team signed off on the approval recommendation in my absence). The planning officer primarily involved in the assessment of the application was Mr Jacob Hart. As Planning Team Coordinator I had responsibility for overseeing assessment of the application by the planning officer and other internal ICC referral officers.
142. The subject site is a "T" shaped vacant lot with a total area of 1.032 hectares, with direct access to Chubb Street via a 15 metre wide "access handle". Chubb Street is the high point along a "peninsula" at One Mile around which the Bremer River loops. The subject land is situated within an urban area of One Mile approximately three kilometres from the Ipswich CBD.
143. The land to the north and east of the site comprises low density residential development. The land to the south is the subject of the material change of use approval for aged accommodation units at 84/100 Chubb Street discussed earlier in this statement.
144. The subject site slopes gently from the west to the east across the lot and generally away from Chubb Street toward the Bremer River located 300 metres to the east of the site. The land drains generally towards the east.
145. The land is located in the residential low density (RL2) zone of the 2006 Ipswich Planning Scheme. The proposal was consistent with the intent of the zone for low density development of 10 - 15 dwellings per hectare.

146. The relevant flood regulation line was Q100. As detailed below the expert reports variously placed the Q100 flood line at the site between RL23.39 - RL23.80 AHD. This Q100 flood level was lower than the site levels which, when allowance is also made for the minimum required 250mm freeboard for finished construction levels, would give considerable flood immunity for dwellings to be constructed on the site.
147. The site was not inundated in the 2011 flood. Council records indicate that the site was inundated in the 1974 flood.
148. The application was lodged on 23 August 2007 for an approval to reconfigure 1 lot into 11 new residential lots. As detailed in my statement below the application was carefully assessed, particularly as regards stormwater management and related drainage issues, but was uncontroversial and relatively straight forward.
149. The application was code assessable and therefore not subject to submissions. It was approved, subject to conditions, on 17 September 2008. The application sought to negotiate the conditions of approval and a negotiated decision notice issued on 23 October 2008.
150. The approval has not yet been taken up and no operational works approvals have been sought for the proposal.
151. Annexed to my statement are copies of the following key documents relating to this application.

JMP-28: Application by Ipswich Ideal dated 20 August 2007 (received 23 August 2007)

JMP-29: ICC Information Request dated 20 September 2007

JMP-30: Letter [REDACTED] to ICC dated 31 January 2008 in response to the ICC Information Request

JMP-31: Environmental Hydrology Associates (EHA Pty Ltd) Stormwater Management Plan dated 29 January 2008

JMP-32: Cardno Stormwater Management Plan and Flooding Report dated 9 August 2005

JMP-33: [REDACTED] Town Planning & Environment Stormwater Quality Management Plan dated 31 January 2008

JMP-34: ICC outstanding issues letter dated 14 March 2008

JMP-35: Letter [REDACTED] to ICC dated 6 May 2008 in response to ICC outstanding issues letter



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- JMP-36:** Updated EHA Pty Ltd Stormwater Management Plan dated 6 May 2008
- JMP-37:** Updated Daniel Willis Town Planning and Environment Stormwater Quality Management Plan dated 2 May 2008
- JMP-38:** Memorandum Senior Environmental Planner to Senior Development Planner dated 13 May 2008
- JMP-39:** Memorandum Development Engineer to Senior Engineering Officer dated 16 June 2008
- JMP-40:** Memorandum Development Planner to Development Team Coordinator dated 3 September 2008
- JMP-41:** ICC Assessment Checklist - Code Assessable Development
- JMP-42:** ICC Development Application Decision Notice dated 17 September 2008
- JMP-43:** ICC Development Application Negotiated Decision Notice dated 23 October 2008.

Question 1: The known Q100 and Q20 flood levels at or around the time of the application

152. These levels are:

- Q100 - approximately 24.0m AHD based on Council's known flood levels for the site
 - 23.39m AHD based on the Cardno flood report produced by the applicant. This flood report, prepared for the adjoining 84 Chubb Street development, included a cross section taken on the 70A Chubb Street site which indicated a developed Q100 site level of 23.39 AHD
- Q20 - approximately 18.9m AHD although this level was not relevant to the subject application

Question 2: The known site level or levels

153. Council records indicate that the site levels range from approximately RL23.75m AHD at the eastern boundary up to RL25.0m AHD at the western boundary of the site (the Chubb Street frontage).

Question 3: What assessment process was followed specific to flood impacts

154. The assessment process followed was in accordance with the process I have outlined in paragraphs 17 and following of this statement.

155. Upon lodgment of the development application I nominated Development Planner, [REDACTED] as the assessing officer for the application. The proposal was forwarded to the IDAP meeting at which time it was identified that the OV5 1 in 100 flood line affected the site and that no flood study had been submitted with the application. It was therefore identified that a hydraulics assessment would likely be required in addition to a stormwater management plan. It was also identified that the proposal would necessitate internal referral to ICC's development engineers to undertake a preliminary assessment to determine the specific information required. The application was referred to the appropriate geographically based engineering team, where it was allocated to an Assistant Development Engineer for review.
156. By an Information Request to the applicant dated 20 September 2007 (JMP-29) Council requested information regarding stormwater quality and quantity and demonstration that the requirements of Part 11, Division 4, Section 7 - Flooding and Urban Storm Flow Path Areas had been addressed, together with other matters unrelated to flood or stormwater.
157. A response to the Information Request was received on 4 February 2008. This response included a Stormwater Management Plan prepared by Environmental Hydrology Associates (EHA Pty Ltd) dated 29 January 2008, a copy of the Cardno (Qld) Pty Ltd flood report undertaken for the adjoining site at 84 Chubb Street dated 9 August 2005 and a Stormwater Quality Management Plan prepared by [REDACTED] Town Planning & Environment dated 31 March 2008. Copies of each of these reports have been annexed to my statement. Other information request items, unrelated to flooding, were also addressed in this response.
158. This information was reviewed to determine its adequacy. A number of issues were raised by the Development Engineer, relating particularly to the Stormwater Management Plan and the predicted development peak discharge for the 5 year ARI storm event. In addition, some issues regarding the Stormwater Quality Management Plan were raised by the ICC Senior Environmental Planner. As a result, an outstanding issues letter was forwarded to the applicant on 14 March 2008 outlining the items which remained outstanding.
159. A response to the outstanding issues letter was received on 6 May 2008. This response included a revised Stormwater Management Plan prepared by EHA Pty Ltd dated 6 May 2008. This information was again reviewed. The Senior Environmental Planner and the Development Engineer each advised that the additional information provided by the applicant addressed their concerns and the application proceeded to the decision stage.
160. Council's Development Engineer finalised her assessment of the application. Her recommendation concluded that from an engineering technical view point the application could be supported subject to the imposition of conditions of approval which included stormwater related requirements. These requirements included that the site be developed, from

a stormwater perspective, generally in accordance with the Stormwater Management Plan prepared by EHA Pty Ltd dated 6 May 2008 and in accordance with the other conditions recommended by the Development Engineer. This report was endorsed by the Senior Engineering Officer.

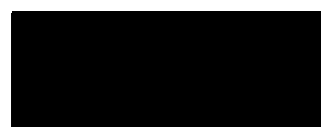
161. On the basis of their review of the supporting information provided by the applicant, the engineers were satisfied to proceed on the basis of an actual Q100 flood level of 23.8m AHD. This level was equivalent to the lowest surveyed level on the site at its eastern extremity which meant the site was above the Q100 flood event.
162. A final planning report including the ICC development checklist was prepared by the Development Planner. This report included an approval recommendation and conditions formulated on the basis of Council's assessment of the application. This report was reviewed by the acting Delegate and the development was approved in accordance with the recommendation on 17 September 2008. I have annexed to my statement the key documents relating to this approval process.

Question 4: What consideration was given to:

- (a) the proximity of the site to Bremer River;
- (b) the flood risk or potential impact of flooding on the use proposed for the site;
- (c) the frequency with which flooding has occurred at the site in the past.

(a) Proximity to Bremer River

163. The site is separated from the Bremer River by approximately 300 metres. The proximity of the site to the Bremer River was considered in the application with regard to:
- (a) stormwater discharge from the site, which was conditioned to ensure that stormwater discharge was maintained at pre-development flows for all storm events up to and including a 1 in 100 year ARI storm event; and
 - (b) the potential impact from river flooding as identified by Council's planning scheme overlay OV5 - 1 in 100 flood line - Council's records indicated that the site was affected by the OV5 - Q100 flooding overlay, but following the production of the Cardno flood study and other reports, detailed reports and the assessment of those reports, Council was satisfied that the applicant had demonstrated the site was free of Q100 flood impacts.



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(b) Potential flood risk

164. The Stormwater Management Plan prepared by EHA Pty Ltd Rev B dated 29 January 2008 concluded that the ground levels of the site were expected to be almost completely above the 100 year ARI flood level. The EHA report reviewed cross sections of the Bremer River adjacent to the site which were the subject of flood modelling undertaken by SKM in 2000-2001 and based on these cross sections, interpolated the 100 year ARI peak flood level at the site to be approximately RL23.67m AHD. This assessment concurred with the Cardno report prepared for 84 Chubb Street, which indicated that at the location of the subject site the developed case flood peak level is 23.39m AHD. On that basis, the Council's Development Engineer and Senior Engineering Officer concurred that the proposed use could be supported subject to the imposition of reasonable and relevant conditions of approval.

(c) The frequency of past flooding at the site

165. As previously noted in my statement, it is my understanding that the frequency with which flooding has occurred in the past was a policy consideration in the formulation of the 1 in 100 flood line. Information as to historical river heights in relation to the site was not obtained for the purpose of considering the application. The assessment with respect to flooding was undertaken in accordance with the requirements of the Planning Scheme.

Question 5: The measures proposed to mitigate the potential for flooding at the site by reference to the location of proposed habitable floor levels

166. It was demonstrated to Council's satisfaction that the Q100 flood level did not impact the site. The approved flood study prepared by Cardno for the adjoining 84 Chubb Street site identified the developed Q100 level at the subject site as RL23.39m AHD. A detailed site survey demonstrated that the minimum site level was RL23.80m AHD.

167. Notwithstanding the Q100 flood line did not impact on the site, further measures proposed to mitigate the potential for flooding at the site included:

- (a) Condition 2 of the Development Permit required the plan of survey submitted by the developer to conform with proposed plan no. 4628/P2 prepared by Saunders Havell Group and dated 16 August 2007, which plan detailed all proposed allotments being located above the Q100 line;
- (b) in accordance with the Ipswich Planning Scheme, the dwellings on allotments would be constructed to have building pads with a minimum 250mm immunity above the Q100 flood line; and

- (c) the earthworks for the site were proposed as a balance arrangement such that the internal road servicing the lots would be lower than the lots and the building pads for the dwellings, thereby further elevating the building pads and accommodating stormwater run-off via the internal roads toward the east of the site into the drainage system.

Question 6: Whether the impact on upstream and/or downstream properties was taken into account when assessing the development application, particularly with respect to:

- (a) the impacts of any land filling or excavation work carried out as part of the application;
- (b) the impacts of any stormwater or overland flow management facilities

(a) Land filling or excavation work

168. The balance cut and fill to be undertaken on the site will not alter the pre-development impacts from the site on upstream or downstream properties.

(b) The impact of any stormwater or overland flow management facilities

169. Stormwater from the 11 lots is to be attenuated by treating roof water from all proposed lots through a kerbside bio-retention swale and associated bio-retention basin located along the eastern road alignment adjacent to proposed lot 4, after which it is discharged to the existing stormwater drain to the east of the site as the lawful point of discharge. This attenuation is in accordance with QUDM and appropriately caters for a Q100 storm event.

Question 7: What process the Council used to assess the adequacy of any expert reports

170. The Council's Senior Engineering Officer, Mr Katt, who oversaw the engineering assessment of the proposal concurred that the proposal could be supported from an engineering technical viewpoint and endorsed the engineering related conditions of approval to be applied should the application be approved.

171. I am advised by Mr Katt that the process generally followed to assess the adequacy of expert reports such as flood studies and the compliance with relevant codes is to ensure firstly that the study has been prepared by a RPEQ who is suitably qualified and experienced. The study is then reviewed by Council to determine that generally the following items are contained or have been addressed and found to be satisfactory:

- (a) specific software used to model the existing and post development flood impact;
- (b) the methodology used;

- (c) the parameters of the study and assumptions made to create the model are acceptable;
- (d) if an existing model is used, the source of the model; and
- (e) pre and post development site profile is reflected accurately against the proposal plans.

Question 8: What conditions were included with respect to protection from the impacts of flooding

172. The following conditions were included in the approval with respect to protection from the impacts of flooding:

Roadworks

- (a) The proposed access road shall be designed and constructed with asphaltic concrete surfacing to a width of 6.5 m for the full length of all property frontages. A minimum 4.25 m verge width on one side of road shall be provided to accommodate relevant services as shown in ICC Standard Drawings SR 22 and SR 23. The maximum area to implement the swale is 4.25m in width at some sections. The applicant shall adjust the cross section of swale at those locations such that the maximum slope of the batter is 1 in 4. Any reduction in stormwater quality and detention quantity requirements as stated in the Stormwater Management Plan prepared by EHA (Report No. SW-07-08-REP-001 Rev. D) and dated 6 May 2008 shall be compensated for through the use of the proposed road verge in front of Lots 1 and 2. Any such modifications shall be submitted with the lodgement of an operational works application. Works shall include:
 - (i) Concrete kerb and channel on both sides;
 - (ii) Concrete footpath 1.5 m wide on one side, with kerb ramps designed in accordance with ICC Standard Drawing SR.18. The construction of footpaths shall be in accordance with Council's Standard Drawing SR.19. The concrete footpaths shall be on the same side as the street lights, and the maximum longitudinal grade shall not exceed 1:8. and
 - (iii) Stormwater drainage infrastructure designed in accordance with Council's Planning Scheme Policy 3 – General Works, Queensland Urban Drainage Manual, the Department of Main Roads Drainage Design Manual and Stormwater Management Plan, dated 6 May 2008, prepared by EHA Pty Ltd in that order of precedence.



Solicitor

- (b) Roadworks shall be designed and constructed in accordance with Council's Standards, Queensland Streets, Austroads Publications, AMCORD, the relevant and appropriate roadworks design standards and guidelines, and any other documentation deemed appropriate by Council. Such design and construction shall ensure that road carriageway widths are consistent with the road function and position in the road hierarchy and are in accordance with the relevant design speed environment.
- (c) Road pavement designs shall comply with Ipswich City Council's Planning Scheme Policy 3 - General Works, Part 1 – Standard for Design of Roadworks. The proposed road shall have single way cross-fall to accord with the stormwater system design as identified in the approved plans.

Stormwater

- (a) Stormwater quality for the development shall achieve the following water quality objectives as outlined within the South-east Queensland Regional Plan (SEQ RP) Part 11.

- (i) 80% for total suspended solids;
- (ii) 60% for total phosphorus;
- (iii) 45% for total nitrogen; and
- (iv) 90% for gross pollutants

- (b) The water quality objectives listed in (a) shall be achieved through the implementation of the swales and bio-retention swale in accordance with the Stormwater Quality Management Plan (Rev B) prepared by Daniel Willis Town Planning & Environment reference 06-010 and dated 2 May 2008 and the Stormwater Management Plan Report No. SW-01-08-REP-001 Revision D) prepared by Environmental Hydrology Associates Pty Ltd and dated 6 May 2008, subject to the following:-

- (i) Any additional rainwater tanks other than what is required under the Queensland Development Code and used specifically as a stormwater attenuation device would not be supported by Council.
- (ii) The Developer shall provide stormwater detention by proposed swales and drainage easement through Lot 4 on the subject land, which shall be designed and constructed to ensure that flows, at any point downstream

in the catchment, are not increased by the development for any combination of frequency and duration from the storm event with an ARI of 2 years up to and including the storm event with an ARI of 100 years.

- (iii) The sides of any grassed embankment and/or basin shall not exceed a maximum 1:6 grade unless otherwise approved by the Senior Development Engineer. Appropriate provision for managing low flows and maintenance shall be made to the satisfaction of the Senior Development Engineer.
 - (iv) The developer shall demonstrate that all discharges from the proposed drainage reserve are within all QUDM requirements.
 - (v) The developer shall demonstrate that the overland flowpath(existing drainage reserve) between 8 & 10 Battersby Street has sufficient width in accordance with QUDM requirements to cater for flows associated with a storm event with an ARI of 100 years.
- (c) Detailed cross sections and final locations for stormwater infrastructure required by (b) shall be submitted for approval in conjunction with any application for Operational Works and be in accordance with the Water Sensitive Technical Design Guidelines for South East Queensland specifically Chapters 10 Plant Selection for WSUD, Chapter 2 Swales (Incorporating Buffer Strips) and Chapter 3 Bio-retention Swales published by Healthy Waterways.
- (d) Bollards shall be installed along the swale drain interface in accordance with Ipswich City Council's Standard Drawing SP.43 Revision B at maximum of 1.5m centres at an alignment of 650mm from the edge of kerb. Every 3rd bollard shall be required to be replaced with an approved street tree. The Developer shall submit a Streetscape Plan (including bollard and interface details) for approval in conjunction with application for Operational Works that generally complies with Typical Cross Section (Drawing number SK-003 Project number 07052 Revision A) prepared by dks Consulting Engineer dated 6 May 2008.
- (e) Appropriate works shall be carried out to ensure that stormwater drainage from the new kerb and channel discharges suitably into the existing drainage system.




Solicitor

- (f) The Developer shall provide all necessary stormwater drainage (both internal and external to the development) and such drainage works (except for roofwater systems) shall be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

Overland flow paths shall be suitably designed to cater for the water from a storm event with an ARI of 100 years. In the case where the piped system is carrying part of the flow, the overland flow paths shall be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system, noting the requirements of QUDM.

- (g) A suitable roofwater system shall be designed in accordance with QUDM, for allotments that do not have adequate fall from within the allotment to the design invert level of the kerb and channel. The design is to be to a minimum Level II in QUDM.

- (h) All stormwater flows within and adjacent to the development, other than inter-allotment drainage, shall be confined to dedicated roads, drainage reserves, registered drainage easements or within parkland. The registered drainage easements, if related to piped drainage, shall be centrally located over such underground pipe system and shall be not less than 4.0 m wide, except for drainage easements required for side boundaries which may be 3.0 m wide where approved by the Senior Development Engineer. In addition, the easements shall be of suitable width to contain the predicted overland flow from the storm event with an ARI of 100 years in that location.

- (i) No ponding, concentration or redirection of stormwater shall occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.

OTHER MATTERS

173. The Commission Requirement asks that, in addressing these matters, I make commentary and provide opinions I am qualified to give as to the appropriateness of particular actions or decisions.



Solicitor

174. I do not have any concerns or issues with the approach taken by Council officers in their assessment of the applications addressed in this statement. In each case I consider the assessment to have been undertaken professionally and comprehensively, that relevant questions were asked and information sought, and that the actions taken and decisions made were appropriate.
175. With the benefit of my review of the relevant application files I would make one observation. Part 11, section 4 sub-section 7(c)(iv) of the 2004 Ipswich Planning Scheme requires that the floor levels of any habitable rooms of all dwellings must be located at minimum of 250mm above the 100 year ARI flood event. This requirements carries into the 2006 Planning Scheme.
176. As this requirement for a 250mm freeboard above the 100 year ARI flood event for habitable rooms is a requirement of the Planning Scheme, it is generally not included as an express condition of the development approvals. However, I observe that in the case of the 2 Haig Street application, condition 20(h) of the Council Decision Notice expressly provided that:
"The floor levels of any habitable rooms of all dwellings must be located a minimum of 250mm above the 100 year ARI flood event".
177. No such express condition was included in the approvals for 70A Chubb Street and 84 Chubb Street, nor, for the reasons identified above is such a condition required. However, notwithstanding the Planning Scheme requirements, in my opinion, so as to provide additional certainty and clarity as to Council's requirements, the inclusion such a condition in development approvals may be appropriate, particularly for those applications which involve sites that fall partially within the level of the 100 year ARI flood event.

I make this statement conscientiously believing the same to be true, and by virtue of the provisions of the *Oaths Act 1867* (Qld).

Signed and declared by Joanne Mary Pocock at *Ipswich* in the State of Queensland this *7th* day of October 2011 before me:

.....
Deponent



.....
Witness





Assessment Checklist

[Code/Impact] Assessable Development

A. Application Details

Appln No.:

Division:

B. Preamble Assessment

1. Are the real property description and location details provided on the Application Form correct? Yes No
2. Has the 'consent of owner' been correctly obtained? Yes No
3. Has the correct fee been paid? Yes No

C. Supporting Information

1. (a) Was any supporting material lodged with the application? Yes No

(b) Are there any planning issues associated with this material?
Comment: Comment Yes No
2. (a) Was an Information Request required to be made? Yes No

(b) Are there any outstanding issues associated with the Information Response? Yes No
Comment: Comment

D. Referral Agencies

1. Are there any Referral Agencies applicable to this development?

Yes No

2. Are there any issues associated with advice received from a Referral Agency?

Yes No N/A

Comment: Comment

E. State Planning Policies (SPP's)

1. Are there any SPP's applicable to this development?

Yes No

2. Does the development comply with the relevant SPP's?

Yes No N/A

Comment: Comment

F. Zone Code

1. What is the relevant zone code(s) for this development?

Yes No

2. (a) Does the development require impact assessment under the relevant assessment table for the zone?

Yes No

(b) Is the development consistent with the outcomes sought for the zone?

Yes No

Comment: Comment

3. (a) Are there any overall or specific outcomes for the locality which apply to the development?

Yes No

Comment: Comment

(b) Does the development comply with any relevant overall or specific outcomes for the locality?

Yes No

Comment: Comment

F. Zone Code

4. Does the development comply with the overall outcomes for the zone?

Yes No

Comment: Comment

5. Does the development comply with the "Effects of Development – General" (including the specific outcomes and any applicable probable solutions or acceptable solutions) for the zone?

Yes No

Comment: Comment

6. (a) Are there any Sub Area or Precinct provisions within the zone which apply to this development?

Yes No

Comment: Comment

(b) Does the development comply with these provisions?

Yes No

Comment: Comment

G. Codes for a Stated Purpose or of a Stated Type (refer Part 12 of the Planning Scheme)

1. Are there any codes under Part 12 of the Planning Scheme applicable to the development?

Yes No

Comment: Comment

2. Does the development comply with these codes?

Yes No N/A

Comment: Comment

H. Overlays (refer Part 11 of the Planning Scheme)

1. (a) Is the site affected by a Character Places Overlay?

Yes No

Comment: Comment

(b) Is the assessment category changed (refer Table 11.3.2)?

Yes No N/A

Comment: Comment

H. Overlays (refer Part 11 of the Planning Scheme)

(c) Does the development comply with the Character Places Overlay Code and the Character Code?

Yes No N/A

Comment: Comment

2. (a) Is the site affected by a Development Constraints Overlay?

Yes No

(b) Is the assessment category changed (refer Table 11.4.3 and 11.4.4)?

Yes No N/A

Comment: Comment

(c) Does the development comply with the relevant provisions of the Development Constraints Overlay Code?

Yes No N/A

Comment: Comment

I. Other Relevant Matters

1. (a) Are there any Planning Scheme Policy provisions which specifically apply to this development?

Yes No

(b) Does the development comply with these provisions?

Yes No N/A

Comment: Comment

2. (a) Are there any Implementation Guidelines which specifically apply to this development?

Yes No N/A

Comment: Comment

(b) Does the development comply with these Guidelines?

Yes No N/A

Comment: Comment

I. Other Relevant Matters

3. (a) Are there any previous development approvals relating to the site?

Yes No N/A

Comment: Comment

(b) If so, are there any outstanding conditions, in particular, are there any outstanding infrastructure charges?

Yes No N/A

Comment: Comment

4. Are there any other relevant matters which pertain to this development?

Yes No

Comment: Comment

5. Does Council as Assessment Manager also have jurisdiction delegated to it by the Central SEQ Distributor-Retailer for the assessment of water and wastewater components of this development?

Yes No

Comment: [Comment about any issues relating to the water and wastewater components of the development eg.:

- Standard conditions are to be applied to the development for water and wastewater requirements.
- Nominate any trunk infrastructure requirements for water and wastewater components of the development
- Nominate and requirements for infrastructure agreements for water and wastewater components of the development
- Outline the consultation undertaken with the Central SEQ Distributor-Retailer Authority (QUU) in relation to the application THIS IS ESSENTIAL

6. Infrastructure Contributions – Calculation Sheet attached to this checklist?

Yes
 No
 N/A

If Yes, Refer Condition X for calculations for (footpath and kerb & channel) infrastructure, Table A below for calculations in respect to (roadworks, parks and community facilities) issued by the assessment manager and Table B below for calculations in respect to (water and wastewater) networks issued by the assessment manager under delegation from the Central SEQ Distributor-Retailer Authority.

If No, reason for contributions not be required

I. Other Relevant Matters

Table A – ICC Infrastructure Charges

Infrastructure Network & Catchment	Charge/VT	Unit Charge Multiplier/VT	Units of Demand, Demand Credit and Net Infrastructure Charge Payable pursuant to Planning Scheme Policy No.5	Units of Demand, Demand Credit and Net Infrastructure Charge Payable pursuant to Maximum Adopted Charge
Roadworks [Insert Catchment /Sector]	\$x	2010/11 Unit Rate	<u>Demand Factor</u>	<u>Demand Factor</u>
			<u>Credits</u>	<u>Credits</u>
			<u>Net Demand</u>	<u>Net Demand</u>
			Net Demand x \$Charge/VT x Unit Charge Multiplier/VT = \$Contribution	Net Demand x \$Charge/VT x Unit Charge Multiplier/VT = \$Contribution
Infrastructure Network & Catchment	Charge/Person	Unit Charge Multiplier/Person	Units of Demand, Demand Credit and Net Infrastructure Charge Payable pursuant to Planning Scheme Policy No.5	Units of Demand, Demand Credit and Net Infrastructure Charge Payable pursuant to Maximum Adopted Charge:
Parks [Insert Catchment /Sector]	\$x	2010/11 Unit Rate	<u>Demand Factor</u>	<u>Demand Factor</u>
			<u>Credits</u>	<u>Credits</u>
			<u>Net Demand</u>	<u>Net Demand</u>
			Net Demand x \$Charge/Person x Unit Charge Multiplier/Person = \$Contribution	Net Demand x \$Charge/Person x Unit Charge Multiplier/Person = \$Contribution

I. Other Relevant Matters

Community Facilities [Insert Catchment /Sector]	\$x	2010/11 Unit Rate	<u>Demand Factor</u>	<u>Demand Factor</u>
			<u>Credits</u>	<u>Credits</u>
			<u>Net Demand</u>	<u>Net Demand</u>
			Net Demand x \$Charge/Person x Unit Charge Multiplier/Person = \$Contribution	Net Demand x \$Charge/Person x Unit Charge Multiplier/Person = \$Contribution

Table B – QUU Infrastructure Charges

Infrastructure Network & Catchment	Charge/EP or NRU	Unit Charge Multiplier/EP or NRU	Units of Demand, Demand Credit and Net Infrastructure Charge Payable pursuant to Planning Scheme Policy No.5	Units of Demand, Demand Credit and Net Infrastructure Charge Payable pursuant to Maximum Adopted Charge
Water Supply [Insert Catchment /Sector]	\$x	2010/11 Unit Rate	<u>Demand Factor</u>	<u>Demand Factor</u>
			<u>Credits</u>	<u>Credits</u>
			<u>Net Demand</u>	<u>Net Demand</u>
			Net Demand x \$Charge/EP or NRU x Unit Charge Multiplier/EP or NRU = \$Contribution	Net Demand x \$Charge/EP or NRU x Unit Charge Multiplier/EP or NRU = \$Contribution
Wastewater (Sewerage) [Insert Catchment /Sector]	\$x	2010/11 Unit Rate	<u>Demand Factor</u>	<u>Demand Factor</u>
			<u>Credits</u>	<u>Credits</u>
			<u>Net Demand</u>	<u>Net Demand</u>

I. Other Relevant Matters

			Net Demand x \$Charge/EP or NRU x Unit Charge Multiplier/EP or NRU = \$Contribution	Net Demand x \$Charge/EP or NRU x Unit Charge Multiplier/EP or NRU = \$Contribution
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J. Public Notification

1. Was the public notification carried out in accordance with the *Sustainable Planning Act* requirements? Yes No

2. Were any submissions received? Yes No
Comment: Comment

K. Summary

1. Recommended for: Approval - Subject to Conditions
 Part Refusal / Part Approval -Subject to conditions
 Deemed Approval

2. Comment:

Officer Name
POSITION (DEVELOPMENT)
Date:

TC/DPM
TEAM COORDINATOR /DEVELOPMENT PLANNING MANAGER
Date:

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Common details

PART A

The completion of **all applicable questions** on Part A is **mandatory** for all applications.
 Part A must be accompanied by one (1) or more other completed parts of the Form.
 Any information requested in the form may be provided in an attachment to the application.
 For further information about completing the following details, refer to **Guide 1: Making an IDAS Application**.

<p>Description of land All land the subject of the application, must be identified.</p> <p>A description of the land is not required in relation to a mobile or temporary environmentally relevant activity.</p> <p>Advice for completing Q2 Q2 applies if development is proposed within a water body or watercourse.</p> <p>Advice for completing Q3 Most land can be identified by a lot on plan description. These details can be obtained from title documents or through the local government. However, if the land on which the development is proposed does not have a lot on plan description (i.e. the development is proposed in a water body or watercourse) provide— (i) the lot on plan description for the adjoining/adjacent land, or (ii) GPS coordinates where there is no adjoining/adjacent land (eg. in Moreton Bay).</p> <p>Advice for completing Q7 Q7 does not apply if the development is proposed within a water body or watercourse.</p> <p>Advice for completing Q8 Q8 applies if development is proposed within a local government area. Note: Areas below high water mark are not within a local government's area unless provided for under the Local Government Act 1993.</p> <p>Advice for completing Q9 Q9 applies if development is proposed on strategic port land or a strategic port land tidal area. For more information refer to Guide 1.1 <i>Development on strategic port land</i>.</p>	<p>1. Street address: <i>(including house number, street name, suburb/locality name & postcode) (if applicable)</i> <input type="text" value="Leichhardt"/></p> <p>2. Name of water body or watercourse, within which the development is proposed: <i>(if applicable)</i> <input type="text" value="-"/></p> <p>3. Lot on plan description: <i>(eg. Lot 123 on RP 4567) / GPS coordinates</i> <input type="text" value="Lot 59 on RP 849800, Lot 93 on RP 8310 & Lot 14 on RP 859820"/></p> <p>4. The above description is for: <i>(tick applicable box)</i> <input checked="" type="checkbox"/> (i) the land on which the development is proposed; or <input type="checkbox"/> (ii) the land adjoining the water body or watercourse, within which the development is proposed; or <input type="checkbox"/> (iii) the water body or watercourse.</p> <p>5. Shop / tenancy number: <i>(if applicable)</i> 6. Storey / level: <i>(if applicable)</i> <input type="text" value="-"/> <input type="text" value="-"/></p> <p>7. Total area of land: <i>(m² or ha) (if applicable)</i> <input type="text" value="approx. 7.714 Ha"/></p> <p>8. Local government area in which the land is situated: <i>(eg. Brisbane, Esk, Hervey Bay, Woomoo etc.) (if applicable)</i> <input type="text" value="Ipswich City Council"/></p> <p>9. Port authority for the strategic port land or strategic port land tidal area on which the development is proposed: <i>(eg. Port of Brisbane, Port of Townsville) (if applicable)</i> <input type="text" value="-"/></p> <p>10. Existing use of the land: <i>(eg. vacant, single house, shop etc.)</i> <input type="text" value="Vacant, Recreation"/></p> <p>11. Proposed use of the land: <i>(eg. 6 unit apartment building, 30 lot residential subdivision, ERA for aquaculture in ponds with a total area of 7 ha for which wastes are released into waters etc.)</i> <input type="text" value="Multiple Residential - Mature Aged Accommodation and Recreational Uses"/></p>
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INTEGRATED PLANNING ACT 1997

Other applicable parts of Form 1
Part A of Form 1 must always be accompanied by other completed parts of Form 1.
For information about when a part of Form 1 may apply for an application refer to Guide 1 Making an IDAS development application.

12. Other parts of Form 1 completed as part of this application: (eg. Part D, Part I, etc)
Part D, Part F & Referral Checklist

Applicant details
Clearly identify who is making the application. The applicant need not be the owner of the land.
When signing and lodging this application
The applicant is responsible for ensuring the information provided is correct. The assessment manager, any referral agency and the Chief Executive (where applicable) will rely on this information when assessing and deciding the application.
If the applicant is a company
A contact person must be shown. All correspondence will be mailed to this address.

13. Name:
GALAXY PROJECT HOUSING PTY LTD

14. Postal address:
C/- David Brett and Associates Pty Ltd
PO Box 5020 Brassall 4305

15. Signature:
[Redacted Signature]

16. Date:
24-12-04

17. Contact person:
C/- David Brett and Associates Pty Ltd

18. Telephone number:
3201 5555

19. Mobile phone number: (if applicable)
[Redacted]

20. Facsimile number: (if applicable)
3201 4788

21. Email address: (if applicable)
[Redacted]

Land owner's consent (if applicable)
Section 3.2.1(10)(a) of the IPA prescribes that an application can not be taken to be properly made without the land owner's consent.
For more information about land owner's consent refer to Guide 1 Making an IDAS development application.
An application must be supported by the consent of the land owner if the application involves:
(i) a material change of use
(ii) reconfiguration of a lot
(iii) work on land below high-water mark & not within a canal as defined under the Coastal Protection and Management Act 1988, or
(iv) work on rail corridor land defined under the Transport Infrastructure Act 1994.
For a mobile or temporary ERA
Land owner's consent is not required.
If an owner has signed this form as applicant
Their signature is not required again in this section.
If there are multiple owners
The consent of each owner is required.
If the owner is a company
Refer to Guide 1.

22. Name/s:
[Redacted]

23. Signature:
[Redacted Signature]

24. Date:
24-12-04

Resource entitlement (if applicable)
Section 3.2.1(10)(b) of the IPA prescribes that an application can not be taken to be properly made without evidence of the resource entitlement.
Advice for completing Q26
Refer to schedule 10 of the Integrated Planning Regulation 1998 that prescribes the nature of evidence required by the State in support of the lodging of this development application.

25. Does this application involve taking or interfering with (other than interfering with quarry material on State coastal land under the Coastal Protection and Management Act 1988) a State resource?
 NO - go to Q28 YES - go to Q26

26. This application is required by regulation to be accompanied by: (tick the applicable box)
 (i) evidence of the allocation of, or entitlement to, the resource - attach evidence
 (ii) evidence the chief executive of the department administering the resource is satisfied the development is consistent with an allocation of, or entitlement to, the resource - go to Q 27
 (iii) evidence the chief executive of the department administering the resource is satisfied the development application may proceed in the absence of an allocation of, or

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Reconfiguring a lot

PART F

Completion of **all applicable questions** on Part F is **mandatory** for all applications involving the reconfiguring of a lot (including freehold subdivision, community title subdivision, subdivision by lease, etc.).

Nature of the application

A development permit authorises development to occur, while a preliminary approval is a step in the approval process and does not authorise development to occur.

1. This application is for: (tick one (1) or both if applicable)

Development permit - provide details below eg. stage 1: freehold subdivision of 25 lots, realignment of a boundary, creation of an access easement)

Multiple Residential - Mature Aged Accommodation and Recreational Uses subdivision

AND / OR

Preliminary approval - provide details below eg. stages 2, 3 and 4: freehold subdivision of 75 lots, realignment of a boundary, creation of an access easement)

The subject land

The information requested in Q2 & 3 is necessary for statistical and planning purposes.

2. Number of existing lots:

3. Total area of land in application: (if staged, total area of the land in this stage)

approx 7.714 Ha

4. How the subject land is identified in the planning scheme: (name the zone, precinct etc.)

Lot 59 on RP 849800 - RL2 - Residential Low Density
 Lot 93 on RP 8310 - Recreation
 Lot 14 on RP 859820 - Large Lot Residential (LLR)

5. Current use of the land: (if vacant, also identify the previous use)

Vacant, Recreation

6. Are there buildings or structures existing on the land?

NO
 YES - complete Q 7

7. Indicate which one of the following circumstances applies:

All existing buildings and structures on the land will be demolished as part of the development / redevelopment of the site; or
 Some existing buildings and structures on the land are proposed to be retained as part of the development / redevelopment of the site - indicate on the plans prepared in response to Question 6 above, those buildings or structures proposed to be retained

8. Existing services on the land: (eg. water & sewerage) - attach plan identifying location if appropriate)

site has access to water, sewerage, power, stormwater

9. Are there any existing easements over the land?

NO
 YES - attach plan identifying easement location & purpose

The proposal

The information requested in Q10-13 is necessary for statistical and planning purposes.

10. Total area of land in the development permit minus any balance area

approx 7.714Ha minus land contributed to council for open space network

11. Number of proposed lots:

12. Number of additional residential lots proposed in development permit: (if applicable)

	13. Estate name & stage number: <i>(applicable if the application is for a stage or stages of an overall subdivision proposal)</i> -
	14. Area of land to be contributed for community purposes: <i>(if applicable)</i> approx 2590sqm
	15. Length of new road to be constructed: <i>(if applicable)</i> -

PLEASE NOTE

This application cannot be accepted unless accompanied by Part A of Form 1.

The assessment manager may refuse to accept an application that, at the time of lodgement, fails to provide all applicable information requested by Part A and any other relevant part of Form 1.

OFFICE USE ONLY *(applicable to assessment manager)*

DATE RECEIVED		REFERENCE NUMBER/S	
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Form 1 Development Application idas

Material change of use

assessable against a local government's planning scheme

Completion of **all applicable questions** on Part D is **mandatory** for all applications involving assessment of a material change of use (MCU) assessable against a local government's planning scheme.

<p>Nature of the application</p> <p>A development permit authorises development to occur, while a preliminary approval is a step in the approval process and does not authorise development to occur.</p>	<p>1. This application is for: <i>(tick 1 or both if applicable)</i></p> <p><input type="checkbox"/> Preliminary approval for a material change of use of premises including conceptual design for any associated works that require approval under the planning scheme <i>(i.e. consideration of the proposal concept)</i></p> <p style="text-align: center;">AND / OR</p> <p><input checked="" type="checkbox"/> Development permit for a material change of use of premises including conceptual design for any associated works that require approval under the planning scheme.</p>
<p>The subject land</p> <p>For the definition of "gross floor area" go to the planning scheme against which the application will be assessed.</p>	<p>2. How the subject land is identified in the planning scheme <i>(name the zone, precinct etc.)</i></p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> Lot 59 on RP 849800 – RL2 – Residential Low Density Lot 93 on RP 8310 – Recreation 14 on RP 859820 – Large Lot Residential (LLR) </div> <p>3. Existing gross floor area: <i>(if applicable)</i> N/A</p> <p>4. Are there any existing easements on the land?</p> <p><input type="checkbox"/> NO</p> <p><input checked="" type="checkbox"/> YES – <i>attach plans of the location and details of the purpose of the easement</i></p>
<p>Material change of use details</p>	<p>5. Details of the change to the use of the land: <i>(eg. vacant land to shopping centre, house to apartment building, vacant land to industry (tyre manufacturing) etc.)</i></p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> Vacant/openspace recreation to Multiple Residential - Mature Aged Accommodation and Recreational uses. </div> <p>6. Number of employees: -</p> <p>7. Operating days and hours: -</p>
<p>Associated building works details <i>(if applicable)</i></p> <p>For the definition of "site cover", "gross floor area" and "storey" go to the planning scheme against which the application will be assessed.</p>	<p>8. Site cover: -</p> <p>9. Gross floor area: -</p> <p>10. Number of on-site car parking spaces: 438</p> <p>11. Number of storeys / maximum height above natural ground: 2</p> <p>12. Number of employees -</p> <p>13. Hours and days the use will operate -</p>
<p>Associated operational works details <i>(if applicable)</i></p>	<p>14. Details of associated operational works <i>(eg. landscaping, cut and fill, drainage, road works etc.)</i></p> <div style="border: 1px solid black; padding: 5px; height: 20px;"> - </div>

PLEASE NOTE

This application cannot be accepted unless accompanied by Part A of Form 1.

The assessment manager may refuse to accept an application that, at the time of lodgement, fails to provide all applicable information requested by Part A and any other relevant part of Form 1.

OFFICE USE ONLY *(applicable to assessment manager)*

DATE RECEIVED		REFERENCE NUMBER/S	
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Referrals checklist

Completion of **all questions** on the Referrals Checklist is **mandatory** for all applications, other than those requiring the completion of Parts A & B only. It is the responsibility of the applicant to work with the assessment manager to correctly identify if an application involves referral to an IDAS referral agency for their assessment and determination, or comment and / or the coordination of any information request by the Chief Executive DLGP through the referral coordination process. The checklist contains a number of questions to aid in this determination.

If your application does involve referral, the assessment manager will confirm in the acknowledgement notice the referral actions required.

To assist you in answering the following questions a series of guides are available free from www.ipa.qld.gov.au.

REFERRALS THAT CAN APPLY TO DEVELOPMENT

- other than building work assessable against the Standard Building Regulation 1993

<p>Environmentally relevant activity</p> <p>For more information refer to <i>Guide 4 Assessment of Environmentally Relevant Activities (ERA)</i>, schedule 8A of the IPA & schedule 2 of the IP Regulation.</p> <p>Unless you answered "none of the above" to Q1, the application requires assessment by the administering authority¹. If an agency other than the administering authority is the assessment manager for the application, the administering authority is a concurrence agency for the application in relation to this matter.</p> <p>Note: An application involving ERA 19 and/or 20 will also require completion of Part K₂ of Form 1 for approval where an allocation under the <i>Water Act 2000</i> is required.</p>	<p>1. The application involves (tick applicable boxes) –</p> <p><input type="checkbox"/> (i) an environmentally relevant activity (ERA) for which a code for environmental compliance has not been made - complete Part G of Form 1</p> <p><input type="checkbox"/> (ii) a mobile or temporary ERA for which a code of environmental compliance has not been made - complete Part G of Form 1</p> <p><input checked="" type="checkbox"/> (iii) none of the above</p>
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¹ The administering authority may be either the Environmental Protection Agency, the relevant local government (for a devolved ERA) or the Queensland Department of Primary Industries and Fisheries (for a delegated ERA).

<p>State-controlled road matters</p> <p>For more information refer to <u>Guide 3 Referrals in relation to State-controlled road matters</u>, schedule 8A of the IPA & schedule 2 of the IP Regulation.</p> <p>Unless you answered "none of the above" to Q2, the application triggers referral to Main Roads as referral agency.</p> <p>In certain circumstances Main Roads will be an advice agency, while in other circumstances Main Roads will be a concurrence agency. Schedule 2 of the IP Regulation will assist you to determine where Main Roads is an advice or concurrence agency for the application.</p>	<p>2. The application involves development on land: (tick applicable box/es) -</p> <p>(a) contiguous² to a State controlled road that is for -</p> <p><input type="checkbox"/> (i) a material change of use assessable against the planning scheme;</p> <p><input type="checkbox"/> (ii) reconfiguring a lot - unless the number of lots does not increase and the number of lots abutting the State-controlled road does not increase;</p> <p><input type="checkbox"/> (iii) operational work not associated with a material change of use assessable against the planning scheme or reconfiguring a lot that -</p> <ul style="list-style-type: none"> • is associated with access to a State-controlled road; • is for filling or excavation; <p><input type="checkbox"/> (iv) operational work or building work (for a non-residential purpose and not associated with an assessable reconfiguration or a material change of use assessable against a planning scheme) that involves the redirection or intensification of site stormwater from the site, through a pipe with a cross-sectional area greater than 250mm² that directs stormwater to a State-controlled road.</p> <p>(b) not contiguous to a State-controlled road that is -</p> <p><input type="checkbox"/> (iv) proposed within a local government area that has a transitional planning scheme and is for development -</p> <ul style="list-style-type: none"> • mentioned in schedule 5 of the IP Regulation and exceeds the thresholds set in that schedule <p><input type="checkbox"/> (v) proposed within a local government area that has an IPA planning scheme and is for development -</p> <ul style="list-style-type: none"> • mentioned in schedule 5 of the IP Regulation and exceeds the thresholds set in that schedule • inconsistent with plans for State-controlled road infrastructure <p>(c) <input checked="" type="checkbox"/> none of the above</p>
<p>Clearing vegetation</p> <p>For more information refer to <u>Guide 12 Vegetation clearing made assessable under Schedule 8 of IPA</u>, schedule 8A of the IPA & schedule 2 of the IP Regulation.</p> <p>Unless you answered "none of the above" to Q3, the application requires assessment by NR&M. If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.</p>	<p>3. The application involves: (tick applicable box) -</p> <p><input type="checkbox"/> (a) operational work for the clearing of native vegetation where the vegetation clearing is made assessable under Schedule 8 of the IPA - complete Part J of Form 1</p> <p><input type="checkbox"/> (b) a material change of use -</p> <p>(i) the lot contains -</p> <ul style="list-style-type: none"> • a category 1, 2 or 3 area shown on a property map of assessable vegetation; or • if there is no property map of assessable vegetation for the lot - remnant vegetation; and <p>(ii) the existing use of the land is a rural or environmental use; and</p> <p>(iii) the size of the land is 2 hectares or larger - complete Part J of Form 1</p> <p><input type="checkbox"/> (c) reconfiguration of a lot if -</p> <p>(i) the lot contains -</p> <ul style="list-style-type: none"> • a category 1, 2 or 3 area shown on a property map of assessable vegetation; or • there is no property map of assessable vegetation for the lot - remnant vegetation; and <p>(ii) the size of the lot before the reconfiguration is 2 hectares or larger; and</p> <p>(iii) 2 or more lots are created; and</p> <p>(iv) the size of any lot created is 25 hectares or smaller - complete Part J of Form 1</p> <p><input checked="" type="checkbox"/> (d) none of the above</p>
<p>Strategic port land</p> <p>For more information refer to <u>Guide 11 Development on strategic port land</u>, schedule 8A of the IPA & schedule 2 of the IP Regulation.</p> <p>If you answered "YES" to Q4, the relevant Port Authority is the assessment manager and Queensland Transport is a concurrence agency for the application.</p>	<p>4. Does the application involve a material change of use on strategic port land that is inconsistent with the approved land use plan under the <i>Transport Infrastructure Act 1994</i>?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Part I of Form 1</p>

² Land contiguous to a State-controlled road is defined in schedule 14 of the IP Regulation to mean land if part of the land is within 100m of the State-controlled road or land that is part of a future State-controlled road)

³ Department of Natural Resources and Mines

<p>Acid sulfate soils</p> <p>For more information refer to <u>Guide 10 Acid sulfate soils</u> & schedule 2 of the IP Regulation.</p> <p>Unless you answered "none of the above" to Q5, the application requires assessment by NR&M. If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.</p>	<p>5. The application involves assessable development (other than building work only assessable against the Standard Building Regulation) on land situated in an identified⁴ local government area and where the surface of the land is: (tick applicable box)</p> <p><input type="checkbox"/> (i) below 20m AHD⁵ and the development involves the excavation of 1000m³ or more of soil or sediment at or below 5m AHD; or</p> <p><input type="checkbox"/> (ii) at or below 5m AHD and the development involves filling the site with 1000m³ or more of material</p> <p><input checked="" type="checkbox"/> (iii) none of the above</p>
<p>Major hazard facilities or possible major hazard facilities</p> <p>For more information refer to <u>Guide 17 Major Hazard Facility or Possible Major Hazard Facility</u>, schedule 8A of the IPA & schedule 2 of the IP Regulation.</p> <p>If you answered "YES" to Q6, the application requires assessment by DES⁶. If an agency other than DES is the assessment manager for the application, DES is a concurrence agency for the application in relation to this matter.</p>	<p>6. Does the application involve a material change of use for a major hazard facility or possible major hazard facility as defined under the <i>Dangerous Goods Safety Management Act 2000</i>?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Part L of Form 1</p>
<p>Water related development</p> <p>For more information about items (i) - (iv), refer to <u>Guide 15 Water related development</u>, schedule 8A of the IPA & schedule 2 of the IP Regulation.</p> <p>For more information about item (v), refer to <u>Guide 14 Does my application involve assessment of a referable dam?</u>, schedule 8A of the IPA & schedule 2 of the IP Regulation.</p> <p>Unless you answered "none of the above", the application requires assessment by NR&M. If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.</p>	<p>7. The application involves operational work that is: (tick applicable box(es))</p> <p><input type="checkbox"/> (i) in a watercourse (eg. a pump, gravity diversion, stream re-direction, weir or dam)</p> <p><input type="checkbox"/> (ii) for an artesian bore anywhere in the State, no matter what the use</p> <p><input type="checkbox"/> (iii) for a subartesian bore, in declared groundwater area⁷, for use for purposes other than stock and/or domestic use</p> <p><input type="checkbox"/> (iv) for a subartesian bore, in certain declared groundwater area, for use for stock and/or domestic purposes</p> <p><input type="checkbox"/> (v) for a referable dam⁸</p> <p><input type="checkbox"/> (vi) for taking overland flow water;</p> <p><input checked="" type="checkbox"/> (vii) none of the above.</p>
<p>Removal of quarry material from a watercourse</p> <p>For more information refer to <u>Guide 16 Removal of quarry material from a watercourse</u>, schedule 8A of the IPA & schedule 2 of the IP Regulation.</p> <p>If you answered "YES" to Q8, the application requires assessment by NR&M. If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.</p> <p>Note: Part G of Form 1 is required to be completed as the activity of removing quarry material from a watercourse is also an Environmentally Relevant Activity (ERA).</p>	<p>8. Does the application involve development for the removal of quarry material from a watercourse⁹ under an allocation notice given under the <i>Water Act 2000</i>?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Part K, and G of Form 1</p>
<p>Operational works in a tidal area or coastal management district</p> <p>For more information refer to <u>Guide 18 Coastal development</u>, schedule 8A of the IPA & schedule 2 of the IP Regulation.</p> <p>If you answered "YES" to Q9, the application requires assessment by EPA. If an agency other than EPA is the assessment manager for the application, EPA is a concurrence agency for the application in relation to this matter.</p>	<p>9. Does the application involve operational works in a tidal area or coastal management district as defined under the <i>Coastal Protection and Management Act 1995</i>?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Part M of Form 1</p>

⁴ The identified local government areas are: Aurukun, Bowen, Brisbane, Broadsound, Bundaberg, Burdekin, Burke, Burnett, Caboolture, Cairns, Calliope, Caloundra, Cardwell, Carpentaria, Cook, Coooloolo, Douglas, Fitzroy, Gladstone, Gold Coast, Hervey Bay, Hinchinbrooke, Isis, Johnstone, Livingstone, Logan, Mackay, Maroochy, Maryborough, Mirium Vale, Morningson, Noosa, Pine Rivers, Redcliffe, Redland, Rockhampton, Sarina, Thuringowa, Tiara, Torres, Townsville, Whitsunday.

⁵ Australian Height Datum (AHD)

⁶ Department of Emergency Services

⁷ The declared ground water areas are listed in Guide 13 Development in a declared catchment area

⁸ Referable dam is defined under the *Water Act 2000*

⁹ Watercourse is defined in sch 10 of the IPA

<p>Tidal works and coastal management For more information refer to Guide 18 Coastal development, schedule 8A of the IPA & schedule 2 of the IP Regulation. Unless you answered "none of the above", the application triggers referral to QT¹⁰ (Maritime Safety Qld) as concurrence agency.</p>	<p>10. The application involves operational work that is: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) tidal work¹¹ – complete Part M of Form 1</p> <p><input type="checkbox"/> (ii) disposing of dredge spoil or other solid material in tidal water – complete Part M of Form 1</p> <p><input type="checkbox"/> (iii) reclaiming land under tidal water – complete Part M of Form 1</p> <p><input type="checkbox"/> (iv) constructing a canal¹² if the canal is associated with reconfiguring a lot – complete Part M of Form 1</p> <p><input checked="" type="checkbox"/> (v) none of the above.</p>
<p>Coastal management For more information refer to Guide 18 Coastal development, schedule 8A of the IPA & schedule 2 of the IP Regulation. Unless you answered "none of the above", the application requires assessment by EPA. If an agency other than EPA is the assessment manager for the application, EPA is a concurrence agency for the application in relation to this matter.</p>	<p>11. The application involves: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) a material change of use involving operational work carried out completely or partly in a coastal management district¹³ and assessable under a planning scheme</p> <p><input type="checkbox"/> (ii) a material change of use involving building work carried out completely or partly in a coastal management district and assessable under a planning scheme that is –</p> <ul style="list-style-type: none"> • the construction of a new premises with a GFA¹⁴ of at least 1000m² • the enlargement of the GFA of an existing premises by more than 1000m² <p><input type="checkbox"/> (iii) assessable reconfiguration of a lot where the land is situated completely or partly in a coastal management district – complete Part M of Form 1</p> <p><input type="checkbox"/> (iv) assessable reconfiguration of a lot¹⁵ in connection with the construction of a canal – complete Part M of Form 1</p> <p><input checked="" type="checkbox"/> (v) none of the above</p>
<p>Development below high water mark For more information refer to Guide 18 Coastal development, schedule 8A of the IPA & schedule 2 of the IP Regulation. If you answered "YES" to Q12, the application triggers referral to the Port Authority. The Port Authority is concurrence agency if the development is –</p> <ul style="list-style-type: none"> • within 200m of a shipping channel or an entry and exit shipping corridor for the port • within 1000m of a swing basin, a commercial shipping wharf, a mooring, anchorage or spoil grounds, • within 1000m of a planned port facility identified in a land use plan approved under the Transport Infrastructure Act 1994. <p>In all other situation the Port Authority is advice agency.</p>	<p>12. Does the application involve development below high water mark¹⁶ and within the limits of a port under the Transport Infrastructure Act 1994?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES – complete Part M of Form 1</p>
<p>Marinas For more information refer to Guide 18 Coastal development, schedule 8A of the IPA & schedule 2 of the IP Regulation. If you answered "YES" to Q13, the application triggers referral to Queensland Fire and Rescue Service as an advice agency.</p>	<p>13. Does the application involve operational work that is tidal work for a marina¹⁷ with more than 6 vessel berths?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES – complete Part M of Form 1</p>
<p>Tidal works in strategic port land tidal areas For more information refer to Guide 18 Coastal development, schedule 8A of the IPA & schedule 2 of the IP Regulation. If you answered "YES" to Q14, the relevant port authority is the assessment manager for the application and EPA and Queensland Transport are concurrence agencies for the application.</p>	<p>14. Does the application involve tidal works within the limits of strategic port land tidal areas¹⁸?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES – complete Part M of Form 1</p>

¹⁰ Queensland Transport

¹¹ Tidal work is defined in sch 10 of the IPA

¹² Canal means canal as defined under the Coastal Protection and Management Act 1995

¹³ Coastal management district is defined in sch 10 of the IPA and means a coastal management district under the Coastal Protection and Management Act 1995, other than an area declared as a coastal management district under section 47(2) of that Act

¹⁴ GFA is defined in sch 14 of the IPA to mean the gross floor area. For a definition of how to calculate GFA, go to the planning scheme against which the application is being assessed.

¹⁵ Under s117 of the Coastal Protection and Management Act 1995, an application for reconfiguration, where the reconfiguration is associated with the construction of an artificial waterway, must be accompanied by the application for the operational works to construct the artificial waterway.

¹⁶ High water mark is defined in the Coastal Protection and Management Act 1995 and means the ordinary high water mark at spring tide

¹⁷ Marina is defined in the Transport Operations (Maritime Pollution) Regulation 1995

¹⁸ Strategic port land tidal areas are the areas generally 50 meters seaward of high water mark adjacent to strategic port land.

Heritage
 For further information refer to Guide 19 *Development in a heritage registered place*, schedule 8A of the IPA & schedule 2 of the IP Regulation.
 If you answered "YES" to Q15, the application triggers referral to the Queensland Heritage Council as concurrence agency for the application.

15. Does the application involve development in a heritage registered place as defined under the *Queensland Heritage Act 1992*?
 NO
 YES - complete Part C of Form 1

Declared catchment areas
 For more information, including a list of the declared catchment areas within Queensland, refer to Guide 13 *Development in a declared catchment area*, schedule 8A of the IPA & schedule 2 of the IP Regulation.
 Unless you answered "none of the above", the application requires assessment by NR&M. If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.

16. The application involves development in an areas declared to be a catchment area under the *Water Act 2000* for: (tick the applicable box/es)
 (i) reconfiguration of a lot, if any lot resulting from the reconfiguration is less than 16 hectares;
 (ii) the establishment or expansion of a waste water disposal system, other than a disposal system for carrying out an environmentally relevant activity under the *Environmental Protection Act 1994*.
 (iii) none of the above

Contaminated land
 Applications involving material change of use and / or reconfiguring a lot may trigger this referral.
 For more information refer to Guide 5 *Contaminated land matters*, schedule 8A of the IPA & schedule 2 of the IP Regulation.
 If you answered "YES" to Q17, the application requires assessment by EPA. If an agency other than EPA is the assessment manager for the application, EPA will be a concurrence agency for the application in relation to this matter.

17. This application involves: (tick the applicable box/es) -
 (a) **reconfiguring a lot** for which all of part of the premises are -
 (i) premises mentioned in the IPA, schedule 8, part 1, table 2 -
 • item 5, including the exemption otherwise provided for by paragraph (d);
 • item 6, including the exemption otherwise provided for by paragraph (e); or
 • item 7,
 • including the exemption otherwise provided for a mining activity or petroleum activity; or
 (ii) in an area for which an area management advice has been given for unexploded ordnance - complete Part N of Form 1
 (b) a **material change of use** -
 (i) made assessable under the IPA, schedule 8, part 1, table 2, items 5 to 7; or
 (ii) if all or part of the premises is in an area for which an area management advice has been given for unexploded ordnance - complete Part N of Form 1

Electricity infrastructure
 For more information refer to schedule 2 of the IP Regulation.
 Unless you answered "none of the above", the application triggers referral to the agency to which the easement is granted in favour of as advice agency.

18. The application involves: (tick the applicable box/es)
 (i) reconfiguration of a lot where any part of the lot is -
 • subject to an easement in favour of a distribution entity or transmission entity under the *Electricity Act 1994* and the easement is for a transmission grid or supply network under that Act; or
 • situated within 100m of a substation site;
 (ii) a material change of use, assessable against a planning scheme and not associated with reconfiguring a lot if -
 • any part of the premises is subject to an easement in favour of a distribution entity or transmission entity under the *Electricity Act 1994* and the easement is for a transmission grid or supply network under that Act; and
 • any structure or work that is the natural and ordinary consequence of the use is, or will be, located wholly or partly in the easement;
 (iii) a material change of use, assessable against a planning scheme and not associated with reconfiguring a lot if any part of the premises is situated within 100m of a substation site
 (iv) operational work that is filling or excavation, not associated with reconfiguring a lot, if -
 • any part of the premises is subject to an easement in favour of a distribution entity or transmission entity under the *Electricity Act 1994*; and
 • the work is located wholly or partly in the easement
 (v) none of the above.

<p>Land designated for community infrastructure Applications involving development on land designated for community infrastructure may trigger this referral. For more information refer to schedule 2 of the IP Regulation. If you answered "YES" to Q19, the application requires assessment by the chief executive of the department administering the Act authorising the development for the designated purpose. If an agency other than the designator is the assessment manager for the application, the designating agency will be a concurrence agency for the application in relation to this matter.</p>	<p>19. Does the application involve development on land designated for community infrastructure – (i) intended to be supplied by a public sector entity, and (ii) on land not owned by or on behalf of the State; and (iii) other than development – • for the designated purpose, or • carried out by, or on behalf of, the designator <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES</p>
<p>Referral coordination An information request requires referral coordination if the application involves – (i) 3 or more concurrence agencies; or (ii) a facility or area assessable under a planning scheme and prescribed in schedule 7 or 8 of the IP Regulation; or (iii) development which is subject to an application for preliminary approval mentioned in section 3.4.6 of the IPA. For more information go to Guide 2 Referral agencies and their role in IDAS and Guide 6 Referral coordination.</p>	<p>20. Does the application trigger referral coordination? <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES - complete Part N of Form 1</p>
<p>Referral agency responses prior to lodgement Under section 3.3.2 of IPA a referral agency may give a referral agency response on a matter within its jurisdiction about a proposal before an application for the proposal is made to the assessment manager. This is commonly the case where an application requires referral to a building referral agency (eg. Qld Fire and Rescue Service).</p>	<p>21. Did a referral agency give a referral agency response under s3.3.2 of the IPA <u>before</u> the application was made to the assessment manager? <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES - attach a copy of the referral agency's response/s</p>

BUILDING REFERRALS

Referrals that can apply to an application involving building work assessable against the Standard Building Regulation

NOTE: If an application does not involve the completion of Part B of Form 1, the triggers identified in Questions 22 to 32 below are not applicable.

<p>Fire safety For more information go to schedule 2 of the IP Regulation</p>	<p>22. The building work the subject of the application requires the installation of a fire safety system? <input type="checkbox"/> NO <input type="checkbox"/> YES - referral may be required to Qld Fire and Rescue Service as advice agency</p>
<p>Fire safety for budget accommodation For more information go to schedule 2 of the IP Regulation</p>	<p>23. The building work the subject of the application requires the installation of a fire safety system for a budget accommodation building? <input type="checkbox"/> NO <input type="checkbox"/> YES - referral may be required to Qld Fire and Rescue Service as advice agency</p>
<p>Spray painting For more information go to schedule 2 of the IP Regulation</p>	<p>24. The application involves a workplace incorporating spray painting? <input type="checkbox"/> NO <input type="checkbox"/> YES - referral may be required to the Chief Executive under the Workplace Health and Safety Act 1995 as concurrence agency</p>
<p>Retail meat premises For more information go to schedule 2 of the IP Regulation</p>	<p>25. The application involves a retail meat premises? <input type="checkbox"/> NO <input type="checkbox"/> YES - referral may be required to Safe Food Qld as concurrence agency</p>
<p>Private health facilities For more information go to schedule 2 of the IP Regulation</p>	<p>26. The application involves a private health facility? <input type="checkbox"/> NO <input type="checkbox"/> YES - referral may be required to the Chief Executive under the Health Act 1937 as concurrence agency</p>
<p>Workplace area less than 2.3m² For more information go to schedule 2 of the IP Regulation</p>	<p>27. The application involves a workplace area less than 2.3m²? <input type="checkbox"/> NO <input type="checkbox"/> YES - referral may be required to the Chief Executive under the Workplace Health and Safety Act 1995 as advice agency</p>
<p>Land contiguous to a State-controlled road For more information go to schedule 2 of the IP Regulation</p>	<p>28. The application involves land contiguous to a State-controlled road? <input type="checkbox"/> NO <input type="checkbox"/> YES - referral may be required to the Chief Executive under the Transport Infrastructure Act 1994 as concurrence or advice agency</p>

<p>IP Regulation</p>	
<p>Pastoral workers accommodation For more information go to schedule 2 of the IP Regulation</p>	<p>29. The application involves pastoral workers accommodation? <input type="checkbox"/> NO <input type="checkbox"/> YES – referral may be required to the Chief Executive under the Pastoral Workers' Accommodation Act 1980 as concurrence agency</p>
<p>Child care centre For more information go to schedule 2 of the IP Regulation</p>	<p>30. The application involves a child care centre? <input type="checkbox"/> NO <input type="checkbox"/> YES – referral may be required to the Chief Executive under the Child Care Act 2002 as concurrence agency</p>
<p>Coastal development For more information go to schedule 2 of the IP Regulation</p>	<p>31. The application involves land completely or partly seaward of a coastal building line¹⁹? <input type="checkbox"/> NO <input type="checkbox"/> YES – referral may be required to the Chief Executive under the Coastal Protection and Management Act 1995 as concurrence agency</p>
<p>Heritage For more information go to schedule 2 of the IP Regulation</p>	<p>32. The application involves a heritage registered place? <input type="checkbox"/> NO <input type="checkbox"/> YES – referral may be required to the Heritage Council as concurrence agency</p>

PLEASE NOTE

The assessment manager may refuse to accept an application, which, at the time of lodgement, fails to provide the completed Referrals Checklist (if applicable).

OFFICE USE ONLY (applicable to assessment manager)

DATE RECEIVED		REFERENCE NUMBER/S	
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¹⁹ Coastal building lines are prescribed under the Coastal Protection and Management Act 1995.

ASSESSMENT REPORT

DEVELOPMENT APPLICATION

FOR

**RECONFIGURING A LOT AMALGAMATION OF
THREE (3) LOTS INTO TWO (2) LOTS**

**MATERIAL CHANGE OF USE – MULTIPLE
RESIDENTIAL – MATURE AGED
ACCOMMODATION**

RECREATIONAL USES

Prepared for: GALAXY PROJECT HOUSING

Prepared by : David Brett & Associates Pty Ltd
31 January 2005

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1.0 INTRODUCTION

This report is the supporting information for the proposed Reconfiguring a Lot and the Material Change of Use of Premises for Multiple Residential – Mature Aged Accommodation and Recreational Uses. The proposal is a 175 dwelling Townhouse development that incorporates recreational facilities such as a sports oval, tennis court, clubhouse and pool. The clubhouse is to be relocated from Lot 93 on RP 8310 to the proposed position indicated on Drawing 303_04_NCD (sheet 1) – Concept Site Layout.

The existing area designation has a lower dwelling per hectare intent, however due to the character of the surrounding area we believe that it can support this level of intensity. The proposed development falls between the residential low density and the residential medium density designations. The proposed site allows for the provision of more than adequate open recreation and parking areas due to land designated below the 1 in 20 development line. We believe that the proposed level of density is suited to the surrounding area based on the existing level of housing density, the location of services and the opportunity for adjacent large recreational spaces. We believe the proposed density will be consistent with the character of the area and will provide housing types and allotment sizes in response to housing needs that will avoid adverse impacts on existing residential amenity.

2.0 SITE DETAILS

Street Address	8 Georgette Street, 84 & 100 Chubb Street
Suburb	One Mile
Real Property Description	Lot 59 on RP 849800, Lot 93 on RP 8310 & Lot 14 on RP 859820
Site Area	7.714 ha approx
Ipswich Planning Scheme Designation	<ul style="list-style-type: none">• Lot 59 on RP 849800 – RL2 – Residential Low Density• Lot 93 on RP 8310 – Recreation• 14 on RP 859820 – Large Lot Residential (LLR)

3.0 APPLICATION DETAILS

Aspects of the Development	<ul style="list-style-type: none">• Reconfiguring a Lot• Material Change of Use – Multiple Residential
Level of Assessment	Impact Assessable
Land Owner	
Applicant	Galaxy Project Housing Pty Ltd C/- David Brett & Associates Pty Ltd

Contact Person	<p>David Brett & Associates Pty Ltd PO Box 5020, Brassall Qld 4305 Ph: 3201 5555 or [REDACTED] Fax: 3201 4766 Email: [REDACTED]</p>
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4.0 SITE CHARACTERISTICS

Road Frontage/s	Georgette Street & Chubb Street
Current use of site	<ul style="list-style-type: none"> • Lot 59 on RP 849800 – Vacant • Lot 93 on RP 83 – Commercial Other – Recreation Uses. • 14 on RP 859820 – Vacant
Encumbrances	<ul style="list-style-type: none"> • 14 on RP 859820 – Access Easement
Infrastructure services	The proposal will provide the required water, power, stormwater and sewerage requirements.
Existing significant vegetation	The site developable area is cleared
Surrounding Land Use	REC: Recreational RL2: Residential Low Density – Sub Area 2 LLR: Large Lot Residential

5.0 PROPOSAL

5.1 Built Form:

The proposed built form of the development is 175 townhouses of Type A or Type B design (Refer Drawing 303_04_NDC (sheet 2) Elevations) to be located across the three lots. The built form of the proposal will also include a clubhouse, tennis court, pool and sports oval.

5.2 Access / Parking and Servicing:

Access to the development will be available via both Georgette and Chubb Street.

5.3 Existing Vegetation:

The developable area of the site is predominately cleared while the land towards the river is lightly vegetated.

5.4 Landscaping / Buffering:

Landscaping for the proposal will be the subject of a Landscape Master Plan.

5.5 Services

The development will provide the required services including – sewerage, water, stormwater and electricity to Local and State Authority requirements.

6.0 IPSWICH PLANNING SCHEME

6.1 USE CLASS / DEFINITION OF PROPOSAL

Under the Ipswich Planning Scheme the proposed development is defined as Multiple Residential.

"Multiple Residential"

(1) Multiple Residential" means the residential use of premises if there are three or more dwellings on any one lot.

(2) The term includes the use of premises for—

(a) apartments;

(b) boarding house, if providing permanent accommodation;

(c) caravan park, if providing permanent accommodation;

(d) nursing home;

(e) retirement community; or

(f) townhouses.

The project would also be defined as a Major Subdivision due to the number of townhouses proposed.

"Major Subdivision" means the reconfiguring of a lot within an urban area which—

(a) requires the construction of an industrial Collector, Collector Street, Internal Connecting Road or higher order road; or

(b) involves the creation of 75 or more residential lots or 100 or more dwelling units (or their equivalent), or any combination thereof which would generate 750 or more vehicle trips per day.

The proposal includes several recreational uses such as a sports oval, tennis court, pool and clubhouse which has indoor recreational uses such as squash courts and a gymnasium. Under the Planning scheme the proposal would be defined as Recreation Use.

"Recreation Use"
(1) "Recreation Use" means the use of premises for recreation purposes, including the following—
(a) equestrian and coursing sports;
(b) indoor recreation;
(c) motor sports; or
(d) outdoor recreation.
(2) The term includes facilities providing for
(a) the preparation and supply of refreshments to patrons on the premises;
(b) car parking; or
(c) the social and administrative activities of any organisation associated with the use of the premises.
(3) The term does not include the use of premises for a "Park"

6.2 IPSWICH PLANNING SCHEME DESIGNATION

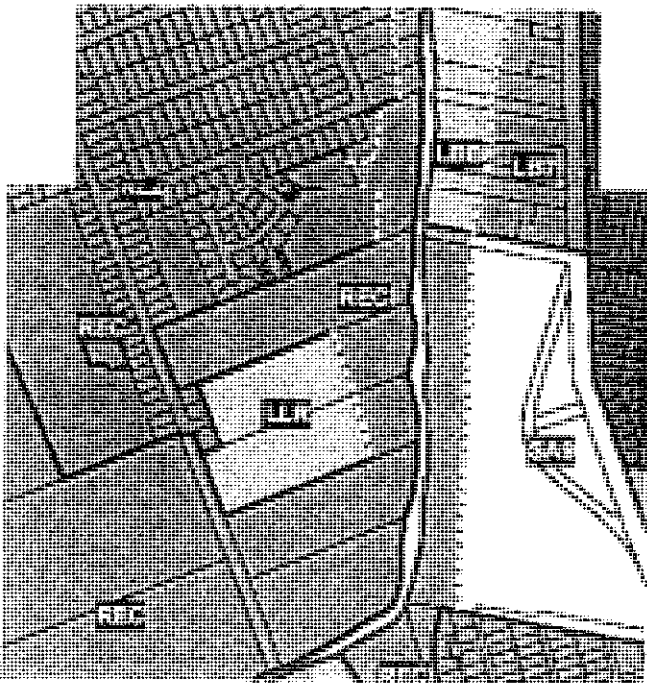


Figure 1: Ipswich Planning Scheme Land Use Designation map.

Under the Ipswich Planning Scheme the proposal has a different designation for each lot.

- Lot 59 on RP 849800 – RL2 – Residential Low Density
- Lot 93 on RP 8310 – Recreation
- 14 on RP 859820 – Large Lot Residential (LLR)

6.3 RELEVANT CODES

The following table identifies the relevant Codes that are required to be assessed for the proposal.

Column 1 Defined use or use class	Column 2 Assessment category	Column 3 Relevant assessment criteria— applicable code if development is self-assessable or requires code assessment
Residential Low Density Zone (Part 4, Div 5)		
Multiple Residential— inconsistent use if— (a) a caravan park; or (b) involving buildings more than 2 storeys in height; or (c) involving a dwelling density which exceeds the density range for the relevant Sub Area [refer s 4.5.5(3)]	Impact Assessable	Urban Areas Code (Part 4)— particularly the specific outcomes in section 4.3.3 and the Residential Low Density Zone (division 5) Residential Code (Part 12, division 6) Parking Code (Part 12, division 9)
Reconfiguring a lot	Code Assessable	Reconfiguring a Lot Code (Part 12, division 5) Urban Areas Code (Part 4)— particularly the specific outcomes in section 4.3.3 and the Residential Low Density Zone (division 5)
Recreation Use— inconsistent use class if indoor recreation, or motorsports complex [refer s 4.4.5(3)]	Impact Assessable	Urban Areas Code (Part 4)— particularly the specific outcomes in section 4.3.3 and the Large Lot Residential Zone (division 4) Recreation and Entertainment Code (Part 12, division 11) Parking Code (Part 12, division 9)
Recreational Zone (Part 4, Div 17)		
Multiple Residential— inconsistent use class [refer s 4.17.5(3)]	Impact Assessable	Urban Areas Code (Part 4)— particularly the specific outcomes in section 4.3.3 and the Recreation Zone (division 17) Residential Code (Part 12, division 6) Parking Code (Part 12, division 9)

Reconfiguring a lot	Code Assessable	Reconfiguring a Lot Code (Part 12, division 5) Urban Areas Code (Part 4)—particularly the specific outcomes in section 4.3.3 and the Recreation Zone (division 17)
Recreation Use—inconsistent use class if motor sports complex [refer s 4.17.5(3)]	Impact Assessable if motor sports complex. Code Assessable otherwise.	Urban Areas Code (Part 4)—particularly the specific outcomes in section 4.3.3 and the Recreation Zone (division 17) Recreation and Entertainment Code (Part 12, division 11) Parking Code (Part 12, division 9)
Large Lot Residential Zone (Part 4, Div 4)		
Multiple Residential—inconsistent use class, unless a nursing home or retirement community [refer s 4.4.5(3)]	Impact Assessable	Urban Areas Code (Part 4)—particularly the specific outcomes in section 4.3.3 and the Large Lot Residential Zone (division 4) Residential Code (Part 12, division 6) Parking Code (Part 12, division 9)
Reconfiguring a lot	Code Assessable	Reconfiguring a Lot Code (Part 12, division 5) Urban Areas Code (Part 4)—particularly the specific outcomes in section 4.3.3 and the Large Lot Residential Zone (division 4)
Recreation Use—inconsistent use class if indoor recreation, or motorsports complex [refer s 4.4.5(3)]	Impact Assessable	Urban Areas Code (Part 4)—particularly the specific outcomes in section 4.3.3 and the Large Lot Residential Zone (division 4) Recreation and Entertainment Code (Part 12, division 11) Parking Code (Part 12, division 9)

Figure 2: Table 4.5.1: Assessment Categories and Relevant Assessment Criteria for Residential Low Density Zone—Making a Material Change of Use

Relevant Codes

- Urban Areas Code (Part 4, Div 3)
- Residential Low Density Code (Part 4, Div 5)
- Recreational Zone (Part 4, Div 17)
- Large Lot Residential Zone (Part 4, Div 4)
- Residential Code (Part 12, Div 6)
- Parking Code (Part 12, Div 9)
- Recreation and Entertainment Code (Part 12, Div 11)

6.4.1 URBAN AREAS (Part 4, Div 3)

Division 3—Overall and Specific outcomes for the Urban Areas as a whole.

Overall Outcomes / Specific Outcomes / Probable Solutions	Compliance
4.3.2 Overall Outcomes for Urban Areas	
<p>(2) The overall outcomes sought for the Urban Areas are the following—</p> <p>Overall Vision</p> <p>(a) Integrated communities are created and maintained which enjoy enhanced liveability, effective growth management, sustained economic growth, good urban design and ecological sustainability.</p>	<p>(2)(a) The proposed Townhouse development will integrate with the existing community and help create and maintain liveability. The proposal will enable effective growth for the area to accommodate the projected increase in population.</p>
<p>Community Identity</p> <p>(b) Definable but inter-related neighbourhoods are created and maintained with a strong sense of community identity.</p>	<p>(b) The proposal positively adds to the community identity of the area and enables the inter-relation of neighbourhoods.</p>
<p>Housing</p> <p>(c) There is a diversity of housing types.</p> <p>(d) There is an adequate supply of residential land and dwellings that respond to community needs and locational constraints and opportunities.</p> <p>(e) The spacious, large lot, residential character of certain communities is maintained particularly—</p> <p>(i) to the north of the Warrego Highway;</p> <p>(ii) to the west of Old Logan Road, Camira;</p> <p>(iii) at North Bundamba; and</p> <p>(iv) in defined areas within the Deebing Creek and Ripley Valleys.</p> <p>(f) The historic townscape character of the historic suburbs is conserved and new development is compatible with that character.</p> <p>(g) There are increased and mixed residential densities in identified areas having good access to commercial, community, employment and transport facilities with particular concentrations around commuter railway stations.</p>	<p>(c) The proposal is providing diversity of housing types by supplying housing at a type and density that is required to ensure the continued growth of the area.</p> <p>(d) The proposal is responding to a community need to expand and is doing so by utilising an area that is suitable for the type and density of the proposed development.</p> <p>(e) The area is not identified to retain its large lot residential character.</p> <p>(f) The area is not of historic townscape character.</p> <p>(g) The proposal provides a mixture of residential densities within the area which has good access to commercial, community, employment and transport facilities.</p>
<p>Amenity</p> <p>(h) Pleasant and safe living and working environments are created.</p> <p>(i) There is a high standard of amenity in residential areas and uses and works in these areas are compatible.</p>	<p>(h) The proposal will provide a pleasant and safe living environment that utilises the sites natural attributes.</p>
<p>Environmental Management and Greenspace</p> <p>(j) Uses and works are located and designed to minimise risks and nuisance to people and property.</p> <p>(k) Principal conservation areas are conserved and where possible linked via riparian, or other wildlife</p>	<p>(i) The proposal will not create a nuisance to people and property.</p> <p>(k) The area maintains the existing riparian corridor along the Bremer river.</p>

<p>corridors.</p> <p>(l) Degraded or contaminated sites are rehabilitated and used in an appropriate manner.</p> <p>(m) There is an integrated open space network providing for diverse, useable, accessible, multi-purpose and affordable recreation and leisure opportunities that respond to community needs.</p>	<p>(l) The site is not degraded or contaminated.</p> <p>(m) The proposal enables the continuation of Council's open space network along the river corridor.</p>
<p>Infrastructure Efficiency</p> <p>(n) Uses and works support the efficient provision or extension of infrastructure, including both physical infrastructure and human services and facilities.</p>	<p>(n) The proposal will provide efficient provision and extension of infrastructure provided in the area.</p>
<p>Transport and Access</p> <p>(o) An efficient, safe and attractive transport network is provided for a range of transport modes including motor vehicles, freight vehicles, public transport, pedestrians and cyclists.</p> <p>(p) Pedestrian, cycle and vehicle connectivity and ease of mobility are provided within and between neighbourhoods, major centres, employment areas and public transport interchanges.</p> <p>(q) Conflict between local and through traffic and between pedestrians, cyclists and vehicles is minimised.</p>	<p>(o) The proposal has effective links with existing transport networks for a range of modes including motor vehicle, freight vehicles, public transport, pedestrian and cyclists.</p> <p>(p) The proposal provides access to public transport enabling connectivity with other neighbourhoods, the city centre and employment areas.</p> <p>(q) The proposal will not cause conflict between local and through traffic due to the multiple access points for the site. Conflict between pedestrians, cyclists and vehicles within the development internal transport network will be minimised through the clear definition of pedestrian routes and nodes defined by landscaping.</p>
<p>Community Development and Human Services</p> <p>(r) An appropriate range of community facilities and human services is provided in response to the needs of all sections of the community, including families, young people, senior citizens, people with disabilities, indigenous people, people from non-English speaking backgrounds and people on low incomes.</p>	<p>(r) The proposal includes community facilities such as a clubhouse, sports oval, and pool that are accessible to the residents of the proposed new development and the general public.</p>
<p>Centres</p>	<p>N/A</p>
<p>Economic Development</p>	<p>N/A</p>
<p>Bundamba Racecourse Stables Area</p>	<p>N/A</p>
<p>Special Opportunity Areas</p>	<p>N/A</p>
<p>Urban Design, Heritage, Townscape and Image</p>	<p>N/A</p>
<p>4.3.3 Specific Outcomes for the Urban Areas, as a whole</p>	
<p>Centres</p>	
<p>Transport and Access</p> <p>(2) Specific Outcomes</p> <p>(a) A strategic transport network is provided, as outlined in Map 4 in Schedule 7.</p> <p>(b) Where possible, sensitive land uses are located away from major transport corridors and haul roads.</p>	<p>(2)(a) N/A</p> <p>(b) The proposed residential development is not located near any major transport corridors or haul routes.</p>

<p>(c) Alternatively, where necessary, acoustic assessments are undertaken together with appropriate ameliorative measures to reduce noise levels within sensitive uses to appropriate levels commensurate with the Environmental Protection Policy (Noise).</p> <p>(d) Carparking is provided in accordance with the demand generated by uses or works, and may include shared parking and access arrangements.</p> <p>(e) The design and layout of parking facilities is—</p> <ul style="list-style-type: none"> (i) integrated (particularly for adjoining carparks); (ii) located to minimise disruption to traffic flow; and (iii) located and designed to minimize pedestrian and vehicle conflicts. <p>(f) Service and delivery areas—</p> <ul style="list-style-type: none"> (i) provide safe and efficient access to sites; (ii) are combined, where possible for adjoining uses; (iii) minimise disruptions to local traffic; and (iv) reduce pedestrian/vehicular conflicts. 	<p>(c) N/A</p> <p>(d) The proposal has provided more than adequate parking spaces for the type and intensity of the use, taking into account both residents and visitors.</p> <p>(e) (i) The proposal does not have the ability to adjoin with any existing parking areas.</p> <p>(ii) The proposal will create a new internal transport network that will effectively manage the flow and distribution of traffic.</p> <p>(iii) The proposal layout ensures a clear definition between vehicular and pedestrian movement.</p> <p>(f) Service and delivery areas for the proposal will:</p> <ul style="list-style-type: none"> (i) Ensure access is available to the site. (ii) N/A (iii)&(iv) Service and delivery areas are designed not to interfere with the flow of traffic and ensure pedestrian and vehicular conflicts are minimised.
<p>Environmental Management</p> <p>(3) Specific Outcomes</p> <p>(a) The quality of stormwater runoff from a use or site is similar to or better than the established water quality standards for the receiving waters or lawful point of discharge.</p> <p>(b) Uses and works are designed to support integrated catchment management, including—</p> <ul style="list-style-type: none"> (i) protection and rehabilitation of natural drainage patterns and riparian vegetation; (ii) environmentally acceptable effluent and runoff management systems or techniques which prevent pollution of water sources; and (iii) appropriate buffering along any adjoining major watercourses. <p>(c) Uses and works with the potential for material or serious environmental harm or environmental nuisance, establish and implement a site specific Environmental Management Plan, which describes the measures to be used to avoid or minimize adverse impacts, and how such measures are to be implemented during the life of the development.</p>	<p>(3)(a) The proposal will employ measures to ensure that stormwater runoff is an acceptable standard for the receiving waters or lawful point of discharge. Refer Consulting Engineers Stormwater Management plan to be provided.</p> <p>(b) The proposal approaches the site from a catchment orientated management strategy. The proposal will be dedicating land to contribute to Councils Open Space Network that is adjacent to a watercourse.</p> <ul style="list-style-type: none"> (i) Refer Consulting Engineers Stormwater Management plan to be provided. (ii) Refer Consulting Engineers Stormwater Management plan to be provided (iii) Refer Consulting Engineers Stormwater Management plan to be provided. <p>(c) The proposal does not have the potential to cause serious environmental harm or environmental nuisance to the surrounding environment.</p>
<p>Visual Framework</p> <p>NOTE 4.3.3B</p> <p>(1) The Ipswich Urban Areas include places with strong visual appeal, comprising both man made and natural features.</p> <p>(2) These features include—</p> <ul style="list-style-type: none"> (a) major topographic features, such as the Brisbane and Bremer Rivers and other major tributary watercourses and prominent mountains, ridgelines, knolls and hillsides; (b) historic townscapes; (c) major approach routes and gateways; 	<p>(1) The proposal is located adjacent to the Bremer River, which will add to the visual appeal of the development.</p> <p>(2) The proposal is located adjacent to the Bremer River, which will add to the visual appeal of the development.</p>

<p>(d) major landmarks; and (e) important view corridors. (3) Specific details in relation to visual framework features for the inner urban areas surrounding the Ipswich City Centre have been compiled and are depicted in Figures 4.3.1 and 4.3.2, Tables 4.3.1, 4.3.2 and 4.3.3 and Schedule 4. (4) The planning scheme seeks to ensure that the Urban Areas maintain their distinctive character as they develop by conserving valuable visual features, particularly— (a) major landmarks and important view corridors; (b) historic townscapes and other heritage character areas; (c) the short distance views to prominent features; and (d) the longer range views to the hinterland (Cityframe). (5) The planning scheme seeks to enhance the overall visual quality of the Urban Areas by— (a) appropriate treatments along the main approach routes and gateways; (b) high quality in the design, construction and landscaped treatment of new buildings, with particular attention to details which are easily viewed by passers by; and (c) the development of new landmark buildings and structures in appropriate locations.</p>	<p>(3) N/A The proposal is not within the visual framework. (4) The proposal does not detrimentally affect any of the identified features. (5)(a) The proposal is not located on a major approach route. (b) The proposal will ensure its aesthetic quality through effective design and the use of landscaping. (c) The proposal does not include the development of any landmark buildings.</p>
<p>(4) Specific Outcomes (a) Uses and works which adjoin a Designated Road or an approach route listed in Table 4.3.1 or depicted on Figure 4.3.1, are designed to enhance— (i) the overall visual impression of the City; and (ii) the character of the particular area in which the site is located. (b) Uses and works which adjoin a gateway listed in Table 4.3.1 or depicted in Figure 4.3.1 are designed to enhance the sense of arrival and the overall character of the particular area in which the site is located. (c) The major city landmarks and local landmark sites (including those listed in Table 4.3.2 and depicted on Figure 4.3.1) are retained, and where possible enhanced. (d) New uses or works— (i) do not obstruct a significant view of a major or local landmark; (ii) do not significantly alter the context of an existing landmark; and (iii) create an attractive landmark feature on a potential landmark site. (e) New uses and works are located and designed to conserve and where possible enhance important views</p>	<p>(4)(a) The proposal does not adjoin a designated road. (b) The proposal does not adjoin a gateway. (c)&(d) The proposal will not effect any local landmark sites.</p>

<p>to—</p> <p>(i) the green backdrop formed to the south by the vegetated hillsides, ridgelines and mountain tops in the area extending from Spring Mountain to White Rock to Flinders Peak and from the Grampian Hills to Flinders Peak;</p> <p>(ii) the panoramas to the D'Aguiar Range and Pine Mountain to the north;</p> <p>(iii) the panoramas to the Little Liverpool Range to the west; and</p> <p>(iv) the inner urban areas around the City Centre, as outlined in Table 4.3.3, Figure 4.3.2 and Schedule 4.</p> <p>(f) New uses and works on prominent hillsides or ridgelines are designed and located—</p> <p>(i) to conserve historic buildings, large mature trees and significant stands of vegetation, where possible;</p> <p>(ii) to retain important skyline elements, including tree canopies for vegetated ridgelines and knolls; and</p> <p>(iii) to retain and where possible enhance significant views into and out of the area.</p> <p>(g) New uses and works adjoining defined watercourses are designed and located—</p> <p>(i) generally in a manner which is subservient to the landscape;</p> <p>(ii) to retain and where possible enhance views along the watercourse; and</p> <p>(iii) to conserve significant vegetation, where possible.</p> <p>(h) Roof design and the design and placement of roof top plant and equipment is complimentary to the appearance of a building, particularly where the roof of the building is prominent.</p>	<p>(f) The proposal is not located on a prominent hillside or ridgeline.</p> <p>(g) The proposal adjoins the Bremer River.</p> <p>(i) The proposed development as it moves towards the river is subservient to the landscape with open space and minor buildings uses established.</p> <p>(ii) The proposal will use the views along the river to provide an attractive setting for the residential development.</p> <p>(iii) The proposal will not clear significant vegetation along the river.</p> <p>(h) The proposed buildings will have a complimentary roofline.</p>
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6.4.2 RESIDENTIAL LOW DENSITY ZONE (Part 4, Div 5)

Specific Outcomes / Probable Solutions	Compliance
4.5.2 Overall Outcomes for Residential Low Density Zone	
<p>(2) The overall outcomes sought for the Residential Low Density Zone are the following—</p> <p>(a) The Residential Low Density Zone caters primarily for low density, sewerage, urban residential development and associated uses, to the general exclusion of most other uses including unsewered, acreage housing.</p> <p>(b) Uses within the Residential Low Density Zone are provided with full urban services such as reticulated water, sewerage, sealed roads, parks and other community facilities.</p> <p>(c) Uses within the Residential Low Density Zone provide a mix of low to medium density housing types and allotment sizes in response to community housing needs.</p> <p>(d) Uses and works within the Residential Low Density Zone are located and designed to maximise the efficient extension and safe operation of infrastructure.</p> <p>(e) Uses and works within the Residential Low</p>	<p>(2)(a) The proposal is a sewerage urban residential development at a density that is sustainable for the area based upon the surrounding demographic conditions.</p> <p>(b) The proposal will provide the full urban services such as water, sewerage, sealed internal transport network, parks and other community facilities.</p> <p>(c) The proposal is a medium density mature aged housing development that will provide housing needs for the growing community in the area.</p> <p>(d) The proposal will include the extension of infrastructure services for the proposed development ensuring its safe operation.</p> <p>(e) The proposed development will;</p>

<p>Density Zone are located, designed and managed to—</p> <ul style="list-style-type: none"> (i) maintain residential amenity; (ii) maintain or enhance important aspects of local character and places of cultural significance or streetscape value; (iii) be compatible with other uses and works; (iv) avoid significant adverse effects on the natural environment; and (v) maintain the safety of people, buildings and works. 	<ul style="list-style-type: none"> (i) No detrimentally effect residential amenity of the existing area. (ii) The proposal is not located in an area of local character or place of cultural significance. (iii) The proposal is compatible with the surrounding uses. (iv) The proposal will not affect the natural environment. (v) The proposal will maintain the safety of people, buildings and works.
<p>4.5.3 Effects of Development – General</p>	
<p>Residential Uses – Density and Character</p> <p>(1) Specific Outcomes</p> <p>Uses and works reflect the established built character, maintain amenity and protect and enhance important townscape and landscape elements within local areas having regard to—</p> <ul style="list-style-type: none"> (a) building height; (b) dwelling density; (c) lot sizes and dimensions; (d) boundary clearances and the provision of space around buildings; (e) access to natural light and ventilation; (f) privacy; (g) noise attenuation; (h) vegetation protection; (i) landscape treatment; (j) places of cultural significance or streetscape value; and (k) the form, scale, bulk, style, siting, orientation, roof lines, materials and detailing of buildings. 	<ul style="list-style-type: none"> (1)(a) The proposed building height of the townhouses will be up to two storeys high, which is consistent with the surrounding area. (b) The proposal as indicated before represents a higher density than that intended for the area but due to the surrounding conditions and the opportunities of the site the higher density is acceptable for the area and will not have a detrimental affect on the townscape. (c) The proposed lot sizes and dimensions are consistent with the type of development. (d) The proposed townhouses have the required boundary clearances and provision of space to ensure there is no detrimental affect on residential amenity. (e) The proposal has been designed so that natural ventilation is available to all townhouses due to their location on the site with relation to each other and prevailing breezes. (f) The proposed development will not have any detrimental impacts on the privacy of existing residents in the area. (g) A noise impact assessment is currently underway for the proposed development. (h) The proposal will maintain the riparian vegetation that exists along the Bremer River. (i) The proposal will incorporate extensive landscaping. (j) The proposed site is not a place of cultural significance or streetscape value. (k) The proposed form of the development is consistent with other development in the area.
<p>Vegetation and Landscaping</p> <p>(4) Specific Outcomes</p> <ul style="list-style-type: none"> (a) Appropriate landscaping, including street trees, is used to soften building outlines and enhance the overall appearance of the area. (b) Buildings on stumps/piers are provided in preference to slab on ground construction, where located within vegetated areas and on steeply sloping land. 	<ul style="list-style-type: none"> (4)(a) TBA (b) The proposed site is not located within a vegetated area.

<p>(c) All significant trees are retained, where possible, particularly on heavily treed, large lots.</p> <p>(d) Uses and works at the rear of existing dwellings are designed to avoid adverse impact on established vegetation and the amenity of neighbouring properties.</p>	<p>(c) The proposal site is predominately cleared.</p> <p>(d) The proposal will not have a detrimental impact on the amenity of neighbouring properties, as there is no existing vegetation until the shoreline.</p>
<p>Building Setbacks</p> <p>(5) Specific Outcome</p> <p>New buildings are setback to the alignment of adjoining buildings unless an alternative setback does not detrimentally affect the character and amenity of the area and the overall townscape.</p>	<p>(5) The proposed new town houses are aligned with the internal access network created within the proposal.</p>
<p>Operation of Road Network and Access</p> <p>(6) Specific Outcomes</p> <p>Uses and works are located and designed to—</p> <p>(a) ensure the safe and efficient operation of the road network; and</p> <p>(b) avoid multiple access points along major roads; and</p> <p>(c) ensure that the principal access for the area between Melrose Drive and Reif Street, Flinders View is via Fischer Road, to avoid amenity concerns and traffic congestion within the residential area to the north of Melrose Drive, Flinders View; and</p> <p>(d) avoid significant adverse effects (e.g. by noise or dust generated) from use of the road network; and</p> <p>(e) ensure reconfiguration of the existing historic lots to the south of Berry Street and in the vicinity of Phoenix Court, Churchill provide for the construction of appropriate road reserves and suitable building envelopes.</p>	<p>(6)(a) The proposed use will create its own sealed internal network, which will be accessible from both Georgette and Chubb Street.</p> <p>(b) The proposal does not have multiple access points along a major road.</p> <p>(c) N/A</p> <p>(d) The proposal will provide a sealed internal access network that will ensure there are no significant effects of noise or dust from its use.</p> <p>(e) N/A</p>
<p>Provision of Infrastructure</p> <p>(7) Specific Outcomes</p> <p>Infrastructure is—</p> <p>(a) provided to meet appropriate standards at the least whole-of-life cost, including avoiding unnecessary duplication; and</p> <p>(b) comprised of components and materials that are readily accessible and available from local sources; and</p> <p>(c) readily integrated with existing systems and facilitates the orderly provision of future systems.</p>	<p>(7)(a) The proposal will provide infrastructure to the standards of whole of life cost.</p> <p>(b) The proposed development will use components and materials readily available from local sources.</p> <p>(c) The required infrastructure will be readily integrated with existing systems and facilities and fit in with the orderly provision of future systems.</p>
<p>(8) Probable Solutions – for sub-section (7)</p> <p>Infrastructure is provided to the standards stated in Planning Scheme Policy 3—General Works.</p>	<p>(8) Infrastructure will be provided to the standards stated in Planning Scheme Policy 3.</p>
<p>4.5.4 Effects of Development within Sub Areas</p>	
<p>(2) Sub Area RL2</p> <p>(a) Specific Outcomes</p> <p>(i) The established traditional inner suburban residential character is maintained.</p>	<p>(2)(a)(i) The area is not a traditional inner suburb.</p>

<p>(ii) Uses and reconfiguring of lots provide for select residential consolidation (infill) within 500 metres of existing or committed centres, major open space areas, major employment nodes, concentrations of community facilities, schools and public transport routes and nodes.</p> <p>(iii) A mix of housing types and lot sizes are provided in Greenfield and outer infill areas.</p>	<p>(ii) The proposal creates an opportunity for outer infill growth due to the major open space opportunity that is presented on the site. The site is also located close to community facilities such as schools and public transport routes.</p> <p>(iii) The proposal provides for a density of housing that is responding to the need for growth on a suitable site.</p>
<p>(b) Probable Solution – for sub-section (2)(a) The overall dwelling density is 10 to 15 dwellings per hectare.</p>	<p>(a) The proposal is for a higher density due to the site-specific character.</p>

6.4.3 RECREATION ZONE (Part 4, Div 17)

The proposal will use some of the land designated as recreational use for the purpose of residential medium density housing due to the suitability of the land. The areas of land heading towards the river will house recreational uses such as a sports oval, clubhouse, tennis court and a swimming pool. The proposed clubhouse is relocated from an existing recreational use and will incorporate indoor recreational activities such as a gymnasium and squash courts.

Specific Outcome / Probable Solution	Compliance
<p>4.17.2 Overall Outcomes for Recreation Zone</p>	
<p>(2) The overall outcomes sought for the Recreation Zone are the following—</p> <p>(a) The Recreation Zone provides for the development of an integrated open space network including the use of land for—</p> <p>(i) both active and passive recreation opportunities within parks;</p> <p>(ii) linear/riparian corridors as open space links; and</p> <p>(iii) private and public sporting/recreation facilities.</p> <p>(b) The Recreation Zone provides sufficient land—</p> <p>(i) to meet the recreational needs of residents and visitors within Citywide, district and local catchments; and</p> <p>(ii) to achieve an equitable distribution of recreational areas and facilities in suitable and accessible locations.</p>	<p>(2)(a) The proposal will incorporate an area of land on Lot 93 on RP 8310 to be included in the open space network via a contribution of land below the 1 in 20 flood line to Council.</p> <p>(i) N/A</p> <p>(ii) The proposal enables a waterside corridor as a link for the open space network</p> <p>(iii) The proposal will have as part of the development both private and public sporting and recreational facilities such as an oval, tennis court and swimming pool.</p> <p>(b)(i) The proposal will utilise some of the recreational area to meet the recreational needs of the residents of the proposal and the surrounding areas.</p> <p>(ii) The proposal enables the accessible location of recreational areas and facilities.</p>
<p>(c) The Recreation Zone provides for a wide range of recreational settings, including—</p> <p>(i) Formal Parks and Gardens;</p> <p>(ii) Waterside Parks;</p> <p>(iii) Play and Picnic Parks;</p> <p>(iv) Sportsgrounds and Courts; and</p> <p>(v) Linear Parks.</p> <p>(e) Waterside Parks are designed and located as focal parks which maximise access to permanent water bodies situated within an attractive setting, and may include jetties, ramps and launch pontoons.</p>	<p>(c) The Recreational section of the proposal will enable the use of the land for waterside parks and sports grounds.</p> <p>(e) The proposed waterside park will enable access to the Bremer River.</p>

<p>(f) Play and Picnic parks provide for informal recreational needs, including facilities for children's play, non organised sporting activities, walking, nature appreciation, picnics and barbeques and community/cultural events, as appropriate, relative to the capacity of surrounding roads and other nearby land uses and the setting, amenity and character of the surrounding area.</p> <p>(g) Sportsgrounds and Courts provide for a range of indoor and outdoor facilities including—</p> <p>(i) ovals, fields, multipurpose courts, club houses, fenced playgrounds, pools, shaded seating, grandstands; and</p> <p>(ii) provision for night competition/activity as appropriate to the setting of the facility and the likely impacts on the amenity and character of the surrounding area.</p> <p>(j) Where land within the Recreation Zone is privately owned or controlled, access to the general public may be restricted.</p>	<p>(f) The areas will also enable play and picnic areas.</p> <p>(g)(i) The proposal also incorporates an oval and tennis court.</p> <p>(j) Parts of the land designated as a recreational use will be privately owned and access to the general public will be restricted.</p>
<p>4.17.3 Effects of Development – General</p>	
<p>Integrated Planning, Uses and Works</p> <p>(1) Specific Outcomes</p> <p>(a) Regard is had to Map 1 in Schedule 7 in determining appropriate locations and embellishment levels for the different recreational settings for future Citywide (Level 1) and District (Level 2) parks.</p> <p>(b) Major recreational facilities are developed in an integrated manner that—</p> <p>(i) provides, where possible, for primary and secondary recreational opportunities, including opportunities for informal recreation;</p> <p>(ii) provides for multi use opportunities and joint use arrangements;</p> <p>(iii) addresses likely impacts on other nearby uses and include measures to mitigate adverse impacts;</p> <p>(iv) addresses likely impact in terms of significant landmark features, view corridors, gateways and approach routes;</p> <p>(v) addresses likely impacts in terms of the public utilities infrastructure and the transport network;</p> <p>(vi) provides for public access and community safety;</p> <p>(vii) addresses likely impacts on environmental values and places of cultural heritage significance or streetscape value; and</p> <p>(viii) incorporates the specific outcomes for any relevant Sub Area.</p> <p>(c) Bushland management plans and strategies are prepared and implemented for areas containing important stands of bushland to deal with issues such as—</p> <p>(i) introduced plants and animals;</p> <p>(ii) fire control;</p> <p>(iii) fragmentation – loss of continuous habitat;</p> <p>(iv) eutrophication of stormwater runoff;</p> <p>(v) supplementary planting and natural regeneration;</p> <p>(vi) appropriate public access, public use and low impact recreational activities (including trail design for multi-use recreation activities) which do not diminish environmental</p>	<p>(1)(a) N/A. The proposal is not a Level 1 or Level 2 district park.</p> <p>(b) N/A. The proposal is not a major recreational facility.</p> <p>(c) The proposal does not require a bushland management plan.</p>

values; (vii) restoring a diversification of habitat; and (viii) dumping of rubbish.	
Building Design and Placement (2) Specific Outcomes (a) The design and placement of buildings ensures— (i) buildings generally remain subservient to and do not dominate the open landscape; (ii) buildings maintain the visual prominence of any significant landmarks and conserve important view corridors; (iii) public access is generally not diminished, unless privately owned or leased; (iv) buildings are not significantly affected by flooding or stormwater drainage; (v) buildings are sympathetic and respectful to places of cultural heritage significance; (vi) effective community safety measures are incorporated; (vii) large expanses of blank wall are avoided, particularly where visually prominent. (b) Obsolete or extraneous buildings are removed and/or screened from view. (c) Attention is given to the design of roof forms and the placement of plant and equipment on sites with sloping topography, or where recreation areas are readily viewed from above.	(2)(a) The proposal includes a building within the area designated as recreational space. (i) The proposed building will not dominate the open landscape due to its size and design. (ii) The building will not affect the visual prominence of any significant landmarks or important view corridors. (iii) The proposed site will be privately owned and have public access restrictions. (iv) The proposed clubhouse building is between the 1 in 20 and the 1 in 100 flood line and provides flood mitigation measures such as water resistance building materials. (v) The area is not one of cultural heritage significance. (vi) The proposal will implement the required community safety measures. (vii) The proposed building will be articulated. (b) The proposed building is not obsolete or extraneous. (c) The proposal will appropriately design roof forms and the placement of plant and equipment.
Vegetation and Landscaping (4) Specific Outcomes (a) Historic plantings and mature vegetation are conserved, where possible. (b) The historic layout of formal parks and gardens is conserved, where possible. (c) Important elements of cultural heritage fabric [e.g. historic walls and fences and indigenous scarred trees (usually called scar trees), midden sites etc] are conserved, where possible. (d) Riparian vegetation is conserved where possible.	(4)(a) There are no historic plantings or mature vegetation on the site. (b) The proposal is not on a historic layout. (c) There are no elements of cultural heritage fabric. (d) The proposal will conserve the riparian vegetation.
Multi Use of Recreation Areas (5) Specific Outcome Recreation uses are designed to— (a) share facilities between different user groups; (b) facilitate the co-location of different recreational settings; and (c) facilitate co-location with other community facilities to create a community focal point.	(5)(a) The proposal enables the sharing of different user groups (b) The proposal enables the co-location of different recreational settings. (c) The proposed clubhouse and recreation facilities will create a community focal point.
Residential Amenity (6) Specific Outcomes (a) Significant impacts of recreation facility operation are contained within the boundaries of existing and future	(6)(a) The proposed recreation facilities on the site will not have a detrimental affect on the surrounding residential

<p>sites, and appropriate on-site buffers are maintained, particularly where catering for night time activities and major spectator events.</p> <p>(b) Traffic impacts of recreation facility operation on nearby residential areas are minimised.</p> <p>(c) Carpark areas are designed so as not to detract from the visual amenity of recreation areas or to detract from the amenity of nearby residential areas.</p> <p>(d) Wherever possible, shared use of carparking areas occurs.</p>	<p>uses. An appropriate noise impact assessment study has been commissioned to investigate the effects of the proposed recreational uses on the surrounding residential areas.</p> <p>(b) The proposal has also enacted a traffic impact study to cover the issues of traffic associated with the site.</p> <p>(c) The proposed car park areas are situated close to the recreational uses due to their location below the 1 in 100 flood line.</p> <p>(d) The proposal does not have the opportunity to share carparking facilities with any neighbouring sites.</p>
<p>(7) Probable Solutions – for sub-section (6)</p> <p>(a) Landscape buffers of a minimum width of ten (10) metres are provided to side and rear boundaries where the site abuts land in the Residential Low Density, Residential Medium Density, Large Lot Residential and Character Housing Zones.</p> <p>(b) Landscape buffers include screen fences and/or mounding where the emission of noise, light or the visual effects of the use warrant additional screening.</p> <p>(c) Access points, carparking, night lit facilities, spectator areas and other major noise sources are oriented and designed to minimise impacts on the amenity and character of nearby areas.</p>	<p>(7)(a) The proposed recreational areas have provided more than adequate space between any residential uses to ensure residential amenity is maintained.</p> <p>(b) The proposal provides appropriate attenuation measures.</p> <p>(c) There are no major noise sources that will cause a negative impact on residential uses. Carparking facilities for the recreational uses are located adjacent to residential uses and therefore incorporate appropriate light and noise attenuation.</p>
<p>Operation of Road Network and Access</p> <p>(8) Specific Outcomes</p> <p>Uses and works are located and designed to—</p> <p>(a) ensure the safe and efficient operation of the road network;</p> <p>(b) avoid multiple access points along major roads;</p> <p>(c) avoid direct vehicular access to Designated Roads with alternate side and rear access used where possible;</p> <p>(d) minimise traffic and amenity impacts on nearby residential areas.</p>	<p>(8)(a) The proposed recreational areas are accessed from the internal network of the residential development. This internal network is accessed from Georgette and Chubb Streets.</p> <p>(c) There is no direct vehicular access to Designated Roads.</p> <p>(d) The proposed parking areas for the recreational uses allow for quick access and ability to leave the transport network for the purpose of parking.</p>
<p>Provision of Infrastructure</p> <p>(9) Specific Outcomes</p> <p>Infrastructure is—</p> <p>(a) provided to meet appropriate standards at the least whole-of-life cost, including avoiding unnecessary duplication; and</p> <p>(b) comprised of components and materials that are readily accessible and available from local sources; and</p> <p>(c) readily integrated with existing systems and facilitates the orderly provision of future systems.</p>	<p>(9)(a) Appropriate infrastructure will be provided for the recreational uses which will meet the appropriate standards for the whole of life cost.</p> <p>(b) The infrastructure supplied will be comprised of components and materials that are readily accessible and available from local sources</p> <p>(c) The provision of infrastructure will be integrated with the existing system and facilities, and will represent the orderly provision of systems.</p>
<p>(10) Probable Solutions – for sub-section (9)</p> <p>Infrastructure is provided to the standards stated in Planning Scheme Policy 3—General Works.</p>	<p>(10) Infrastructure will be provided to the standards stated in Planning Scheme Policy 3.</p>

<p>Operational Airspace – Wildlife Hazards (11) Specific Outcome (a) Particular attention is given to the covering or containment of food and waste sources so as not to attract wildlife (particularly birds or bats) that are likely to affect the operational airspace within 8km of RAAF Base Amberley. (b) Turf farming and fruit farming are managed within 8km of RAAF Base Amberley to avoid the attraction of wildlife (particularly birds or bats) that is likely to affect the operational airspace of RAAF Base Amberley.</p>	<p>(11)(a) The proposal is located within the operational airspace of RAAF Base Amberley and will therefore pay particular attention to the covering and containment of food and waste resources in order not to attract wildlife. (b) The proposal is not turf or fruit farming.</p>
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6.4.4 LARGE LOT RESIDENTIAL ZONE (Part 4, Div 4)

Specific Outcomes / Probable Solutions	Compliance
<p>4.4.2 Overall Outcomes for Large Lot Residential Zone</p>	
<p>(2) The overall outcomes sought for the Large Lot Residential Zone are the following— (a) The Large Lot Residential Zone caters primarily for residential uses on large suburban (i.e. acreage) lots, to the general exclusion of most other uses. (b) Uses within the Large Lot Residential Zone are provided with urban services such as reticulated water, sealed roads, parks and other community facilities. (c) In most cases reticulated sewerage is not provided; however adequate provision is made for on-site effluent treatment and disposal. (d) Uses and works within the Large Lot Residential Zone are located and designed to maximise the efficient extension and safe operation of infrastructure. (e) Uses and works within the Large Lot Residential Zone are located, designed and managed to— (i) maintain residential amenity; (ii) be compatible with other uses and works; (iii) maintain the safety of people, buildings and works; (iv) protect the spacious character of the zone; and (v) avoid significant adverse effects on the natural environment.</p>	<p>(2)(a) As indicated previously in this report it is our belief that the site that is designated as Large Lot Residential is suitable for a higher density residential development than indicated by its designation, based on the surrounding character and growth patterns of the area. (b) The proposed development will be provided with full urban services. (c) The proposed will provide reticulated sewerage. (d) The proposed use will ensure the safe operation of infrastructure. (e)(i) The proposed use will maintain residential amenity within the surrounding area. (ii) The proposed use will be compatible with the surrounding residential uses. (iii) The proposal will maintain the safety of people, buildings and works. (iv) Due to the surrounding character of the area we believe that the large lot residential designation is inappropriate and the site is more suitable to a higher density. (v) The proposed development will not cause adverse effects on the natural environment.</p>
<p>4.4.3 Effects of Development – General</p>	
<p>Residential Uses – Density and Character (1) Specific Outcome Uses and works reflect the established built character, maintain amenity and protect and enhance important townscape and landscape elements within local areas having regard to—</p>	<p>We believe that the built character of the area is more appropriate for a higher density development than the large lot residential designation. The proposal will still maintain amenity within the area and provide a well</p>

<p>(a) building height; (b) dwelling density; (c) lot sizes and dimensions; (d) boundary clearances and the provision of space around buildings; (e) access to natural light and ventilation; (f) privacy; (g) noise attenuation; (h) vegetation protection; (i) landscape treatment; and (j) the form, scale, bulk, style, siting, orientation, roof lines, materials and detailing of buildings.</p>	<p>designed residential development for the growing community.</p> <p>(1)(a) The proposed building height of the townhouses will be up to two storeys high which is consistent with the area.</p> <p>(b) The proposal as indicated before represents a higher density than that intended for the area but due to the surrounding conditions and the opportunities of the site the higher density is acceptable for the area and will not have a detrimental affect on the townscape.</p> <p>(c) The proposed lot sizes and dimensions are consistent with the type of development.</p> <p>(d) The proposed townhouses have the required boundary clearances and provision of space to ensure there is no detrimental affect on residential amenity.</p> <p>(e) The proposal has been designed so that natural ventilation is available to all townhouses due to their location on the site with relation to each other and prevailing breezes.</p> <p>(f) The proposed development will not have any detrimental impacts on the privacy of existing residents in the area.</p> <p>(g) A noise impact assessment is currently underway for the proposed development.</p> <p>(h) The proposal will maintain the riparian vegetation that exists along the Bremer River.</p> <p>(i) The proposal will incorporate extensive landscaping.</p> <p>(j) The proposed form of the dwellings are consistent with that of the surrounding area. The scale of the buildings is smaller in the streetscape context than the surrounding existing dwellings. The style of building is similar to residences in the surrounding areas. The siting of the buildings will ensure the appropriate attenuation measures such as timber screen fences and landscaping to maintain existing residential amenity. Buildings are orientated on the site to protect the amenity of existing residences. Roof lines along with materials and detailing of buildings will be consistent with that of the existing dwellings in the area.</p>
<p>(2) Probable Solution – for sub-section (1)(b) and (c) The overall density is 1.5 to 2.5 dwellings per hectare, with lots ranging from 4000m² to 6000m² in area.</p>	<p>We believe that the built character of the area is more appropriate for a higher density development than the large lot residential designation. The proposal will still maintain amenity within the area and provide a well designed residential development for the growing community.</p>
<p>Non Residential Uses (3) Specific Outcomes Each non-residential use— (a) fulfils a local community need; and (b) is accessible to the population it serves; and (c) where possible, co-locates with other nonresidential uses, but does not contribute to undesirable commercial ribbon development; and (d) does not have a significant detrimental impact on the</p>	<p>(3) There are no non residential uses proposed within the area designated Large Lot residential.</p>

<p>amenity of nearby residents, including through the generation of—</p> <ul style="list-style-type: none"> (i) odours; (ii) noise; (iii) waste products; (iv) dust; (v) traffic; (vi) chemical spray drift; (vii) electrical interference; or (viii) lighting; and <p>(e) maintains a scale and appearance in keeping with the residential amenity and character of the locality with adequate buffering or screening to nearby residential uses (both existing and proposed).</p>	
<p>Operation of Road Network and Access (4) Specific Outcomes Uses and works are located and designed to—</p> <ul style="list-style-type: none"> (a) ensure the safe and efficient operation of the road network; and (b) avoid multiple access points along major roads; and (c) avoid significant adverse effects (e.g. by noise or dust generated) from use of the road network. 	<p>(4) (a) The proposal ensures the safe and efficient operation of the road network by ensuring effective access points to the development. (b) The proposal is not situated along a major road. (c) The proposal will not be exposed to adverse noise or dust from the road and internal transport network.</p>
<p>Provision of Infrastructure (5) Specific Outcomes Infrastructure is—</p> <ul style="list-style-type: none"> (a) provided to meet appropriate standards at the least whole-of-life cost, including avoiding unnecessary duplication; and (b) comprised of components and materials that are readily accessible and available from local sources; and (c) readily integrated with existing systems and facilitates the orderly provision of future systems. 	<p>(5)(a) Refer Probable solution (6) below</p>
<p>(6) Probable Solutions – for sub-section (5) Infrastructure is provided to the standards stated in Planning Scheme Policy 3—General Works.</p>	<p>(6) Infrastructure is provided to the standards stated in Planning Scheme Policy 3 – General Works.</p>
<p>Effluent Treatment and Disposal (7) Specific Outcome If connection is not available to a sewerage system, uses and lots are able to be provided with adequate on-site effluent treatment and disposal.</p>	<p>(7) The proposal will be to be connected to the existing sewerage system.</p>
<p>Operational Airspace – Wildlife Hazards (8) Specific Outcome (a) Particular attention is given to the covering or containment of food and waste sources so as not to attract wildlife (particularly birds or bats) that are likely to affect the operational airspace within 8km of RAAF Base Amberley. (b) Turf farming and fruit farming are managed within 8km of RAAF Base Amberley to avoid the attraction of wildlife (particularly birds or bats) that is likely to affect the</p>	<p>(8)(a) The proposal will cover and contain food and waste sources so as not to attract wildlife as it is located within the operational airspace of the RAAF Base Amberley. (b) The proposal is not turf or fruit farming.</p>

operational airspace of RAAF Base Amberley.	
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6.4.5 RESIDENTIAL CODE

SPECIFIC OUTCOMES / PROBABLE SOLUTIONS	COMPLIANCE
12.6.3 Overall Outcomes for the Residential Code	
<p>(2) The overall outcomes sought for the Residential Code are the following—</p> <p>(a) Residential uses and works—</p> <p>(i) create a pleasant, safe and attractive living environment;</p> <p>(ii) maintain, and where possible enhance, residential amenity both internal and external to the site;</p> <p>(iii) blend new development into existing streetscapes and neighbourhoods;</p> <p>(iv) conserve places of cultural significance or streetscape value;</p> <p>(v) promote greater housing choice with sufficient flexibility to accommodate the diverse housing needs of the community; and</p> <p>(vi) provide for privacy, day lighting, ventilation and natural climate control.</p> <p>(b) The character, scale and density of development are—</p> <p>(i) commensurate with the intent of the zone or Sub Area in which the development is proposed;</p> <p>(ii) compatible with the physical characteristics of the site and its surrounds; and</p> <p>(iii) compatible with the desired character of the local area.</p>	<p>(2) (a) (i) The proposed residential development creates a pleasant, safe and attractive living environment that incorporates the river and adjacent recreational space to provide a high level of residential amenity.</p> <p>(ii) The proposal will enhance residential amenity within the site and also enhance the external amenity through improving the existing streetscape.</p> <p>(iii) The proposal will improve the streetscape by creating attractive residential developments that are integrated with the existing surrounding area.</p> <p>(iv) The area is not of cultural significance or streetscape value.</p> <p>(v) The proposal enables a choice of house types within the development and increases the mix of housing within the area.</p> <p>(vi) The proposal allows for privacy, day lighting, ventilation and natural climate control throughout the development due to the provision of both private and public space.</p> <p>(b) The proposal is a higher density than the designated zones and sub areas require. We believe that there is sufficient planning need for this proposed increase in density due to expected population growth rates for the area and the suitability of the particular site, particularly the ability to provide large areas of recreational space.</p>
12.6.4 Residential Uses and Works – Effects of Development – General Provisions	
<p>Density and Character</p> <p>(1) Specific Outcomes</p> <p>Uses and works reflect the desired built character, maintain amenity and protect and enhance important townscape and landscape elements having regard to—</p> <p>(a) dwelling density;</p> <p>(b) building height;</p> <p>(c) lot sizes and dimensions;</p> <p>(d) boundary clearances and the provision of space around buildings;</p> <p>(e) the location and design of parking areas;</p> <p>(f) the provision of recreation space;</p> <p>(g) access to natural light and ventilation;</p> <p>(h) privacy;</p> <p>(i) noise attenuation;</p> <p>(j) vegetation protection;</p> <p>(k) landscape treatment;</p> <p>(l) places of cultural significance or streetscape value; and</p>	<p>(1)(a) The proposal is a higher density than the designated zones and sub areas require. We believe that there is sufficient planning need for this proposed increase in density due to expected population growth rates for the area and the suitability of the particular site, particularly the ability to provide large areas of recreational space.</p> <p>(b) The proposed building height of the townhouses will be up to two storeys high which is consistent with the area.</p> <p>(c) The proposed lot sizes and dimensions are consistent with the type of development.</p> <p>(d) The proposed townhouses have the required boundary clearances and provision of space to ensure</p>

<p>(m) the form, scale, bulk, style, siting, orientation, roof lines, materials and detailing of buildings.</p>	<p>there is no detrimental affect on residential amenity.</p> <p>(e) The location and design of car parking areas ensure that residential amenity is protected through the effective use of landscaping the timber screen fencing.</p> <p>(f) The proposal has a unique opportunity to provide more than adequate open space for the proposed residential development by utilizing land below the 1 in 100 flood line.</p> <p>(g) The proposal has been designed so that natural ventilation is available to all townhouses due to their location on the site with relation to each other and prevailing breezes.</p> <p>(h) The proposed development will no have any detrimental impacts on the privacy of existing residents in the area.</p> <p>(i) A noise impact assessment is currently underway for the proposed development.</p> <p>(j) The proposal will maintain the riparian vegetation that exists along the Bremer River.</p> <p>(k) The proposal will incorporate extensive landscaping.</p> <p>(l) The proposed site is not a place of cultural significance or streetscape value.</p> <p>(m) The proposed form of the dwellings are consistent with that of the surrounding area. The scale of the buildings is smaller in the streetscape context than the surrounding existing dwellings. The style of building is similar to residences in the surrounding areas. The siting of the buildings on the site will ensure the appropriate attenuation measures such as timber screen fences and landscaping to ensure existing residential amenity is protected. Buildings are orientated on the site to protect the amenity of existing residences. Roof lines along with materials and detailing of buildings will be consistent with that of the existing dwellings in the area.</p>
<p>(2) Probable Solutions – for sub-section (1) Dwelling Density, Height and Setbacks</p> <p>(a) The dwelling density, height and setbacks conform to those specified for the relevant zone, Sub Area or precinct.</p>	<p>(a) The proposal is a higher density than the designated zones and sub areas require. We believe that there is sufficient planning need for this proposed increase in density due to expected population growth rates for the area and the suitability of the site, particularly the ability to provide large areas of recreational space.</p>
<p>Building Height</p> <p>(b) Where no building height provisions are specified for the zone, sub area or precinct, buildings are limited to one</p> <p>(1) storey in height, unless appropriate with—</p> <p>(i) the scale of adjoining development; and</p> <p>(ii) the extent of fall across the site; and</p> <p>(iii) the character and amenity of the area and the overall townscape.</p>	<p>(b) The proposed building height is a maximum of 2 storeys which is</p> <p>(i) appropriate with the scale of adjoining development</p> <p>(ii) The extent of fall across the site and</p> <p>(ii) is compatible with the surrounding character and amenity of the area and the overall townscape.</p>

<p>Building Setbacks</p> <p>(c) Where no building setbacks are specified for the zone, sub area or precinct, the building setbacks conform to Schedule 5.</p> <p>(d) Windows in habitable rooms do not face directly into habitable rooms in another dwelling on the same site closer than nine (9) metres except that at ground level such minimum separation may be—</p> <p>(i) three (3) metres where screen fences or walls are provided or where the windows are above 1.6 metres from the floor; and</p> <p>(ii) six (6) metres where existing vegetation or new plantings prevent views between windows.</p>	<p>(c) Building setbacks conform with Schedule 5 of the Planning Scheme.</p> <p>(d) Habitable rooms do not face directly into habitable rooms in other dwellings within required distances.</p>
<p>Building Scale and Articulation</p> <p>(3) Specific Outcomes</p> <p>(a) Building design, detailing and finish provide an appropriate scale to the street and add visual interest and differentiation between residential buildings when viewed from streets, or a public thoroughfare.</p> <p>(b) In low density residential areas, new residential buildings are designed with clearly distinguishable parts of similar scale to existing dwellings.</p> <p>(c) Large expanses of blank walls are avoided, particularly in situations where such walls are likely to be visually prominent.</p> <p>(d) New buildings take into account the image presented by the backs and sides of buildings so as to ensure an attractive townscape.</p>	<p>(3)(a) The proposed residential buildings have an articulated design as can be seen in Drawing 303_04_NDC – Concept Layouts.</p> <p>(b) The proposed new residential buildings are similar in scale to existing residential buildings within the area.</p> <p>(c) The proposed new buildings do not have large expanses of blank walls.</p> <p>(d) The proposed new residential buildings have regard the design of their backs and sides in order to maintain an attractive townscape.</p>
<p>Building Orientation</p> <p>(5) Specific Outcomes</p> <p>(a) Buildings address the street frontage or frontages rather than being aligned at right angles or diagonal to the street.</p> <p>(b) Buildings are designed so that overlooking and opportunities for casual surveillance of public spaces, pedestrian paths and car parking areas are provided.</p> <p>(c) Generally, as much as practical of the habitable parts of a building are located towards the street, in order to develop a strong relationship between private accommodation and the street.</p> <p>(d) Buildings are sited and designed to provide a clearly delineated transition space from public spaces (e.g. the street or communal open space) to dwellings and associated private use areas.</p> <p>(e) The site layout ensures that the front entrance of each dwelling is easily found, and that amenity is maintained between dwellings.</p>	<p>(5)(a) The proposed buildings are aligned with the internal transport network frontage.</p> <p>(b) The proposal allows overlooking and opportunities for casual surveillance of public spaces, pedestrian paths and car parking areas through the orientation of residential buildings and their location on site.</p> <p>(c) Habitable rooms are located as much as practical toward internal roadways.</p> <p>(d) The proposal has delineated between public spaces and dwellings and associated private use areas through the use of landscaping and screen fencing.</p> <p>(e) The site layout ensures entrances are legible due to the location and design of the building and amenity is maintained between dwellings.</p>
<p>(6) Probable Solutions – for sub-section (5)</p> <p>(a) There are no blank walls along street frontages.</p> <p>(b) Habitable rooms of dwellings that are located near the street frontage are oriented towards the street, and have verandahs or balconies adjoining, or oriented to the street.</p>	<p>(6)(a) The proposal ensures that there are no blank walls along street frontages</p> <p>(b) Habitable rooms of the dwellings are located towards the street and internal transport network frontage as can be seen from the floor layouts provided in Drawing</p>

	303_04_NDC – Concept Layouts.
Corner Sites (7) Specific Outcomes	The proposal is not a corner site.
Building Entrances (8) Specific Outcomes (a) Entries to buildings are exposed to the main street frontage and are clearly delineated/legible. (b) Building identification and numbering is prominent. (c) Entrances to buildings are emphasized by— (i) a size of entrance of an appropriate scale and presence on the street; and (ii) use of high quality materials and high levels of detailing around the entrance.	(8)(a) Entries to buildings are orientated and exposed to the internal transport network frontages. (b) Building identification and numbering will be prominent. (c) The proposed entrances will be emphasized by – (i) An appropriately scaled entrance with regard to the building. (ii) The proposed will use high quality materials and high levels of detailing around entrance refer Drawing 303_04_NDC – Concept Layouts.
Skyline Elements/Roof Top Design (9) Specific Outcomes (a) The design of the roof form is consistent with the predominant existing character or the desired character of roofs in the area. (b) The design of roof forms ensure that— (i) plant rooms and equipment are appropriately concealed; and (ii) appropriately coloured roof treatments are used and contrasting coloured roof treatments are avoided.	(9)(a) The proposed roof forms of the two styles of townhouses is consistent with predominate existing character of roofs in the area. The predominate style of housing in the area is concrete slab, brick veneer. (b)(i) The roof forms of the proposal will not contain plant or equipment. (ii) The proposed roof treatments and colours will be consistent.
Building Materials (10) Specific Outcomes (a) External materials are high quality, attractive, durable and need minimal maintenance. (b) Use of highly reflective materials in facades or on roofs (e.g. unpainted zincalume) is avoided or limited to locations where they do not detract from the amenity and character of adjacent development and public or semi-public spaces. (c) Colours are used to unify buildings which form part of a group, and colour schemes are appropriate to the style of the building. (d) Previously unpainted surfaces are not painted where the original finish (e.g. face brickwork) is an important part of the building's character.	(10)(a) The proposed buildings are brick veneer finishes. (b) The proposal does not use highly reflective facades. (c) Groups of buildings will have a unified colour scheme. (d) N/A
Site Amalgamation (11) Specific Outcomes Where the site for the proposed development comprises more than one lot, all lots are amalgamated by survey into one parcel prior to the submission of an application for the approval of building works.	(11) The proposed site will be subdivided accordingly.
Site Suitability and Amenity (12) Specific Outcomes (a) Residential uses or works are designed and sited to maximise site potential, minimise risk and provide a high	(12)(a) The proposed site is suited to a medium density residential development due to the ability of the site to

<p>degree of amenity in a residential environment, suited to the community's needs.</p> <p>(b) Residential uses and works do not cause unreasonable, detrimental impacts on the amenity of adjacent uses, streets, or other public or semipublic spaces with respect to—</p> <p>(i) overshadowing or loss of sunlight or natural daylight;</p> <p>(ii) noise; and</p> <p>(iii) loss of privacy.</p> <p>(c) Mixed use developments incorporating residential accommodation (for short or long term residents) are designed to ensure that residents are afforded reasonable standards of on-site convenience and amenity, and safe and secure access.</p> <p>(d) Habitable rooms in dwellings are situated above the adopted flood level.</p> <p>(e) Residential building sites have proven, suitable surface and sub-surface stability characteristics having regard to past, present and likely future mining activity.</p> <p>(f) Residential uses are sited within a lot so that the future development of the balance area of the lot (if any) is facilitated.</p>	<p>provide essential communal recreational space. The site also allows for a level of developable land can sustain the proposed amount of dwellings due to the access to essential services such as sewerage, water, power and stormwater.</p> <p>(b) The proposal will not cause a detrimental impact on the surrounding uses with respect to:</p> <p>(i) Overshadowing due to the size of the proposed buildings.</p> <p>(ii) Noise due to the fact the proposed uses are consistent within the area.</p> <p>(c) The proposal has provided a high level of residential amenity and also safe a secure access to the buildings.</p> <p>(d) The proposed residential dwellings are located above the adopted flood level of 1 in 100.</p> <p>(e) The proposal is not affected by mining constraints.</p> <p>(f) N/A there will be no balance of land.</p>
<p>Privacy</p> <p>(13) Specific Outcomes</p> <p>Direct overlooking of main internal living areas of other dwellings is minimised by building layout, location of entrances, location and design of windows and balconies, screening devices and landscaping or by physical separation.</p>	<p>(13) The proposal allow for privacy between the proposed dwellings. They do not have overlooking windows or balconies. Each dwelling will have a timber screen fence around the rear section of the lot ensuring physical separation.</p>
<p>(14) Probable Solutions – for sub-section (13)</p> <p>(a) Dwellings are designed to face a street frontage or towards the interior of a site, rather than across side or rear boundaries to adjoining land.</p> <p>(b) A minimum 9m separation (or 12 m where above first floor level) is provided between the windows of habitable rooms of facing dwellings.</p> <p>(c) Direct views between living area windows of adjacent dwellings are screened or obscured.</p> <p>(d) Direct views from living rooms of dwellings into the principal area of private recreation space of another dwelling are screened or obscured.</p> <p>(e) Screening is provided by—</p> <p>(i) 1.8 m high solid fences or walls between ground floor level windows; or</p> <p>(ii) window screens that have a maximum area of 25% openings, which are permanently fixed and made of durable materials; or</p> <p>(iii) landscaping, including existing dense vegetation or new planting.</p> <p>(f) Each dwelling is provided with a private entrance at ground level, or alternatively, where there are shared access paths to entries, overlooking into habitable rooms is prevented by the use of screen walls or the location of windows above 1.6 metres from the floor.</p>	<p>14(a) All dwellings face the internal transport network frontage.</p> <p>(b) A distance of approx 9.7m is provided between habitable rooms that are facing each other.</p> <p>(c) Direct views between living area windows will be screened.</p> <p>(d) Direct views from living rooms of dwellings into the principal area of private recreation space will be screened.</p> <p>(e) Screening will be according to council standards.</p> <p>(f) The proposal enables each dwelling a private entry.</p>

<p>Noise</p> <p>(15) Specific Outcomes</p> <p>(a) Site layout and building design protect internal living and sleeping areas from high levels of external noise.</p> <p>(b) Active recreation facilities, including swimming pools, spas, tennis courts and barbecue areas and equipment and machinery such as garbage chutes, pumps, compressors, air conditioning and other plant which generate high noise levels, are located away from habitable rooms in nearby dwellings or are enclosed or otherwise acoustically treated.</p> <p>(c) Where possible, driveways and parking areas are located away from the windows of habitable rooms in adjacent dwellings at the same level, or are screened to minimise noise.</p> <p>(d) Residential buildings are either—</p> <p>(i) not exposed to unacceptable transport noise (particularly from main roads or rail corridors); or</p> <p>(ii) designed and constructed so that acceptable living conditions are created within the dwelling.</p>	<p>(15)(a) Refer Noise Impact assessment to be provided.</p> <p>(b) The proposed Clubhouse, sports oval, tennis court and pool are located away from habitable rooms in nearby dwellings. A Noise Impact Assessment study is currently being prepared which will analyse the expected impact on dwellings located near the proposed recreation facilities.</p> <p>(c) Parking areas are located away from the windows of adjacent habitable rooms or appropriate noise attenuation will be provided.</p> <p>(d) (i) The proposal is not located near a main road or rail corridor.</p> <p>(ii) The proposed development will provide acceptable living conditions within the dwellings with respect to noise due to suitable nature of surrounding elements.</p>
<p>Lighting</p> <p>(16) Specific Outcomes</p> <p>Lighting is—</p> <p>(a) provided in public streets and public/communal spaces, along pedestrian and cyclist paths and within car parking areas;</p> <p>(b) located such that mature planting does not reduce its effectiveness;</p> <p>(c) aesthetically integrated into the total design with building, landscaping, signage, streetscape and public space design;</p> <p>(d) used to illuminate buildings, public and communal areas and other areas that may be susceptible to criminal activity, but avoids 'light spill' which would detract from the amenity of nearby areas (particularly residential uses) or contribute to hazardous traffic conditions;</p> <p>(e) appropriately placed to avoid shadows and glare which might put pedestrians at risk. (i.e. shielded light at eye level);</p> <p>(f) not directed onto nearby properties;</p> <p>(g) downward directed;</p> <p>(h) appropriately shielded at its source;</p> <p>(i) provided to vehicular and pedestrian movement areas, including roads, paths and carparks, in order to provide visibility and safety at night; and</p> <p>(j) provided for entry ways, and includes point-to-point lighting for pedestrian walkways.</p>	<p>(16) Lighting will be provided to appropriate council standards.</p>
<p>Climate Control</p> <p>(18) Specific Outcomes</p> <p>(a) Uses and works are sited, designed and constructed to respond to Ipswich's climate in a manner which minimises reliance on non-renewable energy sources for heating, cooling or ventilation.</p> <p>(b) Habitable rooms, occupants, streets and</p>	<p>(18)(a) The proposed dwellings have incorporated design features such as outdoor pergolas, and awnings to minimise reliance on non-renewable energy sources.</p>

<p>public/communal spaces are capable of receiving adequate daylight and ventilation which maximizes access to winter sunshine and summer breezes.</p> <p>(c) Windows and doors in buildings are located, sized and shaded and the building layout and materials chosen to facilitate energy conservation.</p> <p>(d) Building design incorporates architectural features such as extended eaves, awnings, pergolas and verandahs to protect windows and doorways from summer sun, glare and rain, and to provide shelter for outdoor living areas.</p> <p>(e) Habitable rooms receive adequate daylight for the carrying out of daily tasks and private recreation space receives adequate sunlight, having regard to both on-site and adjacent development.</p> <p>(f) Buildings are sited and designed—</p> <p>(i) to maximise use of prevailing breezes for natural ventilation; and</p> <p>(ii) so that openings (windows and doors) are located in opposite and adjacent walls wherever possible to facilitate capture of prevailing breezes and cross ventilation.</p>	<p>(b) The proposed development enables habitable rooms, occupants and public/communal spaces to receive adequate daylight and ventilation.</p> <p>(c) The proposal will incorporate appropriately located windows and doors in buildings to ensure the facilitation of energy conservation.</p> <p>(d) The proposed residential buildings have incorporated building design such as pergolas and window awnings.</p> <p>(e) The proposal has more than adequate access to sunlight due to their orientation on the site</p> <p>(f) The proposed buildings are orientated towards the north west which enable prevailing easterly breezes to access habitable rooms via windows enabling natural ventilation.</p>
<p>Overshadowing and Wind Turbulence (20) Specific Outcome The height and placement of buildings is designed to ensure that there is minimal overshadowing and creation of wind turbulence on adjoining properties, particularly where containing public or communal spaces, which would have a detrimental impact upon the amenity of those properties.</p>	<p>(20) The proposed development will not cause overshadowing or creation of wind turbulence on adjoining properties due to their relative small size.</p>
<p>Recreation Space (22) Specific Outcomes (a) Communal recreation space and associated facilities are provided onsite to suit anticipated user needs, taking into account—</p> <p>(i) the overall housing density;</p> <p>(ii) the quality and extent of alternative public open space or private recreation space;</p> <p>(iii) the relationship to other, nearby, recreation or open space areas;</p> <p>(iv) the need to distinguish communal recreation space clearly from public open space or private recreation space;</p> <p>(v) the type of activity permitted on the communal recreation space;</p> <p>(vi) future maintenance requirements;</p> <p>(vii) the need to maintain the privacy of nearby dwellings; and</p> <p>(viii) the need for landscaping to enhance a sense of enclosure, while allowing informal surveillance and meeting security needs.</p> <p>Private recreation space is provided for each dwelling to suit projected user needs by—</p> <p>(i) being clearly defined for private use;</p>	<p>(22)(a) The proposal will provide extensive recreational space as indicated in Sect 6.4.3, Recreational Zone analysis above.</p> <p>(i) The proposal provides more than adequate recreational space in relation to the density of the residential development.</p> <p>(ii) The quality and extent of the public open space and private recreational areas for the development are more than adequate. The proposal has provided both private recreational areas for each dwelling along with good quality open space and communal recreational areas.</p> <p>(iii) N/A the proposal will provide more than adequate recreational space areas.</p> <p>(iv) Private recreational space will be fenced and screened.</p> <p>(v) The areas of land provided for communal open space enables a wide range of activities to be permitted.</p> <p>(vi) The proposal will ensure future maintenance is managed.</p> <p>(vii) The privacy of nearby dwellings will be maintained through the use of screening and landscaping.</p> <p>(viii) The communal recreational space will provide areas</p>

<ul style="list-style-type: none"> (ii) being suitable for intended use, with particular regard to slope; (iii) being directly accessible from a main living area; (iv) having dimensions capable of accommodating some outdoor recreational needs and some space for service functions; and (v) taking account of requirements for privacy, security, outlook and maximum year-round use. 	<p>of landscaping.</p> <ul style="list-style-type: none"> (i) Private recreational space will be appropriately screened. (ii) The slope of the private recreational space is suitable for the intended use. (iii) Private recreational space is accessible from the living area. (iv) The proposed outdoor recreational space is capable to accommodate functions. (v) The proposed private recreational space achieves privacy, security and enables maximum year-round use.
<p>Landscaping (24) Specific Outcomes (a) Landscaping for residential uses is designed and constructed to—</p> <ul style="list-style-type: none"> (i) compliment the existing or intended streetscape character and appearance and thereby to assist with the integration of the development into the streetscape; (ii) an appropriate scale, relative to both the street reserve width and the building bulk; (iii) be sensitive to site attributes, such as cultural landscapes, natural landform, existing vegetation, views, land capability, availability of water on site, and drainage; (iv) incorporate significant existing vegetation, where possible; (v) improve privacy and minimize overlooking into private spaces; (vi) promote safety and casual surveillance; (vii) assist in microclimate management and energy conservation and efficiency, with particular regard to maximising summer shade and providing access to winter sunshine for outdoor living and recreation areas and providing protection from winter winds and westerly aspects; (viii) accommodate stormwater flows and maximise absorptive landscaped areas for on-site infiltration of stormwater; (ix) integrate and form linkages with parks, reserves and transport corridors; (x) reinforce desired traffic speed and behaviour; (xi) enhance opportunities for pedestrian comfort; (xii) consider lines of sight for pedestrians, cyclists and vehicles; (xiii) provide attractive and coordinated street furniture and facilities to meet user needs; (xiv) effectively screen storage and service areas from views from outside the site; (xv) achieve easy and cost effective maintenance, which is not overly dependent on the city's reticulated water supply and utilises stored rainwater and recycled treated wastewater where practicable; and (xvi) avoid damage to building foundations and overhead and underground utility services. <p>(b) Landscaping is designed to promote safety through—</p>	<p>(24) Landscaping for the proposal will be the subject of a full Landscaping Master Plan to the satisfaction of Council's Landscape Architect.</p>

<p>(i) the provision of shade and shelter which encourages the use of public and communal areas; and (ii) planting which supports informal surveillance and does not obscure doors and windows overlooking public/communal spaces and isolated areas.</p>	
<p>Fences and Walls (26) Specific Outcomes (a) Fence types are designed giving consideration to— (i) the appropriateness of the fence design in its local context; (ii) the role of the fence; (iii) the definition of the property boundary; (iv) uses on the site and on adjoining sites; (v) existing or planned lighting and landscaping; and (vi) site security and access identification and restriction. (b) Front fences and walls— (i) enable some outlook from buildings to the street for safety and surveillance; (ii) assist in highlighting entrances and in creating a sense of community identity within the streetscape; (iii) are designed and detailed to provide visual interest to the streetscape; (iv) comprise materials and colours compatible with the buildings and landscaping on site, and with attractive visual examples of fences and walls in the streetscape to offer a sense of continuity; and (v) are compatible with facilities in the street frontage area, such as mail boxes and garbage collection areas. (c) Retaining walls are terraced and landscaped, or otherwise detailed, to be visually attractive and not to appear to be overbearing.</p>	<p>(26) Fencing for the proposal will be consistent with the existing area. Fencing will provide, the definition of property boundaries, privacy and security. Typically fencing will be 1.8m timber screen fencing.</p>
<p>Footpaths (28) Specific Outcomes (a) Footpaths are designed and constructed to— (i) provide safe and convenient access to dwellings and communal facilities; (ii) discourage use of the site as a pedestrian through-route for non-residents; and (iii) provide privacy to interior dwelling spaces and private recreation space from passersby. (b) All footpaths have a hard and non-slip surface and are well drained.</p>	<p>(28) There is the provision for a footpath within the proposed internal transport network.</p>
<p>Paving Materials and Street Furniture (30) Specific Outcomes The materials and colours used for footpath paving and street furniture are consistent with those identified in the local government's adopted standards.</p>	<p>(30) The colours used for footpath paving and street furniture are consistent with those identified in the local government's adopted standards.</p>

<p>Safety and Security (31) Specific Outcomes (a) Overall Design/Legibility (i) Uses and works are designed and managed to ensure that users are aware of how to safely gain access to, around and within the premises, with a particular emphasis on vulnerable groups, vulnerable elements and vulnerable settings. (ii) The design increases people's awareness of their environment and potential risks to their safety. (iii) The design promotes the use, construction and maintenance of an urban environment which is user friendly and safe to live and move in at any time of day or night. (iv) Where possible, the use or works improves the opportunities to be seen through reduction in isolation, improved mix and intensity of land use and increased legitimate use of spaces. (v) Buildings, spaces and infrastructure are designed to assist legibility (i.e. orientation and navigation through a site or area) reducing the need to depend on signs in order for a person to find their way around. (vi) The layout minimises the potential for crime, vandalism and fear and enhances personal safety and the individual's perception of personal safety. (vii) An easy to understand pedestrian network is provided so that people can easily find their way through, and connections to, important destinations. (viii) The design of areas, buildings, accessways and spaces enables people to find building entrances and exits as well as services such as public transport, phones and public toilets without undue signage.</p>	<p>(31)(a)(i) The proposal enables the safe and efficient access to the premises. There are no vulnerable groups, vulnerable elements and vulnerable settings identified in this development.</p> <p>(ii) The design of the site ensures that there are minimal potential risks to safety. (ii) The urban environment created is user friendly and safe to live and move in.</p> <p>(iv) The proposal is a legitimate use of space and the location does not pose any safety threats.</p> <p>(v) The buildings and internal transport network are sufficient in defining orientation and navigation through the site.</p> <p>(vi) The proposal does not create any potential for crime through its design and can be perceived as maintaining personal safety. (vii) The pedestrian network is legible and will provide links with residents, recreational activities, open space and carparking areas. (viii) The design of the proposal is legible and does not require undue signage.</p>
<p>(b) Surveillance and Sightlines (i) The development provides unimpeded sightlines, particularly along pedestrian/bicycle routes. (ii) The development encourages informal surveillance from surrounding buildings and land uses. (iii) Front fences and walls enable some outlook from buildings to the street to achieve safety and surveillance. (iv) Visibility is provided into spaces where risk to personal safety is perceived to be high, including stairwells, elevators, car parks, lobby entrances and bicycle parking facilities. (v) The design of the use or works avoids— (A) 'blind' corners (including on stairs, in corridors or other situations where movement can be predicted); (B) sudden changes of grade on pathways which reduce sightlines; (C) concealment points (unless they can be secured after hours); and (D) pedestrian tunnels, excepting that where unimpeded sightlines or the absence of concealment points cannot be reasonably achieved, hardware (such as security mirrors) and good lighting is provided to restore visibility. (vi) All barriers (including landscaping features) along</p>	<p>(b)(i) The proposal does not impede on sightlines along pedestrian / bicycle routes. (ii) The proposal enables informal surveillance from surrounding buildings and land use, which are predominately residential. (ii) The proposed fences will enable some lookout from buildings to the street and pedestrian networks. (iv) Visibility is available into car parking areas from surrounding dwellings.</p> <p>(v) The proposal avoids – (A) blind corners (B) sudden changes of grade on pathways (C) concealment points</p> <p>(vi) Landscaping barriers along pedestrian routes are</p>

<p>principal bicycle and pedestrian routes are visually permeable (i.e. can be easily seen through) to reduce concealment points.</p> <p>(vii) Windows, verandahs, balconies and activities in buildings are directed to overlook pedestrian routes, open space areas and carparks.</p>	<p>visually permeable.</p> <p>(vii) Residential dwelling's windows overlook pedestrian routes open space and carparking areas.</p>
<p>(c) Clear Definition of Ownership/Boundaries</p> <p>(i) Uses and works are designed and constructed to clearly define ownership, boundaries and legitimate use of private, semi-private and public/communal space (see Figure 12.6.2).</p> <p>(ii) Landscaping, building features, changes of level and low to medium height fencing are used to delineate ownership boundaries.</p> <p>(iii) Street names and building identification (e.g. numbers) are clearly displayed using reflective materials, with numbers clearly located on the kerb, and building frontage.</p>	<p>(c)(i) The proposal provides a clear definition of ownership / boundaries through the use of fencing and landscaping.</p> <p>(ii) Refer above (c)(i)</p> <p>(iii) Building identification will be to council specifications.</p>
<p>(d) Concealment Reduction</p> <p>(i) Potential concealment points adjacent to main pedestrian routes are eliminated.</p> <p>(ii) Where a concealment point is unavoidable, aids to visibility such as convex mirrors and good lighting are provided.</p> <p>(iii) The design of the development avoids the creation of concealment points such as—</p> <p>(A) dark areas adjacent to a main/designated pedestrian route;</p> <p>(B) dead-end alleyways; and</p> <p>(C) areas that are isolated after dark.</p> <p>(iv) Security lighting is provided along principal movement routes, in building entrances, site entries, car parking areas and other movement areas used after dark.</p> <p>(v) Access to loading docks, storage areas and other restricted areas is controlled by—</p> <p>(A) solid, secure materials; and</p> <p>(B) locking the facilities after hours.</p>	<p>(d)(i) The proposal does not have concealment points adjacent to main pedestrian routes.</p> <p>(ii) N/A</p> <p>(iii) The proposal does not create concealment points.</p> <p>(iv) Security lighting will be provided in communal recreational areas.</p> <p>(v) Access to loading docks, storage areas and other restricted areas will be controlled by</p> <p>(A) solid, secure materials and</p> <p>(B) Locking facilities after hours</p>
<p>(e) Streetscape Design</p> <p>(i) Streetscape design—</p> <p>(A) creates safe public places;</p> <p>(B) encourages pedestrian flow; and</p> <p>(C) designates safe resting places.</p> <p>(ii) Paving materials, surfaces and spaces are free of trip hazards and obstructions for the safe movement of the elderly and people with mobility difficulties.</p> <p>(iii) Where appropriate, street furniture is provided which—</p> <p>(A) does not obscure the views of users, obstruct sightlines along the street, or provide opportunities for concealment; and</p> <p>(B) provides shade and encourages use and informal surveillance.</p>	<p>(e)(i)(A),(B)(c) The streetscape designs of the proposal will create safe public places and encourage pedestrian flows.</p> <p>(ii) Paving materials, surfaces and spaces will be free of trip hazards and obstructions.</p> <p>(iii) Street furniture is not appropriate for the proposal.</p>

<p>(f) Building Design for Public Safety</p> <p>(i) Building design removes, as much as is possible, the opportunity and incentive to commit crime and improves personal perception and the physical reality of a useable, comfortable and safe environment.</p> <p>(ii) Buildings are designed and constructed, including through the location of windows, verandahs and balconies and the location of habitable rooms to support informal surveillance of the street reserve, nearby open space and other vulnerable areas.</p> <p>(iii) Building entrances are designed so that they— (A) are clearly defined; (B) well lit and face the street; (C) do not create concealment points; and (D) provide clear sightlines from the building foyer so that occupants can see outside before leaving the building.</p> <p>(iv) Ramps and elevator entrances are provided in areas which are not isolated.</p> <p>(v) Windows at street level, are secured.</p> <p>(vi) Buildings are designed to minimise access between roof, balconies and windows of adjoining dwellings.</p>	<p>The proposed residential buildings minimize incentives to commit crime through effective security measures such as timber screen fencing.</p> <p>(ii) The proposed residential buildings use windows and the location of habitable rooms to enable casual surveillance.</p> <p>(iii) The proposed building entrances will be (A) Clearly defined through the orientation and use of materials (B) Well lit and face the street (C) Do not create concealment points. (D) There is no building foyer.</p> <p>(iv) There are no ramp or elevator entrances as part of the proposal.</p> <p>(v) Windows at street level will be secured.</p> <p>(vi) No access is available between roofs and adjoining windows.</p>
<p>Carparking and Vehicular Access (33) Specific Outcomes</p> <p>(a) The site has vehicle access from a street or road with adequate capacity for the traffic volumes expected to be generated.</p> <p>(b) Garages, carports and other parking structures are sited and designed so as not to dominate the street frontage.</p> <p>(c) Garages, carports and other parking structures are compatible with the design of the main building(s) on site, particularly in terms of materials, detailing, colours and roof form.</p> <p>(d) Open car parking areas (including visitor parking) are not located between the building and the street alignment, unless softened with landscaping or some other appropriate form of low screening.</p> <p>(e) Access points and driveways avoid existing street trees, as well as mature or significant vegetation on site.</p> <p>(f) The visual impact of driveways and open parking areas is reduced through the appropriate use of tints, textures, gravel or pavers.</p> <p>(g) Large expanses of bitumen and concrete are avoided.</p> <p>(h) The prominence of driveway and carpark access into sites is minimised through limiting the width and number of driveways.</p> <p>(i) Shared driveways are utilised, where possible, to reduce the visual impact on the streetscape of large expanses of driveway crossovers.</p> <p>(j) The paving apron and turning area is kept to the minimum area necessary.</p>	<p>33(a) The proposal has vehicular access from both Chubb and Georgette Street.</p> <p>(b) The proposed car parking areas do not dominate any street frontages.</p> <p>(c) The proposed garage areas are part of the dwelling and are suitably coloured.</p> <p>(d) There are no open car parking areas between the buildings and the street alignment.</p> <p>(e) The proposed access points and driveways do not affect existing street trees.</p> <p>(f) The proposal will incorporate a measure to ensure appropriate tints, textures, gravel or pavers.</p> <p>(g) The proposal does not provide large expanses of bitumen or concrete except for parking areas.</p> <p>(h) The proposal driveways are small and integrated with the internal transport network.</p> <p>(i) As identified above the proposal driveways are integrated with the internal transport network.</p> <p>(j) The paving area of the driveways are minimal due to the close location of the garages.</p>
<p>Service Facilities (35) Specific Outcomes Provision is made for refuse collection and storage areas,</p>	<p>(35) The proposal provides waste storage areas and mail boxes that are</p>

<p>laundry and clothes drying facilities, mail boxes and external storage facilities, which are—</p> <p>(a) of useable size;</p> <p>(b) suitably located for convenient use; and</p> <p>(c) designed to be visually attractive or screened.</p>	<p>(a) Of a useable size</p> <p>(b) Suitably located for convenient use and</p> <p>(c) Bin areas are screened</p>
<p>(36) Probable Solutions – for sub-section (35)</p> <p>(a) A mail box structure—</p> <p>(i) is provided adjacent to the street frontage alignment of the main pedestrian access to the site; and</p> <p>(ii) includes, where the development involves more than one dwelling, one lockable mail box per dwelling, plus one additional mail box for use by a body corporate or management entity.</p> <p>(b) Each dwelling is provided with its own laundry and clothes drying facilities, or alternatively communal facilities are provided within 50 metres of each dwelling.</p> <p>(c) Each dwelling is provided with a secure storage area, of at least three cubic metres, which is capable of being accessed from the exterior of the dwelling.</p> <p>(d) The external storage area may form part of a garage or carport, but not a laundry.</p>	<p>(a) The proposal will provide a mail box structure according to ICC standards.</p> <p>(b) Each dwelling will be provided with its own laundry and clothes drying facilities.</p> <p>(c) Each dwelling is provided with a secure storage area.</p> <p>(d) The external storage area is part of the garage.</p>

6.4.6 RECREATION AND ENTERTAINMENT CODE

The proposal has several recreation and entertainment aspects that include both outdoor and indoor activities. The proposal includes a sports oval, tennis court, pool and clubhouse. The proposed clubhouse is relocated from an existing recreational use and will incorporate indoor recreational activities such as a gymnasium and squash courts. These recreational uses are addressed in the code assessment below.

Specific Outcomes/Probable Solutions	Compliance
12.11.3 Overall Outcomes for the Recreation and Entertainment Code	
<p>(2) The overall outcomes sought for the Recreation and Entertainment Code are the following—</p> <p>(a) Recreation and entertainment uses and works—</p> <p>(i) are undertaken in a manner which does not cause a nuisance or disturbance to the occupiers or users of other nearby land, particularly nearby residents and other sensitive receptors;</p> <p>(ii) provide reasonable buffers between incompatible uses and zones or Sub Areas;</p> <p>(iii) provide for the convenient, safe and efficient movement of vehicles and pedestrians within the site as well as to and from the site;</p> <p>(iv) maintain a safe and secure environment;</p> <p>(v) screen unsightly elements;</p> <p>(vi) conserve places of cultural significance or streetscape value;</p> <p>(vii) ensure adequate provision is made for waste storage, treatment and disposal; and</p> <p>(viii) do not adversely affect the operational airspace of RAAF Base Amberley or Archerfield</p>	<p>(2)(a)(i) The proposed recreational uses will not cause a nuisance or disturbance to the occupiers or users of other nearby land, particularly residents.</p> <p>(ii) The proposed recreation areas do not adjoin any incompatible uses, zones or sub areas.</p> <p>(iii) The proposed recreation areas allow the safe and efficient movement of vehicles and pedestrians.</p> <p>(iv) The proposal maintains a safe and secure environment.</p> <p>(v) The recreational areas do not have any unsightly elements.</p> <p>(vi) The proposed site is not an area of cultural significance or streetscape value.</p> <p>(vii) The proposal ensures adequate provision is made for waste storage, treatment and disposal.</p>

<p>Aerodrome. (b) The character, scale, height and intensity of development are— (i) commensurate with the intent of the zone or Sub Area in which the development is proposed and operational airspace for RAAF Base Amberley and Archerfield Aerodrome; (ii) compatible with the physical characteristics of the site and its surrounds; and (iii) compatible with the desired character of the local area.</p>	<p>(viii) The proposal will in no way adversely affect the operational airspace of RAAF Amberley or Archerfield Aerodrome. (i) The proposed recreational use is part of the major residential subdivision and will have no adverse affect on the RAAF Base. (ii) The proposed recreational uses are compatible with the physical characteristics of the site and use available land linked with council's open space network. (iii) The use is compatible with the overall character of the area.</p>
<p>12.11.4 Effects of Development – General</p>	
<p>Effects on Amenity (1) Specific Outcomes (a) The recreation and entertainment use and its scale, design and character does not adversely impact on, and is compatible with the existing and likely future amenity of the nearby area having regard to— (i) noise; (ii) hours of operation; (iii) traffic; (iv) the location and design of parking areas; (v) lighting; (vi) signage; (vii) visual amenity; (viii) privacy; and (ix) odour and emissions. (b) Buildings and temporary structures are sited to maintain a physical and visual separation from the road frontage of the site and from any buildings on adjoining sites. (c) Ancillary storage of goods or materials in open areas are either— (i) screened from view from the road or nearby land; or (ii) presented in a manner that does not detract from the visual amenity of the area. (d) Landscape buffers include screen fences, walls or mounding where the emission of noise, light or the visual effects of the use warrant additional screening.</p>	<p>(1)(a) The proposed recreational uses will not affect existing and future amenity of nearby land with respect to (i) Refer to Noise impact assessment to be provided. (ii) The proposed hours of operation (iii) The proposal has provided efficient access and manoeuvring within the site in relation to the recreational uses. (iv) There is more than adequate provision of parking spaces located with close proximity to the recreational uses. (v) Lighting will comply with Council's conditions. (vi) Signage will be indicative of function and operation of recreational uses. (vii) The proposed recreational uses will not cause any detrimental affect on visual amenity. (ix) The proposed recreational uses will not cause any odour or other emissions: (b) The proposed Clubhouse provides a visual separation between adjoining residential areas. (c) There will be no ancillary storage of goods or materials. (d) The proposal will include screen fencing and landscaping as buffering for residential areas.</p>
<p>(2) Probable Solutions – for sub-section (1) (a) Building setbacks for recreation and entertainment uses conform to those specified for the relevant zone or Sub Area. (b) Where no building setback provisions are specified— (i) the frontage boundary setback of buildings is consistent with that of buildings on adjoining sites; or (ii) the frontage boundary setback is six (6) metres or half the height of the building whichever is the greater. (c) Landscape buffers of a minimum width of ten (10) metres are provided to side and rear boundaries where the site abuts land in a Residential Zone. (d) Unless otherwise specified in the relevant zone or Sub Area, the hours of operation for the use are from</p>	<p>(2)(a) The proposed clubhouse is in accordance with the setbacks for the sub area. (b) Refer (2)(a). (c) The proposal is incorporated within the residential development and is separated from any residential uses by the internal transport network and parking facilities in most cases. (d) The proposed hours of operation will be 7:00am to</p>

7.00 a.m. to 10.00 p.m.	10:00pm.
<p>Outdoor Lighting (3) Specific Outcome (a) Outdoor lighting is— (i) designed, installed and operated to maintain the amenity of the area; (ii) located, utilised and focused to efficiently light a desired area while minimising lighting overspill; (iii) located such that mature planting does not reduce its effectiveness; (iv) integrated into the total design with building, landscaping, signage, streetscape and public space design; (v) used to illuminate buildings and areas that may be susceptible to criminal activity but avoids light overspill which may detract from the amenity of nearby areas (particularly residential uses) or contribute to hazardous traffic conditions; (vi) appropriately placed to avoid shadows and glare which might put pedestrians at risk (e.g. shielded light at eye level); (vii) not directed onto the street or adjoining properties; (viii) downward directed; (ix) appropriately shielded at its source; (x) provided to vehicular and pedestrian movement areas, including roads, paths and carparks, in order to provide visibility and safety at night; and (xi) provided for entry ways and includes point-to-point lighting for pedestrian walkways. (b) Particular attention is given to the lighting of sites which are situated within 6km of the Amberley Air Base runway, so as not to cause distraction or interference with a pilot's visibility while in control of approaching or departing aircraft.</p>	<p>(3) Outdoor lighting will be subject to council conditions.</p>
<p>Noise (5) Specific Outcomes (a) Unreasonable levels of noise are not transmitted to noise-sensitive places, including existing and future residential areas. (b) A reduction in noise impacts is achieved by— (i) regulating the hours of operation; (ii) locating noisy operations at sufficient distance from noise sensitive places; (iii) orienting access points, carparking, night lit facilities, spectator areas and other major noise sources to minimise impacts on the amenity of nearby areas; (iv) incorporating noise attenuating features into the design, construction and layout of buildings and use areas; and (v) appropriately locating and enclosing noisy plant and equipment (e.g. air conditioning).</p>	<p>(5)(a) The proposal does not represent unreasonable levels of noise for residential uses. A noise impact assessment is being prepared for aspects of the proposed development. (b) The proposed recreational uses reduce noise impacts by (i) regulating the hours of operation; (ii) appropriate location of noise generating activities/uses (iii) orientation of carparking facilities and night lit facilities. (iv) The proposal will contain appropriate noise attenuation features. (v) The proposal will appropriately locate any plant and equipment in order to constrain noise.</p>

<p>Carparking (6) Specific Outcome (a) The design and arrangement of access, carparking and vehicle movements on the site is safe and convenient. (b) The carparking area is— (i) integrated with the public access points of any building on the site; and (ii) located to provide shared use of carparking areas with adjoining land uses or other recreation and entertainment uses, where possible.</p>	<p>(6)(a) The proposed access, carparking and vehicle movement on the site is safe and convenient. Car parking spaces are located directly adjacent recreational uses. (b)(i) The carparking areas are integrated with access points. (ii) The proposed car parking areas provide a shared arrangement with the adjacent residential development.</p>
<p>Multi and Joint Use of Facilities (7) Specific Outcome Multi use opportunities and joint use arrangements for recreation and entertainment facilities are maximised with consideration to— (a) sharing facilities between different user groups; (b) facilitating the co-location of different recreational settings; and (c) facilitating the co-location with other community facilities to create a community focal point.</p>	<p>(7)(a) The proposed recreational facilities are available for use between different user groups in the area. (b) The proposal provides several type of recreational settings. (c) There are no community facilities within the area to co locate with.</p>
<p>Building Design, Height and Placement (8) Specific Outcomes (a) The design, placement and height of buildings and other structures ensures— (i) buildings generally remain subservient to and do not dominate the open landscape; (ii) buildings maintain the visual prominence of any significant landmarks and conserve important view corridors; (iii) public access is generally not diminished, unless the land or facilities are privately owned or leased; (iv) buildings are not significantly affected by flooding or stormwater drainage; (v) buildings are sympathetic and respectful to places of cultural significance or streetscape value; (vi) effective community safety measures are incorporated; (vii) large expanses of blank wall are avoided, particularly where visually prominent; and (viii) the maintenance of the safety of the operational airspace for RAAF Base Amberley. (b) Obsolete and extraneous buildings are removed or screened from view. (c) Attention is given to the design of roof forms and the placement of plant and equipment on sites with sloping topography or where recreation or entertainment uses are readily viewed from above.</p>	<p>(8)(a) The proposed clubhouse remains subservient to the open landscape.] (ii) The proposal does not impede on any significant landmarks or view corridors. (iii) Some of the land will have restricted access public access. (iv) The proposed clubhouse is located between the 1 in 20 and 1 in 100 flood lines and has appropriate flood mitigation measures. (v) There are no areas of cultural significance or streetscape value on the site or surrounding areas. (vi) There are no large expanses of blank wall as part of the proposal. (vii) The proposal will not affect the operation airspace of RAAF base Amberley. (b) The proposed site does not have obsolete and extraneous buildings. (c) Roof form and plant and equipment will be designed to ensure they are suitable to the slope of the land.</p>
<p>(9) Probable Solutions – for sub-section 8(a) (a) Building heights for recreation and entertainment uses conform to those as specified for the relevant zone or Sub Area.</p>	<p>(9)(a) The proposed building height is compatible with that of the sub area.</p>

<p>(b) Where no building height provisions are specified, buildings are limited to one (1) storey in height, unless appropriate with—</p> <ul style="list-style-type: none"> (i) the scale of adjoining development; (ii) the extent of fall across the site; (iii) the character and amenity of the area and the overall townscape; and (iv) the operational airspace of RAAF Base Amberley and Archerfield Aerodrome. 	<p>(b) Refer (9)(a) above.</p>
<p>Public Toilets (10) Specific Outcome Public toilet facilities are provided and designed for use by all members of the community, including people with disabilities, parents and young children.</p>	<p>(10) There are no public toilets provided as part of the proposal.</p>
<p>Hearing Aid Loops (12) Specific Outcome A hearing aid loop system for the benefit of people with impaired hearing is provided where a recreation or entertainment use contains an auditorium.</p>	<p>(12) There is no auditorium proposed.</p>
<p>Vegetation and Landscaping (13) Specific Outcomes</p> <ul style="list-style-type: none"> (a) Historic plantings and mature vegetation are conserved, where possible. (b) The historic layout of formal parks and gardens is conserved, where possible. (c) Important elements of cultural fabric (e.g. historic walls and fences and indigenous scarred trees, midden sites, etc) are conserved, where possible. (d) Riparian vegetation is conserved where possible. 	<ul style="list-style-type: none"> (13)(a) There are no historic planting or mature vegetation on the site. (b) The proposal is not a formal park. (c) There are no elements of cultural fabric on the proposed site. (d) Riparian vegetation will be conserved.
<p>Safety and Security (14) Specific Outcomes</p> <ul style="list-style-type: none"> (a) Recreation and entertainment uses and works are designed and managed to ensure that users are aware of how to safely gain access to and move around and within the premises, with a particular emphasis on vulnerable groups, vulnerable elements and vulnerable settings. (b) The design of the recreation and entertainment use or works increases people's awareness of their environment and potential risks to their safety. (c) Buildings, spaces and infrastructure are designed to assist legibility (i.e. ease of orientation and navigation through a site or area), reducing the need to depend on signs in order for a person to find their way around. (d) The layout minimises the potential for crime, vandalism and fear and enhances personal safety and the individual's perception of personal safety. (e) Recreation and entertainment uses provide unimpeded sightlines, particularly along pedestrian/bicycle routes. (f) Recreation and entertainment uses encourage informal surveillance from surrounding buildings and land uses. (g) Front fences and walls enable some outlook from 	<ul style="list-style-type: none"> (14)(a) The proposal provides clear and legible pedestrian networks. (b) The design of the proposed recreation uses are located adjacent to uses that can provide informal visual surveillance. (c) The proposal has a clear legible pedestrian network and does not rely on signs to direct flows. (d) The proposed layout enables informal visual surveillance which minimises crime potential. (e) The proposed recreation uses provide unimpeded sightlines along pedestrian and bicycle routes. (f) The proposal layout enable informal visual surveillance from surrounding residential land uses. (g) The proposed fences and walls will allow outlook from

<p>buildings to the street to achieve safety and surveillance.</p> <p>(h) Visibility is provided into spaces where risk to personal safety is perceived to be high, including stairwells, elevators, carparks, lobby entrances and bicycle parking facilities.</p> <p>(i) The design of the recreation or entertainment use or works avoids</p> <p>(i) 'blind' corners (including on stairs, in corridors or other situations where movement can be predicted);</p> <p>(ii) sudden changes of grade on pathways which reduce sightlines;</p> <p>(iii) concealment points (unless they can be secured after hours); and</p> <p>(iv) pedestrian tunnels, except that where unimpeded sightlines or the absence of concealment points cannot be reasonably achieved, hardware (such as security mirrors) and good lighting is provided to restore visibility.</p> <p>(j) All barriers (including landscaping features) along principal bicycle and pedestrian routes are visually permeable (i.e. can be easily seen through) to reduce concealment points.</p> <p>(k) Windows, verandahs, balconies and activities in buildings are directed (where possible) to overlook pedestrian routes, open space areas and carparks.</p> <p>(l) Signposted, emergency telephones or alarms are provided along identified, vulnerable or isolated bicycle and pedestrian routes.</p> <p>(m) Uses and works promote the security of the property by clearly defining ownership, boundaries and legitimate use of private, semi-private and public/community space.</p> <p>(n) Landscaping, building features, changes of level and low to medium height fencing is used to delineate ownership boundaries.</p> <p>(o) Where possible, round-the-clock informal surveillance is promoted through a mix of uses which are compatible with neighbouring land uses.</p> <p>(p) Potential concealment points adjacent to main pedestrian routes are eliminated.</p> <p>(q) Where a concealment point is unavoidable, aids to visibility such as convex mirrors and good lighting are provided.</p> <p>(r) The design of the use avoids the creation of concealment points such as—</p> <p>(i) dark areas adjacent to main/designated pedestrian routes;</p> <p>(ii) dead-end alleyways;</p> <p>(iii) indentations in fencing or walls;</p> <p>(iv) gaps in the streets such as entrances to interior courtyards and recessed doorways; and</p> <p>(v) areas that are isolated after dark.</p> <p>(s) Building design removes, as much as is possible, the opportunity and incentive to commit crime and improves personal perception and the physical reality of a useable, comfortable and safe environment.</p> <p>(t) Buildings are designed and constructed, including through the location of windows, to support informal</p>	<p>buildings.</p> <p>(h) The proposal enable high visibility into carparking area.</p> <p>(i) The proposal does not provide any blind corners or</p> <p>(ii) sudden changes of grade on pathways reducing sightlines or</p> <p>(iii) concealment points or</p> <p>(iv) pedestrian tunnels.</p> <p>(j) All barriers along bicycle and pedestrian routes are visually permeable avoiding concealment points.</p> <p>(k) The proposed club house enables overlooking of pedestrian routes, open space areas and car parks.</p> <p>(l) There are no areas perceived to be vulnerable or isolated pedestrian or cycle routes.</p> <p>(m) The proposal has clearly defined property boundaries identifying public and private spaces.</p> <p>(n) Boundary lines use Landscaping, building features, changes of level and low to medium height fencing is used to delineate ownership boundaries.</p> <p>(o) The integration of residential use enables round the clock informal surveillance.</p> <p>(p) There are no potential concealment points adjacent to main pedestrian routes.</p> <p>(q) Refer (p) above.</p> <p>(r) Refer (p) above.</p> <p>(s) The proposed club house does not create any incentives to commit crime.</p> <p>(t) The location of windows and doors for the proposed club house allows for informal surveillance of open space</p>
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surveillance of adjacent open space and other vulnerable areas.	areas.
Waste Storage and Removal (15) Specific Outcomes Areas and receptacles for the storage and removal of waste are— (a) designed, located and screened, where necessary, so as not to present an unsightly appearance, when viewed from a street or public 'right of way'; (b) designed and located to facilitate access by the Local Government's waste removal vehicles; and (c) covered, contained and managed so as not to attract wildlife (particularly birds or bats), that are likely to affect the operational airspace within 8km of RAAF Base Amberley.	(15)(a) Waste storage areas will be screened to ensure they do not present unsightly appearance when viewed from a street or public right of way. (b) The proposed waste storage area will be accessible by the Local Government's waste removal vehicles. (c) The proposed waste storage area will be covered to ensure it does not attract any wildlife that will affect the operational airspace of RAAF Base Amberley.

6.4.7 PARKING CODE (Part 12, Div 9)

Use	Probable Solutions	Notes
Multiple Residential (incorporates the following uses)—		
(g) townhouse.	1 covered space per dwelling for exclusive resident use; 0.5 spaces per dwelling for visitor parking; 0.5 spaces per dwelling (to be located in the common area) for use by both residents or visitors; plus 1 vehicle wash bay per 20 dwellings.	Any development with a long driveway (e.g. in excess of 50 metres) is to provide for access (which may include a passing bay) by furniture removal vans, refuse collection and emergency vehicles.

Table 12.9.1: Provision of Parking Spaces

The proposed development is a multiple residential development of 175 Townhouses. As detailed in Table 12.9.1 above the required parking provision for the development would be 175 covered spaces exclusively for residents use and 175 extra for visitor parking in a common area along with 9 wash bays being a total of 359 parking spaces.

The proposed development has provided a total of 438 parking spaces, including 175 covered spaces exclusively for residents. The remaining 263 car spaces are in common areas and will be utilised for visitor and resident parking and also service the clubhouse and recreational areas. The proposed parking provision is more than adequate for the type of development.

6.4.8 RECONFIGURING A LOT CODE (Part 12, Div 5)

The proposal is a major urban residential reconfiguration with the construction of a new internal transport network. The initial subdivision of land will be an amalgamation of the existing 3 lots into 2 lots. One lot will contain the Clubhouse and the other lot will be the balance of the land.

Table 12.5.2: Specific Outcomes and Probable Solutions for Moderate and Major Subdivisions

Column 1 Specific Outcomes	Column 2 Probable Solutions	Compliance
<p>Residential/Industrial Estate Design (MAJOR SUBDIVISIONS ONLY) (1) For Major Subdivisions, the layout and design— (a) gives a residential neighbourhood or a commercial/industrial location a strong and positive identity, by responding to site characteristics, setting, landmarks, views and places of cultural significance and through clearly legible streets and streetscaping themes, and in the case of residential neighbourhoods, open space networks; (b) provides a mix of lot sizes and enables a variety of housing types, commercial and industrial establishments and other compatible land uses; (c) distributes land uses so as to minimise infrastructure costs; (d) is to be cognisant of linear open spaces, and, in the case of residential neighbourhoods ensure they are located to define the boundaries of neighbourhoods and, where appropriate, provide community focal points; (e) reinforces residential neighbourhood identity by locating community, retail and commercial facilities at focal points within convenient walking distance for residents; (f) enhances for residential neighbourhoods personal safety and perceptions of safety, and minimise potential for crime, vandalism and fear through achievement of casual surveillance and, for commercial and industrial development, the layout enhances safety through the provision of alternative through</p>	<p>Residential/Industrial Estate Design (1) There are no recommended probable solutions for this specific outcome as each situation requires an individual approach.</p>	<p>Specific Outcome (1)(a) The proposal gives a residential neighbourhood a strong and positive identity by using the site characteristics to create a unique environment that includes streetscaping and open space (b) The proposal provides for two types of townhouses within the development and provides the surrounding area with a mix of housing type and lot sizes. (c) The proposed development is capable of accessing existing infrastructure networks. (d) The proposal provides linear open space, which acts as a community focal point. (e) The surrounding area has sufficient facilities within acceptable distances to service the proposal. (f) The proposal ensures the perception of safety for the proposal due to the ability of casual surveillance that is provided. (g) The proposal has a safe and efficient pedestrian network that runs parallel with open space. (h) The proposal has a more than adequate provision of open space for the proposed development which enables a range of uses and activities. The area provided in the proposed development aids both in stormwater management and environmental care due to it being adjacent to the river. (i) The proposal provides a clear and legible pedestrian network.</p>

<p>routes (i.e. culs-de-sacs are avoided);</p> <p>(g) provides a pedestrian network that is safe, attractive and efficient, running largely along public spaces (including streets and open spaces) fronted by houses or other development and avoiding areas or uses with major breaks in surveillance;</p> <p>(h) provides well-distributed public open spaces that contribute to the legibility and character of the locality, provide for a range of uses and activities, are cost-effective to maintain, and contribute to stormwater management and environmental care; and</p> <p>(i) provides well located vehicle, cyclist and pedestrian networks that minimise local vehicle trips, maximise public transport effectiveness, and encourage walking and cycling to daily activities and to provide a recreation resource.</p>		
<p>Lot Layout and Design</p> <p>(2) Lots (including hatchet lots) have the appropriate layout, area and dimensions to—</p> <p>(a) enable the siting and construction of a dwelling and ancillary outbuildings, where for the purposes of residential use;</p> <p>(b) enable the siting and construction of commercial or industrial buildings, where for the purposes of commercial or industrial use;</p> <p>(c) provide for landscaping, including private outdoor recreational space;</p> <p>(d) provide convenient vehicle access and parking;</p> <p>(e) take into account the slope of the land, in particular the desirability of minimising earthworks/retaining walls associated with building construction;</p> <p>(f) overcome site constraints (e.g. undermining, flooding, drainage, bushfire risk, buffers to incompatible land uses etc);</p> <p>(g) conserve natural, cultural or special features (e.g. trees, buildings, views etc);</p> <p>(h) provide within residential areas housing diversity and choice and</p>	<p>Lot Layout and Design</p> <p>(2) (a) The lot size, frontage and special characteristics for the different residential lot types are as outlined in Appendix A.</p> <p>(b) The requirements for access easements for residential lots are to be those applicable for hatchet lots [see Probable Solution (4) below].</p> <p>(c) The lot size, frontage and special characteristics for the different commercial and industrial lot types are as outlined in Appendix B.</p> <p>(d) The requirements for access easements, for commercial or industrial lots, although undesirable, are to be those applicable for hatchet lots [see Probable Solution (4) below].</p>	<p>Specific Outcome</p> <p>(2)(a) The proposed development enables the appropriate siting and construction of dwellings and ancillary buildings.</p> <p>(c) N/A</p> <p>(c) The proposal will provide extensive landscaping throughout the development.</p> <p>(d) The proposal enables convenient vehicle access and more than adequate parking arrangements for the development.</p> <p>(e) The proposed design of the development has taken into account the slope of the land and sited the buildings accordingly.</p> <p>(f) The proposal has sited all buildings and uses in accordance with and acceptable outcome within the identified constraints such as flooding.</p> <p>(g) The proposal will conserve riparian vegetation along the river.</p> <p>(h) The proposal has two types of</p>

<p>within commercial/industrial areas a variety of choice for the different commercial and industrial development types;</p> <p>(i) avoid large concentrations of cottage lots and courtyard lots in the Low Density Residential Zones or Sub Areas;</p> <p>(j) ensure that cottage lots, courtyard lots, dual occupancy lots and multiple residential lots are located in close proximity to parks, shops, employment areas or community facilities;</p> <p>(k) enable lot frontages to be oriented towards the street and open spaces to facilitate personal safety, property security and casual surveillance of footpaths and public open space areas;</p> <p>(l) facilitate, within residential areas (via street and lot orientation), the siting of dwellings to take advantage of microclimatic benefits and to allow adequate on-site solar access and access to breezes taking into account likely dwelling size and the relationship of each lot to the street;</p> <p>(m) integrate with the surrounding urban environment, and in particular complement existing streetscapes and landscapes and, where possible in residential areas, provide connectivity to facilitate shared use of public facilities by adjoining communities;</p> <p>(n) facilitate the integration of commercial and industrial development into its surroundings ensuring minimal impact on the amenity of adjacent or nearby areas;</p> <p>(o) ensure that the layout of commercial or industrial development abutting areas of residential development allows lots to be configured for the siting and design of development that can incorporate visual, noise pollution and other ameliorative measures, in order to reduce impacts on nearby residential amenity.</p>		<p>townhouses within the development.</p> <p>(i) The proposal is not a cottage or courtyard lot.</p> <p>(j) The proposal has provided a large amount of communal open space within the site area with the provision of community facilities.</p> <p>(k) The proposed lot frontages and open space areas are orientated towards the internal transport network enabling casual surveillance of these areas.</p> <p>(l) The proposed residential dwellings are orientated on the site to enable solar access and breezes.</p> <p>(m) The proposal will integrate existing streetscapes and landscapes to ensure that connectivity between neighbouring areas is achieved.</p> <p>(n) N/A</p> <p>(o) N/A</p>
<p>(3) A reconfiguration of land may produce one or more hatchet lots, provided—</p> <p>(a) it is not likely to prejudice the</p>	<p>(3) (a) The following apply in respect of residential lots—</p> <p>(i) any lot having a common boundary with an access strip of a</p>	<p>Specific Outcome</p> <p>(3) The proposal is not a hatchet lot.</p>

<p>subsequent reconfiguration or use of adjoining land;</p> <p>(b) it is not desirable nor practicable for the subject and adjoining land to be otherwise reconfigured so as to have a frontage to another road which may be subsequently constructed;</p> <p>(c) the siting of buildings on a proposed hatchet lot will not be detrimental to the amenity of the area;</p> <p>(d) existing development of land in the area will not have a detrimental effect on buildings to be sited on the proposed hatchet lots; and</p> <p>(e) there is no reasonable alternative to the hatchet lot having regard to the sites's topography, access, location, shape and size.</p>	<p>hatchet lot is to have a width of 20m at any point throughout its depth or is capable of providing an area containing a rectangle (suitable for building purposes) measuring 9m by 15m;</p> <p>(ii) hatchet lots are not used for multiple residential use; and</p> <p>(iii) the proposed lot will have no greater than five (5) adjoining neighbours.</p> <p>(b) The following apply in respect of commercial or industrial lots—</p> <p>(i) any lot having a common boundary with an access strip of a hatchet lot is to have a width of 25m at any point throughout its depth or is capable of providing an area containing a rectangle (suitable for building purposes) measuring 14m by 28m;</p> <p>(ii) hatchet lots are not used for commercial or industrial uses.</p>	
<p>(4) Hatchets lots—</p> <p>(a) do not dominate or intrude within the existing subdivision pattern;</p> <p>(b) provide an access strip capable of accommodating adequate vehicular access and utility services; and</p> <p>(c) provide an access strip which does not unduly affect or restrict on-street parking.</p>	<p>(4) (a) The number of hatchet lots is generally limited to one (1) behind any full frontage lot.</p> <p>(b) The access strip is located on only one (1) side of a lot with direct frontage to the street.</p> <p>(c) The shape of the access strip (including the construction of the driveway) for a residential or commercial lot enables a single unit truck to enter and leave the lot in forward gear.</p> <p>(d) The shape of the access strip (including the construction of the driveway) for an industrial use enables a semi-trailer to enter and leave the lot in forward gear.</p> <p>(e) The minimum width of the access strip is as follows—</p> <p>(i) Traditional Lots – 4m(3);</p> <p>(ii) Hillside, Homestead or Township Lots – 5m(3);</p> <p>(iii) Dual Occupancy Dwelling Lots – 5m(4).</p> <p>(f) The type of reciprocal easements comply with the requirements shown in Diagram A, below.</p> <p>Diagram A</p> <p>(g) For residential lots, the minimum width of the constructed driveway in the access strip is three (3) metres.</p> <p>(h) The driveway is to be constructed</p>	<p>(4) N/A The proposal is not a hatchet lot.</p>

	from the kerb for the full length of the access strip.	
Designated Roads (5) For major subdivisions, the road network has a clear structure and component roads conform to their function in the system.	Designated Roads (5) Roads link with other roads that are no more than one level higher or lower in the hierarchy.	Specific Outcome (5) The proposed internal transport network has a clear structure with legible access and entry points.
(6) For major subdivisions, the road system is located so that it provides routes which are more convenient for external traffic than the residential or commercial/industrial street network.	(6) The road network is generally located as outlined in Map 4 of Schedule 7.	Specific Outcome (6) The proposal provides an internal transport network that is more convenient for residents than the external transport network due to the scale and legibility.
(7) For major subdivisions, the road system has the capability to accommodate public transport services and has capacity to safely and efficiently accommodate projected movements.	(7) The Designated Road system is provided as outlined in Map 4 of Schedule 7.	Specific Outcome (7) The proposed internal transport network is not designed to accommodate public transport vehicles. The proposed network has links with existing public transport networks. The proposal can safely and efficiently accommodate projected movements.
(8) For major subdivisions, the road network is provided in a manner where it complements the street network, public transport, pedestrians and cycleways.	(8) Where a Land Use Concept Master Plan, Town Centre Concept Plan or other approved Plan of Development exists, the road network conforms with this plan.	Specific Outcome (8) The proposed internal transport network will complement the street network enabling links with existing public transport.
(9) For major subdivisions, safe and convenient links are provided for pedestrians and cyclists across Designated Roads.	(9) Pedestrian and cyclist crossings of Designated Roads adjacent to residential and industrial areas are provided at intervals of not less than 500m and for commercial areas at intervals of not less than 200m in locations related to movement desire lines.	Specific Outcome (9) The proposal is not located on a designated road.
(10) Intersections are located to provide safe and efficient connection and traffic interface between the street network and Designated Roads.	(10) The location of intersections to Designated Roads is in accordance with the following Austroad publication— "Guide to Traffic Engineering Practice" (a) Part 5 Intersections at Grade; (b) Part 6 Roundabouts; (c) Part 7 Traffic Signals.	Specific Outcome (10) The proposal enable efficient links with the existing traffic network.

<p>(11) Access arrangements do not impede the traffic performance of Designated Roads.</p>	<p>(11) (a) Residential lots do not have direct vehicle access to the road system unless there are no suitable access alternatives (provided by the street system), in which case vehicle access onto the Designated Road is capable of being made in a forward direction. (b) Any vehicle access for a residential lot is limited to one (1) point only (where direct access to the Designated Road is unavoidable). (c) Commercial or industrial lots do not have direct vehicle access to the road system unless there are no suitable access alternatives (provided by the street system), in which case vehicle access onto the Designated Road must be capable of being made in a forward direction using a left turn only. (d) Any vehicle access is sited to obtain the maximum visibility (i.e. sightlines).</p>	<p>Specific Outcome (11) The proposed access does not impede the traffic performance of a designated road.</p>
<p>(11A) Road networks in areas within 6km of the RAAF Base Amberley runway do not include configurations of lights that replicate the appearance of airport runways at night.</p>	<p>(11A) Road networks do not include configurations of lights in straight parallel lines 500m – 1000m long in areas within 6km of the RAAF Base Amberley runway.</p>	<p>Specific Outcome (11A) The proposal will not include configuration of lights that replicate the appearance of airport runways.</p>
<p>(12) Residential premises are— (a) not exposed to unacceptable traffic noise⁵; or (b) able to be designed and constructed to ensure that acceptable living conditions within the dwelling can be created.</p>	<p>(12) There are no recommended probable solutions for this specific outcome as each situation requires an individual approach.</p>	<p>Specific Outcome (12)(a) The proposal will not be exposed to unacceptable traffic noise. (b) The proposal will provide the residential dwellings a high level of living conditions.</p>
<p>Street Networks and Design (13) For major subdivisions, the street network is to— (a) for residential development, meet local needs and allow for the provision of public transport, for pedestrians and cyclists, and for expected vehicle traffic; (b) for commercial and industrial development, provide for the mixed functions of moving traffic, vehicles accessing lots and parked vehicles whilst allowing for the provision of public transport, for pedestrians and cyclists, and for expected vehicle traffic (including heavy vehicles).</p>	<p>Street Networks and Design (13) Where a Land Use Concept Master Plan, Town Centre Concept Plan or other approved Plan of Development exists, the road network conforms with this plan.</p>	<p>Specific Outcome (13)(a) The proposal provides an internal transport network that is suitable for the expected vehicular use.</p>

<p>(14) For major subdivisions, the street network connects with Designated Roads to maximise movement efficiency on the main traffic routes, whilst at the same time minimising internal traffic volumes.</p>	<p>(14) (a) Intersections between Designated Roads and the internal street network are located so as to minimize restriction of movement on the Designated Roads, and to avoid traffic volumes in excess of 12,000 vpd on industrial avenues, 10,000 vpd on trunk collector streets, 5,000 vpd on internal connecting roads and 3,000 vpd on collector streets.</p> <p>(b) For residential development, connections between residential streets and the road system are in accordance with the requirements of Section 3.3 'The Street/Road Interface' of Queensland Streets.</p> <p>(c) For commercial and industrial development, intersection spacings between commercial/ industrial streets and the road system are in accordance with Table 3.3A of Section 3.3 'The Street/Road Interface' of Queensland Streets.</p>	<p>Specific Outcome (14) The proposal enables connection with designated roads.</p>
<p>(15) The street network has a clear structure and component streets conform to their function in the network.</p>	<p>(15) Streets link with other streets that are no more than one level higher in the hierarchy.</p>	<p>Specific Outcome (15) The internal transport network has a clear structure and function.</p> <p>Probable Solution (15) The proposed internal transport network links with streets in the hierarchy.</p>
<p>(16) The layout of the street network has clear physical distinctions between each type of street, based on function, economy, convenience, traffic volumes, vehicle speeds, public safety, amenity and in the case of commercial or industrial development, parking demand.</p>	<p>(16) The street network reflects the characteristics outlined in Appendix C.</p>	<p>Specific Outcome & Probable Solution (16) The proposed internal transport network is clear and legible and does not have different types of streets.</p>
<p>(17) The design features of each type of street encourage driver behaviour appropriate to the primary function of the street in the network.</p>	<p>(17) There are no recommended Probable Solutions for this specific outcome as each situation requires an individual approach.</p>	<p>Specific Outcome (17) The proposed internal transport network encourages low speeds and facilitates pedestrian movements. The proposed network is not a designated road but a network of internal access routes.</p>

<p>(18) Intersections are spaced to create safe and convenient vehicle movements.</p>	<p>(18) Intersections are spaced in accordance with Section 2.11 'Intersections' of Queensland Streets.</p>	<p>Specific Outcomes (18) The spacing of intersection in the proposal provide for efficient and safe vehicle movements.</p>
<p>(19) The street network provides— (a) convenient movement for residents between their homes and Designated Roads; and (b) for commercial or industrial development, convenient movement for vehicles (including heavy vehicles).</p>	<p>(19) (a) For residential development, the driving distance from any dwelling to a Designated Road or Trunk Collector Street is no more than 700 metres (or 2,000 metres for 'Large Lot' Residential Development). (b) No more than three intersections are required to be negotiated in order to travel from any home to the most convenient collector street or Designated Road. (c) All precincts of more than 100 lots/dwellings are provided with an alternative street access. (d) For industrial development, the subdivision layout should use cul-de-sac only when unavoidable. (e) For both residential and industrial development the cul-de-sac length should be as short as possible and the turning area should provide for a single movement turn (refer to Section 9.12 'Turning Areas' of Queensland Streets) based on the typical manoeuvring areas for Council's design garbage truck.</p>	<p>Specific Outcomes (19) The proposed internal transport network allows access to the designated road network.</p> <p>Probable Solution (a) (b) The proposal location enables any home to be 3 or less intersections away from the nearest collector street. (c) The proposed development is greater than 100 dwellings and has an alternative street access. (d) N/A (e) N/A</p>
<p>(20) For major subdivisions— (a) There is provision for bus routes which are direct and safely accessible by foot from all dwellings, activity centres, commercial centres or industrial estates and which provide links with external areas and are efficient to operate. (b) Streets carrying bus routes provide for ease of movement of buses between residential neighbourhoods and for links to centres within and external to the neighbourhood without complicated turning manoeuvres. (c) The alignment of the streets that form the bus route allow for efficient and unimpeded movement of buses without facilitating high traffic speeds. (d) The street network offers opportunities for cost-effective operation of demand-responsive public transport services should the need arise, providing for both peak</p>	<p>(20) (a) Where a Land Use Concept Master Plan, Town Centre Concept Plan or other Plan of Development exists, public transport routes conform with that plan. (b) At least 90% of dwellings or businesses are within 400m walking distance from an existing or potential bus route (or 500m walking distance of a bus stop where identified), or 200m walking distance from an existing or proposed demand-responsive public transport route. (c) Where bus routes link residential neighbourhoods or employment areas across any road or street which carries in excess of 6,000 vpd, the intersection is designed as a roundabout/traffic signals or enables a left turn into the road from one neighbourhood followed by a right turn from the road into the adjoining residential neighbourhood. (d) Bus routes linking residential</p>	<p>Specific Outcomes (20)(a) Bus services are accessible on foot from the proposed development. (b) The proposal does not have an internal street that is on a bus route. (c) N/A The proposal does not have an internal street that serves as a public transport route. (d) N/A The proposal does not have an internal street that serves as a public transport route.</p>

<p>and off-peak regular services and the potential future provision of demand-responsive services.</p>	<p>areas with employment areas are designed as a transit only link to prevent use of the link by through traffic.</p>	
<p>(21) (a) The street layout facilitates walking and cycling within the residential neighbourhood and to activity centres without encouraging external traffic into the residential neighbourhood. (b) The street and path network provides an overall network of pedestrian routes and routes for cyclists, with connections to adjoining streets, open spaces, neighbouring residential areas and activity centres. (c) The location of paths is aligned to conserve trees and other significant features and where they exist, focus on vistas and landmarks whilst ensuring safe and convenient use by pedestrians and cyclists. (d) Pedestrian paths and cycleways are located where there is casual surveillance and potential for the areas to be well lit. (e) Pedestrian, cycle and vehicular movement systems are collocated to encourage maximum surveillance of public areas.</p>	<p>(21) (a) For major subdivisions, the cycleway network is located and provided as outlined in the Ipswich Cycle Strategy or Ipswich Open Space and Recreation Development Plan Review or where an approved Land Use Concept Master Plan or Town Centre Concept Plan or other Plan of Development exists, pedestrian/cyclist paths are provided in accordance with that plan. (b) Footpaths and cyclepaths are provided as specified in Appendices D, E, F and G. (c) For residential development, pedestrian/cyclist connections are provided between the ends of culs desacs, from streets to open space areas, or from streets to Designated Roads (refer section 4.5 of Queensland Streets). (d) For commercial or industrial development pedestrian/cyclist connections are provided from local industrial streets to industrial collectors, to residential streets or to Designated Roads.</p>	<p>(21) The proposed internal transport network layout facilitates walking and cycling within the neighbourhood and to activity centre.</p>
<p>(22) The street layout and design— (a) takes account of the topography (especially steep land) and significant vegetation; (b) avoids steep slopes (i.e. greater than 15%) so as to minimize landscape disturbance and vegetation loss; (c) avoids penetrating and fragmenting large tracts of remnant vegetation; (d) respects and protects places of cultural significance or streetscape value; (e) takes advantage of opportunities for views and vistas; (f) takes account of streetscapes that may be created or that already exist; (g) permits the establishment of streetscapes that blend with existing</p>	<p>(22) There are no recommended probable solutions for this specific outcome as each situation requires an individual approach.</p>	<p>Specific Outcome (22)(a) The proposal site is not affected by significantly sloping land. (b) Refer (22)(a) (c) The proposal site does not have large tracts of remnant vegetation. (d) The site is not an area of cultural significance or streetscape value. (e) The proposal will utilise river views. (f) The proposal will create attractive streetscape and integrate with existing. (g) New streetscapes will be designed to blend with existing streetscape design. (h) The proposal enables solar access to dwellings. (i) The proposed internal transport network takes account of drainage</p>

<p>streetscapes or comply with any approved public streetscape plan;</p> <p>(h) where practical, is orientated to promote efficient solar access for dwellings;</p> <p>(i) takes account of natural drainage and open space systems;</p> <p>(j) avoids crossing drainage features or open space areas, particularly for access places and access streets;</p> <p>(k) is located, designed and managed to enhance the habitat and corridor requirements of native wildlife (plants and animals);</p> <p>(l) locates the streets to the least environmentally sensitive sites;</p> <p>(m) avoids extensive use of cut and fill;</p> <p>(n) avoids important stands of vegetation to minimise the loss of important trees or ecosystems;</p> <p>(o) maintains interlocking tree canopies over fauna corridors, where possible, to allow for the movement of arboreal fauna and birds;</p> <p>(p) narrows the width of the carriageway or provides a wildlife underpass/bridge where it crosses wildlife movement corridors, such as riparian zones;</p> <p>(q) at known wildlife crossing points, streets are narrowed and appropriate pavement surfacing, lighting, signage and fencing are provided to reflect the low-speed environment;</p> <p>(r) provides a high level of internal accessibility and good external connections for vehicles (including heavy vehicles in commercial and industrial areas), pedestrian and cycle movements, maintains appropriate traffic speeds, deters through-traffic, creates safe conditions for road users and for major subdivisions, limit the length of time local drivers need to spend in a low-speed environment;</p> <p>(s) for residential development, traffic speeds and volumes are restrained through such measures as—</p> <p>(i) limiting street length;</p> <p>(ii) introducing bends;</p> <p>(iii) introducing slow points; and</p> <p>(iv) intersections;</p> <p>(t) for major subdivisions, ensure that traffic generated by a</p>		<p>patterns and open space.</p> <p>(j) The proposed internal transport network does not cross drainage features or open space areas.</p> <p>(k) The proposed internal transport network does not impact on wildlife corridors.</p> <p>(l) The internal transport network is not located away from existing vegetated areas.</p> <p>(m) The requires cut and fill that will not have any external impacts on adjacent site.</p> <p>(n) The subject site is predominately cleared and does not have important remaining vegetation areas.</p> <p>(o) N/A no interlocking tree canopies exist</p> <p>(p) The proposed internal transport network does not cross a wildlife movement corridor.</p> <p>(q) The proposal is not a known wildlife crossing point.</p> <p>(r) The proposed internal transport network enables a high level of internal accessibility with appropriate traffic speeds and deters through traffic and limits the time local drivers are in a low speed environment.</p> <p>(s) The proposal employs measures such as</p> <p>(i) limiting street length;</p> <p>(ii) introducing bends;</p> <p>(iii) intersections;</p> <p>(f) The proposed internal transport network will be designed to ensure it has the environmental capacity of the street network.</p> <p>(u) The proposal is not within a bushfire risk area.</p> <p>(v) The proposal will provide cost effective public utilities.</p>
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<p>development is within the acceptable environmental capacity of the street network;</p> <p>(u) ensures that where within or abutting bushfire risk areas streets are designed, located and connected to allow safe and efficient movement of fire emergency vehicles; and</p> <p>(v) provides for the cost effective provision of public utilities, including water, sewerage, electricity, telecommunications and gas.</p>		
<p>(22A) Street networks in areas within 6km of the RAAF Base Amberley runway do not include configurations of light that replicate the appearance of airport runways at night.</p>	<p>(22A) Street networks do not include configurations of light in straight parallel lines 500m – 1000m long, in areas within 6km of the RAAF Base Amberley runway.</p>	<p>Specific Outcome</p> <p>The internal transport network does not include configurations of light that replicate the appearance of airport runways at night.</p>
<p>(22B) Recessed landscaped areas are to be provided at regular intervals to soften the visual impact of long portions of acoustic or screen fencing along a street or road.</p>	<p>(22B) (a) Where fences are >50m in length, landscaped recesses are to be provided.</p> <p>(b) These are to be a minimum of 1.5m deep, and comprise 10% of the total length of the fence.</p>	<p>Specific Outcome</p> <p>(22B) Landscaping along portions of acoustic or screen fencing will be recessed at regular intervals.</p>
<p>(23) Streets and lots are located so that dwellings are not subject to unacceptable levels of traffic noise.</p>	<p>(23) (a) Traffic noise in residential streets does not exceed 55 dB(A) L10 at the affected facade of dwellings.</p> <p>(b) For 'Large Lot' Residential Development, acceptable noise levels at potential house sites is achieved in accordance with Table 8.5A of Section 8 'Rural Residential Streets' of Queensland Streets.</p>	<p>Specific Outcome</p> <p>(23) The proposed internal transport network and lot layouts are located so that dwellings are not subject to unacceptable levels of noise traffic noise.</p>
<p>(24) The design of each type of street conveys the street's primary function and the street reserve width is sufficient to cater for all street functions, including—</p> <p>(a) safe and efficient movement of all users, including pedestrians and cyclists;</p> <p>(b) provision for parked vehicles;</p> <p>(c) provision of landscaping; and</p> <p>(d) location, construction and maintenance of public utilities.</p>	<p>(24) (a) The following street components for each type of street are as specified in Appendices D, E, F and G—</p> <p>(i) carriageway widths;</p> <p>(ii) verge widths;</p> <p>(iii) street reserve widths;</p> <p>(iv) parking within the street reserve;</p> <p>(v) provision for parking lanes;</p> <p>(vi) kerb type;</p> <p>(vii) pedestrian and cyclist facilities;</p> <p>(viii) longitudinal gradients.</p> <p>(b) All frontage and street construction works are to be in place or sufficient security provided before the Plan of Subdivision is approved by the local government.</p>	<p>Specific Outcome</p> <p>(24) The proposed internal transport network width is approx 6 to 9m which enables</p> <p>(a) Safe and efficient movement of all users</p> <p>(b) Parking will be restricted on the communal parking areas (c) The provision of landscaping.</p> <p>(d) Location, construction of public utilities.</p>

<p>(25) Provision of on-street carparking to ensure— (a) for residential development— (i) convenience and safety for users; (ii) the efficient use of car spaces; (iii) compatibility with the street's function; and (iv) the achievement of relevant streetscape outcomes; and (b) for commercial or industrial development— (i) sufficient and convenient short-term parking to accommodate vehicles not catered for on-site; (ii) parked vehicles do not obstruct the passage of vehicles on the carriageway or create traffic hazards.</p>	<p>(25) (a) For residential development, provision within the street reserve of areas sufficient to provide 0.5 spaces per single residential lot or dual occupancy lot and parking spaces per dwelling for other residential uses as outlined in Table 10.5B of Queensland Streets. (b) For industrial development, provision within the carriageway of parking lanes on both sides of all Industrial Streets, with widths as outlined in Appendix G. (c) For residential development, one car space is available within 25m of each single residential or dual occupancy lot. (d) For multiple residential uses, on-street parking is located within 40m of the lot. (e) For residential development, the dimensions of on-street carparking spaces and access comply with the requirements outlined in the Parking Code as applicable to on-site parking.</p>	<p>Specific Outcome (25) The proposed residential development has provided large areas of communal parking spaces enabling parking within the development.</p>
<p>Public Open Space (26) Parks— (a) are provided in the general locations as outlined in Map 6.2 of Planning Scheme Policy 5—Infrastructure and Map 1 in Schedule 7; (b) provide opportunities for casual surveillance; (c) are, with the exception of linear or waterside parkland, easily visible from the street; (d) are located away from excessive noise; (e) are located and designed in accordance with the desired standards of service for each recreation setting outlined in Planning Scheme Policy 5—Infrastructure.</p>	<p>Public Open Space (26) (a) Where a Land Use Concept Master Plan, Town Centre Concept Plan, Open Space Master Plan or other Plan of Development exists, public open space is provided in accordance with that plan. (b) In those lot reconfigurations where it is proposed that parkland be secured— (i) land dedications are provided (and are indicated on the Plan of Subdivision); and (ii) the areas of public open space are appropriate for their intended purpose; and (iii) the land is not constrained by encumbrances from providing public recreation uses; and (iv) the edges of the parkland are overlooked by housing or commercial or other development with active frontages that can provide effective informal surveillance, rather than adjoining the rear of the dwellings; and (v) for linear or waterside parkland— (A) the lot layout aligns the parkland</p>	<p>Specific Outcomes (26)(a) The proposal will contribute land on Lot 93 on RP 8310 to council as part of their open space network as it is identified as Map 1 Schedule 7 as waterside/linear open space. (b) The proposal enables casual surveillance of the dedicated open space. (c) The proposal is waterside parkland. (d) The waterside parkland is located away from any excessive noise activities. (e) The proposal will be designed in accordance with Planning Scheme Policy 5 – Infrastructure.</p> <p>Probable Solution (b)(i) The proposed plan of subdivision indicates dedication of land to council open space. Refer Drawing 303_04_NCD (Sheet 1) (ii) The area of public space is a waterside park as identified by the planning scheme in Schedule 7. (iii) The land is not constrained from public access. (iv) The edges of the parkland are</p>

	<p>reserve along the river or creek edge;</p> <p>(B) the extent of the parkland correlates with the adopted flood level or is a minimum width of 30 metres (measured from the banks of the watercourse) or as much in addition to the 30 metres to achieve at least a 10 metre width with slopes less than 1 in 20 (5%) to enable construction of a walking/bicycle path and to facilitate maintenance; and</p> <p>(C) the land is stable and useable for recreation and pedestrian/cycle movement, within the broader functions of drainage, conservation and visual amenity.</p>	<p>overlooked by housing enabling informal surveillance.</p> <p>(v)(A) The proposal provides recreation uses along the waterside parkland.</p> <p>(B)</p>
<p>Utilities</p> <p>(27) Cost effective and environmentally sustainable utilities (including effluent treatment and disposal, water, electricity, gas, street lighting and communication services) are provided to each lot.</p>	<p>Utilities</p> <p>(27) (a) Provision is made for the—</p> <p>(i) reticulation of water supply to each lot;</p> <p>(ii) reticulation of sewerage to each lot. For Homestead or Township lots (including unsewered township commercial or industrial lots), measures to treat and dispose of effluent on-site in compliance within the Standard Sewerage Law and the On-Site Sewerage Code;</p> <p>(iii) supply of electricity (and where applicable the supply of natural gas) to each lot;</p> <p>(iv) supply of telecommunication services to each lot; and</p> <p>(v) installation of street lighting on that side of the street or road as the existing or planned location of the footpath.</p> <p>(b) All utilities are to be in place or sufficient security provided before the Plan of Subdivision is approved by the local government.</p>	<p>Specific Outcome</p> <p>(27) The proposal will provide standard utilities including effluent treatment and disposal, water, electricity, street lighting and communication services to each lot.</p>
<p>Stormwater Drainage</p> <p>(28) The major stormwater drainage system—</p> <p>(a) has the capacity to safely convey stormwater flows resulting from the adopted design storm under normal operating conditions;</p> <p>(b) is located and designed to ensure that there are no flow paths that would increase risk to public safety and property;</p> <p>(c) is to maximise community benefit through the retention of natural</p>	<p>Stormwater Drainage</p> <p>(28) (a) The design of the major stormwater drainage system is—(i) in accordance with the individual adopted Drainage Master Plans or where no Drainage Master Plan exists the major drainage system is designed to safely convey stormwater flows under normal operating conditions for ARI = 100 years;</p> <p>(ii) matched to the conditions which</p>	<p>Specific Outcome</p> <p>The proposed stormwater drainage system will be subject to engineering specification and will comply with local authority regulations.</p>

<p>streams and vegetation wherever practicable, the incorporation of parks and other less flood-sensitive land uses into the drainage corridor and the placement of detention basins for amenity and function.</p>	<p>occurred before development; (iii) to be sufficient to hydraulically convey this design flow (ARI 100) through the subdivision to the lawful point of discharge; and (b) The width of the drainage path is— (i) sufficient to contain design flows; and (ii) allow maintenance access.</p>	
<p>(29) All lots are located above the adopted flood level to provide protection of property in accordance with the accepted level of risk.</p>	<p>(29) (a) All Cottage Lots, Courtyard Lots, Traditional Lots, Hillside Lots and Dual Occupancy Lots are located above the adopted flood level. (b) For Homestead or Township Lots, an area which is suitable for a building platform comprising at least 600m² of each lot is to be located above the 1 in 100 Average Recurrence Interval (ARI). Also, an additional area is to be available on each lot that is suitable to treat and dispose of effluent on-site in compliance with the Standard Sewerage Law and the On-Site Sewerage Code. (c) All multiple residential lots, commercial lots, mixed business and industry lots and industrial lots are located above the adopted flood level for the respective zone or Sub Area.</p>	<p>Specific Outcome (29) All residential lots are located above the 1 in 20 flood line.</p>
<p>(30) Design of the lot layout provides for— (a) drainage which does not cause damage or nuisance flows to adjoining properties; (b) a drainage system that can be economically maintained; (c) maximum use of on-site infiltration; (d) the safety and convenience of people using the site; and (e) for homestead lots or township lots, any dams are to be wholly located within lot boundaries.</p>	<p>(30) (a) Lot drainage is to be directed into the street drainage system. (b) For homestead lots or township lots, the high water level of any dam and the top and toe of all dam walls and embankments are not to be closer than 2 metres to any lot boundary.</p>	<p>Specific Outcome (30)(a) Drainage will be the subject of engineering specifications and a detailed Stormwater Management Plan.</p>
<p>(31) The stormwater drainage system— (a) minimises the environmental impact of urban run-off on surface receiving water quality and on other</p>	<p>(31) (a) The design and proposed implementation of the water quality control systems are in accordance with an adopted Drainage Master Plan or Catchment</p>	<p>Specific Outcome (31) Design of the stormwater drainage system will be subject to engineering specifications in a detailed Stormwater Management</p>

<p>aspects of the natural environment;</p> <p>(b) optimises the interception, retention and removal of waterborne pollutants through the use of appropriate 'fitness for use' criteria, prior to the stormwater's discharge to receiving waters;</p> <p>(c) ensures the continuation, in healthy condition, of a wide diversity of wetland environments in the urban landscape;</p> <p>(d) ensures that 'first flush' diversion or treatment systems are able to be installed to lessen the impact of shock pollution loadings to receiving waters;</p> <p>(e) optimises the integration of stormwater infrastructure with open space management objectives.</p>	<p>Management Strategy.</p> <p>(b) If there is no adopted Drainage Master Plan or Catchment Management Strategy, there are no recommended probable solutions for this specific outcome as each situation requires an individual approach.</p>	<p>Plan.</p>
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6.5 OVERLAY CODES

Specific Outcomes / Probable Solutions	Compliance
11.4.7 Flooding and Urban Stormwater Flow Path Areas	
<p>(c) Land Situated Between the 1 in 20 Development Line and the 1 in 100 Flood Line – Residential Uses</p> <p>(i) The planning scheme acknowledges development commitments, based on former zonings or current approvals, for continued residential use, particularly one dwelling per existing lot.</p> <p>(ii) Lot reconfigurations which create sites for additional dwellings are avoided in areas situated below the 1 in 100 flood line.</p> <p>(iii) Special dispensation may be obtained to erect a second dwelling to house family members on land situated between the 1 in 20 development line and the 1 in 100 flood line.</p> <p>(iv) Where a development commitment, based on former zoning provisions, allows a multiple residential use to be sited within areas affected by significant flood flows, such dwellings are designed to be capable of withstanding the static and dynamic loads, including debris loads, applicable to a flood event of 1 in 100 Average Recurrence Interval (ARI).</p> <p>(v) Where possible, the floor levels of any habitable rooms of a proposed building are a minimum of 250mm above the 1 in 100 flood level, whilst having regard to—</p> <p>(A) the level of consistency with adjoining buildings and other buildings in the area;</p> <p>(B) the visual and amenity impacts, associated with any significant raising of floor levels; and</p> <p>(C) avoiding being lower than the existing floor level</p>	<p>(c)(i) The proposal is the subject of a new application.</p> <p>(ii) The majority of the proposed new lots are situated above the 1 in 100 flood line. Housing proposed between the 1 in 100 flood line and the 1 in 20 flood line will be the subject of a detailed Civil Engineering Study incorporating hydrological issues.</p> <p>(ii) N/A</p> <p>(iv) N/A</p> <p>(v) Refer Civil Engineering study.</p>

<p>predominant in the streetscape.</p> <p>(vi) The design and layout of residential buildings provides for—</p> <p>(A) parking and other low intensive, non habitable uses at ground level (e.g. temporary storage of readily removable items); and</p> <p>(B) habitable rooms above, to increase flood immunity.</p> <p>(vii) Building materials used below the adopted flood level are resistant to water damage.</p> <p>(viii) Where possible, buildings and other structures are sited on the highest part of the site to increase flood immunity.</p> <p>(ix) Access routes are designed or alternative emergency evacuation routes are provided so that in the event of a serious incident occupants can escape to a safe and secure area.</p> <p>(x) The development does not increase the flood hazard (e.g. by way of increased depth, duration or velocity of flood waters or a reduction in warning times) for other properties within a flood plain.</p> <p>(xi) Filling of land below the 1 in 100 flood line and the clearing of native vegetation within the stream banks are avoided.</p>	<p>(vi) Low intensive, non habitable uses are situated below the 1 in 100 flood line including parking and recreational facilities.</p> <p>(vii) The proposed buildings will have appropriate building materials.</p> <p>(viii) The proposed residential buildings are predominately above the 1 in 100 flood line.</p> <p>(ix) There is available access routes above the 1 in 100 flood line.</p> <p>(x) The proposed development will not increase the flood hazard – refer civil engineering report.</p> <p>(xi) There will be no clearing of native vegetation within the stream bank.</p>
<p>(d) Land Situated Between the 1 in 20 Development Line and the 1 in 100 Flood Line – Commercial, Industrial and Other Non Residential Uses</p> <p>(i) Where possible, the design and layout of buildings provides for—</p> <p>(A) parking, or other low intensive, or non habitable uses at ground level; and</p> <p>(B) retail, commercial and work areas above the parking areas, to increase flood immunity.</p> <p>(ii) Expensive plant and equipment and stock are located in the area of the site or building with the greatest flood immunity.</p> <p>(iii) Building materials used below the adopted flood level are resistant to water damage.</p> <p>(iv) Access routes are designed or alternative emergency evacuation routes are provided so that in the event of a serious incident occupants can escape to a safe and secure area.</p> <p>(v) Buildings are located to avoid areas affected by significant flood flows (i.e. one metre or more in depth), or alternatively, buildings are designed to be capable of withstanding the static and dynamic loads, including debris loads, applicable to a flood event of 1 in 100 Average Recurrence Interval (ARI).</p> <p>(vi) Materials stored on-site—</p> <p>(A) are those that are readily able to be moved in a flood event;</p> <p>(B) are not hazardous or noxious, or comprise materials that may cause a deleterious effect on the environment if discharged in a flood event; and</p> <p>(C) where capable of creating a safety hazard by being shifted by flood waters, are contained in order to minimise</p>	<p>(d)(i)(A) The proposed parking for the clubhouse is at ground level.</p> <p>(B) The proposal is not a retail or commercial use.</p> <p>(ii) Any expensive plant and equipment and stock will not be stored near.</p> <p>(ii) Any proposed development will ensure that plant and equipment and stock are located in an area with flood immunity.</p> <p>(iv) The proposal has an access route available that is not situated under the 1 in 100 flood line.</p> <p>(v) Refer Civil Engineering study.</p> <p>(vi) The proposed nature of goods stored onsite would include.</p> <p>(A) Those that are readily able to be move in a flood event.</p> <p>(B) Are not hazardous or noxious.</p> <p>(c) Refer Civil Engineering Report.</p>

<p>movement in times of flood.</p> <p>(vii) The development does not increase the flood hazard (e.g. by way of increased depth, duration or velocity of flood waters or a reduction in warning times) for other properties within a flood plain.</p> <p>(viii) Filling of land below the 1 in 100 flood level and the clearing of native vegetation within the stream banks are avoided.</p>	<p>(vii) Refer Civil Engineering Report.</p> <p>(viii) Refer Civil Engineering Report.</p>
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7.0 CONCLUSION

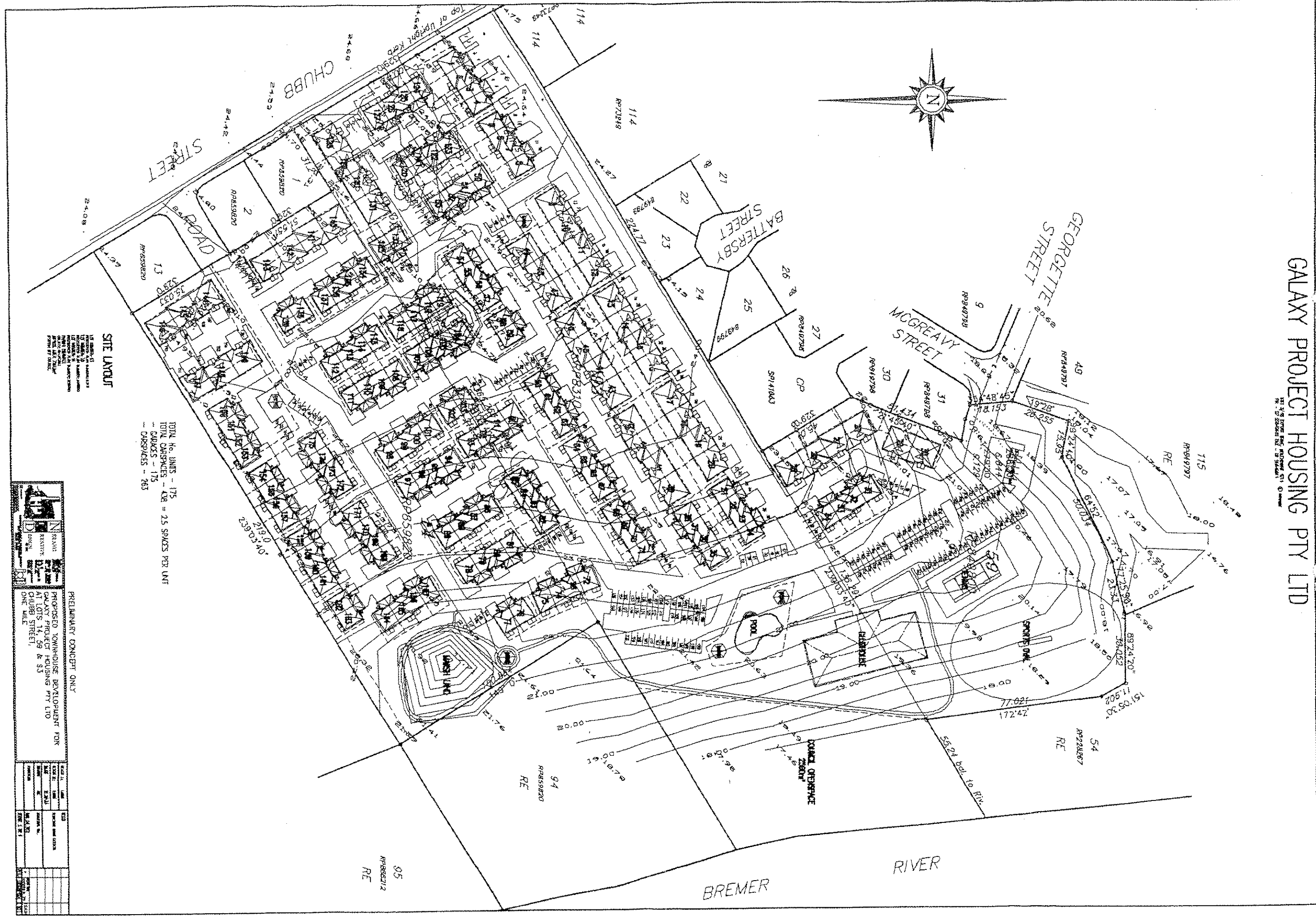
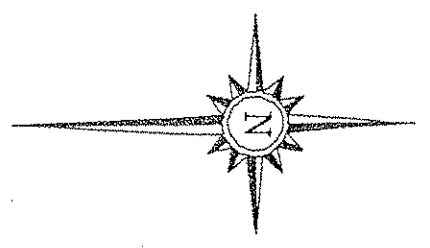
This report is the supporting information for the proposed Reconfiguring a Lot and the Material Change of Use of Premises for Multiple Residential – Mature Aged Accommodation and Recreational Uses. The proposal is a 175 dwelling Townhouse development that incorporates recreational facilities such as a sports oval, tennis court, clubhouse and pool. The clubhouse is to be relocated from Lot 93 on RP 8310 to the proposed position indicated on Drawing 303_04_NCD (Sheet 1) – Concept Site Layout.

The existing area designation has a lower dwelling per hectare intent, however due to the character of the surrounding area we believe that it can support this level of intensity. The proposed development falls between the residential low density and the residential medium density designations. The proposed site allows for the provision of more than adequate open recreation and parking areas due to land designated below the 1 in 20 development line. We believe that the proposed level of density is suited to the surrounding area based on the existing level of housing density, the location of services and the opportunity for adjacent large recreational spaces.

We believe the proposed density will be consistent with the character of the area and will provide housing types and allotment sizes in response to housing needs that will avoid adverse impacts on existing residential amenity.

GALAXY PROJECT HOUSING PTY LTD

111 3/8 FROM KING AND QUEEN STS
M. 0.250000 1:100000



TOTAL No. UNITS - 175
 TOTAL CARSPACES - 428 = 2.5 SPACES PER UNIT
 CARSPACES - 175
 CARSPACES - 263

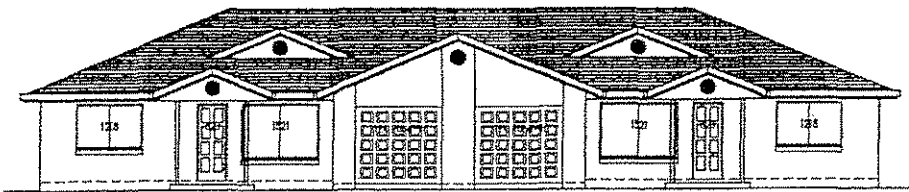
SITE LAYOUT

1. TO BE CONSIDERED AS A PRELIMINARY CONCEPT ONLY.
 2. THE LAYOUT IS SUBJECT TO THE APPROVAL OF THE LOCAL COUNCIL.
 3. THE LAYOUT IS SUBJECT TO THE APPROVAL OF THE STATE GOVERNMENT.
 4. THE LAYOUT IS SUBJECT TO THE APPROVAL OF THE FEDERAL GOVERNMENT.
 5. THE LAYOUT IS SUBJECT TO THE APPROVAL OF THE COMMONWEALTH GOVERNMENT.

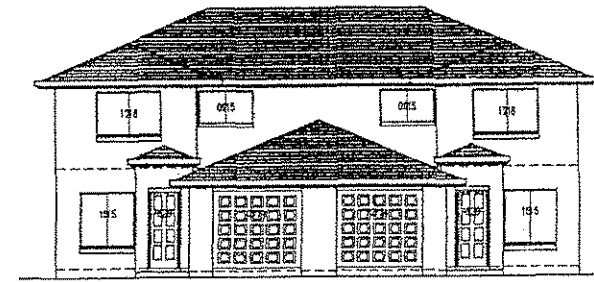
		PRELIMINARY CONCEPT ONLY PROPOSED TOWNHOUSE DEVELOPMENT FOR GALAXY PROJECT HOUSING PTY LTD 14, 59 & 83 CHUBB STREET, ONE MILE	
DATE	BY	DATE	BY
14/01/2011	J. SMITH	14/01/2011	J. SMITH
15/01/2011	J. SMITH	15/01/2011	J. SMITH
16/01/2011	J. SMITH	16/01/2011	J. SMITH
17/01/2011	J. SMITH	17/01/2011	J. SMITH
18/01/2011	J. SMITH	18/01/2011	J. SMITH
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20/01/2011	J. SMITH	20/01/2011	J. SMITH
21/01/2011	J. SMITH	21/01/2011	J. SMITH
22/01/2011	J. SMITH	22/01/2011	J. SMITH
23/01/2011	J. SMITH	23/01/2011	J. SMITH
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25/01/2011	J. SMITH	25/01/2011	J. SMITH
26/01/2011	J. SMITH	26/01/2011	J. SMITH
27/01/2011	J. SMITH	27/01/2011	J. SMITH
28/01/2011	J. SMITH	28/01/2011	J. SMITH
29/01/2011	J. SMITH	29/01/2011	J. SMITH
30/01/2011	J. SMITH	30/01/2011	J. SMITH
31/01/2011	J. SMITH	31/01/2011	J. SMITH
01/02/2011	J. SMITH	01/02/2011	J. SMITH
02/02/2011	J. SMITH	02/02/2011	J. SMITH
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05/02/2011	J. SMITH	05/02/2011	J. SMITH
06/02/2011	J. SMITH	06/02/2011	J. SMITH
07/02/2011	J. SMITH	07/02/2011	J. SMITH
08/02/2011	J. SMITH	08/02/2011	J. SMITH
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15/02/2011	J. SMITH	15/02/2011	J. SMITH
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25/02/2011	J. SMITH	25/02/2011	J. SMITH
26/02/2011	J. SMITH	26/02/2011	J. SMITH
27/02/2011	J. SMITH	27/02/2011	J. SMITH
28/02/2011	J. SMITH	28/02/2011	J. SMITH
29/02/2011	J. SMITH	29/02/2011	J. SMITH
30/02/2011	J. SMITH	30/02/2011	J. SMITH
31/02/2011	J. SMITH	31/02/2011	J. SMITH

GALAXY PROJECT HOUSING PTY LTD

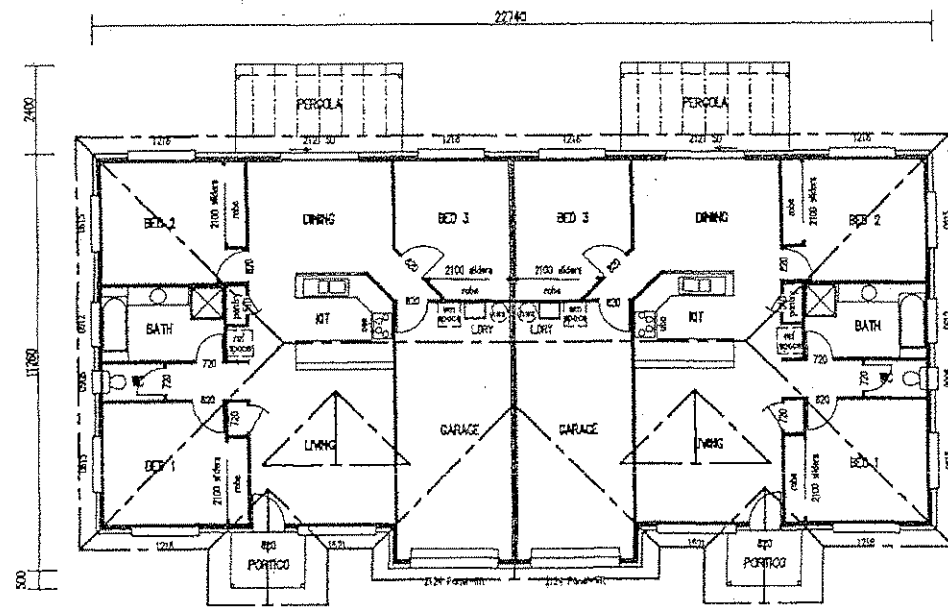
UNIT 5/48 EXPORT DRIVE, WALENGHAR 4214 © COPYRIGHT
PH - 07 55949400 FAX - 07 55949011



FRONT ELEVATION 1

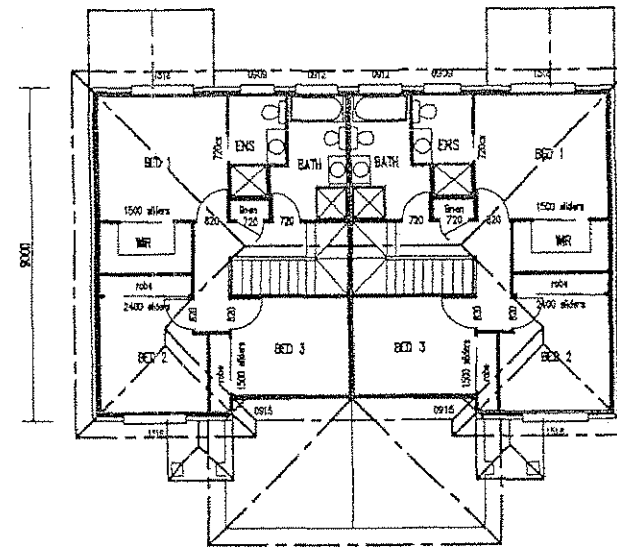


ELEVATION 1



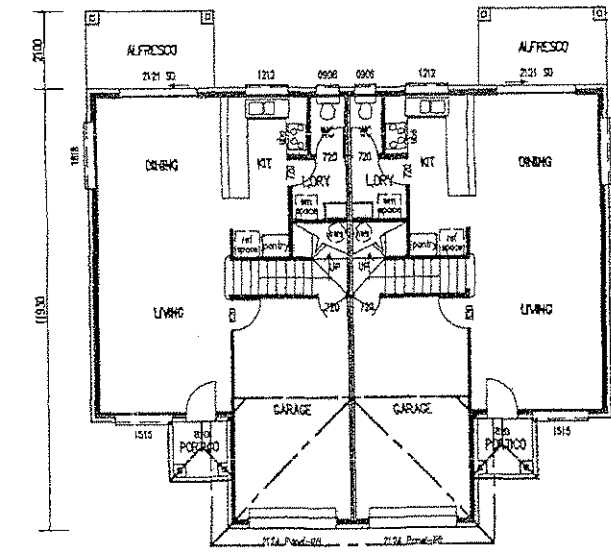
FLOOR LAYOUT

TYPE A



UPPER FLOOR LAYOUT

TYPE B



LOWER FLOOR LAYOUT

PRELIMINARY CONCEPT ONLY

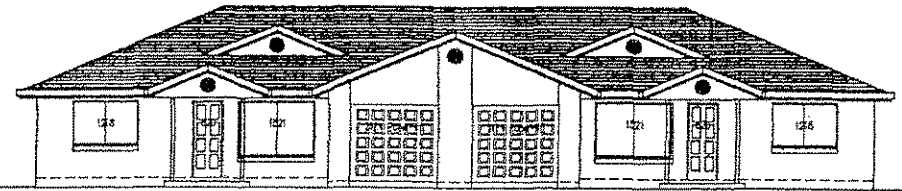
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PROPOSED TOWNHOUSE DEVELOPMENT FOR
GALAXY PROJECT HOUSING PTY LTD
AT LOTS 14, 59 & 93
CHUBB STREET,
ONE MILE

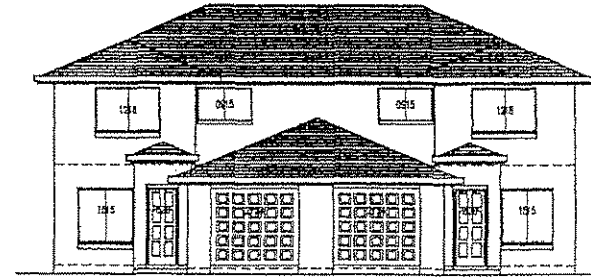
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		SHEET 2 OF 2	

GALAXY PROJECT HOUSING PTY LTD

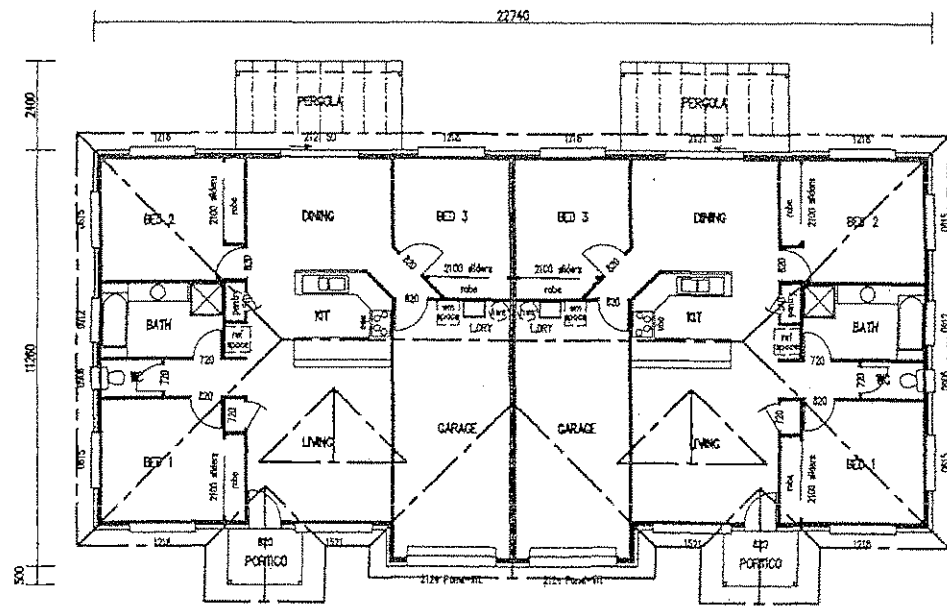
UNIT 5/48 EXPORT DRIVE, MOLENDINAR 4214
PH - 07 55949406 FAX - 07 55949011 © COPYRIGHT



FRONT ELEVATION 1

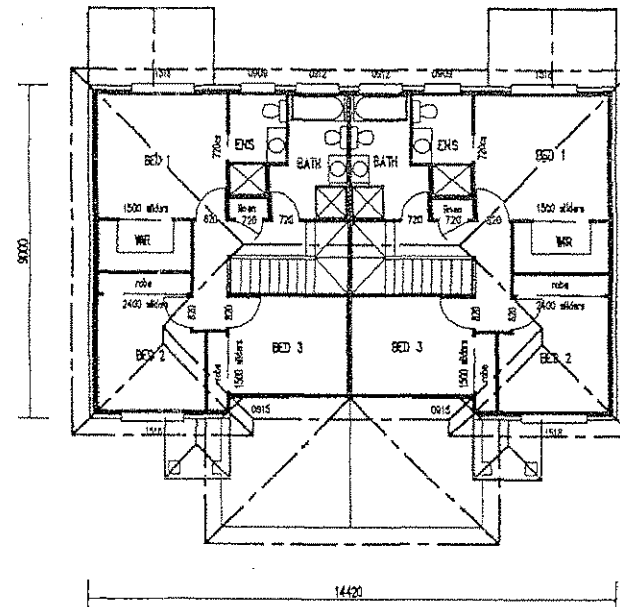


ELEVATION 1



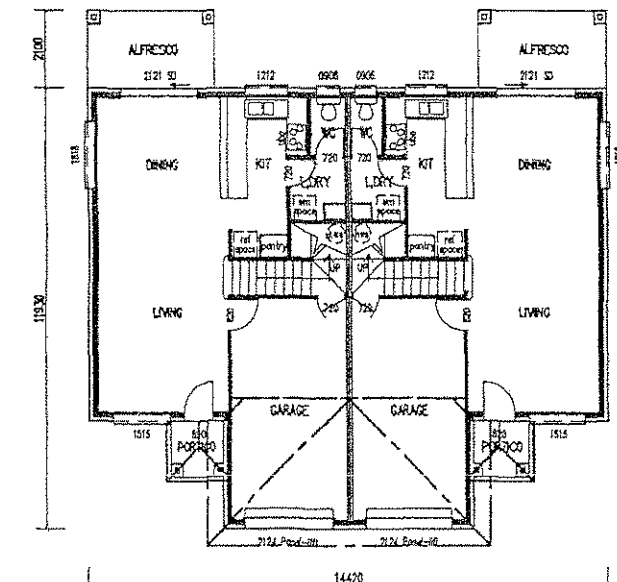
FLOOR LAYOUT

TYPE A



UPPER FLOOR LAYOUT

TYPE B



LOWER FLOOR LAYOUT

PRELIMINARY CONCEPT ONLY

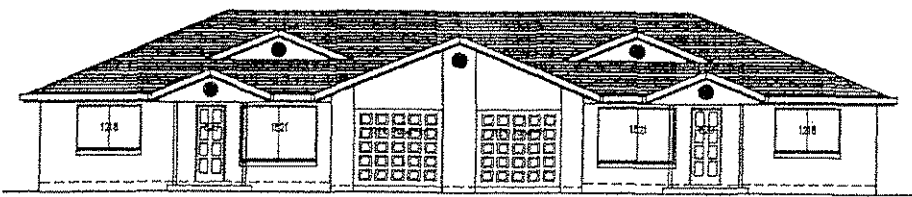
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PROPOSED TOWNHOUSE DEVELOPMENT FOR
GALAXY PROJECT HOUSING PTY LTD
AT LOTS 14, 59 & 93
CHUBB STREET,
ONE MILE

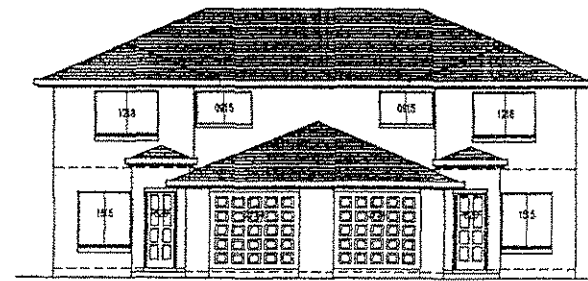
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		SHEET 2 OF 2	
REV	DESCRIPTION	DATE	

GALAXY PROJECT HOUSING PTY LTD

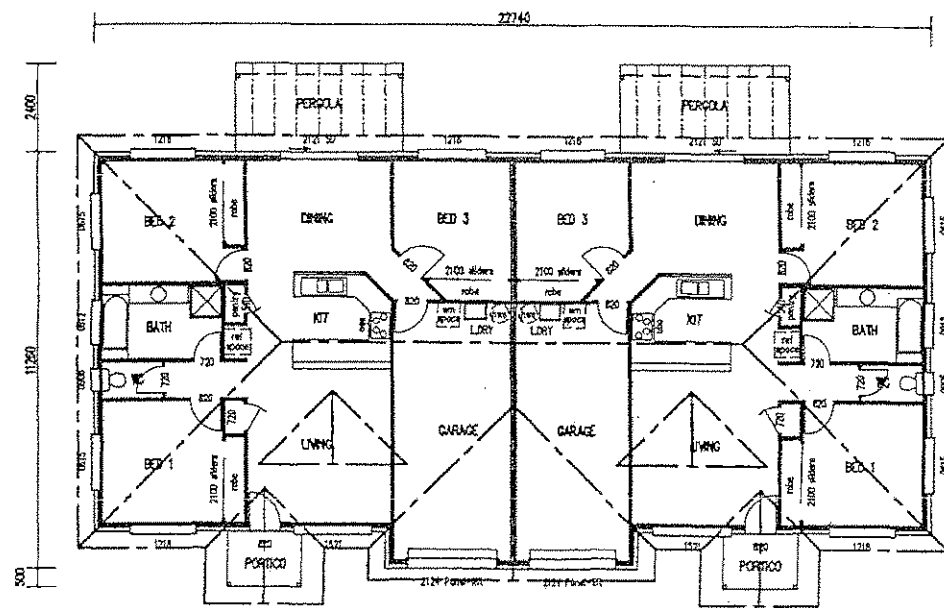
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PH - 07 55949400 FAX - 07 55949011 © COPYRIGHT



FRONT ELEVATION 1

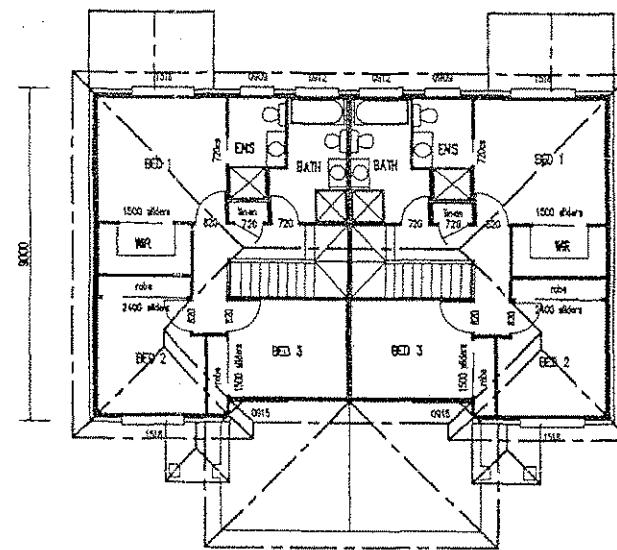


ELEVATION 1



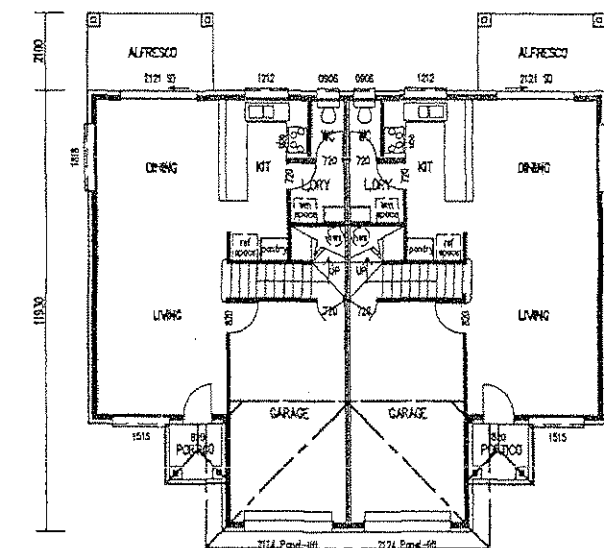
FLOOR LAYOUT

TYPE A



UPPER FLOOR LAYOUT

TYPE B



LOWER FLOOR LAYOUT

PRELIMINARY CONCEPT ONLY

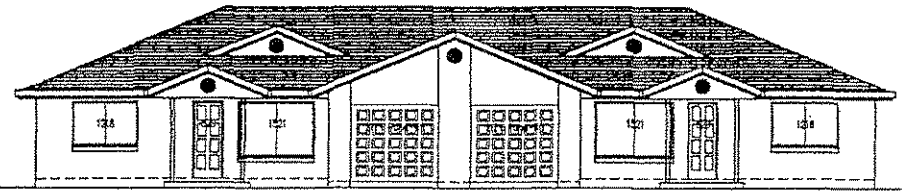
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PROPOSED TOWNHOUSE DEVELOPMENT FOR
GALAXY PROJECT HOUSING PTY LTD
AT LOTS 14, 59 & 93
CHUBB STREET,
ONE MILE

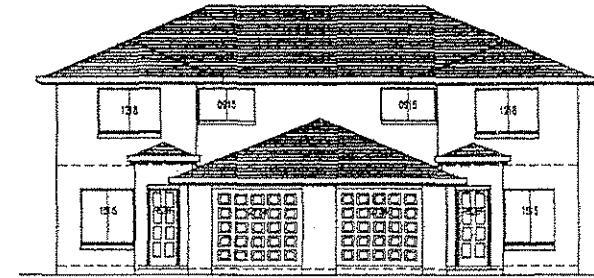
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		SHEET 2 OF 2	
		REV.	DESCRIPTION DATE

GALAXY PROJECT HOUSING PTY LTD

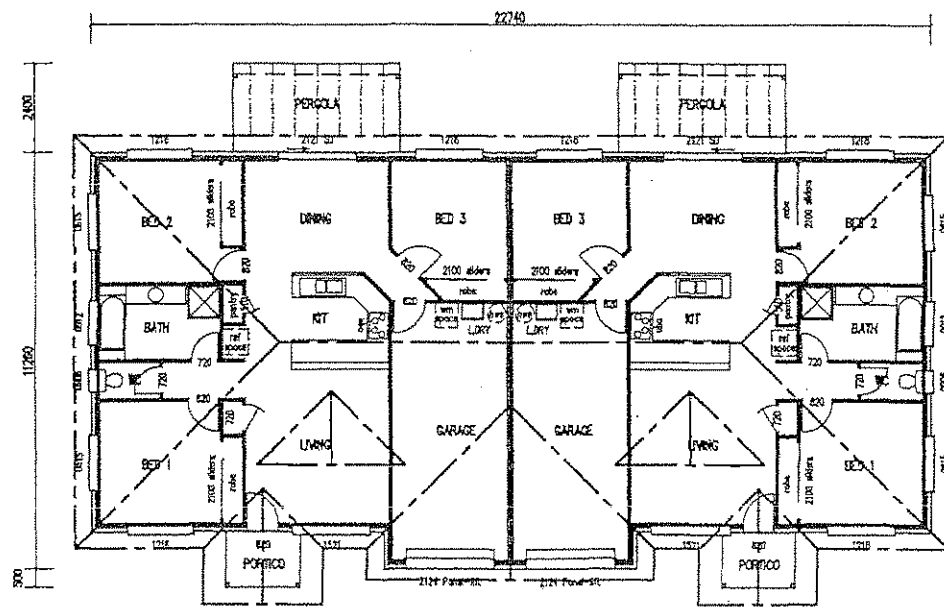
UNIT 5/49 EXPORT DRIVE, MCLENDINAR 4214
PH - 07 55949400 FAX - 07 55949011



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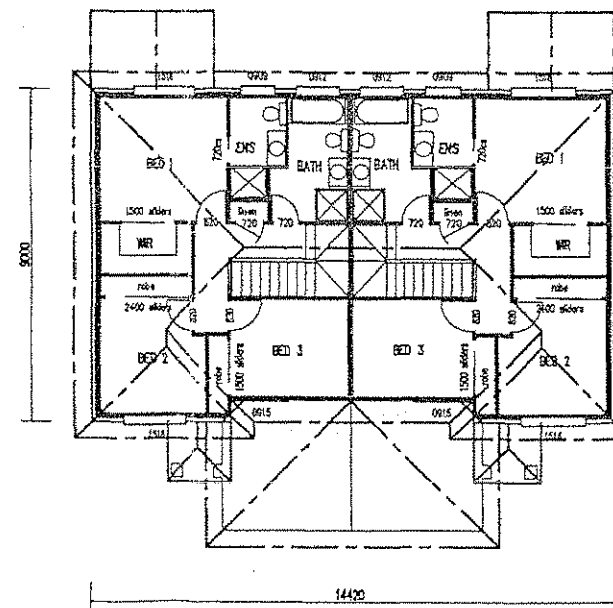


ELEVATION 1



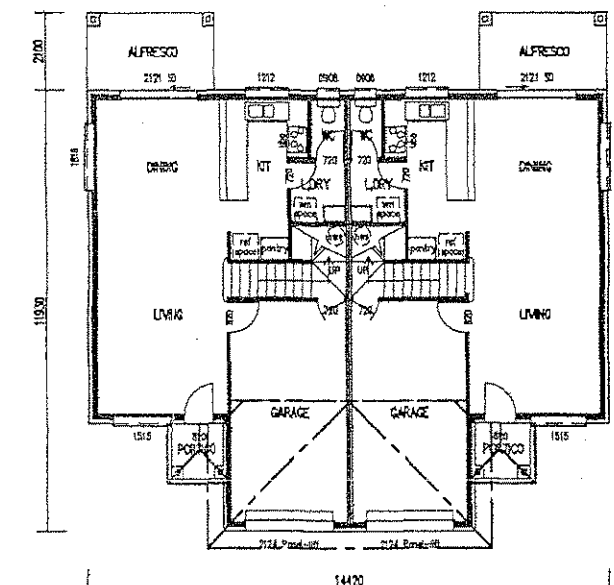
FLOOR LAYOUT

TYPE A



UPPER FLOOR LAYOUT

TYPE B



LOWER FLOOR LAYOUT

PRELIMINARY CONCEPT ONLY

SCALE 1 : 200

PROPOSED TOWNHOUSE DEVELOPMENT FOR
GALAXY PROJECT HOUSING PTY LTD
AT LOTS 14, 59 & 93
CHUBB STREET,
ONE MILE

SCALE 1:	1:100	TITLE			
SCALE 2:	1:100	TYPE A & B CONCEPT LAYOUTS			
DATE	21.02.04				
DRAWN	TW	DRAWING No.			
CHECKED	SOS_O4_MCD				
	SHEET 2 OF 2				
REV.	DESCRIPTION	DATE			

GALAXY PROJECT HOUSING PTY LTD

1:1000 SCALE
 DATE: 10/10/2011
 DRAWN BY: J. BROWN
 CHECKED BY: J. BROWN
 APPROVED BY: J. BROWN



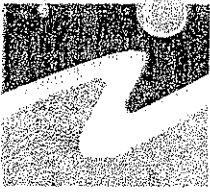
TOTAL No. UNITS - 175
 TOTAL CARSPACES - 438 = 2.5 SPACES PER UNIT
 - GARAGES - 175
 - CARSPACES - 263

SITE LAYOUT
 ALL DIMENSIONS IN METERS
 ALL DISTANCES TO BE MEASURED FROM THE CENTERLINE OF THE ROAD
 ALL DISTANCES TO BE MEASURED FROM THE CENTERLINE OF THE ROAD
 ALL DISTANCES TO BE MEASURED FROM THE CENTERLINE OF THE ROAD

PRELIMINARY CONCEPT ONLY

PROPOSED TOWNHOUSE DEVELOPMENT FOR GALAXY PROJECT HOUSING PTY LTD AT LOTS 14, 29 & 93 CHURCH STREET, ONE MILE

NO.	DATE	BY	REVISION
1	10/10/2011	J. BROWN	ISSUED FOR TENDERS
2			
3			
4			
5			



Ipswich
City Council

Your Reference:
Our Reference: 437/05 JFF
Contact Officer: [REDACTED]
Telephone No.: 3810 6191

30 March 2005

Dear Sir/Madam

Re: Development Application Information Request (Section 3.3.6)
Application Number: 437/05
**Proposal: Multiple Residential (175 Aged Accommodation Units),
Recreation Uses, Reconfiguration of a Lot (Three (3) lots
into Two (2) lots)**
Property Location: 8 Georgette Street and 84 and 100 Chubb Street, One Mile

Upon review of the abovementioned Development Approval Application and supporting information we require further information to satisfactorily assess this application. The information requested is set-out below.

1. In terms of Town Planning matters the Developer is requested to provide further information concerning the following:

(a) Recreation Use

The applicant is requested to provide detailed plans of the proposed clubhouse including suitably scaled elevations and floor plans.

(b) Unit Designs

The applicant is requested to clarify which of the units are currently proposed to be type A design and type B design. Furthermore, to achieve compliance with the specific outcomes of the Residential Code relating to building scale and articulation, building materials and density the applicant is requested to submit an expanded range of designs for the proposed units. The applicant is also requested to demonstrate that the proposed designs are suitable to the proposed use of the site for Mature Aged Accommodation, particularly the type B design (three bedroom, two storey).

[REDACTED]
[REDACTED]
Department of Local Government, Planning,
Sport and Recreation
PO Box 15031
CITY EAST QLD 4002

Please Address All Correspondence to:
Chief Executive Officer
Ipswich City Council
A.B.N. 61 461 981 077
PO Box 191 Ipswich Qld 4305
Telephone: (07) 3810 6666
Facsimile: (07) 3810 6731

Website: www.ipswich.qld.gov.au

(c) Pedestrian Access Strategy

In order to demonstrate compliance with Specific Outcome Nine (9) of the Parking Code - Separation of Pedestrian and Vehicular Circulation, the developer is requested to provide a pedestrian access strategy for the proposed development, paying particular attention to pedestrian movement between the individual units, visitor parking areas and communal recreation spaces. Generally, a 1.5m wide concrete footpath or a suitable alternative is required throughout the development. Alternatively, should the applicant wish for the proposed internal roadways to function as 'shared' zones it must be demonstrated that a suitable design speed environment can be achieved to allow safe pedestrian movement.

(d) Recreation Space

The applicant is requested to demonstrate how the proposal complies with Specific Outcome 22 (Recreation Space) of the Residential Code. In particular the applicant is requested to provide details of the area proposed as private recreation space for each unit and the proposed treatment of these areas in terms of landscaping and fencing to ensure adequate privacy, security, outlook and maximum year-round use.

(e) Landscape Strategy

The applicant is requested to submit a Concept Landscape Strategy prepared in accordance with Planning Scheme Policy 2 of the Planning Scheme. It is considered that such information is imperative to assessing the overall impact of the development upon the streetscape, within the development and within the surrounding area. Landscaping may help to achieve further articulation of building facades and improve the visual amenity of the development when viewed from outside the site. Design of such landscaped areas is required to address and demonstrate compliance with the Residential Code provisions relating to light spill, noise, building articulation and screening of blank building facades, privacy between units, private and communal recreational spaces, car parking areas (particularly with the view to providing shade to these) and the entry to the development.

(f) Parking

The applicant is requested to demonstrate how the proposed location of the visitor car parking spaces complies with the Specific Outcomes of the Parking Code. The location of the visitor car parking spaces should be centrally located within the proposed development to provide convenient and safe pedestrian access to the dwellings for which they are to be used. The Developer is requested to submit an amended site plan that meets the Specific Outcomes of the Parking Code.

2. In terms of Engineering matters the Developer is requested to provide further information concerning the following:

(a) Stormwater ✓

The Developer is requested to submit a stormwater management plan that identifies among other things the proposed methods of stormwater control for overland flows and constructed drainage systems from the proposed development. Further, the Developer is requested to submit preliminary hydraulic calculations for the major and minor storm events prepared by an RPEQ in accordance with QUDM which identifies the increase in stormwater runoff

generated by the full development, the location and treatment of discharge points such that the proposed development will not adversely affect downstream properties.

Note:

Should stormwater discharge onto private property or a stormwater drainage system enters adjoining private property, then the written approval of the property owner for this to occur (which may also include the provision of a drainage easement) is required to be submitted to Council.

(b) Access ✓

The Developer is requested to provide information that clearly demonstrates how the largest design vehicle anticipated to enter and exit the site can do so in forward gear. Turning paths and manoeuvres shall be in accordance with the Australian Standard (AS2890 series).

(c) Traffic/Roads ✓

The Developer is requested to submit a full traffic report prepared by a RPEQ in relation to access to the proposed development. Amongst other matters, the study shall address the following:

- (i) A review of traffic generated by the proposal, including anticipated traffic flows and number of vehicle movements in a peak hour;
- (ii) Recommendation of specific measures, to be undertaken so as to minimise the impact on local roads as a result of the traffic generated by the proposed development;
- (iii) Any proposed traffic calming devices are to be sympathetic to the movement of buses; and
- (iv) Any improvements necessary to the Siemons Street and Old Toowoomba Road intersection.

(d) Flooding ✓

The Developer is requested to submit a hydraulic and ground stability study prepared by a RPEQ for the subject site that addresses the following:

- (i) The likely impact of the proposed development, including associated earth works, both upstream and downstream from the site, particularly in terms of changes to depth, duration or velocity of flood waters and duration of warning time;
- (ii) Geology of the site and any related problems;
- (iii) Instability features such as slips, soil creep etc;
- (iv) Effects of existing vegetation and of any possible removal and or modification of same; and
- (v) Likely impacts in terms of watercourse bank stability.

3. In terms of health and environment matters the Developer is requested to provide further information concerning the following:

(a) Stormwater Quality

In order to demonstrate compliance with the Scheme, the applicant is to supply either of the following:

- (i) A conceptual design Stormwater Quality Management Plan (the "conceptual design SQMP") must be prepared by a suitably qualified and experienced professional and be developed in accordance with the *Australian Runoff Quality Design Guidelines, Australian Institute of Engineers, 2003* and must demonstrate, through appropriate pollutant export modelling (eg AQUALM or MUSIC), that the predicted pollutant levels in the stormwater from the Catchment will meet the pollutant levels identified in Table 1 below.

It is expected that the conceptual design SQMP will also identify the treatment measures required, their general location and intended ownership.

TABLE 1

Indicator	Modified ecosystem, wildlife, cultural heritage, secondary & visual recreation, industry, stock and irrigation	Human consumer	Primary contact	Raw water & farm supply
Total Phosphorus ⁽¹⁾	70 ug/L			
Total Nitrogen ⁽¹⁾	650 ug/L			
Suspended solids	15mg/L for combined wet and dry periods ⁽¹⁾ 90% ile < 100mg/L for wet weather periods ⁽²⁾			
Faecal coliforms ⁽³⁾	1000 organisms/100ml (minimum of 5 samples taken at regular intervals not exceeding one month, with 4 of 5 not exceeding 4000 organisms/100ml)		150 organisms/100ml (minimum of 5 samples taken at regular intervals not exceeding one month, with 4 of 5 not exceeding 600 organisms/100ml)	No sample should contain any organisms/100ml
Litter/gross pollutants ⁽⁷⁾	No anthropogenic (man-made) material greater than 5mm in any dimension			
Riparian vegetation & habitat	Protect & restore consistent with Council policy and plans			
Cultural heritage	Protect & restore consistent with Council policy and plans			

- Levels are upper limits for median values or ranges in which medians should lie, unless otherwise stated.
- If a parameter relevant to a particular activity is not given in the above table please refer to the latest Australian Water Quality Guidelines for Fresh and Marine Waters (ANZECC).
 1. Derived from the Draft Queensland Water Quality Guidelines (EPA, 1998)
 2. Derived from local and interstate information. A wet weather period is defined as "any period where stormwater runoff leaves the site".
 3. Taken from Australian Water Quality Guidelines for Fresh and Marine Waters (ANZECC, 1992).
 7. An interpretation of what is acceptable to the community in terms of visual impact. Litter definition derived from information provided by the CRC for Catchment Hydrology.

OR

- (ii) The applicant must prepare a Master Stormwater Quality Management Plan and must contribute towards the augmentation of the plan.

A Master Stormwater Quality Management Plan is required to cover the necessary works and management practices for the entire Catchment within which the development site is located. The applicant / owner must prepare this Master Stormwater Quality Management Plan for the creek systems/Catchment and the cost of the plan must be approved by the Chief Executive Officer prior to work commencing on the plan, and then credited against the contributions payable by the applicant / owner with the plan when the works are completed.

The Master Stormwater Quality Management Plan must be prepared by a suitably qualified and experienced professional and be developed in accordance with the *Australian Runoff Quality Design Guidelines, Australian Institute of Engineers, 2003* and must demonstrate, through appropriate pollutant export modelling (eg AQUALM or MUSIC), that the predicted pollutant levels in the stormwater from the Catchment will meet the pollutant levels identified in Table I above.

The Master SQMP must describe how the matters of Water Sensitive Urban Design (WSUD) and Water Quality will be addressed throughout the Catchment.

The Master Stormwater Quality Management Plan must be submitted to and endorsed by the Chief Executive Officer and Agreement reached regarding contributions and works prior to submission for an application for a Development Permit for Operational Works for the reconfiguration and/or prior to issue of a Development Permit for carrying out Building Works and/or prior to the commencement of the use.

The applicant/ owner must contribute towards the augmentation of stormwater quality management measures and associated services in accordance with the Master Stormwater Quality Management Plan.

The applicant may elect to design, document and construct parts of the work required by the plan, and gain credits for the value of those works (not exceeding fair market value) against contributions due.

The contribution rate is that which is current at the time of payment. Payment is required prior to approval and dating the plan of survey for reconfiguration and/or prior to the issue of a Development Permit for Carrying Out Building Work.

- (b) Noise

The applicant is to supply an acoustic report, prepared by an independent and appropriately qualified Acoustic Consultant, which demonstrates how the proposed activities will comply with the following;

- (i) For continuous/steady state noise sources -

The emitted L_{A90} , measured over a period of at least 15 minutes, at the boundary of any sensitive use must not exceed:

Where the measured background L_{A90} exceeds the Estimated Average Background Sound Pressure Level specified for the relevant time period for Noise Area Category (R2) in Appendix A of AS1055.2 :-

Monday to Saturday	0700 to 1800	45dB(A)
	1800 to 2200	40dB(A)
	2200 to 0700	35dB(A)
Sunday and Public Holidays	0900 to 1800	45dB(A)
	1800 to 2200	40dB(A)
	2200 to 0900	35dB(A)

OR

Where the measured background L_{A90} equals or is less than the Estimated Average Background Sound Pressure Level specified for the relevant time period for Noise Area Category (R2) in Appendix A of AS1055.2) :- the measured background L_{A90}

(ii) For time varying noise (other than music at night)-

Emissions of noise from the development, when measured outside the most affected sensitive use as the maximum A-weighted sound pressure level ($L_{max,T}$) where T is > or = 15 mins, must not exceed 50dB(A) between 2200 to 0700.

Emissions of noise during the day and evening period (0700 – 2200) must not cause;

The L_{A1} and L_{A10} , measured over a period of at least 15 minutes, at the boundary of any sensitive land use, to exceed the background L_{A1} and L_{A10} , measured over a period of at least 15 minutes.

The adjusted maximum A-weighted sound pressure level ($L_{Amax,adj,T}$) where T is > or = 15 mins, at the boundary of any sensitive land use, to exceed the background L_{A90} by more than 5dB(A).

{Note: noise events must be clearly identified and comparison of ambient events with predicted events must be related ie. cannot compare noise level of birds/insects to noise level of banging of hammers or grinding}

(Note: Where noise levels stipulated under the *Environmental Protection Regulation* are more stringent than the above criteria, then it is expected that the more stringent criteria must apply. However, this must be justified and demonstrated through appropriate assessment and modelling)

(iii) For time varying noise (music at night) –

Emissions of noise (music) between 2200hrs – 0700hrs must not cause the resultant L_{A10} noise level in each octave band from 31.5Hz to 4kHz (inclusive) is not to exceed the corresponding L_{90} ambient noise level in that octave band, by more than 8 dB(A) when measured at the boundary of any sensitive land use.

(c) Lighting

The applicant shall submit a lighting plan from a qualified and experienced lighting consultant, demonstrating that all lighting shall be so designed, constructed, located and maintained in accordance with Australian Standard 4282 – 1997 (Control of the obtrusive effects of outdoor lighting) and so as not to cause nuisance to the occupants of nearby properties or passing traffic.

For the purposes of the report curfew time is 9:00pm to 6:30am and the area is deemed to be a well lit residential. This means that:

- (i) Between 6:30 am to 9:00pm light spillage from the development shall not exceed 10 lux, and
- (ii) Between 9:00pm and 6:30am light spillage from the development shall not exceed 2 lux and luminous intensity shall not exceed 1000cd.

For further information in relation to this request please contact Council's Development Planner, Mr James Fjeldsoe, on Ph: 3810 6191.

Yours faithfully



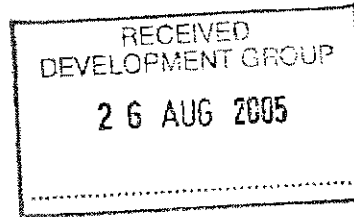
Joanne Pocock
**DEVELOPMENT TEAM CO-ORDINATOR
CENTRAL WEST**

DAVID BRETT & ASSOCIATES PTY. LTD.

BUILT ENVIRONMENT & DEVELOPMENT PLANNERS

25 August 2005

Chief Executive Officer (Assessment Manager)
Attn: Michael Ellery
Ipswich City Council
PO Box 191
IPSWICH QLD 4305



CC/- **Environmental Protection Agency** (Third Party)
Attn: [REDACTED]
GPO Box 2771
Brisbane QLD 4001

Department of Primary Industries and Fisheries (Third Party)
Attn: [REDACTED]
PO Box 5165 SCMC
Nambour QLD 4560

Department of Natural Resources and Mines (Third Party)
Attn: [REDACTED]
PO Box 864
Ipswich QLD 4305



RECEIVED	
26 AUG 2005	
Doc. No.	1472529
Applic. No.	437/05
Action Off.	M. Ellery

Re: Development Application Information Response
Application Number: 437/05
Proposal: Material Change of Use – Multiple Residential (Aged Accommodation Units)
Property Location: 84 & 100 Chubb Street and 8 Georgette Street, One Mile
Property Description: Lot 93 RP8310 & Lot 14 RP859820, Lot 59 RP849800

We act as authorised representatives of the applicant. I refer to the Information Request dated 30 March 2005 regarding the above application from the above agencies.

In accordance with sect 3.3.8 (3)(a) of the *Integrated Planning Act 1997*, this is considered to be a full response to the information request. It is requested that the Assessment Manager and each referral agency proceed with the assessment of the application.

APPLICATION

In response to the Information Requested by Ipswich City Council and subsequent meetings with council planning officers and engineers the proposed development has been altered to facilitate development generally in accordance with those discussions and a recently completed market review.

With respect to the proposed development please find attached Site Analysis Plan as prepared by PMM Group (Annexure 1) and Conceptual Layout – option 1A as prepared by PMM Group (Annexure 2).

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

The Conceptual Layout – option 1A has replaced the original site plan that was lodged with the application being Drawing 303_04_NCD (sheet 1) – Concept Site Layout.

As indicated in the Conceptual Layout – option 1A (Annexure 2), the proposed density of the development has decreased from 175 lots to 118 lots. Other major changes to the proposal include:

- Existing Gymnasium on the site is to be refurbished as a community clubhouse for the residents. The proposed clubhouse is no longer to be relocated on the site and will remain in current location.
- Nature of recreation facilities has changed to include the construction of tennis courts (unlit), large Gazebos and lawn bowls green in the riverside open space along with walking trails. These are for the use of the residence only. No other major facilities are proposed to be developed in the area below Q100.
- Inclusion of a hardstand area for Recreational Vehicles off Georgette Street.
- Major entry and exit to be off Chubb St with pedestrian and maintenance access and access for parking of RVs off Georgette St.
- Existing dam is to be retained for use in stormwater management and treatment
- Some of the lower land is also intended to be available to residents for community vegetable plots.
- The land situated below Q20 is to be dedicated to Council as indicated on Conceptual Layout – option 1A (Annexure 2).

IPSWICH CITY COUNCIL (ASSESSMENT MANAGER)

1. Town Planning Matters

(a) Recreation Use

The existing gymnasium on the site is to be refurbished as a Community clubhouse for the residents. The existing Clubhouse will be upgraded with a new pool and is also planned to include the following for resident use:

- (a) Managers office and reception
- (b) Small convenience shop for residence
- (c) Games Room
- (d) Squash courts
- (e) Meeting room
- (f) Computer room and library
- (g) Crafts room
- (h) Theatre
- (i) Exercise rooms
- (j) Spirit room
- (k) Toilets

DAVID BRETT & ASSOCIATES PTY. LTD.

The refurbishment of the Gym will be the subject of a separate Building application.

(b) Unit Design

The proposed building types have changed from the original application and there is now a range of 2 and 3 bedroom dwellings that allow a variation in streetscape and a range of housing choice within the development.

Please find attached proposed dwelling layouts and elevations from Etto Design and Drafting (Annexure 3) These represent typical designs and are subject to change. They include the following design layouts.

- Lizard (1 Storey, 2 bedroom, study)
- Linderman (1 storey, 2 bedroom, study)
- Hamilton (1 storey, 2 bedroom)
- Bedarra (2 storey, 3 bedroom)

(c) Pedestrian Access Strategy

Please refer to Information Request Response prepared by PMM Group (Annexure 4).

(d) Recreation Space

Please refer to Information Request Response prepared by PMM Group (Annexure 4)

(e) Landscape Strategy

Please refer to Landscape Concept Plans prepared by Verge Urban Landscape Architecture (Annexure 5)

(f) Parking

Please refer to Information Request Response prepared by PMM Group (Annexure 4).

2. Engineering Matters

(a) Stormwater (1 & 2)

Please find attached a copy of the Cardno (QLD) Pty Ltd Stormwater Management Plan and Flooding Report (Annexure 6).

(b) Access

Please find attached Drawing 3500/49/01-001 - Design Vehicle Turning Paths and response prepared by Cardno (QLD) Pty Ltd (Annexure 7).

(c) Traffic / Roads

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

Please find attached Traffic Report as prepared by Viney Traffic Engineering (Annexure 8).

(d) Flooding

Please find attached a copy of the Cardno (QLD) Pty Ltd Stormwater Management Plan and Flooding Report (Annexure 6).

3. Health and Environment Matters

(a) Stormwater Quality

Please find attached a copy of the Cardno (QLD) Pty Ltd Stormwater Management Plan and Flooding Report (Annexure 6).

(b) Noise

Please find attached a copy of the Ron Rumble Pty Ltd Noise Issues (Annexure 9)

(c) Lighting

The proposed nature of recreational activities has changed and as a result the proposed tennis courts and lawn bowling facility will not be lit.

DEPARTMENT OF PRIMARY INDUSTRIES AND FISHERIES

Please find attached a copy of letter dated 19th August from 4 Site regarding assessment of marine vegetation (Annexure 10).

In accordance with sect 3.3.8 (3)(a) of the *Integrated Planning Act 1997*, this is considered to be a full response to the information request. It is requested that the Assessment Manager and each referral agency proceed with the assessment of the application.

Regards,



ANNEXURE 1
Site Analysis Plan

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

25 Canning St, North Ipswich Qld
Telephone : (07) 3281 0744

Correspondence : PO Box 5020, Brassall Qld 4305 A.B.N. 54 010 980 346










B.S.A. LICENCE No. 067680

Facsimile : (07) 3281 0766

Site Analysis Plan

Chubb Street, Ipswich

Legend

-  Site boundary
-  Existing street network
-  Preferred site access
-  Pedestrian linkages
-  Residential interface
-  Existing building to be retained
-  Existing bus stop
-  Internal views
-  Significant trees
-  Recreation open space
-  Q 100 extent
-  Bremer River
-  Existing dam
-  Storm water flows



The contents of this plan are confidential and for discussion purposes only. All views and observations are approximate, subject to relevant studies, Survey, Engineering and Council approvals.

20038 - 01 date: June 2005 scale: 1:1000@A1

file path - U:\PMM\projects\20000\20038\final\master files\20038-01

© 2005 PMM
 10/10/05 10:10:10 AM
 10/10/05 10:10:10 AM

ANNEUXRE 2
Conceptual Layout – option 1A

BUILDING DESIGN






COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

Conceptual Layout - option 1A

Chubb Street, Ipswich

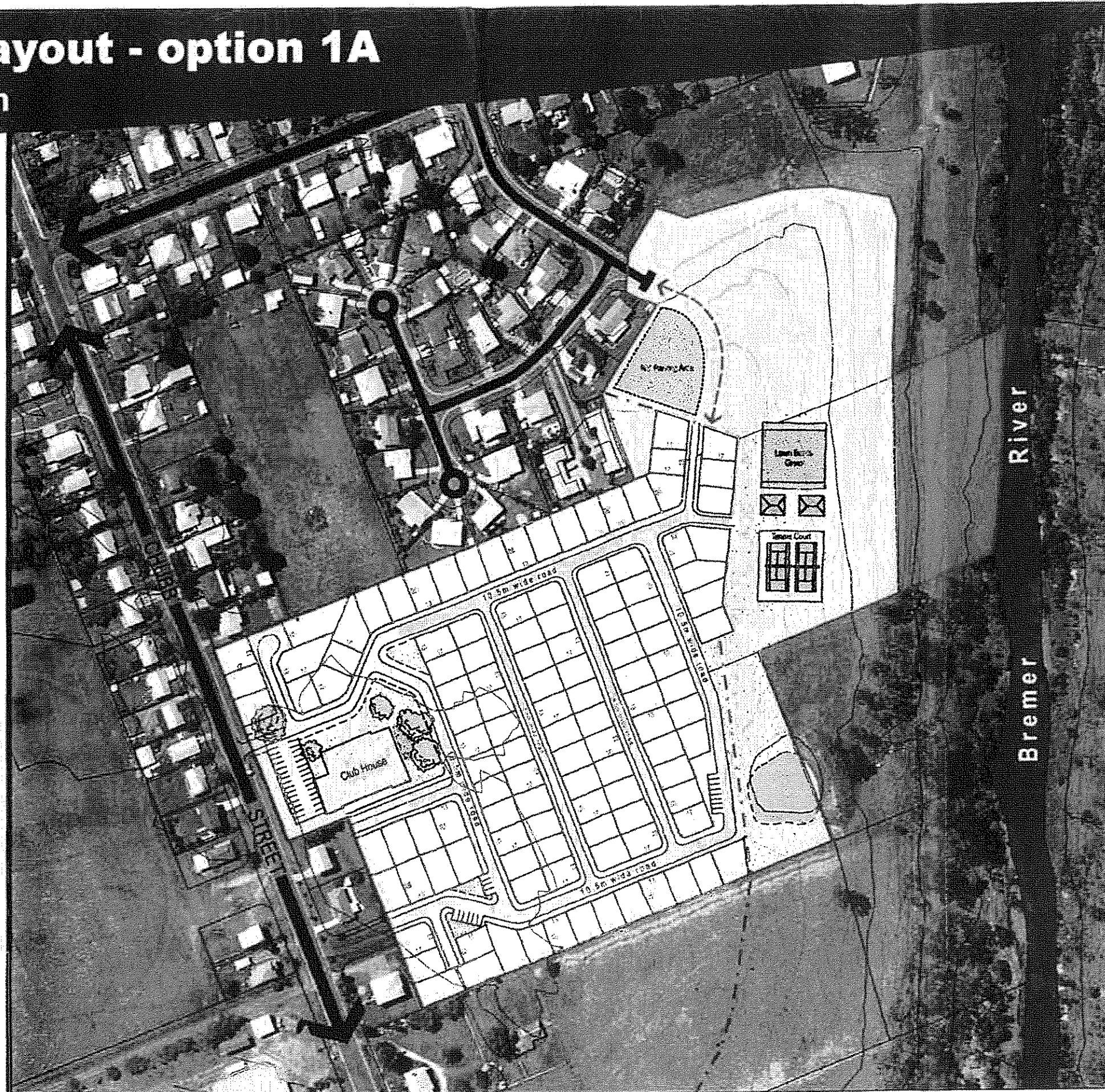
Legend

-  Site boundary
-  Park dedication
-  Existing dam
-  Q100 extent
-  Pedestrian link / maintenance vehicle access

Development Statistics

Total No. Of Lots.....118
 Total No. Of Carparks.....48

Area of Open Space
 Park Dedication.....6830m²
 Private Open Space (under Q100).....2.5ha
 RV Parking.....1400m²
 Club House.....4780m²



The contents of this plan are conceptual only, for discussion purposes. All areas and dimensions are approximate, subject to relevant studies, Survey Engineering, and Council approvals

20038 - 03A date: July 2005 scale: 1:1000@A1

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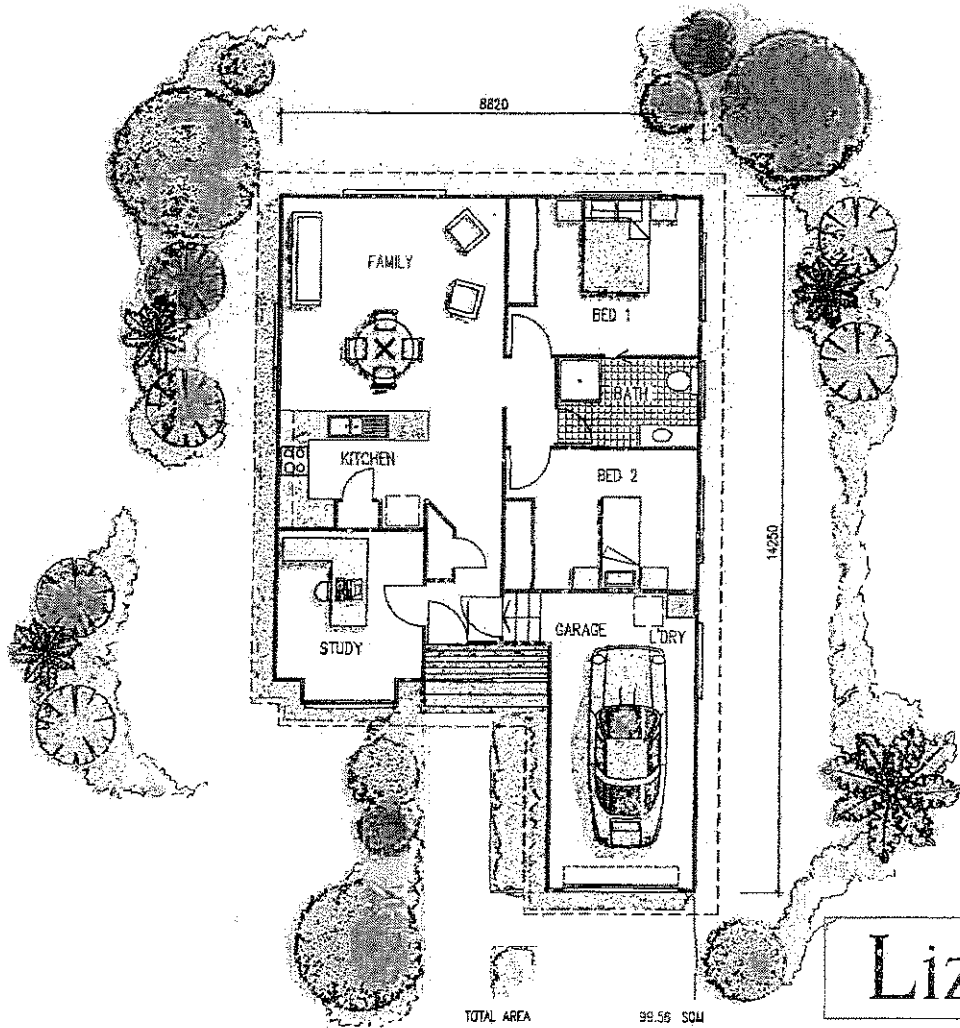
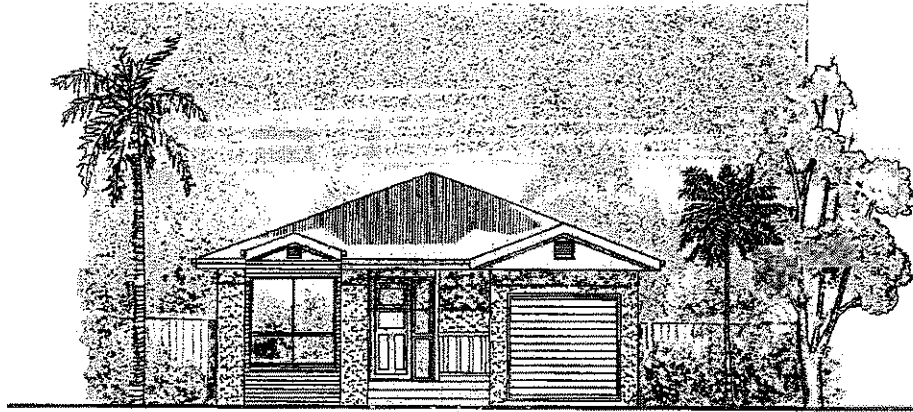
DAVID BRETT & ASSOCIATES PTY. LTD.

ANNEXURE 3 Dwelling Layouts and elevations

BUILDING DESIGN

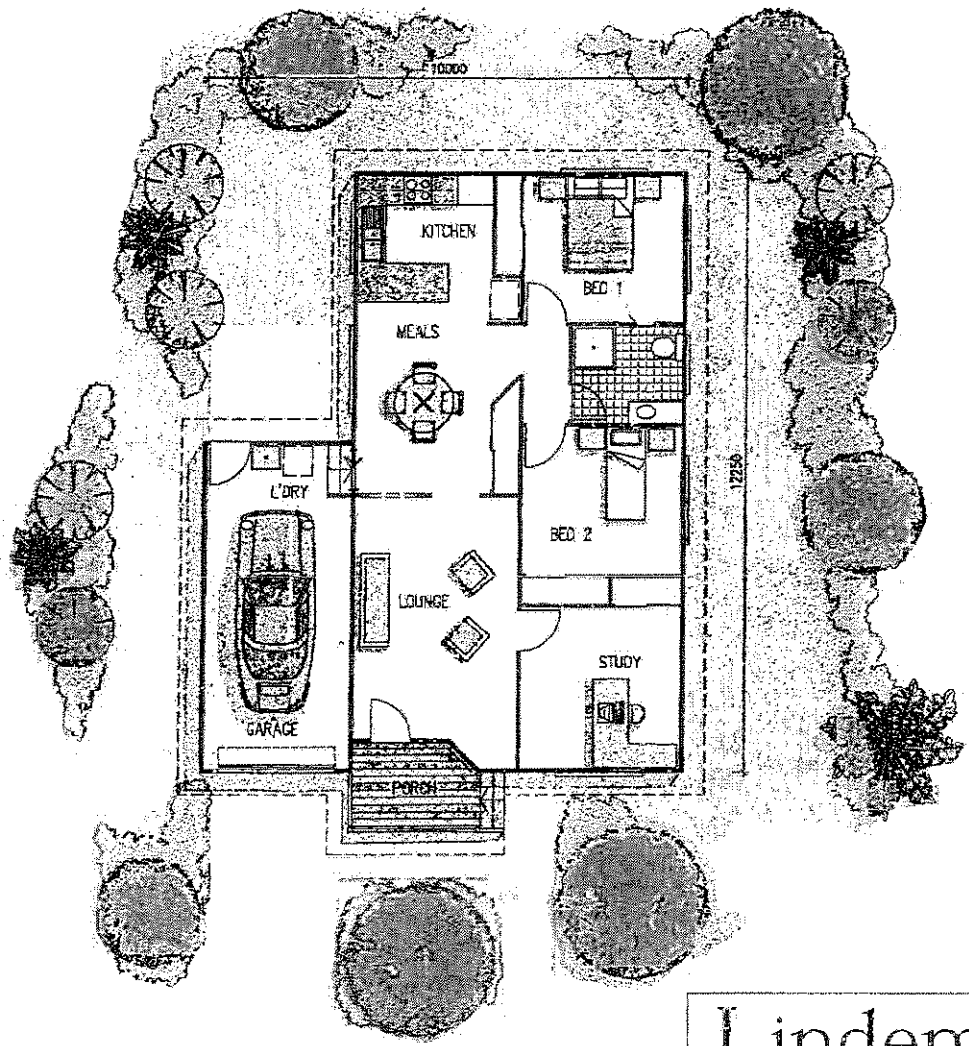
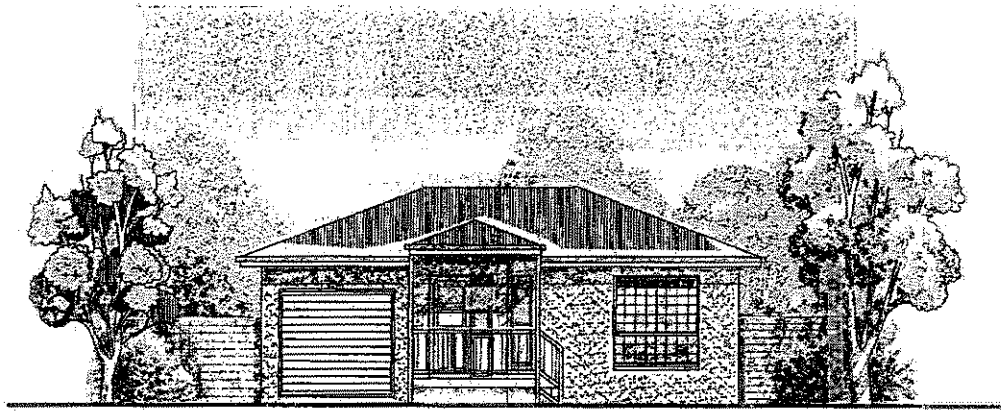
COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING



Lizard

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<small>FIGURED DIMENSIONS HAVE PREFERENCE OVER THOSE SCALED. ALL DIMENSIONS AND LEVELS TO BE VERIFIED ON SITE AT SETOUT.</small>		



Lindeman

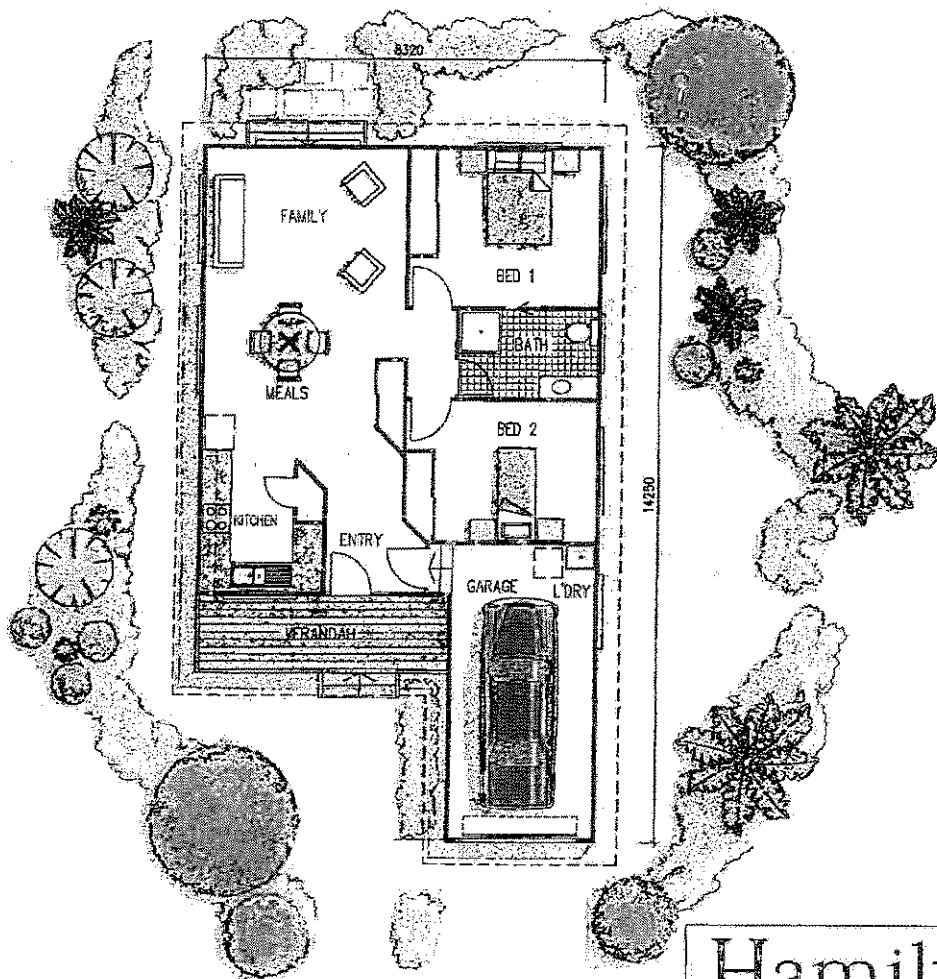
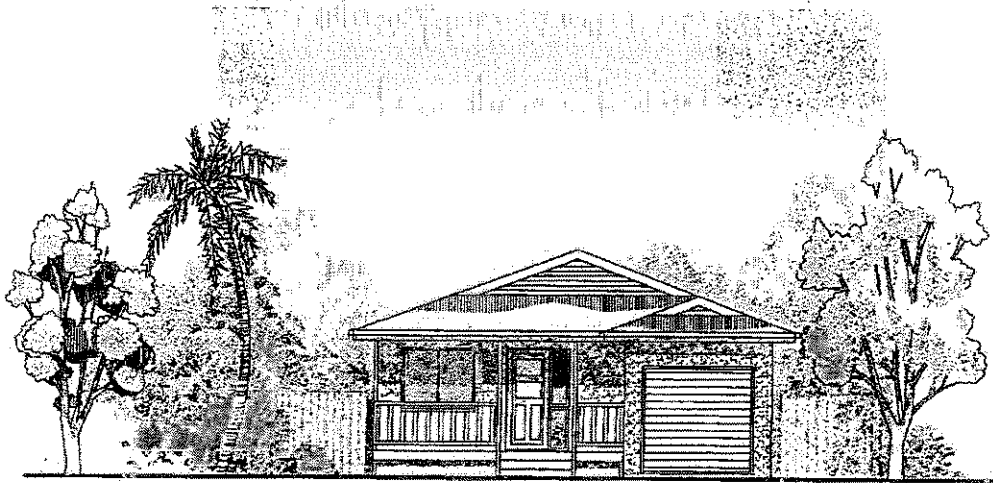
GROUND FLOOR AREA 164.20 SQM
 PORCH AREA 4.87 SQM
 TOTAL AREA 169.07 SQM

DESIGNED AND DRAWN BY
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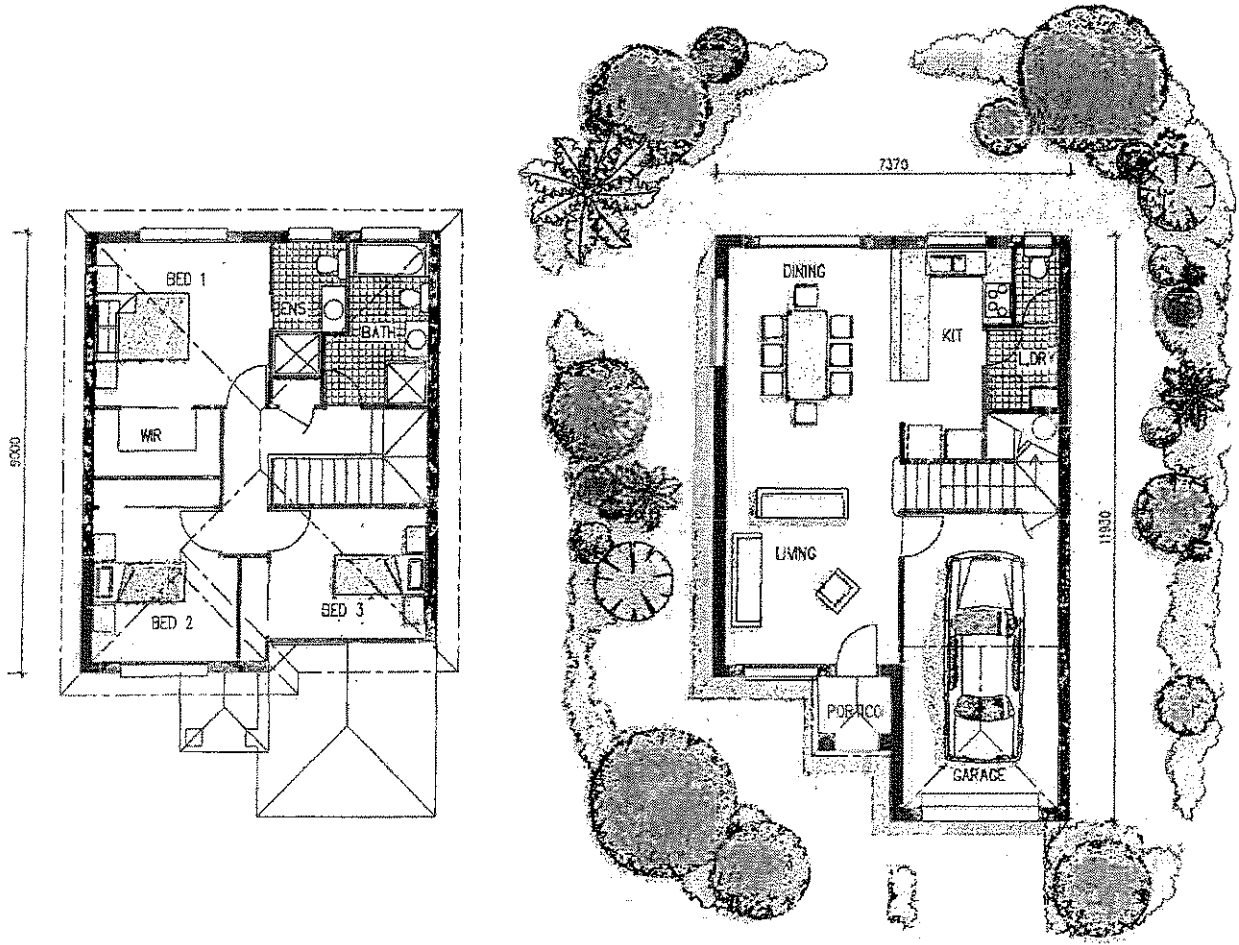
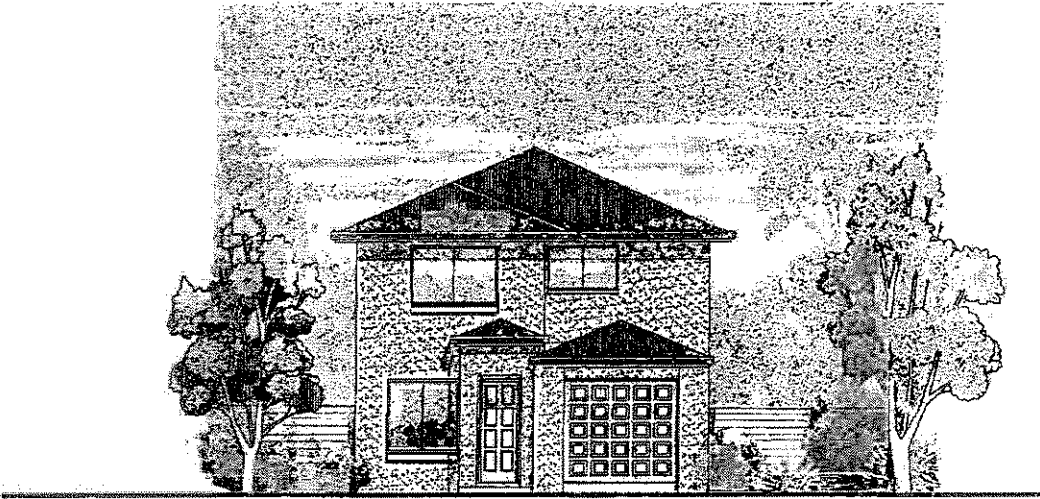
DATE: _____
 Dwg. No. _____
 Dwg. by: R. E.
 Scale = 1:100
 VHS CLASSIFICATION NUMBER: FREE
N2



Hamilton

TOTAL AREA 100.84 SQM

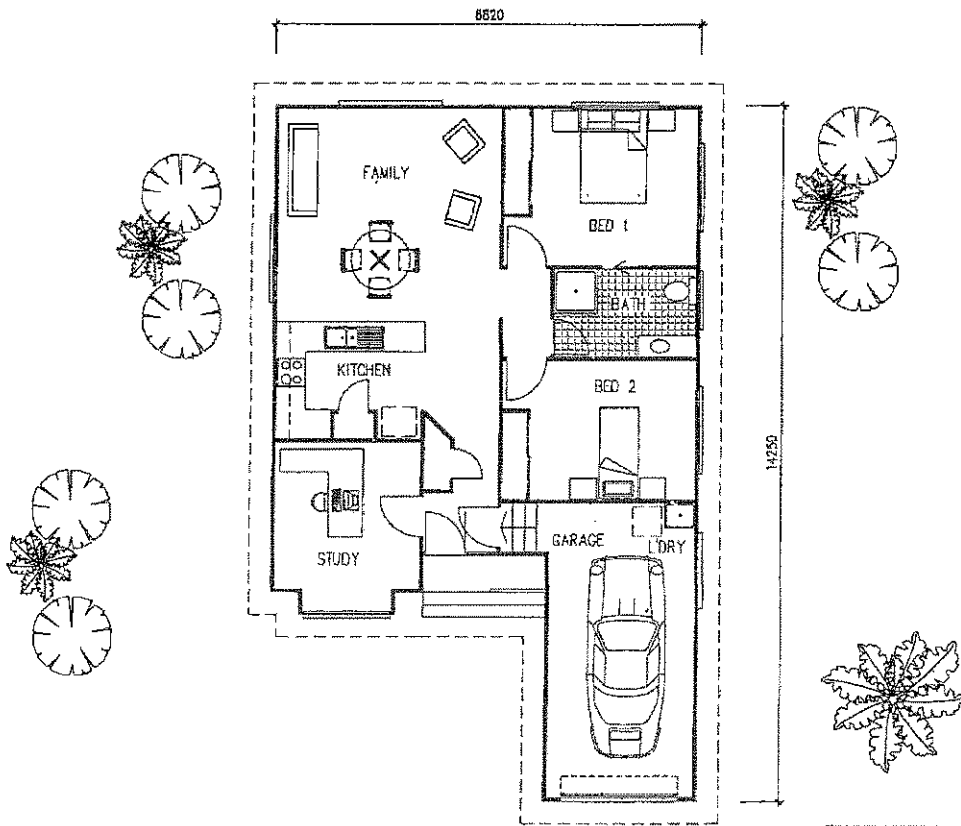
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		Scale=1:100
		<small>UNE CLASSIFICATION</small> <small>ESTRUCO 2002</small> N2



UPPER FLOOR AREA 64.23 SQM
 GROUND FLOOR AREA 77.11 SQM
 PORCH AREA 2.25 SQM
 TOTAL AREA 143.59 SQM

Bedarra

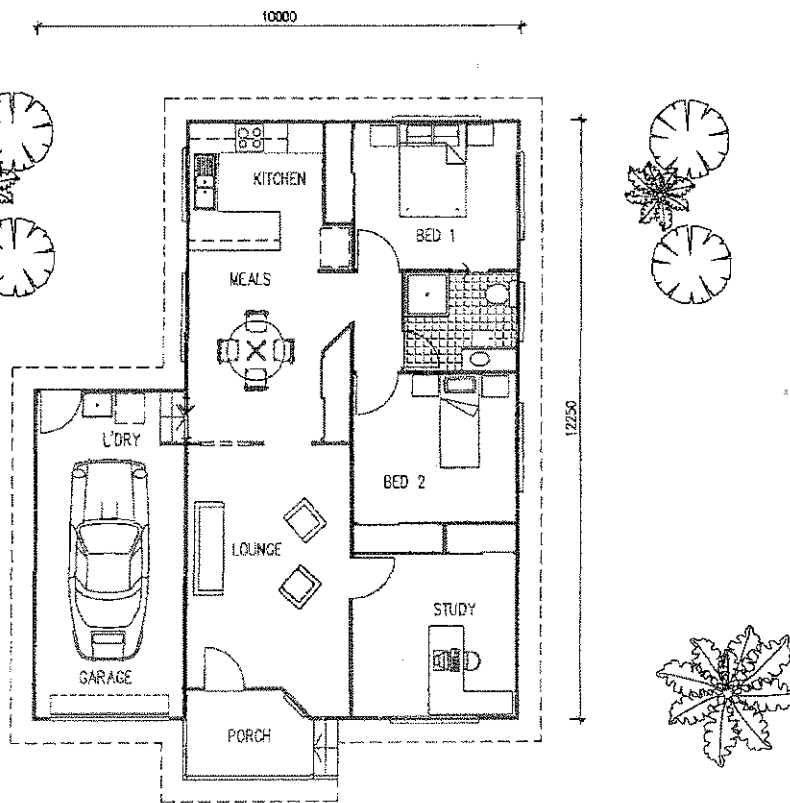
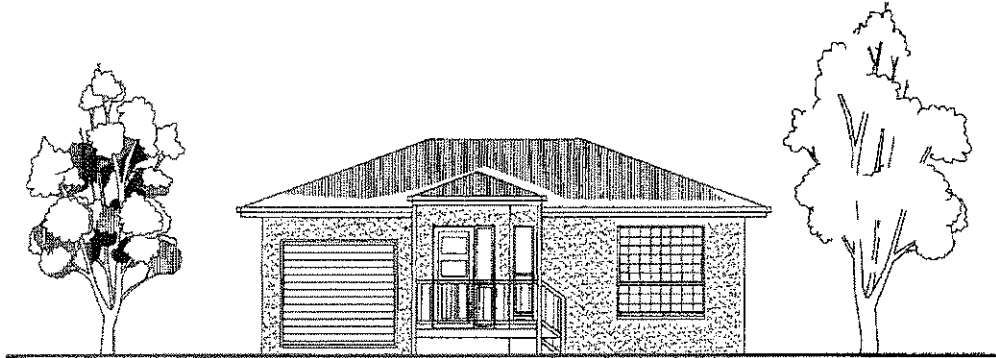
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Lizard

TOTAL AREA 95.58 SQM

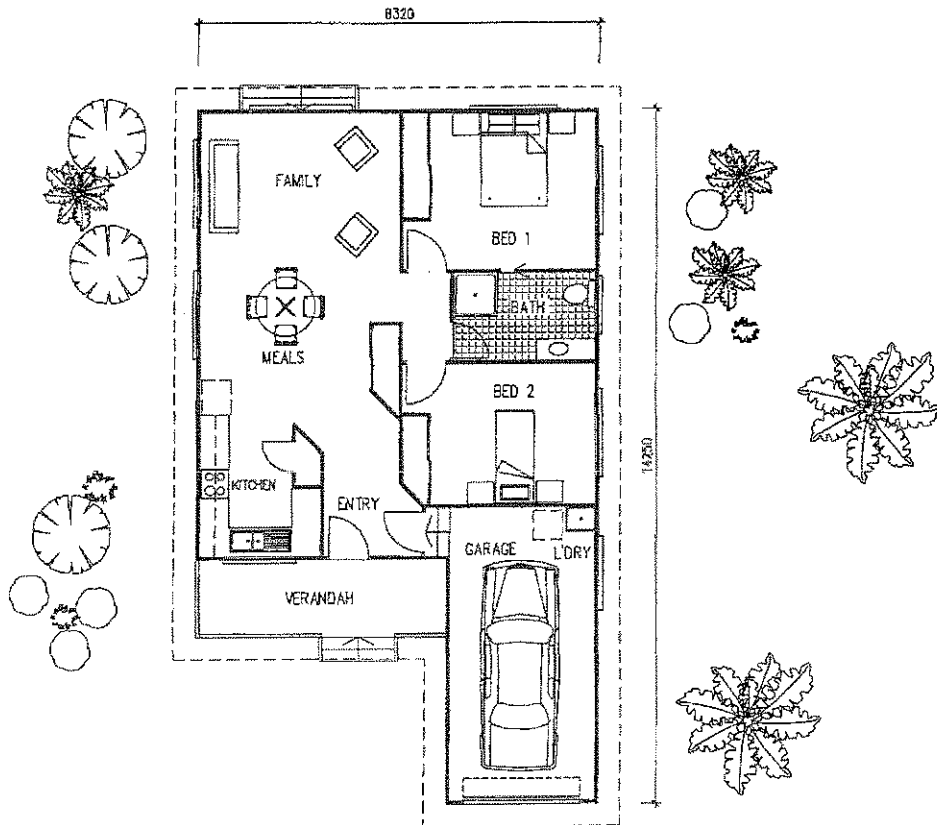
DESIGNED AND DRAWN BY ETTD DESIGN & DRAFTING PH. 3388 0997 G. B. S. A. 527097 COPYRIGHT	CLIENT : FIGURED DIMENSIONS HAVE PREFERENCE OVER THOSE SCALED. ALL DIMENSIONS AND LEVELS TO BE VERIFIED ON SITE AT SETOUT.	DATE: _____ DWG. No. _____ DWG. BY: R. E. Scale=1:100 <small>PLINE CLASSIFICATION</small> <small>WALLS 1/2 LINE</small> N2
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Lindeman

GROUND FLOOR AREA 104.70 SQM
 PORCH AREA 4.67 SQM
 TOTAL AREA 109.37 SQM

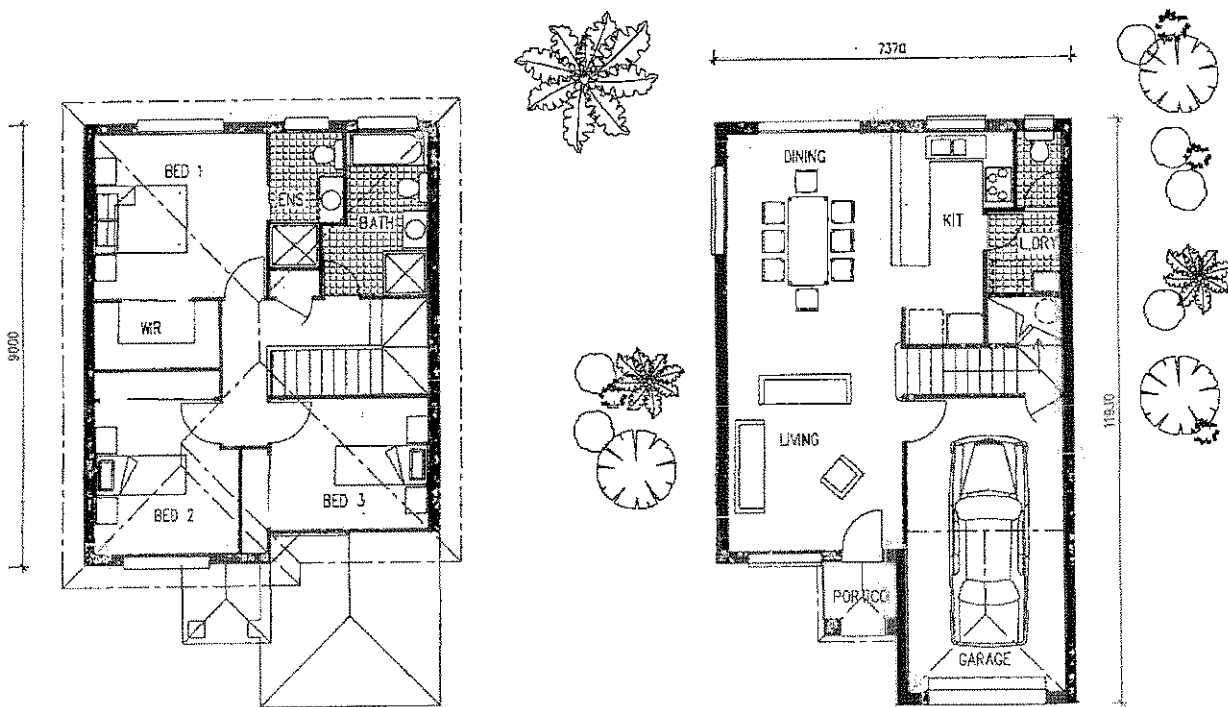
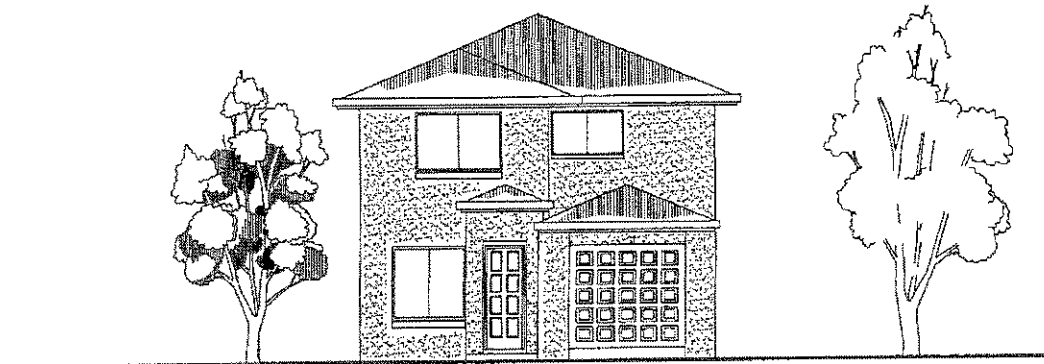
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Hamilton

TOTAL AREA 180.84 SQM

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	FIGURED DIMENSIONS HAVE PREFERENCE OVER THOSE SCALED FROM DIMENSIONS AND LEVELS TO BE VERIFIED ON SITE AT SETOUT.	DWG NO. DWG BY P.T. SCALE 1:100 1/18/2014



UPPER FLOOR AREA 64.23 SQM
 GROUND FLOOR AREA 77.11 SQM
 PORCH AREA 2.25 SQM
 TOTAL AREA 143.59 SQM

Bedarra

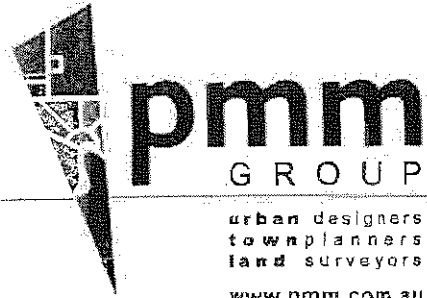
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	FIGURED DIMENSIONS HAVE PREFERENCE OVER THOSE SCALED. ALL DIMENSIONS AND LEVELS TO BE VERIFIED ON SITE AT SETOUT.	Dwg. No. Dwg. by: R. E. Scale: 1:100 N2

ANNEXURE 4
Information Request Response

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING



urban designers
town planners
land surveyors

www.pmm.com.au

T: 61 7 3237 8899
F: 61 7 3237 8833

PO Box 1559
Fortitude Valley Q 4006
743 Ann Street
Fortitude Valley Q 4006
Australia

Our Ref: 20038
Date: 19 August 2005

Attn: [REDACTED]

H& H Lee Pty Ltd
C/- Bradshaw and Associates
PO Box 380
CARINA QLD 4152

Via: Mail

Dear Peter

RE: INFORMATION REQUEST RESPONSE
PROPOSED MULTIPLE RESIDENTIAL (AGED ACCOMMODATION UNITS),
RECREATION USES AND RECONFIGURATION OF A LOT
84 & 100 CHUBB STREET AND 8 GEORGETTE STREET, IPSWICH

We write in response to the information request in respect of the above issued by Ipswich City Council on 24 March 2005. You have specifically requested the preparation of responses to items 1(c), 1(d) and 1(f) with responses to the remaining items to be addressed by others.

(c) Pedestrian Access Strategy

In order to demonstrate compliance with Specific Outcome Nine (9) of the Parking Code - Separation of Pedestrian and Vehicular Circulation, the developer is requested to provide a pedestrian access strategy for the proposed development, paying particular attention to pedestrian movement between the individual units, visitor parking areas and communal recreation spaces. Generally, a 1.5m wide concrete footpath or a suitable alternative is required throughout the development. Alternatively, should the applicant wish for the proposed internal roadways to function as 'shared' zones it must be demonstrated that a suitable design speed environment can be achieved to allow safe pedestrian movement.

Response

It is proposed that pedestrians and vehicles will share the internal circulation roads. These will be limited to 10 kph by appropriate signs and by speed limiting devices. No formal footpaths are proposed. Details of these devices will be provided at Operational Works Stage with the submission of detailed engineering drawings.

A pedestrian footpath connection will be provided through the development to meet up with Georgette Street so as to provide for permeability.

Car parking for tenants will be provided on each individual lot.

It is proposed to provide 47 visitor spaces equating to 0.4 visitor spaces per unit. These are provided adjacent to the proposed Club House (29 spaces) and also off the 10.5m wide private internal circulation road (18 spaces). It is considered that the location of the visitor car spaces are appropriate, particularly as it is envisaged that the majority of visitors will be met in the communal Club House.

We also note that the internal roads are of sufficient width to allow for informal parallel car parking outside individual units.

(d) Recreation Space

The applicant is requested to demonstrate how the proposal complies with Specific Outcome 22 (Recreation Space) of the Residential Code. In particular the applicant is requested to provide details of the area proposed as private recreation space for each unit and the proposed treatment of these areas in terms of landscaping and fencing to ensure adequate privacy, security, outlook and maximum year-round use.

Response

As a Multiple Residential (Aged Accommodation Units) development, the proposal is required to comply with recreation space specific outcomes for a Retirement Community as set out in Section 12.6.5 (7) (c). These specific outcomes require recreation space and associated facilities to suit anticipated user needs taking into account a number of factors (i) – (viii).

The probable solutions for Section 12.6.5 (7) (c), for self-contained accommodation such as is proposed, are found in Section 12.6.4 (23). These are the 'standard' requirements for residential development.

A mix of 2 bedroom and 3 bedroom units is proposed. While their actual final mix has not yet been established, it is anticipated that the majority will be of 3 bedroom units (say 75%). This mix would require some 8,400m² of open space over the entire site. A minimum of 35m² is required for each unit with a minimum dimension of 3.0m – including a principal area of a minimum 16m² with direct access from a living room, oriented to receive adequate sunlight, and screened with a 1.8 'no gap' fence.

The proposal will more than comply with these requirements. Each dwelling unit will be provided with private open space in compliance with the above. Fencing will be provided between individual units and along the perimeter of the site to the adjoining properties and with the exception of that part of the site facing the river.

In addition to the private open space, more than 2.5 hectares of open space will be provided in addition to a Club House on a 4,780m² site.

Facilities provided in the open space area will include tennis court facilities and a lawn bowling green with associated gazebos. The Club House will provide recreational facilities including outdoor swimming pool, meeting and games rooms and kitchen.

In terms of landscaping treatment, refer to the Landscape Concept Plan

- (f) The applicant is requested to demonstrate how the proposed location of the visitor car parking spaces complies with the Specific Outcomes of the Parking Code. The location of the visitor car parking spaces should be centrally located within the proposed development to provide convenient and safe pedestrian access to the dwellings for which they are to be used. The developer is requested to submit an amended site plan that meets the Specific Outcomes of the Parking Code.

Response

As a "Multiple Residential" development, the Planning Scheme (Table 12.9.1) requires 1.5 spaces per self-contained unit plus 1 space per staff member. For the proposed 118 units, this equates to 177 spaces, plus 1 space for the manager i.e. a total of 178 spaces.

It is proposed to provide 166 spaces in total, comprising 118 spaces for owners/tenants of the 118 units and 47 spaces for visitors. 1 space is provided for the manager.

The 47 visitor spaces equates to 0.4 visitor spaces per unit, and are provided in a readily identifiable and accessible location adjacent to the proposed Club House (29 spaces), and also on the 10.5m wide private internal circulation road (18 spaces). It is considered that the location of the visitor car spaces are appropriate. We note that the internal roads are of sufficient width to allow for informal parallel car parking outside individual units.

The notes forming part of the table state that provision should also be made for parking for any community buses and for service vehicle parking and loading/unloading. The proposed Club House will be provided with a service vehicle/bus parking space in compliance with this requirement.

We trust this information is sufficient for your purposes, however should you require any further details or clarification, please do not hesitate to contact the writer by telephone.

Yours faithfully
PMM GROUP PTY LTD



Senior Town Planner

DAVID BRETT & ASSOCIATES PTY. LTD.

ANNEXURE 5 Landscape Concept Plans

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

25 Canning St, North Ipswich Qld
Telephone : (07) 3281 0744

Correspondence : PO Box 5020, Brassall Qld 4305 A.B.N. 54 010 980 346

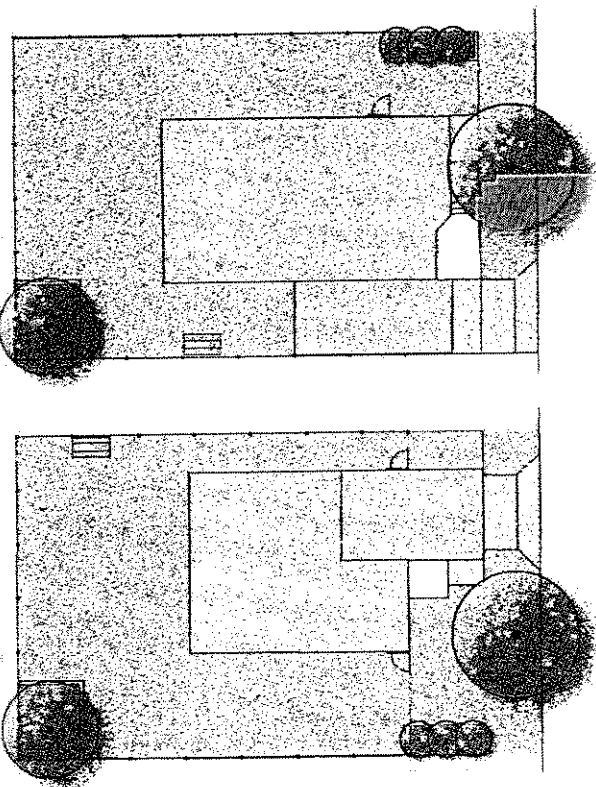
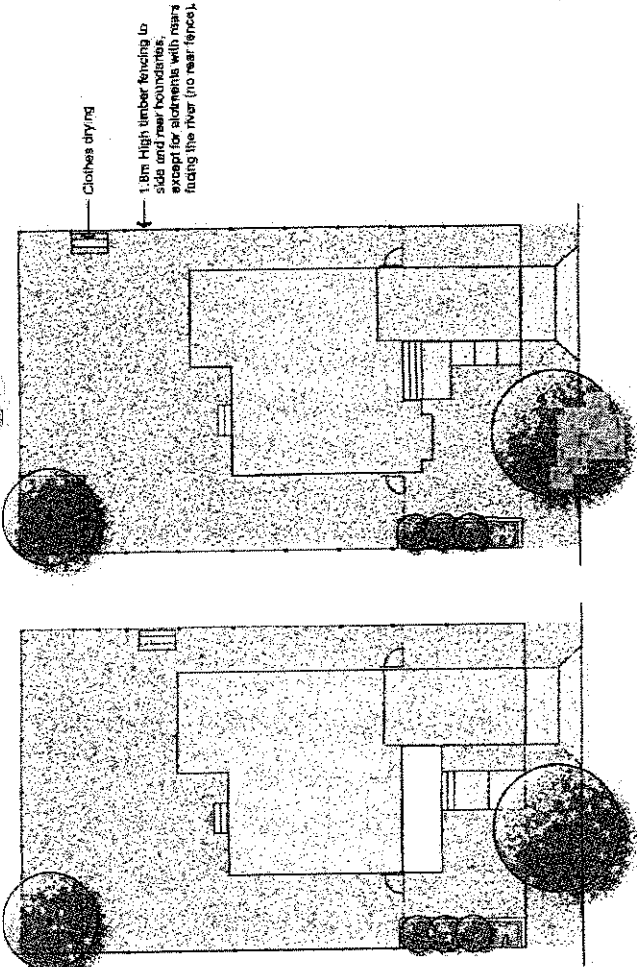
B.S.A. LICENCE No. 067680

Facsimile : (07) 3281 0766

GENERAL SPECIFICATION NOTES

Landscape Plant/Flair

- 1.0 **GENERAL**
Scope of works as shown on drawings.
All garden areas to have minimum internal width of 600mm. A durable edge is to be provided between all garden beds and turfed areas.
- 2.0 **MULCH**
Standards: To AS4546-1998 'Compost, soil conditioners and mulches'.
Mulch Type: Hoop Pipe bark 100mm Deep.
- 3.0 **CULTIVATION**
All garden and turfed areas cultivated to a depth of 150mm.
- 4.0 **TOPSOIL**
Standards: To AS 4419-1988 'Garden Soils for landscaping and garden use'.
Depth: To planting areas: 200mm
To tree holes and pits 1.5x rootball depth or as detailed
To turfed areas: 100mm
- 5.0 **PLANTING**
All beds to be prepared over uncompacted subgrade.
- 6.0 **TREES**
Minimum sizes: To car parking areas 45 litre stock
To common areas and all critical interfaces 25 litre stock
To private areas: 300mm stock
Siting: All trees larger than 25 litre stock shall be sited to future detail.
- 7.0 **SHRUBS AND GROUNDCOVERS**
Minimum stock: Shrubs 200mm stock
Groundcovers 140mm stock
- 8.0 **TREES TO BE RETAINED**
Trees to be retained include trees on neighbouring properties which have drip lines that lie within or overlap with the site works.
Stumps of removed trees are to be ground to 300mm below ground surface, avoiding roots of retained trees as much as possible. Where necessary for retained trees, roots in excess of 20mm that are to be cut shall have a clean straight cut, then dressed with an approved emulsion dressing. Backfilling of soil shall be carefully trimmed and watered in around roots to eliminate air pockets.
Any damage occurring to limbs of trees to be retained should be assessed by a qualified arborist and remedial pruning undertaken. Any remedial pruning shall be undertaken where necessary in accordance with AS4373-1999 'Pruning of Ornamental Trees'.
- 9.0 **TURFING**
Turf Type: Zoysia Empire
- 10.0 **PAVING**
Concrete paths: 125mm thick reinforced N25 concrete
Vehicular pavement & crossover: 180mm thick reinforced N25 concrete; coloured asphaltic concrete patterning
- 11.0 **ESTABLISHMENT**
Three month establishment period with a twelve month defects liability period from Practical Completion.



Building Types and Landscape Treatments

LANDSCAPE CONCEPT

MULTIPLE RESIDENTIAL (AGED ACCOMMODATION UNITS),
84 & 100 CHUBB STREET, IPSWICH



Scale: 1:150 @ A1

verge
URBAN LANDSCAPE ARCHITECTURE

Chubb Street, Ipswich
Building Types & Spac Homes
Drawing 19/19-02
Issue A, 22 Aug 2005
Scale 1:100 @ A1 size

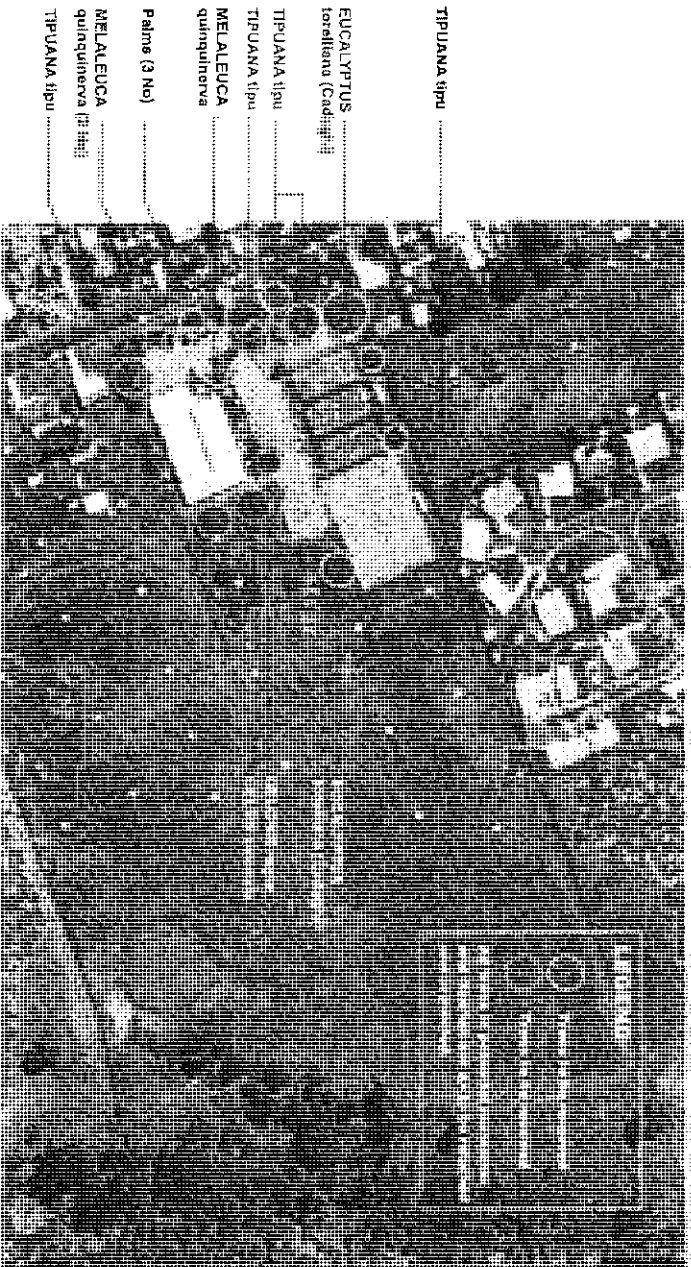
NOTE: Location of gardens and planting to be determined by owners.

LEGEND

- Turf as specified
- Concrete pavement as specified
- New tree
- Screening shrubs
- Groundcovers/mulched garden beds. All beds to have a 100mm wide flush concrete edge where adjacent to turf.

LANDSCAPE CONCEPT

RESIDENTIAL (AGED ACCOMMODATION UNITS)
100 CHUBB STREET, IPSWICH



EXISTING TREES

PLANT PALETTE

Botanical Name	Container Size	Site Use
Trees CALLISTEMON viminalis	45 litre	Street Tree/residential allotments
CALLISTEMON salignus	45 litre	Residential allotments
EUCALYPTUS tereticornis	300 mm/25 litre	Riparian area
EUCALYPTUS tessellatis	25 litre	Recreation areas
LOPHOSTEMON confertus	25 and 45 litre	Recreation areas
LOPHOSTEMON suaveolens	300mm	Riparian area
SYZYGIUM lambrankii	45 litre	Residential allotments
WATERHOUSIA floribunda	45 litre	Street Tree/Entrances
Shrubs - Medium to Tall AUSTROBAILEYA inophloea Bushy Beauty	200 mm	Allotments - boundaries screen planting
SYZYGIUM ataromulium	300 mm	Allotments - boundaries/ screen planting
SYZYGIUM 'Cascade'	200 mm	Allotments - boundaries/ Car park (front)
SYZYGIUM paniculata 'Ellie'	300 mm	Allotments - boundaries/ Screen planting
Other Planting CRINUM podunculatum	140 mm	Dam banks/riparian area
DIANELLA sp	140 mm	Dam banks/
LOMANDRA sp	140mm	Dam banks/riparian Area

NOTE:
Plant palette to be extended at Operational Works approval to include plant species to be used in any rehabilitation works to river edge. Species to be drawn from local indigenous plant lists.

Chubb Street Ipswich
Existing Trees & Plant Palette
Drawing 1018403
Issue A, 22 Aug 2005
Scale 1:1000 @ A1 size

Scale 1:1000 @ A1



verge
URBAN LANDSCAPE ARCHITECTURE

DAVID BRETT & ASSOCIATES PTY. LTD.

ANNEXURE 6 Stormwater Management Plan

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

25 Canning St, North Ipswich Qld
Telephone : (07) 3281 0744

Correspondence : PO Box 5020, Brassall Qld 4305 A.B.N. 54 010 960 346

B.S.A. LICENCE No. 067680

Facsimile : (07) 3281 0766



Cardno
Engineering the Future

CHUBB STREET DEVELOPMENT, ONE MILE



STORMWATER MANAGEMENT PLAN AND FLOODING REPORT

H & H LEE



Cardno (Qld) Pty Ltd
ABN 57 051 074 992

Level 1, 5 Gardner Close, Milton QLD 4064
PO Box 388, Toowong QLD 4066 Australia

9 August 2005
Job No. 3500-49

Telephone: 07 3369 9822
Facsimile: 07 3369 9722
International: +61 73369 9822



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5 Gardner Close Milton Q 4064

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Queensland 4066 Australia

Telephone: 07 3369 9822

Facsimile: 07 3369 9722

International: +61 7 3369 9822

Web: www.cardno.com.au

Document Control

Version	Date	Author		Reviewer	
		Name	Initials	Name	Initials
2	9 August 2005				

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CHUBB STREET DEVELOPMENT, ONE MILE STORMWATER MANAGEMENT PLAN AND FLOODING REPORT

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Figure 4	Detention Basin Size

APPENDICES

APPENDIX A MIKE 11 CROSS-SECTIONS

1. INTRODUCTION

It is proposed to develop the land at 8 Georgette Street, 84 Chubb Street, and 100 Chubb Street, One Mile (refer Figure 1) for residential purposes (refer Figure 2).

In response to the development application lodged with respect to the site, Council issued an information request dated 24 March 2005. This report provides a response to the information request in relation to the following issues.

- flooding;
- local runoff; and
- water quality.

2. BREMER RIVER FLOODING

2.1 General

The Bremer River is located on the eastern boundary of the site. When the river is in flood, a portion of the site is inundated. Council has defined the following flood levels for both 84 Chubb Street and 100 Chubb Street:

- 100 Year Event 23.8 m AHD
- 20 Year Event 18.9 m AHD

The extent of inundation of the site produced by a 100 year event in the Bremer River is shown on Figure 2. The proposed development requires that filling be undertaken over part of the site inundated by Bremer River flooding. As the filling could impact on flood levels in the Bremer River, a hydraulic study was undertaken to quantify the impact and to determine the ameliorative measures required to ensure that flood levels are not increased as a result of development.

2.2 Scope of Hydraulic Study

Ipswich City Council has completed detailed hydraulic modelling of the Bremer and Brisbane River systems using the DHI program Mike-11. Council provided a reach of this model for use in the flood investigation. The data provided included cross sections, flow hydrographs (assuming ultimate catchment development) and the stage hydrograph calculated using the overall model at the downstream end of the reach.

The truncated model reach, which extends both upstream and downstream of the site, extends from cross-section BREM 1000700 to BREM 1004150. Sheet 40 of the Ipswich Rivers Flood Study is reproduced as Figure 2 and shows the extent of the truncated model and the location of cross sections within the reach.

Due to the broad area modelled by Council, the cross sections supplied to Cardno were at a spacing of about 500 metres. To provide additional cross sections in the region of interest, additional survey of the site and surrounding areas was undertaken by Terranean Mapping Technologies.

Based on the survey, cross-sections were extracted at approximately 100m intervals throughout the site as shown in Figure 2. These cross-sections were inserted into the existing model. Where new cross-sections were located near or at existing cross-sections the latest cross-section data was adopted. As the survey did not include areas below the water line, appropriate bed levels were calculated for each new cross section based on the cross sections in the Council Mike-11 model. The cross sections used in the MIKE-11 model are shown in Appendix A.

2.3 Methodology

To determine the impact of the proposed development on flood levels, a 'base case' was established using the truncated existing conditions Mike-11 model with ultimate catchment flows, and inserting the new cross-sections (refer Section 2.2).

The 'developed case' model was then established by modifying the base case Mike-11 model to reflect the proposed filling. To offset the loss in storage produced by the filling, compensatory earthworks are proposed in the area between the development and the riverbank. The earthworks have been limited to areas at or above 20 m AHD in order to minimise the change in level of available storage (i.e. to prevent the replacement of high level storage with low level storage which is less effective). The level of 20 m AHD is above the defined 20 year flood level and therefore considered to be suitable for the creation of storage.

The extent of proposed earthworks are shown in Figure 3. The cross sections affected by the proposed development are between BREM1002600 (upstream) and BREM1003000. Appendix A contains the modified cross sections used to represent the development case relative to the existing case.

The cross sections indicate that the proposed filling on its own will reduce the storage volume of the Bremer River by approximately 13,000 m³. However, this is more than offset by the proposed cut volume of approximately 24,000 m³.

The 'base case' MIKE 11 model used the resistance values from the original model, duplicating them in the new cross-sections. The resistance values used in the 'developed case' model were the same as for the 'base case' model. The radius type of Resistance Radius was used for the computation of processed data, as it was the radius type used in the previous Council Mike-11 model.

The base case and developed case models were run for the 100 year ARI local flood event. A recent review done by Brisbane City Council of the hydrology used in its modelling has meant that flows from Brisbane River have been changed. While the Council Mike-11 model is being reviewed to reflect these changes, it can be assumed that the 100 year ARI event can be modelled using what was considered to be the 50 year event flows. The 100 year ARI flood levels quoted by council correspond to Mike-11 results of the 50 year ARI event. The critical storm duration for this event is the 50 year 30 hour flooding of Brisbane River, and so this storm event was used for the analysis. Unfortunately, there are no flows available to adequately model the 20 year ARI event.

The 'base case' was calibrated so that results matched those obtained by Council. The 'base case' was then modified to account for the proposed development.

2.4 Results

Anticipated peak flood level results are summarised in Table 1 for the base case and proposed development case under the peak flood event. Included in Table 1 is a summary of the afflux resulting from the proposed development. A positive value indicates an increase in flood level.

As the results in Table 1 show, the peak water levels for the developed case are generally less than those for the base case for the 100 year ARI local flood event, by as much as 41mm.

It should be noted that the flood levels in Table 1 for the site are comparable to the 100 year ARI flood level of 23.8m AHD that Council quotes for the site.

The impact of the proposed development produces a maximum increase of 5 mm in flood level within the site for the 100 year ARI local flood event. However the flood levels are generally decreased, by as much as 41 mm, indicating that the development can proceed without adversely impacting on flood levels. It is expected that the final shape of the compensatory works will be developed as part of detailed design.

Table 1 Anticipated Peak Flood Levels

Cross-section	100 Year Event			Afflux (mm)
	Previous Council Model (mAHD)	Base Case Peak Flood Level (mAHD)	Developed Case Peak Flood Level (mAHD)	
BREM 1000700.00	25.25	25.17	25.14	-32
BREM 1001120.00	25.12	25.05	25.02	-32
BREM 1001700.00	24.88	24.80	24.76	-35
BREM 1002300.00	24.33	24.32	24.27	-41
BREM 1002600.00		24.03	24.01	-28
BREM 1002700.00	23.87	23.86	23.85	-17
BREM 1002800.00		23.66	23.65	-10
BREM 1002900.00		23.52	23.52	5
BREM 1003000.00		23.39	23.39	-3
BREM 1003050.00		23.38	23.38	0
BREM 1003100.00		23.35	23.35	0
BREM 1003200.00	23.37	23.30	23.30	0
BREM 1003700.00	23.09	23.09	23.09	0
BREM 1004150.00	22.94	22.94	22.94	0

Note: Sections within site shaded

The peak velocities calculated in Mike-11 were also compared. As Table 2 shows there is no significant change in peak velocities for the developed case.

Table 2 Anticipated Peak Velocities

Cross-section	100 Year Event		Afflux (m/s)
	Base Case Peak Velocity (m/s)	Developed Case Peak Velocity (m/s)	
BREM 1000700.00	0.94	0.94	0.00
BREM 1000910.00	0.81	0.81	0.00
BREM 1001120.00	0.67	0.67	0.00
BREM 1001410.00	0.77	0.77	0.00
BREM 1001700.00	1.22	1.22	0.00
BREM 1002000.00	1.15	1.15	0.00
BREM 1002300.00	1.11	1.12	0.00
BREM 1002450.00	1.24	1.24	0.00
BREM 1002600.00	1.47	1.47	0.00
BREM 1002650.00	1.52	1.52	0.00
BREM 1002700.00	1.60	1.58	-0.02
BREM 1002750.00	1.71	1.70	-0.01
BREM 1002800.00	1.84	1.83	-0.01
BREM 1002850.00	1.74	1.71	-0.03
BREM 1002900.00	1.67	1.61	-0.06

Cross-section	100 Year Event		
	Base Case Peak Velocity (m/s)	Developed Case Peak Velocity (m/s)	Afflux (m/s)
BREM 1002950.00	1.67	1.67	0.00
BREM 1003000.00	1.78	1.78	0.00
BREM 1003025.00	1.88	1.88	0.00
BREM 1003050.00	2.00	2.00	0.00
BREM 1003075.00	1.62	1.62	0.00
BREM 1003100.00	1.51	1.51	0.00
BREM 1003150.00	1.30	1.30	0.00
BREM 1003200.00	1.14	1.14	0.00
BREM 1003450.00	1.25	1.25	0.00
BREM 1003700.00	2.05	2.05	0.00
BREM 1003925.00	1.52	1.52	0.00
BREM 1004150.00	1.13	1.13	0.00

Note: Sections within site shaded

3.1 LOCAL RUNOFF

3.1 General

Local runoff from the site has the potential to increase as a result of development. Although the flood levels calculated for the Bremer River are based on full catchment urbanisation, the proposed level of urbanisation of the site is greater than that anticipated for the region. Therefore, it will be necessary to reduce the peak flow discharged from the site in order that flood levels in the Bremer River are not affected. This will be achieved by the construction of a detention basin as part of the development.

Given that an existing dam exists on the banks of the river (refer Figure 4), it is proposed to increase the size of the dam to provide the required detention volume and then to direct all stormwater runoff from the site to the detention basin. It is intended that only areas above the 20 year flood level (18.9 m AHD) will be considered as providing effective storage for local runoff.

The required detention basin size was determined using the empirical preliminary detention basin sizing guidelines contained in the *Queensland Urban Drainage Manual* (Neville Jones and Associates et al, 1992)(QUDM). It is recognised that as part of detailed design the size of the detention basin will need to be confirmed by the use of a runoff routing model to confirm that the peak runoff from the site does not increase for all events up to and including the 100 year event.

3.2 Hydrology

The peak flow discharged from the site for the pre-developed (i.e. prior to any development occurring on the site) and developed cases was calculated using the Rational Method in accordance with QUDM). For the analysis, it was conservatively assumed that the existing site was undeveloped.

Appropriate rainfall intensities for the site were derived in accordance with Ipswich City Council Standard Drawing STD.D026 (Revision B, 1998).

The calculation of peak flow rate for the pre-developed and developed cases is presented below.

• **Pre Developed Case**

The catchment area draining to the proposed detention basin is 4.95 hectares. The travel distance to the proposed limit of development is 200 metres.

The time of concentration for the catchment was calculated using the Friend's Equation from QUDM (Equation 5.05.1) with the following data:

- Horton roughness value of 0.045 (averaged grassed surface)
- Overland sheet flow path length 50 metres
- Slope of 2 percent along flow path

Table 5.05.2 of QUDM recommends that the length over which Friend's equation should be used in rural situations is between 50 and 200 metres. A length of 50 metres was considered reasonable for the site:

Friend's Equation produced a travel time of 15.4 minutes.

For the remaining 150 metres of flow distance, recourse was made to the channel flow times presented in Table 5.05.6 of QUDM. For a fall of 5 metres and a length of 150 metres, a travel time of 5.1 minutes was obtained, providing an overall time of concentration of 20.5 minutes. The 100 year rainfall intensity associated with this time of concentration is 191 mm/h.

For a fraction impervious of zero, a runoff coefficient of 0.66 was adopted for the 10 year event (Table 5.04.2 of QUDM) together with a frequency factor of 1.2 for the 100 year event (Table 5.04.3 of QUDM).

The above values provided a peak flow for the 100 year event of 2.08 m³/s.

- **Proposed Development**

With the development in place, the time of concentration of the catchment will be reduced. Based on standard inlet times (Table 5.05.1 of QUDM), the time of concentration to the gully pits was taken as five minutes.

To this was added 300 metres of pipe travel (the likely pipe network will result in a longer travel distance than the current direct overland flow distance). Based on the channel flow times presented in Table 5.05.6 of QUDM and a fall of 5 metres, a travel time of 3.8 minutes was obtained, providing an overall time of concentration of 8.8 minutes. The 100 year event rainfall intensity associated with this time of concentration is 270 mm/h.

Due to the relatively high density of the development, a runoff coefficient of 0.85 was adopted for the 10 year event (Table 5.04.2 of QUDM). Applying a frequency factor of 1.2 resulted in a runoff coefficient of unity for the 100 year event.

The above values provided a peak flow for the 100 year event of 3.72 m³/s.

3.3 Detention Basin Sizing

Based on the peak flows calculated for the pre-developed and developed cases, an estimate of the detention basin size required to reduce the peak flow from the developed case to match that produced by the site prior to development was made using the empirical relations presented in Section 6.06.1 of QUDM.

The required basin volume was calculated using each of the four available equations. The largest volume estimate was 1,155 m³ (Equation 6.03). For other cases where detailed design has been completed, it has been found that the actual volume required is about double that suggested by the empirical equations. Consequently, a volume of 2,300 m³ was adopted for the site.

The surface area of the existing dam is about 960 m². Assuming a 1.5 metre depth of water for the 100 year event (to minimise safety concerns) and a batter of 1 in 3, a land

area of 1,900 m² is required. Based on existing contours, it should be straightforward to create a detention basin with this area, as shown indicatively on Figure 4.

3.4 Ground Conditions

At a meeting held with Council in relation to the project, the high erosion potential of the soils in the area was noted. In particular, it is understood that Council is concerned in relation to the concentrated discharge of runoff down the relatively steep bank of the Bremer River.

As noted in Section 3.1, runoff from the site for events up to the 100 year event will be directed to a detention basin located near the top of the bank of the Bremer River. As noted in Section 3.2, the detention basin will reduce the peak flow discharged from the developed site to 2.08 m³/s for the 100 year event. The slope of the bank between the detention basin and the Bremer River is about 1 in 13.5. At this slope, the entire 100 year event flow can be conveyed via twin 525 mm diameter pipes. This would allow the runoff from the site to be piped down the face of the river bank and outlet near the standing water level in the river, thereby avoiding any potential for the riverbank to scour.

However, the flow velocity in the pipes for the 100 year event will be approaching 5.5 m/s (a single pipe at a grade of 1 in 13.5 would convey the flow at a velocity greater than 6 m/s which is unacceptable according to QUDM). To minimise the potential for scour at the outlet of the pipes, it is proposed that a manhole and reduction in grade would be introduced near the pipe outlet to reduce the velocity of flow. The velocity of flow in a 1,200 mm diameter pipe at a grade of 1 in 200 would be less than 2.5 m/s. The energy loss associated with the reduction in velocity would be contained within the manhole and therefore unable to cause scour of the river bank. Standard outlet protection measures such as gabions would be used at the outlet of the larger pipe to protect the river bank as the width of flow expands and the velocity of flow reduces to a magnitude insufficient to cause scour.

A typical detail of the proposed works is provided in Figure 4.

4. WATER QUALITY MANAGEMENT

4.1 Construction Phase

During the construction phase, the potential exists for increases in the amount of pollutants, particularly sediment, exported from the site. However, given that the majority of works relate to the construction of buildings, the actual area of open area disturbed by the works will be relatively small.

During this period, an Erosion and Sediment Control Plan will be required as part of the overall Environmental Management Plan prepared for the construction phase.

Consequently, the site is classified as being low risk with respect to erosion and sediment control. However, it is still considered prudent to adopt appropriate erosion and sediment control measures during the construction phase.

It is considered that the completion of construction activities in accordance with the Sediment and Erosion Control Plan developed using the Institution of Engineers Australia publication *Soil Erosion and Sediment Control, Engineering Guidelines for Queensland Construction Sites* (June 1996) will minimise the nature of any adverse impacts during the construction phase.

4.2 Operational Phase

Given the size of the proposed development, it is considered that the development will be deemed as having a significant water quality impact under Council's Planning Scheme Policy No 3 (April 2004, p PSP3-10). As such, Set A of the water quality objectives specified in Table 2.3.1 of the Planning Scheme Policy No 3 are applicable. The water quality objectives for those indicators applicable to residential developments are listed in Table 3. It can be noted that the values presented in the table are median values.

Table 3 Water Quality Objectives

Indicator	Objective
Suspended solids	15 mg/L for combined wet and dry periods 90%ile < 100 mg/L for wet weather periods
Total Phosphorus	0.07 mg/L
Total Nitrogen	0.65 mg/L
Oils and grease	No visible films or odour
Faecal coliforms	1000 organisms/ 100 mL (minimum of 5 samples taken at regular intervals not exceeding one month, with 4 of 5 not exceeding 4000 organisms/ 100 mL)
Litter/ gross pollutants	No anthropogenic (man-made) material greater than 5 mm in any dimension.

In order to satisfy Council's water quality objectives, it will be necessary to treat runoff from the site. Based on previous modelling of developments, the following treatment train is proposed for the site:

- Gross pollutant traps.
- Bioretention system.

The gross pollutant traps would be proprietary devices located in the underground drainage system and would remove litter, coarse sediment and oil and grease. The traps would provide pre-treatment of runoff prior to its discharge to the bioretention system. The logical location for the bioretention system is in the base of the detention basin (refer Figure 4).

Bioretention devices consist of a vegetated storage area over an infiltration trench. Given the fall of land, it will be possible to drain the infiltration trench to the pipe draining the detention basin. The basin would be designed to store and treat the runoff volume associated with the three month design event (taken as half the one year event). Runoff in excess of the three month event would be drained via the outlet pipe for the detention basin.

Sizing of the gross pollutant traps and the bioretention system will be completed as part of detailed design. The relevant design parameters for the design will be as follows:

- Gross pollutant traps - treatment of runoff from three month event
- Bioretention systems - storage area sized to capture runoff from three month event
- runoff to drain over a period of not less than 24 hours.

It is expected that the ownership of the devices and responsibility for maintenance will remain with the Body Corporate for the development.

The likely performance of the system was assessed using the AQUALM program. The removal efficiencies of the treatment devices were adopted from Table C4.3 of the Brisbane City Council *Water Quality Management Guidelines* (Version 1, 2000). The adopted removal efficiencies are presented in Table 4. It can be noted that the efficiency of the bioretention system was taken to be the combined performance of a swale and infiltration system.

Table 4 Adopted Removal Efficiencies

Indicator	Removal Efficiency (%)	
	Gross Pollutant Trap	Bioretention System
Suspended Solids	40	82
Total Nitrogen	20	66
Total Phosphorus	20	66

The model data adopted for the analysis are summarised in Table 5.

Table 5 Adopted Model Data

Data	Source
Rainfall	Rainfall records for Ipswich 040101 with missing records generated from factored records for Amberley 040004. The generated rainfall record extended from 1978 to 1998 with a mean annual rainfall of 854 mm.
Evaporation	Mean monthly pan evaporation records were obtained from Samford, with an average annual evaporation of 1519 mm.
Rainfall-runoff relations	As specified in the Brisbane City Council publication <i>Guidelines for Pollutant Modelling in Brisbane</i> (Version 7, October 2003) for urban areas.
Pollutant Export	As specified in the Brisbane City Council publication <i>Guidelines for Pollutant Modelling in Brisbane</i> (Version 7, October 2003) for urban areas.

The AQUALM model considered the 21 year period from 1st January 1978 to 31 December 1998, with the results for the first year of simulation discarded in order to allow the moisture stores to reach equilibrium. The median concentrations predicted by the AQUALM model are listed in Table 6.

Table 6 AQUALM Model Results

Indicator	Model Result (mg/L)	Water Quality Objective (mg/L)	Meets Water Quality Objective?
Suspended Solids	1.9, combined wet and dry periods 30, 90 th %ile wet weather	15 100	Yes
Total Nitrogen	0.50	0.65	Yes
Total Phosphorus	0.04	0.07	Yes

With reference to Table 6, it can be concluded that the proposed treatment system, subject to detailed design, will allow the water quality objectives specified by Council, to be met.

At present, it is not possible to model indicators other than sediment and nutrients. However, it is considered that the proposed measures will provide adequate treatment with respect to oils and grease, faecal coliforms, and litter.

5. INFORMATION REQUEST ISSUES

Specific responses to the issues raised in the information request that are dealt with in this report are presented below.

2. (a) Stormwater

"The developer is requested to submit a stormwater management plan that identifies among other things the proposed methods of stormwater control for overland flows and constructed drainage systems from the proposed development. Further, the Developer is requested to submit preliminary hydraulic calculations for the major and minor storm events prepared by an RPEQ in accordance with QUDM which identifies the increase in stormwater runoff generated by the full development, the location and treatment of discharge points such that the proposed development will not adversely affect downstream properties"

The detailed response to this issue is provided in Section 3. It is proposed to construct a detention basin at the boundary of the development to offset the increase in peak flow produced by the development. Discharge from the detention basin will be piped to the base of the river bank in order to eliminate the potential for bank erosion.

2. (d) Flooding

"The developer is requested to submit a hydraulic and ground stability study prepared by a RPEQ for the subject site that addresses the following:

- (i) The likely impact of the proposed development, including associated earthworks, both upstream and downstream from the site, particularly in terms of changes to depth, duration or velocity of flood waters and duration of warning time;
- (ii) Geology of the site and any related problems;
- (iii) Instability features such as slips, soil creep etc
- (iv) Effects of existing vegetation and of any possible removal and or modification of same; and
- (v) Likely impacts in terms of watercourse bank stability."

The flooding investigation undertaken in relation to the site is described in Section 2. The impact of proposed filling is to be offset by the excavation of a volume greater than that filled. The analysis of the proposed works indicated a slight reduction in flood level for the proposed works.

Overall, it is considered that the works will have a negligible impact on the duration or velocity of flooding or warning times.

The Geology of the site is not likely to be affected by the development but this will need to be considered in detail as part of detailed design. Further, the development of the adjacent land suggests that soil creep and slips are not likely on this site. Again, this will be considered as part of detailed design.

In relation to item (iv), there is little vegetation on the site and therefore this item is not considered to be relevant. However, it would be expected that any works on the bank of the river would be accompanied by landscaping to ensure that a stable batter is achieved.

3. (a) Stormwater Quality

"In order to demonstrate compliance with the Scheme, the applicant is to supply either of the following:

- (i) A conceptual design Stormwater Management Plan (the "conceptual design SQMP") must be prepared by a suitably qualified and experienced professional and be developed in accordance with the *Australian Runoff Quality Design Guidelines, Australian Institute of Engineers, 2003* and must demonstrate, through appropriate pollutant export modelling (eg AQUALM or MUSIC), that the predicted pollutant levels in the stormwater from the Catchment will meet the pollutant levels identified in Table 1 below."

Section 4 of this report details the proposed water quality treatment measures for the site and presents the results of modelling of the conceptual system. The modelling indicated that the treatment measures will allow the water quality objectives defined by Council to be achieved.

6. CONCLUSION

A residential development is proposed for Chubb Street, One Mile (refer Figure 1 and Figure 2). In response to the information request issued by Council in relation to the proposed development, consideration has been given to the following issues, with outcomes as summarised below.

- **Flooding**

Modelling of the proposed development and compensatory earthworks has indicated that the development can proceed without adversely impacting on flood levels.

- **Local Drainage**

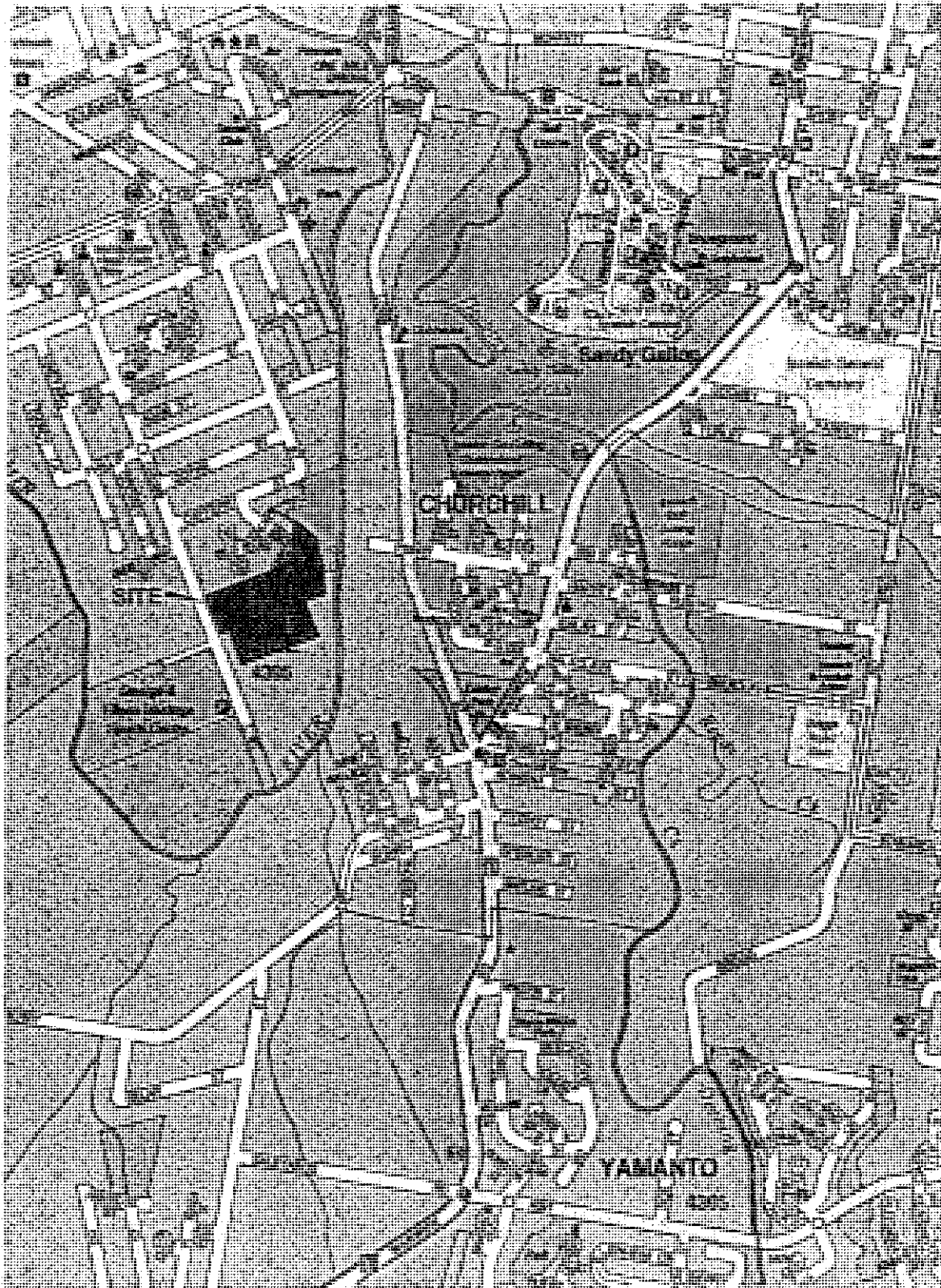
A detention basin will be constructed to reduce the peak flow from the developed site to match that produced for the existing case.

- **Water Quality**

A stormwater treatment system has been proposed for the development that will allow the water quality objectives identified by Council to be achieved.

FIGURES

- Figure 1 Locality Plan
- Figure 2 Proposed Development and New Cross-sections
- Figure 3 Sheet 40 of Ipswich Rivers Flood Study
- Figure 4 Detention Basin Size



Location plan sourced from "Brisbane, Gold coast & Sunshine
Coast 2001 USD - CD-ROM" Universal Press Pty Ltd.

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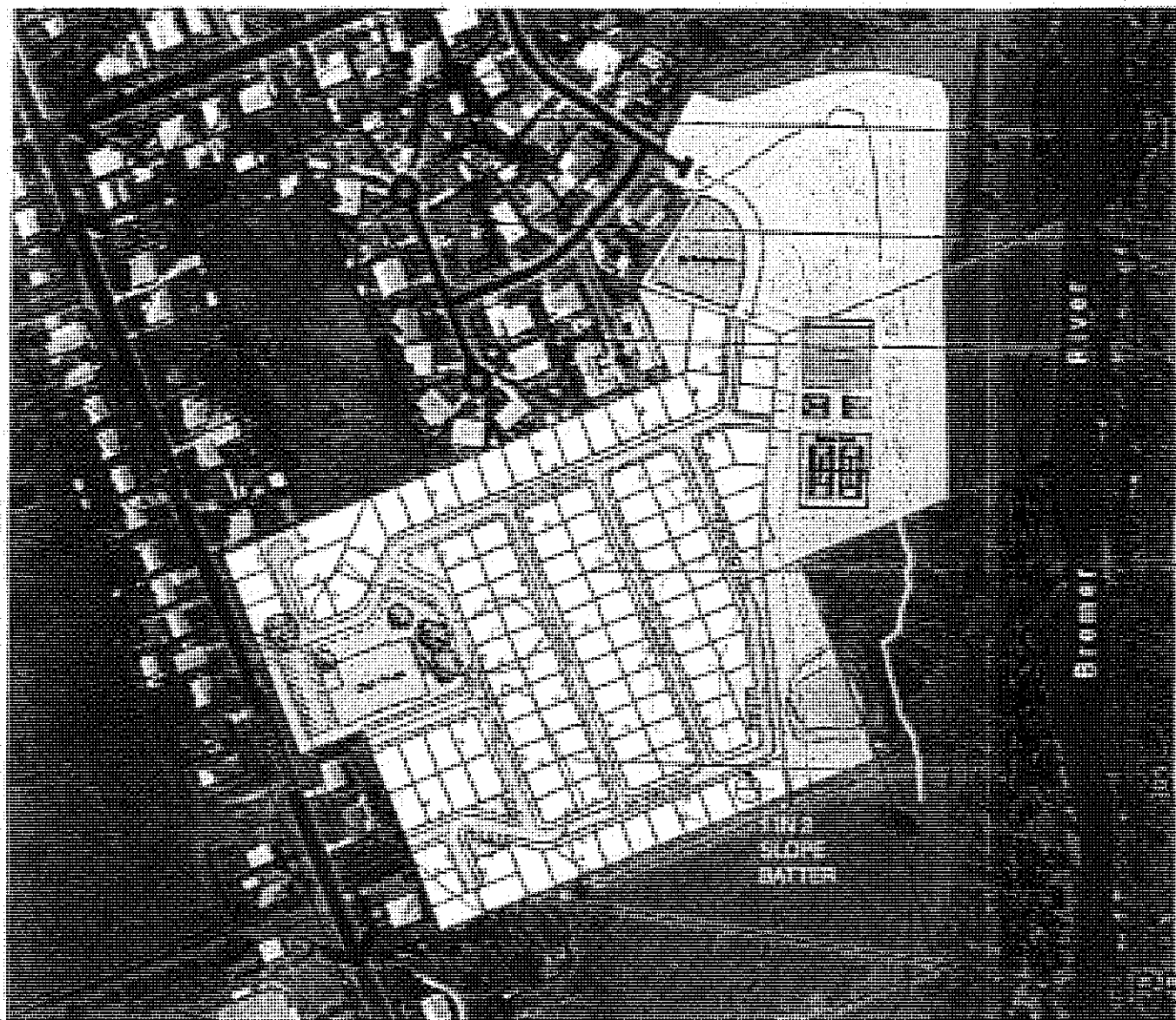
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REF: 1

N.T.S.

FIGURE 1 LOCALITY PLAN

Project No.: 3500/49

Sheet 04 of 11 August 2005 1:10pm



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BREM1003050
BREM1003000
BREM1002900
BREM1002800
BREM1002700

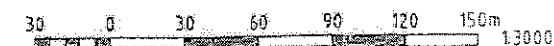
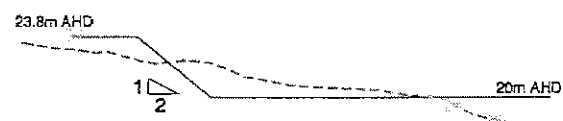
LEGEND

- Proposed Development Fill Limit
- Proposed Excavation Limit
- MIKE 11 Cross-section

BREM1002600

TYPICAL SECTION

Scale 1:2000



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Scale 1:3000 (A4)

FIGURE 2

PROPOSED DEVELOPMENT AND NEW CROSS-SECTIONS

Project No.: 3500/49

DATE: 10/08/05



Scale 1:20000 (A4)

FIGURE 3
SHEET 40 OF
IPSWICH RIVERS FLOOD STUDY

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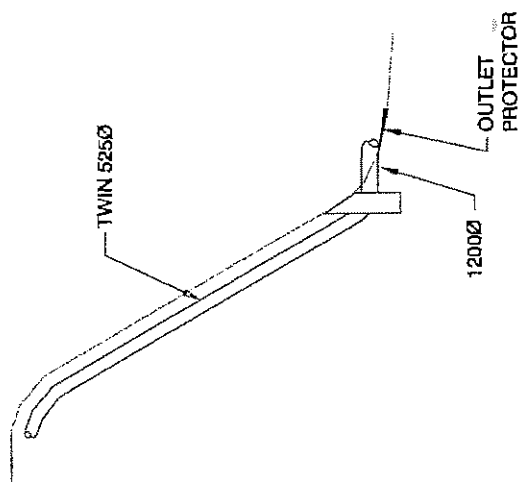
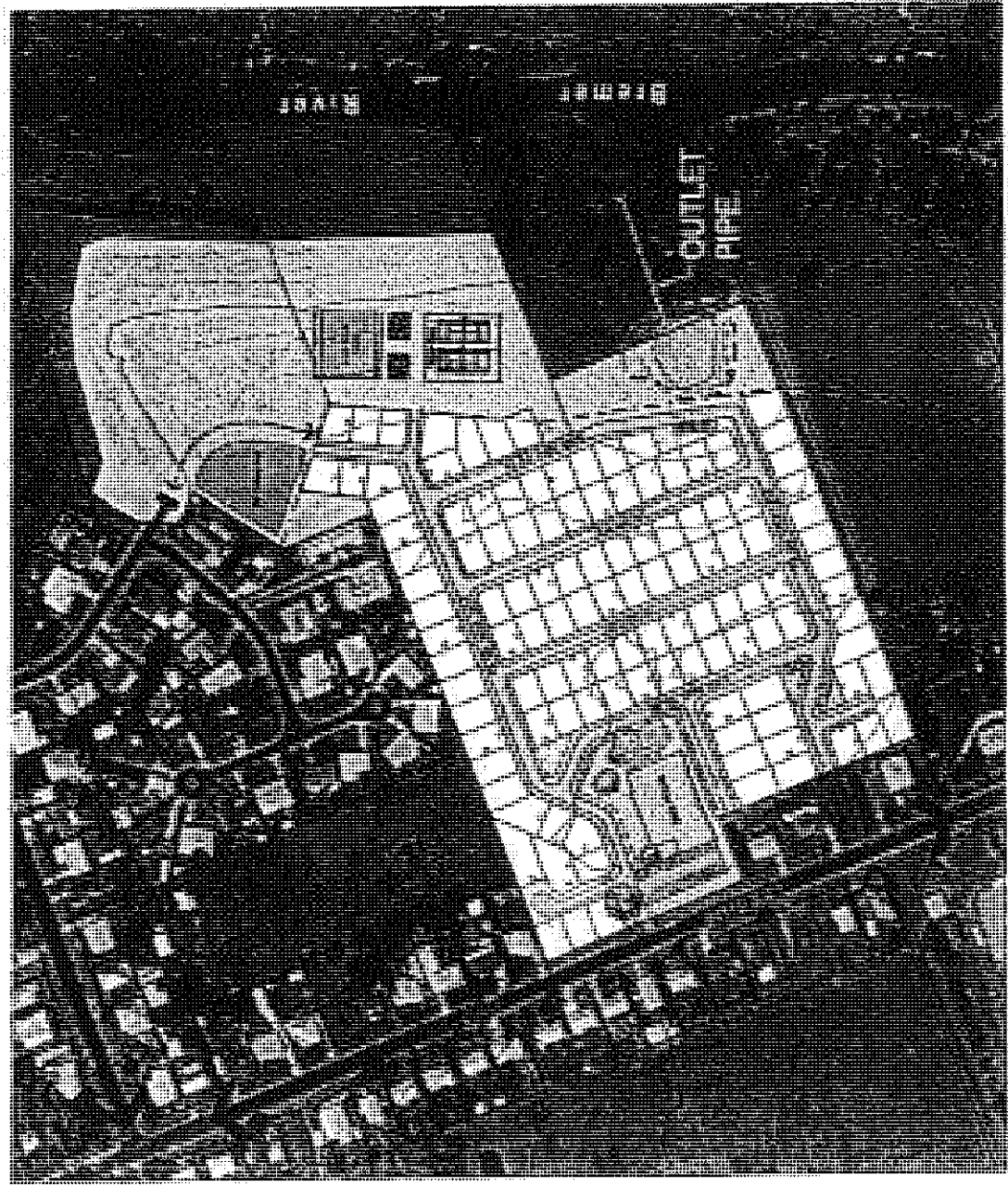
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Project No.: 3500/49

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PROFILE OF OUTLET PIPE
SCALE: NTS

Scale 1:4000 (A4)

FIGURE 4
DETENTION BASIN SIZE

Project No.: 3500/49
1871 BAIF STANSEA SUB - 15266

LEGEND

Proposed Detention Basin

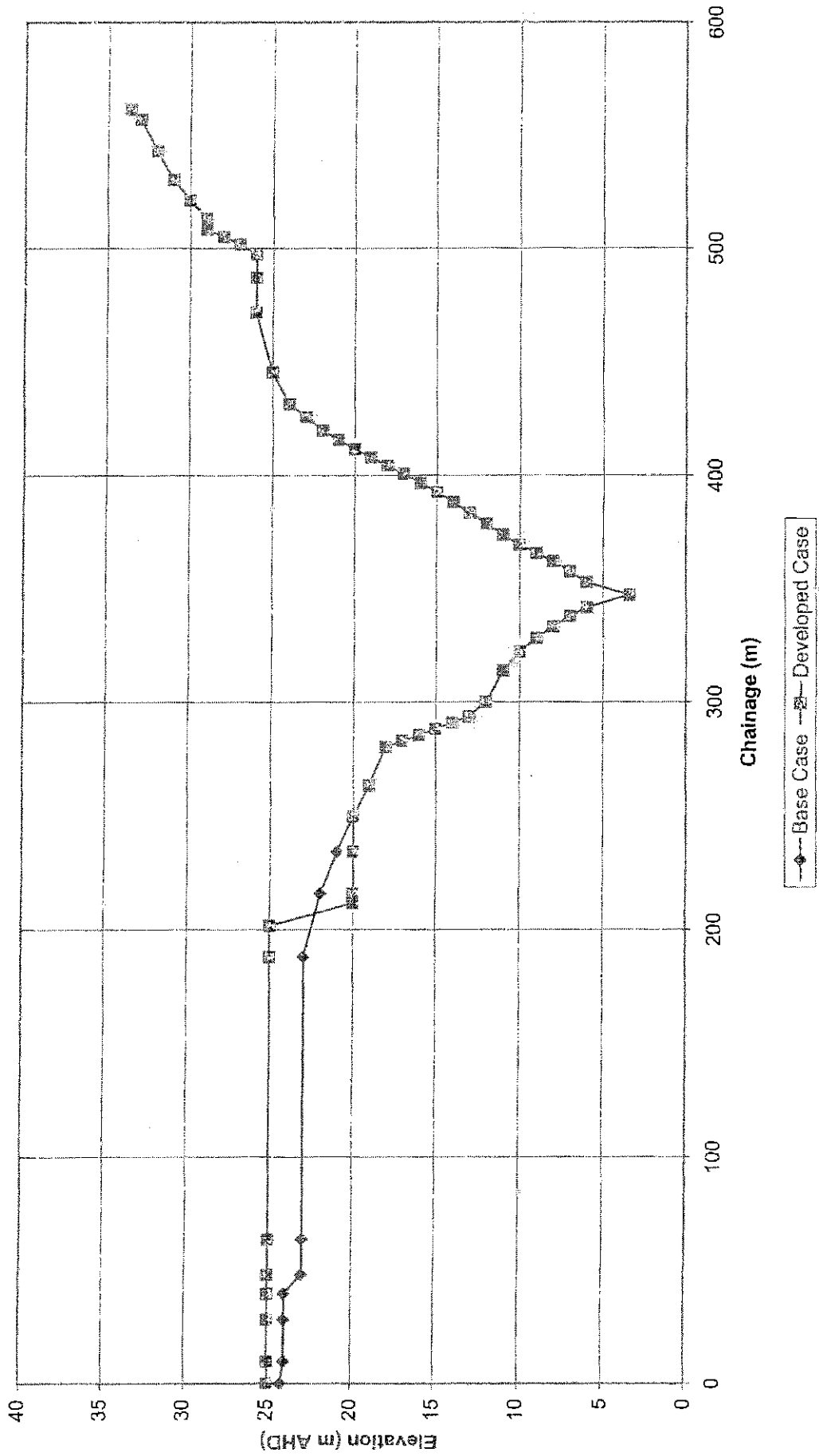
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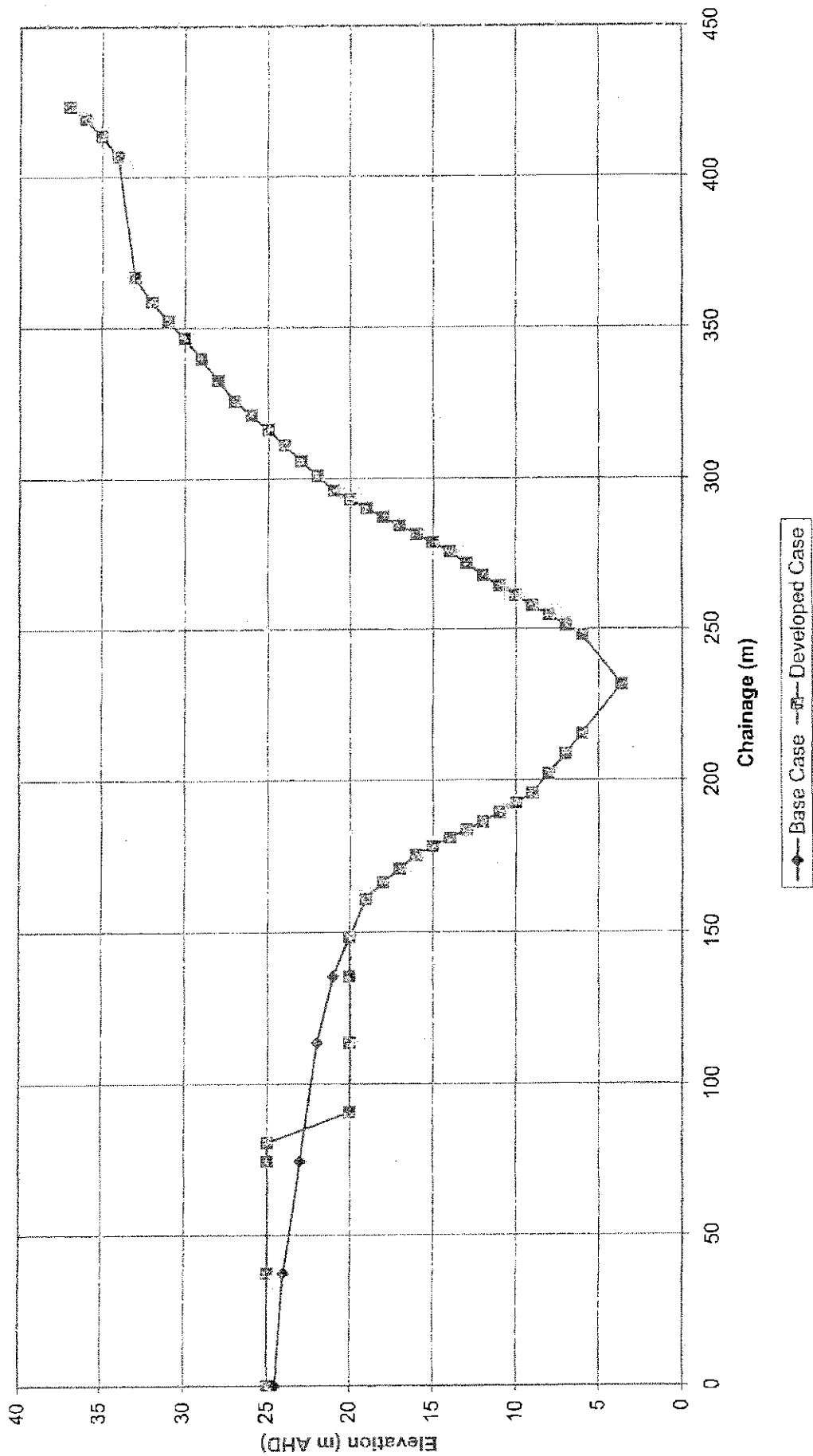
APPENDIX A

MIKE 11 CROSS-SECTIONS

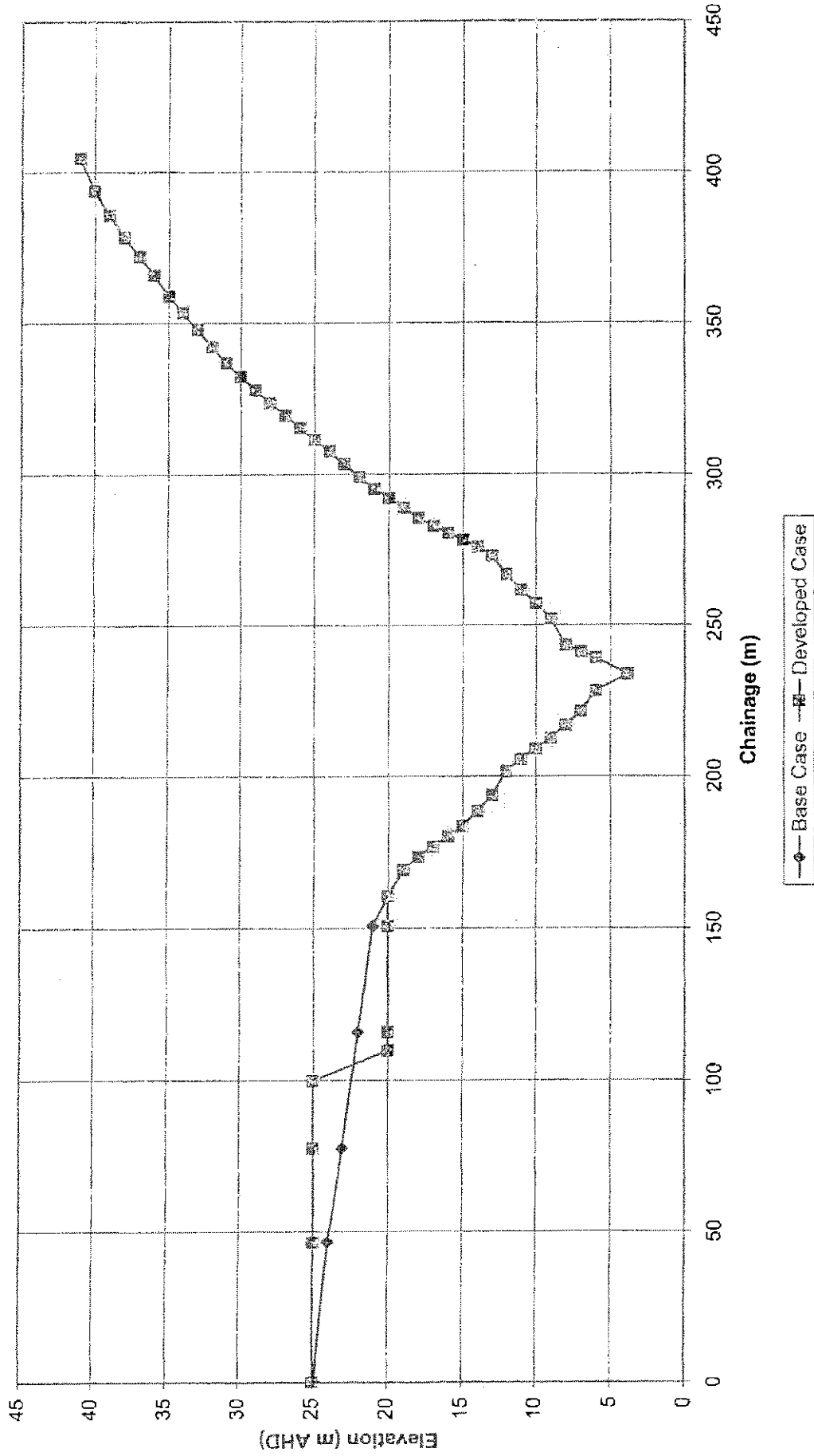
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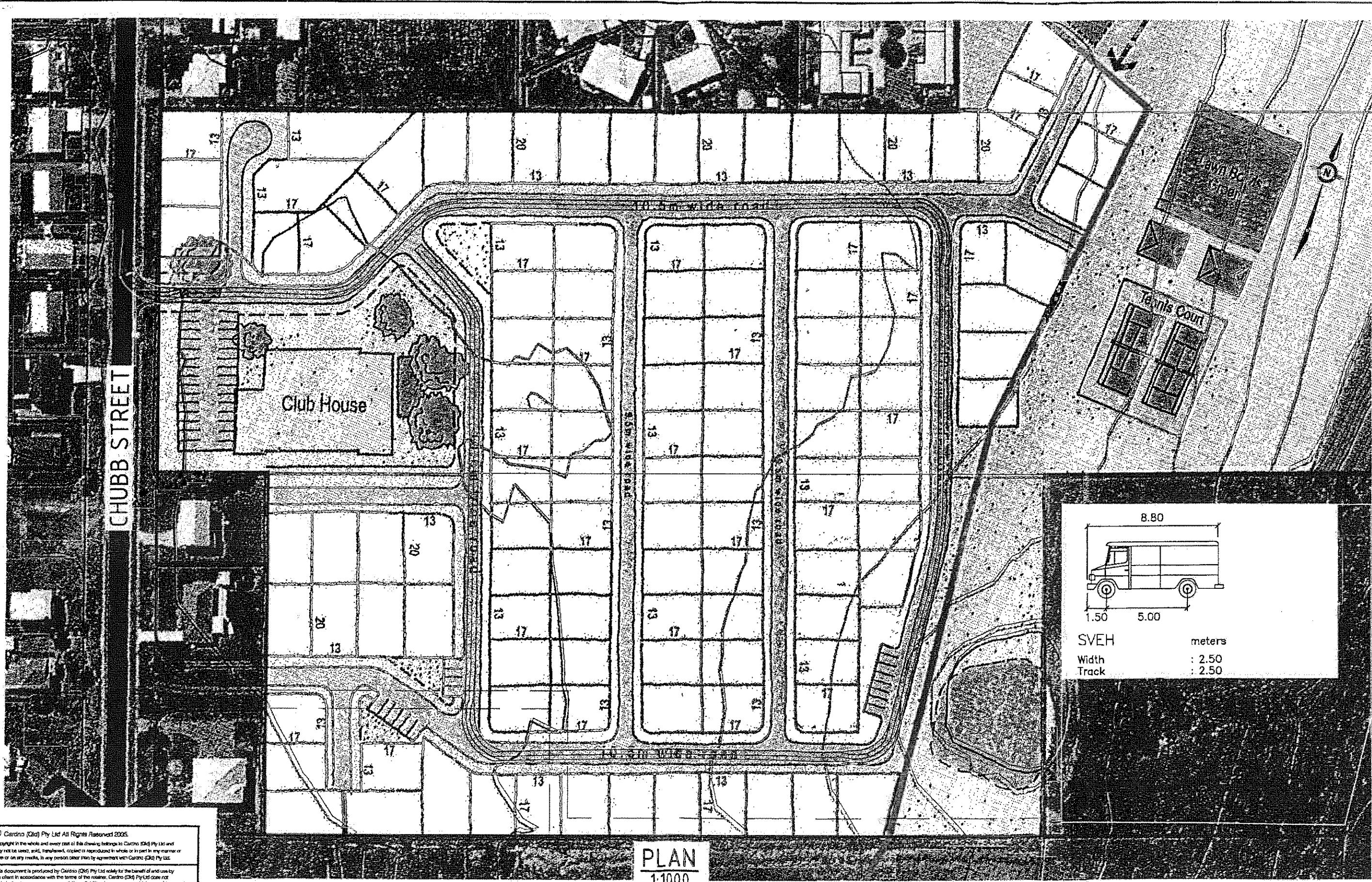
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PLAN
1:1000

DESIGNED:	A3
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Toowoomba	(07) 4637 8122	(07) 4637 8155

GALAXY PROJECT HOUSING PTY LTD
 DEVELOPMENT APPLICATION SKETCH
 DESIGN VEHICLE TURNING PATHS

DATE:	10-09-2005	Rv.
DRAWING No:	3500/49/01-001	

Our Ref 3500/49 :mpg

Contact Martin Gies



11 August 2005

H & H Lee Pty Ltd
c/o Continuum Group
18 Picton Drive
ALEXANDRA HILLS QLD 4161

Attention: [REDACTED]

Dear Sir

**CHUBB STREET IPSWICH
ACCESS**

As requested, we have prepared a response to the Council information request dated 24 March 2005 relating to access.

Item 2(b) of the information request is as follows:

"The Developer is requested to provide information that clearly demonstrates how the largest design vehicle anticipated to enter and exit the site can do so in forward gear. Turning paths and manoeuvres shall be in accordance with the Australian Standard (AS2890 series)."

Subsequent to the receipt of the information request, the development layout has been significantly revised to improve traffic flow. The attached plan demonstrates that the largest design vehicle anticipated to enter the site can traverse the site in forward gear.

It is considered that the revised layout allows the Council requirement for access to be satisfied.

We trust that this response is adequate for your requirements. If you have any further queries, please do not hesitate to contact us.

Yours faithfully



Principal
for Cardno

Enc: Cardno Plan 3500/49/01-001

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DAVID BRETT & ASSOCIATES PTY. LTD.

ANNEXURE 8 Traffic Assessment

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

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PROPOSED RESIDENTIAL DEVELOPMENT

**CHUBB STREET
ONE MILE**

TRAFFIC REPORT

**PROJECT NO: 355 J7
16 August 2005**

1.0 INTRODUCTION

H & H Lee Pty Ltd proposes to develop land at 84 and 100 Chubb Street and 8 Georgette Street, One Mile for 118 'Over 50' Accommodation units.

The land is described as Lot 59 on RP 849800 and Lot 93 on RP 8310 and Lot 14 on RP 859820.

Following submission of an initial application for Material Change of Use and Reconfiguration of a Lot, an Information Request was received dated 30 March 2005.

Amongst other matters, a full traffic report was requested that:

- Estimated peak hour traffic flows generated by the proposal;
- Recommended any specific measures to be undertaken to minimise the impact on local roads;
- Any proposed traffic calming devices to be sympathetic to the movement of buses; and
- Any improvements necessary to the Siemons Street and Old Toowoomba Road intersection.

This report addresses this aspect of the information request. Other issues have resulted in changes to the proposal which have been described by others.

The amended proposal is shown on PMM Plan No 20038-03A dated July 2005.

2.0 ROAD NETWORK

Figure 1 shows the site in relation to the surrounding road network.

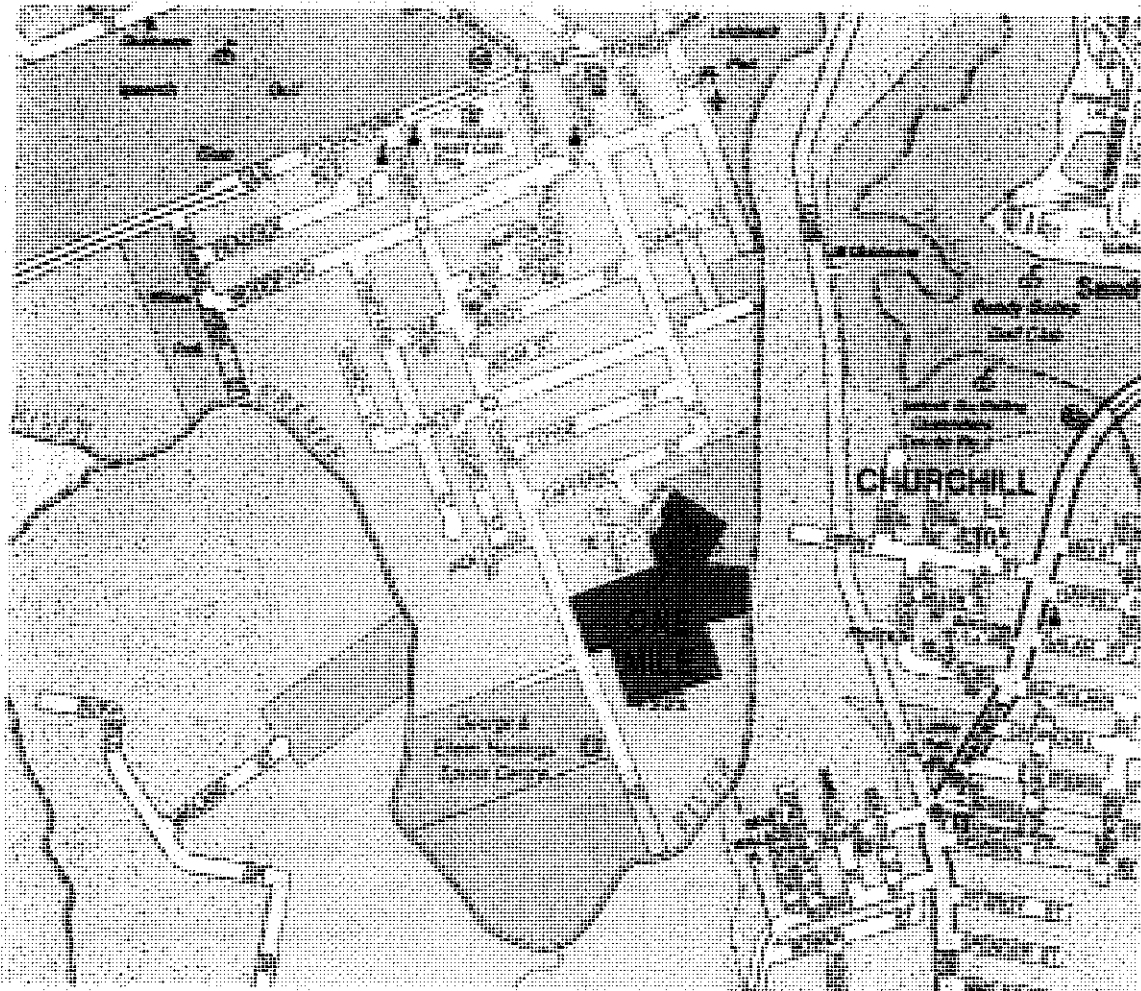


FIGURE 1
Locality Plan

One Mile is a land locked pocket bound by the Bremer River with all vehicular access to the area provided by Old Toowoomba Road. The site is located at the southern end of the pocket with frontage to Chubb Street and access to both Chubb Street and Georgette Street.

Because of the confined nature of the area, Chubb Street and Siemons Street (which are the main collector roads) carry only moderate traffic volumes.

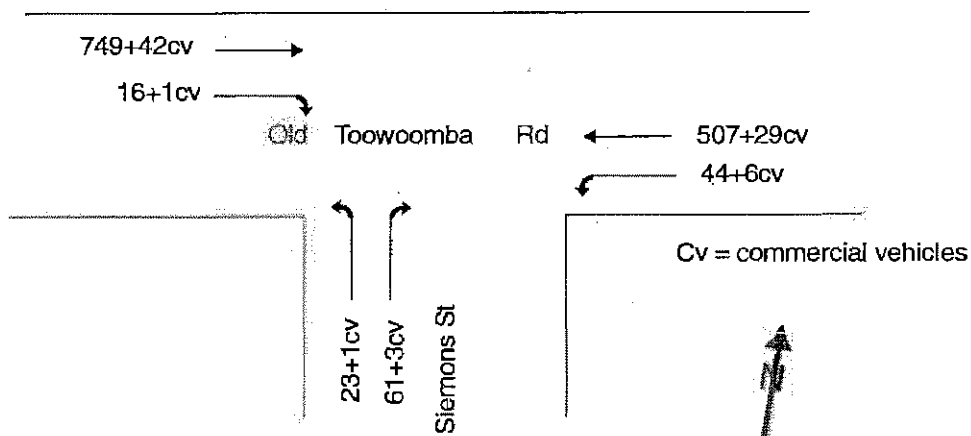
The information request specifically referred to the intersection of Siemons Street with Old Toowoomba Road. This intersection is a 'Give Way' controlled T intersection with an Austroads Type A right turn from Old Toowoomba Road into Siemons Street (ie sufficient width for the turning vehicle not to block the through movement).

A morning and evening traffic count was undertaken at this intersection in July 2005 and the

results of this count are set out in Figure 2 below.

FIGURE 2
A) Morning Peak - Existing Traffic Flows
Siemons Street/Old Toowoomba Road

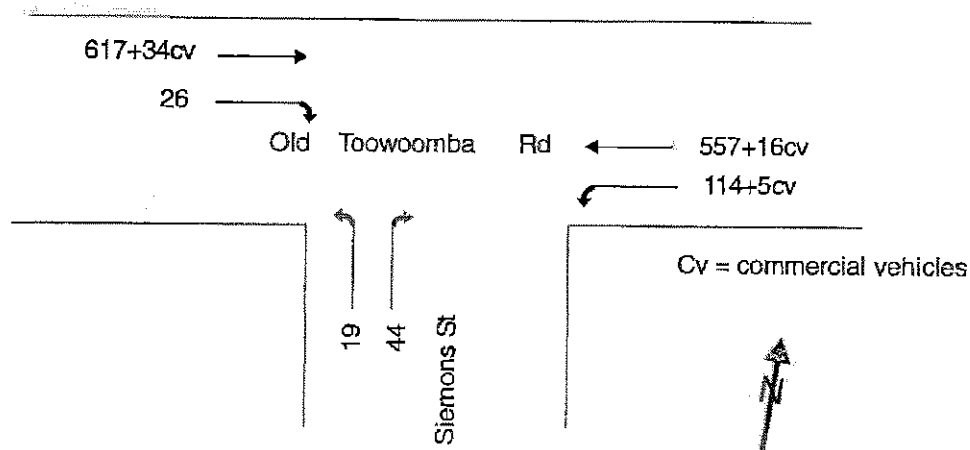
Time	East on Old Toowoomba Rd	Right to Siemons St	Left from Siemons St	Right from Siemons St	Left to Siemons St	West on Old Toowoomba Rd
	→	↘	↖	↗	↙	←
7.00-7.15	88+11cv	3	5	13	2	100+5cv
7.15-7.30	100+4cv	1	2	13+1cv	4	102+4cv
7.30-7.45	106+10cv	1	5	6+1cv	4+2cv	79+12cv
7.45-8.00	148+14cv	3	4	10+1cv	8+1cv	125+8cv
8.00-8.15	195+8cv	4	7	16+1cv	9	162+6cv
8.15-8.30	233+16cv	4+1cv	5+1cv	14+1cv	17+1cv	119+7cv
8.30-8.45	173+4cv	5	7	21	10+1cv	101+8cv
8.45-9.00	144+12cv	3	4	16	18+3cv	108+3cv



A) Morning Peak - Thursday 14 July 2005 Peak (7.45am-8.45am)

**B) Evening Peak - Existing Traffic Flows
Siemons Street/Old Toowoomba Road**

Time	East on Old Toowoomba Rd	Right to Siemons St	Left from Siemons St	Right from Siemons St	Left to Siemons St	West on Old Toowoomba Rd
	→	↘	↙	↗	↖	←
3.00-3.15	156+5cv	6	6	7	29+1cv	165+10cv
3.15-3.30	174+10cv	7	7	10	30+1cv	125
3.30-3.45	155+8cv	8	4	10	29	140+2cv
3.45-4.00	132+11cv	5	2	17	26+3cv	127+4cv
4.00-4.15	150+5cv	13	8	12+3cv	21+1cv	142+2cv
4.15-4.30	127+4cv	6	7	12	21	159+5cv



B) Evening Peak - Tuesday 5 July 2005 Peak (3.00pm-4.00pm)

3.0 IMPACT OF PROPOSED DEVELOPMENT

3.1 VEHICLE GENERATION

The proposal is for 118 'Over 50' accommodation units. The level of vehicle generation for this type of facility is considerably lower than that of normal housing.

The draft Queensland Transport publication Transport Assessment Guide suggests a peak rate of 0.1-0.2 trips/unit for this type of dwelling compared to 0.4 trips/unit for high density dwellings and 0.8 trips/unit for normal detached dwellings. If the upper limit of the suggested range is adopted (ie 0.2 trips/unit) then the development would generate approximately 24 peak hour trips with 6 in and 18 out in the morning peak and 16 in and 8 out in the evening peak.

3.2 ASSIGNMENT TO ROAD NETWORK

The amended internal road layout as shown on the Conceptual Layout Plan has all vehicle access to Chubb Street with only pedestrian access to Georgette Street. Consequently, most generated traffic would use only Chubb Street to reach Old Toowoomba Road.

There could be some generated traffic that uses Siemons Street as a more direct access to the local shopping facilities located at the Siemons Street/Old Toowoomba Road corner. However, this component of the generated traffic is likely to park in Siemons Street while visiting the shops rather than enter Old Toowoomba Road.

Figure 3 below shows the expected assignment of generated traffic to the road network.

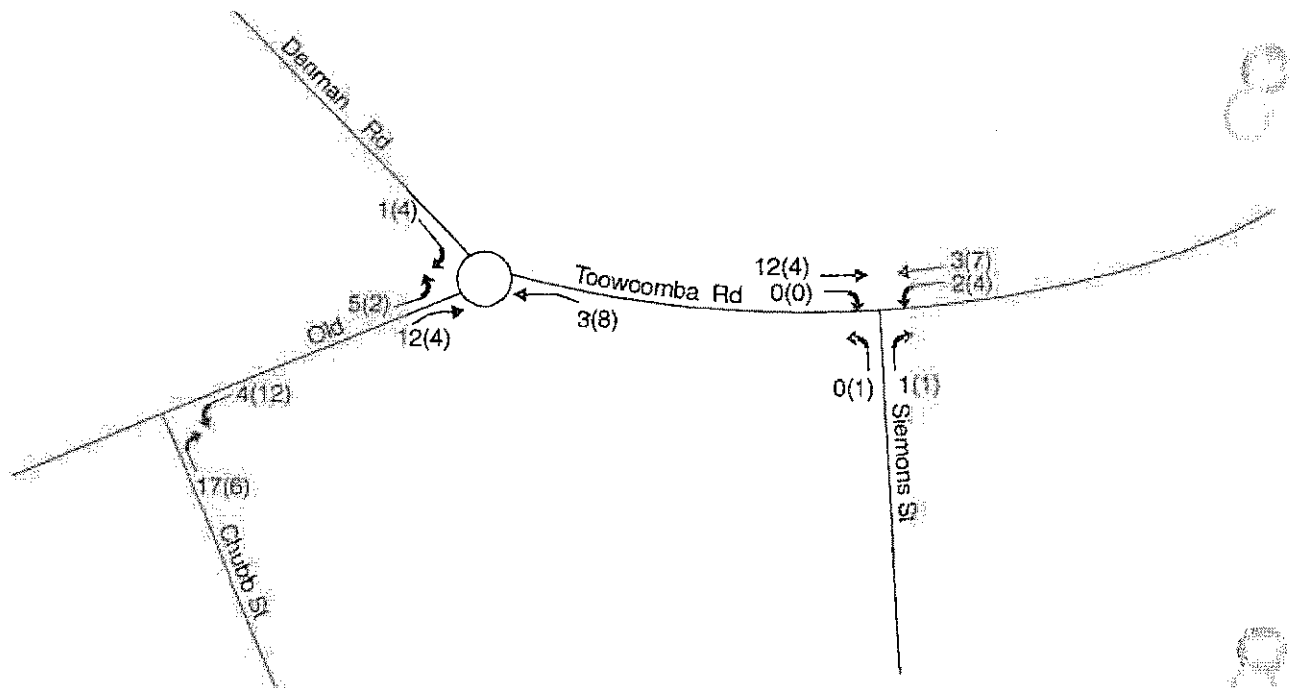


FIGURE 3
Assumed Distribution of Generated Traffic
AM(PM)

3.3 EFFECT ON INTERSECTION CAPACITY

An analysis of the Old Toowoomba Road/Siemons Street intersection was undertaken using the aa Sidra 2.0 program. A future design year of 2016 was adopted and a 3% per annum growth rate assumed for through traffic on Old Toowoomba Road.

Table A shows the results of this analysis.

TABLE A
Operating Parameters Old Toowoomba Road/Siemons Street

Scenario	Sidra File	Degree of Saturation (highest)	Practical Spare Capacity (lowest)	Longest 95 th Percentile Queue Length (m)	Level of Service	
					Intersection	Worst Approach
Base 2005 AM	355 OTR1	0.419	91%	14	A	A
Design 2005 AM	355 OTR2	0.425	88%	15	A	A
Base 2016 AM (3% pa growth)	355 OTR3	0.914	-12%	44	E	E
Design 2016 AM	355 OTR4	0.956	-16%	50	E	E
Base 2005 PM	355 OTR5	0.345	132%	8	A	A
Design 2005 PM	355 OTR6	0.347	131%	8	A	A
Base 2016 PM (3% pa growth)	355 OTR7	0.524	53%	17	B	B
Design 2016 PM	355 OTR8	0.549	46%	18	B	B

The results set out in Table A indicate that if a background traffic growth rate of 3% per annum or higher is recorded over the next ten years, then there will be long delays in turning right out of Siemons Street (delays at present are sufficient at peak times to cause some drivers to use the Old Toowoomba Road/Denman Road roundabout as a safer and faster means of turning right from Siemons Street).

However, the impact of the proposed development can be seen to be relatively minor. Given the limited nature of the One Mile catchment area, it is likely that signalisation of this intersection would not be warranted. If delays become excessive, then turning traffic will divert to the acceptable alternative of using Chubb Street and to some extent the level of congestion at the Old Toowoomba Road/Siemons Street intersection will be self regulated.

If necessary, the right turn movement out of Siemons Street could be banned and this movement transferred to Chubb Street or the roundabout used to facilitate the turn.

No capacity problems are evident at either the Old Toowoomba Road/Denman Road roundabout or the Chubb Street/Old Toowoomba Road T intersection.

3.4 TRAFFIC CONTROL IN CHUBB STREET

Local and school buses travel on Siemons Street, Cafferky Street and Chubb Street.

These buses must mount the centre island of the roundabouts constructed in Chubb Street at the intersections of Phillip Street and Woodford Street but as these intersection treatments are existing, no changes are proposed. Given the very low generated traffic volume expected of the proposed development, no new traffic control features are considered to be necessary in Chubb Street.

4.0 SUMMARY AND CONCLUSIONS

The proposal is to develop land at Chubb Street, One Mile for 118 'Over 50' Accommodation Units.

The area of One Mile is constrained and protected from traffic growth by the Bremer River. However, because of this constraint, all access to the area is restricted to Old Toowoomba Road.

Concerns were raised by Council regarding the likely impact of the development on the Old Toowoomba Road/Siemons Street intersection. Analysis of the operation of this intersection suggests that it will be at capacity within a ten year design horizon if moderate background traffic growth is experienced on Old Toowoomba Road. However, no changes are proposed for the intersection since:

- The operating level of the intersection will be largely self regulated with acceptable alternative routes available;
- The traffic generated by the proposed development will be relatively low and will have minimal impact on the operational level of this intersection.

From a traffic engineering viewpoint, the proposal is considered to be acceptable.

DAVID BRETT & ASSOCIATES PTY. LTD.

ANNEXURE 9 Noise Issues

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

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Correspondence : PO Box 5020, Brassall Qld 4305 A.B.N. 54 010 980 346 B.S.A. LICENCE No. 067680

Facsimile : (07) 3281 0766





Ron Rumble Pty Ltd
Consulting Acoustical & Vibration Engineers

ABN: 95 010 264 930

19 August 2005

Ref: ML/05/5196.rpt

H & H Lee Pty Ltd
c/o Bradshaw and Associates
PO Box 380
CARINA QLD 4152

**Proposed Over Fifty's Development and Sporting Facilities
Chubb Street, One Mile
Noise Issues**

Sir,

I refer to your correspondence of 3rd August 2005 regarding the proposed development at Chubb Street in One Mile. In accordance with your request, I have conducted a review of potential noise issues for the proposed development.

Proposed Development

The proposed development is located on the southern end of Chubb Street in One Mile. The site is currently a sporting facility (Tennis Courts and Indoor Sporting Facility) and vacant paddocks. It is bounded to the north and to the west by residential properties.

It is proposed to retain the Indoor sporting facility building and demolish the tennis courts. The balance of the site will be developed mainly for residential purposes, with new tennis courts and a lawn bowls green at the eastern end. The proposed layout is shown on Figure 1.

It is proposed to locate manufactured home on each of the lots. Each lot and dwelling will be leased. There will be an on-site manager to maintain the site and manage day to day issues.

The indoor sporting facility building will be retained as a residents' club-house. It will contain facilities such as a gym, cinema and common rooms. The building will remain relatively unchanged. The tennis courts and lawn bowls green will only operate during daylight hours as they are not lit. All facilities will be administered and supervised by the on-site manager.

Access to the site will be provided from Chubb Street via the existing clubhouse driveway. There will be a pedestrian link between site and the end of Georgette Street.

Noise Issues

Following an inspection of the site and a review of the proposed site layout, it has been concluded that the only potential noise issue is noise emission to existing residents from the tennis courts at the new north-eastern corner of the site. All other issues are insignificant.

Discussion of Tennis Court Noise

The proposed tennis courts are 85 metres from the nearest existing residence. According to advice from Ipswich City Council, noise from tennis courts would be reasonable if it were comparable to or less than other noises that already exist in the area.

To gain an appreciation of the existing noise environment at the site, noise logging was conducted in the rear yard of the residence located at the end of Georgette Street over a period of 2 days in March 2005. Through the day period, (between 7am and 6 pm), when the tennis courts will operate, ambient noise levels were recorded as shown in Table 1

Table 1: Ambient Noise Levels

Day	Time of Day	Average ¹ Noise Levels (dBA)				
		max L _A ²	L _{A01} ³	L _{A10} ⁴	L _{Aeq} ⁵	L _{A90} ⁶
Weekday	7am – 6pm	71	57	48	48	39

Noise measurements have previously been carried out during tennis fixtures being played at the University of Queensland courts at St Lucia. With adult male players, the average maximum noise level (L_{A max}) at a distance of 20m from the centre of the court was found to be 55dBA. For female players and juniors, the noise levels were typically 5dBA lower.

Using this data, it has been possible to calculate the likely noise emissions at the nearest affected residence, by making an appropriate adjustment for distance attenuation over 85 metres.

At this distance, the average maximum noise emissions under worst-case conditions of male adult play, would be 43dBA (L_{A max}). As tennis noise would sound different from existing ambient noise in the area, it would be appropriate to add a penalty adjustment of 5dBA. L_{A max adj} for the tennis activities would be 48dBA (43 + 5dBA).

¹ Averages are presented as arithmetic averages except for the L_{A90} parameter which is presented as the average below the median.

² max L_A represents the maximum A-weighted noise level within each 15 minute sample period.

³ L_{A01} represents the A-weighted noise level which is exceeded for 1% of the time.

⁴ L_{A10} represents the A-weighted noise level which is exceeded for 10% of the time.

⁵ L_{Aeq} represents the equivalent or energy-averaged A-weighted level.

⁶ L_{A90} represents the A-weighted noise level which is exceeded for 90% of the time.

Conclusions

From Table 1, it can be seen that the existing ambient noise environment has average maximum noise levels ($L_{A\ max}$) of 71dBA. In fact the ambient noise exceed 57dBA for 1 percent of the time (L_{A01}). It can be concluded that tennis noise would be far lower than the existing ambient noise.

Regards,
Ron Rumble Pty Ltd



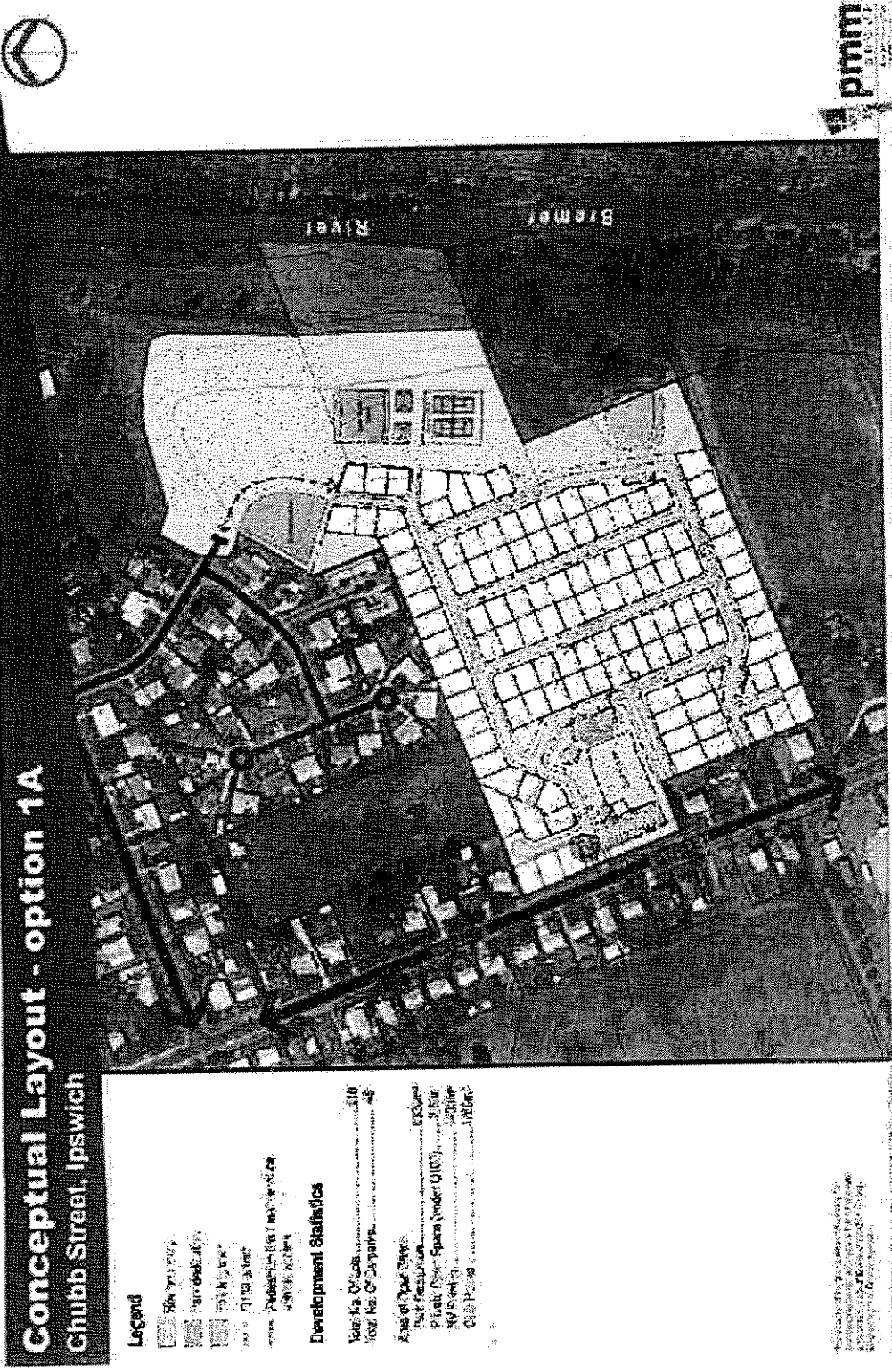


Figure 1 - Proposed Site Layout

DAVID BRETT & ASSOCIATES PTY. LTD.

ANNEXURE 10 Assessment of marine vegetation

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

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2

20

20



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H & H Lee Pty Ltd
c/o Bradshaw and Associates
PO Box 380
Carina 4152

19th August 2005

Dear Sir/Madam

Re: Information request for Chubb Street, Ipswich

This letter is in response to the Department of Primary Industries and Fisheries information request for assessment of marine vegetation at Chubb Street in One Mile, Ipswich.

A site inspection was conducted on 11th July 2005 by 4site Co Pty Ltd to determine the nature and level of marine vegetation that exists in the Bremer River adjacent to the site. Due to access difficulties, the site was surveyed along the northern end of the property boundary where the property adjoins the Bremer River.

Despite recent rainfall, the site consisted of a shallow river system with no flow during the time of inspection. The river was approximately 3-4 metres wide at the inspection point, but varied in width both downstream and upstream. The water was turbid in nature at the time of our inspection.

The site inspection found there were no marine plants present within or adjacent to the development site. The site contained a narrow riparian zone with riparian vegetation abutting the river's edge.

The proposed development consists of works located above the Q20 flood levels, therefore no aquatic features or riparian vegetation will be disturbed as a result of the development. Due to the lack of marine vegetation, and the fact that development of the site is not disturbing the riparian zone, it is anticipated any impacts to the Bremer River will be negligible.

MANAGING DIRECTOR - NORRIE SANDERS BSC M APP SC GRAD DIP MGT MEIA
DIRECTOR - DAVID CARBERRY B APP SC (HONS) MEIA
BUSINESS MANAGER - ALANA FOOTE

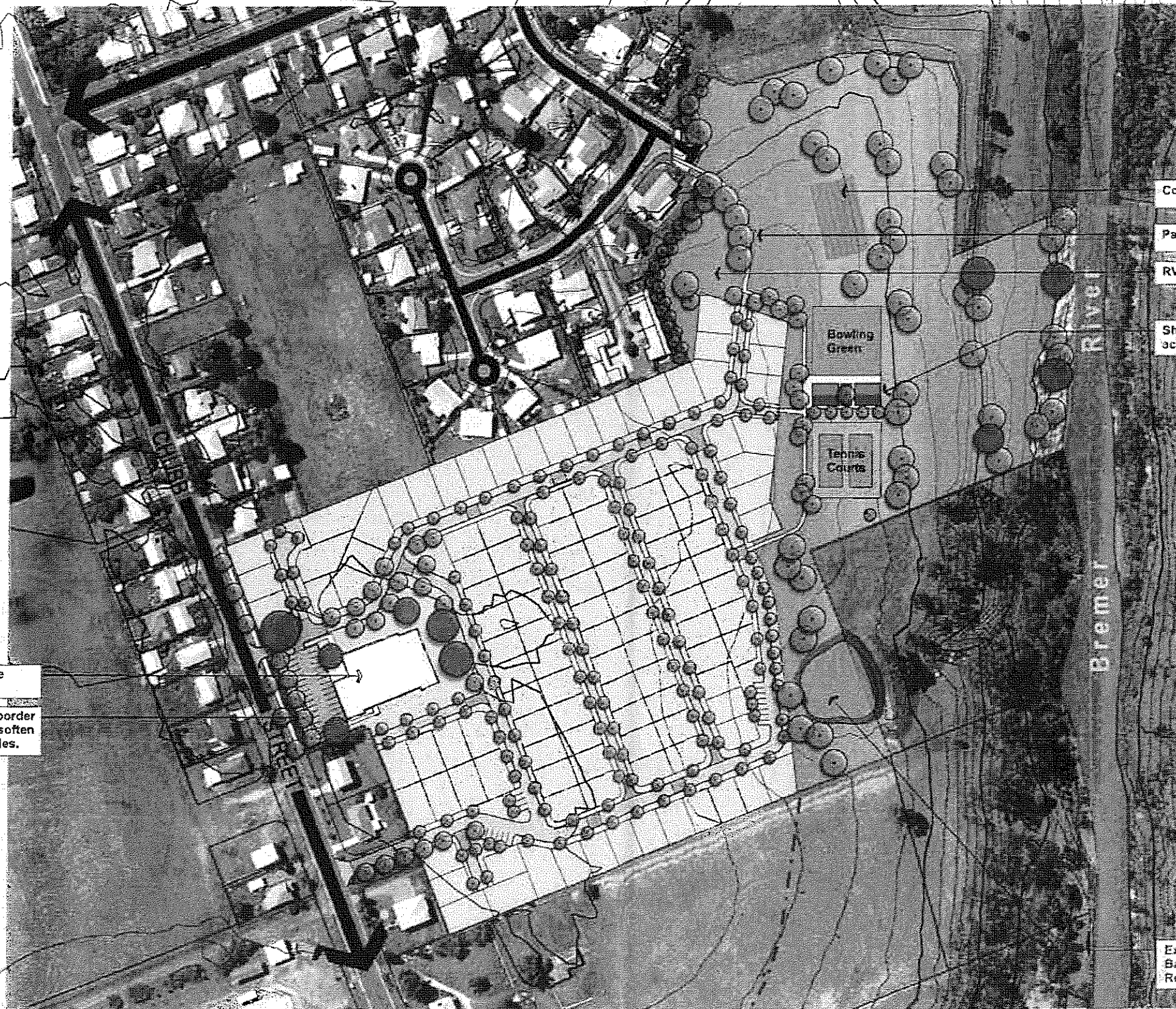
Should you have any questions, please do not hesitate to contact me on 3257 3375.

Yours sincerely



Environmental Consultant

MANAGING DIRECTOR - NORRIE SANDERS BSC M APP SC GRAD DIP MGT MEIA
DIRECTOR - DAVID CARBERRY B APP SC (HONS) MEIA
BUSINESS MANAGER - ALANA FOOTE










- Communal vegetable/herb garden
- Pathway connection to Georgette Street
- RV parking area
- Shelter structures for communal recreation activities

Existing Communal Building to be refurbished.

New shade trees to car park and border planting of low to med shrubs to soften appearance of car park and vehicles.

LEGEND

-  New allotments
-  Pedestrian accessible path 1.5m wide
-  Internal road network - low speed vehicular environment, shared with pedestrians.
-  Existing trees to be retained - refer drwg 1916-03
-  Street trees in turf. Refer to Plant Palette.
-  Recreation space - shade trees in grass. Refer to Plant Palette.
-  Riparian buffer - indigenous trees and groundcovers/weed removal. Refer to Plant Palette.

Existing dam for retention of on-site stormwater, Banks planted with stabilizing local native groundcovers. Refer to Plant Palette.

Chubb Street, Ipswich
 Landscape Concept Plan
 Drawing 1916-01
 Issue A: 22 Aug 2005
 Scale 1:1000 @ A1 size

LANDSCAPE CONCEPT

MULTIPLE RESIDENTIAL (AGED ACCOMMODATION UNITS)
 84 & 100 CHUBB STREET, IPSWICH

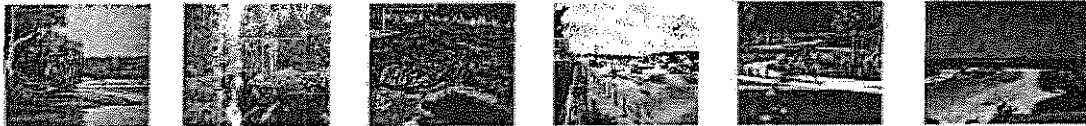


verge
 URBAN LANDSCAPE ARCHITECTURE



Cardno
Engineering the Future

CHUBB STREET DEVELOPMENT, ONE MILE



STORMWATER MANAGEMENT PLAN AND FLOODING REPORT

H & H LEE



Cardno (Qld) Pty Ltd
ABN 57 051 074 992

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9 August 2005
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Document Control

Version	Date	Author		Reviewer	
		Name	Initials	Name	Initials
2	9 August 2005				

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CHUBB STREET DEVELOPMENT, ONE MILE STORMWATER MANAGEMENT PLAN AND FLOODING REPORT

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Figure 4	Detention Basin Size

APPENDICES

APPENDIX A MIKE 11 CROSS-SECTIONS

1. INTRODUCTION

It is proposed to develop the land at 8 Georgette Street, 84 Chubb Street, and 100 Chubb Street, One Mile (refer Figure 1) for residential purposes (refer Figure 2).

In response to the development application lodged with respect to the site, Council issued an information request dated 24 March 2005. This report provides a response to the information request in relation to the following issues.

- flooding;
- local runoff; and
- water quality.

2. BREMER RIVER FLOODING

2.1 General

The Bremer River is located on the eastern boundary of the site. When the river is in flood, a portion of the site is inundated. Council has defined the following flood levels for both 84 Chubb Street and 100 Chubb Street:

- 100 Year Event 23.8 m AHD
- 20 Year Event 18.9 m AHD

The extent of inundation of the site produced by a 100 year event in the Bremer River is shown on Figure 2. The proposed development requires that filling be undertaken over part of the site inundated by Bremer River flooding. As the filling could impact on flood levels in the Bremer River, a hydraulic study was undertaken to quantify the impact and to determine the ameliorative measures required to ensure that flood levels are not increased as a result of development.

2.2 Scope of Hydraulic Study

Ipswich City Council has completed detailed hydraulic modelling of the Bremer and Brisbane River systems using the DHI program Mike-11. Council provided a reach of this model for use in the flood investigation. The data provided included cross sections, flow hydrographs (assuming ultimate catchment development) and the stage hydrograph calculated using the overall model at the downstream end of the reach.

The truncated model reach, which extends both upstream and downstream of the site, extends from cross-section BREM 1000700 to BREM 1004150. Sheet 40 of the Ipswich Rivers Flood Study is reproduced as Figure 2 and shows the extent of the truncated model and the location of cross sections within the reach.

Due to the broad area modelled by Council, the cross sections supplied to Cardno were at a spacing of about 500 metres. To provide additional cross sections in the region of interest, additional survey of the site and surrounding areas was undertaken by Terranean Mapping Technologies.

Based on the survey, cross-sections were extracted at approximately 100m intervals throughout the site as shown in Figure 2. These cross-sections were inserted into the existing model. Where new cross-sections were located near or at existing cross-sections the latest cross-section data was adopted. As the survey did not include areas below the water line, appropriate bed levels were calculated for each new cross section based on the cross sections in the Council Mike-11 model. The cross sections used in the MIKE-11 model are shown in Appendix A.

2.3 Methodology

To determine the impact of the proposed development on flood levels, a 'base case' was established using the truncated existing conditions Mike-11 model with ultimate catchment flows, and inserting the new cross-sections (refer Section 2.2).

The 'developed case' model was then established by modifying the base case Mike-11 model to reflect the proposed filling. To offset the loss in storage produced by the filling, compensatory earthworks are proposed in the area between the development and the riverbank. The earthworks have been limited to areas at or above 20 m AHD in order to minimise the change in level of available storage (i.e. to prevent the replacement of high level storage with low level storage which is less effective). The level of 20 m AHD is above the defined 20 year flood level and therefore considered to be suitable for the creation of storage.

The extent of proposed earthworks are shown in Figure 3. The cross sections affected by the proposed development are between BREM1002600 (upstream) and BREM1003000. Appendix A contains the modified cross sections used to represent the development case relative to the existing case.

The cross sections indicate that the proposed filling on its own will reduce the storage volume of the Bremer River by approximately 13,000 m³. However, this is more than offset by the proposed cut volume of approximately 24,000 m³.

The 'base case' MIKE 11 model used the resistance values from the original model, duplicating them in the new cross-sections. The resistance values used in the 'developed case' model were the same as for the 'base case' model. The radius type of Resistance Radius was used for the computation of processed data, as it was the radius type used in the previous Council Mike-11 model.

The base case and developed case models were run for the 100 year ARI local flood event. A recent review done by Brisbane City Council of the hydrology used in its modelling has meant that flows from Brisbane River have been changed. While the Council Mike-11 model is being reviewed to reflect these changes, it can be assumed that the 100 year ARI event can be modelled using what was considered to be the 50 year event flows. The 100 year ARI flood levels quoted by council correspond to Mike-11 results of the 50 year ARI event. The critical storm duration for this event is the 50 year 30 hour flooding of Brisbane River, and so this storm event was used for the analysis. Unfortunately, there are no flows available to adequately model the 20 year ARI event.

The 'base case' was calibrated so that results matched those obtained by Council. The 'base case' was then modified to account for the proposed development.

2.4 Results

Anticipated peak flood level results are summarised in Table 1 for the base case and proposed development case under the peak flood event. Included in Table 1 is a summary of the afflux resulting from the proposed development. A positive value indicates an increase in flood level.

As the results in Table 1 show, the peak water levels for the developed case are generally less than those for the base case for the 100 year ARI local flood event, by as much as 41mm.

It should be noted that the flood levels in Table 1 for the site are comparable to the 100 year ARI flood level of 23.8m AHD that Council quotes for the site.

The impact of the proposed development produces a maximum increase of 5 mm in flood level within the site for the 100 year ARI local flood event. However the flood levels are generally decreased, by as much as 41 mm, indicating that the development can proceed without adversely impacting on flood levels. It is expected that the final shape of the compensatory works will be developed as part of detailed design.

Table 1 Anticipated Peak Flood Levels

Cross-section	100 Year Event			Afflux (mm)
	Previous Council Model (mAHD)	Base Case Peak Flood Level (mAHD)	Developed Case Peak Flood Level (mAHD)	
BREM 1000700.00	25.25	25.17	25.14	-32
BREM 1001120.00	25.12	25.05	25.02	-32
BREM 1001700.00	24.88	24.80	24.76	-35
BREM 1002300.00	24.33	24.32	24.27	-41
BREM 1002600.00		24.03	24.01	-28
BREM 1002700.00	23.87	23.86	23.85	-17
BREM 1002800.00		23.66	23.65	-10
BREM 1002900.00		23.52	23.52	5
BREM 1003000.00		23.39	23.39	-3
BREM 1003050.00		23.38	23.38	0
BREM 1003100.00		23.35	23.35	0
BREM 1003200.00	23.37	23.30	23.30	0
BREM 1003700.00	23.09	23.09	23.09	0
BREM 1004150.00	22.94	22.94	22.94	0

Note: Sections within site shaded

The peak velocities calculated in Mike-11 were also compared. As Table 2 shows there is no significant change in peak velocities for the developed case.

Table 2 Anticipated Peak Velocities

Cross-section	100 Year Event		Afflux (m/s)
	Base Case Peak Velocity (m/s)	Developed Case Peak Velocity (m/s)	
BREM 1000700.00	0.94	0.94	0.00
BREM 1000910.00	0.81	0.81	0.00
BREM 1001120.00	0.67	0.67	0.00
BREM 1001410.00	0.77	0.77	0.00
BREM 1001700.00	1.22	1.22	0.00
BREM 1002000.00	1.15	1.15	0.00
BREM 1002300.00	1.11	1.12	0.00
BREM 1002450.00	1.24	1.24	0.00
BREM 1002600.00	1.47	1.47	0.00
BREM 1002650.00	1.52	1.52	0.00
BREM 1002700.00	1.60	1.58	-0.02
BREM 1002750.00	1.71	1.70	-0.01
BREM 1002800.00	1.84	1.83	-0.01
BREM 1002850.00	1.74	1.71	-0.03
BREM 1002900.00	1.67	1.61	-0.06

Cross-section	100 Year Event		
	Base Case Peak Velocity (m/s)	Developed Case Peak Velocity (m/s)	Afflux (m/s)
BREM 1002950.00	1.67	1.67	0.00
BREM 1003000.00	1.78	1.78	0.00
BREM 1003025.00	1.88	1.88	0.00
BREM 1003050.00	2.00	2.00	0.00
BREM 1003075.00	1.62	1.62	0.00
BREM 1003100.00	1.51	1.51	0.00
BREM 1003150.00	1.30	1.30	0.00
BREM 1003200.00	1.14	1.14	0.00
BREM 1003450.00	1.25	1.25	0.00
BREM 1003700.00	2.05	2.05	0.00
BREM 1003925.00	1.52	1.52	0.00
BREM 1004150.00	1.13	1.13	0.00

Note: Sections within site shaded

3.1 LOCAL RUNOFF

3.1 General

Local runoff from the site has the potential to increase as a result of development. Although the flood levels calculated for the Bremer River are based on full catchment urbanisation, the proposed level of urbanisation of the site is greater than that anticipated for the region. Therefore, it will be necessary to reduce the peak flow discharged from the site in order that flood levels in the Bremer River are not affected. This will be achieved by the construction of a detention basin as part of the development.

Given that an existing dam exists on the banks of the river (refer Figure 4), it is proposed to increase the size of the dam to provide the required detention volume and then to direct all stormwater runoff from the site to the detention basin. It is intended that only areas above the 20 year flood level (18.9 m AHD) will be considered as providing effective storage for local runoff.

The required detention basin size was determined using the empirical preliminary detention basin sizing guidelines contained in the *Queensland Urban Drainage Manual* (Neville Jones and Associates et al, 1992)(QUDM). It is recognised that as part of detailed design the size of the detention basin will need to be confirmed by the use of a runoff routing model to confirm that the peak runoff from the site does not increase for all events up to and including the 100 year event.

3.2 Hydrology

The peak flow discharged from the site for the pre-developed (i.e. prior to any development occurring on the site) and developed cases was calculated using the Rational Method in accordance with QUDM). For the analysis, it was conservatively assumed that the existing site was undeveloped.

Appropriate rainfall intensities for the site were derived in accordance with Ipswich City Council Standard Drawing STD.D026 (Revision B, 1998).

The calculation of peak flow rate for the pre-developed and developed cases is presented below.

- **Pre Developed Case**

The catchment area draining to the proposed detention basin is 4.95 hectares. The travel distance to the proposed limit of development is 200 metres.

The time of concentration for the catchment was calculated using the Friend's Equation from QUDM (Equation 5.05.1) with the following data:

- Horton roughness value of 0.045 (averaged grassed surface)
- Overland sheet flow path length 50 metres
- Slope of 2 percent along flow path

Table 5.05.2 of QUDM recommends that the length over which Friend's equation should be used in rural situations is between 50 and 200 metres. A length of 50 metres was considered reasonable for the site.

Friend's Equation produced a travel time of 15.4 minutes.

For the remaining 150 metres of flow distance, recourse was made to the channel flow times presented in Table 5.05.6 of QUDM. For a fall of 5 metres and a length of 150 metres, a travel time of 5.1 minutes was obtained, providing an overall time of concentration of 20.5 minutes. The 100 year rainfall intensity associated with this time of concentration is 191 mm/h.

For a fraction impervious of zero, a runoff coefficient of 0.66 was adopted for the 10 year event (Table 5.04.2 of QUDM) together with a frequency factor of 1.2 for the 100 year event (Table 5.04.3 of QUDM).

The above values provided a peak flow for the 100 year event of 2.08 m³/s.

- **Proposed Development**

With the development in place, the time of concentration of the catchment will be reduced. Based on standard inlet times (Table 5.05.1 of QUDM), the time of concentration to the gully pits was taken as five minutes.

To this was added 300 metres of pipe travel (the likely pipe network will result in a longer travel distance than the current direct overland flow distance). Based on the channel flow times presented in Table 5.05.6 of QUDM and a fall of 5 metres, a travel time of 3.8 minutes was obtained, providing an overall time of concentration of 8.8 minutes. The 100 year event rainfall intensity associated with this time of concentration is 270 mm/h.

Due to the relatively high density of the development, a runoff coefficient of 0.85 was adopted for the 10 year event (Table 5.04.2 of QUDM). Applying a frequency factor of 1.2 resulted in a runoff coefficient of unity for the 100 year event.

The above values provided a peak flow for the 100 year event of 3.72 m³/s.

3.3 Detention Basin Sizing

Based on the peak flows calculated for the pre-developed and developed cases, an estimate of the detention basin size required to reduce the peak flow from the developed case to match that produced by the site prior to development was made using the empirical relations presented in Section 6.06.1 of QUDM.

The required basin volume was calculated using each of the four available equations. The largest volume estimate was 1,155 m³ (Equation 6.03). For other cases where detailed design has been completed, it has been found that the actual volume required is about double that suggested by the empirical equations. Consequently, a volume of 2,300 m³ was adopted for the site.

The surface area of the existing dam is about 960 m². Assuming a 1.5 metre depth of water for the 100 year event (to minimise safety concerns) and a batter of 1 in 3, a land

area of 1,900 m² is required. Based on existing contours, it should be straightforward to create a detention basin with this area, as shown indicatively on Figure 4.

3.4 Ground Conditions

At a meeting held with Council in relation to the project, the high erosion potential of the soils in the area was noted. In particular, it is understood that Council is concerned in relation to the concentrated discharge of runoff down the relatively steep bank of the Bremer River.

As noted in Section 3.1, runoff from the site for events up to the 100 year event will be directed to a detention basin located near the top of the bank of the Bremer River. As noted in Section 3.2, the detention basin will reduce the peak flow discharged from the developed site to 2.08 m³/s for the 100 year event. The slope of the bank between the detention basin and the Bremer River is about 1 in 13.5. At this slope, the entire 100 year event flow can be conveyed via twin 525 mm diameter pipes. This would allow the runoff from the site to be piped down the face of the river bank and outlet near the standing water level in the river, thereby avoiding any potential for the riverbank to scour.

However, the flow velocity in the pipes for the 100 year event will be approaching 5.5 m/s (a single pipe at a grade of 1 in 13.5 would convey the flow at a velocity greater than 6 m/s which is unacceptable according to QUDM). To minimise the potential for scour at the outlet of the pipes, it is proposed that a manhole and reduction in grade would be introduced near the pipe outlet to reduce the velocity of flow. The velocity of flow in a 1,200 mm diameter pipe at a grade of 1 in 200 would be less than 2.5 m/s. The energy loss associated with the reduction in velocity would be contained within the manhole and therefore unable to cause scour of the river bank. Standard outlet protection measures such as gabions would be used at the outlet of the larger pipe to protect the river bank as the width of flow expands and the velocity of flow reduces to a magnitude insufficient to cause scour.

A typical detail of the proposed works is provided in Figure 4.

4. WATER QUALITY MANAGEMENT

4.1 Construction Phase

During the construction phase, the potential exists for increases in the amount of pollutants, particularly sediment, exported from the site. However, given that the majority of works relate to the construction of buildings, the actual area of open area disturbed by the works will be relatively small.

During this period, an Erosion and Sediment Control Plan will be required as part of the overall Environmental Management Plan prepared for the construction phase.

Consequently, the site is classified as being low risk with respect to erosion and sediment control. However, it is still considered prudent to adopt appropriate erosion and sediment control measures during the construction phase.

It is considered that the completion of construction activities in accordance with the Sediment and Erosion Control Plan developed using the Institution of Engineers Australia publication *Soil Erosion and Sediment Control, Engineering Guidelines for Queensland Construction Sites* (June 1996) will minimise the nature of any adverse impacts during the construction phase.

4.2 Operational Phase

Given the size of the proposed development, it is considered that the development will be deemed as having a significant water quality impact under Council's Planning Scheme Policy No 3 (April 2004, p PSP3-10). As such, Set A of the water quality objectives specified in Table 2.3.1 of the Planning Scheme Policy No 3 are applicable. The water quality objectives for those indicators applicable to residential developments are listed in Table 3. It can be noted that the values presented in the table are median values.

Table 3 Water Quality Objectives

Indicator	Objective
Suspended solids	15 mg/L for combined wet and dry periods 90%ile < 100 mg/L for wet weather periods
Total Phosphorus	0.07 mg/L
Total Nitrogen	0.65 mg/L
Oils and grease	No visible films or odour
Faecal coliforms	1000 organisms/ 100 mL (minimum of 5 samples taken at regular intervals not exceeding one month, with 4 of 5 not exceeding 4000 organisms/ 100 mL)
Litter/ gross pollutants	No anthropogenic (man-made) material greater than 5 mm in any dimension.

In order to satisfy Council's water quality objectives, it will be necessary to treat runoff from the site. Based on previous modelling of developments, the following treatment train is proposed for the site:

- Gross pollutant traps.
- Bioretention system.

The gross pollutant traps would be proprietary devices located in the underground drainage system and would remove litter, coarse sediment and oil and grease. The traps would provide pre-treatment of runoff prior to its discharge to the bioretention system. The logical location for the bioretention system is in the base of the detention basin (refer Figure 4).

Bioretention devices consist of a vegetated storage area over an infiltration trench. Given the fall of land, it will be possible to drain the infiltration trench to the pipe draining the detention basin. The basin would be designed to store and treat the runoff volume associated with the three month design event (taken as half the one year event). Runoff in excess of the three month event would be drained via the outlet pipe for the detention basin.

Sizing of the gross pollutant traps and the bioretention system will be completed as part of detailed design. The relevant design parameters for the design will be as follows:

- * Gross pollutant traps - treatment of runoff from three month event
- * Bioretention systems - storage area sized to capture runoff from three month event
 - runoff to drain over a period of not less than 24 hours.

It is expected that the ownership of the devices and responsibility for maintenance will remain with the Body Corporate for the development.

The likely performance of the system was assessed using the AQUALM program. The removal efficiencies of the treatment devices were adopted from Table C4.3 of the Brisbane City Council *Water Quality Management Guidelines* (Version 1, 2000). The adopted removal efficiencies are presented in Table 4. It can be noted that the efficiency of the bioretention system was taken to be the combined performance of a swale and infiltration system.

Table 4 Adopted Removal Efficiencies

Indicator	Removal Efficiency (%)	
	Gross Pollutant Trap	Bioretention System
Suspended Solids	40	82
Total Nitrogen	20	66
Total Phosphorus	20	66

The model data adopted for the analysis are summarised in Table 5.

Table 5 Adopted Model Data

Data	Source
Rainfall	Rainfall records for Ipswich 040101 with missing records generated from factored records for Amberley 040004. The generated rainfall record extended from 1978 to 1998 with a mean annual rainfall of 854 mm.
Evaporation	Mean monthly pan evaporation records were obtained from Samford, with an average annual evaporation of 1519 mm.
Rainfall-runoff relations	As specified in the Brisbane City Council publication <i>Guidelines for Pollutant Modelling in Brisbane</i> (Version 7, October 2003) for urban areas.
Pollutant Export	As specified in the Brisbane City Council publication <i>Guidelines for Pollutant Modelling in Brisbane</i> (Version 7, October 2003) for urban areas.

The AQUALM model considered the 21 year period from 1st January 1978 to 31 December 1998, with the results for the first year of simulation discarded in order to allow the moisture stores to reach equilibrium. The median concentrations predicted by the AQUALM model are listed in Table 6.

Table 6 AQUALM Model Results

Indicator	Model Result (mg/L)	Water Quality Objective (mg/L)	Meets Water Quality Objective?
Suspended Solids	1.9, combined wet and dry periods 30, 90 th %ile wet weather	15 100	Yes
Total Nitrogen	0.50	0.65	Yes
Total Phosphorus	0.04	0.07	Yes

With reference to Table 6, it can be concluded that the proposed treatment system, subject to detailed design, will allow the water quality objectives specified by Council, to be met.

At present, it is not possible to model indicators other than sediment and nutrients. However, it is considered that the proposed measures will provide adequate treatment with respect to oils and grease, faecal coliforms, and litter.

5. INFORMATION REQUEST ISSUES

Specific responses to the issues raised in the information request that are dealt with in this report are presented below.

2. (a) Stormwater

"The developer is requested to submit a stormwater management plan that identifies among other things the proposed methods of stormwater control for overland flows and constructed drainage systems from the proposed development. Further, the Developer is requested to submit preliminary hydraulic calculations for the major and minor storm events prepared by an RPEQ in accordance with QUDM which identifies the increase in stormwater runoff generated by the full development, the location and treatment of discharge points such that the proposed development will not adversely affect downstream properties"

The detailed response to this issue is provided in Section 3. It is proposed to construct a detention basin at the boundary of the development to offset the increase in peak flow produced by the development. Discharge from the detention basin will be piped to the base of the river bank in order to eliminate the potential for bank erosion.

2. (d) Flooding

"The developer is requested to submit a hydraulic and ground stability study prepared by a RPEQ for the subject site that addresses the following:

- (i) The likely impact of the proposed development, including associated earthworks, both upstream and downstream from the site, particularly in terms of changes to depth, duration or velocity of flood waters and duration of warning time;
- (ii) Geology of the site and any related problems;
- (iii) Instability features such as slips, soil creep etc
- (iv) Effects of existing vegetation and of any possible removal and or modification of same; and
- (v) Likely impacts in terms of watercourse bank stability."

The flooding investigation undertaken in relation to the site is described in Section 2. The impact of proposed filling is to be offset by the excavation of a volume greater than that filled. The analysis of the proposed works indicated a slight reduction in flood level for the proposed works.

Overall, it is considered that the works will have a negligible impact on the duration or velocity of flooding or warning times.

The Geology of the site is not likely to be affected by the development but this will need to be considered in detail as part of detailed design. Further, the development of the adjacent land suggests that soil creep and slips are not likely on this site. Again, this will be considered as part of detailed design.

In relation to item (iv), there is little vegetation on the site and therefore this item is not considered to be relevant. However, it would be expected that any works on the bank of the river would be accompanied by landscaping to ensure that a stable batter is achieved.

3. (a) Stormwater Quality

"In order to demonstrate compliance with the Scheme, the applicant is to supply either of the following:

- (i) A conceptual design Stormwater Management Plan (the "conceptual design SQMP") must be prepared by a suitably qualified and experienced professional and be developed in accordance with the *Australian Runoff Quality Design Guidelines, Australian Institute of Engineers, 2003* and must demonstrate, through appropriate pollutant export modelling (eg AQUALM or MUSIC), that the predicted pollutant levels in the stormwater from the Catchment will meet the pollutant levels identified in Table 1 below."

Section 4 of this report details the proposed water quality treatment measures for the site and presents the results of modelling of the conceptual system. The modelling indicated that the treatment measures will allow the water quality objectives defined by Council to be achieved.

6. CONCLUSION

A residential development is proposed for Chubb Street, One Mile (refer Figure 1 and Figure 2). In response to the information request issued by Council in relation to the proposed development, consideration has been given to the following issues, with outcomes as summarised below.

- **Flooding**

Modelling of the proposed development and compensatory earthworks has indicated that the development can proceed without adversely impacting on flood levels.

- **Local Drainage**

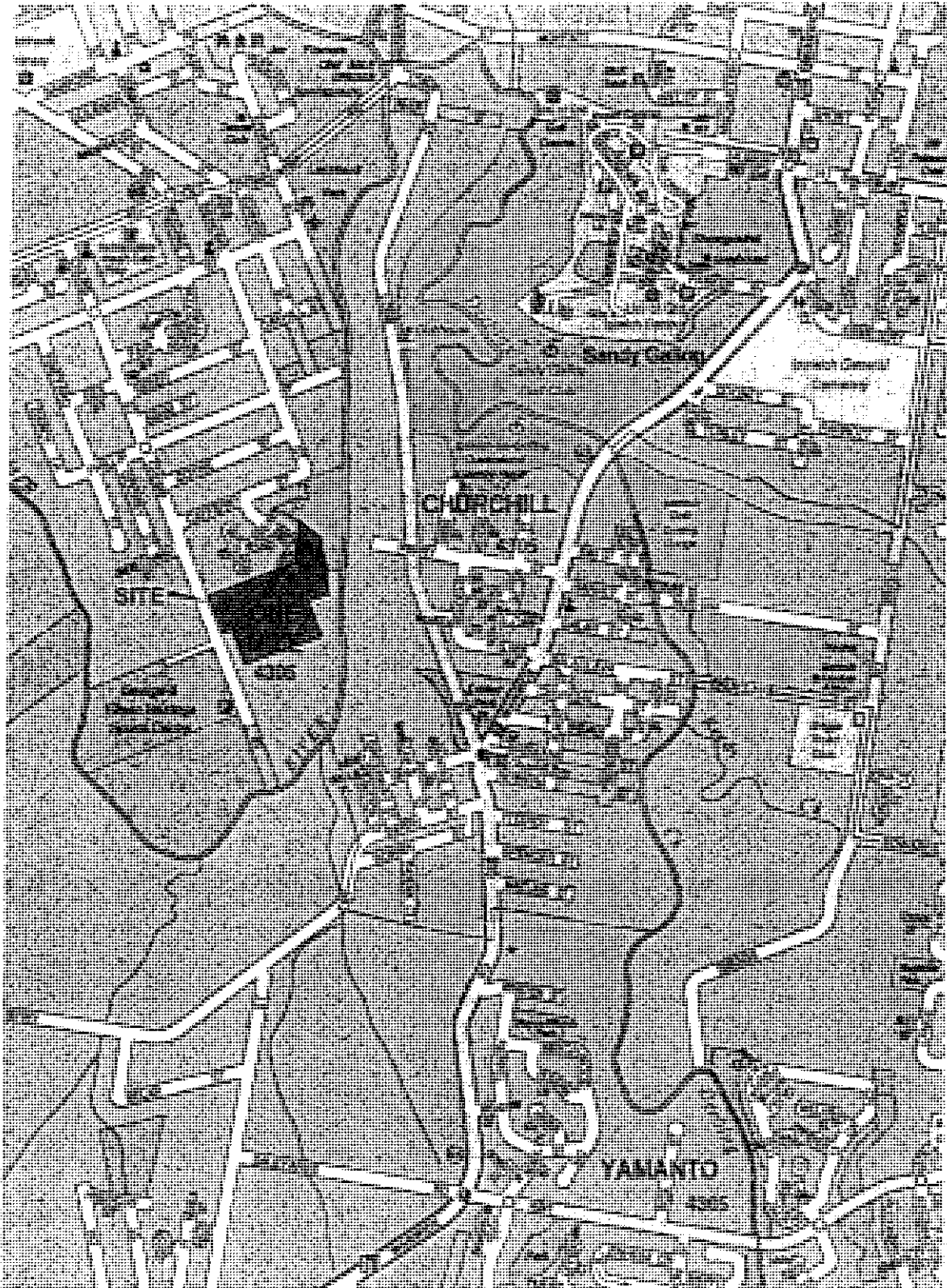
A detention basin will be constructed to reduce the peak flow from the developed site to match that produced for the existing case.

- **Water Quality**

A stormwater treatment system has been proposed for the development that will allow the water quality objectives identified by Council to be achieved.

FIGURES

- Figure 1 Locality Plan
- Figure 2 Proposed Development and New Cross-sections
- Figure 3 Sheet 40 of Ipswich Rivers Flood Study
- Figure 4 Detention Basin Size



Location plan sourced from "Brisbane, Gold coast & Sunshine Coast 2001 UBD - CD-ROM" Universal Press Pty Ltd.

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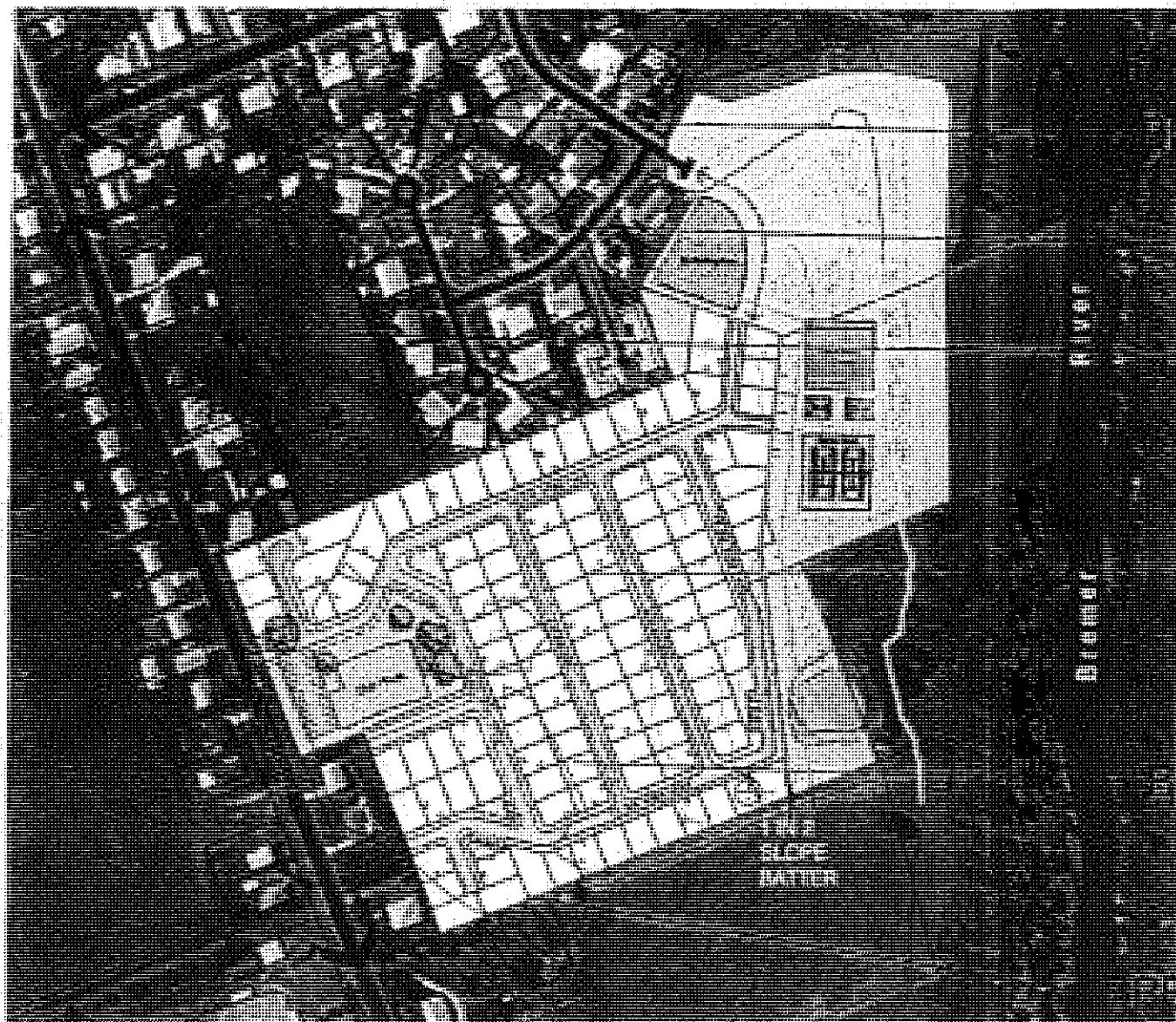
Rev: Orig. Date: August 2005

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N.T.S.
**FIGURE 1
LOCALITY PLAN**

Project No.: 3500/49

SCALE DATE: 10 August 2005 5:24pm



BREM1003100

BREM1003050

BREM1003000

BREM1002900

BREM1002800

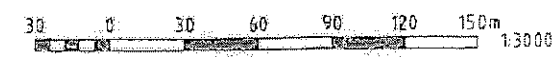
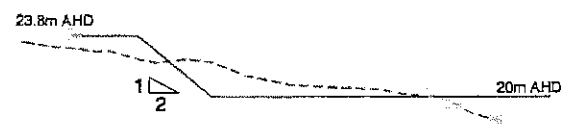
BREM1002700

BREM1002600

- LEGEND**
- Proposed Development Fill Limit
 - Proposed Excavation Limit
 - MIKE 11 Cross-section

TYPICAL SECTION

Scale 1:2000



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Scale 1:20000 (A4)

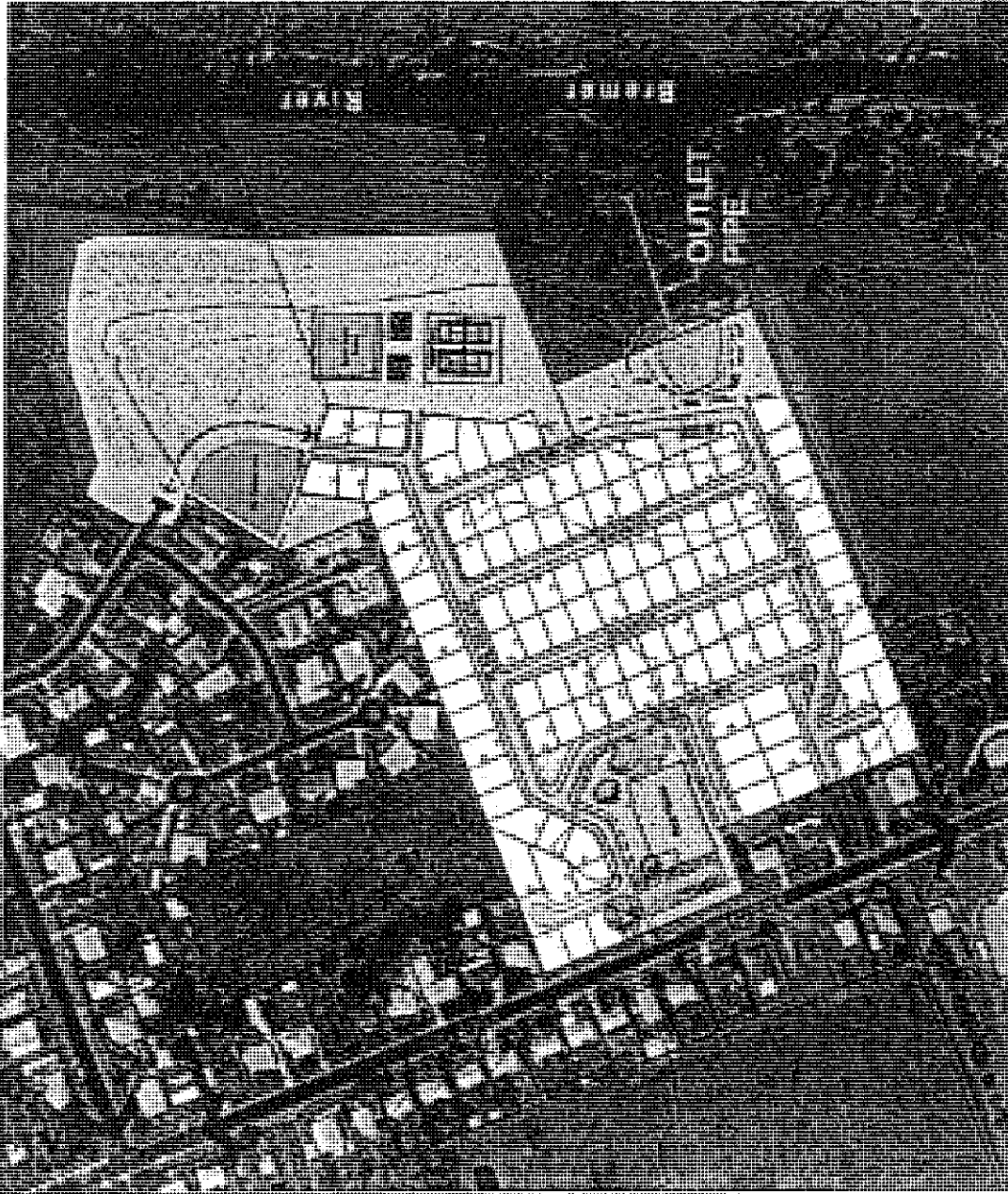
FIGURE 3
SHEET 40 OF
IPSWICH RIVERS FLOOD STUDY

Project No.: 3500/49

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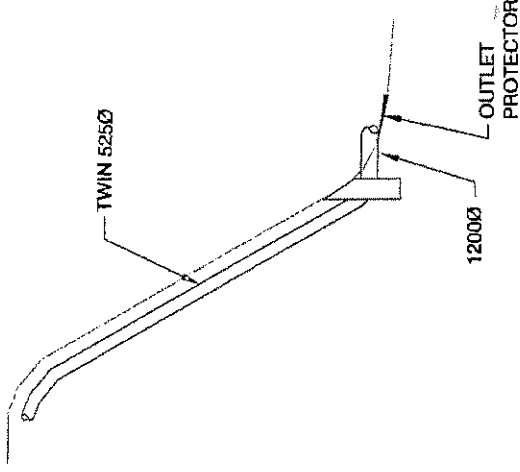
Rev. Orig. Date: August 2005

C/O CONTINUUM GROUP

10000115/00 - 05/08/2005 - Rev. 05/08/2005 - Detention Basin size 0x1

LEGEND

--- Proposed Detention Basin



PROFILE OF OUTLET PIPE

SCALE : NTS

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FIGURE 4

DETENTION BASIN SIZE

Project No.: 3500/49

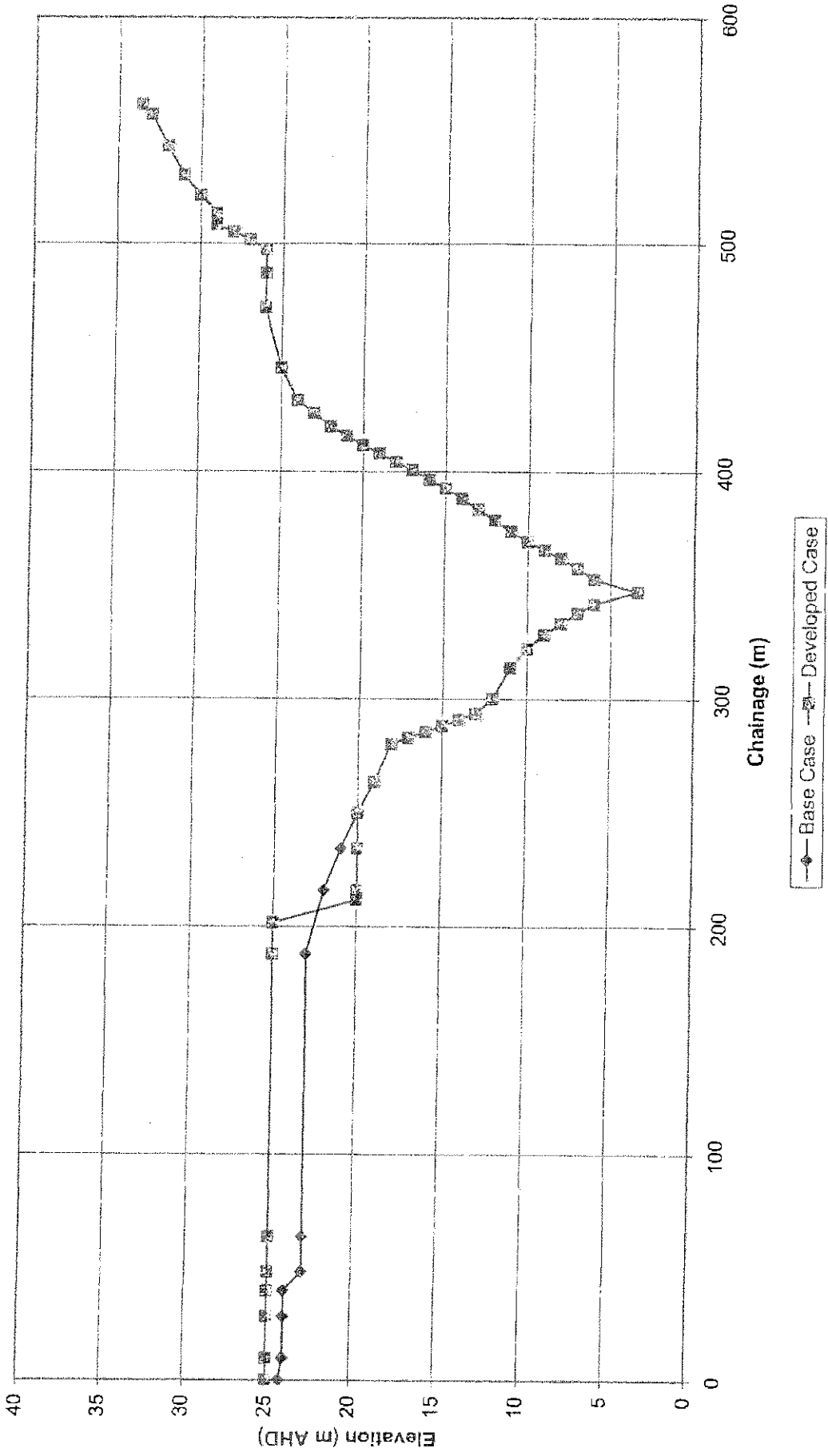
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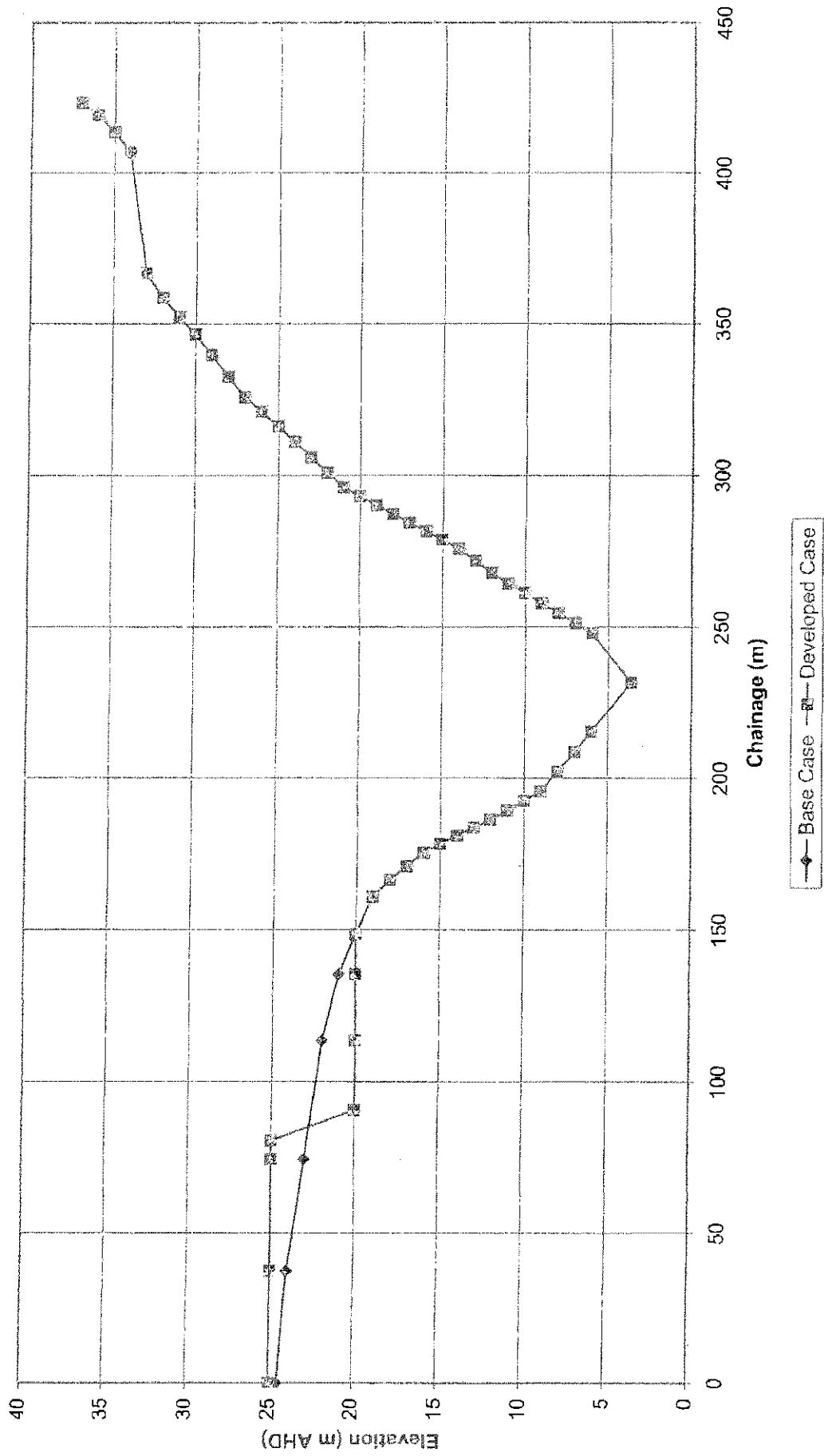
APPENDIX A

MIKE 11 CROSS-SECTIONS

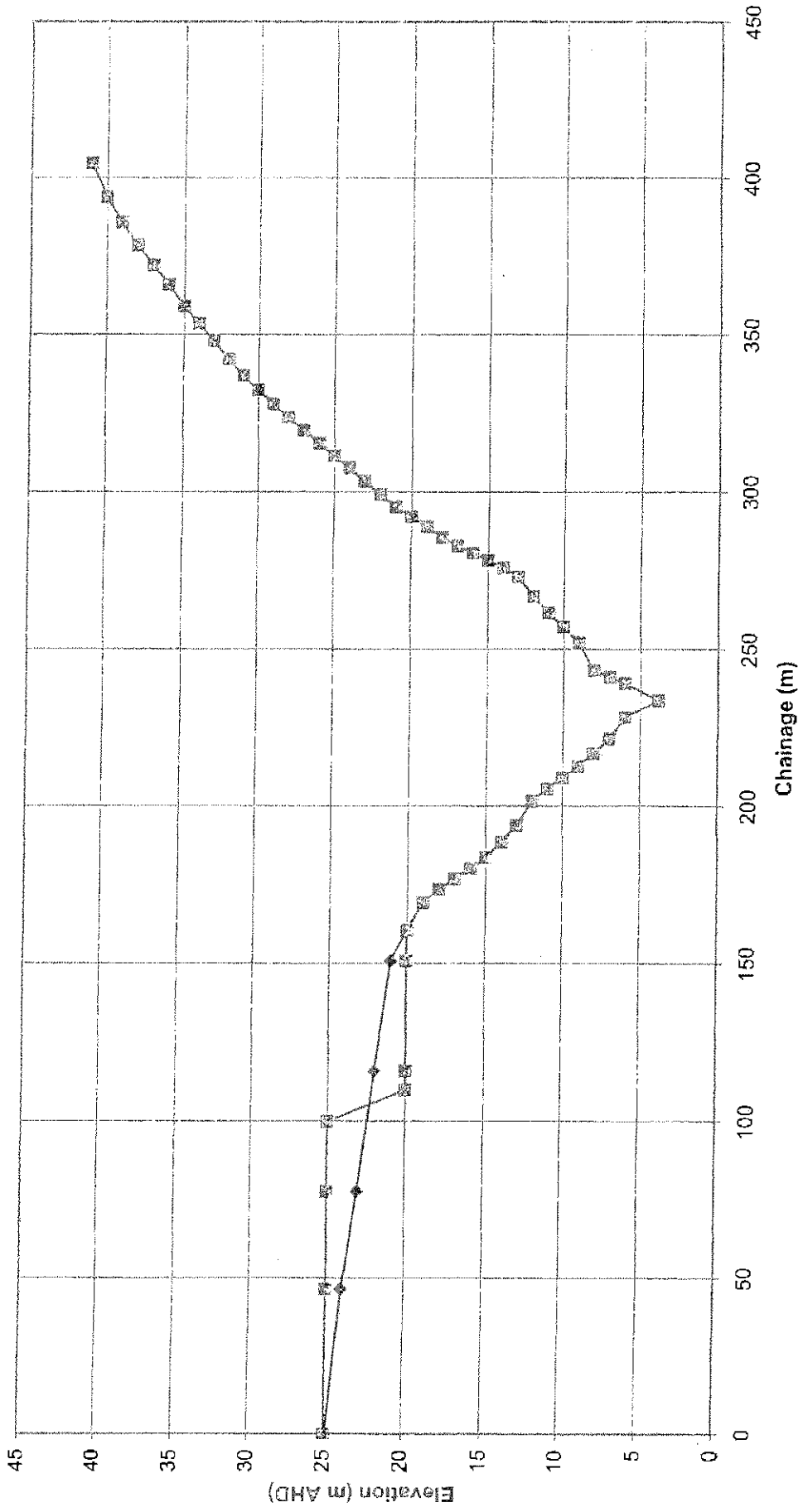
BREM 1003000



BREM 1002900



BREM 1002800

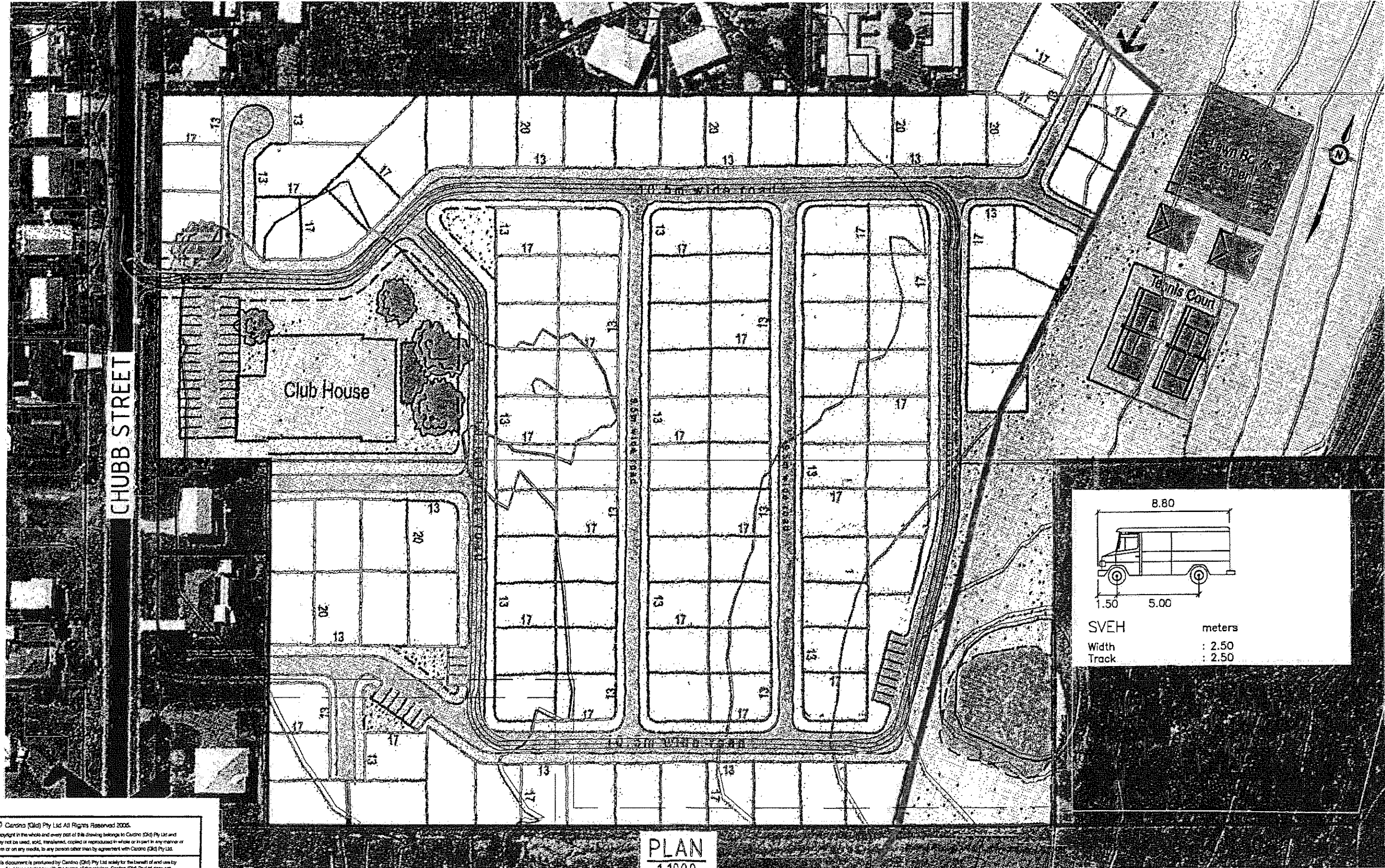


◆ Base Case □ Developed Case

XREF: XY-A3-BU-SHT

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DATE PLOTTED: 10 August, 2005 - 11:14am



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PLAN
1:1000

DESIGNED:
DRAWN:
CHECKED:
RECOMMENDED: PROJ. MAN.
APPROVED: PROJ. DIR.

A3

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GALAXY PROJECT HOUSING PTY LTD
 DEVELOPMENT APPLICATION SKETCH
 DESIGN VEHICLE TURNING PATHS

DATE:	10-09-2005	Rv.
DRAWING No:	3500/49/01-001	

Chubb

437/2005/CA Aaron Katt

9 March 2006

MEMORANDUM

TO: DEVELOPMENT TEAM CO-ORDINATOR - CENTRAL WEST
FROM: ASSISTANT DEVELOPMENT ENGINEER - AARON KATT
RE: **DEVELOPMENT APPLICATION**
INTEGRATED PLANNING ACT 1997 - SECTION 3.2.1(1)
ENGINEERING ASSESSMENT REPORT

Appn No: 437/2005/CA
Applicant: David Brett & Associates Pty Ltd
Property Location: 8 Georgette Street, 84 and 100 Chubb Street One Mile

Proposal	Development	Approval Type
Multiple Residential (Mature Aged Accommodation Community)	Carrying out building work	N/A.
	Carrying out plumbing or drainage work	N/A.
	Carrying out operational work	N/A.
	Making a material change of use of premises	Development Permit.
	Reconfiguring a lot	Development Permit.

Date Received: 1 February 2005

The following comments are made in respect of the above proposed development.

1. **APPLICABLE CODES**

This application has been assessed against the following codes:-

- (a) Ipswich Planning Scheme
- (b) Residential Development Code;
- (c) Parking Code;
- (d) Planning Scheme Policy for Water Supply and Sewerage Infrastructure Contributions;
- (e) Planning Scheme Policy for Ipswich Roadworks Infrastructure Contributions;
- (f) Planning Scheme Policy for Ipswich Drainage Contributions;
- (g) Amendments to Australian Model Code for Residential Development (Amcord) Edition 2 - 1990;
- (h) Ipswich City Council Engineering Works Manual;
- (i) Queensland Urban Drainage Manual;

- (j) Queensland Streets;
- (k) Austroads Guide to Traffic Engineering Practice - Intersections at Grade;
- (l) Ipswich City Council Standards Drawings;
- (m) Manual of Uniform Traffic Control Devices (Department of Main Roads);
- (n) Australian Standard 2890.1 - Off-Street Car Parking;
- (o) Australian Standard 3798 - Guidelines on Earthworks for Commercial and Residential Developments;

The proposal generally complies with or has been conditioned to comply with the above codes.

2. EXISTING CONDITIONS AND COMMENTS

(a) Background

There is no significant history to this site from an engineering point of view. The site contains a sports facility which contains a building that functions for some indoor sports as well as outdoor tennis courts. The balance of the site is grassed paddocks, cleared of significant vegetation except adjacent to the banks of the river. An existing dam is also present on the site. There is an existing carparking area on both concrete and flexible pavement areas.

(b) Outstanding Matters Relating to Previous Approvals

There are no outstanding engineering matters relating to previous approvals.

(c) Allotments

The site has a land area of 7.714 ha and generally slopes from the western property boundary to the Bremer River. The slopes along the bank region are in excess of 20%.

(d) Roads/Traffic/Parking

(i) External

Chubb Street

10.0 m wide bituminous carriageway with concrete kerb and channel on both sides.

There are no constructed footpaths.

(ii) Internal

Not applicable.

(iii) Access

Access to the site is presently provided by a concrete driveway into the existing carpark of the sports facility.

(iv) Future Road System

Based on the Ipswich City Road Transportation Study, it is unlikely that any part of the land will be required for any future road system.

(v) Pathways

Not applicable

(e) Stormwater

The site was inundated in the 1974 flood, is below the ARI of 20 years flood level, and is not subject to an ARI of 20 years overland flow. An existing dam is located in the south eastern corner of the site.

(f) Sewerage

The Property is in a sewered area. An existing sewer traverses adjacent to the Chubb Street frontage.

(g) Water Supply

The Property is in a water supply area.

(h) Energex and Street Lighting

Existing overhead electrical power reticulation is located along the eastern side of Chubb Street. The Developer is required to provide adequate internal lighting.

(i) Mining

Council records indicate that the subject site is located within an area that has not been undermined.

(j) Others

(i) Easements

An existing easement traverses through the southern section of the development site. Further investigation will be needed to ascertain the true purpose of the easement however initial speculation is that it is for a private watermain to irrigate the sporting fields on the western side of Chubb Street.

(ii) Oil/Gas Pipelines

Not applicable.

(iii) Service Corridors

Not applicable.

(k) General

Not Applicable.

3. OTHER DEVELOPMENT APPROVALS REQUIRED

From an engineering perspective, further Development Permits, as required by the *Integrated Planning Act 1997*, shall be obtained in respect of any Operational Works in relation to this approval before any such works are commenced.

RECOMMENDATION

A. Based on engineering grounds only, it is recommended that the application for Impact Assessment - Development Permit - Material Change Of Use and of land at 8 Georgette Street, 84 and 100 Chubb Street One Mile as proposed by David Brett & Associates Pty Ltd and detailed on plan number 20038-03A prepared by PMM Group, dated July 2005, be approved, subject to the following terms and conditions being completed by the Developer, to the satisfaction of the Senior Development Engineer:

1. Terms

- (a) RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required. Furthermore, the RPEQ required for the analysis and reporting for mining shall be experienced in the analysis of underground and surface mining within the Ipswich area.
- (b) QUDM - The Queensland Urban Drainage Manual, produced by the Queensland Department of Primary Industries.
- (c) Queensland Streets - The Design Guidelines for Subdivisional Street Works, prepared for the Institute of Municipal Engineers of Australia (QLD).
- (d) AMCORD - The Australian Model Code of Residential Development produced by the Commonwealth Department of Housing and Regional Development.
- (e) DMR - Department of Main Road.
- (f) MUTCD - The Manual of Uniform Traffic Control Devices, published by DMR.
- (g) Ipswich Water - Commercial Business Unit of Ipswich City Council providing water and sewerage services.
- (h) DNRM - Department of Natural Resources and Mines.

2. Roadworks

- (a) The unnamed road located at the development's southern access point shall be constructed as road, extending from Chubb Street to subject site, in accordance with Council's standards. Any stormwater discharge (both piped or overland) originating from Chubb

Street and/or the unnamed road that enters the subject site shall require an appropriately sized easement, extending to Council approved discharge, within the development.

- (b) Roadworks shall be designed and constructed in accordance with Council's Standards, Queensland Streets, Austroads Publications, AMCORD, the relevant and appropriate roadworks design standards and guidelines, and any other documentation deemed appropriate by Council. Such design and construction shall ensure that road carriageway widths are consistent with the road function and position in the road hierarchy and are in accordance with the relevant design speed environment.
- (c) The pavement designs shall be in accordance with the Ipswich City Council's Planning Scheme Policy 3 - General Works, Chapter 5 - Roadworks. All roads shall have two way crossfalls in accordance with Council's adopted standards.
- (d) All traffic signs and delineation shall be installed in accordance with MUTCD.
- (e) The Developer shall provide a minimum 1.5 m wide concrete footpath on the eastern side of Chubb Street from the southern boundary of Lot 13 on RP859820 (102 Chubb Street) to the northern boundary of Lot 4 on RP73249 (68 Chubb Street).

The construction of footpaths shall be in accordance with Council's Standard Drawing SR.19. The concrete footpaths shall be on the same side as the street lights, and the maximum longitudinal grade shall not exceed 1:8.

- (f) Kerb ramps are to be constructed in accordance with Council's Standard Drawing SR.18 at all intersections and at additional locations where required to connect the concrete pathways and cycleways. Generally at "T" intersections, 4 kerb ramps are required.
- (g) The developer shall provide a contribution of \$21,150 towards the upgrade of the Old Toowoomba Road / Chubb Street intersection.
- (h) The developer shall provide a bus shelter located on Translink Bus Route No.516 which shall be designed to meet the requirements of Translink. The location of the bus shelter shall be determined after considering the needs of existing residents and include consultation with those residents adjacent to where the bus shelter is to be installed. The location and design of the bus shelter shall be investigated and submitted for approval as part of the Operational Works Application. A 1.5m wide footpath (and associated pedestrian crossing facilities if required) shall also be provided linking the development to the bus shelter.

3. Access/Parking

- (a) Design and construction of all access and parking shall be in accordance with the provisions of the Ipswich City Council Parking Code and the Australian Standards (2890 series) (applicable to a HRV).

The proposed design shall minimise conflict and traffic calming devices must be prominent and effective. To this end the design shall be undertaken in accordance with QLD Streets (including traffic slow points devices) and a maximum vehicle speed of 10 kph as required under Council Policy or as otherwise agreed with the Senior Development Engineer.

- (b) Parking and manoeuvring areas shall accommodate the largest anticipated vehicle to use the site. The developer shall provide details for all critical areas of the site demonstrating this requirement has been met with the operational works submission.
- (c) Adequate facilities for servicing the development shall be provided on site to ensure loading and/or unloading activities do not occur on-street.
- (d) Provision shall be made for all vehicles to enter and exit the site in forward gear.
- (e) All parking, access and manoeuvring areas, excluding the proposed RV parking area, shall be constructed of concrete, bitumen or pavers and shall be linemarked in accordance with the relevant Australian Standard. In the instance of the RV parking area, the surface shall be a suitable impervious material (eg. rock/gravel with effective dust and weed control) to the satisfaction of the Senior Development Engineer.
- (f) A concrete layback and driveway slab minimum 9.0 m wide or a demonstrably suitable width necessary to allow for the largest anticipated vehicle access, from the layback to the property boundary, shall be constructed at each entry/exit to the site. This driveway shall be in accordance with Council's Standard Drawings SR.14. Any road pavement failures adjacent to the points of access shall be removed and reinstated as established by, and, to the satisfaction of the Senior Development Engineer.

Access configuration (including fencing arrangements) shall not create safety hazards for pedestrians, vehicles or adjacent landowners amenity. For example, applicable sight distances and noise generation and levels.

- (g) The Developer shall provide a minimum 1.2 m wide footpath network to service all the proposed units, future on-site development and key amenities in accordance with Council Policy relating to retirement communities. The maximum longitudinal grade shall not exceed 1:8 unless required for wheelchairs where the maximum longitudinal grade shall be 1:14. Kerb ramps shall be provided, to the satisfaction of the Senior Development Engineer, at appropriate points and intersections so as to afford the appropriate level of connectivity within a retirement community.

Pedestrian pathways shall be well defined with either two white lines or crosshatching or as otherwise agreed with the Senior Development Engineer defining the pathway where vehicles cross the pathway. The pathways in these locations shall be adequately signposted with "Caution Pedestrians" signs to the satisfaction of the Senior Development Engineer.

- (h) The Developer shall provide a new concrete layback and driveway slab minimum 3.0 m wide for the existing property Lot 13 on RP859820. The driveway shall be located on the unnamed road at the southern access point. Additionally the Developer shall remove the existing driveway and reinstate the verge. These works shall be undertaken in consultation with Council and the relevant property owner.

4. Sewerage

- (a) The Developer shall relay the existing sewerage reticulation reach, extending between access chambers Asset No 509 and 510, around the relevant proposed building allotments.

The alignment of the relayed sewer shall generally coincide with the immediate proposed access road/cul-de-sac and within the proposed verge area.

- (b) The Developer shall pay the full cost for Council to provide suitable connections into the existing sewerage reticulation system. All works on live sewers are to be carried out by Council at the Developer's expense.
- (c) No work on the sewerage reticulation system shall commence prior to the approval of the Operational Works application.

5. Water

- (a) All works on live water mains are to be carried out by Council in accordance with Council's policy, and at the Developer's expense.
- (b) The Developer shall provide a private internal reticulated water supply system together with valves and fire hydrants capable of sustaining fire fighting draw off demands placed on it in terms of adequate flow and satisfactory pressure in accordance with QFRS (Qld Fire and Rescue Service Community Safety Unit) recommendations and an adequately sized metered domestic water supply system, in accordance with the "*Guidelines for Planning and Design of Urban Water Supply Schemes*". The configuration and sizing of the water main design shall be for a single connection into Council's reticulation system or as otherwise agreed with the Senior Development Engineer.

The recurrent maintenance requirements for the constructed internal water supply and fire hydrant system shall be the sole responsibility of the Developer and/or future property owners and shall be maintained to the satisfaction of the Senior Development Engineer. The review of the internal water works design shall be part of the approval process relating to the Operational Works submission.

- (c) Where concrete footpaths are to be constructed, the Developer shall provide 100 mm diameter conduits under the footpath and in line with the conduits under the road, for future ease of installing the individual water services. The letter "W" shall be embossed in the concrete to mark the location of the conduit.
- (d) The Developer shall lodge a private works request on the prescribed Council form, for Council to supply a cost estimate to:
 - (i) provide a sluice valve/meter configuration generally in accordance with attached sketch Figure 1 at the existing 150 mm water main located in Chubb Street;
 - (ii) amend the existing connection if necessary; and
 - (iii) seal off any existing water connections if necessary.

The appropriate fees are to be paid prior to Council signing any plan of survey.

- (e) The Developer shall duplicate the existing 150mm diameter water main located in Chubb Street extending along the eastern side of Chubb Street from Cafferky Street water main to 150 mm water main (Asset No 9,024) located at the southern access point (unnamed road).

6. Stormwater

- (a) The Developer shall provide all necessary stormwater drainage (both internal and external to the development) and such drainage works (except for roofwater systems) shall be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

Overland flow paths shall be suitably designed to cater for the water from a storm event with an ARI of 100 years. In the case where the piped system is carrying part of the flow, the overland flow paths shall be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system, noting the requirements of QUDM.

- (b) No ponding, concentration or redirection of stormwater shall occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.
- (c) Due consideration shall be given in the design and construction of the development in relation to the effect of the developed catchment flows on the downstream discharge receival areas. Suitable stormwater control devices are to be provided to ensure that there is no increase in velocity in watercourses. Such control devices are to be designed so as to integrate the landscaping, recreational, infrastructural and drainage roles of watercourses.
- (d) All stormwater runoff from the developed areas of the site shall be discharged through the proposed detention basin and outlet in a manner and to a point to be approved by the Senior Development Engineer. Any piped infrastructure conveying stormwater flows shall have an appropriately designed outlet at the low water level in the adjacent Bremer River.
- (e) Stormwater drainage plans and calculations are to be submitted and approved by the Senior Development Engineer, in conjunction with the submission of an Operational Works application.
- (f) The Developer shall develop the site from a stormwater management perspective in line with the recommendations contained in the Stormwater Management Plan and Flooding Report, prepared by Cardno (Qld) Pty Ltd dated 9 August 2005 subject to the inclusion/provision of the following:
- (i) The increased stormwater runoff volume (post-development) associated with a Q5 storm event shall be retained on site;
 - (ii) Detailed on-site flood routing and detention/retention basin and/or easement sizing shall be provided as part of the Operational Works application;
 - (iii) Accommodation of Council approved water quality treatment measures;
 - (iv) Adoption/incorporation of Council approved hydraulic/river bank stability study recommendations; and
 - (v) A Level V roofwater and interallotment drainage system, in accordance with QUDM, shall be provided for this development.

The developer shall comply with all requirements of Council approved design inclusions and alterations in association with the above mentioned items.

- (g) Development of the property with buildings or other structures below the flood level associated with an ARI of 20 years will not be permitted.
- (h) There shall be no filling or removal of material in the flood area below the flood level associated with an ARI of 20 years. The extent of earthworks on the site shall be limited to the area and scope as defined in the Stormwater Management Plan and Flooding Report, prepared by Cardno (Qld) Pty Ltd dated 9 August 2005.
- (i) Pollutant control devices and/or bioretention areas shall be installed in the stormwater system. Locations and types of the devices or treatment areas shall be submitted with the Operational Works Application for approval.

There shall be minimal disturbance to vegetation in the river bank areas, unless prior written approval is obtained from Council. Stormwater drainage outlets shall be the subject of detailed design in the preparation of plans for each stage of the development.

- (j) The Developer shall provide a rainwater retention system for the purpose of on-site landscape irrigation. The minimum retention capacity shall be 1,000 litres/proposed dwelling.
- (k) Runoff, including pipe discharge, from the development site down the embankment shall be controlled to a maximum velocity of 1.8m/s or unless otherwise accommodated in design and agreed with the Senior Development Engineer

7. Public Utilities

- (a) Street lighting shall be installed by the Developer in the Chubb Street frontage in accordance with the Australian Standard 1158.3.1 Table 1.1. All street lighting associated with the development shall be certified by a RPEQ. Street lighting shall be installed on the same side as concrete footpaths (where applicable).
- (c) The Developer shall provide underground electricity/telecommunications within the development. Electricity/telecommunication drawings shall be co-ordinated with the civil engineering design documents, to ensure that service clashes are avoided.
- (d) Prior to the any building approval, the Developer shall provide Council with a copy of an agreement with Energex for the supply of electricity to the development.
- (e) Telephone and cable services may be laid in a combined trench with electricity cables, subject to the approval of Energex and the authorised telephone/cable service provider.
- (f) The Developer shall make suitable arrangements for the provision of telephone services to all proposed units, Managers Residences and Community Centres etc. Documentary evidence that discussions have commenced with any authorised telephone service provider on the provision of telephone services shall be produced prior to commencement of use of each stage of the development.

8. Erosion & Silt Management

- (a) The Developer shall be responsible for the installation and maintenance of silt management facilities from the time of commencement of construction until this development has been completed. All silt management facilities are to be in accordance with the document "Soil Erosion and Sediment Control" published by the Institution of Engineers Australia, or equivalent.
- (b) Diversion drains and ponds, as necessary, shall be installed on the site before any other work is undertaken on site to ensure that "dirty water" is contained and/or isolated.
- (c) A procedure shall be submitted with the engineering drawings for approval for maintaining the facilities, setting out the frequency of attention, with inspections to be made after each significant rainfall event.
- (d) The Developer shall lodge a \$10,000 siltation and erosion performance bond with Council, prior to the commencement of works, which shall only be released by Council at the termination of the maintenance period. Where Council determines that a draw-down of the bond is required, the Developer shall restore the bond to its full amount within 10 days of a notice from Council to that effect. Such bond shall guarantee adequate performance in the circumstances (i) and (ii) below:
 - (i) In the event that instructions issued to the Consulting Engineer by the Senior Development Engineer for the installation of erosion control measures, are not complied with within 24 hours, Council will call upon the bond to the extent required to carry out the necessary works.
 - (ii) If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.

Should the Developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council shall complete the work and recover all costs from the Developer associated with that work.

9. Operational Works – Municipal Works
(ie Works being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) The Developer shall comply with the requirements of the documents entitled "Planning Scheme Policy 3 - General Works" and "Standard Drawings".

- (c) All engineering drawings submitted to Council shall be in accordance with Council's Planning Scheme Policy 3 - General Works and Standard Drawings, and shall include as a minimum the following:
- (d) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ;
- (e) The drawings shall be submitted as three A3 size sets and one full size set; and
- (f) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (g) Municipal works shall require a detailed design certified by a RPEQ, the design approved by Council Engineers with appropriate fees payable, a works pre-start meeting on-site and various detailed construction and audit inspections by Council Officers. A twelve month maintenance period is applicable for the works as well as the payment of a maintenance security deposit.
- (h) All works shall be supervised by a RPEQ competent in civil works and shall be undertaken by a nominated principal contractor experienced in the construction of municipal works. Council reserves the right to request evidence of the principal contractor's competency. Should it be deemed by the Senior Development Engineer that the contractor does not have the necessary competency or has constructed substandard works for Council in the past, Council reserves the right to reject the nominated contractor.
- (i) Municipal works shall be accepted "On Maintenance" prior to commencement of use. A maintenance bond equal to 5% of the construction cost (minimum of \$1,000.00) shall be retained by Council for a minimum period of twelve months, or until such time as the works are accepted "Off Maintenance" by Council.
- (j) "As Constructed" plans for municipal works shall be submitted to Council and approved prior to the formal acceptance of the works "On Maintenance".
- (k) On completion of the works a certificate shall be submitted to Council by a RPEQ certifying that the works have been constructed in accordance with Council's construction standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.
- (l) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent in regard to the works relevant to the Operational Works approval.
- (m) Prior to the commencement of any municipal works associated with developments other than the subdivision of land, Council shall require the provision of a bond equivalent to not less than 10% (minimum of \$1,000.00) of the value of the works as security for the performance of the various construction obligations (including the provision of engineering certification and "As Constructed" information). The bond shall be reduced to an amount of not less than 5% of the value of the works upon formal acceptance of the works "On Maintenance" and shall be retained by Council during the maintenance period as security

for the performance of the maintenance obligations. The bond shall be returned upon formal acceptance of the works "Off Maintenance".

- (n) Council requires the provision of a bank guarantee, or a performance bond of not less than 10% (minimum of \$5,000.00) of the value of the external municipal works. The bond/guarantee shall be retained by Council until such time the Developer provides a replacement or additional maintenance period bond/guarantee for entire Municipal Works (both external and internal) as security for the performance of the maintenance obligations.

External Municipal Works relates to those works external to the subject site and located in already dedicated public areas, for example existing road or drainage reserve, or private property not subject to Developer ownership.

10. Operational Works – Internal Works
(ie Works not being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ.
- (c) The drawings shall be submitted as three A3 size sets and one full size set. Where municipal works are also being undertaken, it is usually appropriate to make a combined submission.
- (d) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (e) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent.
- (f) A certificate shall be submitted to Council by a RPEQ certifying that the completed works have been constructed in accordance with Council's requirements and standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.

11. Plan of Survey

- (a) The Developer shall grant, free of cost to or compensation payable by Council, minimum 4.0 m wide easements located centrally over proposed and existing stormwater drains, water mains and sewerage rising mains, where they are located within private property.

The documentation associated with these easements may be prepared by the Developer in a form satisfactory to Council's City Solicitor, or the Developer may submit easement plans,

only where Council is party to the easements, to Council for the preparation of easement documents at the Developer's expense.

- (b) Easements shall be centrally located over the alignment of stormwater paths and be of a width sufficient to encompass the overland flow from a storm event with an ARI of 100 years.
- (c) Easements shall be of sufficient width to contain any fitting, access chamber etc located on stormwater drains, water mains, and sewerage rising mains.
- (d) All pre-existing easements crossing the site shall be pegged where they cross each property boundary and at every change of direction.
- (e) The Developer shall transfer free of cost to or compensation payable by Council for drainage purposes that part of the site below the level of the storm event with an ARI of 20 years (approximately RL20 m).
- (f) All land (excluding that contained within approved parkland) below the flood level associated with an ARI of 10 years shall be dedicated as Drainage Reserve at no cost to Council. Land below this level shall not be considered as parkland contribution.
- (g) The Developer shall grant, free of cost to or compensation payable by Council, a suitable easement to permit access to the land described in the above condition for the purpose of Council maintaining that land.

12. General

- (a) All disturbed verge areas and allotments shall be graded, grassed and left in a mowable condition. The grass cover shall be obtained as early as possible during the development and an acceptable grass cover shall be achieved before the development can be accepted "Off Maintenance".
- (b) With reference to any works, on land under other private ownership, written permission for the works shall be obtained and forwarded to Council. Similarly, written clearances shall be obtained after the works are completed, unless otherwise accepted by the Senior Development Engineer.
- (c) All works required for this development shall take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works shall be altered at the cost of the Developer.
- (d) Any filling for a greater depth than 500 mm shall be conducted in accordance with Australian Standard 3798. Test results as required by Australian Standard 3798, and a certificate of quality and uniformity of fill shall be provided by a RPEQ. The level of responsibility shall be Level 1.
- (e) A certificate from a RPEQ shall be issued to Council certifying that any retaining wall greater than 800 mm in height is structurally sound and capable of withstanding any likely surcharge loads. Retaining walls greater than 1.0 m in height are to be provided with railings or other barriers to provide pedestrian safety.

- (f) Retaining walls shall be designed so that there are no imposed loads placed upon Council's underground services. This may include extending the footing to a level 300 mm below the invert of the pipe.
- (g) For batters resulting from cutting and filling of the site and producing slopes greater than 1:6, Council requires a RPEQ to certify that they are stable and properly drained.
- (h) A hydraulic and river bank stability study shall be undertaken in regard to the site by a RPEQ. Such study shall be comprehensive taking into account all matters relating to the site and shall include, but shall not be limited to, the following:

- Geology of the site and any related problems;
- Instability features such as slips, soil creep etc;
- Effects of existing vegetation and of any possible removal and or modification of same;
- Effects of any fill material and the types of fill material recommended;
- Water eg: ground water; scour potential in flood situations including the effects of turbulence; effects of rapid draw down of water level.

Such studies shall include any necessary recommendations in regard to the proposed development to ensure long term stability.

- (i) Approval of the Senior Development Engineer is required for any fill intended to be placed over Council's underground services.

B. Further Advice

- (a) The subject site was fully inundated in the 1974 flood. Council, and its servants and agents, accept no liability or responsibility for any loss or damage to person or property of whatever nature or however caused as the direct or indirect consequence of the granting of the approval herein contained. Such approval has been granted at the request of the Developer and in reliance of information submitted by the Developer in support thereof.
- (b) The Developer shall submit to Council hydraulic plans that comply with the requirements of the *Sewerage and Water Supply Act* for scrutiny by Council.
- (c) Scrutiny fees in accordance with the Council's Schedule of Fees and Charges shall be paid at the time of lodgement of plans. No work on the plumbing and drainage shall commence prior to the approval of the plan and the issuing of a permit, by this Council, to a Licensed Plumber/Drainer.
- (d) General
 - (i) There shall be minimal disturbance to vegetation in the flood area, unless prior written approval is obtained from the Council.
 - (ii) Structures adjacent to vertical drops shall be provided with appropriate balustrades and/ or barriers (including adequate founding) suitable for their function in relation to their height, adjacent pedestrian, bicycle and motor vehicle use on walkways and/or roadways, and with

regard to likely impacts. Design shall be in accordance with relevant Standards Australia, Ausroads, Building Code of Australia publications and currently accepted practice.

If any other reshaping or structure is proposed (other than currently nominated) below the Q100 level then the developer shall demonstrate to the satisfaction of the Senior Development Engineer that there will be no adverse impact on property or structures upstream or down stream of that location during storms with ARI of 2 to 100 years.

(e) Portable Long Service Leave

From 1 January 2000, the Building and Construction Industry (Portable Long Service Leave) Levy must be paid prior to the issue of a development permit where one is required for the 'Building and Construction Industry'. This applies to Building Works, Operational Works and Plumbing and Drainage Works applications, as defined under the *Integrated Planning Act 1997*, where the works are \$80 000 or more and matching the definition of 'Building and Construction Industry' under the *Building and Construction Industry (Portable Long Service Leave) Act 1991*.

Council will not be able to issue a Decision Notice without receipt of details that the Levy has been paid. Should you require clarification in regard to the amendments to the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, you should contact QLeave on 1800 803 481 (free call) or (07) 3212 6855.

- C. That the applicant be advised that from an engineering perspective, further Development Permits, as required by the *Integrated Planning Act 1997*, shall be obtained in respect of any Operational Works in relation to this approval before any such works are commenced.



ASSISTANT DEVELOPMENT ENGINEER

ENDORSED BY:



**ASSISTANT DEVELOPMENT MANAGER -
ENGINEERING**

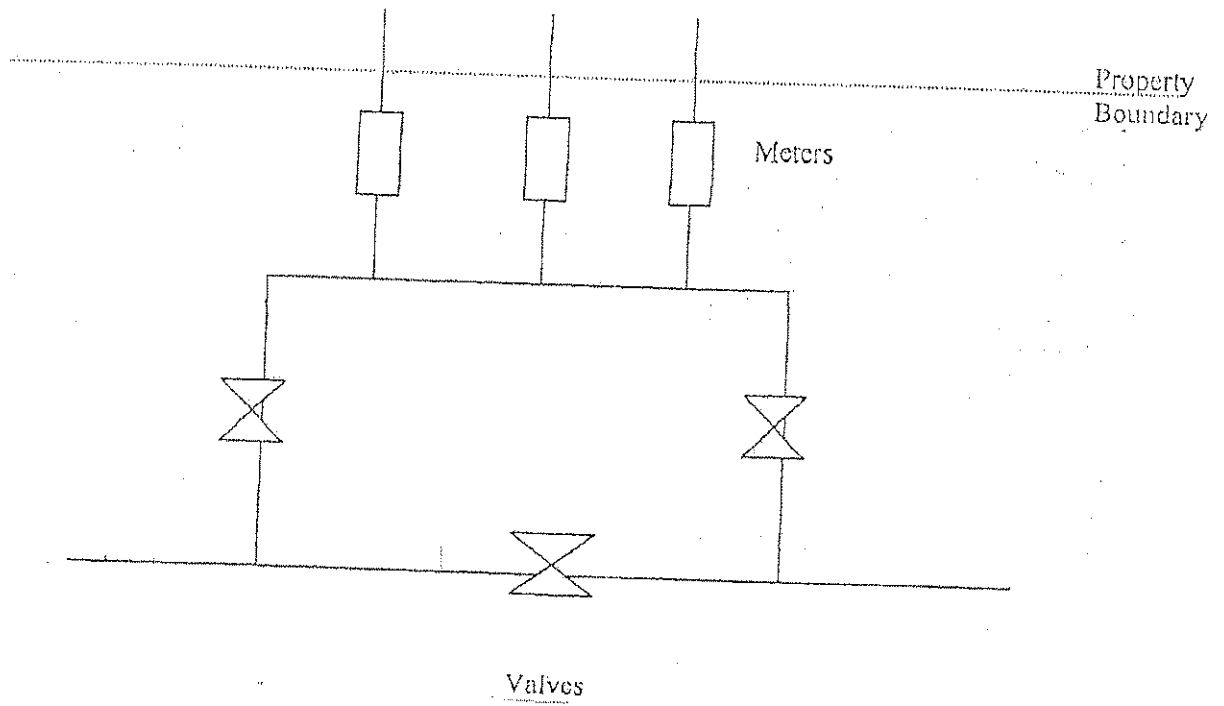


Figure 1: Water Meter and Valve Configuration.

437/05 Michael Ellery

16 March 2006

MEMORANDUM

TO: DEVELOPMENT TEAM CO-ORDINATOR - CENTRAL WEST
FROM: SENIOR DEVELOPMENT PLANNER - MICHAEL ELLERY
RE: **DEVELOPMENT APPLICATION - IMPACT ASSESSMENT
INTEGRATED PLANNING ACT 1997 - SECTION 3.2.1(1)**

Appn No: 437/05
Applicant: David Brett and Associates Pty Ltd
Real Property Description: Lot 59 on RP849800, Lot 93 on RP8310 and Lot 14 on RP859820
Property Location: 8 Georgette Street, One Mile and 84 & 100 Chubb Street, One Mile
Division: 8

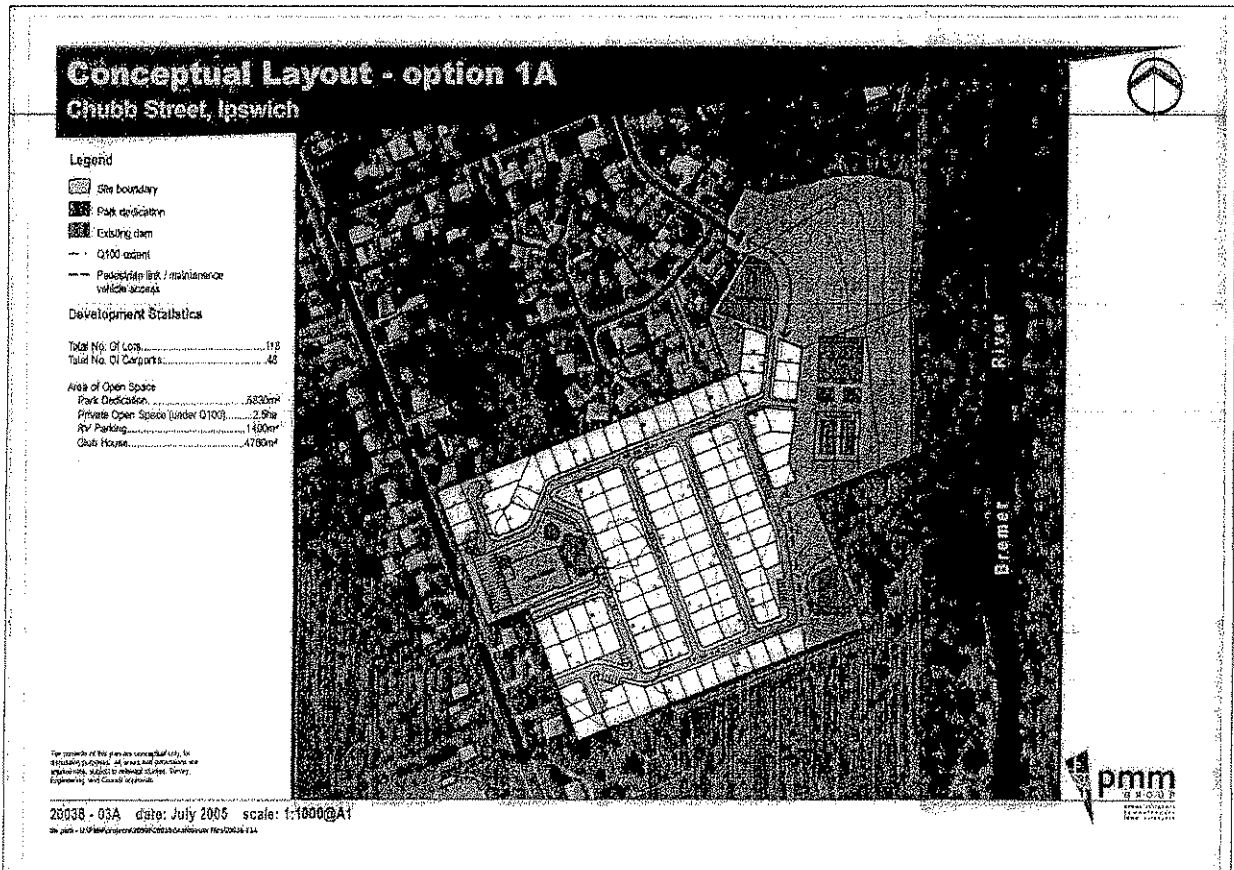
Proposal	Development	Approval Type Requested
Multiple Residential - 118 Aged Accommodation Units and Ancillary Recreation Facilities	Making a material change of use of premises	Development Permit
Reconfigure Three (3) Lots into Two (2) Lots	Reconfiguring a lot	Development Permit

Date Received: 1 February 2005
Start Date for Decision Stage: 17 November 2005
Stat. Date for Determination: 23 January 2006
Site Area: 7.71 ha
Zone: 8 Georgette St – Residential Low Density (RL2)
84 Chubb St – Recreation
100 Chubb St - Large Lot Residential

SITE LOCATION



PROPOSAL PLAN - LAYOUT



PROPOSAL PLAN - UNIT TYPES

Lizard

DESIGNED BY
 CTTD DESIGN
 & DRAFTING
 801 208 9977
 601 208 9977
 601 208 9977

CLIENT
 FISHERS HUNTINGTON BANK
 10001 SHELTON AVENUE
 SHERBOURNE, GA 30296
 404 270 1100

DATE
 12/15/10

DRG. NO.
 100

DRG. BY
 R. E. C.

SCALE
 AS SHOWN

Lindeman

DESIGNED BY
 CTTD DESIGN
 & DRAFTING
 801 208 9977
 601 208 9977
 601 208 9977

CLIENT
 FISHERS HUNTINGTON BANK
 10001 SHELTON AVENUE
 SHERBOURNE, GA 30296
 404 270 1100

DATE
 12/15/10

DRG. NO.
 101

DRG. BY
 R. E. C.

SCALE
 AS SHOWN

RESIDENCE PLAN
 1710 WESTON
 8 BDR 7140
 3.5 B.A. 22000
 CLIENT:

DATE: _____
 DRG. NO. _____
 SCALE: 1/8" = 1'-0"
 N2

Hamilton

RESIDENCE PLAN
 1710 WESTON
 8 BDR 7140
 3.5 B.A. 22000
 CLIENT:

DATE: _____
 DRG. NO. _____
 SCALE: 1/8" = 1'-0"
 N2

Bedarra

SUMMARY

This is a combined application for a Material Change of Use and Reconfiguring a Lot. The Material Change of Use component seeks a development permit for 118 aged accommodation units and ancillary recreation facilities, which include a communal facilities building, a swimming pool, tennis courts and lawn bowls. The Developer has proposed four (4) different unit designs that will be developed on the site dependant on tenant preferences. One of the designs is double-storey. A total of 48 visitor parking spaces are proposed for the site. Each unit will have its own covered space and residents will also have use of a proposed Recreational Vehicle parking area to store caravans, boats and the like. Two (2) vehicular access points are proposed to Chubb Street, with a pedestrian only link to be provided to Georgette Street. There will be no vehicular access to Georgette Street.

The proposal to Reconfigure Three (3) Lots into Two (2) Lots seeks to excise an area of 6830 m² of linear open space along the Bremer River that will be dedicated to Council and that will connect two (2) existing lots owned by Council. The remainder of the development site is then proposed to be amalgamated into a single lot that will be developed for the aged accommodation and ancillary recreational facilities.

84 Chubb Street is currently improved by a former gymnasium and outdoor sports courts that has ceased operation. It is proposed to reuse the existing gym building as a community clubhouse which will include activities such as the manager's office and reception, a small convenience shop for residents, a games room, computer facilities, exercise and squash rooms, and meeting rooms. 100 Chubb Street is improved by a number of shed structures that are proposed to be demolished and contains a dam that is to be adapted for use as part of the site's stormwater solution. 8 Georgette Street was the subject of a previous subdivision, approval which has since lapsed, and is currently vacant.

Each of the subject lots has a different zoning. 8 Georgette Street is zoned Residential Low Density (RL2), 84 Chubb Street is zoned Recreation (in recognition of its previous use), and 100 Chubb Street is zoned Large Lot Residential. The whole of the development site can be adequately serviced by urban infrastructure (water, sewerage, etc) and is generally suitable for residential purposes. The site is affected by the Q100 and Q20 flood lines. The Applicant has proposed balance cut and fill to ensure that all unit sites will be located above the adopted flood line.

The proposed reconfiguration generally complies with the requirements of the Reconfiguring a Lot Code. However, additional land above the top of the bank is required to provide a suitably level area of land for the provision of a bicycle/pedestrian pathway within the open space dedication in the future. An additional 10-20 metre strip of land can easily be provided without impacting on the development plan. A condition to this effect has been included in the recommendation. Headworks credits for the provision of the open space have been attributed to the material change of use component of the application against the required Level 2 Open Space contributions. The standard conditions for dedication of parkland have also been included in the recommendation.

The density of the proposed development is approximately 16.8 dwelling units per hectare, which is comparable to the probable solution of 15 dwelling units per hectare for density in the Residential Low Density Zone RL2 stated in the Planning Scheme. The proposal generally complies with the requirements of the Residential Code. Each unit is provided with adequate private open space and substantial public open space and communal recreational facilities are to be provided. The design of each unit is of a scale and nature compatible with the surrounding area. It is considered that the proposal is generally acceptable for the subject

site, subject to the imposition of reasonable and relevant conditions to address the following matters:

- The Parking Code requires the provision of 59 visitor parking spaces and one space for the manager. The Developer has only proposed 48. A condition has been included in the recommendation for the Developer to provide these additional spaces as there is more than adequate space on the site to provide the additional twelve (12) spaces;
- To reduce visual impacts on existing adjoining neighbours, it is considered appropriate to restrict the construction of double-storey units on sites that share a common boundary with existing residences external to the site. This will leave 87 sites on which a double-storey unit can be constructed;
- A condition has been included in the recommendation to clearly limit the use of the recreational facilities to residents of the site and their visitors. A limitation on the hours of operation of the outdoor facilities has also been included to restrict noise and lighting impacts at night;
- Dense vegetation screening will be required around the proposed RV parking area to reduce potential visual and dust impacts on surrounding residents. Fencing will be required along all common boundaries to adjoining residences. Details will be required to be approved as part of the detailed Landscape Master Plan to be submitted prior to commencement of the use; and
- External footpaths will be required in Chubb Street to connect to the footpaths required to be constructed as part of the recent approval for 87 Chubb Street (284/05).

There were no concurrence or advice agencies for the application. However, the application did require Referral Coordination as the proposal involved a facility (a body of water) listed in Schedule 7 of the *Integrated Planning Regulation 1998*. The DLGPSR made third party referrals to the Department of Primary Industries and Fisheries, the EPA and to the Department of Natural Resources and Mines. The DPI&F provided a response on 6 September 2005 and advised that it considered that the potential impacts on issues relevant to the Department were likely to be minor and therefore they had no requirements. No response was received from the EPA and the DNRM. It should be noted that the proposal no longer proposes a permanent water body and hence referral coordination would not be required if the application were remade in its current format.

Written notice has been received from the applicant confirming public notification of the proposal correctly identified the application as a proposal for a material Change of Use – Multiple Residential (118 Aged Accommodation Units), Common Facility, Recreation Use (Lawn Bowls Green and 2 unlit Tennis Courts) and Reconfigure a Lot – Amalgamation of Three (3) Lots into Two (2) Lots and included publishing a notice in the Queensland Times on 3 October 2005. Such notice confirmed that the actual notification period of 30 business days complies with Section 3.4.5 of the *Integrated Planning Act 1997* which states that the notification period for the application is 30 business days. The public notification of the proposal has been carried out in accordance with the *Integrated Planning Act 1997* and one submission has been received. The main grounds of objection are suitability of the proposal for Large Lot Residential zoned land, impacts on property values, increased traffic in Chubb Street and the provision of a road to the submitter's boundary. It is considered that the planning matters of the objection can be adequately addressed through the imposition of reasonable and relevant conditions, particularly as outlined above.

In summary, it is considered that the proposal to permit the development of 118 aged accommodation units and ancillary recreation facilities and the proposal to reconfigure three (3) lots into two (2) lots is suitable for the subject site and should be approved, subject to the conditions mentioned above and as detailed below.

RECOMMENDATION

A. That the Developer be advised that Development Application No. 437/05 is determined as outlined in the table below and is subject to the conditions specified below.

Proposal	Development	Decision Approval Type
Multiple Residential – 118 Aged Accommodation Units and Ancillary Recreation Facilities	Making a material change of use of premises	Development Permit
	Carrying Out Operational Work	Preliminary Approval
	Carrying Out Building Work	Preliminary Approval
Reconfigure Three (3) Lots into Two (2) Lots	Reconfiguring a lot	Development Permit

Further Development Permits Required

Further Development Permits, as required by the *Integrated Planning Act 1997*, shall be obtained in respect of any Operational Works and Building Works in relation to this approval before any such works are commenced.

Conditions of Assessment Manager (Ipswich City Council)

Material Change of Use, Operational Work and Building Work

1. Basis of Approval

Subject to these conditions, the facts and circumstances set out in the application and all relevant Council Local Laws and/or Planning Scheme Policies shall be adhered to.

2. Site Development

The proposed development of the site shall be undertaken generally in accordance with the following plans:

- Plan Number 20038-03A, prepared by the PMM Group and dated July 2005;
- Plan Number 1916-02 Building Types and Landscape Treatment, prepared by Verge and dated 22 August 2005;
- Plan Number 1916-01, prepared by Verge and dated 22 August 2005;
- Approved Plan designated Plan 437/05-1 “Lizard”, prepared by Etto Design and Drafting;

- Approved Plan designated Plan 437/05-2 "Lindeman", prepared by Etto Design and Drafting;
- Approved Plan designated Plan 437/05-3 "Hamilton", prepared by Etto Design and Drafting; and
- Approved Plan designated Plan 437/05-4 "Bedarra", prepared by Etto Design and Drafting.

with the following amendments and clarifications:

- (a) The location of double-storey units shall be in accordance with Condition 4(b) of this approval;
- (b) A development plan for the community club house shall be submitted and approved by the Development Manager prior to the approval of any further application for a Development Permit in respect to this approval. The plan shall detail the location and extent of proposed uses within the building. Elevations should be provided where it is intended to alter the external appearance of the building;
- (c) There shall be no vehicular access to Georgette Street;
- (d) Additional car parking spaces shall be provided in accordance with Condition 10 of this approval; and
- (e) The existing dam proposed to be utilised as detention basin shall be contained wholly within the subject site and allow for a minimum setback to the boundary of 3 metres.

Such amendments shall be to the satisfaction of the Development Manager.

3. Particular Use

This approval is for the particular use stated, and does not imply approval for other similar uses. To this end, the use of any of the proposed structures associated with the aged accommodation units, inclusive of car parking and any associated outdoor areas on site, are not permitted to be used for any other purpose, unless, in the opinion of the Development Manager, such use is ancillary and incidental to the predominant use of the site for aged accommodation units. In particular, the use of the community club house and any recreational facilities on the site, such as the tennis court and lawn bowls green, is strictly limited to use by residents of the subject site and their genuine visitors.

4. Unit Types

- (a) The individual unit sites shall be developed in accordance with one of the approved unit designs detailed in the approved plans listed in Condition 2 above.
- (b) The use of the double-storey unit detailed on Approved Plan 437/05-4 "Bedarra" is not approved for any sites that share a common boundary with an adjoining lot not the subject of this approval, unless otherwise approved in writing by the Development Manager.

5. Hours of Construction

Unless otherwise approved in writing by the Development Manager hours of construction shall be:

Monday to Saturday 6.30 a.m. to 6.30 p.m.

Work shall not be conducted from or on the premises outside the above hours or on Sundays or public holidays.

6. Hours of Operation- Outdoor Recreation Facilities

Unless otherwise approved in writing by the Development Manager hours of operation for the outdoor recreation facilities, including the tennis courts and lawn bowls green, shall be:

Monday to Sunday 7.00 a.m. to 6.00 p.m.

The outdoor recreation facilities shall not be used outside the above hours.

7. Lighting

- (a) The provision of advertising, security and flood lighting shall be designed, constructed, located and maintained to the satisfaction of the Development Manager so as not to cause disturbance to the occupants of nearby properties or passing traffic.
- (b) Unless otherwise approved by the Development Manager, lighting shall not be provided to the tennis courts and lawn bowls green.

8. Letter Boxes

Unless otherwise approved by the Development Manager, one letter box shall be provided per unit plus one letter box for use by the body corporate or management where appropriate. Such letter boxes shall form an integral part of the design of the development and shall be located within six (6) metres of the road frontage to which the site has been allocated its street address, unless otherwise approved by the Development Manager.

9. Loading and Unloading

All loading and unloading shall take place within the boundaries of the subject property.

10. Carparking - Use and Maintenance

- (a) 59 visitor car parking spaces and one (1) manager's car parking space shall be provided on site for the proposed development. The spaces shall be clearly shown on the Landscape Master Plan required by Condition 11 of this approval and on the Operational Works drawings.
- (b) All parking areas shall be:
 - (i) kept exclusively for parking;
 - (ii) used exclusively for parking;

- (iii) accessible to visitors during any approved hours of operation; and
- (iv) maintained to the satisfaction of the Development Manager.

11. Landscaping Plan

- (a) A Landscape Master Plan, which conforms to the approved Landscape Concept Plans prepared by Verge, Plan Numbers 1916-01, 1916-02 and 1916-03, and Council's Residential Code, shall be submitted to and approved by the Development Manager prior to the issue of a development permit for Building Works. Such plan shall include, amongst other necessary items, the following features:
 - (i) extent of landscaped areas, including buffers;
 - (ii) location and name of existing trees;
 - (iii) soil type;
 - (iv) location of drainage, sewerage and other underground services and overhead powerlines;
 - (v) details of landscaping structures;
 - (vi) contours and spot levels;
 - (vii) proposed surface treatments;
 - (viii) means of drainage;
 - (ix) fence size and type of material;
 - (x) schedule of plant species size and attributes; and
 - (xi) It is noted on Plan 1916-03 that is proposed to retain a *Celtis sinensis* (Chinese Elm) near the community club house. Any such species on the site shall be removed as they are considered to be an environmental weed as listed on Council's Environmental Weeds List.
- (b) A densely planted buffer shall be provided around the proposed RV Parking Area where it adjoins existing residential properties and proposed unit sites within the development. The buffer shall be designed to ensure that the parking facility is visually screened from surrounding residential uses. The buffer shall be a minimum of five metres wide or such other width as agreed to in writing by the Development Manager. Details of this buffer shall be included in the Landscape Master Plan required by Condition 11(a) of this approval.
- (c) The Developer shall provide landscaping to that area located between the outdoor recreation facilities (tennis courts, bowling green and communal garden) and the area of land to be dedicated for open space purposes. Such landscaping shall be designed to capture sheet stormwater runoff from these areas and provide a measure of stormwater quality treatment prior to discharge into the Bremer River. The landscaping shall also be designed to maintain casual surveillance of the proposed

public open space area along the Bremer River when viewed from the subject site. The species selected for planting in this area should be appropriate to achieve these objectives. The large scale use of grass/turf on its own is not considered an appropriate response. Details of such landscaping shall be included in the Landscape Master Plan required by 11(a) of this approval.

- (d) A 1.8 metre high timber screen fence shall be provided to all common boundaries with adjoining existing allotments, unless otherwise approved in writing by the Development Manager. Where an existing fence of suitable condition already exists and the adjoining owner agrees, a new fence need not be provided. In such case, the written agreement of the adjoining owner shall be provided to Council.
- (e) The Developer shall complete landscaping and fencing works in accordance with the approved landscape plans to the satisfaction of the Development Manager prior to the commencement of the use of the land unless Council determines otherwise. Such landscaping and fencing shall be maintained in perpetuity to Council's satisfaction by the existing or future owners and occupiers of the property.

12. Engineering Requirements

The following engineering requirements, detailed in Conditions 13 – 23, shall be completed to the satisfaction of the Senior Development Engineer.

Terms

- (a) RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required. Furthermore, the RPEQ required for the analysis and reporting for mining shall be experienced in the analysis of underground and surface mining within the Ipswich area.
- (b) QUDM - The Queensland Urban Drainage Manual, produced by the Queensland Department of Primary Industries.
- (c) Queensland Streets - The Design Guidelines for Subdivisional Street Works, prepared for the Institute of Municipal Engineers of Australia (QLD).
- (d) AMCORD - The Australian Model Code of Residential Development produced by the Commonwealth Department of Housing and Regional Development.
- (e) DMR - Department of Main Road.
- (f) MUTCD - The Manual of Uniform Traffic Control Devices, published by DMR.
- (g) Ipswich Water - Commercial Business Unit of Ipswich City Council providing water and sewerage services.
- (h) DNRM - Department of Natural Resources and Mines.

13. Roadworks

- (a) The unnamed road located at the development's southern access point shall be constructed as road, extending from Chubb Street to the subject site, in accordance with Council's standards. Any stormwater discharge (both piped or overland)

originating from Chubb Street and/or the unnamed road that enters the subject site shall require an appropriately sized easement, extending to Council approved discharge, within the development. The Developer shall submit to Council a list of three proposed alternative street names and the corresponding name meanings for this unnamed road. The proposed names should normally be submitted as part of the Operational Works application. Council reserves the right to accept any or none of the proposed names.

- (b) Roadworks shall be designed and constructed in accordance with Council's Standards, Queensland Streets, Austroads Publications, AMCORD, the relevant and appropriate roadworks design standards and guidelines, and any other documentation deemed appropriate by Council. Such design and construction shall ensure that road carriageway widths are consistent with the road function and position in the road hierarchy and are in accordance with the relevant design speed environment.
- (c) The pavement designs shall be in accordance with the Ipswich City Council's Planning Scheme Policy 3 - General Works, Chapter 5 - Roadworks. All roads shall have two way crossfalls in accordance with Council's adopted standards.
- (d) All traffic signs and delineation shall be installed in accordance with MUTCD.
- (e) The Developer shall provide a minimum 1.5 m wide concrete footpath on the eastern side of Chubb Street from the southern boundary of Lot 13 on RP859820 (102 Chubb Street) to the northern boundary of Lot 4 on RP73249 (68 Chubb Street).

The construction of footpaths shall be in accordance with Council's Standard Drawing SR.19. The concrete footpaths shall be on the same side as the street lights, and the maximum longitudinal grade shall not exceed 1:8.

- (f) Kerb ramps are to be constructed in accordance with Council's Standard Drawing SR.18 at all intersections and at additional locations where required to connect the concrete pathways and cycleways. Generally at "T" intersections, 4 kerb ramps are required.
- (g) The Developer shall provide a bus shelter located on Translink Bus Route No.516 which shall be designed to meet the requirements of Translink. The location of the bus shelter shall be determined after considering the needs of existing residents and include consultation with those residents adjacent to where the bus shelter is to be installed. The location and design of the bus shelter shall be investigated and submitted for approval as part of the Operational Works Application. A 1.5m wide footpath (and associated pedestrian crossing facilities if required) shall also be provided linking the development to the bus shelter.

14. Access/Parking

- (a) Design and construction of all access and parking shall be in accordance with the provisions of the Ipswich City Council Parking Code and the Australian Standards (2890 series) (applicable to a HRV).

The proposed design shall minimise conflict and traffic calming devices must be prominent and effective. To this end the design shall be undertaken in accordance with QLD Streets (including traffic slow points devices) and a maximum vehicle

speed of 10 kph as required under Council Policy or as otherwise agreed with the Senior Development Engineer.

- (b) Parking and manoeuvring areas shall accommodate the largest anticipated vehicle to use the site. The developer shall provide details for all critical areas of the site demonstrating this requirement has been met with the operational works submission.
- (c) Adequate facilities for servicing the development shall be provided on site to ensure loading and/or unloading activities do not occur on-street.
- (d) Provision shall be made for all vehicles to enter and exit the site in forward gear.
- (e) All parking, access and manoeuvring areas, excluding the proposed RV parking area, shall be constructed of concrete, bitumen or pavers and shall be linemarked in accordance with the relevant Australian Standard. In the instance of the RV parking area, the surface shall be a suitable impervious material (eg. rock/gravel with effective dust and weed control) to the satisfaction of the Senior Development Engineer.
- (f) A concrete layback and driveway slab minimum 9.0 m wide or a demonstrably suitable width necessary to allow for the largest anticipated vehicle access, from the layback to the property boundary, shall be constructed at each entry/exit to the site. This driveway shall be in accordance with Council's Standard Drawings SR.14. Any road pavement failures adjacent to the points of access shall be removed and reinstated as established by, and, to the satisfaction of the Senior Development Engineer.

Access configuration (including fencing arrangements) shall not create safety hazards for pedestrians, vehicles or adjacent landowners amenity. For example, applicable sight distances and noise generation and levels.

- (g) The Developer shall provide a minimum 1.2 m wide footpath network to service all the proposed units, future on-site development and key amenities in accordance with Council Policy relating to retirement communities. The footpath network shall also extend from the end of the internal road adjoining the RV parking area to Cafferky Street, as shown on the approved plan. The maximum longitudinal grade shall not exceed 1:8 unless required for wheelchairs where the maximum longitudinal grade shall be 1:14. Kerb ramps shall be provided, to the satisfaction of the Senior Development Engineer, at appropriate points and intersections so as to afford the appropriate level of connectivity within a retirement community.

Pedestrian pathways shall be well defined with either two white lines or crosshatching or as otherwise agreed with the Senior Development Engineer defining the pathway where vehicles cross the pathway. The pathways in these locations shall be adequately signposted with "Caution Pedestrians" signs to the satisfaction of the Senior Development Engineer.

- (h) The Developer shall provide a new concrete layback and driveway slab minimum 3.0 m wide for the existing property Lot 13 on RP859820. The driveway shall be located on the unnamed road at the southern access point. Additionally, the Developer shall remove the existing driveway and reinstate the verge. These works shall be undertaken in consultation with Council and the relevant property owner.

- (i) Any terminating internal roads shall be provided with a turn-around area of sufficient size to enable a standard passenger vehicle to negotiate a clear turn. Hazard markers and delineator posts shall be erected at the ends of the turnarounds. Details of the proposed turn-around shall be provided on the operational works plan and shall be to the satisfaction of the Senior Development Engineer.

15. Sewerage

- (a) The Developer shall relay the existing sewerage reticulation reach, extending between access chambers Asset No 509 and 510, around the relevant proposed building allotments. The alignment of the relayed sewer shall generally coincide with the immediate proposed access road/cul-de-sac and within the proposed verge area.
- (b) The Developer shall pay the full cost for Council to provide suitable connections into the existing sewerage reticulation system. All works on live sewers are to be carried out by Council at the Developer's expense.
- (c) No work on the sewerage reticulation system shall commence prior to the approval of the Operational Works application.

16. Water

- (a) All works on live water mains are to be carried out by Council in accordance with Council's policy, and at the Developer's expense.
- (b) The Developer shall provide a private internal reticulated water supply system together with valves and fire hydrants capable of sustaining fire fighting draw off demands placed on it in terms of adequate flow and satisfactory pressure in accordance with QFRS (Qld Fire and Rescue Service Community Safety Unit) recommendations and an adequately sized metered domestic water supply system, in accordance with the "*Guidelines for Planning and Design of Urban Water Supply Schemes*". The configuration and sizing of the water main design shall be for a single connection into Council's reticulation system or as otherwise agreed with the Senior Development Engineer.

The recurrent maintenance requirements for the constructed internal water supply and fire hydrant system shall be the sole responsibility of the Developer and/or future property owners and shall be maintained to the satisfaction of the Senior Development Engineer. The review of the internal water works design shall be part of the approval process relating to the Operational Works submission.

- (c) Where concrete footpaths are to be constructed, the Developer shall provide 100 mm diameter conduits under the footpath and in line with the conduits under the road, for future ease of installing the individual water services. The letter "W" shall be embossed in the concrete to mark the location of the conduit.
- (d) The Developer shall lodge a private works request on the prescribed Council form, for Council to supply a cost estimate to:
 - (i) provide a sluice valve/meter configuration generally in accordance with attached sketch Figure 1 at the existing 150 mm water main located in Chubb Street;

- (ii) amend the existing connection if necessary; and
- (iii) seal off any existing water connections if necessary.

The appropriate fees are to be paid prior to Council signing any plan of survey.

- (e) The Developer shall duplicate the existing 150mm diameter water main located in Chubb Street extending along the eastern side of Chubb Street from Cafferky Street water main to 150 mm water main (Asset No 9,024) located at the southern access point (unnamed road).

17. Stormwater

- (a) The Developer shall provide all necessary stormwater drainage (both internal and external to the development) and such drainage works (except for roofwater systems) shall be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

Overland flow paths shall be suitably designed to cater for the water from a storm event with an ARI of 100 years. In the case where the piped system is carrying part of the flow, the overland flow paths shall be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system, noting the requirements of QUDM.

- (b) No ponding, concentration or redirection of stormwater shall occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.
- (c) Due consideration shall be given in the design and construction of the development in relation to the effect of the developed catchment flows on the downstream discharge receival areas. Suitable stormwater control devices are to be provided to ensure that there is no increase in velocity in watercourses. Such control devices are to be designed so as to integrate the landscaping, recreational, infrastructural and drainage roles of watercourses.
- (d) All stormwater runoff from the developed areas of the site shall be discharged through the proposed detention basin and outlet in a manner and to a point to be approved by the Senior Development Engineer. Any piped infrastructure conveying stormwater flows shall have an appropriately designed outlet at the low water level in the adjacent Bremer River.
- (e) Stormwater drainage plans and calculations are to be submitted and approved by the Senior Development Engineer, in conjunction with the submission of an Operational Works application.
- (f) The Developer shall develop the site from a stormwater management perspective in line with the recommendations contained in the Stormwater Management Plan and Flooding Report, prepared by Cardno (Qld) Pty Ltd dated 9 August 2005 subject to the inclusion/provision of the following:
 - (i) The increased stormwater runoff volume (post-development) associated with a Q5 storm event shall be retained on site;

- (ii) Detailed on-site flood routing and detention/retention basin and/or easement sizing shall be provided as part of the Operational Works application;
- (iii) Accommodation of Council approved water quality treatment measures;
- (iv) Adoption/incorporation of Council approved hydraulic/river bank stability study recommendations; and
- (v) A Level V roofwater and interallotment drainage system, in accordance with QUDM, shall be provided for this development.

The Developer shall comply with all requirements of Council approved design inclusions and alterations in association with the above mentioned items.

- (g) Development of the property with buildings or other structures below the flood level associated with an ARI of 20 years will not be permitted.
- (h) There shall be no filling or removal of material in the flood area below the flood level associated with an ARI of 20 years. The extent of earthworks on the site shall be limited to the area and scope as defined in the Stormwater Management Plan and Flooding Report, prepared by Cardno (Qld) Pty Ltd dated 9 August 2005.
- (i) Pollutant control devices and/or bioretention areas shall be installed in the stormwater system. Locations and types of the devices or treatment areas shall be submitted with the Operational Works Application for approval.

In addition to the requirements of Condition 5 of the Reconfiguring a Lot approval (that forms part of this approval 437/05), there shall be no clearing of vegetation below the adopted flood level unless otherwise approved by the Development Manager. Stormwater drainage outlets shall be the subject of detailed design in the preparation of plans for each stage of the development.

- (j) The Developer shall provide a rainwater retention system for the purpose of on-site landscape irrigation. The minimum retention capacity shall be 1,000 litres/proposed dwelling.
- (k) Runoff, including pipe discharge, from the development site down the embankment shall be controlled to a maximum velocity of 1.8m/s or unless otherwise accommodated in design and agreed with the Senior Development Engineer.
- (l) It is noted that the discharge pipe from the detention basin is proposed to extend and discharge into Council's land, Lot 94 on RP859820. The Developer shall obtain the written consent of the Conservation, Parks and Sport Manager for any such pipe prior to the submission of any application for operational works. Alternatively, the Developer may chose to relocate the pipe so that it discharges within the subject site.

18. Public Utilities

- (a) Street lighting shall be installed by the Developer in the Chubb Street frontage in accordance with the Australian Standard 1158.3.1 Table 1.1. All street lighting associated with the development shall be certified by a RPEQ. Street lighting shall be installed on the same side as concrete footpaths (where applicable).

- (b) The Developer shall provide underground electricity/telecommunications within the development. Electricity/telecommunication drawings shall be co-ordinated with the civil engineering design documents, to ensure that service clashes are avoided.
- (c) Prior to the any building approval, the Developer shall provide Council with a copy of an agreement with Energex for the supply of electricity to the development.
- (d) Telephone and cable services may be laid in a combined trench with electricity cables, subject to the approval of Energex and the authorised telephone/cable service provider.
- (e) The Developer shall make suitable arrangements for the provision of telephone services to all proposed units, Managers Residences and Community Centres etc. Documentary evidence that discussions have commenced with any authorised telephone service provider on the provision of telephone services shall be produced prior to commencement of use of each stage of the development.

19. Erosion & Silt Management

- (a) The Developer shall be responsible for the installation and maintenance of silt management facilities from the time of commencement of construction until this development has been completed. All silt management facilities are to be in accordance with the document "Soil Erosion and Sediment Control" published by the Institution of Engineers Australia, or equivalent.
- (b) Diversion drains and ponds, as necessary, shall be installed on the site before any other work is undertaken on site to ensure that "dirty water" is contained and/or isolated.
- (c) A procedure shall be submitted with the engineering drawings for approval for maintaining the facilities, setting out the frequency of attention, with inspections to be made after each significant rainfall event.
- (d) The Developer shall lodge a \$10,000 siltation and erosion performance bond with Council, prior to the commencement of works, which shall only be released by Council at the termination of the maintenance period. Where Council determines that a draw-down of the bond is required, the Developer shall restore the bond to its full amount within 10 days of a notice from Council to that effect. Such bond shall guarantee adequate performance in the circumstances (i) and (ii) below:
 - (i) In the event that instructions issued to the Consulting Engineer by the Senior Development Engineer for the installation of erosion control measures, are not complied with within 24 hours, Council will call upon the bond to the extent required to carry out the necessary works.
 - (ii) If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.

Should the Developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council shall complete the work and recover all costs from the Developer associated with that work.

20. Operational Works – Municipal Works
(ie Works being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) The Developer shall comply with the requirements of the documents entitled "Planning Scheme Policy 3 - General Works" and "Standard Drawings".
- (c) All engineering drawings submitted to Council shall be in accordance with Council's Planning Scheme Policy 3 - General Works and Standard Drawings, and shall include as a minimum the following:
- (d) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ;
- (e) The drawings shall be submitted as three A3 size sets and one full size set; and
- (f) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (g) Municipal works shall require a detailed design certified by a RPEQ, the design approved by Council Engineers with appropriate fees payable, a works pre-start meeting on-site and various detailed construction and audit inspections by Council Officers. A twelve month maintenance period is applicable for the works as well as the payment of a maintenance security deposit.
- (h) All works shall be supervised by a RPEQ competent in civil works and shall be undertaken by a nominated principal contractor experienced in the construction of municipal works. Council reserves the right to request evidence of the principal contractor's competency. Should it be deemed by the Senior Development Engineer that the contractor does not have the necessary competency or has constructed substandard works for Council in the past, Council reserves the right to reject the nominated contractor.
- (i) Municipal works shall be accepted "On Maintenance" prior to commencement of use. A maintenance bond equal to 5% of the construction cost (minimum of \$1,000.00) shall be retained by Council for a minimum period of twelve months, or until such time as the works are accepted "Off Maintenance" by Council.
- (j) "As Constructed" plans for municipal works shall be submitted to Council and approved prior to the formal acceptance of the works "On Maintenance".

- (k) On completion of the works a certificate shall be submitted to Council by a RPEQ certifying that the works have been constructed in accordance with Council's construction standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.
- (l) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent in regard to the works relevant to the Operational Works approval.
- (m) Prior to the commencement of any municipal works associated with developments other than the subdivision of land, Council shall require the provision of a bond equivalent to not less than 10% (minimum of \$1,000.00) of the value of the works as security for the performance of the various construction obligations (including the provision of engineering certification and "As Constructed" information). The bond shall be reduced to an amount of not less than 5% of the value of the works upon formal acceptance of the works "On Maintenance" and shall be retained by Council during the maintenance period as security for the performance of the maintenance obligations. The bond shall be returned upon formal acceptance of the works "Off Maintenance".
- (n) Council requires the provision of a bank guarantee, or a performance bond of not less than 10% (minimum of \$5,000.00) of the value of the external municipal works. The bond/guarantee shall be retained by Council until such time the Developer provides a replacement or additional maintenance period bond/guarantee for entire Municipal Works (both external and internal) as security for the performance of the maintenance obligations.

External Municipal Works relates to those works external to the subject site and located in already dedicated public areas, for example existing road or drainage reserve, or private property not subject to Developer ownership.

21. Operational Works – Internal Works
(ie Works not being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ.
- (c) The drawings shall be submitted as three A3 size sets and one full size set. Where municipal works are also being undertaken, it is usually appropriate to make a combined submission.
- (d) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.

- (e) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent.
- (f) A certificate shall be submitted to Council by a RPEQ certifying that the completed works have been constructed in accordance with Council's requirements and standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.

22. Plan of Survey

- (a) The Developer shall grant, free of cost to or compensation payable by Council, minimum 4.0 m wide easements located centrally over proposed and existing stormwater drains, water mains and sewerage rising mains, where they are located within private property.

The documentation associated with these easements may be prepared by the Developer in a form satisfactory to Council's City Solicitor, or the Developer may submit easement plans, only where Council is party to the easements, to Council for the preparation of easement documents at the Developer's expense.

- (b) Easements shall be centrally located over the alignment of stormwater paths and be of a width sufficient to encompass the overland flow from a storm event with an ARI of 100 years.
- (c) Easements shall be of sufficient width to contain any fitting, access chamber etc located on stormwater drains, water mains, and sewerage rising mains.
- (d) All pre-existing easements crossing the site shall be pegged where they cross each property boundary and at every change of direction.
- (e) All land (excluding that contained within approved parkland) below the flood level associated with an ARI of 10 years shall be dedicated as Drainage Reserve at no cost to Council. Land below this level shall not be considered as parkland contribution.
- (f) Existing Easement A on RP859820 shall be relinquished prior to the approval of any application for Building or Operational Works for the subject site. The easement shall not be relinquished until such time as the plan of survey dedicating the required additional open space as shown on the approved plan and as conditioned by the Reconfiguring a Lot component of this approval has been registered by the Department of Natural Resources and Mines.

23. General

- (a) All disturbed verge areas and allotments shall be graded, grassed and left in a mowable condition. The grass cover shall be obtained as early as possible during the development and an acceptable grass cover shall be achieved before the development can be accepted "Off Maintenance".
- (b) With reference to any works, on land under other private ownership, written permission for the works shall be obtained and forwarded to Council. Similarly,

written clearances shall be obtained after the works are completed, unless otherwise accepted by the Senior Development Engineer.

- (c) All works required for this development shall take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works shall be altered at the cost of the Developer.
- (d) Any filling for a greater depth than 500 mm shall be conducted in accordance with Australian Standard 3798. Test results as required by Australian Standard 3798, and a certificate of quality and uniformity of fill shall be provided by a RPEQ. The level of responsibility shall be Level 1.
- (e) A certificate from a RPEQ shall be issued to Council certifying that any retaining wall greater than 800 mm in height is structurally sound and capable of withstanding any likely surcharge loads. Retaining walls greater than 1.0 m in height are to be provided with railings or other barriers to provide pedestrian safety.
- (f) Retaining walls shall be designed so that there are no imposed loads placed upon Council's underground services. This may include extending the footing to a level 300 mm below the invert of the pipe.
- (g) For batters resulting from cutting and filling of the site and producing slopes greater than 1:6, Council requires a RPEQ to certify that they are stable and properly drained.
- (h) A hydraulic and river bank stability study shall be undertaken in regard to the site by a RPEQ. Such study shall be comprehensive taking into account all matters relating to the site and shall include, but shall not be limited to, the following:
 - Geology of the site and any related problems;
 - Instability features such as slips, soil creep etc;
 - Effects of existing vegetation and of any possible removal and or modification of same;
 - Effects of any fill material and the types of fill material recommended;
 - Water eg: ground water; scour potential in flood situations including the effects of turbulence; effects of rapid draw down of water level.

Such studies shall include any necessary recommendations in regard to the proposed development to ensure long term stability.

- (i) Approval of the Senior Development Engineer is required for any fill intended to be placed over Council's underground services.

24. Contributions

In accordance with the relevant Planning Scheme Policies, the Developer shall pay, prior to the commencement of the proposed change of use, the following monies to Council:-

Contribution	Sector	Rate	Proposal	Calculation
Social Infrastructure	Leichhardt	Level 1: \$44.94/EP	Number of "3 bed" Dwellings: 118.000 @	Level 1: \$48.89 x 357.28 = \$17 467.41

	Wulkuraka	Level 2: \$66.91/EP Level 3: \$31.08/EP Unit Charge = 1.088 Total = Level 1: \$48.89/EP Level 2: \$72.80/EP Level 3: \$33.82/EP	3.080 EP Existing Credit of 6.16 EP Proposal = 357.28 EP	Level 2: \$72.80 x 357.28 = \$26 009.98 Level 3: \$33.82 x 357.28 = \$12 083.20 Total = \$55 561.00
Open Space	Leichhardt - Wulkuraka	Level 1: \$110.43/EP Level 2: \$895.42/EP Level 3: \$257.33/EP Unit Charge = 1.026 Total = Level 1: \$113.30/EP Level 2: \$918.70/EP Level 3: \$264.02/EP	Number of "3 bed" Dwellings: 118.000 @ 3.080 EP Existing Credit of 6.16 EP Proposal = 357.28 EP	Level 1: \$113.30 x 357.28 = \$40 479.82 Level 2: \$918.70 x 357.28 = \$328 233.13 Level 3: \$264.02 x 357.28 = \$94 329.06 Total = \$463 042.00
Water Supply	Brassall Water Zone	\$841.00/EP Unit Charge = 1.088 Total = \$915.01/EP	Number of "3 bed" Dwellings: 118.000 @ 2.32 EP Community Club House (1069 m ² gfa): 0.5 EP/100 m ² gfa x 1069 Existing Credit of 12.10 EP Proposal = 267.0 EP	\$915.01 x 267.0 = \$244 307.67 Total = \$244 308.00
Sewerage Catchment	Bundamba Catchment	\$678.36/EP Unit Charge = 1.088	Number of "3 bed" Dwellings: 118.000 @ 2.32 EP Community Club House	\$738.06 x 270.3 = \$199 497.61 Total = \$199 498.00

		Total = \$738.06/EP	(1069 m ² gfa): 0.5 EP/100 m ² gfa x 1069 Existing Credit of 8.8 EP Proposal = 270.3 EP	
Road Contributions	Leichhardt-Wulkuraka	\$1,397.43/EP Unit Charge = 1.026 Total = \$1,433.76/EP	Number of "3 bed" Dwellings: 118.000 @ 1.75 EP Community Club House (1069 m ² gfa): 3.78 EP/100 m ² gfa x 1069 Existing Credit of 59.55 EP Proposal = 187.35 EP	\$1,433.76 x 187.35 = \$268 614.93 Total = \$268 615.00
Total for Development				\$1 231 024.00

The contributions above shall be applicable for a period of twelve (12) months from the date of the development approval, and thereafter shall be based on the infrastructure contribution rates applicable at the date when payment is made.

Note: Level 2 and Level 3 Open Space credits are applicable for the area of land to be dedicated for open space required by the conditions of the Reconfiguring a Lot component of this approval. The final credit given will be dependant on the final agreed area for dedication and the area of this land that is located above the Q10 flood level, as land below this flood level does not attract credits under the policy.

25. Dust suppression

Dust suppression measures shall be employed during construction to the satisfaction of the Development Manager so as not to cause a dust nuisance.

26. Refuse

A bulk bin waste service shall be provided by an approved waste contractor to the satisfaction of the Development Manager. The waste service shall be maintained to a degree that will ensure all waste on site is managed effectively and without nuisance.

27. Minor Alterations

Notwithstanding the requirements detailed in this approval, any other minor alterations and/or modifications acceptable to the Development Manager will suffice.

28. Compliance with Conditions

- (a) Unless otherwise stated all conditions shall be completed prior to commencement of the proposed change of use of the site or as determined by the Development Manager.
- (b) All conditions shall be completed to the satisfaction of the Development Manager.

29. When Approval Takes Effect

This approval has effect in accordance with the provisions of Section 3.5.19 of the *Integrated Planning Act 1997* as follows:

- (a) If the applicant does not appeal the decision to the court - when the submitter's appeal period ends; or
- (b) If an appeal is made to the court - subject to the decision of the court, when the appeal is finally decided.

30. When Approval Lapses

- (a) This approval lapses at the end of the currency period, unless the change of use happens before the end of the currency period. The currency period for this approval is 4 years starting the day the approval takes effect; and
- (b) An extended currency period may be agreed upon, pursuant to Section 3.5.22 of the *Integrated Planning Act 1997*, provided a written notice to Council is made before the end of the currency period. Such written notice is to be on Council's approved form, accompanied by the owner's consent and the prescribed fee in Council's Register of General Charges.
- (c) All of the development the subject of this approval shall be completed within the periods stated in Condition (a) above. This approval shall lapse for any part of the development of the site that has not commenced within the currency period stated in Condition (a) above.

Reconfiguring a Lot

1. Basis of Approval

Subject to these conditions, the facts and circumstances set out in the application and all relevant Council Local Laws and/or Planning Scheme Policies shall be adhered to.

2. Plan of Survey

The Developer shall submit a plan of survey to conform with plan number 20038-03A, prepared by the PMM Group and dated July 2005, with the following amendments and clarifications as noted on the approved plan:

- (a) The Developer shall dedicate an additional area of open space at the top of the bank of sufficient width to cater for a pedestrian/cycleway and associated recreation facilities. The western boundary of the dedication shall generally follow the 19 m contour or such other location as agreed to by the Development Manager.

Such amendments shall be to the satisfaction of the Development Manager.

3. Rates in Arrears

In accordance with the provisions of the *Integrated Planning Act 1997*, all rates and other expenses as a charge against the land shall not be in arrears at the date of signing of the plan of survey.

4. Parkland Dedication

Land required for open space shall be dedicated, free of cost to and compensation by Council, in fee simple at the time of registration in the Department of Natural Resources and Mines of the relevant plan of survey.

5. Clearing within Proposed Parkland

No clearing shall be undertaken in proposed parkland without the prior approval of the Development Manager.

6. Quality of Park Dedication

Land to be dedicated for park purposes shall be upgraded to the satisfaction of the Development Manager as follows:

- (a) declared plants, environmental weeds and rubbish shall be removed;
- (b) dead trees shall be removed and dangerous trees made safe within 10 m of proposed house blocks or proposed pathways or playgrounds;
- (c) open areas shall be grassed and left in mowable condition;
- (d) open areas shall be free of rocks, stumps, humps and hollows;
- (e) all areas of disturbance within parkland including areas of erosion and bare ground shall be rehabilitated. All batters and banks shall be fully stabilised and vegetated to the satisfaction of the Development Manager;
- (f) all rubbish shall be removed from parkland;
- (g) parkland shall be freely and safely drained;
- (h) no overburden or spoil shall be pushed or deposited into parkland;
- (i) there shall be no removal of soil or filling around trees.

7. Compliance with Conditions

- (a) Unless otherwise stated all conditions shall be completed prior to signing of the relevant plan of survey or as determined by the Development Manager.
- (b) All conditions shall be completed to the satisfaction of the Development Manager.

8. Minor Alterations

Notwithstanding the requirements detailed in this approval, any other minor alterations and/or modifications acceptable to the Development Manager will suffice.

9. When Approval Takes Effect

This approval has effect in accordance with the provisions of Section 3.5.19 of the *Integrated Planning Act 1997* as follows:

- (a) If the applicant does not appeal the decision to the court - when the submitter's appeal period ends; or
- (b) If an appeal is made to the court - subject to the decision of the court, when the appeal is finally decided.

10. When Approval Lapses

- (a) The currency period for this approval is 2 years starting the day the approval takes effect. The Developer is required to submit to Council an accurate plan of survey before the end of the currency period, otherwise the approval will lapse.
- (b) An extended currency period may be agreed upon, pursuant to Section 3.5.22 of the *Integrated Planning Act 1997*, provided a written notice to Council is made before the end of the currency period. Such written notice is to be on Council's approved form, accompanied by the owner's consent and the prescribed fee in Council's Register of General Charges.

B. The Developer be further advised of the following:-

1. Portable Long Service Leave

From 1 January 2000, the Building and Construction Industry (Portable Long Service Leave) Levy must be paid prior to the issue of a development permit where one is required for the 'Building and Construction Industry'. This applies to Building Works, Operational Works and Plumbing and Drainage Works applications, as defined under the *Integrated Planning Act 1997*, where the works are \$80 000 or more and matching the definition of 'Building and Construction Industry' under the *Building and Construction Industry (Portable Long Service Leave) Act 1991*.

Council will not be able to issue a Decision Notice without receipt of details that the Levy has been paid. Should you require clarification in regard to the amendments to the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, you should contact QLeave on 1800 803 481 (free call) or (07) 3212 6855.

2. Fire Ants

In accordance with the *Plant Protection Act 1989* and the Plant Protection Regulation 1990, a quarantine notice has been issued for the State of Queensland to prevent the spread of the Red Imported Fire Ant (ant species *Solenopsis invicta*) and to eradicate it from the State.

It is the legal obligation of the land owner or any consultant or contractor employed by the land owner to report the presence or suspicion of Fire Ants to the Queensland

Department of Primary Industries on 132523 within 24 hours of becoming aware of the presence or suspicion, and to advise in writing within seven days to:

Director General
Department of Primary Industries
GPO Box 46, Brisbane QLD 4001

It should be noted that the movement of Fire Ants is prohibited, unless under the conditions of an Inspectors Approval. More information can be obtained from the Queensland Department of Primary Industries website www.dpi.qld.gov.au.

The land over which you have made a development application is within a suburb known to have Fire Ants and as such is within a "Restricted Area". The presence of Fire Ants on the site may affect the nature, form and extent of works permitted on the site. In view of this it will be necessary for you to contact the Department of Primary Industries to investigate the site and for you to implement any necessary matters required by that Department prior to the commencement of any works.

3. Flooding

The subject site was fully inundated in the 1974 flood. Council, and its servants and agents, accept no liability or responsibility for any loss or damage to person or property of whatever nature or however caused as the direct or indirect consequence of the granting of the approval herein contained. Such approval has been granted at the request of the Developer and in reliance of information submitted by the Developer in support thereof.

- C. That the Decision Notice advise the Developer that there were properly made submissions received with respect to this application.



Michael Ellery
SENIOR DEVELOPMENT PLANNER

I have this day adopted the recommendation specified in this report.

Such action was taken pursuant to the delegation entitled "Determination of a Development Application, including Negotiated Decisions" granted to me by the Chief Executive Officer dated 16 August 2001 and 22 August 2001.



Joanne Pocock
**DEVELOPMENT TEAM
CO-ORDINATOR - CENTRAL WEST**

Date: 17/3/06 .

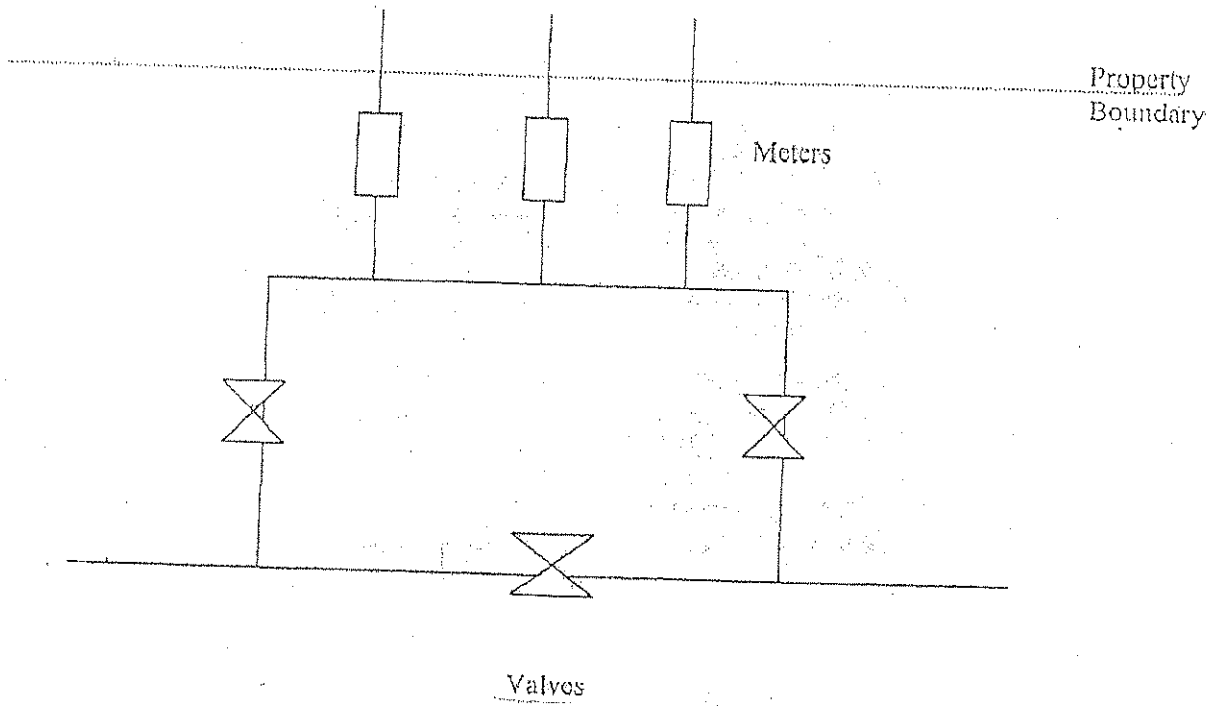


Figure 1: Water Meter and Valve Configuration.



Assessment Checklist

Impact Assessable Development

A. Application Details

Appln No.: 437/05

Division: 8

B. Preamble Assessment

1. Are the real property description and location details provided on the Application Form correct? Yes No
2. Has the 'consent of owner' been correctly obtained? Yes No
3. Has the correct fee been paid? Yes No

C. Supporting Information

1. (a) Was any supporting material lodged with the application? Yes No
 - Planning Report, prepared by David Brett & Associates Pty Ltd;
 - IDAS Forms; and
 - Proposal Plans.
- (b) Are there any planning issues associated with this material? Yes No

C. Supporting Information

2. (a) Is there a need for an Information Request?

Yes No

Further information was requested from the Applicant in relation to the following matters:

- Details of the proposed recreation use;
- Details of proposed unit designs;
- Pedestrian access and movement within the site;
- Provision of recreation space;
- A landscape strategy;
- Provision of adequate numbers of parking spaces;
- A stormwater management plan;
- Access for the largest anticipated vehicle;
- A traffic report;
- A hydraulic report to address flooding issues;
- An acoustic report; and
- A lighting plan.

(b) Are there any outstanding issues associated with the Information Response?

Yes No N/A

Comment: In response to the information request the proposal was significantly altered, particularly in terms of density of the proposed units. It is considered that the Applicant has adequately responded to the matters contained in the information request.

D. Referral / Advice Agencies

1. Are there any referral or advice agencies applicable to this development? Yes No

The following were Third Party Advice Agencies relevant to this application:

- Environmental Protection Agency;
- Department of Natural Resources and Mining; and
- Department of Primary Industries and Fisheries.

Under the provisions of Schedule 8 of the *Integrated Planning Regulation 1998* this application triggered referral co-ordination.

2. Are there any issues associated with advice received from a Referral / Advice Agency? Yes No N/A

Comment: The DPI&F provided a response on 6 September 2005 and advised that it considered that the potential impacts on issues relevant to the Department were likely to be minor and therefore they had no requirements. No response was received from the EPA and the DNRM. It should be noted that the proposal no longer proposes a permanent water body and hence referral coordination would not be required if the application were remade in its current format.

E. State Planning Policies (SPP's)

1. Are there any SPP's applicable to this development? Yes No

2. Does the development comply with any relevant SPP's? Yes No N/A

F. Zone Code

1. What is the relevant zone code(s) for this development?

- Urban Areas Code- Division 4 Large Lot Residential, Division 5 Residential Low Density and Division 17 Recreation

2. (a) Does the development require impact assessment under the relevant assessment table for the zone? Yes No

- (b) Is the development consistent with the outcomes sought for the zone? Yes No

3. (a) Are there any overall or specific outcomes for the locality which apply to the development? Yes No

F. Zone Code

(b) Does the development comply with any relevant overall or specific outcomes for the locality?

Yes No N/A

4. Does the development comply with the overall outcomes for the zone?

Yes No N/A

5. Does the development comply with the "Effects of Development – General" (including the specific outcomes and any applicable probable solutions or acceptable solutions) for the zone?

Yes No N/A

6. (a) Are there any Sub Area or Precinct provisions within the zone which apply to this development?

Yes No

- Residential Low Density- Sub Area RL2

(b) Does the development comply with these provisions?

Yes No N/A

G. Codes for a Stated Purpose or of a Stated Type (refer Part 12 of the Planning Scheme)

1. Are there any codes under Part 12 of the Planning Scheme applicable to the development?

Yes No

- Residential Code; and
- Parking Code.

2. Does the development comply with these codes?

Yes No N/A

Comment: The Parking Code requires the provision of 59 visitor parking spaces and one space for the manager. The Developer has only proposed 48. A condition has been included in the recommendation for the Developer to provide these additional spaces as there is more than adequate space on the site to provide the additional twelve (12) spaces.

H. Overlays (refer Part 11 of the Planning Scheme)

1. (a) Is the site affected by a Character Places Overlay?

Yes No

(b) Is the assessment category changed (refer Table 11.3.2)?

Yes No N/A

H. Overlays (refer Part 11 of the Planning Scheme)

(c) Does the development comply with the Character Places Overlay Code and the Character Code?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
2. (a) Is the site affected by a Development Constraints Overlay? <ul style="list-style-type: none">• OV5 Flooding (1 in 20 and 1 in 100 Flood Lines);• OV7A Building Height Restriction;• OV7A Inner Horizontal Surface RL 71.5; and• OV7B Existing Urban Committed Townships.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(b) Is the assessment category changed (refer Table 11.4.3 and 11.4.4)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
(c) Does the development comply with the relevant provisions of the Development Constraints Overlay Code? Comment: The Applicant has proposed balance cut and fill to ensure that all unit sites will be located above the adopted flood line. The Senior Development Engineer is satisfied that, with the imposition of appropriate conditions, the proposed earthworks are suitable and will not have a detrimental impact on the site or surrounding properties.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

I. Other Relevant Matters

1. (a) Are there any Planning Scheme Policy provisions which specifically apply to this development? <ul style="list-style-type: none">• Planning Scheme Policy 5- Infrastructure	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(b) Does the development comply with these provisions?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
2. (a) Are there any Implementation Guidelines which specifically apply to this development?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
(b) Does the development comply with these Guidelines?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
3. Are there any other relevant matters which pertain to this development?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

I. Other Relevant Matters

4. Infrastructure Contributions – Calculation Sheet attached to this checklist?

Yes No N/A

J. Public Notification

1. Was the public notification carried out in accordance with the *Integrated Planning Act* requirements?

Yes No

2. Were any submissions received?

Yes No

Written notice has been received from the applicant confirming public notification of the proposal correctly identified the application as a proposal for a material Change of Use – Multiple Residential (118 Aged Accommodation Units), Common Facility, Recreation Use (Lawn Bowls Green and 2 unlit Tennis Courts) and Reconfigure a Lot – Amalgamation of Three (3) Lots into Two (2) Lots and included publishing a notice in the Queensland Times on 3 October 2005. Such notice confirmed that the actual notification period of 30 business days complies with Section 3.4.5 of the *Integrated Planning Act 1997* which states that the notification period for the application is 30 business days. The public notification of the proposal has been carried out in accordance with the *Integrated Planning Act 1997* and one submission has been received. A detailed review of the submission is contained within Appendix A attached to this report.

Submitter

ONE MILE QLD 4305

K. Summary

1. Recommended for:

- Approval - Subject to Conditions
 Refusal
 Part Refusal / Part Approval - Subject to conditions

Michael Ellery
SENIOR DEVELOPMENT PLANNER

Date: 16/3/06

Joanne Pocock
DEVELOPMENT TEAM
CO-ORDINATOR - CENTRAL WEST

Date: 17/3/06

APPENDIX A – ISSUES MADE BY SUBMITTERS AND COUNCIL’S COMMENTS

Issues	Council Comment
<p><i>I purchased 96 Chubb St at One Mile on 7 June 2002, and found during the title searches by the solicitor that 100 Chubb Street was also zoned residential and approved for one dwelling only. This was a major factor in my decision to buy the house.</i></p>	<p>It is noted that as of 2002, there were no current development approvals for the subject site. Subsequent to this time, Building and Plumbing Works approvals were issued in 2003 for a single residential house. This development was self-assessable under the Planning Scheme at this time.</p> <p>Despite this, the Planning Scheme states that a multiple residential development for the purposes of aged accommodation is consistent development within the Large Lot Residential Zone if of a type and scale appropriate for the prevailing nature of the area. As noted in the report, the density of the development is 16.83 dwellings per hectare. This density is comparable to the preferred density of the Residential Low Density Zone, being the dominant zone in the area, which allows up to 15 dwellings per hectare. The development has been designed to avoid large scale and bulky buildings that would be out of character with the local area and uses unit designs that are comparable to the existing built fabric of the surrounding area. The impacts generated by the proposal are either of a similar nature to the uses in the surrounding area or can be conditioned appropriately. As such, it is considered that the proposal is consistent with the intent of the zone and is suitable for the locality.</p>
<p><i>During the design and community awareness phase of the development Mr Brad Fuller (acting on behalf of Galaxy Pty Ltd) approached me regularly to purchase 96 Chubb St from me. During this time he assured to me it was best to sell as the value of my property would fall by having a multi-residential development on at least two of my boundaries.</i></p>	<p>There is no planning reason why the proposed development should detrimentally impact on the value of surrounding properties. Appropriate conditions have been included in the recommendation to ensure that the amenity of adjoining residences is not adversely affected.</p>
<p><i>On the application plans the two access road to the retirement village are both to be positioned within 50 metres of my boundaries. As these are on Chubb Street and there being a minimum of 118 residents plus staff and visitors, the vehicle traffic to the area will increase dramatically on what is currently a dead-end street.</i></p>	<p>The Senior Development Engineer has reviewed the submitted Traffic Report and is satisfied that Chubb Street has sufficient capacity to cater for the traffic anticipated to be generated by the use. Conditions have been included in the recommendation for appropriate road works at the entry points to the development to ensure safe traffic movements.</p>

On the plan one of the internal roads is shown to join right to my fence line, I would like to know for what purpose as presumably a cul-de-sac would be more functional.

A condition has been included in the recommendation that any terminating internal roads be provided with a turn-around area to cater for a standard passenger vehicle. The detailed design of the turn-arounds will be required to be submitted with the operational works drawings.



Assessment Checklist

Impact Assessable Development

A. Application Details

Appln No.: 437/05

Division: 8

B. Preamble Assessment

1. Are the real property description and location details provided on the Application Form correct? Yes No
2. Has the 'consent of owner' been correctly obtained? Yes No
3. Has the correct fee been paid? Yes No

C. Supporting Information

1. (a) Was any supporting material lodged with the application? Yes No
 - Planning Report, prepared by David Brett & Associates Pty Ltd;
 - IDAS Forms; and
 - Proposal Plans.
- (b) Are there any planning issues associated with this material? Yes No

C. Supporting Information

2. (a) Is there a need for an Information Request? Yes No

Further information was requested from the Applicant in relation to the following matters:

- Details of the proposed recreation use;
- Details of proposed unit designs;
- Pedestrian access and movement within the site;
- Provision of recreation space;
- A landscape strategy;
- Provision of adequate numbers of parking spaces;
- A stormwater management plan;
- Access for the largest anticipated vehicle;
- A traffic report;
- A hydraulic report to address flooding issues;
- An acoustic report; and
- A lighting plan.

(b) Are there any outstanding issues associated with the Information Response? Yes No N/A

Comment: In response to the information request the proposal was significantly altered, particularly in terms of density of the proposed units. It is considered that the Applicant has adequately responded to the matters contained in the information request.

D. Referral / Advice Agencies

1. Are there any referral or advice agencies applicable to this development? Yes No

The following were Third Party Advice Agencies relevant to this application:

- Environmental Protection Agency;
- Department of Natural Resources and Mining; and
- Department of Primary Industries and Fisheries.

Under the provisions of Schedule 8 of the *Integrated Planning Regulation 1998* this application triggered referral co-ordination.

2. Are there any issues associated with advice received from a Referral / Advice Agency? Yes No N/A

Comment: The DPI&F provided a response on 6 September 2005 and advised that it considered that the potential impacts on issues relevant to the Department were likely to be minor and therefore they had no requirements. No response was received from the EPA and the DNRM. It should be noted that the proposal no longer proposes a permanent water body and hence referral coordination would not be required if the application were remade in its current format.

E. State Planning Policies (SPP's)

1. Are there any SPP's applicable to this development? Yes No

2. Does the development comply with any relevant SPP's? Yes No N/A

F. Zone Code

1. What is the relevant zone code(s) for this development?

- Urban Areas Code- Division 4 Large Lot Residential, Division 5 Residential Low Density and Division 17 Recreation

2. (a) Does the development require impact assessment under the relevant assessment table for the zone? Yes No

- (b) Is the development consistent with the outcomes sought for the zone? Yes No

3. (a) Are there any overall or specific outcomes for the locality which apply to the development? Yes No

F. Zone Code

(b) Does the development comply with any relevant overall or specific outcomes for the locality?

Yes No N/A

4. Does the development comply with the overall outcomes for the zone?

Yes No N/A

5. Does the development comply with the "Effects of Development – General" (including the specific outcomes and any applicable probable solutions or acceptable solutions) for the zone?

Yes No N/A

6. (a) Are there any Sub Area or Precinct provisions within the zone which apply to this development?

Yes No

- Residential Low Density- Sub Area RL2

(b) Does the development comply with these provisions?

Yes No N/A

G. Codes for a Stated Purpose or of a Stated Type (refer Part 12 of the Planning Scheme)

1. Are there any codes under Part 12 of the Planning Scheme applicable to the development?

Yes No

- Residential Code; and
- Parking Code.

2. Does the development comply with these codes?

Yes No N/A

Comment: The Parking Code requires the provision of 59 visitor parking spaces and one space for the manager. The Developer has only proposed 48. A condition has been included in the recommendation for the Developer to provide these additional spaces as there is more than adequate space on the site to provide the additional twelve (12) spaces.

H. Overlays (refer Part 11 of the Planning Scheme)

1. (a) Is the site affected by a Character Places Overlay?

Yes No

(b) Is the assessment category changed (refer Table 11.3.2)?

Yes No N/A

H. Overlays (refer Part 11 of the Planning Scheme)

(c) Does the development comply with the Character Places Overlay Code and the Character Code?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
2. (a) Is the site affected by a Development Constraints Overlay? <ul style="list-style-type: none">• OV5 Flooding (1 in 20 and 1 in 100 Flood Lines);• OV7A Building Height Restriction;• OV7A Inner Horizontal Surface RL 71.5; and• OV7B Existing Urban Committed Townships.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(b) Is the assessment category changed (refer Table 11.4.3 and 11.4.4)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
(c) Does the development comply with the relevant provisions of the Development Constraints Overlay Code? Comment: The Applicant has proposed balance cut and fill to ensure that all unit sites will be located above the adopted flood line. The Senior Development Engineer is satisfied that, with the imposition of appropriate conditions, the proposed earthworks are suitable and will not have a detrimental impact on the site or surrounding properties.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

I. Other Relevant Matters

1. (a) Are there any Planning Scheme Policy provisions which specifically apply to this development? <ul style="list-style-type: none">• Planning Scheme Policy 5- Infrastructure	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
(b) Does the development comply with these provisions?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
2. (a) Are there any Implementation Guidelines which specifically apply to this development?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
(b) Does the development comply with these Guidelines?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
3. Are there any other relevant matters which pertain to this development?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

I. Other Relevant Matters

4. Infrastructure Contributions – Calculation Sheet attached to this checklist?

Yes No N/A

J. Public Notification

1. Was the public notification carried out in accordance with the *Integrated Planning Act* requirements?


Yes No

2. Were any submissions received?

Yes No

Written notice has been received from the applicant confirming public notification of the proposal correctly identified the application as a proposal for a material Change of Use – Multiple Residential (118 Aged Accommodation Units), Common Facility, Recreation Use (Lawn Bowls Green and 2 unlit Tennis Courts) and Reconfigure a Lot – Amalgamation of Three (3) Lots into Two (2) Lots and included publishing a notice in the Queensland Times on 3 October 2005. Such notice confirmed that the actual notification period of 30 business days complies with Section 3.4.5 of the *Integrated Planning Act 1997* which states that the notification period for the application is 30 business days. The public notification of the proposal has been carried out in accordance with the *Integrated Planning Act 1997* and one submission has been received. A detailed review of the submission is contained within Appendix A attached to this report.

Submitter


Chubb Street
ONE MILE QLD 4305

K. Summary

1. Recommended for:

- Approval - Subject to Conditions
- Refusal
- Part Refusal / Part Approval - Subject to conditions


Michael Ellery
SENIOR DEVELOPMENT PLANNER

Date: 16/3/06


Joanne Pocock
DEVELOPMENT TEAM
CO-ORDINATOR - CENTRAL WEST

Date: 17/3/06



Ipswich
City Council

4802

Your Reference:
Our Reference: 437/05 : MTE : NBC
Contact Officer: Michael Ellery
Telephone No.: 3810 6894

RECEIVED	
BY	DATE
T.E.	20/03/06

20 March 2006

INTEGRATED PLANNING ACT 1997
DEVELOPMENT APPLICATION DECISION NOTICE

Application Details

Application No: 437/05

Real Property Description: Lot 59 RP849800, Lot 93 RP8310 & Lot 14 RP859820

Property Location: 8 Georgette Street & 84 and 100 Chubb Street, One Mile

Names and Addresses of all Referral Agencies: N/A

Decision Date: 17 March 2006

Decision: Approved subject to the conditions detailed below.

Decision Authority: Team Co-ordinator - Central West

Dave Humphries 0419 626 282



David Brett & Associates Pty Ltd
PO Box 5020
BRASSALL QLD 4305

Please Address All Correspondence to:
Chief Executive Officer
Ipswich City Council
A.B.N. 61 461 981 077
PO Box 191 Ipswich Qld 4305
Telephone: (07) 3810 6666
Facsimile: (07) 3810 6731
Email: council@gil.com.au
Website: www.ipswich.qld.gov.au

Approval Details:

Proposal	Development	Decision	Approval Type
Multiple Residential - 118 Aged Accommodation Units and Ancillary Recreation Facilities ✓	Making a material change of use of premises ✓	Approved ✓	Development Permit ✓
	Carrying out Operational Work ✓	Approved ✓	Preliminary Approval ✓
	Carrying out Building Work	Approved ✓	Preliminary Approval ✓
Reconfigure Three (3) Lots into Two (2) Lots ✓	Reconfiguring a lot ✓	Approved ✓	Development Permit ✓

Further Development Permits Required

Further Development Permits, as required by the *Integrated Planning Act 1997*, shall be obtained in respect of any Operational Works and Building Works in relation to this approval before any such works are commenced.

Conditions**Assessment Manager (Ipswich City Council)**

Conditions applicable to this approval under Integrated Planning Act:

Conditions of Assessment Manager (Ipswich City Council)**Material Change of Use, Operational Work and Building Work**1. Basis of Approval

Subject to these conditions, the facts and circumstances set out in the application and all relevant Council Local Laws and/or Planning Scheme Policies shall be adhered to. ✓

2. Site Development

The proposed development of the site shall be undertaken generally in accordance with the following plans:

- Plan Number 20038-03A, prepared by the PMM Group and dated July 2005; ✓
- Plan Number 1916-02 Building Types and Landscape Treatment, prepared by Verge and dated 22 August 2005; ✓
- Plan Number 1916-01, prepared by Verge and dated 22 August 2005; ✓
- Approved Plan designated Plan 437/05-1 "Lizard", prepared by Etto Design and Drafting; ✓
- Approved Plan designated Plan 437/05-2 "Lindeman", prepared by Etto Design and Drafting; ✓
- Approved Plan designated Plan 437/05-3 "Hamilton", prepared by Etto Design and Drafting; and ✓

- Approved Plan designated Plan 437/05-4 "Bedarra", prepared by Etto Design and Drafting. ✓

with the following amendments and clarifications:

- 77 ✓
- 10 ✓
- 59 (29)
- X
- The location of double-storey units shall be in accordance with Condition 4(b) of this approval; ✓
 - A development plan for the community club house shall be submitted and approved by the Development Manager prior to the approval of any further application for a Development Permit in respect to this approval. The plan shall detail the location and extent of proposed uses within the building. Elevations should be provided where it is intended to alter the external appearance of the building; ✓
 - There shall be no vehicular access to Georgette Street; ✓
 - Additional car parking spaces shall be provided in accordance with Condition 10 of this approval; and
 - The existing dam proposed to be utilised as detention basin shall be contained wholly within the subject site and allow for a minimum setback to the boundary of 3 metres.

Such amendments shall be to the satisfaction of the Development Manager.

3. Particular Use

99 ✓

This approval is for the particular use stated, and does not imply approval for other similar uses. To this end, the use of any of the proposed structures associated with the aged accommodation units, inclusive of car parking and any associated outdoor areas on site, are not permitted to be used for any other purpose, unless, in the opinion of the Development Manager, such use is ancillary and incidental to the predominant use of the site for a aged accommodation units. In particular, the use of the community club house and any recreational facilities on the site, such as the tennis court and lawn bowls green, is strictly limited to use by residents of the subject site and their genuine visitors.

4. Unit Types

- ✓
- ✓
- The individual unit sites shall be developed in accordance with one of the approved unit designs detailed in the approved plans listed in Condition 2 above.
 - The use of the double-storey unit detailed on Approved Plan 437/05-4 "Bedarra" is not approved for any sites that share a common boundary with an adjoining lot not the subject of this approval, unless otherwise approved in writing by the Development Manager. ✓

5. Hours of Construction

Unless otherwise approved in writing by the Development Manager hours of construction shall be:

Monday to Saturday 6.30 a.m. to 6.30 p.m.

Work shall not be conducted from or on the premises outside the above hours or on Sundays or public holidays.

6. Hours of Operation- Outdoor Recreation Facilities

Unless otherwise approved in writing by the Development Manager hours of operation for the outdoor recreation facilities, including the tennis courts and lawn bowls green, shall be:

Monday to Sunday 7.00 a.m. to 6.00 p.m.

The outdoor recreation facilities shall not be used outside the above hours.

7. Lighting

(a) The provision of advertising, security and flood lighting shall be designed, constructed, located and maintained to the satisfaction of the Development Manager so as not to cause disturbance to the occupants of nearby properties or passing traffic.

(b) Unless otherwise approved by the Development Manager, lighting shall not be provided to the tennis courts and lawn bowls green.

8. Letter Boxes

Unless otherwise approved by the Development Manager, one letter box shall be provided per unit plus one letter box for use by the body corporate or management where appropriate. Such letter boxes shall form an integral part of the design of the development and shall be located within six (6) metres of the road frontage to which the site has been allocated its street address, unless otherwise approved by the Development Manager.

9. Loading and Unloading

All loading and unloading shall take place within the boundaries of the subject property.

10. Carparking - Use and Maintenance

(a) 59 visitor car parking spaces and one (1) manager's car parking space shall be provided on site for the proposed development. The spaces shall be clearly shown on the Landscape Master Plan required by Condition 11 of this approval and on the Operational Works drawings.

(b) All parking areas shall be:

(i) kept exclusively for parking;

(ii) used exclusively for parking;

(iii) accessible to visitors during any approved hours of operation; and

(iv) maintained to the satisfaction of the Development Manager.

✓ 11. Landscaping Plan

- (a) A Landscape Master Plan, which conforms to the approved Landscape Concept Plans prepared by Verge, Plan Numbers 1916-01, 1916-02 and 1916-03, and Council's Residential Code, shall be submitted to and approved by the Development Manager prior to the issue of a development permit for Building Works. Such plan shall include, amongst other necessary items, the following features:
- (i) extent of landscaped areas, including buffers;
 - (ii) location and name of existing trees;
 - (iii) soil type;
 - (iv) location of drainage, sewerage and other underground services and overhead powerlines;
 - (v) details of landscaping structures;
 - (vi) contours and spot levels;
 - (vii) proposed surface treatments;
 - (viii) means of drainage;
 - (ix) fence size and type of material;
 - (x) schedule of plant species size and attributes; and
- ✓ (xi) It is noted on Plan 1916-03 that is proposed to retain a *Celtis sinensis* (Chinese Elm) near the community club house. Any such species on the site shall be removed as they are considered to be an environmental weed as listed on Council's Environmental Weeds List.
- Em ✓ (b) A densely planted buffer shall be provided around the proposed RV Parking Area where it adjoins existing residential properties and proposed unit sites within the development. The buffer shall be designed to ensure that the parking facility is visually screened from surrounding residential uses. The buffer shall be a minimum of five metres wide or such other width as agreed to in writing by the Development Manager. Details of this buffer shall be included in the Landscape Master Plan required by Condition 11(a) of this approval.
- ✓ (c) The Developer shall provide landscaping to that area located between the outdoor recreation facilities (tennis courts, bowling green and communal garden) and the area of land to be dedicated for open space purposes. Such landscaping shall be designed to capture sheet stormwater runoff from these areas and provide a measure of stormwater quality treatment prior to discharge into the Bremer River. The landscaping shall also be designed to maintain casual surveillance of the proposed public open space area along the Bremer River when viewed from the subject site. The species selected for planting in this area should be appropriate to achieve these objectives. The large scale use of grass/turf on its own is not considered an appropriate response. Details of such landscaping shall be included in the Landscape Master Plan required by 11(a) of this approval.

- (d) A 1.8 metre high timber screen fence shall be provided to all common boundaries with adjoining existing allotments, unless otherwise approved in writing by the Development Manager. Where an existing fence of suitable condition already exists and the adjoining owner agrees, a new fence need not be provided. In such case, the written agreement of the adjoining owner shall be provided to Council.
- (e) The Developer shall complete landscaping and fencing works in accordance with the approved landscape plans to the satisfaction of the Development Manager prior to the commencement of the use of the land unless Council determines otherwise. Such landscaping and fencing shall be maintained in perpetuity to Council's satisfaction by the existing or future owners and occupiers of the property.

12. Engineering Requirements

The following engineering requirements, detailed in Conditions 13 – 23, shall be completed to the satisfaction of the Senior Development Engineer.

Terms

- (a) RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required. Furthermore, the RPEQ required for the analysis and reporting for mining shall be experienced in the analysis of underground and surface mining within the Ipswich area.
- (b) QUDM - The Queensland Urban Drainage Manual, produced by the Queensland Department of Primary Industries.
- (c) Queensland Streets - The Design Guidelines for Subdivisional Street Works, prepared for the Institute of Municipal Engineers of Australia (QLD).
- (d) AMCORD - The Australian Model Code of Residential Development produced by the Commonwealth Department of Housing and Regional Development.
- (e) DMR - Department of Main Road.
- (f) MUTCD - The Manual of Uniform Traffic Control Devices, published by DMR.
- (g) Ipswich Water - Commercial Business Unit of Ipswich City Council providing water and sewerage services.
- (h) DNRM - Department of Natural Resources and Mines.

13. Roadworks

- (a) The unnamed road located at the development's southern access point shall be constructed as road, extending from Chubb Street to the subject site, in accordance with Council's standards. Any stormwater discharge (both piped or overland) originating from Chubb Street and/or the unnamed road that enters the subject site shall require an appropriately sized easement, extending to Council approved discharge, within the development. The Developer shall submit to Council a list of three proposed alternative street names and the corresponding name meanings for this unnamed road.

The proposed names should normally be submitted as part of the Operational Works application. Council reserves the right to accept any or none of the proposed names.

- (b) Roadworks shall be designed and constructed in accordance with Council's Standards, Queensland Streets, Austroads Publications, AMCORD, the relevant and appropriate roadworks design standards and guidelines, and any other documentation deemed appropriate by Council. Such design and construction shall ensure that road carriageway widths are consistent with the road function and position in the road hierarchy and are in accordance with the relevant design speed environment.
- ✓ (c) The pavement designs shall be in accordance with the Ipswich City Council's Planning Scheme Policy 3 - General Works, Chapter 5 - Roadworks. All roads shall have two way crossfalls in accordance with Council's adopted standards.
- ✓ (d) All traffic signs and delineation shall be installed in accordance with MUTCD.
- ✓ (e) The Developer shall provide a minimum 1.5 m wide concrete footpath on the eastern side of Chubb Street from the southern boundary of Lot 13 on RP859820 (102 Chubb Street) to the northern boundary of Lot 4 on RP73249 (68 Chubb Street).

The construction of footpaths shall be in accordance with Council's Standard Drawing SR.19. The concrete footpaths shall be on the same side as the street lights, and the maximum longitudinal grade shall not exceed 1:8.

- ✓ (f) Kerb ramps are to be constructed in accordance with Council's Standard Drawing SR.18 at all intersections and at additional locations where required to connect the concrete pathways and cycleways. Generally at "T" intersections, 4 kerb ramps are required.
- (g) The Developer shall provide a bus shelter located on Translink Bus Route No.516 which shall be designed to meet the requirements of Translink. The location of the bus shelter shall be determined after considering the needs of existing residents and include consultation with those residents adjacent to where the bus shelter is to be installed. The location and design of the bus shelter shall be investigated and submitted for approval as part of the Operational Works Application. A 1.5m wide footpath (and associated pedestrian crossing facilities if required) shall also be provided linking the development to the bus shelter.

14. Access/Parking

- (a) Design and construction of all access and parking shall be in accordance with the provisions of the Ipswich City Council Parking Code and the Australian Standards (2890 series) (applicable to a HRV).

The proposed design shall minimise conflict and traffic calming devices must be prominent and effective. To this end the design shall be undertaken in accordance with QLD Streets (including traffic slow points devices) and a maximum vehicle speed of 10 kph as required under Council Policy or as otherwise agreed with the Senior Development Engineer.

- (b) Parking and manoeuvring areas shall accommodate the largest anticipated vehicle to use the site. The developer shall provide details for all critical areas of the site demonstrating this requirement has been met with the operational works submission.

- (c) Adequate facilities for servicing the development shall be provided on site to ensure loading and/or unloading activities do not occur on-street.
- (d) Provision shall be made for all vehicles to enter and exit the site in forward gear.
- (e) All parking, access and manoeuvring areas, excluding the proposed RV parking area, shall be constructed of concrete, bitumen or pavers and shall be linemarked in accordance with the relevant Australian Standard. In the instance of the RV parking area, the surface shall be a suitable impervious material (eg. rock/gravel with effective dust and weed control) to the satisfaction of the Senior Development Engineer.
- (f) A concrete layback and driveway slab minimum 9.0 m wide or a demonstrably suitable width necessary to allow for the largest anticipated vehicle access, from the layback to the property boundary, shall be constructed at each entry/exit to the site. This driveway shall be in accordance with Council's Standard Drawings SR.14. Any road pavement failures adjacent to the points of access shall be removed and reinstated as established by, and, to the satisfaction of the Senior Development Engineer.
- Access configuration (including fencing arrangements) shall not create safety hazards for pedestrians, vehicles or adjacent landowners amenity. For example, applicable sight distances and noise generation and levels.
- (g) The Developer shall provide a minimum 1.2 m wide footpath network to service all the proposed units, future on-site development and key amenities in accordance with Council Policy relating to retirement communities. The footpath network shall also extend from the end of the internal road adjoining the RV parking area to Cafferky Street, as shown on the approved plan. The maximum longitudinal grade shall not exceed 1:8 unless required for wheelchairs where the maximum longitudinal grade shall be 1:14. Kerb ramps shall be provided, to the satisfaction of the Senior Development Engineer, at appropriate points and intersections so as to afford the appropriate level of connectivity within a retirement community.

Pedestrian pathways shall be well defined with either two white lines or crosshatching or as otherwise agreed with the Senior Development Engineer defining the pathway where vehicles cross the pathway. The pathways in these locations shall be adequately signposted with "Caution Pedestrians" signs to the satisfaction of the Senior Development Engineer.

- (h) The Developer shall provide a new concrete layback and driveway slab minimum 3.0 m wide for the existing property Lot 13 on RP859820. The driveway shall be located on the unnamed road at the southern access point. Additionally, the Developer shall remove the existing driveway and reinstate the verge. These works shall be undertaken in consultation with Council and the relevant property owner.
- (i) Any terminating internal roads shall be provided with a turn-around area of sufficient size to enable a standard passenger vehicle to negotiate a clear turn. Hazard markers and delineator posts shall be erected at the ends of the turnarounds. Details of the proposed turn-around shall be provided on the operational works plan and shall be to the satisfaction of the Senior Development Engineer.

15. Sewerage

- (a) The Developer shall relay the existing sewerage reticulation reach, extending between access chambers Asset No 509 and 510, around the relevant proposed building allotments. The alignment of the relayed sewer shall generally coincide with the immediate proposed access road/cul-de-sac and within the proposed verge area.
- (b) The Developer shall pay the full cost for Council to provide suitable connections into the existing sewerage reticulation system. All works on live sewers are to be carried out by Council at the Developer's expense.
- (c) No work on the sewerage reticulation system shall commence prior to the approval of the Operational Works application.

16. Water

- (a) All works on live water mains are to be carried out by Council in accordance with Council's policy, and at the Developer's expense.
- (b) The Developer shall provide a private internal reticulated water supply system together with valves and fire hydrants capable of sustaining fire fighting draw off demands placed on it in terms of adequate flow and satisfactory pressure in accordance with QFRS (Qld Fire and Rescue Service Community Safety Unit) recommendations and an adequately sized metered domestic water supply system, in accordance with the "*Guidelines for Planning and Design of Urban Water Supply Schemes*". The configuration and sizing of the water main design shall be for a single connection into Council's reticulation system or as otherwise agreed with the Senior Development Engineer.

The recurrent maintenance requirements for the constructed internal water supply and fire hydrant system shall be the sole responsibility of the Developer and/or future property owners and shall be maintained to the satisfaction of the Senior Development Engineer. The review of the internal water works design shall be part of the approval process relating to the Operational Works submission.

- (c) Where concrete footpaths are to be constructed, the Developer shall provide 100 mm diameter conduits under the footpath and in line with the conduits under the road, for future ease of installing the individual water services. The letter "W" shall be embossed in the concrete to mark the location of the conduit.
- (d) The Developer shall lodge a private works request on the prescribed Council form, for Council to supply a cost estimate to:
 - (i) provide a sluice valve/meter configuration generally in accordance with attached sketch Figure 1 at the existing 150 mm water main located in Chubb Street;
 - (ii) amend the existing connection if necessary; and
 - (iii) seal off any existing water connections if necessary.

The appropriate fees are to be paid prior to Council signing any plan of survey.

- ✓ (e) The Developer shall duplicate the existing 150mm diameter water main located in Chubb Street extending along the eastern side of Chubb Street from Cafferky Street water main to 150 mm water main (Asset No 9,024) located at the southern access point (unnamed road).

17. Stormwater

- ✓ (a) The Developer shall provide all necessary stormwater drainage (both internal and external to the development) and such drainage works (except for roofwater systems) shall be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

Overland flow paths shall be suitably designed to cater for the water from a storm event with an ARI of 100 years. In the case where the piped system is carrying part of the flow, the overland flow paths shall be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system, noting the requirements of QUDM.

- ✓ (b) No ponding, concentration or redirection of stormwater shall occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.
- ✓ (c) Due consideration shall be given in the design and construction of the development in relation to the effect of the developed catchment flows on the downstream discharge receival areas. Suitable stormwater control devices are to be provided to ensure that there is no increase in velocity in watercourses. Such control devices are to be designed so as to integrate the landscaping, recreational, infrastructural and drainage roles of watercourses.
- ✓ (d) All stormwater runoff from the developed areas of the site shall be discharged through the proposed detention basin and outlet in a manner and to a point to be approved by the Senior Development Engineer. Any piped infrastructure conveying stormwater flows shall have an appropriately designed outlet at the low water level in the adjacent Bremer River.
- ✓ (e) Stormwater drainage plans and calculations are to be submitted and approved by the Senior Development Engineer, in conjunction with the submission of an Operational Works application.
- ✓ (f) The Developer shall develop the site from a stormwater management perspective in line with the recommendations contained in the Stormwater Management Plan and Flooding Report, prepared by Cardno (Qld) Pty Ltd dated 9 August 2005 subject to the inclusion/provision of the following:
- ✓ (i) The increased stormwater runoff volume (post-development) associated with a Q5 storm event shall be retained on site;
 - ✓ (ii) Detailed on-site flood routing and detention/retention basin and/or easement sizing shall be provided as part of the Operational Works application;
 - ✓ (iii) Accommodation of Council approved water quality treatment measures;
 - ✓ (iv) Adoption/incorporation of Council approved hydraulic/river bank stability study recommendations; and

- (v) A Level V roofwater and interallotment drainage system, in accordance with QUDM, shall be provided for this development.

The Developer shall comply with all requirements of Council approved design inclusions and alterations in association with the above mentioned items.

- (g) Development of the property with buildings or other structures below the flood level associated with an ARI of 20 years will not be permitted.
- (h) There shall be no filling or removal of material in the flood area below the flood level associated with an ARI of 20 years. The extent of earthworks on the site shall be limited to the area and scope as defined in the Stormwater Management Plan and Flooding Report, prepared by Cardno (Qld) Pty Ltd dated 9 August 2005.
- (i) Pollutant control devices and/or bioretention areas shall be installed in the stormwater system. Locations and types of the devices or treatment areas shall be submitted with the Operational Works Application for approval.

In addition to the requirements of Condition 5 of the Reconfiguring a Lot approval (that forms part of this approval 437/05), there shall be no clearing of vegetation below the adopted flood level unless otherwise approved by the Development Manager. Stormwater drainage outlets shall be the subject of detailed design in the preparation of plans for each stage of the development.

- (j) The Developer shall provide a rainwater retention system for the purpose of on-site landscape irrigation. The minimum retention capacity shall be 1,000 litres/proposed dwelling.
- (k) Runoff, including pipe discharge, from the development site down the embankment shall be controlled to a maximum velocity of 1.8m/s or unless otherwise accommodated in design and agreed with the Senior Development Engineer.
- (l) It is noted that the discharge pipe from the detention basin is proposed to extend and discharge into Council's land, Lot 94 on RP859820. The Developer shall obtain the written consent of the Conservation, Parks and Sport Manager for any such pipe prior to the submission of any application for operational works. Alternatively, the Developer may chose to relocate the pipe so that it discharges within the subject site.

18. Public Utilities

- (a) Street lighting shall be installed by the Developer in the Chubb Street frontage in accordance with the Australian Standard 1158.3.1 Table 1.1. All street lighting associated with the development shall be certified by a RPEQ. Street lighting shall be installed on the same side as concrete footpaths (where applicable).
- (b) The Developer shall provide underground electricity/telecommunications within the development. Electricity/telecommunication drawings shall be co-ordinated with the civil engineering design documents, to ensure that service clashes are avoided.
- (c) Prior to the any building approval, the Developer shall provide Council with a copy of an agreement with Energex for the supply of electricity to the development.

- ✓ (d) Telephone and cable services may be laid in a combined trench with electricity cables, subject to the approval of Energex and the authorised telephone/cable service provider.
- ✓ (e) The Developer shall make suitable arrangements for the provision of telephone services to all proposed units, Managers Residences and Community Centres etc. Documentary evidence that discussions have commenced with any authorised telephone service provider on the provision of telephone services shall be produced prior to commencement of use of each stage of the development.

19. Erosion & Silt Management

- ✓ (a) The Developer shall be responsible for the installation and maintenance of silt management facilities from the time of commencement of construction until this development has been completed. All silt management facilities are to be in accordance with the document "Soil Erosion and Sediment Control" published by the Institution of Engineers Australia, or equivalent.
- ✓ (b) Diversion drains and ponds, as necessary, shall be installed on the site before any other work is undertaken on site to ensure that "dirty water" is contained and/or isolated.
- ✓ (c) A procedure shall be submitted with the engineering drawings for approval for maintaining the facilities, setting out the frequency of attention, with inspections to be made after each significant rainfall event.
- ✓ (d) The Developer shall lodge a \$10,000 siltation and erosion performance bond with Council, prior to the commencement of works, which shall only be released by Council at the termination of the maintenance period. Where Council determines that a draw-down of the bond is required, the Developer shall restore the bond to its full amount within 10 days of a notice from Council to that effect. Such bond shall guarantee adequate performance in the circumstances (i) and (ii) below:
 - ✓ (i) In the event that instructions issued to the Consulting Engineer by the Senior Development Engineer for the installation of erosion control measures, are not complied with within 24 hours, Council will call upon the bond to the extent required to carry out the necessary works.
 - ✓ (ii) If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.

Should the Developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council shall complete the work and recover all costs from the Developer associated with that work.

20. Operational Works – Municipal Works
(ie Works being handed over to Council)

- ✓ (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works).

The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.

- (b) The Developer shall comply with the requirements of the documents entitled "Planning Scheme Policy 3 - General Works" and "Standard Drawings".
- (c) All engineering drawings submitted to Council shall be in accordance with Council's Planning Scheme Policy 3 - General Works and Standard Drawings, and shall include as a minimum the following:
- (d) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ;
- (e) The drawings shall be submitted as three A3 size sets and one full size set; and
- (f) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (g) Municipal works shall require a detailed design certified by a RPEQ, the design approved by Council Engineers with appropriate fees payable, a works pre-start meeting on-site and various detailed construction and audit inspections by Council Officers. A twelve month maintenance period is applicable for the works as well as the payment of a maintenance security deposit.
- (h) All works shall be supervised by a RPEQ competent in civil works and shall be undertaken by a nominated principal contractor experienced in the construction of municipal works. Council reserves the right to request evidence of the principal contractor's competency. Should it be deemed by the Senior Development Engineer that the contractor does not have the necessary competency or has constructed substandard works for Council in the past, Council reserves the right to reject the nominated contractor.
- (i) Municipal works shall be accepted "On Maintenance" prior to commencement of use. A maintenance bond equal to 5% of the construction cost (minimum of \$1,000.00) shall be retained by Council for a minimum period of twelve months, or until such time as the works are accepted "Off Maintenance" by Council.
- (j) "As Constructed" plans for municipal works shall be submitted to Council and approved prior to the formal acceptance of the works "On Maintenance".
- (k) On completion of the works a certificate shall be submitted to Council by a RPEQ certifying that the works have been constructed in accordance with Council's construction standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.
- (l) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent in regard to the works relevant to the Operational Works approval.

- (m) Prior to the commencement of any municipal works associated with developments other than the subdivision of land, Council shall require the provision of a bond equivalent to not less than 10% (minimum of \$1,000.00) of the value of the works as security for the performance of the various construction obligations (including the provision of engineering certification and "As Constructed" information). The bond shall be reduced to an amount of not less than 5% of the value of the works upon formal acceptance of the works "On Maintenance" and shall be retained by Council during the maintenance period as security for the performance of the maintenance obligations. The bond shall be returned upon formal acceptance of the works "Off Maintenance".
- (n) Council requires the provision of a bank guarantee, or a performance bond of not less than 10% (minimum of \$5,000.00) of the value of the external municipal works. The bond/guarantee shall be retained by Council until such time the Developer provides a replacement or additional maintenance period bond/guarantee for entire Municipal Works (both external and internal) as security for the performance of the maintenance obligations.

External Municipal Works relates to those works external to the subject site and located in already dedicated public areas, for example existing road or drainage reserve, or private property not subject to Developer ownership.

21. Operational Works - Internal Works

(ie Works not being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ.
- (c) The drawings shall be submitted as three A3 size sets and one full size set. Where municipal works are also being undertaken, it is usually appropriate to make a combined submission.
- (d) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (e) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent.
- (f) A certificate shall be submitted to Council by a RPEQ certifying that the completed works have been constructed in accordance with Council's requirements and standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.

22. Plan of Survey

- (a) The Developer shall grant, free of cost to or compensation payable by Council, minimum 4.0 m wide easements located centrally over proposed and existing stormwater drains, water mains and sewerage rising mains, where they are located within private property.

The documentation associated with these easements may be prepared by the Developer in a form satisfactory to Council's City Solicitor, or the Developer may submit easement plans, only where Council is party to the easements, to Council for the preparation of easement documents at the Developer's expense.

- (b) Easements shall be centrally located over the alignment of stormwater paths and be of a width sufficient to encompass the overland flow from a storm event with an ARI of 100 years.
- (c) Easements shall be of sufficient width to contain any fitting, access chamber etc located on stormwater drains, water mains, and sewerage rising mains.
- (d) All pre-existing easements crossing the site shall be pegged where they cross each property boundary and at every change of direction.
- (e) All land (excluding that contained within approved parkland) below the flood level associated with an ARI of 10 years shall be dedicated as Drainage Reserve at no cost to Council. Land below this level shall not be considered as parkland contribution.
- (f) Existing Easement A on RP859820 shall be relinquished prior to the approval of any application for Building or Operational Works for the subject site. The easement shall not be relinquished until such time as the plan of survey dedicating the required additional open space as shown on the approved plan and as conditioned by the Reconfiguring a Lot component of this approval has been registered by the Department of Natural Resources and Mines.

23. General

- (a) All disturbed verge areas and allotments shall be graded, grassed and left in a mowable condition. The grass cover shall be obtained as early as possible during the development and an acceptable grass cover shall be achieved before the development can be accepted "Off Maintenance".
- (b) With reference to any works, on land under other private ownership, written permission for the works shall be obtained and forwarded to Council. Similarly, written clearances shall be obtained after the works are completed, unless otherwise accepted by the Senior Development Engineer.
- (c) All works required for this development shall take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works shall be altered at the cost of the Developer.
- (d) Any filling for a greater depth than 500 mm shall be conducted in accordance with Australian Standard 3798. Test results as required by Australian Standard 3798, and a certificate of quality and uniformity of fill shall be provided by a RPEQ. The level of responsibility shall be Level 1.

- (e) A certificate from a RPEQ shall be issued to Council certifying that any retaining wall greater than 800 mm in height is structurally sound and capable of withstanding any likely surcharge loads. Retaining walls greater than 1.0 m in height are to be provided with railings or other barriers to provide pedestrian safety.
- (f) Retaining walls shall be designed so that there are no imposed loads placed upon Council's underground services. This may include extending the footing to a level 300 mm below the invert of the pipe.
- (g) For batters resulting from cutting and filling of the site and producing slopes greater than 1:6, Council requires a RPEQ to certify that they are stable and properly drained.
- (h) A hydraulic and river bank stability study shall be undertaken in regard to the site by a RPEQ. Such study shall be comprehensive taking into account all matters relating to the site and shall include, but shall not be limited to, the following:
- Geology of the site and any related problems;
 - Instability features such as slips, soil creep etc;
 - Effects of existing vegetation and of any possible removal and or modification of same;
 - Effects of any fill material and the types of fill material recommended;
 - Water eg: ground water; scour potential in flood situations including the effects of turbulence; effects of rapid draw down of water level.

Such studies shall include any necessary recommendations in regard to the proposed development to ensure long term stability.

- (i) Approval of the Senior Development Engineer is required for any fill intended to be placed over Council's underground services.

24. Contributions

In accordance with the relevant Planning Scheme Policies, the Developer shall pay, prior to the commencement of the proposed change of use, the following monies to Council:-

Contribution	Sector	Rate	Proposal	Calculation
Social Infrastructure	Leichhardt - Wulkuraka	Level 1: \$44.94/EP	Number of "3 bed" Dwellings: 118.000 @	Level 1: \$48.89 x 357.28 = \$17 467.41
		Level 2: \$66.91/EP	3.080 EP	Level 2: \$72.80 x 357.28 = \$26 009.98
		Level 3: \$31.08/EP	Existing Credit of 6.16 EP	Level 3: \$33.82 x 357.28 = \$12 083.20
		Unit Charge = 1.088	Proposal = 357.28 EP	Total = \$55 561.00
		Total = Level 1: \$48.89/EP		270.

		Level 2: \$72.80/EP Level 3: \$33.82/EP		
Open Space	Leichhardt - Wulkuraka	Level 1: \$110.43/EP Level 2: \$895.42/EP Level 3: \$257.33/EP Unit Charge = 1.026 Total = Level 1: \$113.30/EP Level 2: \$918.70/EP Level 3: \$264.02/EP	Number of "3 bed" Dwellings: 118.000 @ 3.080 EP Existing Credit of 6.16 EP Proposal = 357.28 EP	Level 1: \$113.30 x 357.28 = \$40 479.82 Level 2: \$918.70 x 357.28 = \$328 233.13 Level 3: \$264.02 x 357.28 = \$94 329.06 Total = \$463 042.00 3924.0.
Water Supply	Brassall Water Zone	\$841.00/EP Unit Charge = 1.088 Total = \$915.01/EP	Number of "3 bed" Dwellings: 118.000 @ 2.32 EP Community Club House (1069 m ² gfa): 0.5 EP/100 m ² gfa x 1069 Existing Credit of 12.10 EP Proposal = 267.0 EP	\$915.01 x 267.0 = \$244 307.67 Total = \$244 308.00 2070.40.
Sewerage Catchment	Bundamba Catchment	\$678.36/EP Unit Charge = 1.088 Total = \$738.06/EP	Number of "3 bed" Dwellings: 118.000 @ 2.32 EP Community Club House (1069 m ² gfa): 0.5 EP/100 m ² gfa x 1069 Existing Credit of 8.8 EP Proposal = 270.3 EP	\$738.06 x 270.3 = \$199 497.61 Total = \$199 498.00 1012.69.
Road Contributions	Leichhardt- Wulkuraka	\$1,397.43/ EP	Number of "3 bed" Dwellings: 118.000 @ 1.75 EP	\$1,433.76 x 187.35 = \$268 614.93 Total = \$268 615.00 2276.39.

		Unit Charge = 1.026	Community Club House (1069 m ² gfa): 3.78 EP/100 m ² gfa x 1069	
		Total = \$1,433.76/EP	Existing Credit of 59.55 EP	
			Proposal = 187.35 EP	10 4 32 . 40 per unit
Total for Development				\$1 231 024.00

The contributions above shall be applicable for a period of twelve (12) months from the date of the development approval, and thereafter shall be based on the infrastructure contribution rates applicable at the date when payment is made.

Note: Level 2 and Level 3 Open Space credits are applicable for the area of land to be dedicated for open space required by the conditions of the Reconfiguring a Lot component of this approval. The final credit given will be dependant on the final agreed area for dedication and the area of this land that is located above the Q10 flood level, as land below this flood level does not attract credits under the policy.

25. Dust suppression

Dust suppression measures shall be employed during construction to the satisfaction of the Development Manager so as not to cause a dust nuisance.

26. Refuse

A bulk bin waste service shall be provided by an approved waste contractor to the satisfaction of the Development Manager. The waste service shall be maintained to a degree that will ensure all waste on site is managed effectively and without nuisance.

27. Minor Alterations

Notwithstanding the requirements detailed in this approval, any other minor alterations and/or modifications acceptable to the Development Manager will suffice.

28. Compliance with Conditions

(a) Unless otherwise stated all conditions shall be completed prior to commencement of the proposed change of use of the site or as determined by the Development Manager.

(b) All conditions shall be completed to the satisfaction of the Development Manager.

29. When Approval Takes Effect

This approval has effect in accordance with the provisions of Section 3.5.19 of the *Integrated Planning Act 1997* as follows:

- (a) If the applicant does not appeal the decision to the court - when the submitter's appeal period ends; or
- (b) If an appeal is made to the court - subject to the decision of the court, when the appeal is finally decided.

30. When Approval Lapses

- (a) This approval lapses at the end of the currency period, unless the change of use happens before the end of the currency period. The currency period for this approval is 4 years starting the day the approval takes effect; and
- (b) An extended currency period may be agreed upon, pursuant to Section 3.5.22 of the *Integrated Planning Act 1997*, provided a written notice to Council is made before the end of the currency period. Such written notice is to be on Council's approved form, accompanied by the owner's consent and the prescribed fee in Council's Register of General Charges.
- (c) All of the development the subject of this approval shall be completed within the periods stated in Condition (a) above. This approval shall lapse for any part of the development of the site that has not commenced within the currency period stated in Condition (a) above.

Reconfiguring a Lot

1. Basis of Approval

Subject to these conditions, the facts and circumstances set out in the application and all relevant Council Local Laws and/or Planning Scheme Policies shall be adhered to.

2. Plan of Survey

The Developer shall submit a plan of survey to conform with plan number 20038-03A, prepared by the PMM Group and dated July 2005, with the following amendments and clarifications as noted on the approved plan:

- (a) The Developer shall dedicate an additional area of open space at the top of the bank of sufficient width to cater for a pedestrian/cycleway and associated recreation facilities. The western boundary of the dedication shall generally follow the 19 m contour or such other location as agreed to by the Development Manager.

Such amendments shall be to the satisfaction of the Development Manager.

3. Rates in Arrears

In accordance with the provisions of the *Integrated Planning Act 1997*, all rates and other expenses as a charge against the land shall not be in arrears at the date of signing of the plan of survey.

4. Parkland Dedication

Land required for open space shall be dedicated, free of cost to and compensation by Council, in fee simple at the time of registration in the Department of Natural Resources and Mines of the relevant plan of survey.

5. Clearing within Proposed Parkland

No clearing shall be undertaken in proposed parkland without the prior approval of the Development Manager.

6. Quality of Park Dedication

Land to be dedicated for park purposes shall be upgraded to the satisfaction of the Development Manager as follows:

- (a) declared plants, environmental weeds and rubbish shall be removed;
- (b) dead trees shall be removed and dangerous trees made safe within 10 m of proposed house blocks or proposed pathways or playgrounds;
- (c) open areas shall be grassed and left in mowable condition;
- (d) open areas shall be free of rocks, stumps, humps and hollows;
- (e) all areas of disturbance within parkland including areas of erosion and bare ground shall be rehabilitated. All batters and banks shall be fully stabilised and vegetated to the satisfaction of the Development Manager;
- (f) all rubbish shall be removed from parkland;
- (g) parkland shall be freely and safely drained;
- (h) no overburden or spoil shall be pushed or deposited into parkland;
- (i) there shall be no removal of soil or filling around trees.

7. Compliance with Conditions

- (a) Unless otherwise stated all conditions shall be completed prior to signing of the relevant plan of survey or as determined by the Development Manager.
- (b) All conditions shall be completed to the satisfaction of the Development Manager.

8. Minor Alterations

Notwithstanding the requirements detailed in this approval, any other minor alterations and/or modifications acceptable to the Development Manager will suffice.

9. When Approval Takes Effect

This approval has effect in accordance with the provisions of Section 3.5.19 of the *Integrated Planning Act 1997* as follows:

- (a) If the applicant does not appeal the decision to the court - when the submitter's appeal period ends; or
- (b) If an appeal is made to the court - subject to the decision of the court, when the appeal is finally decided.

10. When Approval Lapses

- (a) The currency period for this approval is 2 years starting the day the approval takes effect. The Developer is required to submit to Council an accurate plan of survey before the end of the currency period, otherwise the approval will lapse.
- (b) An extended currency period may be agreed upon, pursuant to Section 3.5.22 of the *Integrated Planning Act 1997*, provided a written notice to Council is made before the end of the currency period. Such written notice is to be on Council's approved form, accompanied by the owner's consent and the prescribed fee in Council's Register of General Charges.

Advice

*The following advices are offered for your information only
and should not be viewed as mandatory conditions of this approval.*

Assessment Manager (Ipswich City Council)

1. Portable Long Service Leave

From 1 January 2000, the Building and Construction Industry (Portable Long Service Leave) Levy must be paid prior to the issue of a development permit where one is required for the 'Building and Construction Industry'. This applies to Building Works, Operational Works and Plumbing and Drainage Works applications, as defined under the *Integrated Planning Act 1997*, where the works are \$80 000 or more and matching the definition of 'Building and Construction Industry' under the *Building and Construction Industry (Portable Long Service Leave) Act 1991*.

Council will not be able to issue a Decision Notice without receipt of details that the Levy has been paid. Should you require clarification in regard to the amendments to the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, you should contact QLeave on 1800 803 481 (free call) or (07) 3212 6855.

2. Fire Ants

In accordance with the *Plant Protection Act 1989* and the Plant Protection Regulation 1990, a quarantine notice has been issued for the State of Queensland to prevent the spread of the Red Imported Fire Ant (ant species *Solenopsis invicta*) and to eradicate it from the State.

It is the legal obligation of the land owner or any consultant or contractor employed by the land owner to report the presence or suspicion of Fire Ants to the Queensland Department of Primary Industries on 132523 within 24 hours of becoming aware of the presence or suspicion, and to advise in writing within seven days to:

Director General
Department of Primary Industries
GPO Box 46, Brisbane QLD 4001

It should be noted that the movement of Fire Ants is prohibited, unless under the conditions of an Inspectors Approval. More information can be obtained from the Queensland Department of Primary Industries website www.dpi.qld.gov.au.

The land over which you have made a development application is within a suburb known to have Fire Ants and as such is within a "Restricted Area". The presence of Fire Ants on the site may affect the nature, form and extent of works permitted on the site. In view of this it will be necessary for you to contact the Department of Primary Industries to investigate the site and for you to implement any necessary matters required by that Department prior to the commencement of any works.

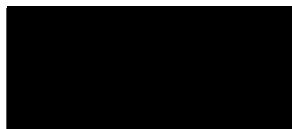
3. Flooding

The subject site was fully inundated in the 1974 flood. Council, and its servants and agents, accept no liability or responsibility for any loss or damage to person or property of whatever nature or however caused as the direct or indirect consequence of the granting of the approval herein contained. Such approval has been granted at the request of the Developer and in reliance of information submitted by the Developer in support thereof.

There were properly made submissions received with respect to this application.

Pursuant to the provisions of the *Integrated Planning Act 1997*, I also enclose herewith a copy of Section 4.1.27 concerning the institution of an appeal.

Yours faithfully



Brendan Nelson
DEVELOPMENT MANAGER

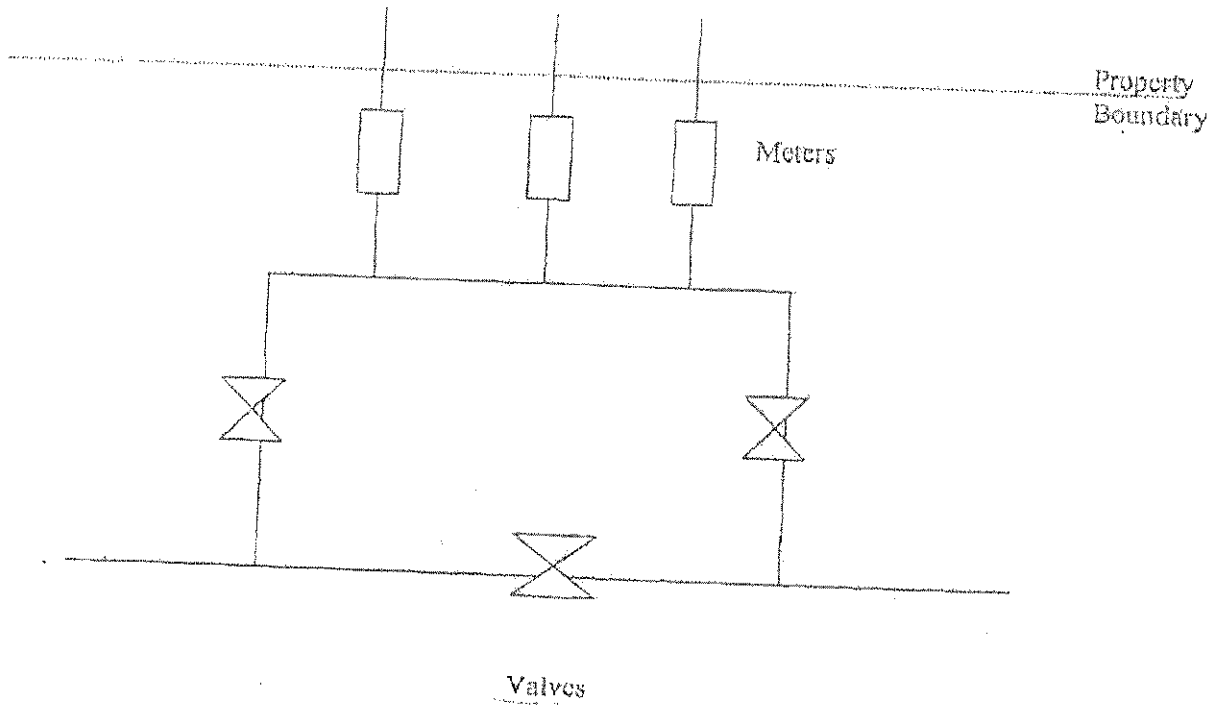


Figure 1: Water Meter and Valve Configuration.

Extract from the Integrated Planning Act

Division 8—Appeals to court relating to development applications

Appeals by applicants

- 4.1.27. (1) An applicant for a development application may appeal to the court against any of the following—
- (a) the refusal, or the refusal in part, of a development application;
 - (b) a matter stated in a development approval, including any condition applying to the development, and the identification of a code under Section 3.1.6;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a currency period;
 - (e) a deemed refusal.
- (2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the “applicant’s appeal period”) after the day the decision notice or negotiated decision notice is given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

Appeals by submitters

- 4.1.28. (1) A submitter for a development application may appeal to the court about—
- (a) the giving of a development approval, including any conditions (or lack of conditions) or other provisions of the approval; or
 - (b) the length of a currency period for the approval.
- (2) The appeal must be started within 20 business days (the “submitter’s appeal period”) after the day the decision notice or negotiated decision notice is given to the submitter.
- (3) If a person withdraws a submission before the application is decided, the person may not appeal the decision.
- (4) If an application involves both impact assessment and code assessment, appeal rights for submitters are available only for the part of the application involving impact assessment.

Appeals for matters arising after approval given (co-respondents)

- 4.1.30. (1) For a development approval given for a development application, a person to whom any of the following notices have been given may appeal to the court against the decision in the notice—
- (a) a notice giving a decision on a request for an extension of the currency period for an approval;
 - (b) a notice giving a decision on a request to make a minor change to an approval.
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.
- (3) Subsection (1)(a) does not apply if the approval resulted from a development application (superseded Planning Scheme) that was assessed as if it were an application made under a superseded planning scheme.

Division 9—Appeals to court about other matters

Appeals for matters arising after approval given (no co-respondents)

- 4.1.31. (1) A person to whom any of the following notices have been given may appeal to the court against the decision in the notice—
- (a) a notice giving a decision on a request to change or cancel a condition of a development approval;
 - (b) a notice under Section 6.1.44 giving a decision to change or cancel a condition of a development approval.
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.

Appeals on matters relating to the Building Act 1975 the following also applies

Jurisdiction of tribunals

- 4.2.7. (1) A tribunal has jurisdiction to decide any matter that under this or another Act may be appealed to it.
- (2) An appeal to a tribunal may only relate to—
- (a) the part of a development application assessed against the *Building Act 1975*; or
 - (b) a matter prescribed under a regulation.

Appeals by applicants

- 4.2.9. (1) An applicant for a development application may appeal to a tribunal against any of the following—
- (a) the refusal, or the refusal in part, of a development application;
 - (b) a matter stated in a development approval, including any condition applying to the development, but not including the identification of a code under section 3.1.6;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a currency period;
 - (e) a deemed refusal.
- (2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the "applicant's appeal period") after the day the decision notice or negotiated decision notice is given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

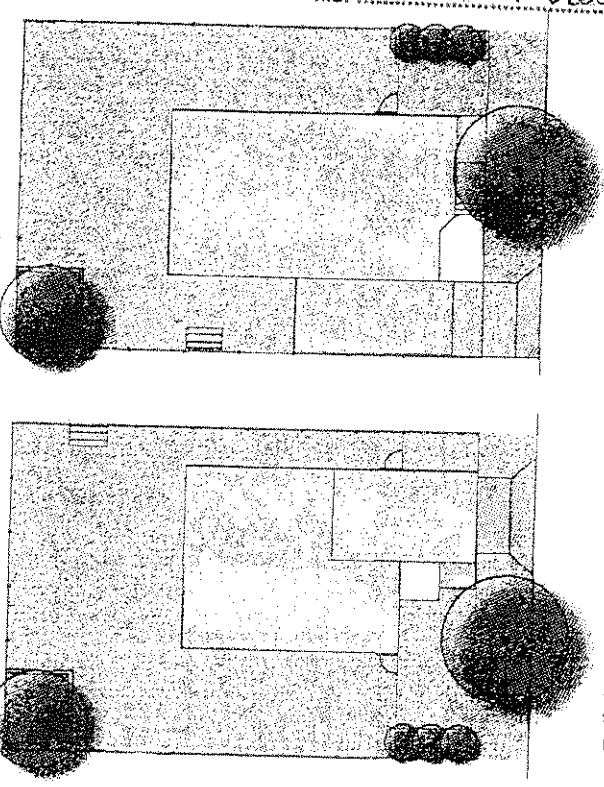
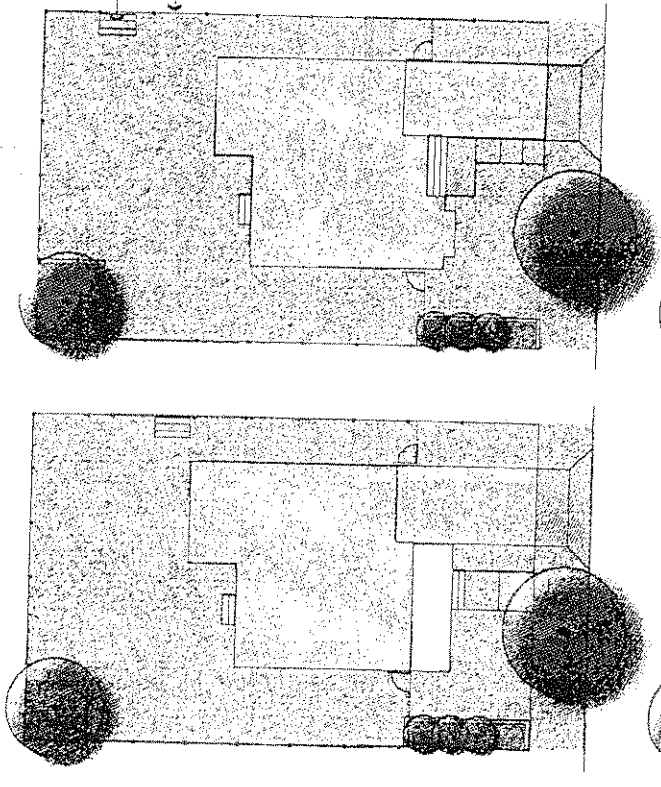
Jurisdiction of tribunals

- 4.2.7. (1) A tribunal has jurisdiction to decide any matter that under this or another Act may be appealed to it.
- (2) An appeal to a tribunal may only relate to—
- (a) the part of a development application assessed against the *Building Act 1975*; or
 - (b) a matter prescribed under a regulation.

Appeals by applicants

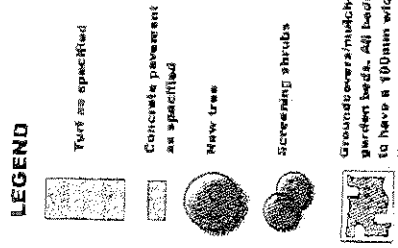
- 4.2.9. (1) An applicant for a development application may appeal to a tribunal against any of the following—
- (a) the refusal, or the refusal in part, of a development application;
 - (b) a matter stated in a development approval, including any condition applying to the development, but not including the identification of a code under section 3.1.6;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a currency period;
 - (e) a deemed refusal.
- (2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the “**applicant’s appeal period**”) after the day the decision notice or negotiated decision notice is given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

← Clothes drying
← 1.8m High timber fencing to separate rear boundaries, except for allotments with rear facing the rear (no rear fence)



GENERAL SPECIFICATION NOTES
Landscape Plan

- 1.0 GENERAL
Scope of works to shown on drawings.
All garden areas to have minimum internal width of 800mm. A desirable edge is to be provided between all garden beds and hard areas.
- 2.0 MULCH
Standards: To AS 4454-1989 Compost, soil conditioners and mulches.
Mix: Type: High Pine bark, 100mm Deep.
- 3.0 CULTIVATION
All garden and turfed areas cultivated to a depth of 150mm.
- 4.0 TOPSOIL
Standards: To AS 4415-1988 Turfless Soils for Landscaping and Gardening.
Depths:
To planting areas: 300mm
To wet areas and pits: 1.5x rootball depth or as stipulated
To turfed areas: 100mm
- 5.0 PLANTING
All beds to be prepared over decomposed subgrade.
- 6.0 TREES
Minimum sizes: To car parking areas: 45 litre stock
To common areas and at critical junctures: 25 litre stock
To private areas: 300mm stock
Staking: All trees larger than 25 litre stock shall be staked to future growth.
- 7.0 SHRUBS AND GROUNDCOVERS
Minimum sizes: Shrubs: 200mm stock
Groundcovers: 140mm stock
- 8.0 TREES TO BE RETAINED
Trees to be retained include those on neighbouring properties which have any lines that lie within or overlap with the site works.
Stumps of removed trees are to be ground to 300mm below ground surface, avoiding roots of retained trees as much as possible. Where necessary for retained trees, roots in excess of 200mm may need to be cut, shall have a clean straight cut, then dressed with an approved erosion dressing. Backfilling of soil shall be carefully tamped and watered in around roots to eliminate air pockets.
Any damage occurring to lines of trees to be retained should be assessed by a qualified arborist and remedial pruning undertaken. Any remedial pruning shall be undertaken where necessary in accordance with AS 4373-1996 Pruning of Amenity Trees.
- 9.0 TURFING
Turf Type: Zoysia 'Empire'
- 10.0 PAVING
Concrete paths: 125mm thick reinforced M25 concrete
Circular pavement: 50 concrete
180mm thick reinforced M25 concrete, contained within a concrete perimeter
- 11.0 ABUTMENT
The month establishment period with a twelve month defects liability period from Practical completion.



NOTE: Location of gardens and planting to allotments by owners.

pursuant to Section 3.5.15(5) of the Integrated Planning Act, this plan forms part of Council's approval for

Application No: 437/05
Dated: 1 February 2005
Signed: [Redacted]
Date: 17 March 2006

Building Types and Landscape Treatments

LANDSCAPE CONCEPT

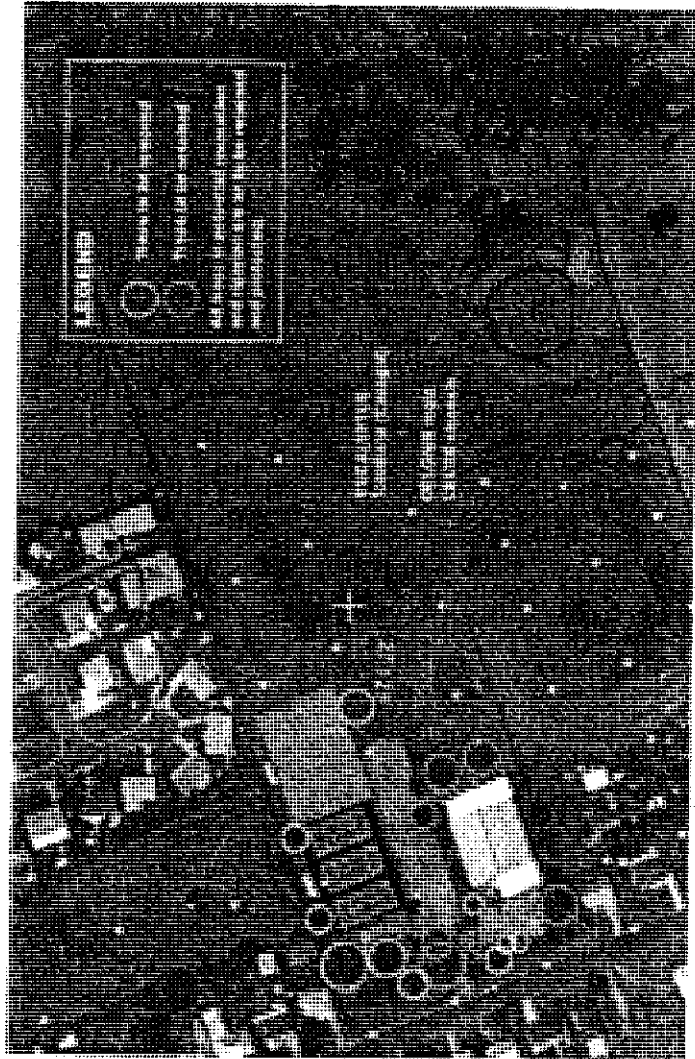
MULTIPLE RESIDENTIAL (AGED ACCOMMODATION UNITS)
34-40 CHURCH STREET, BSMICM

Scale: 1:100



verge
URBAN LANDSCAPE ARCHITECTURE

Chubb Street, Ipswich
Building Types & Spec Notes
Drawing 1915-07
Issue A, 22 Aug 2005
Scale 1:100 @ A1 size



- TIPUANA tipo
- EUCALYPTUS torrelliana (Cadeppp#)
- TIPUANA tipo
- TIPUANA tipo
- MELALEUCA quibuhnera
- Palms (3 No)
- MELALEUCA quinquemaria (4 #)
- TIPUANA tipo

EXISTING TREES

PLANT PALETTE

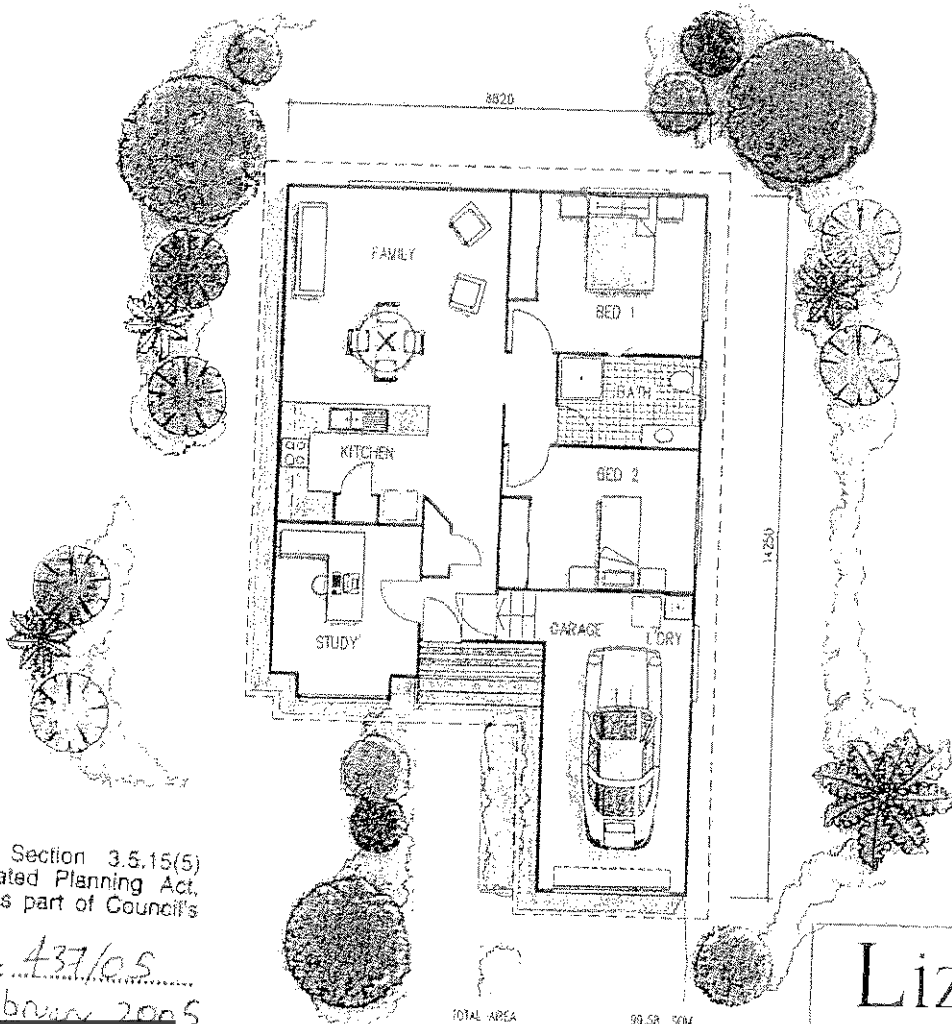
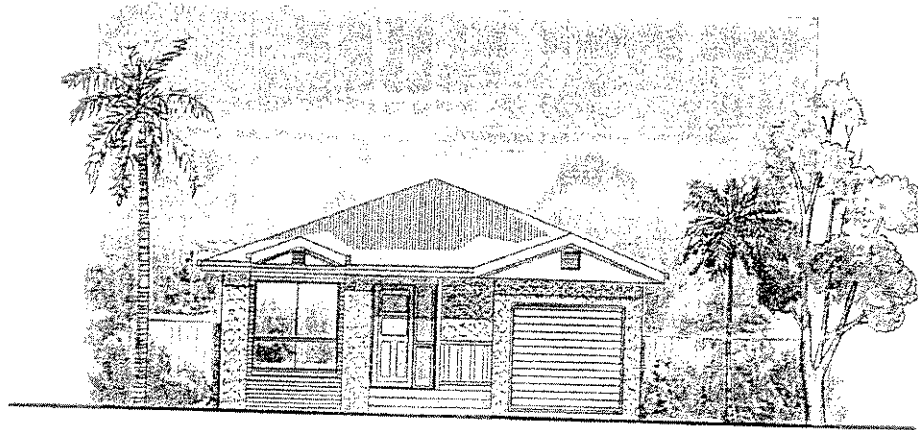
Botanical Name	Container Size	Site Use
Trees		
CALLISTEMON strictus	45 litre	Street Trees/residential allotments
CALLISTEMON strictus	45 litre	Residential allotments
EUCALYPTUS tereticornis	300 mm/25 litre	Riparian area
EUCALYPTUS tereticornis	25 litre	Recreation area
LOPHOSTEMON condensatus	25 and 45 litre	Recreation area
LOPHOSTEMON condensatus	300mm	Riparian area
SYZYGIA leucomelaena	45 litre	Residential allotments
WATERHUSIA flaberrima	45 litre	Street Trees/Entrances
Shrubs - Medium to Tall		
AUSTROMYRTUS laevis	270 mm	Allotments - boundaries/ screen planting
Blushing Beauty	300 mm	Allotments - boundaries/ screen planting
SYZYGIA alatanum	208 mm	Allotments - boundaries/ Gar park (front)
SYZYGIA 'Cascade'	300 mm	Allotments - boundaries/ Screen planting
SYZYGIA paniculata 'Ellis'		
Other Planting		
CINNAMOM pedunculatum	140 mm	Dam banks/riparian area
DIANELLIS sp	148 mm	Dam banks/ riparian area
LOMANTHERA sp	140mm	Area

NOTE:
Plant palette to be extended at Operational Works approval to include plant species to be used in any rehabilitation works to river edge. Species to be drawn from local indigenous plant lists.

Church Street Ipswich
Existing Trees & Plant Palette
Drawing 1916-03
Issue A, 22 Aug 2005
Scale 1:1000 @ A1 size

Pursuant to Section 3.5.15(5) of the Integrated Planning Act, this plan forms part of Council's approval for
 Application No: 437/05
 Dated: 17 February 2005
 Signed: [Redacted]
 Date: 17 March 2006

Plan Number 437/05-1



Pursuant to Section 3.5.15(5) of the Integrated Planning Act, this plan forms part of Council's approval for

Application No: 437/05

Dated: 1 February 2005

Signed:

Date: 17 March 2006

Lizard

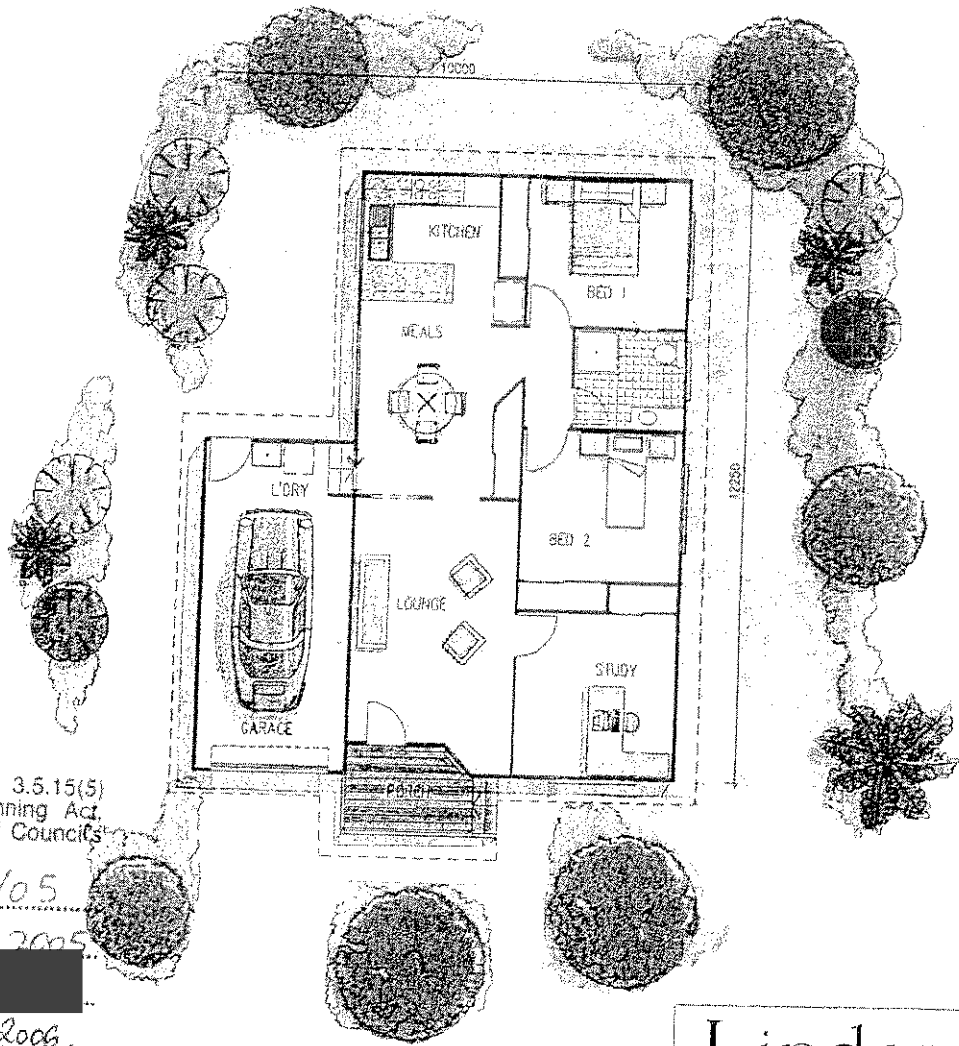
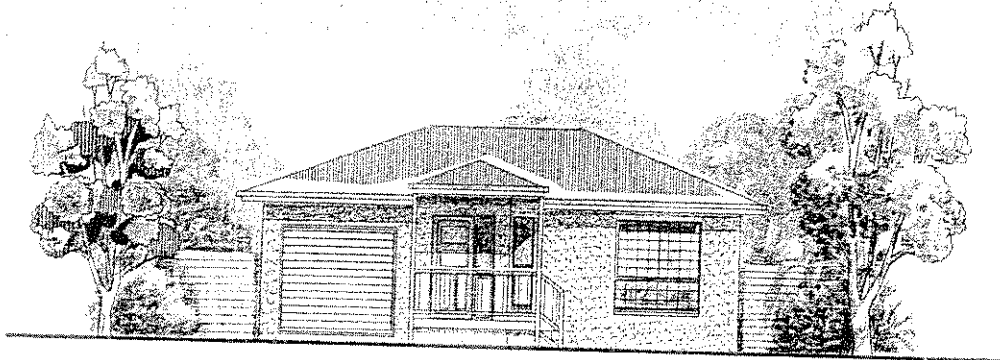
TOTAL AREA 99.58 SQM

DESIGNED AND DRAWN BY ETTO DESIGN & DRAFTING PH 3266 9997 D. B. C. A. 527097 COPYRIGHT	CLIENT :	DATE: Dwg. No. Dwg. by: R. E. Scale=1:100 1:1000 1:2000 1:5000 1:10000
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FIGURED DIMENSIONS HAVE PREFERENCE OVER THOSE SCALED. ALL DIMENSIONS AND LEVELS TO BE VERIFIED ON SITE AT SETOUT

NR

Plan Number 437/05-2



Pursuant to Section 3.5.15(5) of the Integrated Planning Act, this plan forms part of Council's approval for

Application No: 437/05

Dated: 1 February 2005

Signed: [Redacted Signature]

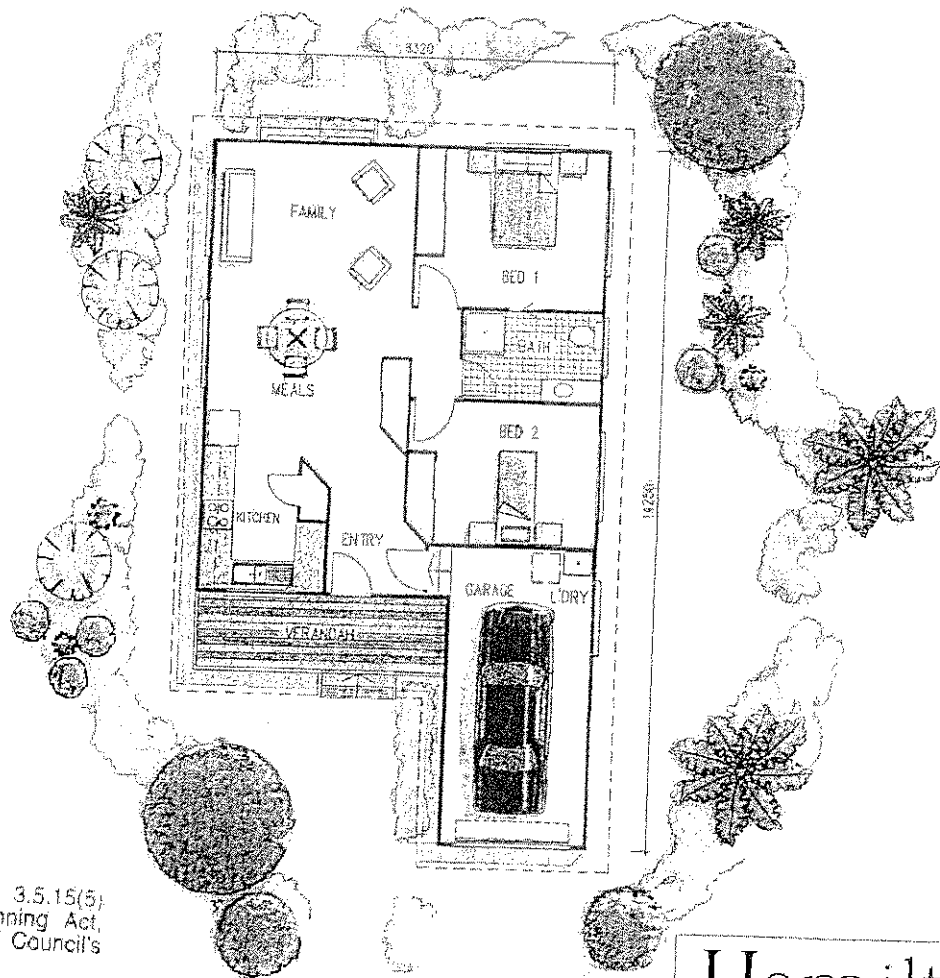
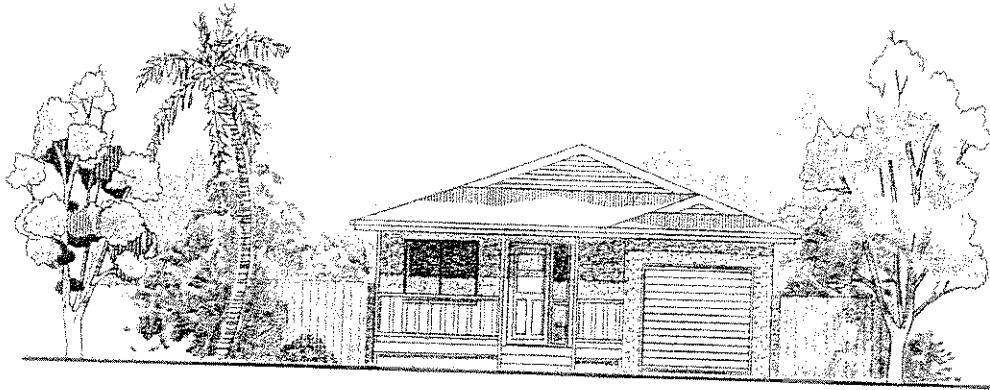
Date: 17 March 2006

Lindeman

GROUND FLOOR AREA 104.20 SQM
PORCH AREA 4.67 SQM
TOTAL AREA 108.87 SQM

DESIGNED AND DRAWN BY ETTD DESIGN & DRAFTING PH 3368 0997 2 B.S.A. 527097 COPYRIGHT	CLIENT :	DATE: _____ Dwg. No. _____ Dwg. by: R. E. Scale: 1:100 PRINTED AT: N2
FIGURED DIMENSIONS HAVE PREFERENCE OVER THOSE SCALED. ALL DIMENSIONS AND LEVELS TO BE VERIFIED ON SITE AT SETOUT.		

Plan Number 437/05-3



TOTAL AREA 109.84 SQM

Hamilton

Pursuant to Section 3.5.15(5) of the Integrated Planning Act, this plan forms part of Council's approval for

Application No: 437/05

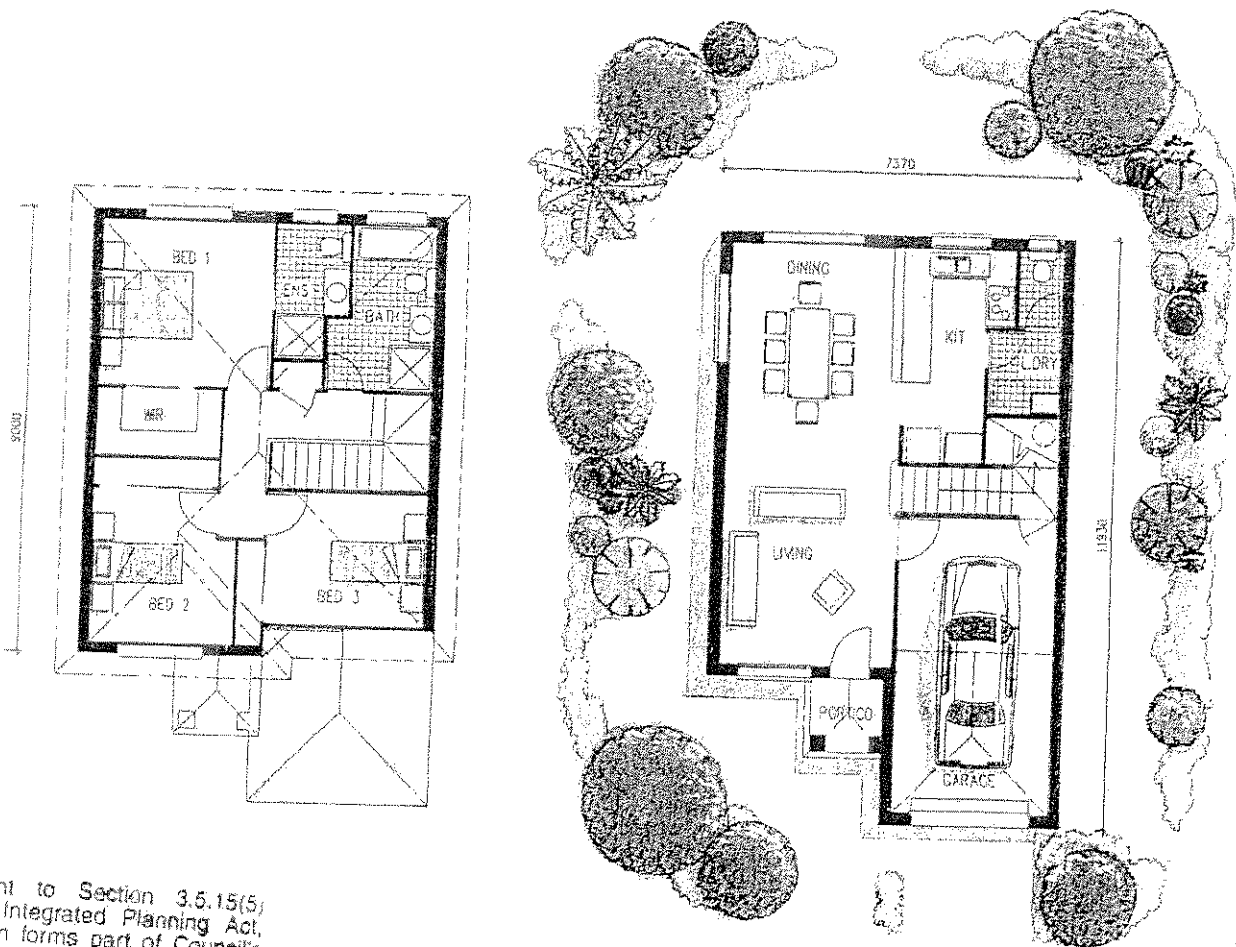
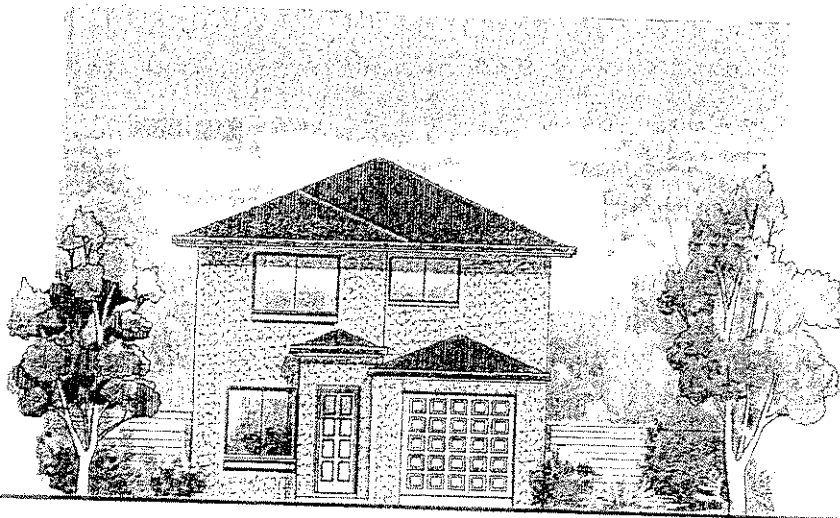
Dated: 1 February 2006

Signed: [Redacted Signature]

Date: 17 MARCH 2006

DESIGNED AND DRAWN BY ETTO DESIGN & DRAFTING PH 3388 0997 9. 8. S. A. 527097 COPYRIGHT	CLIENT	DATE: Dwg. No. Dwg. by: R. E. Scale: 1:100 PWA CLASSIFIED MARCH 2006 N2
STANDARD DIMENSIONS HAVE PREFERENCE OVER THOSE SCALED ALL DIMENSIONS AND LEVELS TO BE VERIFIED ON SITE AT SETOUT.		

Plan Number 437/05-4



Bedarra

Pursuant to Section 3.5.15(5) of the Integrated Planning Act, this plan forms part of Council's approval for

Application No: 437/05

Dated: 17 February 2005

Signed: [Redacted]

Date: 17 March 2006

UPPER FLOOR AREA 54.23 SQM
 GROUND FLOOR AREA 77.11 SQM
 PORCH AREA 2.25 SQM
 TOTAL AREA 133.59 SQM

DESIGNED AND DRAWN BY ETTD DESIGN & DRAFTING PH 3348 0997 10 DCA 527097 COPYRIGHT	CLIENT :	DATE: Dwg. No. Dwg. by: R. E. Scale: 1:100 M2
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FIGURED DIMENSIONS HAVE PREFERENCE OVER THOSE SCALED. ALL DIMENSIONS AND LEVELS TO BE VERIFIED ON SITE AT SETOUT.

Pursuant to Section 35.15(5) of the Integrated Planning Act, this plan forms part of Council's approval for:

Application No: 457/06

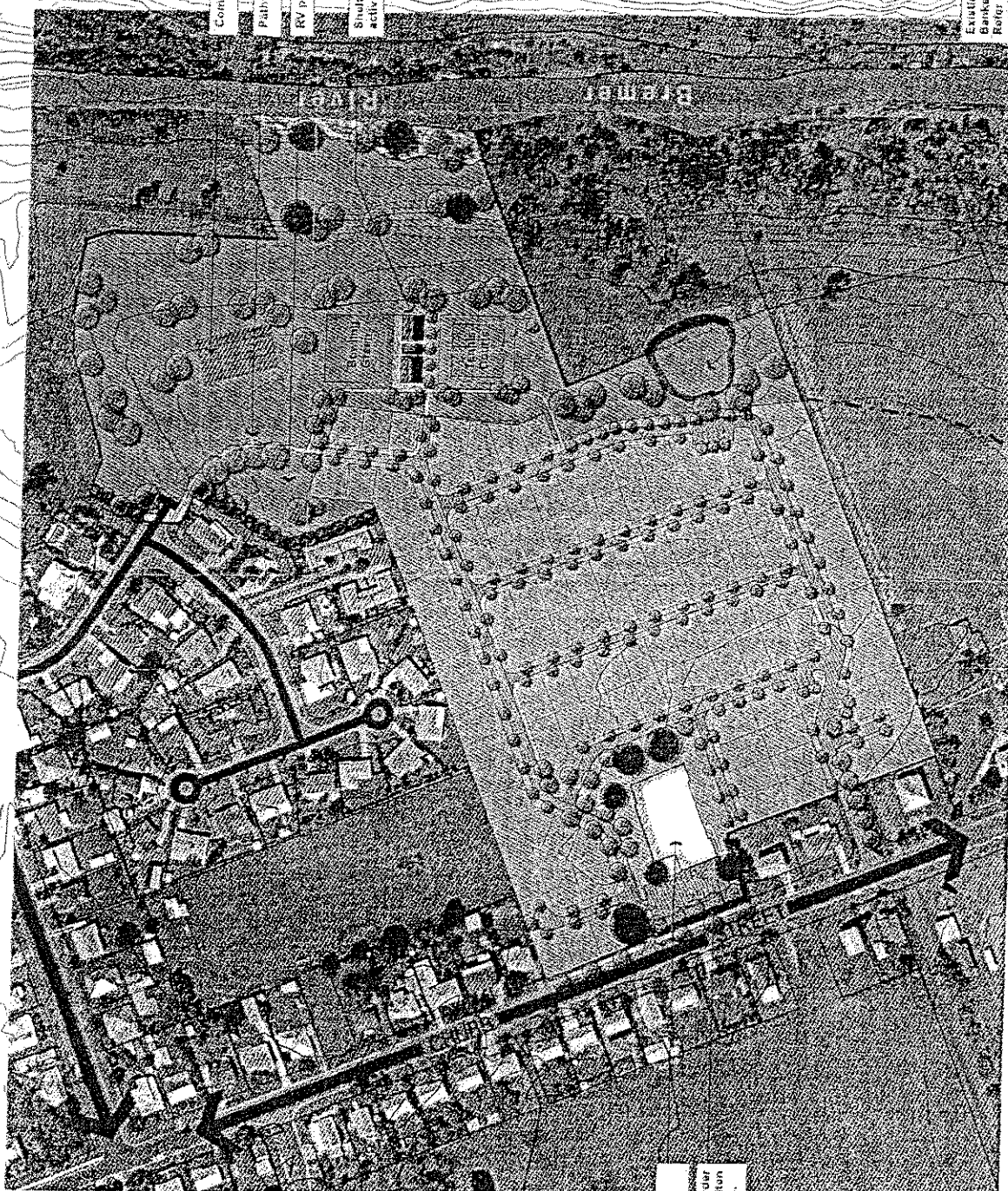
Dated: 12/07/06

Signed: [Redacted]

Date: 17/07/2006

Existing Commercial Building to be refurbished.

How shade trees to car park and border planting of low to mid shrubs to soften appearance of car park and vehicles.



- Communal vegetable/herb garden
- Pathway connection to Gaspetite Street
- RV parking area
- Shade structures for communal recreation activities

LEGEND

- New elements
- Pedestrian accessibility path 1.2m wide
- Internal road network - low speed vegetation environment, shaded with padua/thoux.
- Existing trees to be retained - refer draw 1919/03
- Street trees in turf. Refer to Plant Palette.
- Recreation space - shade trees in grass. Refer to Plant Palette.
- Riparian buffer - indigenous trees and groundcovers/weed removal. Refer to Plant Palette.

Existing dam for retention of un-aide stormwater. Banks planted with stabilising local native groundcovers. Refer to Plant Palette.

Chubb Street, Ipswich
Landscape Concept Plan
Drawing 1919/03
Issue A: 12/07/2006
Scale: 1:1000 @ A1
Scale: 1:400 @ A face

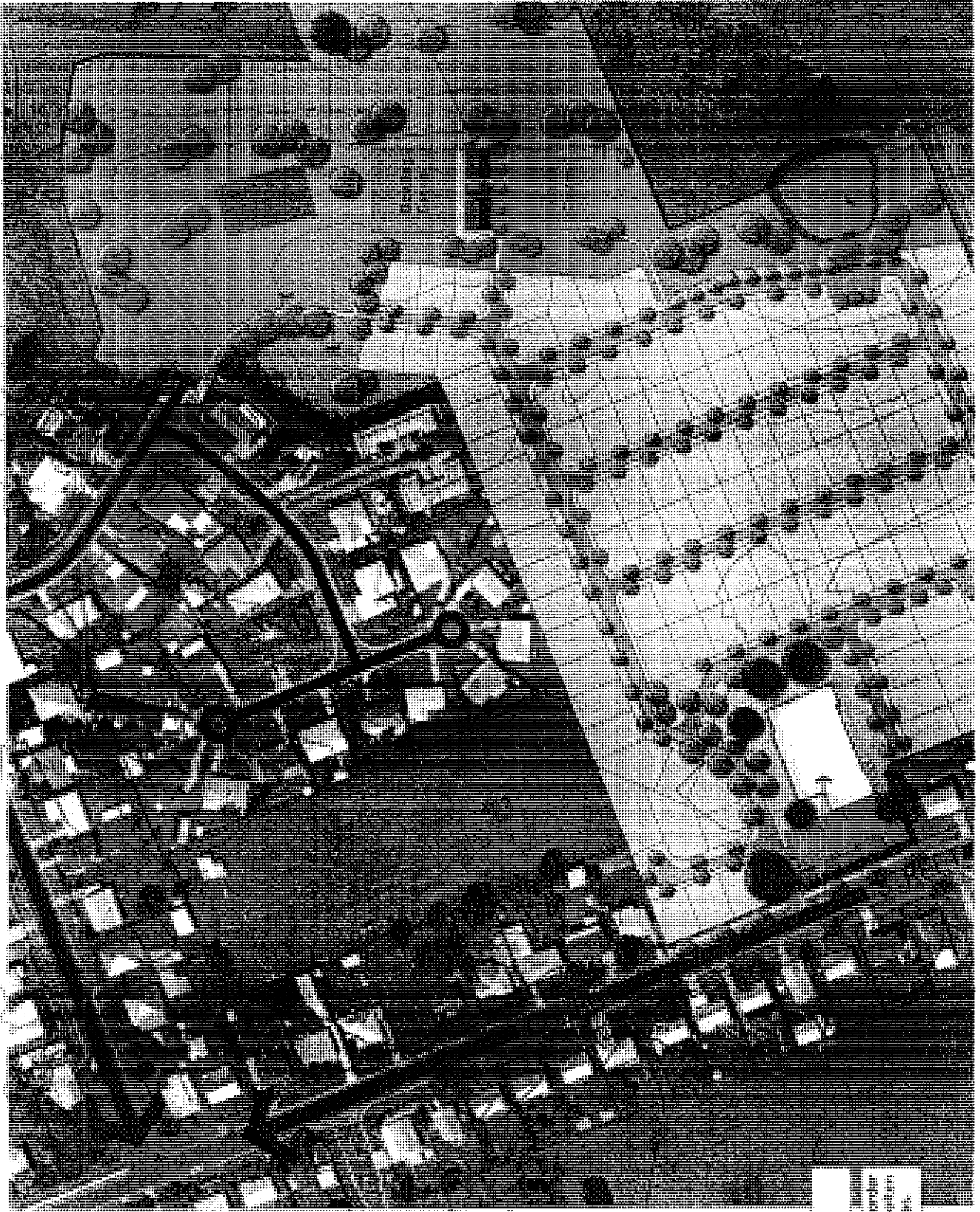
Pursuant to the Order of the Board of Health of the Incorporated Village of Islip, this plan is hereby approved by:

Application No. 13765

Dated: February 27, 2013

Signature: 

Date: 2/27/13

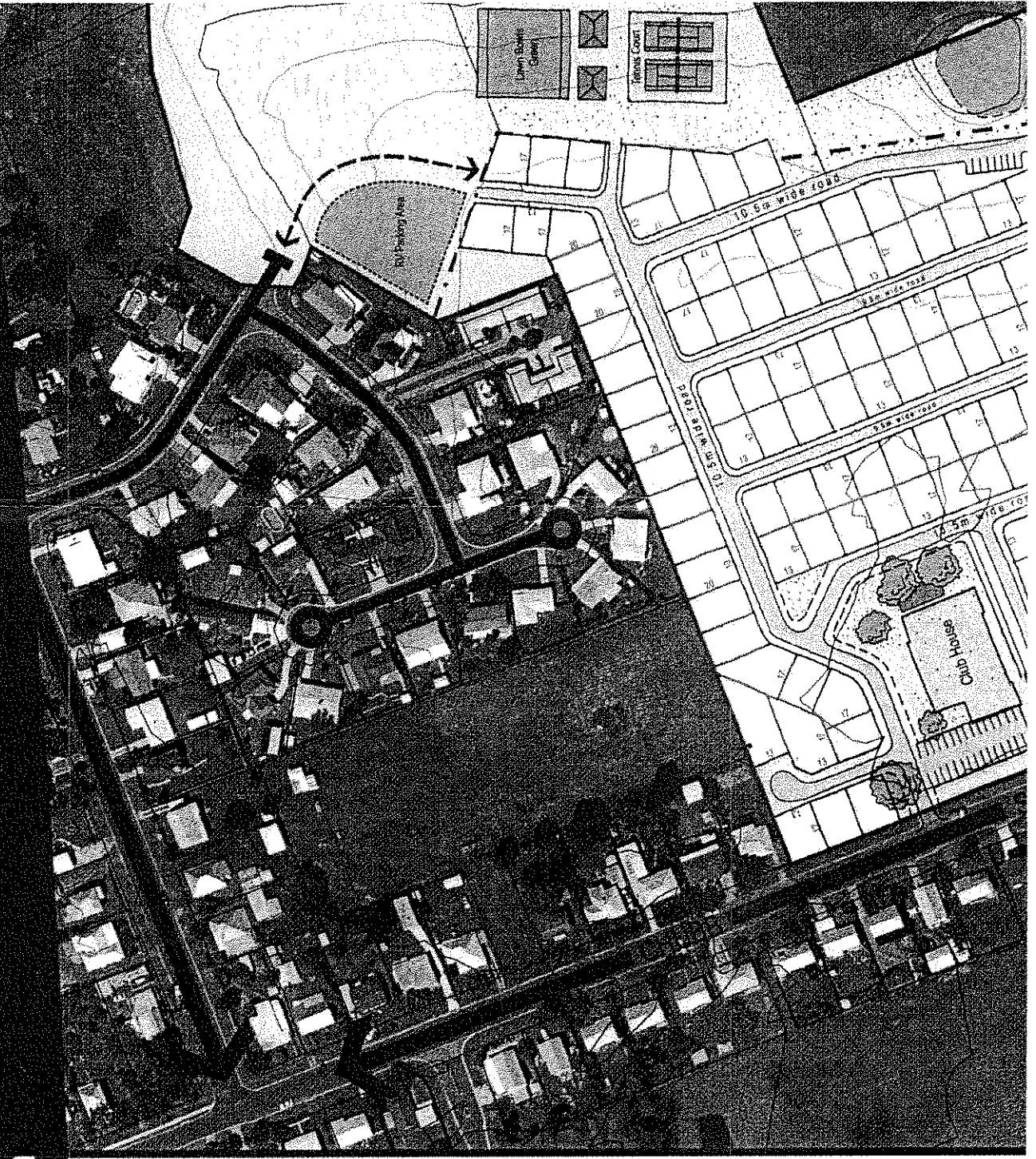


Existing Conditions existing to be re-landscaped.






Area outside areas to our part and border planting of trees to meet irrigation to replace appearance of our park and facilities.

Conceptual Layout - option 1A

Chubb Street, Ipswich



Legend

-  Site boundary
-  Park dedication
-  Existing dam
-  Q100 extent
-  Pedestrian link / maintenance vehicle access

Development Statistics

Total No. Of Lots.....	118
Total No. Of Carparks.....	48
Area of Open Space	
Park Dedication.....	6830m ²
Private Open Space (under Q100).....	2.5ha
RV Parking.....	1400m ²
Club House.....	4780m ²



28th August 2006

Chief Executive Officer
Ipswich City Council
PO BOX 191
IPSWICH Q 4305
Your Reference: 437/05 ; MTE : NBC

Dear Sir,

**SUBMISSION FOR OPERATIONAL WORKS APPROVAL – PROPOSED
MULTIPLE RESIDENTIAL AGED ACCOMMODATION UNITS AND
ANCILLARY RECREATION FACILITIES AT LOT 59 RP 849800, LOT 93
RP 8310 & LOT 14 RP 859820.**

Enclosed please find certified drawings accompanying the application for operational works approval for the above mentioned site.

With the exception of a few minor points, the majority of the developments conditions as listed in the development permit dated 20th March 2006 have been addressed in the attached drawings.

In response to that development permit we advise of the following:

Stormwater Quality

As detailed in Cardno's flood study report, gross pollutant traps will be located in the underground drainage system. The traps will provide pre-treatment of run-off to its discharge to the bio-retention system which will be located in the base of the detention basin. However in this stage these treatments are not required as open channels (refer to drawing for details) are proposed to convey stormwater run-off into the existing detention basin. Stage 2 will then trigger the GPTs and bio-retention basin.

Stormwater Detention

In addition to the proposed detention basin as mentioned above, the site proposes to incorporate rain-water tanks into the development. The most appropriate tanks maybe the slimline tanks which can be easily incorporated onto each rain-water connection. In addition to the slimline tanks the development will also incorporate larger underground tanks for on-site harvesting etc.



The sizing of the basin is in accordance with Cardno's flood study.

Landscaping

A landscaping plan is currently being documented and will be provided to Council prior to approvals.

Internal works

Internal works services such as stormwater, sewer, water and roof-water have been shown on the attached drawings for Council perusal.

If there are any queries please give me a call and I will be happy to assist.

Yours Faithfully



RPEQ No. 7189

Form 1 Development Application idas

Common details

PART A

The completion of **all applicable questions** on Part A is **mandatory** for all applications. Part A must be accompanied by the completed IDAS Assessment Checklist if required, and by one (1) or more other completed parts of the Form as required. For more information on the parts of the Form refer to www.ipa.qld.gov.au. Any information requested in the form may be provided in an attachment to the application. For further information about completing the following details, refer to Guide 1.

<p>Description of land</p> <p>All land the subject of the application, must be identified. However, a description of the land is not required in relation to a mobile or temporary Environmentally Relevant Activity (ERA).</p> <p>Advice for completing Q2 - Q2 applies if development is proposed within a water body or watercourse.</p> <p>Advice for completing Q3 - Most land can be identified by a lot on plan description. These details can be obtained from title documents or through the local government.</p> <p>However, if the land on which the development is proposed does not have a lot on plan description (i.e. the development is proposed in a water body or watercourse) provide --</p> <p>(i) the lot on plan description for the adjoining/adjacent land; or</p> <p>(ii) GPS coordinates where there is no adjoining/adjacent land (eg. in Moreton Bay).</p> <p>Advice for completing Q7 - Q7 does not apply if the development is within a water body or watercourse.</p> <p>Advice for completing Q8 - Q8 applies if development is within a local government area.</p> <p>Note: Areas below high water mark are not within a local government's area unless provided for under the Local Government Act 1993.</p> <p>Advice for completing Q9 - Q9 applies if development is on strategic port land or a strategic port land tidal area. For more details refer to Guide 11</p>	<p>1. Street address: (including house number, street name, suburb/locality name & postcode) (if applicable)</p> <p>8 Georgette Street & 84 and 100 Chubb Street</p> <p>2. Name of water body or watercourse, within which the development is proposed: (if applicable)</p> <p>N/A</p> <p>3. Lot on plan description (eg. Lot 123 on RP 4567) / GPS coordinates:</p> <p>Lot 59 RP 849800, Lot 93 RP 8310 & Lot 14 RP 859820</p> <p>4. The above description is for: (tick applicable box)</p> <p><input checked="" type="checkbox"/> (i) the land on which the development is proposed; or</p> <p><input type="checkbox"/> (ii) the land adjoining the water body or watercourse, within which the development is proposed; or</p> <p><input type="checkbox"/> (iii) the water body or watercourse.</p> <p>5. Shop / tenancy number: <input type="text" value="N/A"/> 6. Storey / level: <input type="text" value="N/A"/> 7. Total area of land: (m² or ha): <input type="text" value="Stage 1 - 4.16Ha"/></p> <p>8. Local government area in which the land is situated: (eg. Esk, Hervey Bay, Woomoo etc.) (if applicable)</p> <p>Ipswich City Council</p> <p>9. Port authority for the strategic port land or strategic port land tidal area on which the development is proposed: (eg. Port of Brisbane, Port of Townsville) (if applicable)</p> <p>N/A</p>
<p>Proposal details</p> <p>If there is insufficient room available, details may be provided in an attachment to the application.</p>	<p>10. Existing use of the land: (eg. vacant, single house, shop etc.)</p> <p>Vacant</p> <p>11. Proposed use of the land: (eg. 6 unit apartment building, 30 lot residential subdivision, ERA for aquaculture in ponds with a total area of 7 ha for which wastes are released into waters etc.)</p> <p>118 Multiple Residential Aged Accommodation units and ancillary recreation facilities</p>
<p>Other applicable parts of Form 1</p> <p>Part A must always be accompanied by other completed parts of Form 1. For information about when a part of Form 1 may apply refer to Guide 1.</p>	<p>12. Other parts of Form 1 completed as part of this application: (eg. Part B, Part I, etc)</p> <p>Part E</p>
<p>Applicant details</p> <p>Clearly identify who is making the application. The applicant need not be the owner of the land.</p> <p>Before signing and lodging this application</p> <p>The applicant is responsible for ensuring the information provided is correct. The assessment manager, any referral agency & the Chief Executive (where applicable) will rely on this information when assessing and deciding the application.</p> <p>If the applicant is a company - a contact person must be shown.</p>	<p>13. Applicant's name: <input type="text" value="BDI Holdings Pty Ltd"/></p> <p>14. Contact number: <input type="text" value="07 3202 9823 or 042 112 5578"/></p> <p>15. Contact person: <input type="text" value="[REDACTED]"/></p> <p>16. Facsimile number/e-mail address: <input type="text" value="[REDACTED]"/></p> <p>17. Postal address: <input type="text" value="c/o DKS Queensland Consulting, 42 Limosa Street Bellbowrie Q:4070"/></p> <p>18. Signature: <input type="text" value="[REDACTED]"/></p> <p>19. Date: <input type="text" value="28 August 2006"/></p>

Land owner's consent (if applicable)
 Section 3.2.1(3) of the IPA prescribes that an application must contain, or be supported by, the written consent of the land owners, if the application involves:
 (i) a material change of use;
 (ii) reconfiguration of a lot;
 (iii) work on land below high-water mark & not within a canal as defined under the Coastal Protection and Management Act 1995; or
 (iv) work on rail corridor land defined under the Transport Infrastructure Act 1994.
 Section 3.8.1(2)(a) of the IPA provides that landowner's consent is not required for a mobile or temporary ERA.
 For more information refer to Guide 1.

20. Land owner's consent to the making of this application:

Name	Signature	Date
(i) [Redacted]	[Redacted]	28/8/06
(ii)		
(iii)		
(iv)		
(v)		

Resource entitlement (if applicable)
 Section 3.2.1(5) of the IPA requires evidence of resource entitlement be given for applications that involve a prescribed State resource.
 Section 3.2.1(10)(a)(i) of the IPA prescribes that an application cannot be taken to be properly made without evidence of the resource entitlement.
Advice for completing Q21 & 22
 Refer to schedule 10 of the Integrated Planning Regulation 1998 that prescribes the nature of evidence required by the State in support of the lodging of this development application.

Advice for completing Q23
 The information in (i) - (v) is mandatory if evidence is required under Q22 (i) or (ii) above.
 The official stamp of the Department of Natural Resources, Mines and Water is mandatory where the application involves any water or riverine quarry material under the Water Act 2000.
 Section 3.2.1(5A) allows the resource manager to limit the time the evidence may be used. Q23 (vi) must be completed if the evidence is time limited.

21. Does this application involve a State resource prescribed under a regulation (other than involving quarry material on State coastal land under the Coastal Protection and Management Act 1995)?
 NO - go to Q24 YES - go to Q22

22. This application is accompanied by evidence: (tick applicable box)
 (i) of the allocation of, or entitlement to, the resource - attach evidence and go to Q23(vi)
 (ii) the chief executive of the department administering the resource is satisfied the development is consistent with an allocation of, or entitlement to, the resource - go to Q23
 (iii) the chief executive of the department administering the resource is satisfied the development application may proceed in the absence of an allocation of, or entitlement to, the resource - go to Q23

23. Evidence of the resource entitlement:

(i) Resource entitlement / authority details	(vi) Official stamp of the department administering the resource (if applicable)
(ii) Name of delegated officer	
(iii) Position of delegated officer	
(iv) Signature of delegated officer	
(v) Date	
(vi) Expiry date of evidence (if applicable)	

Assessment triggers
 This checklist does not apply if the application requires the completion of Parts A and B of the Form only. It must be completed for all other applications.

24. Is the IDAS Assessment Checklist completed and attached to this application?
 YES NO - the assessment manager may refuse to accept this application on the grounds that the application has not been properly made

Plans / drawings / reports
 An application should be accompanied by details to support the proposal & enable the assessment manager, referral agencies and any person viewing the application during public scrutiny or public notification to understand the scope of the proposal and any potential impact.

25. Plans/drawings/reports accompanying this application:

Plan / Drawing / Report Number	Title	Date
(i) CHU1-C-00 to CHU1-C-22	Cover sheet, general layout, intersection details, road longitudinal sections and cross sections, stormwater layout and longitudinal sections incl catchment plans, roof-water layout, sewer layout and longitudinal sections, water reticulation plan, earthworks plan, erosion and sediment control plan, vehicle turning paths plan and details plan.	28/08/06
(ii)		
(iii)		

Notification of Engagement of Private Certifier *(Optional format)*

To _____ Council, I have been engaged as the private certifier for the building work referred to in this application.

Date of engagement: / / Accreditation Number: _____ Name: _____ Signature: _____

Form 1 Development Application

idas

Operational &/or building work
assessable against a local government's planning scheme

PART E

Completion of **all question** on Part E is **mandatory** for all applications involving the assessment of operational work and/or building work (including detailed engineering plans and other plans, detailed engineering plans for subdivisional works and conceptual design plans for engineering & building work when the application does not involve assessment of a material change of use of premises at the same time) assessable against a local government's planning scheme.

Nature of the application

A development permit authorises development to occur, while a preliminary approval is a step in the approval process and does not authorise development to occur.

The types of work that are assessable against a planning scheme are determined by the scheme for a particular local government and will vary across the State.

To determine the types of work that are assessable under a particular planning scheme, contact the relevant local government.

1. This application is for (tick one (1) or both if applicable)

Preliminary approval - provide details of the type of work eg. roadwork, stormwater, water and sewerage infrastructure, etc

AND / OR

Development permit - provide details of the type of work eg. roadwork, stormwater, water and sewerage infrastructure, etc

Roads, sewer, water, storm-water and earthworks

2. Are the works subsequent to a previous development approval?

NO

YES -- provide details of all previous approvals (eg. file references)

DA Application Number 437/05

3. Is the subdivision for a canal estate?

NO

YES

Portable Long Service Leave levy (if applicable)

Prior to issuing a development permit for the works, the assessment manager is required by law to "sign" an approved form, issued by Cleave, which signifies that the PLSL levy has been paid.

4. Is payment of a Portable Long Service Leave (PLSL) levy applicable to the proposal?

YES -- complete Q5

NO -- Q5, 6 & 7 do not apply

5. Has the PLSL levy been paid?

YES -- complete Q6

NO -- the applicable levy must be paid before a development permit can be given for the works

6. How much was paid?

\$ 2,380

7. What is the receipt number of the payment?

See attached Receipt and copy of Payment

PLEASE NOTE

This application **cannot** be accepted unless accompanied by Part A of Form 1.

The assessment manager may refuse to accept an application that, at the time of lodgement, fails to provide all applicable information requested by Part A and any other relevant part of Form 1.

OFFICE USE ONLY (applicable to assessment manager)

DATE RECEIVED	REFERENCE NUMBERS

- (i) Is a PLSL levy applicable in this instance? NO YES - complete Q(ii)
- (ii) Has the approved form (*issued by QLeave and which signifies that the PLSL levy has been paid*) been sighted by the assessment manager / private certifier at the time of lodgement of this application?
- NO YES - provide receipt details below

Form 1 Development Application

idas

IDAS Assessment Checklist

(Formerly the "Referrals Checklist")

IMPORTANT NOTE FOR ALL APPLICANTS:

1. This checklist was formerly referred to as the "Referrals Checklist". Some of the 'Guides' to using the IDAS Application Forms continue to refer to this document as the "Referrals Checklist". The name of this checklist was changed from 25 July 2005 to more accurately describe its function.
2. Under the IPA and IDAS framework, an application may require assessment by the local Council and/or certain Queensland State entities (e.g. Environmental Protection Agency, Dept. of Natural Resources and Mines, Queensland Heritage Council etc.).
3. This checklist is provided to assist applicants to determine when an application requires assessment by a Queensland State entity and may also assist the applicant to determine the assessment manager¹ for the application.
4. Therefore, the completion of **all** questions in section 1 of this checklist is **mandatory** for all applications (other than those requiring the completion of Parts A & B only).
5. It is the responsibility of the applicant to accurately complete this checklist.
6. Depending on the nature of the application, an applicable State entity may be either the assessment manager or an IDAS referral agency for the application.
7. The assessment manager for the application will rely on the information provided in this checklist (as well as any material lodged in support of the application) to identify any applicable referral agencies for the application in the Acknowledgement Notice. The assessment manager will also rely on this information when identifying if the application triggers referral coordination².
8. To assist you in answering the following questions a series of guides are available free from www.ipa.qld.gov.au.
9. Any other parts of Form 1 that this checklist requires to be completed are available from the Council or the applicable State entity, or can be downloaded free from www.ipa.qld.gov.au.
10. Section 2 provides advice about the referrals that can be required for applications for building work assessable against the *Standard Building Regulation 1993* (SBR).

SECTION 1 - STATE ASSESSMENT (completion mandatory)

Note: The following state assessment triggers apply to development other than for building work assessable against the *Standard Building Regulation 1993* (SBR).

<p>Environmentally relevant activity For more information refer to Guide 4. Unless you answered "none of the above" to Q1, the application requires assessment by the <u>administering authority</u>³. If an entity, other than the administering authority, is the assessment manager for the application, the administering authority is a concurrence agency for the application in relation to this matter. <i>Note: An application involving ERA 19 and/or 20 will also require completion of Part K3 of Form 1 for approval unless an allocation under the Water Act 2000 is required.</i></p>	<p>1. The application involves: (tick applicable box/es)</p> <p><input type="checkbox"/> (i) an environmentally relevant activity (ERA) for which a code of environmental compliance has not been made - complete Part G of Form 1</p> <p><input type="checkbox"/> (ii) a mobile or temporary ERA for which a code of environmental compliance has not been made - complete Part G of Form 1</p> <p><input checked="" type="checkbox"/> (iii) none of the above</p>
<p>State-controlled road matters For more information refer to Guide 3. Unless you answered "none of the above" to Q2, the application triggers referral to the <u>Department of Main Roads (DMR)</u> as a referral agency. In certain circumstances DMR will be an advice agency, while in other circumstances DMR will be a concurrence agency. Schedule 2 of the <i>IP Regulation</i> will assist you to determine where DMR is an advice or concurrence agency for the application.</p>	<p>2. The application involves: (tick applicable box/es)</p> <p><input type="checkbox"/> (i) development on land contiguous⁴ to a State controlled road and for -</p> <p><input type="checkbox"/> (a) material change of use assessable against the planning scheme;</p> <p><input type="checkbox"/> (b) reconfiguring a lot unless -</p> <ul style="list-style-type: none"> • the total number of lots is not increased; and • the total number of lots abutting the State-controlled road is not increased; <p><input type="checkbox"/> (c) operational work (not associated with a material change of use assessable against the planning scheme or reconfiguring a lot mentioned in (b) above)-</p> <ul style="list-style-type: none"> • associated with access to a State-controlled road; or • for filling or excavation; or • involving the redirection or intensification of site stormwater from the land, through a pipe with a cross-sectional area greater than 625 cm² that directs stormwater to a State-controlled road.

1 The assessment manager is responsible for assessing and deciding an IDAS application. The assessment manager for an application is prescribed in schedule 6A of the IPA.
 2 For additional information refer to Guide 6 "Does my application trigger the referral coordination process?"
 3 The 'administering authority' may be either the Environmental Protection Agency, the relevant local government (for a devolved ERA) or the Queensland Department of Primary Industries and Fisheries (for a devolved ERA).
 4 Land contiguous to a State-controlled road is defined in schedule 14 of the IP Regulation to mean land - if part of the land is within 100m of the State-controlled road; or that is part of a future State-controlled road.

<p>State-controlled road matters (cont)</p>	<p><input type="checkbox"/> (ii) development on land <i>not contiguous</i> to a State-controlled road and -</p> <ul style="list-style-type: none"> <input type="checkbox"/> (a) <i>material change of use</i> - <ul style="list-style-type: none"> • assessable against the local government's planning scheme; and • mentioned in schedule 5 of the IP Regulation and exceeding the thresholds set by that schedule; <input type="checkbox"/> (b) <i>reconfiguring a lot</i> for a purpose mentioned in schedule 5 of the IP regulation and exceeding the thresholds set by that schedule; <input type="checkbox"/> (c) <i>operational work</i> (not associated with a material change of use assessable against the planning scheme or reconfiguring a lot mentioned in (b) above)- <ul style="list-style-type: none"> • assessable against the local government's planning scheme; and • mentioned in schedule 5 of the IP Regulation and exceeding the thresholds set by that schedule. <p><input checked="" type="checkbox"/> (iii) none of the above</p>
<p>Clearing vegetation For more information refer to Guide 12. Unless you answered "none of the above" to Q3, the application requires assessment by the Department of Natural Resources and Mines (NR&M). If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.</p>	<p>3. The application involves: (tick applicable box/es)</p> <ul style="list-style-type: none"> <input type="checkbox"/> (i) <i>material change of use</i> - <ul style="list-style-type: none"> (a) assessable against the planning scheme; (b) on a lot containing - <ul style="list-style-type: none"> • a category 1, 2 or 3 area shown on a property map of assessable vegetation; or • if there is no property map of assessable vegetation for the lot - remnant vegetation; (c) where the existing use of the land is a rural or environmental use; and (d) where the size of the land is 2 hectares or larger - complete Part J of Form 1 <input type="checkbox"/> (ii) <i>reconfiguring a lot</i> - <ul style="list-style-type: none"> (a) on a lot containing a category 1, 2 or 3 area shown on a property map of assessable vegetation or, if there is no property map of assessable vegetation for the lot, remnant vegetation; (b) where the size of the lot before the reconfiguration is 2 hectares or larger; (c) where 2 or more lots are created; and (d) where the size of any lot created is 25 hectares or smaller - complete Part J of Form 1 <input type="checkbox"/> (iii) <i>operational work</i> - <ul style="list-style-type: none"> (a) for the clearing of native vegetation where the vegetation clearing is made assessable under Schedule 8 of the IPA; and (b) not associated with a material change of use assessable against the planning scheme mentioned in (i) or reconfiguring a lot mentioned in (ii) - complete Part J of Form 1 <p><input checked="" type="checkbox"/> (iv) none of the above.</p>
<p>Strategic port land For more information refer to Guide 11. If you ticked (i) - the relevant Port Authority is the assessment manager for the application. If you ticked (ii) Queensland Transport is a concurrence agency for the application.</p>	<p>4. The application involves:</p> <ul style="list-style-type: none"> <input type="checkbox"/> (i) development on strategic port land as defined in the <i>Transport Infrastructure Act 1994</i> (TI Act) - complete Part I of Form 1 <input type="checkbox"/> (ii) a <i>material change of use</i> that is <i>inconsistent</i> with the land use plan approved under the TI Act for the strategic port land - complete Part I of Form 1 <p><input checked="" type="checkbox"/> (iii) none of the above</p>
<p>Acid sulfate soils For more information refer to Guide 10. Unless you answered "none of the above" to Q6, the application requires assessment by Department of Natural Resources and Mines (NR&M). If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.</p>	<p>5. The application involves development on land situated in an identified⁵ local government area and where the surface of the land is: (tick applicable box)</p> <ul style="list-style-type: none"> <input type="checkbox"/> (i) below 20m AHD⁶ and the development will involve the excavation of 1000m³ or more of soil or sediment at or below 5m AHD, or <input type="checkbox"/> (ii) at or below 5m AHD and the development will involve filling the site with 1000m³ or more of material <p><input checked="" type="checkbox"/> (iii) none of the above</p>

5 The identified local government areas are: Atrurkun, Bowen, Brisbane, Broadsound, Bundaberg, Burdekin, Burke, Burnett, Caboolture, Cairns, Calliope, Caboundra, Cardwell, Carpentaria, Cook, Cooloola, Douglas, Fitzroy, Gladstone, Gold Coast, Hervey Bay, Hinchinbrooke, Isis, Johnstone, Livingstone, Logan, Mackay, Maroochy, Maryborough, Mirum Vale, Mornington, Noosa, Pine Rivers, Redcliffe, Rodland, Rockhampton, Sarina, Thuringowa, Tiara, Torres, Townsville, Whitsunday.

6 Australian Height Datum (AHD).

<p>Major hazard facilities or possible major hazard facilities For more information refer to <u>Guide 17</u>. If you answered "YES" to Q6, the application requires assessment by the <u>Department of Emergency Services (DES)</u>. If an agency other than DES is the assessment manager for the application, DES is a concurrence agency for the application in relation to this matter.</p>	<p>6. Does the application involve a material change of use for a major hazard facility or possible major hazard facility as defined under the <u>Dangerous Goods Safety Management Act 2001</u>?</p> <p><input checked="" type="checkbox"/> NO <input type="checkbox"/> YES - complete Part L of Form 1</p>
<p>Water related development under the Water Act 2000 For more information about items (a) - (d), refer to <u>Guide 15</u>. For more information about item (e), refer to <u>Guide 14 Does my application involve assessment of a referable dam?</u> Unless you answered "none of the above" to Q7, the application requires assessment by the <u>Department of Natural Resources and Mines (NR&M)</u>. If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.</p>	<p>7. The application involves:</p> <p><input type="checkbox"/> (i) operational work, for taking or interfering with water under the <u>Water Act 2000</u>, that is: (tick applicable box/es)</p> <p><input type="checkbox"/> (a) in a watercourse, lake or spring, or from a dam constructed on a watercourse (eg. a pump, gravity diversion, stream re-direction, weir or dam) - complete Part K₂, K₃, K₄, K₅, or K₆ of Form 1 whichever is applicable;</p> <p><input type="checkbox"/> (b) for an artesian bore anywhere in the State, no matter what the use - complete Part K₁ of Form 1;</p> <p><input type="checkbox"/> (c) for a subartesian bore, in declared groundwater area⁷, for use for purposes other than stock and/or domestic use - complete Part K₁ of Form 1;</p> <p><input type="checkbox"/> (d) for a subartesian bore, in certain declared groundwater area, for use for stock and/or domestic purposes - complete Part K₁ of Form 1;</p> <p><input type="checkbox"/> (e) for constructing a referable dam⁸ or that will increase the storage capacity of a referable dam by more than 10% - complete Part K₃ of Form 1; Or</p> <p><input type="checkbox"/> (f) for taking or interfering with overland flow water - complete Parts K₆ and G of Form 1</p> <p><input checked="" type="checkbox"/> (ii) none of the above.</p>
<p>Removal of quarry material from a watercourse For more information refer to <u>Guide 16</u>. If you answered "YES" to Q8, the application requires assessment by the <u>Department of Natural Resources and Mines (NR&M)</u>. If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter. <i>Note: Part G of Form 1 is required to be completed as the activity of removing quarry material from a watercourse is also an Environmentally Relevant Activity (ERA).</i></p>	<p>8. Does the application involve development for the removal of quarry material from a watercourse⁹ requiring an allocation notice under the <u>Water Act 2000</u>?</p> <p><input checked="" type="checkbox"/> NO <input type="checkbox"/> YES - complete Parts K₇ and G of Form 1</p>
<p>Operational works in a tidal area or coastal management district For more information refer to <u>Guide 19</u>. For more information about prescribed tidal work in local government tidal areas refer to <u>Guide 24</u>. Unless you answered "none of the above" to Q9, the application requires assessment by the <u>Environmental Protection Agency (EPA)</u>. If an agency other than EPA is the assessment manager for the application, EPA is a concurrence agency for the application in relation to this matter. Local government is the assessment manager for all prescribed tidal work.</p>	<p>9. The application involves operational work that is: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) tidal work¹⁰ as defined under the <u>Coastal Protection and Management Act 1995</u> (the Coastal Act) that is not prescribed tidal work - complete Part M of Form 1; Or</p> <p><input type="checkbox"/> (ii) tidal work that is prescribed tidal work¹¹ other than in a canal¹² - complete Part P of Form 1; Or</p> <p><input type="checkbox"/> (iii) carried out within a coastal management district under the Coastal Act and for - complete Part M of Form 1 if any box/es (a) to (j) below are ticked.</p> <p><input type="checkbox"/> (a) constructing or installing works in a watercourse between MHWS and HAT (i.e. other than those works in tidal water) where the development has been determined not to be assessable against the <u>Water Act 2000</u>;</p> <p><input type="checkbox"/> (b) constructing a canal¹² intended to be connected to tidal waters;</p> <p><input type="checkbox"/> (c) constructing an artificial waterway;</p> <p><input type="checkbox"/> (d) reclaiming land under tidal water;</p> <p><input type="checkbox"/> (e) disposing of dredge spoil or other solid waste material in tidal water;</p> <p><input type="checkbox"/> (f) interfering with quarry material on State coastal land above high-water mark;</p> <p><input type="checkbox"/> (g) draining or allowing drainage or flow of water or other matter across State coastal land above high-water mark;</p> <p><input type="checkbox"/> (h) removing or interfering with coastal dunes on land, other than State coastal land, that is in an erosion prone area and above high-water mark;</p> <p><input type="checkbox"/> (i) constructing a bank or bund wall to establish a ponded pasture on land, other than State coastal land, above high-water mark; or</p> <p><input checked="" type="checkbox"/> (iv) none of the above.</p>

7 The declared ground water areas are listed in Guide 13 Development in a declared catchment area.

8 Referable dam is defined under the Water Act 2000.

9 Watercourse is defined in sch 10 of the IPA.

10 Tidal work is defined in sch 10 of the IPA.

11 Prescribed tidal work is defined in the Coastal Protection and Management Regulation 2003 and includes certain tidal works completely or partly within a local government tidal area.

12 Canal means canal as defined under the Coastal Protection and Management Act 1995

Operational work below high water mark
 For more information refer to [Guide 18](#). For more information about prescribed tidal work in local government tidal areas refer to [Guide 24](#).
 Unless you answered "none of the above" to Q10, the application triggers referral to [Queensland Transport \(QT\)](#) ([Maritime Safety Qld](#)) as a concurrence agency.
 Local government is the assessment manager for all prescribed tidal work.

10. The application involves **operational work** that is: (tick the applicable boxes)
- (i) **tidal work**¹³ as defined under the *Coastal Protection and Management Act 1995* (the Coastal Act) that is not prescribed tidal work – complete Part M of Form 1; Or
 - (ii) tidal work that is **prescribed tidal work**¹⁴ – complete Part P of Form 1; Or
 - (iii) carried out within a coastal management district¹⁵ under the Coastal Act and for -
 - (a) disposing of dredge spoil or other solid waste material in tidal water – complete Part M of Form 1;
 - (b) reclaiming land under tidal water – complete Part M of Form 1; Or
 - (c) constructing a canal¹⁶, if the canal is associated with reconfiguring a lot – complete Part M of Form 1;
 - (iv) none of the above.

Coastal management
 For more information refer to [Guide 18](#).
 Unless you answered "none of the above" to Q11, the application requires assessment by the [Environmental Protection Agency \(EPA\)](#).
 If an agency other than EPA is the assessment manager for the application, EPA is a concurrence agency for the application in relation to this matter.

11. The application involves: (tick the applicable boxes)
- (i) a **material change of use** assessable under a planning scheme **involving operational work** carried out completely or partly in a coastal management district¹⁵
 - (ii) a **material change of use** assessable under a planning scheme **involving building work**, carried out completely or partly in a coastal management district that is -
 - the construction of a new premises with a GFA¹⁷ of at least 1000m²
 - the enlargement of the GFA of existing premises by more than 1000m²
 - (iii) **reconfiguring a lot** assessable under schedule 8 of the IPA where the land is situated completely or partly in a coastal management district
 - (iv) **reconfiguring a lot**¹⁸ assessable under schedule 8 of the IPA and in connection with the construction of a canal¹⁶ – complete Part M of Form 1
 - (v) none of the above

Development within the limits of a port
 For more information refer to [Guide 18](#). For information about prescribed tidal work refer to [Guide 24](#).
 If you answered "YES" to Q12, the application triggers referral to the [Port Authority](#).
 The Port Authority is a concurrence agency if the development is -

- within 200m of a shipping channel or an entry and exit shipping corridor for the port
- within 1000m of a swing basin, a commercial shipping wharf, a mooring, anchorage or spoil grounds;
- within 1000m of a planned port facility identified in a land use plan approved under the *Transport Infrastructure Act 1994*.

 In all other situations the Port Authority is an advice agency.

12. Does the application involve development below high water mark¹⁹ and within the limits of a port under the *Transport Infrastructure Act 1994*?
- NO
 - YES – complete Part M of Form 1, or Part P of Form 1 if the work is prescribed tidal work

Marinas
 For more information refer to [Guide 18](#). For information about whether a marina is prescribed tidal work refer to [Guide 24](#). The local government is the assessment manager for all prescribed tidal work.
 If you answered "YES" to Q13, the application triggers referral to [Queensland Fire and Rescue Service](#) as a concurrence agency.

13. Does the application involve **operational work** that is tidal work for a marina²⁰ with more than 6 vessel berths?
- NO
 - YES - complete Part M of Form 1, or Part P of Form 1 if the tidal work is prescribed tidal work

Tidal works in strategic port land tidal areas
 For more information refer to [Guide 18](#).
 Unless you answered "NO" to Q14, the relevant [Port Authority](#) is the assessment manager for the application and the [Environmental Protection Agency \(EPA\)](#) and [Queensland Transport \(QT\)](#) are concurrence agencies for the application.

14. Does the application involve tidal works within a strategic port land tidal area²¹?
- NO
 - YES - complete Part M of Form 1

13 Tidal work is defined in sch 10 of the IPA.
 14 Prescribed tidal work is defined in the *Coastal Protection and Management Regulation 2003* and includes certain tidal works completely or partly within a local government tidal area.
 15 Coastal management district is defined in sch 10 of the IPA and means a coastal management district under the *Coastal Protection and Management Act 1995*, other than an area declared as a coastal management district under section 47(2) of that Act.
 16 Canal means canal as defined under the *Coastal Protection and Management Act 1995*
 17 GFA is defined in sch 14 of the IPA to mean the gross floor area. For a definition of how to calculate GFA, go to the planning scheme against which the application is being assessed.
 18 Under s117 of the *Coastal Protection and Management Act 1995*, an application for reconfiguration, where the reconfiguration is associated with the construction of an artificial waterway, must be accompanied by the application for the operational works to construct the artificial waterway.
 19 High water mark is defined in the *Coastal Protection and Management Act 1995* and means the ordinary high water mark at spring tide.
 20 Marina is defined in the *Transport Operations (Maritime Pollution) Regulation 1995*.

<p>Heritage For further information refer to Guide 19. If you answered "YES" to Q15, the application triggers referral to the Queensland Heritage Council as concurrence agency for the application.</p>	<p>15. Does the application involve development in a heritage registered place as defined under the <i>Queensland Heritage Act 1992</i>?</p> <p><input checked="" type="checkbox"/> NO <input type="checkbox"/> YES – complete Part C of Form 1</p>
<p>Declared catchment areas For more information, including a list of the declared catchment areas within Queensland, refer to Guide 19. Unless you answered "none of the above" to Q16, the application requires assessment by the Department of Natural Resources and Mines (NR&M). If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.</p>	<p>16. The application is in an area declared to be a catchment area under the <i>Water Act 2000</i> and involves: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) reconfiguring a lot, if any lot resulting from the reconfiguration is less than 16 hectares;</p> <p><input type="checkbox"/> (ii) development assessable against the planning scheme involving the establishment or expansion of a waste water disposal system, other than a disposal system for carrying out an environmentally relevant activity under the <i>Environmental Protection Act 1994</i>;</p> <p><input checked="" type="checkbox"/> (iii) none of the above</p>
<p>Contaminated land Applications involving material change of use and / or reconfiguring a lot may trigger this referral. For more information refer to Guide 5. Unless you answered "none of the above" to Q17, the application requires assessment by the Environmental Protection Agency (EPA). If an agency other than EPA is the assessment manager for the application, EPA will be a concurrence agency for the application in relation to this matter.</p>	<p>17. The application involves: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) reconfiguring a lot for which all of part of the premises are –</p> <ul style="list-style-type: none"> • item 5, including the exemption otherwise provided for by paragraph (d); • item 6, including the exemption otherwise provided for by paragraph (e); or • item 7, including the exemption otherwise provided for a mining activity or petroleum activity; or <p>(b) in an area for which an area management advice has been given for unexploded ordnance - complete Part N of Form 1</p> <p><input type="checkbox"/> (ii) a material change of use –</p> <ul style="list-style-type: none"> (a) made assessable under the IPA, schedule 8, part 1, table 2, items 5 to 7; or (b) assessable against the planning scheme and if all or part of the premises is in an area for which an area management advice has been given for unexploded ordnance - complete Part N of Form 1 <p><input checked="" type="checkbox"/> (iii) none of the above</p>
<p>Electricity Infrastructure For more information refer to schedule 2of the IP Regulation. Unless you answered "none of the above" to Q18, the application triggers referral to the agency to which the easement is granted in favour of as advice agency.</p>	<p>18. The application involves: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) reconfiguring a lot where any part of the lot is –</p> <ul style="list-style-type: none"> • subject to an easement in favour of a distribution entity or transmission entity under the <i>Electricity Act 1994</i> and the easement is for a transmission grid or supply network under that Act; or • situated within 100m of a substation site; <p><input type="checkbox"/> (ii) a material change of use, assessable against a planning scheme and not associated with reconfiguring a lot if –</p> <ul style="list-style-type: none"> • any part of the premises is subject to an easement in favour of a distribution entity or transmission entity under the <i>Electricity Act 1994</i> and the easement is for a transmission grid or supply network under that Act; and • any structure or work that is the natural and ordinary consequence of the use is, or will be, located wholly or partly in the easement; <p><input type="checkbox"/> (iii) a material change of use, assessable against a planning scheme and not associated with reconfiguring a lot if any part of the premises is situated within 100m of a substation site;</p> <p><input type="checkbox"/> (iv) operational work that is filling or excavation assessable against the planning scheme, not associated with reconfiguring a lot, if –</p> <ul style="list-style-type: none"> • any part of the premises is subject to an easement in favour of a distribution entity or transmission entity under the <i>Electricity Act 1994</i> and the work is located wholly or partly in the easement; • the work is located wholly or partly within 10m of a substation site; <p><input checked="" type="checkbox"/> (v) none of the above.</p>

Land designated for community infrastructure
 Applications involving development on land designated for community infrastructure may trigger this referral.
 For more information refer to schedule 2 of the IP Regulation.
 If you answered "YES" to Q19, the application requires assessment by the chief executive of the department administering the Act authorising the development for the designated purpose.
 If an agency other than the designator is the assessment manager for the application, the designating agency will be a concurrence agency for the application in relation to this matter.

19. Does the application involve development assessable against the planning scheme and on land designated for community infrastructure?
 (i) intended to be supplied by a public sector entity; and
 (ii) on land not owned by or on behalf of the State; and
 (iii) other than development –
 (a) for the designated purpose; or
 (b) carried out by, or on behalf of, the designator.
 NO
 YES

SEQ Regional Plan
 For more information refer to schedule 2 of the IP Regulation.
 Unless you answered "none of the above" to Q20, the application requires assessment by the Office of Urban Management (OUM).

20. The application involves a **material change of use** of premises in the SEQ Region²² for: (tick the applicable box/es)
 (i) urban activities²³, other than where the premises are zoned for urban activities under a planning scheme in a rural village²⁴ or the Mt Lindesay/North Beaudesert Study Area, for which all or part of the premises, the subject of the development, is in the –
 (a) Regional Landscape and Rural Production Area;
 (b) Rural Living Area;
 (c) Investigation Area; or
 (d) Mt Lindesay/North Beaudesert Investigation Area.
 (ii) rural residential purposes²⁵ where the premises are not zoned for rural residential purposes and the premises are in the –
 (a) Regional Landscape and Rural Production Area;
 (b) Investigation Area; or
 (c) Mt Lindesay/North Beaudesert Investigation Area;
 (iii) none of the above

Fisheries matters
 For more information refer to schedule 2 of the IP Regulation.
 Unless you answered "none of the above" to Q21, the application requires assessment by the Department of Primary Industries and Fisheries (DPI&F).
 If an agency other than DPI&F is the assessment manager for the application, DPI&F is a concurrence agency for the application in relation to items (i) – (iv) and an advice agency in relation to item (v).

21. The application involves: (tick the applicable box/es)
 (i) an assessable **material change of use** for aquaculture - complete Part O₁ of Form 1;
 (ii) assessable **operational work** that is the construction or raising of a waterway barrier - complete Part O₃ of Form 1;
 (iii) assessable **operational work** completely or partly within a declared fish habitat area - complete Part O₂ of Form 1;
 (iv) assessable **operational work** that is the removal, destruction or damage of a marine plant - complete Part O₂ of Form 1;
 (v) development assessable under the IPA, schedule 8, part 1, on land that adjoins a declared fish habitat area;
 (vi) none of the above.

22 Local Governments within the SEQ Region are identified in the South East Queensland Regional Plan as Beaudesert Shire, Goondi Shire, Brisbane City, Caboolture Shire, Caloundra City, Esk Shire, Gellon Shire, Gold Coast City, Ipswich City, Kilcoy Shire, Laidley Shire, Logan City, Maroochy Shire, Noosa Shire, Pine Rivers Shire, Redcliffe City, Redland Shire and Toowoomba City.
 23 Urban activity means urban activity as defined in schedule 2, Part H Regulatory Provisions, South East Queensland Regional Plan. The term includes some facilities and purposes and excludes some purposes. A single residential dwelling on a lot is not included in urban activity.
 24 Rural village means rural village as defined in schedule 2, Part H Regulatory Provisions, South East Queensland Regional Plan.
 25 Rural residential purpose means rural residential purpose as defined in schedule 2, Part H Regulatory Provisions, South East Queensland Regional Plan.

Integration of land use and public transport
 For more information refer to Guide 23, schedule 8A of the IPA, & schedule 2 of the IP Regulation.
 Unless you answered "none of the above", the application triggers referral to QT as a concurrence agency.

22. The application involves: *(tick the applicable boxes)*—
- (i) a **material change of use** assessable against the planning scheme for a purpose mentioned in schedule 13C of the IP Regulation and exceeding the thresholds set by that schedule.
 - (ii) **reconfiguring a lot**—
 - (a) on land that is completely or partly within a public transport corridor, and the total number of lots increases;
 - (b) on land that is completely or partly within a future public transport corridor or an airport's public safety area;
 - (c) on land that is within 400m of a public passenger transport facility or a future public passenger transport facility, and the total site area is 5000m² or greater;
 - (d) for a residential purpose within the 25 ANEF contour for an airport;
 - (e) for a residential purpose resulting in 100 or more allotments.
 - (iii) **operational work** assessable against the planning scheme, but not associated with a material change of use mentioned in (i) above or reconfiguring a lot mentioned in (ii) above, on land that—
 - (a) is completely or partly within a public transport corridor or a future public transport corridor;
 - (b) will result in work that encroaches into an airport's operational airspace.
 - (iv) none of the above.

Railway safety and efficiency
 For more information refer to Guide 23, schedule 8A of the IPA & schedule 2 of the IP Regulation.
 Unless you answered "none of the above", the application triggers referral to QT as a concurrence agency.

23. The application involves: *(tick the applicable boxes)*—
- (i) a **material change of use** assessable against the planning scheme for a purpose mentioned in schedule 13D of the IP Regulation and exceeding the thresholds set by that schedule.
 - (ii) **reconfiguring a lot**—
 - (a) on land that is completely or partly within a future public transport corridor, future railway land or a railway tunnel easement;
 - (b) on land that is within 400m of a Citytrain passenger railway station or a future Citytrain passenger railway station, and the total site area is 5000m² or greater;
 - (c) on land that abuts rail corridor land, commercial corridor land or future railway land, and the total number of lots increases;
 - (d) on land that abuts rail corridor land, commercial corridor land or future railway land and an easement abutting the corridor or future railway land is created;
 - (e) on land that is completely or partly within 100m of, and abutting an approach to, a railway level crossing, and the total number of lots increases;
 - (f) for a residential purpose resulting in 100 or more allotments.
 - (iii) **operational work** assessable against the planning scheme, but not associated with a material change of use mentioned in (i) above or reconfiguring a lot mentioned in (ii) above, involving extracting, excavating or filling greater than 50m³, on land that—
 - (a) is completely or partly within rail corridor land or commercial corridor land, and the work is not for rail transport infrastructure or other rail infrastructure;
 - (b) is completely or partly within future railway land, or a railway tunnel easement;
 - (c) abuts rail corridor land, commercial corridor land or future railway land, and the work is within 25m of the railway boundary.
 - (iv) none of the above.

Referral coordination
 An information request requires referral coordination if the application involves—

- (i) 3 or more concurrence agencies; or
- (ii) a facility or area assessable under a planning scheme and prescribed in schedule 7 or 8 of the IP Regulation; or
- (iii) development which is subject to an application for preliminary approval mentioned in s3.1.6 of the IPA.

For more information go to Guide 2 and Guide 6.

24. Does the application trigger referral coordination?
- NO
 - YES, as the application: *(tick the applicable boxes)*
 - (i) triggers 3 or more concurrence agencies;
 - (ii) involves a **material change of use** made assessable under a planning scheme and prescribed in schedule 7 of the IP Regulation;
 - (iii) involves a **material change of use** (other than a dwelling house, outbuilding or farm building) made assessable under a planning scheme, or **reconfiguring a lot**, in an area prescribed in schedule 8 of the IP Regulation;
 - (iv) is for a preliminary approval mentioned in s3.1.6 of the IPA

Referral agency responses prior to lodgement

Under s3.3.2 of IPA a referral agency may give a referral agency response on a matter within its jurisdiction about a proposal before an application for the proposal is made to the assessment manager.

This is commonly the case where an application requires referral to a building referral agency (eg. Old Fire and Rescue Service).

25. Did a referral agency give a referral agency response under s3.3.2 of the IPA before the application was made to the assessment manager?

- NO
- YES - attach a copy of the referral agency's response/s

PLEASE NOTE: The assessment manager may refuse to accept an application, which, at the time of lodgement, fails to provide the completed IDAS Assessment Checklist (if applicable).

OFFICE USE ONLY (applicable to assessment manager)

DATE RECEIVED	REFERENCE NUMBERS
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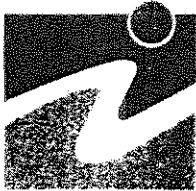
SECTION 2 – BUILDING REFERRALS (completion not mandatory)

Note: Below is a list of the referrals that can apply to an application for building work assessable against the *Standard Building Regulation 1993* (SBR). This section of the IDAS Assessment Checklist is provided for **advice only**. This section of the IDAS Assessment Checklist is **not** required to be completed and lodged with an application for building work assessable against the SBR only.

Fire safety For more information go to schedule 2 of the IP Regulation	1. An application may trigger referral to Qld Fire and Rescue Services as an advice agency if the building work the subject of the application requires the installation of a fire safety system.
Fire safety for budget accommodation For more information go to schedule 2 of the IP Regulation	2. An application may trigger referral to Qld Fire and Rescue Services as an advice agency if the building work the subject of the application requires the installation of a fire safety system for a budget accommodation building.
Spray painting For more information go to schedule 2 of the IP Regulation	3. An application may trigger referral to the Department of Industrial Relations (DIR) as a concurrence agency if the application involves a workplace incorporating spray painting.
Retail meat premises For more information go to schedule 2 of the IP Regulation	4. An application may trigger referral to Safe Food Qld as a concurrence agency if the application involves a retail meat premises.
Private health facilities For more information go to schedule 2 of the IP Regulation	5. An application may trigger referral to the Department of Health as a concurrence agency if the application involves a private health facility.
Workplace area less than 2.3m² For more information go to schedule 2 of the IP Regulation	6. An application may trigger referral to the Department of Industrial Relations (DIR) as an advice agency if the application involves a work place area less than 2.3m ² .
Land contiguous to a State-controlled road For more information go to schedule 2 of the IP Regulation	7. An application may trigger referral to the Department of Main Roads as a concurrence agency or advice agency if the application involves land contiguous to a State-controlled road.
Pastoral workers accommodation For more information go to schedule 2 of the IP Regulation	8. An application may trigger referral to the Department of Industrial Relations (DIR) as a concurrence agency if the application involves pastoral workers accommodation.
Child care centre For more information go to schedule 2 of the IP Regulation	9. An application may trigger referral to the Department of Communities as a concurrence agency if the application involves a childcare centre.
Coastal development For more information go to schedule 2 of the IP Regulation	10. An application may trigger referral to the Environmental Protection Agency (EPA) as a concurrence agency if the application involves land completely or partly seaward of a coastal building line ²⁶ .
Heritage For more information go to schedule 2 of the IP Regulation	11. An application may trigger referral to the Heritage Council as a concurrence agency if the application involves a heritage registered place.
Fisheries matters For more information go to schedule 2 of the IP Regulation	12. An application may trigger referral to the Department of Primary Industries and Fisheries (DPI&F) as a concurrence agency if the application involves assessable building work in a declared fish habitat area; or as an advice agency if the application involves assessable building work on land that adjoins a declared fish habitat area.
Integration of land use and public transport For more information go to schedule 2 of the IP Regulation	13. An application may trigger referral to Queensland Transport as a concurrence agency if the application involves existing or future public transport corridors, or airport operational airspace ²⁷ .
Railway safety and efficiency For more information go to schedule 2 of the IP Regulation	14. An application may trigger referral to Queensland Transport as a concurrence agency if the application involves future railway land.

²⁶ Coastal building lines are prescribed under the Coastal Protection and Management Act 1995.

²⁷ Operational airspace is as defined in State Planning Policy 1/02 'Development in the Vicinity of Certain Airports and Aviation Facilities'.



Ipswich
City Council

Your Reference:
Our Reference: 437/05 BJD
Contact Officer: [REDACTED]
Telephone No.: 3810 6258

22 February 2007

Dear Sir/Madam

**Re: Appl. No. 437/05
8 Georgette Street, 84 Chubb Street and 100 Chubb Street, One Mile
Combined Application for Material Change of Use: Multiple Residential (Mature
Aged Residential) and Reconfiguring a Lot: Three (3) Lots into Two (2) Lots)**

I refer to your letter dated 2 February 2007 requesting approval to stage the above referenced development into three parts in accordance with Condition 27: Minor Alterations.

In reply, it is advised that Council has no objection to the construction and operation of the development in stages in accordance with the attached plans.

Please note that prior to commencement of use of each of the identified stages, all of the relevant conditions of approval must be complied with (including payment of contributions). Furthermore, all external works are to be completed prior to commencement of the use of the first stage to be constructed.

Access PD Online at www.ipswich.qld.gov.au to view, search and print property information, interactive mapping, track development applications and the Ipswich Planning Scheme. Undertake a development enquiry as part of the Property Search function to identify the planning scheme provisions that apply to a particular use on a property. PD Online - information at your fingertips 24 hours a day, 7 days a week.

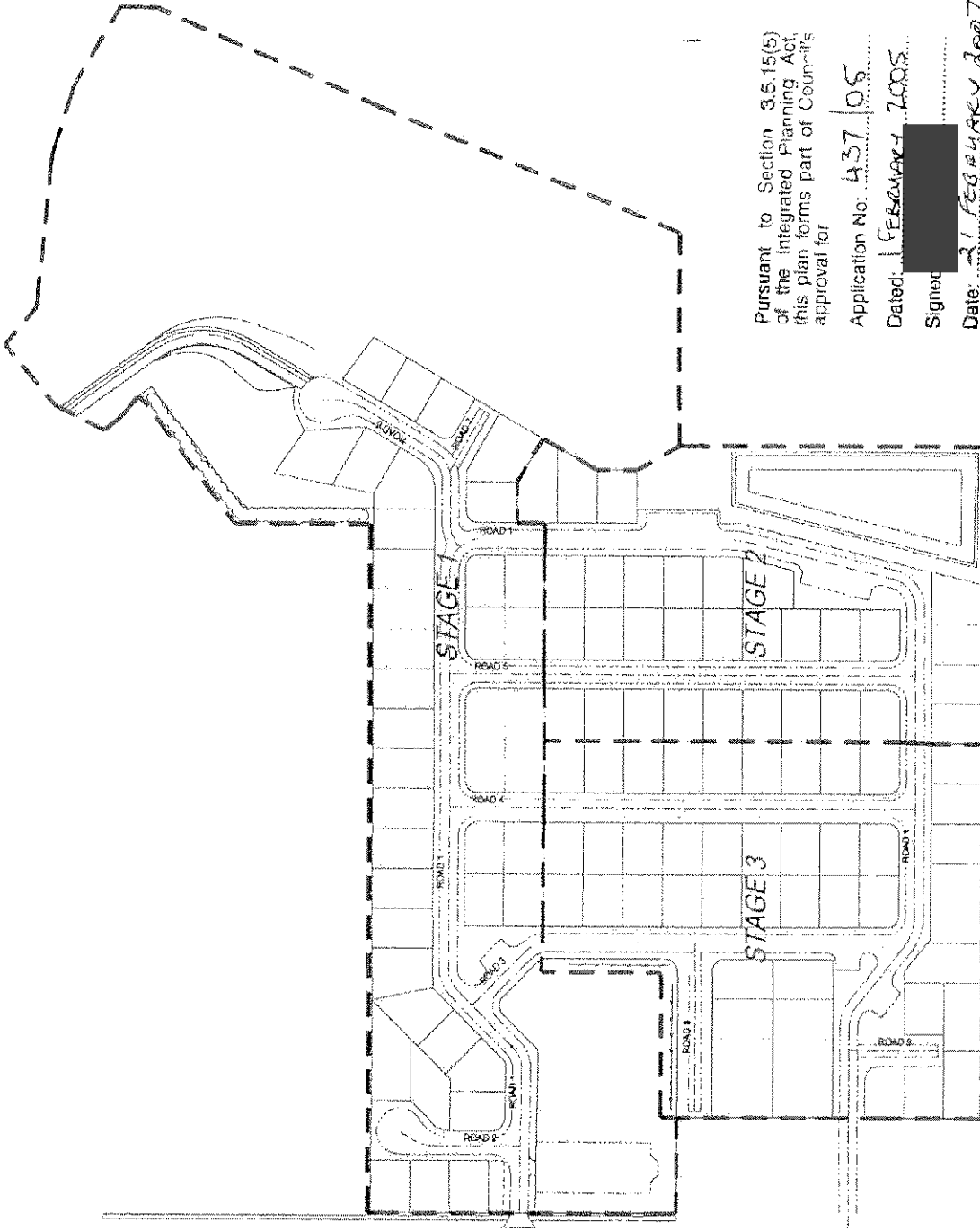
Should you require any further information or assistance with respect to this matter, please contact Mr Brett Davey on the telephone number (07) 3810 6258.

Yours faithfully

[REDACTED]
**ASSISTANT DEVELOPMENT MANAGER -
PLANNING**

[
David Brett and Associates Pty Ltd
PO Box 5020
BRASSALL QLD 4305
]

Please Address All Correspondence to:
Chief Executive Officer
Ipswich City Council
A.B.N. 61 461 981 077
PO Box 191 Ipswich Qld 4305
Telephone: (07) 3810 6666
Facsimile: (07) 3810 6731
[REDACTED]
Website: www.ipswich.qld.gov.au



Pursuant to Section 35.15(5)
of the Integrated Planning Act,
this plan forms part of Council's
approval for

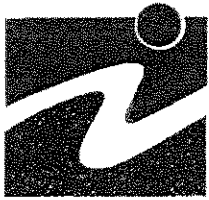
Application No: 437/05
Dated: FEBRUARY 2005
Signed: [Redacted]
Date: 21 FEBRUARY 2007

CHUBB STREET

THE NAME OF THE PROJECT CHUBB STREET DEVELOPMENT		THE NAME OF THE PROJECT STAGING PLAN	
THE NAME OF THE APPLICANT BDI HOLDINGS PTY LTD		THE NAME OF THE APPLICANT CHUBB STREET DEVELOPMENT	
THE ADDRESS OF THE PROJECT CHUBB STREET		THE ADDRESS OF THE PROJECT CHUBB STREET	
THE DATE OF THE PLAN 21 FEBRUARY 2007		THE DATE OF THE PLAN 21 FEBRUARY 2007	
THE SCALE OF THE PLAN AS SHOWN		THE SCALE OF THE PLAN AS SHOWN	
THE DRAWING NUMBER 437/05		THE DRAWING NUMBER 437/05	
THE DRAWING DATE 21 FEBRUARY 2007		THE DRAWING DATE 21 FEBRUARY 2007	
THE DRAWING BY [Redacted]		THE DRAWING BY [Redacted]	
THE DRAWING CHECKED BY [Redacted]		THE DRAWING CHECKED BY [Redacted]	
THE DRAWING APPROVED BY [Redacted]		THE DRAWING APPROVED BY [Redacted]	
THE DRAWING DATE 21 FEBRUARY 2007		THE DRAWING DATE 21 FEBRUARY 2007	
THE DRAWING SCALE AS SHOWN		THE DRAWING SCALE AS SHOWN	
THE DRAWING TITLE CHUBB STREET DEVELOPMENT		THE DRAWING TITLE CHUBB STREET DEVELOPMENT	
THE DRAWING NUMBER 437/05		THE DRAWING NUMBER 437/05	
THE DRAWING DATE 21 FEBRUARY 2007		THE DRAWING DATE 21 FEBRUARY 2007	
THE DRAWING BY [Redacted]		THE DRAWING BY [Redacted]	
THE DRAWING CHECKED BY [Redacted]		THE DRAWING CHECKED BY [Redacted]	
THE DRAWING APPROVED BY [Redacted]		THE DRAWING APPROVED BY [Redacted]	
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THE DRAWING SCALE AS SHOWN		THE DRAWING SCALE AS SHOWN	
THE DRAWING TITLE CHUBB STREET DEVELOPMENT		THE DRAWING TITLE CHUBB STREET DEVELOPMENT	



NOT TO SCALE



Ipswich
City Council

Your Reference:
Our Reference: 5752/06
Contact Officer: [REDACTED]
Telephone No.: 3810 6164

23 February 2007

Dear Sir/Madam.

Re: Outstanding Issues
Application Number: 5752/06
Proposal: Operational Works (Municipal & Internal Works)
Property Location: 8 Georgette Street and 84 & 100 Chubb Street, One Mile

Upon review of the abovementioned Development Approval Application and supporting information we require the following outstanding issues to be address:

Development Plan

Development Permit 437/05, dated 20 March 2006, Condition 2(a) of the Material Change of Use approval, requires a development plan for the community club house to be submitted and approved by the Development Manager prior to the approval of any further application in respect to the subject site. The development plan should detail the location and extent of the proposed uses within the building. Elevations should be provided where it is intended to alter the external appearance of the building.

Stormwater Discharge Approval

Development Permit 437/05, dated 20 March 2006, Condition 17(I) of the Material Change of Use approval, requires written consent to be obtained from Council's Chief Operating Officer - Health, Parks and Recreation for the proposed extension of discharge pipe from the detention basin into Council's land at Lot 94 on RP859820 and discharge of stormwater. Alternatively, the Developer may chose to relocate the pipe so that it discharges within the subject site.

[REDACTED]
DKS Queensland Consulting
42 Limosa Street
BELLBOWRIE QLD 4070

Please Address All Correspondence to:
Chief Executive Officer
Ipswich City Council
A.B.N. 61 461 981 077
PO Box 191 Ipswich Qld 4305
Telephone: (07) 3810 6666
Facsimile: (07) 3810 6731

[REDACTED]
Website: www.ipswich.qld.gov.au

Access PD Online at www.ipswich.qld.gov.au to view, search and print property information, interactive mapping, track development applications and the Ipswich Planning Scheme. Undertake a development enquiry as part of the Property Search function to identify the planning scheme provisions that apply to a particular use on a property. PD Online - information at your fingertips 24 hours a day, 7 days a week.

Response to this letter should be forwarded to:-

The Development Manager
Development Branch
Ipswich City Council
PO Box 191
IPSWICH QLD 4305

Yours faithfully

A large black rectangular redaction box covers the signature area. A small handwritten mark is visible above the top right corner of the box.

SENIOR DEVELOPMENT ENGINEER

15 March 2007

MEMORANDUM

TO: SENIOR DEVELOPMENT ENGINEER – TROY ANDERSON
FROM: DEVELOPMENT ENGINEER – ANDREW TSAI
RE: DEVELOPMENT APPLICATION – CODE ASSESSMENT
OPERATIONAL WORKS
INTEGRATED PLANNING ACT 1997 – SECTION 3.2.1(1)

Application No: 5752/06
Applicant: BDI Holdings
Real Property Description: Lot 59 on RP849800, Lot 93 on RP8310 &
Lot 14 on RP859820
Property Location: 8 Georgette Street and 84 & 100 Chubb Street, One Mile
Division: 8

Proposal	Development	Approval Type Requested
Municipal & Internal Works Stage 1	Carrying out operational work	Development Permit

Date Received: 31 August 2006
Start Date for Decision Stage: 14 September 2006
Start Date for Determination: 12 October 2006
Site Area: 77,140sqm

A. EVALUATION OF PROPOSED DEVELOPMENT

1. Applicable Codes

This application has been assessed against the following codes:-

- (a) Ipswich Planning Scheme – April 2004;
- (b) Queensland Urban Drainage Manual;
- (c) Australian Rainfall and Runoff (The Institution of Engineers, Australia);
- (d) Queensland Streets;
- (e) Policy Guidelines for Earthworks (including allotment filling); Australian Standard 3798 – Guidelines on Earthworks for Commercial and Residential Developments;
- (f) Manual of Uniform Traffic Control Devices (Department of Main Roads); and
- (g) Sewerage and Water Supply Act.

2. Supporting Material

3. Engineering Plans

The engineering plans listed below are generally considered to be adequate:-

Plan Number	Revision Number
CHU1-C-00	A
CHU1-C-01	A
CHU1-C-02	A
CHU1-C-03	A
CHU1-C-04	A
CHU1-C-05	A
CHU1-C-06	A
CHU1-C-07	A
CHU1-C-08	A
CHU1-C-09	A
CHU1-C-10	A
CHU1-C-11	A
CHU1-C-12	A
CHU1-C-13	A
CHU1-C-14	A
CHU1-C-15	A
CHU1-C-16	A
CHU1-C-17	A
CHU1-C-18	A
CHU1-C-19	A
CHU1-C-20	A
CHU1-C-21	A
CHU1-C-22	A
CHU1-C-23	A

RECOMMENDATION

A. That the Developer be advised that Development Application No. 5752/06 involving Operational Works is determined as outlined in the table below:

Proposal	Development	Decision	Approval Type
Municipal & Internal Works Stage 1	Carrying out Operational Works	Approved	Development Approval

1. Basis of Approval

The facts and circumstances set out in the application and all relevant Council Local Laws and/or Local Planning Policies shall be adhered to, except as amended in these conditions.

2. The following is a list of the plans upon which this determination is forwarded:

Plan Number	Revision Number
CHU1-C-00	A
CHU1-C-01	A
CHU1-C-02	A
CHU1-C-03	A
CHU1-C-04	A
CHU1-C-05	A
CHU1-C-06	A
CHU1-C-07	A
CHU1-C-08	A
CHU1-C-09	A
CHU1-C-10	A
CHU1-C-11	A
CHU1-C-12	A
CHU1-C-13	A
CHU1-C-14	A
CHU1-C-15	A
CHU1-C-16	A
CHU1-C-17	A
CHU1-C-18	A
CHU1-C-19	A
CHU1-C-20	A
CHU1-C-21	A
CHU1-C-22	A
CHU1-C-23	A

3. Minor Alterations

Notwithstanding the requirements detailed in this approval, any other minor alterations and/or modifications shall be subject to the prior written approval of the Senior Development Engineer.

4. Hours of Construction

Unless otherwise approved in writing by the Senior Development Manager hours of construction shall be:

Monday to Saturday 6.30 a.m. to 6.30 p.m.

Work or business shall not be conducted from or on the premises outside the above hours or on Sundays or public holidays.

5. Terms

RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required.

6. Nomination of a date for an invitation to Council officers to attend a pre-start meeting.
7. Submission of a copy of the relevant contract documents, including a schedule of quantities and prices.
8. Submission of the following information as required by Ipswich Planning Scheme Policy 3 – General Works prior to or at the pre-start meeting:-
- (a) Contractor's on site and after hours telephone number;
 - (b) Supervising engineer's office and after hours telephone number; and
 - (c) Date of commencement of works and expected duration.
9. The Developer shall submit to Council for approval amended drawings demonstrating compliance with the following conditions. The drawings shall be submitted to Council a minimum of two weeks prior to the pre-start meeting:

The Developer shall undertake and complete the following works in Stage 1 of the development, in accordance with Council's letter dated 22 February 2007:

- i. The unnamed road located at the development's southern access point shall be constructed as road, extending from Chubb Street to the subject site, in accordance with Condition 13(a) – (d) of the Development Permit 437/05, dated 20 March 2006.
- ii. A minimum 1.5m wide concrete footpath shall be constructed on the eastern side of Chubb Street, extending from the southern boundary of Lot 13 on RP859820 (102 Chubb Street) to the northern boundary of Lot 4 on RP73249 (68 Chubb Street). The works shall include the construction of kerb ramps at appropriate locations to the satisfaction of the Senior Development Engineer. The construction of the concrete footpath and kerb ramps shall be in accordance with Council's Standard Drawing SR.19 and SR.18 respectively.

- iii. A bus shelter shall be provided on Translink Bus Route No. 516. The design and location of the bus shelter shall be investigated and submitted to Council for approval prior to the pre-start meeting. The design of the bus shelter shall meet the requirements of Translink. The location of the bus shelter shall be determined after considering the needs of existing residents and include consultation with those residents adjacent to where the bus shelter is to be installed.
- iv. A 1.5m wide footpath (and associated pedestrian crossing facilities if required) shall be provided linking the development to the bus shelter.
- v. The proposed RV parking area shall be constructed in Stage 1. The surface of the parking area shall be a suitable impervious material (e.g. rock/gravel with effective dust and weed control) to the satisfaction of the Senior Development Engineer.
- vi. A concrete layback and driveway slab minimum 9.0m wide, from the layback to the property boundary, shall be constructed at the proposed access points, and in accordance with Council's Standard Drawing SR.14.
- vii. A minimum 1.2m wide footpath network shall be provided to service all the proposed units, future on-site development and key amenities in accordance with Council Policy relating to retirement communities. The footpath network shall also extend from the end of the internal road adjoining the RV parking area to Cafferky Street. The maximum longitudinal grade shall not exceed 1:8 unless required for wheelchairs where the maximum longitudinal grade shall be 1:14. Kerb ramps shall be provided, to the satisfaction of the Senior Development Engineer, at appropriate locations and intersections so as to afford the appropriate level of connectivity within a retirement community.

Pedestrian pathways shall be well defined with either two white lines or crosshatching or as otherwise agreed with the Senior Development Engineer defining the pathway where vehicles cross the pathway. The pathways in these locations shall be adequately signposted with 'Caution Pedestrians' signs to the satisfaction of the Senior Development Engineer.

- viii. A new concrete layback and driveway slab minimum 3.0m wide shall be provided to the existing property Lot 13 on RP859820. The driveway shall be located on the unnamed road at the southern access point. The existing driveway shall be removed and verge reinstated. These works shall be undertaken in consultation with Council and the relevant property owners.
- ix. A 150mm diameter water main shall be constructed along the eastern side of Chubb Street, extending from Cafferky Street water main to the 150mm diameter watermain (asset number 9,024) located at the southern access point (unnamed road). Hydrants and valves shall be provided in accordance with Planning Scheme Policy 3 – General Works and clearly shown on the relevant plans. The water main shall be terminated with a duck-foot bend and hydrant.
- x. The proposed detention basin shall be constructed in Stage 1. All stormwater runoff from the developed areas of the site shall be discharged through the basin and outlet in a manner and to a point to be approved by the Senior Development Engineer. Detailed on-site flood routing and detention basin and easement sizing shall be

submitted to Council for approval. The basin design shall include strategies to protect the river bank from erosion/scouring. The proposed outlet pipe from the basin shall be contained within the site.

- xi. Pollutant control devices and/or bioretention areas shall be installed in the stormwater system. Locations and types of the devices or treatment areas shall be submitted to Council for approval prior to the pre-start meeting.
 - xii. Earthworks along the northern site boundary shall be generally in accordance with the submitted drawing, number CHU1-C-23, revision A, dated 14 March 2007, with batters at the rear of the fill to be a maximum grade of 1:4. Reference to or representation of retaining walls along this boundary shall be removed from all drawings.
10. Prior to the commencement of any construction works on this site, a "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice. All engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ.
 11. A development plan for the community club house shall be submitted and approved by the Development Manager prior to Council signing any plan of survey. The plan shall detail the location and extent of proposed uses within the building. Elevations should be provided where it is intended to alter the external appearance of the building. In the interim, the Developer shall maintain the existing club house in accordance with the approved plan of development. Any additions or alterations to the existing club house shall subject to Council approval.
 12. Any road pavement failures adjacent to the points of access shall be removed and reinstated to the satisfaction of the Senior Development Engineer.
 13. All linemarking and signage shall be in accordance with MUTCD.
 14. Subsurface pavement drains shall be provided under the new kerb and channel in accordance with Ipswich City Council Standard Drawing SR20. The subsurface drains shall be connected to the existing.
 15. Any roads that are to be extended as part of any latter stages (i.e. Roads 1, 3-5), shall be provided with an all-weather gravel surfaced temporary turnaround area of sufficient size to enable Council's refuse vehicle to negotiate a clear turn. Hazard markers and delineator posts shall be erected at the ends of the turnarounds.
 16. The proposed roofwater system for Lots 4, 10-21 shall be to a minimum Level III in accordance with the requirements of QUDM.
 17. All stormwater headwall structures shall be constructed in accordance with the relevant Department of Main Roads' standard drawings for reinforced concrete headwalls and aprons.

18. All works on existing sewer and water infrastructures shall be undertaken by Ipswich Water at the Developers expense.
19. The Developer shall ensure that all earthworks areas are undertaken in accordance with the requirements of Australian Standard AS3798 – Guidelines on Earthworks for Commercial and Residential Developments. To this end, the Developer shall provide test results and appropriate certification to ensure compliance with the abovementioned Australian Standard. Certification and testing shall be complied by a NATA registered authority.
20. All batters greater than 1:6 shall be certified by an experienced geotechnical engineer as being stable and sound in their finished form.
21. A certificate from a RPEQ shall be provided to Council certifying that any retaining wall greater than 800mm is structurally sound and capable of withstanding any likely surcharge loads.
22. Silt Management
 - (a) Sediment fences shall be installed along all common property boundaries to existing properties where fall is towards these properties.
 - (b) The Developer shall be responsible for the installation and maintenance of silt management and truck shake down facilities from the time of commencement of construction until the commencement of use. All silt management facilities shall be in accordance with the document ‘Soil Erosion and Sediment Control’ published by the Institute of Engineers Australia, or equivalent. **All silt and erosion control facilities and truck shake down facility shall be installed prior to any construction commencing within the site.** The extent and location of the facilities shall be to the satisfaction of the Senior Development Engineer.
 - (c) The proposed sedimentation and erosion control plans and all proposed stormwater devices including proposed outlets are subject to performance and may be subject to on-site direction from the Senior Development Engineer to the Developer to change the design.
 - (d) If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.
 - (e) Should the Developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council shall complete the work and recover all costs from the Developer associated with that work. For the purposes of this, the Developer shall lodge a \$10,000 performance bond with Council, prior to the commencement of construction, which shall only be released by Council at the termination of the maintenance period. Where Council determines that a drawdown of the bond is required, the Developer shall restore the bond to its full amount within 10 days of a notice from council to that effect. Such bond shall guarantee adequate performance in the circumstances (i) and (ii) below:

- i. In the event that instructions issued to the Consulting Engineer by the Senior Development Engineer for the installation of erosion control measures, are not complied with within 24 hours, Council will call upon the bond to the extent required to carry out the necessary works.
 - ii. If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.
23. Council requires the provision of a bank guarantee, or a performance bond of not less than 10% (minimum of \$5,000.00) of the value of the external municipal works. The bond or guarantee shall be retained by Council until such time the Developer provides a replacement or additional maintenance bond or guarantee for entire Municipal Works (both external and internal) as security for the performance of the maintenance obligations. External Municipal Works relate to those works external to the subject site and located in already dedicated public areas, for example existing road or drainage reserve, or private property not subject to Developer ownership.
24. No construction works, including building activities, shall commence on site until such time as all necessary Municipal Works performance and silt and erosion bonds are submitted to Council.
25. The requirements of 'Ipswich Planning Scheme Policy 3 – General Works' shall apply to the municipal works.
26. All works required for this development shall take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works shall be altered at the cost of the Developer.
27. Upon completion of the work a certificate shall be issued by a RPEQ certifying that the work has been constructed in accordance with Council construction standards, and in compliance with the approved plans and specifications. All works shall be supervised by a RPEQ competent in the construction of municipal works and shall be undertaken by a nominated principal contractor experienced in the construction of municipal works. Council may request evidence of the principal contractor's competency. It is expected that the RPEQ will undertake all the necessary inspections to validate the certification.
28. "As Constructed" plans and all supporting certifications and test results (with the Applicant's audits of them) for municipal works shall be submitted to Council for approval prior to the formal acceptance of the works "On Maintenance". Should the Applicant fail to supply all the necessary plans and documentation to Council (to the satisfaction of the Senior Development Engineer) within 3 months of the date of practical completion, then Council will no longer concede to the backdating of the acceptance of the works "On Maintenance" to the practical completion date. The acceptable date will revert to that in which all the required and accepted inspections, bonds and other documentation have been provided to Council.
29. Notwithstanding the acceptance of the works "Off Maintenance", the certifying RPEQ shall remain liable for defects in design and construction of all certified work.

Council shall retain the right to call upon the RPEQ to rectify any works that fail to comply with the submitted documentation.

30. When Approval Takes Effect

This approval has effect in accordance with the provisions of Section 3.5.19 of the *Integrated Planning Act 1997* as follows:

- (a) If the Applicant does not appeal the decision to the court – from the time the decision notice is given (or if a negotiated decision notice is given, from the time the negotiated decision notice is given); or
- (b) If an appeal is made to the court – subject to the decision of the court, when the appeal is finally decided.

31. When Approval Lapses

- (a) This approval lapses at the end of the relevant period, unless the development happens before the end of the relevant period. The relevant period for this approval is 2 years starting the day the approval takes effect.
- (b) An extended relevant period may be agreed upon, pursuant to Section 3.5.22 of the *Integrated Planning Act 1997*, provided a written notice to Council is made before the end of the relevant period. Such written notice is to be on Council's approved form, accompanied by the owner's consent and the prescribed fee in Council's Register of General Charges.

B. That the Developer be further advised of the following:-

1. Council has reviewed the Operational Works drawings in relation to the proposed works, to ensure that the design conforms to the engineering conditions of the Development Permit 437/05, dated 20 March 2006. A detailed check of the calculations and drawing details has not been undertaken, as they shall be certified by a RPEQ. Council reserves the right to require further amendments and/or additions at a later date should design errors or omissions become apparent in regard to the works relevant to this Operational Works approval.
2. The use of potable water supply for development purposes, including irrigation of landscaped zones, is subject to any Council water restrictions for non-residential and residential use that are current at the time of the requirement for the use of potable water. Prior to the commencement of any works on site, the Developer shall lodge and have approved by Council a Water Management Plan for the works.

3. Fire Ants

In accordance with the *Plant Protection Act 1989* and the Plant Protection Regulation 1990, a quarantine notice has been issued for the State of Queensland to prevent the spread of the Red Imported Fire Ant (ant species *Solenopsis invicta*) and to eradicate it from the State.

It is the legal obligation of the land owner or any consultant or contractor employed

by the land owner to report the presence or suspicion of Fire Ants to the Queensland Department of Primary Industries on 132 523 within 24 hours of becoming aware of the presence or suspicion, and to advise in writing within seven days to:

Director General
Department of Primary Industries
GPO Box 46, Brisbane QLD 4001

It should be noted that the movement of Fire Ants is prohibited, unless under the conditions of an Department of Primary Industries Inspectors Approval. More information can be obtained from the Queensland Department of Primary Industries website www.dpi.qld.gov.au.

I have this day adopted the recommendation specified in this report.

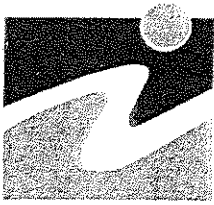
Such action was taken pursuant to the delegation entitled "Determination of a Development Application, including Negotiated Decisions" granted to me by the Chief Executive Officer dated 16 August 2001 and 22 August 2001.


DEVELOPMENT ENGINEER

Endorsed by:


SENIOR DEVELOPMENT ENGINEER

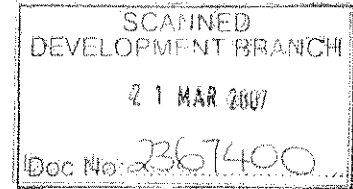
DATE: March 2007



Ipswich
City Council

Your Reference:
Our Reference: 5752/06 AYT:DMJ
Contact Officer: [REDACTED]
Telephone No.: 3810 6164

19 March 2007



INTEGRATED PLANNING ACT 1997

DEVELOPMENT APPLICATION DECISION NOTICE

Application Details

Application No: 5752/06

Real Property Description: Lot 59 on RP849800, Lot 93 on RP8310 & Lot 14 on RP859820

Property Location: 8 Georgette Street & 84 & 100 Chubb Street, One Mile

Names and Addresses of all Referral Agencies: N/A

Decision Date: 19 March 2007

Decision: Approved subject to the conditions detailed below.

Decision Authority: Senior Development Engineer - Central West

BDI Holdings Pty Ltd
C/- DKS Queensland Consulting
42 Limosa Street
BELLBOWRIE QLD 4070

Please Address All Correspondence to:
Chief Executive Officer
Ipswich City Council
A.B.N. 61 461 981 077
PO Box 191 Ipswich Qld 4305
Telephone: (07) 3810 6666
Facsimile: (07) 3810 6731

Website: www.ipswich.qld.gov.au

Approval Details:

Proposal	Development	Decision	Approval Type
Municipal & Internal Works Stage 1	Carrying out Operational Work	Approved	Development Permit.

Conditions***Assessment Manager (Ipswich City Council)******Conditions applicable to this approval under Integrated Planning Act:***1. Basis of Approval

The facts and circumstances set out in the application and all relevant Council Local Laws and/or Local Planning Policies shall be adhered to, except as amended in these conditions.

2. The following is a list of the plans upon which this determination is forwarded:

Plan Number	Revision Number
CHU1-C-00 to CHU1-C-10	A
CHU1-C-11 to CHU1-C-19	A
CHU1-C-20 to CHU1-C-23	A

3. Minor Alterations

Notwithstanding the requirements detailed in this approval, any other minor alterations and/or modifications shall be subject to the prior written approval of the Senior Development Engineer.

4. Hours of Construction

Unless otherwise approved in writing by the Senior Development Manager hours of construction shall be:

Monday to Saturday 6.30 a.m. to 6.30 p.m.

Work or business shall not be conducted from or on the premises outside the above hours or on Sundays or public holidays.

5. Terms

RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required.

6. Nomination of a date for an invitation to Council officers to attend a pre-start meeting.

7. Submission of a copy of the relevant contract documents, including a schedule of quantities and prices.

8. Submission of the following information as required by Ipswich Planning Scheme Policy 3 – General Works prior to or at the pre-start meeting:-
- (a) Contractor's on site and after hours telephone number;
 - (b) Supervising engineer's office and after hours telephone number; and
 - (c) Date of commencement of works and expected duration.
9. The Developer shall submit to Council for approval amended drawings demonstrating compliance with the following conditions. The drawings shall be submitted to Council a minimum of two weeks prior to the pre-start meeting:

The Developer shall undertake and complete the following works in Stage 1 of the development, in accordance with Council's letter dated 22 February 2007:

- i. The unnamed road located at the development's southern access point shall be constructed as road, extending from Chubb Street to the subject site, in accordance with Condition 13(a) – (d) of the Development Permit 437/05, dated 20 March 2006.
- ii. A minimum 1.5m wide concrete footpath shall be constructed on the eastern side of Chubb Street, extending from the southern boundary of Lot 13 on RP859820 (102 Chubb Street) to the northern boundary of Lot 4 on RP73249 (68 Chubb Street). The works shall include the construction of kerb ramps at appropriate locations to the satisfaction of the Senior Development Engineer. The construction of the concrete footpath and kerb ramps shall be in accordance with Council's Standard Drawing SR.19 and SR.18 respectively.
- iii. A bus shelter shall be provided on Translink Bus Route No. 516. The design and location of the bus shelter shall be investigated and submitted to Council for approval prior to the pre-start meeting. The design of the bus shelter shall meet the requirements of Translink. The location of the bus shelter shall be determined after considering the needs of existing residents and include consultation with those residents adjacent to where the bus shelter is to be installed.
- iv. A 1.5m wide footpath (and associated pedestrian crossing facilities if required) shall be provided linking the development to the bus shelter.
- v. The proposed RV parking area shall be constructed in Stage 1. The surface of the parking area shall be a suitable impervious material (e.g. rock/gravel with effective dust and weed control) to the satisfaction of the Senior Development Engineer.
- vi. A concrete layback and driveway slab minimum 9.0m wide, from the layback to the property boundary, shall be constructed at the proposed access points, and in accordance with Council's Standard Drawing SR.14.
- vii. A minimum 1.2m wide footpath network shall be provided to service all the proposed units, future on-site development and key amenities in accordance with Council Policy relating to retirement communities. The footpath network shall also extend from the end of the internal road adjoining the RV parking area to Cafferky Street. The maximum longitudinal grade shall not exceed 1:8 unless required for wheelchairs where the maximum longitudinal grade shall

be 1:14. Kerb ramps shall be provided, to the satisfaction of the Senior Development Engineer, at appropriate locations and intersections so as to afford the appropriate level of connectivity within a retirement community.

Pedestrian pathways shall be well defined with either two white lines or crosshatching or as otherwise agreed with the Senior Development Engineer defining the pathway where vehicles cross the pathway. The pathways in these locations shall be adequately signposted with 'Caution Pedestrians' signs to the satisfaction of the Senior Development Engineer.

- viii. A new concrete layback and driveway slab minimum 3.0m wide shall be provided to the existing property Lot 13 on RP859820. The driveway shall be located on the unnamed road at the southern access point. The existing driveway shall be removed and verge reinstated. These works shall be undertaken in consultation with Council and the relevant property owners.
 - ix. A 150mm diameter water main shall be constructed along the eastern side of Chubb Street, extending from Cafferky Street water main to the 150mm diameter watermain (asset number 9,024) located at the southern access point (unnamed road). Hydrants and valves shall be provided in accordance with Planning Scheme Policy 3 – General Works and clearly shown on the relevant plans. The water main shall be terminated with a duck-foot bend and hydrant.
 - x. The proposed detention basin shall be constructed in Stage 1. All stormwater runoff from the developed areas of the site shall be discharged through the basin and outlet in a manner and to a point to be approved by the Senior Development Engineer. Detailed on-site flood routing and detention basin and easement sizing shall be submitted to Council for approval. The basin design shall include strategies to protect the river bank from erosion/scouring. The proposed outlet pipe from the basin shall be contained within the site.
 - xi. Pollutant control devices and/or bioretention areas shall be installed in the stormwater system. Locations and types of the devices or treatment areas shall be submitted to Council for approval prior to the pre-start meeting.
 - xii. Earthworks along the northern site boundary shall be generally in accordance with the submitted drawing, number CHU1-C-23, revision A, dated 14 March 2007, with batters at the rear of the fill to be a maximum grade of 1:4. Reference to or representation of retaining walls along this boundary shall be removed from all drawings.
10. Prior to the commencement of any construction works on this site, a "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice. All engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ.
 11. A development plan for the community club house shall be submitted and approved by the Development Manager prior to Council signing any plan of survey. The plan shall detail the location and extent of proposed uses within the building. Elevations should be provided where it is intended to alter the external appearance of the building. In the interim, the Developer shall maintain the existing club house in accordance with the approved plan of development. Any additions or alterations to the existing club house shall be subject to Council approval.

12. Any road pavement failures adjacent to the points of access shall be removed and reinstated to the satisfaction of the Senior Development Engineer.
13. All linemarking and signage shall be in accordance with MUTCD.
14. Subsurface pavement drains shall be provided under the new kerb and channel in accordance with Ipswich City Council Standard Drawing SR20. The subsurface drains shall be connected to the existing.
15. Any roads that are to be extended as part of any latter stages (i.e. Roads 1, 3-5), shall be provided with an all-weather gravel surfaced temporary turnaround area of sufficient size to enable Council's refuse vehicle to negotiate a clear turn. Hazard markers and delineator posts shall be erected at the ends of the turnarounds.
16. The proposed roofwater system for Lots 4, 10-21 shall be to a minimum Level III in accordance with the requirements of QUDM.
17. All stormwater headwall structures shall be constructed in accordance with the relevant Department of Main Roads' standard drawings for reinforced concrete headwalls and aprons.
18. All works on existing sewer and water infrastructures shall be undertaken by Ipswich Water at the Developers expense.
19. The Developer shall ensure that all earthworks areas are undertaken in accordance with the requirements of Australian Standard AS3798 – Guidelines on Earthworks for Commercial and Residential Developments. To this end, the Developer shall provide test results and appropriate certification to ensure compliance with the abovementioned Australian Standard. Certification and testing shall be complied by a NATA registered authority.
20. All batters greater than 1:6 shall be certified by an experienced geotechnical engineer as being stable and sound in their finished form.
21. A certificate from a RPEQ shall be provided to Council certifying that any retaining wall greater than 800mm is structurally sound and capable of withstanding any likely surcharge loads.
22. Silt Management
 - (a) Sediment fences shall be installed along all common property boundaries to existing properties where fall is towards these properties.
 - (b) The Developer shall be responsible for the installation and maintenance of silt management and truck shake down facilities from the time of commencement of construction until the commencement of use. All silt management facilities shall be in accordance with the document 'Soil Erosion and Sediment Control' published by the Institute of Engineers Australia, or equivalent. **All silt and erosion control facilities and truck shake down facility shall be installed prior to any construction commencing within the site.** The extent and location of the facilities shall be to the satisfaction of the Senior Development Engineer.

- (c) The proposed sedimentation and erosion control plans and all proposed stormwater devices including proposed outlets are subject to performance and may be subject to on-site direction from the Senior Development Engineer to the Developer to change the design.
 - (d) If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.
 - (e) Should the Developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council shall complete the work and recover all costs from the Developer associated with that work. For the purposes of this, the Developer shall lodge a \$10,000 performance bond with Council, prior to the commencement of construction, which shall only be released by Council at the termination of the maintenance period. Where Council determines that a drawdown of the bond is required, the Developer shall restore the bond to its full amount within 10 days of a notice from council to that effect. Such bond shall guarantee adequate performance in the circumstances (i) and (ii) below:
 - i. In the event that instructions issued to the Consulting Engineer by the Senior Development Engineer for the installation of erosion control measures, are not complied with within 24 hours, Council will call upon the bond to the extent required to carry out the necessary works.
 - ii. If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.
23. Council requires the provision of a bank guarantee, or a performance bond of not less than 10% (minimum of \$5,000.00) of the value of the external municipal works. The bond or guarantee shall be retained by Council until such time the Developer provides a replacement or additional maintenance bond or guarantee for entire Municipal Works (both external and internal) as security for the performance of the maintenance obligations. External Municipal Works relate to those works external to the subject site and located in already dedicated public areas, for example existing road or drainage reserve, or private property not subject to Developer ownership.
24. No construction works, including building activities, shall commence on site until such time as all necessary Municipal Works performance and silt and erosion bonds are submitted to Council.
25. The requirements of 'Ipswich Planning Scheme Policy 3 – General Works' shall apply to the municipal works.
26. All works required for this development shall take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works shall be altered at the cost of the Developer.
27. Upon completion of the work a certificate shall be issued by a RPEQ certifying that the work has been constructed in accordance with Council construction standards, and in compliance with the approved plans and specifications. All works shall be supervised by a RPEQ competent in the construction of municipal works and shall be undertaken by a nominated

principal contractor experienced in the construction of municipal works. Council may request evidence of the principal contractor's competency. It is expected that the RPEQ will undertake all the necessary inspections to validate the certification.

28. "As Constructed" plans and all supporting certifications and test results (with the Applicant's audits of them) for municipal works shall be submitted to Council for approval prior to the formal acceptance of the works "On Maintenance". Should the Applicant fail to supply all the necessary plans and documentation to Council (to the satisfaction of the Senior Development Engineer) within 3 months of the date of practical completion, then Council will no longer concede to the backdating of the acceptance of the works "On Maintenance" to the practical completion date. The acceptable date will revert to that in which all the required and accepted inspections, bonds and other documentation have been provided to Council.
29. Notwithstanding the acceptance of the works "Off Maintenance", the certifying RPEQ shall remain liable for defects in design and construction of all certified work. Council shall retain the right to call upon the RPEQ to rectify any works that fail to comply with the submitted documentation.

30. When Approval Takes Effect

This approval has effect in accordance with the provisions of Section 3.5.19 of the *Integrated Planning Act 1997* as follows:

- (a) If the Applicant does not appeal the decision to the court – from the time the decision notice is given (or if a negotiated decision notice is given, from the time the negotiated decision notice is given); or
- (b) If an appeal is made to the court – subject to the decision of the court, when the appeal is finally decided.

31. When Approval Lapses

- (a) This approval lapses at the end of the relevant period, unless the development happens before the end of the relevant period. The relevant period for this approval is 2 years starting the day the approval takes effect.
- (b) An extended relevant period may be agreed upon, pursuant to Section 3.5.22 of the *Integrated Planning Act 1997*, provided a written notice to Council is made before the end of the relevant period. Such written notice is to be on Council's approved form, accompanied by the owner's consent and the prescribed fee in Council's Register of General Charges.

Advice

*The following advices are offered for your information only
and should not be viewed as mandatory conditions of this approval.*

Assessment Manager (Ipswich City Council)

1. Council has reviewed the Operational Works drawings in relation to the proposed works, to ensure that the design conforms to the engineering conditions of the Development Permit 437/05, dated 20 March 2006. A detailed check of the calculations and drawing details has not been undertaken, as they shall be certified by a RPEQ.

Council reserves the right to require further amendments and/or additions at a later date should design errors or omissions become apparent in regard to the works relevant to this Operational Works approval.

2. The use of potable water supply for development purposes, including irrigation of landscaped zones, is subject to any Council water restrictions for non-residential and residential use that are current at the time of the requirement for the use of potable water. Prior to the commencement of any works on site, the Developer shall lodge and have approved by Council a Water Management Plan for the works.

3. Fire Ants

In accordance with the *Plant Protection Act 1989* and the Plant Protection Regulation 1990, a quarantine notice has been issued for the State of Queensland to prevent the spread of the Red Imported Fire Ant (ant species *Solenopsis invicta*) and to eradicate it from the State.

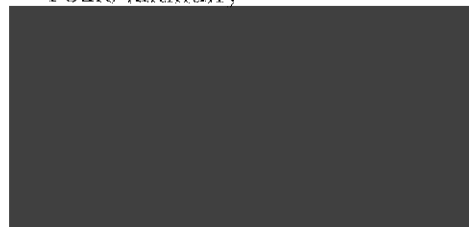
It is the legal obligation of the land owner or any consultant or contractor employed by the land owner to report the presence or suspicion of Fire Ants to the Queensland Department of Primary Industries on 132 523 within 24 hours of becoming aware of the presence or suspicion, and to advise in writing within seven days to:

Director General
Department of Primary Industries
GPO Box 46, Brisbane QLD 4001

It should be noted that the movement of Fire Ants is prohibited, unless under the conditions of an Department of Primary Industries Inspectors Approval. More information can be obtained from the Queensland Department of Primary Industries website www.dpi.qld.gov.au.

Pursuant to the provisions of the *Integrated Planning Act 1997*, I also enclose herewith a copy of the relevant sections concerning the institution of an appeal.

Yours faithfully



SENIOR DEVELOPMENT ENGINEER

*Extract from the Integrated Planning Act**Division 8--Appeals to court relating to development applications***Appeals by applicants**

- 4.1.27. (1) An applicant for a development application may appeal to the court against any of the following--
- (a) the refusal, or the refusal in part, of a development application;
 - (b) a matter stated in a development approval, including any condition applying to the development, and the identification of a code under Section 3.1.6;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a period mentioned in 3.5.21;
 - (e) a deemed refusal.
- (2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the "applicant's appeal period") after the day the decision notice or negotiated decision notice is given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

Appeals by submitters

- 4.1.28. (1) A submitter for a development application may appeal to the court only against-
- (a) the part of the approval relating to the assessment manager's decision under section 3.5.14 or 3.5.14A; or
 - (b) for an application processed under section 6.1.28(2)-the part of the approval about the aspects of the development that would have required public notification under the repealed Act.
- (2) To the extent an appeal may be made under subsection (1), the appeal may be against 1 or more of the following-
- (a) the giving of development approval;
 - (b) any provision of the approval including --
 - (i) a condition of, or lack of condition for, the approval; or
 - (ii) the length of a period mentioned in section 3.5.21 for the approval.
- (3) However, a submitter may not appeal if the submitter-
- (a) withdraws the submission before the application is decided; or
 - (b) has given the assessment manager a notice under section 3.5.19(1)(b)(ii)
- (4) The appeal must be started within 20 business days (the *submitter's appeal period*) after the decision notice or negotiated decision notice is given to the submitter.

Appeals for matters arising after approval given (co-respondents)

- 4.1.30. (1) For a development approval given for a development application, a person to whom any of the following notices have been given may appeal to the court against the decision in the notice-
- (a) a notice giving a decision on a request for an extension of a period mentioned in section 3.5.21;
 - (b) a notice giving a decision on a request to make a minor change to an approval
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.
- (3) Subsection (1)(a) does not apply if the approval resulted from a development application (superseded planning scheme) that was assessed as if it were an application made under a superseded planning scheme.
- (4) Also, a person who has made a request mentioned in subsection (1) may appeal to the court against a deemed refusal of the request.
- (5) An appeal under subsection (4) may be started at any time after the last day the decision on the matter should have been made.

Appeals for matters arising after approval given (no co-respondents)

- 4.1.31. (1) A person to whom any of the following notices have been given may appeal to the court against the decision in the notice-
- (a) a notice giving a decision on a request to change or cancel a condition of a development approval;
 - (b) a notice under section 3.5.33A(9)(b) or 6.1.44 giving a decision to change or cancel a condition of a development approval.
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.
- (3) Also, a person who has made a request mentioned in subsection (1)(a) may appeal to the court against a deemed refusal of the request.
- (4) An appeal under subsection (3) may be started at any time after the last day the decision on the matter should have been made.

Appeals on matters relating to the Building Act 1975 the following also applies: -

Jurisdiction of tribunals

- 4.2.7. (1) A tribunal has jurisdiction to decide any matter that under this or another Act may be appealed to it.
- (2) However, an appeal to a tribunal under this Act may only be about—
- (a) a matter under this Act that relates to the *Building Act 1975* (other than a matter under that Act that may or must be decided by the Building Services Authority) or the *Plumbing and Drainage Act 2002*; or
 - (b) a matter prescribed under a regulation.

Appeals by applicants

- 4.2.9. (1) An applicant for a development application may appeal to a tribunal against any of the following—
- (a) the refusal, or the refusal in part, of a development application;
 - (b) a matter stated in a development approval, including any condition applying to the development, but not including the identification of a code under section 3.1.6;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a period mentioned in section 3.5.21;
 - (e) a deemed refusal.
- (2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the “**applicant’s appeal period**”) after the day the decision notice or negotiated decision notice is given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

Form 1 Development Application idas

Common details

The completion of all **applicable questions** on Part A is **mandatory** for all applications. Part A must be accompanied by the completed IDAS Assessment Checklist if required, and by one (1) or more other completed parts of the Form as required. For more information on the parts of the Form refer to www.ipa.qld.gov.au. Any information requested in the form may be provided in an attachment to the application. For further information about completing the following details, refer to [Guide 1](#).

<p>Description of land</p> <p>All land the subject of the application, must be identified. However, a description of the land is not required in relation to a mobile or temporary Environmentally Relevant Activity (ERA).</p> <p>Advice for completing Q2 - Q2 applies if development is proposed within a water body or watercourse.</p> <p>Advice for completing Q3 - Most land can be identified by a lot on plan description. These details can be obtained from title documents or through the local government.</p> <p>However, if the land on which the development is proposed does not have a lot on plan description (i.e. the development is proposed in a water body or watercourse) provide -</p> <ul style="list-style-type: none"> (i) the lot on plan description for the adjoining/adjacent land; or (ii) GPS coordinates where there is no adjoining/adjacent land (eg. in Moreton Bay). <p>Advice for completing Q7 - Q7 does not apply if the development is within a water body or watercourse.</p> <p>Advice for completing Q8 - Q8 applies if development is within a local government area.</p> <p>Notes: Areas below high water mark are not within a local government's area unless provided for under the Local Government Act 1993.</p> <p>Advice for completing Q9 - Q9 applies if development is on strategic port land or a strategic port land tidal area. For more details refer to Guide 1.1</p>	<p>1. Street address: <i>(including house number, street name, suburb/locality name & postcode)</i> <i>(if applicable)</i> <input style="width: 90%;" type="text" value="Brassall QLD 4305"/></p> <p>2. Name of water body or watercourse, within which the development is proposed: <i>(if applicable)</i> <input style="width: 90%;" type="text" value="-"/></p> <p>3. Lot on plan description (eg. Lot 123 on RP 4567) / GPS coordinates: <input style="width: 90%;" type="text" value="Lot 2 on RP857016"/></p> <p>4. The above description is for: <i>(tick applicable box)</i> <input checked="" type="checkbox"/> (i) the land on which the development is proposed; or <input type="checkbox"/> (ii) the land adjoining the water body or watercourse, within which the development is proposed; or <input type="checkbox"/> (iii) the water body or watercourse.</p> <p>5. Shop / tenancy number: <input style="width: 40%;" type="text" value="-"/> 6. Storey / level: <input style="width: 40%;" type="text" value="-"/> 7. Total area of land: (m² of ha): <input style="width: 40%;" type="text" value="1.282ha"/></p> <p>8. Local government area in which the land is situated: (eg. Esk, Hervey Bay, Woocoo etc.) <i>(if applicable)</i> <input style="width: 90%;" type="text" value="Ipswich"/></p> <p>9. Port authority for the strategic port land or strategic port land tidal area on which the development is proposed (eg. Port of Brisbane, Port of Townsville) <i>(if applicable)</i> <input style="width: 90%;" type="text" value="-"/></p>
<p>Proposal details</p> <p>If there is insufficient room available, details may be provided in an attachment to the application.</p>	<p>10. Existing use of the land: (eg. vacant, single house, shop etc.) <input style="width: 90%;" type="text" value="Recreational - clubhouse, tennis courts, gymnasium and volleyball courts"/></p> <p>11. Proposed use of the land: (eg. 6 unit apartment building, 30 lot residential subdivision, ERA for aquaculture in ponds with a total area of 7 ha for which wastes are released into waters etc.) <input style="width: 90%;" type="text" value="Multiple Residential (52 Townhouses)"/></p>
<p>Other applicable parts of Form 1</p> <p>Part A must always be accompanied by other completed parts of Form 1. For information about when a part of Form 1 may apply refer to Guide 1.</p>	<p>12. Other parts of Form 1 completed as part of this application: (eg. Part D, Part I, etc) <input style="width: 90%;" type="text" value="Part D"/></p>
<p>Applicant details</p> <p>Clearly identify who is making the application. The applicant need not be the owner of the land.</p> <p>When signing and lodging this application</p> <p>The applicant is responsible for ensuring the information provided is correct. The assessment manager, any referral agency & the Chief Executive (where applicable) will rely on this information when assessing and deciding the application.</p> <p>If the applicant is a company - a contact person must be shown.</p>	<p>13. Applicant's name: <input style="width: 90%;" type="text" value="Colran Holdings Pty Ltd"/></p> <p>14. Contact number: <input style="width: 90%;" type="text" value="3281 0744"/></p> <p>15. Contact person: <input style="width: 90%;" type="text" value=""/></p> <p>16. Facsimile number/e-mail address: <input style="width: 90%;" type="text" value="3281 0766"/></p> <p>17. Postal address: <input style="width: 90%;" type="text" value="C/- David Brett & Assoc Pty Ltd, Po Box 5020 Brassall QLD 4305"/></p> <p>18. Signature: <input style="width: 90%;" type="text" value=""/></p> <p>19. Date: <input style="width: 90%;" type="text" value="16.12.05"/></p>

Land owner's consent (if applicable)
 Section 3.2.1(10)(a) of the IPA prescribes that an application cannot be taken to be properly made without the land owner's consent.
 An application must be supported by the consent of all land owner if the application involves:
 (i) a material change of use;
 (ii) reconfiguration of a lot;
 (iii) work on land below high-water mark & not within a canal as defined under the Coastal Protection and Management Act 1995; or
 (iv) work on rail corridor land defined under the Transport Infrastructure Act 1994.
For a mobile or temporary ERA - landowner's consent is not required.
 For more information refer to Guide 1.

20. Land owner's consent to the making of this application:

Name	Signature	Date
(i) Colran Pty Ltd	[Redacted]	16/12/05
(ii)		
(iii)		
(iv)		
(v)		

Resource entitlement (if applicable)
 Section 3.2.1(10)(b) of the IPA prescribes that an application cannot be taken to be properly made without evidence of the resource entitlement.
Advice for completing Q22
 Refer to schedule 10 of the Integrated Planning Regulation 1998 that prescribes the nature of evidence required by the State in support of the lodging of this development application.
Advice for completing Q23
 The information in (i) - (v) is mandatory if evidence is required under Q22 (ii) or (iii) above.
 The official stamp of the Department of Natural Resources and Mines is mandatory where the application involves taking or interfering with water or riverine quarry material under the Water Act 2000.

21. Does this application involve taking or interfering with (other than interfering with quarry material on State coastal land under the Coastal Protection and Management Act 1995) a State resource?
 NO - go to Q24 YES - go to Q22
22. This application is required by regulation to be accompanied by evidence: (tick applicable box)
 (i) of the **allocation** of, or entitlement to, the resource - *attach evidence*
 (ii) the chief executive of the department administering the resource is satisfied the development is **consistent with an allocation** of, or entitlement to, the resource - go to Q23
 (iii) the chief executive of the department administering the resource is satisfied the development application **may proceed in the absence of an allocation** of, or entitlement to, the resource - go to Q23
23. Evidence of the resource entitlement:
 (i) Resource entitlement / authority details
 []
 (ii) Name of delegated officer
 []
 (iii) Position of delegated officer
 []
 (iv) Signature of delegated officer
 []
 (v) Date
 []
- (iv) Official stamp of the department administering the resource (if applicable)
 []

Assessment triggers
 This checklist does not apply if the application requires the completion of Parts A and B of the Form only. It must be completed for all other applications.

24. Is the IDAS Assessment Checklist completed and attached to this application?
 YES NO - the assessment manager may refuse to accept this application on the grounds that the application has not been properly made

Plans / drawings / reports
 An application should be accompanied by details to support the proposal & enable the assessment manager, referral agencies and any person viewing the application during public scrutiny or public notification to understand the scope of the proposal and any potential impact.

25. Plans/drawings/reports accompanying this application:

Plan / Drawing / Report Number	Title	Date
(i)		
(ii)		
(iii)		
(iv)		
(v)		

PLEASE NOTE: The assessment manager may refuse to accept an application that, at the time of lodgement, fails to provide all applicable information required by Part A and any other relevant part of Form 1.

OFFICE USE ONLY (applicable to assessment manager's)

FEE (\$)	DATE RECEIVED	RECEIVING OFFICER'S NAME/S	REFERENCE NUMBERS
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Notification of Engagement of Private Certifier (Optional format)
 To _____ Council, I have been engaged as the private certifier for the building work referred to in this application.
 Date of engagement: / / Accreditation Number: _____ Name: _____ Signature: _____

Attachment

25. Plans/drawings/reports accompanying this application

Plan / Drawing / Report Number	Title	Date
	Planning Assessment Report <i>East Coast Building Design & Drafting</i>	10.01.2006
Drawing DA-1	Indicative Site Layout <i>East Coast Building Design & Drafting</i>	20.12.2005
Drawing DA-2	Indicative Floor Layouts <i>East Coast Building Design & Drafting</i>	21.12.2005
Drawing DA-4	Typical Sections and 3D Views <i>East Coast Building Design & Drafting</i>	19.12.2005
Drawing DA-5	Contour Overlay Plan <i>East Coast Building Design & Drafting</i>	21.12.2005
Drawing DA-6	Landscape Intent Plan <i>East Coast Building Design & Drafting</i>	21.12.2005
Drawing DA-7	Staging Layout Plan <i>East Coast Building Design & Drafting</i>	20.12.2005
Drawing F0235-01	Detailed Survey <i>AJS Surveys</i>	21.11.2005

Annual Company Statement

This Annual Company Statement is generated from the data in our corporate database. Please check this statement carefully. Do not return this Statement to ASIC

You are legally obligated to ensure that all your company details are complete and correct. This is required under s346C (1) and/or s346B and s346C (2) of the Corporations Act 2001.

Failure to notify the Australian Securities and Investments Commission of incorrect details or missing data in this Statement may result in substantial penalties.

More information

If you have any questions about this form or if any data in this form is incorrect, please contact us.

ASIC registered agent name KPMG
 ASIC registered agent number 9374
 Address KPMG, LEVEL 30 CENTRAL PLAZA ONE
 345 QUEEN STREET
 BRISBANE, QLD, 4000
 Telephone _____ Facsimile _____

Company details

Company name COLRAN PTY LIMITED
 ACN / ABN 010 045 128
 Annual Review Date 26/06/2005

Registered office address

KPMG, LEVEL 30 CENTRAL PLAZA ONE
 345 QUEEN STREET
 BRISBANE, QLD, 4000

Principal place of business

155 MANLY ROAD
 MANLY WEST, QLD, 4179

Ultimate holding company

Name _____
 If registered in Australia, ACN or ARBN _____
 Country of incorporation _____

Company officers

Name _____
 Address 155 MANLY ROAD
 MANLY WEST QLD 4179
 Date of birth 30/09/1943 Place of birth BRISBANE, QLD
 Office(s) held Director: Appointed 18/07/1978
 Secretary: Appointed 18/07/1978

Name _____
 Address 155 MANLY ROAD
 MANLY WEST QLD 4179
 Date of birth 03/03/1950 Place of birth AUCKLAND, NEW ZEALAND
 Office(s) held Director: Appointed 17/09/1979

Company share structure

Share class	Shares description	Number issued	Total amount paid on these shares	Total amount unpaid on these shares
ORD	ORDINARY SHARES	10	10.00	0.00

LAND TITLE ACT 1994

REGISTRATION CONFIRMATION STATEMENT

NATURAL RESOURCES & MINES, QUEENSLAND

Title Reference : 18748100

This is the current status of the title as at 12:00 on 10/10/2005

REGISTERED OWNER

Dealing No: 709038260 07/10/2005

COLRAN PTY LIMITED A.C.N. 010 045 128

ESTATE AND LAND

Estate in Fee Simple

LOT 2 REGISTERED PLAN 857016
County of CHURCHILL Parish of BRASSALL
Local Government: IPSWICH CITY

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 19553231 (ALLOT 11)


ADMINISTRATIVE ADVICES - NIL
UNREGISTERED DEALINGS - NIL

CERTIFICATE OF TITLE ISSUED - No


DEALINGS REGISTERED
709038257 RELEASE
09038260 TRANSFER

709038258 RELEASE

** End of Confirmation Statement **


Registrar of Titles and Registrar of Water Allocations

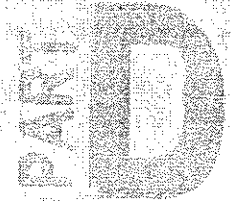
Lodgement No: 1994550


MACFIE CURLEWIS SPIRO
Office: BRISBANE
Box: 211

Form 1 Development Application

idas

Material change of use assessable against a local government's planning scheme



Completion of **all applicable questions** on Part D is **mandatory** for all applications involving assessment of a material change of use (MCU) assessable against a local government's planning scheme.

<p>Nature of the application A development permit authorises development to occur, while a preliminary approval is a step in the approval process and does not authorise development to occur.</p>	<p>1. This application is for: (tick 1 or both if applicable)</p> <p><input type="checkbox"/> Preliminary approval for a material change of use of premises including conceptual design for any associated works that require approval under the planning scheme (i.e. consideration of the proposal concept)</p> <p>AND / OR</p> <p><input checked="" type="checkbox"/> Development permit for a material change of use of premises including conceptual design for any associated works that require approval under the planning scheme.</p>
<p>The subject land For the definition of "gross floor area" go to the planning scheme against which the application will be assessed.</p>	<p>2. How the subject land is identified in the planning scheme (name the zone, precinct etc.) Recreational</p> <p>3. Existing gross floor area: (if applicable) N/A - existing buildings to be demolished</p> <p>4. Are there any existing easements on the land? <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES - attach plans of the location and details of the purpose of the easement</p>
<p>Material change of use details</p>	<p>5. Details of the change to the use of the land: (eg. vacant land to shopping centre, house to apartment building, vacant land to industry (tyre manufacturing) etc.) Recreational uses to Residential (Multiple Residential - 52 townhouses)</p> <p>6. Number of employees: N/A</p> <p>7. Operating days and hours: N/A</p>
<p>Associated building works details (if applicable) For the definition of "site cover", "gross floor area" and "storey" go to the planning scheme against which the application will be assessed.</p>	<p>8. Site cover: approx 34.5 %</p> <p>9. Gross floor area: approx 9508sqm (total)</p> <p>10. Number of on-site car parking spaces: 110</p> <p>11. Number of storeys / maximum height above natural ground: 2</p> <p>12. Number of employees: N/A</p> <p>13. Hours and days the use will operate: N/A</p>
<p>Associated operational works details (if applicable)</p>	<p>14. Details of associated operational works (eg. landscaping, cut and fill, drainage, road works etc.) Cut and fill, drainage, internal / external roadworks, landscaping</p>

PLEASE NOTE

This application cannot be accepted unless accompanied by Part A of Form 1.
The assessment manager may refuse to accept an application that, at the time of lodgement, fails to provide all applicable information requested by Part A and any other relevant part of Form 1.

OFFICE USE ONLY (applicable to assessment manager)

DATE RECEIVED

REFERENCE NUMBER/S

Form 1 Development Application idas

IDAS Assessment Checklist

(Formerly the "Referrals Checklist")

IMPORTANT NOTE FOR ALL APPLICANTS:

1. This checklist was formerly referred to as the "Referrals Checklist". Some of the 'Guides' to using the IDAS Application Forms continue to refer to this document as the "Referrals Checklist". The name of this checklist was changed from 25 July 2005 to more accurately describe its function.
2. Under the IPA and IDAS framework, an application may require assessment by the local Council and/or certain Queensland State entities (e.g. Environmental Protection Agency, Dept. of Natural Resources and Mines, Queensland Heritage Council etc.).
3. This checklist is provided to assist applicants to determine when an application requires assessment by a Queensland State entity and may also assist the applicant to determine the assessment manager¹ for the application.
4. Therefore, the completion of all questions in section 1 of this checklist is mandatory for all applications (other than those requiring the completion of Parts A & B only).
5. It is the responsibility of the applicant to accurately complete this checklist.
6. Depending on the nature of the application, an applicable State entity may be either the assessment manager or an IDAS referral agency for the application.
7. The assessment manager for the application will rely on the information provided in this checklist (as well as any material lodged in support of the application) to identify any applicable referral agencies for the application in the Acknowledgement Notice. The assessment manager will also rely on this information when identifying if the application triggers referral coordination².
8. To assist you in answering the following questions a series of guides are available free from www.ipa.qld.gov.au.
9. Any other parts of Form 1 that this checklist requires to be completed are available from the Council or the applicable State entity, or can be downloaded free from www.ipa.qld.gov.au.
10. Section 2 provides advice about the referrals that can be required for applications for building work assessable against the *Standard Building Regulation 1993* (SBR).

SECTION 1 - STATE ASSESSMENT (completion mandatory)

Note: The following state assessment triggers apply to development other than for building work assessable against the *Standard Building Regulation 1993* (SBR).

<p>Environmentally relevant activity For more information refer to <u>Guide 4</u>. Unless you answered "none of the above" to Q1, the application requires assessment by the <u>administering authority</u>³. If an entity, other than the administering authority, is the assessment manager for the application, the administering authority is a concurrence agency for the application in relation to this matter. <i>Note: An application involving ERA 19 and/or 20 will also require completion of Part K of Form 1 for approval where an allocation under the Water Act 2000 is required.</i></p>	<p>1. The application involves: (tick applicable box/es)</p> <p><input type="checkbox"/> (i) an environmentally relevant activity (ERA) for which a code for environmental compliance has <u>not</u> been made - complete Part G of Form 1</p> <p><input type="checkbox"/> (ii) a mobile or temporary ERA for which a code of environmental compliance has <u>not</u> been made - complete Part G of Form 1</p> <p><input checked="" type="checkbox"/> (iii) none of the above</p>
<p>State-controlled road matters For more information refer to <u>Guide 3</u>. Unless you answered "none of the above" to Q2, the application triggers referral to the <u>Department of Main Roads</u> (DMR) as a referral agency. In certain circumstances DMR will be an advice agency, while in other circumstances DMR will be a concurrence agency. Schedule 2 of the IP Regulation will assist you to determine where DMR is an advice or concurrence agency for the application.</p>	<p>2. The application involves: (tick applicable box/es)</p> <p><input type="checkbox"/> (i) development on land <u>contiguous</u>⁴ to a State controlled road and for -</p> <p style="margin-left: 20px;"><input type="checkbox"/> (a) material change of use assessable against the planning scheme;</p> <p style="margin-left: 20px;"><input type="checkbox"/> (b) reconfiguring a lot unless -</p> <ul style="list-style-type: none"> • the total number of lots is not increased; and • the total number of lots abutting the State-controlled road is not increased; <p style="margin-left: 20px;"><input type="checkbox"/> (c) operational work (not associated with a material change of use assessable against the planning scheme or reconfiguring a lot mentioned in (b) above)-</p> <ul style="list-style-type: none"> • associated with access to a State-controlled road; or • for filling or excavation; or • involving the redirection or intensification of site stormwater from the land, through a pipe with a cross-sectional area greater than 625 cm² that directs stormwater to a State-controlled road.

1 The assessment manager is responsible for assessing and deciding an IDAS application. The assessment manager for an application is prescribed in schedule 8A of the IPA.
 2 For additional information refer to Guide 6 'Does my application trigger the referral coordination process?'
 3 The 'administering authority' may be either the Environmental Protection Agency, the relevant local government (for a devolved ERA) or the Queensland Department of Primary Industries and Fisheries (for a delegated ERA).
 4 Land contiguous to a State-controlled road is defined in schedule 14 of the IP Regulation to mean land - if part of the land is within 100m of the State-controlled road; or that is part of a future State-controlled road.

<p>State-controlled road matters (cont)</p>	<p><input type="checkbox"/> (ii) development on land not contiguous to a State-controlled road and -</p> <p><input type="checkbox"/> (a) material change of use -</p> <ul style="list-style-type: none"> • assessable against the local government's planning scheme; and • mentioned in schedule 5 of the IP Regulation and exceeding the thresholds set by that schedule; <p><input type="checkbox"/> (b) reconfiguring a lot for a purpose mentioned in schedule 5 of the IP regulation and exceeding the thresholds set by that schedule;</p> <p><input type="checkbox"/> (c) operational work (not associated with a material change of use assessable against the planning scheme or reconfiguring a lot mentioned in (b) above)-</p> <ul style="list-style-type: none"> • assessable against the local government's planning scheme; and • mentioned in schedule 5 of the IP Regulation and exceeding the thresholds set by that schedule. <p><input checked="" type="checkbox"/> (iii) none of the above</p>
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<p>Clearing vegetation For more information refer to <u>Guide 12</u>. Unless you answered "none of the above" to Q3, the application requires assessment by the <u>Department of Natural Resources and Mines (NR&M)</u>. If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.</p>	<p>3. The application involves: (tick applicable boxes)</p> <p><input type="checkbox"/> (i) material change of use -</p> <p>(a) assessable against the planning scheme;</p> <p>(b) on a lot containing -</p> <ul style="list-style-type: none"> • a category 1, 2 or 3 area shown on a property map of assessable vegetation; or • if there is no property map of assessable vegetation for the lot - remnant vegetation; <p>(c) where the existing use of the land is a rural or environmental use; and</p> <p>(d) where the size of the land is 2 hectares or larger - complete Part J of Form 1</p> <p><input type="checkbox"/> (ii) reconfiguring a lot -</p> <p>(a) on a lot containing a category 1, 2 or 3 area shown on a property map of assessable vegetation or, if there is no property map of assessable vegetation for the lot, remnant vegetation;</p> <p>(b) where the size of the lot before the reconfiguration is 2 hectares or larger;</p> <p>(c) where 2 or more lots are created; and</p> <p>(d) where the size of any lot created is 25 hectares or smaller - complete Part J of Form 1</p> <p><input type="checkbox"/> (iii) operational work -</p> <p>(a) for the clearing of native vegetation where the vegetation clearing is made assessable under Schedule 8 of the IPA; and</p> <p>(b) not associated with a material change of use assessable against the planning scheme mentioned in (i) or reconfiguring a lot mentioned in (ii) - complete Part J of Form 1</p> <p><input checked="" type="checkbox"/> (iv) none of the above.</p>
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<p>Strategic port land For more information refer to <u>Guide 11</u>. If you ticked (i) - the relevant Port Authority is the assessment manager for the application. If you ticked (ii) Queensland Transport is a concurrence agency for the application.</p>	<p>4. The application involves:</p> <p><input type="checkbox"/> (i) development on strategic port land as defined in the <i>Transport Infrastructure Act 1994 (TI Act)</i> - complete Part I of Form 1</p> <p><input type="checkbox"/> (ii) a material change of use that is inconsistent with the land use plan approved under the TI Act for the strategic port land - complete Part I of Form 1</p> <p><input checked="" type="checkbox"/> (iii) none of the above</p>
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<p>Acid sulfate soils For more information refer to <u>Guide 10</u>. Unless you answered "none of the above" to Q5, the application requires assessment by <u>Department of Natural Resources and Mines (NR&M)</u>. If an agency other than NR&M is the assessment manager for the application, NR&M is an advice agency for the application in relation to this matter.</p>	<p>5. The application involves development on land situated in an identified⁵ local government area and where the surface of the land is: (tick applicable box)</p> <p><input type="checkbox"/> (i) below 20m AHD⁶ and the development will involve the excavation of 1000m³ or more of soil or sediment at or below 5m AHD, or</p> <p><input type="checkbox"/> (ii) at or below 5m AHD and the development will involve filling the site with 1000m³ or more of material</p> <p><input checked="" type="checkbox"/> (iii) none of the above</p>
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5 The identified local government areas are: Aurukun, Bowen, Brisbane, Broadsound, Bundaberg, Burdekin, Buika, Burnett, Caboolture, Cairns, Calliope, Caloundra, Cardwell, Carpentaria, Cook, Coooloolo, Douglas, Fitzroy, Gladstone, Gold Coast, Hervey Bay, Hinchinbrooke, Isis, Johnstone, Livingstone, Logan, Mackay, Maroochy, Maryborough, Mirum Vale, Morningson, Noosa, Pine Rivers, Redcliffe, Redland, Rockhampton, Sarina, Thuringowa, Tiara, Torres, Townsville, Whitsunday.

6 Australian Height Datum (AHD).

Major hazard facilities or possible major hazard facilities
 For more information refer to Guide 17.
 If you answered "YES" to Q6, the application requires assessment by the Department of Emergency Services (DES).
 If an agency other than DES is the assessment manager for the application, DES is a concurrence agency for the application in relation to this matter.

6. Does the application involve a **material change of use** for a major hazard facility or possible major hazard facility as defined under the *Dangerous Goods Safety Management Act 2001*?
 NO
 YES - complete Part L of Form 1

Water related development under the Water Act 2000
 For more information about items (a) – (d), refer to Guide 15. For more information about item (e), refer to Guide 14 Does my application involve assessment of a referable dam?
 Unless you answered "none of the above" to Q7, the application requires assessment by the Department of Natural Resources and Mines (NR&M).
 If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.

7. The application involves:
 (i) **operational work**, for taking or interfering with water under the *Water Act 2000*, that is: (tick applicable box/es)
 (a) in a watercourse, lake or spring, or from a dam constructed on a watercourse (eg. a pump, gravity diversion, stream re-direction, weir or dam) - complete Part K₂, K₃, K₄, K₆, or K₉ of Form 1 whichever is applicable;
 (b) for an artesian bore anywhere in the State, no matter what the use - complete Part K₁ of Form 1;
 (c) for a subartesian bore, in declared groundwater area⁷, for use for purposes other than stock and/or domestic use - complete Part K₁ of Form 1;
 (d) for a subartesian bore, in certain declared groundwater area, for use for stock and/or domestic purposes - complete Part K₁ of Form 1;
 (e) for constructing a referable dam⁸ or that will increase the storage capacity of a referable dam by more than 10% - complete Part K₅ of Form 1; Or
 (f) for taking or interfering with overland flow water - complete Parts K₆ and G of Form 1
 (ii) none of the above.

Removal of quarry material from a watercourse
 For more information refer to Guide 16.
 If you answered "YES" to Q8, the application requires assessment by the Department of Natural Resources and Mines (NR&M).
 If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.
 Note: Part G of Form 1 is required to be completed as the activity of removing quarry material from a watercourse is also an Environmentally Relevant Activity (ERA).

8. Does the application involve development for the removal of quarry material from a watercourse⁹ requiring an allocation notice under the *Water Act 2000*?
 NO
 YES - complete Parts K₇ and G of Form 1

Operational works in a tidal area or coastal management district
 For more information refer to Guide 18. For more information about prescribed tidal work in local government tidal areas refer to Guide 24.
 Unless you answered "none of the above" to Q9, the application requires assessment by the Environmental Protection Agency (EPA).
 If an agency other than EPA is the assessment manager for the application, EPA is a concurrence agency for the application in relation to this matter.
 Local government is the assessment manager for all prescribed tidal work.

9. The application involves **operational work** that is: (tick the applicable box/es)
 (i) **tidal work**¹⁰ as defined under the *Coastal Protection and Management Act 1995* (the Coastal Act) that is not prescribed tidal work - complete Part M of Form 1; or
 (ii) tidal work that is **prescribed tidal work**¹¹ other than in a canal¹² - complete Part P of Form 1; Or
 (iii) carried out within a **coastal management district** under the Coastal Act and for - complete Part M of Form 1 if any box/es (a) to (i) below are ticked.
 (a) constructing or installing works in a watercourse between MHWS and HAT (i.e. other than those works in tidal water) where the development has been determined not to be assessable against the *Water Act 2000*;
 (b) constructing a canal¹² intended to be connected to tidal waters;
 (c) constructing an artificial waterway;
 (d) reclaiming land under tidal water;
 (e) disposing of dredge spoil or other solid waste material in tidal water;
 (f) interfering with quarry material on State coastal land above high-water mark;
 (g) draining or allowing drainage or flow of water or other matter across State coastal land above high-water mark;
 (h) removing or interfering with coastal dunes on land, other than State coastal land, that is in an erosion prone area and above high-water mark;
 (i) constructing a bank or bund wall to establish a ponded pasture on land, other than State coastal land, above high-water mark; or
 (iv) none of the above.

7 The declared groundwater areas are listed in Guide 13 Development in a declared catchment area.

8 Referable dam is defined under the *Water Act 2000*.

9 Watercourse is defined in sch 10 of the IPA.

10 Tidal work is defined in sch 10 of the IPA.

11 Prescribed tidal work is defined in the *Coastal Protection and Management Regulation 2003* and includes certain tidal works completely or partly within a local government tidal area.

12 Canal means canal as defined under the *Coastal Protection and Management Act 1995*

<p>Operational work below high water mark</p> <p>For more information refer to <u>Guide 18</u>. For more information about prescribed tidal work in local government tidal areas refer to <u>Guide 24</u>.</p> <p>Unless you answered "none of the above" to Q10, the application triggers referral to <u>Queensland Transport (QT) (Maritime Safety Qld)</u> as a concurrence agency.</p> <p>Local government is the assessment manager for all prescribed tidal work.</p>	<p>10. The application involves operational work that is: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) tidal work¹³ as defined under the <i>Coastal Protection and Management Act 1995</i> (the Coastal Act) that is not prescribed tidal work – complete Part M of Form 1; Or</p> <p><input type="checkbox"/> (ii) tidal work that is prescribed tidal work¹⁴ – complete Part P of Form 1; Or</p> <p><input type="checkbox"/> (iii) carried out within a coastal management district¹⁵ under the Coastal Act and for –</p> <p><input type="checkbox"/> (a) disposing of dredge spoil or other solid waste material in tidal water – complete Part M of Form 1;</p> <p><input type="checkbox"/> (b) reclaiming land under tidal water – complete Part M of Form 1; or</p> <p><input type="checkbox"/> (c) constructing a canal¹⁶, if the canal is associated with reconfiguring a lot – complete Part M of Form 1;</p> <p><input checked="" type="checkbox"/> (iv) none of the above.</p>
<p>Coastal management</p> <p>For more information refer to <u>Guide 18</u>.</p> <p>Unless you answered "none of the above" to Q11, the application requires assessment by the <u>Environmental Protection Agency (EPA)</u>.</p> <p>If an agency other than EPA is the assessment manager for the application, EPA is a concurrence agency for the application in relation to this matter.</p>	<p>11. The application involves: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) a material change of use assessable under a planning scheme involving operational work carried out completely or partly in a coastal management district¹⁵</p> <p><input type="checkbox"/> (ii) a material change of use assessable under a planning scheme involving building work, carried out completely or partly in a coastal management district that is –</p> <ul style="list-style-type: none"> • the construction of a new premises with a GFA¹⁷ of at least 1000m² • the enlargement of the GFA of existing premises by more than 1000m² <p><input type="checkbox"/> (iii) reconfiguring a lot assessable under schedule 8 of the IPA where the land is situated completely or partly in a coastal management district</p> <p><input type="checkbox"/> (iv) reconfiguring a lot¹⁸ assessable under schedule 8 of the IPA and in connection with the construction of a canal¹⁶ – complete Part M of Form 1</p> <p><input checked="" type="checkbox"/> (v) none of the above</p>
<p>Development within the limits of a port</p> <p>For more information refer to <u>Guide 18</u>. For information about prescribed tidal work refer to <u>Guide 24</u>.</p> <p>If you answered "YES" to Q12, the application triggers referral to the <u>Port Authority</u>.</p> <p>The Port Authority is a concurrence agency if the development is –</p> <ul style="list-style-type: none"> • within 200m of a shipping channel or an entry and exit shipping corridor for the port • within 1000m of a swing basin, a commercial shipping wharf, a mooring, anchorage or spoil grounds; • within 1000m of a planned port facility identified in a land use plan approved under the <i>Transport Infrastructure Act 1994</i>. <p>In all other situation the Port Authority is an advice agency.</p>	<p>12. Does the application involve development below high water mark¹⁹ and within the limits of a port under the <i>Transport Infrastructure Act 1994</i>?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES – complete Part M of Form 1, or Part P of Form 1 if the work is prescribed tidal work</p>
<p>Marinas</p> <p>For more information refer to <u>Guide 18</u>. For information about whether a marina is prescribed tidal work refer to <u>Guide 24</u>. The local government is the assessment manager for all prescribed tidal work.</p> <p>If you answered "YES" to Q13, the application triggers referral to <u>Queensland Fire and Rescue Service</u> as an advice agency.</p>	<p>13. Does the application involve operational work that is tidal work for a marina²⁰ with more than 6 vessel berths?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Part M of Form 1, or Part P of Form 1 if the tidal work is prescribed tidal work</p>
<p>Tidal works in strategic port land tidal areas</p> <p>For more information refer to <u>Guide 18</u>.</p> <p>Unless you answered "NO" to Q14, the relevant <u>Port Authority</u> is the assessment manager for the application and the <u>Environmental Protection Agency (EPA)</u> and <u>Queensland Transport (QT)</u> are concurrence agencies for the application.</p>	<p>14. Does the application involve tidal works within a strategic port land tidal area²¹?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Part M of Form 1</p>

13 Tidal work is defined in sch 10 of the IPA.

14 Prescribed tidal work is defined in the *Coastal Protection and Management Regulation 2003* and includes certain tidal works completely or partly within a local government tidal area.

15 Coastal management district is defined in sch 10 of the IPA and means a coastal management district under the *Coastal Protection and Management Act 1995*, other than an area declared as a coastal management district under section 47(2) of that Act.

16 Canal means canal as defined under the *Coastal Protection and Management Act 1995*

17 GFA is defined in sch 14 of the IPA to mean the gross floor area. For a definition of how to calculate GFA, go to the planning scheme against which the application is being assessed.

18 Under s117 of the *Coastal Protection and Management Act 1995*, an application for reconfiguration, where the reconfiguration is associated with the construction of an artificial waterway, must be accompanied by the application for the operational works to construct the artificial waterway.

19 High water mark is defined in the *Coastal Protection and Management Act 1995* and means the ordinary high water mark at spring tide.

20 Marina is defined in the *Transport Operations (Maritime Pollution) Regulation 1995*.

<p>Heritage For further information refer to <u>Guide 19</u>. If you answered "YES" to Q15, the application triggers referral to the <u>Queensland Heritage Council</u> as concurrence agency for the application.</p>	<p>15. Does the application involve development in a heritage registered place as defined under the <i>Queensland Heritage Act 1992</i>?</p> <p><input checked="" type="checkbox"/> NO <input type="checkbox"/> YES – complete Part C of Form 1</p>
<p>Declared catchment areas For more information, including a list of the declared catchment areas within Queensland, refer to <u>Guide 13</u>. Unless you answered "none of the above" to Q16, the application requires assessment by the <u>Department of Natural Resources and Mines (NR&M)</u>. If an agency other than NR&M is the assessment manager for the application, NR&M is a concurrence agency for the application in relation to this matter.</p>	<p>16. The application is in an area declared to be a catchment area under the <i>Water Act 2000</i> and involves: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) reconfiguring a lot, if any lot resulting from the reconfiguration is less than 16 hectares; <input type="checkbox"/> (ii) development assessable against the planning scheme involving the establishment or expansion of a waste water disposal system, other than a disposal system for carrying out an environmentally relevant activity under the <i>Environmental Protection Act 1994</i>; <input checked="" type="checkbox"/> (iii) none of the above</p>
<p>Contaminated land Applications involving material change of use and/or reconfiguring a lot may trigger this referral. For more information refer to <u>Guide 5</u>. Unless you answered "none of the above" to Q17, the application requires assessment by the <u>Environmental Protection Agency (EPA)</u>. If an agency other than EPA is the assessment manager for the application, EPA will be a concurrence agency for the application in relation to this matter.</p>	<p>17. The application involves: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) reconfiguring a lot for which all of part of the premises are – (a) premises mentioned in the IPA, schedule 8, part 1, table 2 – • item 5, including the exemption otherwise provided for by paragraph (d); • item 6, including the exemption otherwise provided for by paragraph (e); or • item 7, including the exemption otherwise provided for a mining activity or petroleum activity; or (b) in an area for which an area management advice has been given for unexploded ordnance - complete Part N of Form 1 <input type="checkbox"/> (ii) a material change of use – (a) made assessable under the IPA, schedule 8, part 1, table 2, items 5 to 7; or (b) assessable against the planning scheme and if all or part of the premises is in an area for which an area management advice has been given for unexploded ordnance - complete Part N of Form 1 <input checked="" type="checkbox"/> (iii) none of the above</p>
<p>Electricity infrastructure For more information refer to schedule 2 of the <u>IP Regulation</u>. Unless you answered "none of the above" to Q18, the application triggers referral to <u>the agency to which the easement is granted in favour of</u> as advice agency.</p>	<p>18. The application involves: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) reconfiguring a lot where any part of the lot is – • subject to an easement in favour of a distribution entity or transmission entity under the <i>Electricity Act 1994</i> and the easement is for a transmission grid or supply network under that Act; or • situated within 100m of a substation site; <input type="checkbox"/> (ii) a material change of use, assessable against a planning scheme and not associated with reconfiguring a lot if – • any part of the premises is subject to an easement in favour of a distribution entity or transmission entity under the <i>Electricity Act 1994</i> and the easement is for a transmission grid or supply network under that Act; and • any structure or work that is the natural and ordinary consequence of the use is, or will be, located wholly or partly in the easement; <input type="checkbox"/> (iii) a material change of use, assessable against a planning scheme and not associated with reconfiguring a lot if any part of the premises is situated within 100m of a substation site; <input type="checkbox"/> (iv) operational work that is filling or excavation assessable against the planning scheme, not associated with reconfiguring a lot, if – • any part of the premises is subject to an easement in favour of a distribution entity or transmission entity under the <i>Electricity Act 1994</i> and the work is located wholly or partly in the easement; • the work is located wholly or partly within 10m of a substation site; <input checked="" type="checkbox"/> (v) none of the above.</p>

Land designated for community infrastructure
 Applications involving development on land designated for community infrastructure may trigger this referral.
 For more information refer to schedule 2 of the IP Regulation.
 If you answered "YES" to Q19, the application requires assessment by the chief executive of the department administering the Act authorising the development for the designated purpose.
 If an agency other than the designator is the assessment manager for the application, the designating agency will be a concurrence agency for the application in relation to this matter.

19. Does the application involve development assessable against the planning scheme and on land designated for community infrastructure?
 (i) intended to be supplied by a public sector entity; and
 (ii) on land not owned by or on behalf of the State; and
 (iii) other than development –
 (a) for the designated purpose; or
 (b) carried out by, or on behalf of, the designator.
 NO
 YES

SEQ Regional Plan
 For more information refer to schedule 2 of the IP Regulation.
 Unless you answered "none of the above" to Q20, the application requires assessment by the Office of Urban Management (OUM).

20. The application involves a **material change of use** of premises in the SEQ Region²² for: (tick the applicable box(es))
 (i) urban activities²³, other than where the premises are zoned for urban activities under a planning scheme in a rural village²⁴ or the Mt Lindesay/North Beaudesert Study Area, for which all or part of the premises, the subject of the development, is in the –
 (a) Regional Landscape and Rural Production Area;
 (b) Rural Living Area;
 (c) Investigation Area; or
 (d) Mt Lindesay/North Beaudesert Investigation Area.
 (ii) rural residential purposes²⁵ where the premises are not zoned for rural residential purposes and the premises are in the –
 (a) Regional Landscape and Rural Production Area;
 (b) Investigation Area; or
 (c) Mt Lindesay/North Beaudesert Investigation Area;
 (iii) none of the above

Fisheries matters
 For more information refer to schedule 2 of the IP Regulation.
 Unless you answered "none of the above" to Q21, the application requires assessment by the Department of Primary Industries and Fisheries (DPI&F).
 If an agency other than DPI&F is the assessment manager for the application, DPI&F is a concurrence agency for the application in relation to items (i) – (iv) and an advice agency in relation to item (v).

21. The application involves: (tick the applicable box(es))
 (i) an assessable **material change of use** for aquaculture - complete Part O₁ of Form 1;
 (ii) assessable **operational work** that is the construction or raising of a waterway barrier - complete Part O₂ of Form 1;
 (iii) assessable **operational work** completely or partly within a declared fish habitat area - complete Part O₂ of Form 1;
 (iv) assessable **operational work** that is the removal, destruction or damage of a marine plant - complete Part O₂ of Form 1;
 (v) development assessable under the IPA, schedule 8, part 1, on land that adjoins a declared fish habitat area;
 (vi) none of the above.

22 Local Governments within the SEQ Region are identified in the South East Queensland Regional Plan as Beaudesert Shire, Boonah Shire, Brisbane City, Caboolture Shire, Caloundra City, Esk Shire, Gatton Shire, Gold Coast City, Ipswich City, Kilcoy Shire, Laidley Shire, Logan City, Maroochy Shire, Noosa Shire, Pine Rivers Shire, Redcliffe City, Redland Shire and Toowoomba City.
 23 Urban activity means urban activity as defined in schedule 2, Part H Regulatory Provisions, South East Queensland Regional Plan. The term includes some facilities and purposes and excludes some purposes. A single residential dwelling on a lot is not included in urban activity.
 24 Rural village means rural village as defined in schedule 2, Part H Regulatory Provisions, South East Queensland Regional Plan.
 25 Rural residential purpose means rural residential purpose as defined in schedule 2, Part H Regulatory Provisions, South East Queensland Regional Plan.

Integration of land use and public transport

For more information refer to Guide 23, schedule 8A of the IPA, & schedule 2 of the IP Regulation.

Unless you answered "none of the above", the application triggers referral to OT as a concurrence agency.

22. The application involves: (tick the applicable box/es)–

- (i) a **material change of use** assessable against the planning scheme for a purpose mentioned in schedule 13C of the IP Regulation and exceeding the thresholds set by that schedule.
- (ii) **reconfiguring a lot**–
 - (a) on land that is completely or partly within a public transport corridor, and the total number of lots increases;
 - (b) on land that is completely or partly within a future public transport corridor or an airport's public safety area;
 - (c) on land that is within 400m of a public passenger transport facility or a future public passenger transport facility, and the total site area is 5000m² or greater;
 - (d) for a residential purpose within the 25 ANEF contour for an airport;
 - (e) for a residential purpose resulting in 100 or more allotments.
- (iii) **operational work** assessable against the planning scheme, but not associated with a material change of use mentioned in (i) above or reconfiguring a lot mentioned in (ii) above, on land that–
 - (a) is completely or partly within a public transport corridor or a future public transport corridor;
 - (b) will result in work that encroaches into an airport's operational airspace.
- (iv) none of the above.

Railway safety and efficiency

For more information refer to Guide 23, schedule 8A of the IPA & schedule 2 of the IP Regulation.

Unless you answered "none of the above", the application triggers referral to QT as a concurrence agency.

23. The application involves: (tick the applicable box/es)–

- (i) a **material change of use** assessable against the planning scheme for a purpose mentioned in schedule 13D of the IP Regulation and exceeding the thresholds set by that schedule.
- (ii) **reconfiguring a lot**–
 - (a) on land that is completely or partly within a future public transport corridor, future railway land or a railway tunnel easement;
 - (b) on land that is within 400m of a Citytrain passenger railway station or a future Citytrain passenger railway station, and the total site area is 5000m² or greater;
 - (c) on land that abuts rail corridor land, commercial corridor land or future railway land, and the total number of lots increases;
 - (d) on land that abuts rail corridor land, commercial corridor land or future railway land and an easement abutting the corridor or future railway land is created;
 - (e) on land that is completely or partly within 100m of, and abutting an approach to, a railway level crossing, and the total number of lots increases;
 - (f) for a residential purpose resulting in 100 or more allotments.
- (iii) **operational work** assessable against the planning scheme, but not associated with a material change of use mentioned in (i) above or reconfiguring a lot mentioned in (ii) above, involving extracting, excavating or filling greater than 50m³, on land that–
 - (a) is completely or partly within rail corridor land or commercial corridor land, and the work is not for rail transport infrastructure or other rail infrastructure;
 - (b) is completely or partly within future railway land, or a railway tunnel easement;
 - (c) abuts rail corridor land, commercial corridor land or future railway land, and the work is within 25m of the railway boundary.
- (iv) none of the above.

Referral coordination

An information request requires referral coordination if the application involves –

- (i) 3 or more concurrence agencies; or
- (ii) a facility or area assessable under a planning scheme and prescribed in schedule 7 or 8 of the IP Regulation; or
- (iii) development which is subject to an application for preliminary approval mentioned in s3.1.6 of the IPA.

For more information go to Guide 2 and Guide 5.

24. Does the application trigger referral coordination?

- NO
- YES, as the application: (tick the applicable box/es)
 - (i) triggers 3 or more concurrence agencies;
 - (ii) involves a **material change of use** made assessable under a planning scheme and prescribed in schedule 7 of the IP Regulation;
 - (iii) involves a **material change of use** (other than a dwelling house, outbuilding or farm building) made assessable under a planning scheme, or **reconfiguring a lot**, in an area prescribed in schedule 8 of the IP Regulation;
 - (iv) is for a preliminary approval mentioned in s3.1.6 of the IPA

Referral agency responses prior to lodgement:

Under s3.3.2 of IPA a referral agency may give a referral agency response on a matter within its jurisdiction about a proposal before an application for the proposal is made to the assessment manager.

This is commonly the case where an application requires referral to a building referral agency (eg. Old Fire and Rescue Service).

25. Did a referral agency give a referral agency response under s3.3.2 of the IPA before the application was made to the assessment manager?

- NO
- YES - attach a copy of the referral agency/s response/s

PLEASE NOTE: The assessment manager may refuse to accept an application, which, at the time of lodgement, fails to provide the completed IDAS Assessment Checklist (if applicable).

OFFICE USE ONLY (applicable to assessment manager)

DATE RECEIVED

REFERENCE NUMBER/S

SECTION 2 – BUILDING REFERRALS (completion **not** mandatory)

Note: Below is a list of the referrals that can apply to an application for building work assessable against the *Standard Building Regulation 1993* (SBR). This section of the IDAS Assessment Checklist is provided for **advice only**. This section of the IDAS Assessment Checklist is **not** required to be completed and lodged with an application for building work assessable against the SBR only.

Fire safety For more information go to schedule 2 of the <u>IP Regulation</u>	1. An application may trigger referral to Qld Fire and Rescue Services as an advice agency if the building work the subject of the application requires the installation of a fire safety system.
Fire safety for budget accommodation For more information go to schedule 2 of the <u>IP Regulation</u>	2. An application may trigger referral to Qld Fire and Rescue Services as an advice agency if the building work the subject of the application requires the installation of a fire safety system for a budget accommodation building.
Spray painting For more information go to schedule 2 of the <u>IP Regulation</u>	3. An application may trigger referral to the Department of Industrial Relations (DIR) as a concurrence agency if the application involves a workplace incorporating spray painting.
Retail meat premises For more information go to schedule 2 of the <u>IP Regulation</u>	4. An application may trigger referral to Safe Food Qld as a concurrence agency if the application involves a retail meat premises.
Private health facilities For more information go to schedule 2 of the <u>IP Regulation</u>	5. An application may trigger referral to the Department of Health as a concurrence agency if the application involves a private health facility.
Workplace area less than 2.3m² For more information go to schedule 2 of the <u>IP Regulation</u>	6. An application may trigger referral to the Department of Industrial Relations (DIR) as an advice agency if the application involves a work place area less than 2.3m ² .
Land contiguous to a State-controlled road For more information go to schedule 2 of the <u>IP Regulation</u>	7. An application may trigger referral to the Department of Main Roads as a concurrence agency or advice agency if the application involves land contiguous to a State-controlled road.
Pastoral workers accommodation For more information go to schedule 2 of the <u>IP Regulation</u>	8. An application may trigger referral to the Department of Industrial Relations (DIR) as a concurrence agency if the application involves pastoral workers accommodation.
Child care centre For more information go to schedule 2 of the <u>IP Regulation</u>	9. An application may trigger referral to the Department of Communities as a concurrence agency if the application involves a childcare centre.
Coastal development For more information go to schedule 2 of the <u>IP Regulation</u>	10. An application may trigger referral to the Environmental Protection Agency (EPA) as a concurrence agency if the application involves land completely or partly seaward of a coastal building line ²⁶ .
Heritage For more information go to schedule 2 of the <u>IP Regulation</u>	11. An application may trigger referral to the Heritage Council as a concurrence agency if the application involves a heritage registered place.
Fisheries matters For more information go to schedule 2 of the <u>IP Regulation</u>	12. An application may trigger referral to the Department of Primary Industries and Fisheries (DPI&F) as a concurrence agency if the application involves assessable building work in a declared fish habitat area; or as an advice agency if the application involves assessable building work on land that adjoins a declared fish habitat area.
Integration of land use and public transport For more information go to schedule 2 of the <u>IP Regulation</u>	13. An application may trigger referral to Queensland Transport as a concurrence agency if the application involves existing or future public transport corridors, or airport operational airspace ²⁷ .
Railway safety and efficiency For more information go to schedule 2 of the <u>IP Regulation</u>	14. An application may trigger referral to Queensland Transport as a concurrence agency if the application involves future railway land.

²⁶ Coastal building lines are prescribed under the *Coastal Protection and Management Act 1995*.

²⁷ Operational airspace is as defined in *State Planning Policy 1/02 'Development in the Vicinity of Certain Airports and Aviation Facilities'*.

DAVID BRETT & ASSOCIATES PTY. LTD.
BUILT ENVIRONMENT & DEVELOPMENT PLANNERS

PLANNING ASSESSMENT REPORT

MATERIAL CHANGE OF USE FOR MULTIPLE RESIDENTIAL DWELLINGS

Prepared for: Colran Pty Ltd

10 January 2006

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

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1. Subject Site Location
2. Subject Site and Surrounding Services
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ANNEXURES

- Annexure 1: Drawing DA-1 Indicative Site Layout *East Coast Building Design & Drafting*
Annexure 2: Drawing DA-2 Indicative Floor Layouts *East Coast Building Design & Drafting*
Annexure 3: Drawing DA-4 Typical Sections and 3D Views *East Coast Building Design & Drafting*
Annexure 4: Drawing DA-5 Contour Overlay Plan *East Coast Building Design & Drafting*
Annexure 5: Drawing DA-6 Landscape Intent Plan *East Coast Building Design & Drafting*
Annexure 6: Drawing DA-7 Staging Layout Plan *East Coast Building Design & Drafting*
Annexure 7: Drawing F0235-01 *AJS Surveys*

1.0 APPLICATION SUMMARY

Street Address	[REDACTED]
Suburb	Brassall 4305
Real Property Description	Lot 2 on RP857016
Site Area	1.282ha.
Ipswich Planning Scheme Designation	Recreation

Aspects of the Development	Material Change of Use – Development Permit – Multiple Residential (52 Townhouses)
Level of Assessment	Impact (Inconsistent)
Land Owner	Colran Pty Ltd
Applicant	Colran Pty Ltd C/- David Brett & Associates Pty Ltd
Contact Person	[REDACTED] David Brett & Associates Pty Ltd PO Box 5020, Brassall Qld 4305 Ph: 3281 0744 or 0411347 569 Fax: 3281 0766 [REDACTED]
Road Frontage	Haig and Collins Streets
Current use of site	Clubhouse, gymnasium, tennis courts, volleyball courts
Encumbrances	N/A
Infrastructure services	Water, Sewerage, Electricity, Stormwater are available to the site.
Existing significant vegetation	Site is cleared
Surrounding Land Use	<ul style="list-style-type: none"> • RM2 (Residential Medium Density – Sub Area 2) • SA20 (Special Opportunity Sub Area SA20 – Brassall (area generally bounded by the Brassall Major Centre Zone, former Railway Corridor/Collins Street and existing community uses fronting Hunter Street). • Recreational • MC2P – Major Centres Sub Area MC2 – Brassall Primary Business Area

2.0 INTRODUCTION

This town planning report has been prepared in respect to land situated at 2 Haig Street, Brassall and described as Lot 2 on RP857016. The locality of the subject site is shown on **Figure 1**.

The proposal is for 52 attached residential dwellings that will be divided into two main sections being the Riverfront Development and Inland Development (Refer Drawing DA-1 Site Plan *East Coast Building Design & Drafting* (annexure 1)). The development will provide a range of one and two storey housing types. The proposed typical layouts, A through G, are indicated in Drawing DA-2 Internal Layouts *East Coast Building Design & Drafting* (annexure 2). The development will be staged in accordance with Drawing DA-7 Staging Layout Plan *East Coast Building Design & Drafting* (annexure 6)

The site is currently a sporting facility that consists of a clubhouse, gymnasium, 4 outdoor tennis courts, and 2 outdoor volleyball courts. The site will not retain any of the buildings or sporting facilities currently on the site. The site has historically been approved as a recreational facility since 1987.

This assessment will identify how the proposed development will provide residential land and dwellings that respond to community needs and locational constraints and opportunities. The proposal is an increase in residential density on the subject site. The site is consistent with having good access to commercial, community, employment and transport facilities. The proposed development has used the Residential Medium Density (RL2) zone requirements of the Ipswich Planning Scheme 2004 as a basis for its design. Due to similar types of development in the area, there is a precedent for the proposed higher intensity use of the land, than that of its current zoning.

This report forms part of an application for a Material Change of Use (Development Permit).

The application is accompanied by the following Drawings.

- Annexure 1:** Drawing DA-1 Indicative Site Layout *East Coast Building Design & Drafting*
- Annexure 2:** Drawing DA-2 Indicative Floor Layouts *East Coast Building Design & Drafting*
- Annexure 3:** Drawing DA-4 Typical Sections and 3D Views *East Coast Building Design & Drafting*
- Annexure 4:** Drawing DA-5 Contour Overlay Plan *East Coast Building Design & Drafting*
- Annexure 5:** Drawing DA-6 Landscape Intent Plan *East Coast Building Design & Drafting*
- Annexure 6:** Drawing DA-7 Staging Layout Plan *East Coast Building Design & Drafting*
- Annexure 7:** Drawing F0235-01 *AJS Surveys*

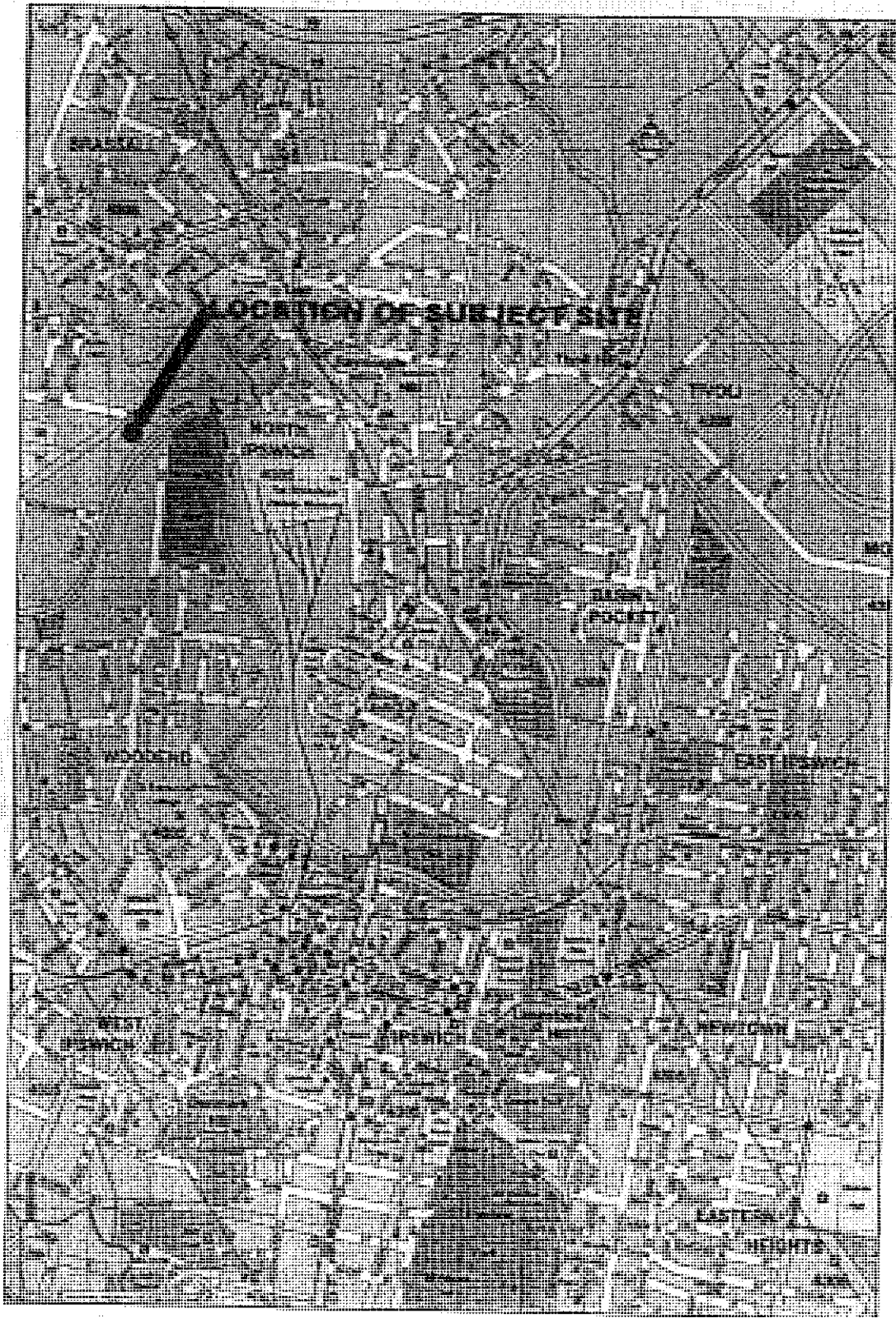


Figure 1: Subject Site Location

3.0 SITE CONTEXT

3.1 The Subject Site

The subject site is situated at 2 Haig Street being Lot 2 on RP857016. The site is situated adjoining the Bremer River and has an area of approx 1.282ha.

Haig Street and Collins Street provide access to the site at its North and West boundary. The site has an approx 100m frontage to Haig Street and approx 80m frontage to Collins Street.

The site is currently being used as a sporting facility containing a clubhouse, gymnasium, tennis courts and volleyball courts.

The site has been cleared of all vegetation to accommodate the previous uses.

3.2 The Surrounding Area

The site is situated in a predominately residential area that is located in close proximity to the Brassall Major Centres Zone and existing commercial and community uses. The commercial and community uses that exist in close proximity to the proposed site are as follows and are indicated in the aerial Photograph in **Figure 2**.

- Brassall State School
- Ipswich State High School
- Service Station, food and convenience services
- Churches
- Brassall Village Shopping Centre (Woolworths)
- Sutton's Park
- Gymnasium

The site is located adjoining a multiple residential development that is appropriately zoned as RM2 (Residential Medium Density Sub Area 2). This development is accessed from Collins Street and has 19 attached, single and two storey townhouses.

The site also occurs adjacent to land that is zoned SA2 which is Special Opportunity, Sub Area SA20 – Brassall (area generally bounded by the Brassall Major Centre Zone, former Railway Corridor/Collins Street and existing community uses fronting Hunter Street). As identified in the scheme this area is immediately adjacent to the Brassall Major Centres Zone and existing community uses. The scheme identifies that the preferred use of this land is uses which may be appropriate include community or other uses which support the Brassall Major Centre and are able to withstand flooding impacts.

Figures 2 and 3 depict the land use and zoning of the site and surrounding area.

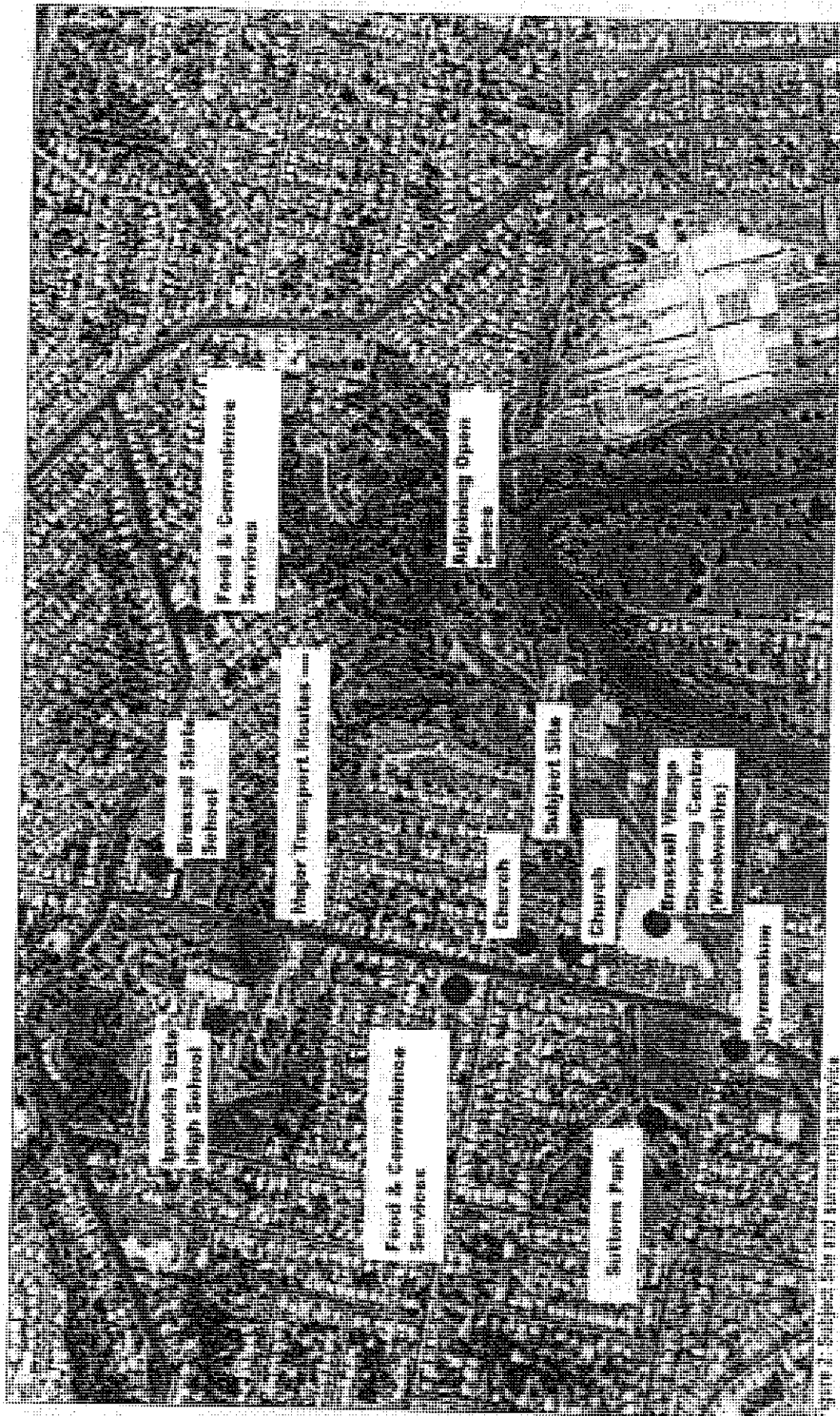


Figure 2. Location of the University of Wisconsin - Stevens Point

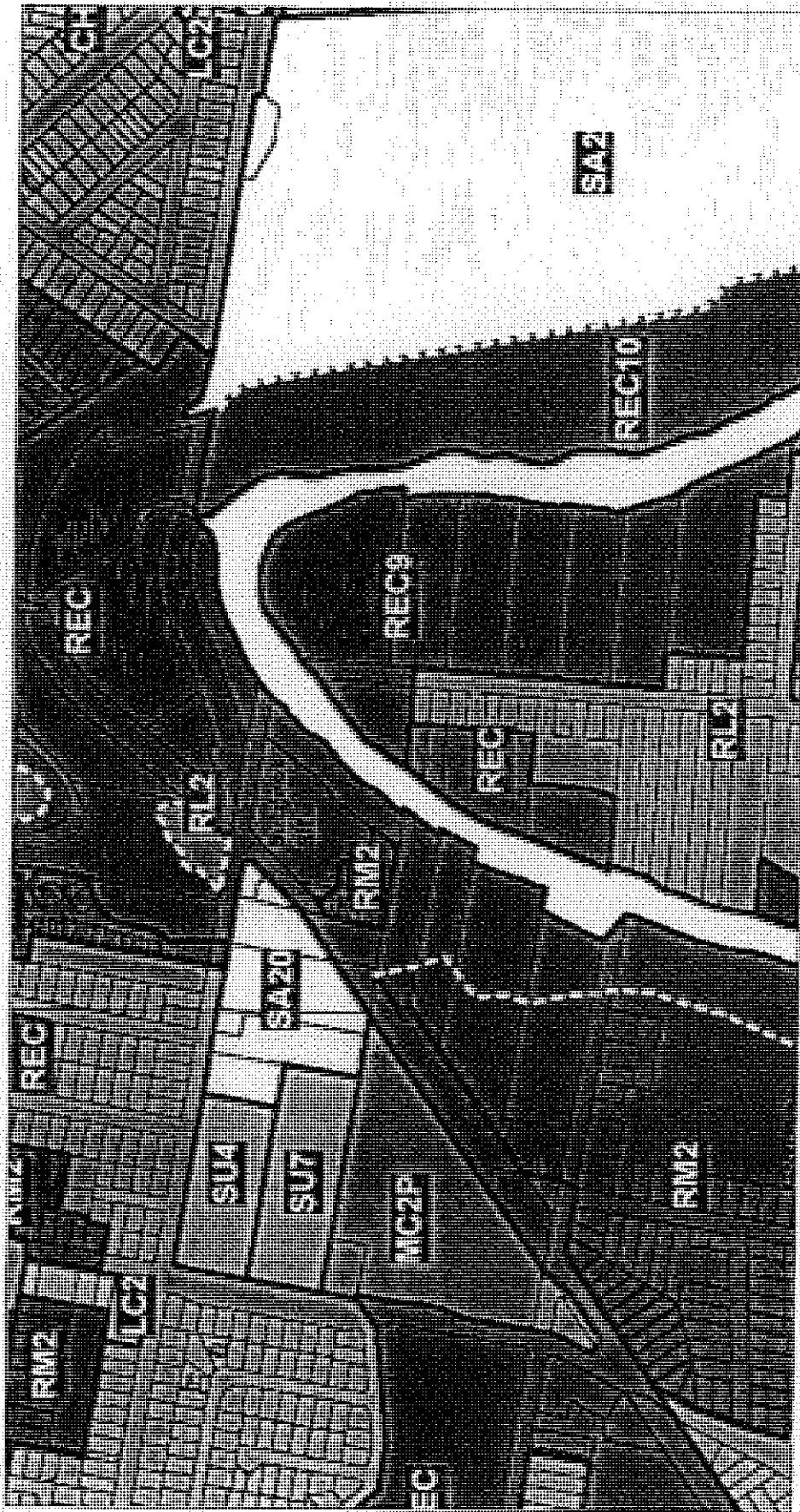


Figure 1: Zoning Designation Under the Greenwich City Council Planning Scheme 2004

4.0 THE PROPOSAL

4.1 Proposed Use

It is proposed to demolish the existing buildings on the site and build attached multiple residential dwellings being 1 and 2 storeys in height. No existing buildings on the site will be retained as part of the new development.

The proposed development will be generally in accordance with the accompanying Drawings.

Of the 52 dwellings proposed, 28 will be 2 Bed units, and 24 will be 3 bed units.

The site density of the proposed development will be 40.56 du / ha. The maximum dwelling density for the Residential Medium Density (RM2) Zone is 50 du / ha. The proposed development has based its design on the requirements of the RM2 zoning due to the appropriateness of the site for this designation. The adjoining development is zoned RM2 and has been developed in this manner.

The development will be staged in accordance with Drawing DA-7 Staging Layout Plan *East Coast Building Design & Drafting* (annexure 6)

4.2 Building Design and Orientation

The proposed dwellings will be brick veneer construction, using colour and window design to highlight a more modern finish. The buildings will have lower pitch skillion roofs, in lieu of the traditional hips.

The proposed development will provide a range of housing types within the site. The different layouts of the proposed dwellings are shown in Drawing DA-2 Internal Layouts *East Coast Building Design & Drafting* (annexure 2). The Site Plan indicates where each type of dwelling is proposed to be located (annexure 1).

The proposed residential dwellings are setback approx 3 metres from the site's two road frontages being the Northern and Western boundaries, approx 3 metres from the eastern boundary which adjoins public open space and the river, and approx 3 metres from the southern boundary, which adjoins a similar type of residential use.

4.3 Access, Parking and Servicing

Access and Internal Road Network

Access to the site is proposed from both Collins and Haig Streets. The layout of the internal road network enables the largest anticipated vehicle, which is Council's refuse vehicle, to enter and exit the site in a forward gear.

The internal road network will have a 5m wide constructed road, allowing for two-way traffic flows within the development. The access point on Haig Street will allow for Right in and left out traffic movements and the access point at Collins Street will allow left in, left out and right in, right out movements. Crossovers for the proposed development will be in accordance with relevant Council requirements.

Pedestrian access to the site is provided from both Haig and Collins Streets. The internal road layout will be a shared pedestrian/vehicle network that has a speed limit for vehicles of 10km / hr. Pedestrian pathways will be provided through park areas where they link with road frontages. Pedestrian pathways will provide linkage between the two developments and access to the viewing deck situated overlooking the river.

Parking

The proposed development has provided parking in the following manner:

- 52 enclosed garages (attached to dwellings)
- 52 visitor / residence parking spaces provided in the common area.
- 6 on-street parking spaces to be used in conjunction with the adjoining public open space.
- 5 car washing bays

This more than satisfies the Ipswich Planning Scheme Parking Code requirements of 1 covered space per dwelling for exclusive resident use, 0.5 spaces per dwelling for visitor parking, 0.5 spaces per dwelling (to be located in the common area) for use by both residents or visitors, plus 1 vehicle-wash bay per 20 dwellings.

Service Facilities

The proposed development has provided three bin enclosures that are located at the Haig Street frontage, the centre of the development and the Collins Street frontage. The bin storage areas are located appropriately throughout the development in order to conveniently service every dwelling. The proposed bin storage areas will be appropriately screened to ensure they do not have any detrimental amenity affects on surrounding dwellings. Bin Storage areas are located adjacent to parking areas to minimise amenity affects.

4.4 Landscaping

A Landscaping Master Plan will be prepared in accordance with the relevant Council requirements. Landscaping will provide a visual buffer between residences and open space aiding to delineate communal and private areas. Landscaping will also be provided along the road frontages for visual screening. The landscaping plan will be lodged as part of the Information Response for the application.

4.5 Recreational Space

The proposed development is required to provide recreational space in accordance with the Residential Code (Part 12, Div 6) of the Ipswich Planning Scheme 2004.

The total requirement of recreation space across the development is as follows:

28 x 2 Bed Units @ 60m² of recreational space each = 1680m² (communal/private)
24 x 3 Bed Units @ 75m² of recreational space each = 1800m² (communal/private)
Total recreational space required = 3480m² (communal/private)

The proposed development has provided the following recreational space within the development:

Private courtyards / decks – 4242m²
Communal open space – 1055m²
Total recreational space provided = 5297m²

The proposed development has more than adequately addressed the requirements for recreational space provision. The site adjoins public open space (Mihi Junction Reserve) that could also be utilised by residents of the development for useable recreational space.

5.0 TOWN PLANNING ASSESSMENT

5.1 Overview

The Ipswich Planning Scheme 2004 prescribes the relevant assessment criteria for the proposed development.

5.2 The Application

The application is for a Development Permit for a Material Change of Use to enable use of the site for multiple residential attached dwellings. The description of the proposed development is described as inconsistent with the land use definitions contained in the Planning Scheme under Part 4 – Urban Areas, Division 7, Recreation Zone, Section 4.17.5 (3)(l).

5.3 Zoning and Use Class / Definition of the Proposal

The Zoning of the subject site in the Ipswich Planning Scheme 2004 is Recreational. The site is zoned as such due to previous historic approvals for recreational purposes such as the existing gymnasium and tennis courts, and due to the location of the 1 in 100 flood line. The use class and definition of the proposal is- Multiple Residential.

The definition of multiple residential is described in the Ipswich Planning Scheme 2004 as:

"Multiple Residential"

(1) *"Multiple Residential" means the residential use of premises if there are three or more dwellings on any one lot.*

(2) *The term includes the use of premises for—*

(a) *apartments;*

(b) *boarding house, if providing permanent accommodation;*

(c) *caravan park, if providing permanent accommodation;*

(d) *nursing home;*

(e) *retirement community; or*

(f) *townhouses.*

(3) *The term does not include the use of premises for "Dual Occupancy", "Institutional Residential" or "Temporary Accommodation".*

5.4 Development Requirements

5.4.1 Relevant Assessment Codes

As identified in Table 4.17.1 of division 17 in the Ipswich Planning Scheme 2004 the proposal is required to be assessed against the following codes;

- Urban Areas Code (Part 4)—particularly the specific outcomes in section 4.3.3 and the
- Recreation Zone (Part 4, division 17)
- Residential Code (Part 12, division 6)
- Parking Code (Part 12, division 9)

The application as identified in Table 4.17.1 of division 17: the proposed type of development is subject to the Impact Assessment Process.

This application will also provide demonstration that the proposed development has been designed in accordance with the provisions of the Residential Medium Density Zone.

The following table identifies the major requirements of the relevant assessment criteria.

DEVELOPMENT REQUIREMENTS

SUMMARY OF REQUIREMENTS

PROPOSAL

Recreation Zone (Part 4, division 17)

- (2) The overall outcomes sought for the Recreation Zone are the following—
- (a) The Recreation Zone provides for the development of an integrated open space network including the use of land for—
- (i) both active and passive recreation opportunities within parks;
 - (ii) linear riparian corridors as open space links; and
 - (iii) private and public sporting/recreation facilities.

The proposal does not obstruct the existence of an integrated open space network in the area. Land situated between the subject site and the river has been previously dedicated for the open space network. The proposed development will not have a detrimental impact on this existing area. The proposed Riverfront dwellings have been designed so that the area underneath the floor of the proposed dwellings are excavated and treated so that it is available for private recreational purposes. These recreational areas will adjoin the area that is identified as open space or riverside parklands that will eventually develop as walking tracks and parkland, integrated with other public open space such as the adjacent Miti Junction Reserve.

Residential Code (Part 12, division 6)

12.6.4 Residential Uses and Works – Effects of Development – General Provisions

Density and Character

(1) Specific Outcomes

Uses and works reflect the desired built character, maintain amenity and protect and enhance important townscape and landscape elements having regard to—

- (a) dwelling density;
- (b) building height;
- (c) lot sizes and dimensions;
- (d) boundary clearances and the provision of space around buildings;
- (e) the location and design of parking areas;
- (f) the provision of recreation space;
- (g) access to natural light and ventilation;
- (h) privacy;
- (i) noise attenuation;
- (j) vegetation protection;
- (k) landscape treatment;
- (l) places of cultural significance or streetscape value; and
- (m) the form, scale, bulk, style, siting, orientation, roof lines, materials and detailing of

The proposed development is well suited to the site due to the nature of the surrounding area. The site provides for a high level of residential amenity due to its favourable location on the river and its proximity to essential services such as schools and shopping centers.

- (a) The proposed use will be similar to the development that it is directly adjacent to. The proposed dwelling density will be suited to a RM2 zoning which is same as the adjoining site. The proposed development is approx 40du/ha.
- (b) The proposed building height will be up to 2 storeys which is consistent with the RM2 zoning and surrounding residential dwellings.
- (c) The subject site will be the subject of a community title scheme.
- (d) The proposed development has provided the required building setbacks from road frontages and adjoining uses.
- (e) Parking areas have been designed within the site at the required rates prescribed in the Ipswich Planning Scheme. Parking spaces have been located to ensure minimal impacts on dwellings with respect to noise and light affects. The proposed development has provided a total of 131 car parking spaces, comprised of 52 enclosed garages, 52 visitor / residence parking provided in the common area, 22

buildings.

tandem parking spaces available in conjunction with the enclosed garages and 6 on-street parking spaces that have been provided to be used in conjunction with the adjoining public open space.

(f) The proposed development has provided 4242 m² of private recreation space and 1055m² of communal recreation space throughout the development as indicated on Drawing DA-1 Site Plan *East Coast Building Design & Drafting* and Drawing DA-2 Internal Layouts *East Coast Building Design & Drafting* (annexure 1&2). The site is located adjacent to the Council owned open space that could be utilised by the residents for recreational purposes.

(g) The proposal has more than adequate access to natural light and ventilation due to the provision of space between dwelling groupings and adjoining uses.

(h) The proposed development will protect privacy of dwellings within the site and adjoining uses through the adequate provision of space, and screening of private and communal recreation spaces.

(i) The proposed development will provide noise attenuation through the use of appropriate building materials for the dwellings.

(j) There is no existing vegetation on the site.

(k) The proposed development will provide adequate landscaping to delineate communal and private space within the development. Landscaping will also be used to delineate vehicular access and manoeuvring areas.

(l) The proposed development is not situated in an area of cultural significance or streetscape value.

(m) The form of the proposed dwellings is consistent with that of the surrounding area particularly the adjoining development.

The scale of the proposed development is consistent with the RM2 designation and has a density of 40.56 du / ha at 1 and 2 storeys.

The bulk of the development is minimised through the use of landscaping and open space which breaks up the built form.

The style of the proposed dwellings will be single and two storey brick veneer buildings which is consistent with the adjoining development. Proposed dwellings will be articulated with appropriate materials and include doors and windows to avoid large expanses of blank walls. Please find attached Drawing DA-4 Typical Sections and 3D Views *East Coast Building Design & Drafting* (Annexure 3) that indicates the placement of windows and doors.

The siting of the proposed dwellings enables more than adequate vehicular and pedestrian manoeuvring through the site.

Proposed dwellings located on street frontages are parallel with the street.

<p>Parking Code (Part 12, division 9)</p> <p>The parking code requires the following for the proposed development: Multiple Residential (incorporates the following uses)— (g) townhouse.</p> <ul style="list-style-type: none"> • 1 covered space per dwelling for exclusive resident use; (52) • 0.5 spaces per dwelling for visitor parking; (26) • 0.5 spaces per dwelling (to be located in the common area) for use by both residents or visitors; plus (26) • 1 vehicle wash bay per 20 dwellings; (2.6) 	<p>The proposed development is required to provide 104 carparking spaces and 2.6 wash bays. The development has provided parking as follows:</p> <ul style="list-style-type: none"> • 52 enclosed garages (attached to dwellings) • 52 visitor / residence parking spaces provided in the common area. • 6 on-street parking spaces to be used in conjunction with the adjoining public open space. • The proposed development has provided 3 wash bays <p>There are 110 Parking spaces and 3 wash bays.</p>
<p>Residential Medium Density Zone (Part 4, Div 6)</p> <p>4.6.2 Overall Outcomes for Residential Medium Density Zone</p> <p>(2) The overall outcomes sought for the Residential Medium Density Zone are the following—</p> <p>(a) Uses within the Residential Medium Density Zone are provided with full urban services such as reticulated water, sewerage, sealed roads, parks and other community facilities.</p> <p>(b) Uses and works within the Residential Medium Density Zone are located and designed to maximise the efficient extension and safe operation of infrastructure.</p> <p>(c) Uses and works within the Residential Medium Density Zone are located, designed and managed to—</p> <ul style="list-style-type: none"> (i) maintain residential amenity and streetscape quality; (ii) maintain or enhance aspects of local character; (iii) be compatible with other uses and works; (iv) maintain the safety of people, buildings and works; and (v) avoid significant adverse effects on the natural environment. 	<p>The proposed development will be able to achieve the overall outcomes sought for the Residential Medium Density Zone. The proposed development will be provided with the full urban services such as reticulated water, sewerage, sealed roads, parks and is located in close proximity to existing community facilities.</p> <p>The proposed design of the development will ensure existing residential amenity is preserved. The proposed development is consistent in scale and intensity with that of other development in the area. The proposed development is consistent with the RM2 zoning requirements of the Ipswich Planning Scheme. There is an existing example of a RM2 level residential development in Collins street which creates a precedent for that type of development within the area.</p> <p>The proposed development will improve the existing streetscape by creating a clear and legible frontage to both the Collins and Haig Street. The site currently has an undity and disjointed frontage to both Collins and Haig Street due to the existing commercial operation not being operational and therefore not maintained.</p>
<p>(2) Sub Area – Residential Medium Density: 2 Storeys (RM2)</p> <p>(a) Specific Outcomes</p> <p>(i) Uses and reconfiguring provide for medium density housing taking advantage of the area's characteristics and location.</p>	<p>The proposed development is located in close proximity to essential services (refer figure 2) and is able to take advantage of the area's characteristics, which are consistent with that of a medium density residential area.</p>

(ii) The established low rise urban profile of the area is protected.
(b) Probable Solution – for sub-section
(2)(a) The overall density does not exceed 50 dwellings per hectare at two storeys in height.

The density of the proposed development does not exceed 50 dwellings per hectare at two storeys in height. The proposed density of the site is approx 40 du/ha and has provided more than adequate recreational space and parking.

5.4.2 Overlay Codes

Overlay	Relevant (Y/N)
Overlay 1: Bushfire Risk Areas	N
Overlay 2: Key Resource Areas, Buffers and Haul Routes	N
Overlay 3: Mining Influence Areas	N
Overlay 4: Difficult Topography	Y ¹
Overlay 5: Flooding & Urban Stormwater Flow Path Areas	Y ²
Overlay 6: Buffers to Highways & Regional Transport Corridors	N
Overlay 7A: Delimitation (Area Control) Regulations and Obstruction Clearance Surfaces	Y (45m)
Overlay 7B: Operational Airspace, Wildlife Attraction & Lighting Issues	Y (60m)
Overlay 7C: 2008 Australian Noise Exposure Forecast (ANEF) Contours	Y (45m)
Overlay 7D: Explosive Storage Safeguard, Public Safety Areas & Purge Rifle Range	N
Overlay 7E: Unexploded Ordnance Areas	N
Overlay 8: Motor Sport Buffers	N
Overlay 9: Waste Water Treatment Buffers	N
Overlay 10: Swan Bank Power Station Buffer	N
Overlay 11: High Pressure Oil and Gas Pipeline	N
Overlay 12: Warril Creek Water Catchment	N
Overlay 13: High Voltage Electricity Transmission Lines	N
Overlay 14: Rail Corridor Noise Impact Management	N

¹Overlay 4: Difficult Topography

The subject site is not directly affected by the difficult topography overlay due to the proposed building envelopes of the development. The site is adjacent to land dedicated to the Council for park and recreation purposes. This piece of land is affected by the difficult topography overlay.

²Overlay 5: Flooding & Urban Stormwater Flow Path Areas

The Q100 flood line affects part of the subject site. The relevant flood level for the Q100 line on that site has been identified as 18.9m. Please find attached a detailed survey of the subject site. The proposed riverfront development aspect of the proposal will build out over the flood line using appropriate construction techniques. This aspect of the development will be the subject of a detailed hydrology study. The intent of the riverfront development will be to excavate an area below the ground floor of the dwellings in order to increase the flood immunity of the subject site. The hydrology study will be done in conjunction with an engineering study and these will address the appropriate sections of the Flooding and Urban Stormwater Flow Path Areas – Overlay Code (Division 4, Part 11 (sect 11.4.7)).

6.0 CONCLUSION

This report has provided a town planning assessment of the proposed Multiple Residential development to be located at 2 Haig Street, Brassall being Lot 2 on RP857016.

The site is currently a recreational use that includes a clubhouse, gymnasium, and outdoor tennis and volley ball courts.

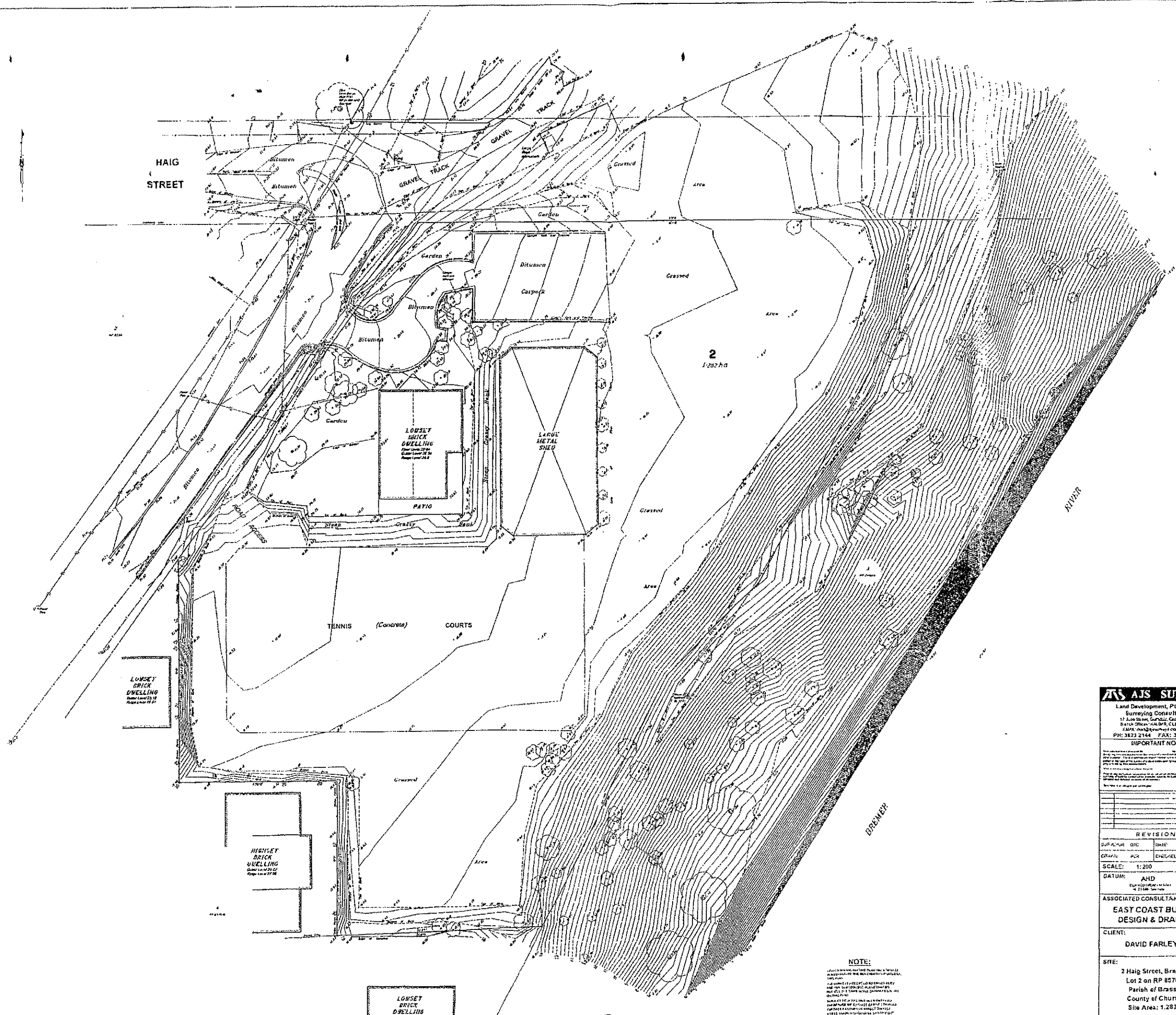
This assessment has identified how the proposed development will provide residential land and dwellings that respond to community needs and locational constraints and opportunities. The proposed increase in residential density on the subject site is consistent with having good access to commercial, community, employment and transport facilities. The proposed development has used the Residential Medium Density (RL2) zone requirements of the Ipswich Planning Scheme 2004 as a basis for its design. Due to similar types of development in the area, there is a precedent for the proposed higher intensity use of the land, than that of its current zoning.

The proposed development has been designed to comply with the major requirements of the Residential Code (Part 12, Div 6) of the Ipswich Planning Scheme 2004 for the provision of recreational space and parking facilities.

The proposal is appropriate from a town planning viewpoint and should be approved subject to reasonable and relevant conditions.

ANNEXURE 1

Drawing DA-1 Indicative Site Layout *East Coast Building Design & Drafting*



HAIG STREET

NIVVA

2
1.282 ha

LOWSEY BRICK DWELLING

LARGE METAL SHED

TENNIS (Concrete) COURTS

LOWSEY BRICK DWELLING
Date: 14/07/22
Page: 14 of 22

HIGHLEY BRICK DWELLING
Date: 14/07/22
Page: 14 of 22

LOWSEY BRICK DWELLING

NOTE:

1. This is a preliminary plan and should not be used for construction purposes without the approval of the Council. It is intended to show the general layout of the site and is subject to change without notice. The Council reserves the right to refuse to issue a building consent if the plan does not comply with the Resource Management Act 1991 and the Resource Management Act Regulations 1992.

AJS SURVEYS
 Land Development, Planning & Surveying Consultants
 17 Lake Street, Grafton, Grafton
 Baitok Office: 104/105, CLEVELAND
 3400, Auckland
 PH: 3823 2144 FAX: 3823 2155

IMPORTANT NOTE
 The information contained in this plan is for the use of the client only and is not to be used for any other purpose without the written consent of AJS Surveys. The client is responsible for ensuring that the information is accurate and up-to-date. AJS Surveys is not responsible for any errors or omissions in this plan.

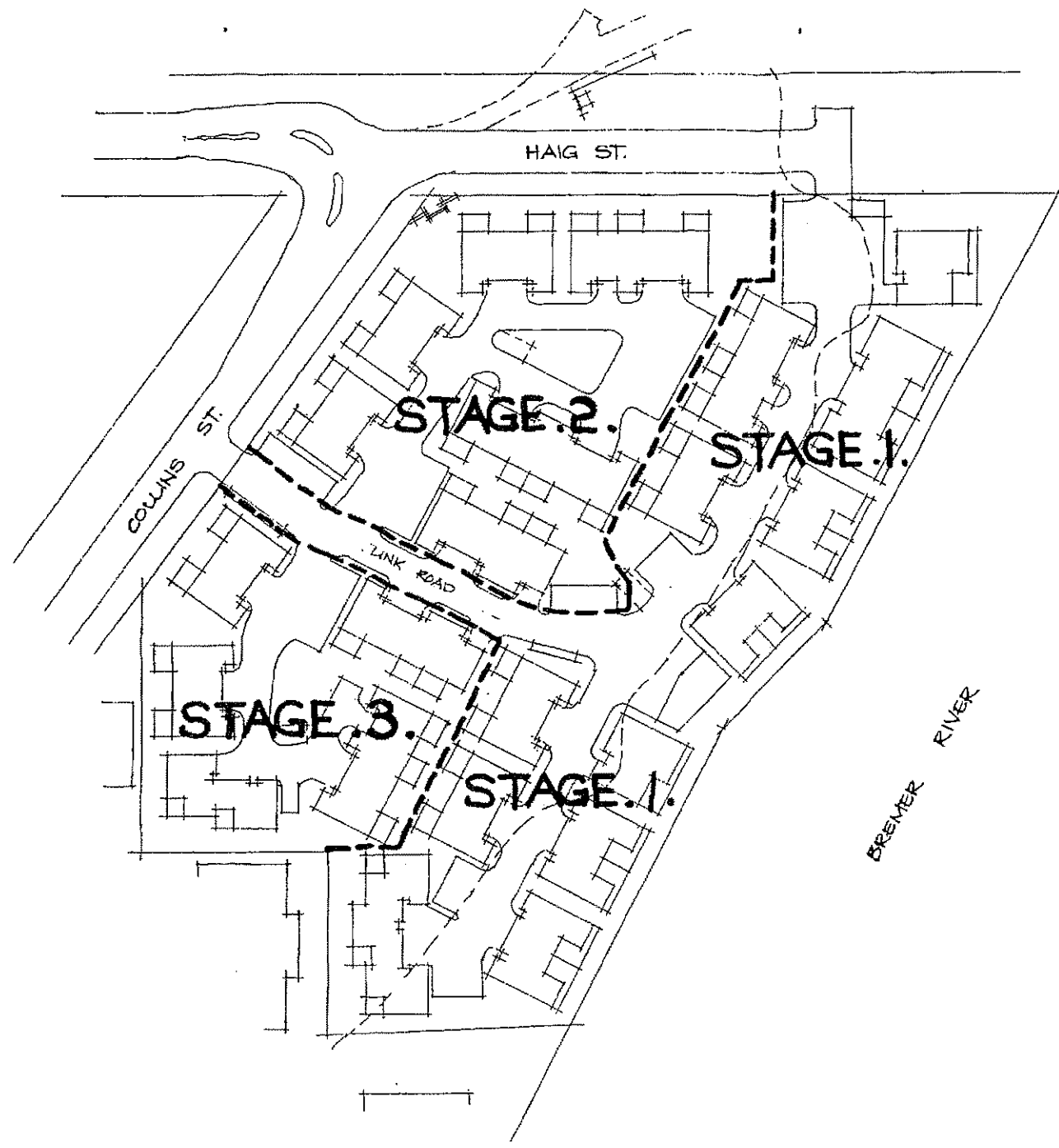
NO.	DATE	DESCRIPTION

REVISIONS

NO.	DATE	DESCRIPTION

SCALE: 1:200
DATUM: AHD
ASSOCIATED CONSULTANTS:
EAST COAST BUILDING DESIGN & DRAFTING
CLIENT:
DAVID FARLEY
SITE:
 2 Haig Street, Brassall
 Lot 2 on RP 857016
 Parish of Brassall
 County of Churchill
 Site Area: 1.282 Ha

ANNEXURE 7
Drawing F0235-01 AJS Surveys



STAGE 1.
 Stage 1 shall include:
 Front front dwellings 1-12
 & Inland dwellings 13-24
 All roads/driveways including the link-road to Collins St.
 All upgrades to Haig St. to connect to the property.
 All landscaping, courtyards & external services for stage 1.
 Provision made for infrastructure (sewer & stormwater) reticulation.
 Sediment control for vacant land of stages 2 & 3.
 Subdivision of land into 3 parcels with necessary easements over the link road to Collins St. & all fitting to be in place with Stage 1 & prior to commencement of stages 2 & 3.
 Also refer council imposed conditions & drawings/reports by others

STAGE 2.
 Stage 2 shall include:
 Front frontage dwellings 25-33
 & Inland dwellings 34-52
 All landscaping, courtyards & external services for stage 2.
 Connection of services & completion of footpath reserve adjacent to residential stage 2 works.
 Construction entrance for Stage 2 shall be direct off Collins St. for all heavy machinery to prevent damage & disruption to link road.

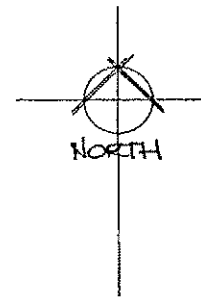
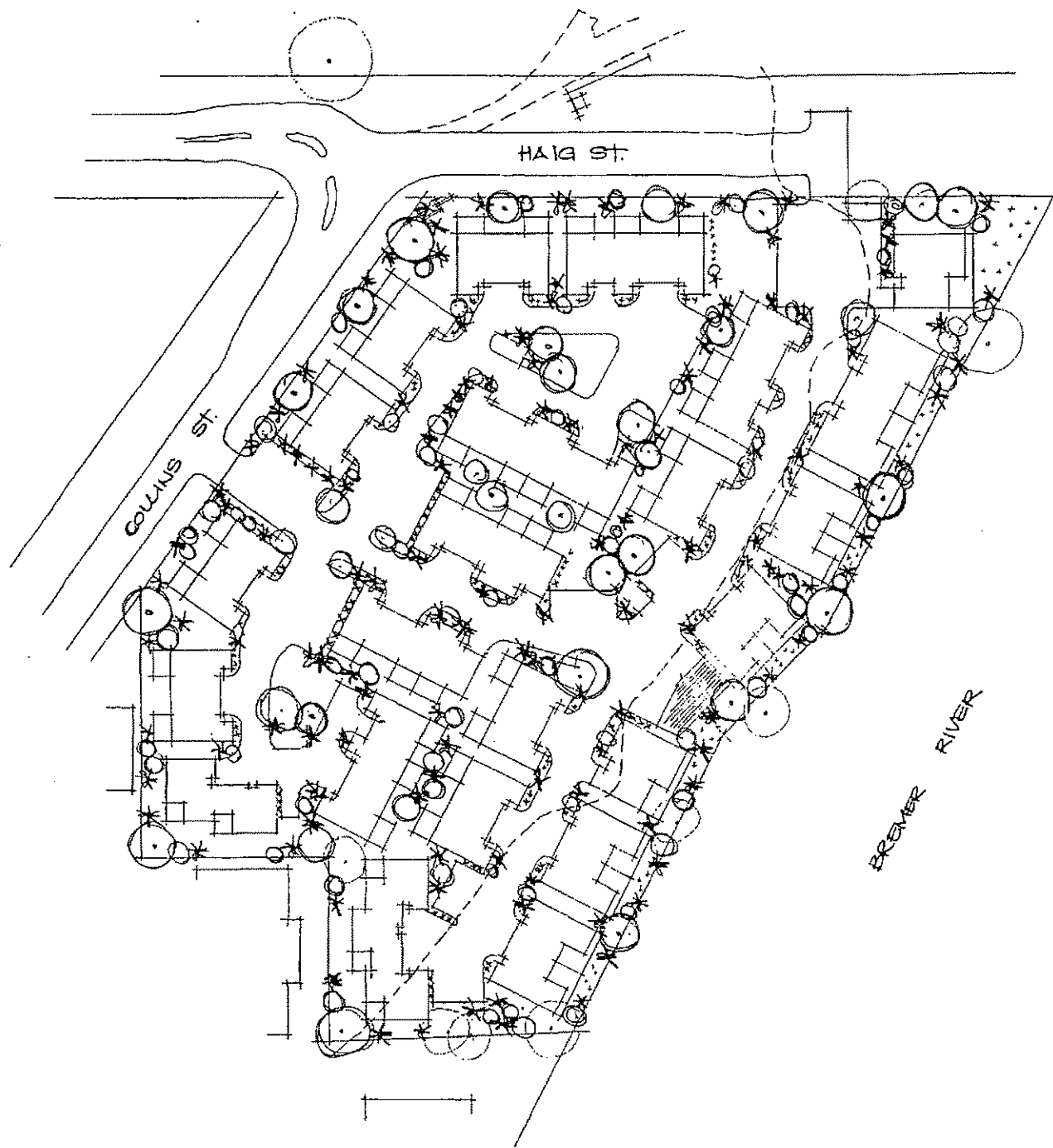
STAGE 3.
 Completion of all remaining dwellings
 Front frontage dwellings 34-35
 & Inland dwellings 36-45
 All remaining landscape, services footpaths & any repairs, etc.
 Construction entrance for Stage 3 shall be direct off Collins St. for all heavy machinery to prevent damage & disruption to link road.

STAGING LAYOUT PLAN.

Ph: 3262 1200 Fax: 3262 1600 Email: ecbd@powercorp.com.au Suite 11 - 713 Sandgate Road, Clayfield, Qld, 4011 ECBDO Pty Ltd (ACN 101 335 077) ODSA License No. 1010199				Issue: 1 Date: 20-02-05
TOWNHOUSE DEVELOPMENT		Job No: 05-028		
COLRAN PTY LTD		Draw No: DA-7		
Address: 2. HAIG ST. BRASSALL		Scale: 1:500 (A1)		

ANNEXURE 6

Drawing DA-7 Staging Layout Plan *East Coast Building Design & Drafting*



LANDSCAPE LEGEND

- EXISTING MATURE TREE
TYPICALLY QUINS 10-20m
- LARGE PLANT GROWING TREES
MATURE HT APPROX 10m
- SMALL TREES
MATURE HT 3-5m
- * SHRUBS 1-3m
- x LOW PLANTS OR
GROUND COVERS < 1m

EACH PRIVATE COURTYARD WILL
HAVE TURFED AREAS & GARDENS

COMMUNITY PARKLANDS WILL
HAVE TURFED AREAS WITH
LARGE SHADE TREES

STREET FRONTAGES WILL HAVE
SCREEN FENCES & A WIDE
RANGE OF UNPLANTED FOLIAGE
TO BLOCK 50% OF BUILDINGS

THE RIVER FRONTAGE IS ALREADY
VISUALLY BLOCKED BY TREES
FURTHER DENSE PLANTING & TREES
WILL BLOCK BUILDINGS FROM VIEW
CHAIN WIRE OR NON SCREENING TYPE
FENCES WILL INTEGRATE LANDSCAPE

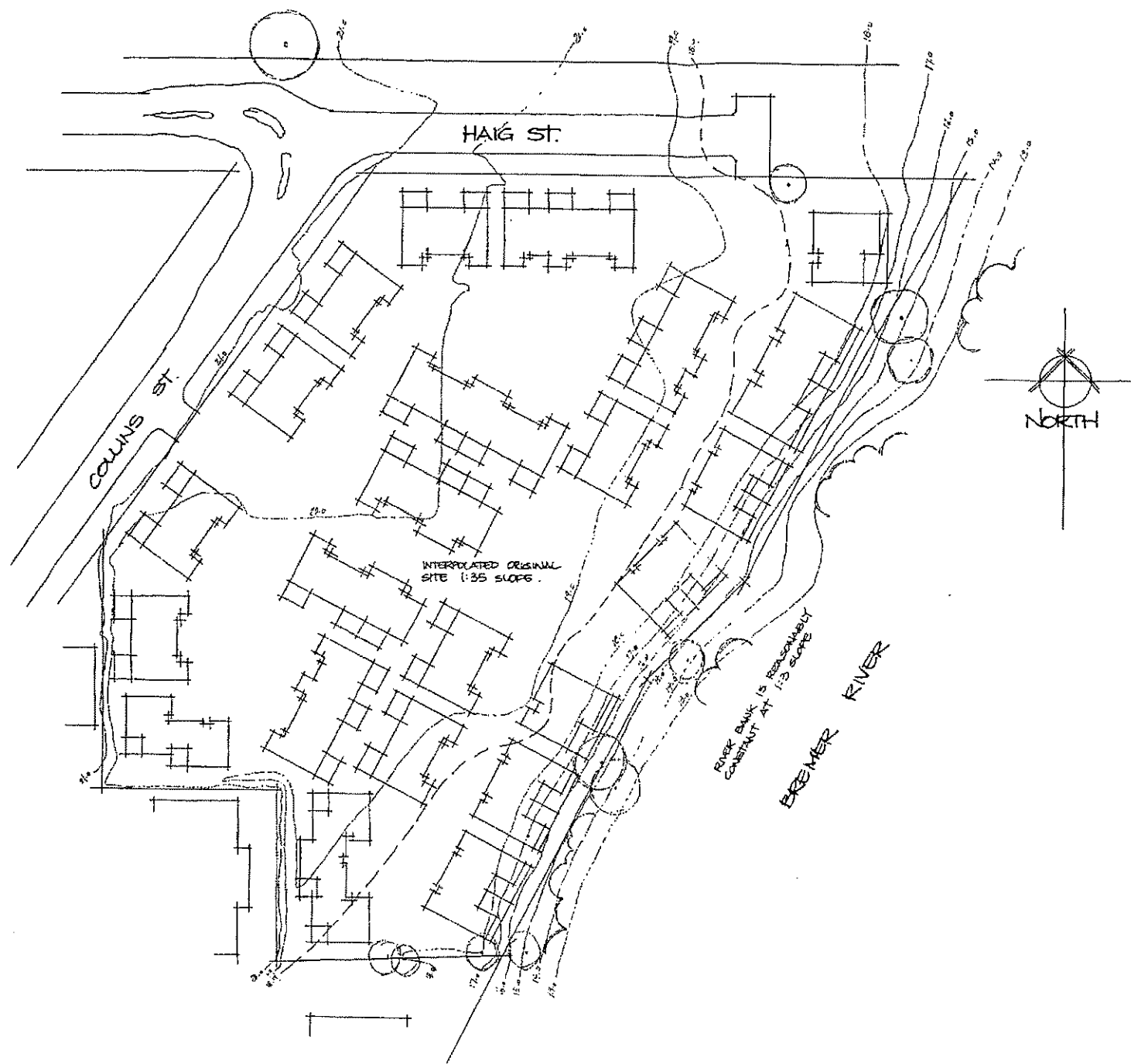
ALL AREAS NOT PAVED OR TURFED
WILL BE DENSELY PLANTED

LANDSCAPE INTENT PLAN.

Ph: 3262 1200 Fax: 3262 1600 Email: ec@eastcoast.com.au Suits 11 - 112 Sandgate Road, Clayfield, Qld, 4013 ECHOO Pty Ltd (ACN 101 135 077) QDCA License No: 1026190			Issue	Author	Date
			1 PA SET	GW/MS	05-02-05
	Project	TOWNHOUSE DEVELOPMENT		Job No: 05-028	
	Client	COURAN PTY LTD.		Dwg No: DA-6	
	Address	2 HAIG ST. BRASSALL		Scale: 1:500 (A1)	

ANNEXURE 5

Drawing DA-6 Landscape Intent Plan *East Coast Building Design & Drafting*



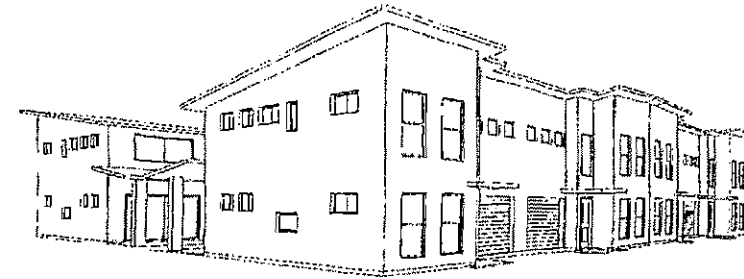
CONTOUR OVERLAY PLAN.

SHOWING EXTENT OF TREE RETENTION.

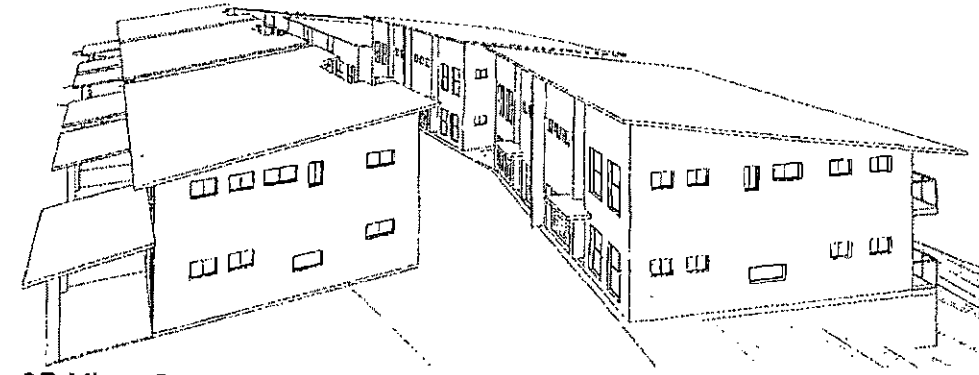
Ph: 3262 1200 Fax: 3262 1600 Email: info@eastcoast.com.au Suite 11 - 713 Sandgate Road, Clayfield, Qld, 4011 FEDERAL Pty Ltd (ACN 101 133 077) QBSA License No. 1010790			Issue: PA 345 Author: PA 345 Date: 12-12-05
	Project: TOWNHOUSE DEVELOPMENT	Job No: 05-028	
	Client: COLRAN PTY LTD	Draw No: PA-5	
	Address: 2 HAIG ST. BRASSAU	Scale: 1:500 (A1)	

ANNEXURE 4

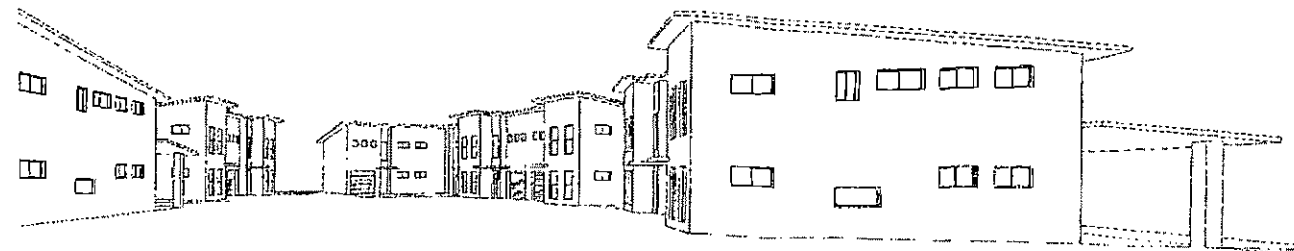
Drawing DA-5 Contour Overlay Plan East Coast Building Design & Drafting



1 3D View 1



2 3D View 2

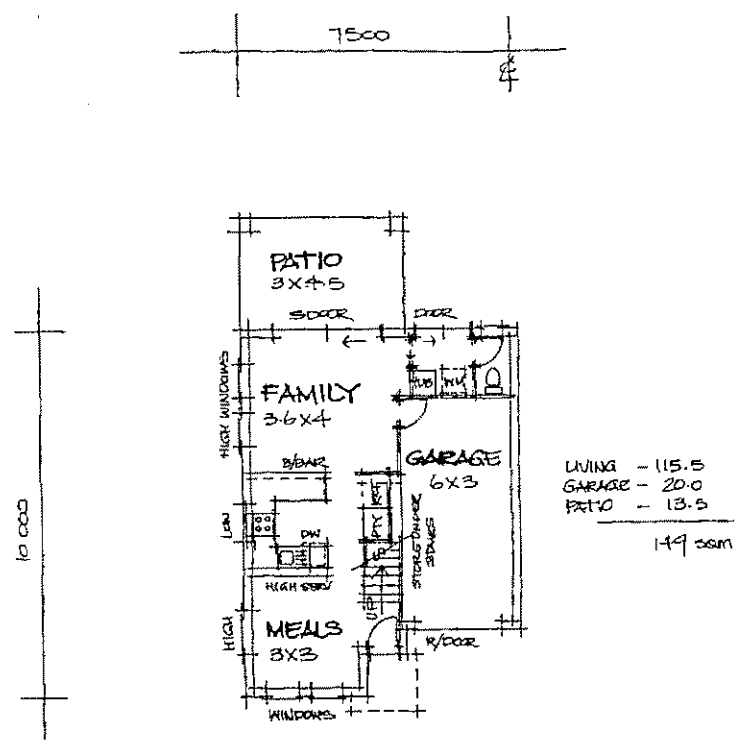


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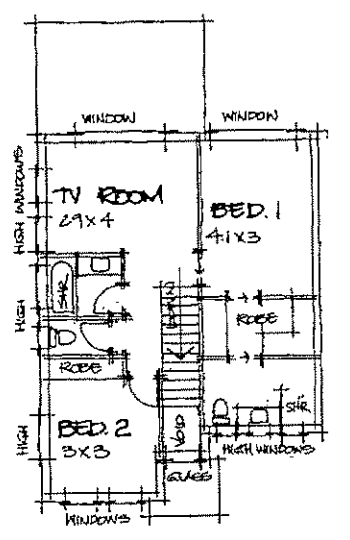
Ph: 3262 1200 Fax: 3262 1600 Email: ecdb@proactive.com.au Suite 11 - 713 Sandgate Road, Clayfield, Qld, 4011 ECRRB Pty Ltd (ACN 101 135 077) CDMA License No. 1010150		EAST COAST BUILDING DESIGN & DRAFTING		Issue: 1 DA-5-05	Author: Date: 1-12-05
Chartered Member 	Project: TOWNHOUSE DEVELOPMENT	Job No: 05-028			
Client: COLRAN PTY LTD	Address: 2 HAIG ST. BRASSALL		Drawing: DA-4		
			Scale: 1:100 (A1)		

ANNEXURE 3

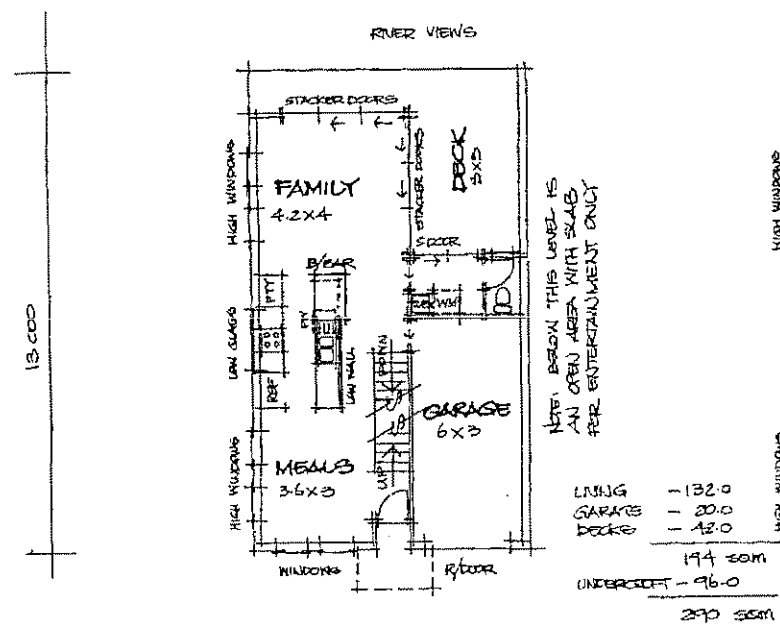
Drawing DA-4 Typical Sections and 3D Views *East Coast Building Design & Drafting*



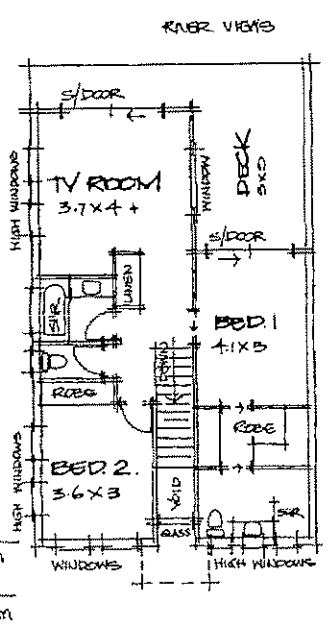
TYPICAL LAYOUT - A & B
TWO STOREY TOWNHOUSE



TYPICAL LAYOUT - C
TWO STOREY TOWNHOUSE



RIVER FRONT ONLY - E & F
TWO STOREY TOWNHOUSE



RIVER FRONT ONLY - G
LOWSET TOWNHOUSE

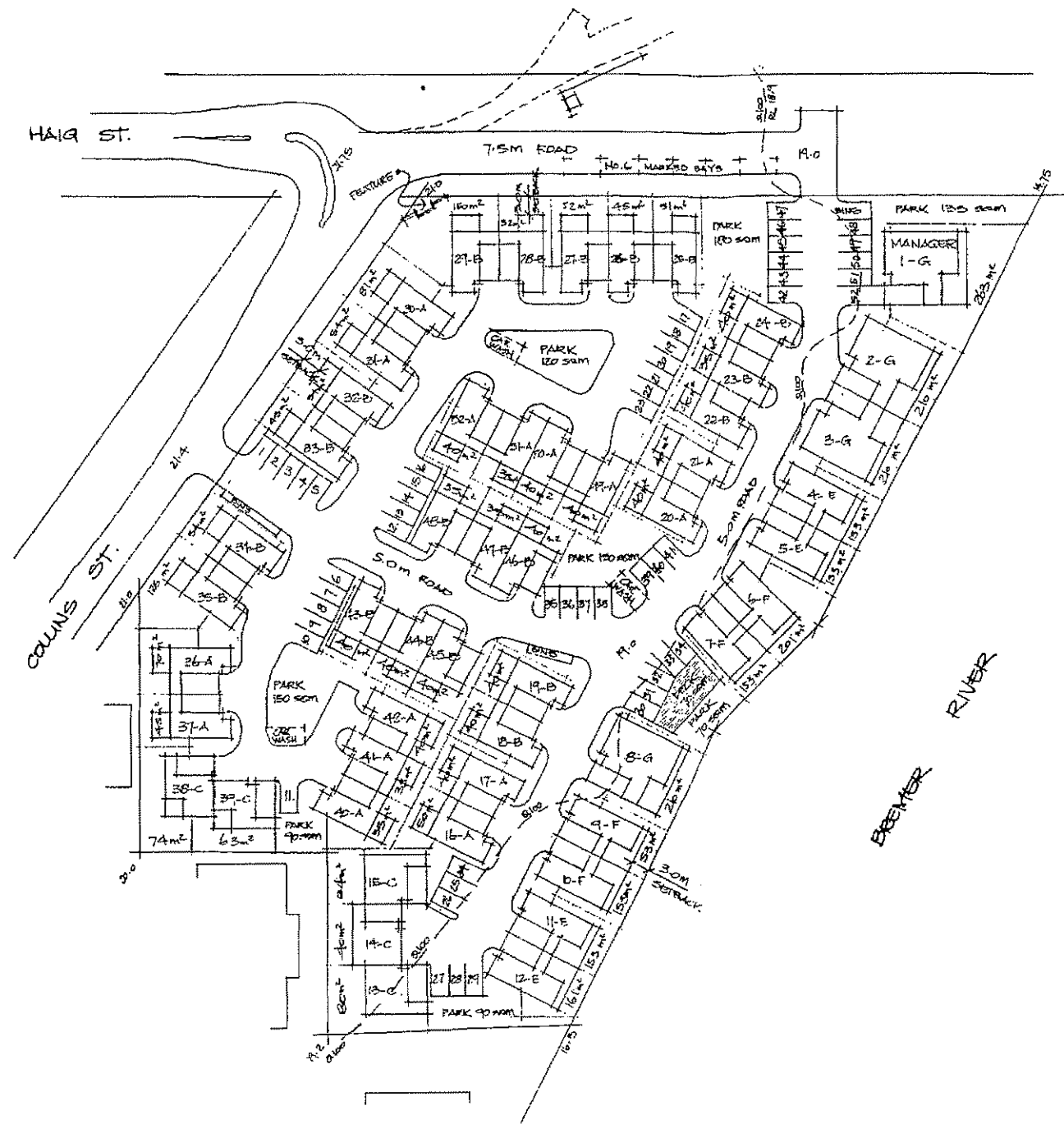
THE ALTERNATE LAYOUTS TO THOSE SHOWN INCLUDES A THIRD BEDROOM UPSTAIRS IN LIEU OF TV/MEDIA RM. REFER. SITE LAYOUT PLAN FOR INDICATIVE SCATTERING.

INDICATIVE FLOOR LAYOUTS.

Ph: 3262 1200 Fax: 3262 1600 Email: east@eastbuildingdesign.com.au Suite 11 - 7-3 Sandgate Road, Clayton, Vic, 3168 EGD410 Pty Ltd (ACN 101 135 077) CRMA Licence No: 1010150	EAST BUILDING DESIGN & DRAFTING	Issue 1 DA - PRELPT VERSION 2 DA - SGT	Author OWEN	Date 23-11-2005 21-12-2005
Project TOWNHOUSE DEVELOPMENT	Job No. 05-028			
Client COLRAN PTY LTD	Draw No. DA-2			
Address 2 HAIG RD. BRASSALL	Scale 1:100 (AI)			

ANNEXURE 2

Drawing DA-2 Indicative Floor Layouts *East Coast Building Design & Drafting*



SITE ANALYSIS

LOT 2, RP 851216
 Parish Brassall
 County Churchill
 1.282 ha.

TOTAL NO. OF DWELLINGS - 52
 No. 2 bed units - 28
 No. 3 bed units - 24
 SITE DENSITY - 40.56 du/ha (50 du/ha Max)

RECREATION AREAS:
 Private courtyards/decks - 4242 m²
 Community parkland areas - 1055 m²
 5297 m² (3840m² Regd)

CAR PARKING:
 Enclosed garages - 52
 Visitor parking - 52
 Chattrac - 6
 110 (104 Regd)

CAR WASHING BAYS - 3 (2.6 Regd)
 Wash bays are grass paving & slope into adjoining parkland, road & car.

The indicative floor layouts show some units with 2 Beds + tv. space & others with 3 beds. All calculations, loadings, etc. have assumed that all 2 storey townhouse units are 3 Bed units to allow maximum flexibility for resale. This development will be staged - refer attached staging plan for details of inclusions.

INDICATIVE SITE LAYOUT.

Ph: 3262 1200 Fax: 3262 1600 Email: ecd@eastdesign.com.au Suite 11 - 111 Sargeant Road Clayfield, Qld, 4011 ECR000 Pty Ltd (GST 101 135 071) SSSA Licence No. 1010106				Issue: 1 Date: 2-12-05 Author: DA - SRT Date: 20-12-05	
QUANTIFIED 		TOWNHOUSE DEVELOPMENT		Job No: 05-028	
Client: COLRAN PTY. LTD.		Access: 2. HALSG. ST. BRASSALL		Drawn: DA - I Scale: 1:500 (A1)	

4.5 Recreational Space

The proposed development is required to provide recreational space in accordance with the Residential Code (Part 12, Div 6) of the Ipswich Planning Scheme 2004.

The total requirement of recreation space across the development is as follows:

28 x 2 Bed Units @ 60m² of recreational space each = 1680m² (communal/private)
24 x 3 Bed Units @ 75m² of recreational space each = 1800m² (communal/private)
Total recreational space required = **3480m²** (communal/private)

The proposed development has provided the following recreational space within the development:

Private courtyards / decks – 4242m²
Communal open space – 1055m²
Total recreational space provided = **5297m²**

The proposed development has more than adequately addressed the requirements for recreational space provision. The site adjoins public open space (Mihi Junction Reserve) that could also be utilised by residents of the development for useable recreational space.

5.0 TOWN PLANNING ASSESSMENT

5.1 Overview

The Ipswich Planning Scheme 2004 prescribes the relevant assessment criteria for the proposed development.

5.2 The Application

The application is for a Development Permit for a Material Change of Use to enable use of the site for multiple residential attached dwellings. The description of the proposed development is described as inconsistent with the land use definitions contained in the Planning Scheme under Part 4 – Urban Areas, Division 7, Recreation Zone, Section 4.17.5 (3)(l).

5.3 Zoning and Use Class / Definition of the Proposal

The Zoning of the subject site in the Ipswich Planning Scheme 2004 is Recreational. The site is zoned as such due to previous historic approvals for recreational purposes such as the existing gymnasium and tennis courts, and due to the location of the 1 in 100 flood line. The use class and definition of the proposal is – Multiple Residential.

The definition of multiple residential is described in the Ipswich Planning Scheme 2004 as:

“Multiple Residential”

(1) *“Multiple Residential” means the residential use of premises if there are three or more dwellings on any one lot.*

(2) *The term includes the use of premises for—*

(a) *apartments;*

(b) *boarding house, if providing permanent accommodation;*

(c) *caravan park, if providing permanent accommodation;*

(d) *nursing home;*

(e) *retirement community; or*

(f) *townhouses.*

(3) *The term does not include the use of premises for “Dual Occupancy”, “Institutional Residential” or “Temporary Accommodation”.*

5.4 Development Requirements

5.4.1 Relevant Assessment Codes

As identified in Table 4.17.1 of division 17 in the Ipswich Planning Scheme 2004 the proposal is required to be assessed against the following codes;

- Urban Areas Code (Part 4)—particularly the specific outcomes in section 4.3.3 and the
- Recreation Zone (Part 4, division 17)
- Residential Code (Part 12, division 6)
- Parking Code (Part 12, division 9)

The application as identified in Table 4.17.1 of division 17 the proposed type of development is subject to the Impact Assessment Process.

This application will also provide demonstration that the proposed development has been designed in accordance with the provisions of the Residential Medium Density Zone.

The following table identifies the major requirements of the relevant assessment criteria.

DEVELOPMENT REQUIREMENTS

PROPOSAL	
<p>SUMMARY OF REQUIREMENTS</p> <p>Recreation Zone (Part 4, division 17)</p> <p>(2) The overall outcomes sought for the Recreation Zone are the following—</p> <p>(a) The Recreation Zone provides for the development of an integrated open space network including the use of land for—</p> <ul style="list-style-type: none"> (i) both active and passive recreation opportunities within parks; (ii) linear/riparian corridors as open space links; and (iii) private and public sporting/recreation facilities. 	<p>The proposal does not obstruct the existence of an integrated open space network in the area. Land situated between the subject site and the river has been previously dedicated for the open space network. The proposed development will not have a detrimental impact on this existing area. The proposed Riverfront dwellings have been designed so that the area underneath the floor of the proposed dwellings are excavated and treated so that it is available for private recreational purposes. These recreational areas will adjoin the area that is identified as open space or riverside parklands that will eventually develop as walking tracks and parkland, integrated with other public open space such as the adjacent Mihi Junction Reserve.</p>
<p>Residential Code (Part 12, division 6)</p> <p>12.6.4 Residential Uses and Works – Effects of Development – General Provisions</p> <p>Density and Character</p> <p>(1) Specific Outcomes</p> <p>Uses and works reflect the desired built character, maintain amenity and protect and enhance important townscape and landscape elements having regard to—</p> <ul style="list-style-type: none"> (a) dwelling density; (b) building height; (c) lot sizes and dimensions; (d) boundary clearances and the provision of space around buildings; (e) the location and design of parking areas; (f) the provision of recreation space; (g) access to natural light and ventilation; (h) privacy; (i) noise attenuation; (j) vegetation protection; (k) landscape treatment; (l) places of cultural significance or streetscape value; and (m) the form, scale, bulk, style, siting, orientation, roof lines, materials and detailing of 	<p>The proposed development is well suited to the site due to the nature of the surrounding area. The site provides for a high level of residential amenity due to its favourable location on the river and its proximity to essential services such as schools and shopping centers.</p> <ul style="list-style-type: none"> (a) The proposed use will be similar to the development that it is directly adjacent to. The proposed dwelling density will be suited to a RM2 zoning which is same as the adjoining site. The proposed development is approx 40du/ha. (b) The proposed building height will be up to 2 storeys which is consistent with the RM2 zoning and surrounding residential dwellings. (c) The subject site will be the subject of a community title scheme. (d) The proposed development has provided the required building setbacks from road frontages and adjoining uses. (e) Parking areas have been designed within the site at the required rates prescribed in the Ipswich Planning Scheme. Parking spaces have been located to ensure minimal impacts on dwellings with respect to noise and light affects. The proposed development has provided a total of 131 car parking spaces, comprised of 52 enclosed garages, 52 visitor / residence parking provided in the common area, 22

buildings.

tandem parking spaces available in conjunction with the enclosed garages and 6 on-street parking spaces that have been provided to be used in conjunction with the adjoining public open space.

(f) The proposed development has provided 4242 m² of private recreation space and 1055m² of communal recreation space throughout the development as indicated on Drawing DA-1 Site Plan *East Coast Building Design & Drafting* and Drawing DA-2 Internal Layouts *East Coast Building Design & Drafting* (annexure 1&2). The site is located adjacent to the Council owned open space that could be utilised by the residents for recreational purposes.

(g) The proposal has more than adequate access to natural light and ventilation due to the provision of space between dwelling groupings and adjoining uses.

(h) The proposed development will protect privacy of dwellings within the site and adjoining uses through the adequate provision of space, and screening of private and communal recreation spaces.

(i) The proposed development will provide noise attenuation through the use of appropriate building materials for the dwellings.

(j) There is no existing vegetation on the site.

(k) The proposed development will provide adequate landscaping to delineate communal and private space within the development. Landscaping will also be used to delineate vehicular access and manoeuvring areas.

(l) The proposed development is not situated in an area of cultural significance or streetscape value.

(m) The form of the proposed dwellings is consistent with that of the surrounding area particularly the adjoining development.

The scale of the proposed development is consistent with the RM2 designation and has a density of 40.56 du / ha at 1 and 2 storeys.

The bulk of the development is minimised through the use of landscaping and open space which breaks up the built form.

The style of the proposed dwellings will be single and two storey brick veneer buildings which is consistent with the adjoining development. Proposed dwellings will be articulated with appropriate materials and include doors and windows to avoid large expanses of blank walls. Please find attached Drawing DA-4 Typical Sections and 3D Views *East Coast Building Design & Drafting* (Annexure 3) that indicates the placement of windows and doors.

The siting of the proposed dwellings enables more than adequate vehicular and pedestrian manoeuvring through the site.

Proposed dwellings located on street frontages are parallel with the street.

<p>Parking Code (Part 12, division 9)</p> <p>The parking code requires the following for the proposed development; Multiple Residential (incorporates the following uses)— (g) townhouse.</p> <ul style="list-style-type: none"> • 1 covered space per dwelling for exclusive resident use; (52) • 0.5 spaces per dwelling for visitor parking; (26) • 0.5 spaces per dwelling (to be located in the common area) for use by both residents or visitors; plus (26) • 1 vehicle wash bay per 20 dwellings.(2.6) 	<p>The proposed development is required to provide 104 car parking spaces and 2.6 wash bays. The development has provided parking as follows;</p> <ul style="list-style-type: none"> • 52 enclosed garages (attached to dwellings) • 52 visitor / residence parking spaces provided in the common area. • 6 on-street parking spaces to be used in conjunction with the adjoining public open space. • The proposed development has provided 3 wash bays <p>There are 110 Parking spaces and 3 wash bays.</p>
<p>Residential Medium Density Zone (Part 4, Div 6)</p> <p>4.6.2 Overall Outcomes for Residential Medium Density Zone</p> <p>(2) The overall outcomes sought for the Residential Medium Density Zone are the following—</p> <ul style="list-style-type: none"> (a) Uses within the Residential Medium Density Zone are provided with full urban services such as reticulated water, sewerage, sealed roads, parks and other community facilities. (b) Uses and works within the Residential Medium Density Zone are located and designed to maximise the efficient extension and safe operation of infrastructure. (c) Uses and works within the Residential Medium Density Zone are located, designed and managed to— <ul style="list-style-type: none"> (i) maintain residential amenity and streetscape quality; (ii) maintain or enhance aspects of local character; (iii) be compatible with other uses and works; (iv) maintain the safety of people, buildings and works; and (v) avoid significant adverse effects on the natural environment. 	<p>The proposed development will be able to achieve the overall outcomes sought for the Residential Medium Density Zone. The proposed development will be provided with the full urban services such as reticulated water, sewerage, sealed roads, parks and is located in close proximity to existing community facilities.</p> <p>The proposed design of the development will ensure existing residential amenity is preserved. The proposed development is consistent in scale and intensity with that of other development in the area. The proposed development is consistent with the RM2 zoning requirements of the Ipswich Planning Scheme. There is an existing example of a RM2 level residential development in Collins street which creates a precedent for that type of development within the area.</p> <p>The proposed development will improve the existing streetscape by creating a clear and legible frontage to both the Collins and Haig Street. The site currently has an uncluttered and disjointed frontage to both Collins and Haig Street due to the existing commercial operation not being operational and therefore not maintained.</p>
<p>(2) Sub Area – Residential Medium Density: 2 Storeys (RM2)</p> <p>(a) Specific Outcomes</p> <p>(i) Uses and reconfiguring provide for medium density housing taking advantage of the area's characteristics and location.</p>	<p>The proposed development is located in close proximity to essential services (refer figure 2) and is able to take advantage of the area's characteristics, which are consistent with that of a medium density residential area.</p>

<p>(ii) The established low rise urban profile of the area is protected.</p>	<p>The density of the proposed development does not exceed 50 dwellings per hectare at two storeys in height. The proposed density of the site is approx 40 du/ha and has provided more than adequate recreational space and parking.</p>
<p>(b) Probable Solution -- for sub-section (2)(a) The overall density does not exceed 50 dwellings per hectare at two storeys in height.</p>	

5.4.2 Overlay Codes

Overlays:	Relevant (Y/N)
Overlay 1: Bushfire Risk Areas	N
Overlay 2: Key Resource Areas, Buffers and Haul Routes	N
Overlay 3: Mining Influence Areas	N
Overlay 4: Difficult Topography	Y ¹
Overlay 5: Flooding & Urban Stormwater Flow Path Areas	Y ²
Overlay 6: Buffers to Highways & Regional Transport Corridors	N
Overlay 7A: Defence (Area Control) Regulations and Obstruction Clearance Surfaces	Y (45m)
Overlay 7B: Operational Airspace, Wildlife Attraction & Lighting Issues	Y (6km)
Overlay 7C: 2006 Australian Noise Exposure Forecast (ANEF) Contours	Y (45m)
Overlay 7D: Explosive Storage Safeguard, Public Safety Areas & Purga Rifle Range	N
Overlay 7E: Unexploded Ordnance Areas	N
Overlay 8: Motor Sport Buffers	N
Overlay 9: Waste Water Treatment Buffers	N
Overlay 10: Swan Bank Power Station Buffer	N
Overlay 11: High Pressure Oil and Gas Pipeline	N
Overlay 12: Warrill Creek Water Catchment	N
Overlay 13: High Voltage Electricity Transmission Lines	N
Overlay 14: Rail Corridor Noise Impact Management	N

¹Overlay 4: Difficult Topography

The subject site is not directly affected by the difficult topography overlay due to the proposed building envelopes of the development. The site is adjacent to land dedicated to the Council for park and recreation purposes. This piece of land is affected by the difficult topography overlay.

²Overlay 5: Flooding & Urban Stormwater Flow Path Areas

The Q100 flood line affects part of the subject site. The relevant flood level for the Q100 line on that site has been identified as 18.9m. Please find attached a detailed survey of the subject site. The proposed riverfront development aspect of the proposal will build out over the flood line using appropriate construction techniques. This aspect of the development will be the subject of a detailed hydrology study. The intent of the riverfront development will be to excavate an area below the ground floor of the dwellings in order to increase the flood immunity of the subject site. The hydrology study will be done in conjunction with an engineering study and these will address the appropriate sections of the Flooding and Urban Stormwater Flow Path Areas – Overlay Code (Division 4, Part 11 (sect 11.4.7)).

6.0 CONCLUSION

This report has provided a town planning assessment of the proposed Multiple Residential development to be located at 2 Haig Street, Brassall being Lot 2 on RP857016.

The site is currently a recreational use that includes a clubhouse, gymnasium, and outdoor tennis and volley ball courts.

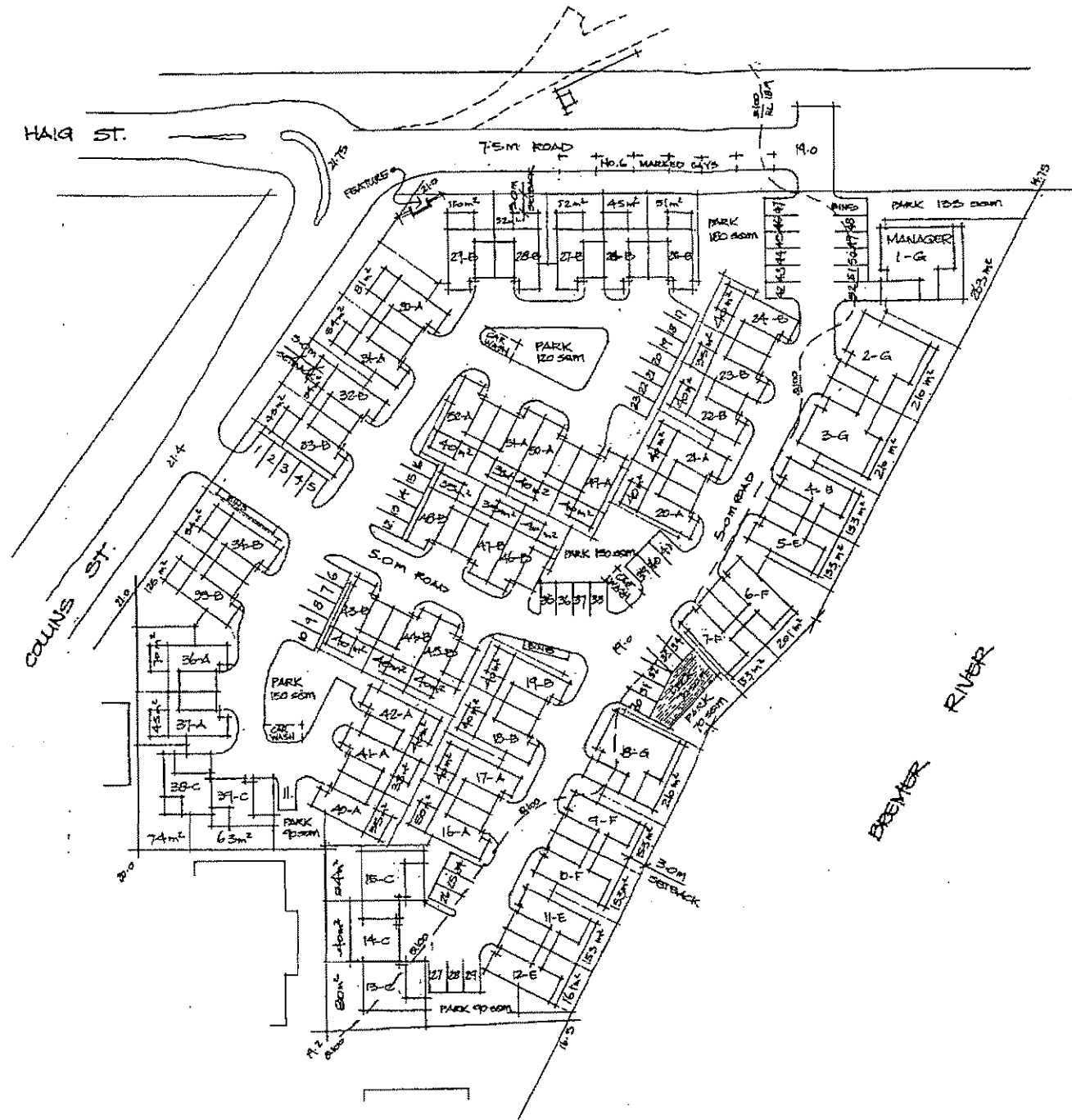
This assessment has identified how the proposed development will provide residential land and dwellings that respond to community needs and locational constraints and opportunities. The proposed increase in residential density on the subject site is consistent with having good access to commercial, community, employment and transport facilities. The proposed development has used the Residential Medium Density (RL2) zone requirements of the Ipswich Planning Scheme 2004 as a basis for its design. Due to similar types of development in the area, there is a precedent for the proposed higher intensity use of the land, than that of its current zoning.

The proposed development has been designed to comply with the major requirements of the Residential Code (Part 12, Div 6) of the Ipswich Planning Scheme 2004 for the provision of recreational space and parking facilities.

The proposal is appropriate from a town planning viewpoint and should be approved subject to reasonable and relevant conditions.

ANNEXURE 1

Drawing DA-1 Indicative Site Layout *East Coast Building Design & Drafting*



SITE ANALYSIS
 LOT 2, RP 85716
 Parish Brassall
 County Churchill
 1.292 Ha.

TOTAL NO. OF DWELLINGS - 52
 No 2 bed units - 28
 No 3 bed units - 24
 SITE DENSITY - 10.56 du/ha (50 du/ha Max)

RECREATION AREAS:
 Private courtyards/decks - 4242 m²
 Community parkland areas - 1055 m²
 5297 m² (3840m² Reqd)

CAR PARKING:
 Enclosed garages - 52
 Visitor parking - 52
 On-street - 6
 110 (104 Reqd)

CAR WASHING BAYS - 3 (2.6 Reqd)
 Wash bays are grass paved & slope into adjoining parkland / rec areas.

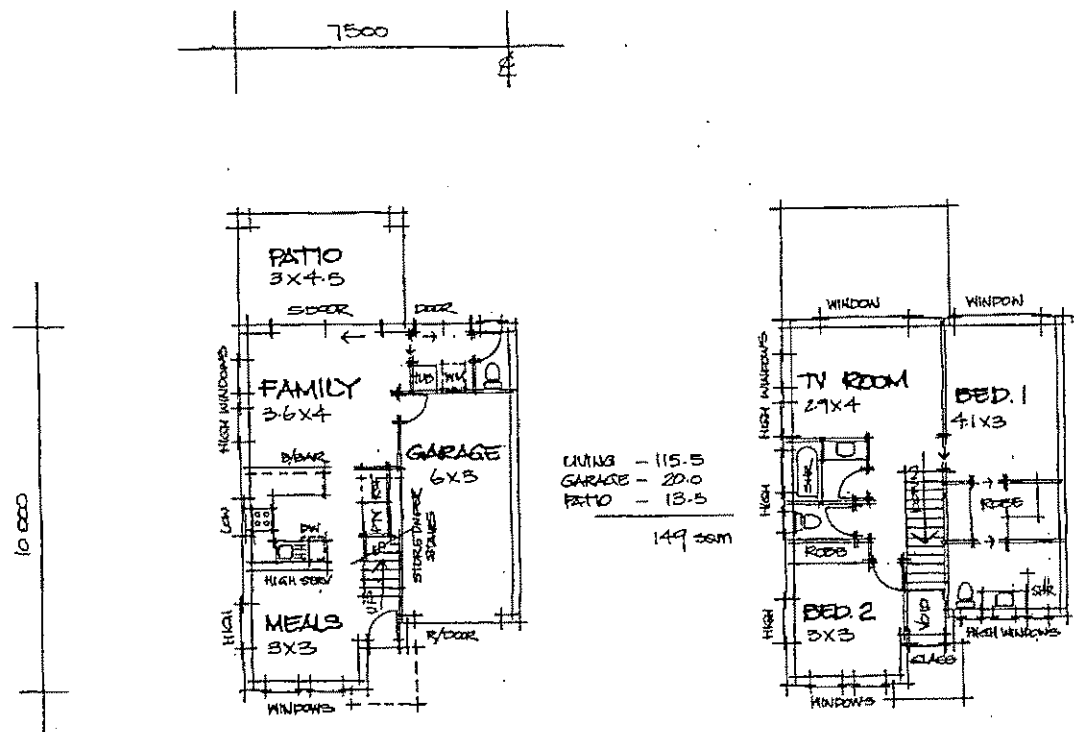
The indicative floor layouts show some units with 2 Beds + tv space & others with 3 beds. All calculations, loadings, etc have assumed that all 2 storey townhouse units are 3 Bed units to allow maximum flexibility for resale. This development will be staged - refer attached staging plan for details & inclusions.

INDICATIVE SITE LAYOUT.

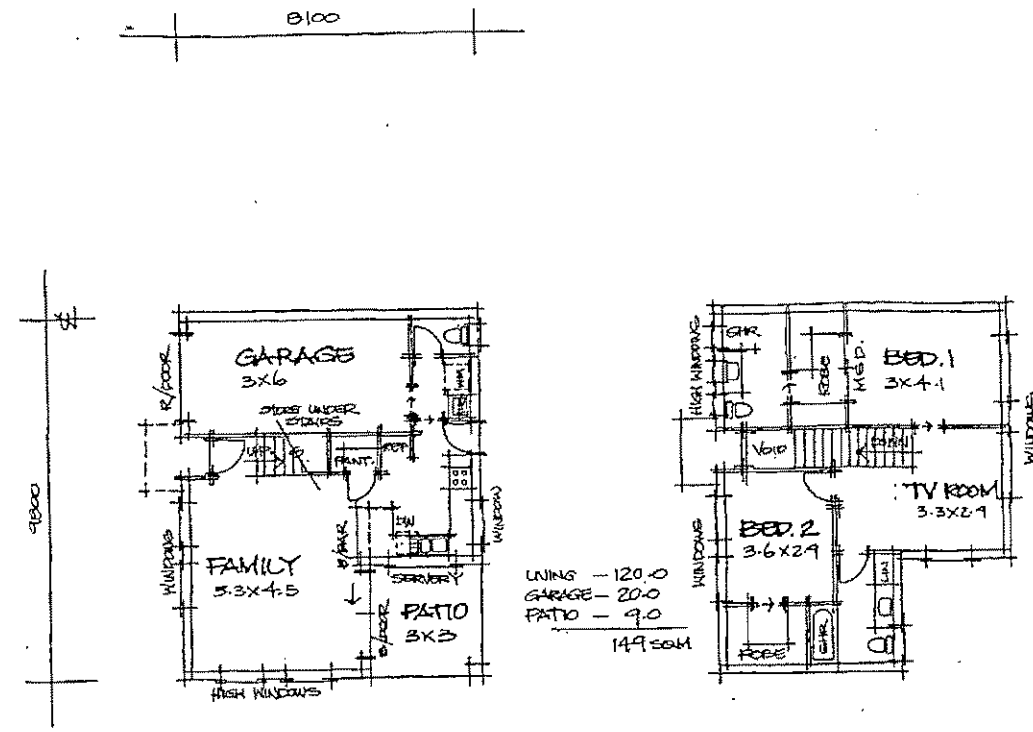
Ph: 3262 1200 Fax: 3262 1600 Email: ec4@powerup.com.au Site 11-713 Sarsgore Road, Clayfield, Qld, 4011 EC200 Pty Ltd (ACH 101 125 077) OBSA License No. 1010190		Issue	Author	Date
		1.1 - DRAFT VERSION DL SET	CLARA OWNER	6-12-05 22-12-05
CHARTERED ARCHITECT 	Project: TOWNHOUSE DEVELOPMENT Client: COLRAN PTY. LTD. Address: 2. HAIG. ST. BRASSALL	Job No: 05-028 Date No: CA-1 Scale: 1:500 (A1)		

ANNEXURE 2

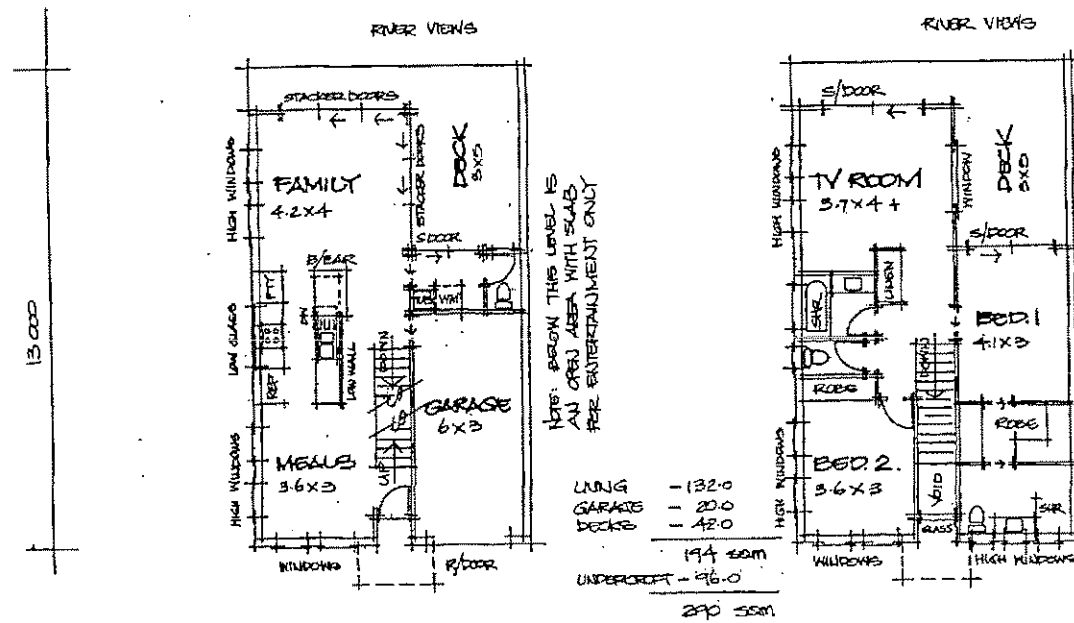
Drawing DA-2 Indicative Floor Layouts *East Coast Building Design & Drafting*



TYPICAL LAYOUT - A & B
TWO STOREY TOWNHOUSE

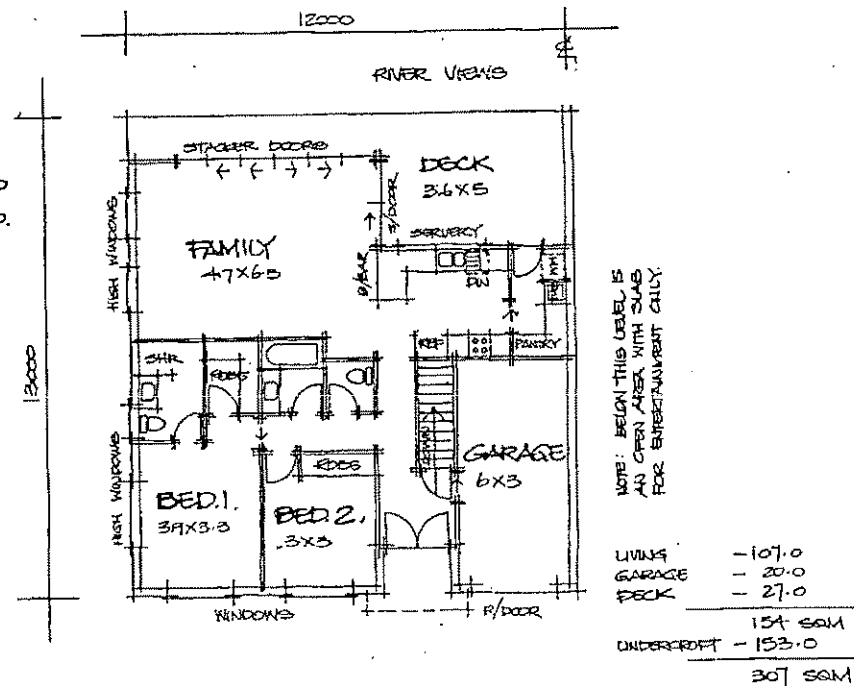


TYPICAL LAYOUT - C
TWO STOREY TOWNHOUSE



RIVER FRONT ONLY - E & F
TWO STOREY TOWNHOUSE

THE ALTERNATE LAYOUTS TO THOSE SHOWN INCLUDES A THIRD BEDROOM UPSTAIRS IN LIEU OF TV/MEDIA RM. REFER SITE LAYOUT PLAN FOR INDICATIVE SCATTERING.



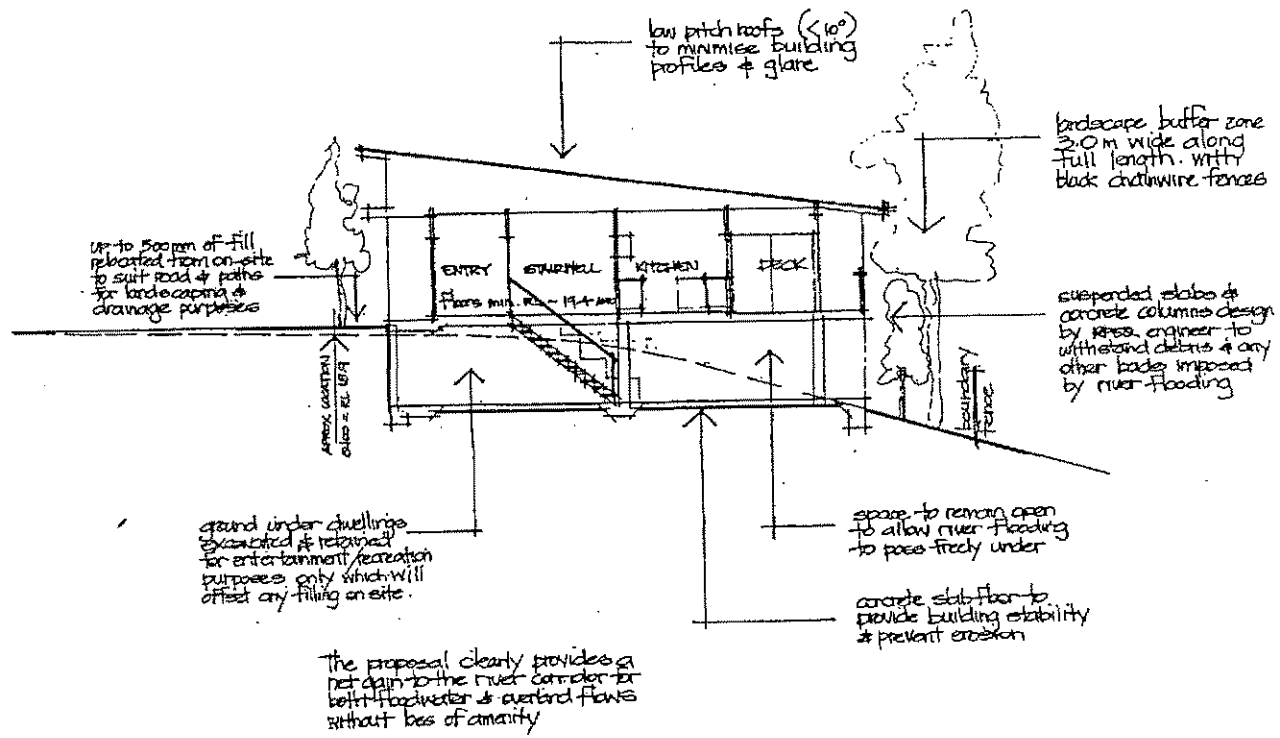
RIVER FRONT ONLY - G
LOWSET TOWNHOUSE

INDICATIVE FLOOR LAYOUTS.

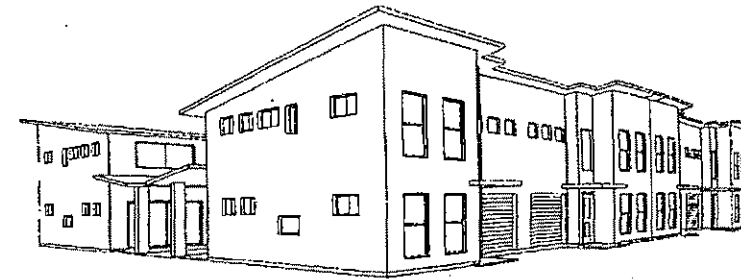
Ph: 3262 1200 Fax: 3262 1600 Email: ecd@pewers.com.au Suite 11 - 713 Sandgate Road, Clayton, Vic. 3168 ECS800 Pty Ltd (ACN 101 125 077) CRSA License No. 1010190				Issue 1. TOTAL - DRAFT VERSION 2. DA SET 3. 4.	Author OWEN Date 21-11-2005 21-12-2005
CHARTERED MEMBER 	Project TOWNHOUSE DEVELOPMENT	Job No. 05-028			
ARCHITECT 	Client COLRAN PTY LTD	Drawn By DA-2			
ADDRESS 2 HAIG RD. BRASSALL	Scale 1:100 (A1)				

ANNEXURE 3

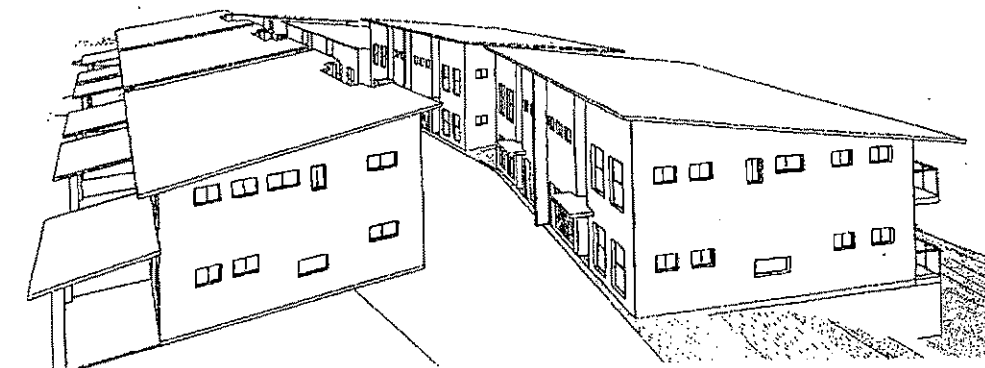
Drawing DA-4 Typical Sections and 3D Views *East Coast Building Design & Drafting*



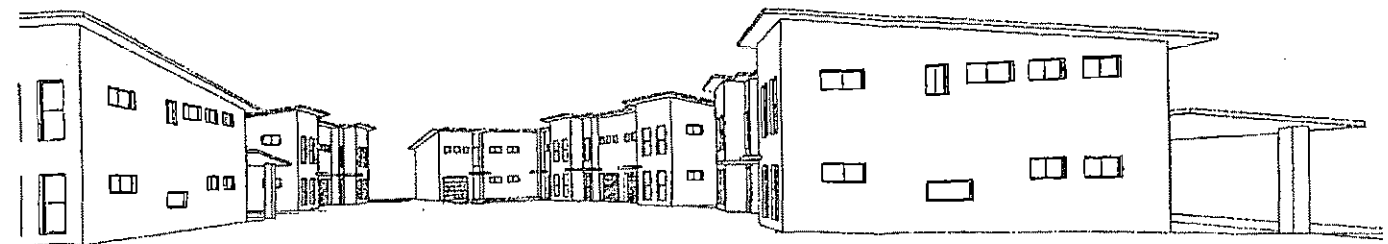
TYPICAL SECTION - RIVER FRONT
TAKEN AT UNIT 2-G. - 1:100.



1 3D View 1



2 3D View 2

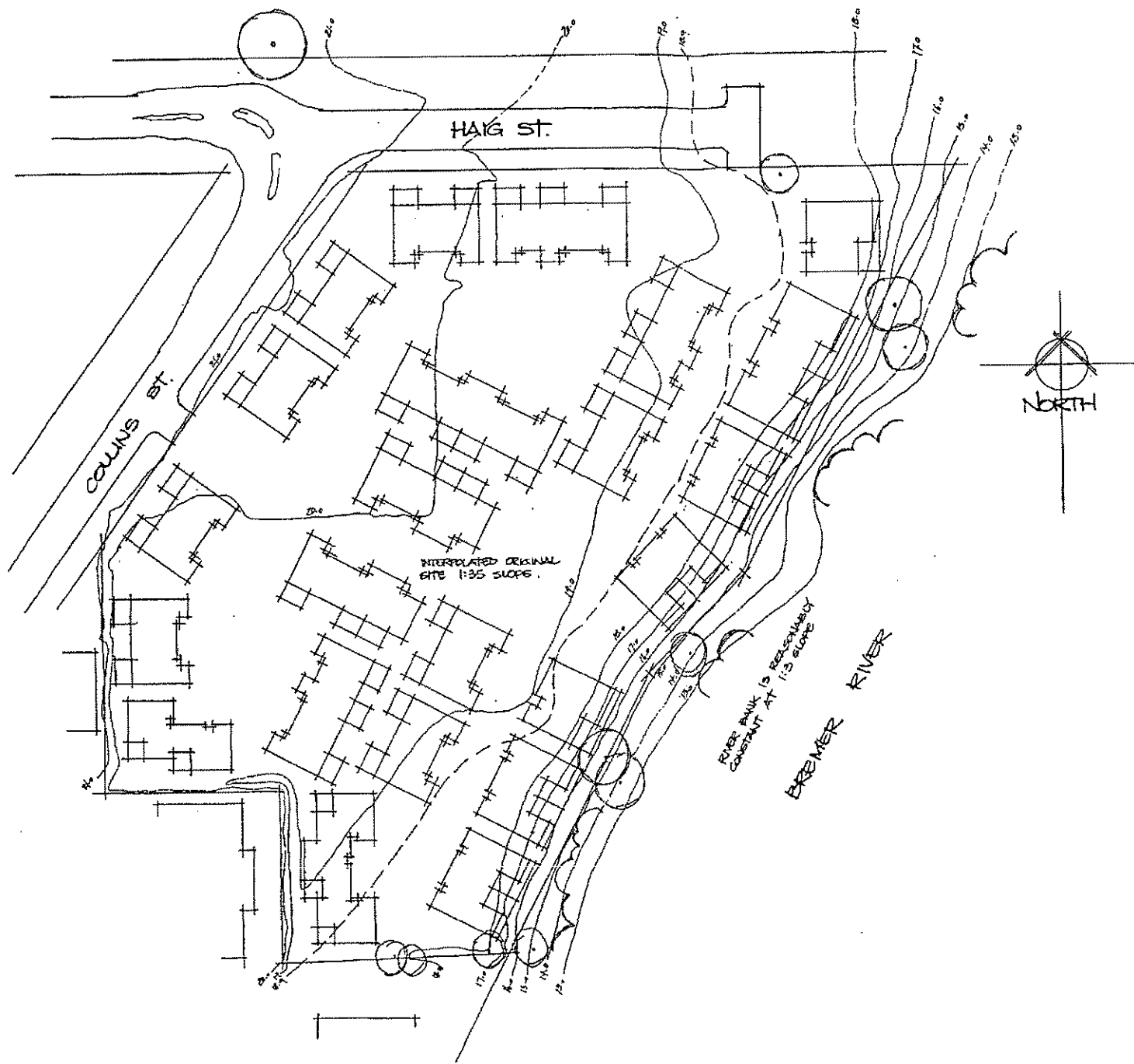


2 3D View 3

Ph: 3262 1200 Fax: 3262 1600 Email: east@powerup.com.au Suite 11 - 713 Sandgate Road, Clayfield, QLD, 4011 ECRD Pty Ltd (ACN 101 125 077) QBSA License No. 1010190				Issue	Author	Date
		TOWNHOUSE DEVELOPMENT		1	PowerUp	11-12-09
Client		COLRAN PTY LTD		Job No.		05-028
Address		2 HAIG ST. BRASSALL		Dwg. No.		DA-4
				Scale		1:100 (A1)

ANNEXURE 4

Drawing DA-5 Contour Overlay Plan *East Coast Building Design & Drafting*



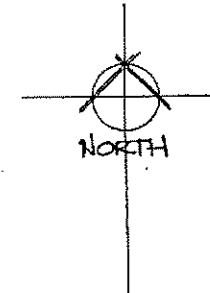
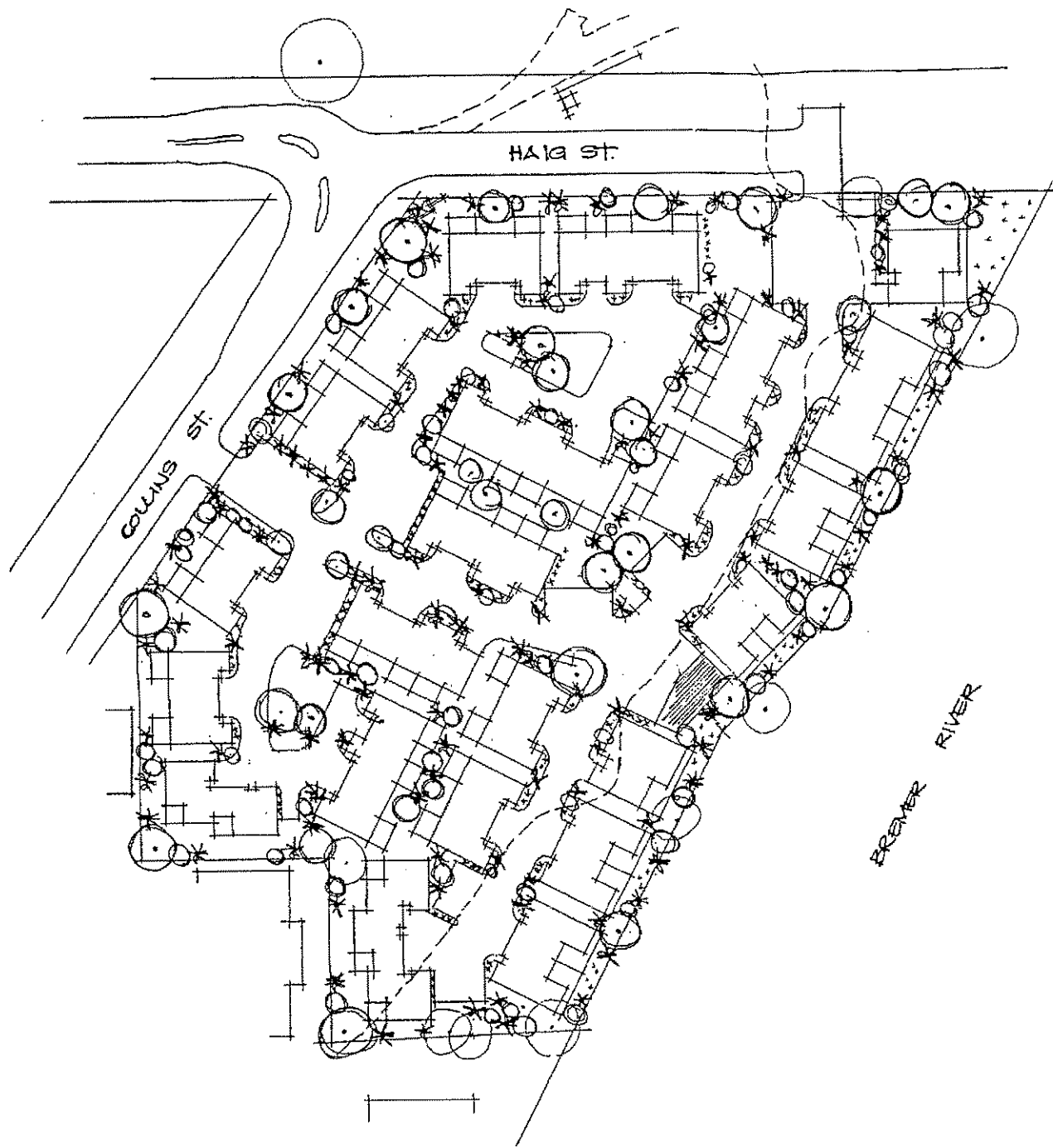
CONTOUR OVERLAY PLAN.

SHOWING EXTENT OF TREE RETENTION

Ph: 3262 1200 Fax: 3262 1600 Email: ecob@yovetop.com.au Suite 11 - 713 St Albans Road, Clayfield, Qld. 4011 ECODD Pty Ltd (ACN 101 155 077) QBSA License No. 1010190		EAST COAST BUILDING DESIGN & DRAFTING		Issue 1 PA SET	Author ONTAL	Date 21-12-05
PROJECTED LEASER 	Project TOWNHOUSE DEVELOPMENT	Client COLRAN PTY LTD	Job No. 05-028			
Address 2 HAIG ST. BRASSALL	Scale 1:500 (A1)					

ANNEXURE 5

Drawing DA-6 Landscape Intent Plan *East Coast Building Design & Drafting*



LANDSCAPE LEGEND

- EXISTING MATURE TREE
TYPICALLY 10-20M
- LARGE FACT GROWING TREES
MATURE HT APPROX 10M
- SMALL TREES
MATURE HT 5-5.5M
- * SHRUBS 1-5M
- * LOW PLANTS OR
GROUNDCOVERS < 1M

EACH PRIVATE COURTYARD WILL
HAVE TURFED AREAS & GARDENS

COMMUNITY PARKLANDS WILL
HAVE TURFED AREAS WITH
LARGE SHADE TREES

STREET FRONTAGES WILL HAVE
SCREEN FENCES & A WIDE
RANGE OF VARIAGATED FOLIAGE
TO BLOCK 50% OF BUILDINGS

THE RIVER FRONTAGE IS ALREADY
VISUALLY BLOCKED BY TREES
FURTHER FENCE PLANTING & TREES
WILL BLOCK BUILDINGS FROM VIEW
CHAIN WIRE OR NON SCREENING TYPE
FENCES WILL INTEGRATE LANDSCAPE

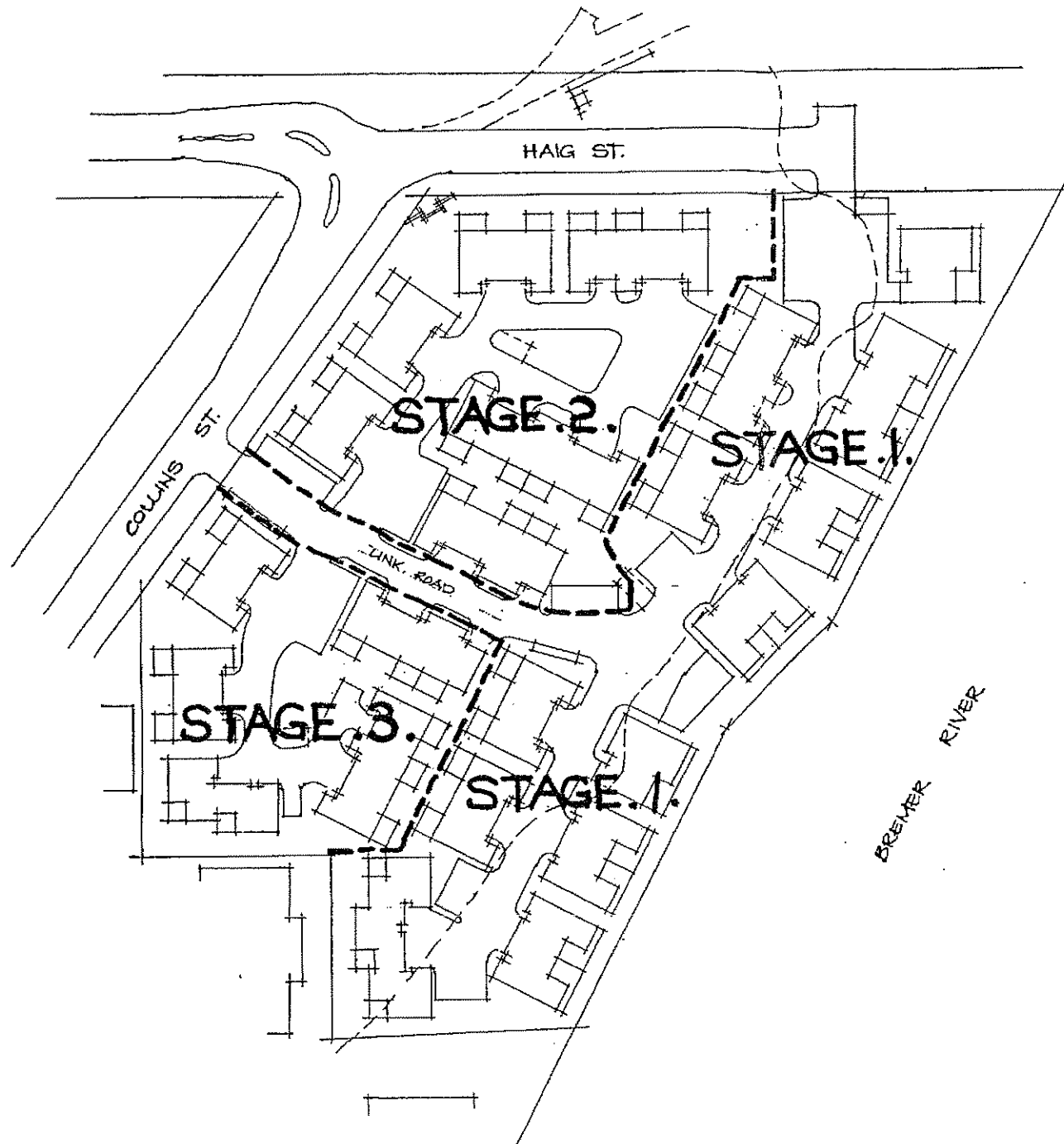
ALL AREAS NOT TURFED OR TURFED
WILL BE DENSELY PLANTED

LANDSCAPE INTENT PLAN.

Ph: 3262 1200 Fax: 3262 1600 Email: info@ecoadesign.com.au Suite 11 - 714 Sandgate Road, Clayfield, Qld, 4011 ECOADesign Pty Ltd (ACN 121 125 017) QOSA Reg No. 1610150			Issue	Author	Date
QUANTIFIED MEASURES 			PA SET		21-12-05
Project		TOWNHOUSE DEVELOPMENT		Job No. 05-028	
Client		COURAN PTY LTD.		Dwg. No. PA-6	
Address		2 HAIG ST. BRASSALL		Scale: 1:500 (A1)	

ANNEXURE 6

Drawing DA-7 Staging Layout Plan *East Coast Building Design & Drafting*



STAGE 1.
 Stage 1 shall include
 Riverfront dwellings 1-12
 & Inland dwellings 13-24
 All roads/driveways including
 the link-road to Collins St.
 All upgrades to Haig St. to
 connect to the property.
 All landscaping, courtyards
 & external services for stage.
 Provision made for infrastructure
 (sewer & stormwater) reticulation.
 Sediment control for vacant
 land of stages 2 & 3.
 Subdivision of land into 3 parcels
 with necessary easements over the
 link road to Collins St. & all
 fitting to be in place with Stage 1
 & prior to commencement of
 stages 2 & 3.
 Also refer council imposed conditions
 & drawings/reports by others

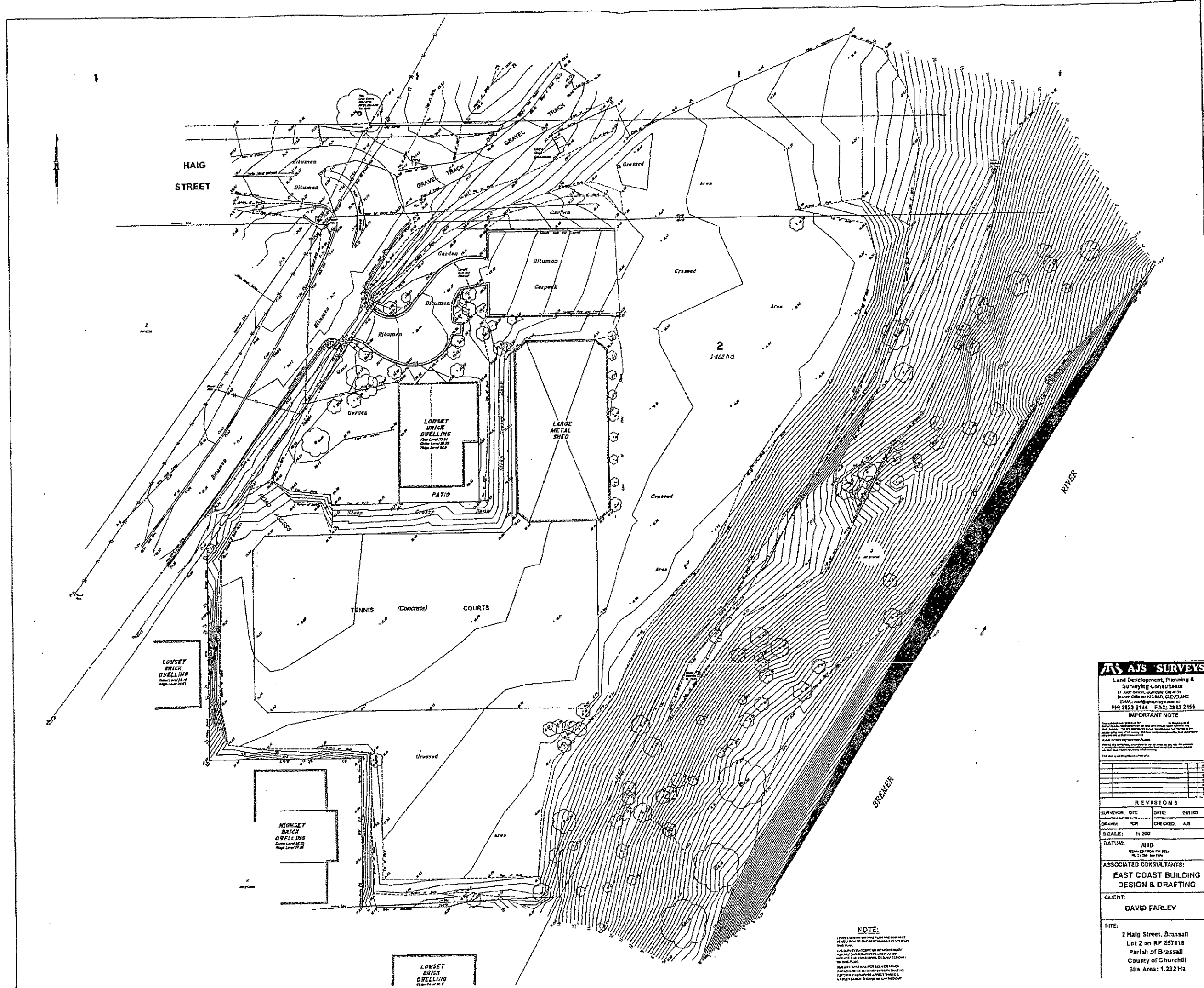
STAGE 2.
 Stage 2 shall include
 Riverfront dwellings 25-33
 & Inland dwellings 34-52
 All landscaping, courtyards
 & external services for stage 2.
 Connection of services & completion
 of footpath reserve adjacent to
 accessed stage 2 works.
 Construction entrance for Stage 2
 shall be direct off Collins St.
 for all heavy machinery to prevent
 damage & disruption to link road.

STAGE 3.
 Completion of all remaining dwellings
 Riverfront dwellings 34-35
 & Inland dwellings 36-45
 All remaining landscape, services
 footpaths & dry repairs, etc.
 Construction entrance for Stage 3
 shall be direct off Collins St.
 for all heavy machinery to prevent
 damage & disruption to link road.

STAGING LAYOUT PLAN.

Ph: 3262 1200 Fax: 3262 1600 Email: ecd@ecdesign.com.au Suite 11-713 Sandgate Road, Cityfield, Qld, 4011 ECBD Pty Ltd (ACN 101 125 077) ORSA License No. 1019190			Title PA-001	Author ENEN	Date 20-02-05
CHARTERED MEMBER 	Project TOWNHOUSE DEVELOPMENT		Job No. 05-028		
BUILDING PRACTITIONERS ASSOCIATION	Client COLRAN PTY LTD	Draw No. DA-7			
	Address 2, HAIG ST. BRASSALL	Scale 1:500 (A1)			

ANNEXURE 7
Drawing F0235-01 *AJS Surveys*



LORSET BRICK DWELLING
 QUOTE LEVEL 25.12
 RAISE LEVEL 25.12

HIGHSET BRICK DWELLING
 QUOTE LEVEL 25.12
 RAISE LEVEL 25.12

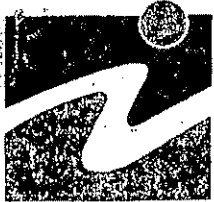
LORSET BRICK DWELLING
 QUOTE LEVEL 25.12

NOTE:
 1. THIS PLAN AND THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE RELEVANT ACTS AND REGULATIONS.
 2. THIS PLAN IS SUBJECT TO ALL RELEVANT ACTS AND REGULATIONS.
 3. THIS PLAN IS SUBJECT TO ALL RELEVANT ACTS AND REGULATIONS.
 4. THIS PLAN IS SUBJECT TO ALL RELEVANT ACTS AND REGULATIONS.

AJS SURVEYS
 Land Development, Planning & Surveying Consultants
 17 Axel Street, Durango, Qld 4754
 BRASSALL OFFICE: KALBAR, CLEVELAND
 EMAIL: ajs@ajs-surveys.com.au
 PH: 3823 2144 FAX: 3823 2155

IMPORTANT NOTE
 This plan is a site plan and is not a cadastral plan. It is not a legal document and should not be used as such. It is a technical drawing and should be used as such. It is not a legal document and should not be used as such. It is a technical drawing and should be used as such.

REVISIONS			
SURVEYOR:	DTC	DATE:	THIRD
DRAWN:	PCR	CHECKED:	AJS
SCALE: 1:200			
DATUM: AHD			
DERIVED FROM: M 571			
M 571 200 100 1000			
ASSOCIATED CONSULTANTS:			
EAST COAST BUILDING DESIGN & DRAFTING			
CLIENT:			
DAVID FARLEY			
SITE:			
2 Haig Street, Brassall			
Lot 2 on RP 657018			
Parish of Brassall			
County of Churchill			
Site Area: 1.222 Ha			



Ipswich
City Council

Your Reference:
Our Reference: 195/06 PAR
Contact Officer: [REDACTED]
Telephone No.: 3810 6192

2 February 2006

Dear [REDACTED]

Re: Development Application Information Request (Section 3.3.6)
Application Number: 195/06
Proposal: Multiple Residential - Fifty two (52) Townhouses
Property Location: 2 Haig Street, Brassall

Upon review of the abovementioned Development Approval Application and supporting information we require further information to satisfactorily assess this application. The information requested is set-out below.

1. Development Density / Site Layout

→ 6m setback from street frontage, air/light circulation, outlook, privacy etc.

The Applicant is requested to demonstrate compliance with Section 4.6.3 (1)(d, f, & k) of the Urban Areas - Residential Medium Density Zone Code with respect to the provision of an appropriately scaled development. Particular regard should be given to the provision of a minimum three (3) metre wide landscape buffer for the length of each road frontage, building setbacks to road frontages and adequate provision of separation distances between dwelling units in order to achieve usable private recreation spaces and privacy between living areas in accordance with Section 4.6.3 (3)(a-g) of the Urban Areas - Residential Medium Density Zone Code and Section 4.17.3(2)(a)(i-vii) of the Urban Areas - Recreation Zone Code.

2. Building Scale and Articulation

The Applicant is requested to demonstrate compliance with the requirements of Section 12.6.4(3) Building Scale and Articulation (a-d) and (5) Building Orientation (a-e) of the Residential Code. Particular regard should be given to the presentation of the development to the site's prominent corner location, which will ultimately form part of the Outer Ipswich Central Link Road System. As such, further consideration of the presentation of building facades by way of incorporating variation in building materials and details, articulation, verandahs, balconies, wall offsets, window hoods and roof form should be given.

Colran Pty Ltd
C/- David Brett & Associates Pty Ltd
PO Box 5020
BRASSALL QLD 4305

Please Address All Correspondence to:
Chief Executive Officer
Ipswich City Council
A.B.N. 61 461 981 077
PO Box 191 Ipswich Qld 4305
Telephone: (07) 3810 6666
Facsimile: (07) 3810 6731

Website: www.ipswich.qld.gov.au

The proposed plan of development displays dwelling designs that lack the above mentioned elements of variation. Further, the viewscales within the internal circulation roads appear to present a dominance of garage doors with minimal activation of the internal streetscape by way of orientation of windows and habitable rooms. As such the Applicant is requested to demonstrate compliance with Section 12.6.4(33)(f-h) of the Residential Code with regard to minimising the visual impact of the buildings to internal circulation roads and driveways. In addition to the Indicative Floor Layouts and 3D Views submitted, the Applicant is requested to provide elevations of the proposed dwelling units that clearly demonstrates incorporation of the above mentioned elements, including internal streetscapes, presentation to Haig Street and Collins Street and proposed building façade materials and colour palettes.

3. Internal Access

The Applicant is requested to demonstrate compliance with Sections 12.6.4(29)(b) and 12.6.4(34)(a-f) of the Residential Code with regard to the minimum required dimensions of the internal circulation road, the design and siting of visitor car parking and the provision of pedestrian access separate from the internal roadway.

4. Proposed Earthworks and Riparian Vegetation

- (a) The Recreation Zone that currently applies to the subject land provides for a wide range of recreational settings, including for the purpose of a District Waterside Park, primarily designed to serve a connectivity/linkage function along selected riparian corridors. The proposed material change of use and subsequent layout appears to necessitate clearing and earthworks within ten (10) metres of the top of bank to the Bremer River. The Vegetation Management Code requires the protection of the riparian corridor visually represented by figure 12.4.1. The Applicant is requested to demonstrate that no earthworks or vegetation clearing shall occur within ten (10) metres from the top of the bank (indicated on Plan Ref: F0235-01 to exist at approximately the 18 metre contour level) of the Bremer River.
- (b) Further, The Applicant is requested to demonstrate compliance with Section 11.4.7(1)(c)(i-xi) – Flooding and Urban Stormwater Flowpath Areas of the Development Constraints Overlay Code. In particular, the creation of habitable rooms should incorporate floor levels a minimum of 250 mm above the adopted 1 in 100 year flood level and any cutting and/or filling of land within the 1 in 100 year flood line should be avoided. The development layout should be sympathetic to Figure 11.4.12: Defining Extent of Riparian Corridor for Protection of Native Vegetation by avoiding development within the riparian corridor.
- (c) In accordance with Map 6.2 – Future Linear and Waterside Parks of Planning Scheme Policy 5 Infrastructure, the Applicant is requested to indicate on the plan of development the provision of a six (6) metre wide shared pedestrian / bicycle pathway, located a minimum of ten (10) metres from the top of the bank (indicated on Plan Ref: F0235-01 to exist at approximately the 18 metre contour level) of the Bremer River, for the length of the subject site's eastern boundary. This area (inclusive of the area of land between the top of the bank and the eastern boundary) will be required to be dedicated to Council for amalgamation with Lot 3 on RP214846 for the purposes of establishing access for a public pathway and Council maintenance of the District Waterside Park adjacent to the Bremer River. Such dedication is required to facilitate a strategic network of continuous linear recreation, maximising public

access to waterside parkland from Workshops Street to the south of the subject site to Pine Street on the opposite reach of the Bremer River, and beyond.

5. Stormwater

- (a) Due to the proposed increase in impervious surfaces post development and the proximity to the Bremer River, the Applicant is requested to demonstrate compliance with Planning Scheme Policy 3 – General Works, Part 2, Division 3 Water Quality Control. It is expected that such compliance be demonstrated by the provision of a conceptual Stormwater Management Plan (SWMP).
- (i) The requested SWMP must be prepared by a suitably qualified and experienced professional i.e. RPEQ, that is developed in accordance with the *Australian Runoff Quality Design Guidelines, Australian Institute of Engineers, 2003* and demonstrates, through appropriate pollutant export modelling (eg AQUALM or MUSIC), that the predicted pollutant levels in the stormwater from the Catchment will meet the pollutant levels identified in Table 2.3.1: Water Quality Objectives of Planning Scheme Policy 3 – General Works, Part 2, Division 3 Water Quality Control.
- (ii) The SWMP should also identify the locations and methods of stormwater disposal, both piped and overland flows, from the site into the adjacent river. Should the Applicant propose to construct stormwater infrastructure through adjoining property under separate private ownership, concentrate and/or redirect stormwater discharge on to adjoining property under separate private ownership then the applicant should obtain and forward to Council the written approval of the owner of the affected property.

Note - In order to demonstrate compliance with the aforementioned criteria, Council encourages alternative treatment methods such as the harvesting roof water for domestic use and treatment of car park runoff through landscaped areas.

6. Car Washing Bays

The Applicant is requested to demonstrate that runoff from the three (3) proposed car washing bays shall meet the pollutant levels identified in Table 2.3.1: Water Quality Objectives of Planning Scheme Policy 3 – General Works, Part 2, Division 3 Water Quality Control.

7. Landscaping Plan

The Applicant is requested to submit a Landscaping Plan in accordance with section 27 of Local Planning Policy 2 – Information Local Government May Request. Species selection must demonstrate exclusion of declared environmental weeds and consideration shall be given to utilising Council's Alluvial Flats, Watercourses and Wetlands Planting Guide (attached) for species selection. Such plan should include details of proposed fencing that demonstrates visual permeability in accordance with Section 12.6.4(26)(a-c) and (27)(a-b), particularly with respect to it's interface with the Recreation land to the east, adjacent to the Bremer River.

8. Traffic

The Applicant is requested to submit a traffic impact report relating to the proposed development. Such report should be prepared by a Registered Practicing Engineer

Queensland (RPEQ) and investigate, but not be limited to, the following:

- (a) Impacts on the surrounding road network caused by the proposed development, which includes, as a minimum, traffic generation and distribution with an analysis of the Hunter Street / Haig Street intersection and the existing culvert crossing in Haig Street in terms of capacity, operation and safety for all road users. This report would also include recommendations of specific measures to be undertaken to improve the alignment, sight distances, and signage of the external roads which will result in safe movements of light and heavy vehicles, and reduce delays and queuing distances eg. Haig and Collins Street Intersection. A four percent(4%) per annum traffic growth rate along Hunter Street shall be adopted for such analysis. Analysis of the intersection is to be undertaken for pre and post development scenarios both in 2006 and 2016;
- (b) Recommendations on any mitigation measures or contributions required as a result of these impacts, including planning layouts;
- (c) Details on suitable access by the largest vehicle expected to access the site (e.g. waste service vehicle, furniture removal truck (HRV)). Forward motion entry, exit and on site manoeuvring for such vehicles shall be clearly demonstrated on the plan of development with the aid of turning templates; and
- (d) Details of how the proposed development intends to integrate with Council's strategic transport planning for the area.

Council may require land to be dedicated to facilitate a thirty (30) metre wide cross section within the Collins Street road reserve and a roundabout at the intersection of Collins Street / Haig Street. Such dedication is required to secure part of the strategic Outer Ipswich Central Link Road System. As such, when undertaking the investigations outlined above, the traffic engineering consultant should consult with Council's Senior Transport Planner (Works Department).

9. Reticulated Water

The Applicant is requested to submit a water reticulation analysis, prepared by a RPEQ, for the full development to determine the adequacy of the external water infrastructure to adequately service the development, including fire fighting flows. The requirements of Ipswich Water's "Water Supply Planning Guidelines" are to be met.

Initial advice from Ipswich Water suggests that the existing 100mm diameter water main located on the northern side of Haig Street will need to be upgraded/augmented to cater for this development.

10. Underground Mining

Information available to Council indicates that the subject site may be subjected to influence from underground mining. As a result the Applicant is requested to submit a detailed geotechnical report by a suitably qualified person which addresses, as a minimum, the following:-

- (a) The mining methods used previously;

- (b) The geology under the site including rock types, dip on the strata and details of any geological irregularities such as faults and folds;
- (c) An indication whether undocumented workings are likely to be under the site and if the workings are flooded or dry;
- (d) The factor of safety against pillar crushing, comments on the stability of all underground workings and the possibility of subsidence settlement;
- (e) The most suitable types of structures and foundation systems to minimise the potential settlement/subsidence impacts;
- (f) The preferred location and any recommended construction techniques for:-
 - (i) infrastructure to serve the proposed development
 - (ii) structures to be constructed on site.
- (g) Any recommended management practices for the site.

11. Waste Storage and Collection

- (a) The Applicant is requested to demonstrate that areas nominated for waste containers incorporate appropriately screened/enclosed bulk bin storage for general waste at the rate of one (1) cubic metre of industrial bin per four (4) dwelling units. Provision shall also be made for wheelie bins for recyclable materials at the rate of one (1) bin per three (3) dwelling units.
- (b) The area on which the bin is to be accessed by refuse collection vehicles should be level, concreted and constructed in conjunction with the driveway surface with no intervening step, ledge, kerb or other obstruction.
- (c) The Applicant is requested to demonstrate that a bin washdown facility is able to be provided. The facility should be designed such that all wash down waters are appropriately treated and discharged to the sewer subject to a Trade Waste approval. No wash down waters are permitted to flow to a roadway, gutter, stormwater drain or natural waterway.
- (d) The waste storage and collection areas should allow forward motion entry to the waste containers and forward motion entry and exit to and from the site. The following dimensions are given as a minimum of front-, rear- and side- loading truck dimensions for a guide to design for the adequate emptying of the bin and manoeuvring of the truck:

	<i>Front/Load</i>	<i>Rear/Load</i>	<i>Side/Load</i>
<i>Length overall</i>	<i>10.9 m</i>	<i>8.2 m</i>	<i>8.7 m</i>
<i>Length when loading</i>	<i>12.6 m</i>	<i>9.5 m</i>	<i>3.0 m</i>
<i>Travelling overhead clearance required</i>	<i>4.0 m</i>	<i>3.0 m</i>	<i>3.5 m</i>
<i>Loading overhead clearance required</i>	<i>6.5m x 10m*</i>	<i>3.0 m</i>	<i>3.0 m</i>
<i>Access width required</i>	<i>3.8 m</i>	<i>3.8 m</i>	<i>4.0 m</i>
<i>Turning radius</i>	<i>9 m</i>	<i>9.0 m</i>	<i>9.0 m</i>
<i>Gross vehicle mass (GVM)</i>	<i>28 tonne</i>	<i>13.6 t</i>	<i>13.6 t</i>

**from the back of the bin*

Under the provisions of the *Integrated Planning Act 1997*, the applicant has three (3) options available in response to this Information Request. The Applicant must give the Development Manager and each Referral Agency (if applicable):

1. all of the information requested; or
2. part of the information requested together with a notice asking the Development Manager and each Referral Agency (if applicable) to proceed with the assessment of the application; or
3. a notice:
 - (a) stating that the applicant does not intend to supply any of the information requested; and
 - (b) asking the Development Manager and each Referral Agency (if applicable) to proceed with the assessment of the application.

Response to this Information Request should be forwarded to:-

The Development Manager
Development Branch
Ipswich City Council
PO Box 191
IPSWICH QLD 4305

Note: The notification stage for the application cannot commence until you, the applicant, give:

- (a) all information request responses to all information requests made, and
- (b) copies of the responses to the development manager.

Yours sincerely



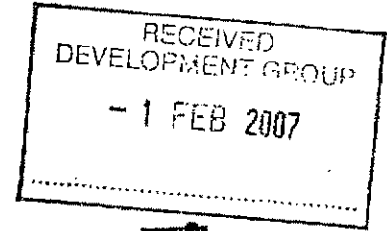
Joanne Pocock
**DEVELOPMENT TEAM CO-ORDINATOR -
CENTRAL WEST**

DAVID BRETT & ASSOCIATES PTY. LTD.

BUILT ENVIRONMENT & DEVELOPMENT PLANNERS

01 February 2007

The Development Manger
 Development Branch
 Ipswich City Council
 PO BOX 191
 IPSWICH QLD 4305



Attention: [REDACTED]



RECEIVED	
5 FEB 2007	
Doc. No.	2279139
Applic. No.	195/06
Action Off.	STAYLOR

Dear Madam,

Re: Development Application Information Response
Application Number: 195/06
Proposal: Multiple Residential – Forty eight (48) Townhouses CR BRONAGE
Property Location: [REDACTED] Brassall

We act as authorised representative of the applicant. I refer to Council's information Request dated 2 February 2006, regarding the above application. The applicant provides the following information in response to the request.

The responses given to the Information Request are to be read in conjunction with the drawings attached to the Information Response (Appendix 1).

Drawing Title	Drawing Number	Date	Scale
Indicative Site Layout	05.028 : DA - 1	31.01.2007	1:500 at A3
Indicative Floor Layout	05.028 : DA - 2	02.12.05	1:100 at A3
Typical Section: River Front – taken at unit 2 G	05.028 : DA - 3	02.12.05	1:100 at A3
Elevations	05.028 : DA - 4	02.12.05	1:200 at A3
Landscape Intent Plan	05.028 : DA - 5	02.12.05	1:500 at A3
Large Vehicle Access and Egress	05614.SK.02 Issue A	31.01.2007	1:500 at A3
Pedestrian Connectivity	05614.SK.03 Issue A	31.01.2007	1:500 at A3

- 1 -

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

25 Canning St, North Ipswich Qld
 Telephone : (07) 3281 0744

Correspondence : PO Box 5020, Brassall Qld 4305 A.B.N. 54 010 980 346 B.S.A. LICENCE No. 067680

Facsimile : (07) 3281 0766

1. Development Density / Site Layout

The assessment against the relevant sections of the Ipswich Planning Scheme below, show that the proposal has incorporated appropriately dimensioned and vegetation setbacks and distances between dwellings.

Residential Medium Density Zone

Overall Outcomes / Specific Outcomes / Acceptable Solutions	Compliance
4.6.3 Effects of Development – General	
Residential Uses – Density and Character	
(1) Specific Outcomes	
<p>Uses and works reflect the desired built character, maintain amenity and protect and enhance important townscape and landscape elements within local areas having regard to—</p> <p>(d) boundary clearances and the provision of space around buildings;</p> <p>(f) privacy;</p> <p>(k) the form, scale, bulk, style, siting, orientation, roof lines, materials and detailing of buildings.</p>	<p>(d) The proposal has incorporated appropriate boundary clearances, to ensure buildings reflect the desired built character of the medium density residential development but also maintain the amenity of the local area. The proposal is for a town house style development, thus it is envisaged that a number of buildings will be joined. Sufficient space has still been provided around dwellings to ensure natural light and ventilation is available particularly to the habitable rooms. The space around buildings is</p> <p>(f) Despite the higher density of the proposal privacy between the residential dwellings has been maintained through the design of dwelling units and screening (vegetation and fencing). The sizing of window and still heights also improve privacy between dwelling units within the proposal. The positioning of balconies also minimised the possibility of overlooking</p> <p>(k) As shown in the elevations, the form, scale, bulk, style, siting, orientation, rooflines, materials and detailing of buildings maintain the desired built character, ensure that both individual dwellings and the development as a whole maintain the amenity of the area and create attractive streetscapes.</p>

Building Setbacks and Design

(3) Specific Outcomes

Buildings—

- (a) are setback 6 metres from the street frontage unless an alternative setback does not detrimentally affect the character and amenity of the area and the overall townscape;
- (b) on the corner of major roads are sited and composed to form attractive 'gateways' and focal points;
- (c) protect and enhance the amenity and intended character of buildings on adjoining sites;
- (d) minimise undesirable levels of enclosure or loss of outlook;
- (e) provide for air circulation, natural light penetration and privacy for existing or likely residents on adjoining sites;
- (f) use articulation to minimise the potential for bulkiness and disproportionate facade length; and
- (g) avoid the use of blank walls, particularly where facing the street.

- (a) The proposed setback to Collins Street and Haig Street are appropriate to ensure the buildings maintain a relationship to the street and positively contribute to an attractive streetscape, through the building design and articulation and vegetation incorporated into the proposal.
- (b) The proposal utilises the corner of Haig Street and Collins Street as a focal point and creates an attractive corner through buildings design, orientation, articulation treatments
- (c) The amenity and character of buildings on the adjoining site is maintained, as development on the adjoining site is a similar medium density residential development. In fact, there are a number of these medium density developments within the local area.
- (d) A combination of one and two storey dwellings to the river frontage has been used to enhance vistas and minimize enclosures. Additionally, the land dedicated to public spaces and views corridors through to the Bremer River that have been conserved minimises undesirable levels of enclosure or loss of outlook.
- (e) The separations between buildings are appropriate to ensure natural light and air circulation is present throughout the site and within dwellings.
- (f) The proposal has incorporated variations in buildings materials and details, articulation, balconies, wall offsets, window hoods and other similar treatments have been used in buildings facades to minimise the potential for bulkiness and disproportionate facade length

	<p>(g) An appropriate level of articulation is provided on all external façades of the residential buildings to ensure the overall appearance of the multiple residential development promotes an attractive townscape</p>
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Recreational Zone

Overall Outcomes / Specific Outcomes / Acceptable Solutions	Compliance
4.17.3 Effects of Development – General	
Building Design and Placement	
(2) Specific Outcomes	
<p>(a) The design and placement of buildings ensures—</p> <p>(i) buildings generally remain subservient to and do not dominate the open landscape;</p> <p>(ii) buildings maintain the visual prominence of any significant landmarks and conserve important view corridors;</p> <p>(iii) public access is generally not diminished, unless privately owned or leased;</p> <p>(iv) buildings are not significantly affected by flooding or stormwater drainage;</p> <p>(v) buildings are sympathetic and respectful to places of cultural heritage significance;</p> <p>(vi) effective community safety measures are incorporated;</p> <p>(vii) large expanses of blank wall are avoided, particularly where visually prominent.</p>	<p>(a) The proposal complies as follows:</p> <p>(i) The two storey height of buildings and ample setbacks incorporated enable buildings to remain subservient to the open landscape.</p> <p>(ii) The proposal has used parkland and view corridors formed through streets to maintain the views from the site to the Bremer River,</p> <p>(iii) The proposal does not prevent the use of its amenities for general public use. In fact, it will promote the use of parkland by the public as it will construct and maintain a pedestrian link on the bank of the Bremer River, which will extend to the surrounding sites.</p> <p>(iv) Due to the design provisions and general nature of the proposal, there will be a high level of casual surveillance on public spaces, ensuring the safety of the community</p> <p>(v) The proposal has used an appropriate level of articulation on all external façades of the residential buildings to ensure the overall appearance of the</p>

	multiple residential development promotes an attractive townscape.
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2. Building Scale and Articulation

As show by the attached elevation drawings, the proposal has utilised variations in building materials and details, articulation, varendahs, balconies, wall offsets, window hoods and roof form, which ensures the proposal will positively contribute to the streetscape and overall appearance of the multiple residential development.

Overall Outcomes / Specific Outcomes / Acceptable Solutions	Compliance
12.6.4 Residential Uses and Works – Effects of Development – General Provisions	
<p>Building Scale and Articulation (3) Specific Outcomes (a) Building design, detailing and finish provide an appropriate scale to the street and add visual interest and differentiation between residential buildings when viewed from streets, or a public thoroughfare.</p> <p>(b) In low density residential areas, new residential buildings are designed with clearly distinguishable parts of similar scale to existing dwellings.</p> <p>(c) Large expanses of blank walls are avoided, particularly in situations where such walls are likely to be visually prominent.</p> <p>(d) New buildings take into account the image presented by the backs and sides of buildings so as to ensure an attractive townscape.</p>	<p>(a) The proposed residential buildings have incorporated appropriate levels of articulation, through the use of colour, texture and pattern, to create an environment that provide visual interest and attractive streetscapes throughout the development. Vegetation and parklands provided also compliments the buildings, softening the buildings and further enhancing the streetscapes within the residential development.</p> <p>(b) Not Applicable, the proposal is for a medium density residential development</p> <p>(c) As shown by the attached drawings, the proposal has avoided expanses of blank walls, particularly in areas that are visually prominent.</p> <p>(d) The proposal has used an appropriate level of articulation on all external façades of the residential buildings to ensure the overall appearance of the multiple residential development promotes an attractive townscape.</p>

<p>Building Orientation (5) Specific Outcomes (a) Buildings address the street frontage or frontages rather than being aligned at right angles or diagonal to the street. (b) Buildings are designed so that overlooking and opportunities for casual surveillance of public spaces, pedestrian paths and car parking areas are provided. (c) Generally, as much as practical of the habitable parts of a building are located towards the street, in order to develop a strong relationship between private accommodation and the street. (d) Buildings are sited and designed to provide a clearly delineated transition space from public spaces (e.g. the street or communal open space) to dwellings and associated private use areas. (e) The site layout ensures that the front entrance of each dwelling is easily found, and that amenity is maintained between dwellings.</p>	<p>(a) All buildings have been aligned to address the street frontage/s and are not orientated at right angles or diagonally to the street (b) The proposal will create high levels of casual surveillance from dwellings to all public spaces through the internal design of dwellings placing habitable rooms in the rooms to the front of dwellings. Balconies will also ensure high levels of casual surveillance are available. (c) The habitable parts of the buildings have been located to the front of the buildings, where possible. (d) The design of the dwellings ensures that it is easy to define between public and private space. Fencing in some areas of the site will also delineate between public and private land. (e) The proposed dwellings have been designed so that the front entrance is easily identifiable and located.</p>
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3. Internal Access

As illustrated below, the proposal complies with the Residential Code, specifically with regard to the minimum required dimensions of the internal circulation road, the design and siting of visitor car parking and the provisions of pedestrian access.

Overall Outcomes / Specific Outcomes / Acceptable Solutions	Compliance
<p>(29) Probable Solutions – for sub-section (28) (b) Where the development involves more than 20 dwellings, pedestrian access to each dwelling is provided by a minimum 1.5m wide</p>	<p>(b) A 1.5 metre pedestrian footpath will be provided, which will provide pedestrian permeability throughout the</p>

<p>footpath which is separate to, but may adjoin, an internal driveway.</p>	<p>site and link the dwelling units to amenities within the proposal. The footpaths will be delineated by using different materials and colours to that used on the internal driveway pavement.</p>
<p>(34) Probable Solutions – for sub-section (33)</p> <p>(a) Where the development involves 12 or more dwellings direct vehicular access is obtained from a public road with a sealed carriageway of not less than 7.5 metres in width.</p> <p>(b) The minimum pavement widths for those sections of internal driveways which do not provide direct access to parking spaces (i.e. including driveway entries and cross overs from a street reserve) are—</p> <p>(i) 3 metres for up to 12 dwellings; and (ii) 5.6 metres for more than 12 dwellings.</p> <p>(c) Internal driveways, and in particular open car parking spaces, are of a non-bituminous appearance to enhance the visual amenity on the site and to differentiate between internal driveways and public roads.</p> <p>(d) The minimum boundary setback for any carport or garage is—</p> <p>(i) six (6) metres from any road boundary; and (ii) 1.5 metres from any other site boundary.</p> <p>(e) The minimum setback for any open car parking space is—</p> <p>(i) three (3) metres from any road boundary; (ii) 1.5 metres from any other site boundary; and (iii) 1.5 metres from any residential building on site.</p> <p>(f) Visitor car parking is provided—</p> <p>(i) in discrete areas with small clusters of no more than five (5) spaces; (ii) at regular intervals in the internal driveway system; and</p>	<p>(a) Direct access is obtained from Haig Road and Collins Street, which are both public road with a sealed carriageways of at least 7.5 metres.</p> <p>(b) As the proposal is for over 12 dwellings, the pavement width for the internal driveway system is 5.6 metres, in accordance with the Traffic Report by TTM.</p> <p>(c) The internal driveways will be constructed using road sections of pavers, concrete, painted bitumen and bitumen. Pervious pavements may also be used in sections of the internal driveways and parking areas to aid in stormwater management and legibility. This will suitably differentiate the internal driveway network from the public streets.</p> <p>(d) The garages for all dwelling units are positioned with a setback within 3 metres (approx) of the internal driveway network and are generally located on dwelling site boundaries, thus complying with the requirements.</p> <p>(e) All open car parks located on the site are access directly from the road with a setback of 1.5 metres from residential dwellings</p> <p>(f) The visitor car parking is provided as street parking, located in small clusters throughout the site with the majority of clusters having 4 – 5 car</p>

(iii) within easy walking distance (i.e. 50 metres) of each dwelling.

parking spaces provided. The clusters are provided within an easy walking distance of all dwellings.

4. Proposed Earthworks and Riparian Vegetation

- (a) Please find attached a Vegetation Management Study undertaken by Cardno (QLD) Pty Ltd, dated 10 August 2006. Expert advice and recommendations were provided to us through the Vegetation Management Study. The plans have been subsequently changed to reflect the expert advice from Cardno, which required the removal of four (4) dwelling units. As identified in the Vegetation Management Study, the plans fully comply with the Vegetation Management Code.
- (b) Please find attached a Flood Study undertaken by Cardno (QLD) Pty Ltd, dated 8 August 2006. The conclusions of the Flood Study are as follows:
- To provide flood immunity to proposed development, a portion of the site is to be raised to a level 500mm higher than the 100 year ARI.
 - Through modelling it was determined that the impacts of the filling on the surrounding sites would be negligible.
 - Therefore, Cardno (QLD) Pty Ltd concluded that "the proposed development does not produce unacceptable impacts on flood levels on residential properties and roads upstream or downstream of the site." (Page 8 of the Flood Study)
- (c) The Future Linear and Waterside Parks initiative within the Ipswich Planning Scheme will be maintained and enhanced. Pedestrian connectivity will be provided along the Bremer River, with the proposal intending to place a pedestrian and bicycle path along the river bank, without adversely impacting on the natural vegetation. The location of the riverside pathway promotes pedestrian interaction with the river and encourages people to use the path.

Need to document →

Currently there is no pathway on the adjoining site to the south, but the pathway in this proposal can be positioned appropriately to allow the adjoining site to link to this path, which facilitates the continuity of the pedestrian linkage along the river. The placement of the path can also easily connect with the provisions on the northern adjoining sites.

The high level of casual surveillance from the dwelling units within the proposal onto the pathway also ensures the safety of people using this pathway and further encourages people to use the path. The passive surveillance of this lower terrain, which would otherwise be concealed, immensely improves safety of the river bank area and therefore significantly reduces the opportunity for criminal activity. Therefore the proposal will promote a usable and safe space, which effectively promotes Councils waterside park pedestrian connectivity.

Previous developments along the Bremer River have shown that the proposal is consistent with the acceptable solutions otherwise approved by Ipswich City Council regarding the creation of a river way connected open space:

- The Multiple Residential Development located approx 500 metres downstream of the subject site has a number of residential buildings over the defined 'top of bank,' to the extent to which the proposal is intending. Additionally, the development has incorporated a pedestrian / cycle path within the banks of the Bremer River, similar to this proposal. The solution proposed is also supported by the expert advice we received through the reports.
- The proposal embraces Ipswich City Council's *River Heart Parklands* project which identifies the importance of river interaction in this recreational project that is constructed on the banks of the Bremer River and obviously improves connectivity with the river. If this were not within the code and not a beneficial outcome, Council would have just built a boardwalk platform at the top of the bank.

5. Stormwater

A Stormwater Management Plan will be created in the Operational Works phase of this application. It is envisaged that a combination of rainwater tanks, pervious pavement treatments, and dispersal of runoff through landscaped areas and gross pollutant traps will be used to ensure the stormwater quantity and quality remain within acceptable standards and do not create an unacceptable load on the stormwater infrastructure. Incorporation of underground storage systems for landscape irrigation purposes and car washing is proposed. All units will incorporate a small water storage tank for private garden usage.

6. Car Wash Bays

The three car wash bays proposed will all have appropriate filtration devices adequate to ensure that the pollutant levels of the runoff do not exceed the levels identified in Table 2.3.1: Water Quality Control.

7. Landscaping Plan

Please find attached a Landscaping Intent Plan drawn by East Coast Building Designs dated 02 December 2005, which provides appropriate details of proposed planting in the Multi Residential Development. Specific Planting will be addressed with the operational works application.

8. Traffic

Please find attached a Traffic Engineering Report produced by TTM Consulting (QLD) Pty Ltd, dated 12 July 2006, providing the information requested by Council. The report concludes that "based on the assessment of the proposed multi-unit development at Haig Street, Brassall with respect to traffic engineering issues, contained within this report, TTM see no reason why the relevant approvals should not be granted."

9. Reticulated Water

In previous discussions with Ipswich Water it has been determined that there are no requirements to increase the water reticulation capacity in the area, as the current infrastructure provisions are suitable for the proposal.

10. Underground Mining

As illustrated by Figure 1: Mining Influenced Constrained Area below, the amount of the site that is classified to be in an area affected by underground mining is very small and is only the influence line, not the undermined area. Furthermore, no buildings will be positioned on the site that is constrained by undermining. Given these facts we believe that a geotechnical report is not required.

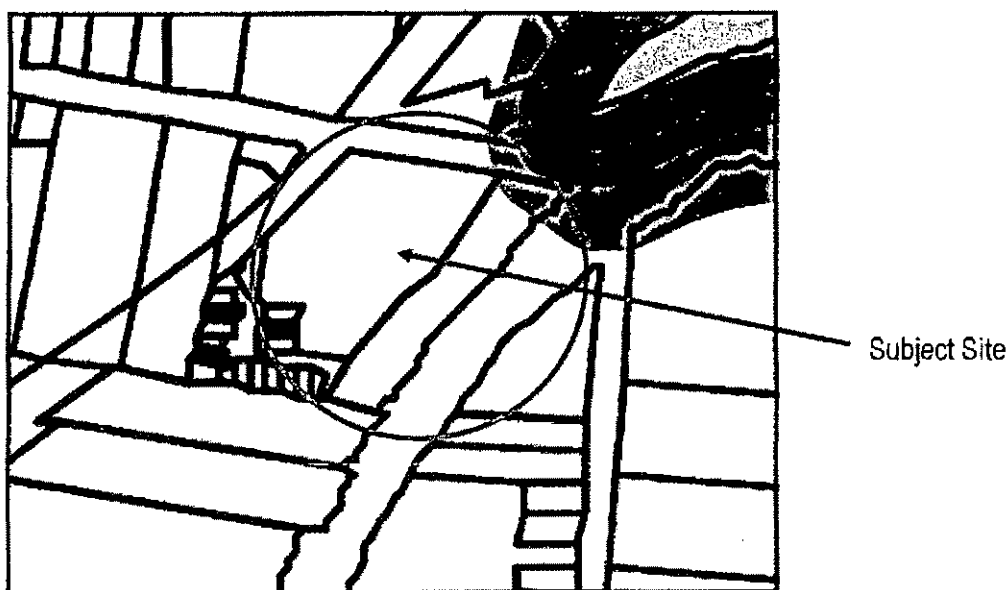


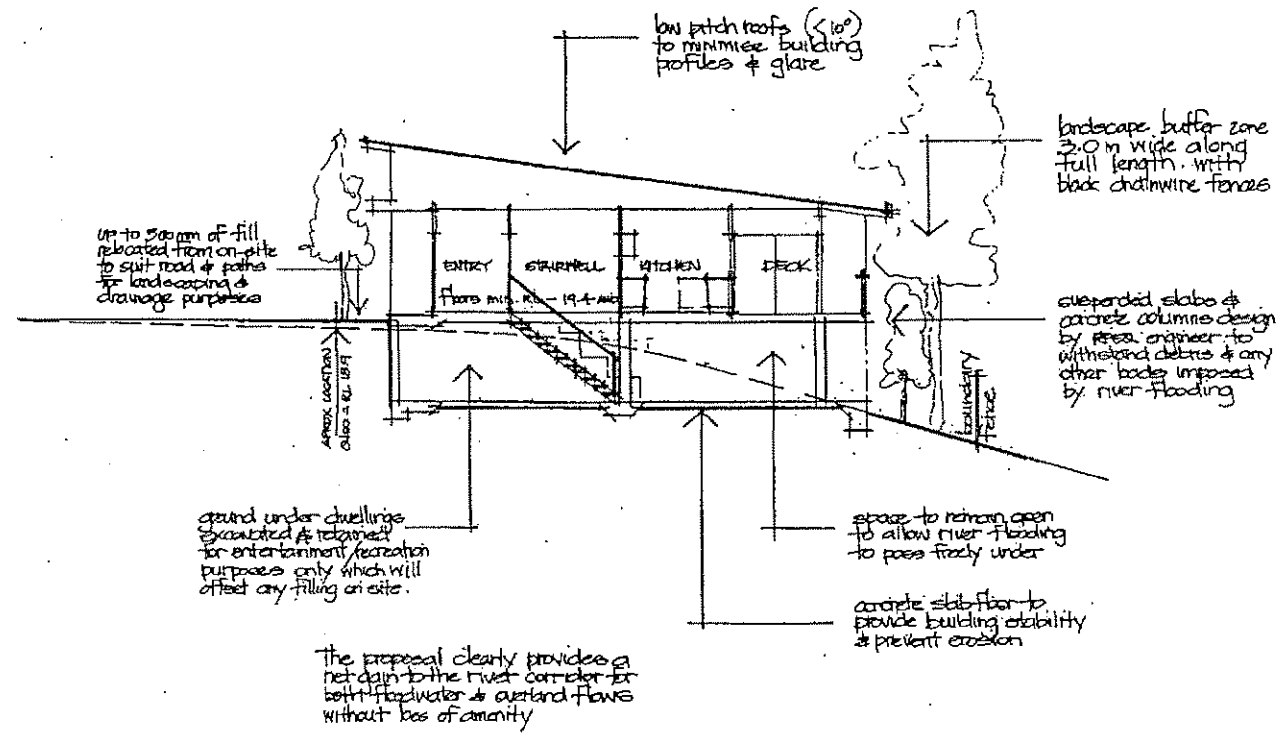
Figure 1: Undermining Constraint

11. Waste Storage and Collection

- (a) The areas nominated for waste containers incorporate appropriately screened / enclosed bulk bin storage for general waste at the rate of 1 cubic metre of industrial bin per 4 dwelling units. Provision shall also be made for wheelie bins for recyclable materials at the rate of 1 bin per 3 dwelling units.
- (b) The area on which the bins are to be accessed by refuse collection vehicles are level, concreted and constructed in conjunction with the driveway surface with no intervening step, ledge, kerb or other obstruction.
- (c) A car wash bay will be used as a bin wash down facility, as the wash bay will have appropriate treatment and filter provisions and will ensure the water does not flow down a roadway, gutter, stormwater drain or natural waterway.

APPENDIX 1

Proposal Plans



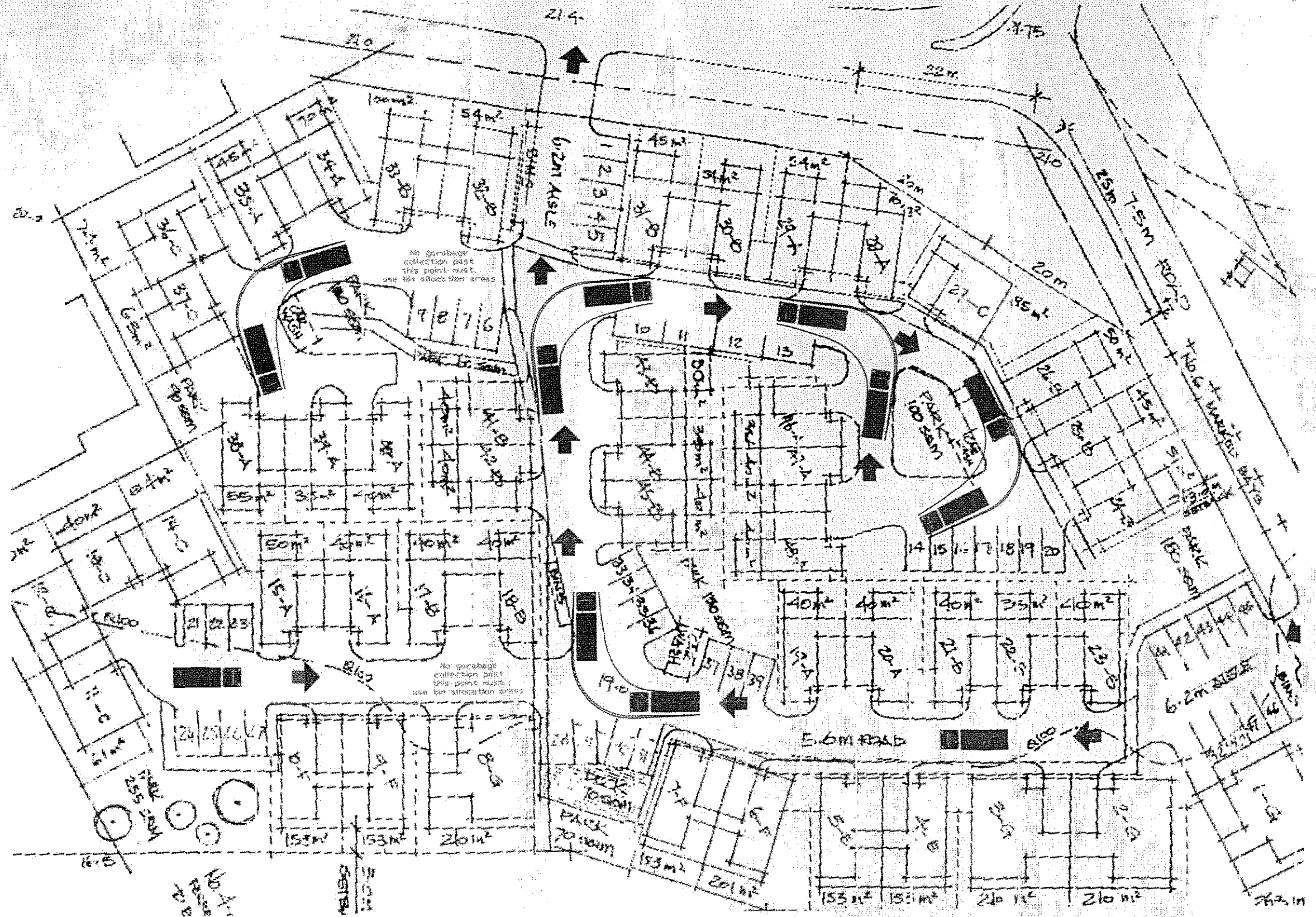
TYPICAL SECTION - RIVER FRONT
TAKEN AT UNIT 2-G. - 1:100.

Ph: 3262 1200 Fax: 3262 1600 Email: ecdb@powerco.com.au Suite 11 - 713 Sandgate Road, Clayton, Vic. 3168 ECR000 Pty Ltd (ACN 191 135 077) QBSA License No. 1010190				<table border="1"> <thead> <tr> <th>Issue</th> <th>Author</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>1 DA SET</td> <td>CP/SL</td> <td>11-12-05</td> </tr> <tr> <td>2 DA LOOSE SET</td> <td>CP/SL</td> <td>11-11-06</td> </tr> </tbody> </table>	Issue	Author	Date	1 DA SET	CP/SL	11-12-05	2 DA LOOSE SET	CP/SL	11-11-06
Issue	Author	Date											
1 DA SET	CP/SL	11-12-05											
2 DA LOOSE SET	CP/SL	11-11-06											
		Project: TOWNHOUSE DEVELOPMENT Client: COLURAN PTY LTD Address: 2 HAIG ST. BRASSALL	Job No.: 05-028 Dwg. No.: DA-3 Scale: 1:100 (A1)										

LARGE VEHICLE ACCESS & EGRESS

A3

SCALE 1:500



Date Issue Particulars Drawn
AMENDMENTS

WRITTEN DIMENSIONS TAKE PRECEDENCE TO SCALED DIMENSIONS. BUILDER MUST CLARIFY ANY DISCREPANCIES PRIOR TO CONSTRUCTION. ALTERATION OF THIS DESIGN IS TO BE MADE BY WRITTEN INSTRUCTION ONLY AND SIGNED BY AN AUTHORISED REPRESENTATIVE OF DAVID BRETT & ASSOCIATES PTY. LTD.

DAVID BRETT AND ASSOCIATES PTY. LTD.
DEVELOPMENT PLANNERS

COPYRIGHT 31.01.2007 ASN 54010980345
PRINCIPAL : D.J. BRETT, A.D.B.E.T.
LICENCED UNDER THE QBSA ACT 1991
QBSA LICENCE NUMBER - 067650
ADDRESS : P.O. BOX 9020 BRASSALL QLD 4305
TELEPHONE : (07) 3281 0744
FACSIMILE : (07) 3281 0756
MOBILE : 0411 347 569
Email : dba@gil.com.au

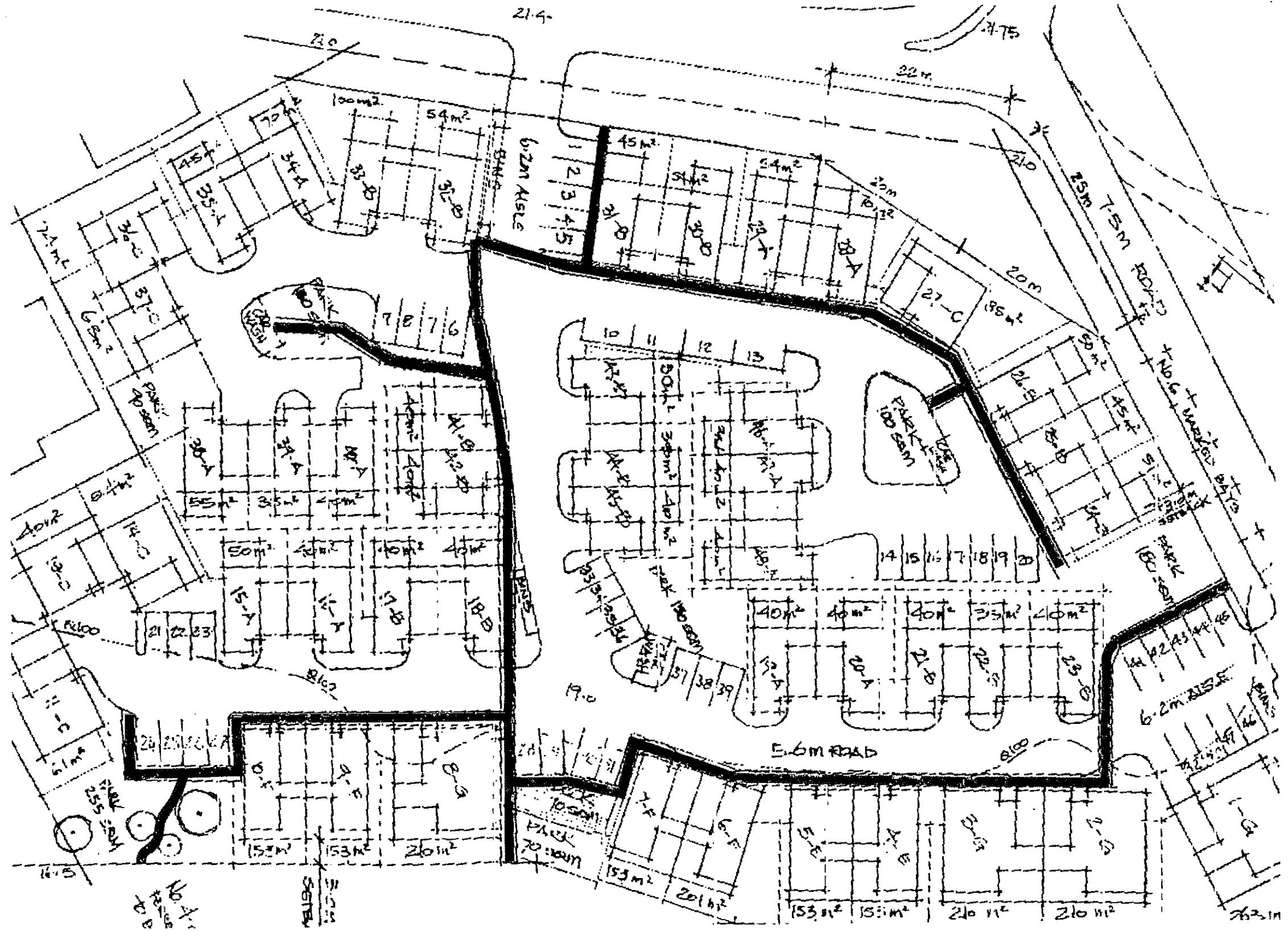
PROJECT **PROPOSED MULTI RESIDENTIAL 2 HAIG STREET BRASSALL**
CLIENT **COLRAN PTY LTD**

SIGNED	DATE 31.01.2007	ORIENTATION
DRAWN TA	SCALE 1:500	
PLOT SCALE 1:500 at A3	SCALE 1:500	
DRAWING NUMBER 05614.SK.02	ISSUE A	

PEDESTRIAN CONNECTIVITY

A3

SCALE 1:500



Date
AMENDMENTS

Issue
Particulars

Drawn

WRITTEN DIMENSIONS TAKE PRECEDENCE TO SCALED DIMENSIONS. BUILDER MUST CLARIFY ANY DISCREPANCIES PRIOR TO CONSTRUCTION. ALTERATION OF THIS DESIGN IS TO BE MADE BY WRITTEN INSTRUCTION ONLY AND SIGNED BY AN AUTHORISED REPRESENTATIVE OF DAVID BRETT & ASSOCIATES PTY. LTD.

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PRINCIPAL : D.J. BRETT, A.D.B.E.T.
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TELEPHONE : (07) 3281 0744
FACSIMILE : (07) 3281 0768
MOBILE : 0411 347 589
Email : dba@qgil.com.au

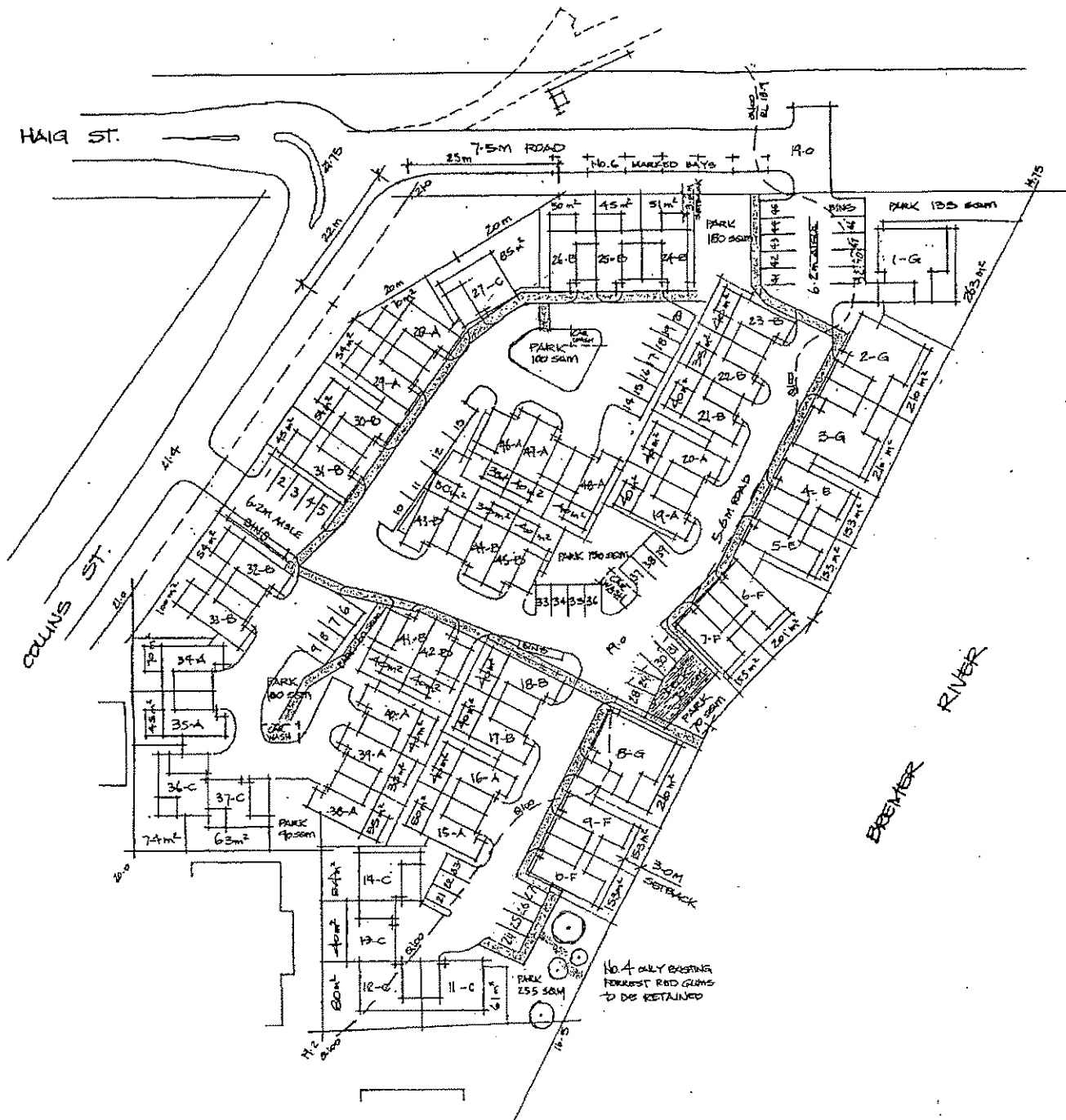
PROJECT
**PROPOSED MULTI RESIDENTIAL
2 HAIG STREET BRASSALL**

CLIENT
COLRAN PTY LTD

SIGNED	DATE	31.01.2007
DRAWN	TA	
PLOT SCALE	1:500 at A3	SCALE
DRAWING NUMBER	05614.SK.03	

ORIENTATION

ISSUE
A



SITE ANALYSIS

LOT 2, RP B57016
Parish Brassall
County Churchill
1.282 ha.

TOTAL NO. OF DWELLINGS - 48
No 2 bed units - 4
No 3 bed units - 44
SITE DENSITY - 37.4 du/ha (50 du/ha Max)

RECREATION AREAS:
Private courtyards/decks - 3599 m²
Community parkland areas - 1080 m²
4679 m² (3840m² Regd)

CAR PARKING:
Embedded garages - 48
Visitor parking - 47
Charnock - 6
101 (96 Regd)

CAR WASHING BAYS - 3 (2.6 Regd)
Note: carwash bays are shown indicative but will not be constructed on this project due to council imposed "level 5" water restrictions (no car washing)

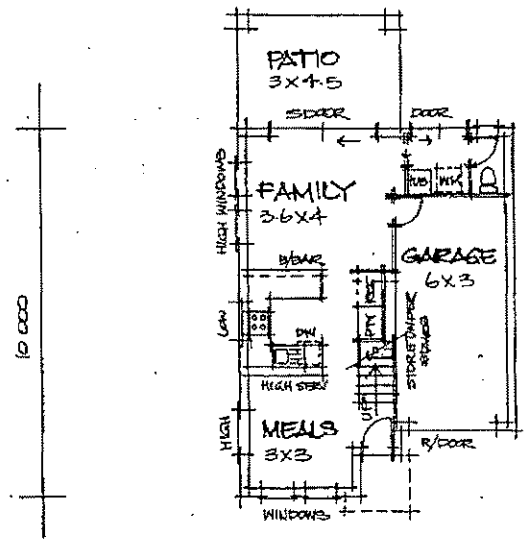
The indicative floor layouts show some units with 2 Beds + tv. space & others with 3 beds
All calculations, loadings, etc. have assumed that all 2 storey townhouse units are 3 Bed units to allow maximum flexibility for resale.
This development will be staged - refer attached staging plan for details & inclusions.

INDICATIVE SITE LAYOUT.

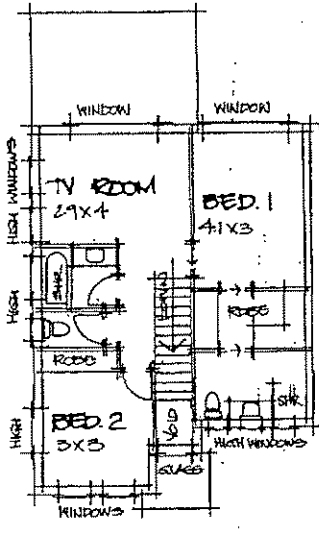
RE-ISSUED TO COUNCIL Nov. 2006 WITH ROAD WIDENINGS.

Ph: 3262 1200 Fax: 3262 1600 Email: ecd@powerco.com.au Suite 11 - 713 Swanport Road, Clayfield, Qld, 4011 EC800 Pty Ltd (ACN 101 135 877) CRSA Scheme No. 1810150			ISSUE 1. PIA - DRAFT VERSION 2. PIA SET 3. PIA LOCAL GOV. APPROVED DA. 4. APPROVED DA.	AUTHOR GAVIN GREEN GAVIN GREEN GAVIN GREEN	DATE 2-12-05 05-12-05 16-1-06 18-1-06
PROJECT: TOWNHOUSE DEVELOPMENT CLIENT: COLRAN PTY. LTD. ADDRESS: 2. HAIG ST. BRASSALL			JOB NO.: 05-028 DWG. NO.: DA-1 SCALE: 1:500 (A1)		

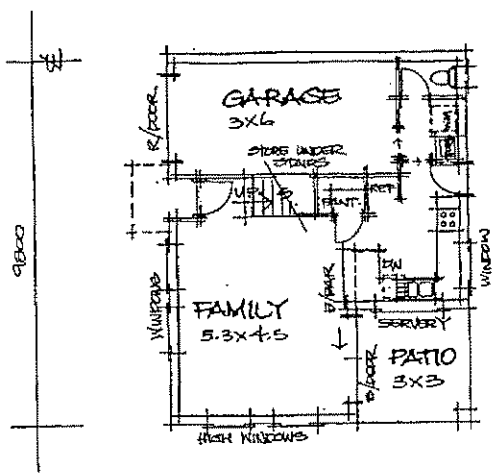
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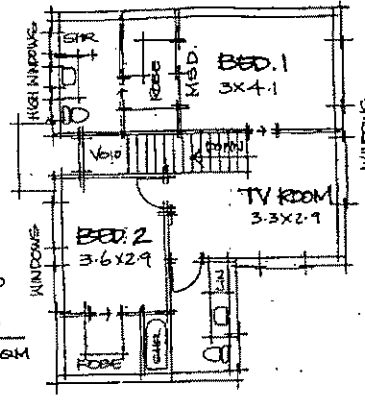
LIVING - 115.5
 GARAGE - 20.0
 PATIO - 13.5
 149 sqm



8100

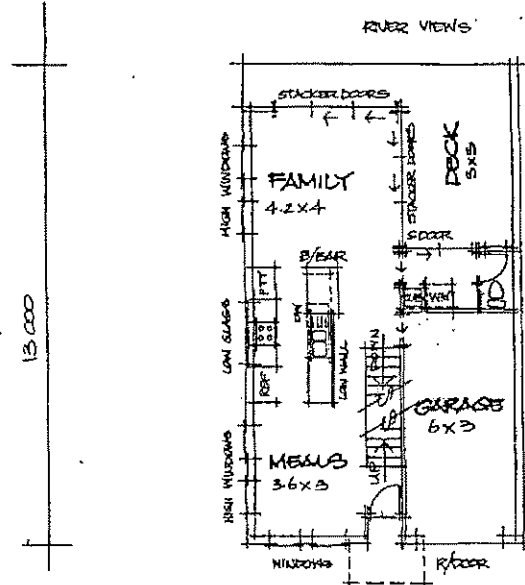


LIVING - 120.0
 GARAGE - 20.0
 PATIO - 9.0
 149 sqm



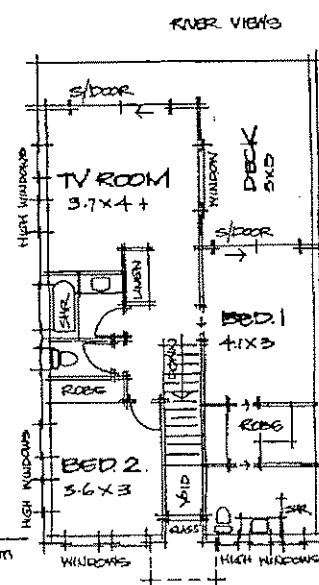
TYPICAL LAYOUT - A & B
 TWO STOREY TOWNHOUSE

TYPICAL LAYOUT - C
 TWO STOREY TOWNHOUSE



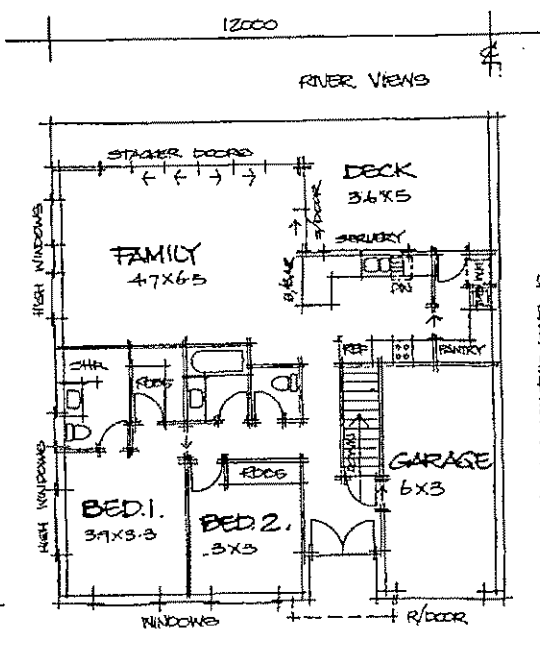
NOTE: BEGON THIS LEVEL IS AN OPEN AREA WITH SLABS FOR ENTERTAINMENT ONLY

LIVING - 132.0
 GARAGE - 20.0
 DECK - 12.0
 194 sqm
 UNDERCROFT - 96.0
 290 sqm



RIVER FRONT ONLY - E & F
 TWO STOREY TOWNHOUSE

THE ALTERNATE LAYOUTS TO THOSE SHOWN INCLUDES A THIRD BEDROOM UPSTAIRS IN LIEU OF TV/MEDIA RM'S. REFER SITE LAYOUT PLAN FOR INDICATIVE SCATTERING.



NOTE: BEGON THIS LEVEL IS AN OPEN AREA WITH SLABS FOR ENTERTAINMENT ONLY.

LIVING - 107.0
 GARAGE - 20.0
 DECK - 27.0
 154 sqm
 UNDERCROFT - 153.0
 307 sqm

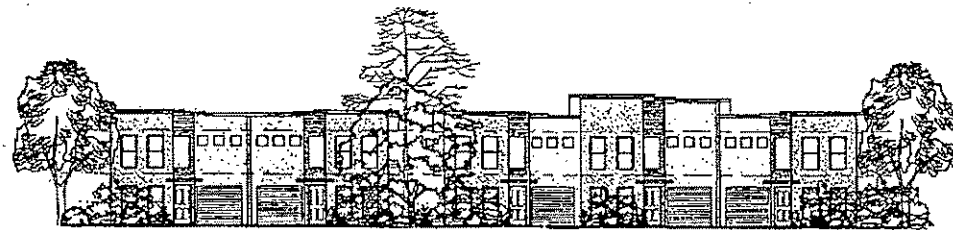
RIVER FRONT ONLY - G
 LOWSET TOWNHOUSE

INDICATIVE FLOOR LAYOUTS.

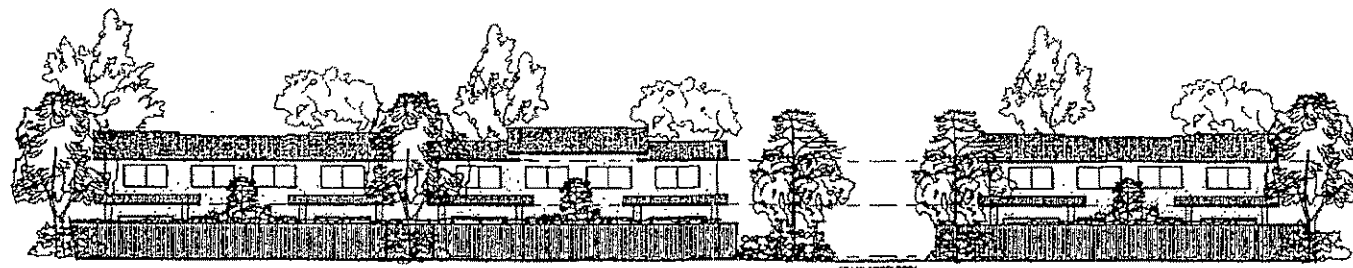
Pk: 3262 1200 Fax: 3262 1600 Email: ecba@powertrac.com.au Suite 11 - 713 Sandgate Road, Chrylfield, Qld, 4011 EC000 Pty Ltd (ABN 101 135 077) OCSA License No. 1010190			Issue DA - DRAFT VERSION DA - SET DA - WORK SET	Author OWNER OWNER	Date 29-11-2005 21-12-2005 11-1-2006
CHAIRMAN MEMBER	Project TOWNHOUSE DEVELOPMENT		Job No. 05-028		
	Client COLRAN PTY LTD	Draw No. DA-2			
BUILDING DESIGNERS ASSOCIATION	Address 2 HAIG RD. BRASSALL	Scale 1:100 (2/3)			



VIEW 1
1:200

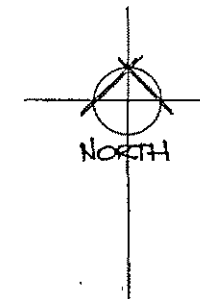
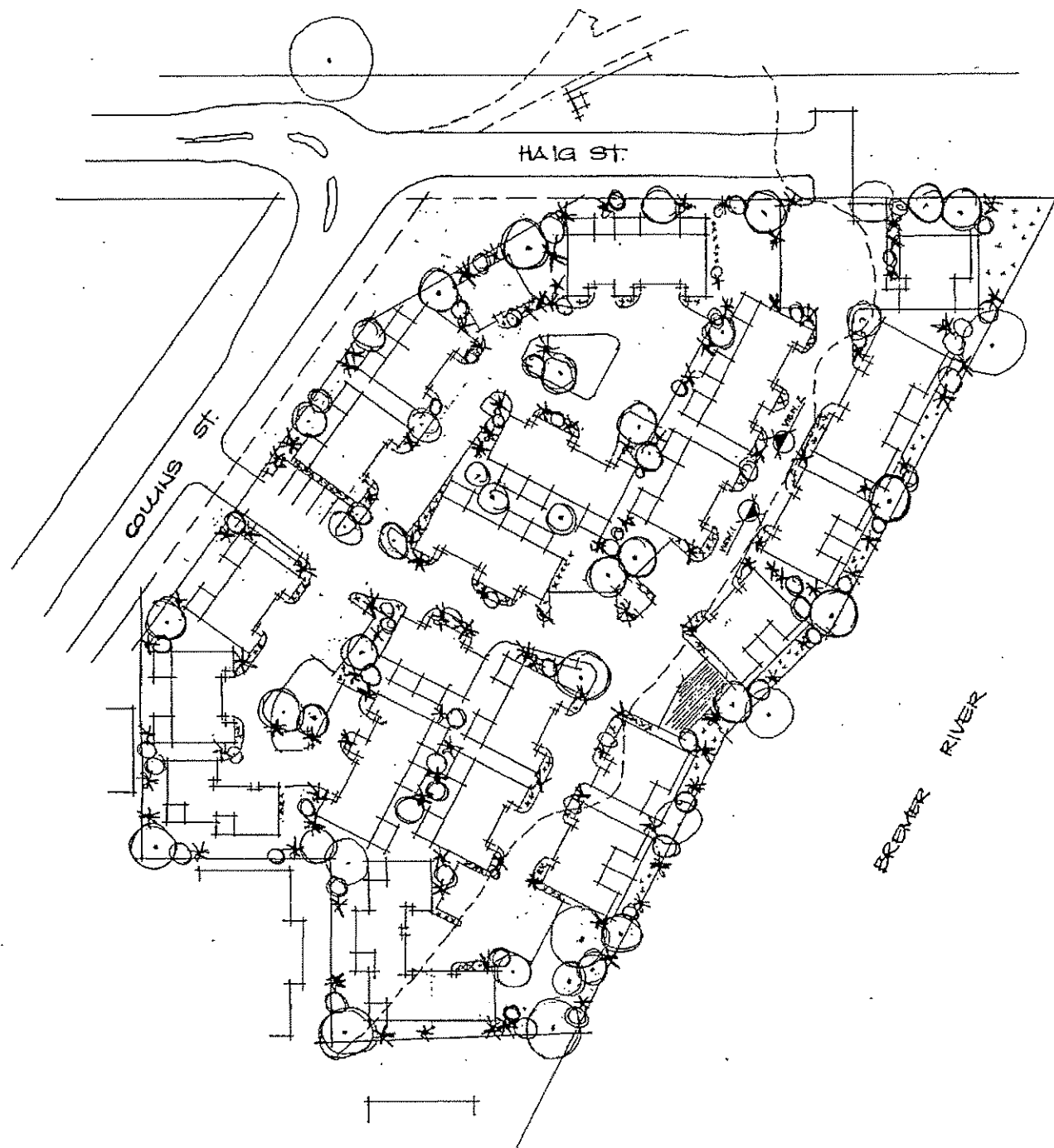


VIEW 2
1:200



COLLINS STREET ELEVATION
1:200

Ph: 3262 1200 Fax: 3262 1600 Email: ecdb@powerup.com.au Suite 11 - 713 Sandgate Road, Clayfield, Qld, 4011 ECDB Pty Ltd (ACN 101 135 077) QBSA License No. 1010190		EAST COAST BUILDING DESIGN & DRAFTING		Issue 1 19/09/04 2 3 4 5	Author strben	Date 19/09/04
CHARTERED MEMBER BUILDING DESIGN ASSOCIATION	Project TOWNHOUSE DEVELOPMENT	Job No. 05-028	Date DA-1	Plot Size A1		
Client COLRAN PTY LTD		Address 2 HAIG ST, BRASSALL		Scale 1:200		



LANDSCAPE LEGEND

- EXISTING MATURE TREES
TYPICALLY GUMS 10-20 m
- LARGE FAST GROWING TREES
MATURE HT APPROX 10 m
- SMALL TREES
MATURE HT 3-5 m
- * SHRUBS 1-3 m
- x LOW PLANTS OR
GROUND COVERS < 1 m

EACH PRIVATE COURTYARD WILL
HAVE TURFED AREAS & GARDENS

COMMUNITY PARKLANDS WILL
HAVE TURFED AREAS WITH
LARGE SHADE TREES

STREET FRONTAGES WILL HAVE
SCREEN FENCES & A NIPES
RANGE OF VARIATED FOLIAGE
TO BLOCK 30% OF BUILDINGS

THE RIVER FRONTAGE IS ALREADY
VISUALLY BLOCCED BY TREES
FURTHER DENSE PLANTING & TREES
WILL BLOCK BUILDINGS FROM VIEW
CHAIN WIRE OR NON SCREENING TYPE
FENCES WILL INTEGRATE LANDSCAPE

ALL AREAS NOT RAISED OR TURFED
WILL BE PENISULY PLANTED

VIEW INDICATIVE VIEW SHOWN
ON ELEVATION SHEET.

LANDSCAPE INTENT PLAN.

RE-ISSUED TO COUNCIL NOV. 2006 WITH ROAD WIDENINGS.

Ph: 3262 1200 Fax 3262 1600 Email: ecdb@yourweb.com.au Suite 11 - 715 Springvale Road Clayton, VIC 3168 ECDB Pty Ltd (ACN 101 125 077) BSA License No. 1010190		EAST EAST BUILDING DESIGN & DRAFTING		ISSUE 1 PA SET 2 PA LAYOUT SET REVISED PA	Author DWG FARDL	Date 2-12-05 14-1-06 1-1-06
CHARTERED SURVEYORS ASSOCIATION	Project TOWNHOUSE DEVELOPMENT	Client COURAN PTY LTD.	Job No. 05-028	Scale 1:500 (A1)		
Address 2 HAIG ST. BRASSALL						

APPENDIX 2

Vegetation Management Study

Our Ref 739611-02 :kjd

Contact [REDACTED]



10 August 2006

David Brett & Associates
PO Box 5020
BRASSAL QLD 4305

Cardno (Qld) Pty Ltd
ABN 57 051 074 992

Attention: [REDACTED]

5 Gardner Close Milton Q 4064
PO Box 388 Toowong
Queensland 4066 Australia
Telephone: 07 3369 9822
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International: +61 7 3369 9822

[REDACTED]
www.cardno.com.au

Dear Sir

Cardno Offices
Brisbane
Sydney
Canberra
Melbourne
Perth
Darwin

2 HAIG STREET, BRASSAL - INFORMATION REQUEST RESPONSE - VEGETATION MANAGEMENT CODE ISSUES

Cairns
Townsville
Rockhampton
Hervey Bay
Sunshine Coast
Toowoomba
Gold Coast
Gastford
Baulkham Hills
Busselton

Please find herein a response to the issues raised by Council concerning the degree of compliance that the proposed plan of development for the 2 Haig Street, Brassal site achieves with the Overall and Specific Outcomes of the Vegetation Management Code.

Port Moresby, PNG
Abu Dhabi, UAE
Portland, USA

In the preparation of this response we have:

- reviewed the proposed plan of development and the information request from Council;
- conducted a site visit to inspect the site and associated riparian vegetation;
- carried out a review of the detailed survey and development plans for the site;
- completed an analysis of the nature and magnitude of any direct or indirect impacts that development would have on existing native riparian vegetation; and
- completed an assessment of any necessary modifications to development layout required to achieve compliance with relevant Specific Outcomes of the Vegetation Management Code.

Council's Information Request, dated 2 February 2006, at point 4 (a) indicates that *"..The proposed material change of use and subsequent layout appears to necessitate clearing and earthworks within ten (10) metres of the top of bank to the Bremer River. The Vegetation Management Code requires the protection of riparian corridor visually represented by figure 12.4.1. The Applicant is requested to demonstrate that no earthworks or vegetation clearance shall occur within ten (10) metres from the top of the bank (indicated on Plan Ref: F0235-01 to exist at approximately the 18 metre contour level) of the Bremer River."*

The Overall Outcomes sought via the Vegetation Management Code of the Ipswich Planning Scheme area:

- Significant areas of native vegetation and their associated wildlife habitats and linkages are conserved and appropriately managed.*
- Vegetation within defined water catchment areas, riparian areas or wetlands is conserved and appropriately managed.*
- Vegetation within environmentally sensitive areas including steeply sloping land and areas prone to erosion or salinity is conserved and appropriately managed.*



- d) *Vegetation which is of cultural heritage, ecological, horticultural, scientific, educational, recreation or aesthetic (including streetscape, townscape or landscape) significance or value is conserved and appropriately managed.*

The relevant Specific Outcome and associated Acceptable/Probable Solutions of the Vegetation Management Code that has been raised by Council in the Information Request is:

Specific Outcome	Acceptable/Probable Solutions
<p>Environmentally Sensitive Areas (1) The clearing of vegetation does not cause or exacerbate land degradation within environmentally sensitive areas including steeply sloping land, areas prone to erosion or salinity, riparian corridors, wetlands or water catchment areas.</p>	<p>Environmentally Sensitive Areas (1) The clearing does not involve the removal of native vegetation from – (a) Land with a slope of 15% or more; or (b) Land within a designated Watercourse or land within 30m of a Designated Watercourse or within 10m of the top of the bank of a Designated Watercourse where the slope of the bank exceeds 15% (see Figure 12.4.1)</p>

Based on a review of the proposed plan of development, an annotated version of which is presented as Annexure A, and an inspection of the site, the following points are noted.

- (a) The vegetation that occurs on that part of the site which is located between the eastern (Bremer River) site boundary and Council's recommended riparian vegetation retention zone (i.e. 10 m from the 18m contour as shown on *Plan Ref: F0235-01*) is comprised of a small number of native and exotic trees over a maintained grassland. There is no shrub or small tree layer as a consequence of past vegetation clearance episodes and the periodic slashing of the ground-layer vegetation.
- (b) There is no remnant vegetation, as defined by the *Vegetation Management Act*, within the riparian vegetation retention zone.
- (c) Native trees located within the riparian vegetation retention zone are four (4) Forest red gum (*Eucalyptus tereticornis*) located in the south-east corner of the site.
- (d) Other trees located within the riparian vegetation retention zone are a cluster of non-native Cocos palms (*Syagrus romanzoffiana*), which are a recognised environmental weed species.
- (e) The vegetation on the site, apart from the aforementioned forest red-gums, does not possess any significant wildlife habitat or linkage values.
- (f) The current layout of the proposed plan of development would not result in the removal of any significant native vegetation apart from the Forest red-gums located in the south-east of the site

Given the above facts and circumstances, the proposed plan of development would require only minor modifications to achieve compliance with the nominated Acceptable/Probable Solution to the relevant Specific Outcome sought by the Vegetation Management Code of the Planning Scheme. The specific form of these modifications needs to cater for the retention of the Forest red-gums located in the south-east corner of the site (refer Annexure A). In practice this would require that there are no earthworks beneath the canopy drip-line of the subject trees.

It is our assessment that a modified plan of development that provides for the retention of existing native vegetation within the area nominated by Council as the riparian vegetation retention zone would satisfy the requirements of the Vegetation Management Code of the Planning Scheme. It is also noted

that the removal of the exotic Cocos palms (an environmental weed) would also be consistent with Specific Outcome (2) of the Code.

We trust that the advice provided herein is of assistance to you. Should you have any queries in respect thereof please contact the undersigned.

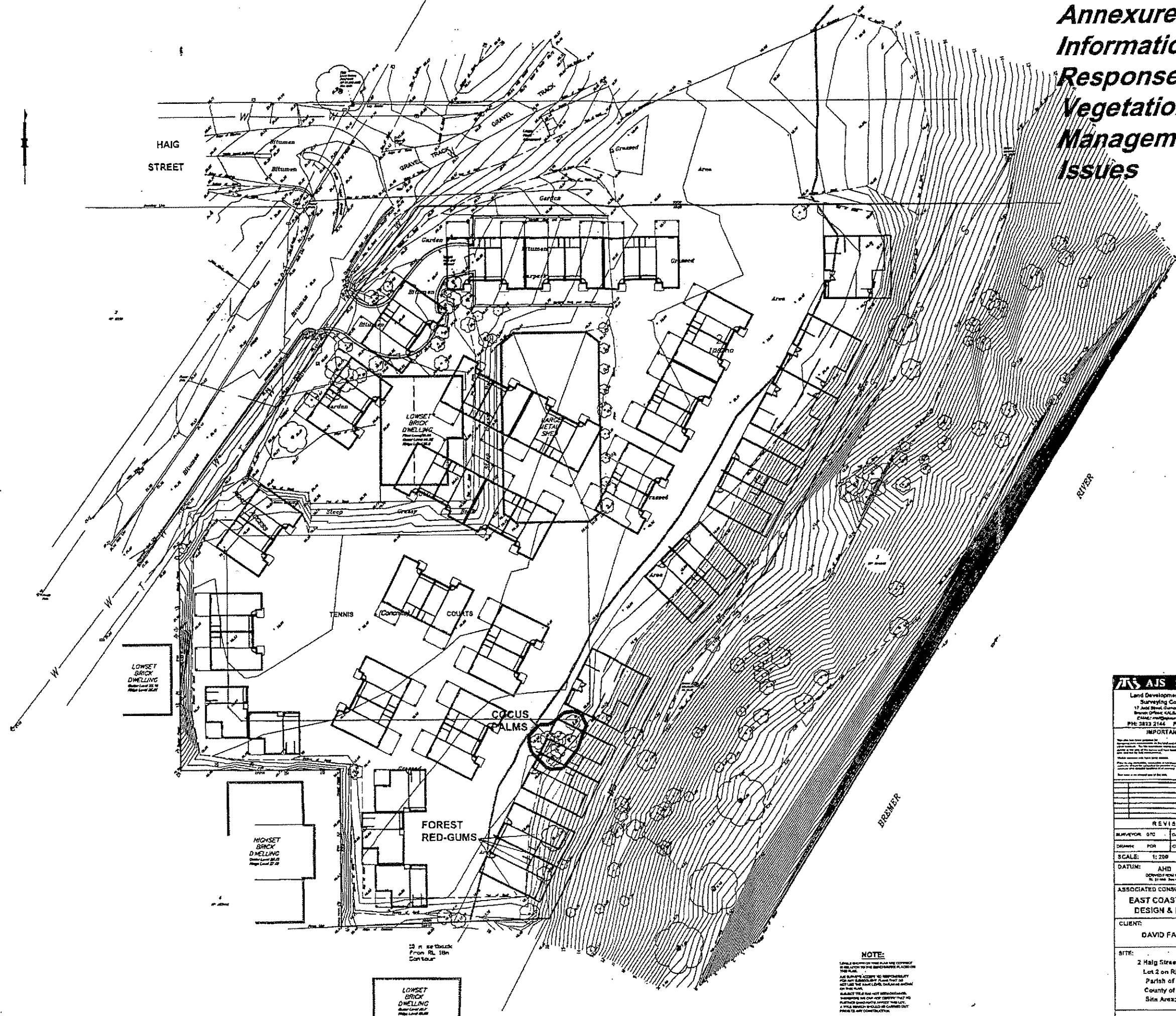
Yours faithfully



*Principal Ecologist
for Cardno*

Enc: Annexure A : Annotated Detailed Survey – Development Layout Plan.

Annexure A : Information Request Response - Vegetation Management Code Issues



AIS SURVEYS
Land Development, Planning & Surveying Consultants
17 And Street, Gungahlin, ACT 2916
Brisbane Office: 400/400, CLIVEHILL
EMAIL: info@aisurveys.com.au
PH: 2823 2144 FAX: 2823 2128

IMPORTANT NOTE
This plan is prepared in accordance with the Survey Act 1958 and the Survey Regulations 1961. It is a legal document and should be read in conjunction with the relevant legislation. The client is responsible for ensuring that the plan is used for the purpose for which it was prepared. The client is also responsible for ensuring that the plan is used in accordance with the relevant legislation. The client is also responsible for ensuring that the plan is used in accordance with the relevant legislation.

NO.	DATE	REVISIONS
1		
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REVISIONS

REVISION NO.	DATE	BY	FOR
1	29/10/16		

SCALE: 1:250
DATE: AHD
OCCUPY FROM THE CITY OF GUNGALIN ACT 2016

ASSOCIATED CONSULTANTS:
EAST COAST BUILDING DESIGN & DRAFTING

CLIENT:
DAVID FARLEY

SITE:
2 Haig Street, Gungahlin
Lot 2 on RP 157016
Parish of Gungahlin
County of Churchill
Site Area: 1,262 Ha

PLAN REF: F0235-01

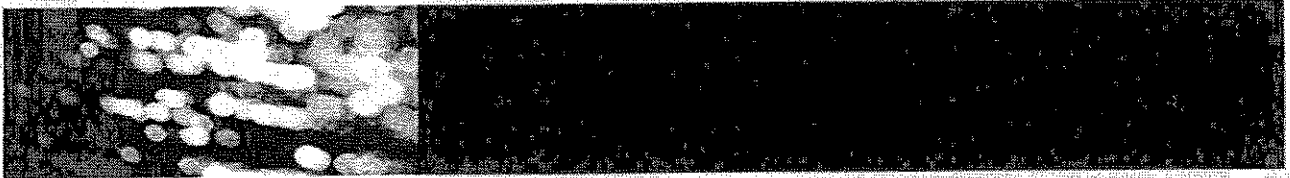
NOTE:
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APPENDIX 3

Flood Study



Cardno
Engineering the Future



2 Haig Street, Brassall

Flood Study

8 August 2006
Job No. 7396-11

Colran Pty. Ltd.

Cardno (Qld) Pty Ltd

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Document Control					
Version	Date	Author		Reviewer	
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1	9 August 2006				

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**2 HAIG STREET, BRASSALL
FLOOD STUDY**

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Figure 5	Extent of inundation

APPENDICES

APPENDIX A	MIKE 11 Cross-sections
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1. INTRODUCTION

It is proposed by Colran Pty. Ltd. to redevelop a disused tennis club located at 2 Haig Street, Parish of Brassall, County of Churchill for residential purposes. The site is described as Lot 2 on RP 857016. The site has an approximate area of 1.3 ha and is located adjacently to the Bremer River in Brassall. The location of the site is shown on Figure 1.

Currently the site is partially developed and contains areas of cleared land. The site also comprises impervious areas in disuse such as tennis courts and a club house.

A hydraulic study has been completed to determine peak flood levels corresponding to the 100 year and 20 year Average Recurrence Interval (ARI) events across the site. This report details the analysis undertaken and the results obtained.

2. SITE DESCRIPTION

The proposed development site has an approximate total area of 1.3 hectares. The site location is shown on Figure 1.

The site is bounded to the north and west by Haig Street, to the south by Residential housing and to the east by the Bremer River. Mihi Creek merges with the Bremer River just downstream of the site.

The ground levels across the site range from 21 m AHD at the western boundary of the site to 15 m AHD at its eastern boundary on the left bank of the Bremer River. The site currently comprises partially developed land and impervious areas in disuse such as tennis courts and a club house. Photographs of the characteristic vegetation and topography of the subject site are presented in Figure 2.

The proposed development involves dividing the site to allocate residential lots and roads to provide access to the existing road network.

3. BREMER RIVER FLOODING

The Bremer River is located on the eastern boundary of the site. Ipswich City Council has defined the following flood levels for the subject site in case of the 100 year and 20 year ARI storm events:

- 100 Year ARI Event 18.9 m AHD
- 20 Year ARI Event 15.0 m AHD

Accordingly to the above flood levels a portion of the site will be inundated for the 100 year ARI storm event, specifically the riverfront dwellings and adjacent roads.

To provide flood immunity for the proposed dwellings and roads, it is proposed to fill the site areas located below the 100 year ARI flood level. Compensatory excavation works will also be undertaken to increase the available storage for large flood events and consequently augment the flood immunity of the site.

As the proposed earthworks and filling could impact on flood levels in the Bremer River, a hydraulic study was undertaken to quantify the impact and to determine the ameliorative measures required to ensure that flood levels are not increased as a result of development.

Fill below
15.0 →

4. BREMER RIVER MIKE11 MODEL

4.1 General

The Bremer and Brisbane Rivers were originally modelled by Sinclair Knight Merz for Ipswich City Council using the 1-D hydrodynamic program MIKE11 developed by DHI.

Council agreed to provide data from a portion of a reach of this model to use in the present flood investigation. The data provided included cross-sections, flow hydrographs (assuming ultimate catchment development) and stage hydrographs calculated using the overall model at the downstream end of the reach.

Cardno developed a new model of the Bremer River based on the data of the truncated reach provided by Council, which extends both upstream and downstream of the site, from cross-section BREM 1000800 to BREM 1010020. A portion of the Ipswich Rivers MIKE11 model layout is reproduced as Figure 3 and shows the extent of the truncated model and the location of cross-sections within the reach.

Due to the large extent of the overall area modelled by Council, the cross-sections supplied to Cardno were at a spacing of about 500 metres. However, only one existing cross-section coincided with the subject site. To provide additional cross-sections in the region of interest, additional survey of the site and surrounding areas was undertaken and included in the new model. Consequently, six cross-sections were inserted into the model to represent in detail the proposed development site (chainages 1009452 to 1009593; Table 1).

Cross-sections were drawn from available contour information with a contour spacing of 0.25 metres. The layout of the new model is shown in Figure 4. Where new cross-sections were located near or at existing cross-sections the latest cross-section data was adopted. As the survey did not include areas below the water line, appropriate bed levels were adopted for each new cross-section based on cross-section 1009675 of the Council MIKE11 model (nearest existing cross-section to the subject site). The added cross-sections are shown in Appendix A.

This new hydraulic model was used to determine the flood levels corresponding to the 100 year and 20 year Average Recurrence Interval (ARI) events across the proposed development site. Storm durations of 18 and 30 hours were analysed to define the critical flooding across the site.

4.2 Methodology

To determine the impact of the proposed development on flood levels, two cases were modelled:

- Existing case; and
- Developed case

The existing case was based on the new MIKE11 model (including the newly added cross-sections) with ultimate catchment flows. The existing case was then modified to account for the proposed development.

The developed case model was established by modifying the MIKE11 model to reflect the proposed filling and excavation.

Not supported
by ICC

It is proposed to fill the site areas located below the 100 year ARI flood level and undertake compensatory excavation works within the area located directly under the riverfront dwellings to increase the available storage for large flood events and provide extra space for recreation purposes to householders.

The extent of proposed earthworks is shown in Figure 4. The cross sections affected by the proposed development are between BREM1009452 (upstream) and BREM1009593 (downstream). Appendix A shows the modified cross sections used to represent the development case relative to the existing case.

It can be noted that the proposed earthworks will be compensatory and have been limited to areas at or above 17 m AHD. As this level is above the defined 20 year flood level, the change in available storage will be effective only for large flood events.

For the existing case, the MIKE11 model used the resistance values from the original model, duplicating them in the new cross-sections. The resistance values used in the developed case model were the same as for the existing case model for most of the cross-section. However resistance values for the proposed excavated areas under the riverfront dwellings were increased to Manning's n values of 0.52 for the proposed recreation area under the houses and reduced to values of 0.052 for the concrete slab areas to reflect the change in roughness at these sections (refer to Figure 4).

The radius type of Resistance Radius was used for the computation of processed data, similarly to the previous Council MIKE11 model.

Both, the existing and developed case models were run for the 100 year and 20 yr ARI local flood events with storm durations of 18 and 30 hours, to define the critical flooding across the site.

A recent review done by Brisbane City Council of the hydrology used in its modelling has indicated that flows from Brisbane River have changed. While the Council MIKE11 model is being reviewed to reflect these changes, it can be assumed that the 100 year ARI event can be modelled using what was considered to be the 50 year event flows. In fact, the 100 year ARI flood levels quoted by council correspond to MIKE11 results of the 50 year ARI event. The critical storm duration for this event at the subject site is the 50 year 30 hour flooding of Brisbane River. ← ???

The existing case model was calibrated so that results agreed with those obtained by Council for the 50 year 30 hour flooding of Brisbane River, and then modified to account for the proposed development.

4.3 Results

Peak flood level results for the 100 year and 20 year ARI events are summarised in Table 1 and Table 2 respectively. Results for both existing and proposed development cases are included. A summary of the afflux resulting from the proposed development is also presented, where a positive value indicates an increase in flood level. The extent of inundation for the 100 year event is shown in Figure 5.

Results in Table 1 demonstrate that for the 100 year ARI flood event, peak water levels for the developed case are similar than those for the existing case. The impact of the proposed development produces a maximum increase of 4 mm in flood level within the site. Such an increase is considered to be insignificant.

It is expected that the final shape of the compensatory works will be developed as part of detailed design. It should be noted that the flood levels presented in Table 1 for the site are comparable to the 100 year ARI flood level of 18.9 m AHD that Council quoted for the site.

Results in Table 2 show that for the 20 year ARI flood event, the proposed development produces a maximum increase of 2 mm in flood level within the site. Again, this increase is considered insignificant.

The obtained results are generally higher than the 20 year ARI flood level of 15.0 m AHD quoted for the site due to the recent revision of rainfall data for the region. The 20 year ARI event for this analysis relates to previous rainfall estimates. Although, there are no reliable flow data to adequately compare results corresponding to the 20 year ARI event, results demonstrate that the minimum elevation of the proposed earthworks is above this flood line.

Table 1 100 year ARI Flood Levels

Cross-section	100 Year Event			Afflux (mm)
	Previous Council Model (m AHD)	Existing Case Flood Level (m AHD)	Developed Case Flood Level (m AHD)	
BREM 1008000.00	20.60	21.136	21.137	1
BREM 1008390.00	20.39	20.970	20.970	0
BREM 1008410.00	20.26	20.309	20.310	1
BREM 1008420.00	20.18	20.237	20.238	1
BREM 1008660.00	19.86	19.919	19.920	1
BREM 1009210.00	19.21	19.278	19.279	1
BREM 1009452.00		19.046	19.050	4
BREM 1009472.00		19.042	19.043	1
BREM 1009493.00		19.032	19.031	-1
BREM 1009519.00		19.000	18.999	-1
BREM 1009549.00		18.960	18.964	4
BREM 1009585.00	18.88	--	--	--
BREM 1009593.00		18.933	18.934	
BREM 1009675.00	18.82	18.884	18.884	0
BREM 1010020.00	18.38	18.383	18.383	0

Note: Sections within site are shaded

Table 2 20 year ARI Flood Levels

Cross-section	20 Year Event			Afflux (mm)
	Previous Council Model (m AHD)	Existing Case Flood Level (m AHD)	Developed Case Flood Level (m AHD)	
BREM 1008000.00	18.52	18.671	18.673	2
BREM 1008390.00	18.29	18.457	18.459	2
BREM 1008410.00	18.13	18.155	18.157	2
BREM 1008420.00	18.07	18.095	18.097	2
BREM 1008660.00	17.78	17.808	17.810	2
BREM 1009210.00	17.18	17.217	17.219	2
BREM 1009452.00		16.988	16.990	2
BREM 1009472.00		16.986	16.985	-1
BREM 1009493.00		16.978	16.978	0
BREM 1009519.00		16.947	16.948	1
BREM 1009549.00		16.910	16.912	1
BREM 1009585.00	16.87	--	--	--
BREM 1009593.00		16.887	16.886	-1
BREM 1009675.00	18.82	16.842	16.842	0
BREM 1010020.00	16.41	16.405	16.405	0

Note: Sections within site are shaded

5. CONCLUSION

A flood study has been conducted to determine the flood levels applicable to the 100 year and 20 year ARI storm events for the proposed residential development at 2 Haig Street, Brassall.

The 100 year flood levels corresponding to the existing and post-development conditions of the Bremer River are presented in Table 1. Its corresponding extent of inundation is shown in Figure 5. The site flood levels corresponding to the 20 year event for the Bremer River are presented in Table 2.

Accordingly to the flood levels provide by Council, a portion of the site will be inundated for the 100 year ARI storm event, specifically the riverfront dwellings and adjacent roads. To provide flood immunity across the site, it is proposed to fill a portion of the site to a level 500 mm higher than the 100 year ARI inundation level (refer to Figure 4 for the location of the proposed filling).

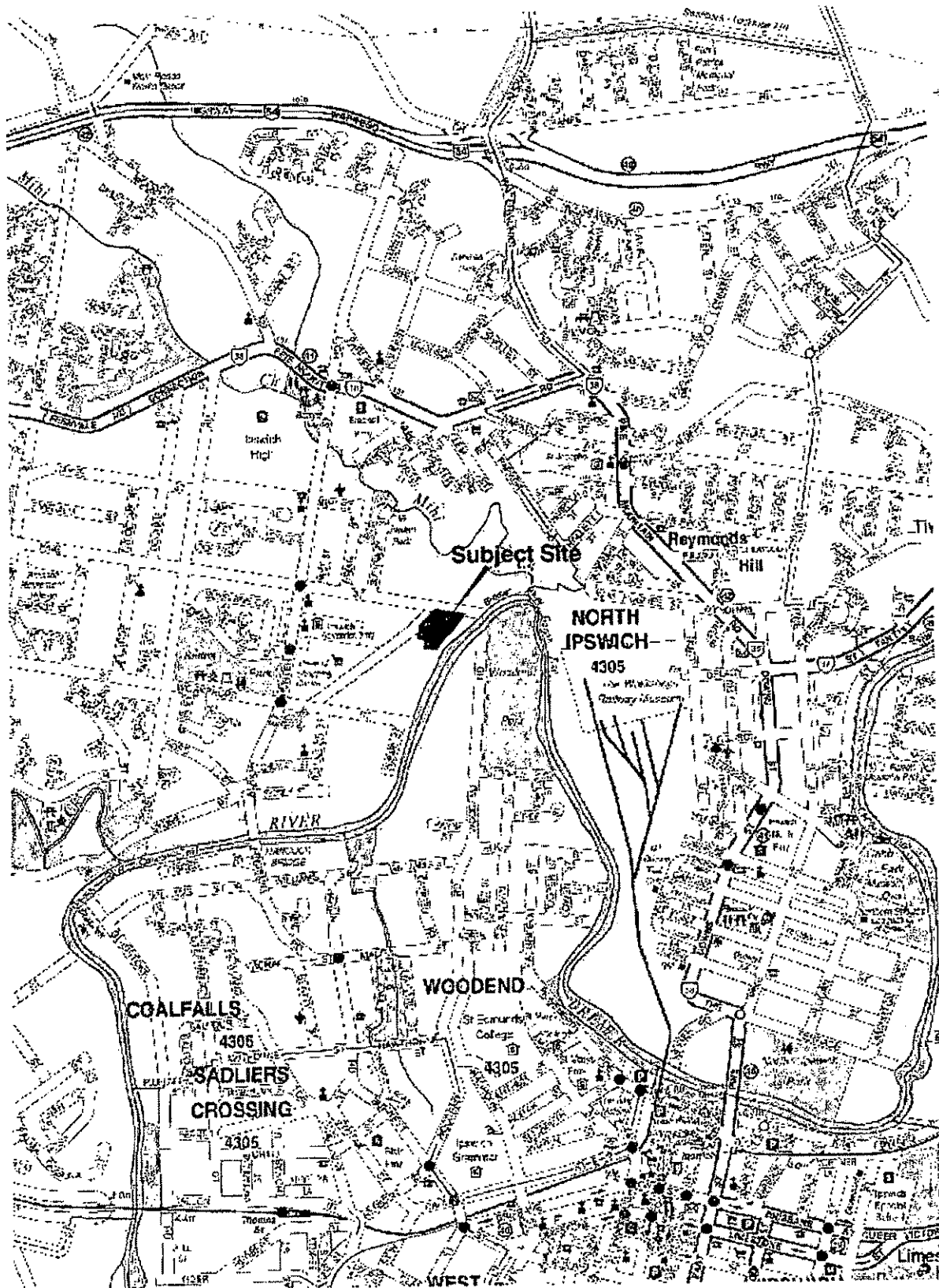
Hydrodynamic modelling of the proposed development and compensatory earthworks has indicated that for the 100 year ARI storm event, the development causes a maximum increase of 4 mm in the flood levels within the site. This flood level increase is considered negligible as it does not impact in the adjacent residential properties and the site itself.

what about d/e properties

Therefore, it is concluded that the proposed development does not produce unacceptable impacts on flood levels on residential properties and roads upstream or downstream of the site.

FIGURES

- Figure 1** **Locality Plan**
- Figure 2** **Existing vegetation and disused land at the site**
- Figure 3** **Ipswich Rivers MIKE11 Model layout**
- Figure 4** **New truncated Bremer River MIKE11 Model layout**
- Figure 5** **Extent of inundation**



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Rev. Orig. Date: 09 August 2006

Colran Pty Ltd
CAD FILE: J:\7396-1\Acad\Flood Study\Figure 1 - Locality Plan.dwg
ARF:

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FIGURE 1 LOCALITY PLAN

Project No.: 7396/11

PRINT DATE: 09 August, 2006 - 14:09



Figure 2b - Brassall Recreation Clubhouse

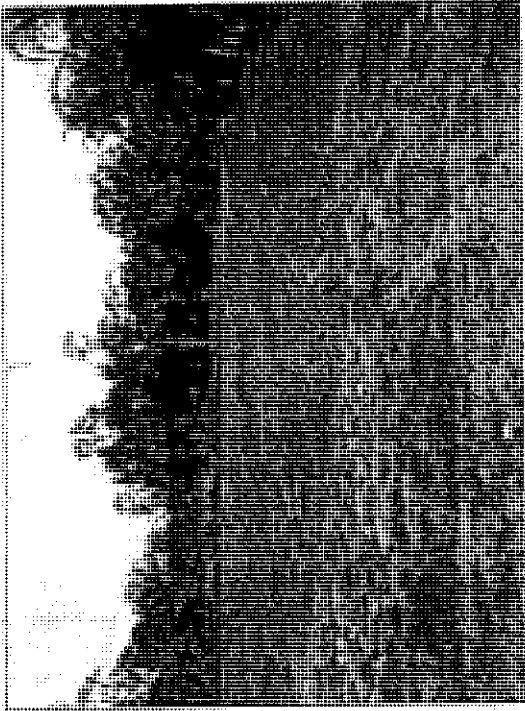


Figure 2c - Clevedon Land



Figure 2b - Existing Clubhouse



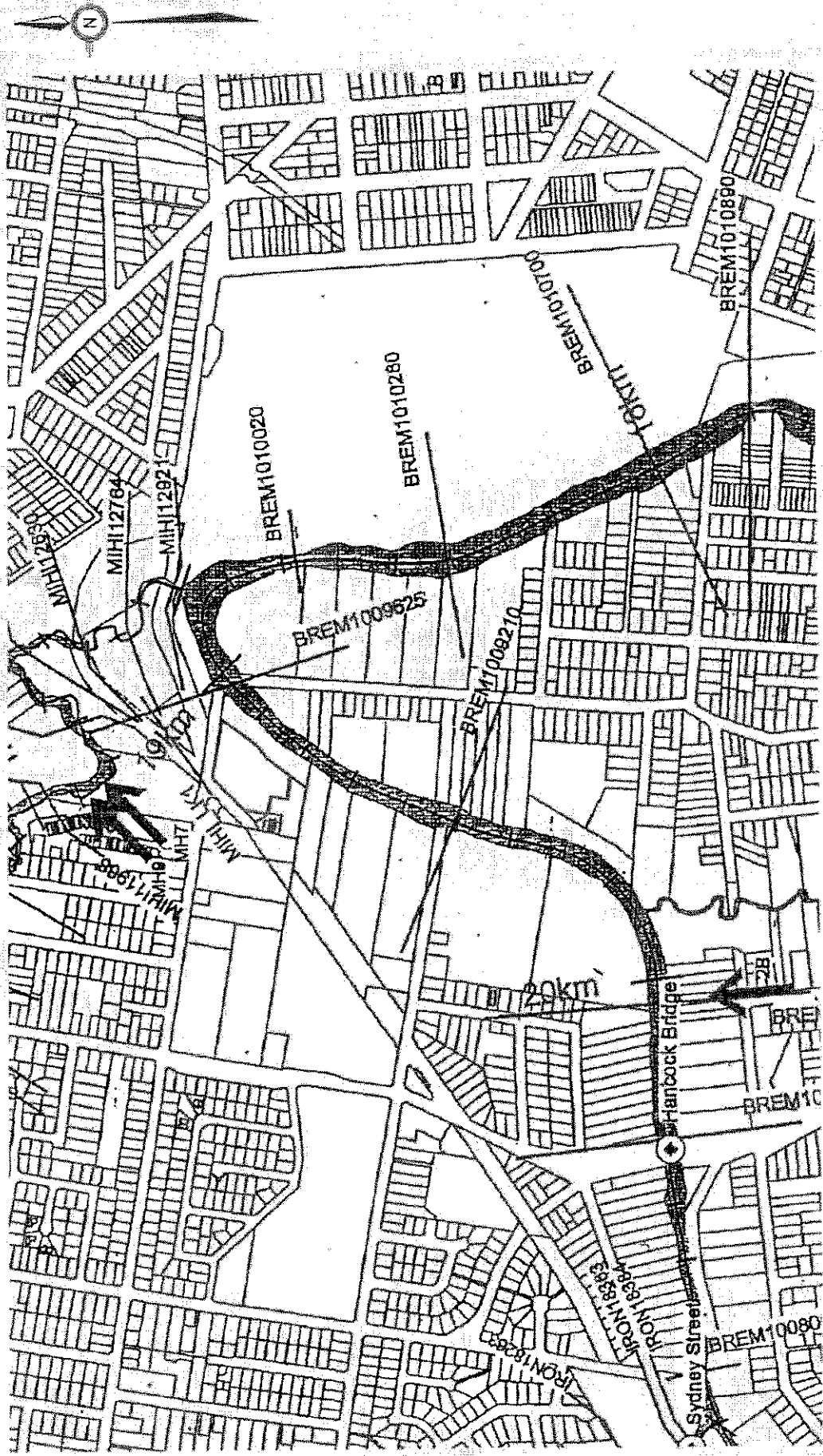
Figure 2d - Disused Tennis Courts

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Rev: 000 Date: 09 AUGUST 2006
 PROJECT: 2 MAG STREET
 CLIENT: 2 MAG STREET DEVELOPMENT

**FIGURE 2
 EXISTING VEGETATION AND IMPERVIOUS AREAS AT THE SITE**

Project No.: 720011
 Date: 09 AUG 2006



Scale 1:10,000 (A4)
FIGURE 3
IPSWICH RIVERS MIKE11 MODEL LAYOUT

MIKE11 Model Layout sourced from Ipswich River Flood
Study, MIKE11 Model Structure, Sheet 20, Ipswich City
Council

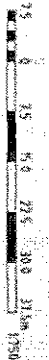
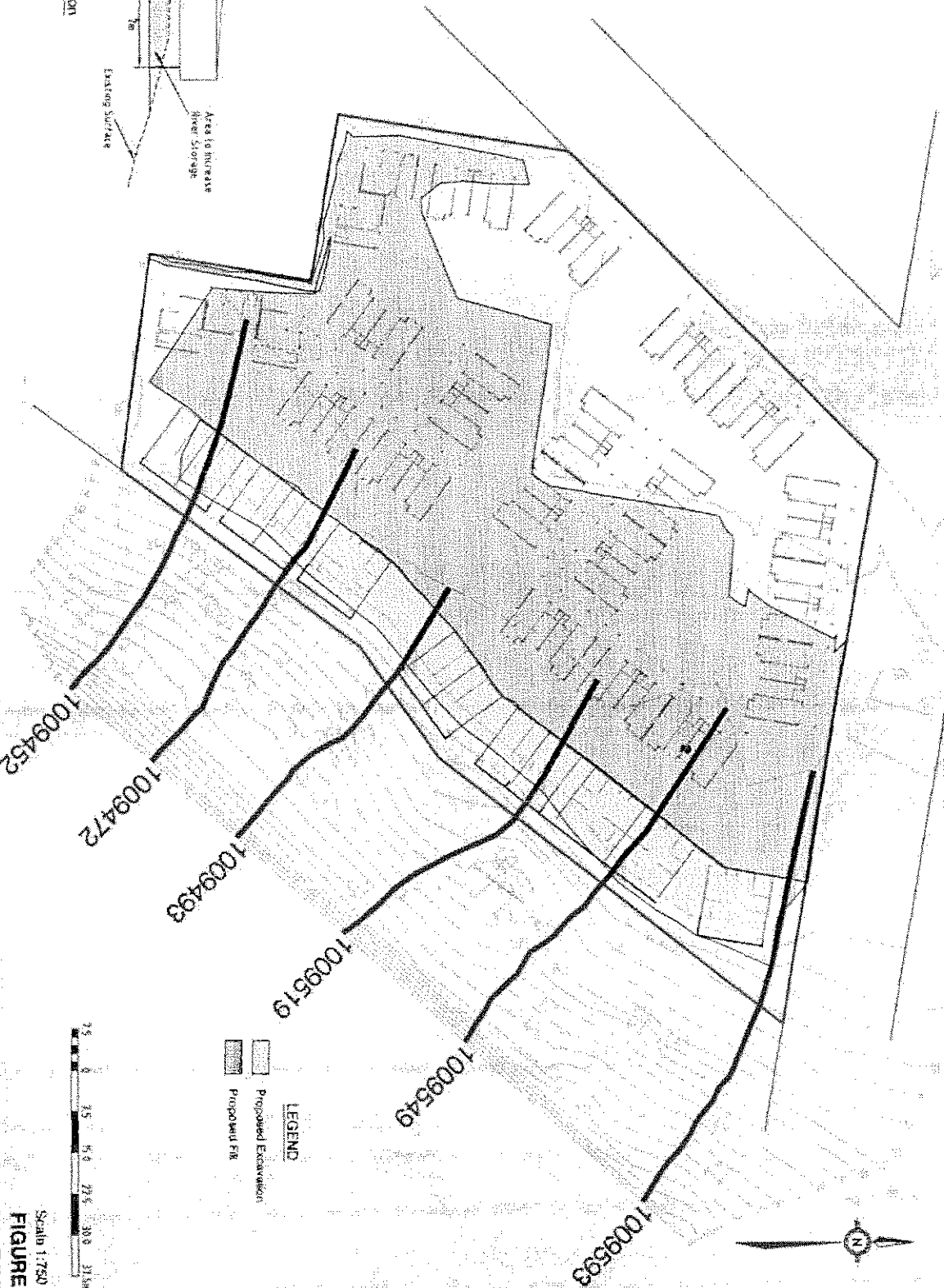
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Rev: Orig; Date: 09 August 2008

Coiran Pty Ltd

2 Haig Street, Brassall, Queensland 4701, Ipswich River Flood Study (RFS) 04

Project No.: 7395/11
Print Date: 09 August 2008 - 14:26



LEGEND
[Symbol] Proposed Excavation
[Symbol] Proposed FR

Scale 1:750 (A3)
FIGURE 4
NEW TRUNCATED BREMER RIVER
MIKE11 MODEL LAYOUT

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Cardno Pty Ltd
Date: 08 August 2006
Project No: 238611






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Plan: D09 Date: 08 August 2008
 Client: NY Ltd
 Project: 2 Haig Street, Grosskill, NJ 07031



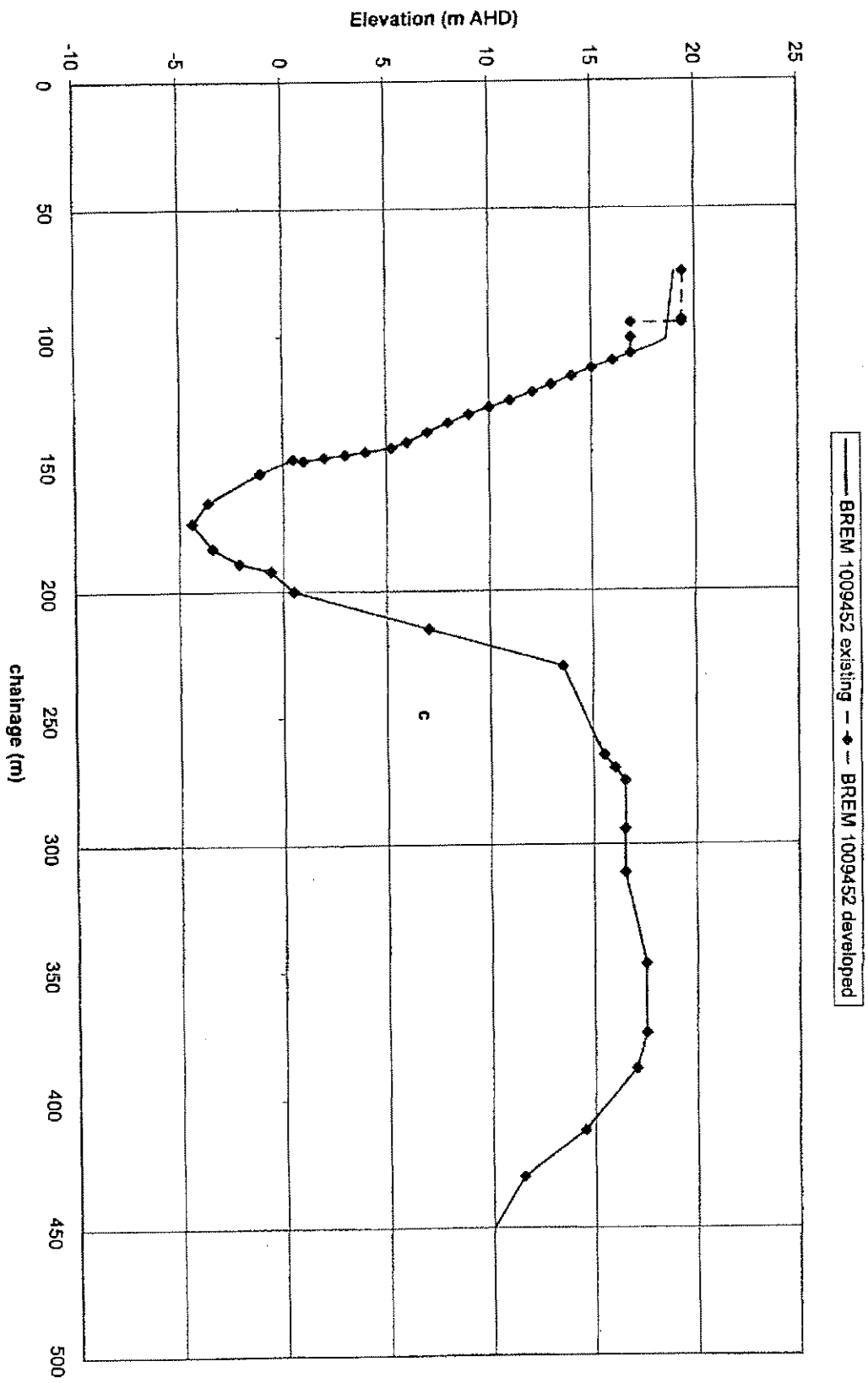
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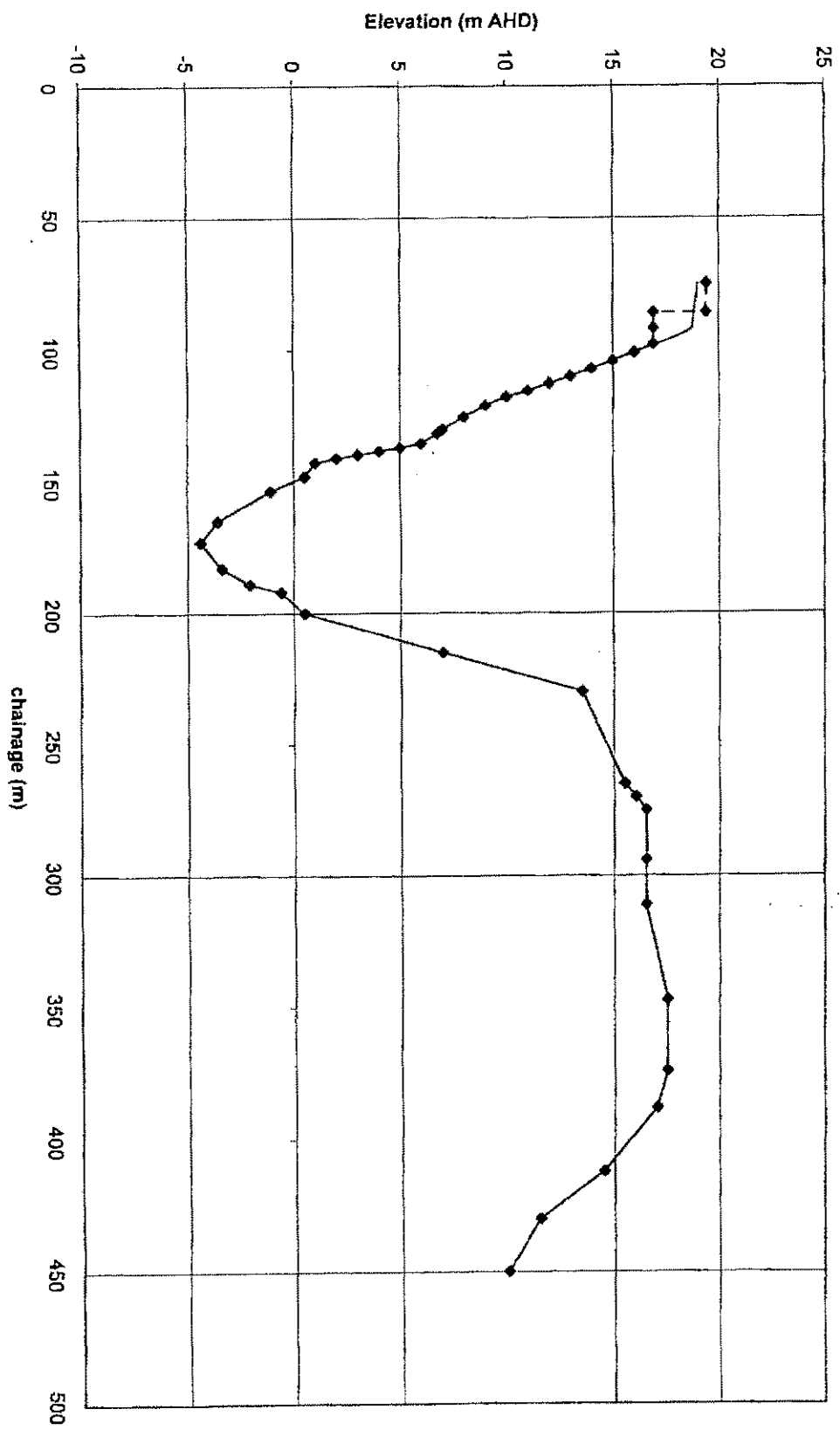
-  100 Year Flood Inundation
-  Proposed Excavation
-  Proposed Fill

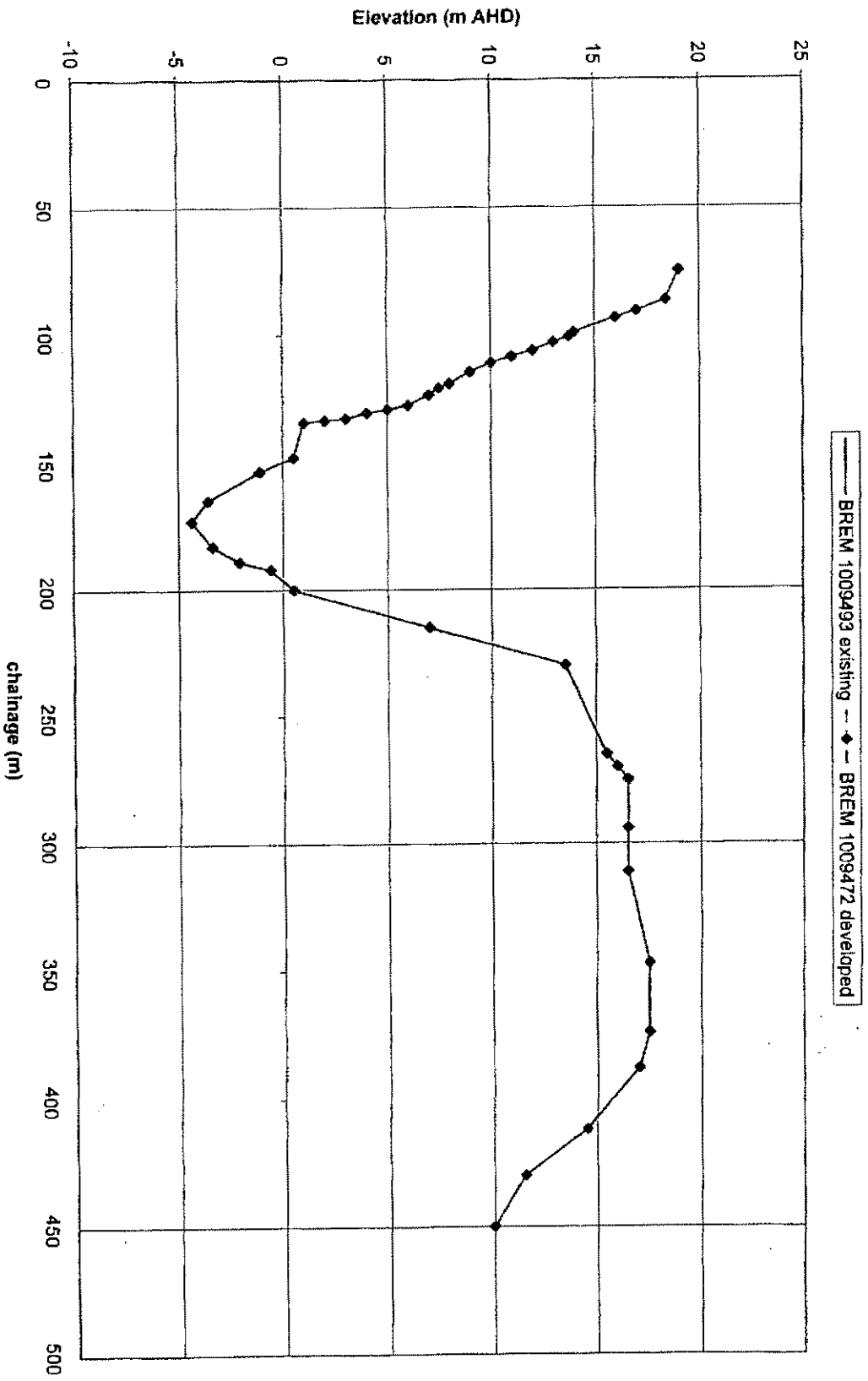
Scale 1:750 (A3)
FIGURE 5
EXTENT OF INUNDATION

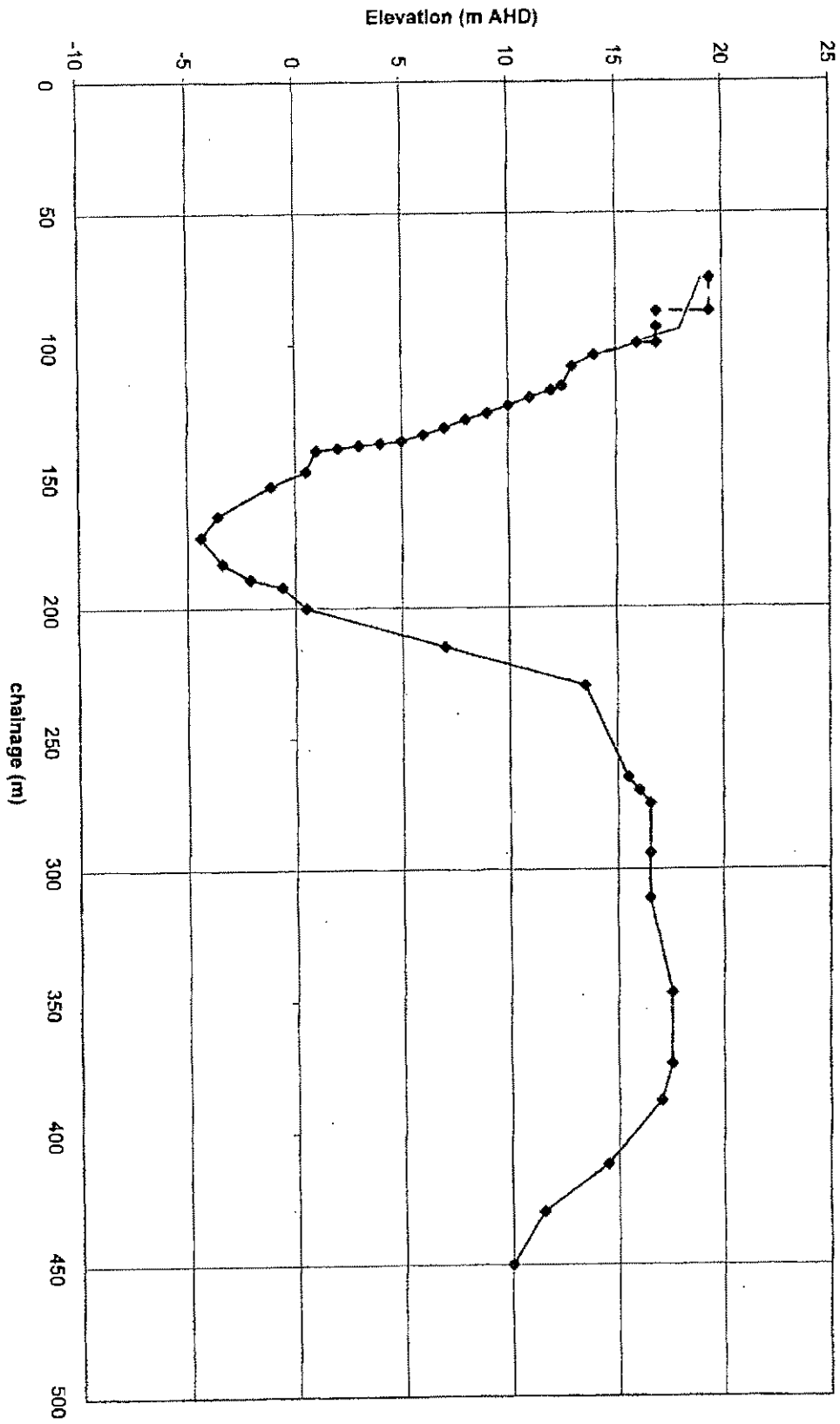
APPENDIX A

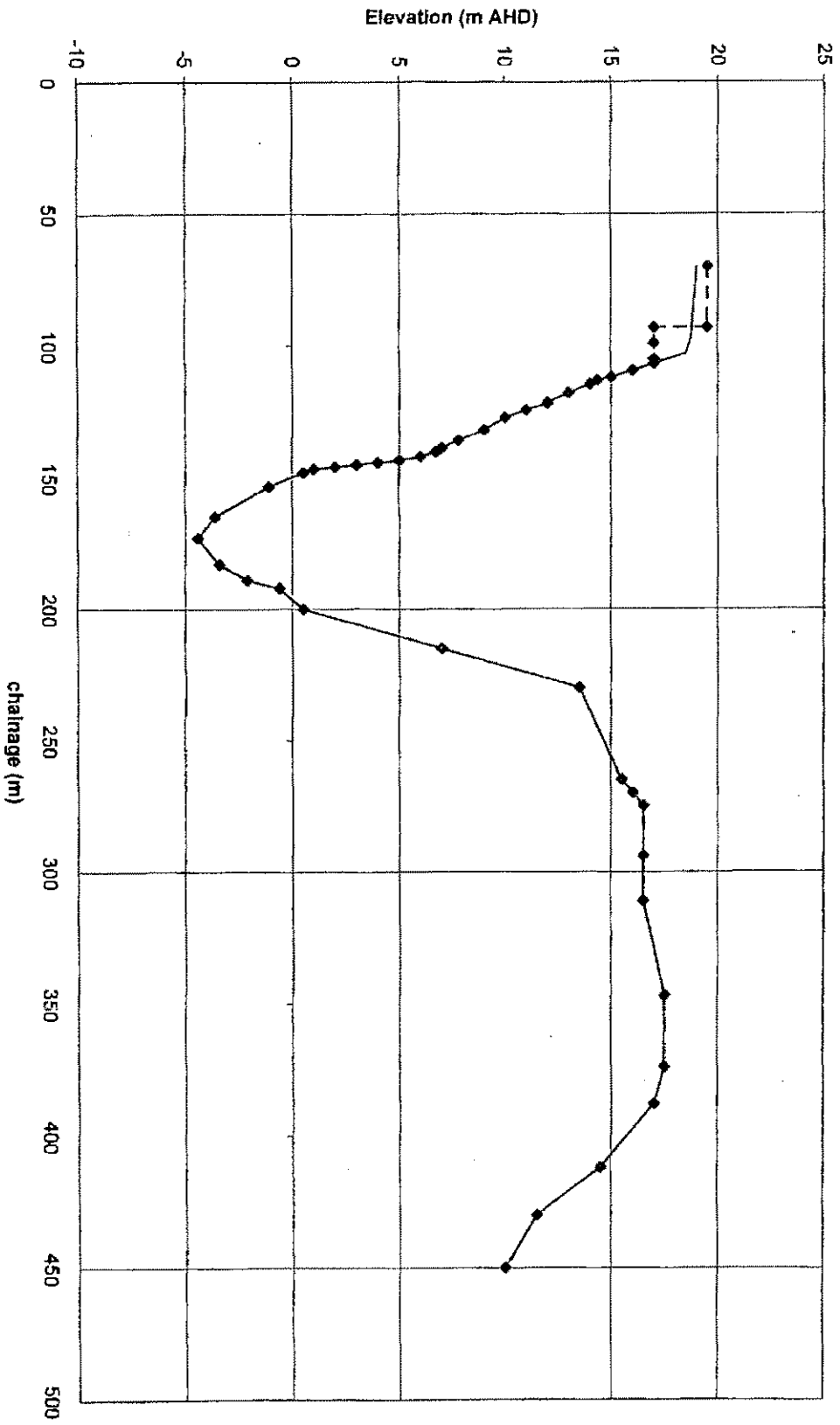
MIKE 11 Cross-sections

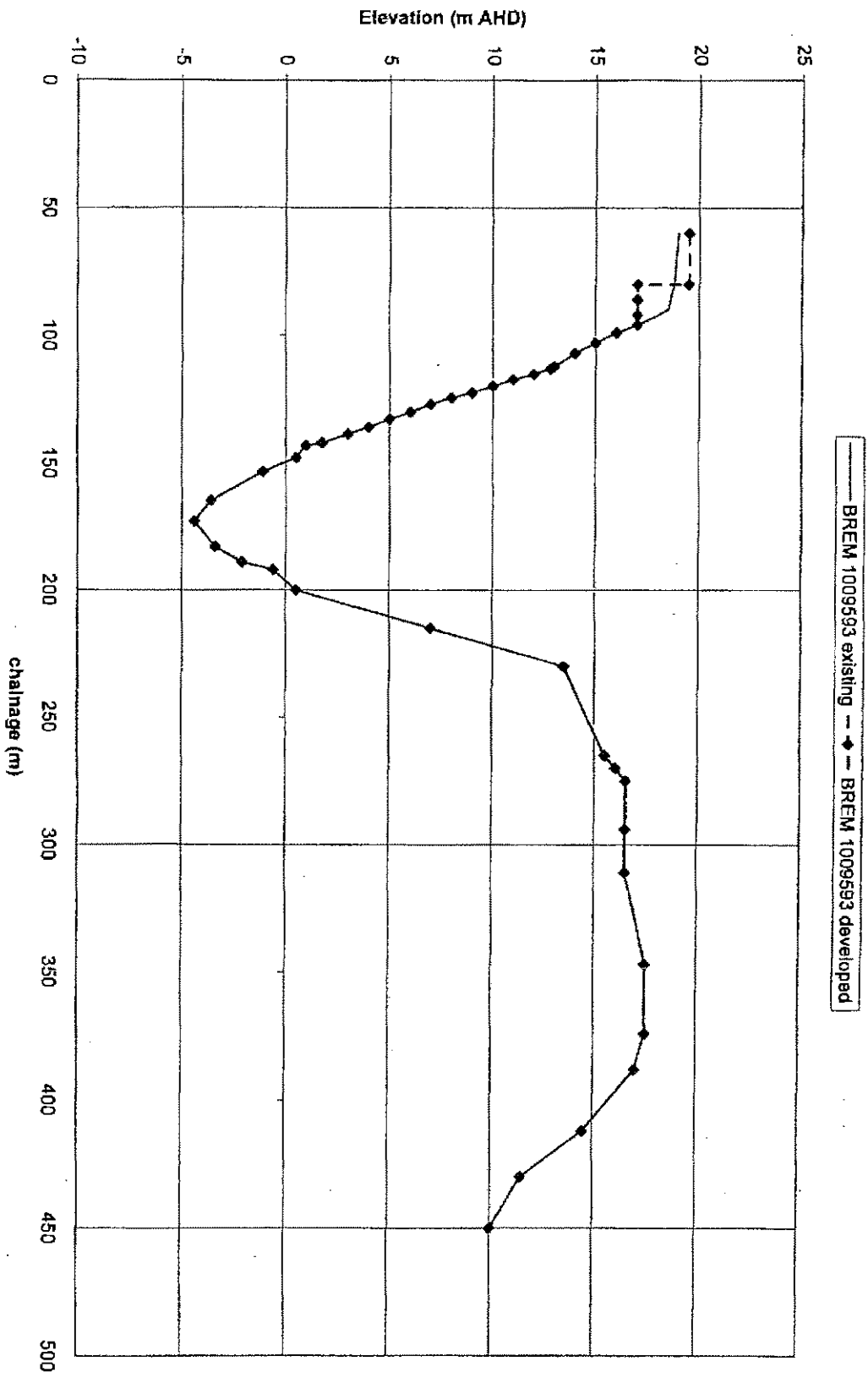












APPENDIX 4

Traffic Report

Proposed Multi-Unit Development
2 Haig Street, Brassall

TRAFFIC ENGINEERING REPORT

Prepared for
Colran Pty Ltd

12th July 2006
TTMRef: 22562rep

*Inquiries about this report should be directed to [REDACTED]
at our Brisbane office on (07) 3327 9500*

1. Background

TTM Consulting has been engaged by Colran Pty Ltd to prepare a traffic engineering report investigating the proposed multi-unit development at 2 Haig Street, Brassall. It is understood that the traffic report will form part of a Development Application to be lodged with Ipswich City Council.

The primary traffic engineering issues detailed in the information request include:

- Undertake a traffic impact analysis of the proposed subdivision on the surrounding road network
- Assess the suitability of the internal road layout
- Assess the adequacy of access intersection arrangements
- Assess the suitability of car parking arrangements
- Assess the adequacy of service vehicle arrangements
- Determine required road upgrades (if any)

In preparing this report, TTM have inspected the subject site and undertaken traffic surveys at key intersections.

1.1 Location of the Subject Site

The proposed development is located at Haig Street, Brassall in Ipswich City Council. A locality plan of the development is shown in Figure 1.1.

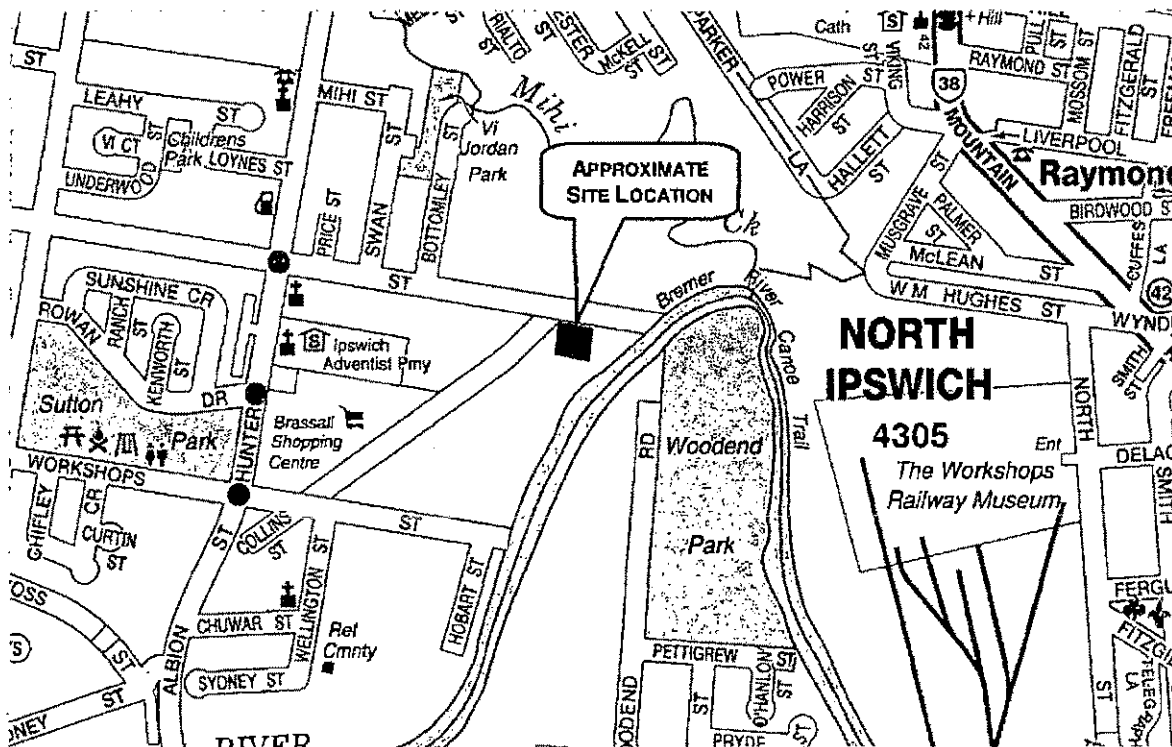


Figure 1.1 Locality Plan

1.2 Current Site Use

The subject property is currently occupied by vacant land.

2. The Proposed Development

The proposed multi-unit development at 2 Haig Street, Brassall comprises of 48 multi-unit dwellings. A development plan is provided by East Coast Building Design & Drafting (Drawing No. DA-1).

2.1 Proposed Access Arrangements

It is that the proposed multi-unit development will have access onto Haig Street and Collins Street. The proposed access driveways have crossover widths of 6m.

2.2 Proposed Car Park Arrangements

The proposed car parking arrangements for the development incorporates 101 spaces including 1 x PWD space.

3. Existing Transport Infrastructure

3.1 The Road Network

The hierarchy and characteristics of roads in the vicinity are presented in Table 3.1.

Road	Speed Limit	Lanes	Classification	Management
• Hunter Street	50kph	2	Intersuburban Road	ICC
• Haig Street	50kph	2	Collector Road	ICC
• Collins Street	50kph	2	Subarterial Road	ICC

Table 3.1: Road Network Characteristics

The intersection of Hunter Street / Haig Street is a four way signalised intersection.

The Haig Street / Collins Street intersection is a priority controlled (Give Way) T-intersection.

Haig Street has a varying carriageway width between 7.5m and 10.8m and a road reserve width of approximately 20m.

Collins Street has a varying carriageway width between 6.1m and 8m and a road reserve width of approximately 18m.

3.2 Road Planning

Consultation with the Ipswich City Council indicated that there is a 4m wide land resumption strip along Collins Street plus a 20m two chord truncation at the intersection with Haig Street requirement for the subject property.

4. Existing Traffic Volumes

4.1 Peak Hour Traffic Volumes

TTM Data conducted an intersection movement survey at the intersection of Hunter Street / Haig Street during both the AM and PM peak periods between 7-9am and 4-6pm on Monday 15th May 2006. The results of the AM (8:00-9:00am) and PM (4:30-5:30pm) peak hours are shown below in Figure 4.1.

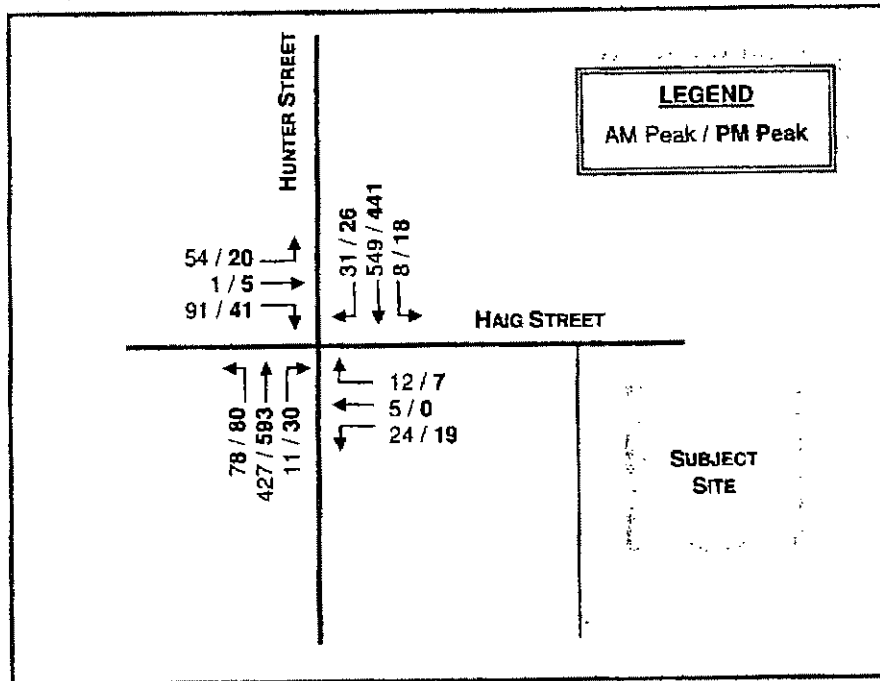


Figure 4.1 2 Haig Street, Brassall Surrounding Road Network 2006 AM / PM Peak Traffic Volumes

4.2 Recent Traffic Growth

TTM have assumed a traffic growth rate of 4%pa for all roads in the surrounding road network for calculating the traffic volumes in the 10 year planning horizon.

5. Estimated Future Transport Demands

5.1 Development Transport Demand Generation

The DMR Road Planning and Design Manual contain rates for estimating traffic generation for residential developments of this nature. The DMR peak hour rate for medium density dwellings is 0.6vph / dwelling. These are rates for low-medium density, dwelling houses which is the form of housing for this development. This equates to approximately 29vph for the entire development.

5.2 Development Traffic Distribution

It is assumed that there would be a ratio of 75% inbound traffic / 25% outbound traffic in the AM peak period and the reverse in the PM peak period.

Development generated traffic will be distributed onto the Haig Street and Collins Street. Presented in Figure 5.1, are the estimated development traffic distribution for the AM and PM peak periods on the development's surrounding road network.

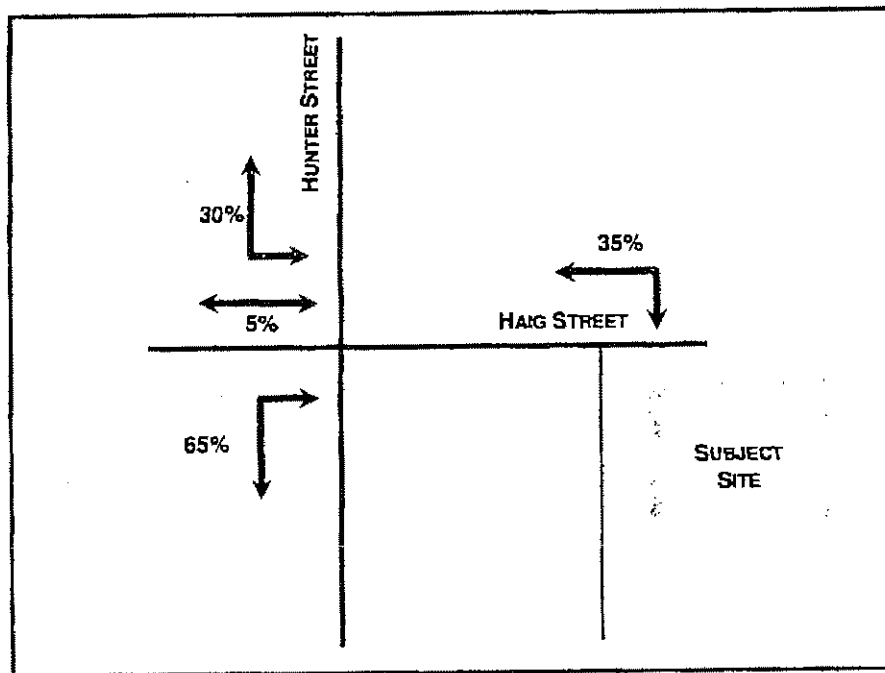


Figure 5.1

Proposed Brassall Multi-Unit Development
Development Traffic Distribution

The traffic generated by the proposed development for the AM and PM peak periods are shown in Figure 5.2.

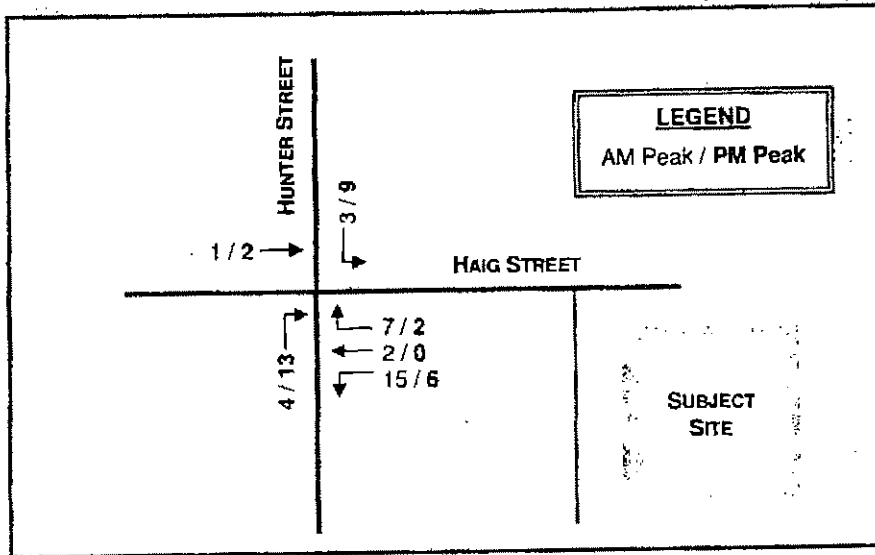


Figure 5.2 Proposed Brassall Multi-Unit Development
AM / PM Peak Development Traffic

5.3 Future Traffic Demands without Development

The mentioned growth rates in Section 4.2 have been applied in order to estimate the 2017 AM and PM peak traffic volumes. The future traffic volumes for the surrounding are shown in Figure 5.3.

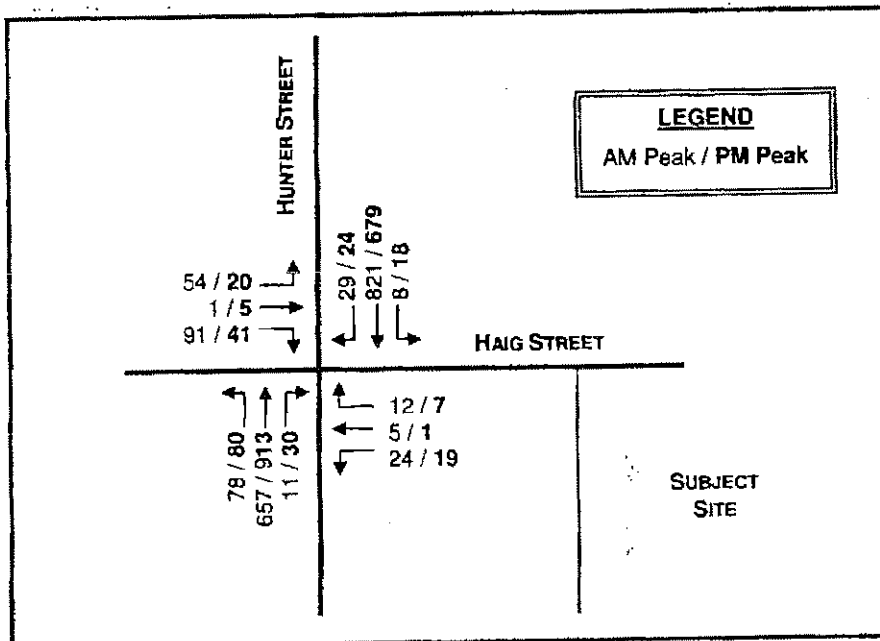
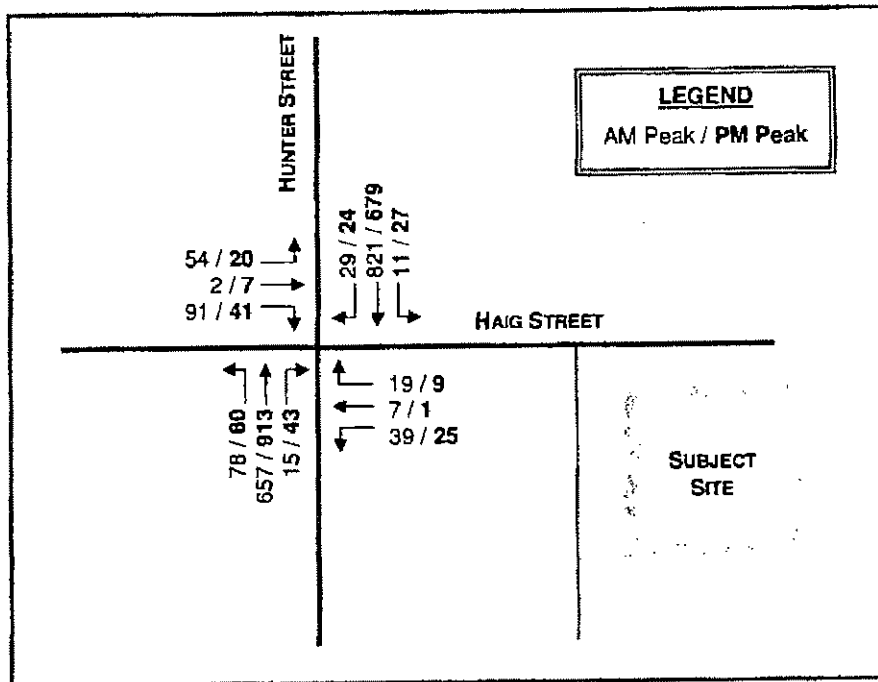


Figure 5.3 Brassall Multi-Units Surrounding Road Network
2017 AM / PM Peak Traffic Volumes without Development

5.4 Future Traffic Demands with Development

The future traffic volumes including traffic generated from the development for the surrounding road network at Haig Street, Brassall are shown in Figure 5.4.



**Figure 5.4 Brassall Multi-Units Surrounding Road Network
2017 AM / PM Peak Traffic Volumes with Development**

6. Road Network Performance

In order to assess the potential traffic impacts of the proposed development on the local road network, the Hunter Street / Haig Street four-way signalised intersection has been identified as the key intersection for assessment. The intersection has been analysed using aaSIDRA 2.1 intersection analysis software for the following scenarios:

- Existing (2007) Without Development – AM & PM Peak Hours
- Existing (2007) With Development – AM & PM Peak Hours
- Future (2017) Without Development – AM & PM Peak Hours
- Future (2017) With Development – AM & PM Peak Hours

The year 2017 represents the 10 year design horizon commonly used to determine future impacts of proposed developments. The traffic volumes shown in Figures 5.2 and 5.3 were used in the analyses. It should be noted that these volumes represent estimated future traffic volumes that are based on broad assumptions. As such these volumes and the following intersection analyses are indicative only.

The performance of the Hunter Street / Haig Street four-way signalised intersection for the various scenarios is summarised in Table 6.1. Results of the analyses can be found in Attachment A.

Scenario	Intersection Performance Measure			
	Level of Service	Degree of Saturation (%)	Average Delay (sec)	95 th %ile Queue (m)
2007 AM Base Case	C	71.1	20.2	63
2007 AM Project Case	C	72.1	20.3	64
2007 PM Base Case	B	69.7	22.4	63
2007 PM Project Case	C	72.7	22.5	69
2017 AM Base Case	C	72.7	23.5	82
2017 AM Project Case	C	73.5	23.5	83
2017 PM Base Case	C	83.1	27.9	76
2017 PM Project Case	C	86.7	27.9	110

Note: All Intersection Performance Measure values represent the maximum within the intersection.

Table 6.1 Summary of Intersection Performance

The results of the analyses indicate that this intersection will operate below capacity in the immediate future (2007) with the addition of proposed development traffic with a maximum degree of saturation of 72.7% (69.7% without development) for the southern approach of Hunter Street in the PM peak period. All levels of service, degrees of saturation, average delays and 95th percentile queue lengths are within acceptable limits.

The analyses also indicates that the Hunter Street / Haig Street intersection will not experience any adverse impacts in the future 10 year planning horizon (2018) with the addition of the proposed developments traffic with a maximum degree of saturation of 86.7% (83.1% without development) for the southern approach of Hunter Street in the PM peak period. All levels of service, degrees of saturation, average delays and 95th percentile queue lengths are within acceptable limits.

The results for the traffic impact analysis indicated that there are no adverse impacts over the 10 year planning horizon on the surrounding road network as a result of traffic generated by the proposed multi-unit development.

7. Access Arrangements

Design

The two access driveways for the proposed development are located on Haig Street and Collins Street which are considered local roads.

For a low turnover Class 1.1A car park that services between 25-100 parking spaces, located on a local road, Australian Standards 2890.1 (2004) specifies a Category 1 (3.0-6.0m width) access driveway.

The proposed access driveways (as per the development plan) for the proposed development have crossover widths of 6m and therefore comply with Council and practical requirements.

Location

AS 2890.1 (2004) requires in Figure 3.1 that access driveways are to be located more than 6m from the Tangent Point of the nearest intersections. The access driveways on Haig Street and Collins Street are located at least 50m from the nearest intersection and are therefore in accordance with Council requirements.

Queuing Provision

AS 2890.1 (2004) specifies in Table 3.3 that the proposed development requires queuing provision for one (1) vehicle length (6m). The development's queuing provision is for two vehicles (12m) which is sufficient for a car park of this size and the turnover of traffic that the development generates.

Sight Distance

Ipswich City Council requires that the *Queensland Streets' Safe Intersection Sight Distance (SISD)* is achieved for the proposed site access location to be approved. The nature of the Haig Street and Collins Street including the design of the development is such that sight distances will not be an issue.

8. Parking Requirements

Ipswich City Council requirements for the design of a multi-unit development car park are based on Council Policy No 403/02 and AS 2890.1 (2004).

8.1 Parking Supply

Ipswich City's Council's *Planning Scheme* indicates parking rates for caravan parks as follows:

*One (1) covered space per dwelling for exclusive residential use; plus
0.5 spaces per dwelling for visitor parking; plus
0.5 spaces per dwelling for use by both residents and visitors; plus
1 vehicle wash bay per 20 dwellings*

The car parking requirement equates to a parking capacity of 96 spaces including 48 x garage spaces; and 48 x visitor / resident spaces plus 3 x wash bay for the proposed multi-unit development.

The proposed multi-unit development has a car parking capacity of 101 spaces including 48 x garage spaces; and 53 x visitor / resident spaces (6 located on Haig Street) plus 3 x car wash bays. Therefore the parking provision for the proposed development is in accordance with Council requirements.

8.2 Car Park Design

Resident parking spaces for the multi-unit development are categorised as a small public car parking area with a low turnover rate, thus in accordance with AS 2890.1 (2004), requiring a minimum width of 2.4m which is provided for in the development plan.

The proposed width for the PWD space of 3.2m is in accordance with Council requirements.

Visitor parking is categorised with a medium turnover rate, thus requiring a minimum width of 2.6m, which is provided for in the proposal.

AS 2890.1 (2004) requires for a site of this nature to have parking aisle widths of at least 6.2m and circulation aisle widths of at least 5.5m which are provided for in the development plan.

The car park layout incorporates a vehicle turnaround bay that enables vehicles to enter and depart the site in a safe forward motion in the scenario of the car park being full.

Therefore the layout of the proposed multi-unit development car park is in accordance with Council and practical requirements.

9. Service Vehicle Facilities

The proposed development requires on-site servicing for a refuse collection vehicle and occasional access for a Large Rigid Vehicle for furniture removal.

The proposed development allows for refuse collection vehicles to enter and depart the site in a safe forward motion with an on-site collection area which is in accordance with Council requirements.

10. Conclusions

The key conclusions based on TTM's assessment of the proposed multi-unit development at Haig Street, Brassall are summarised as follows:

a. Impact on Surrounding Road Network

The traffic generated by the subject residential development is approximately 29vph (in & out) during the peak traffic periods. The traffic impact analysis indicated that there will be no adverse impacts on the surrounding road network and the capacity of the Hunter Street / Haig Street intersection and road sections will remain within acceptable limits with development traffic over the 10 year planning horizon.

b. Development Access Arrangements

The two access driveways for the proposed development are located on Haig Street and Collins Street. The driveways are designed in accordance with Council requirements in terms of design, location and capacity.

c. Car Park Layout

The proposed multi-unit development has a car parking capacity of 101 spaces including 1 x PWD space and is in accordance with Council and practical requirements.

The proposed internal road layout, in terms of road reserve widths; intersection spacing; and sight distances, are all in accordance with Council and practical requirements.

d. Service Vehicle Provisions

The proposed development requires on-site servicing for a refuse collection vehicle and occasional access for a Large Rigid Vehicle for furniture removal.

The proposed development allows for refuse collection vehicles to enter and depart the site in a safe forward motion with an on-site collection area which is in accordance with Council requirements.

Based on the assessment of the proposed multi-unit development at Haig Street, Brassall with respect to traffic engineering issues, contained within this report, TTM see no reason why the relevant approvals should not be granted.

ATTACHMENT A
AASIDRA 2.1 INTERSECTION ANALYSES RESULTS

HUNTER STREET / HAIG STREET

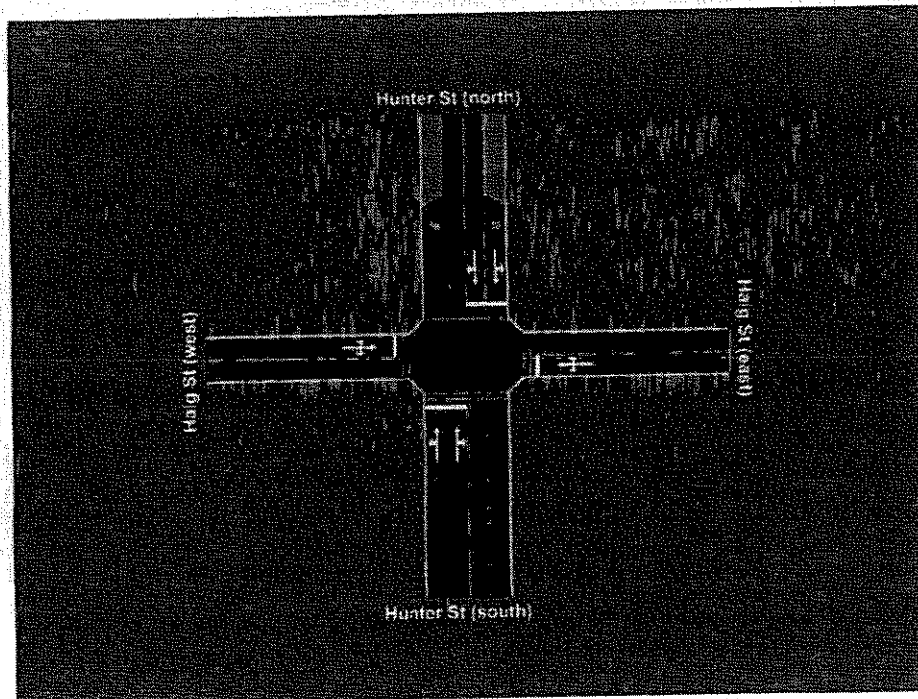


Figure A1 **Ultimate Intersection Layout**

Movement Summary

Hunter Street / Haig Street Intersection

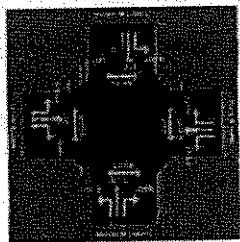
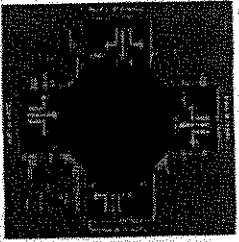
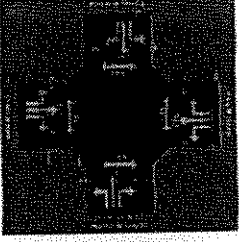
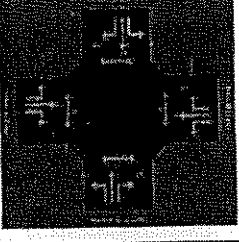
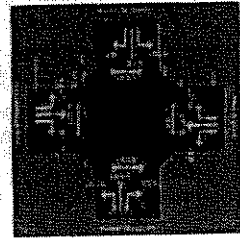
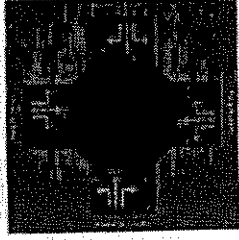
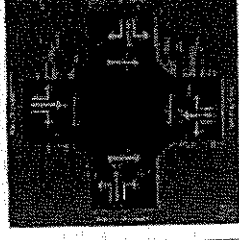
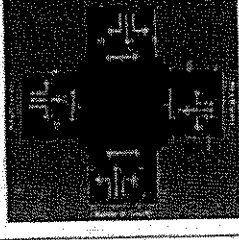
Performance	Level of Service	Degree of Saturation	Control Delay	Queuing Distance
AM Peak				
PM Peak				

Table A1 2007 Performance without Development

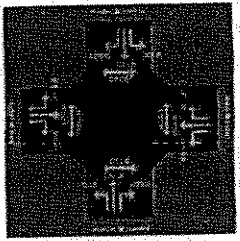
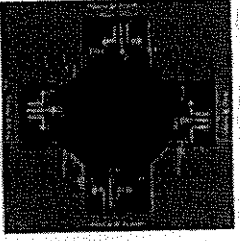
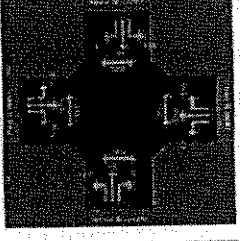
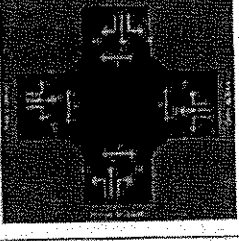
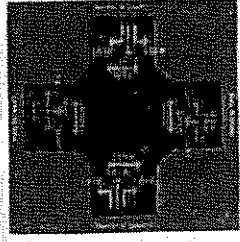
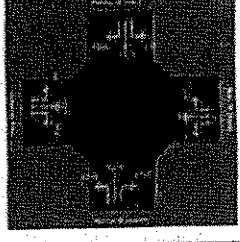
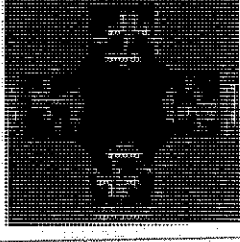
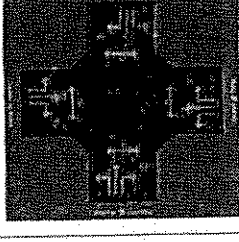
Performance	Level of Service	Degree of Saturation	Control Delay	Queuing Distance
AM Peak				
PM Peak				

Table A2 2007 Performance with Development

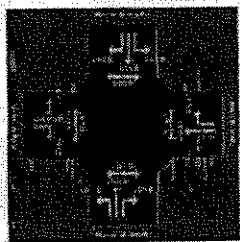
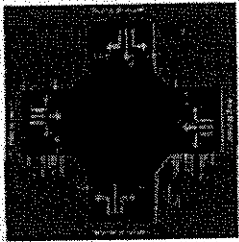
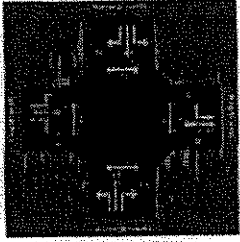
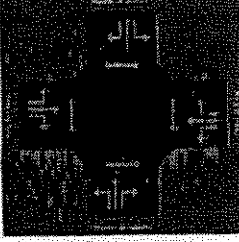
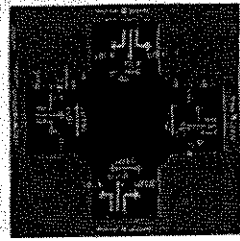
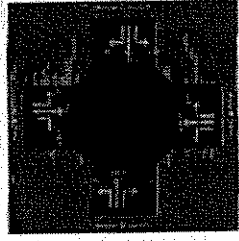
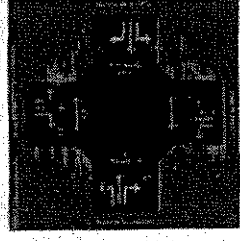
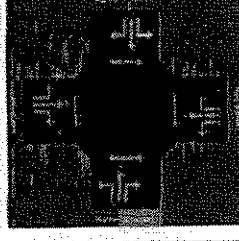
Performance	Level of Service	Degree of Saturation	Control Delay	Queuing Distance
AM Peak				
PM Peak				

Table A3

2017 Performance without Development

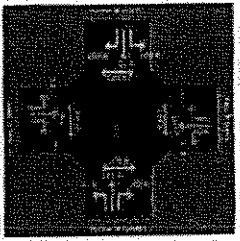
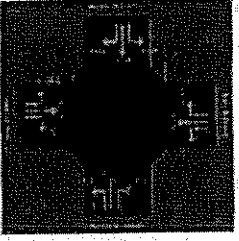
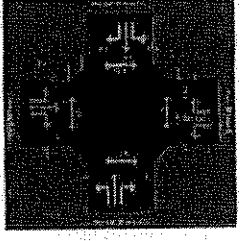
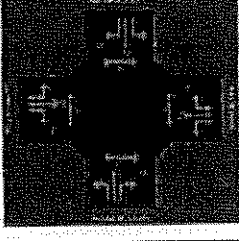
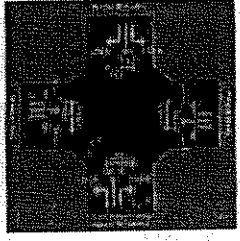
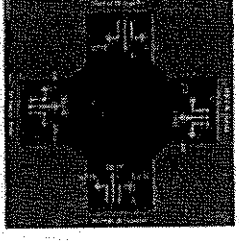
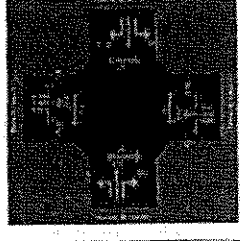
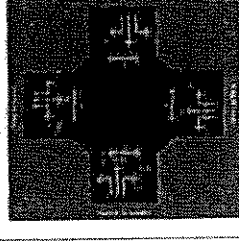
Performance	Level of Service	Degree of Saturation	Control Delay	Queuing Distance
AM Peak				
PM Peak				

Table A4

2017 Performance with Development



Ipswich
City Council

Your Reference:
Our Reference: 195/06 SMT
Contact Officer: [REDACTED]
Telephone No.: 3810 6986

14 March 2007

Dear Sir

**Re: Outstanding Issues
Development Application 195/06
Multiple Residential (48 Townhouses)**

I refer to the response to Council's Information Request received by Council on 14 February 2007.

Upon review of the submitted material, it has been identified that there are a number of outstanding issues that were raised in the information request but have not been addressed in the information response and that are important in order for Council to determine the proposal. Therefore, you are requested to address the outstanding issues listed as follows prior to Council being able to consider the application further:

1. Elevations

- (a) Reference is made to Item 2 of Council's Information Request, '*Building Scale and Articulation*'. Concern is held with respect to the elevations presented to Collins Street, particularly with respect to the 1.8m high timber paling fence that is presented to both street frontages. In terms of building design for public safety, attention is drawn to s12.6.4(31)(f)(b) of the Residential Code which states "*front fences and walls are no more than 1.2m high if solid, or up to 1.8m high if the fence has openings or materials which make it not less than 30% transparent*". Particular attention is also drawn to s12.6.4(5) of the Residential Code which states (a) "*Buildings address the street frontage or frontages*" and (b) "*Buildings are designed so that overlooking and opportunities for casual surveillance of pedestrian paths are provided*".

It is also noted that there are no Haig Street elevations. The applicant is requested to provide a Haig Street elevation, together with three-dimensional drawings of the proposed multiple

Attn: [REDACTED]
Colran Pty Ltd.
C/- David Brett and Associates Pty Ltd.
PO Box 5020
BRASSALL QLD 4305

Please Address All Correspondence to:
Chief Executive Officer
Ipswich City Council
A.B.N. 61 461 981 077
PO Box 191 Ipswich Qld 4305
Telephone: (07) 3810 6666
Facsimile: (07) 3810 6731
[REDACTED]
Website: www.ipswich.qld.gov.au

residential development and a photo montage of the proposed development when viewed from both Collins Street, Haig Street and on the intersection with Haig and Collins Street.

- (b) Concern is also held with respect to the elevations presented to internal roads within the proposed development, particularly with respect to the dominance of garage doors. Particular attention is drawn to s12.6.4(33)(b) of the Residential Code which states that "*Garages, carports and other parking structures are designed so as not to dominate the street frontage*". It is suggested that garages are recessed beyond the entry point to each of the units to reduce their dominance and highlight the entry point to each of the dwelling units in accordance with s12.6.4(31)(f) of the Residential Code.

2. Climate Control

Concern is held with respect to the elevations of the units when viewed from within the proposed development (View 1 and 2, Job No. 05-028, Dwg No. DA-4, prepared by East Coast Building Design and Drafting and dated 10 November 2006), which do not incorporate measures for climate control, particularly architectural features such as extended eaves (minimum width of 450mm) and awnings to protect windows and doorways from summer sun, glare and rain.

3. Proposed Earthworks and Riparian Vegetation

- (a) The applicant cites development further south in support of their development. The development to the south was approved under a previous planning scheme in 1999 and requirements in relation to bank stability, earthworks and stormwater have advanced since that time, therefore this comparative argument does demonstrate the proposals suitability in its current form. The applicant also cites Riverheart in support of their proposal to provide a pedestrian walkway on the bank of the Bremer River. Considering Riverheart is a Citywide Waterside Park, such interaction with the river is acceptable whereas the site subject to this application does not require physical access directly to the Bremer River that can only be implemented by disturbing the banks of the Bremer River.
- (b) The proposal has been amended to remove four dwelling units to enable the retention of four (4) Queensland Blue Gums (*Eucalyptus tereticornis*) and the applicant states that no other clearing of native vegetation will result from the proposal. Concern remains regarding the earthworks proposed and subsequent stabilisation of the riverbank together with the proposal to construct a shared pedestrian/bicycle link on the bank of the Bremer River. The applicant is requested to provide cross sections of the proposed pedestrian/bicycle link and details in relation to earthworks that would be necessary to construct the proposed pedestrian/bicycle link.
- (c) Attention is drawn to item 4(a) of Council's Information Request '*Proposed Earthworks and Riparian Vegetation*'. The Applicant is requested to demonstrate that no earthworks or vegetation clearing is proposed within ten (10) metres from the top of the Bremer River bank (i.e. approximately 10m from the 18m contour level as indicated on the submitted plan F0235-01 prepared by AJS Surveys).
- (d) Attention is drawn to item 4(b) of Council's Information Request '*Proposed Earthworks and Riparian Vegetation*'. The Applicant is requested to amend the submitted flood study prepared by Cardno Pty Ltd to address the issues outlined in Appendix A, attached. Note that Council requests a third party review of the submitted flood study.

- (e) Attention is drawn to item 4(b) of Council's Information Request '*Proposed Earthworks and Riparian Vegetation*'. The Applicant is requested to indicate on the plan of development the provision of a six (6) metre wide shared pedestrian/ bicycle pathway, located at minimum ten (10) metres from the top of the Bremer River bank, and for the full length of the site's eastern boundary.

4. Stormwater

Attention is drawn to item 5 and 6 of Council's Information Request '*Stormwater*' and '*Car Washing Bays*'. The Applicant is requested to submit to Council a site based Stormwater Management Plan (SWMP) prepared in accordance with the requirements outlined in the Information Request, for the assessment of the Material Change of Use Development Application. The applicant states that the SWMP will be submitted at Operational Works, however this is unacceptable given the proposed car wash bays, density, proximity to Bremer River and filling of the floodplain.

5. Traffic

Attention is drawn to item 8(c) of Council's Information Request '*Traffic*'. The Applicant is requested to demonstrate, with the aid of turning templates, the on-site manoeuvrability of a Heavy Rigid Vehicle (e.g. furniture removal truck), and in particular, the forward motion entry and exit of the HRV on the section of roads adjacent to proposed unit 8-18 and 32-40.

It would be appreciated if a response to these outstanding matters could be submitted to Council as soon as possible to enable finalisation of the application. Under the provisions of the *Integrated Planning Act 1997*, the applicant has three (3) options available in response to this Information Request. The Applicant must give the Development Manager and each Referral Agency (if applicable):

1. all of the information requested; or
2. part of the information requested together with a notice asking the Development Manager and each Referral Agency (if applicable) to proceed with the assessment of the application; or
3. a notice:
 - (a) stating that the applicant does not intend to supply any of the information requested; and
 - (b) asking the Development Manager and each Referral Agency (if applicable) to proceed with the assessment of the application.

Response to this Information Request should be forwarded to:-

The Development Manager
Development Branch
Ipswich City Council
PO Box 191
IPSWICH QLD 4305

Yours faithfully



Joanne Pocock
**DEVELOPMENT TEAM CO-ORDINATOR -
CENTRAL/WEST**

Encl.

Appendix A

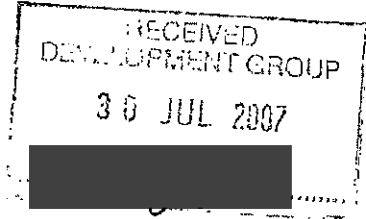
1. The flood study focused only on compensatory storage within the flood plain by cut and fill on the steep Bremer River bank and have not considered the effect of convergence. By filling within the flood plain, river convergence will be reduced and affect the opposite bank flood plain without much afflux.
2. It is noted that the existing slope of the river bank, where cut is proposed, is already too steep (1:2.5). The proposed vertical cut within the flood plain will further de-establish the stability of the river bank.
3. Section 4.1 of the report indicated that additional survey were undertaken to provide additional cross sections for the study. However, the survey did not include areas below the water line and the bed levels for the new cross sections were adopted based on cross section 1009675 of Council's MIKE11 model. It should be noted that cross section 1009675 is located at one end of the site, and there is an approximately 1.3m bed level drop from one end of the site to the other (over approximately 200m frontage). As such there are concerns on the adopted cross sections in the study.
4. Section 4.2 of the report indicated that the model for the existing case was calibrated to the 50 year 30 hour flooding of Brisbane River. However, the site appears to be dominated by the Bremer River flood as it is not affected by the Bribable River backwater for Q100 flood.
5. Section 5 of the report indicated that a portion of the site is proposed to be filled to a level 500mm higher than the 100 year ARI inundation level. However, by examining the Council topographic information, the actual maximum depth of this proposed fill appears to be more than 2m in certain locations.
6. It is requested that the submitted flood study be referred to a third party for review.

DAVID BRETT & ASSOCIATES PTY. LTD.

BUILT ENVIRONMENT & DEVELOPMENT PLANNERS

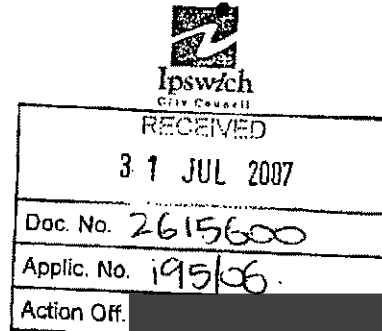
30 July 2007

The Development Manager
Development Branch
Ipswich City Council
PO BOX 191
IPSWICH QLD 4305



Attention: [REDACTED]

Dear Sue,



Re: **Development Application Information Response to Outstanding Issues**
Application Number: 195/06
Proposal: Multiple Residential – Forty eight (48) Townhouses
Property Location: [REDACTED] Brassall

We act as authorised representative of the applicant. I refer to Council's letter outlining Outstanding Issues regarding the above application, dated 14 March 2007. The applicant provides the following information in response.

1. Elevations

- a) Please find attached (in **Appendix A**) the Collins Street Elevation and Haig Street Elevation of the proposal. The elevations illustrate that the front fence has been lowered to 1.2 metres in height and articulation of the building façade has also been improved by using different tones and colours on building walls and through the addition of architectural elements such as awning. The proposal will be orientated towards both Collins/Haig Street and the internal road network and will provide casual surveillance to all surrounding streets. Gates will be incorporated into the 1.2 metre high fence towards Collins / Haig Street, which will provide access to the streets and further orientate these buildings to the streets.

Council has requested a 3D model of the proposal. We understand this is to assist the planners visualise the two dimensional drawings in three dimensions. The considerable expense to create the 3D model is not necessary as I understand that Council now have an architect in the planning team. Sandeep's input regarding the scale, aesthetics and balance of the design is considered a reasonable solution.

- 1 -

BUILDING DESIGN

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

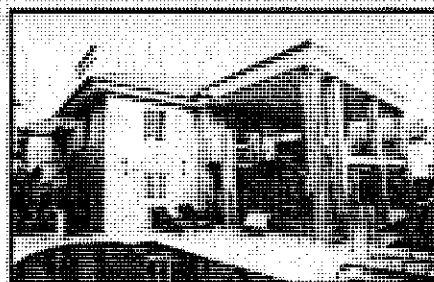
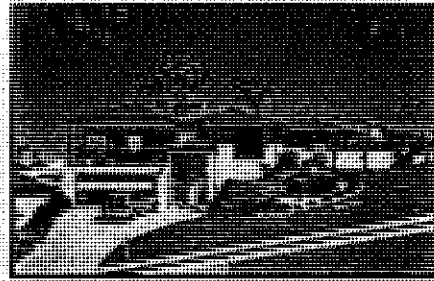
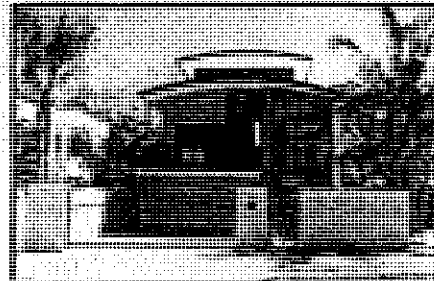
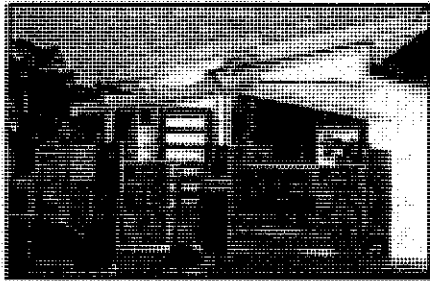
11 King St, North Ipswich Qld Correspondence : PO Box 5020, Brassall Qld 4305 A.B.N. 54 010 980 346 B.S.A. LICENCE No. 067680

Phone : (07) 3281 0744

Facsimile : (07) 3281 0766

DAVID BRETT & ASSOCIATES PTY. LTD.

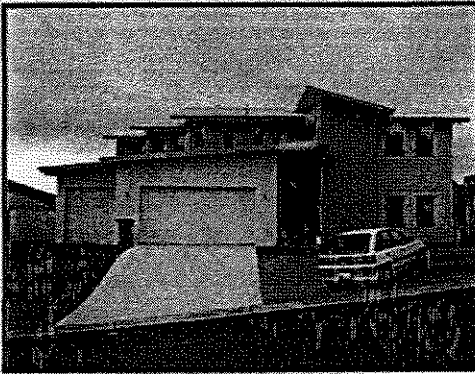
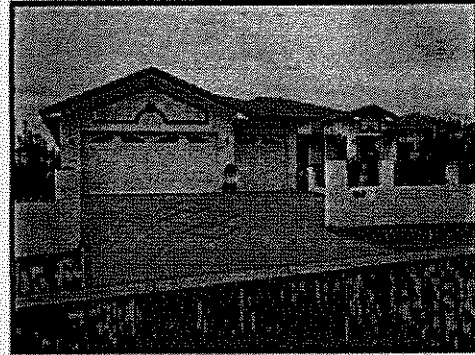
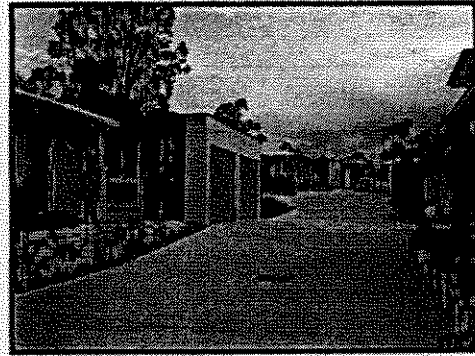
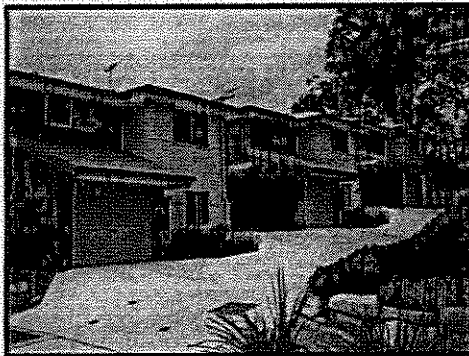
PLEASE NOTE: East Coast Building Designs are the designer for the project. They are a multi-award winning designing company who have been producing work of high quality for many years. East Coast Building Designs have designed a multiple residential development for the subject site that is to a high standard, in-keeping with their reputation. Please find below some examples of their previous work.



For more information on East Coast Building Designs, please visit their web site at <http://www.eastcoastbuildingdesign.com.au/index.php?id=1>.

- b) The proposal will reduce the dominance of garage doors on the internal road network by slightly recessing the garage into the dwellings, as shown on the amended elevations. Colour will also be used to take focus off garage doors and onto the remaining building and the entry into the building. This will be done by colouring the garage with a neutral colour, while painting the building walls above the garage doors with a brighter colour.

The solution will be effective in reducing the visual dominance of the garage doors on the streetscape. However, it is illustrated in the photo compilation below, showing new multiple residential and single dwellings in the suburb of McDowall, that prominent garages are not perceived as undesirable by people who have paid up to one million dollars for such houses. The most important facet of the design remains with the articulation of the building.

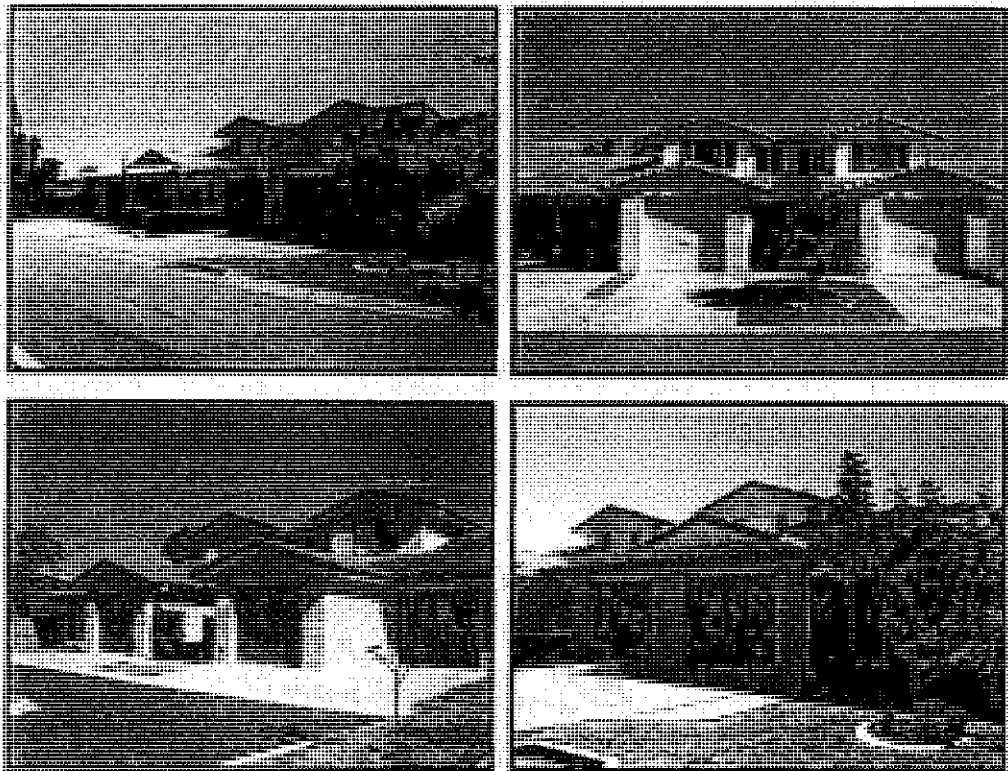


Furthermore, below are pictures of two multiple residential development within the Brassall area, one being on land adjacent to the proposal. The subject proposal will be different and better than these multiple residential development. The photos illustrate that garage doors dominate the internal streetscape, yet people have still bought into the development and obviously believe that the development is athletically pleasing. The built form of the subject proposal will have less predominant garages than the developments below, by slightly recessing the garage doors into the dwellings and through the use of colours.

Suncare Lakes



Adjoining Multiple Residential Development



2. Climate Control

Climate control measures such as eaves and awnings to protect the windows and doorways have been incorporated into the building design. The total extent of these elements will be finalised in the Building Application as they are required to meet the energy efficiency requirements of the Building Code. Should Council consider additional screening necessary Council may condition this on the approval.

3. Proposed Earthworks and Riparian Vegetation

b) Please find attached (in **Appendix B**) the Bremer Bank Stability Assessment, prepared by Morrison Geotechnic, dated July 2007. Due to the risks to bank stability identified by Council, we engaged geotechnical expert who confirmed the risk involved and has provided recommendations to alleviate the risks. We propose to incorporate the recommendations of Morrison Geotechnic as part of our proposal, which will alleviate these risks and request Council conditions these recommendations into the approval. The recommendations are as follows:

- The existing stormwater, which is discharging over the flatter terrace, below the upper bank batter, should be extended to discharge into the river in closed pipes or lined channels to prevent the erosion, which is presently severe.
- The existing erosion damage below the stormwater outfall must be repaired and the ground surface vegetated with suitable erosion resistant ground cover.
- All house footings within the uppermost bank batter must be founded below a line extending up from the toe to of the bank at 150 and within dense or very stiff soils or rock below the loose surficial soils. The eastern-most house footings in the batter should be at least 2.5m deep and can comprise 2.5m deep bored piles with a capping beam footing. The house structures should be flexible and suspended over the bank and supported on the bored piles.
- Surface contour drains must be constructed along the crest of the upper bank batter to minimise infiltration of upslope surface run-off into the soils and slopes. These drains should be located upslope of the crest of the upper bank car and should discharge into the stormwater system via lined channels or pipes.
- All lot runoff and roof water drainage should be discharged into stormwater systems via a system of pipe conduits to minimise water infiltration into the slopes, or collected in tanks.
- The pedestrian/bicycle path should be formed along the mid slope, flatter terrace immediately below the toe of the upper bank batter by cutting into the upper bank batter above rather than by filling. The pavement should have a cross-fall for drainage back into the bank and a lined longitudinal spoon drain at the inner edge. This drain should

clear? →

→

→

house & bank
batter

→

discharge into closed pipes or lined channels with outfalls into the stormwater system or river.

- Sheet flows or runoff discharges over the bank should be avoided
- ▪ Earthworks involving cut should be minimised by adopting contouring designs for the house structures and pedestrian/bicycle way
- ▪ Vegetation clearing should be kept to a minimum with all large, mature trees left undisturbed to maintain present stability where practical. All slope should be topsoiled with non dispersive topsoil and be mulched and revegetated immediately after the completion of any earthworks to minimise the potential for erosion.
- ▪ Appropriate vegetation must be re-established on the bare banks and slopes as soon as practical.
- ▪ Following housing development, the upper bank batter must be protected from erosion by suitable ground cover vegetation or other means, such as rock mattresses
- ▪ Filling should be avoided
- ▪ All cuts including the cutting for the pedestrian/bicycle link road, must be supported by engineered retaining walls, which include drainage and properly designed to account for the sloping ground surface behind the wall.

By abiding by the recommendations of the Bremer Bank Stability Assessment, it is envisaged that the overhanging building will be similar to that of the photos below. These photos are of the existing Suncare Lakes development downriver of the proposal.



- c) The relevant Specific Outcome and associated Acceptable / Probable Solutions of the Vegetation Management Code that has been raised by Council in the request for additional information is:

Specific Outcome	Acceptable / Probable Solution
Environmentally Sensitive Areas (1) The clearing of the vegetation does not cause or exacerbate land degradation within environmentally sensitive areas including steeply sloping land, areas prone to erosion or salinity, riparian corridors, wetlands, or water catchment areas	Environmentally Sensitive Areas (1) The clearing does not involve the removal of native vegetation from- (b) Land with a slope of 15% or more; (c) Land within a designated Watercourse or land within 30m of a Designated Watercourse or within 10m of the top of bank of a Designated Watercourse where the slope of the bank exceeds 15% (see Figure 12.4.1)

Please find attached (in **Appendix C**) a Vegetation Management Study, prepared by Cardno, dated 10 August 2006, that was submitted with the previous information response. The study found that our current proposed plan does not result in the removal of any significant native vegetation. Please note that the proposal was altered in order to retain 4 Forest red-gums located in the south-east corner of the site, which were the only native trees located within the riparian vegetation retention zone.

Also, as stated above, the proposal will not have any adverse impacts on bank stability, by adhering to all the recommendations made by the Bremer Bank Stability Assessment, prepared by Morrison Geotechnic.

Thus, the proposal does not have an impact on the native vegetation or the bank stability of the Bremer River. In fact, the proposal will actually improve and enhance the natural environment of the river bank and the bank stability, by planting more native trees on what is currently a river bank with only a small amount of native and exotic tree cover. It will also repair the existing bank erosion and take measures to prevent it occurring in the future, as recommended in the Geotechnical Report. If council requires, the proposal will undertake a Rehabilitation Management Plan prepared by a riparian expert to be implemented as part of the proposal.

- d) Please find attached (in **Appendix D**) the Response to Council Information Request – Flooding Issues prepared by Cardno, dated 1 June 2007, which addresses all of Council's concerns. Further to Cardno's additional information and clarification we wish to know whether council still considers it necessary for a third party review, as Cardno has advised that the matter is quite straight forward. If council does consider it necessary, could you please advise us on whether we choose the firm to undertake the review of the flood study or will council require it to go to a particular firm and also who pays for the review? We also request that this third party review be undertaken as part of the decision making period.

- e) The proposal will locate a 2 metre wide path will be provided along the Bremer River, designed in accordance to the recommendations provided in section 4.0 of the Bremer Bank Stability Assessment report attached. A 2 metre wide path will provide an appropriate connection along the river bank and will provide opportunity for the adjoining properties to connect with this path. The scale and design of the path will also allow it to be easily integrated within the natural environment.

The 6 metre wide provision requested by Council is unreasonable and inappropriate for the environment and is not required under the Ipswich Planning Scheme. Additionally, given the path width of Riverheart is approx 2.5 metres, and Riverheart is a "Citywide Waterside Park" it would be more appropriate for the path width in the small scale proposal to be 2 metres. An example of the proposed path is provided below. This example is taken from a nearby development (Suncare Lakes) and is quite effective fitting in with the surrounding environment.



4. Stormwater
Please find attached (in Appendix E) a Conceptual Stormwater Management Plan, prepared by Cardno, dated 17 July 2007.
5. Traffic
Please find attached (in Appendix F) a Traffic response, which has been prepared by TTM, dated 26 June 2007.

In accordance with sect 3.3.8 (1)(a) *Integrated Planning Act 1997*, this is considered to be a full response to the Outstanding Issues. It is requested that the Assessment Manager continue with the assessment of the application.

If you require any additionally information please do not hesitate to contact me on the numbers shown below.

Yours Sincerely,

David Brett

APPENDIX A

Elevations

APPENDIX B

Bank Stability Report

JOB NO. 207E/128

JULY, 2007

COLRAN PTY LTD

BREMER RIVER BANK STABILITY ASSESSMENT

2 HAIG STREET

BRASSALL

DAVID BRETT & ASSOCIATES

■ BRISBANE
Unit 1 / 235 Monier Road
Darra Qld 4076

PO Box 3063
Dens QLD 4076

PHONE: 07 3279 0908
FAX: 07 3279 0955
EMAIL: [REDACTED]
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■ GOLD COAST
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Merang Qld 4211

PHONE: 07 5596 1588
FAX: 07 5527 2027
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■ CABOOLTURE
Unit 3 / 42 Aerodrome Road
Caboolture Qld 4510

PHONE: 07 5499 0755
FAX: 07 5428 2498
EMAIL: [REDACTED]



Darra Office
Job No. 207E/128
Ref: 12938B/sw
Author: [REDACTED]

23rd July, 2007

Colran Pty Ltd
c/- David Brett & Associates
25 Canning Street
North Ipswich Qld 4305

ATTENTION [REDACTED]
cc. [REDACTED] Colran Pty Ltd

Email: [REDACTED]
Fax No. 3396 6211

Dear Sirs

RE: BREMER RIVER BANK STABILITY ASSESSMENT - 2 HAIG STREET, BRASSALL

1.0 INTRODUCTION

This report addresses the stability of the west bank of the Bremer River behind the proposed residential development at 2 Haig Street, Brassall. The proposed residential development will occupy a length section of approximately 165 metres along and behind the crest of the Bremer River bank, immediately at the end, and to the south of Haig Street. The eastern-most line of dwellings will partly overlie the upper bank section of the river, requiring suspended construction. A pedestrian bicycle path link is also proposed along the west river bank immediately below the eastern-most line of dwellings.

The stability assessment is confined to a localised evaluation of the Bremer River bank along the eastern section of the development in terms of identification of significant geotechnical constraints or issues which would impact on the residential development, including drainage. This work was by commissioned by David Brett of Brett & Associates on behalf of their client, Colran Pty Ltd.

The slope stability assessment methodology adopted for this assessment generally follows the guidelines presented in the Australian Geomechanics Society "Landslide Risk Management Concepts and Guidelines" Vol 35 No 1 March 2000 pp 51-92.

The slope stability assessment has been based on the following factors:-

- o Ground surface slope angle
- o Slope shape
- o Geology
- o Likely depth of soil cover and soil type (eg. Alluvium, colluvium, residual)
- o Presence of erosion features, surface irregularities or past instability
- o Seepage and drainage conditions as assessed during the walkover survey carried out for this study
- o Vegetation pattern

2.0 SITE DESCRIPTION

The development site is located at the end of Haig Street, Brassall and extends for about 165 metres southwards along the Bremer River. The majority of the proposed development is located on the flat plateau behind the crest of the west bank of the river, which is at a level of approximately RL20.0m. The ground surface forming the Bremer River bank slopes downwards towards the river in the east in several generalised slope configurations comprising:-

- The uppermost batter sloping at 18° to 24° from the crest at RL19.0m to the toe at about RL16.0m to RL14.0m, above
- A flatter terrace at about 9° to 10° , which is up to about 10.0m wide and which is more prominent in the north and central length section of the river bank, but absent in the southern length section, and extending to approximately RL13.0m to RL12.0m, above
- A mid bank section which extends downwards to approximately RL1.0m to RL5.0m at slopes of approximately 20° , above
- The lowest river bank batter, which falls steeply to the water line below RL4.0m to RL5.0m.

It is likely that the uppermost bank batter below about RL19.0m comprises fill associated with the former development to the west of the bank, off Collins Street, which has recently been decommissioned. Bank vegetation is variable, ranging between bare or semi arid sections with some grass cover to mature native trees with dense shrubs and grass understorey.

The low central section of the bank has been severely affected by localised gully erosion resulting from stormwater discharges from two adjacent buried pipes. These adjacent pipes discharge onto the flat terrace below the uppermost bank batter, and the discharges have eroded deep rills and gullies into the banks below, in particular, the mid bank section, below the flat terrace. In this area the larger trees are assisting with erosion control, but a recent fire has destroyed most understorey and ground cover vegetation, or the area which is now critically sensitive and prone to further erosion. The attached photo plates show these erosion features. Drainage control will form a major design requirement for this development.

It is understood that the design Q100 level is RL18.9m, being approximately coincident with the crest of the uppermost bank batter, and importantly, above the proposed pedestrian/bicycle link and within the footprint of the eastern-most line of dwelling units.

There are presently no signs of existing or recent past instability involving large quantities of soil in a sudden event, such as a landslide. The 1974 flood would be expected to have caused shallow surficial slumps of bank sections, most probably where large trees would have caused local increases in flow velocity and the formation of eddies, and where surface vegetation at the time was sparse. Drawdown of the flood water level may also have resulted in shallow slips and surface sloughing in bank areas. No large scars indicating significant areas of existing or recent past instability were observed in July, 2007.

The soil within the upper bank most likely comprises silts and sands, which appear to be loose at the surface. Weathered rock is not exposed in the upper bank sections.

It must be noted that dense understorey vegetation over the lower bank sections just above the river prevented access to these areas and therefore are ground observations of the existence of evidence of instability of the lower banks.

A site plan of the site is attached to this report.

3.0 SLOPE STABILITY AND DEVELOPMENT

Slope stability issues which may impact on the proposed residential development and pedestrian/bicycleway link may include:-

- Erosion of the bare soils over parts of the uppermost bank batter, by rainfall runoff and extreme river flood flows, such as the Q100 event, which cause the river level to rise to this level.
- Creep of the surficial soils forming the uppermost bank batter, after saturation by rainfall.
- Slumping and sloughing of the uppermost bank batter after extreme Q100 flood events, when the river level is subsiding, causing rapid drawdown conditions in the bank.

Events which may result in soil instability can be described as Likely, with an indicative annual probability of 10^{-2} or greater. Damage to property caused by such instability would include house structure damage and damage to the pedestrian/bicycleway link. A damage descriptor of Medium is considered reasonable, whereby Risk Level for property damage is assessed to be High. Implications of this High risk status include requirements for the project designer to implement options which reduce the risk to acceptable levels. These requirements, which include effective drainage and slope sensitive design, are discussed in Section 4.0.

4.0 DEVELOPMENT GUIDELINES AND RECOMMENDATIONS TO REDUCE RISK

The following development guidelines are appropriate for development on and near the uppermost bank batter.


- The existing stormwater system, which is discharging over the flatter terrace, below the upper bank batter, should be extended to discharge into the river in closed pipes or lined channels to prevent the erosion, which is presently severe.
- The existing erosion damage below the stormwater outfall must be repaired and the ground surface vegetated with suitable erosion resistant ground cover.
- All house footings within the uppermost bank batter must be founded below a line extending up from the toe of the bank at 15° and within dense or very stiff soils or rock below the loose surficial soils. The eastern-most house footings in the batter should be at least 2.5m deep and can comprise 2.5m deep bored piles with a capping beam footing. The house structures should be flexible and suspended over the bank and supported on the bored piles.
- Surface contour drains must be constructed along the crest of the upper bank batter to minimise infiltration of upslope surface run-off into the soils and slopes. These drains should be located upslope of the crest of the upper bank car and should discharge into the stormwater system via lined channels or pipes.
- * All lot runoff and roof water drainage should be discharged into stormwater systems via a system of pipe conduits to minimise water infiltration into the slopes, or collected in tanks.

- The pedestrian/bicycle path should be formed along the mid slope, flatter terrace immediately below the toe of the upper bank batter by cutting into the upper bank batter above rather than by filling. The pavement should have a cross-fall for drainage back into the bank and a lined longitudinal spoon drain at the inner edge. This drain should discharge into closed pipes or lined channels with outfalls into the stormwater system or river.
- † • Sheet flows or runoff discharges over the bank should be avoided.
- Earthworks involving cut should be minimised by adopting contouring designs for the house structures and pedestrian/bicycleway.
- Vegetation clearing should be kept to a minimum with all large, mature trees left undisturbed to maintain present stability where practical. All slopes should be topsoiled with non dispersive topsoil and be mulched and revegetated immediately after the completion of any earthworks to minimise the potential for erosion.
- Appropriate vegetation must be re-established on the bare banks and slopes as soon as practical.
- Following housing development, the upper bank batter must be protected from erosion by suitable ground cover vegetation or other means, such as rock mattresses.
- ✕ • Filling should be avoided.
- All cuts, including the cutting for the pedestrian/bicycle link road, must be supported by engineered retaining walls, which include drainage, and properly designed to account for the sloping ground surface behind the wall


Please do not hesitate to contact this office if you require any further information.

Yours faithfully



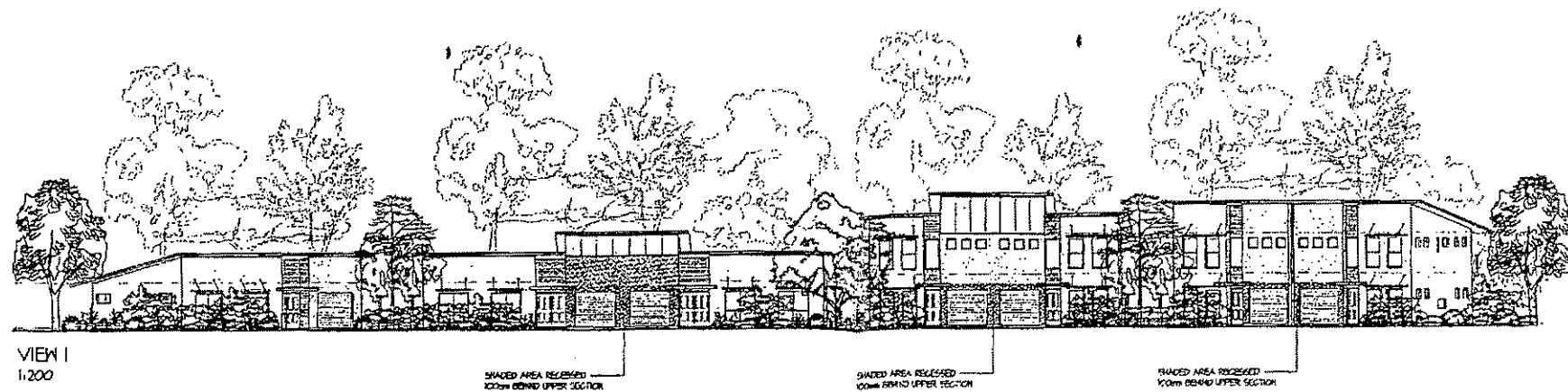
 (RPEQ 5641)
for and on behalf of
MORRISON GEOTECHNIC PTY LIMITED

Encl Site Plans (2)
Photographs (15)
Guidelines for Hillside Construction
Appendix G – Australian Geomechanics (March, 2000)

cc. 
Colran Pty Ltd
PO Box 5061
Manly Qld 4179

12938B Colran Pty Ltd
c/- David Brett & Associates

MORRISON GEOTECHNIC



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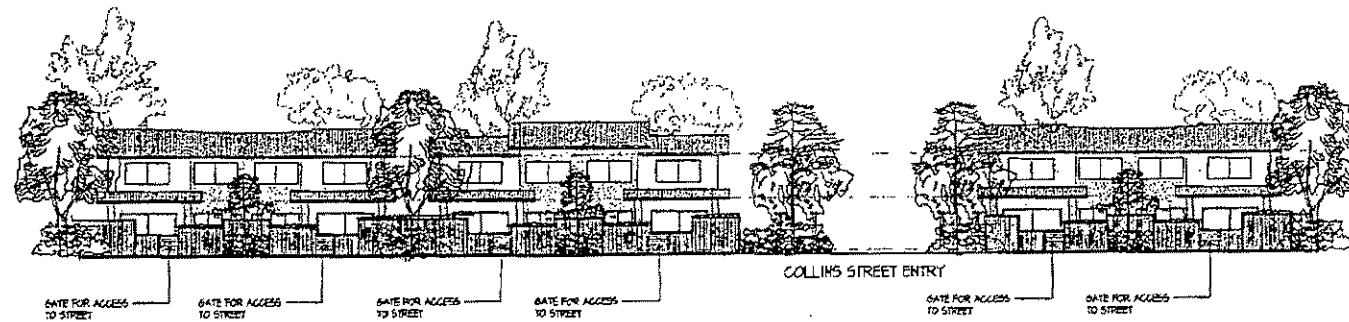
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COLLINS STREET ELEVATION
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HAIG STREET ELEVATION
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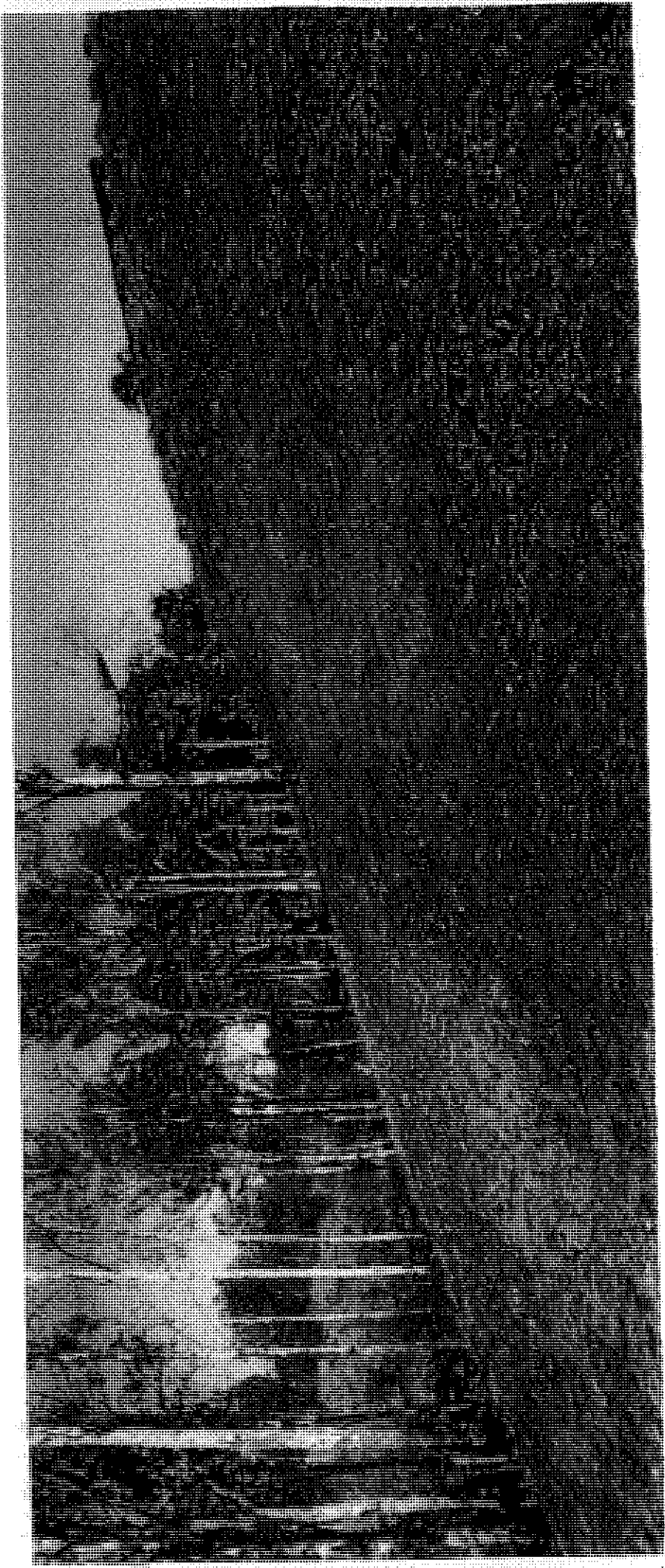
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Ph: 3262 1200 Fax: 3262 1600 Email: ecob@pcom.net.au Suite 11 - 113 Sankarita Place Clayfield, Qld. 4011 ECRND Pty Ltd (ACN 131 135 077) OBSA License No. 1010191		EAST COAST BUILDING DESIGN & DRAFTING		Issue 1. APPROVAL 18-11-05 2. REVISION 25-01-06 3. 4. 5. 6.	Author JWB	Date 18-11-05
DRAWING NUMBER 	Project TOWNHOUSE DEVELOPMENT	Job No. 05-028	Plot No. 	Client COLRAN PTY LTD	Dwg. No. DA-4	Scale A1
Address 2 HAIG ST, BRASSALL						

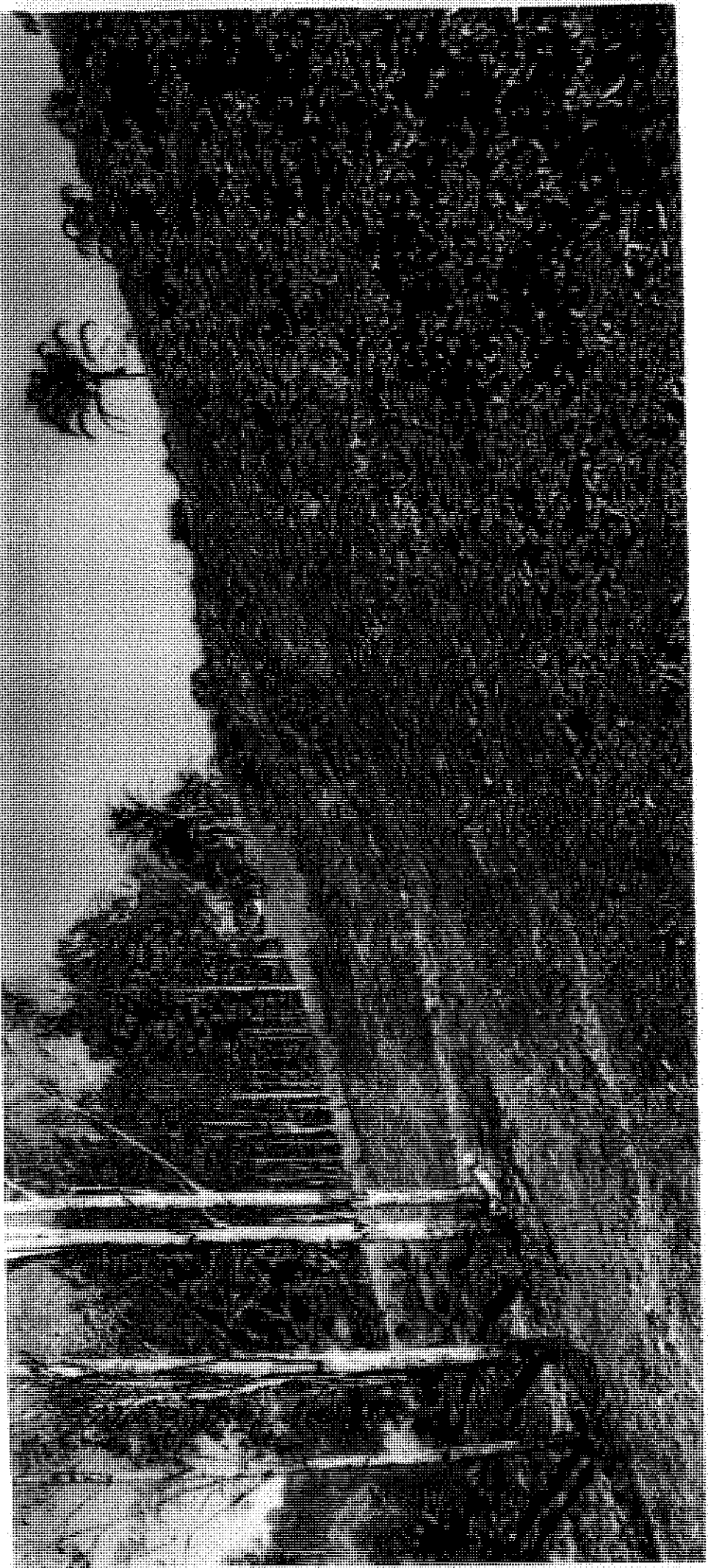




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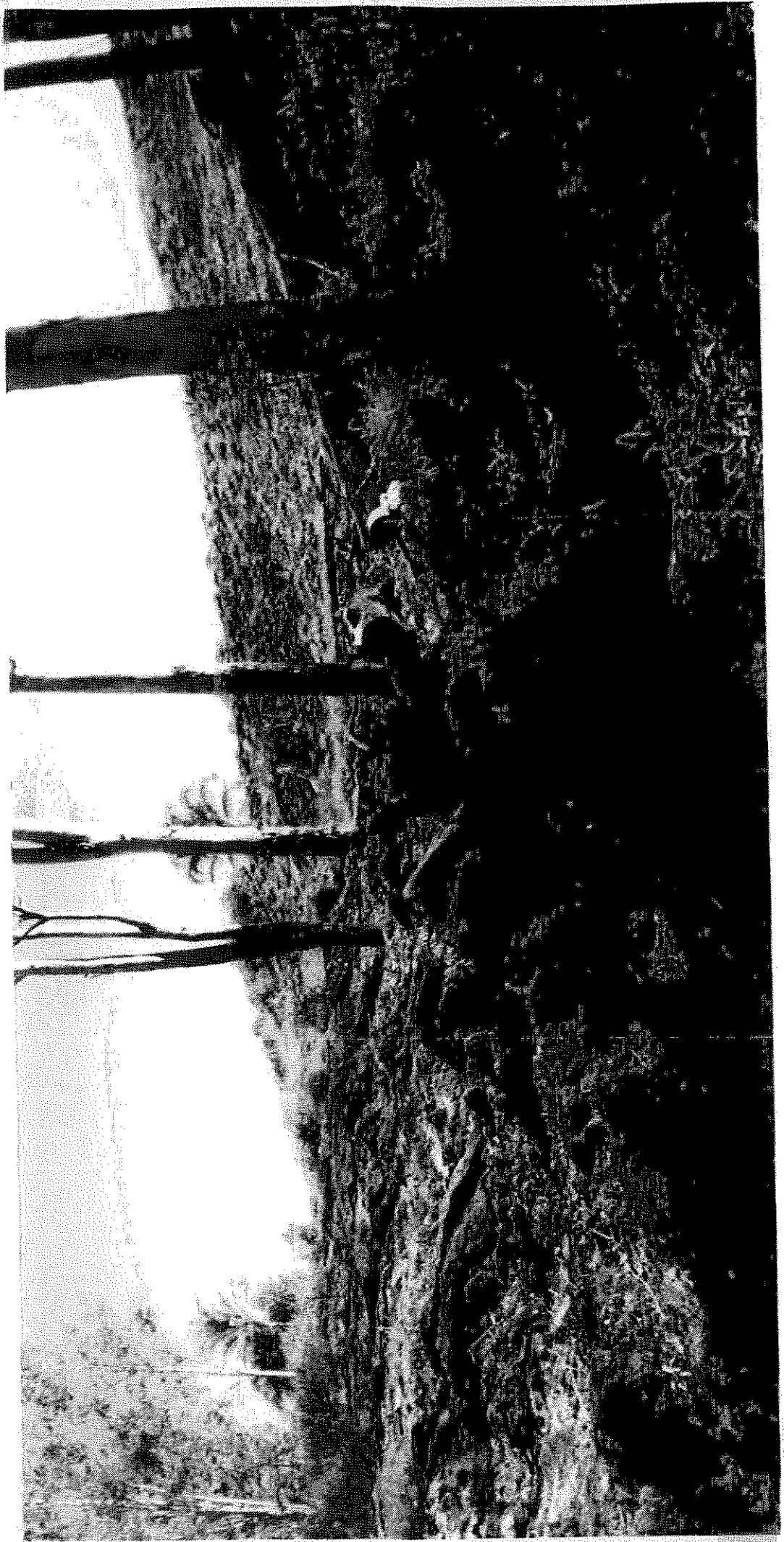
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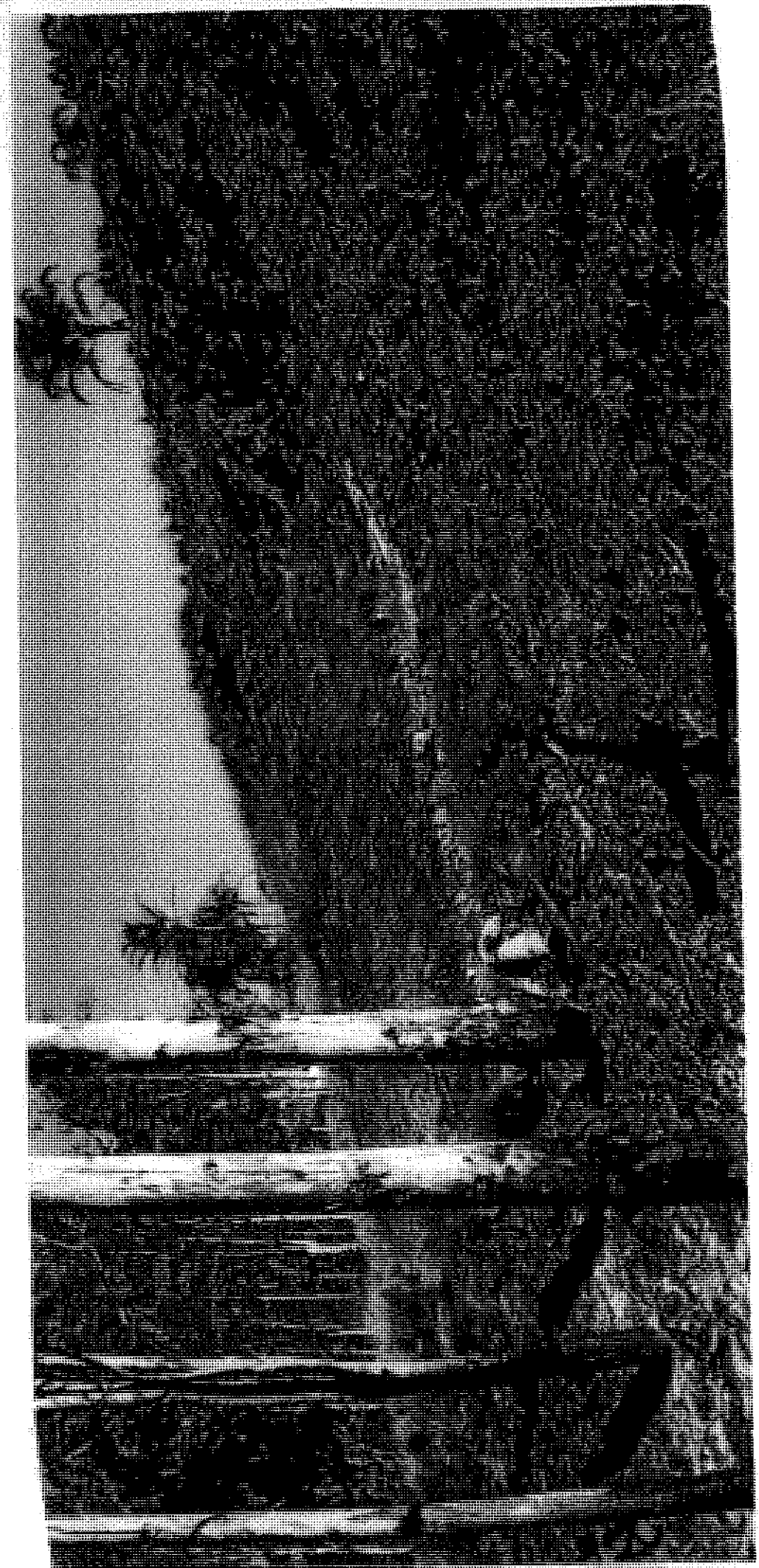




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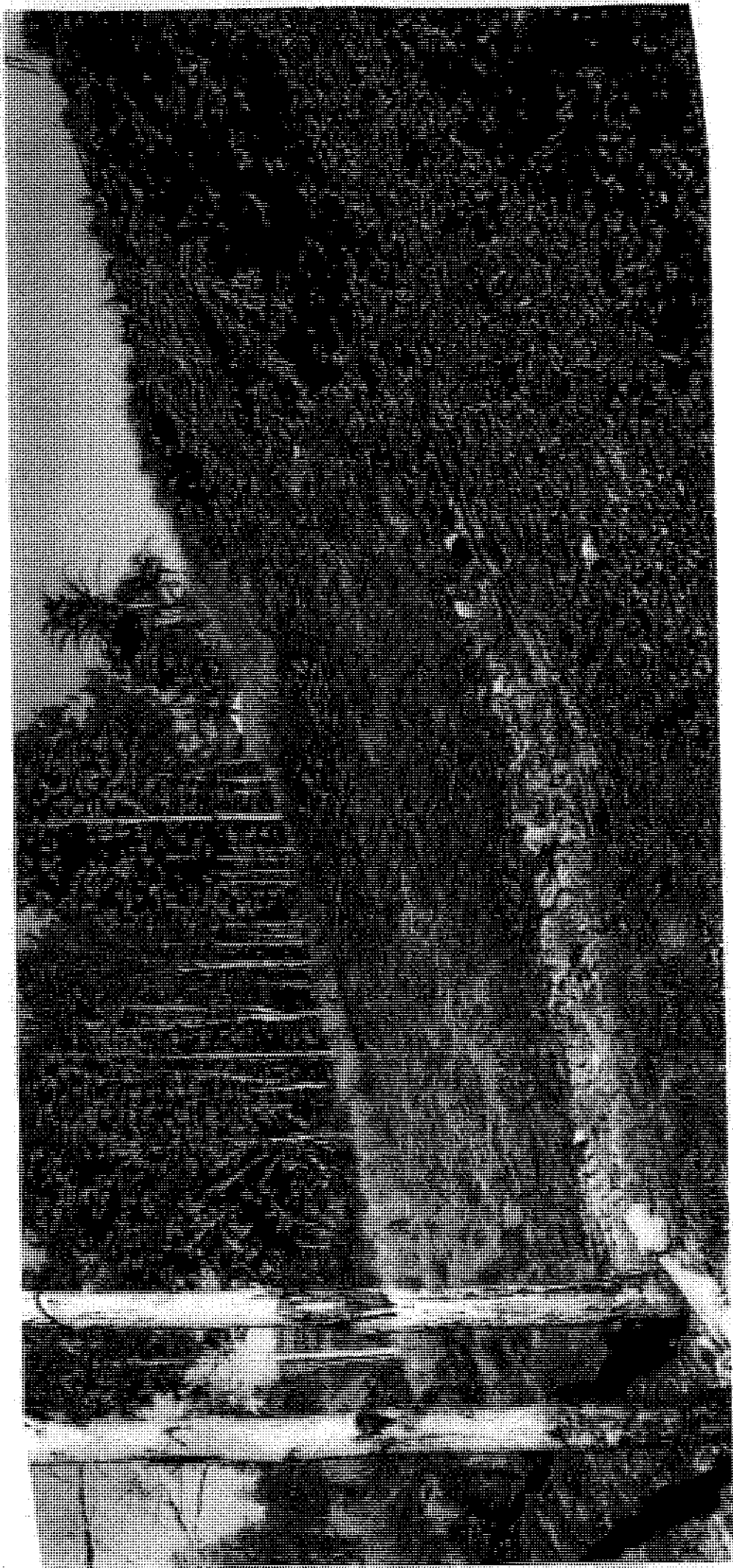






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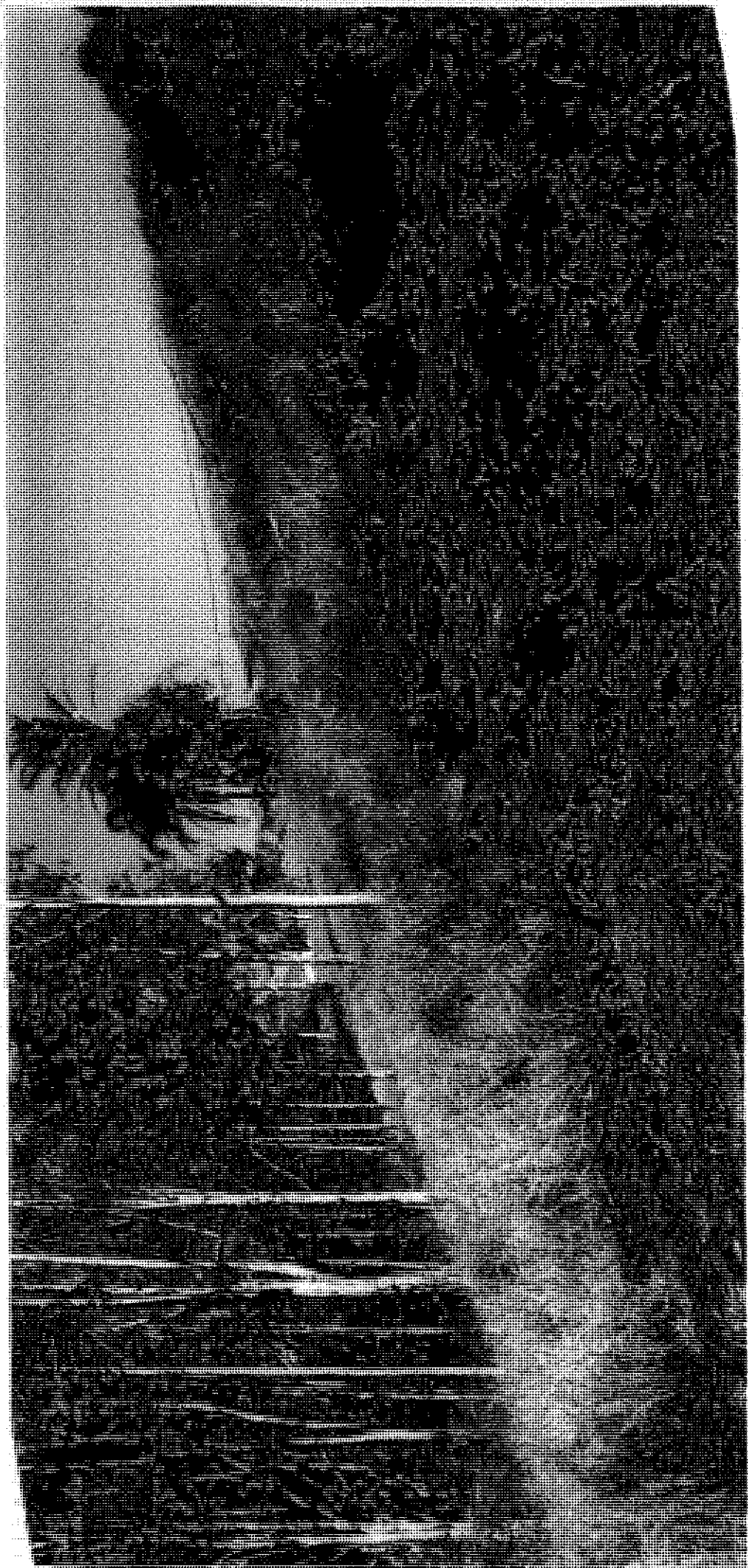
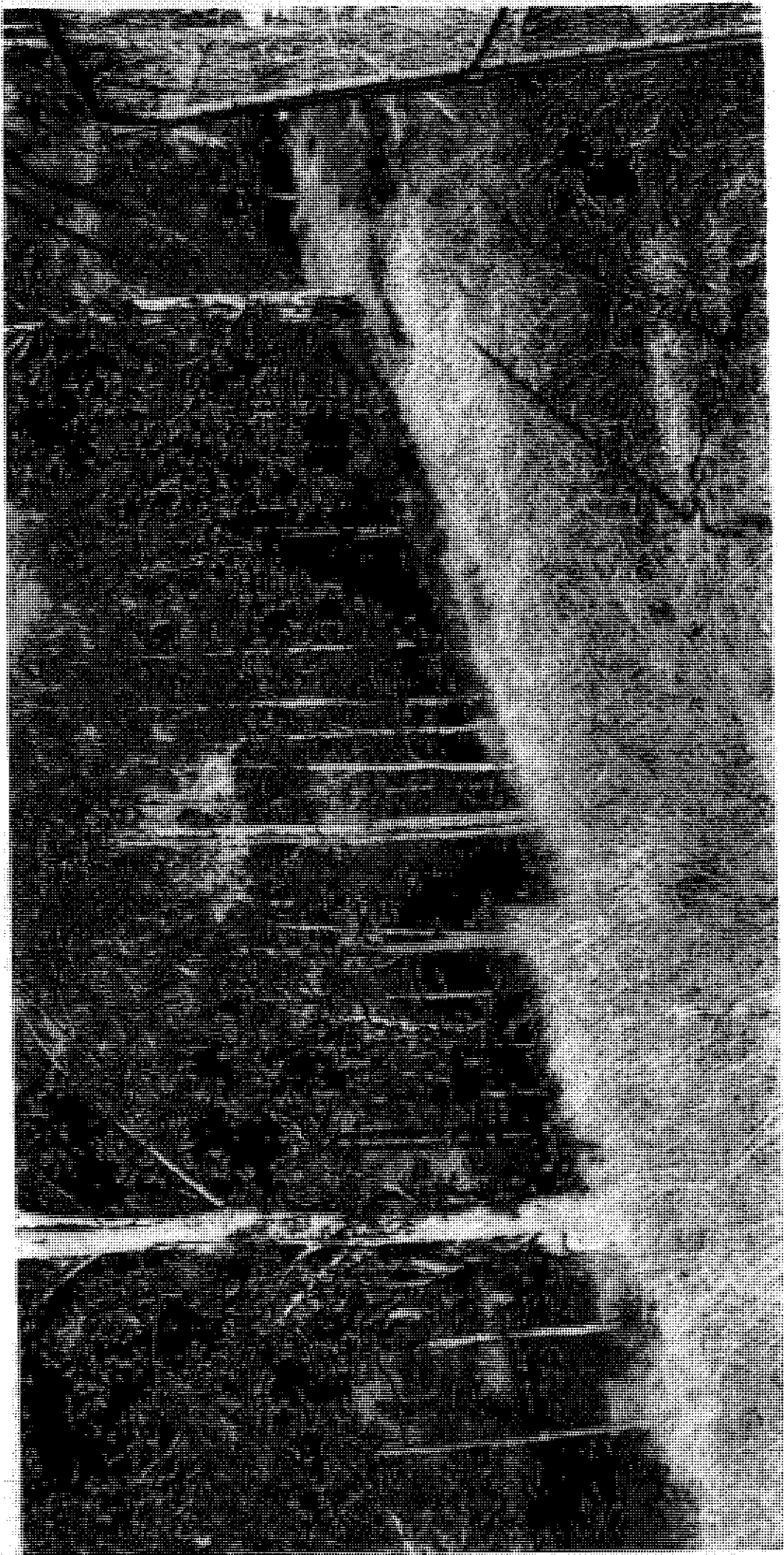




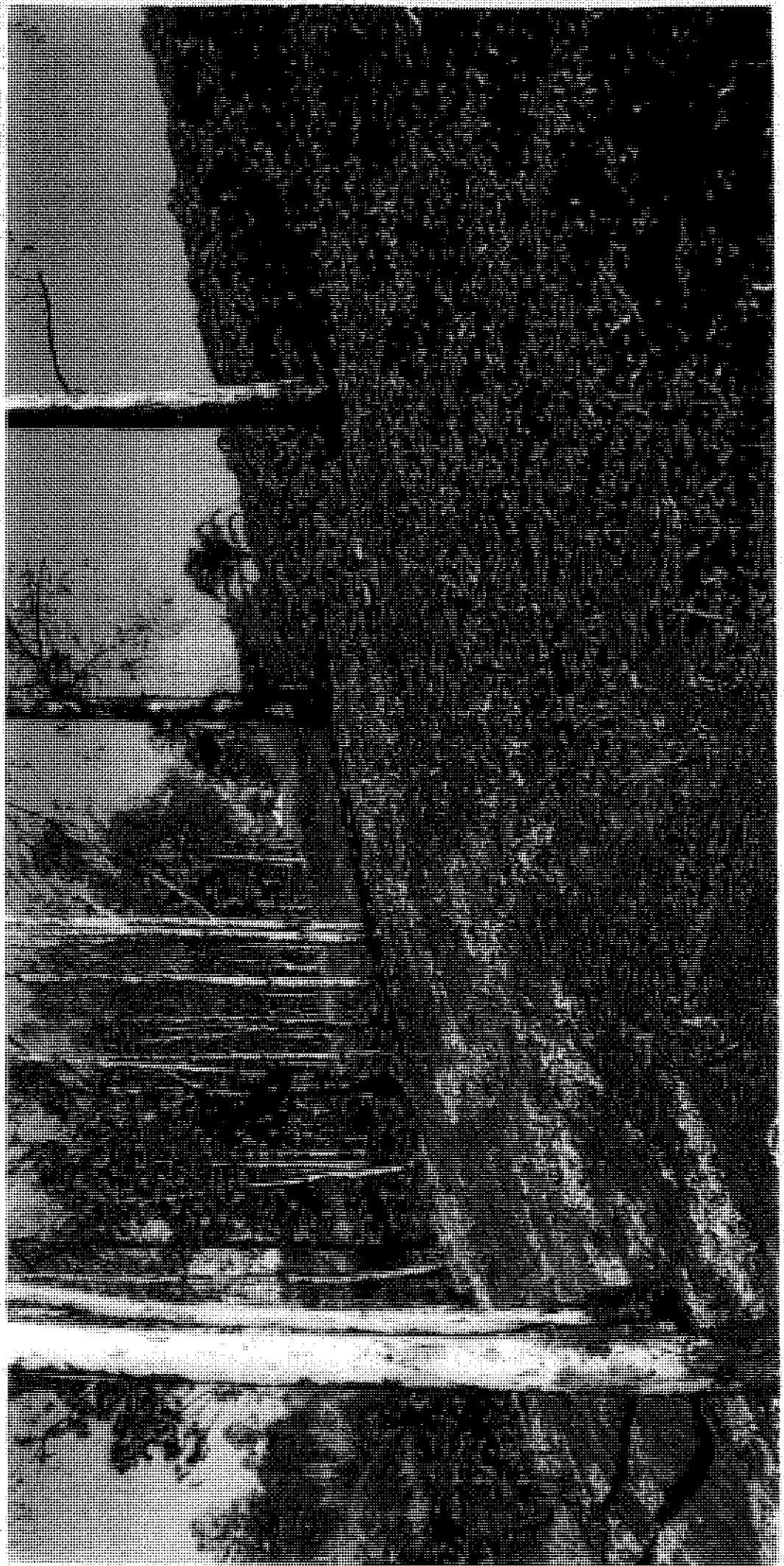


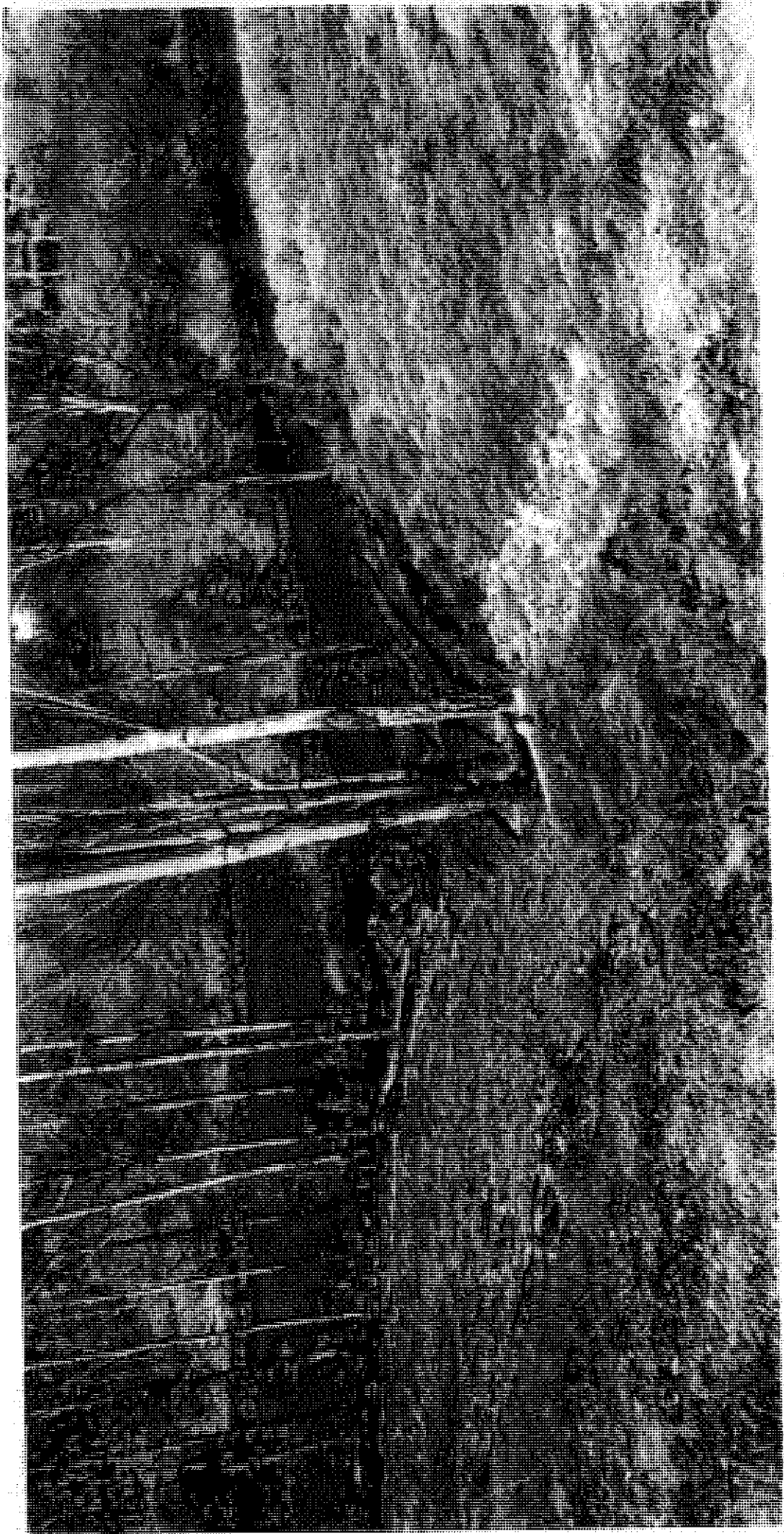
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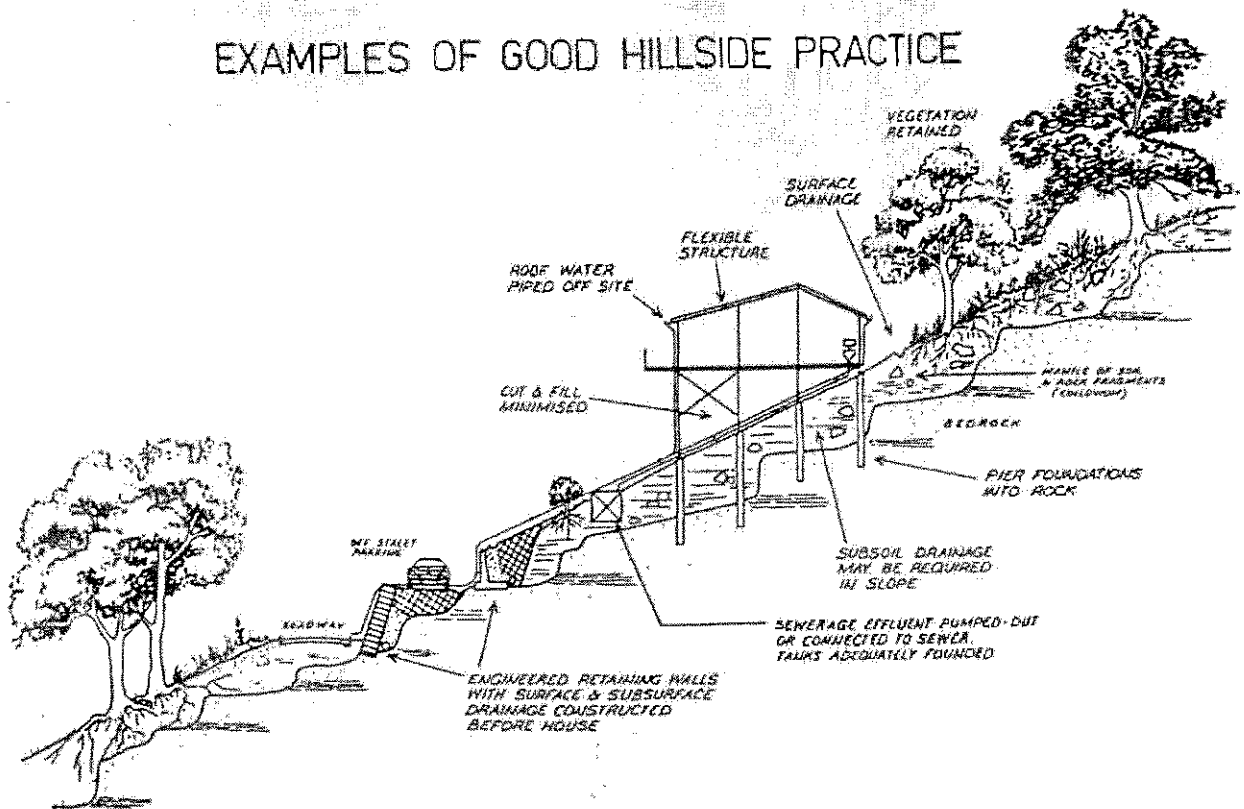


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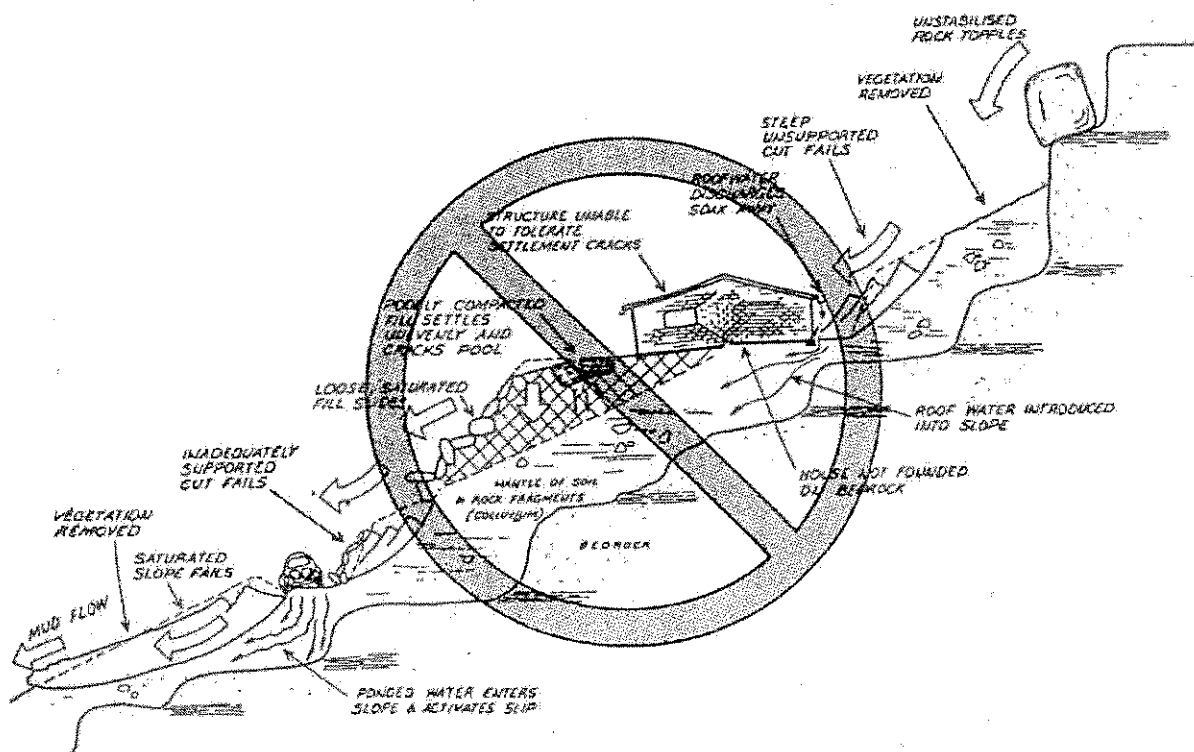




EXAMPLES OF GOOD HILLSIDE PRACTICE



EXAMPLES OF POOR HILLSIDE PRACTICE



Illustrations of Good and Poor Hillside Practice

This figure is an extract from *GEOTECHNICAL RISKS ASSOCIATED WITH HILLSIDE DEVELOPMENT* as presented in *Australian Geomechanics News*, Number 10, December, 1985, which discusses the matter more fully.

APPENDIX G

LANDSLIDE RISK ASSESSMENT - EXAMPLE OF QUALITATIVE TERMINOLOGY FOR USE IN ASSESSING RISK TO PROPERTY

Qualitative Measures of Likelihood

Level	Descriptor	Description	Indicative Annual Probability
A	ALMOST CERTAIN	The event is expected to occur	$>=10^{-1}$
B	LIKELY	The event will probably occur under adverse conditions	$=10^{-2}$
C	POSSIBLE	The event could occur under adverse conditions	$=10^{-3}$
D	UNLIKELY	The event might occur under very adverse circumstances	$=10^{-4}$
E	RARE	The event is conceivable but only under exceptional circumstances.	$=10^{-5}$
F	NOT CREDIBLE	The event is inconceivable or fanciful	$<10^{-6}$

Note: "=" means that the indicative value may vary by say ± 1 order of magnitude, or more.

Qualitative Measures of Consequences to Property

Level	Descriptor	Description
1	CATASTROPHIC	Structure completely destroyed or large scale damage requiring major engineering works for stabilisation.
2	MAJOR	Extensive damage to most of structure, or extending beyond site boundaries requiring significant stabilisation works.
3	MEDIUM	Moderate damage to some of structure, or significant part of site requiring large stabilisation works.
4	MINOR	Limited damage to part of structure, or part of site requiring some reinstatement/stabilisation works.
5	INSIGNIFICANT	Little damage.

Note: The "Description" may be edited to suit a particular case.

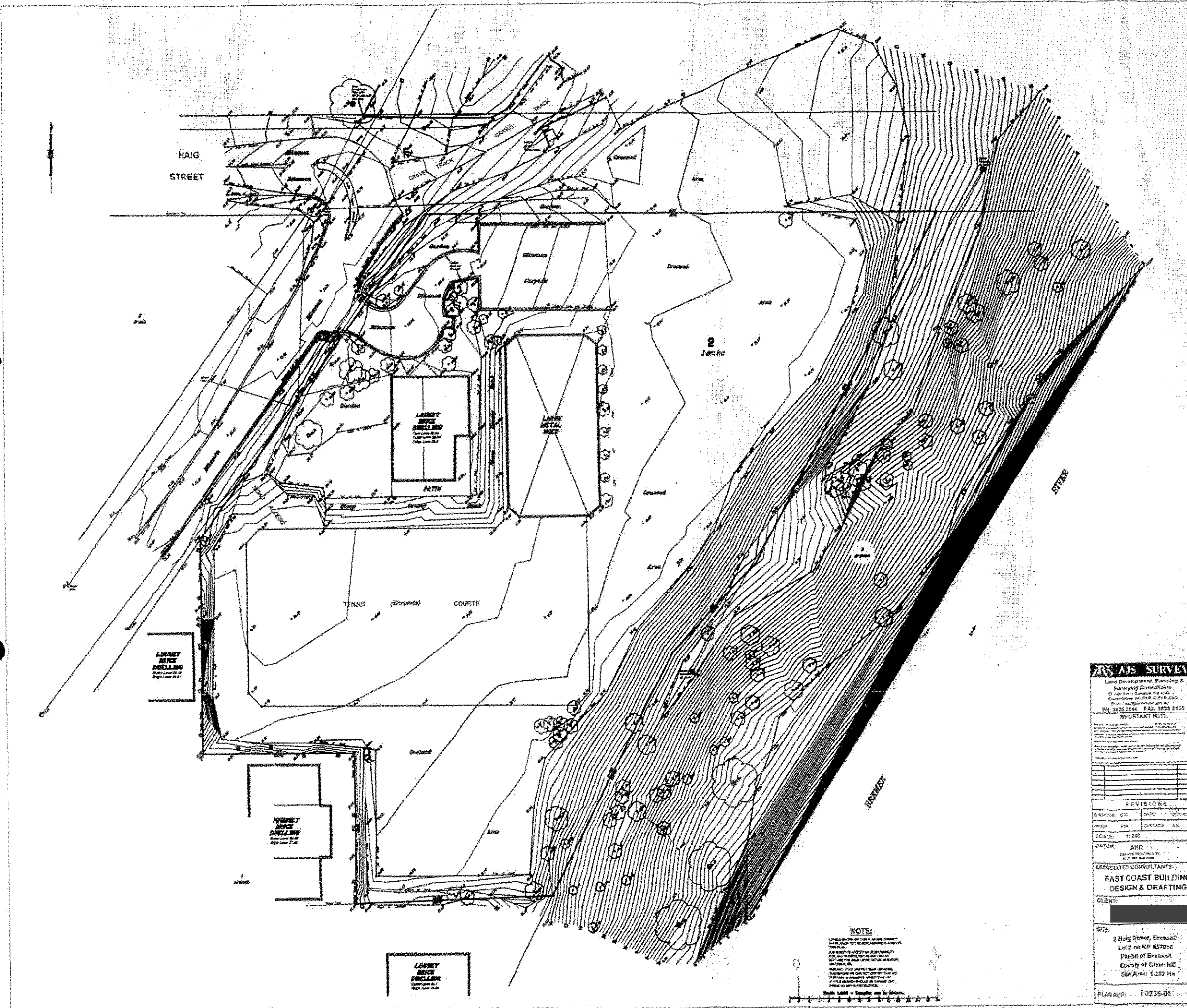
Qualitative Risk Analysis Matrix - Level of Risk to Property

LIKELIHOOD	CONSEQUENCES to PROPERTY				
	1: CATASTROPHIC	2: MAJOR	3: MEDIUM	4: MINOR	5: INSIGNIFICANT
A - ALMOST CERTAIN	VH	VH	H	H	M
B - LIKELY	VH	H	H	M	L-M
C - POSSIBLE	H	H	M	L-M	VL-L
D - UNLIKELY	M-H	M	L-M	VL-L	VL
E - RARE	M-L	L-M	VL-L	VL	VL
F - NOT CREDIBLE	VL	VL	VL	VL	VL

Risk Level Implications

Risk Level	Example Implications ⁽¹⁾
VH VERY HIGH RISK	Extensive detailed investigation and research, planning and implementation of treatment options essential to reduce risk to acceptable levels; may be too expensive and not practical
H HIGH RISK	Detailed investigation, planning and implementation of treatment options required to reduce risk to acceptable levels
M MODERATE RISK	Tolerable provided treatment plan is implemented to maintain or reduce risks. May be accepted. May require investigation and planning of treatment options.
L LOW RISK	Usually accepted. Treatment requirements and responsibility to be defined to maintain or reduce risk.
VL VERY LOW RISK	Acceptable. Manage by normal slope maintenance procedures.

- Note:
- (1) The implications for a particular situation are to be determined by all parties to the risk assessment; these are only given as a general guide.
 - (2) Judicious use of dual descriptors for Likelihood, Consequence and Risk to reflect the uncertainty of the estimate may be appropriate in some cases.



HAIG STREET

LOBBY DECK
 2.00m x 3.00m
 1:100

LOBBY DECK
 2.00m x 3.00m
 1:100

LOBBY DECK
 2.00m x 3.00m
 1:100

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NO.	DATE	DESCRIPTION

REVISIONS

NO.	DATE	DESCRIPTION

DATUM: AHD
 (BENCH MARK: 10.2m)

ASSOCIATED CONSULTANTS:
EAST COAST BUILDING DESIGN & DRAFTING

CLIENT:
 [REDACTED]

SITE:
 2 Haig Street, Drossell
 Lot 2 on RP 857916
 Parish of Bressall
 County of Dorset
 Site Area: 1.282 Ha

PLAN REF: F0235-01

APPENDIX C

Vegetation Management Code Issues

Our Ref 739611-02 :kjd

Contact [REDACTED]



Cardno
Shaping the Future

10 August 2006

David Brett & Associates
PO Box 5020
BRASSAL QLD 4305

Attention: [REDACTED]

Dear Sir

**2 HAIG STREET, BRASSAL - INFORMATION REQUEST RESPONSE -
VEGETATION MANAGEMENT CODE ISSUES**

Please find herein a response to the issues raised by Council concerning the degree of compliance that the proposed plan of development for the 2 Haig Street, Brassal site achieves with the Overall and Specific Outcomes of the Vegetation Management Code.

In the preparation of this response we have:

- reviewed the proposed plan of development and the information request from Council;
- conducted a site visit to inspect the site and associated riparian vegetation;
- carried out a review of the detailed survey and development plans for the site;
- completed an analysis of the nature and magnitude of any direct or indirect impacts that development would have on existing native riparian vegetation; and
- completed an assessment of any necessary modifications to development layout required to achieve compliance with relevant Specific Outcomes of the Vegetation Management Code.

Council's Information Request, dated 2 February 2006, at point 4 (a) indicates that *"..The proposed material change of use and subsequent layout appears to necessitate clearing and earthworks within ten (10) metres of the top of bank to the Bremer River. The Vegetation Management Code requires the protection of riparian corridor visually represented by figure 12.4.1. The Applicant is requested to demonstrate that no earthworks or vegetation clearance shall occur within ten (10) metres from the top of the bank (indicated on Plan Ref: F0235-01 to exist at approximately the 18 metre contour level) of the Bremer River."*

The Overall Outcomes sought via the Vegetation Management Code of the Ipswich Planning Scheme area:

- Significant areas of native vegetation and their associated wildlife habitats and linkages are conserved and appropriately managed.*
- Vegetation within defined water catchment areas, riparian areas or wetlands is conserved and appropriately managed.*
- Vegetation within environmentally sensitive areas including steeply sloping land and areas prone to erosion or salinity is conserved and appropriately managed.*

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- d) *Vegetation which is of cultural heritage, ecological, horticultural, scientific, educational, recreation or aesthetic (including streetscape, townscape or landscape) significance or value is conserved and appropriately managed.*

The relevant Specific Outcome and associated Acceptable/Probable Solutions of the Vegetation Management Code that has been raised by Council in the Information Request is:

Specific Outcome	Acceptable/Probable Solutions
<p>Environmentally Sensitive Areas (1) The clearing of vegetation does not cause or exacerbate land degradation within environmentally sensitive areas including steeply sloping land, areas prone to erosion or salinity, riparian corridors, wetlands or water catchment areas.</p>	<p>Environmentally Sensitive Areas (1) The clearing does not involve the removal of native vegetation from – (a) Land with a slope of 15% or more; or (b) Land within a designated Watercourse or land within 30m of a Designated Watercourse or within 10m of the top of the bank of a Designated Watercourse where the slope of the bank exceeds 15% (see Figure 12.4.1).</p>

Based on a review of the proposed plan of development, an annotated version of which is presented as Annexure A, and an inspection of the site, the following points are noted.

- (a) The vegetation that occurs on that part of the site which is located between the eastern (Bremer River) site boundary and Council's recommended riparian vegetation retention zone (i.e. 10 m from the 18m contour as shown on *Plan Ref: F0235-01*) is comprised of a small number of native and exotic trees over a maintained grassland. There is no shrub or small tree layer as a consequence of past vegetation clearance episodes and the periodic slashing of the ground-layer vegetation.
- (b) There is no remnant vegetation, as defined by the *Vegetation Management Act*, within the riparian vegetation retention zone.
- (c) Native trees located within the riparian vegetation retention zone are four (4) Forest red gum (*Eucalyptus tereticornis*) located in the south-east corner of the site.
- (d) Other trees located within the riparian vegetation retention zone are a cluster of non-native Cocos palms (*Syagrus romanzoffiana*), which are a recognised environmental weed species.
- (e) The vegetation on the site, apart from the aforementioned forest red-gums, does not possess any significant wildlife habitat or linkage values.
- (f) The current layout of the proposed plan of development would not result in the removal of any significant native vegetation apart from the Forest red-gums located in the south-east of the site.

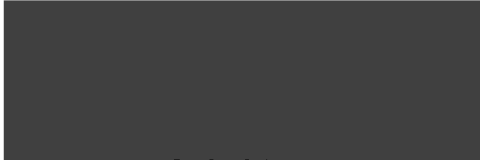
Given the above facts and circumstances, the proposed plan of development would require only minor modifications to achieve compliance with the nominated Acceptable/Probable Solution to the relevant Specific Outcome sought by the Vegetation Management Code of the Planning Scheme. The specific form of these modifications needs to cater for the retention of the Forest red-gums located in the south-east corner of the site (refer Annexure A). In practice this would require that there are no earthworks beneath the canopy drip-line of the subject trees.

It is our assessment that a modified plan of development that provides for the retention of existing native vegetation within the area nominated by Council as the riparian vegetation retention zone would satisfy the requirements of the Vegetation Management Code of the Planning Scheme. It is also noted

that the removal of the exotic Cocos palms (an environmental weed) would also be consistent with Specific Outcome (2) of the Code.

We trust that the advice provided herein is of assistance to you. Should you have any queries in respect thereof please contact the undersigned.

Yours faithfully



Principal Ecologist
for Cardno

Enc: Annexure A : Annotated Detailed Survey – Development Layout Plan.

APPENDIX D

Response to Flooding Issues

Our Ref 7396/11 :mpg

Contact Martin Giles



Cardno
Shaping the Future

1 June 2007

David Brett & Associates
25 Canning Street
NORTH IPSWICH QLD 4305

Attention: [REDACTED]

Dear Sir

**2 HAIG STREET
RESPONSE TO COUNCIL INFORMATION REQUEST- FLOODING ISSUES**

We refer to the Council information request issued in relation to the flood study completed in support of the development application for the above property. Our response to each of the items noted in the request is provided below.

- 1. *The flood study focused only on compensatory storage within the flood plain by cut and fill on the steep Bremer River bank and have not considered the effect of convergence [sic]. By filling within the flood plain, river convergence [sic] will be reduced and affect the opposite bank flood plain without much afflux.***

It is uncertain whether the information request is relating to conveyance or the potential direction of flow towards the other bank of the river.

In relation to conveyance, it is agreed that filling could reduce the conveyance of the river. In the existing case, where flow occurs over the bank of the river, it is relatively shallow and would not contribute significantly to the conveyance of the creek. Excavating on the bank of the river compensates for the loss of conveyance associated with the proposed filling of the overbank area.

For the modelling included the representation of conveyance for both the existing and developed cases. Therefore, conveyance was fully considered in the analysis in addition to compensatory storage.

In relation to the potential for filling to cause flow to be redirected to the other bank of the creek, the minor nature of the works relative to the size of the Bremer River needs to be considered.

With reference to cross section 1009452, a peak flow of 2,840 m³/s is conveyed with a flood level of 19.046 mAHD. This equates to an average flow velocity of 1.5 m/s. The flow area of existing cross section filled by the development is less than 5 m². Assuming that the flow velocity in the area to be filled is equal to the average velocity (it is likely to be well below this value), the flow conveyed in the area to be filled is approximately 5 m³/s, or 0.2 percent. It is considered that such a small change in flow will not have any impact on the opposite bank of the river.

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Baulkham Hills
Wollongong
Busselton

Papua New Guinea
Indonesia
Vietnam
China
Kenya
United Arab Emirates
United Kingdom
United States



- '2. It is noted that the existing slope of the river bank, where cut is proposed, is already too steep (1:2.5). The proposed vertical cut within the flood plain will further de-establish the stability of the river bank.'**

A geotechnical investigation has been undertaken in relation to the stability of the bank. A report will be submitted by the consultants responsible for the geotechnical investigation under separate cover.

- '3. Section 4.1 of the report indicated that additional survey were undertaken to provide additional cross sections for the study. However, the survey did not include areas below the water line and the bed levels for the new cross sections were adopted based on cross section 1009675 of Council's MIKE11 model. It should be noted that the cross section 1009675 is located at one end of the site, and there is an approximately 1.3m bed level drop from one end of the site to the other (over approximately 200m frontage). As such there are concerns on the adopted cross sections in the study.'**

While it is acknowledged that one Council cross section was used to generate those parts of cross sections not included in the survey of the site, this is considered reasonable for two reasons in this case.

Firstly, the submodel developed for the study agreed to within 64 mm and 68 mm of the 100 year flood level determined by Councils model of the river at the downstream and upstream ends of the model respectively. The good agreement achieved both upstream and downstream of the site suggests that the cross sections were reasonable.

Secondly, the model was used for a relative analysis of development impact rather than for the specification of absolute flood levels. The analysis determined that the relative impact of the works will be negligible. It is intended that the design flood levels applicable to the site for the specification of minimum fill and floor levels be based on Councils' defined flood levels for the site.

- '4. Section 4.2 of the report indicated that the model for the existing case was calibrated to the 50 year 30 hour flooding of Brisbane River. However, the site appears to be dominated by the Bremer River flood as it is not affected by the Brisbane River backwater for Q100 flood.'**

According to Table G-1 of Council's model report, the peak flood level at the site for the 100 year event (the 50 year event in the report) is produced by Brisbane River flooding. Flooding is only dominated by the Bremer River for the 200 year event and greater. Given this, it is considered that the site is dominated by Brisbane River flooding rather than Bremer River flooding.

- '5. Section 5 of the report indicated that a portion of the site is proposed to be filled to a level 500mm higher than the 100 year ARI inundation level. However, by examining the Council topographic information, the actual maximum depth of this proposed fill appears to be more than 2m in certain locations.'**

The statement in Section 5 of the report is considered to be correct. The statement indicated that filling above the 100 year flood level was proposed to provide sufficient immunity to flooding. The statement did not refer to the depth of filling required to achieve the required flood immunity. However, based on a review of the detailed survey of the site rather than Council's information, it is considered that the actual depth of fill will be less than two metres.

'6. It is requested that the submitted flood study be referred to a third party for review.'

The model files produced for the analysis are attached for review by others.

We trust that the responses to the above issues are acceptable. If you have any queries in relation to the responses, please do not hesitate to contact us.

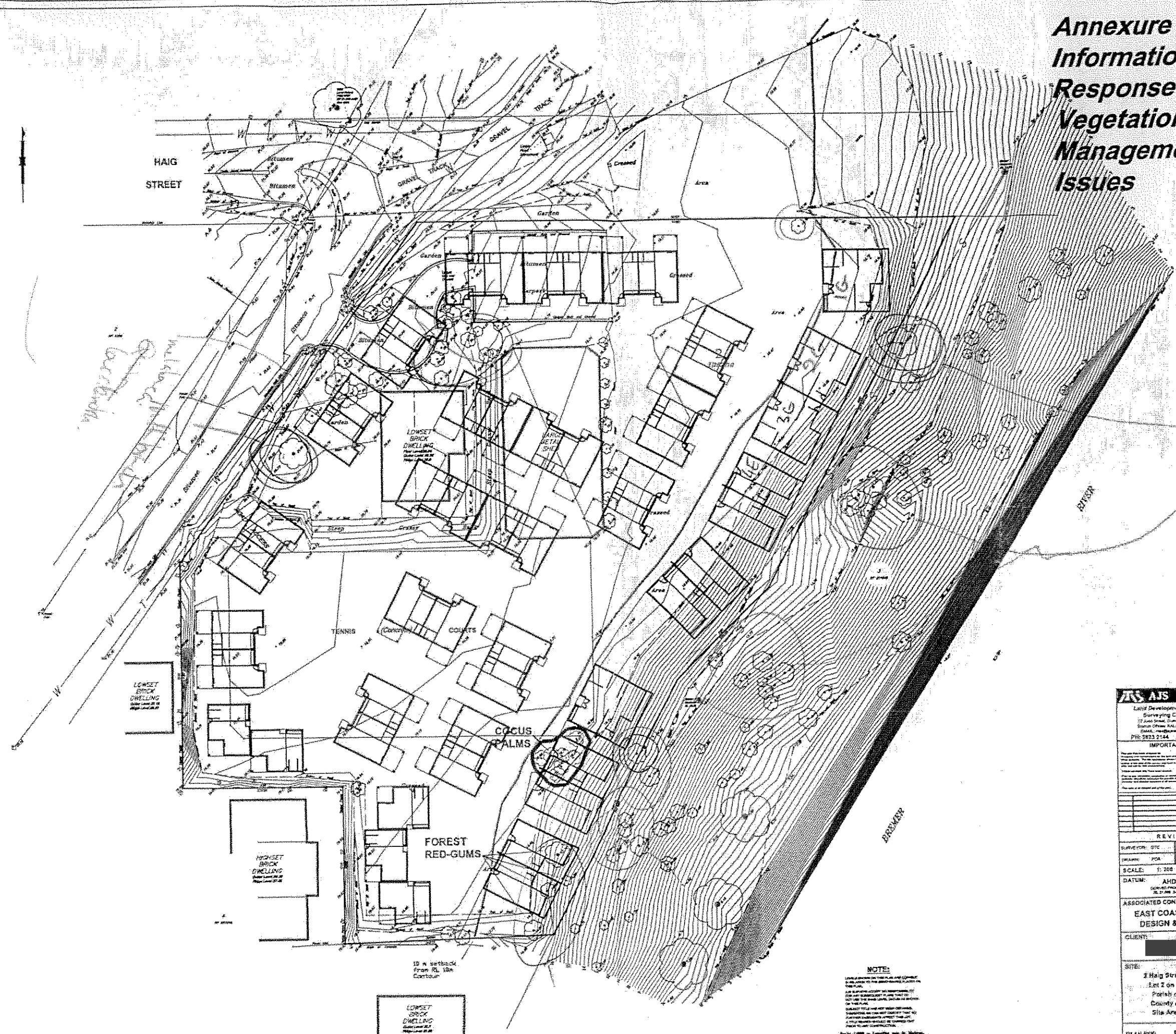
Yours faithfully



*Manager, Water Engineering
for Cardno*

Enc CD with Model Files

Annexure A : Information Request Response - Vegetation Management Code Issues



Handwritten note:
W. 10m setback
W. 10m setback
W. 10m setback

LOWSET BRICK DWELLING
Site Area 2.1

HIGHSET BRICK DWELLING
Site Area 2.1

LOWSET BRICK DWELLING
Site Area 2.1

10 m setback
from RL 10m
Contour

NOTE:
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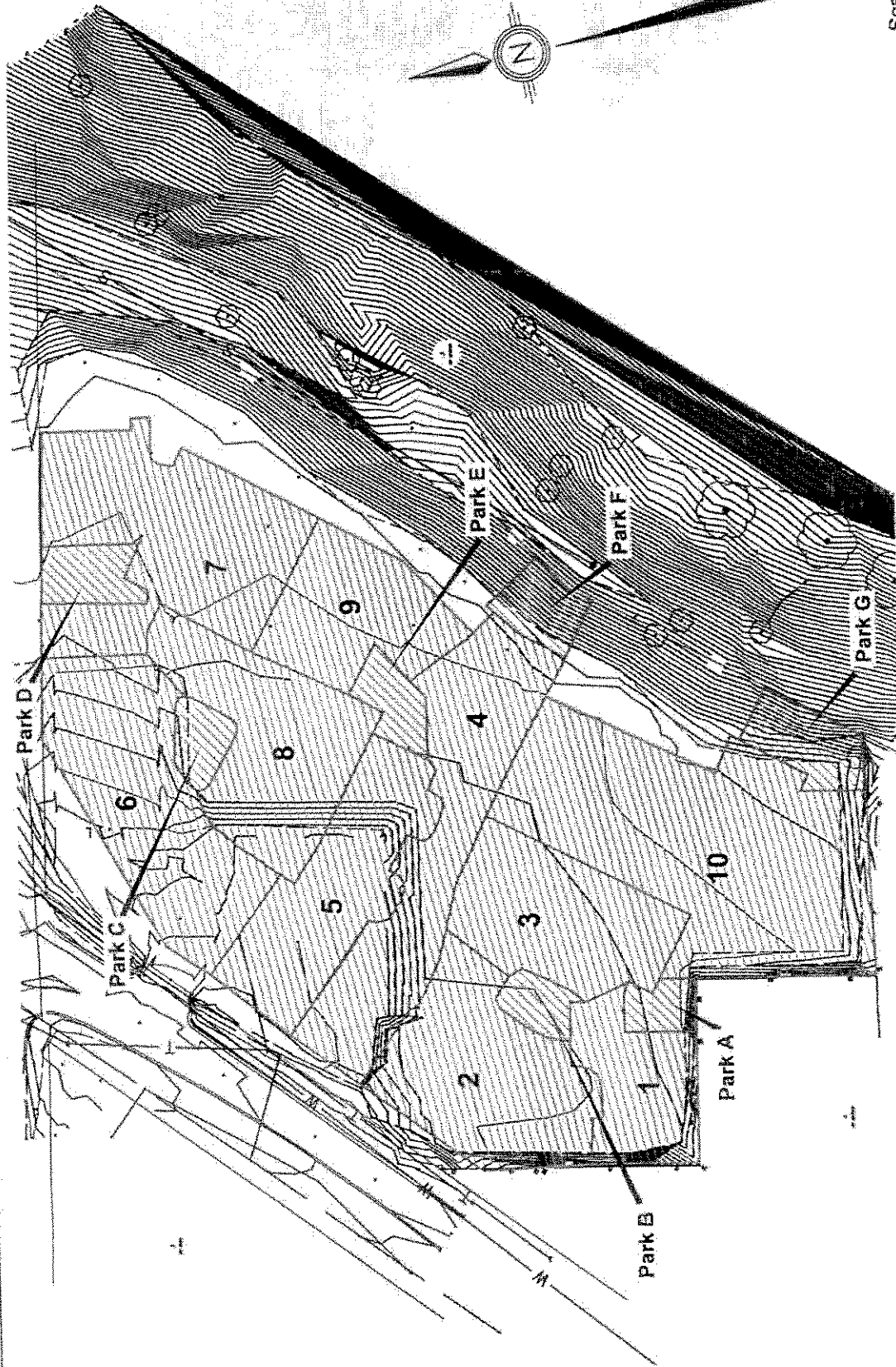
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REVISIONS			
SURVEYOR	DATE	SCALE	DATE

SCALE: 1:200
DATUM: AHD
ASSOCIATED CONSULTANTS:
EAST COAST BUILDING DESIGN & DRAFTING
CLIENT: [REDACTED]

SITE:
2 Haig Street, Dunedin
Lot 2 on RP 857416
Part of Section 3
County of Otago
Site Area: 1.252 ha

PLAN REF: F0238-01



Scale 1:1000 (A4)

FIGURE 3 Stormwater Catchments

Project No.: 7396/11

PRINT DATE: 08 MAY 2007 10:53 AM

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Ref: Orig. Date: 10 July 2007

Colran Pty Ltd
 100/102 WILSON ST BRASSALL SA 5103
 08 8532 1000

APPENDIX E

Stormwater Management Plan



2 HAIG STREET, BRASSALL

Conceptual Stormwater Management Plan

Cardno (Qld) Pty Ltd

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Document Control

Version	Date	Author		Reviewer	
		Name	Initials	Name	Initials
1	17 July 2007				

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**2 HAIG STREET, BRASSALL
CONCEPTUAL STORMWATER MANAGEMENT PLAN**

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1. INTRODUCTION

1.1 Overview

Development is proposed by Colran Pty Ltd for a disused tennis court site at 2 Haig Street, Brassall. The site is described as Lot 2 on RP857016 and backs on to the Bremer River. Figure 1 presents the location of the study site.

A flood study was prepared by Cardno for the site in August 2006. In response to a request for further information issued by Council following the issue of the flood study report a stormwater management plan has now been developed for the site and is presented in this report.

1.2 Development Layout

The development site covers an area of 1.282 ha. The site is bounded by Haig Street to the north, Collins Street to the west, Workshops Street to the south and the Bremer River to the east.

It is proposed to sub-divide the site into 48 residential lots of 2 and 3 bedroom townhouses. The development also includes a number of roads and public park spaces. Figure 2 presents the proposed development layout.

1.3 Water Quality Objectives

Load reduction targets for key stormwater pollutants are identified in the *Water Sensitive Urban Design Technical Design Guidelines for South East Queensland* (released by Healthy Waterways June 2006). This document discusses the concerns connected with concentration based water quality objectives. These concerns include the potential for urban developments to increase pollutant loads to the receiving water without actually altering pollutant concentrations and the challenge in identifying a representative median concentration which is a highly variable measurement. For these reasons, among others, the Healthy Waterways document has adopted load based reduction targets as the standard for determining the effectiveness of stormwater quality measures within a given development.

The following load reduction targets (compared to untreated stormwater) have been applied to the stormwater management assessment presented in this report:

- Total Suspended Solids – 80%
- Total Phosphorus – 60%
- Total Nitrogen – 45%

2. WATER QUALITY MANAGEMENT

2.1 Water Quality Options

A wide range of stormwater management techniques are available to achieve the principles of Water Sensitive Urban Design. All have been shown to be successful when correctly designed, but selection of the most appropriate practices for a particular development is highly dependent on site conditions. The major treatment measures are discussed below and the appropriateness of each for the subject site assessed.

Litter Baskets/racks

The primary purpose for litter baskets is to remove medium sized litter and debris from the site. Significant litter loads are not expected as this is a residential development and other measures will be more appropriate for managing the removal of litter from the site.

Sediment Traps

Sediment traps will be required during the construction phase to limit the transport of sediment off site. Following construction, sediment levels will return to a low level, and traps are therefore not considered necessary as a long-term water quality measure.

Gross Pollutant Traps

Gross pollutant traps are predominantly used for the removal of litter and debris – although they have been shown to effectively remove coarse sediment and suspended solids (Brisbane City Council, 1999). It is not considered that a GPT is necessary for stormwater treatment within the Haig Street development discussed in this report.

Filter Strips/Buffer Strips

Buffer strips are areas of land left in their natural state which act to reduce peak runoff flows and improve the quality of stormwater runoff. This treatment improves the aesthetic and biodiversity value of the development and provides significant quality and quantity improvements.

Grass Swales

Grass swales are considered a highly effective and aesthetic water quality (and to a lesser extent, water quantity) control measure. However, in order to detain flow adequately, grass swales need to be placed on relatively flat slopes no greater than 4 percent. Wherever slopes are sufficiently low to allow for their use (or where they are able to follow contours), grass swales provide effective stormwater treatment.

Vegetated Swales

Vegetated swales require similar conditions as those outlined for grass swales above. Therefore, the use of vegetated swales is limited by slope. Wherever slopes are sufficiently low the use of a vegetated swale would provide effective stormwater treatment for the site. It would be possible to employ grassed or vegetated swales within the subject site provided adequate area and slopes could be achieved in the final development layout.

Extended Detention Basin

Extended detention basins are designed to generally store runoff for 1-2 days. Their main purpose is the reduction of the peak discharge from the site during a storm event, and the retention of particulate matter.

Infiltration Trenches

Infiltration trenches allow pre-treated stormwater runoff to infiltrate into surrounding soils and groundwater, and as such are not treatment devices in themselves. Where space is limited, bio-retention systems are preferred.

Bio-retention Systems

Bio-retention systems effectively combine a grass or vegetated swale with an infiltration trench. They are considered to be extremely effective in removing sediment and nutrients. Although they require a flat area, they can be incorporated in steeper areas using a stepped system. They can also be located within a detention basin, thereby combining the stormwater quality and quantity functions into a smaller area. Bio-retention systems are considered appropriate for this development.

Porous Pavements

Porous pavements are not appropriate for high traffic areas due to increased maintenance requirements. They are also less effective in steep areas. The potential traffic volumes through the site preclude the extensive use of porous pavement for water quality management however it could be possible to include some areas of porous pavement in the designated car parking spaces throughout the development.

Constructed Wetlands

Wetlands require reasonably large flat areas of land. Given the constraints of this development, appropriate locations around the site are limited.

Rainwater Tanks

The ability exists to install rainwater tanks throughout the development to reduce overall water consumption. Lot scale rainwater tanks may be appropriate for this development, however due to the nature of the development (townhouses) the rainwater tanks would need to be small and therefore will not contribute significantly to stormwater treatment.

Tanks are an extremely useful aid to water conservation, and also have some effect in reducing nitrogen levels. The capacity of rainwater tanks cannot be included in stormwater detention calculations however, as although they can have a considerable effect in reducing runoff volumes, they cannot be assumed to be empty at the start of a heavy rainfall event.

2.2 Adopted Treatment Measures

Based on the treatment measures outlined above, the proposed site layout and other site constraints, it was concluded that the most appropriate treatment measure for the site is bio-retention systems. This is primarily due to the presence of numerous parkland areas throughout the development, which present a good opportunity to include such devices.

2.3 Treatment Device Design

The development was therefore divided into several catchments according to the proposed layout. Figure 3 presents the stormwater catchments adopted for this analysis with the catchment areas summarised in Table 1.

Table 1 Stormwater Catchment Areas

Catchment	Area (m ²)	Catchment	Area (m ²)
1	448	6	1014
2	883	7	1134
3	719	8	840
4	1038	9	583
5	767	10	1779

Brisbane City Council's *Water Sensitive Urban Design Engineering Guidelines* (Draft August 2005) outlines an approach for determining the required size of a bio-retention system based on the area of the contributing catchment in order to achieve a desired set of pollutant reduction targets. According to Figure 5.3, Figure 5.4 and Figure 5.5 of the *WSUD Engineering Guidelines* pollutant removal targets of 80% (total suspended solids), 60% (total phosphorus) and 45% (total nitrogen) should be achieved with a bio-retention system treatment area that is approximately 2.5% of the contributing catchment area. This approach was adopted for the assessment presented here. Experience has shown that the total size of the bio-retention system is likely to be approximately 4% of the contributing catchment. Table 2 summarises each bio-retention system, the total catchment contributing to the system and the required bio-retention area based on the methodology described above.

Table 2 Bio-retention Basin Design Details

Bio-retention Name	Contributing Catchments	Contributing Catchment Area (m ²)	Bio-retention Treatment Area (m ²)	Total Bio-retention Area (m ²)
Bio A	1	448	11.2	17.9
Bio B	2, 3	1602	40.1	64.1
Bio C	6	1013	25.3	40.5
Bio D	7	1134	28.3	45.4
Bio E	5, 8, 9	2191	55.0	87.6
Bio F	4	1038	26.0	41.5
Bio G	10	1779	44.5	71.2

An indicative location for each of these bio-retention systems is shown in Figure 4. It can be seen that the required bio-retention areas can be readily incorporated into the already defined parkland areas within the development. Details relating to stormwater drainage networks to and from the bio-retention systems will be confirmed during the detailed design phase of the project.

3. CONCLUSION

Colran Pty Ltd is proposing to develop a disused tennis court site at 2 Haig Street, Brassall for residential purposes. A conceptual stormwater management plan has been produced for the site.

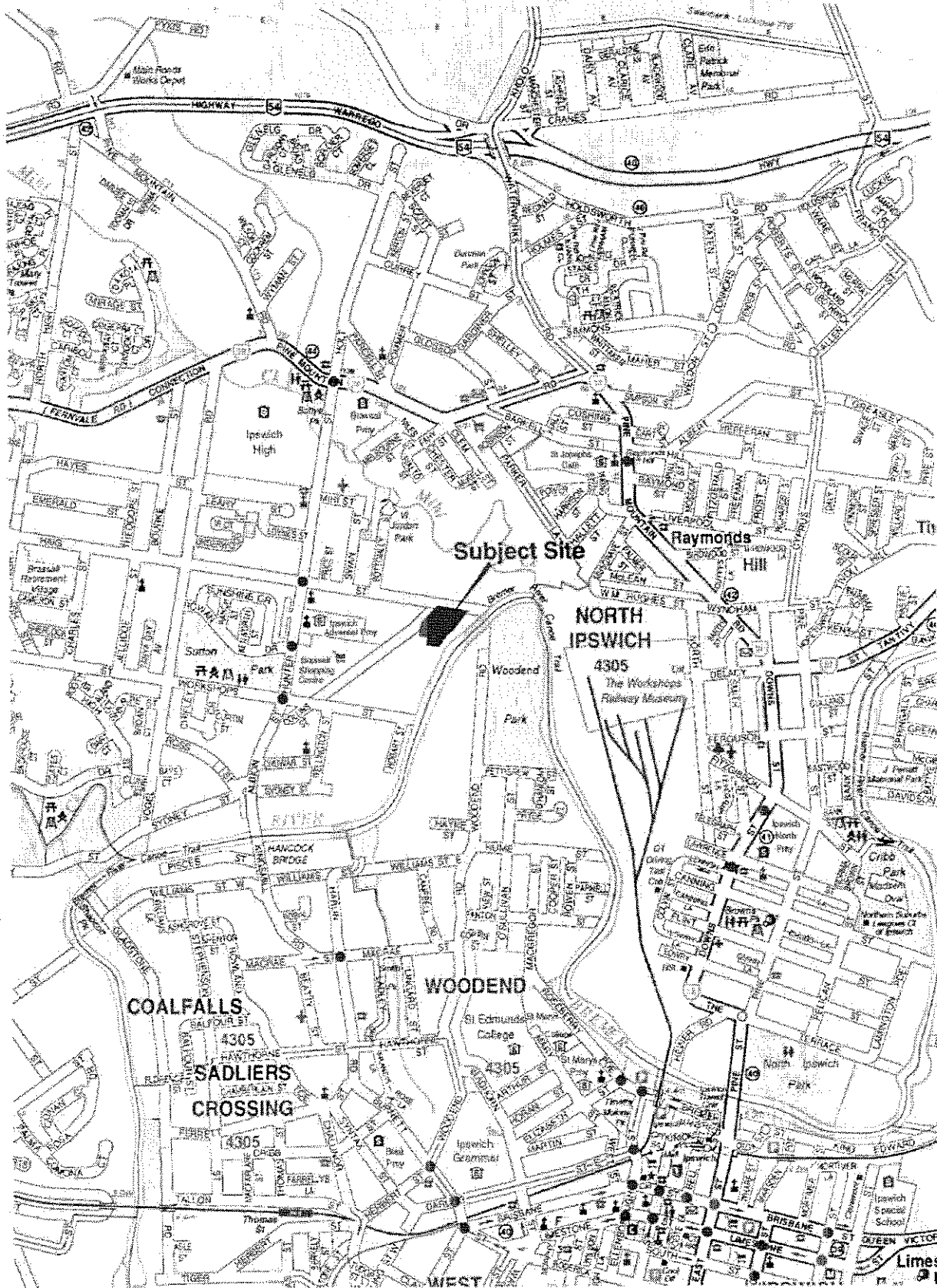
Based on the proposed development layout it is concluded that the most effective stormwater quality management measures for the site will be bio-retention systems located within the park land areas throughout the development.

Preliminary sizing of these bio-retention systems has been conducted according to the methodology outlined in the Brisbane City Council *Water Sensitive Urban Design Engineering Guidelines* (August 2005) and also in the *Healthy Waterways WSUD Technical Design Guidelines for South East Queensland* (June 2006). Load reduction targets were adopted for total suspended solids, total phosphorus and total nitrogen. The required size of each bio-retention system was taken as approximately 2.5% of the contributing catchment area.

It is concluded that the proposed development layout can readily incorporate the necessary water quality treatment measures to ensure load reduction targets are met. It is noted that final design of each of the treatment devices will be carried out during the detailed design phase of the project.

FIGURES

- Figure 1 Locality Plan**
- Figure 2 Proposed Development**
- Figure 3 Stormwater Catchments**
- Figure 4 Stormwater Management Plan**



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Scale 1:20,000 (A4)
FIGURE 1
LOCALITY PLAN

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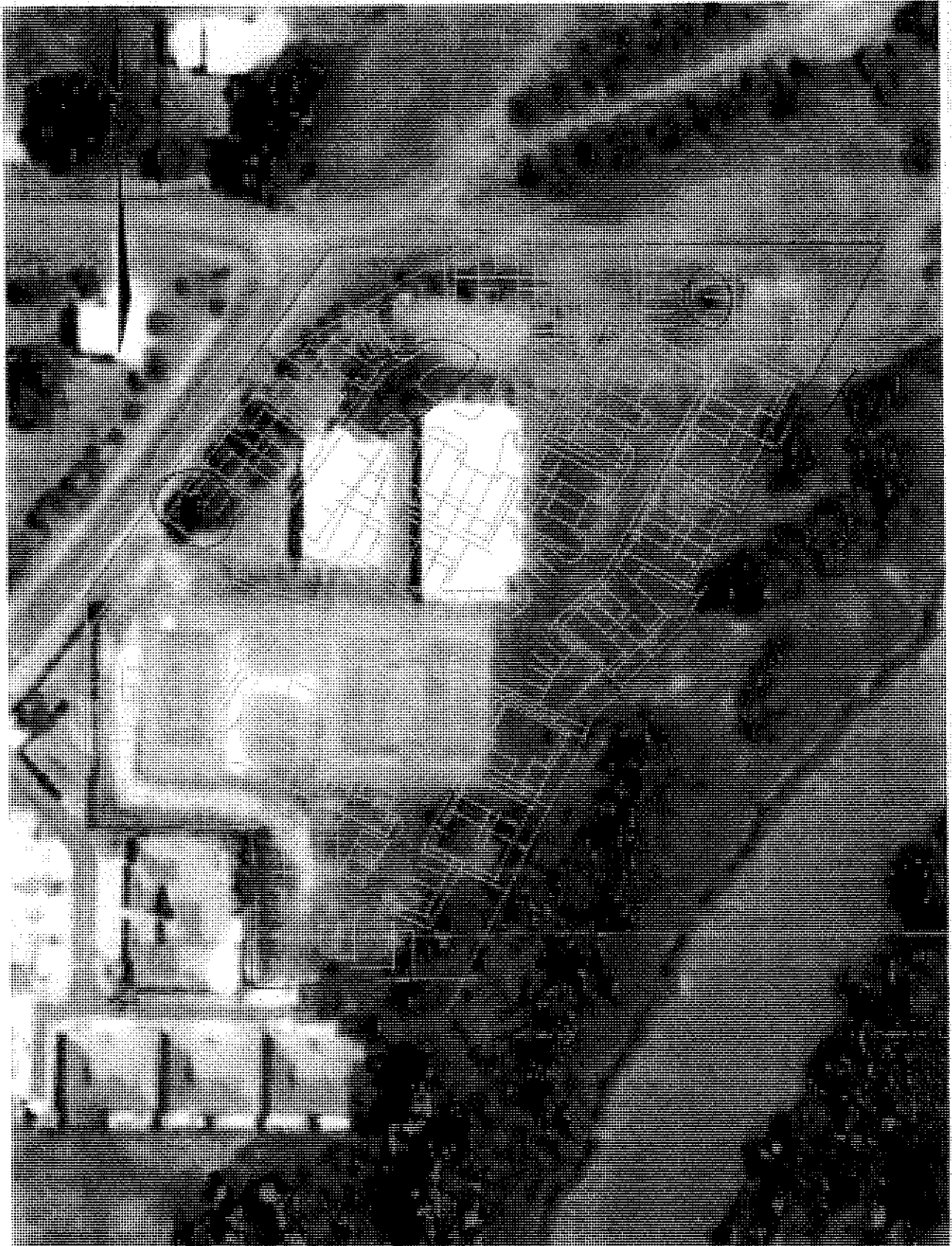
Rev: Orig. Date: 10 July 2007

Project No.: 7395/11

Colran Pty Ltd

PRINT DATE: 18 July, 2007 - 11:25am

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www.coltran.com.au/2007/07/10/

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Rev: Orig. Date: 10 July 2007

Coltran Pty Ltd
CAD FILE: J:\2006-07 Acad_SMP\4048E\Figure 2 - Proposed Development.dwg

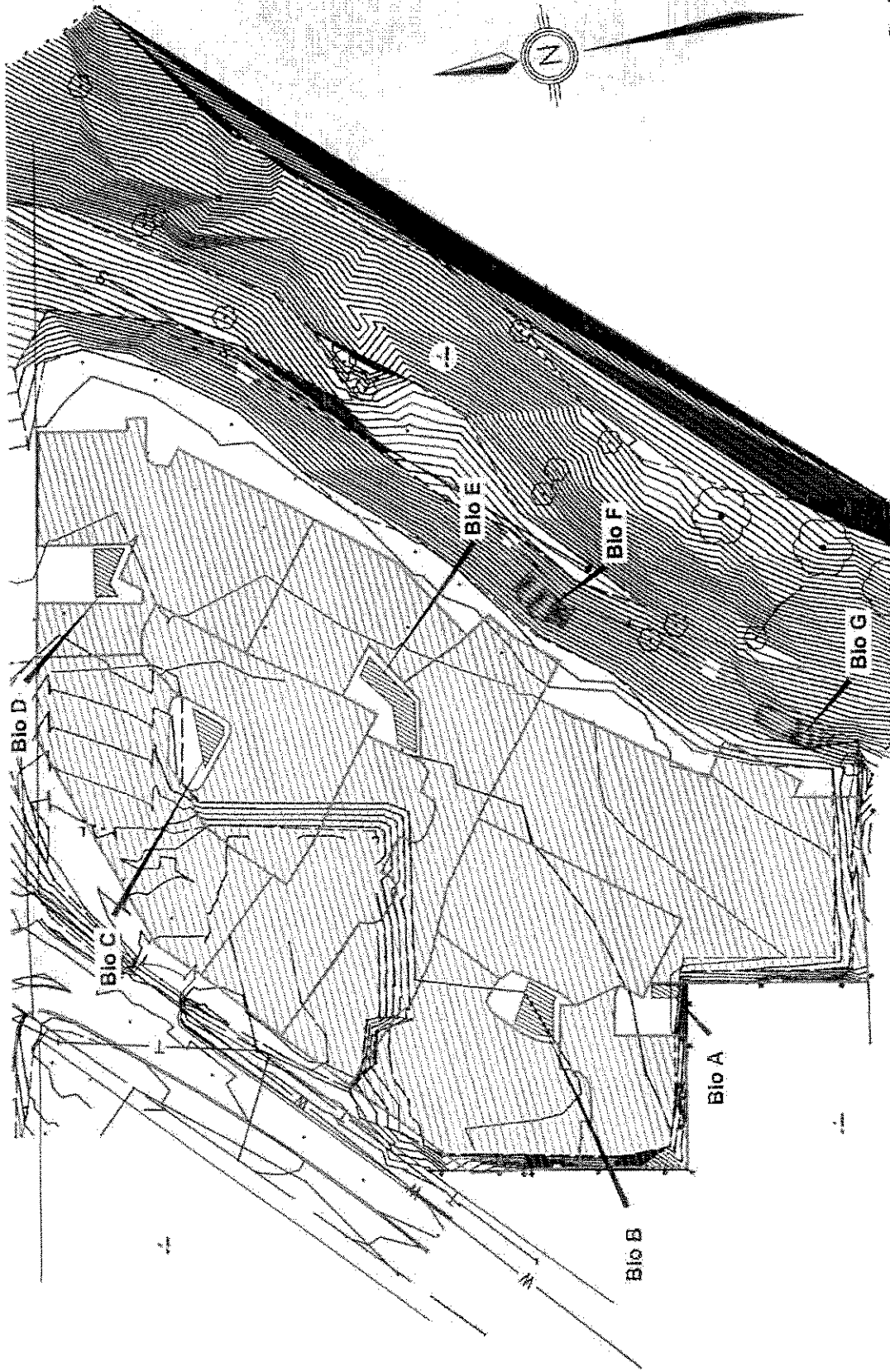
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FIGURE 2

Proposed Development

Project No.: 7396/11

PRINT DATE: 18 July 2007 - 11:35am



Scale 1:1000 (A4)

FIGURE 4
Stormwater Management Plan

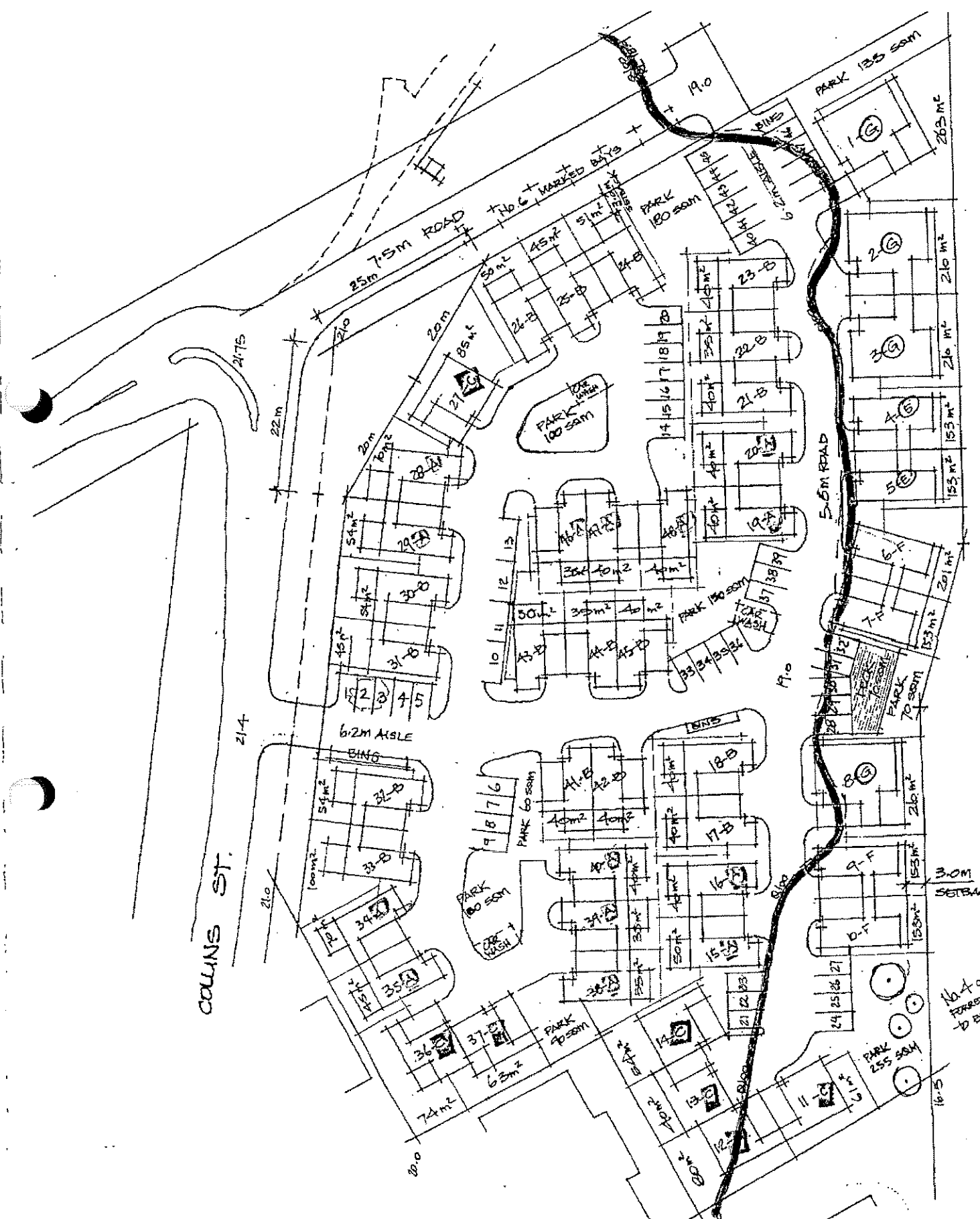
Project No.: 7396/11
PRINT DATE: 30 MAY 2007 11:38AM

*Stability report
discusses design in 11/2006*

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Rev: Orig Date: 19 July 2007

Colran Pty Ltd
CARDNO 25396-11/2007-11/2007/11/2007 - Stormwater Management Plans



APPENDIX F

Response to Traffic Issues



26 June 2007

Our Ref: 22562

Your Ref: 195/06 PAR

Chief Executive Officer
Ipswich City Council
PO Box 191

Ipswich Qld 4305

Dear [REDACTED]

2 Haig Street, Brassal - Proposed Multi-Unit Development

I refer to the Information Request issued by Ipswich City Council dated Wednesday 14 March 2007 for the above mentioned development and now provide a response to the traffic issues raised.

Issue 5 - Traffic

Attention is drawn to item 8 (c) of Council's Information Request 'Traffic'. The Applicant is requested to demonstrate, with the aid of turning templates, the on-site manoeuvrability of a Heavy Rigid Vehicle (e.g. furniture removal truck), and in particular, the forward motion entry and exit of the HRV on the section of roads adjacent to proposed unit 8-18 and 32-40.

Response

The anticipated Heavy Rigid Vehicle generation to the proposed multi-unit development for furniture removal is considered to be infrequent due to the nature of the development.

The likelihood of HRVs being utilised for furniture removal for multi-unit development is considered minimal due to the size of the dwellings and the tendency for such operations to adopt lighter vehicles such as vans, trailers and small rigid vehicles. As a result, it is anticipated that the maximum HRV generation for the subject site would not exceed one per three (3) months.

As such, it is not considered necessary to design the proposed development to accommodate forward motion entry and exit for the roads adjacent to units 8-18 and 32-40 due to the infrequency of HRVs accessing the development.

In order to demonstrate the adequacy of the internal HRV manoeuvring for the proposed development, TTM have applied Auto Track to the proposed development plan. It demonstrated that HRVs are able to enter and depart the site in a safe forward motion while entering and departing the internal roads adjacent to units 8-18 and 32-40 in a safe forward and reverse motion respectively. The diagrams detailing the HRV turn paths roads adjacent to units 8-18 and 32-40 are provided in Figures 1 and 2 respectively.

TTM Consulting (Qld) Pty Ltd

A Subsidiary of TTM Consulting Pty Ltd

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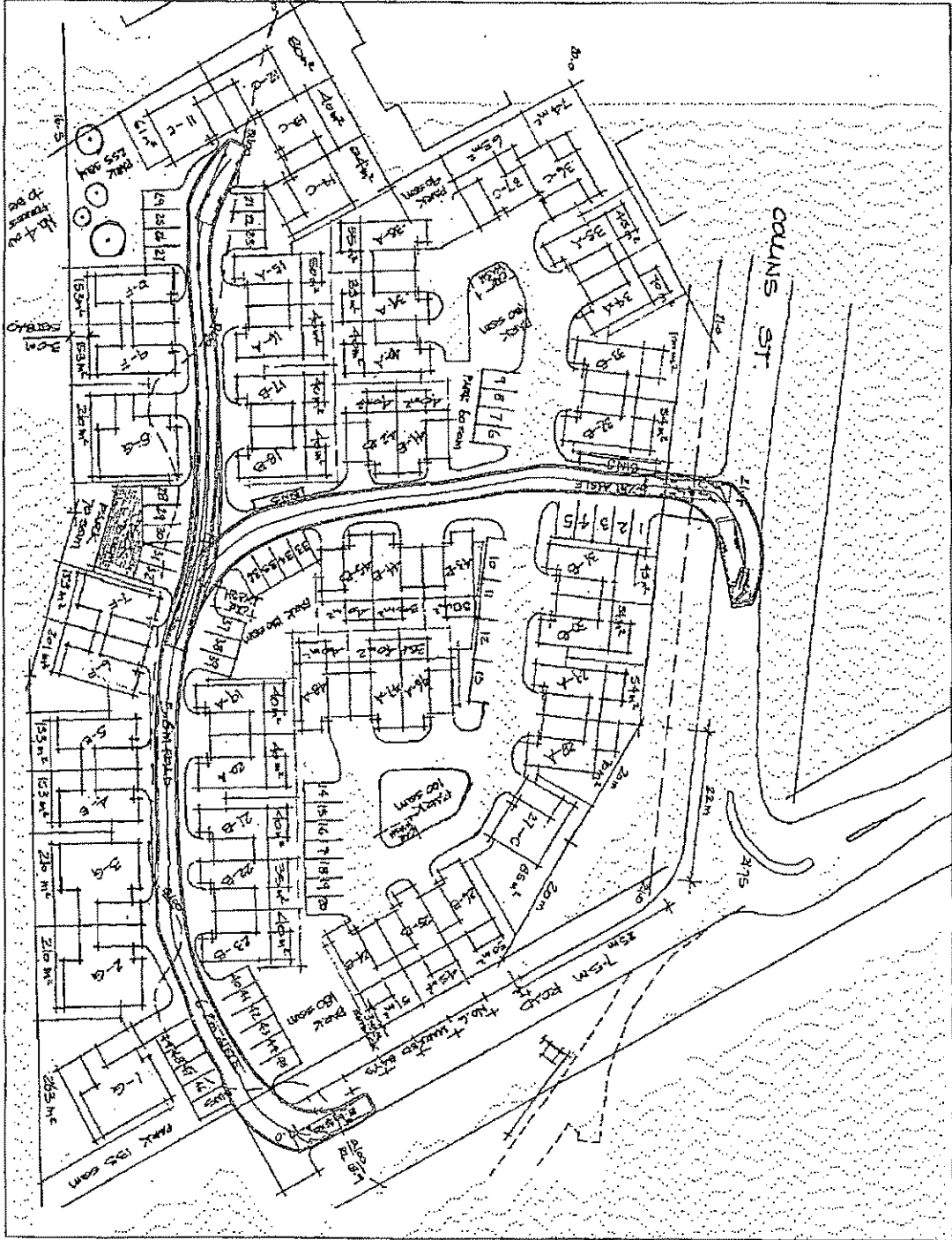
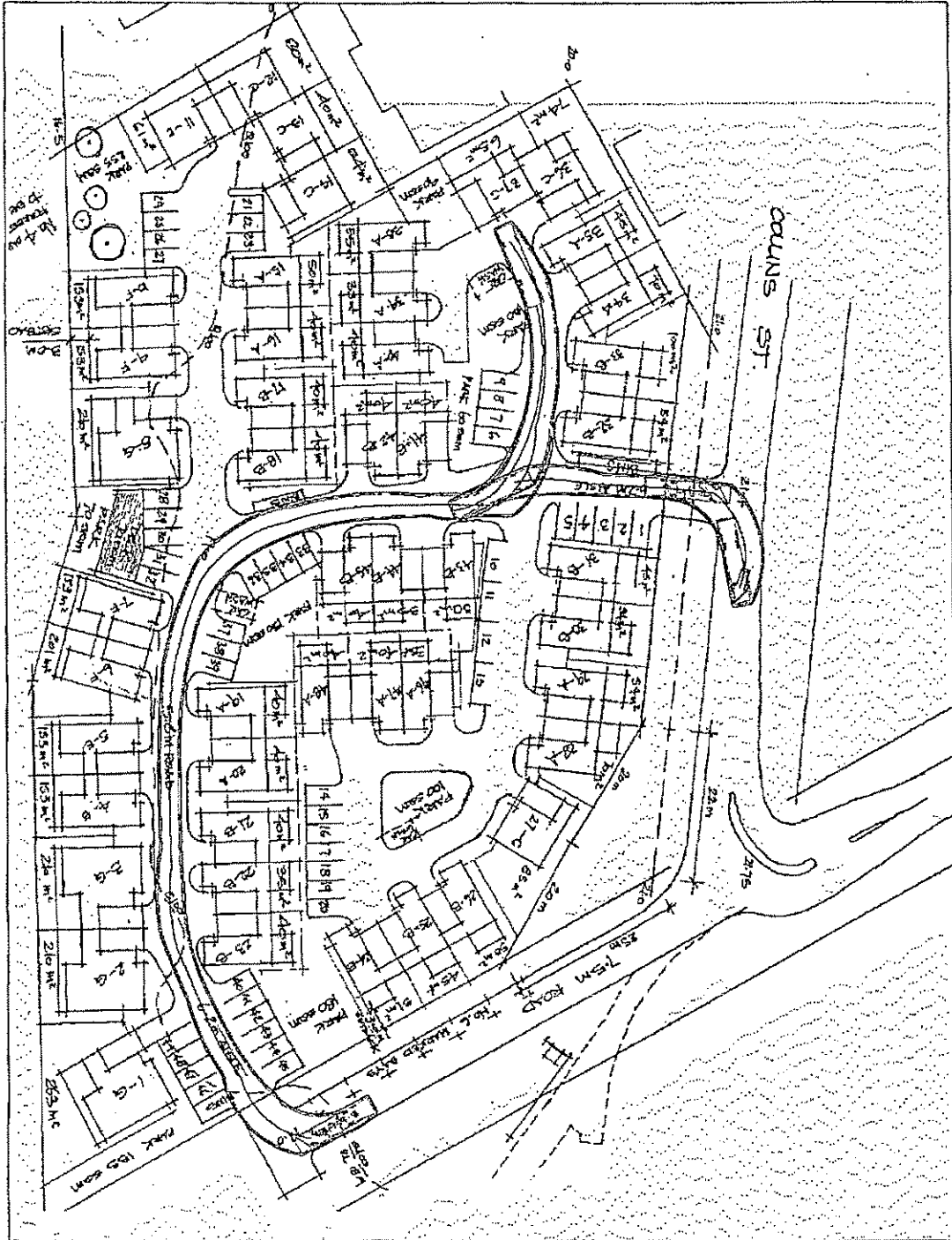


Figure 1: Units 8-18 HRV Turn Path Diagram





The internal HRV manoeuvring for the roads adjacent to units 8-18 and 32-40 demonstrated in Figures 1 and 2 will not create any significant impacts in the performance of the internal manoeuvring of vehicles within the proposed development considering the infrequency of HRV visits. Therefore, it is deemed the proposed car park layout for the proposed multi-unit development at 2 Haig Street, Brassal is in accordance with good traffic engineering practice and practical requirements.

If you have any queries with respect to the information provided in this report, do not hesitate to contact either David Hayward on 3327 9500.

Yours faithfully



Traffic Engineer

DAVID BRETT & ASSOCIATES PTY. LTD.

BUILT ENVIRONMENT & DEVELOPMENT PLANNERS

20 March 2009

The Development Manager - Planning
Development Branch
Ipswich City Council
PO Box 191
IPSWICH QLD 4305

RECEIVED
P&D COUNTER
Date: 20.03/2009
Officer: [REDACTED]

Attention: [REDACTED]

Dear [REDACTED]

**RE: Response to Council Additional Information Request
Development Application Number 195/06
Multiple Residential (Townhouses)
2 Haig Street, Brassall**

I refer to the Ipswich City Council request for additional information, via emails and meetings. We wish to provide the following in response to the requested information, on behalf of our client Colran Pty Ltd.

Proposal Elevations

Please find attached the requested streetscape elevations showing the proposal as viewed from Haig Street and Collins Street. As shown through the elevations, the proposal will present an attractive appearance and compliment the streetscape of both Haig Street and Collins Street.

Engineering

Please find attached the Flood Study, Stormwater Management Plan and the Assessment of River Bank Stability prepared for the proposal. The reports interrelate and illustrate that the proposal is appropriate on the site and complies with Councils requirements for Bank Stability, Stormwater Management and Flooding.

Should you require any clarification, please do not hesitate to contact David on the numbers shown below.

Yours Sincerely,

[REDACTED]

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23 MAR 2009	
Doc. No.	3669702
Applic. No.	195/06
Action Off.	S Taylor

cc. of Bromage.

- 1 -

BUILDING DESIGN

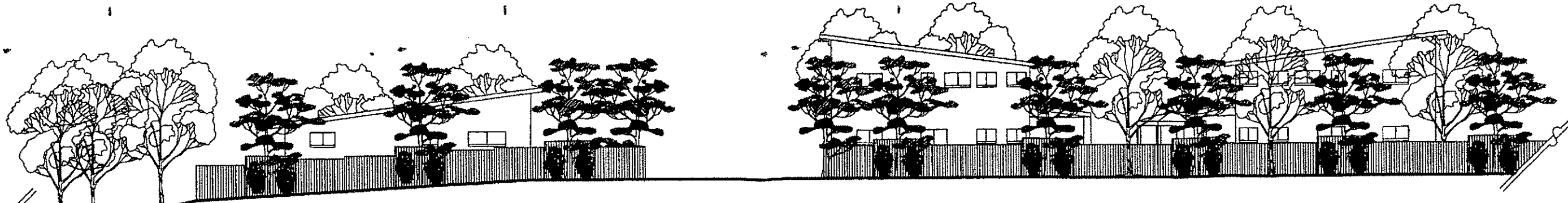
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TOWN PLANNING

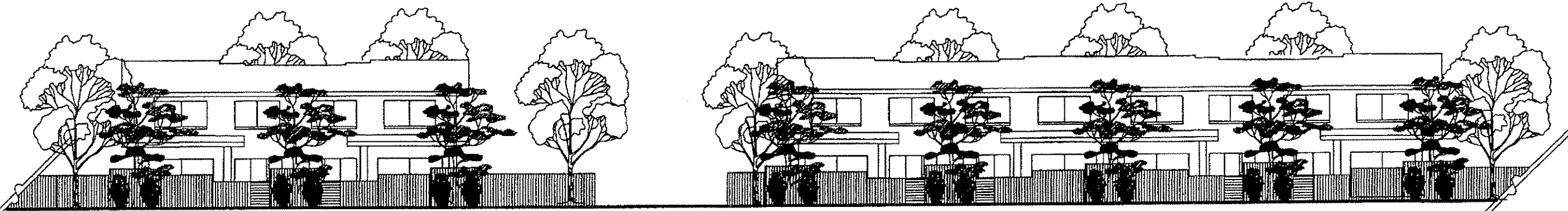
Shop 1, 32 Downs Street, North Ipswich PO Box 2374, North Ipswich, Qld, 4305 A.B.N. 54 010 980 346 B.S.A. LICENCE No. 067680

Telephone : (07) 3281 0744

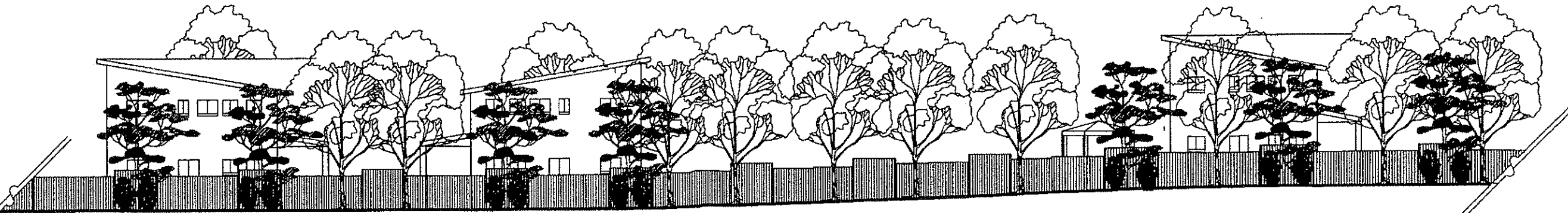
Facsimile : (07) 3281 0766



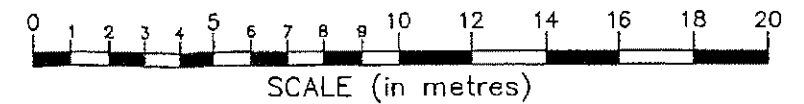
VIEW FROM HAIG STREET



VIEW FROM COLLINS STREET



VIEW FROM CORNER OF HAIG AND COLLINS STREET




Date Issue Particulars Drawn
AMENDMENTS

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DEVELOPMENT PLANNERS

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LICENCED UNDER THE QBSA ACT 1991
QBSA LICENCE NUMBER -- 087680
ADDRESS : P.O. BOX 5020 BRASSALL QLD 4305
TELEPHONE : (07) 3281 0744
FACSIMILE : (07) 3281 0788
MOBILE : 0411 347 568
Email : dbr@gil.com.au

PROJECT **PROPOSED TOWNHOUSE DEVELOPMENT
2 HAIG STREET, BRASSALL**
CLIENT **FARLEY SUPERANNUATION FUND**

SIGNED	DATE	23.12.2008	ORIENTATION 
	DRAWN	TAA	
PLOT SCALE	1:200	SCALE	1:200
DRAWING NUMBER		07673.SK.5	
			ISSUE A

Your reference
Our reference 195/06 SMT
Contact Officer Suzanne Taylor
Telephone 3810 6986



Ipswich City Council

45 Roderick St
PO Box 191
Ipswich QLD 4305
Australia

Tel (07) 3810 6666
Fax (07) 3810 6731

Web www.ipswich.qld.gov.au

David Brett and Associates Pty Ltd.
PO Box 5020
BRASSALL QLD 4305

19 May 2009

Dear Sir

**Re: Outstanding Issues
Development Application 195/06
Multiple Residential (48 Townhouses)**

I refer to the response to the Information Request and Council's outstanding issues letters, received by Council on 20 March 2009. Upon review of the submitted information, a number of matters in the technical reports and absence of previously requested documents has resulted in a number of these issues remaining outstanding and which require resolution. Council will determine the application on the information received in response to this letter and previous information supplied and no further opportunity to address issues which continue to remain outstanding thereafter will be provided.

These matters are outlined below:

1. Bank Stability

Reference is drawn to the River Bank Stability Report, Job No. 207E/128, Ref No. 14023B-Rev/md, prepared by Morrison Geotechnic Pty Ltd., and dated 19 March 2009. Upon review of the report, the following issues have been identified:

- (a) There are aspects of the report which are based on experience and assumptions only and therefore do not provide adequate justification of the results. For instance, soil types and depths require justification by borehole profiling and verification of the stability analysis. Similarly, draw down cases 1, 2 and 3 indicate a factor of stability less than 1.5 which is concerning as this should be greater than or equal to 1.5. The report does not

- outline what draw down cases of 1, 2 and 3 are. No information has been provided whether the analysis has accounted the proposed bank slope of 1:2 or else.
- (b) The location of the bio-retention ponds (at the crest of the bank) are problematic as the combined effect of their location and clay lining places them at a high risk of subsiding and this aspect has not be satisfactorily explored in the technical report. A previous geotechnical report has recommended that the location of bio retention treatment area to be located away from the top of bank, runoff discharge over the bank to be avoided and that stormwater conveyance be via pipes to minimise water infiltration in to the slopes.
 - (c) As the proposal has been modified, the Applicant is requested to resubmit a proposed earthworks plan for the subject property including cut/fill depths, batter slopes, retaining wall heights, typical cross sections etc and demonstrate compliance with Council's earthworks code. This information was previously requested in an email to your office on 16 September 2008.
 - (d) No information has been provided in the information response in relation to the zone of influence of footings on bank stability. This issue has been raised previously with yourself in meetings on 18 March 2008 and 29 October 2008.

2. Flooding

- (a) Reference is drawn to Flood Study, Job No. 7396/11, prepared by Cardno and dated 10 January 2008, Version 3. This report identifies a bank slope of 1:2, however the geotechnical report provided in Appendix B of the Flood Study identifies a slope ratio of 2:1 – refer to flood study, pp5.
- (b) The Q100 flood line is to be superimposed on layout and units need to be 250mm above adopted flood level. Also, foundation and stability designs need to be done to ensure that the construction of units in the Q100 flood zone will not affect bank stability – With the exception of the Q100 flood line, the remainder of this detail is missing from the flood study report.
- (c) The Flood Study Report (pp. 5, paragraph 1) indicates that compensatory excavation works within the area located directly under the riverfront dwellings are to be undertaken to increase the available storage space for large flood events and provide extra space for recreation purposes to householders and that the maximum slope underneath the houses will be 1 in 2 (see pp5 of flood study report, version 3). However, this area is unacceptable to be included as recreation space given the slope and location of this area beneath a suspended dwelling - refer to the recreation space requirements in section 12.6.4.(22) and (23) of the Residential Code.

3. Stormwater

Reference is drawn to *Stormwater Management Plan, Job No. 7396/11, prepared by Cardno and dated 5 December 2008, Version 5*. Cross-sections of basins are still missing. As the batters may need to be maximum of 1:4, cross-sections are required to

demonstrate they fit. Further, the areas of the bio-retention basins do not match those provided in the MUSIC model. The stormwater management plan does not include scaled plans and these are required to measure/validate bioretention areas against the figures in the MUSIC model.

4. Proposal Plans

- (a) Outstanding from previous meetings is an updated scaled proposal site plan showing:
- (i) Removal of carparks from Haig Street from total parking number calculations so that actual parking numbers on site may be analysed.
 - (ii) Entry driveway off Haig Street to be 6.5m and flared so as to accommodate the turning movements of refuse/furniture truck.
 - (iii) Recreation space areas for each unit which adhere to the minimum dimension requirements in the Residential Code, and exclude areas such as those areas occupied by rainwater tanks and service areas such as bins and clothes lines etc. Such indicative detail should be shown on the plans, so Council can verify the measurements.
- (b) The Applicant is requested to clarify what the BLE boundaries are (highlighted) as shown in Figure 4 of the Stormwater Management Plan.
- (c) The Applicant is requested to provide a full set of elevations plans, as only streetscape elevations plans have been submitted. The site plan suggests that there are three different unit types, plans of each type N, S, E and W have never been provided to Council despite being requested.

As indicated above, the above information is crucial for Council in making a determination on this application and as this information has been requested a number of times now, it is essential that Council receives a response to these issues, otherwise Council will need to make a determination on the application based on the information provided.

Should you require any further information or assistance in relation to this matter, please contact [REDACTED] on 3810 6986.

Yours faithfully

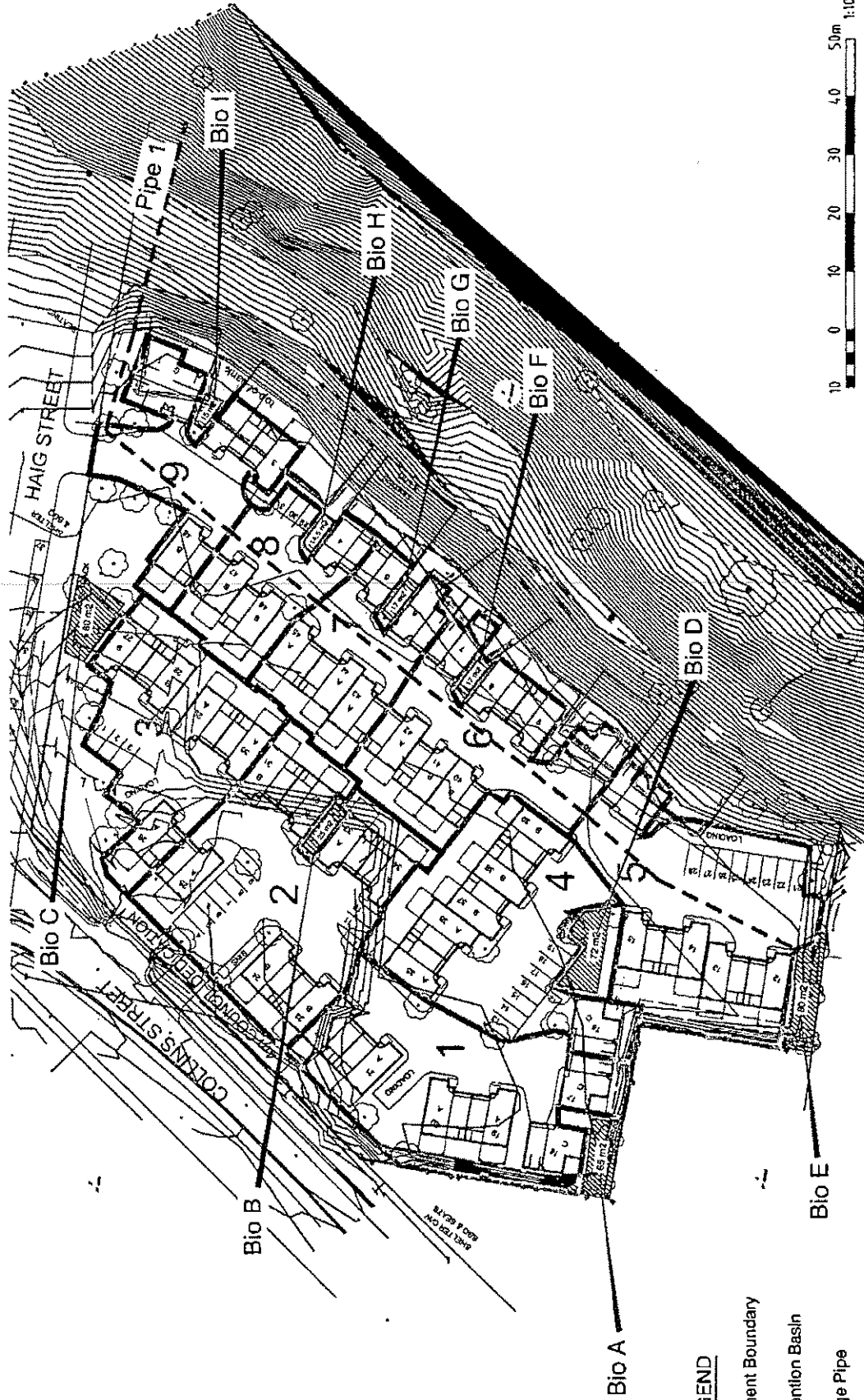
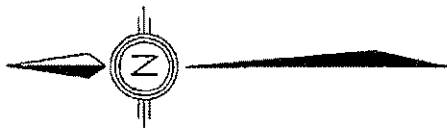


Joanne Pocock




TEAM COORDINATOR (CENTRAL/WEST)



2 HAIG STREET, BRASSALL
STORMWATER MANAGEMENT PLAN



LEGEND

-  Catchment Boundary
-  Bio-retention Basin
-  Drainage Pipe

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Rev: Orig. Date: 6 July 2008

Coltran Pty Ltd

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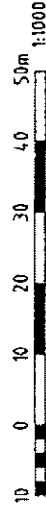


FIGURE 4
STORMWATER MANAGEMENT PLAN

Project No.: 7396/11

Plot DATE: 07 December, 2008 - 4:49pm

DAVID BRETT & ASSOCIATES PTY. LTD.

BUILT ENVIRONMENT & DEVELOPMENT PLANNERS

9 October 2009

The Development Manager - Planning
Development Branch
Ipswich City Council
PO Box 191
IPSWICH QLD 4305

Attention: [REDACTED]

Dear Sue

**RE: Response to Council Outstanding Issues
Development Application Number 195/06
Multiple Residential (Townhouses)
2 Haig Street, Brassall**

I refer to the Ipswich City Council request for additional information in response to Outstanding Issues letter dated 19 May 2009. We wish to provide the following in response to the requested information, on behalf of our client Colran Pty Ltd.

1 Bank Stability

(a) Justification of Results

Please refer to the River Bank Stability Assessment Report 207E/128-2 prepared by Morrison Geotechnic Pty Ltd. The report is in Annexure A of this response.

(b) Location of Bio-retention treatment area

Please refer to the River Bank Stability Assessment Report 207E/128-2 prepared by Morrison Geotechnic Pty Ltd. The report is in Annexure A of this response.

Please refer to the Stormwater Management Plan & Flood Study prepared by Cardno Qld) Pty Ltd. The report is in Annexure B of this response.

(c) Proposed Earthworks Plan

Please refer to the Stormwater Management Plan & Flood Study prepared by Cardno Qld) Pty Ltd. The report is in Annexure B of this response

(d) Zone of Influence of Footings on Bank Stability

Please refer to the River Bank Stability Assessment Report 207E/128-2 prepared by Morrison Geotechnic Pty Ltd. The report is in Annexure A of this response.

2 Flooding

(a) Bank Slope Ratio

Please refer to the River Bank Stability Assessment Report 207E/128-2 prepared by Morrison Geotechnic Pty Ltd. The report is in Annexure A of this response.

- 1 -

BUILDING DESIGN

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TOWN PLANNING

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Please refer to the Stormwater Management Plan 7396/11 prepared by Cardno (Qld) Pty Ltd. The report is in Appendix B of this response.

(b) Units built within Q100 line and bank stability

Please refer to the River Bank Stability Assessment Report 207E/128-2 prepared by Morrison Geotechnic Pty Ltd. The report is in Annexure A of this response.

(c) Compensatory Excavation Works to Riverfront Dwellings

The undercroft storage/recreation areas to the riverfront dwellings have been removed from this proposal.

The compensatory fill has been taken into account in the Bank Stability Assessment Report 207E/128-2 prepared by Morrison Geotechnic Pty Ltd (Annexure A) and the Stormwater Management Plan & Flood Study prepared by Cardno Qld Pty Ltd (Annexure B).

3 Stormwater

(a) Cross Sections of basins

Please refer to the Stormwater Management Plan & Flood Study prepared by Cardno (Qld) Pty Ltd. The report is in Annexure B of this response.

4 Proposal Plans

(a)(i) Removal of carparks from Haig Street

This has been amended on the site plan. The total number of carparks for the site is 48 private spaces plus 31 visitor spaces (79 total). Please find attached in Annexure C, a copy of the Site Plan & Recreation Area Calculation plan 07673.SK.10 Issue A prepared by David Brett & Associates Pty Ltd which reflects this information. This plan supersedes 07673.SK.04.

(ii) Entry driveway from Haig Street to be 6.5m and flared

The driveway has been dimensioned on the Site Plan & Recreation Area Calculation plan and a notation added specifying crossover to be in accordance with Relevant Australian Standards and Ipswich City Council Guidelines. The appropriate detail will be specified at Operational Works Stage. Please find attached in Annexure C, a copy of the Site Plan & Recreation Area Calculation plan 07673.SK.10 Issue A prepared by David Brett & Associates Pty Ltd.

(iii) Private Recreation space

This development complies with the majority of the criteria nominated by Ipswich City Council as a Probable Solution. Additionally the proposal incorporates an Alternative Probable Solution to the Specific Outcomes of the Residential Code Part 12.6.4(22), under the Ipswich City Council Town Plan. Please find attached in Annexure C, a copy of the Site Plan & Recreation Area Calculation plan 07673.SK.10 Issue A, prepared by David Brett & Associates Pty Ltd

An Alternative Probable Solution to achieve the Specific Outcome for recreation space is proposed. This is justified by the following grounds of support:

1. **Minimal reduction in Some Individual Private Recreation Area:** The reduction in proposed private recreation area is considered to be minimal ie. only a relatively small number of units do not achieve the min 35m² nominated as a Probable Solution. The units that do not achieve the 35m² min, do achieve at least 3 x the min nominated as a Probable Solution for an upper level unit (ie 3 x 8m² = 24m² min achieved)

Please find attached in Annexure D, a table detailing private recreation areas provided for each individual unit.

2. **Diversity of Private Recreation Areas:** Although some of the units do not achieve the min 35m² nominated as a Probable Solution, some units have greater than 35m² private recreation areas. According to the Probable solution nominated in the Ipswich City Council Town Plan, the min required total private recreation area is 1680m² (35m² x 48 units). This development provides 1813m² of private recreation space. Which is a total increase of 133m² over the min required total amount of private recreation space.

The variation in private recreation areas provides diversity within the development. For instance, retired couples or young working professionals, may not want to look after a larger yard. Conversely, units with a larger private recreation space have been provided for those people who may want larger yards either for gardening, pets or children. These like type units have been clustered together to enhance the amenity within the development.

3. **Approx 20% increase in additional Overall Recreation Area:** According to the Ipswich City Council Town Plan, the probable solution nominates an overall amount of 3510m² (6 x 60m² + 42 x 75m²) of total recreation area (communal + private). This development has provided 4264m² overall recreation area. That is an additional 754m² supplied which equates to almost 16m² per unit extra over and above what is nominated by Ipswich City Council as a probable solution.

4. **Exclusions to Private Recreation Areas:** The private recreation area has been calculated with min dimensions of 3m x 3m (as nominated by Ipswich City Council as a probable solution). The calculated area is exclusive of rain water tanks, drying areas, bins and any bio-retention filters. A layout showing the indicative positions of clothes drying areas and rainwater tanks has been provided in Appendix C. It should be noted that these are indicative positions for indicative products models only, and has only been provided to demonstrate to Council that these calculations can be verified. The make and models of the products used to demonstrate the area calculation are as follows:-

- * Hills Supa Fold 120 which is a fold down type of clothesline. Dimensions of 2.2m x 0.76m.
- * Paradise Slimline Water Tank SPTP 33B-3000 – 3000L water tank, 2.5m long x 0.8m wide

DAVID BRETT & ASSOCIATES PTY. LTD.

Bins positions are not anticipated to be within the calculated recreation areas. Most units have provision for bins outside of the calculated recreation area. For those that do not, screened bin areas have been provided within the development.

5. ***Increase to Private Recreation Areas (variable)***: A fold down type of clothesline which can be fixed to the fence, or to the building has been nominated. This gives some units an added advantage of increasing the Private Recreation Area by over 1.5m² when not in use (sometimes more depending on location).

Additional Information pertaining to Alternative Solution

Fencing to the courtyards of river orientated townhouses (adjacent to the communal recreation area contingent to the eastern boundary)

The Elevation and outlook of river orientated townhouses provides a balance between visual screening and view maximisation.

The proposed pool style fencing provides good transparency for elevated courtyards to facilitate effective casual surveillance of the communal recreation area adjacent to the public open space of the river corridor.

(b) BLE boundaries shown in Figure 4 of Storm Water Management Plan

These building outlines are the previous positions of the units prior to being moved back. They formed the background to the drawing only. They have no relevance to the proposal other than to illustrate that we have moved the buildings back in the current proposal.

(c) Full set of Elevations

Please find attached in Annexure E copies of the following plans prepared by David Brett & Associates Pty Ltd:

- 07673.SK.06a Issue A – Typical Unit Elevations – Unit Type B
- 07673.SK.07a Issue A – Typical Unit Elevations – Unit Type C
- 07673.SK.08a Issue A – Typical Unit Elevations – Unit Type F
- 07673.SK.09a Issue A – Typical Unit Elevations – Unit Type G
- 07673.SK.11 Issue A – Riverscape Plan

Please note that Type A units and Type E Units are deleted from this proposal.

If you require any further information, please do not hesitate to contact me on the numbers shown below.

Regards



ANNEXURE A

River Bank Stability Assessment Report

JOB NO: 207E/128-2 AUGUST, 2009
██████████ FAMILY SUPERANNUATION FUND
RIVER BANK STABILITY ASSESSMENT
2 HAIG STREET
BRASSALL
(DAVID BRETT AND ASSOCIATES PTY LTD)

MORRISON GEOTECHNIC PTY LTD

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Darra Office
Job No. 207E/128-2
Ref No: 14262B/rt
Author: [REDACTED]

31st August, 2009

[REDACTED] Superannuation Family Fund
C/- David Brett & Associates Pty Ltd
25 Canning Street
North Ipswich Qld 4305

ATTENTION: [REDACTED]

Dear Sir

**RE: RIVER BANK STABILITY ASSESSMENT BASED ON GEOTECHNICAL
INVESTIGATION - 2 HAIG STREET, BRASSALL**

1.0 INTRODUCTION

This report presents the results of a site specific geotechnical investigation and slope stability analyses carried out for the Bremer River bank at the above address. It has been produced at the request of David Brett and Associates (the "Client") and as requested by the Client, addresses the selected following points of the information request produced by the Ipswich City Council, dated 19th May, 2009:

- Points 1a, 1d, 2a and 2b.

This report supersedes the earlier report produced by Morrison Geotechnic and dated 10th March, 2009 (Job No 207E/128, Ref No: 14023B-Rev/sw) and presents the results of the fieldwork, and, in accordance with the Client's requirements, includes the following information and recommendations:-

- Description of subsurface conditions in accordance with AS 1726;
- River bank slope stability analysis with and without flood storage earthworks along the crest of the bank; and
- Response to Ipswich City Council Information Request.



2.0 METHODOLOGY

The site specific geotechnical investigation comprised the drilling of four (4) boreholes to depths ranging between 4.95m and 7.95m at accessible locations along the river bank and a walkover survey of the river bank.

A disturbed sample of the natural clay was retrieved in borehole BH3 between 2.50m and 3.00m and tested for Particle Size Distribution and Atterberg Limits parameters. The Particle Size Distribution test and the Atterberg Limits tests are together known as the 'Quality of Materials' test. Considering the uniformity of the subsurface conditions and material types encountered in the boreholes, one Quality of Materials test was considered adequate for strength characteristics of the natural clay soils.

All borehole drilling was conducted using a trailer mounted ID3300 drill rig.

Standard Penetration Tests (SPTs) were conducted at 1.5m vertical intervals in each borehole.

A pocket penetrometer was used to assess the undrained strength of disturbed clay samples.

The boreholes were described in accordance with AS1726-1993.

The site plan showing the approximate borehole positions, borehole record sheets and laboratory test results are presented in Appendices A, B and C, respectively. The results of the GSLOPE slope stability analyses are presented in Appendix D.

3.0 SITE DESCRIPTION

The batter comprises an upper, partially filled batter and a lower natural batter which extends to the Bremer River. Fill was encountered in the upper batter to depths ranging between 0.5m and 2m. The upper fill batter was densely covered with tall grasses at the time of the investigation and the batter angle was difficult to observe, but estimated at angles up to approximately 20°. The lower natural batter was observed to comprise slopes of up to 15°. Both the upper and lower batters are densely covered with grasses and the lower natural batter also supports a moderate covering of mature tree growth.

4.0 SUBSURFACE CONDITIONS

The geology, subsurface and groundwater conditions are described below in Sections 4.1, 4.2 and 4.3, respectively.

4.1 Geology

The regional geology of the area comprises alluvial deposits comprising clay, silt, sand and gravel, and were thought to have been deposited in the Quaternary Geological Time Period (Ipswich 1st ed, 1981 - 1:100,000 Geological Series).

Based on the results of the drilling programme, the subsurface materials within the lower batter generally comprise *slopewash clays underlain by slopewash gravels and extremely weathered (XW) basalt*. The subsurface materials within the upper batter generally comprise *fill underlain by residual clay and extremely weathered (XW) basalt rock*.

4.2. Subsurface Conditions

The subsurface materials encountered in the lower fill batter, represented by borehole BH1 are summarised below:-

- Slopewash Soil:** Comprising moist, stiff sandy clay of high plasticity, extending to 3.5m, underlain by moist, medium dense clayey sandy gravel, extending to 4.3m, underlain by;
- Weathered Rock:** Comprising extremely weathered (XW) basalt of extremely low strength. The XW basalt increases to very low strength at 6.3m, and extends to a depth in excess of 7.65m.

The subsurface materials encountered in the upper fill batter, represented by boreholes BH2, BH3 and BH4 are summarised below:-

- Fill:** Comprising moist, stiff, very stiff and hard clay of high plasticity, and ripped basalt and siltstone, extending to depths ranging between 0.5m and 2.2m, underlain by;
- Residual Soil:** Comprising moist, very stiff and hard sandy clay of high plasticity, extending to depths ranging between 2.5m and 4.6m, underlain by;
- Weathered Rock:** Comprising extremely weathered (XW) basalt of extremely low strength, extending to depths in excess of 4.95m and 7.95m.

4.3. Groundwater

No standing groundwater was observed within the depth range of the boreholes immediately after borehole drilling.

The presence and depth to groundwater is expected to vary with rainfall, the tide, integrity of buried services and the proximity of vegetation.

5.0 LABORATORY TEST RESULTS

The results of Particle Size Distribution/Atterberg Limits ('Quality of Materials'), are presented in Appendix C and summarised below in Table 1.

Table 1 - Quality of Materials

Bore No.	Depth (m)	Soil Fraction (%)			Liquid Limit (%)	Plasticity Index	Material
		Clay/Silt	Sand	Gravel			
BH3	2.50 - 3.00	72	27	1	51	31	Natural Sandy Clay (CH)

6.0 RIVER BANK SLOPE STABILITY ANALYSIS

6.1. Existing Bank Profile

The analyses have been carried out on the river bank using the supplied survey, which is assessed to typically represent the existing bank cross-sections and considering the following development characteristics:

- New houses providing a 10kPa surface surcharge and located directly behind the crest of the bank at about RL 19.4m.
- Normal Operating Conditions for the Bremer River with the water level at about RL 1.4m.
- Rapid Drawdown Conditions occurring shortly after a flood event when the river water level rises to approximately RL 19m and then rapidly recedes to the normal condition.

The geotechnical strength parameters assigned to the geotechnical model are summarised in Table 2 below. Please note that "natural soils" incorporate both slopewash and residual soils found during the geotechnical investigation.

Table 2 - Geotechnical Strength Parameters

Material	Density (kN/m ³)	Total Stress Parameters		Effective Stress Parameters	
		c _v (kPa)	Ø _v (degrees)	c' (kPa)	Ø' (degrees)
Existing Fill	18	10	20	1	27
Natural Soils	19	15	25	5	28
XW Basalt	21	15	35	5	35

Effective stress parameters for drained conditions were used for normal river and groundwater level conditions, while total stress parameters were used for the rapid drawdown cases where it is assumed that the river level drops rapidly after the passing of the Q100 flood in the Bremer River, compared to drainage of the fill, natural soils and XW basalt. All analyses have been carried out using Bishops Simplified Method of Slices in conjunction with the commercial software - G SLOPE.

The material strength parameters used in the analyses are based on our experience with similar materials in conjunction with the site specific field and laboratory testing.

The results are presented in Appendix D1 and summarised in Table 3 below.

Table 3 - Stability Analyses Results - No Earthworks

Figure Number	Water Level	Minimum Factor of Stability
1	Normal Operating Conditions	1.9
2		1.9
3		1.6
4	Rapid Drawdown	1.5

The factors of safety are assessed to be satisfactory for the normal and extreme river conditions.

6.2. Bank Profile with Minor Crest Cutting

Flood storage considerations may require the upper bank section to be regraded involving minor shallow cutting to effectively remove the wedge of material extending between the property boundary and the building line of the most southerly units.

These earthworks will result in a maximum cutting depth of 1.0m along the crest of the bank, reducing to zero at the property boundary some 7.0m to 10.0m downslope. The batter slope of the reprofiled section will be flatter than 4(H) : 1(V). The 1.0m crest cutting will be retained by a suitable retaining system. The layout plans of the development and the typical cross-sections through the bank are presented in Appendix E.

The stability analyses have been carried out on a section of the bank incorporating the flood storage excavation, using the same strength parameters for the soils as described in Table 2 in Section 6.1, and the normal and rapid drawdown groundwater conditions. The results are presented in Appendix D2 and summarized in Table 4.

Table 4 - Stability Analyses Results - Flood Storage Earthworks

Figure Number	Water Level	Minimum Factor of Stability	Failure Surface
1A	Normal Operating Conditions	1.9	Deep Seated
2A		1.9	Deep Seated
3A	Rapid Drawdown	1.6	Deep Seated
4A		1.5	Deep Seated
5A	Normal Operating Conditions	1.7	Shallow, Local
6A		2.5	Shallow, Local
7A	Rapid Drawdown	2.2	Shallow, Local
8A		2.1	Shallow, Local

with fill

These results are satisfactory.

7.0 BIO-RETENTION PONDS

Cardno has prepared a Stormwater Management Plan (SWMP) for the development, which includes 9 Bio-Retention Ponds located on the flat and behind the crest of the river bank. The effects of these small ponds on bank stability will be insignificant if the pond bases are lined with clay to isolate the pond storages from the groundwater regime beneath the bank, thereby preventing groundwater recharge from the ponds.

- could be (v) Env.

8.0 RESPONSE TO IPSWICH CITY COUNCIL INFORMATION REQUEST

Our response to the Ipswich City Council information request dated 19th May, 2009 and which addresses Points 1a, 1d, 2a and 2b as requested by the Client, is presented in Table 5.

Table 5 - Response to Ipswich City Council Information Request

Information Request Point No.	Comments
1a	Borehole drilling has been performed to supplement and confirm information based on judgement and experience, with information based on the actual subsurface materials observed in the depth range of the boreholes. Importantly, the XW basalt is assumed to be a bedrock layer, rather than a thin "cap" overlying other soils and/or weathered rock sequences. Rapid drawdown cases have factor of safety values greater than 1.5 immediately after flooding conditions. The Section 2 survey provided by David Brett and Associates, which details the existing bank slope geometry, has been used to model the slope stability.

Information Request Point No.	Comments
1d	A 10kPa surcharge has been allowed for the development loading, acting immediately behind the crest of the upper batter.
2a	Site observations indicate that the existing upper bank slopes but excluding the lower bank immediately adjacent to the Bremer River, are no steeper than 2.5H:1V or 20°.
2b	The Q100 flood level (approximately RL19.0m) has been modelled in the Rapid Drawdown case.

9.0 LIMITS OF INVESTIGATION

Recommendations given in this report are based on information supplied regarding the proposed development in conjunction with the findings of the investigation. Any change in development location or area or reshaping of the existing river bank may require additional testing as part of detailed design. It is recommended that this office be involved with the detailed design and documentation of earthworks and building foundations to ensure that the advice presented in this report is taken into account.

It is additionally recommended that Morrison Geotechnic test and supervise all earthworks associated with this development.

Every reasonable effort has been made to locate test sites so that bores are representative of the soil conditions within the area to be investigated. The Client should be made aware however, that this assessment has been based on site data obtained using small diameter boreholes. In some cases, soil conditions can change over short distances, therefore even careful exploration programmes may not locate all the variations. If Variations from the conditions shown on the boreholes are encountered during construction or at any time, this office should be advised immediately. Compliance with the recommendations in paragraph 2 above will facilitate this.

Unless otherwise stated in commissioning documents, any dimensions or slope directions and magnitudes should not be used for any calculations by others. Any sketch supplied should be considered only as approximate pictorial evidence of site work.

Yours faithfully

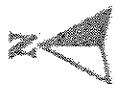


for and on behalf of
MORRISON GEOTECHNIC PTY LIMITED

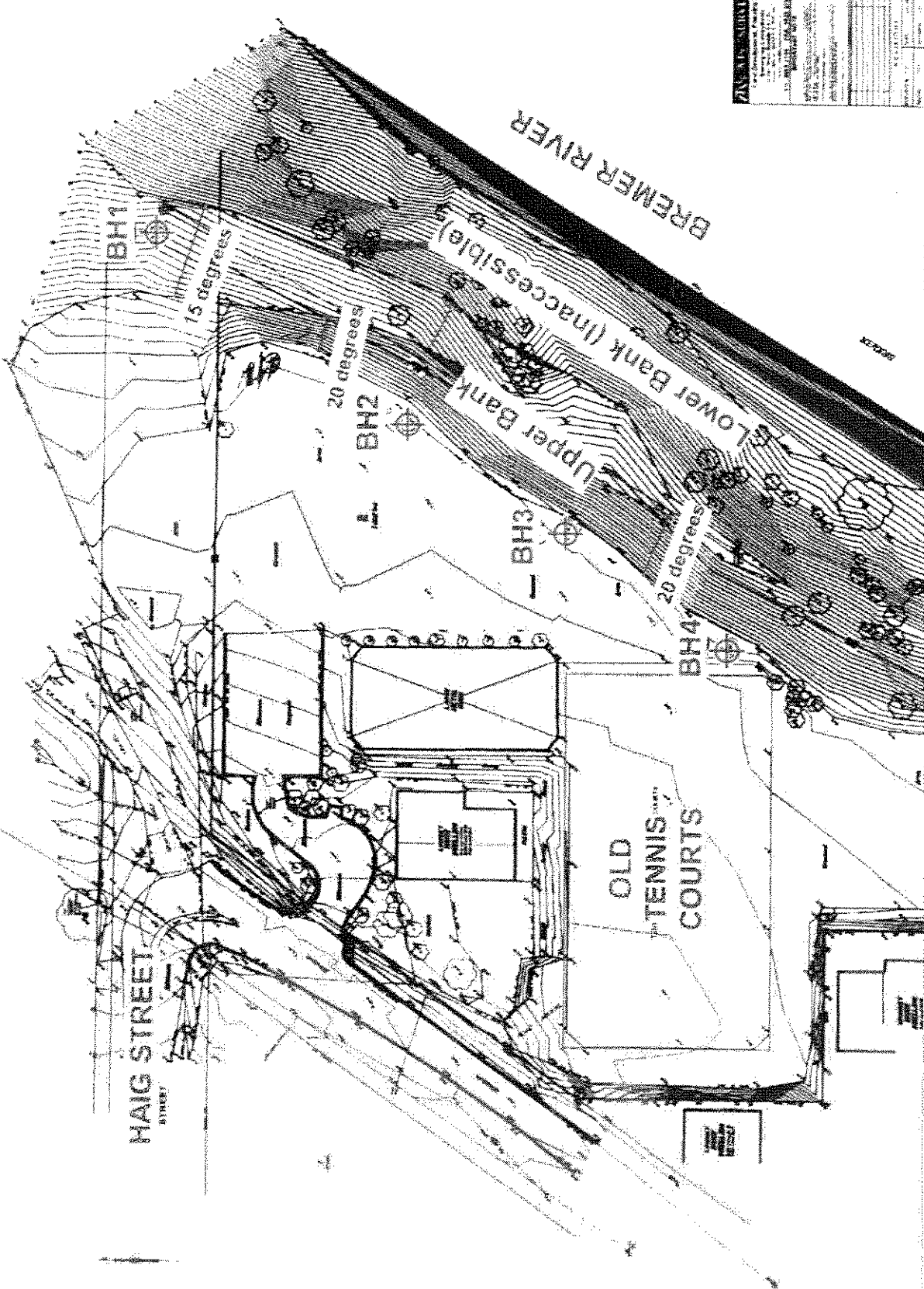
Encl Appendix A – Site Plan
Appendix B – Borehole Record Sheets
Appendix C – Laboratory Test Results
Appendix D1 – Slope Stability Results (Existing Bank Profile – No Earthworks)
Appendix D2 - Slope Stability Results (After Flood Storage Earthworks)
Appendix E – Flood Storage Earthworks

APPENDIX 'A'

SITE PLAN



ZINC AND SUBSTITUTES	
1.00	1.00
2.00	2.00
3.00	3.00
4.00	4.00
5.00	5.00
6.00	6.00
7.00	7.00
8.00	8.00
9.00	9.00
10.00	10.00
11.00	11.00
12.00	12.00
13.00	13.00
14.00	14.00
15.00	15.00
16.00	16.00
17.00	17.00
18.00	18.00
19.00	19.00
20.00	20.00
21.00	21.00
22.00	22.00
23.00	23.00
24.00	24.00
25.00	25.00
26.00	26.00
27.00	27.00
28.00	28.00
29.00	29.00
30.00	30.00
31.00	31.00
32.00	32.00
33.00	33.00
34.00	34.00
35.00	35.00
36.00	36.00
37.00	37.00
38.00	38.00
39.00	39.00
40.00	40.00
41.00	41.00
42.00	42.00
43.00	43.00
44.00	44.00
45.00	45.00
46.00	46.00
47.00	47.00
48.00	48.00
49.00	49.00
50.00	50.00



Map Description
Client
Project

Bore Hole Test Locations

LEGEND

- Bore Hole Test Locations

BORE HOLE TEST LOCATIONS - (Approximate Only)
 DAVID FARLEY FAMILY SUPERANNATION FUND CA, DAVID BRETT AND ASSOC
 RIVER BANK STABILITY ASSESSMENT
 9 Haig St, Erasmabell

Job No: 24/2017
 Drawing No: 06/7/2017/28-2
 Scale: Not to Scale

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MORRISON
 Geotechnical Engineering

APPENDIX 'B'

BOREHOLE RECORD SHEETS



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 A.B.N. 651 005 878 869
 PO Box 3083, Darra, QLD 4076
 Phone: (07) 3275 0900 Fax: (07) 3275 0999

Engineering Log - Borehole

Borehole No: **BH1**

Page: 1 of 1

Job Number: 207E126

Client: David Pina, Family Supermarket Pty Ltd, 2 Hag St, Darra

Project: Crb Wall Retaining Structure

Location: 2 Hag St, Brassell

Boring: []
 Logging: RL
 Total Depth: 7.65m
 Drilling Rig: []
 Driver: []
 Logged By: []
 Date: []

Drilling Information				Material Description				Test Samples							
Top Metres	Water	Flow	Flow Depth (m)	Soil Type	Soil Log	Classification	Description	Water	Moisture	Consistency	Compressibility	PC Test Results	Test No	Test	Sample Ref
0.0				Surface		CL	Surface Loam Min. topsoil/loamly silt/clay to medium clayey silt								
1.0															
2.0													4.5	SPT	2:24 N=8
3.0															
3.5													4.5	SPT	2:24 N=8
4.0						GC	Clayey Sandy GRAVEL Medium dense, brown fine grained soil to medium dense highly plastic, silty, sandy			M	ND				
4.5															
5.0						BA	BASALT Compressive rock, irregularly fractured, medium to coarse grained, weathered, grey, reddish orange stain			HW	ELS		4.5	SPT	10:12:14 N=26
6.0															
6.5						BA	BASALT As above, red, brown, orange, grey, blue, orange			HW	VEL				
7.0							BASALT As above, red, brown, orange, grey, blue, orange			HW	VEL				
7.5							OR, 15 (0)M Highly plastic, silty, clayey silt/clay								
7.65							7.65m BOREHOLE TERMINATED								

TO bot with 100mm Dia. Auger

Comments: _____
 Authorized By: _____
 Date: _____

Water	Weathering	Consistency	Soil	Rock Strength	Tests & Results
Water table at 1.5m depth	FW	Very loose	CL	Low	U95
Water table at 3.5m depth	FW	Very loose	GC	Low	U
Water table at 4.5m depth	FW	Very loose	GC	Low	U95
Water table at 6.5m depth	FW	Very loose	BA	High	U95
Water table at 7.5m depth	FW	Very loose	OR	High	U95



Morrison Geotechnic Pty Ltd

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 Phone: (07) 3279 0900, Fax: (07) 3279 0955

Engineering Log - Borehole

Borehole No.: BH2

Page: 1 of 1

Job Number: 207E/128

Easting: Drilling Rig: ID3500
 Northing: Driller: Alltech
 RL: Logged By: R. Nowchin
 Total Depth: 7.95 Date: 15/06/2009

Client: David Farley Family Superannuation Fund - David West & Assoc

Project: Crib Wall Retaining Structure

Location: 2 Hag St, Brassall

Drilling Information				Material Description					Test Samples					
Drill Method	Water	RL	Hole Depth (m)	Soil Drift	Graphic Log	Classification Code	Description	Weathering	Moisture	Consistency - Density - Strength	TC Test Results	Test Count	Tests	Sample/Result
			1.0	Fill	[Cross-hatched pattern]	PL	Sandy Gravelly CLAY (CH) Sf: high plasticity, brown mottled orange/feebly fine to medium gravel, fine to medium sand, silt.		M	SI		1	1	1500/75
			1.6	Residue	[Vertical lines pattern]	CH	Sandy CLAY Sf: high plasticity, brown mottled orange/feebly fine to medium sand, silt.		M	H		1	1	SPT 4.0 (Sf=11) PP > 600kPa at 1.6m
			2.8	Rock	[Triangle pattern]	BAS	BASALT Dispersed rock, generally low strength, extremely variable size, grey to black, weathered to brown.	HW		SI S		3	3	SPT 6.8 (Sf=16)
			6.0	Rock	[Triangle pattern]	BAS	BASALT No fossils, like grey, black.	HW		SI S		4	4	SPT 7.8 (Sf=18)
			6.5	Rock	[Triangle pattern]	BAS	BASALT No fossils, like grey, black.	HW		SI S		5	5	SPT 4.9 (Sf=12)
			7.0	Rock	[Triangle pattern]	BAS	BASALT No fossils, like grey, black.	HW		SI S		6	6	SPT 4.6 (Sf=11)
			7.95	Rock	[Triangle pattern]	BAS	BASALT No fossils, like grey, black.	HW		SI S		7	7	SPT 4.6 (Sf=11)

Comments:		7.95m BOREHOLE TERMINATED				Authorised by: _____	
						Date: _____	
Water	Weathering	Consistency	Density	Rock Strength	Tests & Results		
<ul style="list-style-type: none"> Water used Water added Water added Water added 	<ul style="list-style-type: none"> KS W QV SW FR 	<ul style="list-style-type: none"> VS S SE VE H MI DI VE 	<ul style="list-style-type: none"> VL L ME DI VE 	<ul style="list-style-type: none"> ELB Low Very low Low High Very high Extremely high 	<ul style="list-style-type: none"> UC D SPT PP S DC 	<ul style="list-style-type: none"> Underbore (down bore) Disturbed sample Standard Penetration Test, 14 readings of blow to drive 300mm (see log) Soil in situ with a 6.1m (20ft) long tapping 752mm Moisture parameter, estimate of unconfined compressive strength (c_u) Moisture shear test (SPT) Dynamic Cone Test, 9.2kg hammer, full stroke, driving 300mm Lab test (see log) to test of soil at depth From AS 1755-1988 (1996) code of practice for engineering geology 	



Morrison Geotechnic Pty Ltd
 A B N 051 009 878 899
 PO Box 3063, Darru, QLD 4078
 Phone: (07) 3279 0900 Fax: (07) 3279 0955

Engineering Log - Borehole
Borehole No.: BH3
 Page: 1 of 1

Job Number: 207E/12A

Existing
 Nothing
 RL
 Total Depth 6.45

Drilling Rig: D2240
 Driller: Archer
 Logged By: R. J. J. J.
 Date: 15/06/2005

Client: West Family Family Supermarket Fund on Bank Drive 5, Darru

Project: Crib Wall Retaining Structure

Location: 2 Haig Dr, Brassall

Drilling Information			Material Description					Test Samples					
Drill Method	Water	R/L	Test Type	Grain Size	Classification	Description	Moisture	Atterberg	Consistency	UC Test Results	Test Depth	Test	Sample/Result
TC bit with 100mm Dia. Auger						Sandy CLAY (Ch)					1.1	PP	EA4-7a
						Sandy CLAY (Ch)					1.3	PP	290kPa
						Sandy CLAY (Ch)					1.5	PP	540kPa
						Sandy CLAY (Ch)					1.8	SPT	5.8-1 No.10
						Reddish BASALT and SILTSTONE					2.2	PP	460kPa
						Sandy CLAY					2.5		
											2.7	D	PSD/Atterberg Sample
											3.0	SPT	6.8-1 No.10
											4.5	SPT	2.9-16 No.24
											6.1	SPT	11.0-23 No.9
6.45m: BOREHOLE TERMINATED													

Comments:						Authenticated by: _____	
						Date: _____	
Water	Weathered	Consistency	Diversity	Plasticity	Strength	Tests & Results	
Water level	BS	Very soft	CL	Very loose	Very low	UC	Undisturbed (from 1.1m)
Water flow	low	Soft	LL	Loose	Low	TE	Disturbed sample
Water table	low	Soft	40	Medium	Very low	SPT	Disturbed (from 1.1m) - No. 10 (5.8-1) and No. 24 (2.9-16) samples
Water table	low	Soft	Soft	Soft	Low	PP	From 1.1m to 1.5m (EA4-7a, EA4-7b)
Water table	low	Soft	Soft	Soft	Low	PP	From 1.5m to 1.8m (540kPa)
Water table	low	Soft	Soft	Soft	Low	D	From 2.2m to 2.5m (PSD/Atterberg)
Water table	low	Soft	Soft	Soft	Low	SPT	From 2.5m to 3.0m (6.8-1 No. 10)
Water table	low	Soft	Soft	Soft	Low	SPT	From 4.5m to 6.1m (2.9-16 No. 24, 11.0-23 No. 9)



Morrison Geotechnic Pty Ltd

A.B.N. 051 009 875 899
 PO Box 3063, Derra, QLD 4078
 Phone: (07) 3279 0900 Fax: (07) 3279 0955

Engineering Log - Borehole

Borehole No.: **BH4**

Page: 1 of 1

Job Number: 207E/108

Client: David Farley Family, Replacement of Fencing and Retaining

Project: Crib Wall Retaining Structure

Location: 2 Haig St, Brassall

Eastings: Drilling Rig: 103309
 Northings: Driller: Allan H
 RL: Logged By: R. Howchin
 Total Depth: 4.95 Date: 15/06/2009

Drilling Information				Material Description					Test Samples					
Soil Moisture	Water	RL	Hole Depth (m)	Soil Depth	Grain Size	Classification Code	Description	Weathering	Moisture	Consistency - Density - Strength	Soil Test Reports	Test	Sample/Result	
			0.0	0.0	CL	CL	Sandy CLAY (CH) Soft red clayey loam, fine to medium sand, moist	SL	SL			0.1	PP	11.9 Pa
			1.0	0.5	CH	CH	Sandy CLAY Very soft, loam with medium to large lumps, fine to medium sand, moist	SL	SL			0.5	PP	24.0 Pa
			2.0	1.5								1.5	SPT	2.63 N/m ²
			3.0	2.7								3	SPT	7.6 (10) N/m ²
			4.0	3.0								4.5	SPT	12.18, 12.14=20
			5.0	4.95			4.95m: BOREHOLE TERMINATED							

Comments: _____
 Authorised by: _____
 Date: _____

Water	Weathering	Consistency	Density	Rock Strength	Tests & Results
Water level	RS Residual	MS Very weak	SL Very loose	LS Low	UCP Unconfined compression test
Water level	SW Slightly weathered	FS Firm	MC Medium	SLS Marginal	UCP Unconfined compression
Water level	OW Moderately weathered	VS Very soft	OL Loose	LS Low	SPT Standard Penetration Test, 64 number of blows to reach 30mm depth
Water level	SW Slightly weathered	H Hard	VC Very compact	HS High	SPT Standard Penetration Test, 64 number of blows to reach 30mm depth
Water level	SW Slightly weathered	M Medium	VC Very compact	HS High	PP Hand penetrometer test, 64 number of blows to reach 30mm depth
Water level	SW Slightly weathered	M Medium	VC Very compact	HS High	UCP Unconfined compression test, 64 number of blows to reach 30mm depth
Water level	SW Slightly weathered	M Medium	VC Very compact	HS High	UCP Unconfined compression test, 64 number of blows to reach 30mm depth

APPENDIX 'C'

LABORATORY TEST RESULTS

MORRISON GEOTECHNIC PTY LTD

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GOLD COAST

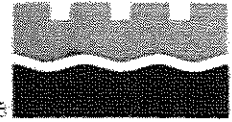
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CABOOLTURE

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GEOTECHNIC**
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RPE/IO 2241

Quality of Materials Report

Client:	DAVID FARLEY FAMILY SUPERANNUATION FUND c/- DAVID BRETT & ASSOCIATES PTY LTD	Report Number:	207E/128 - 1
Job Number:	207E/128	Report Date:	22/06/2009
Project:	RESIDENTIAL DEVELOPMENT	Order Number:	-
Location:	2 HAIG STREET, BRASSALL	Page 1 of 1	
Lab No:	122425	Sample ID:	-
Date Sampled:	15/06/2009	Sample Location:	BH3
Date Tested:	19/06/2009	Depth	2.50m - 3.00m.
Sampled By:	RH	Spec Description:	-
Sample Method:	-	Lot Number:	-
Material Source:	Insitu	Spec Number:	-
For Use As:	-		
Remarks:	-		

Test Method:	A.S. Sieve Sizes	Specification Minimum	Percent Passing	Specification Maximum
	75.00 mm		100	
	53.00 mm		100	
	37.50 mm		100	
	26.50 mm		100	
	19.00 mm		100	
	13.2 mm		100	
	9.50 mm		100	
	6.7 mm		100	
	4.75 mm		100	
	2.36 mm		99	
	1.18 mm		99	
	0.600 mm		98	
	0.425 mm		97	
	0.300 mm		95	
0.150 mm		82		
0.075 mm		72		

Atterberg Tests	Test Method	Specification Minimum	Result	Specification Maximum
Liquid Limit (%)	AS1289.3.1.1		51	
Plastic Limit (%)	AS1289.3.2.1		20	
Plasticity Index	AS1289.3.3.1		31	
Linear Shrinkage (%)	AS1289.3.4.1		17.0	
P.L. x % Passing 0.425 mm			3007	
L.S. x % Passing 0.425 mm			1649	
Ratio of % Passing (0.075 / 0.425)			0.74	

Approved Signatory	Form Number
	AQUALA-18
Mick Morrison (Brisbane) NATA Ref No: 1169	



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APPENDIX 'D1'

SLOPE STABILITY RESULTS
EXISTING BANK PROFILE – NO EARTHWORKS

Morrison Geotechnic - Darra, QLD
 207E128
 Slip Circle Analysis
 23.3.09
 2 High Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund

	Gamma C kN/m ³	Phi deg	Piezo Surf.
Fill	18	27	1
Natural Soil	19	28	1
Deck XW Basalt	21	35	1

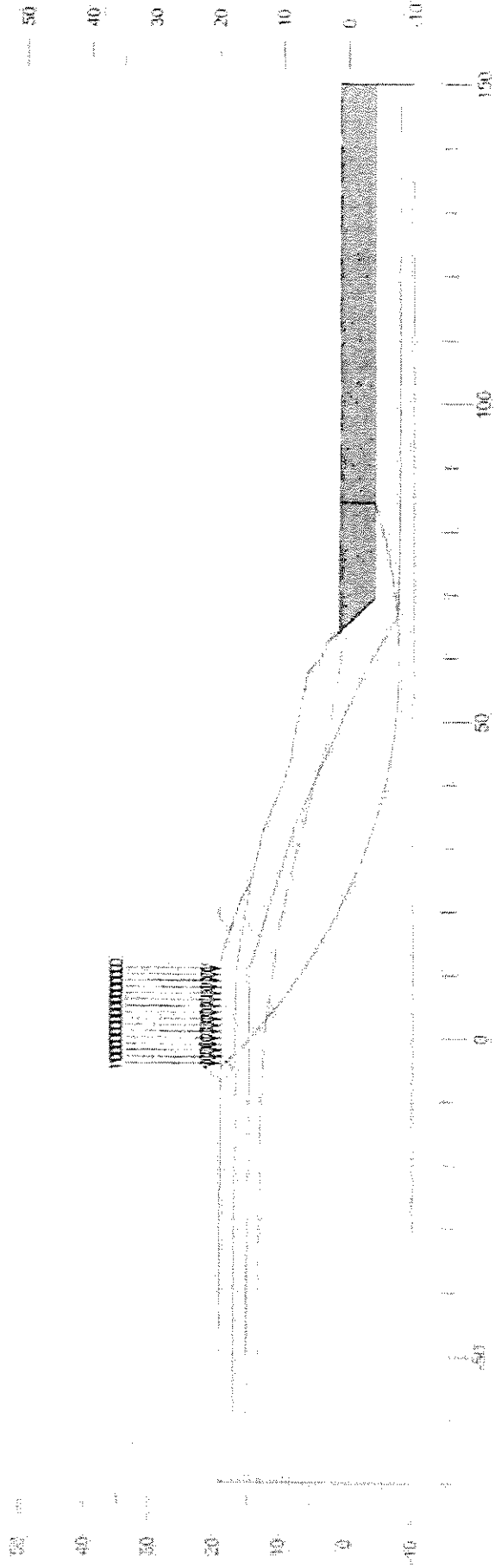
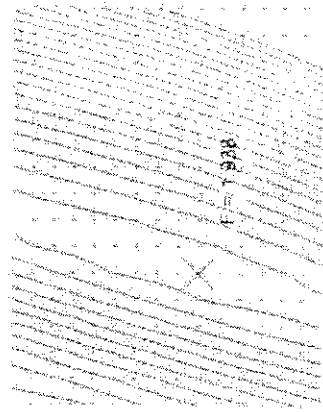
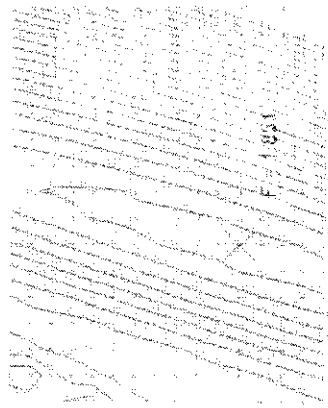


Figure 1

2009-2010-2011-2012-2013-2014-2015-2016-2017-2018-2019-2020-2021-2022-2023-2024-2025-2026-2027-2028-2029-2030-2031-2032-2033-2034-2035-2036-2037-2038-2039-2040-2041-2042-2043-2044-2045-2046-2047-2048-2049-2050-2051-2052-2053-2054-2055-2056-2057-2058-2059-2060-2061-2062-2063-2064-2065-2066-2067-2068-2069-2070-2071-2072-2073-2074-2075-2076-2077-2078-2079-2080-2081-2082-2083-2084-2085-2086-2087-2088-2089-2090-2091-2092-2093-2094-2095-2096-2097-2098-2099-2100

Merison Consulting, Darra QLD
 2025 EIR
 500 Circle Analysis
 23.3.00
 2 Haig Street, Brassall (Brierley River)
 David Farley Family Superannuation Fund



	Gamitin E, kN/m2	PII kPa	PII deg	PII Surf
River Water	0.00	0	0	1
Fill	18	1	27	1
Gravel Soil	10	5	26	1
Decomposed Soil	2.5	5	26	1

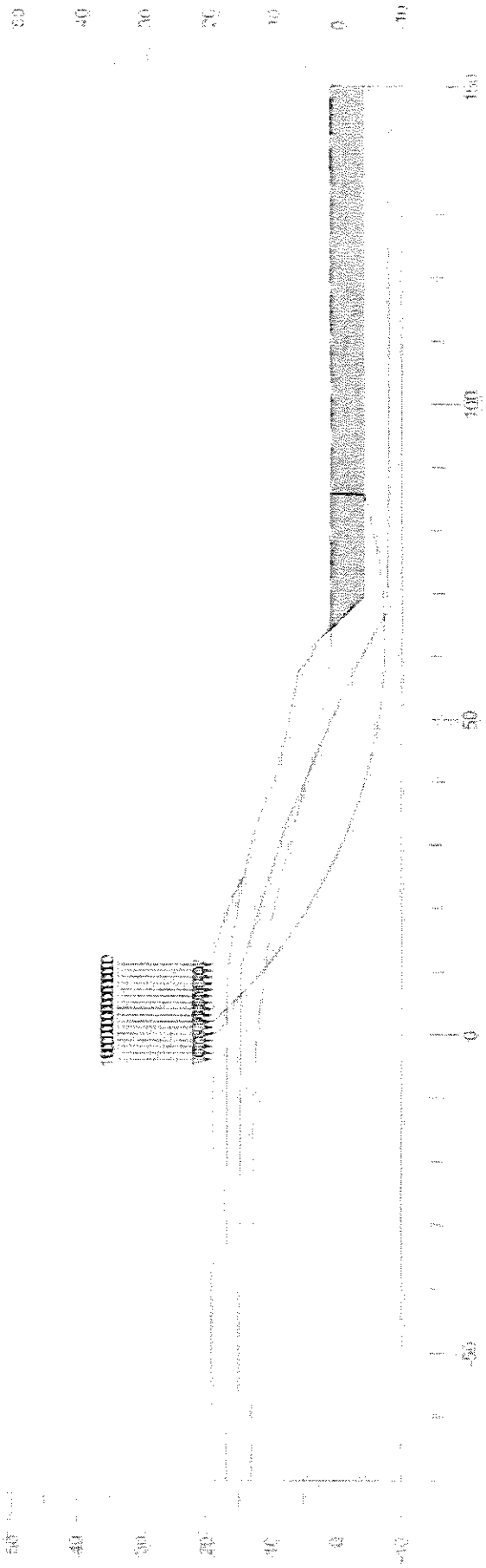


Figure 2

2025 EIR - 500 Circle Analysis - 23.3.00 - 2 Haig Street, Brassall (Brierley River) - David Farley Family Superannuation Fund

Morrison Geotechnic - Darra, QLD
 207E123
 Slip Circle Analysis
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund

	Gamma C kN/m ³	Phi deg	Puzeo Surf
River Water	9.81	0	1
Fill	18	10	1
Natural Soil	19	15	1
Craco XW Basalt	21	15	1

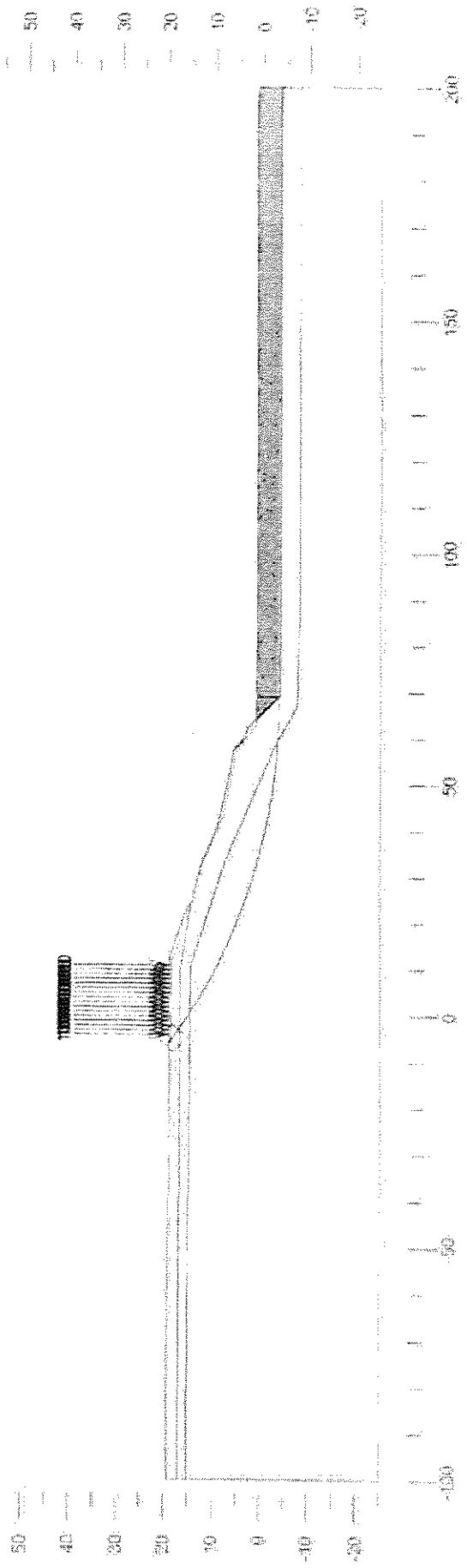
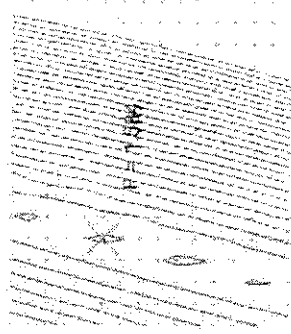


Figure 3

APPENDIX 'D2'

SLOPE STABILITY RESULTS
AFTER FLOOD STORAGE EARTHWORKS

Morrison Geotechnical - Data, GLD
 29/7/125
 Slip Circle Analysis With Flood Storage
 2 Hay Street, Brassall (Bromar River)
 David Farley Family Superannuation Fund

Layer	Gamma, C kN/m ³	Phi deg	Piech SUR
River Water	9.81	0	1
Fill	18	27	1
Natural Soil	19	29	1
Deep X04 Basalt	24	25	1

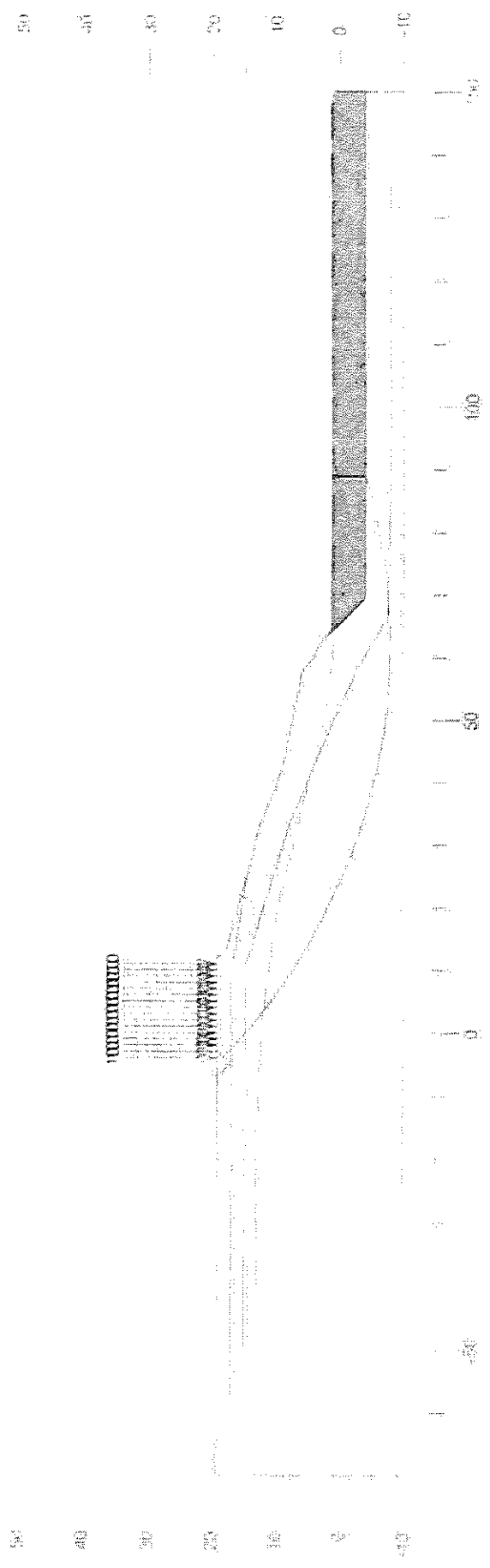
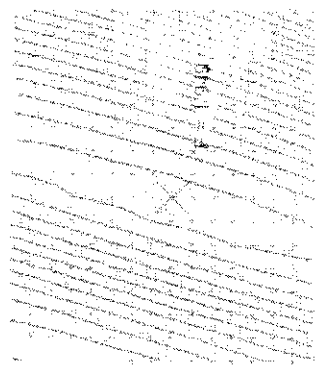


Figure 1A

643426-06-08 14:44:53 - 481 487 544 551 552 - Morrison Geotechnical - 29/07/12 10:44:53

Morrison Geotechnical - Darra, QLD
 207ET28
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Haug Street, Brassall (Bremis River)
 David Farley Family Superannuation Fund

Layer / Material	Gamma C kN/m ³	Phi deg	Piezo Surf
Water	0.01	0	1
Fill	18	27	1
Natural Soil	19	26	1
Clay XV Brassall	21	35	1

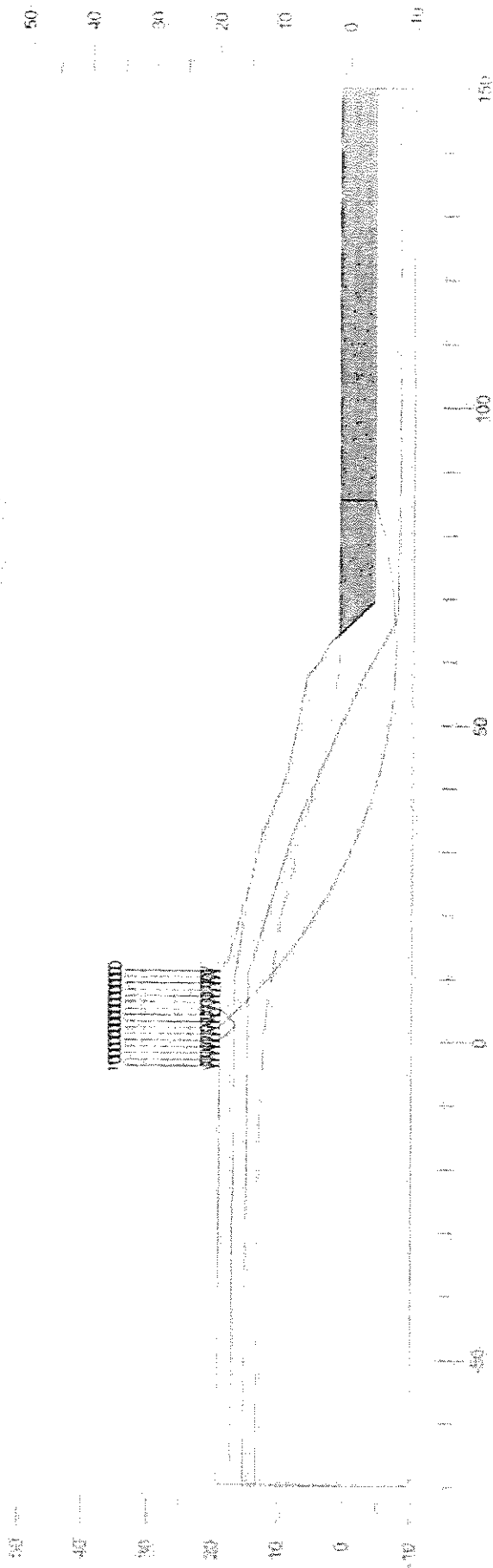
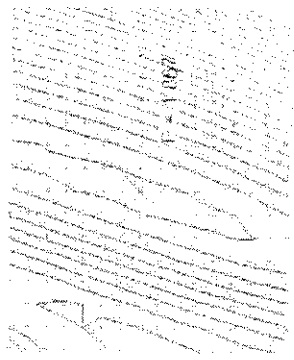


Figure 2A

Motison Geotechnic - Dara, OLD
 207E129
 Slip Circle Analysis With Flood Storage
 2 Hag Street, Brassall (Bremer River)
 Davis Family Family Superannuation Fund

	Gamma C kN/m ³	Phi deg	Piezo Surf
River Water	9.8	0	1
Fill	18	10	1
Natural Soil	19	15	1
Dens 3% Basalt	21	15	1

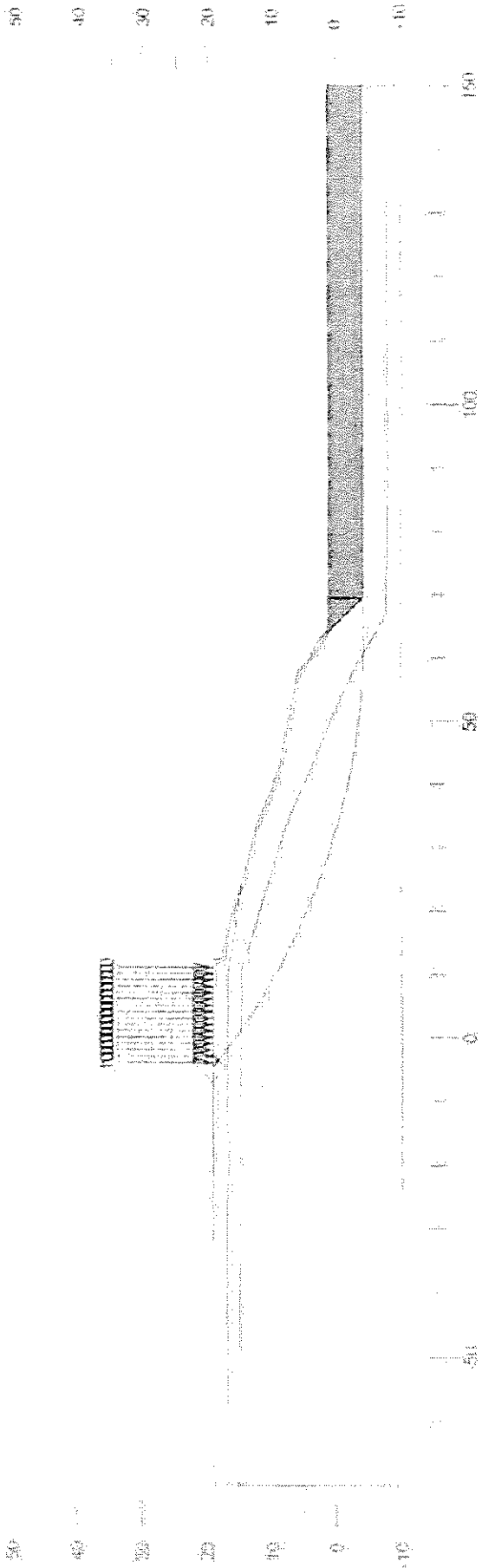
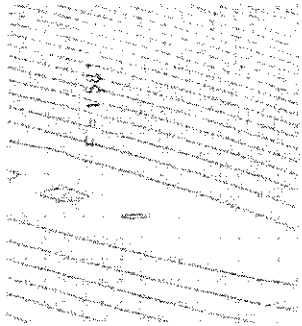


Figure 3A

Morrison Geotech Inc. - Darra, QLD
 207E128
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Haig Street, Brassall (Bromer River)
 David Farley Family Superannuation Fund

	Gamma C kNm ³ kPa	Phi deg	Fract Surf
River Water	9.81	0	1
Fill	18	10	1
Natural Soil	17	25	1
Deco XW Basalt	21	35	1

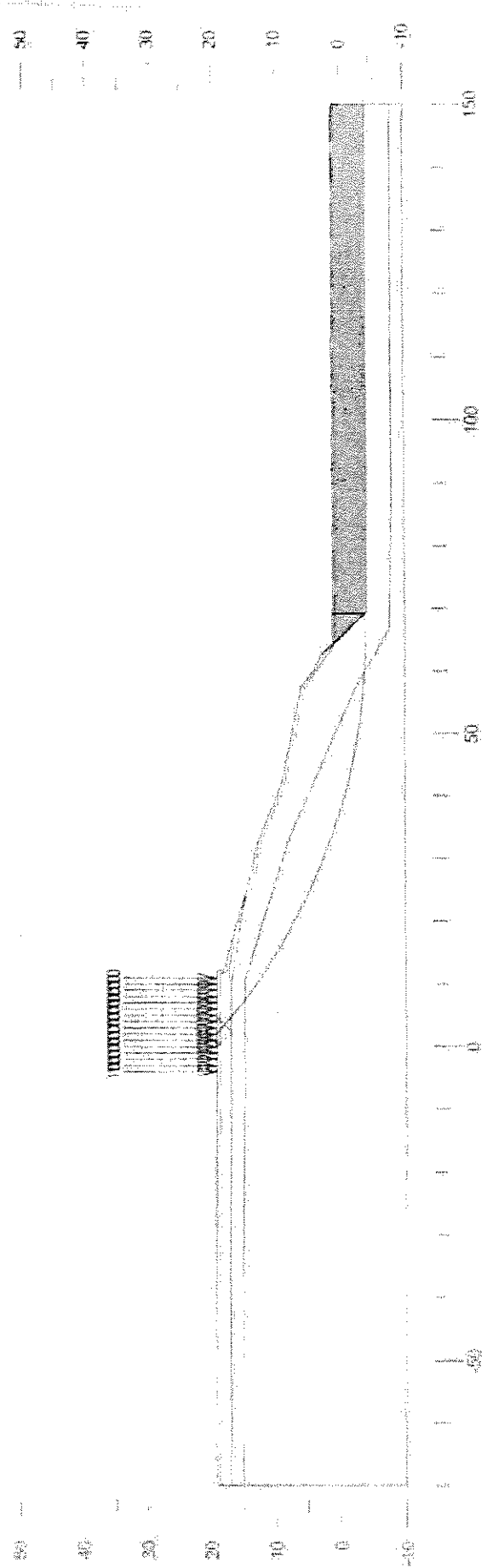
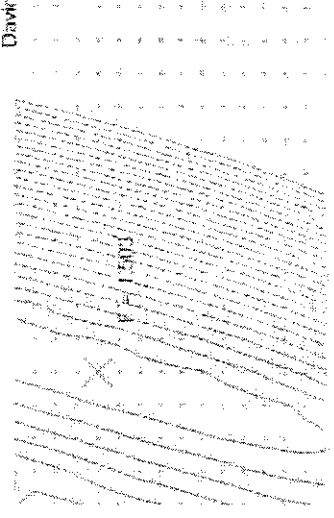


Figure 4 A

Montreal Geotechnic - Datta, GLD
20/E.128

Slip Circle Analysis With Flood Storage
23.3.00

2 Hwy Street, Brassall (Bremer River)
David Farley Family Superannuation Fund

4/1

	Gamma C kN/m ³	Phi deg	Piez Surf.
River Water	9.81	0	1
Fill	18	27	1
Natural Soil	19	33	1
Piez. XYZ Bore	21	36	1

30

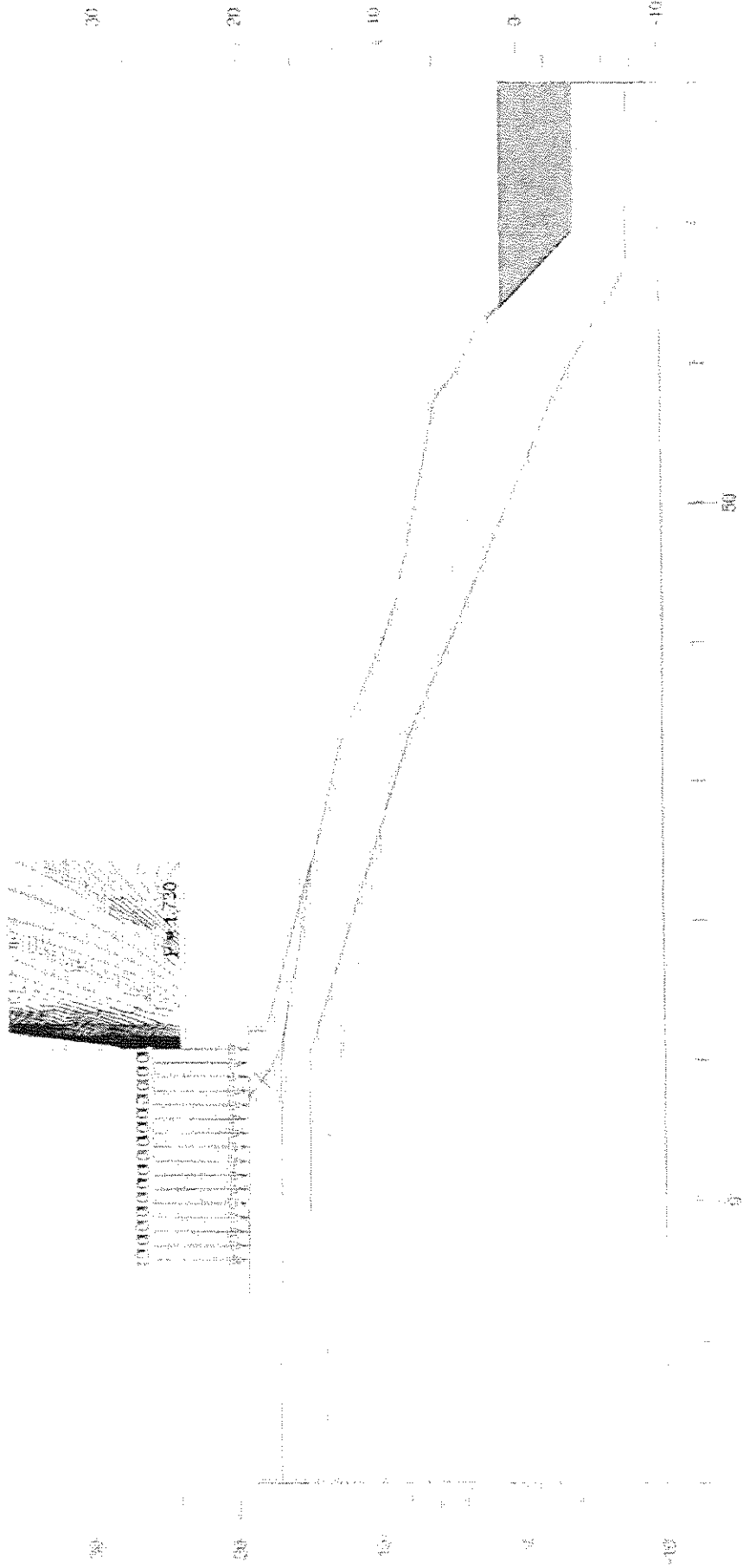


Figure 5A

Morrison Geotechnic - Darra, QLD
 207E126
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund

Layer	Thickness kN/m ²	γ _{sat} kN/m ³	φ _{int} deg	γ _{sub} kN/m ³	Surf
River Water	9.81	0	0	0	1
Fill	18	10	20	1	1
Natural Soil	19	15	25	1	1
Deep XW Basalt	21	15	35	1	1

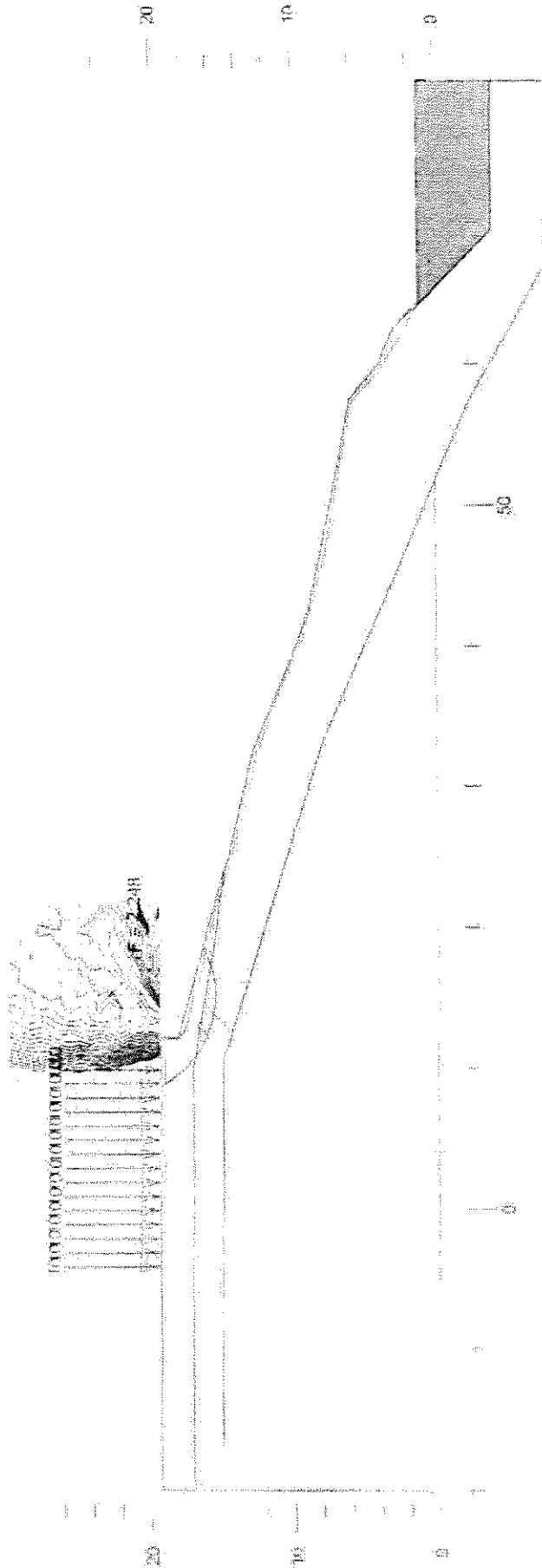


Figure 7A

Morrison Geotechnical - Davao, OLD
 207E 128
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Hag Street, Brassall (Bremer Reef)
 David Farley Family Superannuation Fund

	Gamma C	Phi	Piezo
	kN/m ³	deg	Surf
River Water	9.81	0	1
Fill	18	27	1
Natural Soil	19	29	1
Disco. SW Base	21	35	1

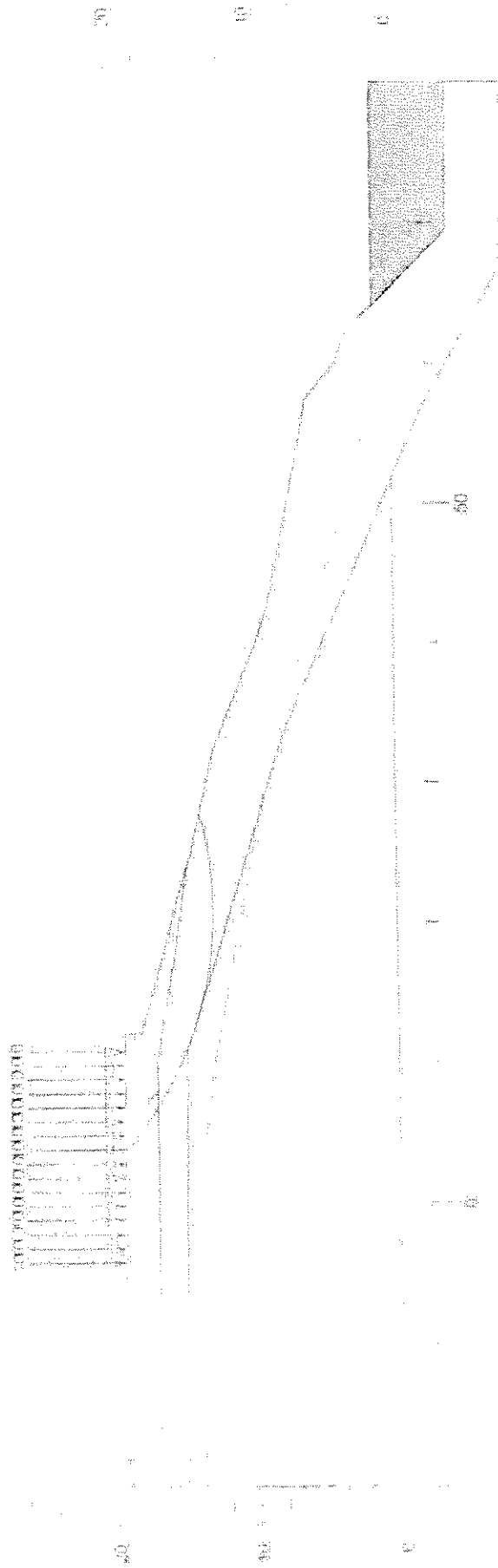
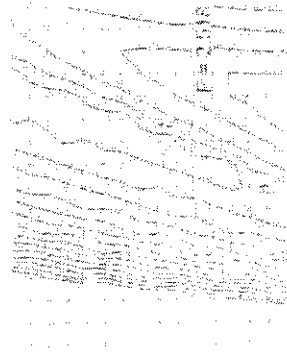


Figure 6.A

Morrison Geotechnic - Derra, QLD
 207E128
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Hag Street, Brassall (Brenner River)
 David Farley Family Superannuation Fund

Gamma G PI_v Piezo
 kN/m³ kPa deg Surf

Fill	18	10	20	1
Natural Soil	10	15	25	1
Decorative Babbal	21	15	35	1

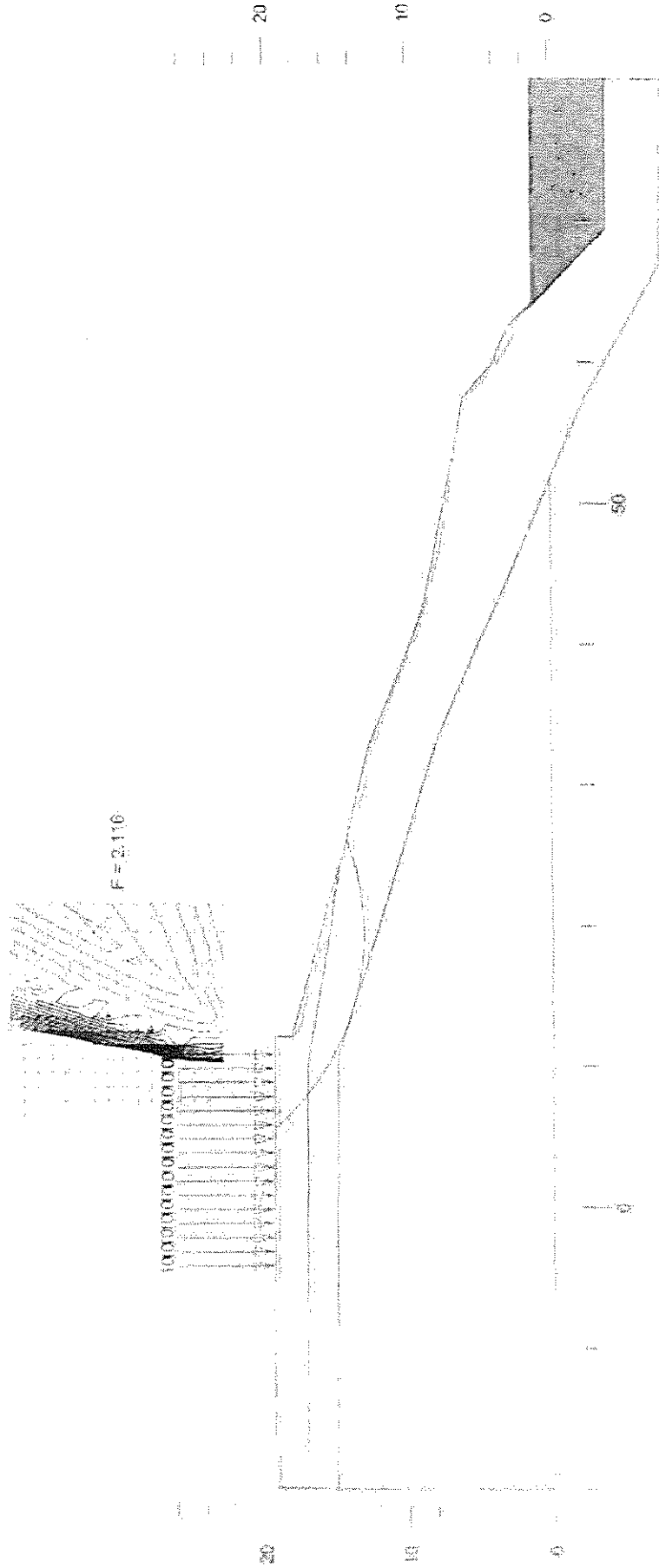
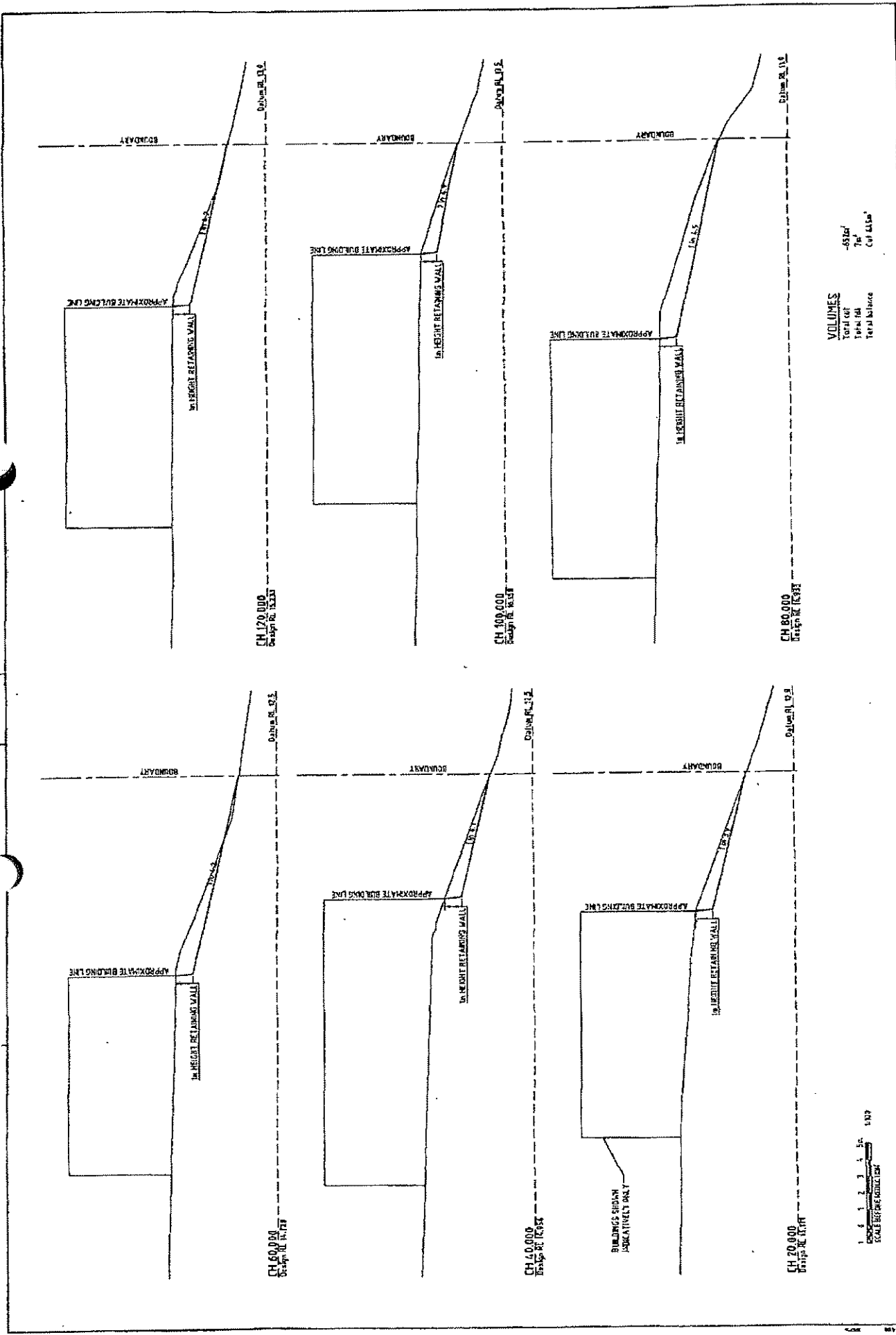


Figure 8A

APPENDIX 'E'

FLOOD STORAGE EARTHWORKS



VOLUMES

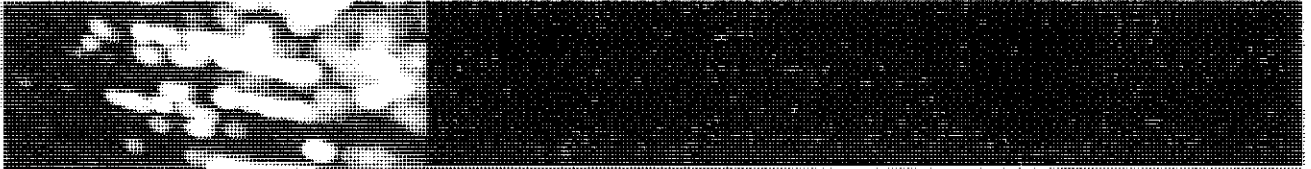
Total cut	4856'
Total fill	78'
Total balance	4778'

1 1/8" = 1'-0"
SCALE BEFORE REDUCING

		FARLEY SUPERANNATION FUND PROPOSED TOWNHOMES DEVELOPMENT - 2 HALL ST. BRASSAL 15TH RETAINING WALL AT BUILDING LINE	
CIVIL ENGINEER 1000 WEST 10TH AVENUE SUITE 100 DENVER, CO 80202 TEL: 303-733-1111 FAX: 303-733-1112 WWW.CARDNO.COM		SHEET NO. 10 TOTAL SHEETS 15 DATE: 10/11/07	
DESIGNER CHECKED APPROVED	A1 DATE: A.H.D. APPROVED: [Signature]	73961101-SK03	

ANNEXURE B

Stormwater Management Plan & Flood Study



2 HAIG STREET, BRASSALL

Stormwater Management Plan



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2 HAIG STREET, BRASSALL STORMWATER MANAGEMENT PLAN

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1. INTRODUCTION

1.1 Overview

Development is proposed by Colran Pty Ltd for a disused tennis court site at 2 Haig Street, Brassall. The site is described as Lot 2 on RP857016 and backs on to the Bremer River. Figure 1 presents the location of the study site.

A flood study was prepared by Cardno for the site in August 2006. In response to a request for further information issued by Council following the issue of the flood study report a stormwater management plan has now been developed for the site and is presented in this report.

The flood study and stormwater management plan have been updated in October 2009 to reflect the most recent development layout and design details relating to earthworks and bioretention systems.

1.2 Development Layout

The development site covers an area of 1.282 ha. The site is bounded by Haig Street to the north, Collins Street to the west, Workshops Street to the south and the Bremer River to the east.

It is proposed to sub-divide the site into 48 residential lots of 2 and 3 bedroom townhouses. The development also includes a number of roads and public park spaces. Figure 2 presents the proposed development layout.

1.3 Water Quality Objectives

Load reduction targets for key stormwater pollutants are identified in the *Water Sensitive Urban Design Technical Design Guidelines for South East Queensland* (released by Healthy Waterways June 2006). This document discusses the concerns connected with concentration based water quality objectives. These concerns include the potential for urban developments to increase pollutant loads to the receiving water without actually altering pollutant concentrations and the challenge in identifying a representative median concentration which is a highly variable measurement. For these reasons, among others, the Healthy Waterways document has adopted load based reduction targets as the standard for determining the effectiveness of stormwater quality measures within a given development.

The following load reduction targets (compared to untreated stormwater) have been applied to the stormwater management assessment presented in this report:

- Total Suspended Solids – 80%
- Total Phosphorus – 60%
- Total Nitrogen – 45%

2. WATER QUALITY MANAGEMENT

2.1 Water Quality Options

A wide range of stormwater management techniques are available to achieve the principles of Water Sensitive Urban Design. All have been shown to be successful when correctly designed, but selection of the most appropriate practices for a particular development is highly dependent on site conditions. The major treatment measures are discussed below and the appropriateness of each for the subject site assessed.

Litter Baskets/Racks

The primary purpose for litter baskets is to remove medium sized litter and debris from the site. Significant litter loads are not expected as this is a residential development and other measures will be more appropriate for managing the removal of litter from the site.

Sediment Traps

Sediment traps will be required during the construction phase to limit the transport of sediment off site. Following construction, sediment levels will return to a low level, and traps are therefore not considered necessary as a long-term water quality measure.

Gross Pollutant Traps

Gross pollutant traps are predominantly used for the removal of litter and debris – although they have been shown to effectively remove coarse sediment and suspended solids (Brisbane City Council, 1999). It is not considered that a GPT is necessary for stormwater treatment within the Haig Street development discussed in this report.

Filter Strips/Buffer Strips

Buffer strips are areas of land left in their natural state which act to reduce peak runoff flows and improve the quality of stormwater runoff. This treatment improves the aesthetic and biodiversity value of the development and provides significant quality and quantity improvements.

Grass Swales

Grass swales are considered a highly effective and aesthetic water quality (and to a lesser extent, water quantity) control measure. However, in order to detain flow adequately, grass swales need to be placed on relatively flat slopes no greater than 4 percent. Wherever slopes are sufficiently low to allow for their use (or where they are able to follow contours), grass swales provide effective stormwater treatment.

Vegetated Swales

Vegetated swales require similar conditions as those outlined for grass swales above. Therefore, the use of vegetated swales is limited by slope. Wherever slopes are sufficiently low the use of a vegetated swale would provide effective stormwater treatment for the site. It would be possible to employ grassed or vegetated swales within the subject site provided adequate area and slopes could be achieved in the final development layout.

Extended Detention Basin

Extended detention basins are designed to generally store runoff for 1-2 days. Their main purpose is the reduction of the peak discharge from the site during a storm event, and the retention of particulate matter.

Infiltration Trenches

Infiltration trenches allow pre-treated stormwater runoff to infiltrate into surrounding soils and groundwater, and as such are not treatment devices in themselves. Where space is limited, bioretention systems are preferred.

Bioretention Systems

Bioretention systems effectively combine a grass or vegetated swale with an infiltration trench. They are considered to be extremely effective in removing sediment and nutrients. Although they require a flat area, they can be incorporated in steeper areas using a stepped system. They can also be located within a detention basin, thereby combining the stormwater quality and quantity functions into a smaller area. Bioretention systems are considered appropriate for this development.

Porous Pavements

Porous pavements are not appropriate for high traffic areas due to increased maintenance requirements. They are also less effective in steep areas. The potential traffic volumes through the site preclude the extensive use of porous pavement for water quality management.

Constructed Wetlands

Wetlands require reasonably large flat areas of land. Given the constraints of this development, appropriate locations around the site are limited.

Rainwater Tanks

The ability exists to install rainwater tanks throughout the development to reduce overall water consumption. Lot scale rainwater tanks may be appropriate for this development, however due to the nature of the development (townhouses) the rainwater tanks would need to be small and therefore will not contribute significantly to stormwater treatment.

Tanks are an extremely useful aid to water conservation, and also have some effect in reducing nitrogen levels. The capacity of rainwater tanks cannot be included in stormwater detention calculations however, as although they can have a considerable effect in reducing runoff volumes, they cannot be assumed to be empty at the start of a heavy rainfall event.

2.2 Adopted Treatment Measures

Based on the treatment measures outlined above, the proposed site layout and other site constraints, it was concluded that **the most appropriate treatment measure for the site is bioretention systems.** This is primarily due to the presence of numerous parkland areas throughout the development, which present a good opportunity to include such devices. It is also proposed to use rainwater tanks as they will be able to be used to reduce water consumption within the site, as well as provide an improvement to stormwater quality.

2.3 Treatment Device Design

The development was therefore divided into several catchments according to the proposed layout. Figure 3 presents the stormwater catchments adopted for this analysis with the catchment areas summarised in Table 1. Roof-water from the townhouses will firstly be treated by rainwater tanks and then be directed to the bioretention systems. The internal roads and carpark areas will be treated by the proposed bioretention systems.

Each townhouse was assumed to have a 5kL rainwater tank. This is equivalent to 240kL of storage for the entire site.

Brisbane City Council's *Water Sensitive Urban Design Engineering Guidelines* (Draft August 2005) outlines an approach for determining the required size of a bioretention system based on the area of the contributing catchment in order to achieve a desired set of pollutant reduction targets.

According to Figure 5.3, Figure 5.4 and Figure 5.5 of the *WSUD Engineering Guidelines* pollutant removal targets of 80% (total suspended solids), 60% (total phosphorus) and 45% (total nitrogen) should be achieved with a bioretention system filter area that is approximately 2.5% of the contributing catchment area.

The 3 month ARI flow volume for each catchment area was also determined, to get an estimate on the volume of storage required. The time of concentration was determined using standard inlet times. Given the small size of the catchments, no additional pipe flow time was added to the times of concentration. A fraction impervious of 0.7 was assumed, which resulted in C_{10} values of 0.825. The resultant 3 month flow volumes are shown below in Table 1.

Table 1 Catchment Areas and 3 Month ARI Flow Volumes

Catchment	Area (m ²)	T _c (min)	3 Month ARI Volume (m ³)
1	1290	15	7.71
2	1420	15	8.72
3	930	15	5.55
4	1200	15	7.15
5	1250	15	7.56
6	970	15	5.79
7	650	15	3.88
8	560	15	3.38
9	700	15	4.17

The area available within the proposed lot layout for the bioretention systems was determined. The storage volume and filter area available within each of these areas was calculated assuming 1 in 3 batters with a depth of 0.25 metres. The proposed design also includes a gully pit located 0.15 metres above the bioretention filter, thereby allowing for 0.10 metres of freeboard to road level for minor events. The extended detention depth for the bioretention systems is therefore 0.15 metre.

The characteristics of each bioretention system are shown below in Table 2. Cross sections of the bioretention systems are shown on Figure 6. Bioretention basins located near the river frontage will be lined to prevent water seepage from the filter media to the surrounding soil, thereby promoting bank stability.

Table 2 Bioretention System Characteristics

Bioretention System	Catchment Name	Surface Area (m ²)	Depth (m)	Batters (1 in x)	Filter Area (m ²)	Volume (m ³)
A	1	66.0	0.15	3	41.0	8.0
B	2	20.8	0.15	3	5.4	2.0
C	3	75.4	0.15	3	49.8	9.4
D	4	70.3	0.15	3	40.5	8.3
E	5	79.9	0.15	3	46.9	9.5
F	6	18.2	0.15	3	4.0	1.7
G	7	17.6	0.15	3	3.9	1.6
H	8	16.4	0.15	3	4.0	1.5
I	9	20.9	0.16	3	6.4	2.0

3. WATER QUALITY MODELLING

In order to determine the effectiveness of the proposed treatment train in meeting the water quality objectives, a stormwater quality analysis was performed using the Model for Urban Stormwater Improvement Conceptualisation (MUSIC) Version 3.01.

The model requires the user to specify meteorological data (rainfall and evaporation), soil properties and pollutant loads for each area of the site, and suitable parameters for the MUSIC model were adopted in accordance with the recommendations of the Brisbane City Council publication *Draft Guidelines for Pollutant Export Modelling in Brisbane- Version 7* (2003). The values adopted for the analysis and the MUSIC model layout are shown in Appendix A.

Rainfall and evaporation data for the site was input to the model using data from 1st January 1990 to 31st December 1999 for Brisbane, and employing a six minute time step.

The modelling guidelines define a range of source nodes reflecting various land use types. Based on the descriptions, 'urban residential' nodes were adopted. The roof area for each sub-catchment was separated and assumed to be 100 percent impervious. The impervious percentage used for the remainder of the sub-catchments was 80 percent.

For MUSIC modelling the connected roof area for each townhouse was calculated and is shown in Table 3. The areas and impervious percentage values of each MUSIC sub-catchment (refer Appendix A) are shown below in Table 3.

Table 3 MUSIC Nodes

MUSIC Node	Area (m ²)	Source Type	% Imp	MUSIC Node	Area (m ²)	Source Type	% Imp
Urban 1	890	Urban Res	80	Urban 1 Roof	400	Urban Res	100
Urban 2	1020	Urban Res	80	Urban 2 Roof	400	Urban Res	100
Urban 3	630	Urban Res	80	Urban 3 Roof	300	Urban Res	100
Urban 4	800	Urban Res	80	Urban 4 Roof	400	Urban Res	100
Urban 5	910	Urban Res	80	Urban 5 Roof	340	Urban Res	100
Urban 6	500	Urban Res	80	Urban 6 Roof	470	Urban Res	100
Urban 7	310	Urban Res	80	Urban 8 Roof	340	Urban Res	100
Urban 8	370	Urban Res	80	Urban 9 Roof	190	Urban Res	100
Urban 9	370	Urban Res	80	Urban 10 Roof	330	Urban Res	100

The parameters common to each bioretention system are shown below in Table 4. The other parameters for each bioretention system are listed in Table 2.

Table 4 MUSIC Parameters

MUSIC Model Parameter Values	Value
Extended detention depth (EDD) (m)	0.25
Seepage loss (mm/hr)	0.0
Filter depth (m)	0.80
Filter median particle diameter (mm)	0.45
Saturated hydraulic conductivity (mm/hr)	180 (sandy loam)
Depth below underdrain pipe (%)	10
Overflow weir (m)	2

The overall treatment train effectiveness of the proposed stormwater treatment train is shown below in Table 5.

Table 5 Treatment Train Effectiveness

Pollutant	Pollutant Load (kg/yr)		Load Reduction (%)		OK?
	No Treatment	With Treatment	Actual	Target	
Total Suspended Solids	1790	192	89.3	80	✓
Total Phosphorus	3.46	0.85	75.4	60	✓
Total Nitrogen	16.6	8.91	46.4	45	✓
Gross Pollutants	167	0.0	100.0	90	✓

It can be seen that for each pollutant, the proposed rainwater tanks and bioretention systems serve to reduce the annual loads released from the site by a sufficient amount to achieve the adopted water quality objectives.

4. INSTALLATION AND MAINTENANCE

4.1 Construction Phase & Sediment Control

During the construction phase, the potential exists for significant increases in the amount of pollutants, particularly sediment, exported from the site. During this period, an Erosion and Sediment Control Plan is required as part of the overall Environmental Management Plan prepared for the construction phase.

The erosion and sediment control plan for the site would be completed in accordance with *Soil Erosion and Sediment Control, Engineering Guidelines for Queensland Construction Sites* (Institution of Engineers Australia, 1996). The completion of construction activities in accordance with the above guidelines will minimise the nature of any adverse impacts during the construction phase.

It is considered that the appropriate time for the preparation of the Erosion and Sediment Control Plan is at the Operational Works stage. Further, it is expected that the requirement to prepare a plan will be a condition of any development approval issued with respect to the site.

4.2 Installation and Planting

In order for the bioretention system to work effectively, it must be installed correctly and properly maintained. If installed correctly, maintenance of the system will be minimal and infrequent. The planting soil shall be a uniform mix, free from large objects (greater than 50mm in diameter). No materials which may be harmful to plant growth shall be mixed with the soil within the infiltration trench. The infiltration trench soil shall be free of all declared plants as specified under the Rural Lands Protection Act (1985).

As the proposed bioretention systems are located next to roads, the filter media may be driven on or used for parking. Therefore traffic controls such as bollards or trees should be used to prevent compaction of the filter media and damage to vegetation.

Reference should be made to the *Guideline Specification for Soil Media in Bioretention Systems* (Facility of Advancing Water Biofiltration, FAWB) for guidance on the construction of appropriate soil filter media, and transition layers. The selected soil filter media should represent a sandy loam with a hydraulic conductivity of 180 mm/hr.

Examples of suitable planting within the bioretention filter area would include *Lomandra longifolia* (long stemmed matrush) and *Lomandra hystrix* (matrush) planted at a density of 4 to 6 per square metre. For further information regarding appropriate planting of bioretention systems refer to Chapter 12 of Brisbane City Council's *Draft Water Sensitive Urban Design Engineering Guidelines*.

4.3 Ongoing Maintenance

The proposed maintenance for the bioretention systems is drawn from Healthy Waterways' *Water Sensitive Urban Design Technical Design Guidelines* (June 2006):

The most intensive period of maintenance is during the plant establishment period (first two years) when weed removal and replanting may be required. It is also the time when large loads of sediments could impact on plant growth and reduce the infiltration capacity of the filter media. This is particularly problematic in developing catchments with an inadequate level of erosion and sediment control during construction phase activities.

Inlet points and surcharge pits require careful monitoring, as these can be prone to scour and litter build up. Inlet pits require routine inspection to ensure structural integrity and that they are free of blockages. Debris can block inlets or outlets and can be unsightly, particularly in high visibility areas. Inspection and removal of debris should be done regularly, and debris should be removed whenever it is observed on a site.

It is essential that a maintenance access point is designed for and maintained in the bioretention basin. The size and complexity of the system will guide its design and may involve provision of a reinforced concrete ramp/pad for truck or machinery access. Typical maintenance of bioretention basin elements will involve:

- *Routine inspection of the bioretention basin profile to identify any areas of obvious increased sediment deposition, scouring from storm flows, rill erosion of the batters from lateral inflows, damage to the profile from vehicles and clogging of the bioretention basin (evident by a 'boggy' filter media surface).*
- *Routine inspection of inlet points, overflow pits and under-drains to identify and clean any areas of scour, litter build up and blockages.*
- *Removal of sediment where it is smothering the bioretention basin vegetation.*
- *Repairing any damage to the profile resulting from scour, rill erosion or vehicle damage by replacement of appropriate fill (to match onsite soils) and revegetating.*
- *Tilling of the bioretention basin surface, or removal of the surface layer, if there is evidence of clogging.*
- *Regular watering/irrigation of vegetation until plants are established and actively growing (see Section 5.4.5).*
- *Removal and management of invasive weeds (herbicides should not be used).*
- *Removal of plants that have died and replacement with plants of equivalent size and species as detailed in the plant schedule.*
- *Pruning to remove dead or diseased vegetation material and to stimulate growth.*
- *Vegetation pest monitoring and control.*

- *Resetting (i.e. complete reconstruction) of the bioretention basin will be required if the system fails to drain adequately after tilling of the surface. Maintenance should only occur after a reasonably rain free period when the soil in the bioretention system is dry. Inspections are also recommended following large storm events to check for scour and other damage.*

Given the above, a three monthly inspection frequency is proposed until the catchment has become stabilised (i.e. buildings within the development are largely complete). After this time, the frequency of inspections can be reduced to every six months or as determined by the operational performance of the devices.

4.4 Construction Management

As stated in the previous section, the efficiency of the bioretention systems can be affected in the early stages of a development by sediment loads, particularly during the construction phase. Moreover, the nature of the pollutants will change as the development progresses: suspended solids are most likely in the construction phase, whereas nutrient loads will be low at first and increase later as the development becomes populated.

In order to protect the proposed bioretention systems from clogging and more effectively deal with the possible sediment loads from the construction phases, it is proposed to construct them in stages to suit the construction programme. The bioretention systems will be built to their full size, but in the early stages of the development they will act as a stilling basin to trap suspended sediments. As the development progresses, the filtration layer will then be installed to bring the bioretention function online. Given that each bioretention system treats runoff from approximately 5 townhouses, it should be relatively straightforward to appropriately stage the development.

5. SITE DRAINAGE

It has been recognised that due to the steep gradient of the river bank it is necessary to pipe the flow from the catchments to the river to prevent scouring and erosion of the river bank. It is proposed to channel the flow via a pipe with the capacity to convey the catchment's 100 ARI flow. The pipe will follow the slope of the river bank before changing grade near the point of discharge to the river.

The change in grade and the increase in the number and size of pipes downstream of the manhole where the change in grade occurs will reduce the velocity of flow and prevent scouring of the river bed. The system also ensures that energy dissipation occurs within the protected pipe system rather than the bank. A typical profile for the pipe system is shown on Figure 5. It is noted that the level of the outlet will be determined as part of detailed design and set below the normal water level in the Bremer River.

Table 6 reports the 100 year ARI discharge calculations for the site.

Table 6 Q100 Calculations

Pipe	Contributing Catchments	Area (ha)	100yr Intensity (mm/h)	Time of Concentration (min)	C ₁₀₀	Q100
1	All Catchments	0.897	318	5	0.99	0.80

Table 7 shows the pipe diameters needed to convey the 100 year ARI flow from the site and the velocities within the network. The required pipe diameters were determined based on manufactures discharge and velocity relationship graph. The graph uses the Manning's equation to formulate its results.

Table 7 Pipe Diameters and Velocities

Pipe	Upstream of Manhole			Downstream of Manhole		
	Diameter (mm)	Slope (1:x)	Velocity (m/s)	Diameter (mm)	Slope (1:x)	Velocity (m/s)
1	450	20	5	3*600	500	1

Note: * Refer to Figure 4 for locations of drainage pipes and Figure 5 for longitudinal profile of network

From the results presented in Table 7 it is clear that calculated velocity upstream of the manhole is high. However the velocity remains less than the maximum permissible according to Table 7.11.1 of the Queensland Urban Drainage Manual (6.0 m/s).

The resultant discharge velocity to the river is considered to be acceptably low.

6. CONCLUSION

Colran Pty Ltd is proposing to develop a disused tennis centre site at 2 Haig Street, Brassall for residential purposes. A stormwater management plan has been produced for the site.

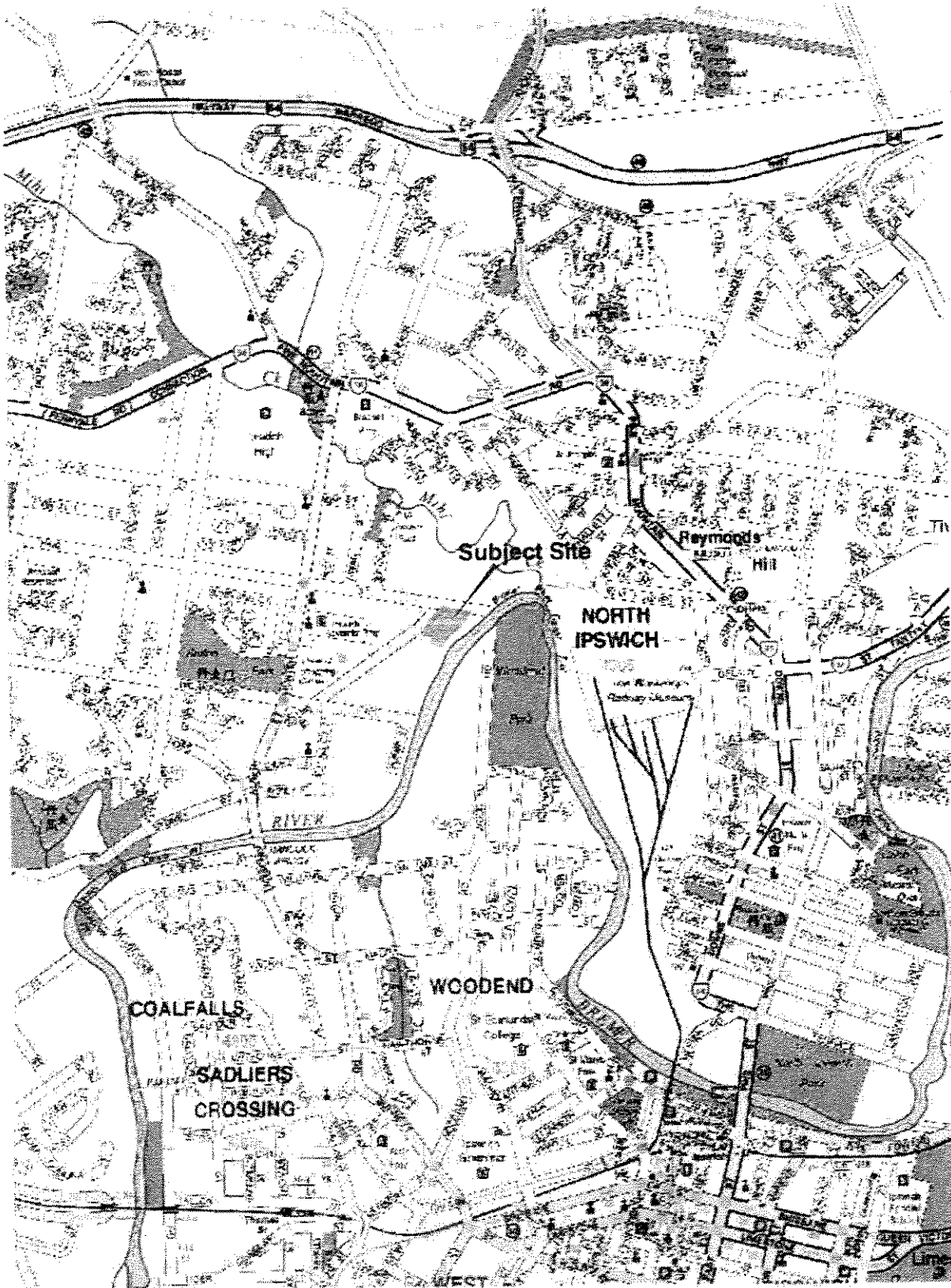
Based on the proposed development layout it is concluded that the most effective stormwater quality management measures for the site are rainwater tanks and bioretention systems located within the park land and landscape areas throughout the development.

MUSIC modelling has shown that the water quality objectives for the site can be met using the proposed stormwater quality management measures.

Further, it will be possible to drain the site without causing scour of the bank of the Bremer River.

FIGURES

- Figure 1 Locality Plan
- Figure 2 Proposed Development
- Figure 3 Stormwater Catchments
- Figure 4 Stormwater Management Plan
- Figure 5 Site Drainage
- Figure 6 Bioretention Basin Cross Sections



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FIGURE 1
LOCALITY PLAN

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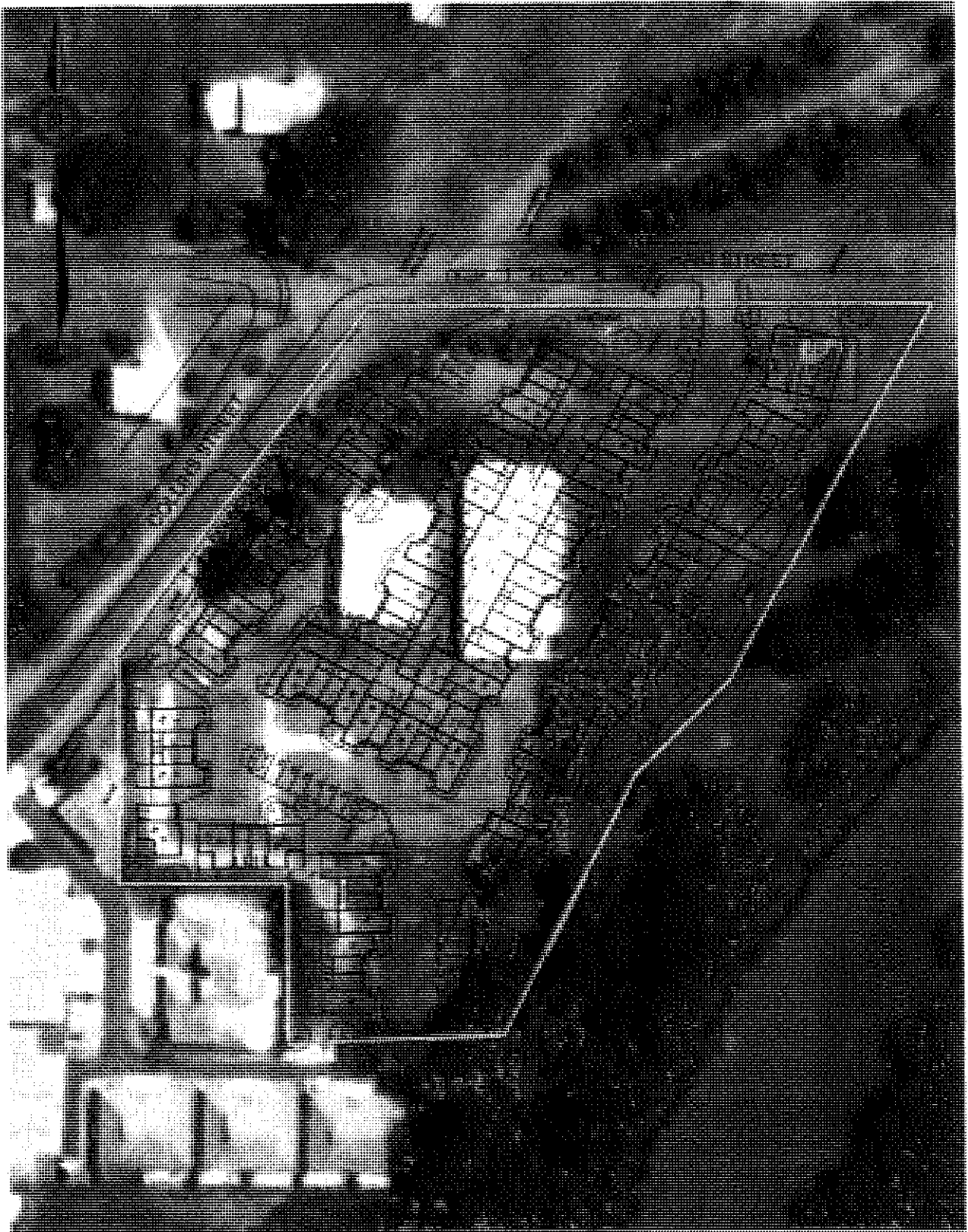


Figure 2: Proposed Development (4/4)

FIGURE 2 PROPOSED DEVELOPMENT

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2 HAIG STREET, BRASSALL
STORMWATER MANAGEMENT PLAN



LEGEND



Catchment Boundary



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**FIGURE 3
STORMWATER CATCHMENTS**

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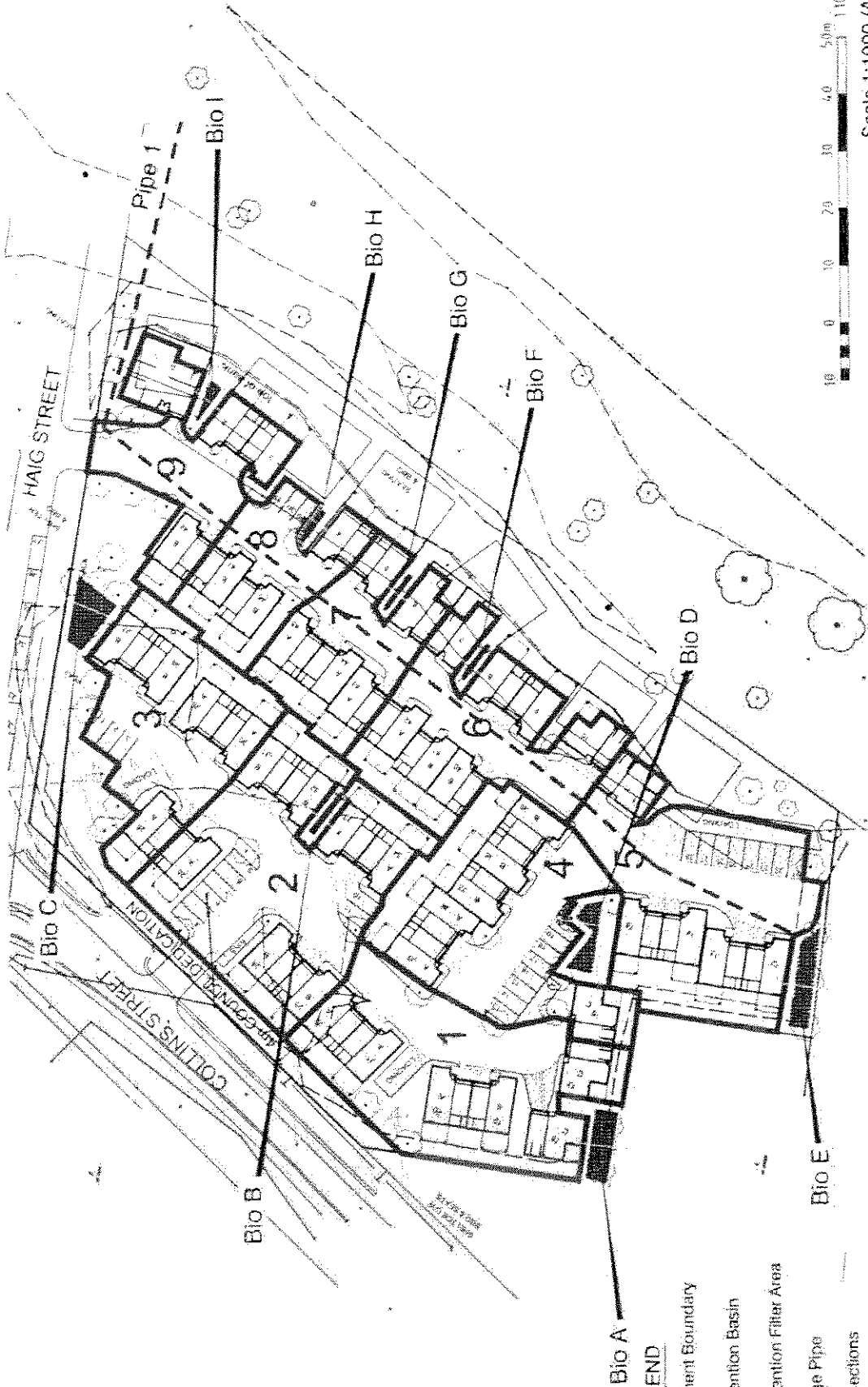
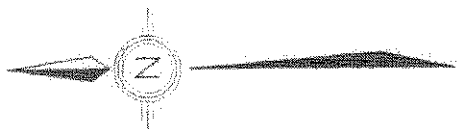
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2 HAIG STREET, BRASSAIL
STORMWATER MANAGEMENT PLAN



LEGEND

- Catchment Boundary
- Bio-retention Basin
- Bio-retention Filter Area
- Drainage Pipe
- Cross sections



Scale 1:1000 (A4)

FIGURE 4
STORMWATER MANAGEMENT PLAN

Project No: 7396/11

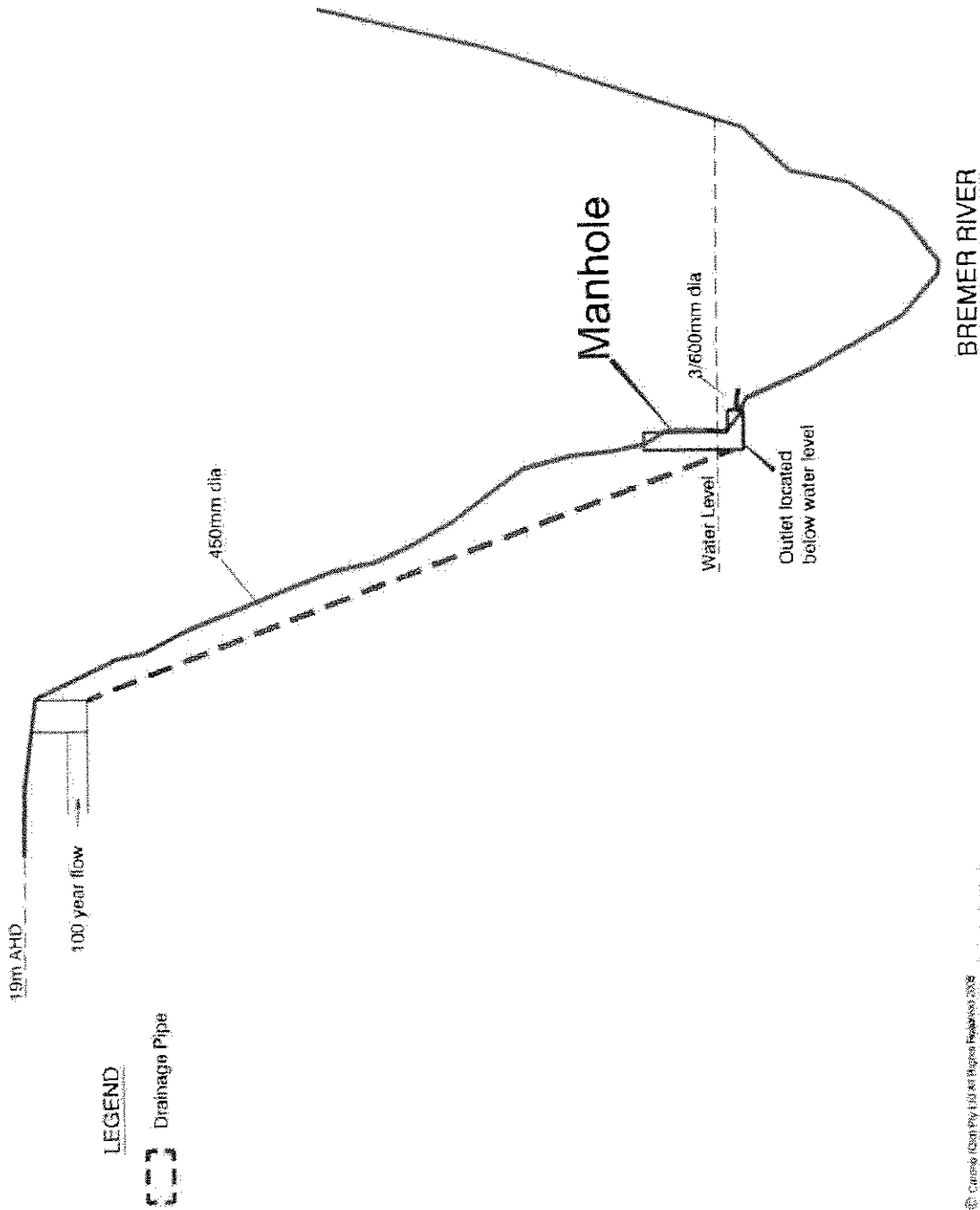
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 Drainage Pipe

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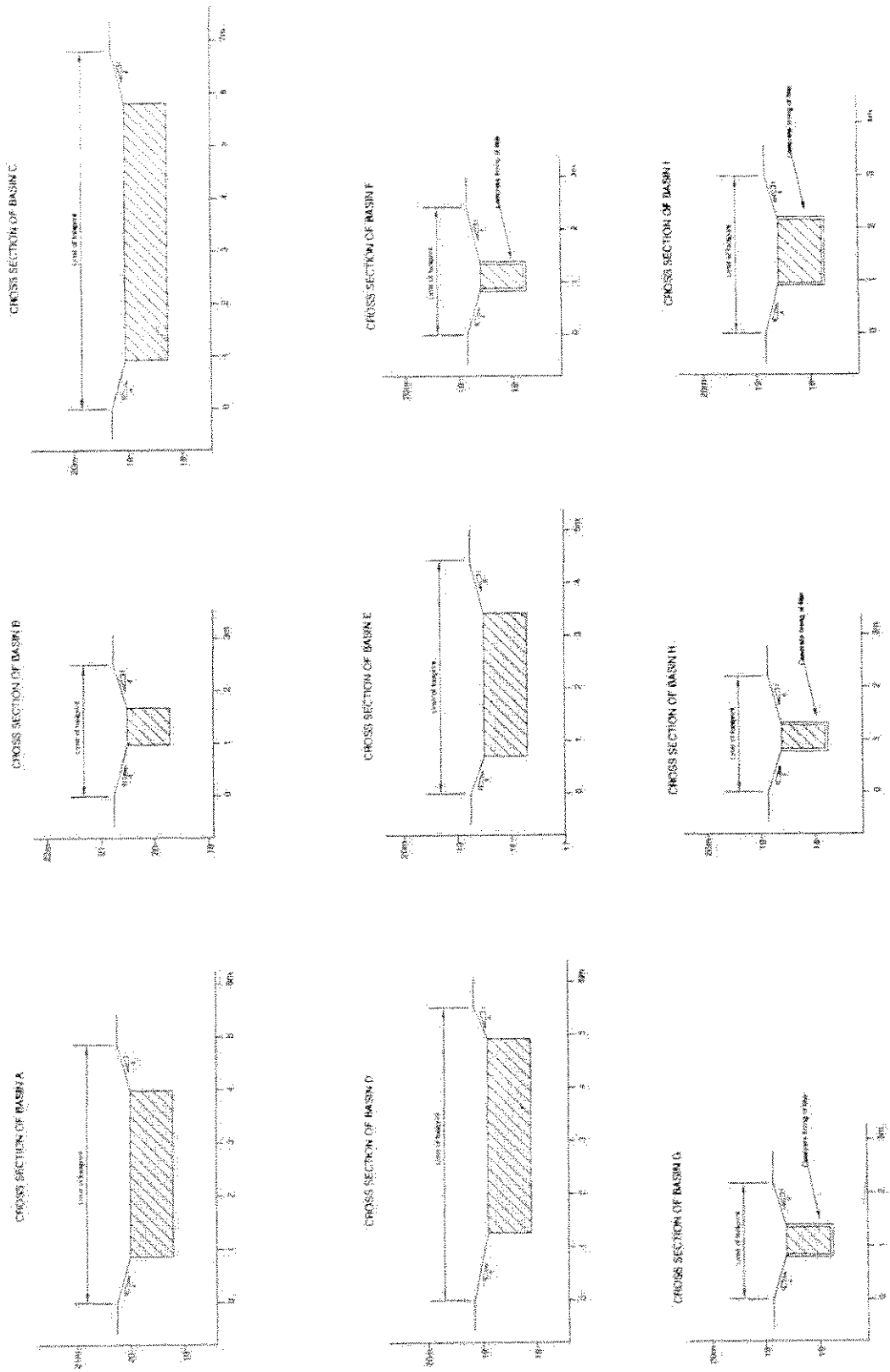
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**FIGURE 5
SITE DRAINAGE**

Project No.: 7396/11
Issue Date: 05 December 2005 - 1:48



2 HAIG STREET, BRASSALL
STORMWATER MANAGEMENT PLAN



LEGEND

 Bioretention filter

FIGURE 6
BIORETENTION BASIN CROSS SECTIONS

Project No.: 7396/11
Plan Date: 14 October 2009

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APPENDIX A

MUSIC Parameters

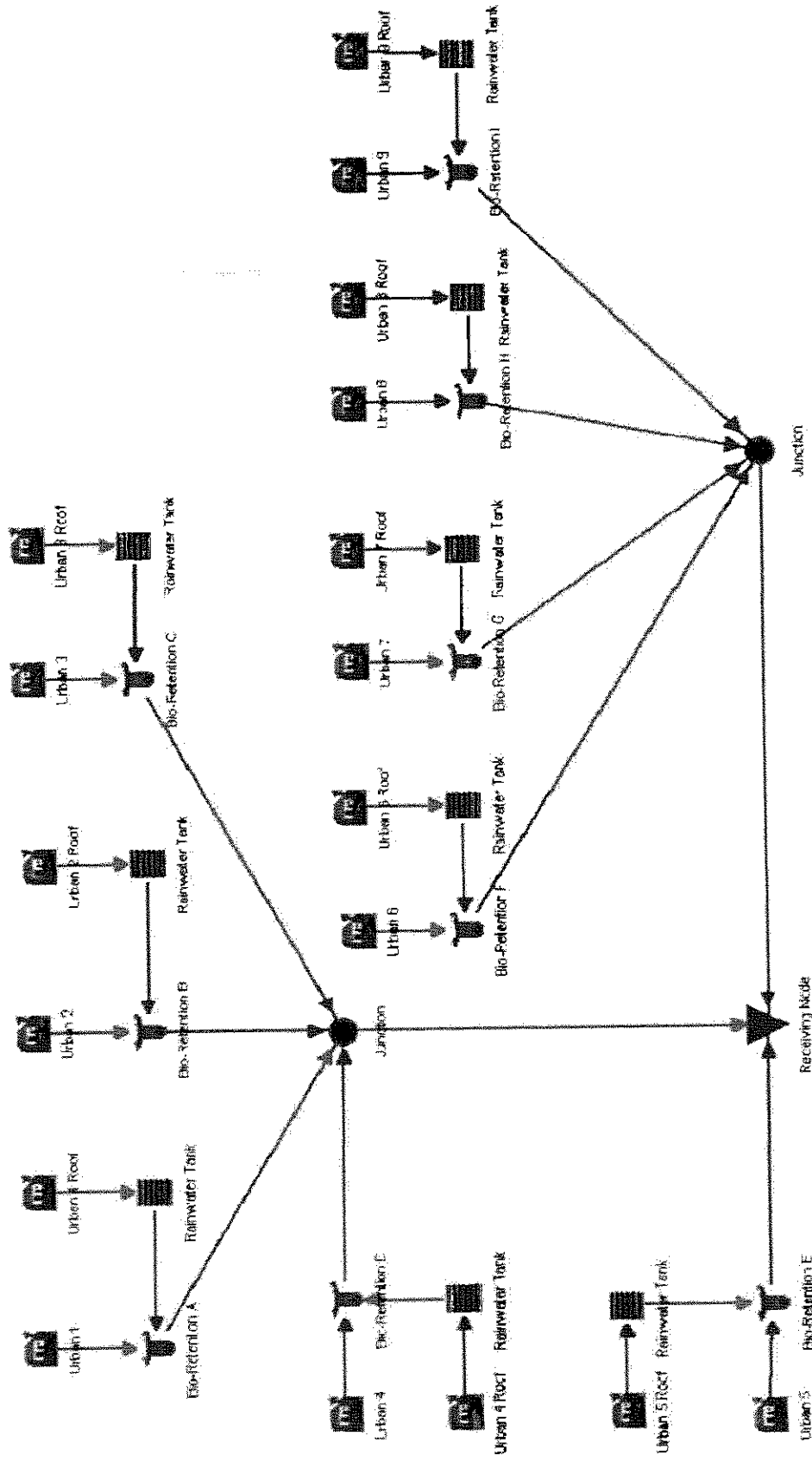
Runoff Generation Parameters

Parameter	Urban Residential
Field Capacity (mm)	200
Infiltration Capacity Coefficient a	50
Infiltration Capacity Exponent b	1
Rainfall Threshold (mm)	1
Soil Capacity (mm)	400
Initial Storage (%)	10
Daily Recharge Rate (%)	25
Daily Baseflow Rate (%)	5
Initial Depth (mm)	50

Pollutant Export Relationships

Land Use Source Nodes	Parameter	Total Suspended Solids (mg/L)		Total Phosphorus (mg/L)		Total Nitrogen (mg/L)	
		Base Flow	Storm Flow	Base Flow	Storm Flow	Base Flow	Storm Flow
Urban Residential	Mean	1.00	2.18	-0.97	-0.47	0.20	0.26
	Std Deviation	0.34	0.39	0.31	0.31	0.20	0.23

MUSIC Model Schematic



ANNEXURE B

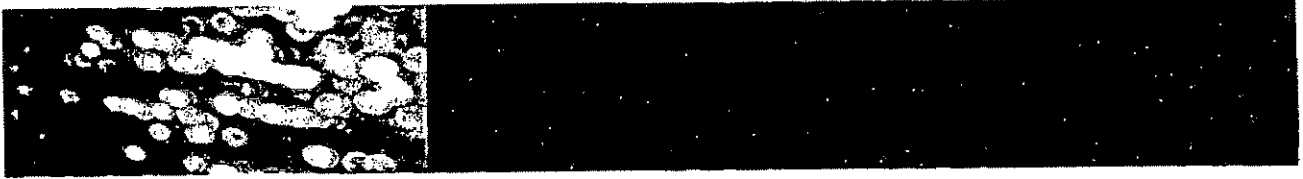
Stormwater Management Plan & Flood Study

BUILDING DESIGN

6

COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING



2 HAIG STREET, BRASSALL

Flood Study

7 October 2009
Job No. 7396/11

Colran Pty Ltd



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Document Control

Version	Date	Author		Reviewer	
		Name	Initials	Name	Initials
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4	7 October 2009				

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**2 HAIG STREET, BRASSALL
FLOOD STUDY**

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Figure 5	Extent of Inundation

APPENDICES

APPENDIX A	MIKE 11 Cross-sections
APPENDIX B	Earthworks Cross Sections

1. INTRODUCTION

It is proposed by Colran Pty Ltd to redevelop a disused tennis club located at 2 Haig Street, Brassall for residential purposes. The site is described as Lot 2 on RP 857016, Parish of Brassall, County of Churchill. The site has an approximate area of 1.3 ha and is located adjacently to the Bremer River in Brassall. The location of the site is shown on Figure 1.

Currently the site is partially developed and contains areas of cleared land. The site also comprises impervious areas in disuse such as tennis courts and a club house.

A hydraulic study was completed in August 2006 to determine peak flood levels corresponding to the 100 year and 20 year Average Recurrence Interval (ARI) events across the site.

An additional hydraulic study was completed in November 2007. This addressed the impact of the proposed boardwalk on peak flood levels. The study concluded that the proposed boardwalk has negligible impact on peak water levels.

A further study was conducted in January 2008 to reassess the impact of the proposed development based on a revised layout plan and taking into account the recommendations of a bank stability study.

The purpose of this report is to reassess the impact of the proposed development considering a further revision to the layout plan. This report details the analysis undertaken and the results obtained.

2. SITE DESCRIPTION

The proposed development site has an approximate total area of 1.3 hectares. The site location is shown on Figure 1.

The site is bounded to the north and west by Haig Street, to the south by Residential housing and to the east by the Bremer River. Mihi Creek merges with the Bremer River just downstream of the site.

The ground levels across the site range from 21 m AHD at the western boundary of the site to 15 m AHD at its eastern boundary on the left bank of the Bremer River. The site currently comprises partially developed land and impervious areas in disuse such as tennis courts and a club house. Photographs of the characteristic vegetation and topography of the subject site are presented in Figure 2.

The proposed development involves dividing the site to allocate residential lots and roads to provide access to the existing road network.

3. BREMER RIVER FLOODING

The Bremer River is located on the eastern boundary of the site. Ipswich City Council has defined the following flood levels for the subject site in case of the 100 year and 20 year ARI storm events:

- 100 Year ARI Event 18.9 m AHD
- 20 Year ARI Event 15.0 m AHD

According to the above flood levels, a portion of the site will be inundated for the 100 year ARI storm event, specifically the riverfront dwellings and adjacent roads. This is shown in Figure 5.

To provide flood immunity for the proposed dwellings and roads, it is proposed to fill the site areas located below the 100 year ARI flood level. Compensatory excavation works will also be undertaken to ensure that the available storage for large flood events is not affected.

As the proposed earthworks and filling could impact on flood levels in the Bremer River, a hydraulic study was undertaken to quantify the impact and to determine any ameliorative measures necessary to ensure that flood levels are not increased as a result of the proposed development.

4. BREMER RIVER MIKE11 MODEL

4.1 General

The Bremer and Brisbane Rivers were originally modelled by Sinclair Knight Merz for Ipswich City Council using the 1-D hydrodynamic program MIKE11 developed by DHI.

Council agreed to provide data from a portion of a reach of this model to use in the present flood investigation. The data provided included cross-sections, flow hydrographs (assuming ultimate catchment development) and stage hydrographs calculated using the overall model at the downstream end of the reach.

Cardno developed a new model of the Bremer River based on the truncated model provided by Council, which extends both upstream and downstream of the site, from cross-section BREM 1000800 to BREM 1010020. A portion of the Ipswich Rivers MIKE11 model layout is reproduced as Figure 3 and shows the extent of the truncated model and the location of cross-sections within the reach.

Due to the large extent of the overall area modelled by Council, the cross-sections supplied to Cardno were at a spacing of about 500 metres. However, only one existing cross-section coincided with the subject site. To provide additional cross-sections in the region of interest, additional survey of the site and surrounding areas was undertaken and included in the new model. Consequently, six cross-sections were inserted into the model to represent in detail the proposed development site (chainages 1009452 to 1009593; Table 1).

Cross-sections were drawn from available contour information with a contour spacing of 0.25 metres. The layout of the new model is shown in Figure 4. Where new cross-sections were located near or at existing cross-sections the latest cross-section data was adopted. As the survey did not include areas below the water line, appropriate bed levels were adopted for each new cross-section based on cross-section 1009675 of the Council MIKE11 model (nearest existing cross-section to the subject site). The added cross-sections are shown in Appendix A.

This new hydraulic model was used to determine the flood levels corresponding to the 100 year and 20 year Average Recurrence Interval (ARI) events across the proposed development site. Storm durations of 18 and 30 hours were analysed to define the critical flooding across the site.

4.2 Methodology

To determine the impact of the proposed development on flood levels, two cases were modelled:

- existing case; and
- developed case

The existing case was based on the new MIKE11 model (including the newly added cross-sections) with ultimate catchment flows. The existing case was then modified to account for the proposed development.

The developed case model was established by modifying the MIKE11 model to reflect the proposed filling and excavation. It is proposed that all developed areas below the 100 year ARI inundation area be filled with compensatory earthworks being conducted to ensure that no loss of floodplain storage occurs as a result of the development. The bank stability assessment conducted by Morrison Geotechnic recommended a maximum slope of $1(V)$ in $2(H)$.

It is proposed therefore that a 1 metre high retaining wall be constructed at the building line, and that the embankment be cut from this point to the property boundary. This results in a cut slope of approximately $1(V)$ in $4(H)$ to $1(V)$ in $5(H)$. The proposed earthworks plan and cross sections are contained in Appendix B. It can be noted that as the proposed earthworks will be compensatory, the proposed development is expected to have a minimal effect on flood levels. 1m cut

The cross sections affected by the proposed development were between BREM1009452 (upstream) and BREM1009593 (downstream). The modifications to these cross sections are shown in Appendix A.

For the existing case, the MIKE11 model used the resistance values from the original model, duplicating them in the new cross-sections. The resistance values used in the developed case model were the same as for the existing case model. The radius type of Resistance Radius was used for the computation of processed data, as for the previous Council MIKE11 model.

Both the existing and developed case models were run for the 100 year and 20 year ARI flood events with storm durations of 18 and 30 hours, to define the critical flooding across the site.

A recent review done by Brisbane City Council of the hydrology used in its modelling has indicated that flows from Brisbane River have changed. While the Council MIKE11 model is being reviewed to reflect these changes, it can be assumed that the 100 year ARI event can be modelled using what was considered to be the 50 year event flows. In fact, the 100 year ARI flood levels quoted by Council correspond to MIKE11 results for the 50 year ARI event. The critical storm duration for this event at the subject site is the 50 year 30 hour flooding of Brisbane River.

The existing case model was calibrated so that results agreed as closely as possible with those obtained by Council for the 50 year 30 hour flooding of Brisbane River, and then modified to account for the proposed development. Due to a different version of MIKE 11 being used for the present analysis to that used for the Ipswich Rivers analysis, results for the existing case model and the published Ipswich River model differ slightly. As this study presents the relative impact between the existing and developed cases, this difference is not considered significant.

4.3 Results

Peak flood level results for the 100 year and 20 year ARI events are summarised in Table 1 and Table 2 respectively. Results for both existing and proposed development cases are included. A summary of the afflux resulting from the proposed development is also presented, where a positive value indicates an increase in flood level. The extent of inundation for the 100 year event is shown in Figure 5.

Results in Table 1 demonstrate that for the 100 year ARI flood event, peak water levels for the developed case are similar to those for the existing case. The impact of the proposed development produces a maximum increase of 2 mm in flood level within the site. Such an increase is considered to be insignificant.

It should be noted that the flood levels for the site presented in Table 1 are comparable to the 100 year ARI flood level of 18.9 m AHD that Council quoted for the site. Q20 - 15.2

Table 1 100 year ARI Flood Levels

Cross Section	100 year ARI Flood Level (m AHD)			
	Council Model	Existing Case	Developed Case	Afflux (mm)
BREM 1080000	20.60	21.136	21.136	0
BREM 1008390	20.39	20.970	20.970	0
BREM 1008410	20.26	20.309	20.310	1
BREM 1008420	20.18	20.237	20.238	1
BREM 1008660	19.86	19.919	19.920	1
BREM 1009210	19.21	19.278	19.278	0
BREM 1009452		19.046	19.046	0
BREM 1009472		19.042	19.042	0
BREM 1009493		19.032	19.034	2
BREM 1009519		19.000	18.999	-1
BREM 1009549		18.960	18.962	2
BREM 1009585	18.88	-	-	-
BREM 1009593		18.933	18.932	-1
BREM 1009675	18.82	18.884	18.884	0
BREM 1010020	18.38	18.383	18.383	0

Note: Sections within site are shaded

Table 2 20 year ARI Flood Levels

Cross Section	20 year ARI Flood Level (m AHD)			
	Council Model	Existing Case	Developed Case	Afflux (mm)
BREM 1080000	18.52	18.671	18.672	1
BREM 1008390	18.29	18.457	18.458	1
BREM 1008410	18.13	18.155	18.156	1
BREM 1008420	18.07	18.095	18.096	1
BREM 1008660	17.78	17.808	17.809	1
BREM 1009210	17.18	17.217	17.218	1
BREM 1009452		16.988	16.989	1
BREM 1009472		16.986	16.987	1
BREM 1009493		16.978	16.981	3
BREM 1009519		16.947	16.949	2
BREM 1009549		16.910	16.912	2
BREM 1009585	16.87	-	-	-
BREM 1009593		16.887	16.886	-1
BREM 1009675	16.82	16.842	16.842	0
BREM 1010020	16.41	16.405	16.405	0

Note: Sections within site are shaded

Results in Table 2 show that for the 20 year ARI flood event, the proposed development produces a maximum increase of 3 mm in flood level within the site. Again, this increase is considered insignificant.

The obtained results are generally higher than the 20 year ARI flood level of 15.0 m AHD quoted for the site due to the recent revision of rainfall data for the region. The 20 year ARI event for this analysis relates to previous rainfall estimates. Although there are no reliable flow data to adequately compare results corresponding to the 20 year ARI event, results demonstrate that the minimum elevation of the proposed earthworks is above this flood line.

← 15.2 AHD

5. CONCLUSION

A flood study has been conducted to determine the flood levels applicable to the 100 year and 20 year ARI storm events for the proposed residential development at 2 Haig Street, Brassall.

The 100 year flood levels corresponding to the existing and post-development conditions of the Bremer River are presented in Table 1. The corresponding extent of inundation is shown on Figure 5. The site flood levels corresponding to the 20 year event for the Bremer River are presented in Table 2.

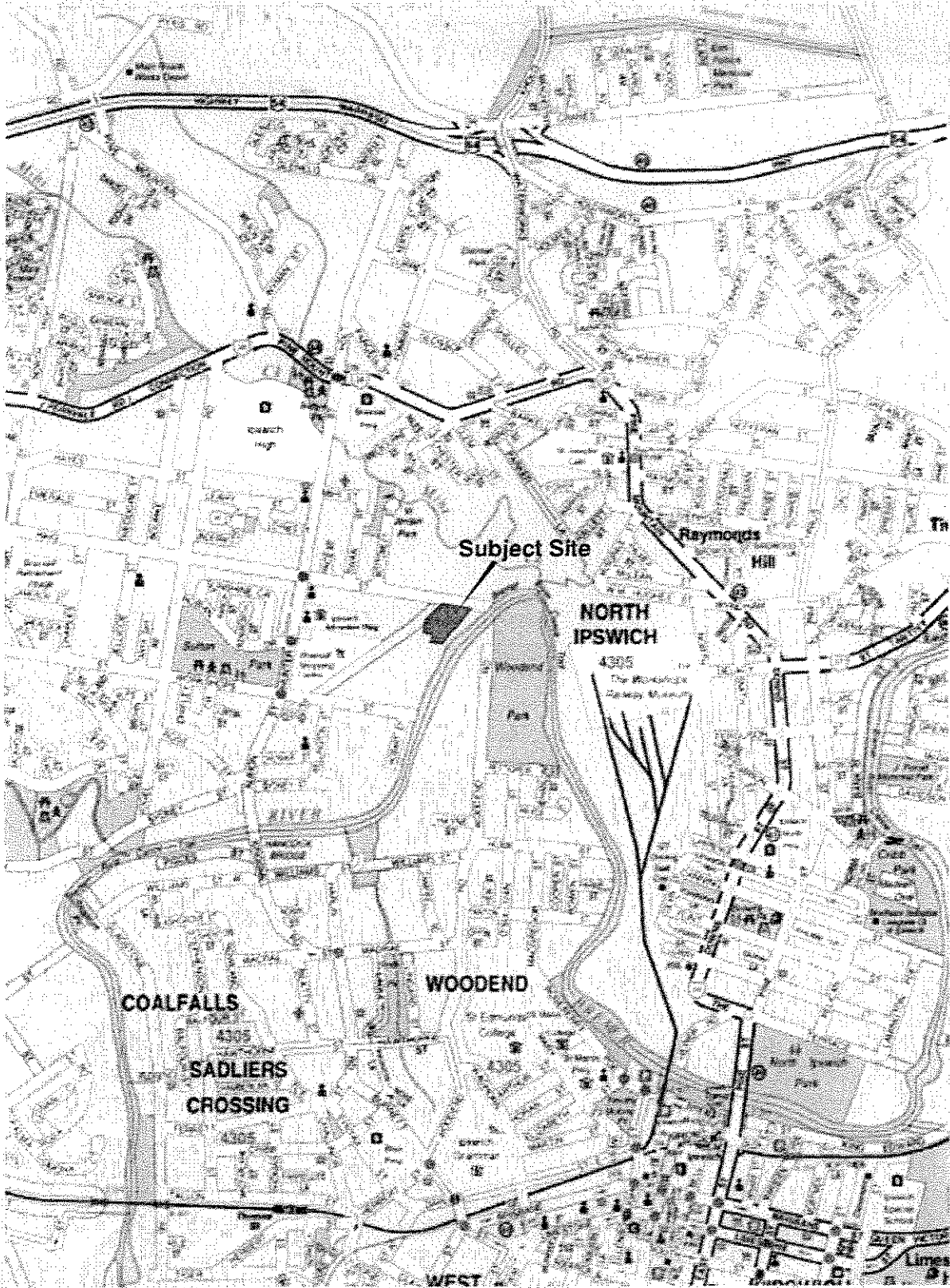
According to the flood levels provide by Council, a portion of the site is currently inundated for the 100 year ARI storm event – specifically the area proposed to contain riverfront dwellings and adjacent roads. To provide flood immunity across the site, it is proposed to fill a portion of the site to a level 500 mm higher than the 100 year ARI inundation level. Compensatory earthworks are proposed to ensure that there is no net loss of floodplain storage as a result of the development.

Hydrodynamic modelling of the proposed development and compensatory earthworks has indicated that for the 100 year ARI storm event, the development causes a maximum increase of 2 mm in the flood levels within the site. This flood level increase is considered negligible as it does not impact on adjacent residential properties.

Therefore it is concluded that the proposed development does not produce unacceptable impacts on flood levels on residential properties and roads upstream or downstream of the site.

FIGURES

- Figure 1** **Locality Plan**
- Figure 2** **Existing Vegetation and Disused Land at the Site**
- Figure 3** **Ipswich Rivers MIKE11 Model layout**
- Figure 4** **New Truncated Bremer River MIKE11 Model Layout**
- Figure 5** **Extent of Inundation**



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Rev: Orig. Date: 7 January 2008

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Scale 1:20,000 (A4)

FIGURE 1 LOCALITY PLAN

Project No.: 7396/11

10/11/08 97 January 2008 11:25am

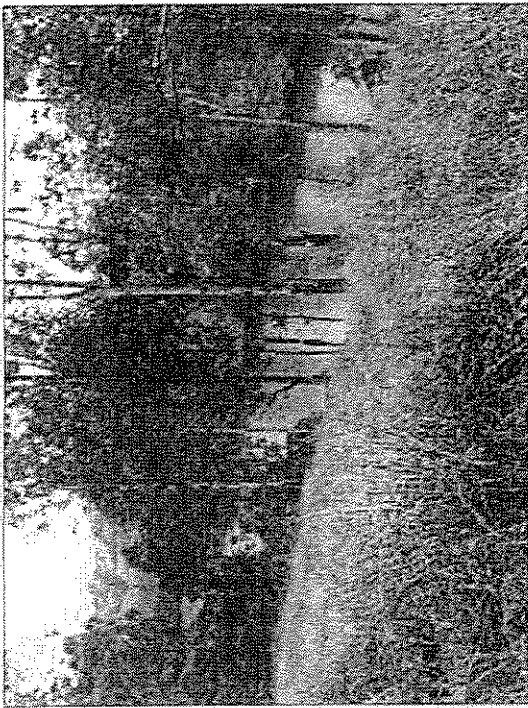


Figure 2a - Characteristic Vegetation at Bremer River Bank

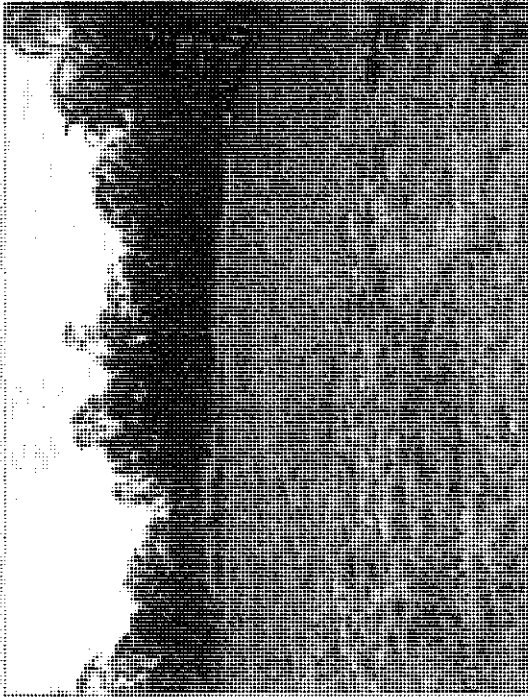


Figure 2c - Cleared Land



Figure 2b - Existing Clubhouse

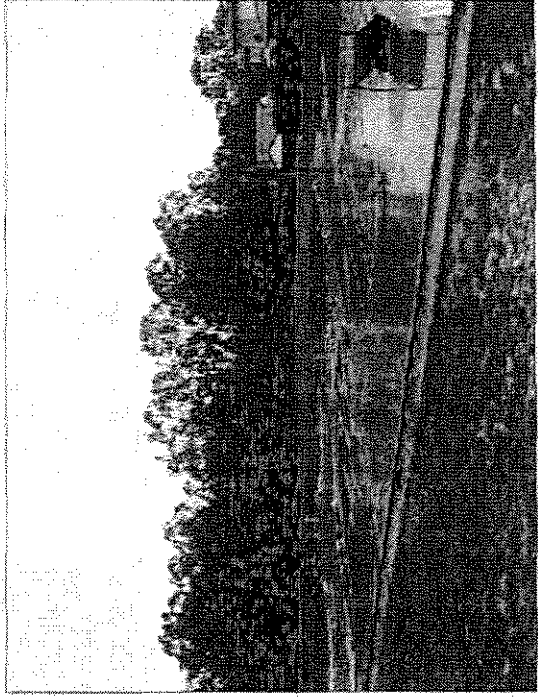


Figure 2d - Disused Tennis Courts

**FIGURE 2
EXISTING VEGETATION AND DISUSED LAND AT THE SITE**

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Tel: +61 8 9442 2000

Project No.: 7396/11
Date: 11 January 2016

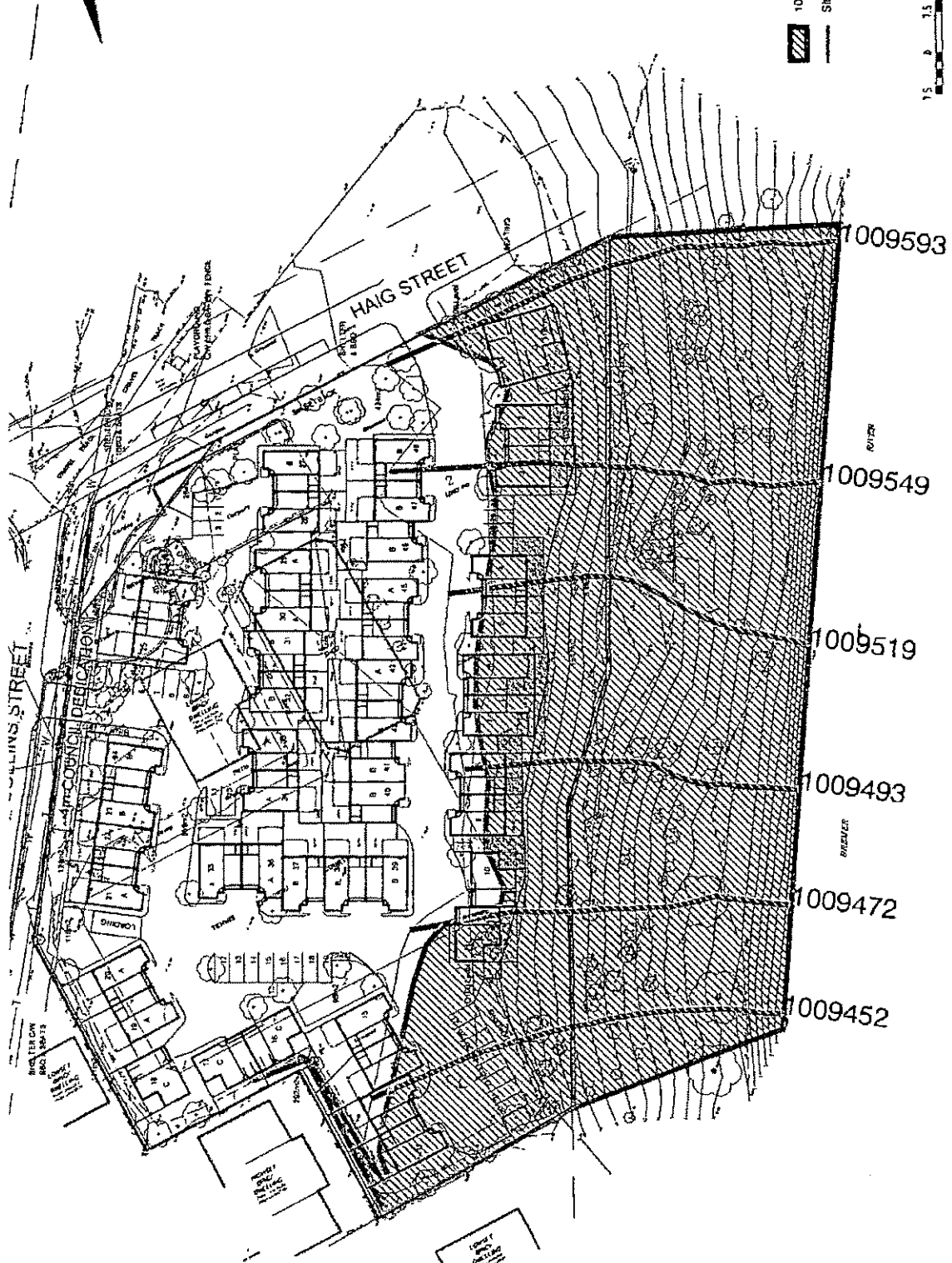


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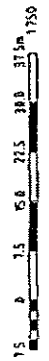
FIGURE 4
NEW TRUNCATED BREMER RIVER
MIKE11 MODEL LAYOUT

Project No.: 7286/11
Date: 14 August 2009

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LEGEND
 100 Year ARI Inundation
 Site Boundary



Scale 1:750 (A3)
FIGURE 5
EXTENT OF INUNDATION

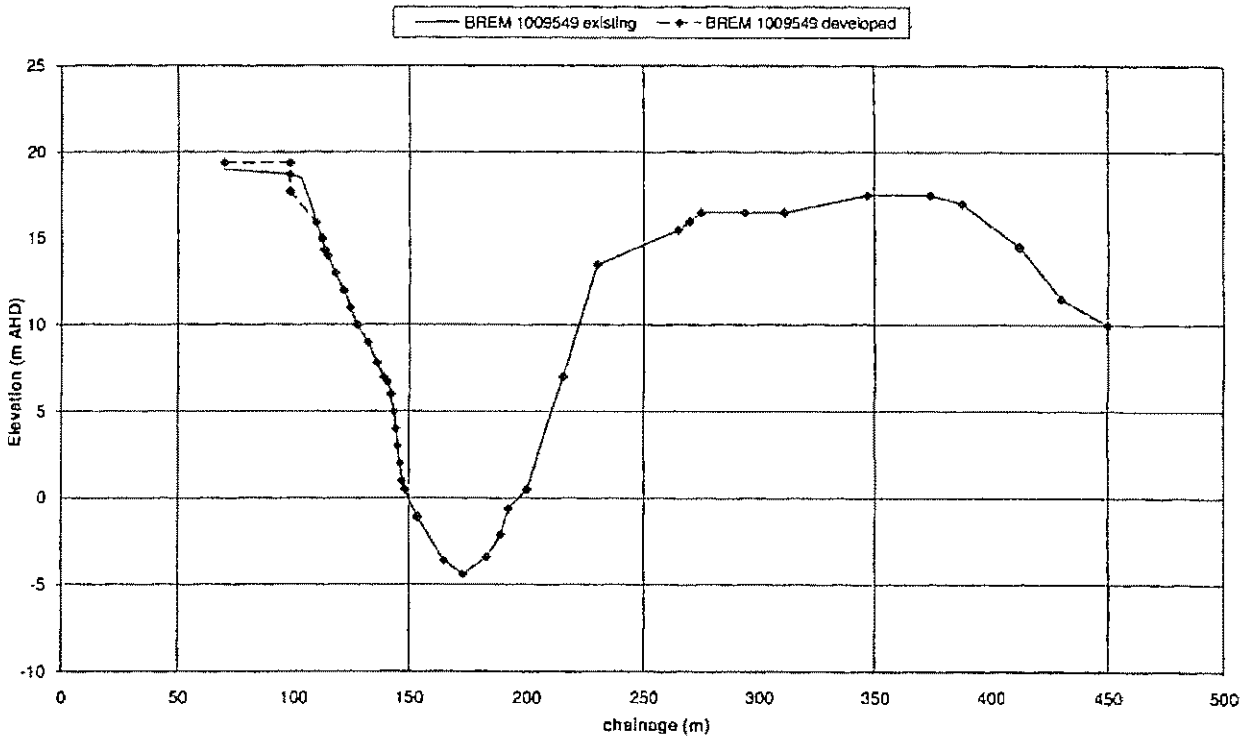
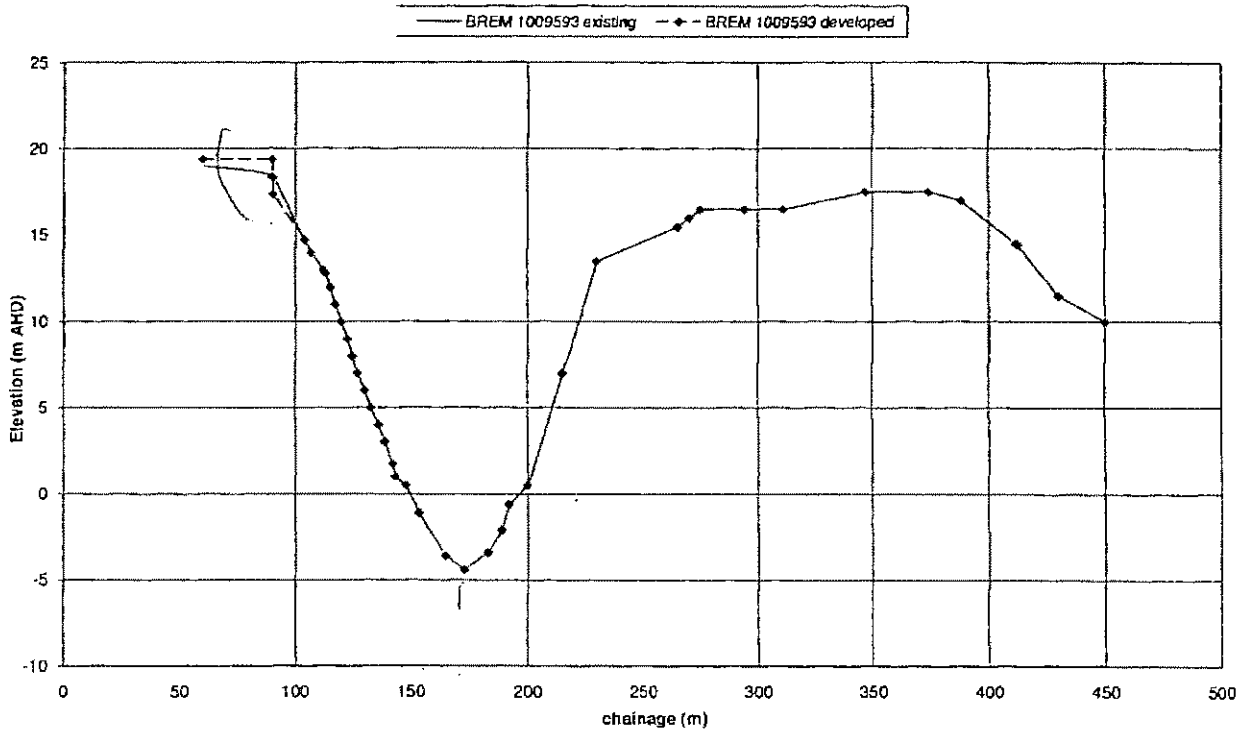
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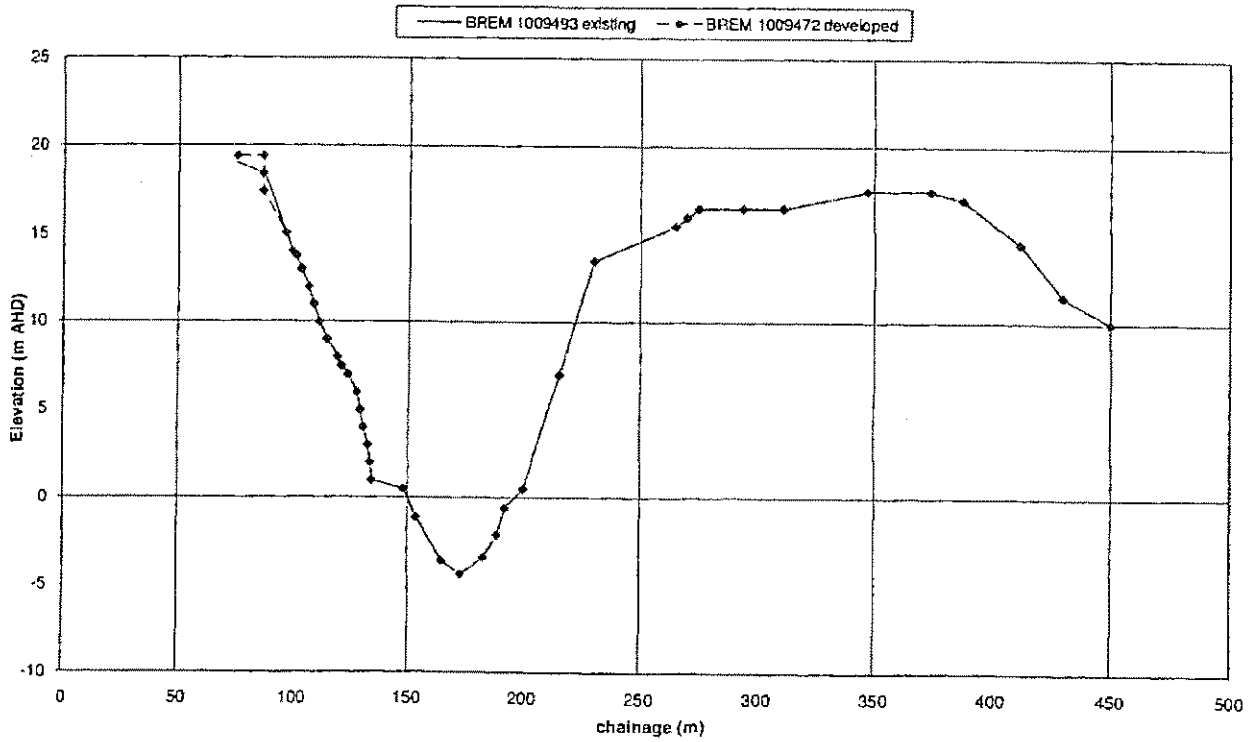
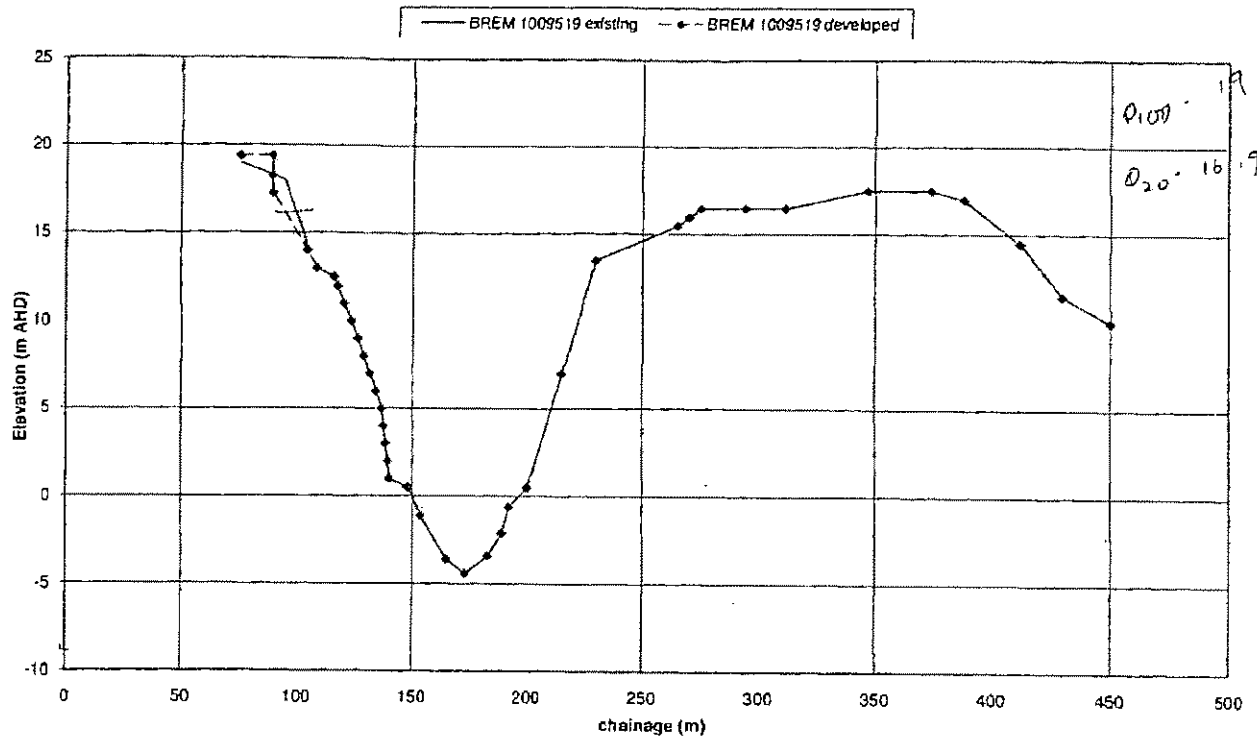
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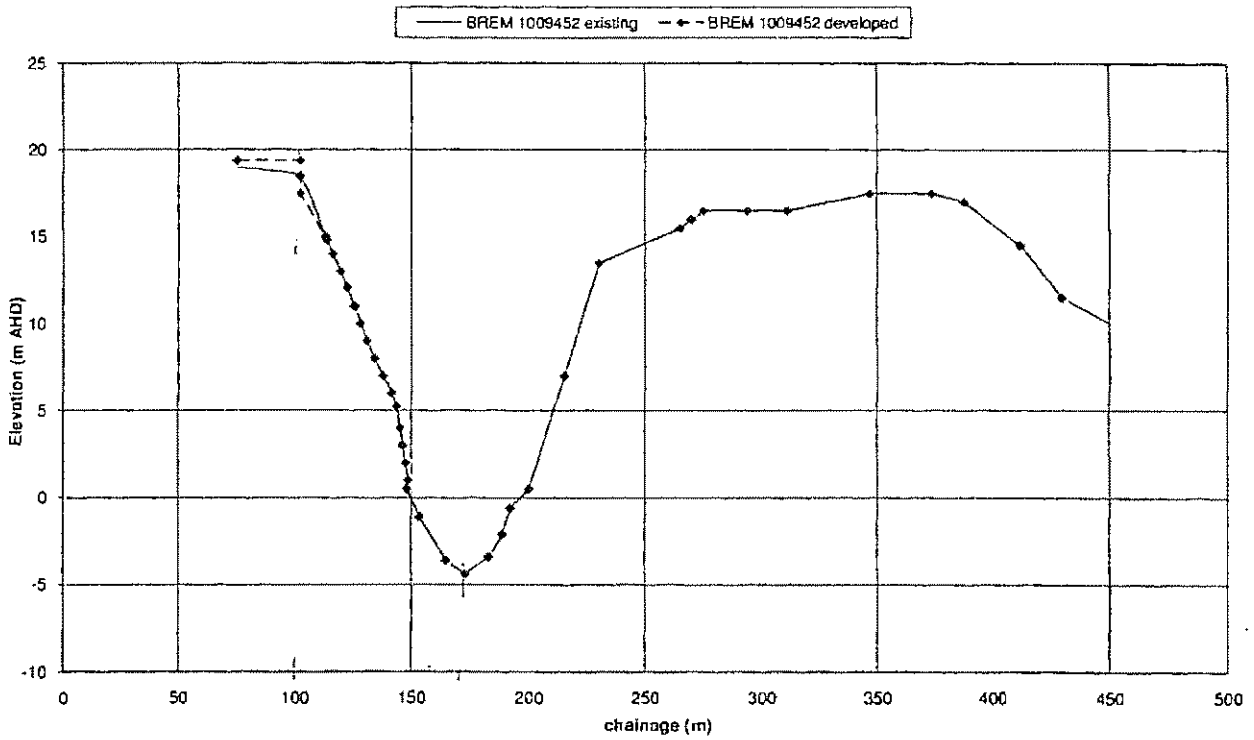
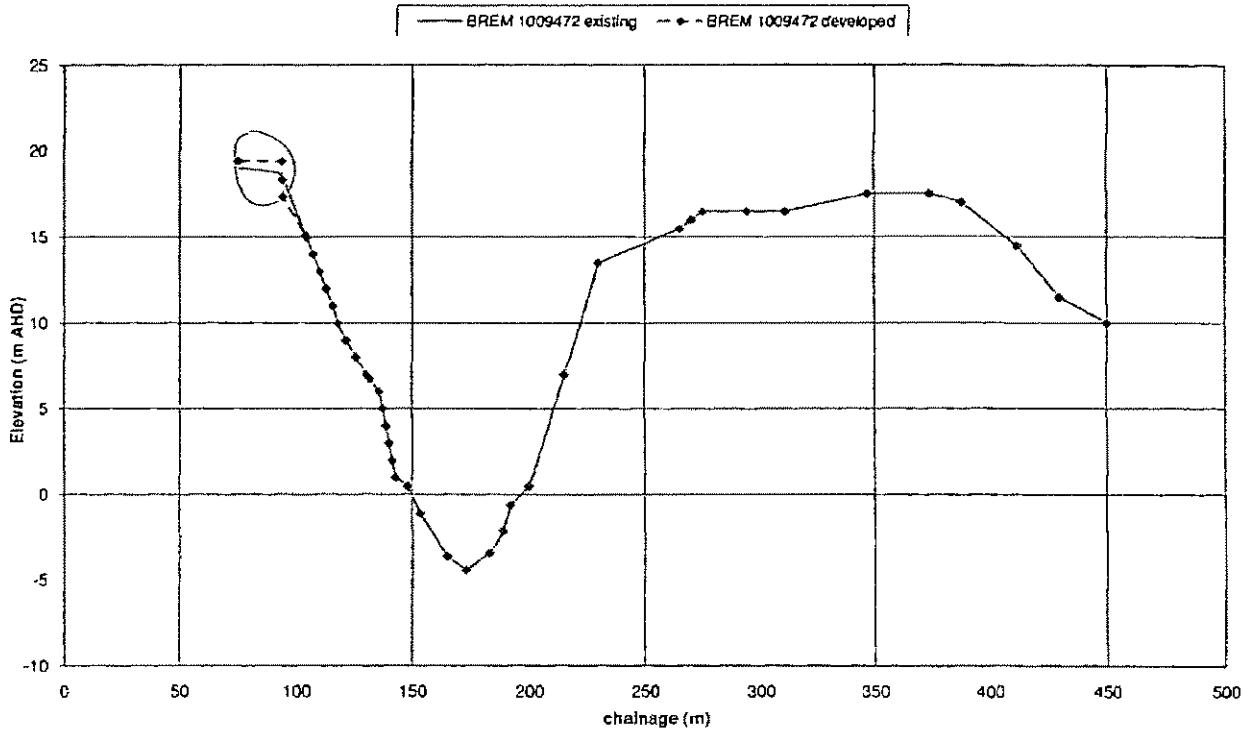
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 30/31, Valley Way, North Sydney, NSW 1585

APPENDIX A

MIKE 11 Cross-sections







ANNEXURE C

Proposed Site Plan & Recreational Area Calculation Plan

BUILDING DESIGN

7
COMMERCIAL & INDUSTRIAL DEVELOPMENT

TOWN PLANNING

COLLINS STREET

+ped paths

RECREATIONAL AREA PROVIDED

Communal	2451m ²
Private	1813m ²
Provided	4264m²
Required	3510m ²

Legend

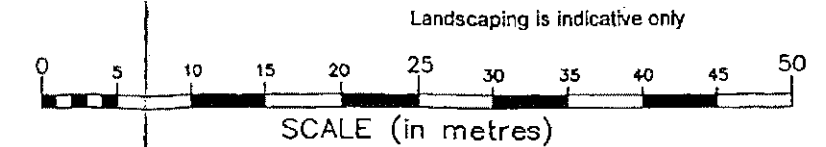
- Loading
- Private Recreation Area
- Private Recreation Area
- Private Recreation Area
- Communal Recreation Area
- Communal Recreation Area
- Contrasting Surface to Roadway



Drying areas and Rainwater Tank positions and sizes are indicative only

Driveway and crossover to be in accordance with relevant Australian Standards and Ipswich City Council Guidelines

Site Plan & Recreation Area Calculations



Date	Issue	Particulars	Drawn
AMENDMENTS			

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2 HAIG STREET, BRASSALL

CLIENT: FARLEY SUPERANNUATION FUND

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PLOT SCALE	1:500	SCALE	1:500
DRAWING NUMBER	07673.SK.10		ISSUE
			A

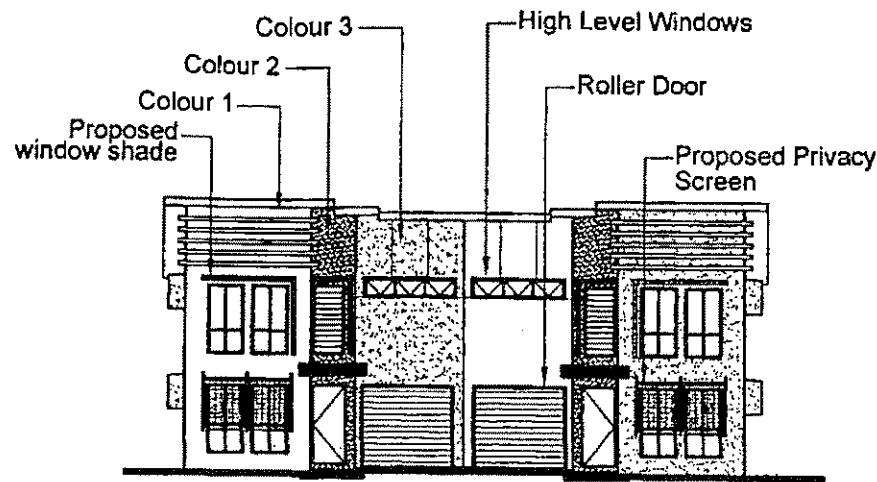
ANNEXURE D

Private Recreation Area Table

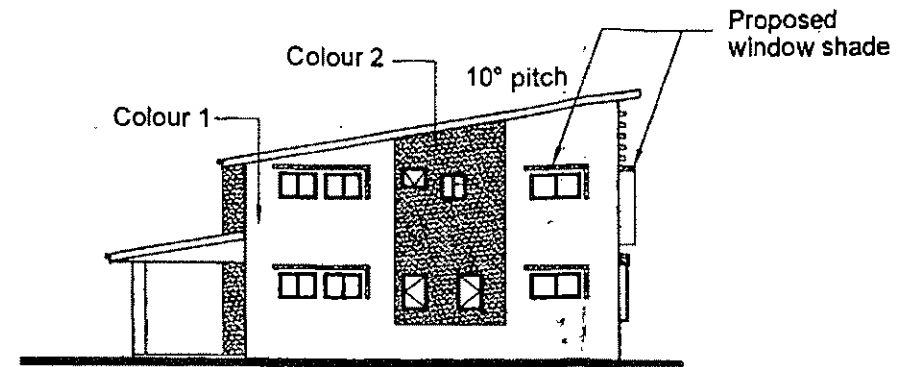
Private Recreation Areas - Individual Units

Unit Number	Unit Type	No of Bedrooms	M2 required	M2 provided min 3 x 3 dims
1	G	2	60	36.3
2	B	3	75	39.3
3	B	3	75	38.8
4	B	3	75	37.0
5	B	3	75	36.4
6	F	3	75	35.8
7	F	3	75	42.1
8	B	3	75	33.3
9	B	3	75	36.2
10	C	2	60	35.9
11	C	2	60	43.3
12	B	3	75	42.6
13	B	3	75	49.1
14	B	3	75	51.7
15	B	3	75	61.1
16	C	2	60	34.5
17	C	2	60	36.9
18	C	2	60	36.7
19	B	3	75	61.4
20	B	3	75	40.7
21	B	3	75	30.0
22	B	3	75	24.6
23	B	3	75	25.4
24	B	3	75	33.7
25	B	3	75	41.2
26	B	3	75	39.3
27	B	3	75	38.6
28	B	3	75	35.3
29	B	3	75	38.7
30	B	3	75	32.8
31	B	3	75	31.5
32	B	3	75	34.3
33	B	3	75	34.3
34	B	3	75	36.7
35	B	3	75	35.9
36	B	3	75	39.8
37	B	3	75	39.1
38	B	3	75	41.3
39	B	3	75	35.4
40	B	3	75	33.7
41	B	3	75	32.7
42	B	3	75	35.5
43	B	3	75	33.8
44	B	3	75	31.0
45	B	3	75	35.7
46	B	3	75	46.1
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48	B	3	75	33.8

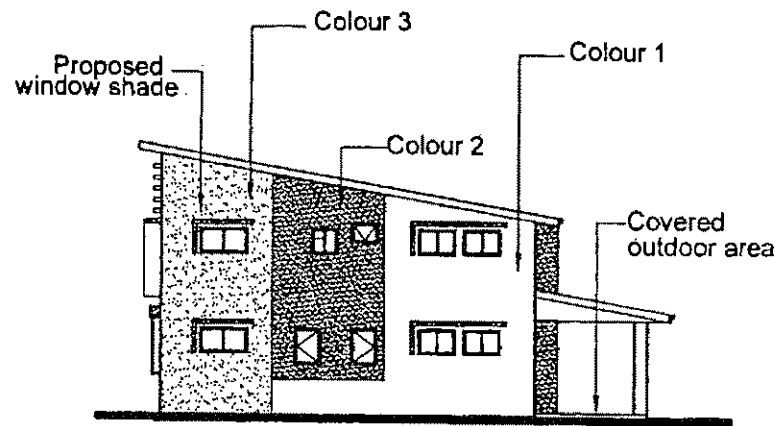
ANNEXURE E
Elevations



FRONT ELEVATION

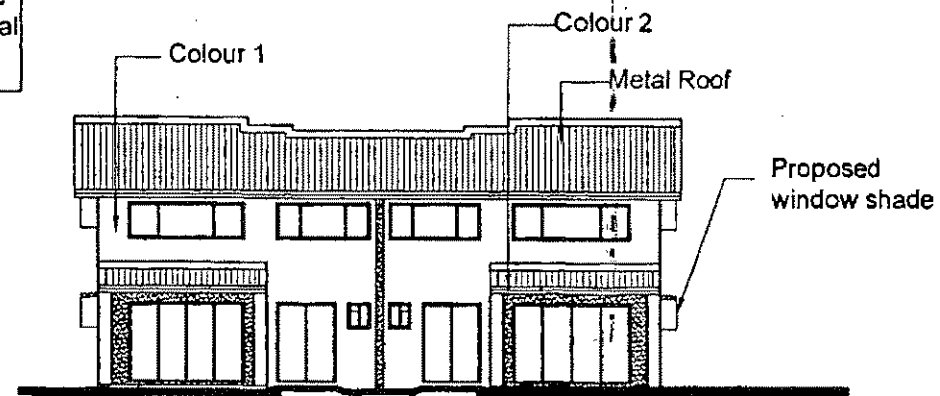


LHS ELEVATION



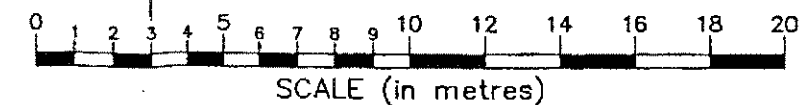
RHS ELEVATION

Elevations are typical elevations for unit types. LHS and RHS elevations are typical for external faces of Type B units. Mirror reverse and additional unit configurations apply



REAR ELEVATION

TYPICAL UNIT ELEVATIONS - UNIT TYPE B



Date Issue Particulars
AMENDMENTS

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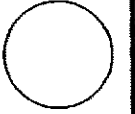
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DATE 06.07.2009

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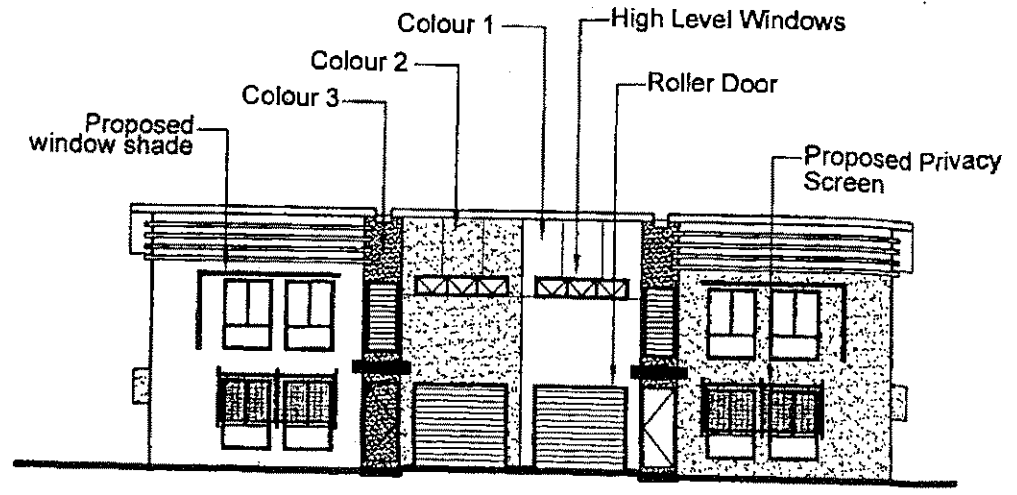
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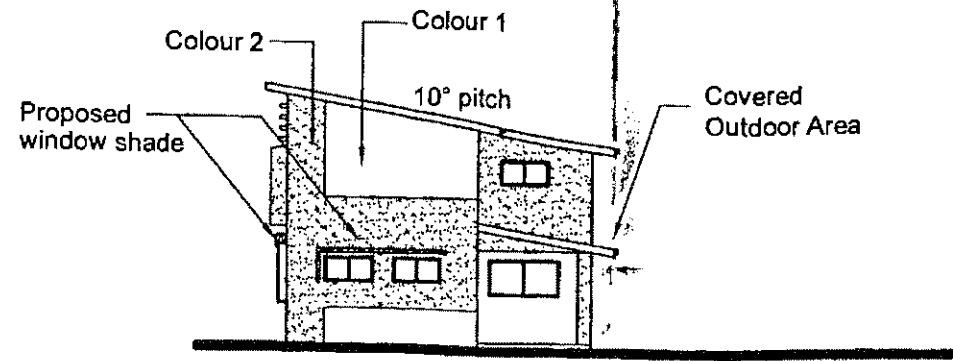
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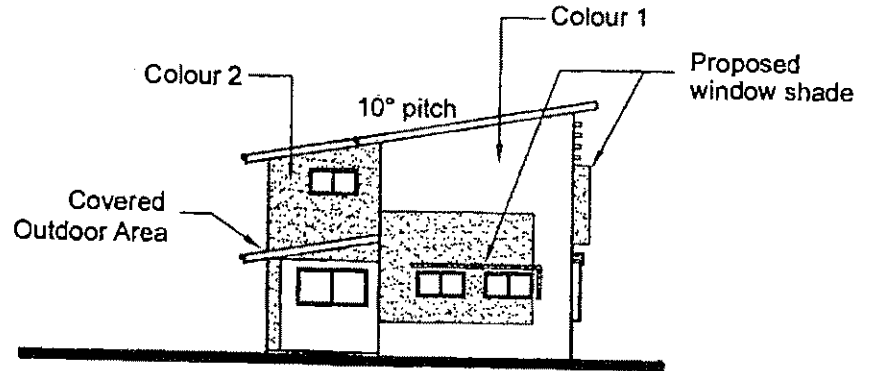


FRONT ELEVATION

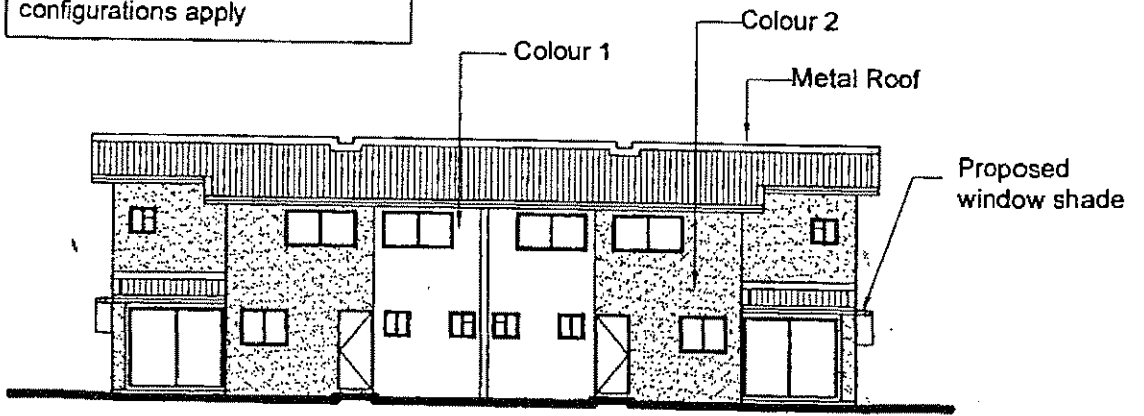


RHS ELEVATION

Elevations are typical elevations for unit types. LHS and RHS elevations are typical for external faces of Type C units. Mirror reverse and additional unit configurations apply

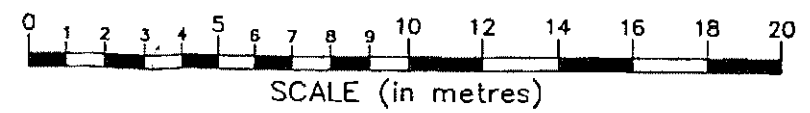


LHS ELEVATION



REAR ELEVATION

TYPICAL UNIT ELEVATIONS - UNIT TYPE C



Date Issue Particulars
AMENDMENTS

Drawn

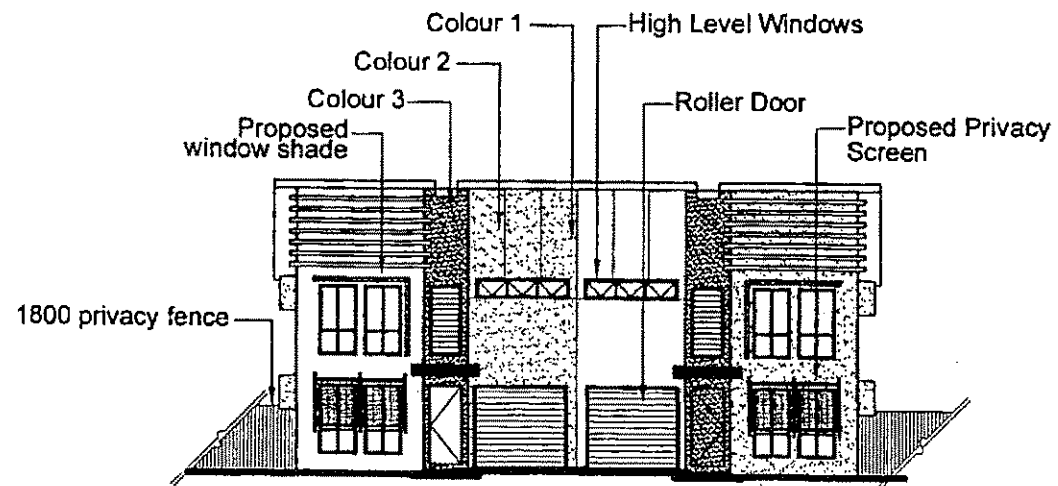
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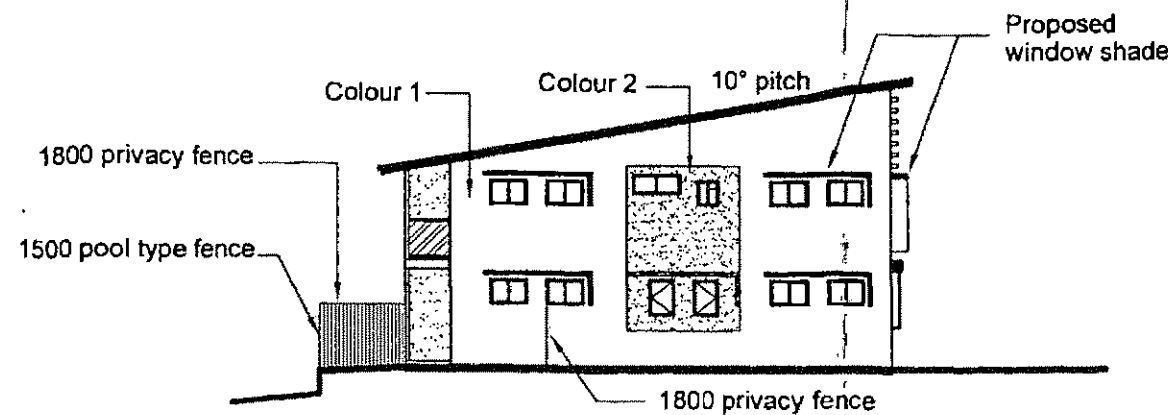
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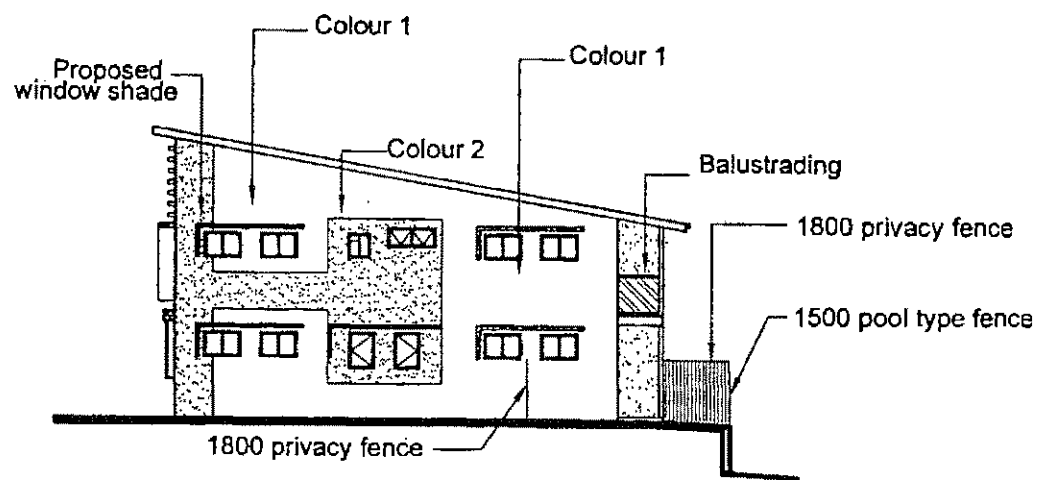
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ISSUE A		



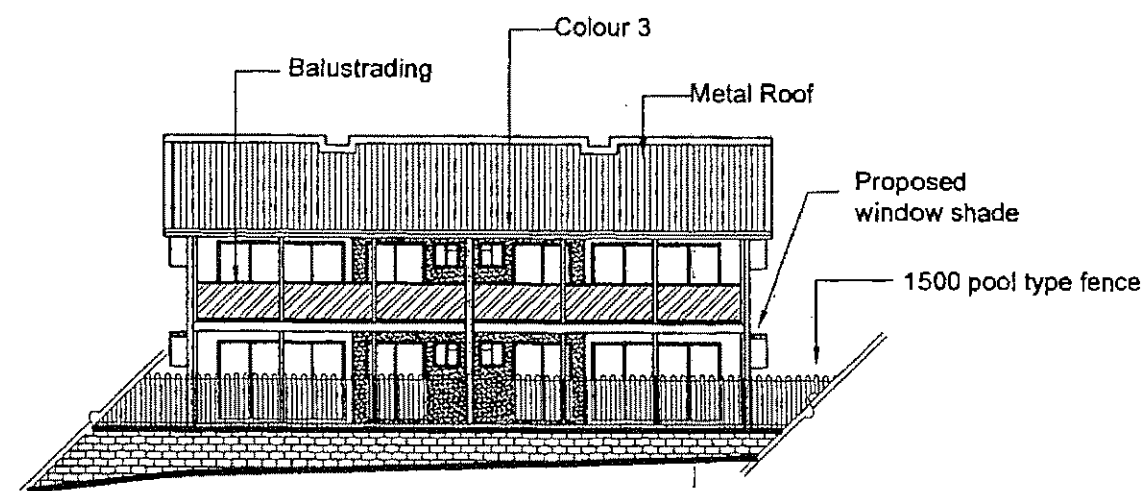
FRONT ELEVATION



LHS ELEVATION

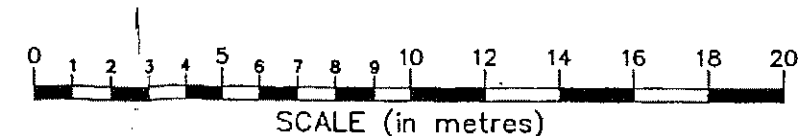


RHS ELEVATION



REAR ELEVATION

UNIT ELEVATIONS - UNIT TYPE F



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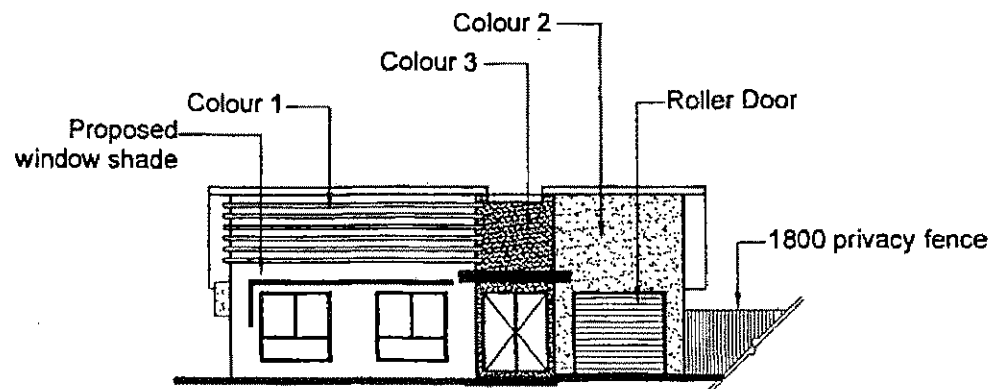
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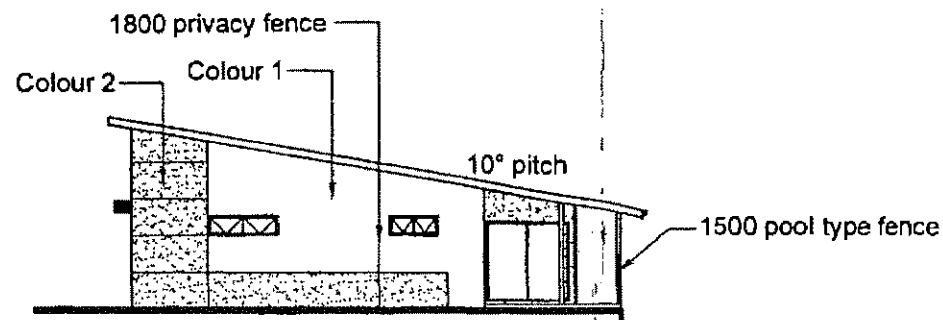
PROJECT **PROPOSED TOWNHOUSE DEVELOPMENT - 2 HAIG STREET, BRASSALL**

CLIENT **FARLEY SUPERANNUATION FUND**

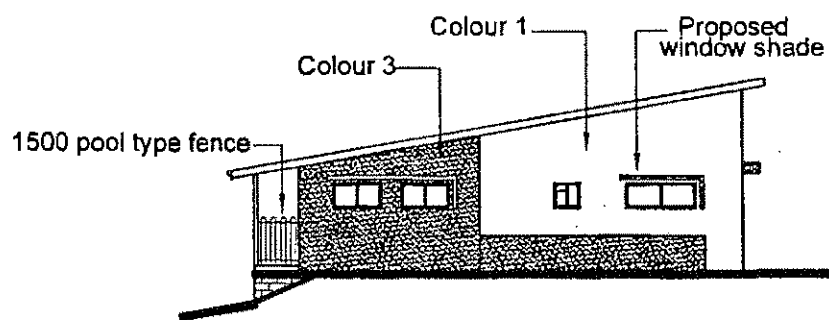
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DRAWING NUMBER	07673.SK.08a		ISSUE
			A



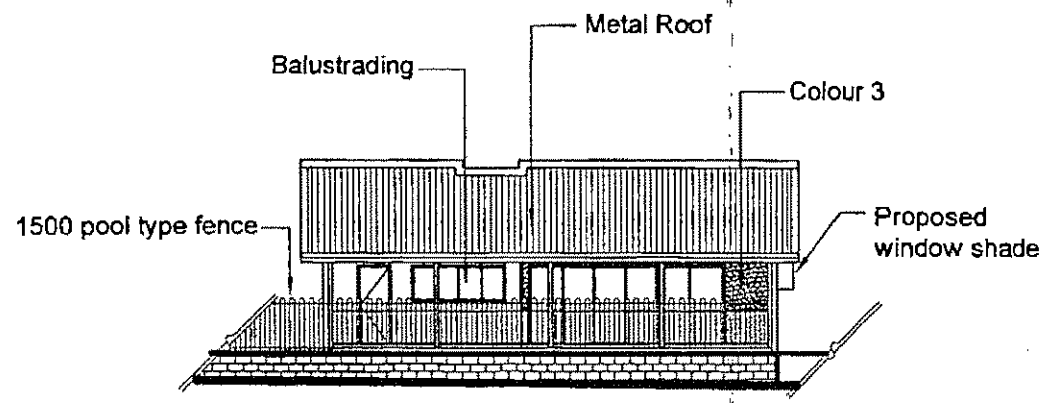
FRONT ELEVATION



LHS ELEVATION

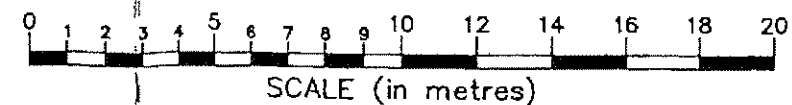


RHS ELEVATION



REAR ELEVATION

UNIT ELEVATIONS - UNIT TYPE G



Date Issue Particulars
AMENDMENTS

Drawn

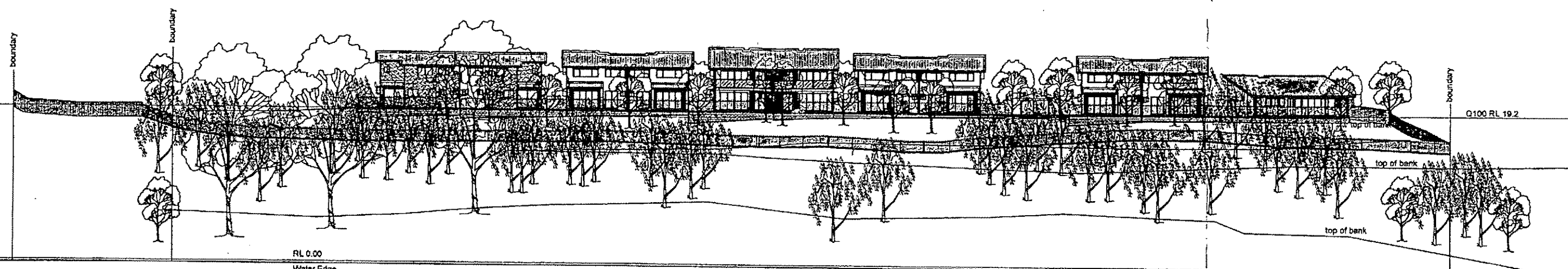
WRITTEN DIMENSIONS TAKE PRECEDENCE TO SCALED DIMENSIONS. BUILDER MUST CLARIFY ANY DISCREPANCIES PRIOR TO CONSTRUCTION. ALTERATION OF THIS DESIGN IS TO BE MADE BY WRITTEN INSTRUCTION ONLY AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER OR AN AUTHORISED REPRESENTATIVE OF DAVID BRETT & ASSOCIATES PTY. LTD.

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DEVELOPMENT PLANNERS

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PRINCIPAL : D.J. BRETT, A.D.B.E.T.
LICENCED UNDER THE QBSA ACT 1991
QBSA LICENCE NUMBER - 067680
ADDRESS : P.O. BOX 2374 NORTH IPSWICH QLD 4305
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Email : dbo@dbogroup.net.au

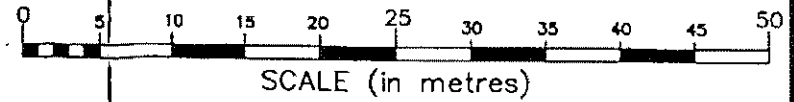
PROJECT **PROPOSED TOWNHOUSE DEVELOPMENT
2 HAIG STREET, BRASSALL**
CLIENT **FARLEY SUPERANNUATION FUND**

SIGNED	DATE 06.07.2009	ORIENTATION
DRAWN TAA	SCALE 1:200	
PLOT SCALE 1:200 at A3	DRAWING NUMBER 07673.SK.09a	
ISSUE A		



Proposed Riverscape

Landscaping is indicative only



Date	Issue	Particulars	Drawn
AMENDMENTS			

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DEVELOPMENT PLANNERS

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PROJECT **PROPOSED TOWNHOUSE DEVELOPMENT
2 HAIG STREET, BRASSALL**

CLIENT **FARLEY SUPERANNUATION FUND**

SIGNED	DATE	31.10.2007	ORIENTATION
	DRAWN	TAA	
PLOT SCALE	1:500 @ A3	SCALE	1:500
DRAWING NUMBER			ISSUE
07673.SK.11			A

MORRISON GEOTECHNIC PTY LTD

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**MORRISON
GEOTECHNIC**
ABN 51 009 878 899
RPEUQ 2241

■ BRISBANE Unit 1 / 35 Limestone Street PO Box 3063 Darra Qld 4076 P: 07 3279 0900 F: 07 3279 0955	■ GOLD COAST Unit 5 / 36 Lawrence Drive PO Box 2011 Nerang Qld 4211 P: 07 5596 1599 F: 07 5527 2027	■ CABOOLTURE Unit 3 / 42 Aerodrome Road Caboolture Qld 4510 P: 07 5499 0755 F: 07 5428 2498	■ SUNSHINE COAST Unit 4 / 81 Wisers Road Maroochydore Qld 4558 P: 07 5443 9522 F: 07 5479 1633
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Darra Office
Job No: 207E/128-2
Ref No: 14522B/rh
Author: [REDACTED]

23rd October, 2009

[REDACTED] Superannuation Family Fund
C/- David Brett & Associates Pty Ltd
25 Canning Street
North Ipswich Qld 4305

ATTENTION: [REDACTED]

Dear Sir

**RE: RIVER BANK STABILITY ASSESSMENT BASED ON GEOTECHNICAL
INVESTIGATION – 2 HAIG STREET, BRASSALL**

1.0 INTRODUCTION

This report presents the results of a site specific geotechnical investigation and slope stability analyses carried out for the Bremer River bank at the above address. It has been produced at the request of David Brett and Associates (the "Client") and as requested by the Client, addresses the selected following points of the information request produced by the Ipswich City Council, dated 19th May, 2009:-

- Points 1a, 1d, 2a and 2b.

This report supercedes the earlier report produced by Morrison Geotechnic and dated 19th March, 2009 (Job No 207E/128, Ref No 14023B-Rev/sw) and presents the results of the fieldwork, and, in accordance with the Client's requirements, includes the following information and recommendations:-

- Description of subsurface conditions in accordance with AS1726;
- River bank slope stability analysis with and without flood storage earthworks along the crest of the bank; and
- Response to Ipswich City Council Information Request.

As a result of meeting with Ipswich City Council on the 9th October, 2009, this report also includes a diagram attached as Appendix F showing the location of the nine (9) Bio-Retention Ponds which are to be constructed as part of the development



2.0 METHODOLOGY

The site specific geotechnical investigation comprised the drilling of four (4) boreholes to depths ranging between 4.95m and 7.95m at accessible locations along the river bank and a walkover survey of the river bank.

A disturbed sample of the natural clay was retrieved in borehole BH3 between 2.50m and 3.00m and tested for Particle Size Distribution and Atterberg Limits parameters. The Particle Size Distribution test and the Atterberg Limits tests are together known as the 'Quality of Materials' test. Considering the uniformity of the subsurface conditions and material types encountered in the boreholes, one Quality of Materials test was considered adequate for strength characteristics of the natural clay soils.

All borehole drilling was conducted using a trailer mounted ID3300 drill rig.

Standard Penetration Tests (SPTs) were conducted at 1.5m vertical intervals in each borehole.

A pocket penetrometer was used to assess the undrained strength of disturbed clay samples.

The boreholes were described in accordance with AS1726-1993.

The site plan showing the approximate borehole positions, borehole record sheets and laboratory test results are presented in Appendices A, B and C, respectively. The results of the GSLOPE slope stability analyses are presented in Appendix D.

3.0 SITE DESCRIPTION

The batter comprises an upper, partially filled batter and a lower natural batter which extends to the Bremer River. Fill was encountered in the upper batter to depths ranging between 0.5m and 2m. The upper fill batter was densely covered with tall grasses at the time of the investigation and the batter angle was difficult to observe, but estimated at angles up to approximately 20°. The lower natural batter was observed to comprise slopes of up to 15°. Both the upper and lower batters are densely covered with grasses and the lower natural batter also supports a moderate covering of mature tree growth.

4.0 SUBSURFACE CONDITIONS

The geology, subsurface and groundwater conditions are described below in Sections 4.1, 4.2 and 4.3, respectively.

4.1. Geology

The regional geology of the area comprises alluvial deposits comprising clay, silt, sand and gravel, and were thought to have been deposited in the Quaternary Geological Time Period (Ipswich 1st ed, 1981 - 1:100,000 Geological Series).

Based on the results of the drilling programme, the subsurface materials within the lower batter generally comprise silt/clay underlain by silt/clay and extremely weathered (XW) basalt. The subsurface materials within the upper batter generally comprise fill underlain by residual clay and extremely weathered (XW) basalt rock.

4.2. Subsurface Conditions

The subsurface materials encountered in the lower fill batter, represented by borehole BH1 are summarised below:-

- Slopewash Soil: Comprising moist, stiff sandy clay of high plasticity, extending to 3.5m, underlain by moist, medium dense clayey sandy gravel, extending to 4.3m, underlain by;
- Weathered Rock: Comprising extremely weathered (XW) basalt of extremely low strength. The XW basalt increases to very low strength at 6.3m, and extends to a depth in excess of 7.65m.

The subsurface materials encountered in the upper fill batter, represented by boreholes BH2, BH3 and BH4 are summarised below:-

- Fill: Comprising moist, stiff, very stiff and hard clay of high plasticity, and ripped basalt and siltstone, extending to depths ranging between 0.5m and 2.2m, underlain by;
- Residual Soil: Comprising moist, very stiff and hard sandy clay of high plasticity, extending to depths ranging between 2.5m and 4.6m, underlain by;
- Weathered Rock: Comprising extremely weathered (XW) basalt of extremely low strength, extending to depths in excess of 4.95m and 7.95m.

4.3. Groundwater

No standing groundwater was observed within the depth range of the boreholes immediately after borehole drilling.

The presence and depth to groundwater is expected to vary with rainfall, the tide, integrity of buried services and the proximity of vegetation.

5.0 LABORATORY TEST RESULTS

The results of Particle Size Distribution/Atterberg Limits ('Quality of Materials'), are presented in Appendix C and summarised below in Table 1.

Table 1 – Quality of Materials

Bore No.	Depth (m)	Soil Fraction (%)			Liquid Limit (%)	Plasticity Index	Material
		Clay/Silt	Sand	Gravel			
BH3	2.50 – 3.00	72	27	1	51	31	Natural Sandy Clay (CH)

6.0 RIVER BANK SLOPE STABILITY ANALYSIS

6.1. Existing Bank Profile

The analyses have been carried out on the river bank using the supplied survey, which is assessed to typically represent the existing bank cross-sections and considering the following development characteristics:

- New houses providing a 10kPa surface surcharge and located directly behind the crest of the bank at about RL 19.4m.
- Normal Operating Conditions for the Bremer River with the water level at about RL 1.4m.
- Rapid Drawdown Conditions occurring shortly after a flood event when the river water level rises to approximately RL 19m and then rapidly recedes to the normal condition.

The geotechnical strength parameters assigned to the geotechnical model are summarised in Table 2 below. Please note that "natural soils" incorporate both slopewash and residual soils found during the geotechnical investigation.

Table 2 - Geotechnical Strength Parameters

Material	Density (kN/m ³)	Total Stress Parameters		Effective Stress Parameters	
		c _u (kPa)	Ø _u (degrees)	c' (kPa)	Ø' (degrees)
Existing Fill	18	10	20	1	27
Natural Soils	19	15	25	5	28
XW Basalt	21	15	35	5	35

Effective stress parameters for drained conditions were used for normal river and groundwater level conditions, while total stress parameters were used for the rapid drawdown cases where it is assumed that the river level drops rapidly after the passing of the Q100 flood in the Bremer River, compared to drainage of the fill, natural soils and XW basalt. All analyses have been carried out using Bishops Simplified Method of Slices in conjunction with the commercial software - G SLOPE.

The material strength parameters used in the analyses are based on our experience with similar materials in conjunction with the site specific field and laboratory testing.

The results are presented in Appendix D1 and summarised in Table 3 below.

Table 3 - Stability Analyses Results - No Earthworks

Figure Number	Water Level	Minimum Factor of Stability
1	Normal Operating Conditions	1.9
2		1.9
3	Rapid Drawdown	1.6
4		1.5

The factors of safety are assessed to be satisfactory for the normal and extreme river conditions.

6.2. Bank Profile with Minor Crest Cutting

Flood storage considerations may require the upper bank section to be regraded involving minor shallow cutting to effectively remove the wedge of material extending between the property boundary and the building line of the most southerly units.

These earthworks will result in a maximum cutting depth of 1.0m along the crest of the bank, reducing to zero at the property boundary some 7.0m to 10.0m downslope. The batter slope of the reprofiled section will be flatter than 4(H) : 1(V). The 1.0m crest cutting will be retained by a suitable retaining system. The layout plans of the development and the typical cross-sections through the bank are presented in Appendix E.

The stability analyses have been carried out on a section of the bank incorporating the flood storage excavation, using the same strength parameters for the soils as described in Table 2 in Section 6.1, and the normal and rapid drawdown groundwater conditions. The results are presented in Appendix D2 and summarized in Table 4.

Table 4 - Stability Analyses Results – Flood Storage Earthworks

Figure Number	Water Level	Minimum Factor of Stability	Failure Surface
1A	Normal Operating Conditions	1.9	Deep Seated
2A		1.9	Deep Seated
3A	Rapid Drawdown	1.6	Deep Seated
4A		1.5	Deep Seated
5A	Normal Operating Conditions	1.7	Shallow, Local
6A		2.5	Shallow, Local
7A	Rapid Drawdown	2.2	Shallow, Local
8A		2.1	Shallow, Local

These results are satisfactory.

7.0 BIO-RETENTION PONDS

Cardno has prepared a Stormwater Management Plan (SWMP) for the development, which includes 9 Bio-Retention Ponds located on the flat land behind the crest of the river bank. The effects of these small ponds on bank stability will be insignificant if the pond bases are lined with clay to isolate the pond storages from the groundwater regime beneath the bank, thereby preventing groundwater recharge from the ponds.

The locations of the 9 Bio-Retention Ponds are displayed in a diagram in Appendix F.

8.0 RESPONSE TO IPSWICH CITY COUNCIL INFORMATION REQUEST

Our response to the Ipswich City Council information request dated 19th May, 2009 and which addresses Points 1a, 1d, 2a and 2b as requested by the Client, is presented in Table 5.

Table 5 – Response to Ipswich City Council Information Request

Information Request Point No.	Comments
1a	Borehole drilling has been performed to supplement and confirm information based on judgement and experience, with information based on the actual subsurface materials observed in the depth range of the boreholes. Importantly, the XW basalt is assumed to be a bedrock layer, rather than a thin "cap" overlying other soils and/or weathered rock sequences. Rapid drawdown cases have factor of safety values greater than 1.5 immediately after flooding conditions. The Section 2 survey provided by David Brett and Associates, which details the existing bank slope geometry, has been used to model the slope stability.

Information Request Point No.	Comments
1d	A 10kPa surcharge has been allowed for the development loading, acting immediately behind the crest of the upper batter.
2a	Site observations indicate that the existing upper bank slopes but excluding the lower bank immediately adjacent to the Bremer River, are no steeper than 2.5H:1V or 20°.
2b	The Q100 flood level (approximately RL19.0m) has been modelled in the Rapid Drawdown case.

9.0 LIMITS OF INVESTIGATION

Recommendations given in this report are based on information supplied regarding the proposed development in conjunction with the findings of the investigation. Any change in development location or area or reshaping of the existing river bank may require additional testing as part of detailed design. It is recommended that this office be involved with the detailed design and documentation of earthworks and building foundations to ensure that the advice presented in this report is taken into account.

It is additionally recommended that Morrison Geotechnic test and supervise all earthworks associated with this development.

Every reasonable effort has been made to locate test sites so that bores are representative of the soil conditions within the area to be investigated. The Client should be made aware however, that this assessment has been based on site data obtained using small diameter boreholes. In some cases, soil conditions can change over short distances, therefore even careful exploration programmes may not locate all the variations. If Variations from the conditions shown on the boreholes are encountered during construction or at any time, this office should be advised immediately. Compliance with the recommendations in paragraph 2 above will facilitate this.

Unless otherwise stated in commissioning documents, any dimensions or slope directions and magnitudes should not be used for any calculations by others. Any sketch supplied should be considered only as approximate pictorial evidence of site work.

Yours faithfully

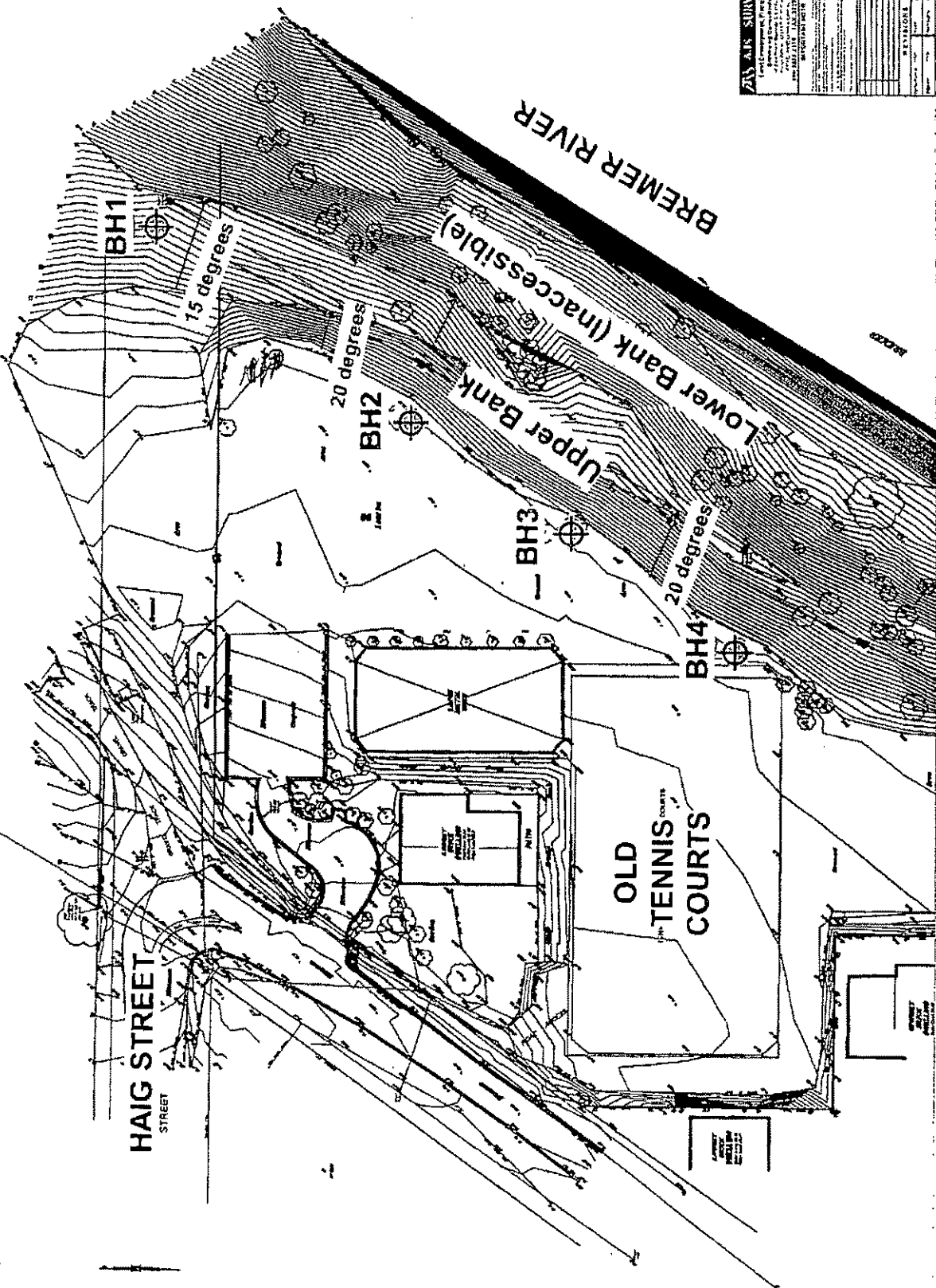


for and on behalf of
MORRISON GEOTECHNIC PTY LIMITED

Encl Appendix A – Site Plan
Appendix B – Borehole Record Sheets
Appendix C – Laboratory Test Results
Appendix D1 – Slope Stability Results (Existing Bank Profile – No Earthworks)
Appendix D2 - Slope Stability Results (After Flood Storage Earthworks)
Appendix E – Flood Storage Earthworks
Appendix F – Location of Bio-Retention Ponds

APPENDIX 'A'

SITE PLAN



ZAS SURVEYS

Land Development Services
 110-112, 114-116, 118-120, 122-124, 126-128, 130-132, 134-136, 138-140, 142-144, 146-148, 150-152, 154-156, 158-160, 162-164, 166-168, 170-172, 174-176, 178-180, 182-184, 186-188, 190-192, 194-196, 198-200, 202-204, 206-208, 210-212, 214-216, 218-220, 222-224, 226-228, 230-232, 234-236, 238-240, 242-244, 246-248, 250-252, 254-256, 258-260, 262-264, 266-268, 270-272, 274-276, 278-280, 282-284, 286-288, 290-292, 294-296, 298-300, 302-304, 306-308, 310-312, 314-316, 318-320, 322-324, 326-328, 330-332, 334-336, 338-340, 342-344, 346-348, 350-352, 354-356, 358-360, 362-364, 366-368, 370-372, 374-376, 378-380, 382-384, 386-388, 390-392, 394-396, 398-400, 402-404, 406-408, 410-412, 414-416, 418-420, 422-424, 426-428, 430-432, 434-436, 438-440, 442-444, 446-448, 450-452, 454-456, 458-460, 462-464, 466-468, 470-472, 474-476, 478-480, 482-484, 486-488, 490-492, 494-496, 498-500, 502-504, 506-508, 510-512, 514-516, 518-520, 522-524, 526-528, 530-532, 534-536, 538-540, 542-544, 546-548, 550-552, 554-556, 558-560, 562-564, 566-568, 570-572, 574-576, 578-580, 582-584, 586-588, 590-592, 594-596, 598-600, 602-604, 606-608, 610-612, 614-616, 618-620, 622-624, 626-628, 630-632, 634-636, 638-640, 642-644, 646-648, 650-652, 654-656, 658-660, 662-664, 666-668, 670-672, 674-676, 678-680, 682-684, 686-688, 690-692, 694-696, 698-700, 702-704, 706-708, 710-712, 714-716, 718-720, 722-724, 726-728, 730-732, 734-736, 738-740, 742-744, 746-748, 750-752, 754-756, 758-760, 762-764, 766-768, 770-772, 774-776, 778-780, 782-784, 786-788, 790-792, 794-796, 798-800, 802-804, 806-808, 810-812, 814-816, 818-820, 822-824, 826-828, 830-832, 834-836, 838-840, 842-844, 846-848, 850-852, 854-856, 858-860, 862-864, 866-868, 870-872, 874-876, 878-880, 882-884, 886-888, 890-892, 894-896, 898-900, 902-904, 906-908, 910-912, 914-916, 918-920, 922-924, 926-928, 930-932, 934-936, 938-940, 942-944, 946-948, 950-952, 954-956, 958-960, 962-964, 966-968, 970-972, 974-976, 978-980, 982-984, 986-988, 990-992, 994-996, 998-1000

<p>MORRISON GEOTECHNIC PTY LTD ABN: 51 631 879 889 Unit 1/25 Lindsay Street, Durrig QLD 4076 P.O. Box 3278 0855 Email: mishawala@morrisongeo.com.au Fax: 3278 0855</p> <p>Engineers: D. Riley & N. Morrison Geologists: R. Hordley Laboratory: K. Morrison</p>		<p>LEGEND</p> <p>◆ Bore Hole Test Locations</p>	<p>Map Description : BORE HOLE TEST LOCATIONS - (Approximate Only)</p> <p>Client : DAVID FARLEY FAMILY SUPERANNUATION FUND C/- DAVID BRETT AND ASSOC</p> <p>Project : RIVER BANK STABILITY ASSESSMENT</p> <p>Job No : 207E/120-2 Drawing No : 0877207E/128-2 Scale : Not to Scale</p>
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APPENDIX 'B'

BOREHOLE RECORD SHEETS



Morrison Geotechnic Pty Ltd

A.B.N. 051 009 878 899
 PO Box 3063, Darra, QLD 4076
 Phone: (07) 3279 0900 Fax: (07) 3279 0955

Engineering Log - Borehole

Borehole No.: BH1

Page: 1 of 1

Job Number: 207E/128

Easting:
 Northing:
 RL:
 Total Depth: 7.65

Drilling Rig: J03300
 Driller: Alltech
 Logged By: R. Howchin
 Date: 15/06/2009

Client: David Farley Family Superannuation Fund c/- David Bren & Assoc

Project: Crib Wall Retaining Structure

Location: 2 Haig St, Brassall

Drilling Information				Material Description					Test Samples					
Drift Method	Water	RL	Hide Depth (m)	Soil Origin	Graphic Log	Classification Code	Description	Weathering	Moisture	Consistency - Density - Strength	DC Test Results	Test Depth	Tests	Sample/Result
			1.0	Shippewash		CH	Sandy CLAY: Stiff, high plasticity, brown, fine to medium sand, moist		M	SI		0.1 -	PP	150kPa
			2.0									1.5	SPT	3,2,4 N=6
			3.0									3	SPT	2,2,4 N=6
			3.5			GC	Clayey Sandy GRAVEL: Medium dense, brown, fine gravel, fine to medium sand, high plasticity fines, moist		M	MD				
			4.0											
			4.3	Rock		BAS	BASALT: Decomposed rock, extremely low strength, extremely weathered, grey mottled orange brown	XW		ELS		4.5	SPT	13,12,14 N=26
			5.0											
			6.0											
			6.3			BAS	BASALT: As above, but not decomposed, very low strength	XW		VLS		6	SPT	10,16,20 N=36
			6.5			BAS	BASALT: As above, but some low strength layers	XW		VLS				
			7.0											
			7.6			SLT	SILTSTONE: Very low strength, extremely weathered, grey	XW		VLS		7.5	SPT	30x150mm N=60
			8.0				7.65m: BOREHOLE TERMINATED							

Comments:

Authorised by:

Date:

Water	Weathering	Consistency	Density	Rock Strength	Tests & Results
Water level on date shown	RS Residual soil	VS Very soft	VL Very loose	ELS Extremely low	USD Undisturbed 50mm diam tube.
Water inflow	XW Extremely weathered	S Soft	L Loose	LS Low	D Disturbed sample.
Water outflow	DW Distinctly weathered	F Firm	MD Medium dense	VLS Very low	SPT Standard Penetration Test, N = number of blows to drive 50mm sampler 300mm with a 63.5kg hammer falling 762mm.
	SW Slightly weathered	St Stiff	D Dense	LS Low	PP Hand penetrometer estimate of unconfined compressive strength, kPa.
	FR Fresh	H Hard	VD Very dense	MS Medium	S Vane shear value kPa
		VS Very stiff		HS High	DC Dynamic Cone test, 9.09kg hammer, fall 608mm, driving 26mm, 30 deg taper cone fitted to rods of smaller section.
		H Hard		VHS Very high	From AS1289-1993 Methods of Testing Soils for Engineering Purposes
		Moisture		EHS Extremely high	
		D Dry M Moist W Wet			



Morrison Geotechnic Pty Ltd
 A.B.N. 051 009 878 899
 PO Box 3063, Darra, QLD 4076
 Phone: (07) 3279 0900 Fax: (07) 3279 0955

Engineering Log - Borehole

Borehole No.: BH2

Page: 1 of 1

Job Number: 207E/128

Client: David Farley Family Superannuation Fund c/- David Brett & Assoc

Project: Crb Wall Retaining Structure

Location: 2 Haig St, Brassall

Easting: Drilling Rig: ID3300
 Northing: Driller: Alltech
 RL: Logged By: R. Howchin
 Total Depth: 7.95 Date: 15/08/2009

Drilling information				Material Description					Test Samples					
Drill Method	Water	RL	Hole Depth (m)	Soil Origin	Graphic Log	Classification Code	Description	Weathering	Moisture	Consistency - Density - Strength	DC Test Results	Test Depth	Tests	Sample/Result
			0.1	Fill		FL	Sandy Gravelly CLAY (CH): Silt, high plasticity, brown mottled orange brown, fine to medium gravel, fine to medium sand, (moist)		M	S		0.1 -	PP	150kPa
			1.6	Residual		CH	Sandy CLAY: Hard, high plasticity, brown mottled orange brown, fine to medium sand, (moist)		M	H		1.5	SPT	4.5,6 N=11; PP >600kPa at 1.6m
		2.0												
			2.5	Rock		BAS	BASALT: Decomposed rock, extremely low strength, extremely weathered, grey brown mottled orange brown	XW		ELS		3	SPT	6.8,10 N=18
		3.0												
		4.0												
			5.0	Rock		BAS	BASALT: As above, but grey brown	XW		ELS		4.5	SPT	7.8,11 N=19
		5.8												
		6.0												
			7.0	Rock		BAS	BASALT: As above, but grey brown	XW		ELS		6	SPT	4.9,11 N=20
		7.5												
			7.95	Rock								7.5	SPT	6.8,11 N=18

Comments: 7.95m: BOREHOLE TERMINATED						Authorised by: Date:	
Water Water level on date shown Water inflow Water outflow	Weathering RS Residual soil XW Extremely weathered DW Distinctly weathered SW Slightly weathered FR Fresh	Consistency VS Very soft S Soft F Firm St Stiff VSt Very stiff H Hard Moisture D Dry .M Moist_ W Wet_	Density VL Very loose L Loose MD Medium dense D Dense VD Very dense	Rock Strength ELS Extremely low VLS Very low LS Low MS Medium HS High VHS Very high EHS Extremely high	Tests & Results U50 Undisturbed 50mm diam tube. D Disturbed sample. SPT Standard Penetration Test, N = number of blows to drive 50mm sampler 300mm with a 63.5kg hammer falling 762mm. PP Hand penetrometer estimate of unconfined compressive strength, kPa. S Vane shear value kPa DC Dynamic Cone test, 9.09kg hammer, fall 508mm, driving 20mm, 30 deg taper cone fitted to rods of smaller section. From AS1289-1993 Methods of Testing Soils for Engineering Purposes		



Morrison Geotechnic Pty Ltd
 A.B.N. 051 009 678 899
 PO Box 3063, Darra, QLD 4076
 Phone: (07) 3279 0900 Fax: (07) 3279 0955

Engineering Log - Borehole

Borehole No.: BH3

Page: 1 of 1

Job Number: 207E/128

Easting: Drilling Rig: ID3300
 Northing: Driller: Alltech
 RL: Logged By: R. Howchin
 Total Depth: 6.45 Date: 15/06/2009

Client: David Farley Family Superannuation Fund of David Brett & Assoc

Project: Crib Wall Retaining Structure

Location: 2 Haig St, Brassall

Drilling Information				Material Description					Test Samples							
Drill Method	Water	RL	Hole Depth (m)	Soil Origin	Graphic Log	Classification Code	Description	Weathering	Moisture	Consistency - Density - Surangh	DC Test Results	Test Depth	Tests	Sample/Result		
TC bit with 100mm Dia. Auger			1.0	Fill	[Cross-hatch pattern]	FIL	Sandy CLAY (CH): Soft, high plasticity, grey brown mottled orange brown, fine to medium sand, trace of fine gravel, moist		M	SI		0.1 -	PP	140kPa		
			1.3			FIL	Sandy CLAY (CH)		M	VSI		1.3 -	PP	250kPa		
			1.5			FIL	As above, but very stiff		M	H		1.5 -	PP	>600kPa		
			1.8			FIL	Sandy CLAY (CH)		M	H		}	SPT	5.6, 4 N=10		
			2.0			FIL	As above, but hard		M	H						
			2.2				Ripped BASALT and SILTSTONE: Ripped Basalt and Siltstone Bridging Layer					2.2 -	PP	>600kPa		
			2.2		Residual	[Vertical lines]	CH	Sandy CLAY: Hard, high plasticity, grey brown, fine to medium sand moist		M	H		2.5 -	}	D	PSD/Atterberg Sample
			3.0									3 -	SPT		5.6, 7 N=13	
			4.6		Rock	[Triangles]	BAS	BASALT: Decomposed rock, extremely low strength, extremely weathered, grey brown	XV		ELS		4.5 -	}	SPT	7.9, 15 N=24
			5.0													
		6.45					6.45m: BOREHOLE TERMINATED					6 -	}	SPT	11, 16, 23 N=39	
		7.0														
			8.0													

Comments:						Authorised by:	
						Date:	
Water	Weathering	Consistency	Density	Rock Strength	Tests & Results		
▼ Water level on date shown	RS Residual soil	VS Very soft	VL Very loose	ELS Extremely low	U50 Undisturbed 50mm diam tube.		
▶ Water inflow	XW Extremely weathered	S Soft	L Loose	VLS Very low	D Disturbed sample.		
▶ Water outflow	DW Distinctly weathered	F Firm	MD Medium dense	LS Low	SPY Standard Penetration Test, N = number of blows to drive 50mm sampler 300mm with a 65.6kg hammer falling 762mm.		
	SW Slightly weathered	VSt Very stiff	D Dense	MS Medium	PP Hand penetrometer estimate of unconfined compressive strength, kPa.		
	FR Fresh	H Hard	VD Very dense	HS High	S Vane shear value kPa		
		Moisture		VHS Very high	DC Dynamic Cone test, 8.09kg hammer, fall 508mm, driving 20mm, 30 deg taper cone fitted to rods of smaller section.		
		D Dry M Moist W Wet		EHS Extremely high	From AS1289-1993 Methods of Testing Soils for Engineering Purposes		



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 A.B.N. 051 009 878 899
 PO Box 3063, Darra, QLD 4078
 Phone: (07) 3279 0900 Fax: (07) 3279 0955

Engineering Log - Borehole
 Borehole No.: **BH4**
 Page: 1 of 1

Easting:
 Northing:
 RL:
 Total Depth: 4.95

Drilling Rig: ID3300
 Drillar: Alltech
 Logged By: R. Howchin
 Date: 15/06/2009

Job Number: 207E/128
 Client: David Farley Family Superannuation Fund c/- David Brett & Assoc
 Project: Crib Wall Retaining Structure
 Location: 2 Haig St, Brassall

Drilling Information				Material Description					Test Samples						
Drill Method	Water	RL	Hole Depth (m)	Soil Origin	Graphic Log	Classification Code	Description	Weathering	Moisture	Consistency - Density - Strength	DC Test Results	Test Depth	Tests	Sample/Result	
TC bit with 100mm Dia. Auger			0.5	Fill	[Cross-hatch pattern]	FIL	Sandy CLAY (CH): Silt, high plasticity, brown, fine to medium sand, moist		M	S		0.1 -	PP	140kPa	
			1.0	Residual	[Vertical lines pattern]	CH	Sandy CLAY: Very stiff, brown mottled to orange brown, fine to medium sand, moist		M	VS		0.5 -	PP	240kPa	
			2.0										1.5	SPT	2.3.3 N=6
			3.0	Rock	[Triangles pattern]	BAS	BASALT: Decomposed rock, extremely low strength, extremely weathered, brown mottled orange brown	XW		ELS			3	SPT	7.8.10 N=18
			4.95				4.95m: BOREHOLE TERMINATED								
			6.0												
			7.0												
			8.0												

Comments:										Authorised by:				
										Date:				
Water	Weathering	Consistency	Density	Rock Strength	Tests & Results									
▼ Water level on date shown	RS Residual soil	VS Very soft	VL Very loose	ELS Extremely low	US0 Undisturbed 50mm diam tube.									
▶ Water inflow	XW Extremely weathered	S Soft	L Loose	VLS Very low	D Disturbed sample.									
◀ Water outflow	DW Distinctly weathered	F Firm	MD Medium dense	LS Low	SPT Standard Penetration Test, N = number of blows to drive 50mm sampler 300mm with a 63.6kg hammer falling 762mm.									
	SW Slightly weathered	VS1 Very stiff	D Dense	MS Medium	PP Hand penetrometer estimate of unconfined compressive strength, kPa.									
	FR Fresh	H Hard	VD Very dense	HS High	S Vane shear value kPa									
		Moisture		YHS Very high	DC Dynamic Cone test, 9.09kg hammer, fall 508mm, driving 20mm, 30 deg taper cone fitted to rods of smaller section.									
		D Dry, M Moist, W Wet		EHS Extremely high	From AS1289-1993 Methods of Testing Soils for Engineering Purposes									

APPENDIX 'C'

LABORATORY TEST RESULTS

MORRISON GEOTECHNIC PTY LTD

www.morrisongeo.com.au

■ **BRISBANE**

Unit 1 / 35 Limestone Street
PO Box 3063
Darra Qld 4076
P: 07 3279 0900
F: 07 3279 0955

■ **GOLD COAST**

Unit 5 / 36 Lawrence Drive
PO Box 2011
Nerang Qld 4211
P: 07 5596 1599
F: 07 5527 2027

■ **CABOOLTURE**

Unit 3 / 42 Aerodrome Road
Caboolture Qld 4510
P: 07 5499 0755
F: 07 5428 2498

■ **SUNSHINE COAST**

Unit 4 / 81 Wisees Road
Maroochydore Qld 4558
P: 07 5443 9522
F: 07 5478 1633



MORRISON
GEOTECHNIC
ABN 51 009 878 899
RPEUQ 2241

Quality of Materials Report

Client:	DAVID FARLEY FAMILY SUPERANNUATION FUND c/- DAVID BRETT & ASSOCIATES PTY LTD	Report Number:	207E/128 - 1
Job Number:	207E/128	Report Date:	22/06/2009
Project:	RESIDENTIAL DEVELOPMENT	Order Number:	-
Location:	2 HAIG STREET , BRASSALL	Page 1 of 1	
Lab No:	122425	Sample ID :	-
Date Sampled:	15/06/2009	Sample Location	
Date Tested:	19/06/2009	BH3	
Sampled By:	RH	Depth 2.50m - 3.00m	
Sample Method:	-	Spec Description: -	
Material Source:	Insitu	Lot Number: -	
For Use As:	-	Spec Number: -	
Remarks:	-		

Test Method:	A.S. Sieve Sizes	Specification Minimum	Percent Passing	Specification Maximum
<p>AS1289.3.6.1</p>	75.00 mm			
	53.00 mm			
	37.50 mm			
	26.50 mm			
	19.00 mm			
	13.2 mm			
	9.50 mm		100	
	6.7 mm		100	
	4.75 mm		100	
	2.36 mm		99	
	1.18 mm		99	
	0.600 mm		98	
	0.425 mm		97	
	0.300 mm		95	
0.150 mm		82		
0.075 mm		72		

Atterberg Tests	Test Method	Specification Minimum	Result	Specification Maximum
Liquid Limit (%)	AS1289.3.1.1		51	
Plastic Limit (%)	AS1289.3.2.1		20	
Plasticity Index	AS1289.3.3.1		31	
Linear Shrinkage (%)	AS1289.3.4.1		17.0	
P.I. x % Passing 0.425 mm			3007	
L.S. x % Passing 0.425 mm			1649	
Ratio of % Passing (0.075 / 0.425)			0.74	



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Approved Signatory Form Number



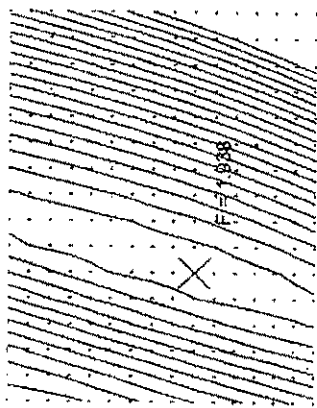
AQUALA-18

NATA Accred No:1169

APPENDIX 'D1'

**SLOPE STABILITY RESULTS
EXISTING BANK PROFILE - NO EARTHWORKS**

Morrison Geotechnic - Darra, QLD
 207E128
 Slip Circle Analysis
 23.3.09
 2 Halg Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund



	Gamma C kN/m ³	Phi deg	Piezo Surt.
Fill	18	27	1
Natural Soil	19	28	1
Deco Xw Basalt	21	35	1

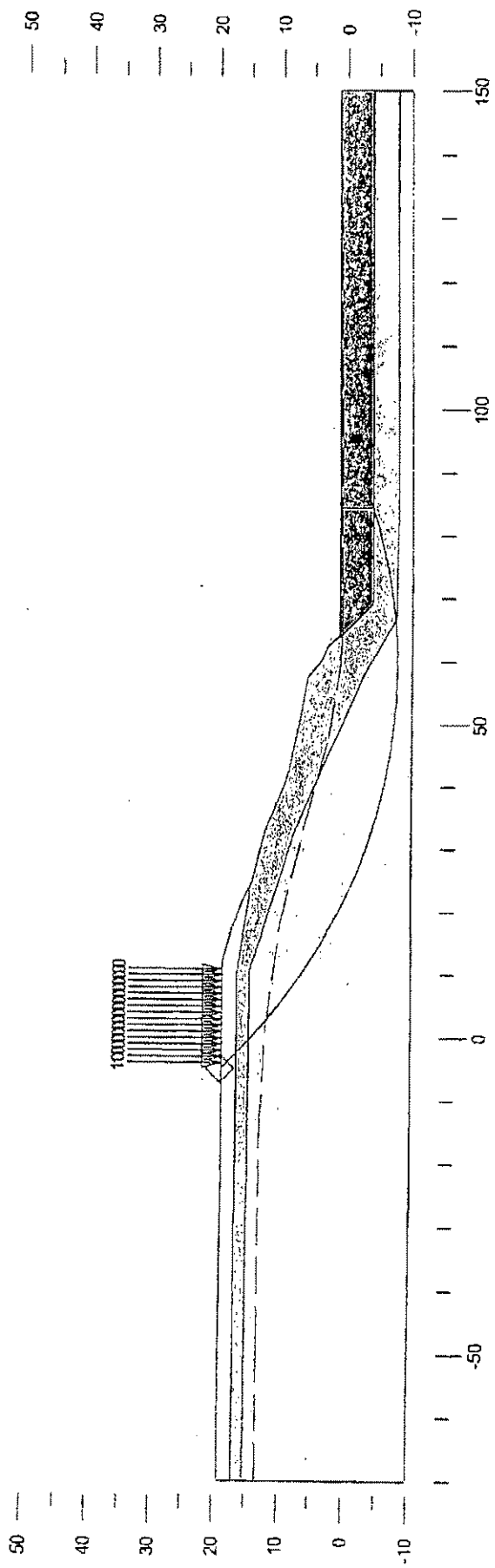


Figure 1

Morrison Geotechnic - Darra, QLD
 207E128
 Slip Circle Analysis
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund

	Gamma C kN/m ³	Phi deg	Piezo Surf.
River Water	9.81	0	0
Fill	18	1	27
Natural Soil	19	5	28
Deco XW Basall	21	5	35

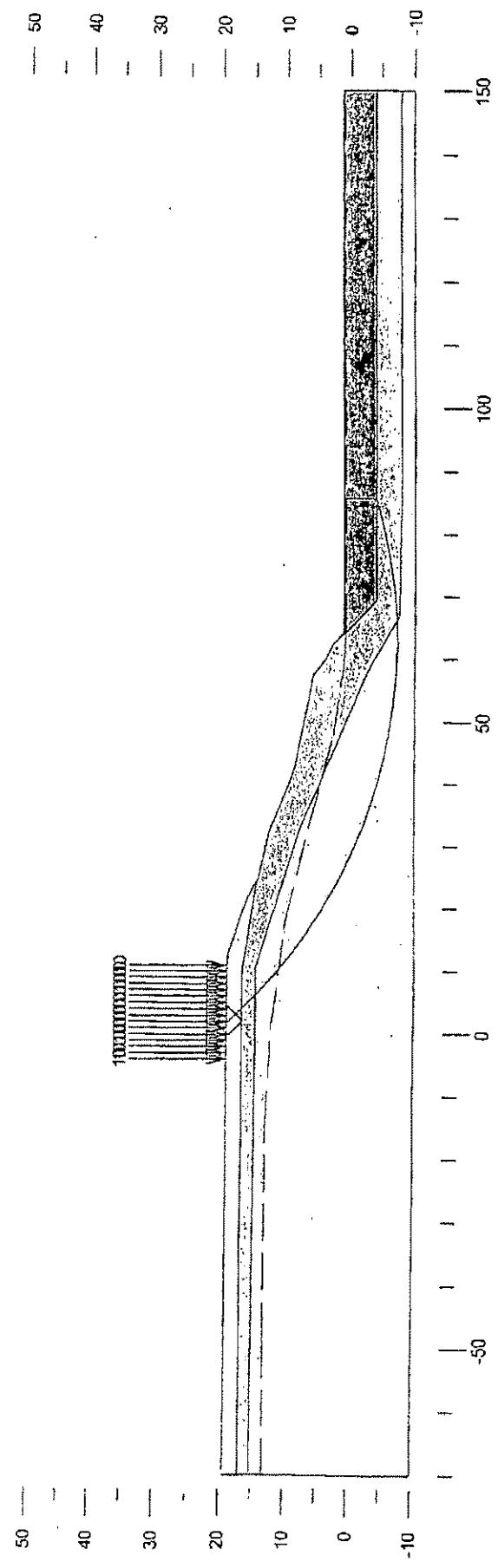
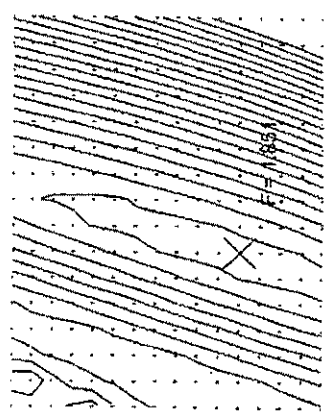


Figure 2

	Gamma C kN/m ³	Phi deg	Piezo Surf.
River Water	9.8	0	0
Fill	18	10	20
Natural Soil	19	15	25
Deco XW Basalt	21	15	35

Morrison Geotechnic - Darra, QLD
 207E128
 Slip Circle Analysis
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund

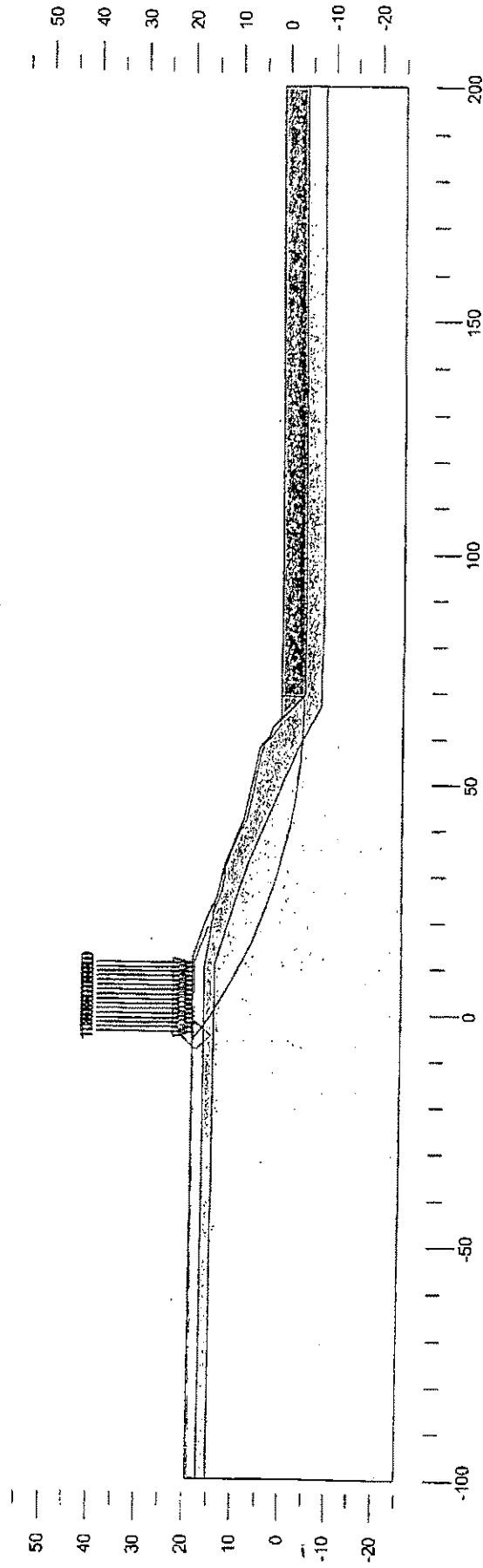
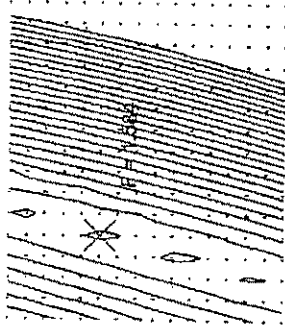
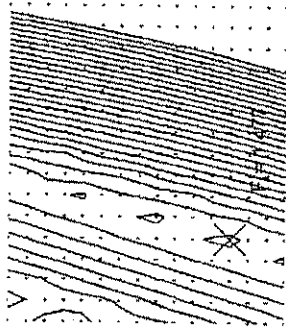


Figure 3

Morrison Geotechnic - Darra, QLD
 207E128
 Slip Circle Analysis
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund



	Gamma C kN/m ³	Phi deg	Piezo Surf.
Riverbank	19	30	1
Fill	18	20	1
Natural Soil	19	25	1
Deco XV Basalt	21	35	1

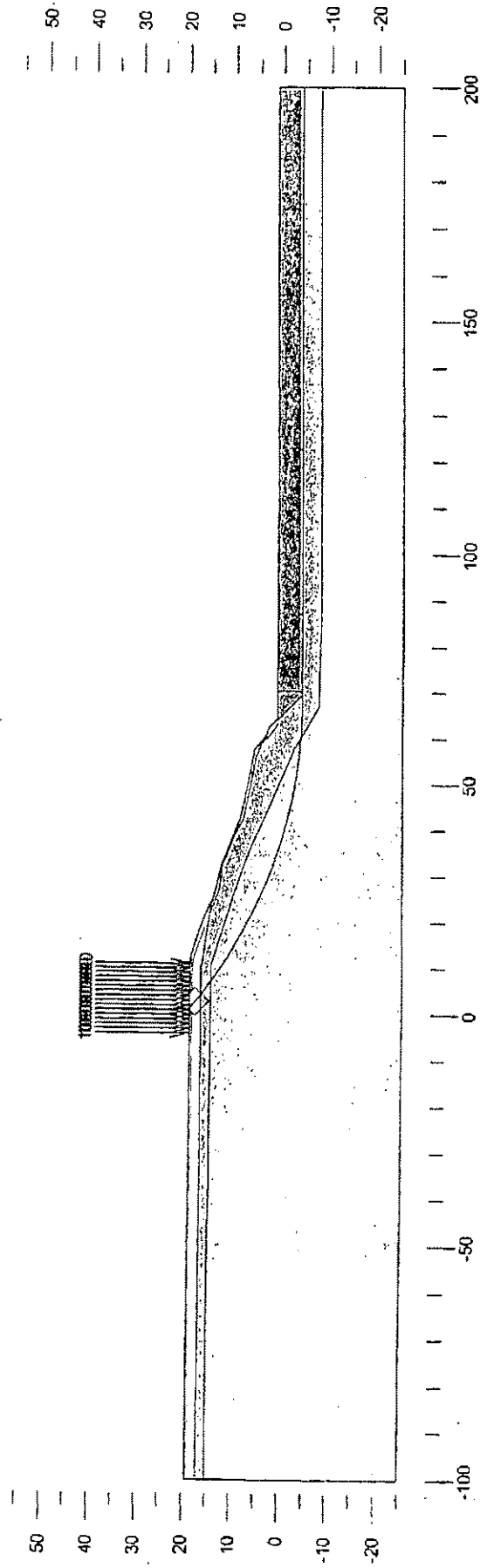


Figure 4

APPENDIX 'D2'

**SLOPE STABILITY RESULTS
AFTER FLOOD STORAGE EARTHWORKS**

Morrison Geotechnic - Daira, QLD
 207E128
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund

	Gamma C kN/m ³	Phi deg	Piezometric Surf.
River Water	9.8	0	0
Fill	18	27	1
Natural Soil	19	28	1
Deco XW Basalt	21	35	1

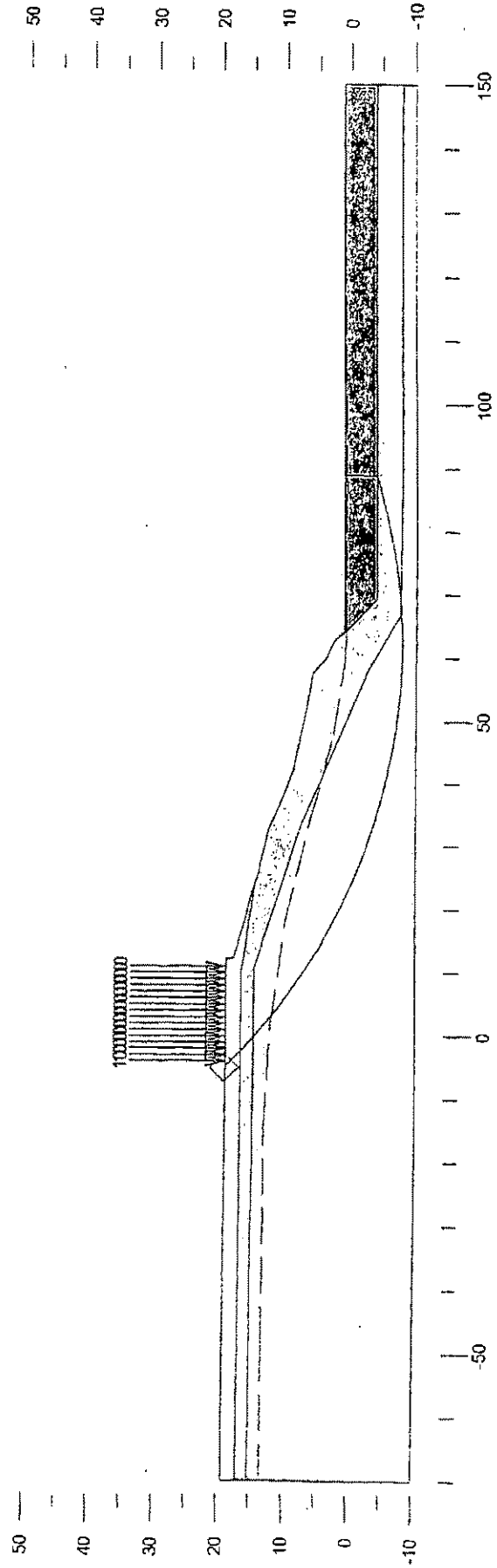
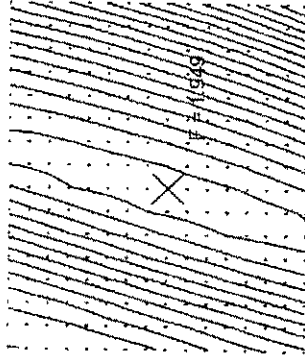


Figure 1A

Morrison Geotechnic - Darra, QLD
 207/E128
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund

	Gamma C kN/m ³	Phi deg	Piezo Surf.
Fill	18	27	1
Natural Soil	19	28	1
Deco XW Basalt	21	35	1

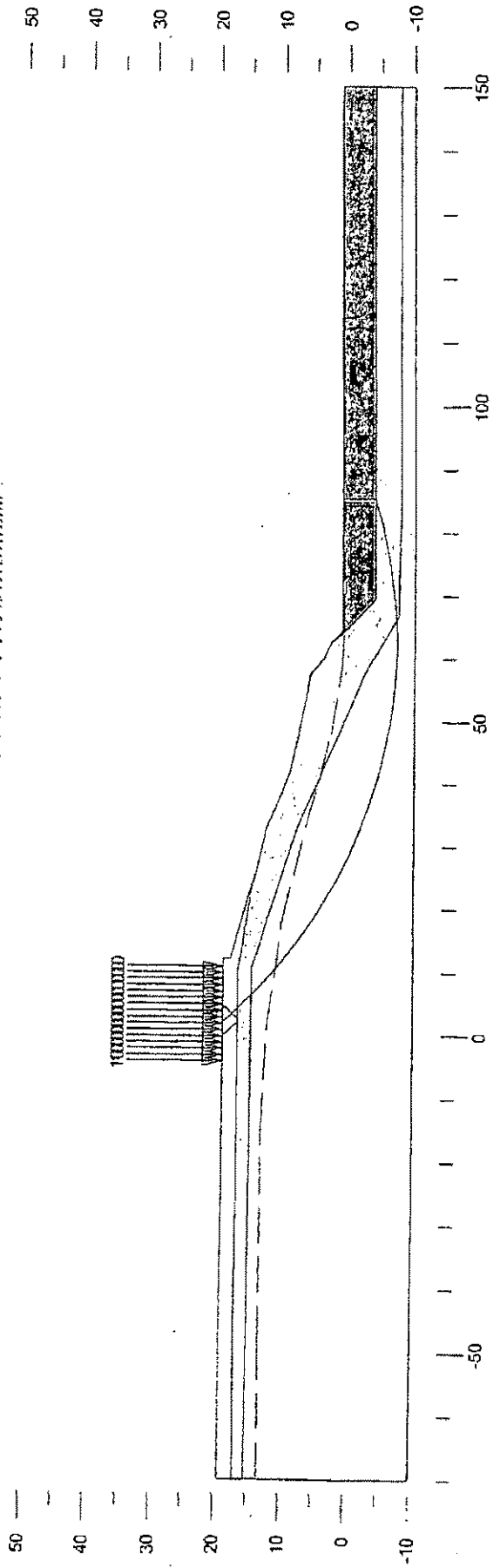
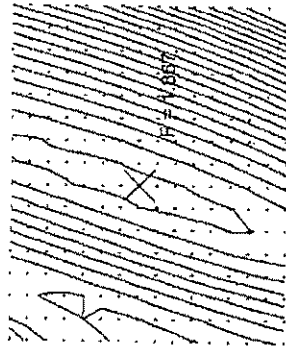
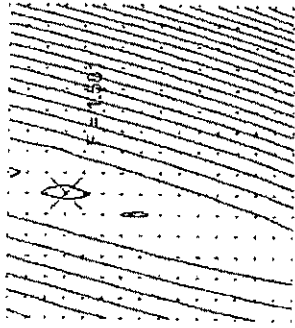


Figure 2A

Morrison Geotechnic - Darra, QLD
 207E128
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund



	Gamma C kN/m ³	Phi deg	Piezo Surf.
River Water	0	0	0
Fill	18	10	20
Natural Soil	19	15	25
Deco XW Basalt	21	15	35

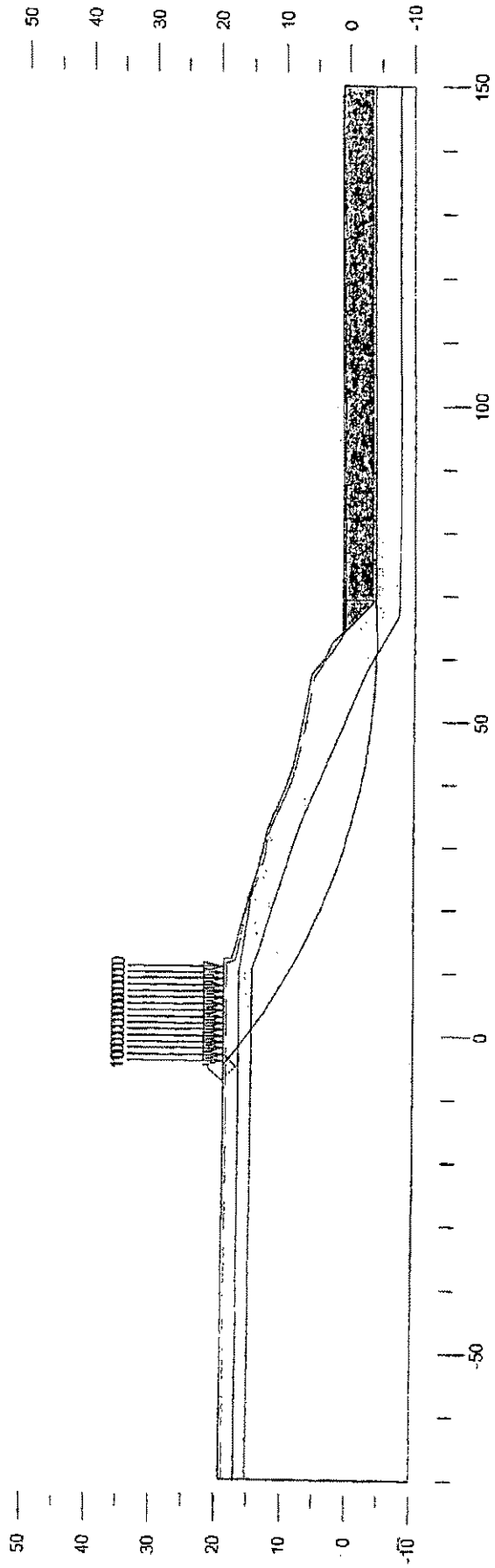
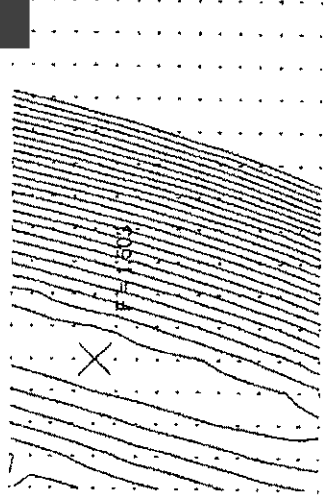


Figure 3A

Morrison Geotechnic - Darra, QLD
 207E128
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 Family Superannuation Fund



	Gamma C kN/m ³	Phi deg	Piezo Surf.
River Water	9.81	0	0
Fill	18	10	20
Natural Soil	19	15	25
Deco XW Basalt	21	15	35

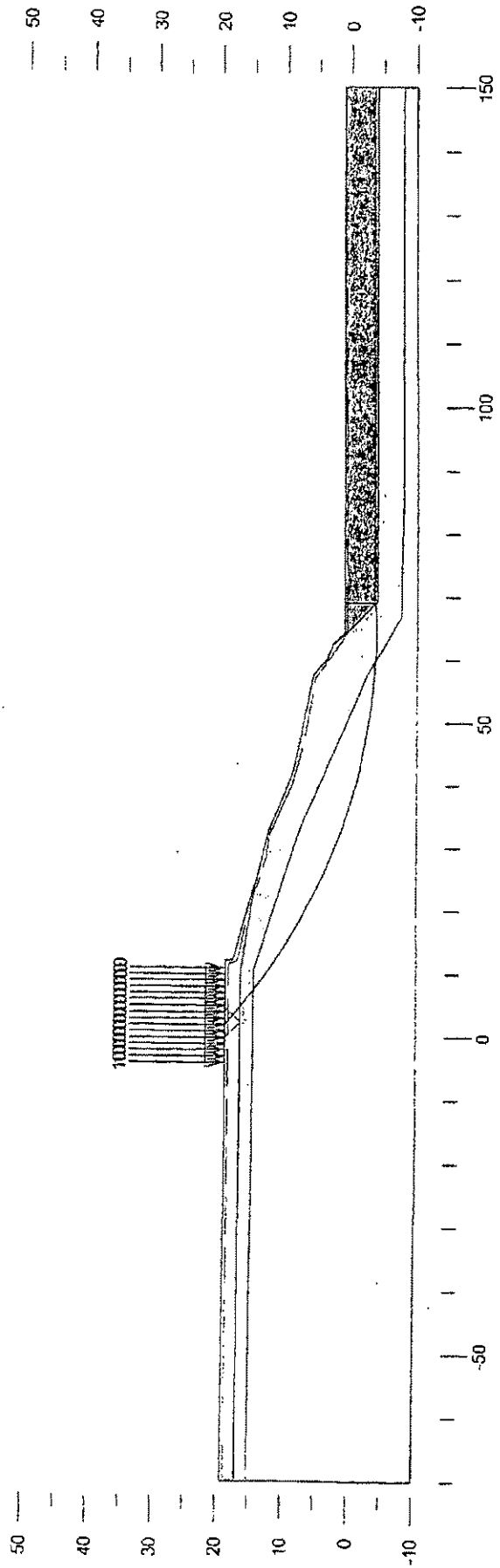


Figure 4 A

Morrison Geotechnic - Darra, QLD
 207E128
 Slip Circle Analysis With Flood Storage
 2 Haig Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund

	Gamma C kN/m ³	Phi deg	Piezo Surf.
River Water	9.81	0	0
Fill	18	1	27
Natural Soil	19	5	28
Deco XW Basalt	21	5	35

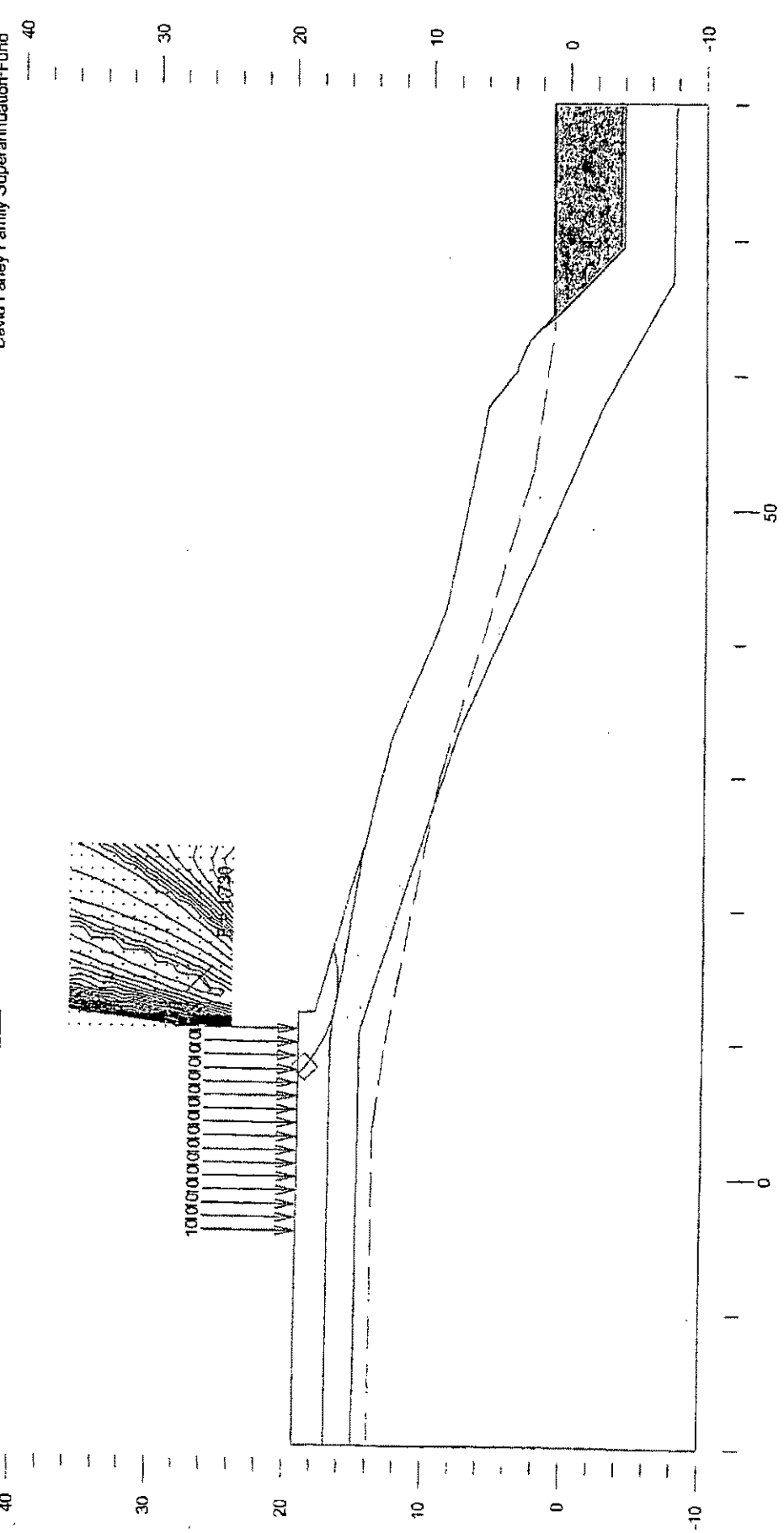


Figure 5A

Morrison Geotechnic - Darra, QLD
 207E128
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund

	Gamma C kNm ³	Phi deg	Plezo Surf.
Fill	18	27	1
Natural Soil	19	28	1
Deco XW Basalt	21	35	1

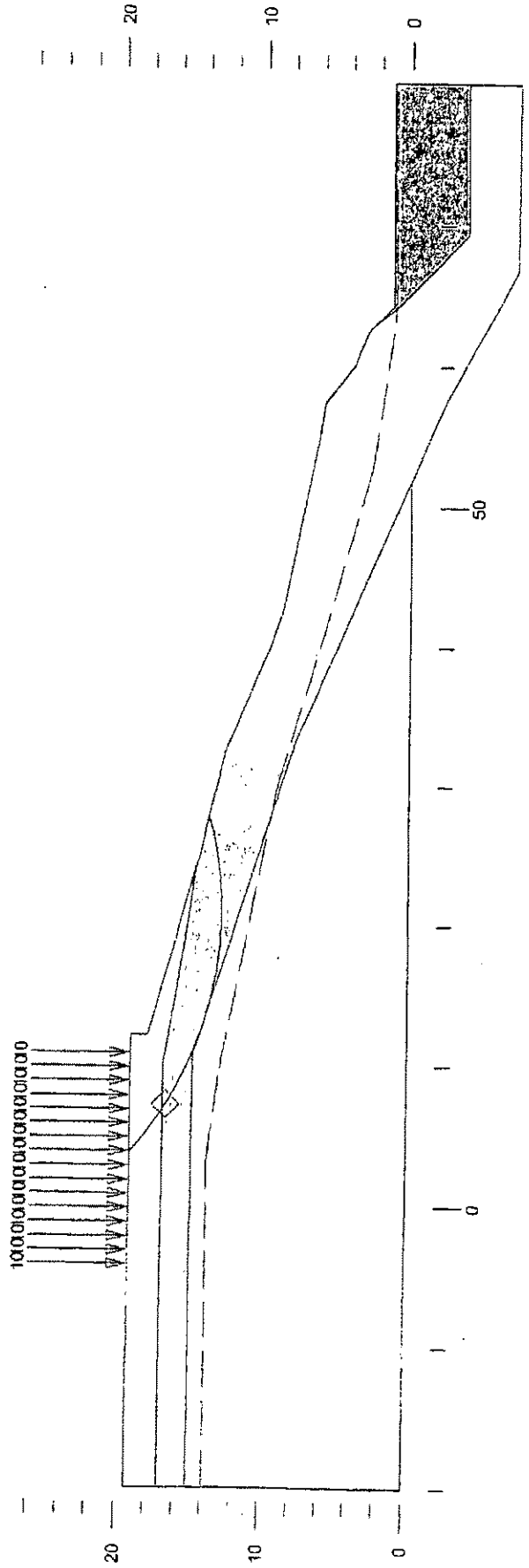
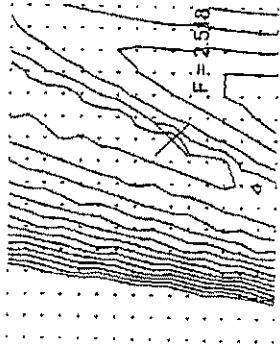


Figure 6 A

Morrison Geotechnic - Darra, QLD
 207E12B
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 Family Superannuation Fund

	Gamma C kN/m ³	Phi kPa	Pi deg	Piezo Surf.
River Material	18	10	20	0
Fill	19	15	25	1
Natural Soil	21	15	35	1
Deco XW Basalt				

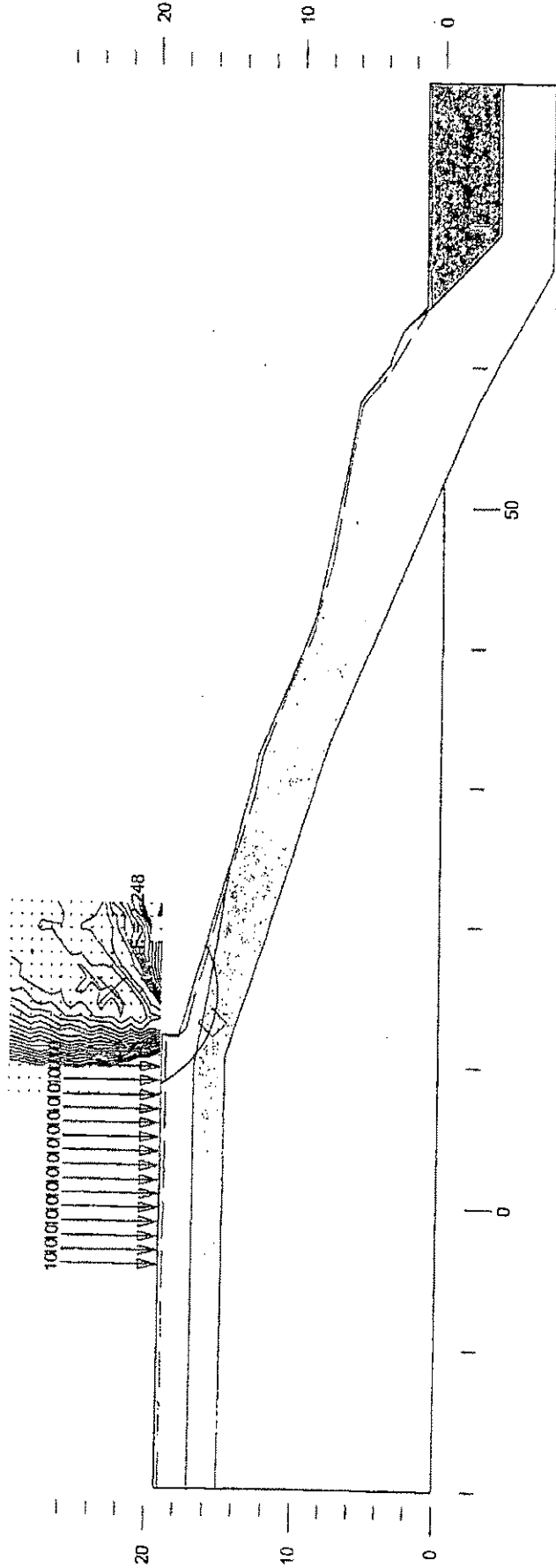


Figure 7A

Morrison Geotechnic - Darra, QLD
 207E128
 Slip Circle Analysis With Flood Storage
 23.3.09
 2 Haig Street, Brassall (Bremer River)
 David Farley Family Superannuation Fund

	Gamma C kN/m ³	Phi deg	Piezo Surf.
Brassall Water	9.81	0	1
Fill	18	10	1
Natural Soil	19	15	1
Deco XW Basalt	21	15	1

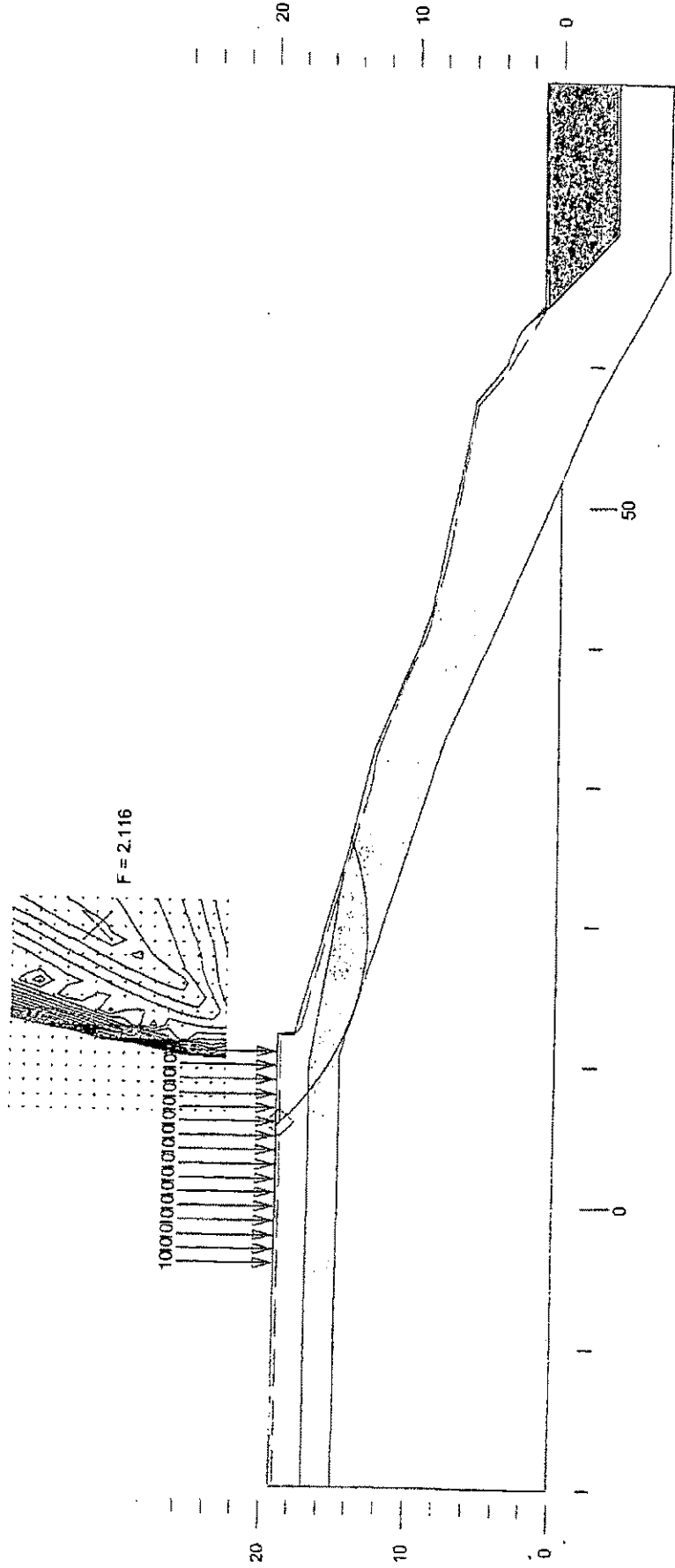
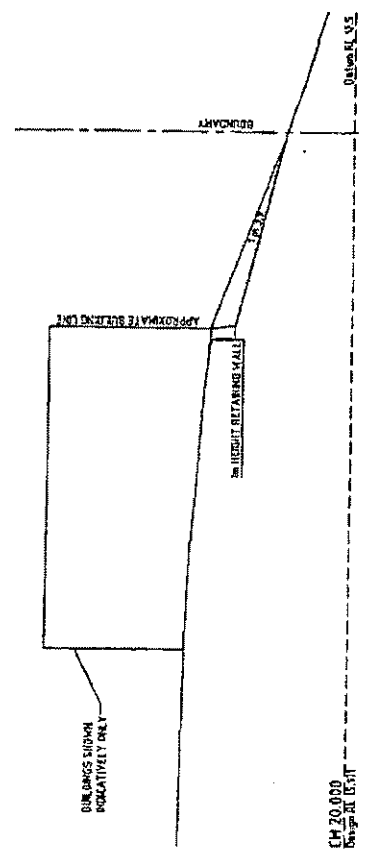
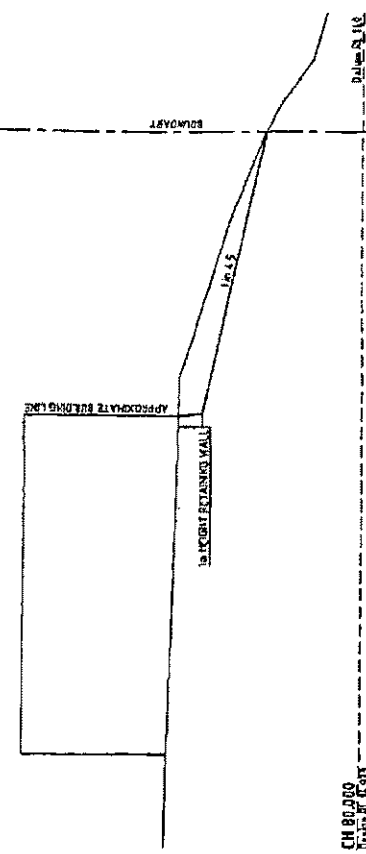
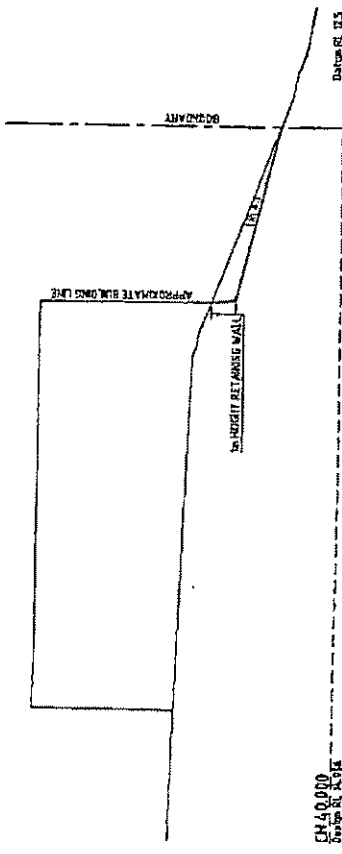
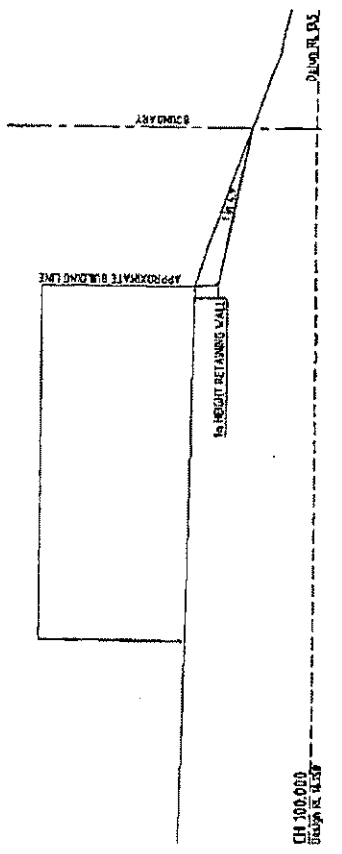
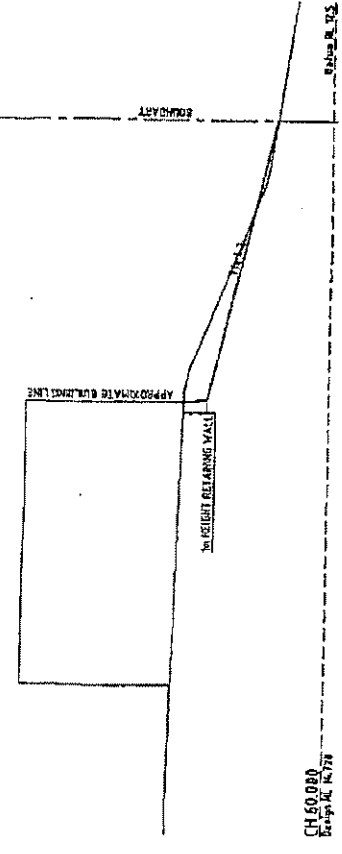
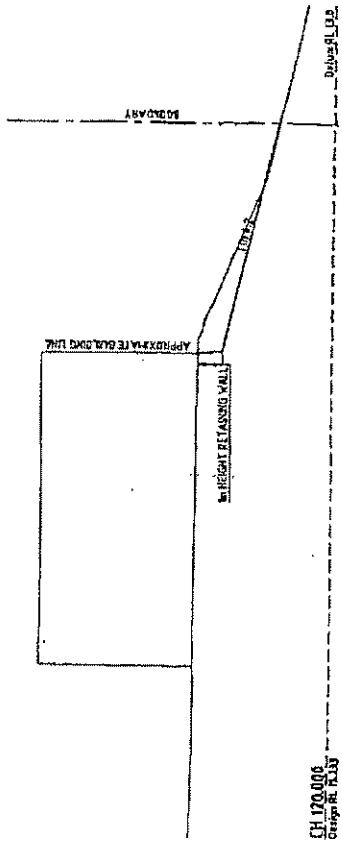


Figure 8A

APPENDIX 'E'

FLOOD STORAGE EARTHWORKS



VOLUMES
Total cut -572.4
Total fill 747
Total Balance 174.6

1 0 1 2 3 4 5
SCALE HORIZONTAL (IN)
1:50

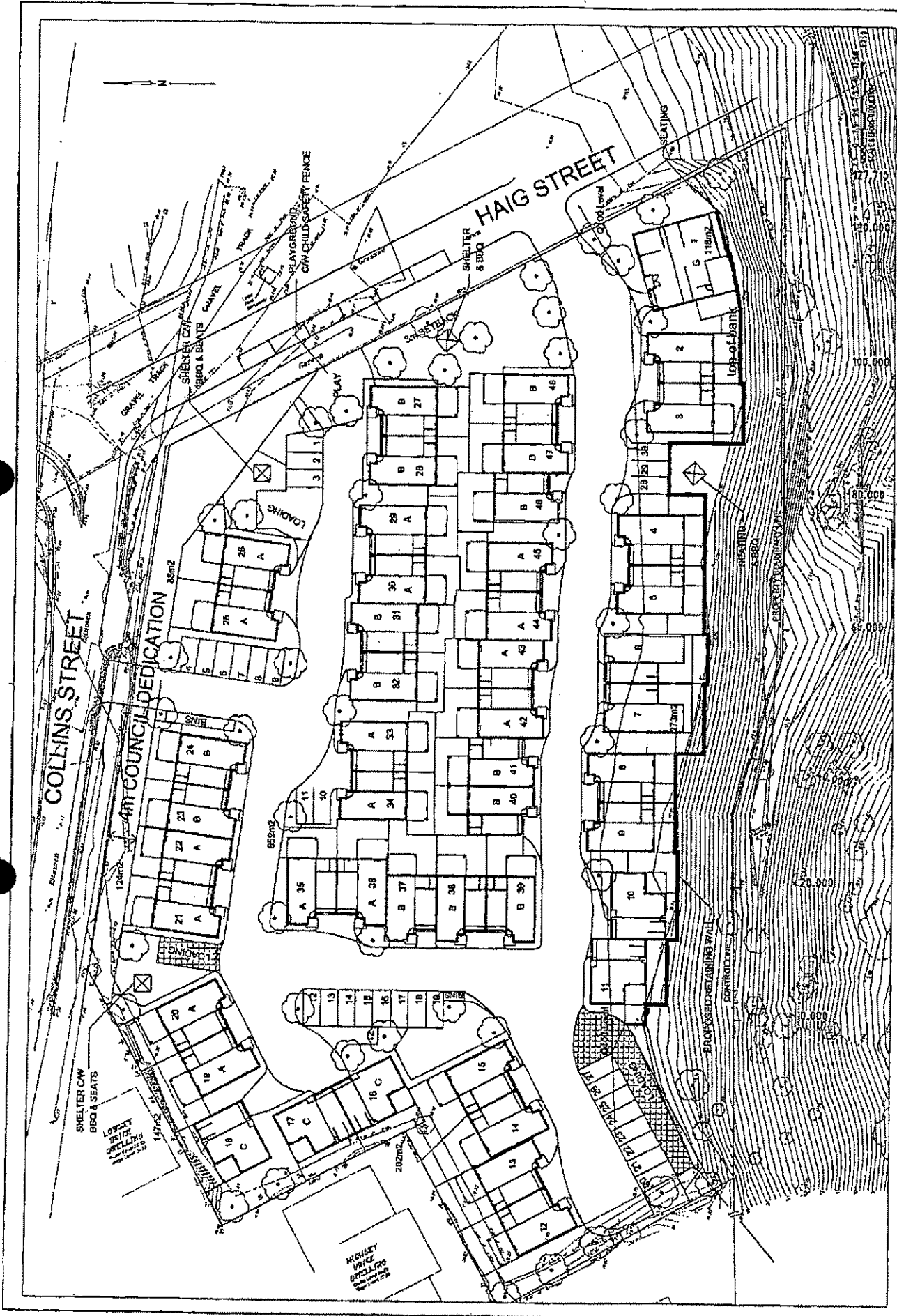
<p>DATE: 08-27-03 DRAWN BY: [Name]</p>		<p>73961101-SK03</p>	
<p>FARLEY SUPERANNATION FUND PROPOSED TOWNHOUSE DEVELOPMENT - 2 ROAD ST, BRASSAL CROSS SECTIONS WITH RETAINING WALL AT BUILDING LINE</p>			
NO.	DESCRIPTION	AREA	VOLUME
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100



Cardno
A1 OUTLINE A.H.D.
EXPLANATION: WALL, etc.

DESIGNED BY: [Name]
CHECKED BY: [Name]
DATE: [Date]

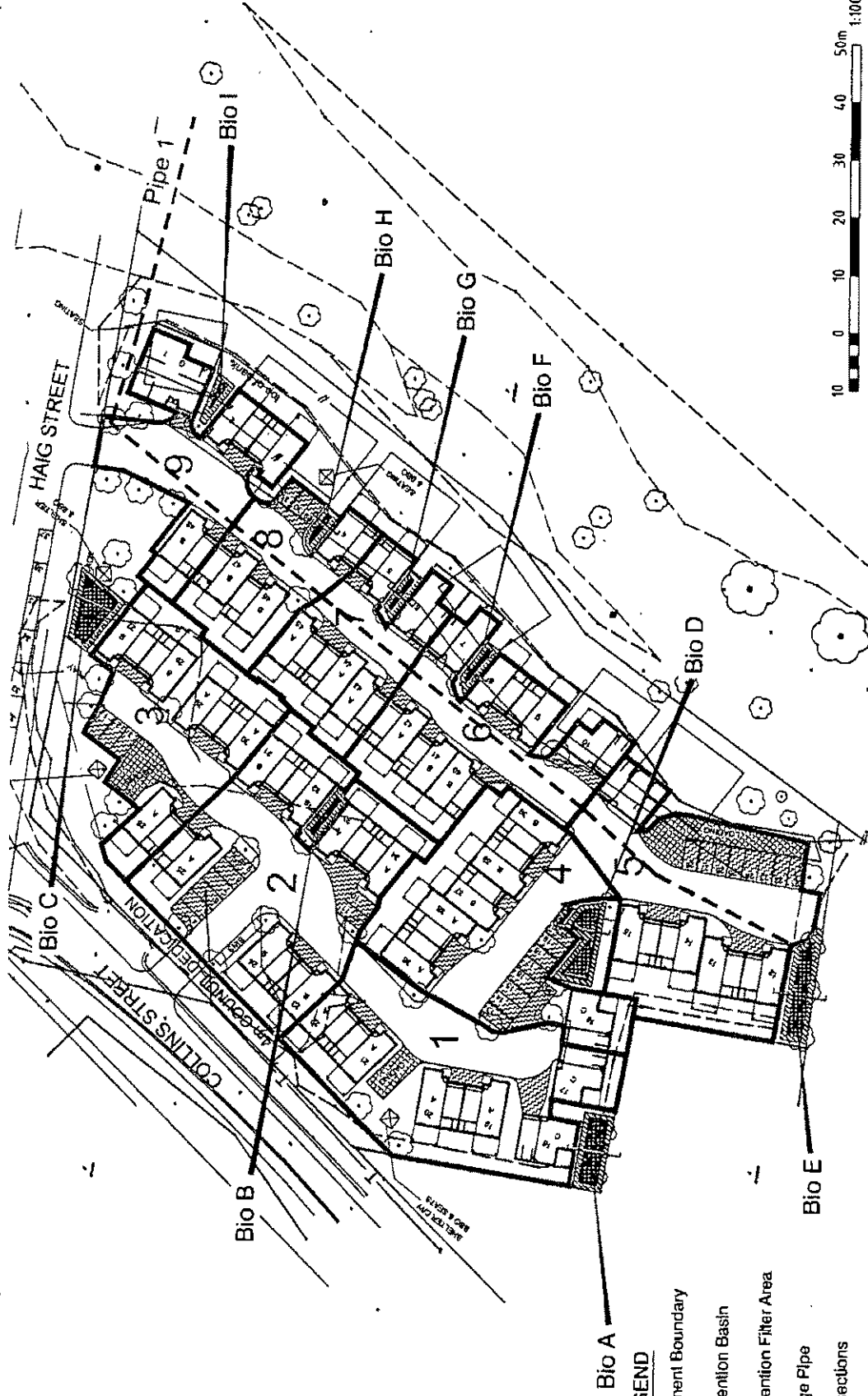
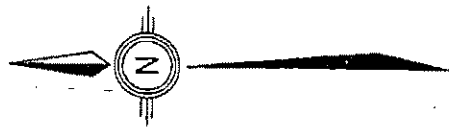
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


<p>FARLEY SUPERANNUATION FUND PROPOSED TOWNHOUSE DEVELOPMENT - 2 HAIG ST, BRASSAL LAYOUT PLAN</p>	
<p>DATE: 09/11 SHEET NO: 73961101-SK01</p>	<p>PROJECT NO: 10000000000000000000 CLIENT: FARLEY SUPERANNUATION FUND ARCHITECT: CARDINO ARCHITECTS ENGINEER: A.H.D. (A1) CONSULTANTS CONTRACTOR: [blank]</p>
<p>DESIGNED BY: [blank] CHECKED BY: [blank] DRAWN BY: [blank] SCALE: 1:500</p>	<p>DATE: 09/11 SHEET NO: 73961101-SK01</p>

APPENDIX 'F'

LOCATION OF BIO-RETENTION PONDS



LEGEND

-  Catchment Boundary
-  Bio-retention Basin
-  Bio-retention Filter Area
-  Drainage Pipe
-  Cross sections

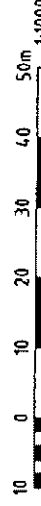
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Rev: 1 Date: 15 October 2009

Colran Pty Ltd

CAD FILE: A17196-114-0441-SP-1-Rev 01 Figures 4 - Stormwater Management Plan_08.dwg
 REF: 5

Scale 1:1000 (A4)



**FIGURE 4
STORMWATER MANAGEMENT PLAN**

Project No.: 7396/11

PRINT DATE: 6 October, 2009 - 2:05pm

195/06/MCU Jayanthi Weerasooriya:JW

09/11/09

MEMORANDUM

TO: SENIOR ENGINEERING OFFICER
FROM: DEVELOPMENT ENGINEER - [REDACTED]
RE: DEVELOPMENT APPLICATION
INTEGRATED PLANNING ACT 1997 - SECTION 3.2.1(1)
ENGINEERING ASSESSMENT REPORT

Appn No: 195/2006/MCU
Applicant: Colran Pty Ltd
Property Location: [REDACTED] Brassall Qld 4305

Proposal	Development	Approval Type
Multiple Residential- 52 Townhouses	Making a Material Change of Use of Premises	Development Permit.

Date Received: 12 January 2006

The following comments are made in respect of the above proposed development.

1. APPLICABLE CODES

This application has been assessed against the following codes:

- (a) Ipswich Planning Scheme Policy 2 – Local Government Information;
- (b) Ipswich Planning Scheme Policy 3 – General Works;
- (c) Ipswich Planning Scheme Part 12, Div 6 – Residential Code;
- (d) Ipswich Planning Scheme Part 12, Div 9 – Parking Code;
- (e) Ipswich Planning Scheme Part 12, Div 15 – Earthworks Code (Including lot filling);
- (f) Queensland Urban Drainage Manual Volume 1 Second Edition 2007;
- (g) Australian Rainfall and Runoff (Engineers Australia);
- (h) Ipswich City Council Standard Drawings;
- (i) Australian Standard 2890.1 - Off-Street Car Parking;
- (j) Australian Standard 2890.2 - Commercial Vehicle Facilities;
- (k) Australian Standard 3798 - Guidelines on Earthworks for Commercial and Residential Developments;

- (l) Water Supply (Safety and Reliability) Act 2008;

The proposal generally complies with or has been conditioned to comply with the above codes.

2. OTHER DEVELOPMENT APPROVALS REQUIRED

From an engineering perspective, further Development Permits, as required by the *Integrated Planning Act 1997*, must be obtained in respect of any Operational Works in relation to this approval before any such works are commenced.

RECOMMENDATION

- A. Based on engineering grounds only, it is recommended that the application for Code Assessment - Development Permit - Material Change Of Use of land at 2 Haig Street Brassall Qld 4305 as proposed by Colran Pty Ltd and detailed on plan number 07673.SK.12 Issue A, dated 13/10/2009, prepared by David Brett and Associates Pty Ltd, be approved, subject to the following terms and conditions being completed by the Developer, to the satisfaction of the Senior Development Engineer:

1. Terms

- (a) RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required.
- (b) QUDM – The *Queensland Urban Drainage Manual (2007 Edition)*, produced by the Queensland Department of Environment and Natural Resources.
- (c) Ipswich Water - Commercial Business Unit of Ipswich City Council providing water and sewerage services to Ipswich City.
- (d) ARI – Average Return Interval - used to define flood frequency and severity.

2. Roadworks

EXTERNAL ROADWORKS

- (a) The proposed land dedication along the Collins Street property frontage must be removed from any future development plan. This dedication is no longer required.

Stage 1

Collins Street

- (b) Collins Street, from the speed platform on Haig Street and along the site frontage, must be upgraded/reconstructed in accordance with Council standards for an Access Street.

Works must include:

- (i) New pavement and carriageway (nominally 6.5m wide) with asphaltic concrete surfacing
 - (ii) New concrete kerb and channel (Type B1) on the south eastern side plus associated stormwater infrastructure
 - (iii) Re-profiling of the verge on the south eastern side
 - (iv) Turfing, landscaping and street lighting.
- (c) A formal pedestrian crossing point must be provided on Collins Street south west of the site access point.

Works must consist of

- (i) Kerb ramps constructed in accordance with Council's Standard Drawing SR.18
- (ii) Warnings signs and lighting
- (iii) 1.5m wide concrete path connecting the site access point in Collins Street and this formal pedestrian crossing point, through to the bicycle path on the north western side of Collins Street.

Haig Street

- (d) A reinforced concrete driveway must be constructed along Haig Street between the end of the existing pavement and the site access point. The driveway must be constructed in accordance with Council standards for a commercial driveway and be a minimum of 6.5m wide.

Works must include

- (i) Kerb & channel (type B1) around the corner of Collins Street/Haig Street to finish generally adjacent the common property boundaries of 13 and 21 Haig Street.
- (ii) Associated pavement widening and stormwater drainage infrastructure
- (iii) A concrete driveway for the development
- (iv) A stub providing access to/from the existing car parking area for the adjacent open space and
- (v) Guide posts on both sides of the proposed driveway
- (vi) 1.5m wide concrete path connecting the site access point in Haig Street and the site access point in Collins Street.

Conceptual Design

- (e) Integrated conceptual design drawings of the above external roadworks must be prepared by an RPEQ and submitted to Council for review and approval before detailed design commences and prior to lodging any Operational Works application for the Development.

Bus Stop infrastructure contributions

- (f) A monetary contribution of \$25,000 must be paid to Council towards bus stop infrastructure in the area and must be paid prior to the issuing of certificate of classification for any Units that are part of this development. The amount must be fixed for 12 month from the date of this Decision Notice and then adjusted in accordance with the Road & Bridge Construction Cost Index applicable to Queensland at the time of payment.
- (g) All roadworks must be designed and constructed in accordance with Council's Policies and Standards, the DMR *Road Planning & Design Manual*, Austroads Publications and any other documentation accepted as best practice by Council. The design and construction of each road or street must ensure that the speed environment, geometry, sight distances, carriageway widths, lighting, facilities for bus stops, refuse collection vehicle movements, pedestrians and cyclists, and on-street parking and other physical attributes are consistent with the function and role of the road or street in the transportation network.
- (h) Road pavements must be designed and constructed in accordance with the Ipswich City Council's Planning Scheme Policy 3 - General Works, Chapter 5 - Roadworks. All roads must have two way cross-falls in accordance with Council's adopted standards.
- (i) "No Through Road" signs must be erected at the entries to all culs-de-sac and terminating roads.

3. Access and Parking

- (a) Design and construction of all access and parking must be in accordance with the provisions of the *Ipswich Planning Scheme Parking Code* and *Australian Standards (2890 Series)*.
- (b) Parking and manoeuvring areas must accommodate the largest anticipated vehicle to use the site.
- (c) Adequate facilities for servicing the development must be provided on site to ensure loading and/or unloading activities do not occur on-street.
- (d) Provision must be made for all vehicles to enter and exit the site in forward gear.
- (e) Provision must be made for HRV manoeuvre into proposed loading bays. Demonstration of same must be as part of the Operational Works application.

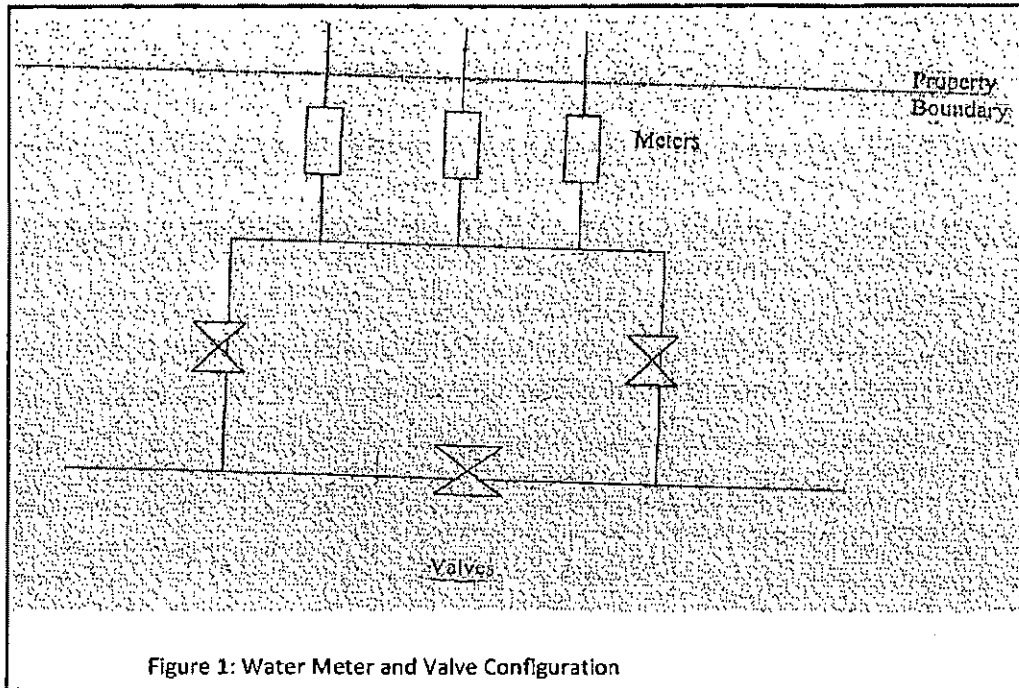
- (f) All parking, access and manoeuvring areas must be constructed of concrete, bitumen or pavers and must be line-marked in accordance with the relevant Australian Standard.
- (g) Concrete layback and driveway slab minimum 6.5 m wide, must be constructed from the layback to the property boundary, at both Collins Street and Haig Street access points to the development in accordance with Council's Standard Drawing SR13.
- (h) A drainage system must be provided so that no part of the driveway will be inundated in the runoff resulting from a storm event with an ARI of 2 years, and the runoff from the driveway must be discharged to the satisfaction of the Senior Development Engineer.
- (i) The Developer must provide linemarked segregated pedestrian access throughout the development to eliminate potential vehicular and pedestrian conflict.
- (j) The driveway construction within the development excluding the segregated pedestrian access must be a minimum 5.5 m wide.
- (k) Any terminating internal roads that may be extended as a part of a later stage must be provided with an all-weather gravel and two-coats of bitumen seal surface turn-around area sufficient size to enable Council's refuse vehicle to negotiate a clear turn. Hazard markers and delineator posts must be erected at the ends of the turnarounds. All works must be undertaken to the satisfaction of the Senior Development Engineer.
- (l) The internal road pavement widths and geometric layouts must make adequate provision for Council's refuse collection vehicles movements.
- (m) Roadway adjacent to Units 27-28 must be adjusted to accommodate reversing movements from garages of these Units.
- (n) A waste bin storage area around Stages 5 and 6 of the development must be nominated with Operational Works application.

4. Sewerage

- (a) The Developer must provide a sewerage reticulation system with appropriate house connection branches, designed to fully command the development (Lot 2 on RP857016).
- (b) The Developer must pay the full cost for Ipswich Water to provide a suitable connection into the existing sewerage reticulation system. All works on live sewers are to be carried out by Ipswich Water at the Developer's expense in accordance with *Planning Scheme Policy 3 Section 10.1.2*, unless arranged otherwise with Ipswich Water.
- (c) Any existing sewerage or sanitary drainage that may be redundant as a result of this approval must be located, disconnected and removed to the satisfaction of the Senior Development Engineer.
- (d) No work on the sewerage reticulation system may commence prior to the approval of the Operational Works application.

5. Water Supply

- (a) The Developer must lodge a private works request on the prescribed Council form, for Ipswich Water to:
- (i) Supply and install a suitable metered water connection for the development generally in accordance with Figure 1 below.



- (ii) Amend the existing connection if necessary, and
- (iii) Seal off any existing water connections if necessary.

The relevant cost must be paid to Council prior to the issuing of the certificate of classification for any Units as part of this development.

- (b) Council's water supply system has been designed to achieve the target levels of service as outlined in Planning Scheme Policy 3 Section 4.1.2 *Standard of Service*. It is the responsibility of the Developer to provide any fire fighting requirements over and above Council's target levels of service, at their expense, internally and without adverse impact to Council's water supply system.
- (c) A 150mm diameter main must be constructed as part of the first stage of this development from the existing 150mm diameter main on northern side of Workshops Street (opposite 24 Workshops Street) and connect into the existing 100mm diameter main adjacent to 12 Collins Street. This extension must include valves and hydrants at appropriate locations and intervals.

6. Stormwater

Stormwater Quality

- (a) The quality of stormwater leaving the developed site must achieve the following reductions in average annual pollutant load:
- 80% for total suspended solids;
 - 60% for total phosphorus;
 - 45% for total nitrogen; and
 - 90% for gross pollutants.
- (b) The water quality objectives listed in (a) must be achieved through the implementation of the nine (9) bio-retention basins generally in accordance with the Stormwater Management Plan Version 7 dated 15 October 2009 prepared by Cardno Pty Ltd subject to the following amendments:
- (i) The nine (9) bio-retention basins must each have a drainage layer depth of 200mm and a transition layer depth of 100mm. The filter media median particle size for all bio-retention basins must be 0.45mm with a hydraulic conductivity of 180mm/hr. All other parameters for the bio-retention basins must be in accordance with the modelled parameters represented in Table 1 below;

Table 1

Bioretention Basin	Extended detention depth (m)	Surface Area (m ²)	Filter Area (m ²)	Filter Media Depth (m)
A	0.2	66.0	33.7	0.7
B	0.2	26.9	5.9	0.7
C	0.2	75.4	42.4	0.7
D	0.2	70.3	31.7	0.7
E	0.2	79.9	37.3	0.7
F	0.2	22.8	3.7	0.7
G	0.2	21.9	3.6	0.7
H	0.2	21	4.1	0.7
I	0.2	20.9	3.1	0.7

- (ii) A high flow bypass must be incorporated into the design of the bio-retention basins to ensure that only flows up to the 3 month ARI storm event are treated through the bio-retention basins;
- (iii) Geofabric must not be used between the bio-retention swale layers and the filter media layer;
- (iv) Detail pre-treatment to bio-retention basins to ensure scour protection and removal of gross pollutants;

- (v) Bioretention basins A, D, E, F, G, H and I must include an impermeable liner to prevent exfiltration to the surrounding soils. Details of the lining must be submitted with application for Operational Works;
- (vi) Bioretention basin under drain design is to be in accordance with Section 5.3.5 of the Water Sensitive Urban Design Technical Design Guidelines (WSUD TDG) for South East Queensland and Section 3.4.5 of the Construction and Establishment Guidelines - Swales, Bioretention Systems and Wetlands, Version 1 dated February 2009, prepared by Healthy Waterways. A copy of the calculations used to size the drainage must be provided at the time of lodging the operational works application. Similarly calculations must be provided to demonstrate that the pipes which are connected downstream of the drainage pipes are suitably sized so as not to become the hydraulic control and filter media is free draining.
- (vii) Underdrainage must consist of either slotted PVC pipe or flexible perforated pipe (e.g. Ag pipe) and not presocked ag pipe;
- (viii) Provide a uPVC riser with screw cap lid at the head of each slotted pipe for maintenance flushing. The plan must include a detail in accordance with BCC drawing UMS153 with a note that states that risers are not to be slotted;
- (ix) Detailed planting plans for bioretention areas demonstrating compliance with the plant species and densities outlined in Appendix A of the WSUD TDG (version current at the time of Operational Works detailed design);
- (x) Specify on the plan the grade at which drainage pipes are to be laid and the relevant width of the drainage pipe slots. It should be noted that a minimum of 0.5% slope is required and depending on the length of the bioretention this may impact significantly on the depth of the drainage layer. The length of all 100mm slotted drainage pipes must not exceed 25m. For longer lengths the pipe size must be increased or duplicated to increase conveyance;
- (xi) Provide the bioretention filter media levels ensuring that the surface of the filter is flat to allow even absorption through the filter;
- (xii) All inlets to the bioretention basins must be as near to the outlet as possible to minimise mixing of high flows with first flush; and
- (xiii) The drawings must include a note which refers to the Healthy Waterways Bioretention Basin Construction and Establishment Sign-off Forms (including the Pre-start meeting form and Forms A-G) for use throughout construction.
- (c) Prior to lodgement of detailed operational works drawings the Developer must receive certification from the consulting engineers who prepared the approved Stormwater Management Plan certifying that the detailed drawings are in accordance with the approved Stormwater Management Plan, these conditions of approval and the WSUD TDG. A copy of the certification, and completed copies of the WSUD TDG Design Assessment Checklist and Calculation Summary Checklist, must be lodged in conjunction with an Operational Works application.

Stormwater Quantity

- (d) The Developer must provide all necessary internal and external stormwater drainage to service the development. Such drainage works (except for building gutters and downpipes) must be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

In the case where the piped system is carrying part of the flow, the overland flow paths must be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system.

- (e) Appropriate works must be carried out to ensure that stormwater drainage from the new kerb and channel discharges suitably into the existing drainage system.
- (f) A suitable roofwater and internal drainage system must be designed in accordance with QUDM for the development. The design must be not less than QUDM Level IV.
- (g) Ponding, concentration or redirection of stormwater must not occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.
- (h) The floor levels of any habitable rooms of all dwellings must be located a minimum of 250 mm above the 100 year ARI flood event.
- (i) Construction of buildings or other structures is not permitted below the flood level associated with an ARI of 100 years with the exemption of Units 1 to 14 as part of this approval.
- (j) There must be no filling or removal of material in the flood area below the flood level associated with an 100 ARI of years with the exception of what has been specified in Flood Study Version 4 for 2 Haig Street Brassall prepared by Cardno dated 7 October 2009. There must be no disturbance to vegetation in the flood area, without prior written approval of the Senior Development Engineer.
- (k) For stormwater management purposes the development must be designed and constructed in accordance with the Stormwater Management Plan (SMP) submitted by Cardno and dated 15 October 2009 and Flood Study submitted by Cardno and dated 7 October 2009 and otherwise conditioned as part of this approval. Pipe discharge arrangement to Bremer river from the development must be in accordance with Section 5 of the above mentioned Stormwater Management Plan.
- (l) Compensatory earthwork drawings and calculations must be submitted as required by Condition 7 below. This submission must also include the following recommendations outlined in the above mentioned Flood Study report and River Bank Stability Assessment submitted by the Developer.

- Maximum height of fill must not exceed 500mm above the flood event equivalent to the ARI of 100 years
 - Maximum depth of cut must not exceed 1m between the proposed retaining wall profile and property boundary and batters must not be steeper than 1:4
- (m) All stormwater runoff from the development must be discharged in a manner and to a point to be approved by the Senior Development Engineer. In this instance all stormwater runoff from impervious areas (including roofwater) for associated storm events up to and including ARI of 100 years must be piped to a single discharge point located below the low level tide mark in the Bremer River.
- (n) Stormwater headwall structures must be constructed in accordance with the relevant DMR standard drawings for reinforced concrete headwalls and aprons, unless agreed otherwise with the Senior Development Engineer.
- (o) Stormwater drainage plans and calculations are to be submitted and approved by the Senior Development Engineer, in conjunction with the submission of first Operational Works application.
- (p) The Developer, prior to the commencement of use of each stage, must submit to Council, certification from an RPEQ that the stormwater infrastructure and overland flow for that stage is connected to the outlet system as stated above.

7. Earthworks

Compensatory earthworks drawings must be submitted with the Operational Works application addressing the following as a minimum and as required by Condition 5(f) above.

- cut/fill depths, batter slopes, retaining wall heights
- cross sections indicating Q100 flood line, reduced level of top of the bank, reduced level of proposed retaining wall etc
- indicate expected total fill height and extend
- batter slopes of fill/cut
- total height of retaining wall
- quantify cut/fill volumes at each section

As part of the Operational Works application an RPEQ must certify that the submission as detailed above is in accordance with the above mentioned Flood Study report.

8. Site Stability

- (a) In terms of earthworks and construction of in-ground services, all works including retaining wall construction must generally be designed and undertaken to account for recommendations and requirements in accordance with "River Bank Stability Assessment" report prepared by Morrison Geotechnic Pty Ltd and dated 23 October 2009 and to the satisfaction of the Senior Development Engineer.

- (b) Retaining walls and batters resulting from cutting and filling require RPEQ certification for Riverbank stability and proper drainage.

9. Building Requirement

Proposed Units 1-11 along the crest of the bank must not exceed design surcharge loading of 10kPa as recommended in "River Bank Stability Assessment" report prepared by Morrison Geotechnic Pty Ltd and dated 23 October 2009.

10. Retaining Walls

- (a) The Developer must obtain written comments from adjoining property owners with respect to any proposed earthworks and retaining walls within three (3) metres of the site boundary, in accordance with Ipswich *Planning Scheme Part 12, Division 15 – Earthworks Code (Section 12.15.4.19)*. The written comments must be submitted to Council for consideration as part of the Operational Works application.
- (b) Finished heights of all retaining walls must be shown on the relevant drawings. The maximum height of gravity boulder retaining walls must be 1.25m. If further height is required, the retaining structure is to be designed and certified by a structural engineer. The total maximum height of any retaining wall is to be 2.5m. Retaining walls over 1.25m high must be constructed with an engineer designed and certified concrete foundation, with an initial retained height of 1.25m, then a minimum set back of 0.6m prior to another maximum retained height of 1.25m to total a maximum height of 2.5m.
- (c) A certificate from a RPEQ must be issued to Council certifying that any retaining wall greater than 1m in height is structurally sound and capable of withstanding any likely surcharge loads. The design and construction of retaining walls must comply with the following minimum requirements unless agreed otherwise with the Senior Development Engineer:
 - (i) The minimum design surcharge loading must be 10kPa
 - (ii) Retaining walls must be designed so that there are no imposed loads placed upon Council's underground services. Retaining walls crossing over services must have support footings extending at least 300mm below the invert of the service pipe.
 - (iii) All retaining walls must be provided with Council approved subsoil and surface drainage systems
 - (iv) Backfill to retaining walls must be comprised of approved drainage material contained within a geo-fabric wrap
 - (v) A drainage system in the form of a mounded V-drain or similar which discharges to a legal point of discharge must be constructed along the top of all gravity retaining walls to prevent stormwater sheeting or concentrating over retaining structures
 - (vi) Retaining walls in public areas that are 1.0m or greater in height must be provided with railings or other barriers to provide pedestrian safety.

11. Waste Storage and Collection

- (a) The area on which the bin(s) is to be accessed by refuse collection vehicles must be screened, level, concreted and constructed in conjunction with the driveway surface with no intervening step, ledge, kerb or other obstruction.
- (b) All wash down waters from bin cleansing performed on-site must be appropriately treated and discharged to sewer subject to a Trade Waste approval. No wash down waters are permitted to flow to a roadway, gutter, stormwater drain or natural waterway. Another alternative is for the Developer to arrange a contact with a refuse bin cleaning company.
- (c) All waste bins must be serviced on site with no street side collection. Access for waste vehicle must allow forward motion entry to the industrial refuse containers and forward motion exit from the site.

12. Erosion & Silt Management

- (a) As part of the application for Operational Works, the Developer must submit with the Operational Works application, an Erosion and Silt Management Plan designed in accordance with "*Best Practice Erosion and Sediment Control*" published by the International Erosion Control Association (Australasia) November 2008, or equivalent.
- (b) The Developer must install silt management facilities at commencement of construction and maintain these facilities until the development has been released "Off Maintenance by Council".
- (c) Silt traps must be sited upstream from any park or reserve area discharge point, such that no silt impinges on the park or reserve areas. The silt trap areas may be phased out after the development work is complete and adequate grass cover is obtained.
- (d) Diversion drains and ponds, as necessary, must be installed on the site before any other work is undertaken on site to ensure that water containing silt, clay, solids or contaminants is contained and/or isolated.
- (e) Prior to the Pre-Start meeting for Operational Works, the Developer must lodge a \$10,000.00 Siltation and Erosion Performance Bond with Council. This bond must only be released by Council at the termination of the maintenance period.
- (f) If the Senior Development Engineer determines that silt damage has occurred as a result of this development, the Developer must be responsible for restoration of any damage. Such restoration must be completed within a time to be advised by the Senior Development Engineer. Should the Developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council may elect to complete the works and recover all costs associated with that work from the Developer.
- (g) Where Council determines that a draw-down of the bond is required, the Developer must restore the bond to its full amount within ten (10) business days of a notice from Council to that effect.

13. Public Utilities

- (a) The Developer must provide appropriate road crossing conduits in accordance with Council's Standard Drawings SR.22 and SR.23. Where concrete footpaths are to be constructed, the conduits must be extended to the property boundaries.
- (b) The Developer must provide an RPEQ certified electrical reticulation layout plan with the Operational Works application.
- (c) Street lighting must be installed by the Developer in accordance with the Australian Standard 1158.3.1 Series for Pedestrians and Vehicles for both Collins and Haig Street. All street lighting associated with the development must be certified by an RPEQ. Street lighting must be installed on the same side as concrete footpaths (where applicable).
- (d) The Developer must make suitable arrangements for the provision of telephone and (where applicable) cable services to all proposed lots within the development. Documentary evidence that telephone and/or cable services will be provided, must be submitted to Council prior to the signing of the plan of survey.

14. Operational Works – Municipal Works
(ie Works being handed over to Council)

- (a) Municipal works must be completed in accordance with a detailed design certified by an RPEQ and approved by Council Engineers with appropriate fees payable, a works pre-start meeting on-site and various detailed construction and audit inspections by Council Officers. In accordance with *Ipswich Planning Scheme Policy 3*, a maintenance period applies for the works and a maintenance security deposit is required.
- (b) External Municipal Works relates to those works external to the subject site and located in already dedicated public areas, for example existing road or drainage reserve, or private property not subject to Developer ownership.
- (c) The requirements of *Ipswich Planning Scheme Policy 3 - General Works* and Council's *Standard Drawings* must apply to the municipal works. Where inconsistencies between any documents occur, *Ipswich Planning Scheme Policy 3* has precedence and must prevail to the extent of any inconsistency.
- (d) All engineering drawings must be in accordance with *Ipswich Planning Scheme Policy 2 – Information Local Government May Request* and include as a minimum the following:
 - (i) Engineering drawings must be marked as confirmation that they have been checked and approved by an RPEQ.
 - (ii) The drawings must be submitted as four (4) hardcopy, A3 size sets. Reports and supporting information must be submitted as four (4) hardcopy sets.

The submission must also include a compact disk containing electronic data as follows:

- (a) One (1) full set of all engineering drawings contained in one file;
- (b) Separate individual files containing layout plans for sewerage, water supply and drainage;
- (c) Any reports submitted in support of the application. Each report must be included as a separate file, and
- (d) An index of all files on the compact disk including descriptions of contents of each file.

All files must be submitted in PDF format, unless otherwise specified.

- (iii) A "Certificate of Design" must be submitted by an RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (e) All works must be supervised by an RPEQ competent in civil works and must be undertaken by a nominated principal contractor experienced in the construction of municipal works. Council reserves the right to request evidence of the principal contractor's competency. Should the contractor not be able to demonstrate the necessary competency to the satisfaction of the Senior Development Engineer or if the contractor has constructed substandard works for Council in the past, Council reserves the right to reject the nominated contractor.
- (f) Prior to the Pre-Start meeting, the Developer must submit to Council a bank guarantee, or a bond of not less than 10% of the value of the external municipal works (minimum \$5,000.00), as security for the performance of the various construction and certification obligations (including provision of "As Constructed" information). The bond or guarantee must be reduced to an amount not less than 5% of the value of the works upon formal acceptance of the works "On Maintenance", and must be retained by Council during the maintenance period as security for the performance of the Developer's maintenance obligations. The bond must be returned upon formal acceptance of the works "Off Maintenance".
- (g) Municipal works must be accepted "On Maintenance" prior to commencement of use. A maintenance bond equal to 5% of the construction cost (minimum \$5,000.00) must be submitted by the Developer and must be retained by Council for a minimum period in accordance with *Ipswich Planning Scheme Policy 3*, or until the works are accepted "Off Maintenance" by Council.
- (h) On completion of the works a certificate must be submitted to Council by an RPEQ certifying that the works have been constructed in accordance with Council's construction standards and in compliance with the approved plans and specifications. It is expected that the RPEQ will undertake the necessary inspections to make this certification.
- (i) "As Constructed" information and final construction issue engineering design drawings, compiled in accordance with *Ipswich Planning Scheme Policy 2 for Municipal Works*, must be submitted to Council and approved prior to the formal acceptance of the works "On

Maintenance". This data must be submitted electronically on a compact disk labelled appropriately to indicate the contents.

- (j) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent in regard to the works relevant to the Operational Works approval.

15. Operational Works – Internal Works

(ie Works not being handed over to Council)

- (a) Internal Works refers to engineering works performed within private property and includes but is not limited to, earthworks, retaining walls, driveways and stormwater management systems.
- (b) Plans relating to all civil engineering works must be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans must show full construction details, layout dimensions, and finished surface levels and must be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (c) Engineering drawings must be marked as confirmation that they have been checked and approved by a RPEQ.
- (d) The drawings must be submitted as four (4) hardcopy A3 size sets and two (2) hardcopy sets of any reports and supporting information. One set of plans will be returned to the applicant with the Decision Notice.

The submission must also include a Compact Disc containing electronic data as follows:

- (i) One (1) full set of all engineering drawings contained in one file,
- (ii) Separate individual files containing layout plans for sewerage, water supply and drainage,
- (iii) Any reports submitted in support of the Application. Each report must be included as a separate file, and
- (iv) An index of all files on the Compact Disc including descriptions of contents of each file.

All files must be submitted in PDF format, unless otherwise specified. Where municipal works are also being undertaken, it is usually appropriate to make a combined submission.

- (e) A "Certificate of Design" signed by an RPEQ must be submitted to certify that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (f) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent.

- (g) On completion of works, a certificate must be submitted to Council by an RPEQ certifying that the completed works have been constructed in accordance with Council's requirements and standards and in compliance with the approved plans and specifications. It is expected that the RPEQ will undertake the necessary inspections to make this certification.

16. General

- (a) All disturbed verge areas and allotments must be graded, grassed and left in a mowable condition. The grass cover must be obtained as early as possible during the development and an acceptable grass cover must be achieved before the development can be accepted "Off Maintenance".
- (b) Should any works be proposed on land under other private ownership, written permission for the works must be obtained and forwarded to Council. Similarly, written clearances must be obtained after the works are completed, unless otherwise accepted by the Senior Development Engineer.
- (c) All works required for this development must take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works must be altered at the cost of the Developer.
- (d) Any allotment filling for a depth greater than 500mm to provide for building platforms must be conducted in accordance with Australian Standard 3798 at Responsibility Level 1. Test results as required by Australian Standard 3798, and a certificate of quality and uniformity of fill must be provided by a RPEQ.
- (e) Imported and exported materials may only be transported on routes approved by the Senior Development Engineer.
- (f) Any fill intended to be placed over Council's underground services must be approved by the Senior Development Engineer.
- (g) Batters and slopes greater than 1:4 resulting from cutting and filling of the site must be certified by an RPEQ as stable and properly drained.

B. Further Advice

- 1. The subject site was fully inundated in the 1974 flood. Council, and its servants and agents, accept no liability or responsibility for any loss or damage to person or property of whatever nature or however caused as the direct or indirect consequence of the granting of the approval herein contained. Such approval has been granted at the request of the Developer and in reliance of information submitted by the Developer in support thereof.

2. Portable Long Service Leave

Where the works are valued at \$80,000 or more and match the definition of Building and Construction Industry, the *Building and Construction Industry (Portable Long Service Leave) Act 1991* requires that evidence of payment of the Portable Long Service Leave (QLeave) Levy be received by Council as a condition of issuing a Development Permit. This applies to Building Works, Operational Works and Plumbing and Drainage Works applications, as defined under the *Integrated Planning Act 1997*.

If such evidence is not received by the time of issuing the Decision Notice, Council may only issue a Preliminary Approval, notifying the Developer that the application is approved, but not permitting commencement of Operational Works.

All statutory timeframes applying under the *Integrated Planning Act 1997* for appeals and expiry of the Approval continue in force after issuing of the Decision Notice containing the Preliminary Approval.

A subsequent Development Permit will have to be issued by Council upon receipt of evidence of payment of the QLeave Levy after issuing a Preliminary Approval. This will require a new Application and fees will apply.

If you require clarification in regard to the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, you should contact QLeave on 1800 803 481 (free call) or (07) 3212 6855.

3. Water Use Authority

The Developer is advised to obtain a current Water Use Authority (WUA) from Ipswich Water if, over the approval relevant period, the potable water restriction level at the time of commencement of, and during, construction prohibits potable water consumption for construction or associated development purposes. The WUA can be obtained by completing a Water Use Declaration and forwarding it to Ipswich Water for approval. Evidence of a current WUA, where applicable, must be provided to the Senior Development Engineer prior to the pre-start meeting.

4. Submission of Drawings

Any engineering drawings submitted for Council review and approval in conjunction with an Operational Works application should be arranged to leave a blank space with minimum dimensions 6cm wide and 14cm high near the right border for a Council Stamp of Approval, so that any existing notes are not over-written by the stamp.



DEVELOPMENT ENGINEER

Endorsed By:



Aaron Katt
Senior Engineering Officer
DATE: 9 December 2009



195/06 [REDACTED]

22 December 2009

MEMORANDUM

TO: TEAM COORDINATOR (CENTRAL WEST) – JO POCOCK
FROM: PLANNER (DEVELOPMENT) [REDACTED]
RE: DEVELOPMENT APPLICATION - IMPACT ASSESSMENT
INTEGRATED PLANNING ACT 1997 - SECTION 3.2.1(1)

Appn No: 195/06
Applicant: Colran Pty Ltd.
Real Property Description: Lot 2 RP857016
Property Location: 2 Haig Street, Brassall
Division: Six (6)

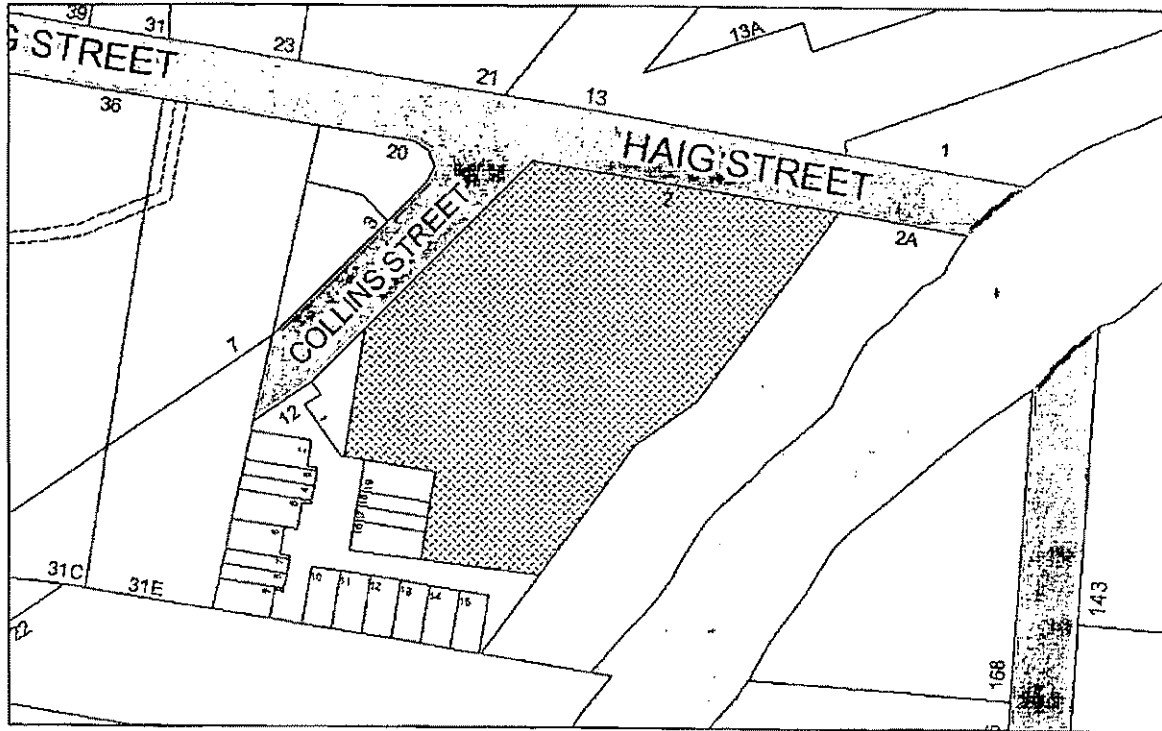
Proposal	Development	Approval Type Requested
Multiple Residential (48 Dwelling Units)	Making a Material Change of Use of Premises	Development Permit.

Date Received: 12 January 2006
Start Date for Decision Stage: 17 November 2009
Stat. Date for Determination: 20 January 2010

Site Area: 1.2820ha

Zone: Recreation

SITE LOCATION



PROPOSAL PLAN

A3

VIEW FROM HAIG STREET

VIEW FROM COLLINS STREET

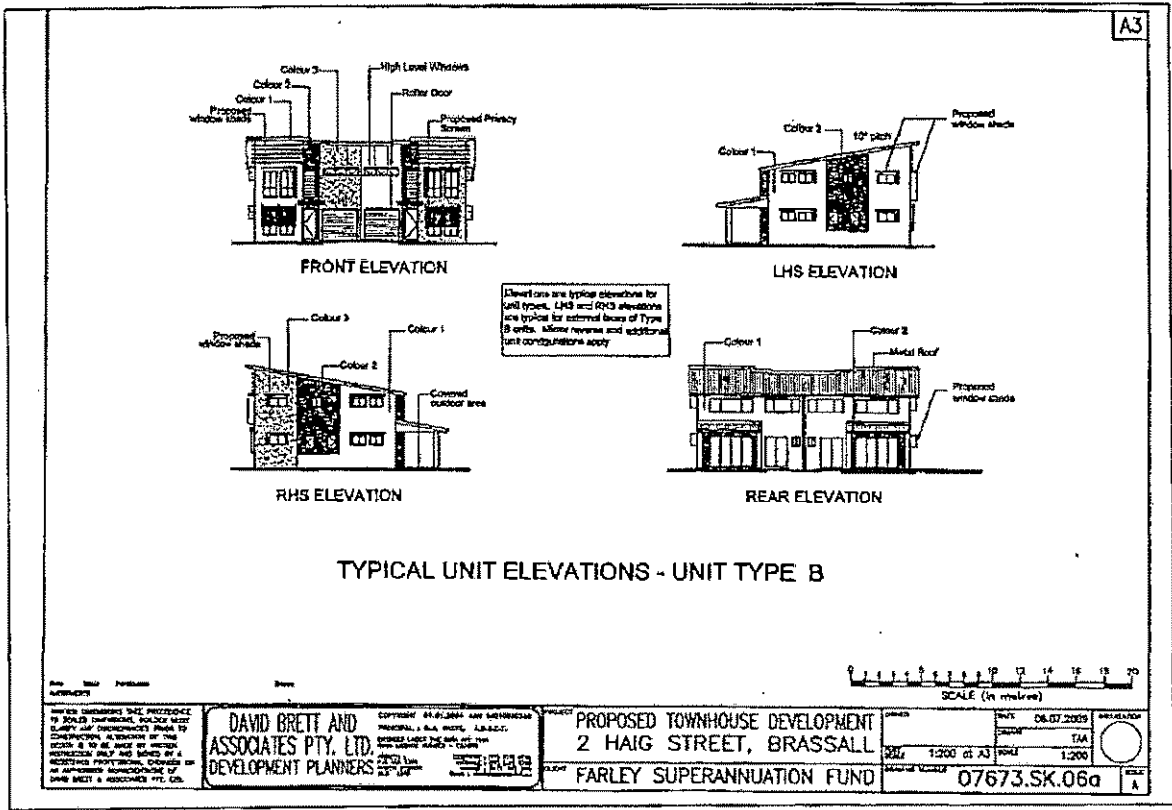
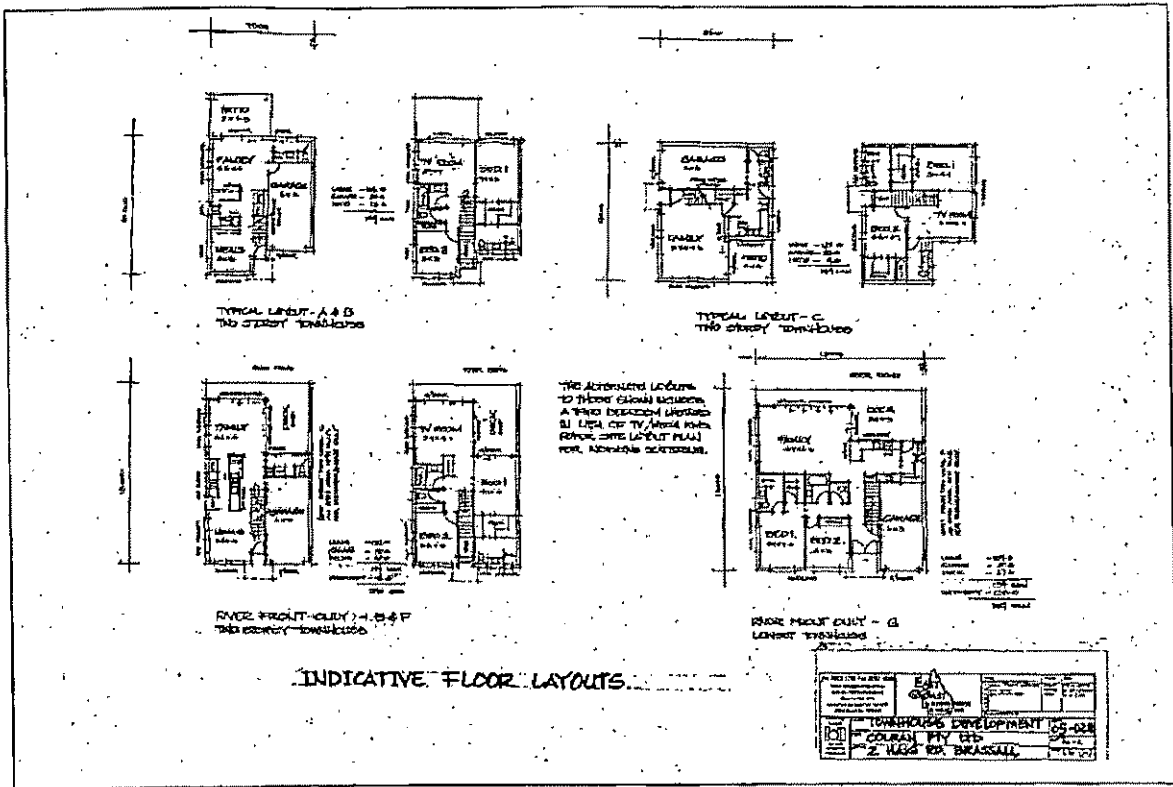
VIEW FROM CORNER OF HAIG AND COLLINS STREET

PROPOSED STREETSCAPES

Landscaping to indicate only

SCALE (in metres)

<p>NOTICE: THIS PLAN IS THE PROPERTY OF DAVID BRETT AND ASSOCIATES PTY. LTD. IT IS TO BE USED ONLY FOR THE PURPOSES SPECIFIED HEREIN. ANY REUSE OR ALTERATION OF THIS PLAN WITHOUT THE WRITTEN PERMISSION OF DAVID BRETT AND ASSOCIATES PTY. LTD. IS STRICTLY PROHIBITED.</p>	<p>DAVID BRETT AND ASSOCIATES PTY. LTD. DEVELOPMENT PLANNERS</p>	<p>OFFICE: 1/11A WELLS STREET, BRASSALL, TASMANIA 7250</p> <p>TEL: 03 6337 1111</p> <p>FAX: 03 6337 1112</p>	<p>PROJECT: PROPOSED TOWNHOUSE DEVELOPMENT 2 HAIG STREET, BRASSALL</p> <p>CLIENT: FARLEY SUPERANNUATION FUND</p>	<p>DATE: 23.12.2020</p> <p>SCALE: 1:200</p> <p>PROJECT NO: 07673.SK.5</p>
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SUMMARY

The purpose of this application is for the establishment of forty-eight (48) multiple residential dwelling units (townhouses) in six (6) stages on a site situated at 2 Haig Street, Brassall. The subject site encompasses a site area of 1.282ha and is the site of a disused tennis centre.

The site is contained within the Recreation Zone in recognition of its historic use for the previous tennis centre under the current Ipswich Planning Scheme and as such, the proposal is Impact Inconsistent development pursuant to the table of development for the zone.

Despite the inclusion of the site in the recreation zone, approval of the proposal is recommended given that the proposed development is well placed to take advantage of local services such as the Brassall Shopping Centre, schools, medical services, public transport and recreation opportunities (in particular the Collins Street bikeway linking Brassall, North Ipswich and the Ipswich CBD). It should be noted there is other multiple residential development adjoining the site, therefore the development of multiple residential units on this site is a logical extension to the higher density residential development existing in this area of Brassall, particularly given its convenient location to essential services.

The subject site is partially affected by both the Q100 and Q20 flood events, however a detailed flood study has been undertaken for the site, with the proposed development constructed clear of predicted flood events. The Applicant has undertaken rigorous technical reporting to support the proposed development, including a flood study, a stormwater management plan and an assessment of river bank stability to ensure the proposed development is physically suitable for the site and does not detrimentally impact upon the riverbank.

Notable engineering works recommended to be conditioned as part of an approval relevant to this application include:

- the upgrade of Collins Street to an access street standard with kerb and channel and footpath infrastructure as part of Stage One (1) of the development
- the construction of a reinforced concrete driveway along Haig Street between the end of the existing pavement and the site access point in addition to construction of kerb and channel infrastructure and the provision of a pedestrian footpath as part of Stage One (1) of the development
- the payment of a monetary contribution of \$25,000 towards bus stop infrastructure in the area as part of Stage one (1) of the development
- the requirement for compensatory earthwork drawings to be submitted with the operational works application, with such plans certified in accordance with the relevant flood study report for all stages
- the requirement for earthworks and in-ground services to be designed and undertaken in accordance with the relevant riverbank stability report for all stages

Standard engineering conditions have also been included in the recommendation in relation to access and parking, sewerage, water supply, stormwater, waste storage and collection, erosion and silt management and provision of public utilities infrastructure.

Pursuant to Planning Scheme Policy 5 'Infrastructure', the Developer will be required to pay total monetary contributions in the amount of \$540,011.00 towards the provision of water, sewerage, roadworks, parks and social infrastructure pursuant to the current Planning Scheme Policy 5.

There are no concurrence agencies relevant to this application. Written notice has been received from the applicant confirming public notification of the proposal, which correctly identified the application as a proposal for Multiple Residential (48 Townhouses) and included publishing a notice in the Courier Mail on the 20 October 2009. Such notice confirmed that the actual notification period of 17 business days complies with Section 3.4.5 of the *Integrated Planning Act 1997*, which states that the notification period for the application is 15 business days. The public notification of the proposal has been carried out in accordance with the *Integrated Planning Act 1997* and no submissions were made in relation to the proposal.

In summary, it is considered that the proposal to permit the development of a Multiple Residential (48 Townhouses) is suitable for the subject site and should be approved, subject to the conditions detailed below.

RECOMMENDATION

- A. That the Developer be advised that Development Application No. 195/06 is determined as outlined in the table below and is subject to the conditions specified below.

Proposal	Development	Decision	Approval Type
Multiple Residential (48 Dwelling Units)	Making a Material Change of Use of Premises	Approved	Development Permit.

Further Development Permits Required

Further Development Permits, as required by the *Integrated Planning Act 1997*, shall be obtained in respect of any Operational Works, Building Works and Plumbing Works in relation to this approval before any such works are commenced.

Conditions of Assessment Manager (Ipswich City Council)

1. **Basis of Approval**

Subject to these conditions, the facts and circumstances set out in the application and all relevant Council Local Laws and/or Planning Scheme Policies shall be adhered to.

2. Site Development

- (a) The proposed development of the site must be undertaken generally in accordance with the following plans:

Title	Drawing Number	Prepared By	Date
Site Plan and Recreation Area Calculations	07673.SK.10, Issue A	David Brett and Associates Pty Ltd	1 October 2009
Staging Plan	07673.SK.12, Issue A	David Brett and Associates Pty Ltd	13 October 2009
Proposed Riverscape	07673.SK.11, Issue A	David Brett and Associates Pty Ltd	31 October 2007
Proposed Streetscapes	07673.SK.5, Issue B	David Brett and Associates Pty Ltd	23 December 2008
Indicative Floor Layouts	DA-2, Job No. 05-028	David Brett and Associates Pty Ltd	16 January 2006
Typical Unit Elevations – Unit Type B	07673.SK.06a, Issue A	David Brett and Associates Pty Ltd	6 July 2009
Typical Unit Elevations – Unit Type C	07673.SK.07a, Issue A	David Brett and Associates Pty Ltd	6 July 2009
Unit Elevations – Unit Type F	07673.SK.08a, Issue A	David Brett and Associates Pty Ltd	6 July 2009
Unit Elevations – Unit Type G	07673.SK.09a, Issue A	David Brett and Associates Pty Ltd	6 July 2009

- (b) As the 4.0m wide road dedication to Collins Street is no longer required, the land shall be retained within development site and must be shown on modified plans to be submitted with the operational works application for approval. Such modified plans must be to the satisfaction of the assessment manager.

3. Hours of Construction

Unless otherwise approved in writing by the assessment manager hours of construction must be:

Monday to Saturday 6.30 a.m. to 6.30 p.m.

Work must not be conducted from or on the premises outside the above hours or on Sundays or public holidays.

4. Demolition of Buildings

All buildings or other structures on the land must be demolished or removed, prior to approval of any application for building works pursuant to this material change of use approval, to the satisfaction of the assessment manager. Approval of an application for building works for the demolition or removal, must be obtained prior to the commencement of such works.

5. Letter Boxes

Unless otherwise approved by the assessment manager, one letter box shall be provided per unit plus one letter box for use by the body corporate or management where appropriate. Such letter boxes shall form an integral part of the design of the development and shall be located within six (6) metres of the road frontage to which the site has been allocated its street address, unless otherwise approved by the assessment manager.

6. Laundering Facilities

Each dwelling unit within the development must be provided with individual laundry and clothes drying facilities. Alternatively, communal facilities must be provided and located to the satisfaction of the assessment manager not more than 100 metres from any dwelling unit.

7. Fencing

- (a) Private recreation space, communal recreation space and site boundaries must be fenced as follows:

Fencing of Private Recreation Space Areas of Units	
Unit Numbers	Type of Fence
1-11	1.8m high timber screen fencing between common private recreation space areas and 1.2m high (30% transparent) fencing along the rear boundary of private recreation space areas
12 – 20	1.8m high timber screen fencing along all boundaries of private recreation space areas
21-26	1.8m high timber screen fencing along common boundaries of private recreation space areas, stepping down. Fencing to Collins Street shall be provided as per ' <i>Fencing to Collins and Haig Street</i> ' below
27 – 48	1.8m high timber screen fencing along all boundaries of private recreation space areas
Fencing to Collins and Haig Street	
The fencing to both Collins Street and Haig Street shall be generally that shown on Proposed Streetscape Plan, Drawing No. 076373.SK.5, Issue B, prepared by David Brett and Associates and dated 23 December 2008, however fence panels shall be at least 30% transparent to ensure passive surveillance of the street environment. The developer also indicate private and secure access gates for each unit which face onto Collins Street and from the communal recreation space area adjacent to units 27 and 48 and Haig Street.	
Fencing of Remaining Site Boundaries	
The remaining boundaries of the site to adjoining properties shall be fenced with 1.8m high screen fencing.	

- (b) The colour, style and material of the fencing must be sympathetic to other fencing in the vicinity of the development site and compliment the development. A detailed schedule of fencing and the treatment of such fencing shall be submitted for approval of the assessment manager, prior to the issue of any building works approval for the approved development.

8. Landscaping

- (a) A Landscape Master Plan, which conforms to the approved development plan, Section 27 of Ipswich City Council's Planning Scheme Policy 2, Council's Street Tree Strategy and the relevant Planning Scheme Development Code/s, must be submitted to Council for approval prior to or in conjunction with an application for operational works. Such plan must include, amongst other necessary items, the following features:
- (i) extent of landscaped areas
 - (ii) location and name of any existing trees
 - (iii) soil type
 - (iv) location of drainage, sewerage and other underground services and overhead powerlines
 - (v) details of landscaping structures
 - (vi) contours and spot levels
 - (vii) proposed surface treatments
 - (viii) means of drainage and irrigation
 - (ix) fence size and type of material, as required by Condition 7 'Fencing' above
 - (x) schedule of plant species size (see Note 1 below), densities (see Note 2 below) and attributes
 - (xi) exclude the use of environmental weeds. Consideration must be given to utilising Council's Vegetation Communities Rehabilitation Guide, specifically Guide 2 Alluvial Flats, Watercourses & Wetlands (attached)

Note 1: Planting sizes are at least as follows

Street and features trees	45L
Other trees	300mm
Larger shrubs	200mm
Groundcovers	150mm

Note 2: Planting at approximately the following density rates:

	<i>As street trees</i>	<i>For buffer planting</i>	<i>All Other instances</i>
<i>Trees</i>	1 per allotment frontage	at 2m centres	at 5m centres
<i>Large shrubs</i>	NA	at 1m centres	at 2m centres
<i>Groundcovers</i>	NA	at 0.5-1m centres	at 0.5-1m centres

- (b) The developer must complete landscaping and fencing works in accordance with the approved landscape plans to the satisfaction of the assessment manager prior to the commencement of the use of the land unless Council determines otherwise.

Such landscaping and fencing must be maintained in perpetuity to Council's satisfaction by the existing or future owners and occupiers of the property.

9. Carparking - Use and Maintenance

- (a) A total of 48 private car parking spaces and 31 visitor car parking spaces must be provided on site for the proposed development. All parking areas must be:
- (i) kept and used exclusively for parking
 - (ii) appropriately signposted at the entry/entries to the carpark and exclusive parking areas, to the satisfaction of the assessment manager (eg. " Visitor and Resident Parking"), in accordance with AS1742
 - (iii) maintained to the satisfaction of the assessment manager
- (b) A delineated pedestrian pathway shall be provided along one side of the internal access roads throughout the development to provide a safe zone for pedestrians. This pedestrian pathway shall be made distinct from the internal access road through use of appropriate tints or textures or physical separation or a combination of these.

10. Contributions

- (a) In accordance with the relevant Council Policies, the developer shall pay, prior to the issue of any building works approval associated with the development (associated with each relevant stage of development), the following monies to Council:-

Stage 1				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	EP Rate = \$1,120/EP	Proposed Residential Use: 8 units with 2 beds each = 8 units x 1.5EP each = 12EPs Existing Indoor Recreation Use – Pre-existing GFA 866m ² = 0.5NRU's/100m ² = 4.33NRU's.	Proposed Residential Use: 12EPs x \$1,274.90 = \$15,298.80 Existing Indoor Recreation Use: 4.33NRUs x \$1,529.88/NRU = \$6,624.38 (credit) Balance Payable = \$8,674.00
		Unit Charge = \$1.1383		
		Total EP Rate= \$1,274.90/EP		
		NRU Rate = \$1,344/NRU		
		Unit Charge = \$1.1383		
Total NRU Rate = \$1,529.88				

Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	EP Rate = \$1,289/ep Unit Charge = \$1.1383 Total EP Rate = \$1,467.27/EP NRU Rate = \$1,574/NRU Unit Charge = \$1.1383 Total NRU Rate = \$1,791.68	Proposed Residential Use: 8 units with 2 beds each = 8 units x 1.5EP each = 12EPs Existing Indoor Recreation Use: Pre-existing GFA 866m ² = 0.5NRU's/100m ² = 4.33NRU's.	Proposed Residential Use: 12EPs x \$1,467.27/EP = \$17,607.24 Existing Indoor Recreation Use: 4.33NRUs x \$1,791.68/NRU = \$7,757.97 (credit) Balance Payable = \$9,849.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	8 units with 2 beds each = 8 units x 3.8VT each = 30.4VTs Credit for Indoor Recreation Use – Pre-existing GFA 866m ² = 13.3VT/100m ² = 115.18VT Total VT = -84.78VT	No infrastructure contributions applicable as sufficient credit exists for this stage.
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	8 units with 2 beds each = 8 units x 1.58EP each = 12.64EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 12.64EPs.	12.64EPs x \$3,278.69/EP = \$41,442.64 \$41,443.00
Social	C6 – Brassall	\$315.27/EP	8 units with 2	12.64EPs x

Infrastructure	(Pathways Fee Code SIC6)	Unit Charge = \$1.1383 Total = \$358.87/EP	beds each = 8 units x 1.58EP each = 12.64EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 12.64EP	\$358.87/EP = \$4,536.12 \$4,536.00
Total for Stage 1				\$64,502.00
Stage 2				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	EP Rate = \$1,120/EP Unit Charge = \$1.1383 Total EP Rate = \$1,274.90/EP	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under Stage 1	Proposed Residential Use: 9EPs x \$1,274.90 = \$11,474.10 Total = \$11,474.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	EP Rate = \$1,289/ep Unit Charge = \$1.1383 Total EP Rate = \$1,467.27/EP NRU Rate = \$1,574/NRU Unit Charge = \$1.1383 Total NRU Rate = \$1,791.68	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under Stage 1	Proposed Residential Use: 9EPs x \$1,467.27 = \$13,205.43 Total = \$13,205.00
Roadworks	42 – Brassall –	\$1,143/VT	6 units with 2	No

Infrastructure	Wulkuraka North (Pathways Fee Code RD42)	Unit Charge = \$1.0952 Total = \$1,251.81/VT	beds each = 6 units x 3.8VT each = 22.8VTs Credit for Indoor Recreation Use = 84.78VT (carried over from stage 1) Total VTs= -61.98	infrastructure contributions applicable as sufficient credit exists for this stage.
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 9.48EP	9.48EPs x \$3,278.69/EP = \$31,081.98 \$31,082.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable.. Total EP = 9.48EP	9.48EPs x \$358.87/EP = \$3,402.09 \$3,402.00
Total for Stage 2				\$56,103.00
Stage 3				
Contribution	Sector	Rate	Proposal	Calculation

Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	<p>EP Rate = \$1,120/EP</p> <p>Unit Charge = \$1.1383</p> <p>Total EP Rate= \$1,274.90/EP</p> <p>NRU Rate = \$1,344/NRU</p> <p>Unit Charge = \$1.1383</p> <p>Total NRU Rate = \$1,529.88</p>	<p>10 units with 2 beds each = 10 units x 1.5EP each = 15EPs</p> <p>Credit for Existing Indoor Recreation Use applied under Stage 1</p> <p>Total EP = 15EPs</p>	<p>Proposed Residential Use: 15EPs x \$1,274.90 = \$19,123.50</p> <p>Total = \$19,124.00</p>
Sewerage Infrastructure	29 – 5P53 (Pathways Fee Code SW29)	<p>EP Rate = \$1,289/ep</p> <p>Unit Charge = \$1.1383</p> <p>Total EP Rate = \$1,467.27/EP</p> <p>NRU Rate = \$1,574/NRU</p> <p>Unit Charge = \$1.1383</p> <p>Total NRU Rate = \$1,791.68</p>	<p>10 units with 2 beds each = 10 units x 1.5EP each = 15EPs</p> <p>Credit for Existing Indoor Recreation Use applied under Stage 1</p> <p>Total EP = 15EPs</p>	<p>Proposed Residential Use: 15EPs x \$1,467.27/EP = \$22,009.05</p> <p>Total = \$22,009.00</p>
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	<p>\$1,143/VT</p> <p>Unit Charge = \$1.0952</p> <p>Total = \$1,251.81/VT</p>	<p>10 units with 2 beds each = 10 units x 3.8VT each = 38VTs</p> <p>Credit for Indoor Recreation Use = 61.98VT (carried over from stage 2)</p> <p>Total VTs = -23.98VTs.</p>	<p>No infrastructure contributions applicable as sufficient credit exists for this stage.</p>

Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	10 units with 2 beds each = 10 units x 1.58EP each = 15.8EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 15.8EPs	15.8EPs x \$3,278.69/EP = \$51,803.30 \$51,803.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	10 units with 2 beds each = 10 units x 1.58EP each = 15.8EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 15.8EPs	15.8EPs x \$358.87/EP = \$5,670.15 \$5,670.00
Total for Stage 3				\$98,606.00
Stage 4				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	\$1,120/EP Unit Charge = \$1.1383 Total = \$1,274.90/EP	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 9EPs	9EP x \$1,274.90/EP = \$11,474.10 \$11,474.00

Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	\$1,289/ep Unit Charge = \$1.1383 Total = \$1,467.27/EP	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 9EPs	9EP x \$1,467.27/EP = \$13,205.43 \$13,205.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	6 units with 2 beds each = 6 units x 3.8VT each = 22.8VTs Credit for Existing Indoor Recreation Use = 23.98VTs (carried over from stage 3) Balance VTs remaining = -1.18VTs.	No infrastructure contributions applicable as sufficient credit exists for this stage.
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 9.48EPs	9.48EPs x \$3,278.69/EP = \$31,081.98 \$31,082.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs	9.48EPs x \$358.87/EP = \$3,402.09

		Total = \$358.87/EP	Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 9.48EPs	\$3,402.00
Total for Stage 4				\$59,163.00
Stage 5				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	\$1,120/EP Unit Charge = \$1.1383 Total = \$1,274.90/EP	9 units with 2 beds each = 9 units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 13.5EPs	13.5EP x \$1,274.90/EP = \$17,211.15 \$17,211.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	\$1,289/ep Unit Charge = \$1.1383 Total = \$1,467.27/EP	9 units with 2 beds each = 9 units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 13.5EPs	13.5EP x \$1,467.27/EP = \$19,808.15 \$19,808.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee	\$1,143/VT Unit Charge = \$1.0952	9 units with 2 beds each = 9 units x 3.8VT each = 34.2VTs	33.02VTs x \$1,251.81/VT = \$41,334.77 \$41,335.00

	Code RD42)	Total = \$1,251.81/VT	Credit for Existing Indoor Recreation Use = 1.18VTs (carried over from stage 4) Balance VT's = 33.02VT's	
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	9 units with 2 beds each = 9 units x 1.58EP each = 14.22EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	14.22EPs x \$3,278.69/EP = \$46,622.97 \$46,623.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	9 units with 2 beds each = 9 units x 1.58EP each = 14.22EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	14.22EPs x \$358.87/EP = \$5,103.13 \$5,103.00
Total for Stage 5				\$130,080.00
Stage 6				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone	\$1,120/EP	9 units with 2 beds each = 9	13.5EP x \$1,274.90/EP =

	(Pathways Fee Code WT4)	Unit Charge = \$1.1383 Total = \$1,274.90/EP	units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 13.5EPs	\$17,211.15 \$17,211.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	\$1,289/ep Unit Charge = \$1.1383 Total = \$1,467.27/EP	9 units with 2 beds each = 9 units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 13.5EPs	13.5EP x \$1,467.27/EP = \$19,808.15 \$19,808.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	9 units with 2 beds each = 9 units x 3.8VT each = 34.2VTs No credit remaining	34.2VTs x \$1,251.81/VT = \$42,811.90 \$42,812.00
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	9 units with 2 beds each = 9 units x 1.58EP each = 14.22EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	14.22EPs x \$3,278.69/EP = \$46,622.97 \$46,623.00

Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	9 units with 2 beds each = 9 units x 1.58EP each = 14.22EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	14.22EPs x \$358.87/EP = \$5,103.13 \$5,103.00
Total for Stage 6				\$131,557.00
Total for the Development				\$540,011.00

The contributions above are applicable for a period of twelve (12) months from the date of the development approval, and thereafter must be based on the infrastructure contribution policies and rates applicable at the date when payment is made.

The Developer is advised that direct debit, personal and/or company cheques cannot be accepted as payment for the above contributions. The only acceptable forms of payments are cash (EFT payments included), bank cheques or eligible credit cards.

11. Building Materials

Building materials and solar panels used in the construction of the multiple residential development must be of low reflectivity and must use anti-reflection coatings where available.

12. Painting

The exterior of all buildings erected on the site must be painted in such a colour or colours which will blend aesthetically with the surrounding environment. A schedule of colours must be submitted to and be approved by the assessment manager prior to painting and such painting must be maintained in perpetuity to the satisfaction of the assessment manager.

13. Visual Privacy

The Developer must provide suitable screening on the upper level to the windows from habitable rooms on all facades of the dwelling units, by means of external screening devices, to minimise overlooking into adjacent properties (including overlooking into buildings and associated private and public open space areas) in accordance with the approved plans to the satisfaction of the assessment manager. Privacy Screening is to be a minimum of 20% transparent and a maximum 40% transparent.

14. Lighting

The provision of security, flood and car park lighting must be designed, constructed and located so as not to cause disturbance to the occupants of nearby residential properties or passing traffic.

15. Engineering Requirements

The following engineering requirements, detailed in Conditions 16 – 30, shall be completed to the satisfaction of the Engineering and Environment Manager.

Terms

- (a) RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required.
- (b) QUDM – The *Queensland Urban Drainage Manual (2007 Edition)*, produced by the Queensland Department of Environment and Natural Resources.
- (c) Ipswich Water - Commercial Business Unit of Ipswich City Council providing water and sewerage services to Ipswich City.
- (d) ARI – Average Return Interval - used to define flood frequency and severity.

16. Roadworks

EXTERNAL ROADWORKS

- (a) The land dedication shown on the approved plans along the Collins Street property frontage must be removed from any future development plan lodged in conjunction with any operational works application pursuant to this material change of use. This dedication is no longer required.

Stage 1

Collins Street

- (b) Collins Street, from the speed platform on Haig Street and along the site frontage, must be upgraded/reconstructed in accordance with Council standards for an Access Street.

Works must include:

- (i) New pavement and carriageway (nominally 6.5m wide) with asphaltic concrete surfacing
- (ii) New concrete kerb and channel (Type B1) on the south eastern side plus associated stormwater infrastructure
- (iii) Re-profiling of the verge on the south eastern side
- (iv) Turfing, landscaping and street lighting.
- (c) A formal pedestrian crossing point must be provided on Collins Street south west of the site access point.
- (d) Works must consist of:
 - (i) Kerb ramps constructed in accordance with Council's Standard Drawing SR.18
 - (ii) Warnings signs and lighting
 - (iii) a 1.5m wide concrete path connecting the site access point in Collins Street and this formal pedestrian crossing point, through to the bicycle path on the north western side of Collins Street

Haig Street

- (d) A reinforced concrete driveway must be constructed along Haig Street between the end of the existing pavement and the site access point. The driveway must be constructed in accordance with Council standards for a commercial driveway and be a minimum of 6.5m wide.

Works must include

- (i) Kerb & channel (type B1) around the corner of Collins Street/Haig Street to finish generally adjacent the common property boundaries of 13 and 21 Haig Street
- (ii) Associated pavement widening and stormwater drainage infrastructure
- (iii) A concrete driveway for the development
- (iv) A stub providing access to/from the existing car parking area for the adjacent open space and
- (v) Guide posts on both sides of the proposed driveway
- (vi) 1.5m wide concrete path connecting the site access point in Haig Street and the site access point in Collins Street

Conceptual Design

- (e) Integrated conceptual design drawings of the above external roadworks must be prepared by an RPEQ and submitted to Council for review and approval before detailed design commences and prior to lodging any operational works application for the Development.

Bus Stop Infrastructure Contributions

- (f) A monetary contribution of \$25,000 must be paid to Council towards bus stop infrastructure in the area and must be paid prior to the issuing of certificate of classification for any Units that are part of this development. The amount must be fixed for 12 month from the date of this decision notice and then adjusted in accordance with the Road & Bridge Construction Cost Index applicable to Queensland at the time of payment.
- (g) All roadworks must be designed and constructed in accordance with Council's Policies and Standards, the *DMR Road Planning & Design Manual*, Austroads Publications and any other documentation accepted as best practice by Council. The design and construction of each road or street must ensure that the speed environment, geometry, sight distances, carriageway widths, lighting, facilities for bus stops, refuse collection vehicle movements, pedestrians and cyclists, and on-street parking and other physical attributes are consistent with the function and role of the road or street in the transportation network.
- (h) Road pavements must be designed and constructed in accordance with the Ipswich City Council's Planning Scheme Policy 3 - General Works, Chapter 5 - Roadworks. All roads must have two way cross-falls in accordance with Council's adopted standards.
- (i) "No Through Road" signs must be erected at the entries to all cul-de-sacs and terminating roads.

17. Access and Parking

- (a) Design and construction of all access and parking must be in accordance with the provisions of the *Ipswich Planning Scheme Parking Code* and *Australian Standards (2890 Series)*.
- (b) Parking and manoeuvring areas must accommodate the largest anticipated vehicle to use the site.
- (c) Adequate facilities for servicing the development must be provided on site to ensure loading and/or unloading activities do not occur on-street.
- (d) Provision must be made for all vehicles to enter and exit the site in forward gear.
- (e) Provision must be made for HRV manoeuvre into proposed loading bays. Demonstration of same must be as part of the first operational works application.

- (f) All parking, access and manoeuvring areas must be constructed of concrete, bitumen or pavers and must be line-marked in accordance with the relevant Australian Standard.
- (g) Concrete layback and driveway slab minimum 6.5 m wide, must be constructed from the layback to the property boundary, at both Collins Street and Haig Street access points to the development in accordance with Council's Standard Drawing SR13 in conjunction with stage 1 of the development.
- (h) A drainage system must be provided so that no part of the driveway will be inundated in the runoff resulting from a storm event with an ARI of 2 years, and the runoff from the driveway must be discharged to the satisfaction of the Senior Development Engineer.
- (i) The developer must provide linemarked segregated pedestrian access throughout the development to eliminate potential vehicular and pedestrian conflict.
- (j) The driveway construction within the development excluding the segregated pedestrian access must be a minimum 5.5 m wide.
- (k) Any terminating internal roads that may be extended as a part of a later stage must be provided with an all-weather gravel and two-coats of bitumen seal surface turn-around area sufficient size to enable Council's refuse vehicle to negotiate a clear turn. Hazard markers and delineator posts must be erected at the ends of the turnarounds. All works must be undertaken to the satisfaction of the Senior Development Engineer.
- (l) The internal road pavement widths and geometric layouts must make adequate provision for Council's refuse collection vehicles movements.
- (m) Roadway adjacent to Units 27-28 must be adjusted to accommodate reversing movements from garages of these units.
- (n) A waste bin storage area around Stages 5 and 6 of the development must be nominated with operational works application relevant to this stage.

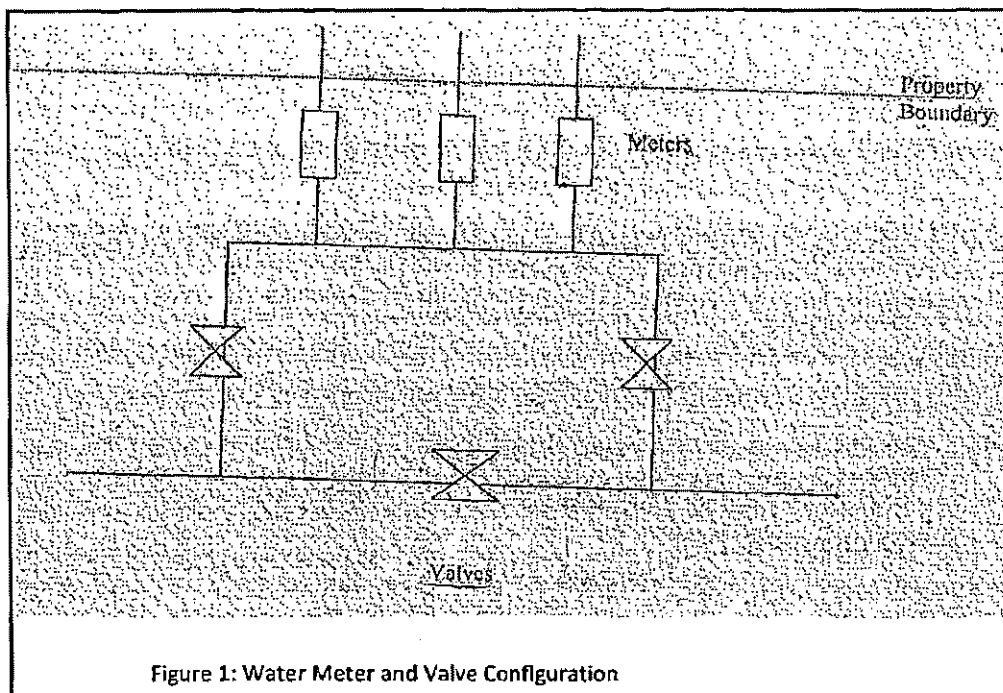
18. Sewerage

- (a) The developer must provide a sewerage reticulation system for each stage with appropriate house connection branches, designed to fully command the development (Lot 2 RP857016).
- (b) The developer must pay the full cost for Ipswich Water to provide a suitable connection into the existing sewerage reticulation system. All works on live sewers are to be carried out by Ipswich Water at the developer's expense in accordance with *Planning Scheme Policy 3 Section 10.1.2*, unless arranged otherwise with Ipswich Water.

- (c) Any existing sewerage or sanitary drainage that may be redundant as a result of this approval must be located, disconnected and removed to the satisfaction of the Senior Development Engineer.
- (d) No work on the sewerage reticulation system may commence prior to the approval of the operational works application.

19. Water Supply

- (a) The Developer must lodge a private works request on the prescribed Council form, for Ipswich Water to:
 - (i) Supply and install a suitable metered water connection for the development generally in accordance with Figure 1 below.



- (ii) Amend the existing connection if necessary, and
- (iii) Seal off any existing water connections if necessary.

The relevant cost must be paid to Council prior to the issuing of the certificate of classification for any Units as part of this development.

- (b) Council's water supply system has been designed to achieve the target levels of service as outlined in Planning Scheme Policy 3 Section 4.1.2 *Standard of Service*. It is the responsibility of the developer to provide any fire fighting requirements over and above Council's target levels of service, at their expense, internally and without adverse impact to Council's water supply system.
- (c) A 150mm diameter main must be constructed as part of the first stage of this development from the existing 150mm diameter main on northern side of

Workshops Street (opposite 24 Workshops Street) and connect into the existing 100mm diameter main adjacent to 12 Collins Street. This extension must include valves and hydrants at appropriate locations and intervals.

20. Stormwater

Stormwater Quality

- (a) The quality of stormwater leaving the developed site must achieve the following reductions in average annual pollutant load:
- 80% for total suspended solids
 - 60% for total phosphorus
 - 45% for total nitrogen
 - 90% for gross pollutants
- (b) The water quality objectives listed in (a) must be achieved through the implementation of the nine (9) bio-retention basins generally in accordance with the Stormwater Management Plan Version 7 dated 15 October 2009 prepared by Cardno Pty Ltd subject to the following amendments:
- (i) The nine (9) bio-retention basins must each have a drainage layer depth of 200mm and a transition layer depth of 100mm. The filter media median particle size for all bio-retention basins must be 0.45mm with a hydraulic conductivity of 180mm/hr. All other parameters for the bio-retention basins must be in accordance with the modelled parameters represented in Table 1 below:

Table 1

Bioretention Basin	Extended detention depth (m)	Surface Area (m ²)	Filter Area (m ²)	Filter Media Depth (m)
A	0.2	66.0	33.7	0.7
B	0.2	26.9	5.9	0.7
C	0.2	75.4	42.4	0.7
D	0.2	70.3	31.7	0.7
E	0.2	79.9	37.3	0.7
F	0.2	22.8	3.7	0.7
G	0.2	21.9	3.6	0.7
H	0.2	21	4.1	0.7
I	0.2	20.9	3.1	0.7

- (ii) A high flow bypass must be incorporated into the design of the bio-retention basins to ensure that only flows up to the 3 month ARI storm event are treated through the bio-retention basins;
- (iii) Geofabric must not be used between the bio-retention swale layers and the filter media layer

- (iv) Detail pre-treatment to bio-retention basins to ensure scour protection and removal of gross pollutants
- (v) Bioretention basins A, D, E, F, G, H and I must include an impermeable liner to prevent exfiltration to the surrounding soils. Details of the lining must be submitted with application for operational works relevant to each stage.
- (vi) Bioretention basin under drain design is to be in accordance with Section 5.3.5 of the Water Sensitive Urban Design Technical Design Guidelines (WSUD TDG) for South East Queensland and Section 3.4.5 of the Construction and Establishment Guidelines - Swales, Bioretention Systems and Wetlands, Version 1 dated February 2009, prepared by Healthy Waterways. A copy of the calculations used to size the drainage must be provided at the time of lodging the operational works application. Similarly calculations must be provided to demonstrate that the pipes which are connected downstream of the drainage pipes are suitably sized so as not to become the hydraulic control and filter media is free draining.
- (vii) Underdrainage must consist of either slotted PVC pipe or flexible perforated pipe (e.g. Ag pipe) and not presocked ag pipe
- (viii) Provide a uPVC riser with screw cap lid at the head of each slotted pipe for maintenance flushing. The plan must include a detail in accordance with BCC drawing UMS153 with a note that states that risers are not to be slotted
- (ix) Detailed planting plans for bioretention areas demonstrating compliance with the plant species and densities outlined in Appendix A of the WSUD TDG (version current at the time of operational works detailed design for each relevant stage.
- (x) Specify on the plan the grade at which drainage pipes are to be laid and the relevant width of the drainage pipe slots. It should be noted that a minimum of 0.5% slope is required and depending on the length of the bioretention this may impact significantly on the depth of the drainage layer. The length of all 100mm slotted drainage pipes must not exceed 25m. For longer lengths the pipe size must be increased or duplicated to increase conveyance
- (xi) Provide the bioretention filter media levels ensuring that the surface of the filter is flat to allow even absorption through the filter
- (xii) All inlets to the bioretention basins must be as near to the outlet as possible to minimise mixing of high flows with first flush
- (xiii) The drawings must include a note which refers to the Healthy Waterways Bioretention Basin Construction and Establishment Sign-off Forms (including the Pre-start meeting form and Forms A-G) for use throughout construction
- (c) Prior to lodgement of detailed operational works drawings for each stage, the Developer must receive certification from the consulting engineers who prepared the approved Stormwater Management Plan certifying that the detailed drawings are in accordance with the approved Stormwater Management Plan, these

conditions of approval and the WSUD TDG. A copy of the certification, and completed copies of the WSUD TDG Design Assessment Checklist and Calculation Summary Checklist, must be lodged in conjunction with an operational works application.

Stormwater Quantity

- (d) The developer must provide all necessary internal and external stormwater drainage to service the development. Such drainage works (except for building gutters and downpipes) must be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

In the case where the piped system is carrying part of the flow, the overland flow paths must be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system.

- (e) Appropriate works must be carried out to ensure that stormwater drainage from the new kerb and channel discharges suitably into the existing drainage system.
- (f) A suitable roofwater and internal drainage system must be designed in accordance with QUDM for the development. The design must be not less than QUDM Level IV.
- (g) Ponding, concentration or redirection of stormwater must not occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.
- (h) The floor levels of any habitable rooms of all dwellings must be located a minimum of 250 mm above the 100 year ARI flood event.
- (i) Construction of buildings or other structures is not permitted below the flood level associated with an ARI of 100 years with the exemption of Units 1 to 14 as part of this approval.
- (j) There must be no filling or removal of material in the flood area below the flood level associated with an 100 ARI of years with the exception of what has been specified in Flood Study Version 4 for 2 Haig Street Brassall prepared by Cardno dated 7 October 2009. There must be no disturbance to vegetation in the flood area, without prior written approval of the Senior Development Engineer.
- (k) For stormwater management purposes the development must be designed and constructed in accordance with the Stormwater Management Plan (SMP) submitted by Cardno and dated 15 October 2009 and Flood Study submitted by Cardno and dated 7 October 2009 and otherwise conditioned as part of this approval. Pipe discharge arrangement to Bremer river from the development must be in accordance with Section 5 of the above mentioned Stormwater Management Plan.
- (l) Compensatory earthwork drawings and calculations must be submitted as required by Condition 22 'Earthworks' below. This submission must also include the

following recommendations outlined in the above mentioned Flood Study report and River Bank Stability Assessment submitted by the Developer.

- Maximum height of fill must not exceed 500mm above the flood event equivalent to the ARI of 100 years
 - Maximum depth of cut must not exceed 1m between the proposed retaining wall profile and property boundary and batters must not be steeper than 1:4
- (m) All stormwater runoff from the development must be discharged in a manner and to a point to be approved by the Senior Development Engineer. In this instance all stormwater runoff from impervious areas (including roofwater) for associated storm events up to and including ARI of 100 years must be piped to a single discharge point located below the low level tide mark in the Bremer River.
- (n) Stormwater headwall structures must be constructed in accordance with the relevant DMR standard drawings for reinforced concrete headwalls and aprons, unless agreed otherwise with the Senior Development Engineer.
- (o) Stormwater drainage plans and calculations are to be submitted and approved by the Senior Development Engineer, in conjunction with the submission of first operational works application.
- (p) The developer, prior to the commencement of use of each stage, must submit to Council, certification from an RPEQ that the stormwater infrastructure and overland flow for that stage is connected to the outlet system as stated above.

21. Earthworks

- (a) Compensatory earthworks drawings must be submitted with the first operational works application addressing the following as a minimum and as required by Condition 21(l) 'Stormwater' above.
- (i) cut/fill depths, batter slopes, retaining wall heights
 - (ii) cross sections indicating Q100 flood line, reduced level of top of the bank, reduced level of proposed retaining wall etc
 - (iii) indicate expected total fill height and extend
 - (iv) batter slopes of fill/cut
 - (v) total height of retaining wall
 - (vi) quantify cut/fill volumes at each section
- (b) As part of the operational works application an RPEQ must certify that the submission as detailed above is in accordance with the above mentioned Flood Study report.

22. Site Stability

- (a) In terms of earthworks and construction of in-ground services, all works including retaining wall construction must generally be designed and undertaken to account for recommendations and requirements in accordance with "River Bank Stability

Assessment" report prepared by Morrison Geotechnic Pty Ltd and dated 23 October 2009 and to the satisfaction of the Senior Development Engineer.

- (b) Retaining walls and batters resulting from cutting and filling require RPEQ certification for Riverbank stability and proper drainage.

23. Building Requirement

Proposed Units 1-11 along the crest of the bank must not exceed design surcharge loading of 10kPa as recommended in "River Bank Stability Assessment" report prepared by Morrison Geotechnic Pty Ltd and dated 23 October 2009.

24. Retaining Walls

- (a) The developer must obtain written comments from adjoining property owners with respect to any proposed earthworks and retaining walls within three (3) metres of the site boundary, in accordance with Ipswich *Planning Scheme Part 12, Division 15 – Earthworks Code (Section 12.15.4.19)*. The written comments must be submitted to Council for consideration as part of the operational works application.
- (b) Finished heights of all retaining walls must be shown on the relevant drawings. The maximum height of gravity boulder retaining walls must be 1.25m. If further height is required, the retaining structure is to be designed and certified by a structural engineer. The total maximum height of any retaining wall is to be 2.5m. Retaining walls over 1.25m high must be constructed with an engineer designed and certified concrete foundation, with an initial retained height of 1.25m, then a minimum set back of 0.6m prior to another maximum retained height of 1.25m to total a maximum height of 2.5m.
- (c) A certificate from a RPEQ must be issued to Council certifying that any retaining wall greater than 1.0m in height is structurally sound and capable of withstanding any likely surcharge loads. The design and construction of retaining walls must comply with the following minimum requirements unless agreed otherwise with the Senior Development Engineer:
 - (i) The minimum design surcharge loading must be 10kPa.
 - (ii) Retaining walls must be designed so that there are no imposed loads placed upon Council's underground services. Retaining walls crossing over services must have support footings extending at least 300mm below the invert of the service pipe.
 - (iii) All retaining walls must be provided with Council approved subsoil and surface drainage systems.
 - (iv) Backfill to retaining walls must be comprised of approved drainage material contained within a geo-fabric wrap.
 - (v) A drainage system in the form of a mounded V-drain or similar which discharges to a legal point of discharge must be constructed along the top of all gravity retaining walls to prevent stormwater sheeting or concentrating over retaining structures.

- (vi) Retaining walls in public areas that are 1.0m or greater in height must be provided with railings or other barriers to provide pedestrian safety.

25. Waste Storage and Collection

- (a) The area on which the bin(s) is to be accessed by refuse collection vehicles must be screened, level, concreted and constructed in conjunction with the driveway surface with no intervening step, ledge, kerb or other obstruction.
- (b) All wash down waters from bin cleansing performed on-site must be appropriately treated and discharged to sewer subject to a Trade Waste approval. No wash down waters are permitted to flow to a roadway, gutter, stormwater drain or natural waterway. Another alternative is for the Developer to arrange a contact with a refuse bin cleaning company.
- (c) All waste bins must be serviced on site with no street side collection. Access for waste vehicle must allow forward motion entry to the industrial refuse containers and forward motion exit from the site.

26. Erosion & Silt Management

- (a) As part of the first application for operational works, the developer must submit with the operational works application, an Erosion and Silt Management Plan designed in accordance with "*Best Practice Erosion and Sediment Control*" published by the International Erosion Control Association (Australasia) November 2008, or equivalent.
- (b) The developer must install silt management facilities at commencement of construction and maintain these facilities until the development has been released "Off Maintenance by Council".
- (c) Silt traps must be sited upstream from any park or reserve area discharge point, such that no silt impinges on the park or reserve areas. The silt trap areas may be phased out after the development work is complete and adequate grass cover is obtained.
- (d) Diversion drains and ponds, as necessary, must be installed on the site before any other work is undertaken on site to ensure that water containing silt, clay, solids or contaminants is contained and/or isolated.
- (e) Prior to the Pre-Start meeting for operational works, the developer must lodge a \$10,000.00 Siltation and Erosion Performance Bond with Council. This bond must only be released by Council at the termination of the maintenance period.
- (f) If the Senior Development Engineer determines that silt damage has occurred as a result of this development, the developer must be responsible for restoration of any damage. Such restoration must be completed within a time to be advised by the Senior Development Engineer. Should the developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council

may elect to complete the works and recover all costs associated with that work from the Developer.

- (g) Where Council determines that a draw-down of the bond is required, the developer must restore the bond to its full amount within ten (10) business days of a notice from Council to that effect.

27. Public Utilities

- (a) The developer must provide appropriate road crossing conduits in accordance with Council's Standard Drawings SR.22 and SR.23. Where concrete footpaths are to be constructed, the conduits must be extended to the property boundaries.
- (b) The developer must provide an RPEQ certified electrical reticulation layout plan with the operational works application.
- (c) Street lighting must be installed by the developer in accordance with the Australian Standard 1158.3.1 Series for Pedestrians and Vehicles for both Collins and Haig Street. All street lighting associated with the development must be certified by an RPEQ. Street lighting must be installed on the same side as concrete footpaths (where applicable).
- (d) The developer must make suitable arrangements for the provision of telephone and (where applicable) cable services to all proposed lots within the development. Documentary evidence that telephone and/or cable services will be provided, must be submitted to Council prior to the signing of the plan of survey.

28. Operational Works – Municipal Works
(ie Works being handed over to Council)

- (a) Municipal works must be completed in accordance with a detailed design certified by an RPEQ and approved by Council Engineers with appropriate fees payable, a works pre-start meeting on-site and various detailed construction and audit inspections by Council Officers. In accordance with *Ipswich Planning Scheme Policy 3*, a maintenance period applies for the works and a maintenance security deposit is required.
- (b) External Municipal Works relates to those works external to the subject site and located in already dedicated public areas, for example existing road or drainage reserve, or private property not subject to Developer ownership.
- (c) The requirements of *Ipswich Planning Scheme Policy 3 - General Works* and Council's *Standard Drawings* must apply to the municipal works. Where inconsistencies between any documents occur, *Ipswich Planning Scheme Policy 3* has precedence and must prevail to the extent of any inconsistency.
- (d) All engineering drawings must be in accordance with *Ipswich Planning Scheme Policy 2 – Information Local Government May Request* and include as a minimum the following:

- (i) Engineering drawings must be marked as confirmation that they have been checked and approved by an RPEQ.
- (ii) The drawings must be submitted as four (4) hardcopy, A3 size sets. Reports and supporting information must be submitted as four (4) hardcopy sets.

The submission must also include a compact disk containing electronic data as follows:

- (a) One (1) full set of all engineering drawings contained in one file
- (b) Separate individual files containing layout plans for sewerage, water supply and drainage
- (c) Any reports submitted in support of the application. Each report must be included as a separate file
- (d) An index of all files on the compact disk including descriptions of contents of each file

All files must be submitted in PDF format, unless otherwise specified.

- (iii) A "Certificate of Design" must be submitted by an RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (e) All works must be supervised by an RPEQ competent in civil works and must be undertaken by a nominated principal contractor experienced in the construction of municipal works. Council reserves the right to request evidence of the principal contractor's competency. Should the contractor not be able to demonstrate the necessary competency to the satisfaction of the Senior Development Engineer or if the contractor has constructed substandard works for Council in the past, Council reserves the right to reject the nominated contractor.
- (f) Prior to the Pre-Start meeting, the developer must submit to Council a bank guarantee, or a bond of not less than 10% of the value of the external municipal works (minimum \$5,000.00), as security for the performance of the various construction and certification obligations (including provision of "As Constructed" information). The bond or guarantee must be reduced to an amount not less than 5% of the value of the works upon formal acceptance of the works "On Maintenance", and must be retained by Council during the maintenance period as security for the performance of the Developer's maintenance obligations. The bond must be returned upon formal acceptance of the works "Off Maintenance".
- (g) Municipal works must be accepted "On Maintenance" prior to commencement of use. A maintenance bond equal to 5% of the construction cost (minimum \$5,000.00) must be submitted by the developer and must be retained by Council for a minimum period in accordance with *Ipswich Planning Scheme Policy 3*, or until the works are accepted "Off Maintenance" by Council.

- (h) On completion of the works a certificate must be submitted to Council by an RPEQ certifying that the works have been constructed in accordance with Council's construction standards and in compliance with the approved plans and specifications. It is expected that the RPEQ will undertake the necessary inspections to make this certification.
- (i) "As Constructed" information and final construction issue engineering design drawings, compiled in accordance with *Ipswich Planning Scheme Policy 2 for Municipal Works*, must be submitted to Council and approved prior to the formal acceptance of the works "On Maintenance". This data must be submitted electronically on a compact disk labelled appropriately to indicate the contents.
- (j) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent in regard to the works relevant to the operational works approval.

29. Operational Works – Internal Works
(ie Works not being handed over to Council)

- (a) Internal Works refers to engineering works performed within private property and includes but is not limited to, earthworks, retaining walls, driveways and stormwater management systems.
- (b) Plans relating to all civil engineering works must be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans must show full construction details, layout dimensions, and finished surface levels and must be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (c) Engineering drawings must be marked as confirmation that they have been checked and approved by a RPEQ.
- (d) The drawings must be submitted as four (4) hardcopy A3 size sets and two (2) hardcopy sets of any reports and supporting information. One set of plans will be returned to the applicant with the Decision Notice.
The submission must also include a Compact Disc containing electronic data as follows:
 - (i) One (1) full set of all engineering drawings contained in one file
 - (ii) Separate individual files containing layout plans for sewerage, water supply and drainage
 - (iii) Any reports submitted in support of the Application. Each report must be included as a separate file
 - (iv) An index of all files on the Compact Disc including descriptions of contents of each file

All files must be submitted in PDF format, unless otherwise specified. Where municipal works are also being undertaken, it is usually appropriate to make a combined submission.

- (e) A "Certificate of Design" signed by an RPEQ must be submitted to certify that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (f) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent.
- (g) On completion of works, a certificate must be submitted to Council by an RPEQ certifying that the completed works have been constructed in accordance with Council's requirements and standards and in compliance with the approved plans and specifications. It is expected that the RPEQ will undertake the necessary inspections to make this certification.

30. General

- (a) All disturbed verge areas and allotments must be graded, grassed and left in a mowable condition. The grass cover must be obtained as early as possible during the development and an acceptable grass cover must be achieved before the development can be accepted "Off Maintenance".
- (b) Should any works be proposed on land under other private ownership, written permission for the works must be obtained and forwarded to Council. Similarly, written clearances must be obtained after the works are completed, unless otherwise accepted by the Senior Development Engineer.
- (c) All works required for this development must take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works must be altered at the cost of the developer.
- (d) Any allotment filling for a depth greater than 500mm to provide for building platforms must be conducted in accordance with Australian Standard 3798 at Responsibility Level 1. Test results as required by Australian Standard 3798, and a certificate of quality and uniformity of fill must be provided by a RPEQ.
- (e) Imported and exported materials may only be transported on routes approved by the Senior Development Engineer.
- (f) Any fill intended to be placed over Council's underground services must be approved by the Senior Development Engineer.
- (g) Batters and slopes greater than 1:4 resulting from cutting and filling of the site must be certified by an RPEQ as stable and properly drained.

32. Minor Alterations

Notwithstanding the requirements detailed in this approval, any other minor alterations and/or modifications acceptable to the Development Planning Manager will suffice.

33. Compliance with Conditions

- (a) Unless otherwise stated all conditions shall be completed prior to commencement of the proposed change of use of each stage of the development or as determined by the assessment manager.
- (b) All conditions shall be completed to the satisfaction of the assessment manager.

34. When Approval Takes Effect

This approval has effect in accordance with the provisions of Section 3.5.19 of the *Integrated Planning Act 1997* as follows:

- (a) If the applicant does not appeal the decision to the court - from the time the decision notice is given (or if a negotiated decision notice is given, from the time the negotiated decision notice is given); or
- (b) If an appeal is made to the court - subject to the decision of the court, when the appeal is finally decided.

35. When Approval Lapses

- (a) This approval lapses at the end of the relevant period, unless the change of use happens before the end of the relevant period. The relevant period for this approval is four (4) years starting the day the approval takes effect.
- (b) An extended relevant period may be agreed upon, pursuant to Section 3.5.22 of the *Integrated Planning Act 1997*, provided a written notice to Council is made before the end of the relevant period. Such written notice is to be on Council's approved form, accompanied by the owner's consent and the prescribed fee in Council's Register of General Charges.

NOTE: operational works application(s) required to be submitted must be approved and works completed within the relevant period stated above.

B. The Developer be further advised of the following:-

1. Further Subdivision

- (a) If the developer wishes to install facilities that will permit the development to be subdivided to provide Community Management Scheme subdivision in accordance with the Body Corporate Act and Community Management Act, the following matters relating to water, sewerage and electricity should be addressed:-

- (i) Water: Separate connections to Council's water mains are required and the systems should not be interconnected.
 - (ii) Sewerage: Separate connections to Council's sewer mains are required. This may require other house connection branches and/or a 150 mm sewer main extension depending on the circumstances. Additionally, the systems should not be interconnected.
 - (iii) Electricity: Separate connections to the proposed development to the electricity reticulation system are required. This may require the extension of the underground electricity reticulation system to Energex's approval.
- (b) The developer must submit to Council hydraulic plans that comply with the requirements of *Water Supply (Safety and Reliability) Act* for scrutiny by Council.
 - (c) Scrutiny fees in accordance with the Council's Schedule of Fees and Charges must be paid at the time of lodgement of plans. No work on plumbing and drainage may commence prior to the approval of the plan and the issuing of a permit, by this Council, to a Licensed Plumber/Drainer.
 - (d) Tests and inspections must be arranged with the Building Section upon payment of the appropriate current fee.

2. Fire Ants

In accordance with the *Plant Protection Act 1989* and the Plant Protection Regulation 1990, a quarantine notice has been issued for the State of Queensland to prevent the spread of the Red Imported Fire Ant (ant species *Solenopsis invicta*) and to eradicate it from the State.

It is the legal obligation of the land owner or any consultant or contractor employed by the land owner to report the presence or suspicion of Fire Ants to the Queensland Department of Primary Industries on 132523 within 24 hours of becoming aware of the presence or suspicion, and to advise in writing within seven days to:

Director General
Department of Primary Industries
GPO Box 46, Brisbane QLD 4001

It should be noted that the movement of Fire Ants is prohibited, unless under the conditions of a Department of Primary Industries Inspectors Approval. More information can be obtained from the Queensland Department of Primary Industries website www.dpi.qld.gov.au.

The development approved herein, by its very nature, includes activities considered to be "high risk" in respect of controlling the spread of Fire Ants. The following lists show high risk activities and some precautions should be considered for implementation.

- (a) High risk activities can include:
 - (i) Earthworks of a minor or major scale
 - (ii) Revegetation or rehabilitation
 - (iii) Import of fill onto a site
 - (iv) Export of fill or other materials such as soils, gravel, mulch and plants
 - (v) Export off or import on to a site of construction and demolition waste and materials or green waste
- (b) Precautions for implementation
 - (i) Checking for ants regularly
 - (ii) Checking all soil, fill and waste materials (construction and green waste) for ants
 - (iii) Asking questions about the quality and source of soil, fill and waste materials (construction and green waste)
 - (iv) Keeping records of all movements of soil, fill and waste materials (construction and green waste)
 - (v) Cleaning of all earthmoving or other soiled vehicles prior to exit from the site
 - (vi) Informing staff and contractors about these precautions

3. Portable Long Service Leave

Where the works are valued at \$80 000 or more and match the definition of 'Building and Construction Industry' under the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, the Building and Construction Industry (Portable Long Service Leave) Levy must be paid prior to the issue of a development permit. This applies to Building Works, operational Works and Plumbing and Drainage Works applications, as defined under the *Integrated Planning Act 1997*.

Council will not be able to issue a Decision Notice without receipt of evidence that the Levy has been paid. Should you require clarification in regard to the amendments to the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, you should contact QLeave on 1800 803 481 (free call) or (07) 3212 6855.

- C. That the Decision Notice advise the Developer that there were no properly made submissions received with respect to this application.
- D. The Development Planning Manager be authorised to note the approval on the planning scheme, pursuant to Section 3.5.27 of the *Integrated Planning Act 1997*.



PLANNER (DEVELOPMENT)

I have this day adopted the recommendation specified in this report.

Such action was taken pursuant to the delegation entitled "Determination of Development Applications, Precinct Plans, Area Development Plans and Related Matters" granted to me by the Chief Executive Officer dated 1 April 2009.



Jo Pocock
TEAM COORDINATOR (CENTRAL WEST)

Date: 23/12/09 .



Assessment Checklist

Impact Assessable Development

A. Application Details

Appln No.: 195/06

Division: Six (6)

B. Preamble Assessment

1. Are the real property description and location details provided on the Application Form correct? Yes No
2. Has the 'consent of owner' been correctly obtained? Yes No
3. Has the correct fee been paid? Yes No

C. Supporting Information

1. (a) Was any supporting material lodged with the application? Yes No
 - IDAS Application Form Part A, D and Assessment Checklist
 - Planning Assessment Report, prepared by David Brett and Associates Pty Ltd., and dated 10 January 2006
- (b) Are there any planning issues associated with this material? Yes No
 - The following issues were identified in the initial assessment of the application:
 - (a) Development Density/Site Layout
 - (b) Building Scale and Articulation
 - (c) Internal Access
 - (d) Proposed Earthworks and Riparian Vegetation
 - (e) Stormwater
 - (f) Car Washing Bays
 - (g) Landscaping Plans
 - (h) Traffic
 - (i) Reticulated Water

C. Supporting Information

- (j) Underground Mining
- (k) Waste Storage and Collection

2. (a) Is there a need for an Information Request? Yes No

- An information request was issued on 2 February 2006 with respect to the abovementioned issues

(b) Are there any outstanding issues associated with the Information Response? Yes No N/A

- A number of outstanding issue letters have been issued to the Applicant over the course of the assessment of this application in order to seek a satisfactory resolution to the abovementioned issues, with a final satisfactory response submitted to Council on 24 November 2009.

D. Referral / Advice Agencies

1. Are there any referral or advice agencies applicable to this development? Yes No

2. Are there any issues associated with advice received from a Referral / Advice Agency? Yes No N/A

E. State Planning Policies (SPP's)

1. Are there any SPP's applicable to this development? Yes No

2. Does the development comply with any relevant SPP's? Yes No N/A

F. Zone Code

1. What is the relevant zone code(s) for this development?

- Recreation

2. (a) Does the development require impact assessment under the relevant assessment table for the zone? Yes No

F. Zone Code

(b) Is the development consistent with the outcomes sought for the zone?

Yes No

- The property is contained within the Recreation Zone, which is intended for recreation purposes, whereas the proposed development is for residential purposes. The overall outcomes sought for the Recreation Zone are provided in more detail below.

3. (a) Are there any overall or specific outcomes for the locality which apply to the development?

Yes No

"The overall outcomes sought for the Recreation Zone are the following—

(a) The Recreation Zone provides for the development of an integrated open space network including the use of land for— (i) both active and passive recreation opportunities within parks;

(ii) linear/riparian corridors as open space links; and

(iii) private and public sporting/recreation facilities.

(b) The Recreation Zone provides sufficient land—

(i) to meet the recreational needs of residents and visitors within Citywide, district and local catchments; and

(ii) to achieve an equitable distribution of recreational areas and facilities in suitable and accessible locations.

(c) The Recreation Zone provides for a wide range of recreational settings, including—

(i) Formal Parks and Gardens;

(ii) Waterside Parks;

(iii) Play and Picnic Parks;

(iv) Sportsgrounds and Courts; and

(v) Linear Parks.

(d) Formal Parks and Gardens are designed as civic spaces mostly in association with existing or proposed centres and include elements such as—

(i) feature planting; and

(ii) areas for picnics, barbeques, and informal recreation.

(e) Waterside Parks are designed and located as focal parks which maximise access to permanent water bodies situated within an attractive setting, and may include jetties, ramps and launch pontoons.

(f) Play and Picnic parks provide for informal recreational needs, including facilities for children's play, non-organised sporting activities, walking, nature appreciation, picnics and barbeques and community/cultural events, as appropriate, relative to the capacity of surrounding roads and other nearby land uses and the setting, amenity and character of the surrounding area.

(g) Sportsgrounds and Courts provide for a range of indoor and outdoor facilities including—

(i) ovals, fields, multipurpose courts, club houses, fenced playgrounds, pools, shaded seating, grandstands; and

(ii) provision for night competition/activity as appropriate to the setting of the facility and the likely impacts on the amenity and character of the surrounding area.

(h) Linear Parks—

(i) are primarily designed to serve a connectivity/linkage function, mostly, but not exclusively along selected riparian corridors; and

(ii) whilst they may remain predominantly in a natural setting and retain important environmental

F. Zone Code

values, including an important role as wildlife corridors, are primarily intended to serve an urban recreation rather than conservation focus.

(i) Uses and works within the Recreation Zone are located, designed and managed to—

(i) maintain residential amenity and streetscape quality;

(ii) maintain or enhance aspects of local character;

(iii) be compatible with other uses and works;

(iv) encourage multi use of facilities, particularly between sporting bodies and various recreation user groups; and

(v) minimise impacts on environmental values and places of environmental and cultural heritage significance.

(j) Where land within the Recreation Zone is privately owned or controlled, access to the general public may be restricted."

(b) Does the development comply with any relevant overall or specific outcomes for the locality?

Yes No N/A

- It should be noted that whilst the land is zoned for recreation purposes, the subject site is not mapped under Map 6.2 'Future Public Parks Infrastructure' for recreation purposes. The strip of land adjacent to the site is mapped as a district waterside park and as a local linear park.
- Despite the inclusion of the site in the recreation zone, approval of the proposal is recommended given that the proposed development is well placed to take advantage of local services such as the Brassall Shopping Centre, schools, medical services, public transport and recreation opportunities (in particular the Collins Street bikeway linking Brassall, North Ipswich and the Ipswich CBD). It should be noted there is other multiple residential development adjoining the site, therefore the development of multiple residential units on this site is a logical extension to the higher density residential development existing in this area of Brassall, particularly given its convenient location to essential services.
- The Applicant has undertaken rigorous technical reporting to support the proposed development, including a flood study, a stormwater management plan and an assessment of river bank stability to ensure the proposed development is physically suitable for the site and does not detrimentally impact upon the riverbank.

4. Does the development comply with the overall outcomes for the zone?

Yes No N/A

- As detailed above, the proposal to develop the site for multiple residential purposes is clearly inconsistent with the zoning of the land for recreation purposes. However there are a number of factors demonstrating that the proposed use of the site for units is the most appropriate use for the land, as detailed below.
- The subject site is not mapped under Map 6.2 'Future Public Parks Infrastructure' for recreation purposes. The strip of land adjacent to the site is mapped as a district waterside

F. Zone Code

park and as a local linear park.

- The proposed development is well placed to take advantage of local services such as the Brassall Shopping Centre, schools, medical services, public transport and recreation opportunities (in particular the Collins Street bikeway linking Brassall, North Ipswich and the Ipswich CBD). It should be noted there is other multiple residential development adjoining the site, therefore the development of multiple residential units on this site is a logical extension to the higher density residential development existing in this area of Brassall, particularly given its convenient location to essential services.
- Rigorous technical reporting has been undertaken to support the proposed development, including a flood study, a stormwater management plan and an assessment of river bank stability to ensure the proposed development is physically suitable for the site and does not detrimentally impact upon the riverbank.

5. Does the development comply with the "Effects of Development – General" (including the specific outcomes and any applicable probable solutions or acceptable solutions) for the zone?

Yes No N/A

6. (a) Are there any Sub Area or Precinct provisions within the zone which apply to this development?

Yes No

(b) Does the development comply with these provisions?

Yes No N/A

**G. Codes for a Stated Purpose or of a Stated Type
(refer Part 12 of the Planning Scheme)**

1. Are there any codes under Part 12 of the Planning Scheme applicable to the development?

Yes No

- Residential Code (Part 12, division 6)
- Parking Code (Part 12, division 9)

2. Does the development comply with these codes?

Yes No N/A

**H. Overlays (refer Part 11 of the
Planning Scheme)**

1. (a) Is the site affected by a Character Places Overlay?

Yes No

H. Overlays (refer Part 11 of the Planning Scheme)

(b) Is the assessment category changed (refer Table 11.3.2)?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
(c) Does the development comply with the Character Places Overlay Code and the Character Code?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
2. (a) Is the site affected by a Development Constraints Overlay?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
The subject site is affected by the following development constraints: OV4 – Difficult Topography (Slopes 15% to 20%) OV5 – 1 in 20 and 1 in 100 flood lines OV7A – Building Height Restriction Area 45m OV7A – Transitional Surface OV7B – Existing Committed Urban Townships	
(b) Is the assessment category changed (refer Table 11.4.3 and 11.4.4)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
(c) Does the development comply with the relevant provisions of the Development Constraints Overlay Code?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<ul style="list-style-type: none">The development has been conditioned to comply with the relevant provisions of the Development Constraint Overlay Code through the imposition of reasonable and relevant conditions.	

I. Other Relevant Matters

1. (a) Are there any Planning Scheme Policy provisions which specifically apply to this development?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none">Planning Scheme Policy 3 'General Works' and Planning Scheme Policy 5 'Infrastructure'	
(b) Does the development comply with these provisions?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<ul style="list-style-type: none">The development has been conditioned to comply with the relevant provisions of the Planning Scheme Policies.	
2. (a) Are there any Implementation Guidelines which specifically apply to this development?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

I. Other, Relevant Matters

(b) Does the development comply with these Guidelines?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
3. Are there any other relevant matters which pertain to this development?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
4. Infrastructure Contributions – Calculation Sheet attached to this checklist?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

Pursuant to Planning Scheme Policy 5 'Infrastructure', the Developer will be required to pay total monetary contributions in the amount of \$540,011.00 towards the provision of water, sewerage, roadworks, parks and social infrastructure.

J. Public Notification

1. Was the public notification carried out in accordance with the <i>Integrated Planning Act</i> requirements?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2. Were any submissions received?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

K. Summary

1. Recommended for:	<input checked="" type="checkbox"/> Approval - Subject to Conditions <input type="checkbox"/> Refusal <input type="checkbox"/> Part Refusal / Part Approval -Subject to conditions
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PLANNER (DEVELOPMENT)
Date: 22 December 2009



Jo Pocock
TEAM COORDINATOR (CENTRAL/WEST)
Date: 23/12/09.

APPENDIX 1 – INFRASTRUCTURE CONTRIBUTIONS

Stage 1				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	EP Rate = \$1,120/EP Unit Charge = \$1.1383 Total EP Rate = \$1,274.90/EP NRU Rate = \$1,344/NRU Unit Charge = \$1.1383 Total NRU Rate = \$1,529.88	Proposed Residential Use: 8 units with 2 beds each = 8 units x 1.5EP each = 12EPs Existing Indoor Recreation Use – Pre-existing GFA 866m ² = 0.5NRU's/100m ² = 4.33NRU's.	Proposed Residential Use: 12EPs x \$1,274.90 = \$15,298.80 Existing Indoor Recreation Use: 4.33NRUs x \$1,529.88/NRU = \$6,624.38 (credit) Balance Payable = \$8,674.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	EP Rate = \$1,289/ep Unit Charge = \$1.1383 Total EP Rate = \$1,467.27/EP NRU Rate = \$1,574/NRU Unit Charge = \$1.1383 Total NRU Rate = \$1,791.68	Proposed Residential Use: 8 units with 2 beds each = 8 units x 1.5EP each = 12EPs Existing Indoor Recreation Use: Pre-existing GFA 866m ² = 0.5NRU's/100m ² = 4.33NRU's.	Proposed Residential Use: 12EPs x \$1,467.27/EP = \$17,607.24 Existing Indoor Recreation Use: 4.33NRUs x \$1,791.68/NRU = \$7,757.97 (credit) Balance Payable = \$9,849.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	8 units with 2 beds each = 8 units x 3.8VT each = 30.4VTs Credit for Indoor Recreation Use – Pre-existing GFA 866m ² =	No infrastructure contributions applicable as sufficient credit exists for this stage.

			13.3VT/100m ² = 115.18VT	
			Total VT = -84.78VT	
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	8 units with 2 beds each = 8 units x 1.58EP each = 12.64EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 12.64EPs.	12.64EPs x \$3,278.69/EP = \$41,442.64 \$41,443.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	8 units with 2 beds each = 8 units x 1.58EP each = 12.64EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 12.64EP	12.64EPs x \$358.87/EP = \$4,536.12 \$4,536.00
Total for Stage 1				\$64,502.00
Stage 2				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	EP Rate = \$1,120/EP Unit Charge = \$1.1383 Total EP Rate = \$1,274.90/EP	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under	Proposed Residential Use: 9EPs x \$1,274.90 = \$11,474.10 Total = \$11,474.00

			Stage 1	
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	EP Rate = \$1,289/ep Unit Charge = \$1.1383 Total EP Rate = \$1,467.27/EP NRU Rate = \$1,574/NRU Unit Charge = \$1.1383 Total NRU Rate = \$1,791.68	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under Stage 1	Proposed Residential Use: 9EPs x \$1,467.27 = \$13,205.43 Total = \$13,205.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	6 units with 2 beds each = 6 units x 3.8VT each = 22.8VTs Credit for Indoor Recreation Use = 84.78VT (carried over from stage 1) Total VTs= -61.98	No infrastructure contributions applicable as sufficient credit exists for this stage.
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP =	9.48EPs x \$3,278.69/EP = \$31,081.98 \$31,082.00

			9.48EP	
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable.. Total EP = 9.48EP	9.48EPs x \$358.87/EP = \$3,402.09 \$3,402.00
Total for Stage 2				\$56,103.00
Stage 3:				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	EP Rate = \$1,120/EP Unit Charge = \$1.1383 Total EP Rate = \$1,274.90/EP NRU Rate = \$1,344/NRU Unit Charge = \$1.1383 Total NRU Rate = \$1,529.88	10 units with 2 beds each = 10 units x 1.5EP each = 15EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 15EPs	Proposed Residential Use: 15EPs x \$1,274.90 = \$19,123.50 Total = \$19,124.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	EP Rate = \$1,289/ep Unit Charge = \$1.1383 Total EP Rate = \$1,467.27/EP NRU Rate = \$1,574/NRU	10 units with 2 beds each = 10 units x 1.5EP each = 15EPs Credit for Existing Indoor Recreation Use applied under Stage 1	Proposed Residential Use: 15EPs x \$1,467.27/EP = \$22,009.05 Total = \$22,009.00

		Unit Charge = \$1.1383 Total NRU Rate = \$1,791.68	Total EP = 15EPs	
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	10 units with 2 beds each = 10 units x 3.8VT each = 38VTs Credit for Indoor Recreation Use = 61.98VT (carried over from stage 2) Total VTs = -23.98VTs.	No infrastructure contributions applicable as sufficient credit exists for this stage.
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	10 units with 2 beds each = 10 units x 1.58EP each = 15.8EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 15.8EPs	15.8EPs x \$3,278.69/EP = \$51,803.30 \$51,803.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code 5IC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	10 units with 2 beds each = 10 units x 1.58EP each = 15.8EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable.	15.8EPs x \$358.87/EP = \$5,670.15 \$5,670.00

			Total EP = 15.8EPs	
Total for Stage 3				\$98,606.00
Stage 4				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	\$1,120/EP Unit Charge = \$1.1383 Total = \$1,274.90/EP	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 9EPs	9EP x \$1,274.90/EP = \$11,474.10 \$11,474.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	\$1,289/ep Unit Charge = \$1.1383 Total = \$1,467.27/EP	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 9EPs	9EP x \$1,467.27/EP = \$13,205.43 \$13,205.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	6 units with 2 beds each = 6 units x 3.8VT each = 22.8VTs Credit for Existing Indoor Recreation Use = 23.98VTs (carried over from stage 3) Balance VTs remaining = -1.18VTs.	No infrastructure contributions applicable as sufficient credit exists for this stage.

Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 9.48EPs	9.48EPs x \$3,278.69/EP = \$31,081.98 \$31,082.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 9.48EPs	9.48EPs x \$358.87/EP = \$3,402.09 \$3,402.00
Total for Stage 4				\$59,163.00
Stage 5				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	\$1,120/EP Unit Charge = \$1.1383 Total = \$1,274.90/EP	9 units with 2 beds each = 9 units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP =	13.5EP x \$1,274.90/EP = \$17,211.15 \$17,211.00

			13.5EPs	
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	\$1,289/ep Unit Charge = \$1.1383 Total = \$1,467.27/EP	9 units with 2 beds each = 9 units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 13.5EPs	13.5EP x \$1,467.27/EP = \$19,808.15 \$19,808.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	9 units with 2 beds each = 9 units x 3.8VT each = 34.2VTs Credit for Existing Indoor Recreation Use = 1.18VTs (carried over from stage 4) Balance VT's = 33.02VT's	33.02VTs x \$1,251.81/VT = \$41,334.77 \$41,335.00
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	9 units with 2 beds each = 9 units x 1.58EP each = 14.22EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	14.22EPs x \$3,278.69/EP = \$46,622.97 \$46,623.00
Social	C6 – Brassall	\$315.27/EP	9 units with 2	14.22EPs x

Infrastructure	(Pathways Fee Code SIC6)	Unit Charge = \$1.1383 Total = \$358.87/EP	beds each = 9 units x 1.58EP each = 14.22EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	\$358.87/EP = \$5,103.13 \$5,103.00
Total for Stage 5				\$130,080.00
Stage 6				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	\$1,120/EP Unit Charge = \$1.1383 Total = \$1,274.90/EP	9 units with 2 beds each = 9 units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 13.5EPs	13.5EP x \$1,274.90/EP = \$17,211.15 \$17,211.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	\$1,289/ep Unit Charge = \$1.1383 Total = \$1,467.27/EP	9 units with 2 beds each = 9 units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 13.5EPs	13.5EP x \$1,467.27/EP = \$19,808.15 \$19,808.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka	\$1,143/VT	9 units with 2 beds each = 9	34.2VTs x \$1,251.81/VT =

	North (Pathways Fee Code RD42)	Unit Charge = \$1.0952 Total = \$1,251.81/VT	units x 3.8VT each = 34.2VTs No credit remaining	\$42,811.90 \$42,812.00
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	9 units with 2 beds each = 9 units x 1.58EP each = 14.22EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	14.22EPs x \$3,278.69/EP = \$46,622.97 \$46,623.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	9 units with 2 beds each = 9 units x 1.58EP each = 14.22EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	14.22EPs x \$358.87/EP = \$5,103.13 \$5,103.00
Total for Stage 6				\$131,557.00
Total for the Development				\$540,011.00



Assessment Checklist

Impact Assessable Development

A. Application Details

Appln No.: 195/06

Division: Six (6)

B. Preamble Assessment

1. Are the real property description and location details provided on the Application Form correct? Yes No
2. Has the 'consent of owner' been correctly obtained? Yes No
3. Has the correct fee been paid? Yes No

C. Supporting Information

1. (a) Was any supporting material lodged with the application? Yes No
 - IDAS Application Form Part A, D and Assessment Checklist
 - Planning Assessment Report, prepared by David Brett and Associates Pty Ltd., and dated 10 January 2006
- (b) Are there any planning issues associated with this material? Yes No
 - The following issues were identified in the initial assessment of the application:
 - (a) Development Density/Site Layout
 - (b) Building Scale and Articulation
 - (c) Internal Access
 - (d) Proposed Earthworks and Riparian Vegetation
 - (e) Stormwater
 - (f) Car Washing Bays
 - (g) Landscaping Plans
 - (h) Traffic
 - (i) Reticulated Water

C. Supporting Information

- (j) Underground Mining
- (k) Waste Storage and Collection

2. (a) Is there a need for an Information Request? Yes No

- An information request was issued on 2 February 2006 with respect to the abovementioned issues

(b) Are there any outstanding issues associated with the Information Response? Yes No N/A

- A number of outstanding issue letters have been issued to the Applicant over the course of the assessment of this application in order to seek a satisfactory resolution to the abovementioned issues, with a final satisfactory response submitted to Council on 24 November 2009.

D. Referral / Advice Agencies

1. Are there any referral or advice agencies applicable to this development? Yes No

2. Are there any issues associated with advice received from a Referral / Advice Agency? Yes No N/A

E. State Planning Policies (SPP's)

1. Are there any SPP's applicable to this development? Yes No

2. Does the development comply with any relevant SPP's? Yes No N/A

F. Zone Code

1. What is the relevant zone code(s) for this development?

- Recreation

2. (a) Does the development require impact assessment under the relevant assessment table for the zone? Yes No

F. Zone Code

(b) Is the development consistent with the outcomes sought for the zone?

Yes No

- The property is contained within the Recreation Zone, which is intended for recreation purposes, whereas the proposed development is for residential purposes. The overall outcomes sought for the Recreation Zone are provided in more detail below.

3. (a) Are there any overall or specific outcomes for the locality which apply to the development?

Yes No

"The overall outcomes sought for the Recreation Zone are the following—

(a) The Recreation Zone provides for the development of an integrated open space network including the use of land for— (i) both active and passive recreation opportunities within parks; (ii) linear/riparian corridors as open space links; and (iii) private and public sporting/recreation facilities.

(b) The Recreation Zone provides sufficient land—

(i) to meet the recreational needs of residents and visitors within Citywide, district and local catchments; and

(ii) to achieve an equitable distribution of recreational areas and facilities in suitable and accessible locations.

(c) The Recreation Zone provides for a wide range of recreational settings, including—

(i) Formal Parks and Gardens;

(ii) Waterside Parks;

(iii) Play and Picnic Parks;

(iv) Sportsgrounds and Courts; and

(v) Linear Parks.

(d) Formal Parks and Gardens are designed as civic spaces mostly in association with existing or proposed centres and include elements such as—

(i) feature planting; and

(ii) areas for picnics, barbeques, and informal recreation.

(e) Waterside Parks are designed and located as focal parks which maximise access to permanent water bodies situated within an attractive setting, and may include jetties, ramps and launch pontoons.

(f) Play and Picnic parks provide for informal recreational needs, including facilities for children's play, non-organised sporting activities, walking, nature appreciation, picnics and barbeques and community/cultural events, as appropriate, relative to the capacity of surrounding roads and other nearby land uses and the setting, amenity and character of the surrounding area.

(g) Sportsgrounds and Courts provide for a range of indoor and outdoor facilities including—

(i) ovals, fields, multipurpose courts, club houses, fenced playgrounds, pools, shaded seating, grandstands; and

(ii) provision for night competition/activity as appropriate to the setting of the facility and the likely impacts on the amenity and character of the surrounding area.

(h) Linear Parks—

(i) are primarily designed to serve a connectivity/linkage function, mostly, but not exclusively along selected riparian corridors; and

(ii) whilst they may remain predominantly in a natural setting and retain important environmental

F. Zone Code

values, including on important role as wildlife corridors, are primarily intended to serve an urban recreation rather than conservation focus.

(i) Uses and works within the Recreation Zone are located, designed and managed to—

(i) maintain residential amenity and streetscape quality;

(ii) maintain or enhance aspects of local character;

(iii) be compatible with other uses and works;

(iv) encourage multi use of facilities, particularly between sporting bodies and various recreation user groups; and

(v) minimise impacts on environmental values and places of environmental and cultural heritage significance.

(j) Where land within the Recreation Zone is privately owned or controlled, access to the general public may be restricted."

(b) Does the development comply with any relevant overall or specific outcomes for the locality?

Yes No N/A

- It should be noted that whilst the land is zoned for recreation purposes, the subject site is not mapped under Map 6.2 'Future Public Parks Infrastructure' for recreation purposes. The strip of land adjacent to the site is mapped as a district waterside park and as a local linear park.
- Despite the inclusion of the site in the recreation zone, approval of the proposal is recommended given that the proposed development is well placed to take advantage of local services such as the Brassall Shopping Centre, schools, medical services, public transport and recreation opportunities (in particular the Collins Street bikeway linking Brassall, North Ipswich and the Ipswich CBD). It should be noted there is other multiple residential development adjoining the site, therefore the development of multiple residential units on this site is a logical extension to the higher density residential development existing in this area of Brassall, particularly given its convenient location to essential services.
- The Applicant has undertaken rigorous technical reporting to support the proposed development, including a flood study, a stormwater management plan and an assessment of river bank stability to ensure the proposed development is physically suitable for the site and does not detrimentally impact upon the riverbank.

4. Does the development comply with the overall outcomes for the zone?

Yes No N/A

- As detailed above, the proposal to develop the site for multiple residential purposes is clearly inconsistent with the zoning of the land for recreation purposes. However there are a number of factors demonstrating that the proposed use of the site for units is the most appropriate use for the land, as detailed below.
- The subject site is not mapped under Map 6.2 'Future Public Parks Infrastructure' for recreation purposes. The strip of land adjacent to the site is mapped as a district waterside

F. Zone Code

park and as a local linear park.

- The proposed development is well placed to take advantage of local services such as the Brassall Shopping Centre, schools, medical services, public transport and recreation opportunities (in particular the Collins Street bikeway linking Brassall, North Ipswich and the Ipswich CBD). It should be noted there is other multiple residential development adjoining the site, therefore the development of multiple residential units on this site is a logical extension to the higher density residential development existing in this area of Brassall, particularly given its convenient location to essential services.
- Rigorous technical reporting has been undertaken to support the proposed development, including a flood study, a stormwater management plan and an assessment of river bank stability to ensure the proposed development is physically suitable for the site and does not detrimentally impact upon the riverbank.

5. Does the development comply with the "Effects of Development – General" (including the specific outcomes and any applicable probable solutions or acceptable solutions) for the zone?

Yes No N/A

6. (a) Are there any Sub Area or Precinct provisions within the zone which apply to this development?

Yes No

(b) Does the development comply with these provisions?

Yes No N/A

**G. Codes for a Stated Purpose or of a Stated Type
(refer Part 12 of the Planning Scheme)**

1. Are there any codes under Part 12 of the Planning Scheme applicable to the development?

Yes No

- Residential Code (Part 12, division 6)
- Parking Code (Part 12, division 9)

2. Does the development comply with these codes?

Yes No N/A

**H. Overlays (refer Part 11 of the
Planning Scheme)**

1. (a) Is the site affected by a Character Places Overlay?

Yes No

H. Overlays (refer Part 11 of the Planning Scheme)

(b) Is the assessment category changed (refer Table 11.3.2)? Yes No N/A

(c) Does the development comply with the Character Places Overlay Code and the Character Code? Yes No N/A

2. (a) Is the site affected by a Development Constraints Overlay? Yes No

The subject site is affected by the following development constraints:

- OV4 – Difficult Topography (Slopes 15% to 20%)
- OV5 – 1 in 20 and 1 in 100 flood lines
- OV7A – Building Height Restriction Area 45m
- OV7A – Transitional Surface
- OV7B – Existing Committed Urban Townships

(b) Is the assessment category changed (refer Table 11.4.3 and 11.4.4)? Yes No N/A

(c) Does the development comply with the relevant provisions of the Development Constraints Overlay Code? Yes No N/A

- The development has been conditioned to comply with the relevant provisions of the Development Constraint Overlay Code through the imposition of reasonable and relevant conditions.

I. Other Relevant Matters

1. (a) Are there any Planning Scheme Policy provisions which specifically apply to this development? Yes No

- Planning Scheme Policy 3 'General Works' and Planning Scheme Policy 5 'Infrastructure'

(b) Does the development comply with these provisions? Yes No N/A

- The development has been conditioned to comply with the relevant provisions of the Planning Scheme Policies.

2. (a) Are there any Implementation Guidelines which specifically apply to this development? Yes No

I. Other, Relevant Matters

(b) Does the development comply with these Guidelines?

Yes No N/A

3. Are there any other relevant matters which pertain to this development?

Yes No N/A

4. Infrastructure Contributions – Calculation Sheet attached to this checklist?

Yes No N/A

Pursuant to Planning Scheme Policy 5 'Infrastructure', the Developer will be required to pay total monetary contributions in the amount of \$540,011.00 towards the provision of water, sewerage, roadworks, parks and social infrastructure.

J. Public Notification

1. Was the public notification carried out in accordance with the *Integrated Planning Act* requirements?

Yes No

2. Were any submissions received?

Yes No

K. Summary

1. Recommended for:

- Approval - Subject to Conditions
- Refusal
- Part Refusal / Part Approval -Subject to conditions


PLANNER (DEVELOPMENT)

Date: 22 December 2009


Jo Pocock

TEAM COORDINATOR (CENTRAL/WEST)

Date:

23/12/09

Posted 23/12/09
Made Public

Your reference
Our reference 195/06 SMT:MM
Contact Officer Suzanne Taylor
Telephone 3810 6986

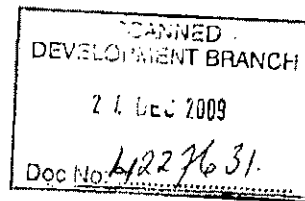


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Colran Pty Limited
C/- David Brett & Associates
PO Box 5020
BRASSALL QLD 4305

23 December 2009

INTEGRATED PLANNING ACT 1997

DEVELOPMENT APPLICATION AMENDED DECISION NOTICE

Application Details

Application No: 195/06
Real Property Description: Lot 2 on RP 857016
Property Location: 2 Haig Street, Brassall-

Names and Addresses of all Referral Agencies: N/A

Decision Date: 23 December 2009
Decision: Approved subject to the conditions detailed below.
Decision Authority: Team Co-ordinator - Central West

Approval Details:

Proposal	Development	Decision	Approval Type
Multiple Residential (48 Dwelling Units)	Making a Material Change of Use of Premises	Approved	Development Permit.

Further Development Permits Required

Further Development Permits, as required by the *Integrated Planning Act 1997*, shall be obtained in respect of any Operational Works, Building Works and Plumbing Works in relation to this approval before any such works are commenced.

Conditions***Assessment Manager (Ipswich City Council)******Conditions applicable to this approval under Integrated Planning Act:*****1. Basis of Approval**

Subject to these conditions, the facts and circumstances set out in the application and all relevant Council Local Laws and/or Planning Scheme Policies shall be adhered to.

2. Site Development

- (a) The proposed development of the site must be undertaken generally in accordance with the following plans:

Title	Drawing Number	Prepared By	Date
Site Plan and Recreation Area Calculations	07673.SK.10, Issue A	David Brett and Associates Pty Ltd	1 October 2009
Staging Plan	07673.SK.12, Issue A	David Brett and Associates Pty Ltd	13 October 2009
Proposed Riverscape	07673.SK.11, Issue A	David Brett and Associates Pty Ltd	31 October 2007
Proposed Streetscapes	07673.SK.5, Issue B	David Brett and Associates Pty Ltd	23 December 2008
Indicative Floor Layouts	DA-2, Job No. 05-028	David Brett and Associates Pty Ltd	16 January 2006
Typical Unit Elevations – Unit Type B	07673.SK.06a, Issue A	David Brett and Associates Pty Ltd	6 July 2009
Typical Unit Elevations – Unit Type C	07673.SK.07a, Issue A	David Brett and Associates Pty Ltd	6 July 2009
Unit Elevations – Unit Type F	07673.SK.08a, Issue A	David Brett and Associates Pty Ltd	6 July 2009
Unit Elevations – Unit Type G	07673.SK.09a, Issue A	David Brett and Associates Pty Ltd	6 July 2009

- (b) As the 4.0m wide road dedication to Collins Street is no longer required, the land shall be retained within development site and must be shown on modified plans to be submitted with the operational works application for approval. Such modified plans must be to the satisfaction of the assessment manager.

3. Hours of Construction

Unless otherwise approved in writing by the assessment manager hours of construction must be:

Monday to Saturday 6.30 a.m. to 6.30 p.m.

Work must not be conducted from or on the premises outside the above hours or on Sundays or public holidays.

4. Demolition of Buildings

All buildings or other structures on the land must be demolished or removed, prior to approval of any application for building works pursuant to this material change of use approval, to the satisfaction of the assessment manager. Approval of an application for building works for the demolition or removal, must be obtained prior to the commencement of such works.

5. Letter Boxes

Unless otherwise approved by the assessment manager, one letter box shall be provided per unit plus one letter box for use by the body corporate or management where appropriate. Such letter boxes shall form an integral part of the design of the development and shall be located within six (6) metres of the road frontage to which the site has been allocated its street address, unless otherwise approved by the assessment manager.

6. Laundering Facilities

Each dwelling unit within the development must be provided with individual laundry and clothes drying facilities. Alternatively, communal facilities must be provided and located to the satisfaction of the assessment manager not more than 100 metres from any dwelling unit.

7. Fencing

- (a) Private recreation space, communal recreation space and site boundaries must be fenced as follows:

Fencing of Private Recreation Space Areas of Units	
Unit Numbers	Type of Fence
1-11	1.8m high timber screen fencing between common private recreation space areas and 1.2m high (30% transparent) fencing along the rear boundary of private recreation space areas
12 – 20	1.8m high timber screen fencing along all boundaries of private recreation space areas
21-26	1.8m high timber screen fencing along common boundaries of private recreation space areas, stepping down. Fencing to Collins Street shall be provided as per 'Fencing to Collins and Haig Street' below
27 – 48	1.8m high timber screen fencing along all boundaries of private recreation space areas
Fencing to Collins and Haig Street	
<p>The fencing to both Collins Street and Haig Street shall be generally that shown on Proposed Streetscape Plan, Drawing No. 076373.SK.5, Issue B, prepared by David Brett and Associates and dated 23 December 2008, however fence panels shall be at least 30% transparent to ensure passive surveillance of the street environment. The developer also indicate private and secure access gates for each unit which face onto Collins Street and from the communal recreation space area adjacent to units 27 and 48 and Haig Street.</p>	
Fencing of Remaining Site Boundaries	
<p>The remaining boundaries of the site to adjoining properties shall be fenced with 1.8m high screen fencing.</p>	

- (b) The colour, style and material of the fencing must be sympathetic to other fencing in the vicinity of the development site and compliment the development. A detailed schedule of fencing and the treatment of such fencing shall be submitted for approval of the assessment manager, prior to the issue of any building works approval for the approved development.

8. Landscaping

- (a) A Landscape Master Plan, which conforms to the approved development plan, Section 27 of Ipswich City Council's Planning Scheme Policy 2, Council's Street Tree Strategy and the relevant Planning Scheme Development Code/s, must be submitted to Council for approval prior to or in conjunction with an application for operational works. Such plan must include, amongst other necessary items, the following features:
- (i) Extent of landscaped areas
 - (ii) Location and name of any existing trees
 - (iii) Soil type
 - (iv) Location of drainage, sewerage and other underground services and overhead powerlines

- (v) Details of landscaping structures
- (vi) Contours and spot levels
- (vii) Proposed surface treatments
- (viii) Means of drainage and irrigation
- (ix) Fence size and type of material, as required by Condition 7 'Fencing' above
- (x) Schedule of plant species size (see Note 1 below), densities (see Note 2 below) and attributes
- (xi) Exclude the use of environmental weeds. Consideration must be given to utilising Council's Vegetation Communities Rehabilitation Guide, specifically Guide 2 Alluvial Flats, Watercourses & Wetlands (attached)

Note 1: Planting sizes are at least as follows

Street and features trees	45L
Other trees	300mm
Larger shrubs	200mm
Groundcovers	150mm

Note 2: Planting at approximately the following density rates:

	<i>As street trees</i>	<i>For buffer planting</i>	<i>All Other instances</i>
<i>Trees</i>	1 per allotment frontage	at 2m centres	at 5m centres
<i>Large shrubs</i>	NA	at 1m centres	at 2m centres
<i>Groundcovers</i>	NA	at 0.5-1m centres	at 0.5-1m centres

- (b) The developer must complete landscaping and fencing works in accordance with the approved landscape plans to the satisfaction of the assessment manager prior to the commencement of the use of the land unless Council determines otherwise. Such landscaping and fencing must be maintained in perpetuity to Council's satisfaction by the existing or future owners and occupiers of the property.

9. Carparking - Use and Maintenance

- (a) A total of 48 private car parking spaces and 31 visitor car parking spaces must be provided on site for the proposed development. All parking areas must be:
 - (i) Kept and used exclusively for parking
 - (ii) Appropriately signposted at the entry/entries to the carpark and exclusive parking areas, to the satisfaction of the assessment manager (eg. "Visitor and Resident Parking"), in accordance with AS1742
 - (iii) Maintained to the satisfaction of the assessment manager

- (b) A delineated pedestrian pathway shall be provided along one side of the internal access roads throughout the development to provide a safe zone for pedestrians. This pedestrian pathway shall be made distinct from the internal access road through use of appropriate tints or textures or physical separation or a combination of these.

10. Contributions

- (a) In accordance with the relevant Council Policies, the developer shall pay, prior to the issue of any building works approval associated with the development (associated with each relevant stage of development), the following monies to Council:-

Stage 1				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	EP Rate = \$1,120/EP Unit Charge = \$1.1383 Total EP Rate = \$1,274.90/EP NRU Rate = \$1,344/NRU Unit Charge = \$1.1383 Total NRU Rate = \$1,529.88	Proposed Residential Use: 8 units with 2 beds each = 8 units x 1.5EP each = 12EPs Existing Indoor Recreation Use – Pre-existing GFA 866m ² = 0.5NRU's/100m ² = 4.33NRU's.	Proposed Residential Use: 12EPs x \$1,274.90 = \$15,298.80 Existing Indoor Recreation Use: 4.33NRUs x \$1,529.88/NRU = \$6,624.38 (credit) Balance Payable = \$8,674.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	EP Rate = \$1,289/ep Unit Charge = \$1.1383 Total EP Rate = \$1,467.27/EP NRU Rate = \$1,574/NRU Unit Charge = \$1.1383 Total NRU Rate = \$1,791.68	Proposed Residential Use: 8 units with 2 beds each = 8 units x 1.5EP each = 12EPs Existing Indoor Recreation Use: Pre-existing GFA 866m ² = 0.5NRU's/100m ² = 4.33NRU's.	Proposed Residential Use: 12EPs x \$1,467.27/EP = \$17,607.24 Existing Indoor Recreation Use: 4.33NRUs x \$1,791.68/NRU = \$7,757.97 (credit) Balance Payable = \$9,849.00

Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	8 units with 2 beds each = 8 units x 3.8VT each = 30.4VTs Credit for Indoor Recreation Use – Pre-existing GFA 866m ² = 13.3VT/100m ² = 115.18VT Total VT = -84.78VT	No infrastructure contributions applicable as sufficient credit exists for this stage.
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	8 units with 2 beds each = 8 units x 1.58EP each = 12.64EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 12.64EPs.	12.64EPs x \$3,278.69/EP = \$41,442.64 \$41,443.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	8 units with 2 beds each = 8 units x 1.58EP each = 12.64EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 12.64EP	12.64EPs x \$358.87/EP = \$4,536.12 \$4,536.00
Total for Stage 1				\$64,502.00

Stage 2				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	EP Rate = \$1,120/EP Unit Charge = \$1.1383 Total EP Rate = \$1,274.90/EP	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under Stage 1	Proposed Residential Use: 9EPs x \$1,274.90 = \$11,474.10 Total = \$11,474.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	EP Rate = \$1,289/ep Unit Charge = \$1.1383 Total EP Rate = \$1,467.27/EP NRU Rate = \$1,574/NRU Unit Charge = \$1.1383 Total NRU Rate = \$1,791.68	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under Stage 1	Proposed Residential Use: 9EPs x \$1,467.27 = \$13,205.43 Total = \$13,205.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	6 units with 2 beds each = 6 units x 3.8VT each = 22.8VTs Credit for Indoor Recreation Use = 84.78VT (carried over from stage 1) Total VTs = -61.98	No infrastructure contributions applicable as sufficient credit exists for this stage.

Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 9.48EP	9.48EPs x \$3,278.69/EP = \$31,081.98 \$31,082.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable.. Total EP = 9.48EP	9.48EPs x \$358.87/EP = \$3,402.09 \$3,402.00
Total for Stage 2				\$59,163.00

Stage 3				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	EP Rate = \$1,120/EP Unit Charge = \$1.1383 Total EP Rate = \$1,274.90/EP NRU Rate = \$1,344/NRU Unit Charge = \$1.1383 Total NRU Rate = \$1,529.88	10 units with 2 beds each = 10 units x 1.5EP each = 15EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 15EPs	Proposed Residential Use: 15EPs x \$1,274.90 = \$19,123.50 Total = \$19,124.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	EP Rate = \$1,289/ep Unit Charge = \$1.1383 Total EP Rate = \$1,467.27/EP NRU Rate = \$1,574/NRU Unit Charge = \$1.1383 Total NRU Rate = \$1,791.68	10 units with 2 beds each = 10 units x 1.5EP each = 15EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 15EPs	Proposed Residential Use: 15EPs x \$1,467.27/EP = \$22,009.05 Total = \$22,009.00

Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	10 units with 2 beds each = 10 units x 3.8VT each = 38VTs Credit for Indoor Recreation Use = 61.98VT (carried over from stage 2) Total VTs = -23.98VTs.	No infrastructure contributions applicable as sufficient credit exists for this stage.
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	10 units with 2 beds each = 10 units x 1.58EP each = 15.8EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 15.8EPs	15.8EPs x \$3,278.69/EP = \$51,803.30 \$51,803.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	10 units with 2 beds each = 10 units x 1.58EP each = 15.8EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 15.8EPs	15.8EPs x \$358.87/EP = \$5,670.15 \$5,670.00
Total for Stage 3				\$98,606.00

Stage 4				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	\$1,120/EP Unit Charge = \$1.1383 Total = \$1,274.90/EP	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 9EPs	9EP x \$1,274.90/EP = \$11,474.10 \$11,474.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	\$1,289/ep Unit Charge = \$1.1383 Total = \$1,467.27/EP	6 units with 2 beds each = 6 units x 1.5EP each = 9EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 9EPs	9EP x \$1,467.27/EP = \$13,205.43 \$13,205.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	6 units with 2 beds each = 6 units x 3.8VT each = 22.8VTs Credit for Existing Indoor Recreation Use = 23.98VTs (carried over from stage 3) Balance VTs remaining = -1.18VTs.	No infrastructure contributions applicable as sufficient credit exists for this stage.

Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 9.48EPs	9.48EPs x \$3,278.69/EP = \$31,081.98 \$31,082.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	6 units with 2 beds each = 6 units x 1.58EP each = 9.48EPs Social Infrastructure not applicable for indoor Recreation Uses, therefore credit not applicable. Total EP = 9.48EPs	9.48EPs x \$358.87/EP = \$3,402.09 \$3,402.00
Total for Stage 4				\$59,163.00

Stage 5 Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	\$1,120/EP Unit Charge = \$1.1383 Total = \$1,274.90/EP	9 units with 2 beds each = 9 units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 13.5EPs	13.5EP x \$1,274.90/EP = \$17,211.15 \$17,211.00

Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	\$1,289/ep Unit Charge = \$1.1383 Total = \$1,467.27/EP	9 units with 2 beds each = 9 units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 13.5EPs	13.5EP x \$1,467.27/EP = \$19,808.15 \$19,808.00
Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	9 units with 2 beds each = 9 units x 3.8VT each = 34.2VTs Credit for Existing Indoor Recreation Use = 1.18VTs (carried over from stage 4) Balance VT's = 33.02VT's	33.02VTs x \$1,251.81/VT = \$41,334.77 \$41,335.00
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	9 units with 2 beds each = 9 units x 1.58EP each = 14.22EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	14.22EPs x \$3,278.69/EP = \$46,622.97 \$46,623.00

Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	9 units with 2 beds each = 9 units x 1.58EP each = 14.22EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	14.22EPs x \$358.87/EP = \$5,103.13 \$5,103.00
Total for Stage 5				\$130,080.00

Stage 6				
Contribution	Sector	Rate	Proposal	Calculation
Water Infrastructure	4 – Brassall Low Level Zone (Pathways Fee Code WT4)	\$1,120/EP Unit Charge = \$1.1383 Total = \$1,274.90/EP	9 units with 2 beds each = 9 units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 13.5EPs	13.5EP x \$1,274.90/EP = \$17,211.15 \$17,211.00
Sewerage Infrastructure	29 – SP53 (Pathways Fee Code SW29)	\$1,289/ep Unit Charge = \$1.1383 Total = \$1,467.27/EP	9 units with 2 beds each = 9 units x 1.5EP each = 13.5EPs Credit for Existing Indoor Recreation Use applied under Stage 1 Total EP = 13.5EPs	13.5EP x \$1,467.27/EP = \$19,808.15 \$19,808.00

Roadworks Infrastructure	42 – Brassall – Wulkuraka North (Pathways Fee Code RD42)	\$1,143/VT Unit Charge = \$1.0952 Total = \$1,251.81/VT	9 units with 2 beds each = 9 units x 3.8VT each = 34.2VTs No credit remaining	34.2VTs x \$1,251.81/VT = \$42,811.90 \$42,812.00
Park Infrastructure	C6 – Brassall (Pathways Fee Code PKC6)	\$2,880.34/EP Unit Charge = \$1.1383 Total = \$3,278.69/EP	9 units with 2 beds each = 9 units x 1.58EP each = 14.22EPs Park Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	14.22EPs x \$3,278.69/EP = \$46,622.97 \$46,623.00
Social Infrastructure	C6 – Brassall (Pathways Fee Code SIC6)	\$315.27/EP Unit Charge = \$1.1383 Total = \$358.87/EP	9 units with 2 beds each = 9 units x 1.58EP each = 14.22EPs Social Infrastructure not applicable for Indoor Recreation Uses, therefore credit not applicable. Total EP = 14.22EPs	14.22EPs x \$358.87/EP = \$5,103.13 \$5,103.00
Total for Stage 6				\$131,557.00
Total for the Development				\$543,071.00

The contributions above are applicable for a period of twelve (12) months from the date of the development approval, and thereafter must be based on the infrastructure contribution policies and rates applicable at the date when payment is made.

The Developer is advised that direct debit, personal and/or company cheques cannot be accepted as payment for the above contributions. The only acceptable forms of payments are cash (EFT payments included), bank cheques or eligible credit cards.

11. Building Materials

Building materials and solar panels used in the construction of the multiple residential development must be of low reflectivity and must use anti-reflection coatings where available.

12. Painting

The exterior of all buildings erected on the site must be painted in such a colour or colours which will blend aesthetically with the surrounding environment. A schedule of colours must be submitted to and be approved by the assessment manager prior to painting and such painting must be maintained in perpetuity to the satisfaction of the assessment manager.

13. Visual Privacy

The Developer must provide suitable screening on the upper level to the windows from habitable rooms on all facades of the dwelling units, by means of external screening devices, to minimise overlooking into adjacent properties (including overlooking into buildings and associated private and public open space areas) in accordance with the approved plans to the satisfaction of the assessment manager. Privacy Screening is to be a minimum of 20% transparent and a maximum 40% transparent.

14. Lighting

The provision of security, flood and car park lighting must be designed, constructed and located so as not to cause disturbance to the occupants of nearby residential properties or passing traffic.

15. Engineering Requirements

The following engineering requirements, detailed in Conditions 16 – 30, shall be completed to the satisfaction of the Engineering and Environment Manager.

Terms

- (a) RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required.
- (b) QUDM – The *Queensland Urban Drainage Manual (2007 Edition)*, produced by the Queensland Department of Environment and Natural Resources.
- (c) Ipswich Water - Commercial Business Unit of Ipswich City Council providing water and sewerage services to Ipswich City.
- (d) ARI – Average Return Interval - used to define flood frequency and severity.

16. Roadworks**EXTERNAL ROADWORKS**

- (a) The land dedication shown on the approved plans along the Collins Street property frontage must be removed from any future development plan lodged in conjunction with any operational works application pursuant to this material change of use. This dedication is no longer required.

Stage 1**Collins Street**

- (b) Collins Street, from the speed platform on Haig Street and along the site frontage, must be upgraded/reconstructed in accordance with Council standards for an Access Street. Works must include:
- (i) New pavement and carriageway (nominally 6.5m wide) with asphaltic concrete surfacing
 - (ii) New concrete kerb and channel (Type B1) on the south eastern side plus associated stormwater infrastructure
 - (iii) Re-profiling of the verge on the south eastern side
 - (iv) Turfing, landscaping and street lighting.
- (c) A formal pedestrian crossing point must be provided on Collins Street south west of the site access point.
- (d) Works must consist of:
- (i) Kerb ramps constructed in accordance with Council's Standard Drawing SR.18
 - (ii) Warnings signs and lighting
 - (iii) A 1.5m wide concrete path connecting the site access point in Collins Street and this formal pedestrian crossing point, through to the bicycle path on the north western side of Collins Street

Haig Street

- (d) A reinforced concrete driveway must be constructed along Haig Street between the end of the existing pavement and the site access point. The driveway must be constructed in accordance with Council standards for a commercial driveway and be a minimum of 6.5m wide.

Works must include

- (i) Kerb & channel (type B1) around the corner of Collins Street/Haig Street to finish generally adjacent the common property boundaries of 13 and 21 Haig Street

- (ii) Associated pavement widening and stormwater drainage infrastructure
- (iii) A concrete driveway for the development
- (iv) A stub providing access to/from the existing car parking area for the adjacent open space and
- (v) Guide posts on both sides of the proposed driveway
- (vi) 1.5m wide concrete path connecting the site access point in Haig Street and the site access point in Collins Street

Conceptual Design

- (e) Integrated conceptual design drawings of the above external roadworks must be prepared by an RPEQ and submitted to Council for review and approval before detailed design commences and prior to lodging any operational works application for the Development.

Bus Stop Infrastructure Contributions

- (f) A monetary contribution of \$25,000 must be paid to Council towards bus stop infrastructure in the area and must be paid prior to the issuing of certificate of classification for any Units that are part of this development. The amount must be fixed for 12 month from the date of this decision notice and then adjusted in accordance with the Road & Bridge Construction Cost Index applicable to Queensland at the time of payment.
- (g) All roadworks must be designed and constructed in accordance with Council's Policies and Standards, the DMR *Road Planning & Design Manual*, Austroads Publications and any other documentation accepted as best practice by Council. The design and construction of each road or street must ensure that the speed environment, geometry, sight distances, carriageway widths, lighting, facilities for bus stops, refuse collection vehicle movements, pedestrians and cyclists, and on-street parking and other physical attributes are consistent with the function and role of the road or street in the transportation network.
- (h) Road pavements must be designed and constructed in accordance with the Ipswich City Council's Planning Scheme Policy 3 - General Works, Chapter 5 - Roadworks. All roads must have two way cross-falls in accordance with Council's adopted standards.
- (i) "No Through Road" signs must be erected at the entries to all cul-de-sacs and terminating roads.

17. Access and Parking

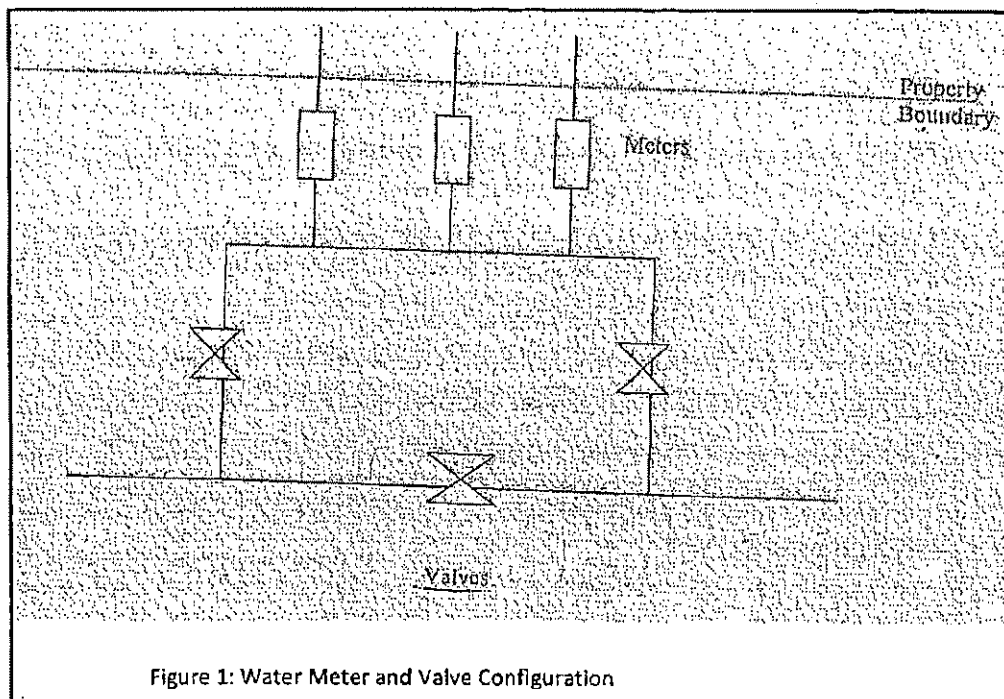
- (a) Design and construction of all access and parking must be in accordance with the provisions of the *Ipswich Planning Scheme Parking Code* and *Australian Standards (2890 Series)*.

- (b) Parking and manoeuvring areas must accommodate the largest anticipated vehicle to use the site.
 - (c) Adequate facilities for servicing the development must be provided on site to ensure loading and/or unloading activities do not occur on-street.
 - (d) Provision must be made for all vehicles to enter and exit the site in forward gear.
 - (e) Provision must be made for HRV manoeuvre into proposed loading bays. Demonstration of same must be as part of the first operational works application.
 - (f) All parking, access and manoeuvring areas must be constructed of concrete, bitumen or pavers and must be line-marked in accordance with the relevant Australian Standard.
 - (g) Concrete layback and driveway slab minimum 6.5 m wide, must be constructed from the layback to the property boundary, at both Collins Street and Haig Street access points to the development in accordance with Council's Standard Drawing SR13 in conjunction with stage 1 of the development.
 - (h) A drainage system must be provided so that no part of the driveway will be inundated in the runoff resulting from a storm event with an ARI of 2 years, and the runoff from the driveway must be discharged to the satisfaction of the Senior Development Engineer.
 - (i) The developer must provide linemarked segregated pedestrian access throughout the development to eliminate potential vehicular and pedestrian conflict.
 - (j) The driveway construction within the development excluding the segregated pedestrian access must be a minimum 5.5 m wide.
 - (k) Any terminating internal roads that may be extended as a part of a later stage must be provided with an all-weather gravel and two-coats of bitumen seal surface turn-around area sufficient size to enable Council's refuse vehicle to negotiate a clear turn. Hazard markers and delineator posts must be erected at the ends of the turnarounds. All works must be undertaken to the satisfaction of the Senior Development Engineer.
 - (l) The internal road pavement widths and geometric layouts must make adequate provision for Council's refuse collection vehicles movements.
 - (m) Roadway adjacent to Units 27-28 must be adjusted to accommodate reversing movements from garages of these units.
 - (n) A waste bin storage area around Stages 5 and 6 of the development must be nominated with operational works application relevant to this stage.
18. Sewerage
- (a) The developer must provide a sewerage reticulation system for each stage with appropriate house connection branches, designed to fully command the development (Lot 2 RP8S7016).

- (b) The developer must pay the full cost for Ipswich Water to provide a suitable connection into the existing sewerage reticulation system. All works on live sewers are to be carried out by Ipswich Water at the developer's expense in accordance with Planning Scheme Policy 3 Section 10.1.2, unless arranged otherwise with Ipswich Water.
- (c) Any existing sewerage or sanitary drainage that may be redundant as a result of this approval must be located, disconnected and removed to the satisfaction of the Senior Development Engineer.
- (d) No work on the sewerage reticulation system may commence prior to the approval of the operational works application.

19. Water Supply

- (a) The Developer must lodge a private works request on the prescribed Council form, for Ipswich Water to:
 - (i) Supply and install a suitable metered water connection for the development generally in accordance with Figure 1 below.



- (ii) Amend the existing connection if necessary, and
- (iii) Seal off any existing water connections if necessary.

The relevant cost must be paid to Council prior to the issuing of the certificate of classification for any Units as part of this development.

- (b) Council's water supply system has been designed to achieve the target levels of service as outlined in Planning Scheme Policy 3 Section 4.1.2 *Standard of Service*. It is the responsibility of the developer to provide any fire fighting requirements over and above Council's target levels of service, at their expense, internally and without adverse impact to Council's water supply system.
- (c) A 150mm diameter main must be constructed as part of the first stage of this development from the existing 150mm diameter main on northern side of Workshops Street (opposite 24 Workshops Street) and connect into the existing 100mm diameter main adjacent to 12 Collins Street. This extension must include valves and hydrants at appropriate locations and intervals.

20. Stormwater

Stormwater Quality

- (a) The quality of stormwater leaving the developed site must achieve the following reductions in average annual pollutant load:
- 80% for total suspended solids
 - 60% for total phosphorus
 - 45% for total nitrogen
 - 90% for gross pollutants
- (b) The water quality objectives listed in (a) must be achieved through the implementation of the nine (9) bio-retention basins generally in accordance with the Stormwater Management Plan Version 7 dated 15 October 2009 prepared by Cardno Pty Ltd subject to the following amendments:
- (i) The nine (9) bio-retention basins must each have a drainage layer depth of 200mm and a transition layer depth of 100mm. The filter media median particle size for all bio-retention basins must be 0.45mm with a hydraulic conductivity of 180mm/hr. All other parameters for the bio-retention basins must be in accordance with the modelled parameters represented in Table 1 below:

Table 1

Bioretention Basin	Extended detention depth (m)	Surface Area (m ²)	Filter Area (m ²)	Filter Media Depth (m)
A	0.2	66.0	33.7	0.7
B	0.2	26.9	5.9	0.7
C	0.2	75.4	42.4	0.7
D	0.2	70.3	31.7	0.7
E	0.2	79.9	37.3	0.7
F	0.2	22.8	3.7	0.7
G	0.2	21.9	3.6	0.7
H	0.2	21	4.1	0.7
I	0.2	20.9	3.1	0.7

- (ii) A high flow bypass must be incorporated into the design of the bio-retention basins to ensure that only flows up to the 3 month ARI storm event are treated through the bio-retention basins;
- (iii) Geofabric must not be used between the bio-retention swale layers and the filter media layer
- (iv) Detail pre-treatment to bio-retention basins to ensure scour protection and removal of gross pollutants
- (v) Bioretention basins A, D, E, F, G, H and I must include an impermeable liner to prevent exfiltration to the surrounding soils. Details of the lining must be submitted with application for operational works relevant to each stage.
- (vi) Bioretention basin under drain design is to be in accordance with Section 5.3.5 of the Water Sensitive Urban Design Technical Design Guidelines (WSUD TDG) for South East Queensland and Section 3.4.5 of the Construction and Establishment Guidelines - Swales, Bioretention Systems and Wetlands, Version 1 dated February 2009, prepared by Healthy Waterways. A copy of the calculations used to size the drainage must be provided at the time of lodging the operational works application. Similarly calculations must be provided to demonstrate that the pipes which are connected downstream of the drainage pipes are suitably sized so as not to become the hydraulic control and filter media is free draining.
- (vii) Underdrainage must consist of either slotted PVC pipe or flexible perforated pipe (e.g. Ag pipe) and not presocked ag pipe
- (viii) Provide a uPVC riser with screw cap lid at the head of each slotted pipe for maintenance flushing. The plan must include a detail in accordance with BCC drawing UMS153 with a note that states that risers are not to be slotted
- (ix) Detailed planting plans for bioretention areas demonstrating compliance with the plant species and densities outlined in Appendix A of the WSUD TDG (version current at the time of operational works detailed design for each relevant stage.
- (x) Specify on the plan the grade at which drainage pipes are to be laid and the relevant width of the drainage pipe slots. It should be noted that a minimum of 0.5% slope is required and depending on the length of the bioretention this may impact significantly on the depth of the drainage layer. The length of all 100mm slotted drainage pipes must not exceed 25m. For longer lengths the pipe size must be increased or duplicated to increase conveyance
- (xi) Provide the bioretention filter media levels ensuring that the surface of the filter is flat to allow even absorption through the filter
- (xii) All inlets to the bioretention basins must be as near to the outlet as possible to minimise mixing of high flows with first flush
- (xiii) The drawings must include a note which refers to the Healthy Waterways Bioretention Basin Construction and Establishment Sign-off Forms (including the Pre-start meeting form and Forms A-G) for use throughout construction

- (c) Prior to lodgement of detailed operational works drawings for each stage, the Developer must receive certification from the consulting engineers who prepared the approved Stormwater Management Plan certifying that the detailed drawings are in accordance with the approved Stormwater Management Plan, these conditions of approval and the WSUD TDG. A copy of the certification, and completed copies of the WSUD TDG Design Assessment Checklist and Calculation Summary Checklist, must be lodged in conjunction with an operational works application.

Stormwater Quantity

- (d) The developer must provide all necessary internal and external stormwater drainage to service the development. Such drainage works (except for building gutters and downpipes) must be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

In the case where the piped system is carrying part of the flow, the overland flow paths must be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system.

- (e) Appropriate works must be carried out to ensure that stormwater drainage from the new kerb and channel discharges suitably into the existing drainage system.
- (f) A suitable roofwater and internal drainage system must be designed in accordance with QUDM for the development. The design must be not less than QUDM Level IV.
- (g) Ponding, concentration or redirection of stormwater must not occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.
- (h) The floor levels of any habitable rooms of all dwellings must be located a minimum of 250 mm above the 100 year ARI flood event.
- (i) Construction of buildings or other structures is not permitted below the flood level associated with an ARI of 100 years with the exemption of Units 1 to 14 as part of this approval.
- (j) There must be no filling or removal of material in the flood area below the flood level associated with an 100 ARI of years with the exception of what has been specified in Flood Study Version 4 for 2 Haig Street Brassall prepared by Cardno dated 7 October 2009. There must be no disturbance to vegetation in the flood area, without prior written approval of the Senior Development Engineer.

- (k) For stormwater management purposes the development must be designed and constructed in accordance with the Stormwater Management Plan (SMP) submitted by Cardno and dated 15 October 2009 and Flood Study submitted by Cardno and dated 7 October 2009 and otherwise conditioned as part of this approval. Pipe discharge arrangement to Bremer river from the development must be in accordance with Section 5 of the above mentioned Stormwater Management Plan.
- (l) Compensatory earthwork drawings and calculations must be submitted as required by Condition 22 'Earthworks' below. This submission must also include the following recommendations outlined in the above mentioned Flood Study report and River Bank Stability Assessment submitted by the Developer.
- Maximum height of fill must not exceed 500mm above the flood event equivalent to the ARI of 100 years
 - Maximum depth of cut must not exceed 1m between the proposed retaining wall profile and property boundary and batters must not be steeper than 1:4
- (m) All stormwater runoff from the development must be discharged in a manner and to a point to be approved by the Senior Development Engineer. In this instance all stormwater runoff from impervious areas (including roofwater) for associated storm events up to and including ARI of 100 years must be piped to a single discharge point located below the low level tide mark in the Bremer River.
- (n) Stormwater headwall structures must be constructed in accordance with the relevant DMR standard drawings for reinforced concrete headwalls and aprons, unless agreed otherwise with the Senior Development Engineer.
- (o) Stormwater drainage plans and calculations are to be submitted and approved by the Senior Development Engineer, in conjunction with the submission of first operational works application.
- (p) The developer, prior to the commencement of use of each stage, must submit to Council, certification from an RPEQ that the stormwater infrastructure and overland flow for that stage is connected to the outlet system as stated above.

21. Earthworks

- (a) Compensatory earthworks drawings must be submitted with the first operational works application addressing the following as a minimum and as required by Condition 21(l) 'Stormwater' above.
- (i) Cut/fill depths, batter slopes, retaining wall heights
 - (ii) Cross sections indicating Q100 flood line, reduced level of top of the bank, reduced level of proposed retaining wall etc
 - (iii) Indicate expected total fill height and extend
 - (iv) Batter slopes of fill/cut

- (v) Total height of retaining wall
- (vi) Quantify cut/fill volumes at each section
- (b) As part of the operational works application an RPEQ must certify that the submission as detailed above is in accordance with the above mentioned Flood Study report.

22. Site Stability

- (a) In terms of earthworks and construction of in-ground services, all works including retaining wall construction must generally be designed and undertaken to account for recommendations and requirements in accordance with "River Bank Stability Assessment" report prepared by Morrison Geotechnic Pty Ltd and dated 23 October 2009 and to the satisfaction of the Senior Development Engineer.
- (b) Retaining walls and batters resulting from cutting and filling require RPEQ certification for Riverbank stability and proper drainage.

23. Building Requirement

Proposed Units 1-11 along the crest of the bank must not exceed design surcharge loading of 10kPa as recommended in "River Bank Stability Assessment" report prepared by Morrison Geotechnic Pty Ltd and dated 23 October 2009.

24. Retaining Walls

- (a) The developer must obtain written comments from adjoining property owners with respect to any proposed earthworks and retaining walls within three (3) metres of the site boundary, in accordance with Ipswich *Planning Scheme Part 12, Division 15 – Earthworks Code (Section 12.15.4.19)*. The written comments must be submitted to Council for consideration as part of the operational works application.
- (b) Finished heights of all retaining walls must be shown on the relevant drawings. The maximum height of gravity boulder retaining walls must be 1.25m. If further height is required, the retaining structure is to be designed and certified by a structural engineer. The total maximum height of any retaining wall is to be 2.5m. Retaining walls over 1.25m high must be constructed with an engineer designed and certified concrete foundation, with an initial retained height of 1.25m, then a minimum set back of 0.6m prior to another maximum retained height of 1.25m to total a maximum height of 2.5m.
- (c) A certificate from a RPEQ must be issued to Council certifying that any retaining wall greater than 1.0m in height is structurally sound and capable of withstanding any likely surcharge loads. The design and construction of retaining walls must comply with the following minimum requirements unless agreed otherwise with the Senior Development Engineer:
 - (i) The minimum design surcharge loading must be 10kPa.
 - (ii) Retaining walls must be designed so that there are no imposed loads placed upon Council's underground services. Retaining walls crossing over services must have support footings extending at least 300mm below the invert of the service pipe.

- (iii) All retaining walls must be provided with Council approved subsoil and surface drainage systems.
- (iv) Backfill to retaining walls must be comprised of approved drainage material contained within a geo-fabric wrap.
- (v) A drainage system in the form of a mounded V-drain or similar which discharges to a legal point of discharge must be constructed along the top of all gravity retaining walls to prevent stormwater sheeting or concentrating over retaining structures.
- (vi) Retaining walls in public areas that are 1.0m or greater in height must be provided with railings or other barriers to provide pedestrian safety.

25. Waste Storage and Collection

- (a) The area on which the bin(s) is to be accessed by refuse collection vehicles must be screened, level, concreted and constructed in conjunction with the driveway surface with no intervening step, ledge, kerb or other obstruction.
- (b) All wash down waters from bin cleansing performed on-site must be appropriately treated and discharged to sewer subject to a Trade Waste approval. No wash down waters are permitted to flow to a roadway, gutter, stormwater drain or natural waterway. Another alternative is for the Developer to arrange a contact with a refuse bin cleaning company.
- (c) All waste bins must be serviced on site with no street side collection. Access for waste vehicle must allow forward motion entry to the industrial refuse containers and forward motion exit from the site.

26. Erosion & Silt Management

- (a) As part of the first application for operational works, the developer must submit with the operational works application, an Erosion and Silt Management Plan designed in accordance with "*Best Practice Erosion and Sediment Control*" published by the International Erosion Control Association (Australasia) November 2008, or equivalent.
- (b) The developer must install silt management facilities at commencement of construction and maintain these facilities until the development has been released "Off Maintenance by Council".
- (c) Silt traps must be sited upstream from any park or reserve area discharge point, such that no silt impinges on the park or reserve areas. The silt trap areas may be phased out after the development work is complete and adequate grass cover is obtained.
- (d) Diversion drains and ponds, as necessary, must be installed on the site before any other work is undertaken on site to ensure that water containing silt, clay, solids or contaminants is contained and/or isolated.
- (e) Prior to the Pre-Start meeting for operational works, the developer must lodge a \$10,000.00 Siltation and Erosion Performance Bond with Council. This bond must only be released by Council at the termination of the maintenance period.

- (f) If the Senior Development Engineer determines that silt damage has occurred as a result of this development, the developer must be responsible for restoration of any damage. Such restoration must be completed within a time to be advised by the Senior Development Engineer. Should the developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council may elect to complete the works and recover all costs associated with that work from the Developer.
- (g) Where Council determines that a draw-down of the bond is required, the developer must restore the bond to its full amount within ten (10) business days of a notice from Council to that effect.

27. Public Utilities

- (a) The developer must provide appropriate road crossing conduits in accordance with Council's Standard Drawings SR.22 and SR.23. Where concrete footpaths are to be constructed, the conduits must be extended to the property boundaries.
- (b) The developer must provide an RPEQ certified electrical reticulation layout plan with the operational works application.
- (c) Street lighting must be installed by the developer in accordance with the Australian Standard 1158.3.1 Series for Pedestrians and Vehicles for both Collins and Haig Street. All street lighting associated with the development must be certified by an RPEQ. Street lighting must be installed on the same side as concrete footpaths (where applicable).
- (d) The developer must make suitable arrangements for the provision of telephone and (where applicable) cable services to all proposed lots within the development. Documentary evidence that telephone and/or cable services will be provided, must be submitted to Council prior to the signing of the plan of survey.

28. Operational Works – Municipal Works
(ie Works being handed over to Council)

- (a) Municipal works must be completed in accordance with a detailed design certified by an RPEQ and approved by Council Engineers with appropriate fees payable, a works pre-start meeting on-site and various detailed construction and audit inspections by Council Officers. In accordance with *Ipswich Planning Scheme Policy 3*, a maintenance period applies for the works and a maintenance security deposit is required.
- (b) External Municipal Works relates to those works external to the subject site and located in already dedicated public areas, for example existing road or drainage reserve, or private property not subject to Developer ownership.
- (c) The requirements of *Ipswich Planning Scheme Policy 3 - General Works* and Council's *Standard Drawings* must apply to the municipal works. Where inconsistencies between any documents occur, *Ipswich Planning Scheme Policy 3* has precedence and must prevail to the extent of any inconsistency.
- (d) All engineering drawings must be in accordance with *Ipswich Planning Scheme Policy 2 – Information Local Government May Request* and include as a minimum the following:

- (i) Engineering drawings must be marked as confirmation that they have been checked and approved by an RPEQ.
- (ii) The drawings must be submitted as four (4) hardcopy, A3 size sets. Reports and supporting information must be submitted as four (4) hardcopy sets.

The submission must also include a compact disk containing electronic data as follows:

- (a) One (1) full set of all engineering drawings contained in one file
- (b) Separate individual files containing layout plans for sewerage, water supply and drainage
- (c) Any reports submitted in support of the application. Each report must be included as a separate file
- (d) An index of all files on the compact disk including descriptions of contents of each file

All files must be submitted in PDF format, unless otherwise specified.

- (iii) A "Certificate of Design" must be submitted by an RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (e) All works must be supervised by an RPEQ competent in civil works and must be undertaken by a nominated principal contractor experienced in the construction of municipal works. Council reserves the right to request evidence of the principal contractor's competency. Should the contractor not be able to demonstrate the necessary competency to the satisfaction of the Senior Development Engineer or if the contractor has constructed substandard works for Council in the past, Council reserves the right to reject the nominated contractor.
- (f) Prior to the Pre-Start meeting, the developer must submit to Council a bank guarantee, or a bond of not less than 10% of the value of the external municipal works (minimum \$5,000.00), as security for the performance of the various construction and certification obligations (including provision of "As Constructed" information). The bond or guarantee must be reduced to an amount not less than 5% of the value of the works upon formal acceptance of the works "On Maintenance", and must be retained by Council during the maintenance period as security for the performance of the Developer's maintenance obligations. The bond must be returned upon formal acceptance of the works "Off Maintenance".
- (g) Municipal works must be accepted "On Maintenance" prior to commencement of use. A maintenance bond equal to 5% of the construction cost (minimum \$5,000.00) must be submitted by the developer and must be retained by Council for a minimum period in accordance with *Ipswich Planning Scheme Policy 3*, or until the works are accepted "Off Maintenance" by Council.

- (h) On completion of the works a certificate must be submitted to Council by an RPEQ certifying that the works have been constructed in accordance with Council's construction standards and in compliance with the approved plans and specifications. It is expected that the RPEQ will undertake the necessary inspections to make this certification.
- (i) "As Constructed" information and final construction issue engineering design drawings, compiled in accordance with *Ipswich Planning Scheme Policy 2 for Municipal Works*, must be submitted to Council and approved prior to the formal acceptance of the works "On Maintenance". This data must be submitted electronically on a compact disk labelled appropriately to indicate the contents.
- (j) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent in regard to the works relevant to the operational works approval.

29. Operational Works – Internal Works
(ie Works not being handed over to Council)

- (a) Internal Works refers to engineering works performed within private property and includes but is not limited to, earthworks, retaining walls, driveways and stormwater management systems.
- (b) Plans relating to all civil engineering works must be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans must show full construction details, layout dimensions, and finished surface levels and must be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (c) Engineering drawings must be marked as confirmation that they have been checked and approved by a RPEQ.
- (d) The drawings must be submitted as four (4) hardcopy A3 size sets and two (2) hardcopy sets of any reports and supporting information. One set of plans will be returned to the applicant with the Decision Notice.
The submission must also include a Compact Disc containing electronic data as follows:
 - (i) One (1) full set of all engineering drawings contained in one file
 - (ii) Separate individual files containing layout plans for sewerage, water supply and drainage
 - (iii) Any reports submitted in support of the Application. Each report must be included as a separate file
 - (iv) An index of all files on the Compact Disc including descriptions of contents of each file

All files must be submitted in PDF format, unless otherwise specified. Where municipal works are also being undertaken, it is usually appropriate to make a combined submission.

- (e) A "Certificate of Design" signed by an RPEQ must be submitted to certify that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (f) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent.
- (g) On completion of works, a certificate must be submitted to Council by an RPEQ certifying that the completed works have been constructed in accordance with Council's requirements and standards and in compliance with the approved plans and specifications. It is expected that the RPEQ will undertake the necessary inspections to make this certification.

30. General

- (a) All disturbed verge areas and allotments must be graded, grassed and left in a mowable condition. The grass cover must be obtained as early as possible during the development and an acceptable grass cover must be achieved before the development can be accepted "Off Maintenance".
- (b) Should any works be proposed on land under other private ownership, written permission for the works must be obtained and forwarded to Council. Similarly, written clearances must be obtained after the works are completed, unless otherwise accepted by the Senior Development Engineer.
- (c) All works required for this development must take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works must be altered at the cost of the developer.
- (d) Any allotment filling for a depth greater than 500mm to provide for building platforms must be conducted in accordance with Australian Standard 3798 at Responsibility Level 1. Test results as required by Australian Standard 3798, and a certificate of quality and uniformity of fill must be provided by a RPEQ.
- (e) Imported and exported materials may only be transported on routes approved by the Senior Development Engineer.
- (f) Any fill intended to be placed over Council's underground services must be approved by the Senior Development Engineer.
- (g) Batters and slopes greater than 1:4 resulting from cutting and filling of the site must be certified by an RPEQ as stable and properly drained.

31. Minor Alterations

Notwithstanding the requirements detailed in this approval, any other minor alterations and/or modifications acceptable to the Development Planning Manager will suffice.

32. Compliance with Conditions

- (a) Unless otherwise stated all conditions shall be completed prior to commencement of the proposed change of use of each stage of the development or as determined by the assessment manager.
- (b) All conditions shall be completed to the satisfaction of the assessment manager.

33. When Approval Takes Effect

This approval has effect in accordance with the provisions of Section 3.5.19 of the *Integrated Planning Act 1997* as follows:

- (a) If the applicant does not appeal the decision to the court - from the time the decision notice is given (or if a negotiated decision notice is given, from the time the negotiated decision notice is given); or
- (b) If an appeal is made to the court - subject to the decision of the court, when the appeal is finally decided.

34. When Approval Lapses

- (a) This approval lapses at the end of the relevant period, unless the change of use happens before the end of the relevant period. The relevant period for this approval is four (4) years starting the day the approval takes effect.
- (b) An extended relevant period may be agreed upon, pursuant to Section 3.5.22 of the *Integrated Planning Act 1997*, provided a written notice to Council is made before the end of the relevant period. Such written notice is to be on Council's approved form, accompanied by the owner's consent and the prescribed fee in Council's Register of General Charges.

NOTE: operational works application(s) required to be submitted must be approved and works completed within the relevant period stated above.

Advice

***The following advices are offered for your information only
and should not be viewed as mandatory conditions of this approval.***

Assessment Manager (Ipswich City Council)

1. Further Subdivision

- (a) If the developer wishes to install facilities that will permit the development to be subdivided to provide Community Management Scheme subdivision in accordance with the Body Corporate Act and Community Management Act, the following matters relating to water, sewerage and electricity should be addressed:-
 - (i) Water: Separate connections to Council's water mains are required and the systems should not be interconnected.

- (ii) Sewerage: Separate connections to Council's sewer mains are required. This may require other house connection branches and/or a 150 mm sewer main extension depending on the circumstances. Additionally, the systems should not be interconnected.
- (iii) Electricity: Separate connections to the proposed development to the electricity reticulation system are required. This may require the extension of the underground electricity reticulation system to Energex's approval.
- (b) The developer must submit to Council hydraulic plans that comply with the requirements of *Water Supply (Safety and Reliability) Act* for scrutiny by Council.
- (c) Scrutiny fees in accordance with the Council's Schedule of Fees and Charges must be paid at the time of lodgement of plans. No work on plumbing and drainage may commence prior to the approval of the plan and the issuing of a permit, by this Council, to a Licensed Plumber/Drainer.
- (d) Tests and inspections must be arranged with the Building Section upon payment of the appropriate current fee.

2. Fire Ants

In accordance with the *Plant Protection Act 1989* and the Plant Protection Regulation 1990, a quarantine notice has been issued for the State of Queensland to prevent the spread of the Red Imported Fire Ant (ant species *Solenopsis invicta*) and to eradicate it from the State.

It is the legal obligation of the land owner or any consultant or contractor employed by the land owner to report the presence or suspicion of Fire Ants to the Queensland Department of Primary Industries on 132523 within 24 hours of becoming aware of the presence or suspicion, and to advise in writing within seven days to:

Director General
Department of Primary Industries
GPO Box 46, Brisbane QLD 4001

It should be noted that the movement of Fire Ants is prohibited, unless under the conditions of a Department of Primary Industries Inspectors Approval. More information can be obtained from the Queensland Department of Primary Industries website www.dpi.qld.gov.au.

The development approved herein, by its very nature, includes activities considered to be "high risk" in respect of controlling the spread of Fire Ants. The following lists show high risk activities and some precautions should be considered for implementation.

- (a) High risk activities can include:
 - (i) Earthworks of a minor or major scale
 - (ii) Revegetation or rehabilitation

- (iii) Import of fill onto a site
 - (iv) Export of fill or other materials such as soils, gravel, mulch and plants
 - (v) Export off or import on to a site of construction and demolition waste and materials or green waste
- (b) Precautions for implementation
- (i) Checking for ants regularly
 - (ii) Checking all soil, fill and waste materials (construction and green waste) for ants
 - (iii) Asking questions about the quality and source of soil, fill and waste materials (construction and green waste)
 - (iv) Keeping records of all movements of soil, fill and waste materials (construction and green waste)
 - (v) Cleaning of all earthmoving or other soiled vehicles prior to exit from the site
 - (vi) Informing staff and contractors about these precautions

3. Portable Long Service Leave

Where the works are valued at \$80 000 or more and match the definition of 'Building and Construction Industry' under the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, the Building and Construction Industry (Portable Long Service Leave) Levy must be paid prior to the issue of a development permit. This applies to Building Works, operational Works and Plumbing and Drainage Works applications, as defined under the *Integrated Planning Act 1997*.

Council will not be able to issue a Decision Notice without receipt of evidence that the Levy has been paid. Should you require clarification in regard to the amendments to the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, you should contact QLeave on 1800 803 481 (free call) or (07) 3212 6855.

There were no properly made submissions received with respect to this application.

Pursuant to the provisions of the *Integrated Planning Act 1997*, I also enclose herewith a copy of the relevant sections concerning:

- Making representations about conditions during the applicant's appeal period (i.e. Negotiated Decision Notice); and
- The institution of an appeal.

Yours faithfully



Joanne Pocock
TEAM COORDINATOR (CENTRAL/WEST)

Extract from the Integrated Planning Act

Division 4 – Representations about conditions and other matters

Application of div 4

3.5.16 This division applies only during the applicants appeal period.

Changing conditions and other matters during the applicant's appeal period

- 3.5.17 (1) This section applies if the applicant makes representations to the assessment manager about a matter stated in the decision notice, other than a refusal or a matter about which a concurrence agency told the assessment manager under section 3.3.18(1).
- (2) If the assessment manager agrees with any of the representations, the assessment manager must give a new decision notice (the *negotiated decision notice*) to –
- (a) the applicant; and
 - (b) each principal submitter; and
 - (c) each referral agency; and
 - (d) if the assessment manager is not the local government and the development is in a local government area – the local government.
- (3) Only 1 negotiated decision notice may be given.
- (4) The negotiated decision notice –
- (a) must be given within 5 business days after the day the assessment manager agrees with the representations; and
 - (b) must be in the same form as the decision notice previously given; and
 - (c) must state the nature of the changes; and
 - (d) replaces the decision notice previously given.
- (5) If the assessment manager does not agree with any of the representations, the assessment manager must, within 5 business days after the day the assessment manager decides not to agree with any of the representations, give a written notice to the applicant stating the decision about the representations.
- (6) Before the assessment manager agrees to a change under this section, the assessment manager must reconsider the matters considered when the original decision was made, to the extent the matters are relevant.
- (7) If the development approved by the negotiated decision notice is different from the development approved in the decision notice in a way that affects the amount of an infrastructure charge or regulated infrastructure charge, the local government may give the applicant a new infrastructure charges notice under 5.1.8 or regulated infrastructure charges notice under section 5.1.18 to replace the original notice.
- (8) If the development approved by the negotiated decision notice is different from the development approved in the decision notice in a way that affects the amount of a regulated State infrastructure charge, the relevant State infrastructure provider may give the applicant a new regulated State infrastructure charges notice under section 5.3.4 to replace the original notice.

Applicant may suspend applicant's appeal period

- 3.5.18 (1) If the applicant needs more time to make the written representations, the applicant may, by written notice given to the assessment manager, suspend the applicants appeal period.
- (2) The applicant may act under subsection (1) only once.
- (3) If the written representations are not made within 20 business days after the day written notice was given to the assessment manager, the balance of the applicants appeal period restarts.
- (4) If the written representations are made within 20 business days after the day written notice was given to the assessment manager –
- (a) if the applicant gives the assessment manager a notice withdrawing the notice under subsection (1) – the balance of the applicants appeal period restarts the day after the assessment manager receives the notice of withdrawal; or
 - (b) if the assessment manager gives the applicant a notice under section 3.5.17(5) – the balance of the applicant's appeal period restarts the day after the applicant receives the notice; or
 - (c) if the assessment manager gives the applicant a negotiated decision notice – the applicant's appeal period starts again the day after the applicant receives the negotiated decision notice.

Division 8—Appeals to court relating to development applications**Appeals by applicants**

- 4.1.27. (1) An applicant for a development application may appeal to the court against any of the following—
- (a) the refusal, or the refusal in part, of a development application;
 - (b) a matter stated in a development approval, including any condition applying to the development, and the identification of a code under Section 3.1.6;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a period mentioned in 3.5.21;
 - (e) a deemed refusal.
- (2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the “applicant’s appeal period”) after the day the decision notice or negotiated decision notice is given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

Appeals by submitters

- 4.1.28. (1) A submitter for a development application may appeal to the court only against—
- (a) the part of the approval relating to the assessment manager’s decision under section 3.5.14 or 3.5.14A; or
 - (b) for an application processed under section 6.1.28(2)—the part of the approval about the aspects of the development that would have required public notification under the repealed Act.
- (2) To the extent an appeal may be made under subsection (1), the appeal may be against 1 or more of the following—
- (a) the giving of development approval;
 - (b) any provision of the approval including —
 - (i) a condition of, or lack of condition for, the approval; or
 - (ii) the length of a period mentioned in section 3.5.21 for the approval.
- (3) However, a submitter may not appeal if the submitter—
- (a) withdraws the submission before the application is decided; or
 - (b) has given the assessment manager a notice under section 3.5.19(1)(b)(ii)
- (4) The appeal must be started within 20 business days (the *submitter’s appeal period*) after the decision notice or negotiated decision notice is given to the submitter.

Appeals for matters arising after approval given (co-respondents)

- 4.1.30. (1) For a development approval given for a development application, a person to whom any of the following notices have been given may appeal to the court against the decision in the notice—
- (a) a notice giving a decision on a request for an extension of a period mentioned in section 3.5.21;
 - (b) a notice giving a decision on a request to make a minor change to an approval
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.
- (3) Subsection (1)(a) does not apply if the approval resulted from a development application (superseded planning scheme) that was assessed as if it were an application made under a superseded planning scheme.
- (4) Also, a person who has made a request mentioned in subsection (1) may appeal to the court against a deemed refusal of the request.
- (5) An appeal under subsection (4) may be started at any time after the last day the decision on the matter should have been made.

Appeals for matters arising after approval given (no co-respondents)

- 4.1.31. (1) A person to whom any of the following notices have been given may appeal to the court against the decision in the notice—
- (a) a notice giving a decision on a request to change or cancel a condition of a development approval;
 - (b) a notice under section 3.5.33A(9)(b) or 6.1.44 giving a decision to change or cancel a condition of a development approval.
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.
- (3) Also, a person who has made a request mentioned in subsection (1)(a) may appeal to the court against a deemed refusal of the request.
- (4) An appeal under subsection (3) may be started at any time after the last day the decision on the matter should have been made.

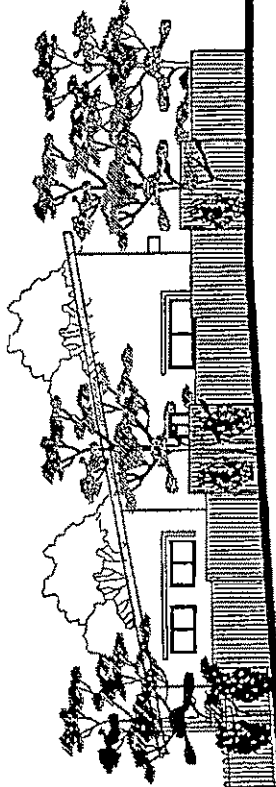
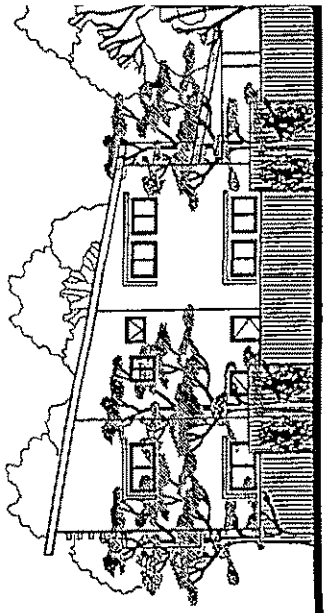
Appeals on matters relating to the Building Act 1975 the following also applies: -

Jurisdiction of tribunals

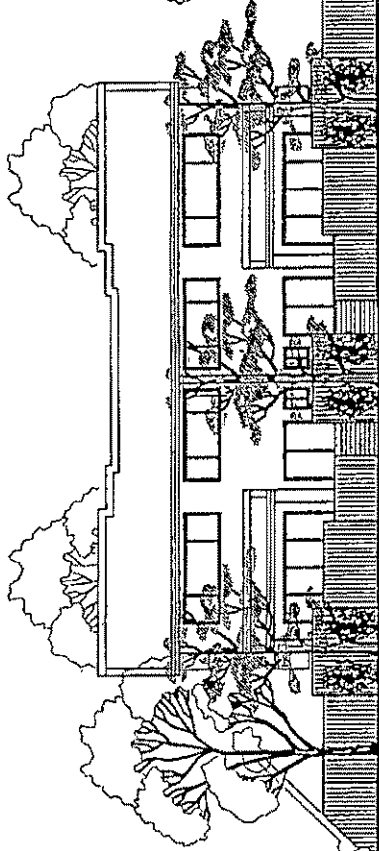
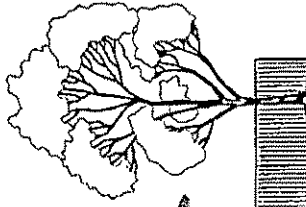
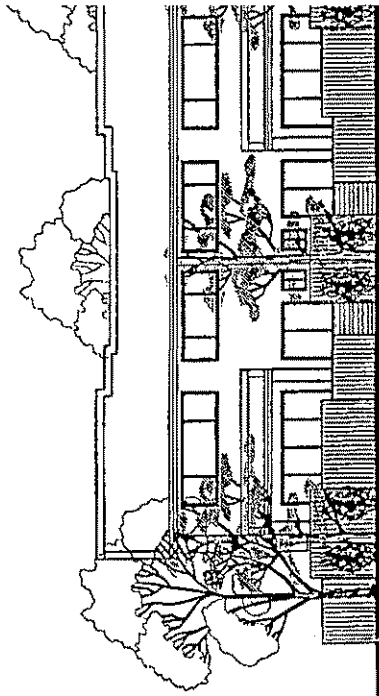
- 4.2.7. (1) A tribunal has jurisdiction to decide any matter that under this or another Act may be appealed to it.
(2) However, an appeal to a tribunal under this Act may only be about—
(a) a matter under this Act that relates to the *Building Act 1975* (other than a matter under that Act that may or must be decided by the Building Services Authority) or the *Plumbing and Drainage Act 2002*; or
(b) a matter prescribed under a regulation.

Appeals by applicants

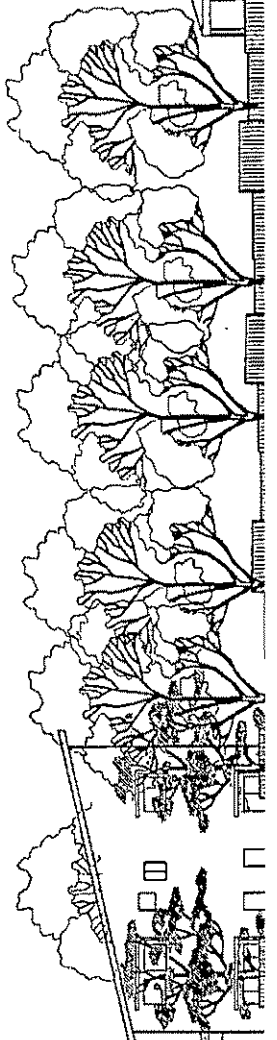
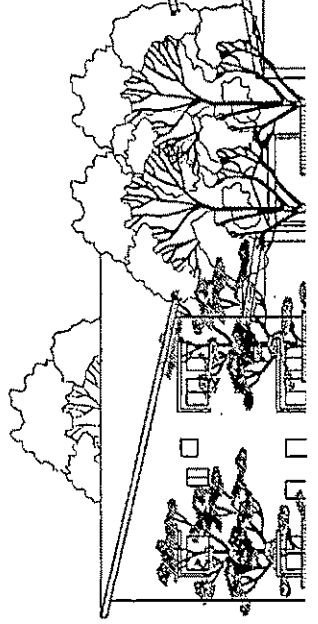
- 4.2.9. (1) An applicant for a development application may appeal to a tribunal against any of the following—
(a) the refusal, or the refusal in part, of a development application;
(b) a matter stated in a development approval, including any condition applying to the development, but not including the identification of a code under section 3.1.6;
(c) the decision to give a preliminary approval when a development permit was applied for;
(d) the length of a period mentioned in section 3.5.21;
(e) a deemed refusal.
(2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the “**applicant’s appeal period**”) after the day the decision notice or negotiated decision notice is given to the applicant.
(3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.



VIEW FROM HAIG STREET



VIEW FROM COLLINS STREET










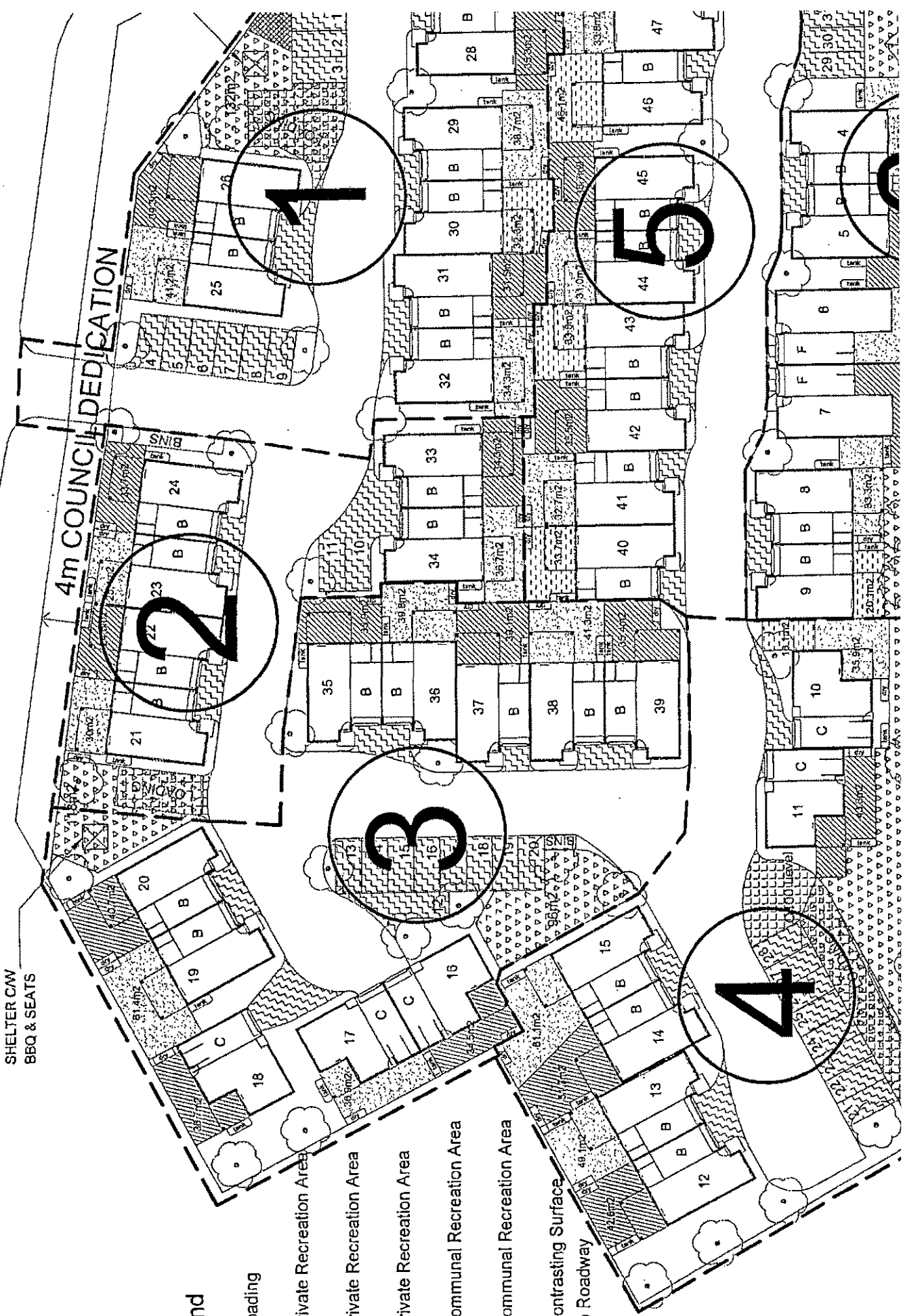
COLLINS STREET

4m COUNCIL DEDICATION

SHELTER CW
BBQ & SEATS

Legend

-  Loading
-  Private Recreation Area
-  Private Recreation Area
-  Private Recreation Area
-  Communal Recreation Area
-  Communal Recreation Area
-  Contrasting Surface to Roadway



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






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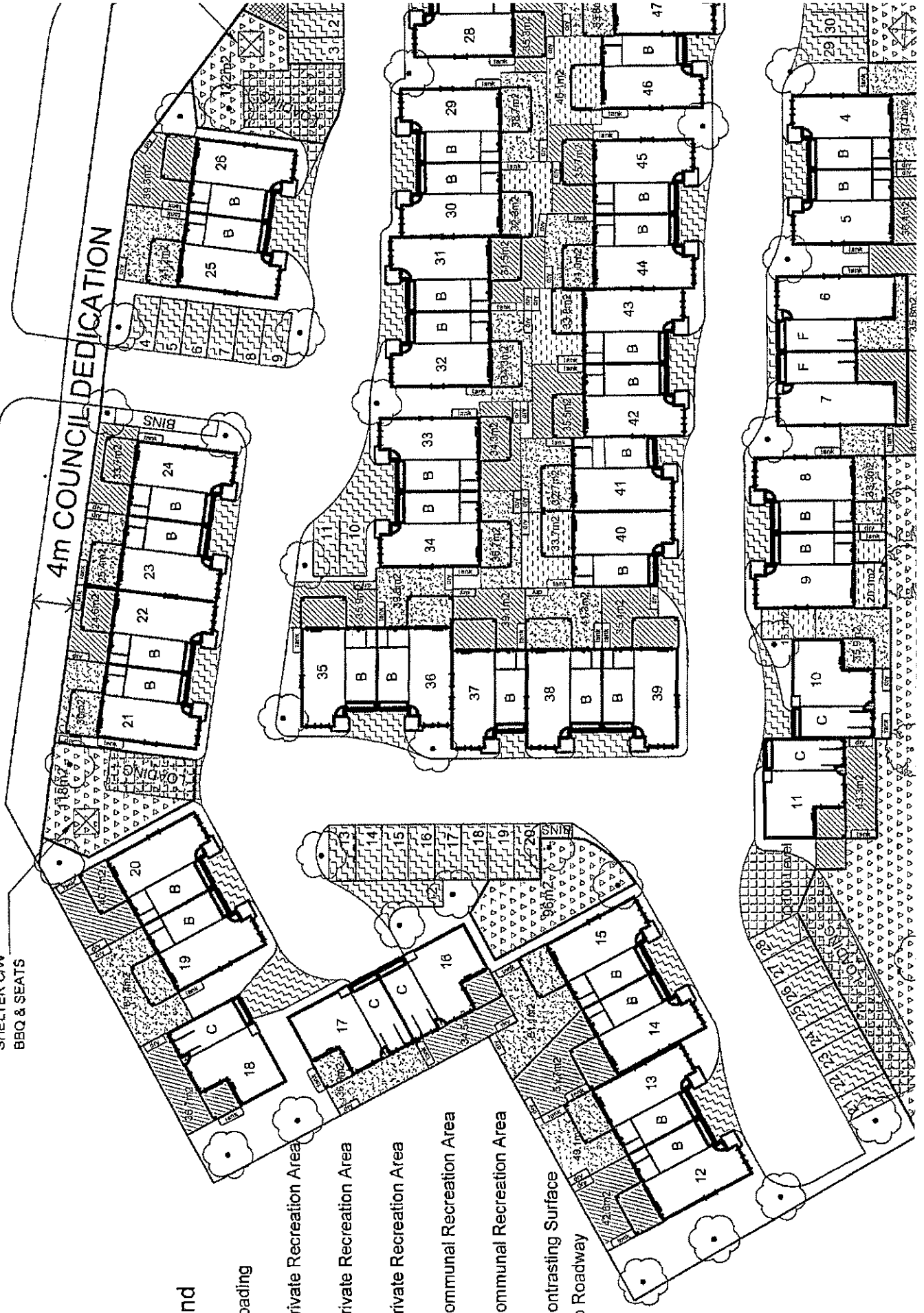
COLLINS STREET

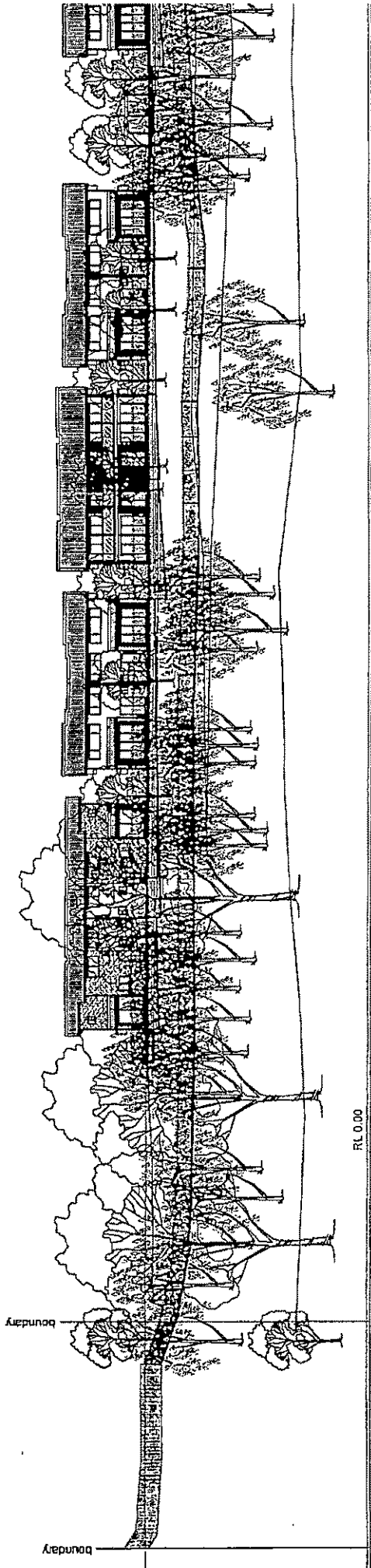
4m COUNCIL DEDICATION

SHELTER CW
BBQ & SEATS

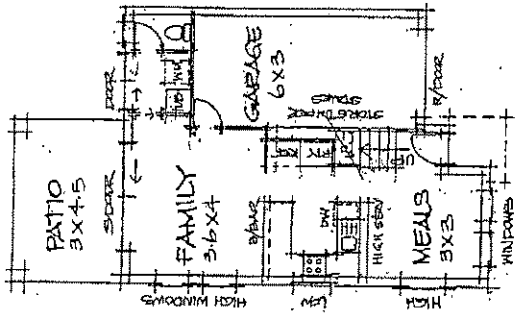
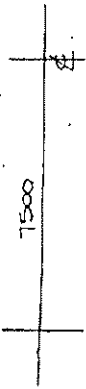
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-  Contrasting Surface to Roadway

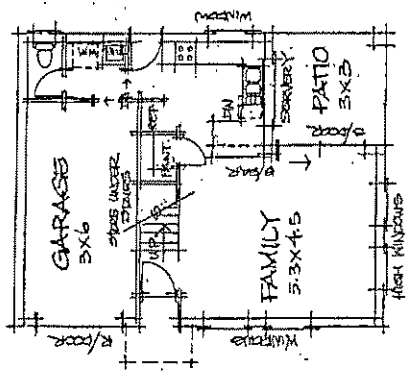
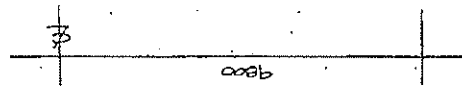
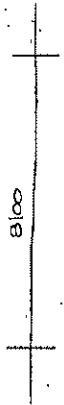
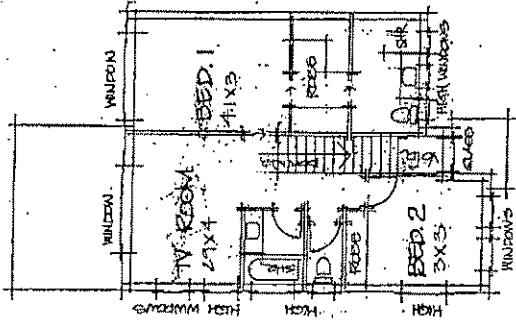




Proposed Riverscape



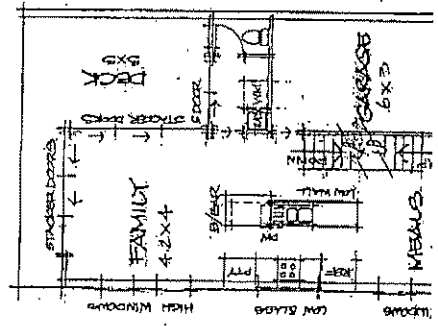
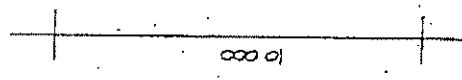
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GARAGE - 20.0
PATIO - 13.5
149 sqm



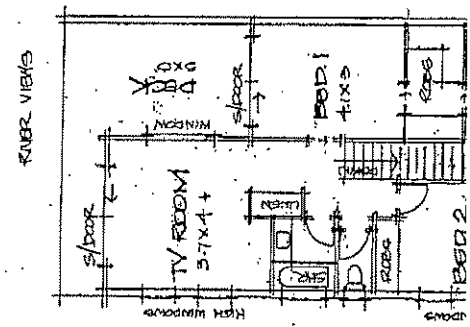
LIVING - 12.0
GARAGE - 20.0
PATIO - 9.0
149

TYPICAL LAYOUT - A & B
TWO STOREY TOWNHOUSE

TYPICAL LAYOUT - C
TWO STOREY TOWNHOUSE



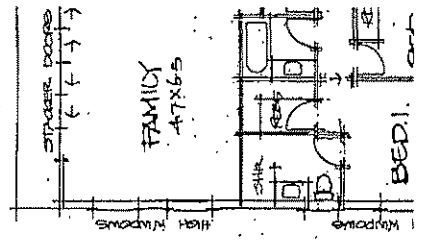
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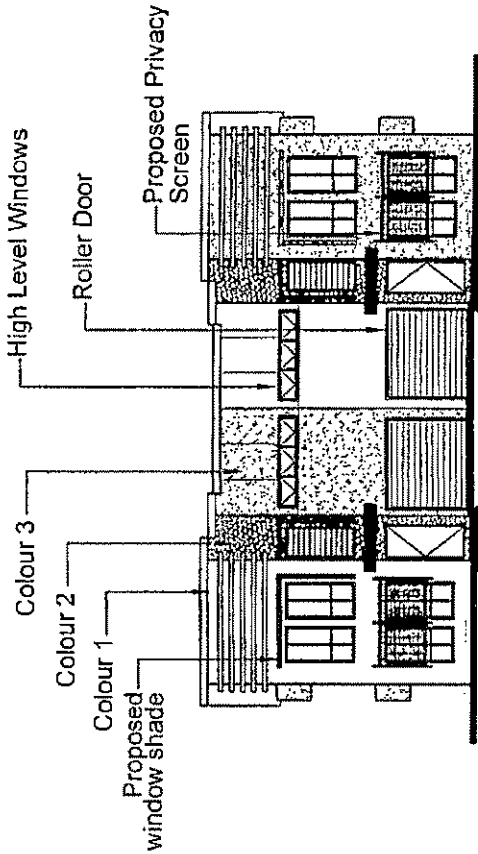


RIVER VIEWS

RIVER VIEWS

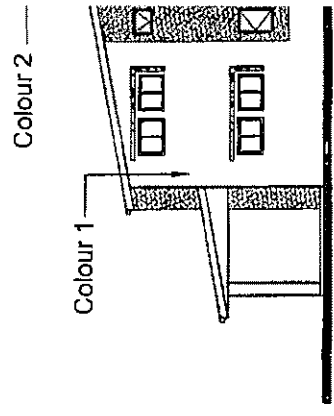
THE ALTERNATE LAYOUTS
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FOR INDICATIVE SCATTERING.



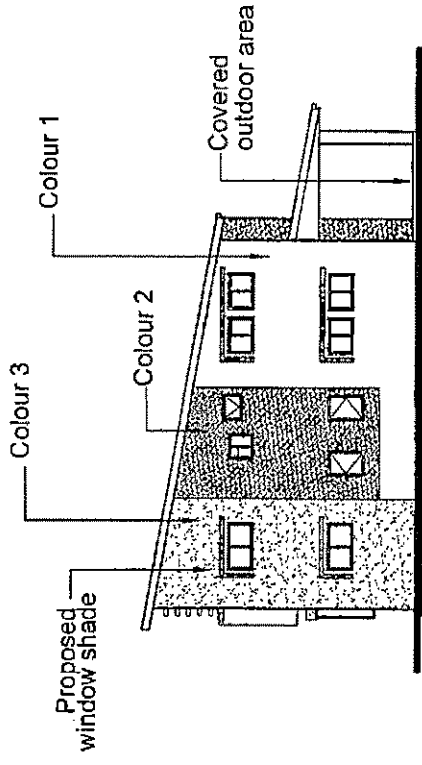


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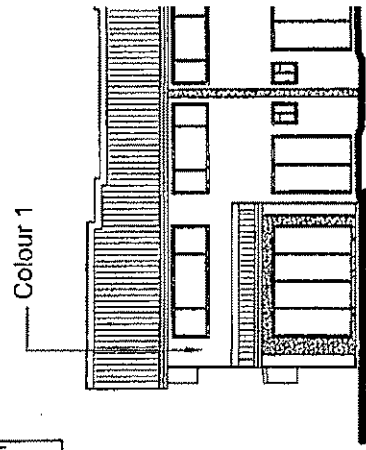
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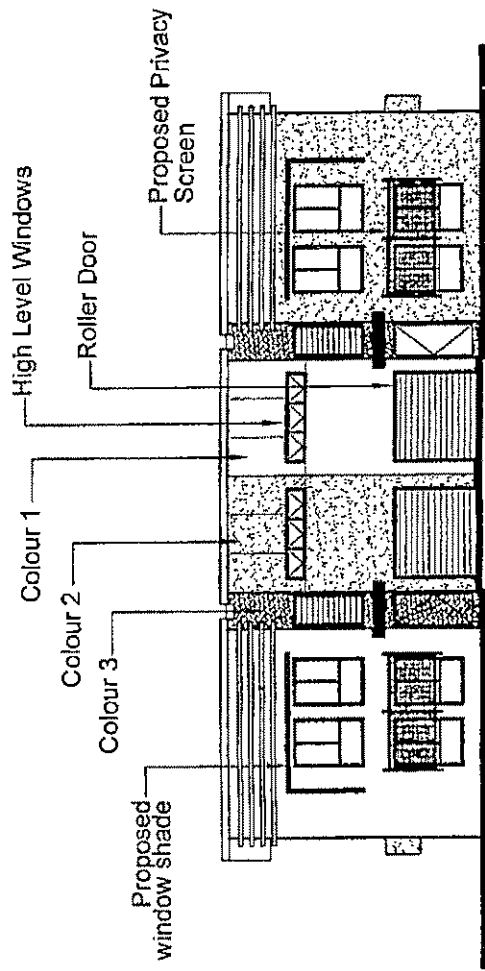
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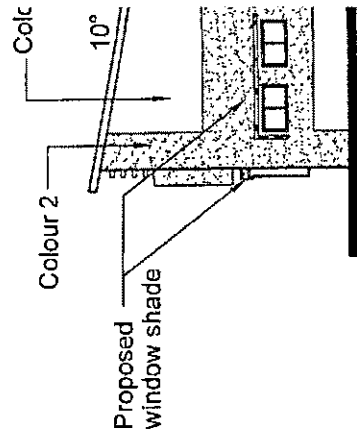
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REAR ELEVATION

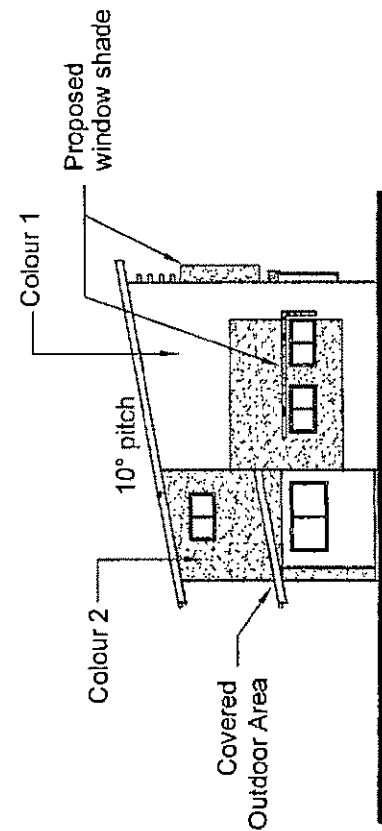


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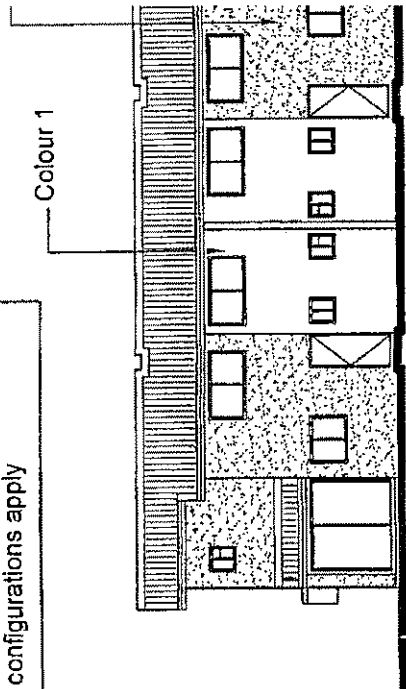


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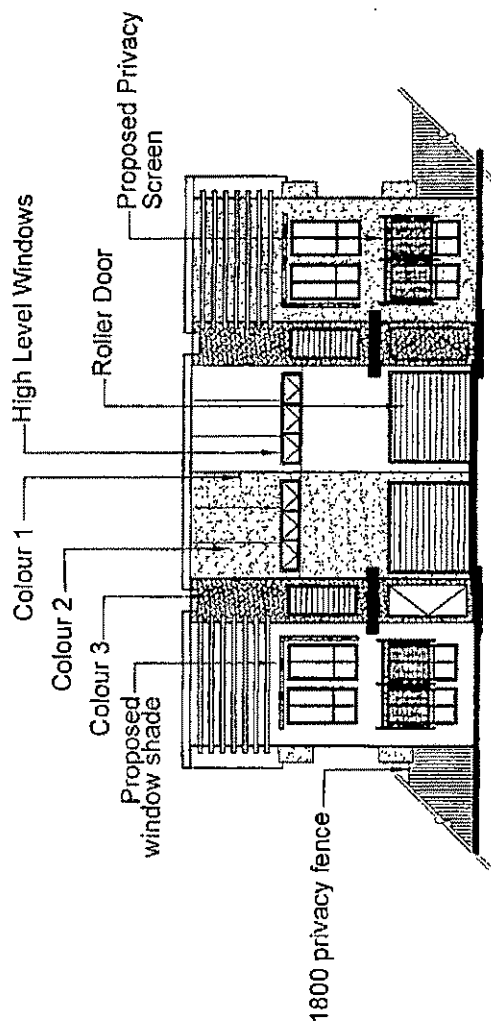
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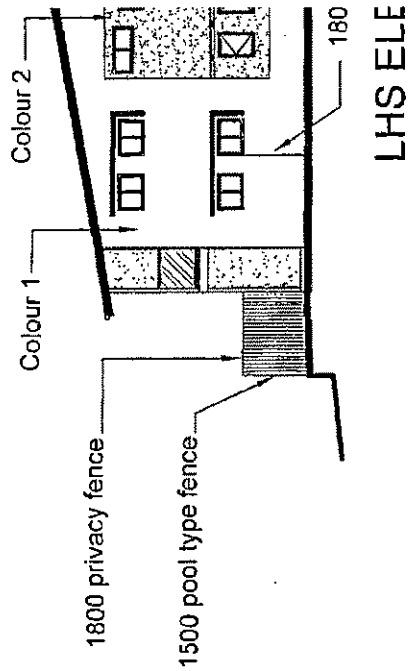
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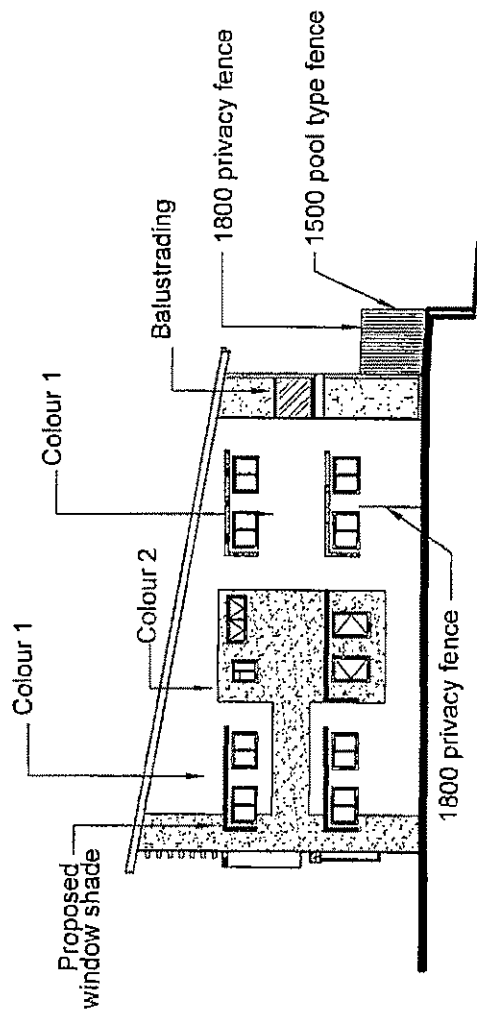
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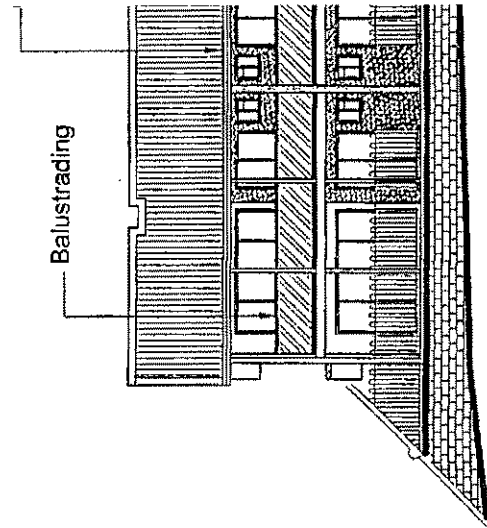
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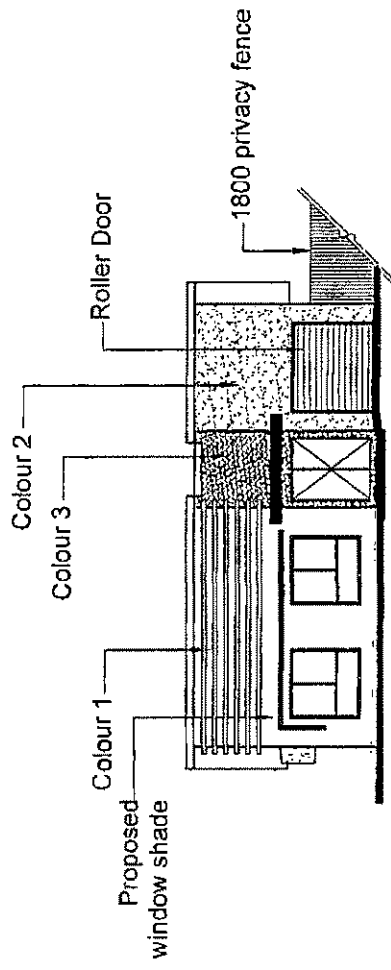
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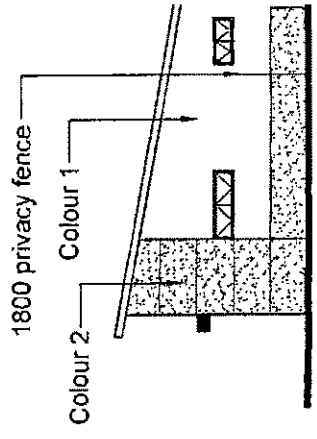
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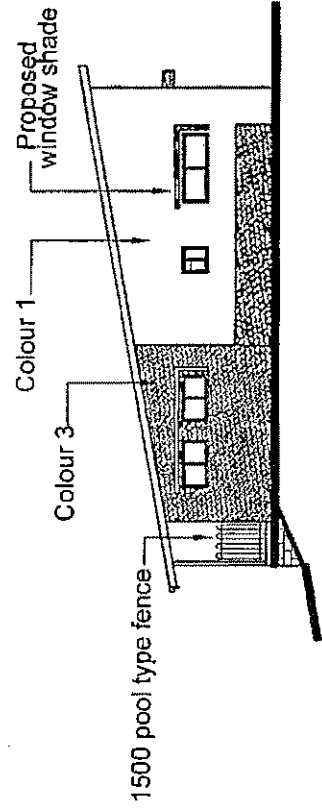
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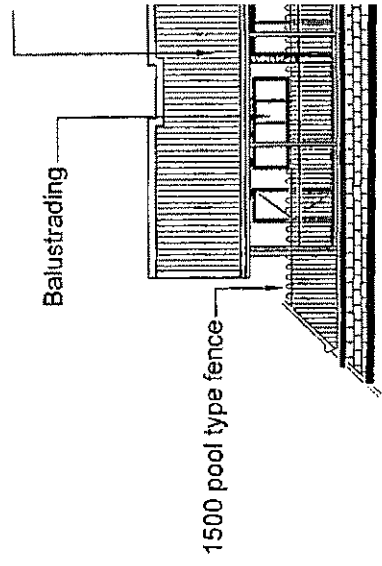
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LHS ELEVATION



RHS ELEVATION



REAR ELEVATION

PCL XL error

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Annexure JMP - 28

Reference: 06-010

20 August 2007

Chief Executive Officer
Ipswich City Council
PO Box 191
IPSWICH QLD 4305

Attention: *Planning and Development*

Dear Sir/Madam

**RESIDENTIAL SUBDIVISION
70A CHUBB STREET, ONE MILE**

I have been instructed by my client, Ipswich Ideal Pty Ltd to make application to Ipswich City Council for the subdivision of land at 70A Chubb Street, One Mile into 11 residential allotments. The property is described as Lot 14 on RP73249 and comprises 1.032 hectares. The land is currently vacant and holds in excess of 20 metres frontage to Chubb Street. The application is for a development permit for lot reconfiguration. Access to the new allotments is to be achieved directly from a new cul-de-sac to extend from Chubb Street. The land is adjoined to the north, east and west by existing residential allotments, with a retirement community approved for the land immediately to the south.

The land is shown in the Ipswich Planning Scheme as falling within the Sub Area RL2 designation of the Residential Low Density Zone. The proposed development involves 11 new residential allotments, which rests comfortably within the density requirement of 10 – 15 dwelling units per hectare as is envisaged for this designation under Council's scheme. Table 4.5.2 of Council's scheme sets out that reconfiguring a lot in the Residential Low Density Zone is code assessable.

It is not envisaged that the application will require referral to any state government agencies. Please find attached the following to assist Council in its assessment of this application:

- Two (2) additional copies of the covering letter;
- Three (3) copies of the relevant IDAS forms A, F and the IDAS assessment checklist;

- Three (3) copies of a Planning Report detailing the issues relevant to the site, addressing the provisions of Council's scheme and including a layout plan as a figure to the report; and
- My client's cheque for \$5,060 being the relevant application fee prescribed under Council's schedule of fees for the 2007/08 financial year.

I trust the above information is to your satisfaction. Please do not hesitate to contact me directly on [REDACTED] should you have any queries in relation to this matter.

Yours faithfully,

[REDACTED]

B.App.Sc. GDURP MURP MPIA

Encl.

CC: Ipswich Ideal Pty Ltd

Reference: 06-010

Ipswich Ideal Pty Ltd

PLANNING REPORT

**Proposed Residential Subdivision
70A Chubb Street, One Mile**

PO BOX 7044

SIPPY DOWNS, QLD. 4556

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FIGURE 5: *Subdivision Layout Plan*

1.0 INTRODUCTION

1.1 GENERAL

This report has been prepared to provide supporting information for an application to Ipswich City Council for a lot reconfiguration development permit for the subdivision of land located at 70A Chubb Street, One Mile. The proposal involves the subdivision of the existing parcel into 11 separate allotments. The location of the land is shown on Figure 1. A subdivision plan showing site contour information determined by survey has been included as Figure 5 of this report.

Particulars relating to the lot are as follows:

Real Property Description:	Lot 14 on RP73249
Address:	70A Chubb Street, One Mile
Combined Area:	1.032 hectares.
Tenure:	Freehold
Owners:	Ipswich Ideal Pty Ltd
Improvements:	Nil
Zoning:	Residential Low Density (Sub Area RL2)
Overlays:	Flood Line 1 in 100 15m Height Restriction ANEF Noise Overlay

1.2 APPLICATION

The application comprises a lot reconfiguration development approval for the subdivision of the existing parcel to form 11 new allotments plus 120 metres of new road. Table 4.5.2 of Council's scheme *Assessment Categories and Relevant Assessment Criteria for Residential Low Density Zone – Other Development* sets out that lot reconfiguration is code assessable in the Residential Low Density Zone. The proposed development will involve the creation of allotments that accord with Part 12 Division 5 of the Scheme – Reconfiguring a Lot Code.

Council's scheme categorises this form of development as a **Moderate Subdivision** which is defined as *the reconfiguring of a lot within an urban area which—*

(a) requires the construction of an Access Place, Access Street or Local Industrial Street; or



(b) involves the creation of less than 75 residential lots or 100 dwelling units (or their equivalent), or any combination thereof which would generate less than 750 vehicle trips per day.

The requirements for this application are further considered under Section 4 of this Planning Report.



PHOTO PLATE 4: Chubb Street looking south from the site frontage.

3.0 PROPOSED DEVELOPMENT

3.1 CONCEPT

The subject land is located within the existing residential area of One Mile and is surrounded to the north and west by older housing stock, whilst newer residential development is situated to the east. New development is occurring further to the west and also to the south. In this regard, the future development of the current land is central to the infilling and sequential extension of the urban fabric in the area.

Within this context, the current proposal seeks to provide a range of housing allotments to meet community demand, ranging in size from 450 square metres to 1,000 square metres. This is generally consistent with the surrounding allotments which typically support low density, detached residential dwellings.

Given the configuration of the site and the existing and proposed parkland to the east, no park is proposed as part of this development.

3.2 TRAFFIC ACCESS AND EXTERNAL ROADS

Access to the site will be achieved from Chubb Street. Chubb Street comprises a low order residential collector towards the north which services a number of access streets between its terminal point and the intersection with Old Toowoomba Road. Intersections with a number of these streets comprise small round-a-bouts which assist in managing traffic flow. Chubb Street conforms to the concept of an access street in the vicinity of the proposed development.

Access to the site can also be achieved by accessing Chubb Street from Cafferky Street via Siemens Street. The existing road network has sufficient capacity to accommodate the proposed development and no upgrading is considered necessary for the proposed development to occur.

3.3 WATER SUPPLY AND SEWERAGE

Water and sewerage connections are available within the area and no modification to this infrastructure is proposed. Sewering of the proposed subdivision will require connection to the existing manhole to avoid impacting on the sewer which is located at depth below the surface.

3.4 ELECTRICITY AND TELECOMMUNICATIONS

Telecommunication and electricity services are available within the Chubb Street road reserve and will be extended to service the proposed development. The standard arrangement will be entered into with Energex (or successor) and Telstra at the time of subdivision.

3.5 STORMWATER DRAINAGE

3.5.1 General

Given the flat nature of the site, it is proposed that all stormwater is drained to the new road reserve. An underground drainage system will convey stormwater from the road reserve across proposed Lot 4 to the drainage easement through Lot 20 immediately to the east of the site. Some form of detention may be necessary to assimilate peak flows. This may be achieved through the oversizing of pipework to allow detention to occur within the drainage system as well as the inclusion of water tanks with future residences proposed for each lot. The present drainage of the site is likely to see all stormwater conveyed as overland flow through the existing easement.

3.5.2 Flood Risk

Council's planning scheme identifies part of the site as being affected by the flooding and overland flow path overlay. The area affected appears to be restricted to the eastern extent of the site within the centre of the property. Detailed survey of the site has indicated that the land is relatively flat within this area, suggesting that the extent of Council's affected area may not be accurate and any inundation would be very shallow (ie. less than 200mm depth).

Further, more recent construction of residential development in this area, including recent approval of the retirement community to the south has largely precluded the area from the extent of flooding envisaged under the overlay codes, primarily due to filling required to ensure that existing and proposed dwellings on adjoining properties remain above levels associated with a 1 in 100 ARI flood event. To this end, it is envisaged that the flood level has changed considerable to that envisaged under Council's original flood mapping used to create the overlay.

In any event, the proposed subdivision is likely to involve a net earthworks balance which will result in the new road being lower than the surrounding land to accommodate runoff generated during peak storm events, whilst the surrounding land may be slightly higher, thereby ensuring



all allotments are granted immunity to a Q₁₀₀ event without reducing the hydraulic envelope within the Bremer River flood plain.

4.0 TOWN PLANNING

4.1 GENERAL

The subject land is regulated by the Ipswich Planning Scheme, an IPA scheme adopted on 14 December 2005. The planning scheme and its associated planning scheme policies took effect on 23 January 2006.

4.2 DEFINITION

The subdivision comprises a Moderate Subdivision under Council's scheme, involving *the reconfiguring of a lot within an urban area which—*

(b) requires the construction of an Access Place, Access Street or Local Industrial Street; or

(b) involves the creation of less than 75 residential lots or 100 dwelling units (or their equivalent), or any combination thereof which would generate less than 750 vehicle trips per day.

4.3 ZONING AND LEVEL OF ASSESSMENT

The subject land is located within the Residential Low Density Zone. This is further divided into two sub areas – RL1 and RL2. The site is situated within the bounds of Sub Area RL2. Table 4.5.2 of Council's scheme *Assessment Categories and Relevant Assessment Criteria for Residential Low Density Zone – Other Development* sets out that lot reconfiguration is code assessable in the Residential Low Density Zone.

Given the above, the development proposal will be assessed against the Reconfiguring a Lot Code (Part 12, Division 5) and the Urban Areas Code (Part 4), particularly the specific outcomes in Section 4.3.3 and the Residential Low Density Zone (Division 5). Further consideration has been given to the various provisions of the scheme in this light.

4.4 URBAN AREAS CODE

4.4.1 General

The overall outcomes for Urban Areas within Ipswich City are set out in Section 4.3.2 (2) of the Scheme. Compliance with each of the relevant overall outcomes has been demonstrated below:

Overall Vision

(a) Integrated communities are created and maintained which enjoy enhanced liveability, effective growth management, sustained economic growth, good urban design and ecological sustainability.

The proposed development comprises infilling within the existing suburb of One Mile. No significant constraints exist on the land, ensuring the above outcomes can be satisfied.

Community Identity

(b) Definable but inter-related neighbourhoods are created and maintained with a strong sense of community identity.

The proposed development comprises infilling within the existing suburb of One Mile and will be consistent with the form of development predominant within the area.

Housing

(d) There is an adequate supply of residential land and dwellings that respond to community needs and locational constraints and opportunities.

The proposed development seeks to provide 10 additional allotments (from one existing allotment) within the existing urban suburb of One Mile, thereby satisfying this overall outcome.

Amenity

(h) Pleasant and safe living and working environments are created.

(i) There is a high standard of amenity in residential areas and uses and works in these areas are compatible.

The proposed development is in close proximity to significant areas of open space, the City Centre and nearby convenience services. Key open space areas include the Ipswich Golf Club to the north, Wilcox Park to the west, Leichardt Park and areas along the Bremer River to the east and the Hastings Sports Centre to the south.

Environmental Management and Greenspace

(j) Uses and works are located and designed to minimise risks and nuisance to people and property.

The subdivision comprises infilling and will not adversely affect environmental values within the area.

Infrastructure Efficiency

(n) Uses and works support the efficient provision or extension of infrastructure, including both physical infrastructure and human services and facilities.

The development comprises infill which will improve the efficient use of infrastructure existing within the area.

Transport and Access

(p) Pedestrian, cycle and vehicle connectivity and ease of mobility are provided within and between neighbourhoods, major centres, employment areas and public transport interchanges.

(q) Conflict between local and through traffic and between pedestrians, cyclists and vehicles is minimised.

The proposed development will result in the creation of one new road to service the allotments.

Urban Design, Heritage, Townscape and Image

(w) Places of cultural significance or streetscape value are conserved and used for appropriate purposes.

(x) Uses and works are designed and located in a manner which is appropriate and compatible with—

(i) identified historic character areas; and

(ii) areas of townscape significance, including major approach routes and gateways and landmark features and sites.

The proposed subdivision is consistent in nature with the surrounding area and will comprise infill development located behind an existing row of detached dwellings fronting Chubb Street.

4.4.2 Specific Outcomes

Specific outcomes for the Urban Area have been detailed in Section 4.3.3 of the scheme. Those relevant to this application have been detailed and addressed below.

Transport and Access

(b) Where possible, sensitive land uses are located away from major transport corridors and haul roads.

The site is situated on Chubb Street which comprises a low order collector to the north and an access street in the vicinity of the development. It is proposed that access is achieved off this street by a small access place. The proposed development will not generate significant traffic volumes.

Visual Framework

(d) New uses or works—

- (i) do not obstruct a significant view of a major or local landmark;
- (ii) do not significantly alter the context of an existing landmark; and
- (iii) create an attractive landmark feature on a potential landmark site.

The proposed development will comprise infilling development in an existing suburban area and will not affect a gateway, land mark or significant visual feature.

4.5 RESIDENTIAL LOW DENSITY ZONE

4.5.1 Overall Outcomes

The subject land is located within the Residential Low Density Zone. Section 4.5.2(2) details the overall outcomes for the Residential Low Density Zone. This is also considered to comprise the purpose of the Zone. Each of the overall outcomes for the Residential Low Density Zone and relevant to the proposed development have been detailed and discussed below:

(a) The Residential Low Density Zone caters primarily for low density, sewerage, urban residential development and associated uses, to the general exclusion of most other uses including unsewered, acreage housing.

The proposed subdivision will be located in an existing area of detached dwellings, with a retirement village approved on land to the south. The site is separated from Chubb Street by a row of houses and will comprise infill development, being located to the rear of the existing residential allotments within the area. The area is remote from the Bremer River and other sensitive areas and will have no adverse impact on the natural environment.

4.5.2 Specific Outcomes for the Residential Low Density Zone

Section 4.5.4(2) of the Scheme – Effects of Development in Sub Areas details the specific outcomes and probable solutions for development in Sub Area RL2. The specific outcomes considered relevant to this application and the associated probable solutions have been tabulated below. Compliance with the specific outcomes has been demonstrated where no probable solutions are available.

Specific Outcomes	Probable Solutions
<p>Residential Uses – Density and Character Uses and works reflect the established built character, maintain amenity and protect and enhance important townscape and landscape elements within local areas having regard to—</p> <ul style="list-style-type: none"> (a) dwelling density; (b) building height; (c) lot sizes and dimensions; (d) boundary clearances and the provision of space around buildings; (e) access to natural light and ventilation; (f) privacy; (g) noise attenuation; (h) vegetation protection; (i) landscape treatment; (j) places of cultural significance or streetscape value; and (k) the form, scale, bulk, style, siting, orientation, roof lines, materials and detailing of buildings. 	<p>The lot size and dimensions of the proposed allotments are consistent with the existing residential use of the area.</p>

Specific Outcomes	Probable Solutions
<p>Vegetation and Landscaping</p> <p>(a) Appropriate landscaping, including street trees, is used to soften building outlines and enhance the overall appearance of the area.</p> <p>(b) Buildings on stumps/piers are provided in preference to slab on ground construction, where located within vegetated areas and on steeply sloping land.</p> <p>(c) All significant trees are retained, where possible, particularly on heavily treed, large lots.</p> <p>(d) Uses and works at the rear of existing dwellings are designed to avoid adverse impact on established vegetation and the amenity of neighbouring properties.</p>	<p>No significant vegetation exists on the existing allotment. It is proposed that street trees will be planted in accordance with Council's requirements along the extent of the new road to enhance the amenity of the area.</p>
<p>Building Setbacks</p> <p>New buildings are setback to the alignment of adjoining buildings unless an alternative setback does not detrimentally affect the character and amenity of the area and the overall townscape.</p>	<p>Whilst no buildings are proposed as part of this development, it is envisaged that all buildings will be set back a minimum of 6 metres from the road frontage in accordance with Council's scheme requirements and the Queensland Development Code.</p>
<p>Operation of Road Network and Access</p> <p>Uses and works are located and designed to—</p> <p>(a) ensure the safe and efficient operation of the road network; and</p> <p>(b) avoid multiple access points along major roads; and</p> <p>(c) ensure that the principal access for the area between Melrose Drive and Reif Street, Flinders View is via Fischer Road, to avoid amenity concerns and traffic congestion within the residential area to the north of Melrose Drive, Flinders View; and</p> <p>(d) avoid significant adverse effects (e.g. by noise or dust generated) from use of the road network; and</p> <p>(e) ensure reconfiguration of the existing historic lots to the south of Berry Street and in the vicinity of Phoenix Court, Churchill provide for the construction of appropriate road reserves and suitable building envelopes.</p>	<p>The development will include the construction of one new road. This will assume the form of a cul-de-sac extending from Chubb Street which is an access street in the vicinity of the development. Chubb Street forms a low order residential collector to the north, servicing the area. To this end, the proposed development will not create additional access points along major roads or adversely affect the existing traffic movements in the area.</p>
<p>Provision of Infrastructure</p> <p>Infrastructure is—</p> <p>(a) provided to meet appropriate standards at the least whole-of-life cost, including avoiding unnecessary duplication; and</p> <p>(b) comprised of components and materials that are readily accessible and available from local sources; and</p> <p>(c) readily integrated with existing systems and facilitates the orderly provision of future systems.</p>	<p>Infrastructure is to be provided to the standards stated in Planning Scheme Policy 3—General Works. All urban infrastructure is readily available in the area and can be extended to service the proposed allotments.</p>

4.6.2 Overall Outcomes

Each of the overall outcomes for the Reconfiguring a Lot Code and relevant to the proposed development have been detailed and discussed below:

Residential (including Large Lot Residential), Commercial and Industrial Estate Design (Urban Areas Only)

(a) Safe, convenient and attractive residential neighbourhoods and functionally compatible commercial centres and industrial estates that meet the diverse and changing needs of the community are provided.

(b) This encompasses—

- (i) offering a wide choice in good quality housing and associated community and commercial facilities;
- (ii) offering a diversity of services at locations that are highly accessible to all sections of the community;
- (iii) providing for local employment opportunities;
- (iv) encouraging walking and cycling;
- (v) facilitating the use of public transport;
- (vi) creating neighbourhood focal points and a diverse range of activities within each commercial centre or industrial estate to promote a 'sense of place' and the creation of a distinctive identity which recognises and, where relevant, conserves the natural environment and places of cultural heritage significance; and
- (vii) facilitating ecologically sustainable development.

The proposed development comprises infill development in an existing urban area and corresponds to 1 hectare of land comprising a rear allotment accessed off Chubb Street. The proposal will continue to introduce newer residential development to the existing One Mile suburb in a manner that reflects the changing housing needs of the community, offering a range of allotment sizes for the construction of residences. The development will be consistent with the surrounding residential amenity although containing aspects of a more modern residential area (ie. street trees, modern homes, etc).

Integrated Movement Networks

(c) Movement networks are provided---

- (i) within urban areas for vehicles, public transport, pedestrians and cyclists that are integrated, cost-effective and environmentally acceptable, and which minimise internal traffic volumes and the impact of traffic on the residential environment; and
- (ii) within rural areas for vehicles, that are cost-effective and environmentally acceptable, and which minimise the impact of traffic on the rural environment.

Wide verges are proposed within the new access place servicing the subdivision to ensure opportunity is maximised for pedestrian movement.

The Road System

(d) An efficient road system (i.e. for major roads) is provided external to the Residential, Commercial/Industrial and Rural Street System.

The proposed development does not adversely impact on the function of Council's road hierarchy or the operation of major roads within the local area.

Street Networks

(e) Street networks are created in which the function of each street is clearly identified, providing acceptable levels of access, on-street parking (urban areas only), safety and convenience for all users whilst minimising the impact on the environment and maintaining and enhancing identified conservation values.

The new road to be constructed as part of the proposed development will be designed in accordance with Queensland Streets and Council's requirements to ensure the function of the street and levels of access are clearly discernible. A 6.5 metre pavement width is proposed.

Pedestrian and Cyclist Facilities (Urban Areas Only)

(f) Walking and cycling are encouraged by providing safe, convenient and legible movement networks to points of attraction within and beyond the development and to nearby centres and employment areas.

Lot Layout and Design

(p) A range and mix of lot sizes are provided to suit a variety of dwelling and household types, commercial and industrial purposes and primary production purposes, with areas and dimensions that meet user requirements.

(q) For residential development, lots are in keeping with the environmental values of the site (including local and regional biological diversity, where possible) and are oriented where practicable to enable microclimate management, including the application of energy conservation principles.

(r) For commercial and industrial development, lots are consistent with the overall and specific outcomes of the respective Commercial and Industry Zones.

(s) For rural development, lots are consistent with the overall and specific outcomes of the Rural Zones.

A range of lot sizes have been included in the development proposal, ranging from 450 square metres through to 1,000 square metre allotments.

4.6.3 Specific Outcomes for the Reconfiguring a Lot Code

Table 12.5.2 of Section 12.5.4 of the Scheme details the specific outcomes and probable solutions for moderate and major subdivisions. The specific outcomes considered relevant to this application and the associated probable solutions have been tabulated below. Compliance with the specific outcomes has been demonstrated where no probable solutions are available.

Specific Outcomes	Probable Solutions
<p>Lot Layout and Design</p> <p>(2) Lots (including hatchet lots) have the appropriate layout, area and dimensions to—</p> <p>(a) enable the siting and construction of a dwelling and ancillary outbuildings, where for the purposes of residential use;</p> <p>(b) enable the siting and construction of commercial or industrial buildings, where for the purposes of commercial or industrial use;</p> <p>(c) provide for landscaping, including private outdoor recreational space;</p> <p>(d) provide convenient vehicle access and parking;</p> <p>(e) take into account the slope of the land, in particular the desirability of minimising</p>	<p>Lot Layout and Design</p> <p>(2) (a) The proposed lots comprise traditional lots under the scheme. All allotments exceed the 450 square metre minimum area requirement, with corner lots comprising 600 square metres or greater. All standard lot frontages are 15 metres or greater. All allotments are on land with a grade of less than 5%. A minimum frontage of 17 metres is provided for the one corner allotment (proposed Lot 11) in accordance with the requirements of Appendix A of the scheme.</p> <p>A total of four (4) allotments of a minimum of 800 square metres have been provided. This is greater than the 10% requirement articulated under the scheme. These are positioned towards the northern end of the site.</p>

<p>earthworks/retaining walls associated with building construction;</p> <p>(f) overcome site constraints (e.g. undermining, flooding, drainage, bushfire risk, buffers to incompatible land uses etc);</p> <p>(g) conserve natural, cultural or special features (e.g. trees, buildings, views etc);</p> <p>(h) provide within residential areas housing diversity and choice and within commercial/industrial areas a variety of choice for the different commercial and industrial development types;</p> <p>(i) avoid large concentrations of cottage lots and courtyard lots in the Low Density Residential Zones or Sub Areas;</p> <p>(j) ensure that cottage lots, courtyard lots, dual occupancy lots and multiple residential lots are located in close proximity to parks, shops, employment areas or community facilities;</p> <p>(k) enable lot frontages to be oriented towards the street and open spaces to facilitate personal safety, property security and casual surveillance of footpaths and public open space areas;</p> <p>(l) facilitate, within residential areas (via street and lot orientation), the siting of dwellings to take advantage of microclimatic benefits and to allow adequate on-site solar access and access to breezes taking into account likely dwelling size and the relationship of each lot to the street;</p> <p>(m) integrate with the surrounding urban environment, and in particular complement existing streetscapes and landscapes and, where possible in residential areas, provide connectivity to facilitate shared use of public facilities by adjoining communities;</p> <p>(n) facilitate the integration of commercial and industrial development into its surroundings ensuring minimal impact on the amenity of adjacent or nearby areas;</p> <p>(o) ensure that the layout of commercial or industrial development abutting areas of residential development allows lots to be configured for the siting and design of development that can incorporate visual, noise pollution and other ameliorative measures, in order to reduce impacts on nearby residential amenity.</p>	<p>northern end of the site.</p>
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Specific Outcomes	Probable Solutions
<p>(3) A reconfiguration of land may produce one or more hatchet lots, provided—</p> <p>(a) it is not likely to prejudice the subsequent reconfiguration or use of adjoining land;</p> <p>(b) it is not desirable nor practicable for the subject and adjoining land to be otherwise reconfigured so as to have a frontage to another road which may be subsequently constructed;</p> <p>(c) the siting of buildings on a proposed hatchet lot will not be detrimental to the amenity of the area;</p> <p>(d) existing development of land in the area will not have a detrimental effect on buildings to be sited on the proposed hatchet lots; and</p> <p>(e) there is no reasonable alternative to the hatchet lot having regard to the sites' topography, access, location, shape and size.</p>	<p>NA – no hatchet shaped allotments are produced as a result of this development.</p>
<p>(4) Hatchets lots—</p> <p>(a) do not dominate or intrude within the existing subdivision pattern;</p> <p>(b) provide an access strip capable of accommodating adequate vehicular access and utility services; and</p> <p>(c) provide an access strip which does not unduly affect or restrict on-street parking.</p>	<p>NA – no hatchet shaped allotments are produced as a result of this development.</p>
<p>Designated Roads</p> <p>(5) For major subdivisions, the road network has a clear structure and component roads conform to their function in the system.</p>	<p>NA – the development does not comprise a major subdivision.</p>
<p>(6) For major subdivisions, the road system is located so that it provides routes which are more convenient for external traffic than the residential or commercial/industrial street network.</p>	<p>NA – the development does not comprise a major subdivision.</p>
<p>(7) For major subdivisions, the road system has the capability to accommodate public transport services and has capacity to safely and efficiently accommodate projected movements.</p>	<p>NA – the development does not comprise a major subdivision.</p>
<p>(8) For major subdivisions, the road network is provided in a manner where it complements the street network, public transport, pedestrians and cycleways.</p>	<p>NA – the development does not comprise a major subdivision.</p>

Specific Outcomes	Probable Solutions
(9) For major subdivisions, safe and convenient links are provided for pedestrians and cyclists across Designated Roads.	NA – the development does not comprise a major subdivision.
(10) Intersections are located to provide safe and efficient connection and traffic interface between the street network and Designated Roads.	NA – the existing capacity of the intersection of old Toowoomba Road will remain largely unaffected by this proposal.
(11) Access arrangements do not impede the traffic performance of Designated Roads.	(11) (a) Residential lots do not have direct vehicle access to a designated road, but all access is from an access street, Chubb Street.
(11A) Road networks in areas within 6km of the RAAF Base Amberley runway do not include configurations of lights that replicate the appearance of airport runways at night.	(11A) The proposed new road will not include configurations of lights in straight parallel lines 500m – 1,000m long.
(12) Residential premises are— (a) not exposed to unacceptable traffic noise; or (b) able to be designed and constructed to ensure that acceptable living conditions within the dwelling can be created.	The proposed d is located in an existing residential neighbourhood and is well set back from busy roads. The site is not exposed to any significant noise sources.
Street Networks and Design (13) For major subdivisions, the street network is to— (a) for residential development, meet local needs and allow for the provision of public transport, for pedestrians and cyclists, and for expected vehicle traffic; (b) for commercial and industrial development, provide for the mixed functions of moving traffic, vehicles accessing lots and parked vehicles whilst allowing for the provision of public transport, for pedestrians and cyclists, and for expected vehicle traffic (including heavy vehicles).	NA – the development does not comprise a major subdivision.
(14) For major subdivisions, the street network connects with Designated Roads to maximise movement efficiency on the main traffic routes, whilst at the same time minimising internal traffic volumes.	NA – the development does not comprise a major subdivision.
(15) The street network has a clear structure and component streets conform to their function in the network.	(15) The new cul-de-sac links with Chubb Street which is one level higher in the road hierarchy at the point of connection, comprising an access street at this point.

Specific Outcomes	Probable Solutions
(16) The layout of the street network has clear physical distinctions between each type of street, based on function, economy, convenience, traffic volumes, vehicle speeds, public safety, amenity and in the case of commercial or industrial development, parking demand.	(16) The proposed new road conforms to the definition of an access place as outlined in Appendix C of the scheme.
(17) The design features of each type of street encourage driver behaviour appropriate to the primary function of the street in the network.	The proposed street network to service the new subdivision will comprise a cul-de-sac with relatively narrow pavement widths and short distances. The nature of the road configuration will assist in ensuring low driver speed.
(18) Intersections are spaced to create safe and convenient vehicle movements.	(18) The proposed development is in a low speed environment. The new intersection has sufficient separation from Cafferky Street which is located approximately 100 metres to the north in accordance with Section 2.11 'Intersections' of Queensland Streets, given the speed environment is around 40 kilometers/hour.
(19) The street network provides— <ul style="list-style-type: none"> (a) convenient movement for residents between their homes and Designated Roads; and (b) for commercial or industrial development, convenient movement for vehicles (including heavy vehicles). 	(19) (a) The driving distance from any dwelling to a Designated Road or Trunk Collector Street is approximately 1,000 metres. (b) Only one major intersection (ie. Old Toowoomba Road) is negotiated in order to travel from the proposed infill development site to the most convenient collector street or Designated Road. (c) The proposed development will be afforded several means of accessing Old Toowoomba Road as an alternative street access. (e) The cul-de-sac length is approximately 120 metres total. Turning area will be sufficient for a single movement turn (refer to Section 9.12 'Turning Areas' of Queensland Streets) based on the typical manoeuvring areas for Council's design garbage truck.

Specific Outcomes	Probable Solutions
<p>(20) For major subdivisions—</p> <p>(a) There is provision for bus routes which are direct and safely accessible by foot from all dwellings, activity centres, commercial centres or industrial estates and which provide links with external areas and are efficient to operate.</p> <p>(b) Streets carrying bus routes provide for ease of movement of buses between residential neighbourhoods and for links to centres within and external to the neighbourhood without complicated turning manoeuvres.</p> <p>(c) The alignment of the streets that form the bus route allow for efficient and unimpeded movement of buses without facilitating high traffic speeds.</p> <p>(d) The street network offers opportunities for cost-effective operation of demand-responsive public transport services should the need arise, providing for both peak and off-peak regular services and the potential future provision of demand-responsive services.</p> <p>(e) Bus stops are located—</p> <p>(i) to provide for pedestrian safety, security, comfort and convenience;</p> <p>(ii) to be able to be overlooked from nearby buildings;</p> <p>(iii) to be in keeping with the character of the locality; and</p> <p>(iv) for residential development, to minimise adverse impact on the amenity of nearby dwellings.</p>	<p>NA – the proposed development does not comprise a major subdivision.</p>
<p>(21) (a) The street layout facilitates walking and cycling within the residential neighbourhood and to activity centres without encouraging external traffic into the residential neighbourhood.</p> <p>(b) The street and path network provides an overall network of pedestrian routes and routes for cyclists, with connections to adjoining streets, open spaces, neighbouring residential areas and activity centres.</p> <p>(c) The location of paths is aligned to conserve trees and other significant features and where they exist, focus on vistas and landmarks whilst ensuring safe and convenient use by pedestrians and cyclists.</p> <p>(d) Pedestrian paths and cycleways are</p>	<p>21 (b) A footpath will be provided on one side of the street.</p>

<p>located where there is casual surveillance and potential for the areas to be well lit.</p> <p>(e) Pedestrian, cycle and vehicular movement systems are co-located to encourage maximum surveillance of public areas.</p>	
<p>(22) The street layout and design—</p> <p>(a) takes account of the topography (especially steep land) and significant vegetation;</p> <p>(b) avoids steep slopes (i.e. greater than 15%) so as to minimise landscape disturbance and vegetation loss;</p> <p>(c) avoids penetrating and fragmenting large tracts of remnant vegetation;</p> <p>(d) respects and protects places of cultural significance or streetscape value;</p> <p>(e) takes advantage of opportunities for views and vistas;</p> <p>(f) takes account of streetscapes that may be created or that already exist;</p> <p>(g) permits the establishment of streetscapes that blend with existing streetscapes or comply with any approved public streetscape plan;</p> <p>(h) where practical, is orientated to promote efficient solar access for dwellings;</p> <p>(i) takes account of natural drainage and open space systems;</p> <p>(j) avoids crossing drainage features or open space areas, particularly for access places and access streets;</p> <p>(k) is located, designed and managed to enhance the habitat and corridor requirements of native wildlife (plants and animals);</p> <p>(l) locates the streets to the least environmentally sensitive sites;</p> <p>(m) avoids extensive use of cut and fill;</p> <p>(n) avoids important stands of vegetation to minimise the loss of important trees or ecosystems;</p> <p>(o) maintains interlocking tree canopies over fauna corridors, where possible, to allow for the movement of arboreal fauna and birds;</p> <p>(p) narrows the width of the carriageway or provides a wildlife underpass/bridge where it crosses wildlife movement corridors, such as riparian zones;</p> <p>(q) at known wildlife crossing points, streets are narrowed and appropriate pavement surfacing, lighting, signage and fencing are provided to reflect the low-speed</p>	<p>The proposed street layout is the most practical means of servicing the infill development. The short length of the cul-de-sac will ensure limited vehicle speed, consistent with environment desired outcomes for a low order residential road.</p>

<p>environment;</p> <p>(r) provides a high level of internal accessibility and good external connections for vehicles (including heavy vehicles in commercial and industrial areas), pedestrian and cycle movements, maintains appropriate traffic speeds, deters through-traffic, creates safe conditions for road users and for major subdivisions, limit the length of time local drivers need to spend in a low-speed environment;</p> <p>(s) for residential development, traffic speeds and volumes are restrained through such measures as—</p> <p>(i) limiting street length;</p> <p>(ii) introducing bends;</p> <p>(iii) introducing slow points; and</p> <p>(iv) intersections;</p> <p>(t) for major subdivisions, ensure that traffic generated by a development is within the acceptable environmental capacity of the street network;</p> <p>(u) ensures that where within or abutting bushfire risk areas streets are designed, located and connected to allow safe and efficient movement of fire emergency vehicles; and</p> <p>(v) provides for the cost effective provision of public utilities, including water, sewerage, electricity, telecommunications and gas.</p>	
<p>(22A) Street networks in areas within 6km of the RAAF Base Amberley runway do not include configurations of light that replicate the appearance of airport runways at night.</p>	<p>(22A) Street networks do not include configurations of light in straight parallel lines 500m – 1000m long, in areas within 6km of the RAAF Base Amberley runway.</p>
<p>(22B) Recessed landscaped areas are to be provided at regular intervals to soften the visual impact of long portions of acoustic or screen fencing along a street or road.</p>	<p>NA</p>
<p>(23) Streets and lots are located so that dwellings are not subject to unacceptable levels of traffic noise.</p>	<p>NA – the area is not subject to unacceptable levels of traffic noise.</p>

Specific Outcomes	Probable Solutions
<p>(24) The design of each type of street conveys the street's primary function and the street reserve width is sufficient to cater for all street functions, including—</p> <ul style="list-style-type: none"> (a) safe and efficient movement of all users, including pedestrians and cyclists; (b) provision for parked vehicles; (c) provision of landscaping; and (d) location, construction and maintenance of public utilities. 	<p>(24) (a) The following street components are as specified in Appendix Development of Council's scheme—</p> <ul style="list-style-type: none"> (i) carriageway widths; (ii) verge widths; (iii) street reserve widths; (iv) parking within the street reserve; (v) provision for parking lanes; (vi) kerb type; (vii) pedestrian and cyclist facilities; (viii) longitudinal gradients.
<p>(25) Provision of on-street carparking to ensure—</p> <ul style="list-style-type: none"> (a) for residential development— <ul style="list-style-type: none"> (i) convenience and safety for users; (ii) the efficient use of car spaces; (iii) compatibility with the street's function; and (iv) the achievement of relevant streetscape outcomes; and (b) for commercial or industrial development— <ul style="list-style-type: none"> (i) sufficient and convenient short-term parking to accommodate vehicles not catered for on-site; (ii) parked vehicles do not obstruct the passage of vehicles on the carriageway or create traffic hazards. 	<p>(25) (a) Provision will be made within the street reserve to provide 0.5 spaces per single residential lot.</p> <ul style="list-style-type: none"> (c) One car space will be made available within 25m of each single residential lot. (e) The dimensions of on-street carparking spaces and access comply with the requirements outlined in the Parking Code as applicable to on-site parking.
<p>Public Open Space</p> <p>(26) Parks—</p> <ul style="list-style-type: none"> (a) are provided in the general locations as outlined in Map 6.2 of Planning Scheme Policy 5—Infrastructure and Map 1 in Schedule 7; (b) provide opportunities for casual surveillance; (c) are, with the exception of linear or waterside parkland, easily visible from the street; (d) are located away from excessive noise; (e) are located and designed in accordance with the desired standards of service for each recreation setting outlined in Planning Scheme Policy 5—Infrastructure. 	<p>NA – A public parks infrastructure contribution is to be made in lieu of parkland in accordance with Planning Scheme Policy 5—Infrastructure.</p>
<p>Utilities</p> <p>(27) Cost effective and environmentally sustainable utilities (including effluent treatment and disposal, water, electricity, gas, street lighting and communication services) are provided to each lot.</p>	<p>Utilities</p> <p>(27) (a) Provision is made for the—</p> <ul style="list-style-type: none"> (i) reticulation of water supply to each lot; (ii) reticulation of sewerage to each lot.

	<ul style="list-style-type: none"> (iii) supply of electricity to each lot; (iv) supply of telecommunication services to each lot; and (v) installation of street lighting on that side of the street or road as the existing or planned location of the footpath.
<p>Stormwater Drainage</p> <p>(28) The major stormwater drainage system—</p> <ul style="list-style-type: none"> (a) has the capacity to safely convey stormwater flows resulting from the adopted design storm under normal operating conditions; (b) is located and designed to ensure that there are no flow paths that would increase risk to public safety and property; (c) is to maximise community benefit through the retention of natural streams and vegetation wherever practicable, the incorporation of parks and other less flood-sensitive land uses into the drainage corridor and the placement of detention basins for amenity and function. 	<p>Stormwater Drainage</p> <p>(28) (a) The design of the major stormwater drainage system is—</p> <ul style="list-style-type: none"> (i) designed to safely convey stormwater flows under normal operating conditions for ARI = 100 years; (ii) matched to the conditions which occurred before development; (iii) to be sufficient to hydraulically convey the design flow (ARI 100) through the subdivision to the lawful point of discharge which comprises an easement across Lot 20 to the east; and <p>(b) The width of the drainage path is—</p> <ul style="list-style-type: none"> (i) sufficient to contain design flows; and (ii) allow maintenance access.
<p>(29) All lots are located above the adopted flood level to provide protection of property in accordance with the accepted level of risk.</p>	<p>(29) (a) All traditional lots are located above the existing flood level in the area (ie. the adopted level). Whilst Council's overlay code indicates that a small portion of the central eastern extent of the property may be subject to inundation during major flood events, the surrounding development has precluded this from occurring as the land is slightly higher than the adjoining land to the east.</p>
<p>(30) Design of the lot layout provides for—</p> <ul style="list-style-type: none"> (a) drainage which does not cause damage or nuisance flows to adjoining properties; (b) a drainage system that can be economically maintained; (c) maximum use of on-site infiltration; (d) the safety and convenience of people using the site; and (e) for homestead lots or township lots, any dams are to be wholly located within lot boundaries. 	<p>(30) (a) Lot drainage is to be directed into the street drainage system.</p>



FIGURE 2:

Extent of Flooding Affecting the Site as Indicated by Council's OV5 Overlay

In this way, the development will not increase the flood hazard (e.g. by way of increased depth, duration or velocity of flood waters or a reduction in warning times) for other properties within the flood plain (ie. by maintaining the existing hydraulic envelope through road placement and stormwater design). The floor levels of any habitable rooms of a proposed building are a minimum of 250mm above the 1 in 100 flood level.

4.7.3 OV7A and OV7C – 15 Metre Height Restriction and ANEF Noise Overlay

As the site is situated within the area affected by the Amberly Airbase, a number of specific overlays affect the site. The location of the site with respect to height restrictions has been indicated below in Figure 3.



FIGURE 4:

Extent of 20 – 25 ANEF Contour identified in Council's OVTC Overlay

Given that all new residential allotments will be located outside of the extent of the 20 – 25 ANEF contour, no further consideration of this overlay has been given in this report.

To this end, the proposed development is deemed to comply with the relevant overlay codes specified in Council's scheme.

4.8 SOUTH EAST QUEENSLAND REGIONAL PLAN

The site is located within the urban footprint under the South East Queensland Regional Plan. The site is not located in a Major Development Area. In this regard, the proposed subdivision is not affected by the regulatory provisions of the South East Queensland Regional Plan.

4.9 STATE PLANNING POLICIES

4.9.1 SPP 1/02 – Development in the Vicinity of Certain Airports and Aviation Facilities

The site is located within a 3 kilometre radius of the Amberley Airbase. Nonetheless, given that the site is situated outside of the 20 ANEF contour and does not affect operational air space, no further consideration of this SPP is justified as part of this application.

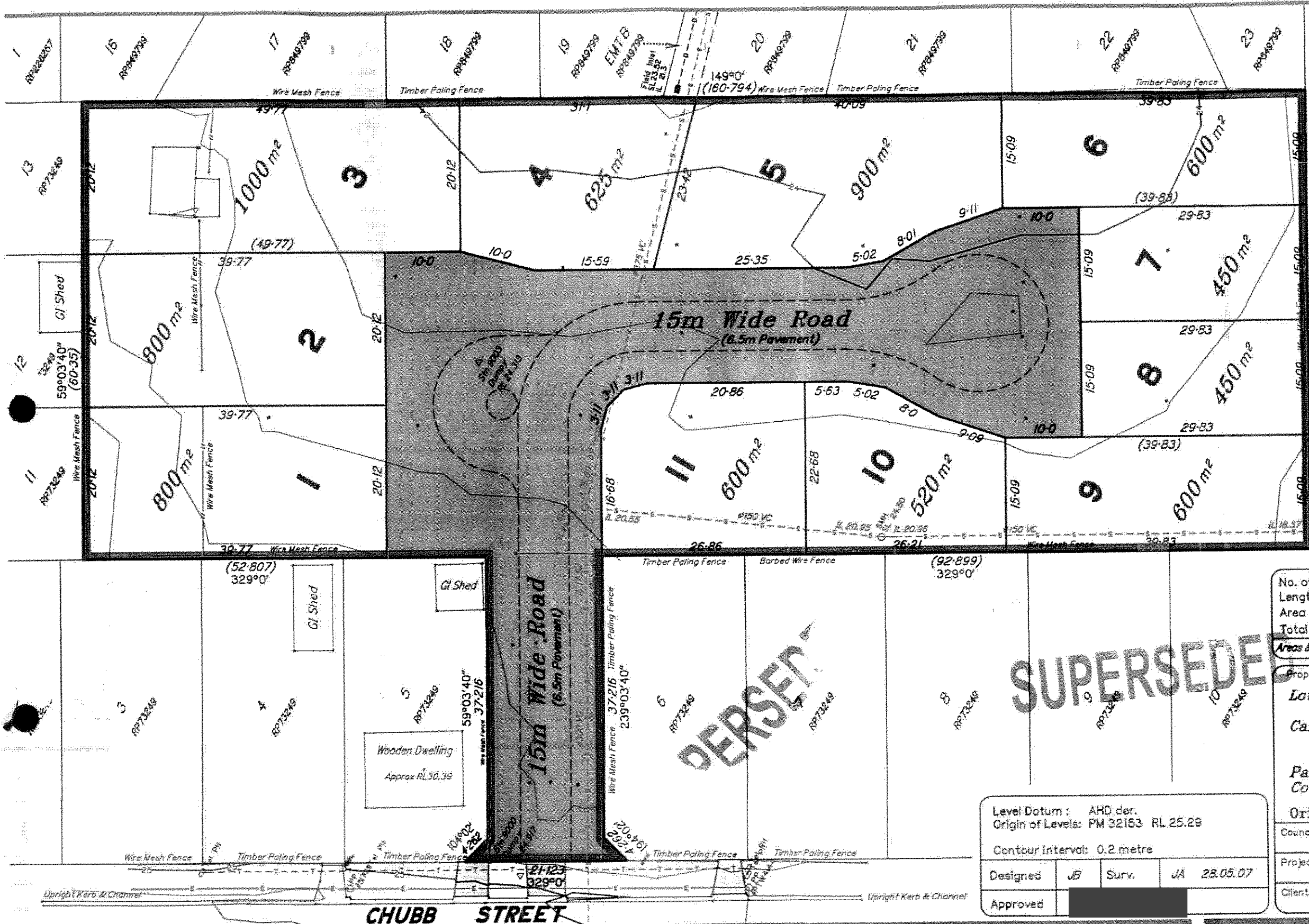
4.9.2 Other State Planning Policies

No other state planning policies relate to the site.

5.0 CONCLUSION

From the preceding information, it can be concluded that the proposed subdivision of the subject land for residential allotments is consistent with the objectives of Ipswich City Council's planning scheme. The development is within the ambit of land use intended for the Residential Low Density Zone. The development complies with all relevant codes nominated within the planning scheme and should therefore be approved.

FIGURE 5:
Subdivision Layout Plan



NOTES

This plan was prepared as a preliminary layout to accompany a development application. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

The Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.

No. of Proposed Lots	11
Length of New Road	135 m
Area of New Road	2970 m ²
Total Area of Subdivision	1.032 ha

Areas & Dimensions are approximate only & subject to Survey.

Proposed Subdivision of:	Lots 1-11
	Cancelling Lot 14 on RP73249
	Parish of Brassall County of Churchill
	Original Portion 73
Council:	Ipswich C.C.
Project:	Chubb St, One Mile
Client:	Ipswich Ideals Pty Ltd

Level Datum : AHD den.			
Origin of Levels: PM 32153 RL 25.29			
Contour Interval: 0.2 metre			
Designed	JB	Surv.	JA 28.05.07
Approved			

CHUBB STREET

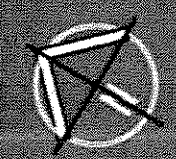
Proposal Plan

Scale 1:500 - Lengths are in Metres.



Saunders Havill Group
town planning

reference:
Job No. 4528
Dwg No. A625P2
Scale 1:500
Date 16.06.07
Client Ipswich Ideals Pty Ltd



Reference: 06-010

20 August 2007

Chief Executive Officer
Ipswich City Council
PO Box 191
IPSWICH QLD 4305

Attention: *Planning and Development*

Dear Sir/Madam

**RESIDENTIAL SUBDIVISION
70A CHUBB STREET, ONE MILE**

I have been instructed by my client, Ipswich Ideal Pty Ltd to make application to Ipswich City Council for the subdivision of land at 70A Chubb Street, One Mile into 11 residential allotments. The property is described as Lot 14 on RP73249 and comprises 1.032 hectares. The land is currently vacant and holds in excess of 20 metres frontage to Chubb Street. The application is for a development permit for lot reconfiguration. Access to the new allotments is to be achieved directly from a new cul-de-sac to extend from Chubb Street. The land is adjoined to the north, east and west by existing residential allotments, with a retirement community approved for the land immediately to the south.

The land is shown in the Ipswich Planning Scheme as falling within the Sub Area RL2 designation of the Residential Low Density Zone. The proposed development involves 11 new residential allotments, which rests comfortably within the density requirement of 10 – 15 dwelling units per hectare as is envisaged for this designation under Council's scheme. Table 4.5.2 of Council's scheme sets out that reconfiguring a lot in the Residential Low Density Zone is code assessable.

It is not envisaged that the application will require referral to any state government agencies. Please find attached the following to assist Council in its assessment of this application:

- Two (2) additional copies of the covering letter;
- Three (3) copies of the relevant IDAS forms A, F and the IDAS assessment checklist;

- Three (3) copies of a Planning Report detailing the issues relevant to the site, addressing the provisions of Council's scheme and including a layout plan as a figure to the report; and
- My client's cheque for \$5,060 being the relevant application fee prescribed under Council's schedule of fees for the 2007/08 financial year.

I trust the above information is to your satisfaction. Please do not hesitate to contact me directly on 0412 788 532 should you have any queries in relation to this matter.

Yours faithfully,



B.App.Sc. GDURP MURP MPIA

Encl.

CC: Ipswich Ideal Pty Ltd

Reference: 06-010

Ipswich Ideal Pty Ltd

PLANNING REPORT

**Proposed Residential Subdivision
70A Chubb Street, One Mile**

PO BOX 7044

SIPPY DOWNS, QLD. 4556

PH: 0412 788 532

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1.0 INTRODUCTION

1.1 GENERAL

This report has been prepared to provide supporting information for an application to Ipswich City Council for a lot reconfiguration development permit for the subdivision of land located at 70A Chubb Street, One Mile. The proposal involves the subdivision of the existing parcel into 11 separate allotments. The location of the land is shown on Figure 1. A subdivision plan showing site contour information determined by survey has been included as Figure 5 of this report.

Particulars relating to the lot are as follows:

Real Property Description:	Lot 14 on RP73249
Address:	70A Chubb Street, One Mile
Combined Area:	1.032 hectares.
Tenure:	Freehold
Owners:	Ipswich Ideal Pty Ltd
Improvements:	Nil
Zoning:	Residential Low Density (Sub Area RL2)
Overlays:	Flood Line 1 in 100 15m Height Restriction ANEF Noise Overlay

1.2 APPLICATION

The application comprises a lot reconfiguration development approval for the subdivision of the existing parcel to form 11 new allotments plus 120 metres of new road. Table 4.5.2 of Council's scheme *Assessment Categories and Relevant Assessment Criteria for Residential Low Density Zone – Other Development* sets out that lot reconfiguration is code assessable in the Residential Low Density Zone. The proposed development will involve the creation of allotments that accord with Part 12 Division 5 of the Scheme – Reconfiguring a Lot Code.

Council's scheme categorises this form of development as a **Moderate Subdivision** which is defined as *the reconfiguring of a lot within an urban area which—*

(a) requires the construction of an Access Place, Access Street or Local Industrial Street; or

(b) involves the creation of less than 75 residential lots or 100 dwelling units (or their equivalent), or any combination thereof which would generate less than 750 vehicle trips per day.

The requirements for this application are further considered under Section 4 of this Planning Report.



PHOTO PLATE 4: Chubb Street looking south from the site frontage.

3.0 PROPOSED DEVELOPMENT

3.1 CONCEPT

The subject land is located within the existing residential area of One Mile and is surrounded to the north and west by older housing stock, whilst newer residential development is situated to the east. New development is occurring further to the west and also to the south. In this regard, the future development of the current land is central to the infilling and sequential extension of the urban fabric in the area.

Within this context, the current proposal seeks to provide a range of housing allotments to meet community demand, ranging in size from 450 square metres to 1,000 square metres. This is generally consistent with the surrounding allotments which typically support low density, detached residential dwellings.

Given the configuration of the site and the existing and proposed parkland to the east, no park is proposed as part of this development.

3.2 TRAFFIC ACCESS AND EXTERNAL ROADS

Access to the site will be achieved from Chubb Street. Chubb Street comprises a low order residential collector towards the north which services a number of access streets between its terminal point and the intersection with Old Toowoomba Road. Intersections with a number of these streets comprise small round-a-bouts which assist in managing traffic flow. Chubb Street conforms to the concept of an access street in the vicinity of the proposed development.

Access to the site can also be achieved by accessing Chubb Street from Cafferky Street via Siemens Street. The existing road network has sufficient capacity to accommodate the proposed development and no upgrading is considered necessary for the proposed development to occur.

3.3 WATER SUPPLY AND SEWERAGE

Water and sewerage connections are available within the area and no modification to this infrastructure is proposed. Sewering of the proposed subdivision will require connection to the existing manhole to avoid impacting on the sewer which is located at depth below the surface.

3.4 ELECTRICITY AND TELECOMMUNICATIONS

Telecommunication and electricity services are available within the Chubb Street road reserve and will be extended to service the proposed development. The standard arrangement will be entered into with Energex (or successor) and Telstra at the time of subdivision.

3.5 STORMWATER DRAINAGE

3.5.1 General

Given the flat nature of the site, it is proposed that all stormwater is drained to the new road reserve. An underground drainage system will convey stormwater from the road reserve across proposed Lot 4 to the drainage easement though Lot 20 immediately to the east of the site. Some form of detention may be necessary to assimilate peak flows. This may be achieved through the oversizing of pipework to allow detention to occur within the drainage system as well as the inclusion of water tanks with future residences proposed for each lot. The present drainage of the site is likely to see all stormwater conveyed as overland flow through the existing easement.

3.5.2 Flood Risk

Council's planning scheme identifies part of the site as being affected by the flooding and overland flow path overlay. The area affected appears to be restricted to the eastern extent of the site within the centre of the property. Detailed survey of the site has indicated that the land is relatively flat within this area, suggesting that the extent of Council's affected area may not be accurate and any inundation would be very shallow (ie. less than 200mm depth).

Further, more recent construction of residential development in this area, including recent approval of the retirement community to the south has largely precluded the area from the extent of flooding envisaged under the overlay codes, primarily due to filling required to ensure that existing and proposed dwellings on adjoining properties remain above levels associated with a 1 in 100 ARI flood event. To this end, it is envisaged that the flood level has changed considerable to that envisaged under Council's original flood mapping used to create the overlay.

In any event, the proposed subdivision is likely to involve a net earthworks balance which will result in the new road being lower than the surrounding land to accommodate runoff generated during peak storm events, whilst the surrounding land may be slightly higher, thereby ensuring

all allotments are granted immunity to a Q₁₀₀ event without reducing the hydraulic envelope within the Bremer River flood plain.

4.0 TOWN PLANNING

4.1 GENERAL

The subject land is regulated by the Ipswich Planning Scheme, an IPA scheme adopted on 14 December 2005. The planning scheme and its associated planning scheme policies took effect on 23 January 2006.

4.2 DEFINITION

The subdivision comprises a Moderate Subdivision under Council's scheme, involving *the reconfiguring of a lot within an urban area which—*

(b) requires the construction of an Access Place, Access Street or Local Industrial Street; or

(b) involves the creation of less than 75 residential lots or 100 dwelling units (or their equivalent), or any combination thereof which would generate less than 750 vehicle trips per day.

4.3 ZONING AND LEVEL OF ASSESSMENT

The subject land is located within the Residential Low Density Zone. This is further divided into two sub areas – RL1 and RL2. The site is situated within the bounds of Sub Area RL2. Table 4.5.2 of Council's scheme *Assessment Categories and Relevant Assessment Criteria for Residential Low Density Zone – Other Development* sets out that lot reconfiguration is code assessable in the Residential Low Density Zone.

Given the above, the development proposal will be assessed against the Reconfiguring a Lot Code (Part 12, Division 5) and the Urban Areas Code (Part 4), particularly the specific outcomes in Section 4.3.3 and the Residential Low Density Zone (Division 5). Further consideration has been given to the various provisions of the scheme in this light.

4.4 URBAN AREAS CODE

4.4.1 General

The overall outcomes for Urban Areas within Ipswich City are set out in Section 4.3.2 (2) of the Scheme. Compliance with each of the relevant overall outcomes has been demonstrated below:

Overall Vision

(a) Integrated communities are created and maintained which enjoy enhanced liveability, effective growth management, sustained economic growth, good urban design and ecological sustainability.

The proposed development comprises infilling within the existing suburb of One Mile. No significant constraints exist on the land, ensuring the above outcomes can be satisfied.

Community Identity

(b) Definable but inter-related neighbourhoods are created and maintained with a strong sense of community identity.

The proposed development comprises infilling within the existing suburb of One Mile and will be consistent with the form of development predominant within the area.

Housing

(d) There is an adequate supply of residential land and dwellings that respond to community needs and locational constraints and opportunities.

The proposed development seeks to provide 10 additional allotments (from one existing allotment) within the existing urban suburb of One Mile, thereby satisfying this overall outcome.

Amenity

(h) Pleasant and safe living and working environments are created.

(i) There is a high standard of amenity in residential areas and uses and works in these areas are compatible.

The proposed development is in close proximity to significant areas of open space, the City Centre and nearby convenience services. Key open space areas include the Ipswich Golf Club to the north, Wilcox Park to the west, Leichardt Park and areas along the Bremer River to the east and the Hastings Sports Centre to the south.

Environmental Management and Greenspace

(j) Uses and works are located and designed to minimise risks and nuisance to people and property.

The subdivision comprises infilling and will not adversely affect environmental values within the area.

Infrastructure Efficiency

(n) Uses and works support the efficient provision or extension of infrastructure, including both physical infrastructure and human services and facilities.

The development comprises infill which will improve the efficient use of infrastructure existing within the area.

Transport and Access

(p) Pedestrian, cycle and vehicle connectivity and ease of mobility are provided within and between neighbourhoods, major centres, employment areas and public transport interchanges.

(q) Conflict between local and through traffic and between pedestrians, cyclists and vehicles is minimised.

The proposed development will result in the creation of one new road to service the allotments.

Urban Design, Heritage, Townscape and Image

(w) Places of cultural significance or streetscape value are conserved and used for appropriate purposes.

(x) Uses and works are designed and located in a manner which is appropriate and compatible with—

(i) identified historic character areas; and

(ii) areas of townscape significance, including major approach routes and gateways and landmark features and sites.

The proposed subdivision is consistent in nature with the surrounding area and will comprise infill development located behind an existing row of detached dwellings fronting Chubb Street.

4.4.2 Specific Outcomes

Specific outcomes for the Urban Area have been detailed in Section 4.3.3 of the scheme. Those relevant to this application have been detailed and addressed below.

Transport and Access

(b) Where possible, sensitive land uses are located away from major transport corridors and haul roads.

The site is situated on Chubb Street which comprises a low order collector to the north and an access street in the vicinity of the development. It is proposed that access is achieved off this street by a small access place. The proposed development will not generate significant traffic volumes.

Visual Framework

(d) New uses or works—

- (i) do not obstruct a significant view of a major or local landmark;
- (ii) do not significantly alter the context of an existing landmark; and
- (iii) create an attractive landmark feature on a potential landmark site.

The proposed development will comprise infilling development in an existing suburban area and will not affect a gateway, land mark or significant visual feature.

4.5 RESIDENTIAL LOW DENSITY ZONE

4.5.1 Overall Outcomes

The subject land is located within the Residential Low Density Zone. Section 4.5.2(2) details the overall outcomes for the Residential Low Density Zone. This is also considered to comprise the purpose of the Zone. Each of the overall outcomes for the Residential Low Density Zone and relevant to the proposed development have been detailed and discussed below:

(a) The Residential Low Density Zone caters primarily for low density, sewerred, urban residential development and associated uses, to the general exclusion of most other uses including unsewerred, acreage housing.

The proposed subdivision will be located in an existing area of detached dwellings, with a retirement village approved on land to the south. The site is separated from Chubb Street by a row of houses and will comprise infill development, being located to the rear of the existing residential allotments within the area. The area is remote from the Bremer River and other sensitive areas and will have no adverse impact on the natural environment.

4.5.2 Specific Outcomes for the Residential Low Density Zone

Section 4.5.4(2) of the Scheme – Effects of Development in Sub Areas details the specific outcomes and probable solutions for development in Sub Area RL2. The specific outcomes considered relevant to this application and the associated probable solutions have been tabulated below. Compliance with the specific outcomes has been demonstrated where no probable solutions are available.

Specific Outcomes	Probable Solutions
<p>Residential Uses – Density and Character Uses and works reflect the established built character, maintain amenity and protect and enhance important townscape and landscape elements within local areas having regard to—</p> <ul style="list-style-type: none"> (a) dwelling density; (b) building height; (c) lot sizes and dimensions; (d) boundary clearances and the provision of space around buildings; (e) access to natural light and ventilation; (f) privacy; (g) noise attenuation; (h) vegetation protection; (i) landscape treatment; (j) places of cultural significance or streetscape value; and (k) the form, scale, bulk, style, siting, orientation, roof lines, materials and detailing of buildings. 	<p>The lot size and dimensions of the proposed allotments are consistent with the existing residential use of the area.</p>

Specific Outcomes	Probable Solutions
<p>Vegetation and Landscaping</p> <p>(a) Appropriate landscaping, including street trees, is used to soften building outlines and enhance the overall appearance of the area.</p> <p>(b) Buildings on stumps/piers are provided in preference to slab on ground construction, where located within vegetated areas and on steeply sloping land.</p> <p>(c) All significant trees are retained, where possible, particularly on heavily treed, large lots.</p> <p>(d) Uses and works at the rear of existing dwellings are designed to avoid adverse impact on established vegetation and the amenity of neighbouring properties.</p>	<p>No significant vegetation exists on the existing allotment. It is proposed that street trees will be planted in accordance with Council's requirements along the extent of the new road to enhance the amenity of the area.</p>
<p>Building Setbacks</p> <p>New buildings are setback to the alignment of adjoining buildings unless an alternative setback does not detrimentally affect the character and amenity of the area and the overall townscape.</p>	<p>Whilst no buildings are proposed as part of this development, it is envisaged that all buildings will be set back a minimum of 6 metres from the road frontage in accordance with Council's scheme requirements and the Queensland Development Code.</p>
<p>Operation of Road Network and Access</p> <p>Uses and works are located and designed to—</p> <p>(a) ensure the safe and efficient operation of the road network; and</p> <p>(b) avoid multiple access points along major roads; and</p> <p>(c) ensure that the principal access for the area between Melrose Drive and Reif Street, Flinders View is via Fischer Road, to avoid amenity concerns and traffic congestion within the residential area to the north of Melrose Drive, Flinders View; and</p> <p>(d) avoid significant adverse effects (e.g. by noise or dust generated) from use of the road network; and</p> <p>(e) ensure reconfiguration of the existing historic lots to the south of Berry Street and in the vicinity of Phoenix Court, Churchill provide for the construction of appropriate road reserves and suitable building envelopes.</p>	<p>The development will include the construction of one new road. This will assume the form of a cul-de-sac extending from Chubb Street which is an access street in the vicinity of the development. Chubb Street forms a low order residential collector to the north, servicing the area. To this end, the proposed development will not create additional access points along major roads or adversely affect the existing traffic movements in the area.</p>
<p>Provision of Infrastructure</p> <p>Infrastructure is—</p> <p>(a) provided to meet appropriate standards at the least whole-of-life cost, including avoiding unnecessary duplication; and</p> <p>(b) comprised of components and materials that are readily accessible and available from local sources; and</p> <p>(c) readily integrated with existing systems and facilitates the orderly provision of future systems.</p>	<p>Infrastructure is to be provided to the standards stated in Planning Scheme Policy 3—General Works. All urban infrastructure is readily available in the area and can be extended to service the proposed allotments.</p>

4.6.2 Overall Outcomes

Each of the overall outcomes for the Reconfiguring a Lot Code and relevant to the proposed development have been detailed and discussed below:

Residential (including Large Lot Residential), Commercial and Industrial Estate Design (Urban Areas Only)

(a) Safe, convenient and attractive residential neighbourhoods and functionally compatible commercial centres and industrial estates that meet the diverse and changing needs of the community are provided.

(b) This encompasses—

- (i) offering a wide choice in good quality housing and associated community and commercial facilities;
- (ii) offering a diversity of services at locations that are highly accessible to all sections of the community;
- (iii) providing for local employment opportunities;
- (iv) encouraging walking and cycling;
- (v) facilitating the use of public transport;
- (vi) creating neighbourhood focal points and a diverse range of activities within each commercial centre or industrial estate to promote a 'sense of place' and the creation of a distinctive identity which recognises and, where relevant, conserves the natural environment and places of cultural heritage significance; and
- (vii) facilitating ecologically sustainable development.

The proposed development comprises infill development in an existing urban area and corresponds to 1 hectare of land comprising a rear allotment accessed off Chubb Street. The proposal will continue to introduce newer residential development to the existing One Mile suburb in a manner that reflects the changing housing needs of the community, offering a range of allotment sizes for the construction of residences. The development will be consistent with the surrounding residential amenity although containing aspects of a more modern residential area (ie. street trees, modern homes, etc).

Integrated Movement Networks

(c) Movement networks are provided—

- (i) within urban areas for vehicles, public transport, pedestrians and cyclists that are integrated, cost-effective and environmentally acceptable, and which minimise internal traffic volumes and the impact of traffic on the residential environment; and
- (ii) within rural areas for vehicles, that are cost-effective and environmentally acceptable, and which minimise the impact of traffic on the rural environment.

Wide verges are proposed within the new access place servicing the subdivision to ensure opportunity is maximised for pedestrian movement.

The Road System

(d) An efficient road system (i.e. for major roads) is provided external to the Residential, Commercial/Industrial and Rural Street System.

The proposed development does not adversely impact on the function of Council's road hierarchy or the operation of major roads within the local area.

Street Networks

(e) Street networks are created in which the function of each street is clearly identified, providing acceptable levels of access, on-street parking (urban areas only), safety and convenience for all users whilst minimising the impact on the environment and maintaining and enhancing identified conservation values.

The new road to be constructed as part of the proposed development will be designed in accordance with Queensland Streets and Council's requirements to ensure the function of the street and levels of access are clearly discernible. A 6.5 metre pavement width is proposed.

Pedestrian and Cyclist Facilities (Urban Areas Only)

(f) Walking and cycling are encouraged by providing safe, convenient and legible movement networks to points of attraction within and beyond the development and to nearby centres and employment areas.

Lot Layout and Design

- (p) A range and mix of lot sizes are provided to suit a variety of dwelling and household types, commercial and industrial purposes and primary production purposes, with areas and dimensions that meet user requirements.
- (q) For residential development, lots are in keeping with the environmental values of the site (including local and regional biological diversity, where possible) and are oriented where practicable to enable microclimate management, including the application of energy conservation principles.
- (r) For commercial and industrial development, lots are consistent with the overall and specific outcomes of the respective Commercial and Industry Zones.
- (s) For rural development, lots are consistent with the overall and specific outcomes of the Rural Zones.

A range of lot sizes have been included in the development proposal, ranging from 450 square metres through to 1,000 square metre allotments.

4.6.3 Specific Outcomes for the Reconfiguring a Lot Code

Table 12.5.2 of Section 12.5.4 of the Scheme details the specific outcomes and probable solutions for moderate and major subdivisions. The specific outcomes considered relevant to this application and the associated probable solutions have been tabulated below. Compliance with the specific outcomes has been demonstrated where no probable solutions are available.

Specific Outcomes	Probable Solutions
<p>Lot Layout and Design</p> <p>(2) Lots (including hatchet lots) have the appropriate layout, area and dimensions to—</p> <p>(a) enable the siting and construction of a dwelling and ancillary outbuildings, where for the purposes of residential use;</p> <p>(b) enable the siting and construction of commercial or industrial buildings, where for the purposes of commercial or industrial use;</p> <p>(c) provide for landscaping, including private outdoor recreational space;</p> <p>(d) provide convenient vehicle access and parking;</p> <p>(e) take into account the slope of the land, in particular the desirability of minimising</p>	<p>Lot Layout and Design</p> <p>(2) (a) The proposed lots comprise traditional lots under the scheme. All allotments exceed the 450 square metre minimum area requirement, with corner lots comprising 600 square metres or greater. All standard lot frontages are 15 metres or greater. All allotments are on land with a grade of less than 5%. A minimum frontage of 17 metres is provided for the one corner allotment (proposed Lot 11) in accordance with the requirements of Appendix A of the scheme.</p> <p>A total of four (4) allotments of a minimum of 800 square metres have been provided. This is greater than the 10% requirement articulated under the scheme. These are positioned towards the northern end of the site.</p>

<p>earthworks/retaining walls associated with building construction;</p> <p>(f) overcome site constraints (e.g. undermining, flooding, drainage, bushfire risk, buffers to incompatible land uses etc);</p> <p>(g) conserve natural, cultural or special features (e.g. trees, buildings, views etc);</p> <p>(h) provide within residential areas housing diversity and choice and within commercial/industrial areas a variety of choice for the different commercial and industrial development types;</p> <p>(i) avoid large concentrations of cottage lots and courtyard lots in the Low Density Residential Zones or Sub Areas;</p> <p>(j) ensure that cottage lots, courtyard lots, dual occupancy lots and multiple residential lots are located in close proximity to parks, shops, employment areas or community facilities;</p> <p>(k) enable lot frontages to be oriented towards the street and open spaces to facilitate personal safety, property security and casual surveillance of footpaths and public open space areas;</p> <p>(l) facilitate, within residential areas (via street and lot orientation), the siting of dwellings to take advantage of microclimatic benefits and to allow adequate on-site solar access and access to breezes taking into account likely dwelling size and the relationship of each lot to the street;</p> <p>(m) integrate with the surrounding urban environment, and in particular complement existing streetscapes and landscapes and, where possible in residential areas, provide connectivity to facilitate shared use of public facilities by adjoining communities;</p> <p>(n) facilitate the integration of commercial and industrial development into its surroundings ensuring minimal impact on the amenity of adjacent or nearby areas;</p> <p>(o) ensure that the layout of commercial or industrial development abutting areas of residential development allows lots to be configured for the siting and design of development that can incorporate visual, noise pollution and other ameliorative measures, in order to reduce impacts on nearby residential amenity.</p>	<p>northern end of the site.</p>
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Specific Outcomes	Probable Solutions
<p>(3) A reconfiguration of land may produce one or more hatchet lots, provided—</p> <p>(a) it is not likely to prejudice the subsequent reconfiguration or use of adjoining land;</p> <p>(b) it is not desirable nor practicable for the subject and adjoining land to be otherwise reconfigured so as to have a frontage to another road which may be subsequently constructed;</p> <p>(c) the siting of buildings on a proposed hatchet lot will not be detrimental to the amenity of the area;</p> <p>(d) existing development of land in the area will not have a detrimental effect on buildings to be sited on the proposed hatchet lots; and</p> <p>(e) there is no reasonable alternative to the hatchet lot having regard to the sites' topography, access, location, shape and size.</p>	<p>NA – no hatchet shaped allotments are produced as a result of this development.</p>
<p>(4) Hatchets lots—</p> <p>(a) do not dominate or intrude within the existing subdivision pattern;</p> <p>(b) provide an access strip capable of accommodating adequate vehicular access and utility services; and</p> <p>(c) provide an access strip which does not unduly affect or restrict on-street parking.</p>	<p>NA – no hatchet shaped allotments are produced as a result of this development.</p>
<p>Designated Roads</p> <p>(5) For major subdivisions, the road network has a clear structure and component roads conform to their function in the system.</p>	<p>NA – the development does not comprise a major subdivision.</p>
<p>(6) For major subdivisions, the road system is located so that it provides routes which are more convenient for external traffic than the residential or commercial/industrial street network.</p>	<p>NA – the development does not comprise a major subdivision.</p>
<p>(7) For major subdivisions, the road system has the capability to accommodate public transport services and has capacity to safely and efficiently accommodate projected movements.</p>	<p>NA – the development does not comprise a major subdivision.</p>
<p>(8) For major subdivisions, the road network is provided in a manner where it complements the street network, public transport, pedestrians and cycleways.</p>	<p>NA – the development does not comprise a major subdivision.</p>

Specific Outcomes	Probable Solutions
(9) For major subdivisions, safe and convenient links are provided for pedestrians and cyclists across Designated Roads.	NA – the development does not comprise a major subdivision.
(10) Intersections are located to provide safe and efficient connection and traffic interface between the street network and Designated Roads.	NA – the existing capacity of the intersection of old Toowoomba Road will remain largely unaffected by this proposal.
(11) Access arrangements do not impede the traffic performance of Designated Roads.	(11) (a) Residential lots do not have direct vehicle access to a designated road, but all access is from an access street, Chubb Street.
(11A) Road networks in areas within 6km of the RAAF Base Amberley runway do not include configurations of lights that replicate the appearance of airport runways at night.	(11A) The proposed new road will not include configurations of lights in straight parallel lines 500m – 1,000m long.
(12) Residential premises are— (a) not exposed to unacceptable traffic noise; or (b) able to be designed and constructed to ensure that acceptable living conditions within the dwelling can be created.	The proposed d is located in an existing residential neighbourhood and is well set back from busy roads. The site is not exposed to any significant noise sources.
Street Networks and Design (13) For major subdivisions, the street network is to— (a) for residential development, meet local needs and allow for the provision of public transport, for pedestrians and cyclists, and for expected vehicle traffic; (b) for commercial and industrial development, provide for the mixed functions of moving traffic, vehicles accessing lots and parked vehicles whilst allowing for the provision of public transport, for pedestrians and cyclists, and for expected vehicle traffic (including heavy vehicles).	NA – the development does not comprise a major subdivision.
(14) For major subdivisions, the street network connects with Designated Roads to maximise movement efficiency on the main traffic routes, whilst at the same time minimising internal traffic volumes.	NA – the development does not comprise a major subdivision.
(15) The street network has a clear structure and component streets conform to their function in the network.	(15) The new cul-de-sac links with Chubb Street which is one level higher in the road hierarchy at the point of connection, comprising an access street at this point.

Specific Outcomes	Probable Solutions
(16) The layout of the street network has clear physical distinctions between each type of street, based on function, economy, convenience, traffic volumes, vehicle speeds, public safety, amenity and in the case of commercial or industrial development, parking demand.	(16) The proposed new road conforms to the definition of an access place as outlined in Appendix C of the scheme.
(17) The design features of each type of street encourage driver behaviour appropriate to the primary function of the street in the network.	The proposed street network to service the new subdivision will comprise a cul-de-sac with relatively narrow pavement widths and short distances. The nature of the road configuration will assist in ensuring low driver speed.
(18) Intersections are spaced to create safe and convenient vehicle movements.	(18) The proposed development is in a low speed environment. The new intersection has sufficient separation from Cafferky Street which is located approximately 100 metres to the north in accordance with Section 2.11 'Intersections' of Queensland Streets, given the speed environment is around 40 kilometers/hour.
(19) The street network provides— <ul style="list-style-type: none"> (a) convenient movement for residents between their homes and Designated Roads; and (b) for commercial or industrial development, convenient movement for vehicles (including heavy vehicles). 	(19) (a) The driving distance from any dwelling to a Designated Road or Trunk Collector Street is approximately 1,000 metres. (b) Only one major intersection (ie. Old Toowoomba Road) is negotiated in order to travel from the proposed infill development site to the most convenient collector street or Designated Road. (c) The proposed development will be afforded several means of accessing Old Toowoomba Road as an alternative street access. (e) The cul-de-sac length is approximately 120 metres total. Turning area will be sufficient for a single movement turn (refer to Section 9.12 'Turning Areas' of Queensland Streets) based on the typical manoeuvring areas for Council's design garbage truck.

Specific Outcomes	Probable Solutions
<p>(20) For major subdivisions—</p> <p>(a) There is provision for bus routes which are direct and safely accessible by foot from all dwellings, activity centres, commercial centres or industrial estates and which provide links with external areas and are efficient to operate.</p> <p>(b) Streets carrying bus routes provide for ease of movement of buses between residential neighbourhoods and for links to centres within and external to the neighbourhood without complicated turning manoeuvres.</p> <p>(c) The alignment of the streets that form the bus route allow for efficient and unimpeded movement of buses without facilitating high traffic speeds.</p> <p>(d) The street network offers opportunities for cost-effective operation of demand-responsive public transport services should the need arise, providing for both peak and off-peak regular services and the potential future provision of demand-responsive services.</p> <p>(e) Bus stops are located—</p> <ul style="list-style-type: none"> (i) to provide for pedestrian safety, security, comfort and convenience; (ii) to be able to be overlooked from nearby buildings; (iii) to be in keeping with the character of the locality; and (iv) for residential development, to minimise adverse impact on the amenity of nearby dwellings. 	<p>NA – the proposed development does not comprise a major subdivision.</p>
<p>(21) (a) The street layout facilitates walking and cycling within the residential neighbourhood and to activity centres without encouraging external traffic into the residential neighbourhood.</p> <p>(b) The street and path network provides an overall network of pedestrian routes and routes for cyclists, with connections to adjoining streets, open spaces, neighbouring residential areas and activity centres.</p> <p>(c) The location of paths is aligned to conserve trees and other significant features and where they exist, focus on vistas and landmarks whilst ensuring safe and convenient use by pedestrians and cyclists.</p> <p>(d) Pedestrian paths and cycleways are</p>	<p>21 (b) A footpath will be provided on one side of the street.</p>

<p>located where there is casual surveillance and potential for the areas to be well lit.</p> <p>(e) Pedestrian, cycle and vehicular movement systems are co-located to encourage maximum surveillance of public areas.</p>	
<p>(22) The street layout and design—</p> <p>(a) takes account of the topography (especially steep land) and significant vegetation;</p> <p>(b) avoids steep slopes (i.e. greater than 15%) so as to minimise landscape disturbance and vegetation loss;</p> <p>(c) avoids penetrating and fragmenting large tracts of remnant vegetation;</p> <p>(d) respects and protects places of cultural significance or streetscape value;</p> <p>(e) takes advantage of opportunities for views and vistas;</p> <p>(f) takes account of streetscapes that may be created or that already exist;</p> <p>(g) permits the establishment of streetscapes that blend with existing streetscapes or comply with any approved public streetscape plan;</p> <p>(h) where practical, is orientated to promote efficient solar access for dwellings;</p> <p>(i) takes account of natural drainage and open space systems;</p> <p>(j) avoids crossing drainage features or open space areas, particularly for access places and access streets;</p> <p>(k) is located, designed and managed to enhance the habitat and corridor requirements of native wildlife (plants and animals);</p> <p>(l) locates the streets to the least environmentally sensitive sites;</p> <p>(m) avoids extensive use of cut and fill;</p> <p>(n) avoids important stands of vegetation to minimise the loss of important trees or ecosystems;</p> <p>(o) maintains interlocking tree canopies over fauna corridors, where possible, to allow for the movement of arboreal fauna and birds;</p> <p>(p) narrows the width of the carriageway or provides a wildlife underpass/bridge where it crosses wildlife movement corridors, such as riparian zones;</p> <p>(q) at known wildlife crossing points, streets are narrowed and appropriate pavement surfacing, lighting, signage and fencing are provided to reflect the low-speed</p>	<p>The proposed street layout is the most practical means of servicing the infill development. The short length of the cul-de-sac will ensure limited vehicle speed, consistent with environment desired outcomes for a low order residential road.</p>

<p>environment;</p> <p>(r) provides a high level of internal accessibility and good external connections for vehicles (including heavy vehicles in commercial and industrial areas), pedestrian and cycle movements, maintains appropriate traffic speeds, deters through-traffic, creates safe conditions for road users and for major subdivisions, limit the length of time local drivers need to spend in a low-speed environment;</p> <p>(s) for residential development, traffic speeds and volumes are restrained through such measures as—</p> <p>(i) limiting street length;</p> <p>(ii) introducing bends;</p> <p>(iii) introducing slow points; and</p> <p>(iv) intersections;</p> <p>(t) for major subdivisions, ensure that traffic generated by a development is within the acceptable environmental capacity of the street network;</p> <p>(u) ensures that where within or abutting bushfire risk areas streets are designed, located and connected to allow safe and efficient movement of fire emergency vehicles; and</p> <p>(v) provides for the cost effective provision of public utilities, including water, sewerage, electricity, telecommunications and gas.</p>	
<p>(22A) Street networks in areas within 6km of the RAAF Base Amberley runway do not include configurations of light that replicate the appearance of airport runways at night.</p>	<p>(22A) Street networks do not include configurations of light in straight parallel lines 500m – 1000m long, in areas within 6km of the RAAF Base Amberley runway.</p>
<p>(22B) Recessed landscaped areas are to be provided at regular intervals to soften the visual impact of long portions of acoustic or screen fencing along a street or road.</p>	<p>NA</p>
<p>(23) Streets and lots are located so that dwellings are not subject to unacceptable levels of traffic noise.</p>	<p>NA – the area is not subject to unacceptable levels of traffic noise.</p>

Specific Outcomes	Probable Solutions
<p>(24) The design of each type of street conveys the street's primary function and the street reserve width is sufficient to cater for all street functions, including—</p> <ul style="list-style-type: none"> (a) safe and efficient movement of all users, including pedestrians and cyclists; (b) provision for parked vehicles; (c) provision of landscaping; and (d) location, construction and maintenance of public utilities. 	<p>(24) (a) The following street components are as specified in Appendix Development of Council's scheme—</p> <ul style="list-style-type: none"> (i) carriageway widths; (ii) verge widths; (iii) street reserve widths; (iv) parking within the street reserve; (v) provision for parking lanes; (vi) kerb type; (vii) pedestrian and cyclist facilities; (viii) longitudinal gradients.
<p>(25) Provision of on-street carparking to ensure—</p> <ul style="list-style-type: none"> (a) for residential development— <ul style="list-style-type: none"> (i) convenience and safety for users; (ii) the efficient use of car spaces; (iii) compatibility with the street's function; and (iv) the achievement of relevant streetscape outcomes; and (b) for commercial or industrial development— <ul style="list-style-type: none"> (i) sufficient and convenient short-term parking to accommodate vehicles not catered for on-site; (ii) parked vehicles do not obstruct the passage of vehicles on the carriageway or create traffic hazards. 	<p>(25) (a) Provision will be made within the street reserve to provide 0.5 spaces per single residential lot.</p> <ul style="list-style-type: none"> (c) One car space will be made available within 25m of each single residential lot. (e) The dimensions of on-street carparking spaces and access comply with the requirements outlined in the Parking Code as applicable to on-site parking.
<p>Public Open Space</p> <p>(26) Parks—</p> <ul style="list-style-type: none"> (a) are provided in the general locations as outlined in Map 6.2 of Planning Scheme Policy 5—Infrastructure and Map 1 in Schedule 7; (b) provide opportunities for casual surveillance; (c) are, with the exception of linear or waterside parkland, easily visible from the street; (d) are located away from excessive noise; (e) are located and designed in accordance with the desired standards of service for each recreation setting outlined in Planning Scheme Policy 5—Infrastructure. 	<p>NA – A public parks infrastructure contribution is to be made in lieu of parkland in accordance with Planning Scheme Policy 5—Infrastructure.</p>
<p>Utilities</p> <p>(27) Cost effective and environmentally sustainable utilities (including effluent treatment and disposal, water, electricity, gas, street lighting and communication services) are provided to each lot.</p>	<p>Utilities</p> <p>(27) (a) Provision is made for the—</p> <ul style="list-style-type: none"> (i) reticulation of water supply to each lot; (ii) reticulation of sewerage to each lot.

	<ul style="list-style-type: none"> (iii) supply of electricity to each lot; (iv) supply of telecommunication services to each lot; and (v) installation of street lighting on that side of the street or road as the existing or planned location of the footpath.
<p>Stormwater Drainage</p> <p>(28) The major stormwater drainage system—</p> <ul style="list-style-type: none"> (a) has the capacity to safely convey stormwater flows resulting from the adopted design storm under normal operating conditions; (b) is located and designed to ensure that there are no flow paths that would increase risk to public safety and property; (c) is to maximise community benefit through the retention of natural streams and vegetation wherever practicable, the incorporation of parks and other less flood-sensitive land uses into the drainage corridor and the placement of detention basins for amenity and function. 	<p>Stormwater Drainage</p> <p>(28) (a) The design of the major stormwater drainage system is—</p> <ul style="list-style-type: none"> (i) designed to safely convey stormwater flows under normal operating conditions for ARI = 100 years; (ii) matched to the conditions which occurred before development; (iii) to be sufficient to hydraulically convey the design flow (ARI 100) through the subdivision to the lawful point of discharge which comprises an easement across Lot 20 to the east; and <p>(b) The width of the drainage path is—</p> <ul style="list-style-type: none"> (i) sufficient to contain design flows; and (ii) allow maintenance access.
<p>(29) All lots are located above the adopted flood level to provide protection of property in accordance with the accepted level of risk.</p>	<p>(29) (a) All traditional lots are located above the existing flood level in the area (ie. the adopted level). Whilst Council's overlay code indicates that a small portion of the central eastern extent of the property may be subject to inundation during major flood events, the surrounding development has precluded this from occurring as the land is slightly higher than the adjoining land to the east.</p>
<p>(30) Design of the lot layout provides for—</p> <ul style="list-style-type: none"> (a) drainage which does not cause damage or nuisance flows to adjoining properties; (b) a drainage system that can be economically maintained; (c) maximum use of on-site infiltration; (d) the safety and convenience of people using the site; and (e) for homestead lots or township lots, any dams are to be wholly located within lot boundaries. 	<p>(30) (a) Lot drainage is to be directed into the street drainage system.</p>



FIGURE 2:

Extent of Flooding Affecting the Site as Indicated by Council's OV5 Overlay

In this way, the development will not increase the flood hazard (e.g. by way of increased depth, duration or velocity of flood waters or a reduction in warning times) for other properties within the flood plain (ie. by maintaining the existing hydraulic envelope through road placement and stormwater design). The floor levels of any habitable rooms of a proposed building are a minimum of 250mm above the 1 in 100 flood level.

4.7.3 OV7A and OV7C – 15 Metre Height Restriction and ANEF Noise Overlay

As the site is situated within the area affected by the Amberly Airbase, a number of specific overlays affect the site. The location of the site with respect to height restrictions has been indicated below in Figure 3.



FIGURE 4:

Extent of 20 – 25 ANEF Contour identified in Council's OV7C Overlay

Given that all new residential allotments will be located outside of the extent of the 20 – 25 ANEF contour, no further consideration of this overlay has been given in this report.

To this end, the proposed development is deemed to comply with the relevant overlay codes specified in Council's scheme.

4.8 SOUTH EAST QUEENSLAND REGIONAL PLAN

The site is located within the urban footprint under the South East Queensland Regional Plan. The site is not located in a Major Development Area. In this regard, the proposed subdivision is not affected by the regulatory provisions of the South East Queensland Regional Plan.

4.9 STATE PLANNING POLICIES

4.9.1 SPP 1/02 – Development in the Vicinity of Certain Airports and Aviation Facilities

The site is located within a 3 kilometre radius of the Amberley Airbase. Nonetheless, given that the site is situated outside of the 20 ANEF contour and does not affect operational air space, no further consideration of this SPP is justified as part of this application.

4.9.2 Other State Planning Policies

No other state planning policies relate to the site.

5.0 CONCLUSION

From the preceding information, it can be concluded that the proposed subdivision of the subject land for residential allotments is consistent with the objectives of Ipswich City Council's planning scheme. The development is within the ambit of land use intended for the Residential Low Density Zone. The development complies with all relevant codes nominated within the planning scheme and should therefore be approved.

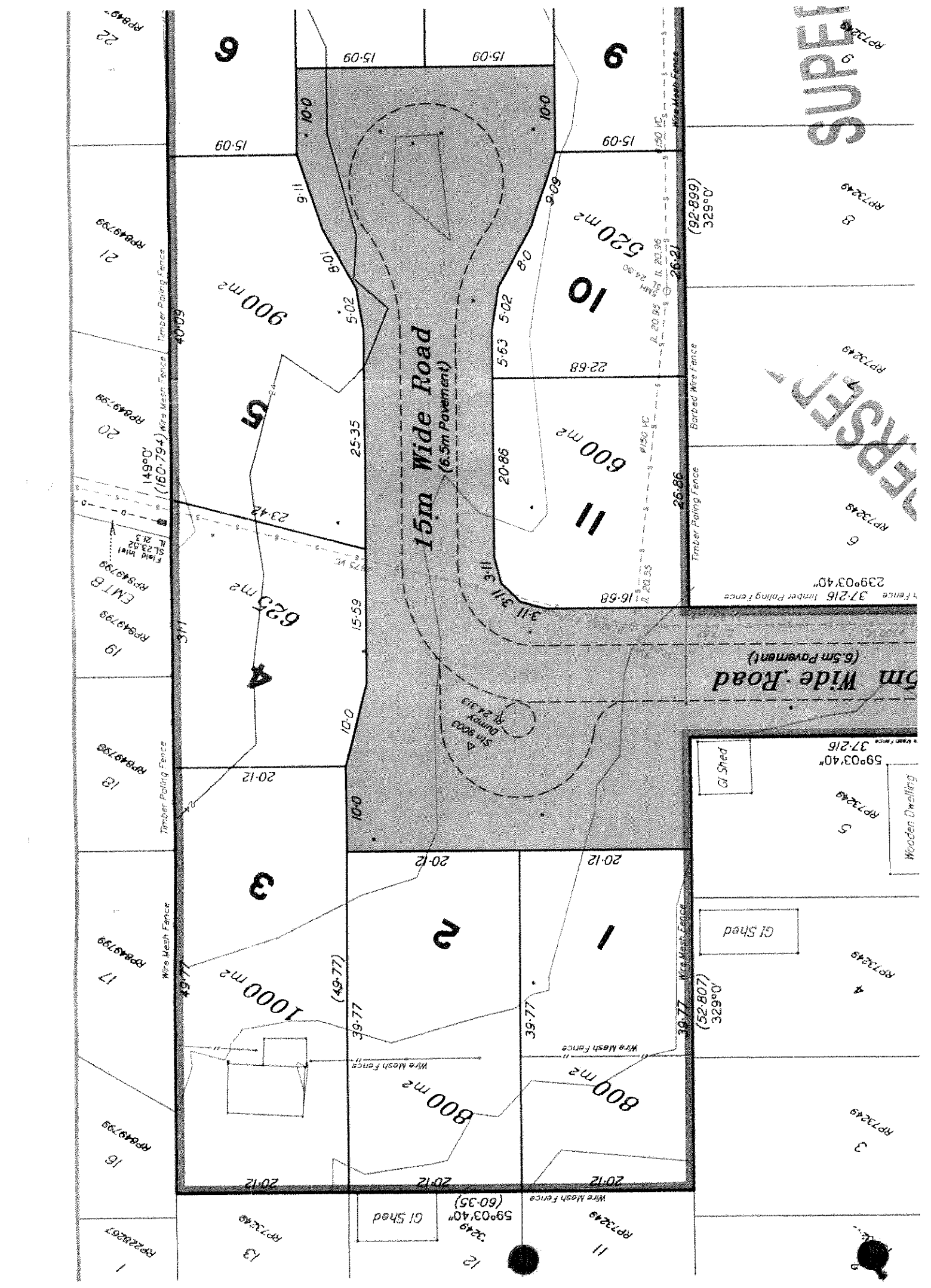


FIGURE 5:
Subdivision Layout Plan



SUPER

PERSEPER



9

8

6

Fence 37.216 Timber Paling Fence

5m Wide Road (6.5m Pavement)

59°03'40" 37.216

Wooden Dwelling

4

3

2

9

15-09

520 m²

10

600 m²

11

Timber Paling Fence

Barbed Wire Fence

(92.899) 329°0'

6

15-09

900 m²

5

625 m²

4

3

1000 m²

16

13

2

1

800 m²

12

59°03'40" (60.35)

GI Shed

Wire Mesh Fence

Wire Mesh Fence

Wire Mesh Fence

GI Shed

GI Shed

GI Shed

RP649799

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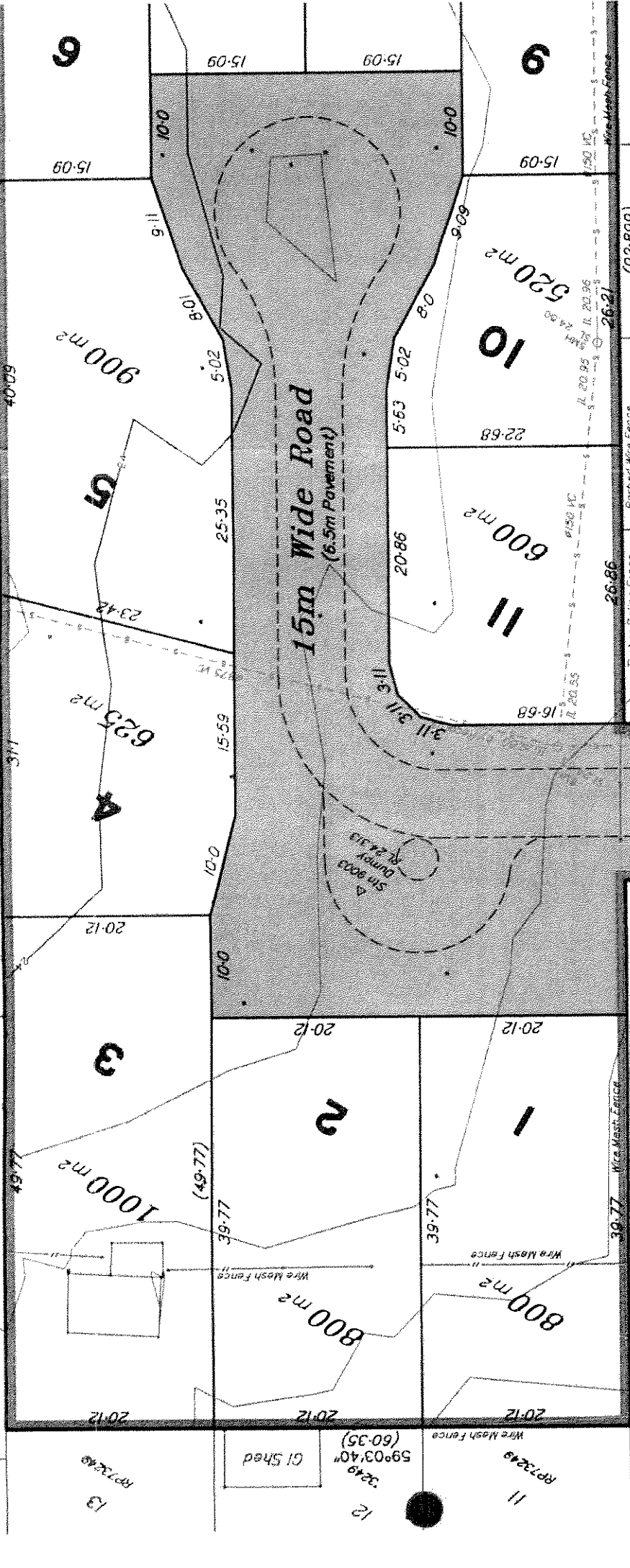
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59°03'40" (60.35)

GI Shed

Wire Mesh Fence

Wire Mesh Fence

Wire Mesh Fence

GI Shed

GI Shed

GI Shed

RP649799

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PCL XL error

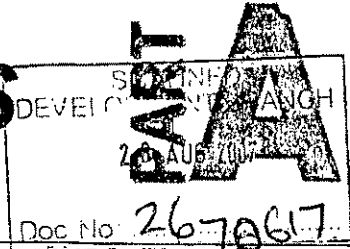
Subsystem: GE_VECTOR

Error: GEEmptyClipPath

Warning: IllegalMediaSize

Form 1 Development Application idas

Common details



The completion of all **applicable** questions on Part A is **mandatory** for all applications. Part A must be accompanied by the completed IDAS Assessment Checklist if required, and by one (1) or more other completed parts of the Form as required. For more information on the parts of the Form refer to www.ipa.qld.gov.au. Any information requested in the form may be provided in an attachment to the application. For further information about completing the following details, refer to **Guide 1**.

<p>Description of land</p> <p>All land the subject of the application, must be identified. However, a description of the land is not required in relation to a mobile or temporary Environmentally Relevant Activity (ERA).</p> <p>Advice for completing Q2 - Q2 applies if development is proposed within a water body or watercourse.</p> <p>Advice for completing Q3 - Most land can be identified by a lot on plan description. These details can be obtained from title documents or through the local government.</p> <p>However, if the land on which the development is proposed does not have a lot on plan description (i.e. the development is proposed in a water body or watercourse) provide -</p> <p>(i) the lot on plan description for the adjoining/adjacent land; or</p> <p>(ii) GPS coordinates where there is no adjoining/adjacent land (eg. in Moreton Bay).</p> <p>Advice for completing Q7 - Q7 does not apply if the development is within a water body or watercourse.</p> <p>Advice for completing Q8 - Q8 applies if development is within a local government area.</p> <p>Note: Areas below high water mark are not within a local government's area unless provided for under the Local Government Act 1993.</p> <p>Advice for completing Q9 - Q9 applies if development is on strategic port land or a strategic port land tidal area. For more details refer to Guide 11.</p>	<p>1. Street address: <i>(including house number, street name, suburb/locality name & postcode)</i> <i>(if applicable)</i></p> <p style="border: 1px solid black; padding: 2px;">70A Chubb Street, One Mile</p> <p>2. Name of water body or watercourse, within which the development is proposed: <i>(if applicable)</i></p> <p style="border: 1px solid black; padding: 2px;">NA</p> <p>3. Lot on plan description (eg. Lot 123 on RP 4567) / GPS coordinates:</p> <p style="border: 1px solid black; padding: 2px;">Lot 14 on RP73249</p> <p>4. The above description is for: <i>(tick applicable box)</i></p> <p><input checked="" type="checkbox"/> (i) the land on which the development is proposed; or</p> <p><input type="checkbox"/> (ii) the land adjoining the water body or watercourse, within which the development is proposed; or</p> <p><input type="checkbox"/> (iii) the water body or watercourse.</p> <p>5. Shop / tenancy number: 6. Storey / level: 7. Total area of land: <i>(m² or ha)</i>:</p> <p style="border: 1px solid black; padding: 2px;">NA NA 1.032 ha</p> <p>8. Local government area in which the land is situated: <i>(eg. Esk, Harvey Bay, Woocoo etc.)</i> <i>(if applicable)</i></p> <p style="border: 1px solid black; padding: 2px;">Ipswich City</p> <p>9. Port authority for the strategic port land or strategic port land tidal area on which the development is proposed: <i>(eg. Port of Brisbane, Port of Townsville)</i> <i>(if applicable)</i></p> <p style="border: 1px solid black; padding: 2px;">NA</p>
<p>Proposal details</p> <p>If there is insufficient room available, details may be provided in an attachment to the application.</p>	<p>10. Existing use of the land: <i>(eg. vacant, single house, shop etc.)</i></p> <p style="border: 1px solid black; padding: 2px;">Vacant</p> <p>11. Proposed use of the land: <i>(eg. 6 unit apartment building, 30 lot residential subdivision, ERA for aquaculture in ponds with a total area of 7 ha for which wastes are released into waters etc.)</i></p> <p style="border: 1px solid black; padding: 2px;">12 lot residential subdivision</p>
<p>Other applicable parts of Form 1</p> <p>Part A must always be accompanied by other completed parts of Form 1. For information about when a part of Form 1 may apply refer to Guide 1.</p>	<p>12. Other parts of Form 1 completed as part of this application: <i>(eg. Part D, Part I, etc)</i></p> <p style="border: 1px solid black; padding: 2px;">Forms F and IDAS Assessment Checklist</p>
<p>Applicant details</p> <p>Clearly identify who is making the application. The applicant need not be the owner of the land.</p> <p>When signing and lodging this application</p> <p>The applicant is responsible for ensuring the information provided is correct. The assessment manager, any referral agency & the Chief Executive <i>(where applicable)</i> will rely on this information when assessing and deciding the application.</p> <p>If the applicant is a company - a contact person must be shown.</p>	<p>13. Applicant's name:</p> <p style="border: 1px solid black; padding: 2px;">Ipswich Ideal Pty Ltd</p> <p>14. Contact number:</p> <p style="border: 1px solid black; padding: 2px;">0412 788 532</p> <p>15. Contact person:</p> <p style="border: 1px solid black; padding: 2px;">Daniel Willis</p> <p>16. Facsimile number/e-mail address:</p> <p style="border: 1px solid black; padding: 2px;">5492 8826</p> <p>17. Postal address:</p> <p style="border: 1px solid black; padding: 2px;">PO Box 7044, Sippy Downs QLD 4556</p> <p>18. Signature: <i>[Handwritten Signature]</i> 19. Date:</p> <p style="border: 1px solid black; padding: 2px;">ACN 123 771 559 6.8.07</p>

Land owner's consent (if applicable)
 Section 3.2.1(3) of the IPA prescribes that an application must contain, or be supported by, the written consent of the land owners, if the application involves:
 (i) a material change of use;
 (ii) reconfiguration of a lot;
 (iii) work on land below high-water mark & not within a canal as defined under the *Coastal Protection and Management Act 1995*; or
 (iv) work on rail corridor land defined under the *Transport Infrastructure Act 1994*.
 Section 3.8.1(2)(a) of the IPA provides that landowner's consent is not required for a mobile or temporary ERA.
 For more information refer to Guide 1.

20. Land owner's consent to the making of this application:

Name	Signature	Date
(i) Ipswich Ideal Pty Ltd	[Redacted]	6.8.07
(ii) [Redacted] (Director)	[Redacted]	6.8.07
(iii) [Redacted] (Director)	[Redacted]	6/8/07
(iv)		
(v)		

Resource entitlement (if applicable)
 Section 3.2.1(5) of the IPA requires evidence of resource entitlement be given for applications that involve a prescribed State resource.
 Section 3.2.1(10)(a)(ii) of the IPA prescribes that an application cannot be taken to be properly made without evidence of the resource entitlement.
Advice for completing Q21 & 22
 Refer to schedule 10 of the *Integrated Planning Regulation 1998* that prescribes the nature of evidence required by the State in support of the lodging of this development application.

21. Does this application involve a State resource prescribed under a regulation (other than involving quarry material on State coastal land under the *Coastal Protection and Management Act 1995*)?
 NO - go to Q24 YES - go to Q22
22. This application is accompanied by evidence: (tick applicable box)
 (i) of the allocation of, or entitlement to, the resource - attach evidence and go to Q23(vi)
 (ii) the chief executive of the department administering the resource is satisfied the development is consistent with an allocation of, or entitlement to, the resource - go to Q23
 (iii) the chief executive of the department administering the resource is satisfied the development application may proceed in the absence of an allocation of, or entitlement to, the resource - go to Q23
23. Evidence of the resource entitlement:
 (i) Resource entitlement / authority details
 [Text Box]
 (ii) Name of delegated officer
 [Text Box]
 (iii) Position of delegated officer
 [Text Box]
 (iv) Signature of delegated officer
 [Text Box]
 (v) Date
 [Text Box]
 (vi) Expiry date of evidence (if applicable)
 [Text Box]
 (vii) Official stamp of the department administering the resource (if applicable)
 [Large Empty Box]

Advice for completing Q23
 The information in (i) - (v) is mandatory if evidence is required under Q22 (ii) or (iii) above.
 The official stamp of the Department of Natural Resources, Mines and Water is mandatory where the application involves any water or riverine quarry material under the *Water Act 2000*.
 Section 3.2.1(5A) allows the resource manager to limit the time the evidence may be used. Q23 (vi) must be completed if the evidence is time limited.

Assessment triggers
 This checklist does not apply if the application requires the completion of Parts A and B of the Form only. It must be completed for all other applications.

24. Is the IDAS Assessment Checklist completed and attached to this application?
 YES NO - the assessment manager may refuse to accept this application on the grounds that the application has not been properly made

Plans / drawings / reports
 An application should be accompanied by details to support the proposal & enable the assessment manager, referral agencies and any person viewing the application during public scrutiny or public notification to understand the scope of the proposal and any potential impact.

25. Plans/drawings/reports accompanying this application:

Plan / Drawing / Report Number	Title	Date
(i)	refer covering letter	
(ii)		
(iii)		
(iv)		

PLEASE NOTE: The assessment manager may refuse to accept an application that, at the time of lodgement, fails to provide all applicable information required by Part A and any other relevant part of Form 1.

OFFICE USE ONLY (applicable to assessment manager's)

FEE (\$)	DATE RECEIVED	RECEIVING OFFICER'S NAME/S	REFERENCE NUMBER/S
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Notification of Engagement of Private Certifier (Optional format)
 To _____ Council, I have been engaged as the private certifier for the building work referred to in this application.
 Date of engagement: / / Accreditation Number: _____ Name: _____ Signature: _____

Form 1 Development Application

idas

Reconfiguring a lot

PART F

Completion of **all applicable questions** on Part F is **mandatory** for all applications involving the reconfiguring of a lot (including freehold subdivision, community title subdivision, subdivision by lease, etc.).

Nature of the application

A development permit authorises development to occur, while a preliminary approval is a step in the approval process and does not authorise development to occur.

1. This application is for: (tick one (1) or both if applicable)

Development permit - provide details below eg. stage 1: freehold subdivision of 25 lots, realignment of a boundary, creation of an access easement)

Subdivision into 11 residential allotments

AND / OR

Preliminary approval - provide details below eg. stages 2, 3 and 4: freehold subdivision of 75 lots, realignment of a boundary, creation of an access easement)

The subject land

The information requested in Q2 & 3 is necessary for statistical and planning purposes.

2. Number of existing lots:

1

3. Total area of land in application: (if staged, total area of the land in this stage)

1.032 ha

4. How the subject land is identified in the planning scheme: (name the zone, precinct etc.)

Residential Low Density Zone, Sub Area RL2

5. Current use of the land: (if vacant, also identify the previous use)

Vacant

6. Are there buildings or structures existing on the land?

NO

YES - complete Q 7

7. Indicate which one of the following circumstances applies:

All existing buildings and structures on the land will be demolished as part of the development / redevelopment of the site; or

Some existing buildings and structures on the land are proposed to be retained as part of the development / redevelopment of the site - indicate on the plans prepared in response to Question 6 above, those buildings or structures proposed to be retained

8. Existing services on the land: (eg. water & sewerage) - attach plan identifying location if appropriate)

Water supply, sewerage, electricity, telecommunications

9. Are there any existing easements over the land?

NO

YES - attach plan identifying easement location & purpose

The proposal

The information requested in Q10-13 is necessary for statistical and planning purposes.

10. Total area of land in the development permit minus any balance area

1.032 hectares

11. Number of proposed lots:

11

12. Number of additional residential lots proposed in development permit: (if applicable)

10

- 13. Estate name & stage number: *(applicable if the application is for a stage or stages of an overall subdivision proposal)*
- 14. Area of land to be contributed for community purposes: *(if applicable)*
- 15. Length of new road to be constructed: *(if applicable)*


PLEASE NOTE

This application cannot be accepted unless accompanied by Part A of Form 1.

The assessment manager may refuse to accept an application that, at the time of lodgement, fails to provide all applicable information requested by Part A and any other relevant part of Form 1.

OFFICE USE ONLY *(applicable to assessment manager)*

DATE RECEIVED		REFERENCE NUMBER/S	
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Form 1 Development Application

IDAS Assessment Checklist

(Formerly the "Referrals Checklist")

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IMPORTANT NOTE FOR ALL APPLICANTS:

1. This checklist was formerly referred to as the "Referrals Checklist". Some of the 'Guides' to using the IDAS Application Forms continue to refer to this document as the "Referrals Checklist". The name of this checklist was changed from 25 July 2005 to more accurately describe its function.
2. Under the IPA and IDAS framework, an application may require assessment by the local Council and/or certain Queensland State entities (e.g. Environmental Protection Agency, Dept. of Natural Resources and Water, Queensland Heritage Council etc.).
3. This checklist is provided to assist applicants to determine when an application requires assessment by a Queensland State entity and may also assist the applicant to determine the assessment manager for the application.
4. Therefore, the completion of **all questions** in section 1 of this checklist is **mandatory** for all applications (other than those requiring the completion of Parts A & B only).
5. It is the responsibility of the applicant to accurately complete this checklist.
6. Section 2 is mandatory only if the proposed development is located in any part of a wild river area declared under the *Wild Rivers Act 2005*.
7. Depending on the nature of the application, an applicable State entity may be either the assessment manager or an IDAS referral agency for the application.
8. The assessment manager for the application will rely on the information provided in this checklist (as well as any material lodged in support of the application) to identify any applicable referral agencies for the application in the Acknowledgement Notice. The assessment manager will also rely on this information when identifying if the application triggers referral coordination².
9. To assist you in answering the following questions a series of guides are available free from the IPA website www.ipa.qld.gov.au. Guide 25 explains the role of the IDAS Assessment Checklist in the IDAS application process, and its relationship to the Form 1 development application.
10. Any other parts of Form 1 that this checklist requires to be completed are available from the Council or the applicable State entity, or can be downloaded free from www.ipa.qld.gov.au.
11. Section 3 provides advice about the referrals that can be required for applications for building work assessable against the *Building Regulation 2006*.

SECTION 1 - STATE ASSESSMENT (completion mandatory)

Note: The following state assessment triggers apply to development other than for building work assessable against the *Building Regulation 2006*.

Environmentally relevant activity

For more information refer to [Guide 4](#).

Unless you answered "none of the above" to Q1, the application requires assessment by the administering authority³.

If an entity, other than the administering authority, is the assessment manager for the application, the administering authority is a concurrence agency for the application in relation to this matter.

Note: An application involving ERA 19 and/or 20 will also require completion of Part K₁ of Form 1 for approval where an allocation under the *Water Act 2000* is required.

1. The application involves: (tick applicable boxes)

- (i) an environmentally relevant activity (ERA) for which a code for environmental compliance has **not** been made - complete Part G of Form 1
- (ii) a mobile or temporary ERA for which a code for environmental compliance has **not** been made - complete Part G of Form 1
- (iii) none of the above

Continued overleaf

PLEASE NOTE: The assessment manager may refuse to accept an application, which, at the time of lodgement, fails to provide the completed IDAS Assessment Checklist (if applicable).

OFFICE USE ONLY (applicable to assessment manager)

DATE RECEIVED		REFERENCE NUMBER/S	
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1 The assessment manager is responsible for assessing and deciding an IDAS application. The assessment manager for an application is prescribed in schedule 8A of the IPA.
 2 For additional information refer to Guide 6 "Does my application trigger the referral coordination process?"
 3 The 'administering authority' may be either the Environmental Protection Agency, the relevant local government (for a devolved ERA) or the Queensland Department of Primary Industries and Fisheries (for a delegated ERA).

State-controlled road matters
 For more information refer to Guide 3.
 Unless you answered "none of the above" to Q2, the application triggers referral to the Department of Main Roads (DMR) as a referral agency.
 In certain circumstances DMR will be an advice agency, while in other circumstances DMR will be a concurrence agency.
 Schedule 2 of the IP Regulation will assist you to determine where DMR is an advice or concurrence agency for the application.

2. The application involves: *(tick applicable boxes)*
- (i) development on land **contiguous**⁴ to a State controlled road and for -
 - (a) **material change of use** assessable against the planning scheme;
 - (b) **reconfiguring a lot** unless -
 - the total number of lots is not increased; and
 - the total number of lots abutting the State-controlled road is not increased;
 - (c) **operational work** (not associated with a material change of use assessable against the planning scheme or reconfiguring a lot mentioned in (b) above)-
 - associated with access to a State-controlled road; or
 - for filling or excavation; or
 - involving the redirection or intensification of site stormwater from the land, through a pipe with a cross-sectional area greater than 625 cm² that directs stormwater to a State-controlled road.
 - (ii) development on land **not contiguous** to a State-controlled road and -
 - (a) **material change of use** -
 - assessable against the local government's planning scheme; and
 - mentioned in schedule 5 of the IP Regulation and exceeding the thresholds set by that schedule;
 - (b) **reconfiguring a lot** for a purpose mentioned in schedule 5 of the IP regulation and exceeding the thresholds set by that schedule;
 - (c) **operational work** (not associated with a material change of use assessable against the planning scheme or reconfiguring a lot mentioned in (b) above)-
 - assessable against the local government's planning scheme; and
 - mentioned in schedule 5 of the IP Regulation and exceeding the thresholds set by that schedule.
 - (iii) none of the above

Clearing vegetation
 For more information refer to Guide 12.
 Unless you answered "none of the above" to Q3, the application requires assessment by the Department of Natural Resources and Water (NRW).
 If an agency other than NRW is the assessment manager for the application, NRW is a concurrence agency for the application in relation to this matter.
 If you ticked Q3(i) or (ii), your application requires referral to NRW for assessment regardless of whether vegetation clearing is proposed or not.

3. The application involves: *(tick applicable boxes)*
- (i) **material change of use** -
 - (a) assessable against the planning scheme;
 - (b) on a lot containing -
 - a category 1, 2 or 3 area shown on a property map of assessable vegetation; or
 - if there is no property map of assessable vegetation for the lot - remnant vegetation;
 - (c) where the existing use of the land is a rural or environmental use; and
 - (d) where the size of the land is 2 hectares or larger - *complete Part J of Form 1*
 - (ii) **reconfiguring a lot** -
 - (a) on a lot containing a category 1, 2 or 3 area shown on a property map of assessable vegetation or, if there is no property map of assessable vegetation for the lot, remnant vegetation;
 - (b) where the size of the lot before the reconfiguration is 2 hectares or larger;
 - (c) where 2 or more lots are created; and
 - (d) where the size of any lot created is 25 hectares or smaller - *complete Part J of Form 1*
 - (iii) **operational work** -
 - (a) for the clearing of native vegetation where the vegetation clearing is made assessable under Schedule 8 of the IPA; and
 - (b) not associated with a material change of use assessable against the planning scheme mentioned in (i) or reconfiguring a lot mentioned in (ii) - *complete Part J of Form 1*
 - (iv) none of the above.

Strategic port land
 For more information refer to Guide 11.
 If you ticked (i) - the relevant Port Authority is the assessment manager for the application.
 If you ticked (ii) Queensland Transport is a concurrence agency for the application.

4. The application involves:
- (i) development on strategic port land as defined in the *Transport Infrastructure Act 1994* (TI Act) - *complete Part I of Form 1*
 - (ii) a **material change of use** that is **inconsistent** with the land use plan approved under the TI Act for the strategic port land - *complete Part I of Form 1*
 - (iii) none of the above

⁴ Land contiguous to a State-controlled road is defined in schedule 14 of the IP Regulation to mean land - if part of the land is within 100m of the State-controlled road; or that is part of a future State-controlled road.

<p>Acid sulfate soils For more information refer to Guide 10. Unless you answered "none of the above" to Q5, the application requires assessment by Department of Natural Resources and Water (NRW). If an agency other than NRW is the assessment manager for the application, NRW is an advice agency for the application in relation to this matter.</p>	<p>5. The application involves development on land situated in an identified⁵ local government area and where the surface of the land is: <i>(tick applicable box)</i></p> <p><input type="checkbox"/> (i) below 20m AHD⁶ and the development will involve the excavation of 1000m³ or more of soil or sediment at or below 5m AHD, or</p> <p><input type="checkbox"/> (ii) at or below 5m AHD and the development will involve filling the site with 1000m³ or more of material</p> <p><input checked="" type="checkbox"/> (iii) none of the above</p>
<p>Major hazard facilities or possible major hazard facilities For more information refer to Guide 17. If you answered "YES" to Q6, the application requires assessment by the Department of Emergency Services (DES). If an agency other than DES is the assessment manager for the application, DES is a concurrence agency for the application in relation to this matter.</p>	<p>6. Does the application involve a material change of use for a major hazard facility or possible major hazard facility as defined under the <i>Dangerous Goods Safety Management Act 2001</i>?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Part L of Form 1</p>
<p>Water related development under the Water Act 2000 For more information about items (a) – (f), refer to Guide 15. For more information about item (g), refer to Guide 14 Does my application involve assessment of a referable dam? Unless you answered "none of the above" to Q7, the application requires assessment by the Department of Natural Resources and Water (NRW). If an agency other than NRW is the assessment manager for the application, NRW is a concurrence agency for the application in relation to this matter.</p>	<p>7. The application involves:</p> <p><input type="checkbox"/> (i) operational work, for taking or interfering with water under the <i>Water Act 2000</i>, that is: <i>(tick applicable box/es)</i></p> <p><input type="checkbox"/> (a) in a watercourse, lake or spring, (eg. a pump, gravity diversion, stream re-direction, weir or dam) - complete Part K₁, K₂, K₄, K₆, or K₉ of Form 1 whichever is applicable;</p> <p><input type="checkbox"/> (b) for an artesian bore anywhere in the State, no matter what the use - complete Part K₁ of Form 1;</p> <p><input type="checkbox"/> (c) for a subartesian bore, in declared subartesian area⁷, or in a certain area covered by a water resource plan, for use for purposes other than stock and/or domestic use - complete Part K₁ of Form 1;</p> <p><input type="checkbox"/> (d) for a subartesian bore, in certain declared subartesian areas, for use for stock and/or domestic purposes - complete Part K₁ of Form 1;</p> <p><input type="checkbox"/> (e) for taking overland flow water in certain areas covered by a water resource plan - complete Part K₂ of Form 1;</p> <p><input type="checkbox"/> (f) for interfering with overland flow water in a drainage and embankment area - complete Part K₁₀ of Form 1</p> <p><input type="checkbox"/> (g) for constructing a referable dam⁸ or works that will increase the storage capacity of a referable dam by more than 10% - complete Part K₃ of Form 1; or</p> <p><input checked="" type="checkbox"/> (ii) none of the above.</p>
<p>Removal of quarry material from a watercourse For more information refer to Guide 16. If you answered "YES" to Q8, the application requires assessment by the Department of Natural Resources and Water (NRW). If an agency other than NRW is the assessment manager for the application, NRW is a concurrence agency for the application in relation to this matter. <i>Note: Part G of Form 1 is required to be completed as the activity of removing quarry material from a watercourse is also an Environmentally Relevant Activity (ERA).</i></p>	<p>8. Does the application involve development for the removal of quarry material from a watercourse⁹ requiring an allocation notice under the <i>Water Act 2000</i>?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Parts K₇ and G of Form 1</p>

5 The identified local government areas are: Ayruckun, Bowen, Brisbane, Broadsound, Bundaberg, Burdekin, Burke, Burnett, Caboolture, Cairns, Calliope, Caloundra, Cardwell, Carpentaria, Cook, Coobool, Douglas, Fitzroy, Gladstone, Gold Coast, Hervey Bay, Hinchinbrooke, Isis, Johnstone, Livingstone, Logan, Mackay, Maroochy, Maryborough, Mirium Vale, Morningson, Noosa, Pine Rivers, Redcliffe, Redland, Rockhampton, Sarina, Thuringowa, Tiaro, Torres, Townsville, Whitsunday.

6 Australian Height Datum (AHD).

7 The declared ground water areas are listed in [Guide 13 Development in a declared catchment area](#).

8 Referable dam is defined under the *Water Act 2000*.

9 Watercourse is defined in sch 10 of the IPA.

<p>Operational work that is tidal work or work in coastal management district For more information refer to Guide 18. For more information about prescribed tidal work in local government tidal areas refer to Guide 24. Unless you answered "none of the above" to Q9, the application requires assessment by the Environmental Protection Agency (EPA). If an agency other than EPA is the assessment manager for the application, EPA is a concurrence agency for the application in relation to this matter. Local government is the assessment manager for all prescribed tidal work.</p>	<p>9. The application involves operational work that is: (tick the applicable boxes)</p> <p><input type="checkbox"/> (i) tidal work¹⁰ as defined under the <i>Coastal Protection and Management Act 1995</i> (the Coastal Act) that is not prescribed tidal work – complete Part M of Form 1; or</p> <p><input type="checkbox"/> (ii) tidal work that is prescribed tidal work¹¹ other than in a canal¹² – complete Part P of Form 1; or</p> <p><input type="checkbox"/> (iii) carried out within a coastal management district under the Coastal Act and for – complete Part M of Form 1 if any boxes (a) to (i) below are ticked.</p> <p><input type="checkbox"/> (a) constructing or installing works in a watercourse between MHWS and HAT (i.e. other than those works in tidal water) where the development has been determined not to be assessable against the <i>Water Act 2000</i>;</p> <p><input type="checkbox"/> (b) constructing a canal¹² intended to be connected to tidal waters;</p> <p><input type="checkbox"/> (c) constructing an artificial waterway;</p> <p><input type="checkbox"/> (d) reclaiming land under tidal water;</p> <p><input type="checkbox"/> (e) disposing of dredge spoil or other solid waste material in tidal water;</p> <p><input type="checkbox"/> (f) interfering with quarry material on State coastal land above high-water mark;</p> <p><input type="checkbox"/> (g) draining or allowing drainage or flow of water or other matter across State coastal land above high-water mark;</p> <p><input type="checkbox"/> (h) removing or interfering with coastal dunes on land, other than State coastal land, that is in an erosion prone area and above high-water mark;</p> <p><input type="checkbox"/> (i) constructing a bank or bund wall to establish a ponded pasture on land, other than State coastal land, above high-water mark; or</p> <p><input checked="" type="checkbox"/> (iv) none of the above.</p>
<p>Operational work below high water mark For more information refer to Guide 18. For more information about prescribed tidal work in local government tidal areas refer to Guide 24. Unless you answered "none of the above" to Q10, the application triggers referral to Queensland Transport (QT) (Maritime Safety Qld) as a concurrence agency. Local government is the assessment manager for all prescribed tidal work.</p>	<p>10. The application involves operational work that is: (tick the applicable boxes)</p> <p><input type="checkbox"/> (i) tidal work¹³ as defined under the <i>Coastal Protection and Management Act 1995</i> (the Coastal Act) that is not prescribed tidal work – complete Part M of Form 1; or</p> <p><input type="checkbox"/> (ii) tidal work that is prescribed tidal work¹⁴ – complete Part P of Form 1; or</p> <p><input type="checkbox"/> (iii) carried out within a coastal management district¹⁵ under the Coastal Act and for -</p> <p><input type="checkbox"/> (a) disposing of dredge spoil or other solid waste material in tidal water – complete Part M of Form 1;</p> <p><input type="checkbox"/> (b) reclaiming land under tidal water – complete Part M of Form 1; or</p> <p><input type="checkbox"/> (c) constructing a canal¹², if the canal is associated with reconfiguring a lot – complete Part M of Form 1;</p> <p><input checked="" type="checkbox"/> (iv) none of the above.</p>
<p>Coastal management For more information refer to Guide 18. Unless you answered "none of the above" to Q11, the application requires assessment by the Environmental Protection Agency (EPA). If an agency other than EPA is the assessment manager for the application, EPA is a concurrence agency for the application in relation to this matter.</p>	<p>11. The application involves: (tick the applicable boxes)</p> <p><input type="checkbox"/> (i) a material change of use assessable under a planning scheme involving operational work carried out completely or partly in a coastal management district¹⁵</p> <p><input type="checkbox"/> (ii) a material change of use assessable under a planning scheme involving building work, carried out completely or partly in a coastal management district that is -</p> <ul style="list-style-type: none"> • the construction of a new premises with a GFA¹⁶ of at least 1000m² • the enlargement of the GFA of existing premises by more than 1000m² <p><input type="checkbox"/> (iii) reconfiguring a lot assessable under schedule 8 of the IPA where the land is situated completely or partly in a coastal management district</p> <p><input type="checkbox"/> (iv) reconfiguring a lot¹⁷ assessable under schedule 8 of the IPA and in connection with the construction of a canal¹² – complete Part M of Form 1</p> <p><input checked="" type="checkbox"/> (v) none of the above</p>

10 Tidal work is defined in sch 10 of the IPA.

11 Prescribed tidal work is defined in the *Coastal Protection and Management Regulation 2003* and includes certain tidal works completely or partly within a local government tidal area.

12 Canal means canal as defined under the *Coastal Protection and Management Act 1995*

13 Tidal work is defined in sch 10 of the IPA.

14 Prescribed tidal work is defined in the *Coastal Protection and Management Regulation 2003* and includes certain tidal works completely or partly within a local government tidal area.

15 Coastal management district is defined in sch 10 of the IPA and means a coastal management district under the *Coastal Protection and Management Act 1995*, other than an area declared as a coastal management district under section 47(2) of that Act.

16 GFA is defined in sch 14 of the IPA to mean the gross floor area. For a definition of how to calculate GFA, go to the planning scheme against which the application is being assessed.

17 Under s117 of the *Coastal Protection and Management Act 1995*, an application for reconfiguration, where the reconfiguration is associated with the construction of an artificial waterway, must be accompanied by the application for the operational works to construct the artificial waterway.

<p>Development within the limits of a port</p> <p>For more information refer to <u>Guide 18</u>. For information about prescribed tidal work refer to <u>Guide 24</u>.</p> <p>If you answered "YES" to Q12, the application triggers referral to the <u>Port Authority</u>.</p> <p>The Port Authority is a concurrence agency if the development is -</p> <ul style="list-style-type: none"> • within 200m of a shipping channel or an entry and exit shipping corridor for the port • within 1000m of a swing basin, a commercial shipping wharf, a mooring, anchorage or spoil grounds; • within 1000m of a planned port facility identified in a land use plan approved under the <i>Transport Infrastructure Act 1994</i>. <p>In all other situation the Port Authority is an advice agency.</p>	<p>12. Does the application involve development below high water mark¹⁸ and within the limits of a port under the <i>Transport Infrastructure Act 1994</i>?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Part M of Form 1, or Part P of Form 1 if the work is prescribed tidal work</p>
<p>Marinas</p> <p>For more information refer to <u>Guide 18</u>. For information about whether a marina is prescribed tidal work refer to <u>Guide 24</u>. The local government is the assessment manager for all prescribed tidal work.</p> <p>If you answered "YES" to Q13, the application triggers referral to <u>Queensland Fire and Rescue Service</u> as an advice agency.</p>	<p>13. Does the application involve <i>operational work</i> that is tidal work for a marina¹⁹ with more than 6 vessel berths?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Part M of Form 1, or Part P of Form 1 if the tidal work is prescribed tidal work</p>
<p>Tidal works in strategic port land tidal areas</p> <p>For more information refer to <u>Guide 18</u>.</p> <p>Unless you answered "NO" to Q14, the relevant <u>Port Authority</u> is the assessment manager for the application and the <u>Environmental Protection Agency (EPA)</u> and <u>Queensland Transport (QT)</u> are concurrence agencies for the application.</p>	<p>14. Does the application involve tidal works within a strategic port land tidal area²⁰?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Part M of Form 1</p>
<p>Heritage</p> <p>For further information refer to <u>Guide 19</u>.</p> <p>If you answered "YES" to Q15, the application triggers referral to the <u>Queensland Heritage Council</u> as concurrence agency for the application.</p> <p>Unless you answered "none of the above" to Q15(b), the application involves referral to the <u>Environmental Protection Agency</u> as an advice agency for the application</p>	<p>15. Does the application involve development in a heritage registered place as defined under the <i>Queensland Heritage Act 1992</i>?</p> <p><input checked="" type="checkbox"/> NO</p> <p><input type="checkbox"/> YES - complete Part C of Form 1</p> <p>15(b) The application involves: (tick applicable boxes)</p> <p><input type="checkbox"/> (i) a material change of use assessable against the planning scheme and the lot shares a common boundary with a protected area or registered place under the Queensland Heritage Act 1992;</p> <p><input type="checkbox"/> (ii) reconfiguring a lot if the lot shares a common boundary with a protected area or registered place under the Queensland Heritage Act 1992;</p> <p><input type="checkbox"/> (iii) none of the above.</p>
<p>Declared catchment areas</p> <p>For more information, including a list of the declared catchment areas within Queensland, refer to <u>Guide 13</u>.</p> <p>Unless you answered "none of the above" to Q16, the application requires assessment by the <u>Department of Natural Resources and Water (NRW)</u>.</p> <p>If an agency other than NRW is the assessment manager for the application, NRW is a concurrence agency for the application in relation to this matter.</p>	<p>16. The application is in an area declared to be a catchment area under the <i>Water Act 2000</i> and involves: (tick the applicable box/es)</p> <p><input type="checkbox"/> (i) reconfiguring a lot if any lot resulting from the reconfiguration is less than 16 hectares;</p> <p><input type="checkbox"/> (ii) development assessable against the planning scheme involving the establishment or expansion of a waste water disposal system, other than a disposal system for carrying out an environmentally relevant activity under the <i>Environmental Protection Act 1994</i>;</p> <p><input checked="" type="checkbox"/> (iii) none of the above</p>

18 High water mark is defined in the *Coastal Protection and Management Act 1995* and means the ordinary high water mark at spring tide.

19 Marina is defined in the *Transport Operations (Maritime Pollution) Regulation 1995*.

20 Strategic port land tidal areas are the areas generally 50 metres seaward of high water mark adjacent to strategic port land.

Contaminated land

Applications involving material change of use and/ or reconfiguring a lot may trigger this referral.

For more information refer to Guide 5.

Unless you answered "none of the above" to Q17, the application requires assessment by the Environmental Protection Agency (EPA). If an agency other than EPA is the assessment manager for the application, EPA will be a concurrence agency for the application in relation to this matter.

17. The application involves: *(tick the applicable boxes)*

- (i) **reconfiguring a lot** for which all of part of the premises are –
 - (a) premises mentioned in the IPA, schedule 8, part 1, table 2 –
 - item 5, including the exemption otherwise provided for by paragraph (d);
 - item 6, including the exemption otherwise provided for by paragraph (e); or
 - item 7, including the exemption otherwise provided for a mining activity or petroleum activity; or
 - (b) in an area for which an area management advice has been given for unexploded ordnance - *complete Part N of Form 1*
- (ii) **a material change of use** –
 - (a) made assessable under the IPA, schedule 8, part 1, table 2, items 5 to 7; or
 - (b) assessable against the planning scheme and if all or part of the premises is in an area for which an area management advice has been given for unexploded ordnance - *complete Part N of Form 1*
- (iii) none of the above

Electricity infrastructure

For more information refer to schedule 2of the IP Regulation.

Unless you answered "none of the above" to Q18, the application triggers referral to the agency to which the easement is granted in favour of as advice agency.

18. The application involves: *(tick the applicable boxes)*

- (i) **reconfiguring a lot** where any part of the lot is –
 - subject to an easement in favour of a distribution entity or transmission entity under the *Electricity Act 1994* and the easement is for a transmission grid or supply network under that Act; or
 - situated within 100m of a substation site;
- (ii) **a material change of use**, assessable against a planning scheme and not associated with reconfiguring a lot if –
 - any part of the premises is subject to an easement in favour of a distribution entity or transmission entity under the *Electricity Act 1994* and the easement is for a transmission grid or supply network under that Act; and
 - any structure or work that is the natural and ordinary consequence of the use is, or will be, located wholly or partly in the easement;
- (iii) **a material change of use**, assessable against a planning scheme and not associated with reconfiguring a lot if any part of the premises is situated within 100m of a substation site;
- (iv) **operational work** that is filling or excavation assessable against the planning scheme, not associated with reconfiguring a lot, if –
 - any part of the premises is subject to an easement in favour of a distribution entity or transmission entity under the *Electricity Act 1994* and the work is located wholly or partly in the easement;
 - the work is located wholly or partly within 10m of a substation site;
- (v) none of the above.

Land designated for community infrastructure

Applications involving development on land designated for community infrastructure may trigger this referral.

For more information refer to schedule 2 of the IP Regulation.

If you answered "YES" to Q19, the application requires assessment by the chief executive of the department administering the Act authorising the development for the designated purpose.

If an agency other than the designator is the assessment manager for the application, the designating agency will be a concurrence agency for the application in relation to this matter.

19. Does the application involve development assessable against the planning scheme and on land designated for community infrastructure?

- (i) intended to be supplied by a public sector entity; and
- (ii) on land not owned by or on behalf of the State; and
- (iii) other than development –
 - (a) for the designated purpose; or
 - (b) carried out by, or on behalf of, the designator.
- NO
- YES

SEQ Regional Plan

For more information refer to schedule 2 of the IP Regulation.

Refer to Chapter 2, part 5A and schedule 10 of the Integrated Planning Act 1997, and schedule 2 of the Regulatory Provisions for relevant definitions.

Unless you answered "none of the above" to Q20, the application requires assessment by the Office of Urban Management (OUM).

20. The application involves (tick applicable box/es) -

- (i) a **material change of use** of premises -
 - (a) in a **Major Development Area** in the Urban Footprint for -
 - (i) an **urban activity** -
 - in an area included in a structure plan where the IPA, section 3.1.6 applies;
 - in an area not included in a structure plan where -
 - the IPA, section 3.1.6 applies to the application for the material change of use; or
 - the premises exceeds 10,000m²; or
 - the gross floor area (GFA) on the premises will exceed 10,000m²; or
 - impact assessment is required under the relevant planning scheme
 - (ii) **intensive animal husbandry**; or
 - (iii) residential development involving a **rural residential purpose**
 - (b) in the **Regional Landscape and Rural Production Area** for -
 - (i) an **urban activity** and not specified in section 2.4(2); or
 - (ii) residential development involving a **rural residential purpose** and not specified in section 2.6(2)
 - (c) in the **Rural Living Area** for an urban activity and not specified in section 2.8(2);
 - (d) in the **Investigation Area** for -
 - (i) an **urban activity** and not specified in section 2.10(2);
 - (ii) residential development involving a **rural residential purpose** and not specified in section 2.12(2); or
 - (iii) **intensive animal husbandry**
- (ii) **reconfiguring a lot**-
 - On land in a **Major Development Area** in the Urban Footprint that is:
 - (a) not included in a structure plan; and
 - (b) not specified in section 3.1(2).
- (iii) none of the above

Fisheries matters

For more information refer to schedule 2 of the IP Regulation.

Unless you answered "none of the above" to Q21, the application requires assessment by the Department of Primary Industries and Fisheries (DPI&F).

If an agency other than DPI&F is the assessment manager for the application, DPI&F is a concurrence agency for the application in relation to items (i) - (iv) and an advice agency in relation to item (v).

21. The application involves: (tick the applicable box/es)

- (i) an assessable **material change of use** for aquaculture - complete Part O₁ of Form 1;
- (ii) assessable **operational work** that is the construction or raising of a waterway barrier - complete Part O₃ of Form 1;
- (iii) assessable **operational work** completely or partly within a declared fish habitat area - complete Part O₂ of Form 1;
- (iv) assessable **operational work** that is the removal, destruction or damage of a marine plant - complete Part O₂ of Form 1;
- (v) development assessable under the IPA, schedule 8, part 1, on land that adjoins a declared fish habitat area;
- (vi) none of the above.

Integration of land use and public transport

For more information refer to Guide 23, schedule 8A of the IPA, & schedule 2 of the IP Regulation.

Unless you answered "none of the above", the application triggers referral to QT as a concurrence agency.

22. The application involves: *(tick the applicable boxes)*—

- (i) a **material change of use** assessable against the planning scheme for a purpose mentioned in schedule 13C of the IP Regulation and exceeding the thresholds set by that schedule.
- (ii) **reconfiguring a lot**—
 - (a) on land that is completely or partly within a public transport corridor, and the total number of lots increases;
 - (b) on land that is completely or partly within a future public transport corridor or an airport's public safety area;
 - (c) on land that is within 400m of a public passenger transport facility or a future public passenger transport facility, and the total site area is 5000m² or greater;
 - (d) for a residential purpose within the 25 ANEF contour for an airport;
 - (e) for a residential purpose resulting in 100 or more allotments.
- (iii) **operational work** assessable against the planning scheme, but not associated with a material change of use mentioned in (i) above or reconfiguring a lot mentioned in (ii) above, on land that—
 - (a) is completely or partly within a public transport corridor or a future public transport corridor;
 - (b) will result in work that encroaches into an airport's operational airspace.
- (iv) none of the above.

Railway safety and efficiency

For more information refer to Guide 23, schedule 8A of the IPA & schedule 2 of the IP Regulation.

Unless you answered "none of the above", the application triggers referral to QT as a concurrence agency.

23. The application involves: *(tick the applicable boxes)*—

- (i) a **material change of use** assessable against the planning scheme for a purpose mentioned in schedule 13D of the IP Regulation and exceeding the thresholds set by that schedule.
- (ii) **reconfiguring a lot**—
 - (a) on land that is completely or partly within a future public transport corridor, future railway land or a railway tunnel easement;
 - (b) on land that is within 400m of a Citytrain passenger railway station or a future Citytrain passenger railway station, and the total site area is 5000m² or greater;
 - (c) on land that abuts rail corridor land, commercial corridor land or future railway land, and the total number of lots increases;
 - (d) on land that abuts rail corridor land, commercial corridor land or future railway land and an easement abutting the corridor or future railway land is created;
 - (e) on land that is completely or partly within 100m of, and abutting an approach to, a railway level crossing, and the total number of lots increases;
 - (f) for a residential purpose resulting in 100 or more allotments.
- (iii) **operational work** assessable against the planning scheme, but not associated with a material change of use mentioned in (i) above or reconfiguring a lot mentioned in (ii) above, involving extracting, excavating or filling greater than 50m³, on land that—
 - (a) is completely or partly within rail corridor land or commercial corridor land, and the work is not for rail transport infrastructure or other rail infrastructure;
 - (b) is completely or partly within future railway land, or a railway tunnel easement;
 - (c) abuts rail corridor land, commercial corridor land or future railway land, and the work is within 25m of the railway boundary.
- (iv) none of the above.

Moonie to Brisbane pipeline

For more information refer to schedule 2 of the IP Regulation.

Unless you answered "none of the above", the application triggers referral to the holder of pipeline licence No 1 issued under the Petroleum Act 1923, currently Santos QNT Pty Ltd, for advice.

24. The application involves the easement for the construction or operation of the Moonie to Brisbane strategic pipeline, and involves: *(tick the applicable boxes)*—

- (i) a **material change of use** assessable against the planning scheme and not associated with reconfiguring a lot, and any structure or work will be located wholly or partly in the easement.
- (ii) **reconfiguring a lot**
- (iii) **operational work** assessable against the planning scheme, that is filling, excavation, compaction, drilling, boring or piling not associated with a reconfiguring a lot, and the work is located wholly or partly in the easement.
- (iv) none of the above.

Koala habitat area
 For more information, refer to Guide 26 and schedule 2 of the IP Regulation.
 Unless you answered "none of the above", the application requires referral to the Environmental Protection Agency as a concurrence agency.

25. The application involves: *(tick the applicable boxes)*—
- (i) a **material change of use** of premises in a koala conservation area or koala sustainability area made assessable under a planning scheme, that is not for a domestic activity and will result in –
 - (a) clearing of native vegetation over an area greater than 2500m²;
 - (b) a new building and any reasonably associated structure with a total footprint greater than 1000m²;
 - (c) an extension to an existing building and any reasonably associated structure if the extension has a total footprint greater than 1000m²;
 - (d) extracting gravel, rock or sand from an area greater than 5000m²;
 - (e) excavating or filling an area greater than 5000m²;
 - (f) additional traffic in a koala conservation area or koala sustainability area, between 6p.m. on a day and 6a.m. on the following day.
 - (ii) **reconfiguring a lot** in a koala conservation area or koala sustainability area that will result in –
 - (a) an increased number of lots;
 - (b) clearing of native vegetation over an area greater than 2500m².
 - (iii) **operational work** in a koala conservation area or koala sustainability area made assessable under Schedule 8, Part 1, Table 4, items 1A to 1G *(not associated with reconfiguring a lot mentioned in (ii) above)* that will result in the clearing of native vegetation over an area greater than 2500m².
 - (iv) **operational work** in a koala conservation area or koala sustainability area made assessable under a planning scheme *(not associated with a material change of use mentioned in (i) or reconfiguring a lot mentioned in (ii) above)* that is not for a domestic activity and will result in –
 - (a) clearing of native vegetation over an area greater than 2500m²;
 - (b) extracting gravel, rock or sand from an area greater than 5000m²;
 - (c) excavating or filling an area greater than 5000m².
 - (v) none of the above.

Wild river area
 For more information, refer to Guide 27.
 If you answered YES to Q26, you must also complete section 2 of this checklist. This will enable you to determine if your application can proceed in a wild river area and which referral agency will assess your application against the Wild Rivers Code, or if the proposed development is "prohibited" in a wild river area.
Note: Development can be "prohibited" in a wild river area because the application cannot be accepted by the assessment manager.

26. Does the application involve development in a wild river area declared under the *Wild Rivers Act 2005*?
- NO
 - YES

Preliminary Approval
 If you answered YES to Q27, the application triggers referral to the Department of Local Government, Planning, Sport and Recreation as an advice agency.

27. Does the application involve a development for which preliminary approval is sought under Section 3.1.6 of the *Integrated Planning Act 1997*?
- NO
 - YES

Wetlands
 Domestic activity means the construction or use of a single residence on a lot and any reasonably associated building or structure. Examples of a building or structure that could be reasonably associated with a single residence include: caretaker's residence, granny flat, building or structure used for a home business.
Note: Wetland is defined in the Integrated Planning Regulation 1998.
 Unless you answered "none of the above" to Q28, the application involves referral to the Environmental Protection Agency as an advice agency for the application.

28. The application involves: *(tick the applicable boxes)* -
- (i) a material change of use, other than for a domestic activity, assessable against the planning scheme that is in or within 100m of a wetland;
 - (ii) reconfiguring a lot –
 - In or within 100m of a wetland that will result in
 - (a) more than 10 lots being created; or
 - (b) lots less than 5 hectares;
 - (iii) none of the above

Conservation Estate

Urban purposes is defined in the Integrated Planning Act 1997 as "purposes for which land is used in cities or towns, including residential, industrial, sporting, recreation and commercial purposes, but not including environmental, conservation, rural, natural or wilderness area purposes".

Unless you answered "none of the above" to Q29, the application involves referral to the Environmental Protection Agency as an advice agency for the application.

29. The application involves: (tick the applicable boxes)–

- (i) a material change of use for urban purposes that is in or within 100m of any of the following –
- (a) a protected area, forest reserve, critical habitat or area of major interest under the Nature Conservation Act 1992;
 - (b) a State forest or timber reserve under the Forestry Act 1959;
 - (c) a marine park under the Marine Parks Act 2004;
 - (d) a recreation area under the Recreation Area Management Act 1988;
 - (e) a world heritage area listed under the World Heritage Convention;
 - (f) Brisbane forest park under the Brisbane Forest Park Act 1977.
- (ii) reconfiguring a lot if –
- (a) any part of the lot is situated in, or within 100m of, any of the following –
 - (i) a protected area, forest reserve, critical habitat or area of major interest under the Nature Conservation Act 1992;
 - (ii) a State forest or timber reserve under the Forestry Act 1959;
 - (iii) a marine park under the Marine Parks Act 2004;
 - (iv) a recreation area under the Recreation Area Management Act 1988;
 - (v) a world heritage area listed under the World Heritage Convention; Brisbane forest park under the Brisbane Forest Park Act 1977; and
 - (b) the reconfiguration involves more than 10 lots being created, or any lot resulting from the reconfiguring is less than 5ha;
- (iii) none of the above.

SECTION 2 – ASSESSMENT IN A WILD RIVER AREA
 (completion mandatory if the proposed development is located in a wild river area)

Wild River Area

It is the responsibility of the applicant to determine if the development is proposed in a wild river area.

Information about wild river areas including the geographical location and position of management areas in relation to properties, can be accessed by contacting the Department of Natural Resources and Water (NRW), accessing the department's website www.nrw.qld.gov.au or contacting the department by email on: wild.rivers@nrw.qld.gov.au

Note on Referrals

Referrals for development in a wild river area (other than for agricultural activities and animal husbandry activities) are not changed from the existing referral arrangements.

Notes on development assessable against the Wild Rivers Code

For information regarding development in a wild river area, see the relevant wild river declaration and Guide 27. The relevant wild river declaration will provide information regarding which types of development must be assessed against the Wild Rivers Code, and in some cases which types of development are exempt from wild river requirements.

The notes on development assessable against the Wild Rivers Code in this section of the checklist provide some guidance however this may vary between wild river areas. The relevant declaration will provide the information applying to each wild river area.

Applications for some new developments will not be accepted if the proposed development is in a high preservation area (HPA). Most applications for development activities which may be made including those in a preservation area (PA), must be assessed against and must comply with the Wild Rivers Code where indicated in a relevant wild river declaration.

1. Which wild river area is the development proposed in?

The proposed development is to be located in: (tick the applicable box(es))

- i) a high preservation area (HPA);
- ii) a preservation area (PA);
- iii) a wild river floodplain management area (FMA);
- iv) a wild river nominated waterway;
- v) a designated urban area (DUA).

Environmentally relevant activities (ERAs) in a designated urban area

If you answered YES, your application for an ERA is exempt from any wild river requirements and provided there are no other aspects of this development that require assessment against wild rivers, you do not need to complete the remaining questions in Section 2.

If you answered NO to Q2, please complete the remaining questions in Section 2.

2. Does the proposed development only involve any of the following environmentally relevant activities (ERAs) in a **designated urban area** (as mapped in the relevant wild river declaration)?

- i) An ERA 28 or ERA 14; or
 - ii) A level 2 ERA except ERA 1, 2, 3, 4, 20, 22 or 59.
- NO YES (ensure you have completed Part G of Form 1)

Clearing native vegetation

If YES, there are a limited number of purposes for which an application to clear native vegetation may be accepted in a HPA. See Guide 27 for a list of relevant purposes for which an application may be made in a HPA.

If YES and you ticked Q4 box i) the application may be made and is assessable against the Wild Rivers Code. If YES and you ticked Q4 box ii) the application will not be accepted.

Note: If clearing native vegetation is in a PA, there are no wild river requirements and provided there are no other aspects of this development where wild river requirements apply, do not complete the remaining questions in Section 2.

3. Is the application operational work for clearing native vegetation in a HPA?

- NO YES (ensure you have completed Part J of Form 1)

4. If YES, is the clearing?

- i) clearing regrowth (as defined in the *Vegetation Management Act 1999*) in a registered area of agriculture in a HPA (see Guide 27); or
- ii) in a HPA outside a registered area of agriculture?

<p>Works in tidal areas, coastal management districts and fish habitat areas</p> <p>If you answered YES to Q5, and ticked any boxes in Q6, your application is required to be assessed against and must comply with the Wild Rivers Code.</p> <p>If you answered YES to Q5 and ticked box i) in Q6, your application is required to be referred to the EPA.</p> <p>Note: If specified works are proposed in a local government area, it is prescribed tidal work – the relevant local government will be the assessment manager with the EPA as a concurrence agency</p> <p>If you answered YES to Q5, and ticked box ii) or iii) in Q6, your application requires referral to DPIF.</p> <p>If you answered NO to Q5 and ticked box i) in Q6, the application will not be accepted.</p> <p>If you answered NO to Q5, ticked box ii) in Q6 and the development is necessary to install authorised works or infrastructure where a development permit is not required, or if a required permit is held, the application must be assessed against and must comply with the Wild Rivers Code. Applications for purposes other than specified works or as described above will not be accepted.</p> <p>If you answered NO to Q5 and ticked box iii) in Q6, the application may be made if the works are in a PA. These applications must be assessed against and must comply with the Wild Rivers Code. The application will not be accepted if the development is proposed to be located in a HPA.</p> <p>For more information about specified works refer to <u>Guide 27</u></p>	<p>5. Is the development for specified works? (see definition in the <i>Wild Rivers Act 2005</i> and Guide 27- Development in a wild river area)</p> <p><input type="checkbox"/> NO <input type="checkbox"/> YES</p> <p>6. The application is for one or more of the following:</p> <p><input type="checkbox"/> i) Operational works that is tidal works or works in a coastal management district (<i>ensure you have completed Part M and/or Part P of Form 1</i>); or</p> <p><input type="checkbox"/> ii) Operational works for the removal, destruction or damage of marine plants (<i>ensure you have completed Part O₂ of Form 1</i>); or</p> <p><input type="checkbox"/> iii) Building or operational works in a fish habitat area (<i>ensure you have completed Part O₂ of Form 1</i>).</p>
<p>Residential, commercial or industrial development</p> <p>If you answered YES to Q7, your application is not subject to wild river requirements. Provided there are no other aspects of this development that require assessment against the relevant wild river declaration or Wild Rivers Code, you do not need to complete the remaining questions in Section 2.</p> <p>If you answered NO to Q7 and ticked either box i) or ii) in Q8, the assessing agency is the relevant local government. The application must be assessed against and must comply with the Wild Rivers Code.</p>	<p>7. Is the application for residential, commercial or industrial development in a designated urban area?</p> <p><input type="checkbox"/> NO <input type="checkbox"/> YES</p> <p>8. If NO, does the application for residential, commercial or industrial development involve:</p> <p><input type="checkbox"/> i) a material change of use made assessable in a local government planning scheme (<i>ensure you have completed Part D of Form 1</i>); or</p> <p><input type="checkbox"/> ii) operational works associated with reconfiguring a lot (<i>ensure you have completed Part F of Form 1</i>).</p>
<p>Animal husbandry activities</p> <p>If you answered YES to Q9 your application requires assessment against and must comply with the Wild Rivers Code.</p> <p>The assessing agency is NRW.</p> <p>Note: Applications for animal husbandry activities will not be accepted if proposed in a HPA. For more details and a definition of animal husbandry activities see the <i>Wild Rivers Act 2005</i> and refer to <u>Guide 27</u>.</p>	<p>9. Does the application involve a material change of use for animal husbandry activities (as defined under the <i>Wild Rivers Act 2005</i>) in a PA?</p> <p><input type="checkbox"/> NO <input type="checkbox"/> YES (<i>ensure you have completed Part R of Form 1</i>)</p>
<p>Agricultural activities</p> <p>If you answered YES to Q10, your application requires assessment against and must comply with the Wild Rivers Code.</p> <p>The assessing agency is NRW.</p> <p>Note: Applications for agricultural activities will not be accepted if proposed in a HPA. For more details and a definition of agricultural activities see the <i>Wild Rivers Act 2005</i> and refer to <u>Guide 27</u>.</p> <p>The production of fodder in a PA, and pasture improvement using low impact soil disturbance techniques is not an agricultural activity as defined under the <i>Wild Rivers Act 2005</i>. For more information see <u>Guide 27</u>.</p>	<p>10. Does the application involve agricultural activities (as defined under the <i>Wild Rivers Act 2005</i>) in a PA?</p> <p><input type="checkbox"/> NO <input type="checkbox"/> YES (<i>ensure you have completed Part Q of Form 1</i>)</p> <p>11. If YES is the application for:</p> <p><input type="checkbox"/> i) a material change of use; or</p> <p><input type="checkbox"/> ii) operational works.</p>

<p>Works that take overland flow water</p> <p>The relevant wild river declaration will state works that take overland flow water are either self assessable or assessable, or are exempt from wild river requirements.</p> <p>If you ticked Q13 i), your application must be assessed by NRW against the Wild Rivers Code and must comply with the code.</p> <p>If you ticked Q13 ii) an application is not required to be made however the works must comply with the relevant self-assessable section of the Wild Rivers Code, otherwise the works become assessable development for which an application is required and must be assessed by NRW against the relevant part of the Wild Rivers Code and must comply with the code.</p> <p>If you ticked Q13 iii) your application is not subject to wild river requirements.</p> <p>Applications for development that is other than that stated to be assessable, self-assessable or exempt will not be accepted.</p>	<p>12. Does the application involve works that take overland flow water in a HPA or an FMA?</p> <p><input type="checkbox"/> NO <input type="checkbox"/> YES (ensure you have completed Part K₆ of Form 1)</p> <p>13. If YES, is the application for works stated in the relevant wild river declaration to be?</p> <p><input type="checkbox"/> i) assessable works <input type="checkbox"/> ii) self-assessable works <input type="checkbox"/> iii) exempt works</p>
<p>Works that interfere with overland flow water</p> <p>The relevant wild river declaration will state works that interfere with overland flow water that are either self assessable, assessable or exempt from wild river requirements.</p> <p>If you ticked Q15 i), your application must be assessed by NRW against the Wild Rivers Code and must comply with the code.</p> <p>If you ticked Q15 ii) an application is not required to be made however the works must comply with the relevant self-assessable section of the Wild Rivers Code, otherwise the works become assessable development for which an application is required and must be assessed by NRW against the relevant part of the Wild Rivers Code and must comply with the code.</p> <p>If you ticked Q15 iii) your application is not subject to wild river requirements.</p> <p>Applications for development that is other than that stated to be assessable, self-assessable or exempt will not be accepted.</p>	<p>14. Does the application involve works that interfere with overland flow water in a FMA?</p> <p><input type="checkbox"/> NO <input type="checkbox"/> YES (ensure you have completed Part K₁₀ of Form 1)</p> <p>15. If YES, is the application for works stated in the relevant wild rivers declaration to be?</p> <p><input type="checkbox"/> i) assessable works <input type="checkbox"/> ii) self-assessable works <input type="checkbox"/> iii) exempt works</p>
<p>Waterway barrier works</p> <p>Applications for building or raising waterway barrier works in a HPA will not be accepted.</p> <p>If you answered YES to Q16, your application must be assessed by DPIF against the Wild Rivers Code and must comply with the code.</p>	<p>16. Does the application involve building or raising waterway barrier works in a PA?</p> <p><input type="checkbox"/> NO <input type="checkbox"/> YES (ensure you have completed Part O₃ of Form 1)</p>
<p>Aquaculture (non ERA)</p> <p>Applications for aquaculture in a HPA will not be accepted.</p> <p>If you answered YES to Q17, your application must be assessed by DPIF against the Wild Rivers Code and must comply with the code.</p>	<p>17. Does the application involve aquaculture in a PA?</p> <p><input type="checkbox"/> NO <input type="checkbox"/> YES (ensure you have completed Part O₁ of Form 1)</p>
<p>Works that interfere with water in a watercourse</p> <p>Note: If the development is proposed in a HPA, applications for all works that interfere with water in a watercourse (including dams or weirs, stream realignment or stream diversion) will not be accepted.</p> <p>In a PA, applications for instream dams and weirs may be accepted in nominated waterways. If you ticked box ii) in Q19, your application will not be accepted.</p> <p>Note: Operational works outside a HPA or nominated waterway are not subject to wild river requirements.</p> <p>More information and locations of nominated waterways is available by contact NRW, accessing the department's website www.nrw.qld.gov.au or contacting the department by email on: wild.rivers@nrw.qld.gov.au.</p>	<p>18. Does the application involve operational works that interfere with water in a watercourse that is in a nominated waterway in a PA?</p> <p><input type="checkbox"/> NO <input type="checkbox"/> YES (ensure you have completed the relevant Part K of Form 1)</p> <p>19. If YES,</p> <p><input type="checkbox"/> i) The application is for an instream dam or weir; or <input type="checkbox"/> ii) The application is for operational works that interfere with water in a watercourse, and is for development other than a dam or weir.</p>

Environmentally relevant activities

Most applications for an ERA in a HPA will not be accepted. Applications which may be made require referral to the EPA. The assessment of some ERAs is assessed by NRW, others have been devolved to DPIF, NRW or delegated local government (see EPA website for more information on devolved ERAs)

If you answered NO to Q20 you do not need to complete Qs 21-24.

If you answered YES to Q20 and the development is in a PA, your application must be assessed by the administering authority²¹ against the Wild Rivers Code and must comply with the code, unless the proposal is for development where an application will not be accepted, or is exempt from wild river requirements (see Q2). You will be able to determine if an application will not be accepted for the development by answering Q21 – Q24.

If you answered NO to Q21, you do not need to complete Q22. If you answered YES to Q21 you are required to complete Q22.

If you answered NO to Q22, the application will not be accepted. If you answered YES to Q22, the application must be assessed by NRW against the Wild Rivers Code and must comply with the code.

If you answered NO to Q23 and the development is proposed in the HPA the application will not be accepted. If you answered YES to Q23, the application must be assessed by the EPA or NRW (as prescribed in schedule 8A of the IPA) against the Wild Rivers Code and must comply with the code.

If you answered YES to Q24 the application will not be accepted. If you answered NO to Q24, your application must be assessed by NRW against the Wild Rivers Code and must comply with the code.

Exempt ERAs in a designated urban area

If the development is proposed in a designated urban area there may be no wild river requirements. See Section 2 Q2.

Note: All applications that can be accepted must be assessed against and must comply with the Wild Rivers Code (other than exempt ERAs in a designated urban area).

Documentation

If you answered NO to Q25, your application may be subject to an information request and processing of the application may be delayed.

20. Does the application involve an ERA?

NO YES (ensure you have completed Part G of Form1)

21. Is the application for an ERA 20 instream?

NO YES

22. Is a quarry allocation notice held for the proposed ERA 20 instream?

NO YES

23. Does the application involve any of the following in a HPA?

- i) a level 2 ERA 11, (and is for specified works or a residential complex)
 - ii) an ERA 19 (dredging)
 - iii) Low impact ERA 20 (out of stream) for specified works or a residential complex (as defined in the Wild Rivers Act 2005, and Environmental Protection Act 1994)
 - iv) an ERA 22 (out of stream)
- NO YES

24. Is the proposed development for ERA 20 (out of stream) and;

- in a FMA; and
 - not low impact; and
 - not for a residential complex in the area, or for specified works.
- NO YES

25. Has documentation been included with the application describing how the applicant proposes to comply with the mandatory requirements, required outcomes, and/ or performance requirements as set out in the relevant part/s of the Wild Rivers Code?

NO YES

²¹ The administering authority may be either the EPA, or if devolved or delegated, the local government, DPIF or NRW.

SECTION 3 – BUILDING REFERRALS (completion not mandatory)

Below is a list of the referrals that can apply to an application for building work assessable against the *Building Regulation 2006*. This section of the IDAS Assessment Checklist is provided for **advice only**. This section of the IDAS Assessment Checklist is **not** required to be completed and lodged with an application for building work assessable against the *Building Regulation 2006* only.

Special fire services - generally For more information go to schedule 2 table 1 and schedule 2A of the <i>IP Regulation</i> . Assessment period 15 days. No response is a deemed refusal.	1. An application may trigger referral to Qld Fire and Rescue Services as an advice agency if the building work requires special fire services mentioned in schedule 2A part 1 of the <i>Integrated Planning Regulation 1998</i> (IP Regulation) or includes an alternative solution assessed against the performance requirements of the Building Code of Australia.
Fire safety for budget accommodation For more information go to schedule 2 of the <i>IP Regulation</i>	2. An application may trigger referral to Qld Fire and Rescue Services as an advice agency if the building work the subject of the application requires the installation of a fire safety system for a budget accommodation building.
Spray painting For more information go to schedule 2 of the <i>IP Regulation</i>	3. An application may trigger referral to the Department of Industrial Relations (DIR) as a concurrence agency if the application involves a workplace incorporating spray painting.
Retail meat premises For more information go to schedule 2 of the <i>IP Regulation</i>	4. An application may trigger referral to Safe Food Qld as a concurrence agency if the application involves a retail meat premises.
Private health facilities For more information go to schedule 2 of the <i>IP Regulation</i>	5. An application may trigger referral to the Department of Health as a concurrence agency if the application involves a private health facility.
Workplace area less than 2.3m² For more information go to schedule 2 of the <i>IP Regulation</i>	6. An application may trigger referral to the Department of Industrial Relations (DIR) as an advice agency if the application involves a work place area less than 2.3m ² .
Land contiguous to a State-controlled road For more information go to schedule 2 of the <i>IP Regulation</i>	7. An application may trigger referral to the Department of Main Roads as a concurrence agency or advice agency if the application involves land contiguous to a State-controlled road.
Pastoral workers accommodation For more information go to schedule 2 of the <i>IP Regulation</i>	8. An application may trigger referral to the Department of Industrial Relations (DIR) as a concurrence agency if the application involves pastoral workers accommodation.
Child care centre For more information go to schedule 2 of the <i>IP Regulation</i>	9. An application may trigger referral to the Department of Communities as a concurrence agency if the application involves a childcare centre.
Coastal development For more information go to schedule 2 of the <i>IP Regulation</i>	10. An application may trigger referral to the Environmental Protection Agency (EPA) as a concurrence agency if the application involves land completely or partly seaward of a coastal building line ²² .
Heritage For more information go to schedule 2 of the <i>IP Regulation</i>	11. An application may trigger referral to the Heritage Council as a concurrence agency if the application involves a heritage registered place.
Fisheries matters For more information go to schedule 2 of the <i>IP Regulation</i>	12. An application may trigger referral to the Department of Primary Industries and Fisheries (DPI&F) as a concurrence agency if the application involves assessable building work in a declared fish habitat area; or as an advice agency if the application involves assessable building work on land that adjoins a declared fish habitat area.
Integration of land use and public transport For more information go to schedule 2 of the <i>IP Regulation</i>	13. An application may trigger referral to Queensland Transport as a concurrence agency if the application involves existing or future public transport corridors, or airport operational airspace ²³ .
Railway safety and efficiency For more information go to schedule 2 of the <i>IP Regulation</i>	14. An application may trigger referral to Queensland Transport as a concurrence agency if the application involves future railway land.

NOTE: CONCURRENCE AGENCY ASSESSMENT PERIODS

The local government, as the concurrence agency, is required to assess and provide a response for the following building applications within a prescribed time. For applications relating to design and siting (17, 18 & 19), and building work for removal or rebuilding (23), the assessment period is 5 days. For all other applications the assessment period is 15 days. If no response is received from the local government for an application, it is taken to be a deemed refusal. However for amenity and aesthetics impact of particular building work for a single detached class 1a or class 10 building or structure (15), no response is taken to be a deemed approval.

Amenity and aesthetic impact of particular building work for single detached class 1 building or class 10 building or structure For more information go to schedule 2 table 1 of the <i>IP Regulation</i> . Assessment period 15 days. No response is a deemed approval.	15. An application will trigger a referral to the local government if it is : <ul style="list-style-type: none"> • for a single detached class 1 building or class 10 structure; and • the local government has declared by resolution the following: <ul style="list-style-type: none"> – the appearance of the building or structure will have an extremely adverse impact on the amenity of the locality; and – the appearance of the building or structure would be in extreme conflict with the character of the locality.
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²² Coastal building lines are prescribed under the *Coastal Protection and Management Act 1995*.

²³ Operational airspace is as defined in State Planning Policy 1/02 "Development in the Vicinity of Certain Airports and Aviation Facilities".

<p>Whether particular buildings may be occupied for residential purposes</p> <p>For more information go to schedule 2 table 1 of the <u>IP Regulation</u>.</p> <p>Assessment period 15 days. No response is a deemed refusal.</p>	<p>13. An application to use an existing building that is not class 1, 2, 3 or 4 for residential purposes may trigger a referral to the local government as the concurrence agency.</p>
<p>Design and siting</p> <p>For more information go to schedule 2 table 1 of the <u>IP Regulation</u>.</p> <p>Assessment period 5 days. No response is a deemed refusal.</p>	<p>17. An application may trigger referral to the local government as the concurrence agency if the building work does not comply with the performance criteria of parts 11 and 12 of the Queensland Development Code.</p> <p>18. An application may trigger referral to the local government as the concurrence agency if the building work does not comply with the qualitative statement for building clearance and site cover.</p> <p>19. An application may trigger referral to the local government as the concurrence agency if the building work does not comply with the qualitative statement for performance criteria 4, 5, 7, 8 or 9 of the Queensland Development Code, part 11 or 12.</p>
<p>Fire safety in particular budget accommodation buildings</p> <p>For more information go to schedule 2 table 1 of the <u>IP Regulation</u>.</p> <p>Assessment period 15 days. No response is a deemed refusal.</p>	<p>20. An application may trigger referral to the local government as the concurrence agency to determine the building will comply with the fire safety standard under the <i>Building Act 1975</i> when the building work has been completed.</p>
<p>Higher risk personal appearance services</p> <p>For more information go to schedule 2 table 1 of the <u>IP Regulation</u> and the QDC part 15.</p> <p>Assessment period 15 days. No response is a deemed refusal.</p>	<p>21. An application may trigger referral to the local government as the concurrence agency to determine if the building work</p> <ul style="list-style-type: none"> • complies with the performance criteria of the Queensland Development code part 15; and • the work does not comply with an acceptable solution stated in the part.
<p>Building work for residential service</p> <p>For more information go to schedule 2 table 1 of the <u>IP Regulation</u> and the QDC part 20.</p> <p>Assessment period 15 days. No response is a deemed refusal.</p>	<p>22. An application for building work for premises in which residential care service under the <i>Residential Services (Accreditation) Act 2002</i>, section 4, is conducted, or is proposed to be conducted, will trigger referral to the local government as the concurrence agency.</p>
<p>Building work for removal or rebuilding</p> <p>For more information go to schedule 2 table 1 of the <u>IP Regulation</u>.</p> <p>Assessment period 5 days. No response is a deemed refusal.</p>	<p>23. An application for the removal and/or rebuilding at another site of a building or other structure, will trigger referral to the local government as the concurrence agency.</p>
<p>Building work for rainwater tank in designated rainwater tank area</p> <p>For more information go to schedule 2 table 1 of the <u>IP Regulation</u> and the QDC part 25.</p> <p>Assessment period 15 days. No response is a deemed refusal.</p>	<p>24. An application may trigger referral to the local government as the concurrence agency to determine if the building work or structure complies with the relevant performance criteria if -</p> <ul style="list-style-type: none"> • Under the <i>Building Regulation 2006</i>, a rainwater tank is proposed to be installed as part of relevant building work, in a designated rainwater tank area; and • Under the Queensland Development Code, part 25, the rainwater tank does not include an acceptable solution for a relevant performance criteria.

PCL XL error

Warning: IllegalMediaSize



Ipswich
City Council

Your Reference:
Our Reference: 06-010
Contact Officer: 6749/07 JAH:JH
Telephone No.: [REDACTED]
3810 7779

20 September 2007

Dear [REDACTED]

Re: Development Application Information Request (Section 3.3.6)
Application Number: 6749/07
Proposal: Reconfiguring One (1) Lot into Eleven (11) Lots
Property Location: 70A Chubb Street, One Mile

Upon review of the abovementioned Development Approval Application and supporting information we require further information to satisfactorily assess this application. The information requested is set-out below.

1. Stormwater -SMP

- (a) The applicant is requested to demonstrate that any stormwater drainage system proposed complies with section 4.3.3(3)(a) of the Urban Areas Code and the Reconfiguration of a Lot Code sections 12.5.3 (2)(k & l) and Table 12.5.2 (31). To this end, the applicant is required to submit a Stormwater Management Plan (SMP) prepared by a Registered Professional Engineer of Queensland (RPEQ) in accordance with QUDM that demonstrates compliance with the environmental values and water quality objectives as outlined within the South-East Queensland Regional Plan (SEQ RP) Part 11. In accordance with the SEQ RP, a reduction in the average annual pollutant load as required by the Southeast Queensland Regional Plan as follows:

- 80% for total suspended solids;
- 60% for total phosphorus;
- 45% for total nitrogen; and
- 90% for gross pollutants.

It is expected that water sensitive urban design be proposed to achieve these values. As such the applicant is requested to demonstrate that any proposed stormwater infrastructure to meet

Ipswich Ideal Pty Ltd
Attn: [REDACTED]
PO Box 7044
SIPPY DOWNS QLD 4556

Please Address All Correspondence to:
Chief Executive Officer
Ipswich City Council
A.B.N. 61 461 981 077
PO Box 191 Ipswich Qld 4305
Telephone: (07) 3810 6666
Facsimile: (07) 3810 6731

Website: www.ipswich.qld.gov.au

the objectives be in accordance with the Water Sensitive Technical Design Guidelines for South East Queensland published by Healthy Waterways.

- (b) The SMP required in (a) above, should document the proposed works and management strategies for stormwater runoff, discharge, and water quality control generally within the proposed development catchment. The SMP should, amongst other issues, address the following:
 - (i) Identify the increase in stormwater runoff generated by the development;
 - (ii) Identify management strategies to ensure that stormwater discharge from the development is maintained at pre-development flows for all storm events up to and including Q100 (i.e. provision of detention/retention devices) and that stormwater discharge from the site does not adversely affect the downstream properties; and
 - (iii) Identify management strategies to ensure that the predicted pollutant levels (through appropriate pollutant export modelling such as AQUALM or MUSIC) in the stormwater from the catchment meet the pollutant loads identified in (a) and Table 2.3.1: Water Quality Objectives of Planning Scheme Policy 3 – General Works, Part 2 – Stormwater Drainage, Division 3 – Water Quality Control.
- (c) The applicant is requested to submit preliminary hydraulic calculations prepared by an RPEQ in accordance with QUDM which identifies the increase in stormwater runoff generated by the proposal, the location and treatment of discharge points such that the proposed development will not adversely effect the down stream properties. The stormwater discharge from the proposed development should be maintained at pre-development flows. The applicant should identify the proposed method of stormwater detention and clearly identify any stormwater detention structures on the development plan. Should the applicant propose to construct stormwater infrastructure through adjoining property under separate private ownership and/or concentrate, redirect stormwater discharge on to adjoining property under separate private ownership then the Applicant should obtain and forward to Council the written approval of the owner of the affected property. The downstream landowner's consent should also be supplied for any proposed changes if required.

2. Flooding

The applicant is requested to submit a plan of the proposal development, which has been prepared by a RPEQ, superimposed with the inundation line of the 1 in 100 ARI Flood event. Council has information which suggests that this property is affected by this Flood line. The applicant is therefore requested to demonstrate that the requirements of Ipswich Planning Scheme Part 11, Division 4, Section 7 – Flooding and Urban Storm Flow Path Areas have been addressed.

3. Waste Storage & Collection

- (a) The Developer is required to provide information that demonstrates that the development will include adequate provisions for waste storage and collection that is consistent with Ipswich Planning Scheme Policy 3 – General Works; Section 1.1.6 Culs-De-Sac- Turning areas.

- (b) The Developer is required to demonstrate that the waste storage and collection areas allow servicing vehicle forward motion entry to the waste containers and forward motion entry and exit to and from the site. The following dimensions are given as a minimum of front-, rear- and side- loading truck dimensions for a guide to design for the adequate emptying of the bin and manoeuvring of the truck:

	Front/Load	Rear/Load	Side/Load
Length overall	10.9 m	8.2 m	8.7 m
Length when loading	12.6 m	9.5 m	3.0 m
Travelling overhead clearance required	4.0 m	3.0 m	3.5 m
Loading overhead clearance required	6.5m x 10m*	3.0 m	3.0 m
Access width required	3.8 m	3.8 m	4.0 m
Turning radius	14 m	8.0 m	11.1 m
Gross vehicle mass (GVM)	28 tonne	13.6 t	13.6 t

*from the back of the bin

These standards do not override the requirements of the Reconfiguring a Lot Code.

4. Lot Layout and Arrangement

It is considered by Council that proposed Lots 10 and 11 shall be problematic for the location of future dwellings and ancillary structures based on setback distances from Council Infrastructure and the requirements of Schedule 5 – Boundary Clearances. Consideration should be given to the proposed turning area (creating access to lots 1, 2 and 3) and opportunities for maximising lot yield and configuration in this portion of the site utilising a standard road reserve width and possible rear hatchet lot configuration. This is to be considered in conjunction with possible reconfiguration opportunities for Lots 10 and 11 and the future practical application of minimum 10 x 15metre building location envelopes over these lots and inclusive of carparking, recreation space and outbuilding construction in the future.

Considering the above, the applicant is to requested to re-consider the proposed lot layout and demonstrate to Council that the proposed is consistent with the requirements of the Planning Scheme.

Under the provisions of the *Integrated Planning Act 1997*, the applicant has three (3) options available in response to this Information Request. The Applicant must give the Development Manager and each Referral Agency (if applicable):

1. all of the information requested; or
2. part of the information requested together with a notice asking the Development Manager and each Referral Agency (if applicable) to proceed with the assessment of the application; or
3. a notice:
 - (a) stating that the applicant does not intend to supply any of the information requested; and
 - (b) asking the Development Manager and each Referral Agency (if applicable) to proceed with the assessment of the application.

Access PD Online at www.ipswich.qld.gov.au to view, search and print property information, interactive mapping, track development applications and the Ipswich Planning Scheme. Undertake a development enquiry as part of the Property Search function to identify the planning scheme provisions that apply to a particular use on a property. PD Online - information at your fingertips 24 hours a day, 7 days a week.

Response to this Information Request should be forwarded to:-

The Development Manager
Development Branch
Ipswich City Council
PO Box 191
IPSWICH QLD 4305

Yours sincerely



**ACTING DEVELOPMENT TEAM CO-
ORDINATOR - CENTRAL/WEST**

Reference: 06-010

Your ref: 6749/07 JAH:JH

31 January 2008

The Development Manager
Development Branch
Ipswich City Council
PO Box 191
IPSWICH QLD 4305



RECEIVED
- 4 FEB 2008
Doc. No. 2954567
Applic. No. 6749/07
Action Off. J. Hart

Action:

Attention: [REDACTED]

Dear [REDACTED]

**RESIDENTIAL SUBDIVISION
70A CHUBB STREET, ONE MILE**

I refer to Council's information request dated 20 September 2007 and have provided the following information to assist Council in its assessment of this application:

1. Stormwater - SMP

A stormwater management plan has been prepared in accordance with Council's request and addresses matters relating to stormwater quantity in order to ensure that stormwater discharge from the development is maintained at pre-developed flows for all storm events up to and including a one in one hundred year ARI storm. This has been enclosed as Attachment A to this correspondence. A stormwater quality management plan has also been prepared as a second document addressing aspects relating to water quality. The stormwater quality management plan details that provided a number of mitigation measures are included in the subdivision layout, the quality of stormwater discharged from the proposed development will have sufficient pollutant load reduction to comply with Council's requirements and the Healthy Waterways load reduction criteria. This document has been included as Attachment B of this correspondence.

2. Flooding

It is understood that Council has adopted a flood level of 23.8 metres AHD for the area. Detailed survey of the site indicates that the area below this elevation is extremely limited on the site and is confined to the area immediately adjacent to the drainage reserve (refer the attached plan of subdivision included as Attachment C).

Further, Table 1 of a flood study prepared for the adjoining land by Cardno indicates that the level of a Q₁₀₀ storm event is anticipated to inundate all land up to 23.39 metres AHD in elevation. This study represents the most recent flood modelling for the area and has been assessed for cross sections at 100 metre intervals for the reach of the Bremer River in close proximity to the site, rather than the 500 metre intervals adopted in the original modelling.

The report concludes that the site is therefore completely immune to flooding associated with a Q₁₀₀ event and the requirements of the Ipswich Planning Scheme Part 11, Division 4, Section 7 – Flooding and Urban Stormwater Flow Path Areas is not relevant to this assessment.

A copy of the Cardno report has been included for Council's information as Attachment D.

3. Waste Storage and Collection

A plan showing the sizing of the cul-de-sac to conform to the requirements of Planning Scheme Policy 3 – General Works; Section 1.1.6 Culs-De-Sac – Turning areas has been attached for Council's information. All proposed allotments are to be serviced by standard wheelie bins which will be placed on the kerb for collection by Council's waste collection vehicle on the appropriate day by individual residents.

The radius of the cul-de-sac is consistent with Council's requirements to accommodate a side loading refuse vehicle. A revised plan indicating the lot layout, turning radii, road widths and edge treatments has been included in Attachment E for Council's information.

4. Lot Layout

Further consideration has been given to Council's comments in relation to proposed Lots 10 and 11. A revised plan showing the proposed layout of the allotments and the location of suitable building envelopes has been provided for Council's consideration (refer Attachment C). The layout identifies the location of the existing sewer and nominates a 1.5 metre separation distance between the sewer and any future dwellings/ancillary structures. Setbacks distances have been determined with reference to the requirements of Schedule 5 – Boundary Clearances. Details in relation to this matter have been addressed as follows:

- All building envelopes on standard allotments are set back 6 metres from the road frontage.
- As there are no road intersections on the property, the 9 metre truncation does not apply.
- The location of a carport within a lesser setback distance to the road frontage has been shown, although this option may not be adopted by residents. The setback of the carport is 3 metres which satisfies the requirements detailed in Table 1, Section 1(d) of Schedule 5 where the maximum width of the car port is not greater than 3 metres and the height does not exceed 4.5 metres.
- Side and rear boundary setbacks of 1.5 metres have been shown. These would be increased to 2 metres where a 2 storey structure is proposed.
- Side boundary setbacks have also been shown as zero metres for the carport structures identified on proposed Lots 1 and 2, 7 and 8 and 9 and 10. This is permitted by virtue of Table 1, Section 2(e) of the Schedule. These setbacks only pertain to the car ports and may not be taken up by residents who do not wish to construct an open car port.

- Lesser frontage setbacks have been provided for the building envelopes shown for proposed Lots 5, 6, 9 and 10 as these allotments are considered to constitute irregular shaped allotments. While proposed Lots 5 and 10 largely contain a square of 10 x 15 metres that includes the 6 metre setback, larger building envelopes have been shown with closer setbacks toward the end of the cul-de-sac head. Proposed Lots 6 and 9 are both shown with 3 metre setbacks, however the standard 10 x 15 metre square can be included well within the proposed building envelope with adequate setbacks if required, given the dimensions of the building envelope shown.

The attached plan identifies that a rectangle with a minimum area of 10 x 15 metres can be accommodated over all lots, with sufficient area available for the inclusion of carparking, recreation space and outbuilding construction. The open space area is typically identifiable within the building setback from the road frontage, however this can also be provided at the side or rear of the allotment where a future dwelling does not take up all of the nominated building envelope. It is worth noting that the building envelopes on proposed Lots 1, 2, 3 and 5 have been shown to accommodate duplex structures as the proposed lots are 800 square metres or greater in area.

We urge Council to refrain from conditioning the building envelopes shown on the nominated plan into the approval as this plan has been prepared primarily to assist Council in identifying that the provisions of the scheme can be complied with for each and every lot with respect to setback requirements. Further, the proposed dwellings to be constructed by future land owners may not take up the entire building envelopes shown and may comprise single detached dwellings where duplex structures have been shown. This is a reasonable possibility given that the area is characterised by lower income households, with the majority of residences in the area comprising smaller, three bedroom dwellings.

This concludes the applicant's response to Council's information request. I trust the above information is to your satisfaction and request Council proceeds with its assessment of the application.

Please do not hesitate to contact me directly on 0412 788 532 should you have any queries in relation to this matter.

Yours faithfully,



B.App.Sc. GDURP MURP MPIA

Encl.

CC: Ipswich Ideal Pty Ltd



STORMWATER MANAGEMENT PLAN

PROPOSED DEVELOPMENT
CHUBB ST, IPSWICH

Report Prepared by Environmental Hydrology Associates (EHA Pty Ltd)
for DKS Consulting

29 January 2008

Report Number SW-07-08-REP-001 Rev B



Limitations Statement

The sole purpose of this report and the associated services performed by EHA Pty Ltd (EHA) is to provide a report detailing a stormwater management plan for the proposed development at Chubb St, Ipswich in accordance with the scope of services set out in the contract between EHA and DKS Consulting ('the Client'). That scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the data sources for the relevant sites.

EHA derived the data in this report primarily from, examination of records in the public domain, interviews with individuals with information about the sites, data relevant to the sites provided by the Client and other parties, and limited site investigation and analysis made as indicated.

The passage of time, manifestation of latent conditions or impacts of future events may require further exploration at the sites and subsequent data analysis, and re-evaluation of the findings, observations and conclusions expressed in this report.

In preparing this report, EHA has relied upon and presumed accurate certain information (or absence thereof) relative to the sites including survey information, Ipswich City Council data and publicly available hydrological data. Except as otherwise stated in the report, EHA has not attempted to verify the accuracy or completeness of any such information.

No warranty or guarantee, whether express or implied, is made with respect to the data reported or to the findings, observations and conclusions expressed in this report. Further, such data, findings, observations and conclusions are based solely upon site conditions, information, drawings supplied by the Client and others in existence at the time of the investigation.

Any cost projections detailed in this report have been provided in good faith based on reasonable unit costs as advised by relevant reputable contractors. It should be noted that the passage of time may result in cost escalations.

This document has been prepared solely for the benefit of the Client and is issued in confidence for the purpose only for which it is supplied. Unauthorised use of this document in any form whatsoever is prohibited. No liability is accepted by EHA Pty Ltd or any employee, contractor or subconsultant of this company with respect to its use by any other person.

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Table 1. Estimated 100-year ARI peak flood levels near site (Bremer River Flooding)

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Table 5. Peak discharge estimates for the 100 year ARI flood event using WBNM.

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Table 7. Storage outflow characteristics of 11 rainwater tanks.

Table 8. Storage outflow characteristics of two swales.

Figures

Figure 1 Locality plan showing contours

Figure 2 Proposed site layout

Figure 3 Plan showing extent of 100-year ARI flooding from Bremer River



1 INTRODUCTION AND SITE DESCRIPTION

Subdivision of a lot at 70A Chubb St Ipswich is proposed. The lot is described as Lot 14 RP73249, and has an area of approximately 1.03 hectares.

A development application for reconfiguration of this lot into 11 lots has been lodged with the Ipswich City Council (Application No 6749/07). Council reviewed the application and requested further information on 20th September 2007.

A locality plan showing the lot, the surrounding lots, and contours is included as Figure 1.

The information request included the following items with respect to stormwater drainage and flooding is found in Appendix A.

1 Stormwater - SMP

- b) *The SMP required in (a - please refer to Appendix A) above, should document the proposed works and management strategies for stormwater runoff, discharge, and water quality control generally within the proposed development catchment. The SMP should, amongst other issues, address the following:*
- I. Identify the increase in stormwater runoff generated by the development;*
 - II. Identify management strategies to ensure that stormwater discharge from the development is maintained at pre-development flows for all storm events up to and including Q100 (i.e. provision of detention / retention devices) and that stormwater discharge from the site does not adversely affect the downstream properties; and*
 - III. Identify management strategies to ensure that the predicted pollutant levels (through appropriate pollutant export modelling such as AQUALM or MUSIC) in the stormwater from the catchment meet the pollutant loads identified in (a) and Table 2.3.1: Water Quality Objectives of Planning Scheme Policy 3 - General Works, Part 2 - Stormwater Drainage - Division 3 - Water Quality Control.*
- c) *The applicant is requested to submit preliminary hydraulic calculations prepared by an RPEQ in accordance with QUDM which identifies the increase in stormwater runoff generated by the proposal, the location and treatment of discharge points such that the proposed development will not adversely affect the down stream properties. The stormwater discharge from the proposed development should be maintained at pre-development flows. The applicant should identify the proposed method of stormwater detention and clearly identify any stormwater detention structures on the development plan. Should the applicant propose to construct stormwater infrastructure through adjoining property under separate private ownership and / or concentrate, redirect stormwater discharge on to adjoining property under separate private ownership then the Applicant should obtain and forward to Council the written approval of the owner of the affected property. The downstream landowner's consent should also be supplied for any proposed changes if required.*



2 Flooding

The applicant is requested to submit a plan of the proposal development, which has been prepared by a RPEQ, superimposed with the inundation line of the 1 in 100 ARI Flood event. Council has information which suggests that this property is affected by this Flood line. The applicant is therefore requested to demonstrate that the requirements of Ipswich Planning Scheme Part 11, Division 4, Section 7 - Flooding and Urban Storm Flow Path Areas have been addressed.

This report addresses the requirements relating to stormwater quantities and flooding. A separate report is to be prepared addressing the stormwater quality requirements, including that mentioned in item 1 (b) (iii) of the request.

1.1 SITE DESCRIPTION

The lot is accessed from Chubb Street by an easement as shown in Figure 1. The land slopes to the east, and the ground levels vary from about RL 24.8 m AHD (near the entrance) about RL 23.8 m AHD at the north-east boundary. The average land slope is approximately 1.3%. The site is cleared, and contains one dwelling, equivalent to rural residential type of development.

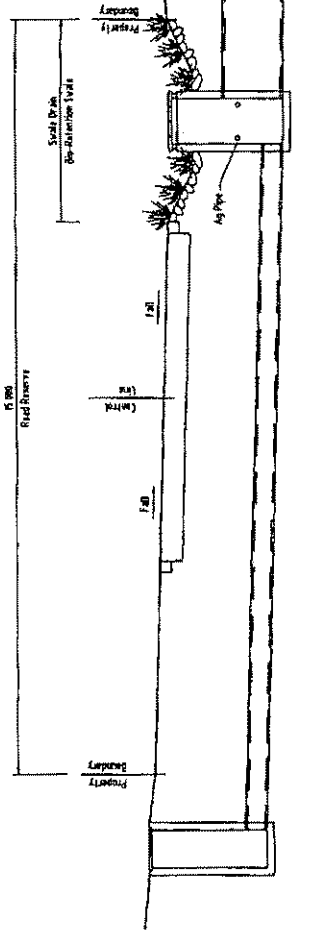
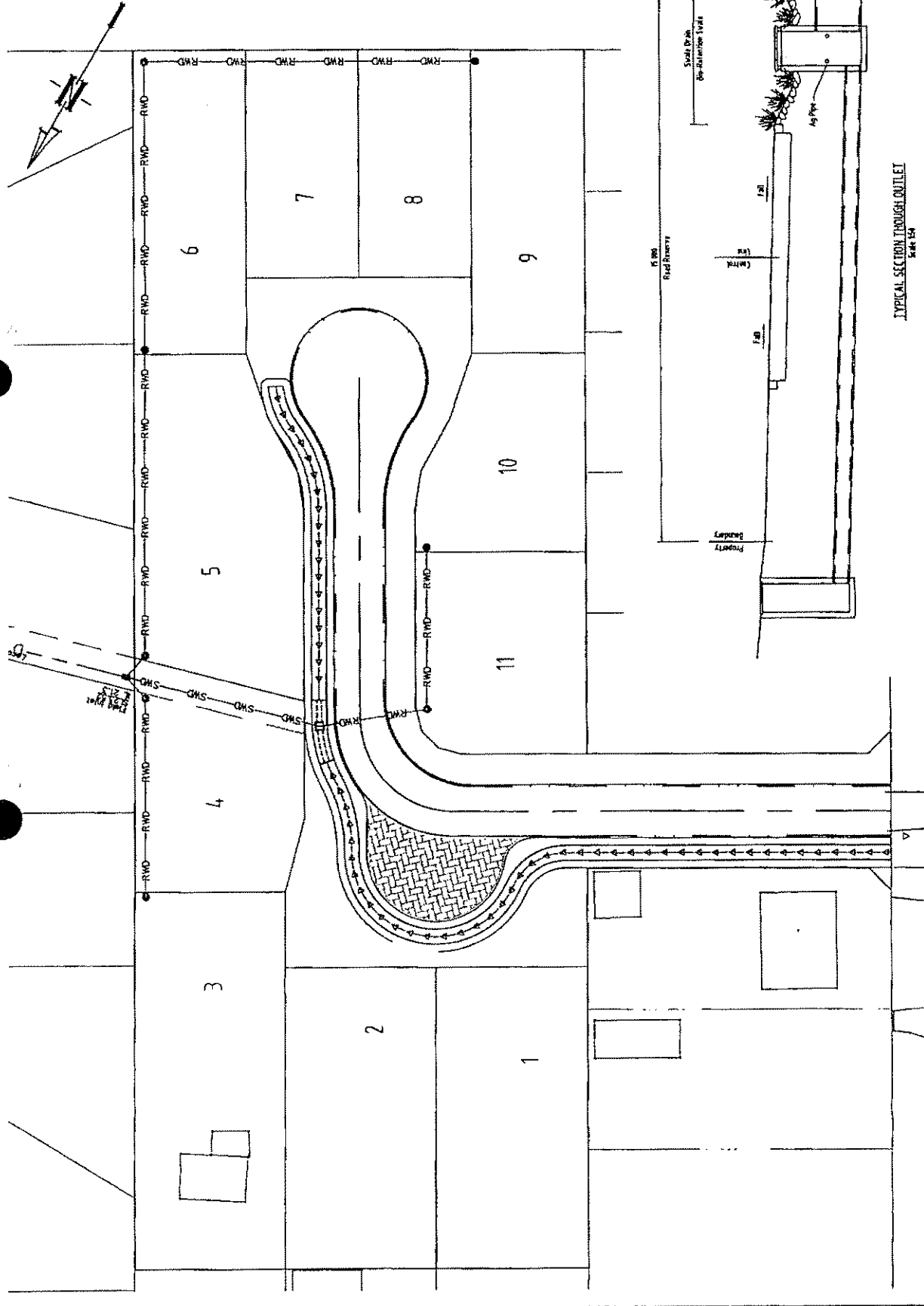
Runoff from the site drains north-easterly to a drainage easement between Nos 8 and 10 Battersby St. The drainage easement is approximately 4.3 metres wide, and has a 375 mm diameter stormwater pipe contained within it.

1.2 PROPOSED DEVELOPMENT

The development will involve subdivision of the Lot 14 into 11 lots with approximate areas ranging from 450 m² to 900 m². A concept plan showing the layout is included as Figure 2. This has been used for the stormwater drainage investigation, and may not represent the final layout.

LEGEND

- Proposed Boundary
- Proposed Stormwater
- Scale 0r 40
- As-Installed Scale
- Concrete Slab
- As Pipe



For Information Only

PROJECT NO: 07052 DRAWING NO: SK-001 DATE: 07/11/11		CLIENT: Ipswich Ideals Pty Ltd	
SCALE: AS SHOWN DRAWN: [Name] CHECKED: [Name] DATE:		PROJECT NO: 07052 DRAWING NO: SK-001 DATE:	
PROJECT NO: 07052 DRAWING NO: SK-001 DATE:		PROJECT NO: 07052 DRAWING NO: SK-001 DATE:	

Figure 2: PROPOSED SITE LAYOUT



Figure 1
LOCALITY PLAN



2 FLOODING

Design flood levels for the site from Bremer River flooding have been obtained from Ipswich City Council (Ravi Raveenthiran). The design flood level information has been derived from a flood study of the Bremer River and tributaries carried out by SKM for Council in 2000-2001 using a Mike-11 hydrodynamic model. A subsequent review of the flood study by an expert panel recommended some modifications to the SKM flood frequency analysis from which the design discharges were estimated.

Currently the flood study is being revised, but in the interim, Council has adopted a 100-year flood level that is equivalent to the SKM-derived 50-year flood level for existing development.

The site is contained within a loop of the Bremer River. Figure 3 shows the locations of the cross sections of the Bremer River adjacent to the site that were used in the flood modelling. The 100-year ARI peak flood levels at these cross sections are listed in Table 1.

Table 1. Estimated 100-year ARI peak flood levels near site (Bremer River Flooding)

Cross Section Label (see Figure 3)	100 year ARI Peak Flood Level (RL m AHD)
BREM1003700	23.20
BREM1003200	23.48
BREM1002700	23.97
BREM1002300	24.44
BREM1001700	24.99
BREM1001120	25.23
BREM1000700	25.36

The site is closest to cross sections BREM1003200 and BREM1002700. By interpolation of the peak flood levels at these cross sections, the 100 year ARI peak flood level at the site is estimated to be approximately RL 23.67 m AHD.

The estimated extent of flooding from the 100 year ARI flood event is shown in Figure 3. It should be noted that Chubb St is the high point along a "peninsular" around which the Bremer River loops. The peak Bremer River flood levels on the western (upstream) side of this peninsular are higher than on the eastern side of the peninsular, and may overtop Chubb St by a small amount. The amount of overtopping and magnitude of the lateral flow is expected to be insignificant.

Based on the above information, the ground levels of the site are expected to be almost completely above the 100 year ARI flood level.

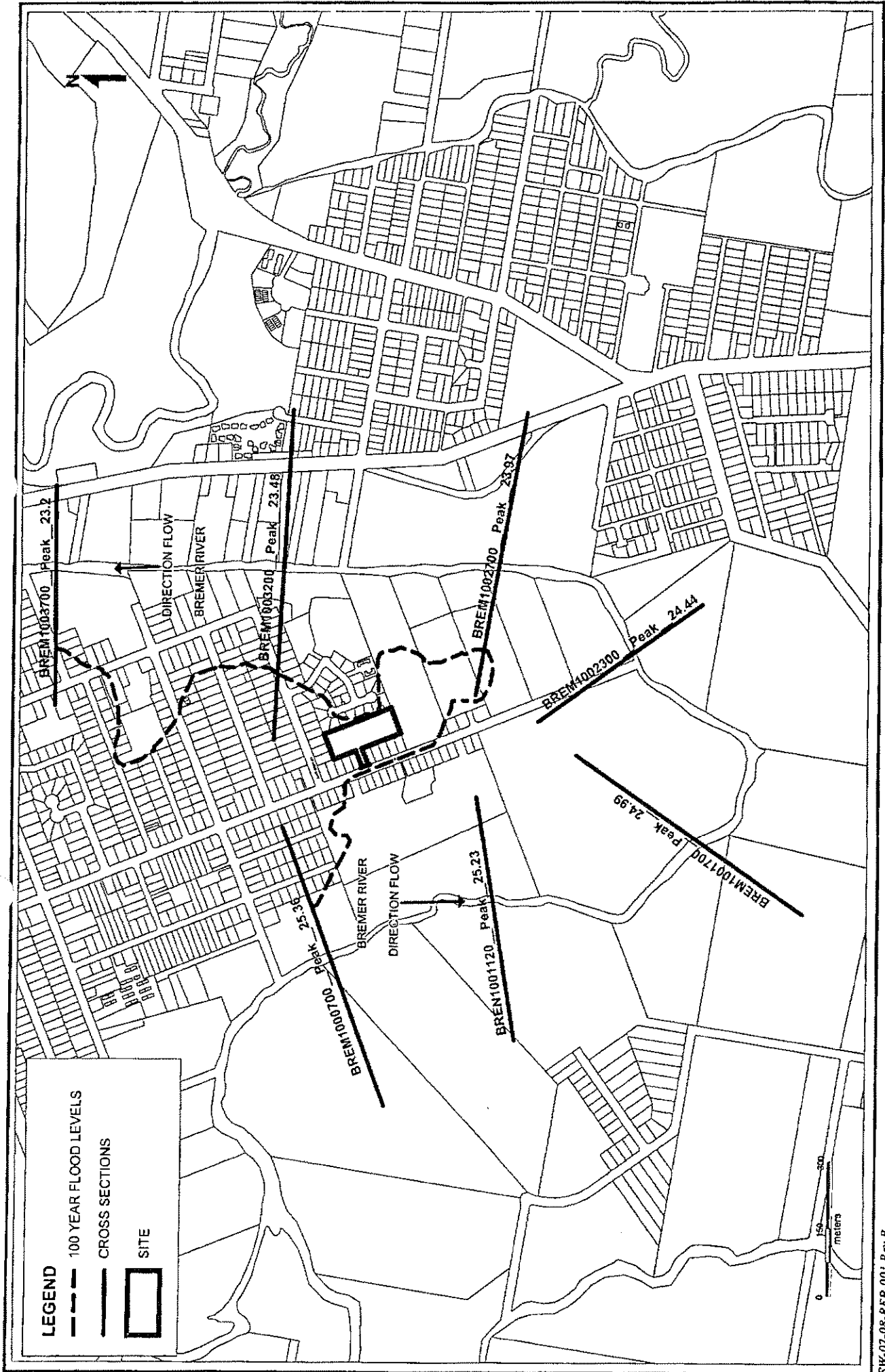


Figure 3
EXTENT OF 100 YEAR ARI FLOODING EVENT



3 STORMWATER QUANTITY MANAGEMENT

The peak discharges from the site are expected to increase as a result of the development. Peak discharges from the site have been estimated, and management measures proposed to reduce the 100 year ARI peak from the developed site.

3.1 ESTIMATE OF PEAK DISCHARGE FROM SITE

The site drains to an existing drainage easement. Peak discharges have been estimated using the rational method procedure as described in the Queensland Urban Drainage Manual (QUDM 1992). The time of concentration for the existing site was determined using the Friends overland sheet flow time procedure in QUDM while the time of concentration for the developed site was determined as the standard inlet time for developed areas with slopes less than 3%.

Table 2 lists the relevant parameters for the rational method together with the estimated 5 year ARI and 100 year ARI peak discharges.

Table 2. Estimation of Peak Discharge from existing and developed site

Parameter / Value	Existing Site	Developed Site
Approximate Catchment Area (m ²)	10300	10300
Time of Concentration (min)	15	10
Equivalent catchment development	Rural residential	Medium Density Residential
Runoff coefficient C ₁₀	0.74	0.79
5 year ARI Peak Discharge (m ³ /sec)	0.209	0.262
100 year ARI Peak Discharge (m ³ /sec)	0.478	0.591

3.2 PROPOSED STORMWATER DETENTION MEASURES

3.2.1 Preliminary Sizing

Some methods of initial detention basin sizing are given in Section 6 of the Queensland Urban Drainage Manual (QUDM 1994). For this development the volumes are listed in Table 3.



Table 3. Initial Retention Basin Sizing

Peak Q_{100} Inflow	0.591	m^3/sec
Inflow Volume 100 yr ARI	532	m^3
Peak Q_{100} Outflow	0.478	m^3/sec
Retention Basin size (m^3)	47	Culp 1948
	102	Boyd 1989
	50	Carroll 1990
	74	Basha 1994
Average	68	m^3

A total of 68 m^3 or greater temporary flood storage volume would be required. Detailed analyses for other sites indicate that these initial basin size formulae may under-predict the actual volume required.

3.2.2 Stormwater Quality Treatment

A separate report (Willis 2007) has been prepared on the proposed methods of treating stormwater to achieve stormwater quality targets. The proposed method is to treat the runoff using two swales, and a bio-retention basin. The locations of the swales and the bio-retention basin are shown in Figure 2.

3.2.3 Description of proposed stormwater detention

Underground detention storage configurations were investigated, but large detention storage volumes were found to be required to provide the required mitigation. With the proposed subdivision, there were only limited opportunities for provision of shallow surface detention storage.

As a solution it is proposed therefore to provide temporary flood storage by means of:

on-site rainwater tank storage; and

detention storage in the proposed swales.

Rainwater Tank Storage

Each lot is proposed to be equipped with a rainwater tank of 10 kL, 5 kL of which will be for permanent rainwater storage, and 5 kL of which will be for temporary flood storage.

The detention storage arrangement could be as follows. Assuming that each tank will be 2.1 metres inlet height and 2.52 metres in diameter, the lower 1.05 metres could be reserved for water supply, and the upper 1.05 metres for temporary flood storage. A restricted outlet would be positioned at 1.05 metres above the base, with the normal overflow at the top. From modelling it was found that a 58 mm orifice would be necessary for the restricted outlet. The temporary flood storage provided by this arrangement is approximately 55 m^3 .

The tanks would overflow to normal stormwater drainage.

Detention Storage in Proposed Swales

Detention storage will be available in the proposed swales. The proposed swale dimensions (from Figure 2)



A simple WBNM model was set up to model the storm runoff from the existing site. Model parameters were adjusted so that the peak discharges from the model were consistent with the estimates obtained by the rational method, listed in Table 2. To model the runoff from the developed site with no mitigation measures, the impervious area in the model was adjusted to be consistent with the developed situation.

The following WBNM model parameters were adopted:

- Lag parameter: 2.45
- Impervious area lag parameter: 0.10
- Directly connected impervious area fraction (existing): 0%
- Directly connected impervious area fraction (developed): 40%

The loss parameters for the 100 year and the 5 year ARI events shown in Table 4 were adopted for the modelling.

Table 4. Adopted loss parameters for WBNM.

Parameter/Value	5 year ARI Storm Event	100 year ARI Storm Event
Initial Loss pervious areas (mm)	20	0
Initial Loss impervious Areas (mm)	4	0
Continuing Loss pervious areas (mm/hr)	3.5	2.5
Continuing Loss impervious areas (mm/hr)	0	0

With the above parameters, the peak discharges predicted for the existing and developed site are listed in Table 5 for various storm durations for the 100 year ARI flood event. The peak discharges predicted by the model for the 5 year ARI flood event are listed in Table 6.



are 2 metres bed width, 4 metres top width, and depth of 0.5 metres (Willis 2007). The bed gradient of the swales is assumed to be approximately 0.25%.

The north-west swale has a total length of approximately 100 metres, while the south east-swale has a length of approximately 45 metres. The total swale length is therefore approximately 145 metres.

The inlet pit from the proposed bio-retention basin and the stormwater pipe connecting the proposed inlet pit to the existing inlet pit have been sized. An inlet pit pipe diameter of 0.7 metres (or of equivalent perimeter dimensions if square or rectangular) is proposed. The inlet pit level is proposed to be 200 mm above the bed of the bio-retention basin. A 675 mm diameter pipe will connect the proposed and existing inlet pits. The capacity of this system is adequate to take the 100-year ARI discharge from the site. Surchage if any would pass to the downstream drainage easement.

3.2.4 Modelling of proposed stormwater detention

Modelling of the proposed stormwater quantity management measures has been carried out using the Watershed Bounded Network Model (WBNM 2005), a flood runoff-routing model developed by University of Wollongong. WBNM is an event based hydrologic model and calculates flood hydrographs from storm rainfall hyetographs. It can be used for modelling natural, part urban and fully urban catchments. For urban catchments, it calculates runoff from pervious and impervious surfaces and routes it through the major system of open watercourses. Flood detention structures can be modelled using WBNM.



Table 5. Peak discharge estimates for the 100 year ARI flood event using WBNM.

Storm Duration (min)	Rainfall (mm)	Estimated Peak Discharges (m ³ /s)		
		Existing Site	Developed Site No Mitigation	Developed Site with rainwater tank and swale detention
15	54.4	0.41	0.58	0.40
20	61.7	0.45	0.55	0.42
30	76.2	0.45	0.59	0.42
45	92.8	0.42	0.50	0.41
60	106.2	0.48	0.59	0.45
90	123.6	0.40	0.46	0.39
	Max Q	0.48	0.59	0.45

Table 6. Peak discharge estimates for the 5 year ARI flood event using WBNM.

Storm Duration (min)	Rainfall (mm)	Estimated Peak Discharges (m ³ /s)		
		Existing Site	Developed Site No Mitigation	Developed Site with rainwater tank and swale detention
15	30.4	0.07	0.19	0.09
20	35.5	0.10	0.22	0.14
30	43.5	0.12	0.24	0.16
45	52.7	0.14	0.20	0.17
60	60.0	0.16	0.27	0.20
90	69.8	0.18	0.24	0.21
	Max Q	0.18	0.27	0.21



Various detention measures such as underground storage, surface ponds, and rainwater tank detention storage were included in the model of the developed site to find an arrangement that would result in mitigation of the 100 year ARI flood peak to no greater than that which would occur from the existing site.

The proposed rainwater tank and swale detention system as described in Section 3.2.3 was modelled.

The rainwater tanks were lumped together in the model to give total detention storage of 55 kL, with storage outflow characteristics as listed in Table 7.

Table 7. Storage outflow characteristics of 11 rainwater tanks.

Height above orifice (m)	Detention Storage (ML)	Outflow (Each tank has 58 mm orifice) (m ³ /s)
0.10	0.005	0.025
0.20	0.011	0.035
0.30	0.016	0.043
0.50	0.026	0.055
0.70	0.037	0.065
0.90	0.047	0.074
1.05	0.055	0.080

It was assumed that the roof area draining to each tank was 180 m², typical of the roof area (including garages etc) of modern detached dwellings. For the whole development, the area draining to tanks was therefore 1980 m², approximately half of the estimated total directly-connected impervious area of the proposed development. The residual impervious area of the development was assumed to drain to the swales and stormwater drainage between lots 4 and 5.

A storage discharge relationship was estimated for the swales and outlet configuration as described in Section 3.2.3. The relationship is given in Table 8.

Table 8. Storage outflow characteristics of two swales.

Height above bed of bio-retention basin (m)	Detention Storage (ML)	Outflow (m ³ /s)
0.00	0.000	0.000
0.20	0.028	0.000
0.25	0.042	0.034
0.30	0.071	0.096
0.40	0.105	0.272
0.50	0.164	0.500



The above arrangement was modelled using WBNM, and the resulting peak discharges from the site for the 100 year ARI event are listed in Table 5, and for the 5 year ARI event are listed in Table 6.

The results indicate that the detention storage provided by the combined rainwater tanks and swales can effectively

- reduce the 100 year ARI peak discharge from the developed site to less than that from the existing site; and
- reduce the 5 year ARI peak discharge from the developed site to close to that from the existing site.

Accordingly, the combined rainwater tank detention and swale detention proposed is a satisfactory means of mitigating any increase in design floods from the site due to the proposed development.



4 SUMMARY AND CONCLUSIONS

A residential development involving reconfiguration of a 1 hectare area property into 11 lots with internal road access is located at 70A Chubb St, One Mile, Ipswich.

Ipswich City Council issued an information request for the development application for this site. Among other things, the information request required:

- a plan showing the extent of flooding for the 100 year ARI flood event (from the Bremer River), and how this impacts the property; and
- management strategies to ensure that stormwater discharge from the development is maintained at pre-development flows for all storm events up to and including Q100 (i.e. provision of detention / retention devices) and that stormwater discharge from the site does not adversely affect the downstream properties.

Information on studies of flooding from the Bremer River was obtained from Ipswich City Council. From this information, the peak flood levels for the 100 year ARI flood event close to the site were obtained. Figure 3 is a plan showing the extent of flooding from the Bremer River for the 100 year ARI flood event. The peak flood level near the site is approximately RL 23.67 m AHD. Virtually all the ground levels of the site are expected to be above the 100 year ARI flood level.

The use of rainwater tanks as detention storages as well as detention storage in the swales is proposed as a mitigation strategy for the management of stormwater runoff from the developed site. It is proposed that each lot have a 10 kL rainwater tank, the lower 5 kL of which is permanent storage for water supply purposes, and the upper 5 kL of which is temporary flood storage. A possible arrangement is for each tank to be 2.1 metres inlet height and 2.52 metres in diameter, with the lower 1.05 metres reserved for water supply, and the upper 1.05 metres for temporary flood storage. A restricted outlet would be positioned at 1.05 metres above the base, with a 58 mm orifice to control outflows, and the normal overflow outlet would be at the top of the tank. The above arrangement gives a total of 55 m³ of rainwater tank detention storage for the site.

In addition, it is proposed that the swales function as detention storages. It is estimated that there will be a total of approximately 164 m³ of detention storage in the swales when the water depth at the inlet pit in the bio-retention basin is 0.5 metres.

Modelling of this arrangement using the Watershed Bounded Network Model (WBNNM) indicates that after development of the site, the peak 100 year ARI flood magnitude will be lower than that from the existing site, and the 5 year ARI flood magnitude will remain similar to that from the existing site.

The actual tank arrangement could be varied from that proposed above, but the total tank detention storage capacity for the site should not be less than 55 m³, with a similar relationship between detention storage and outflow as that proposed.

Periodic inspection of the tanks may be necessary to ensure that the tanks function as intended, including checks to confirm that the low level outlets are not blocked.

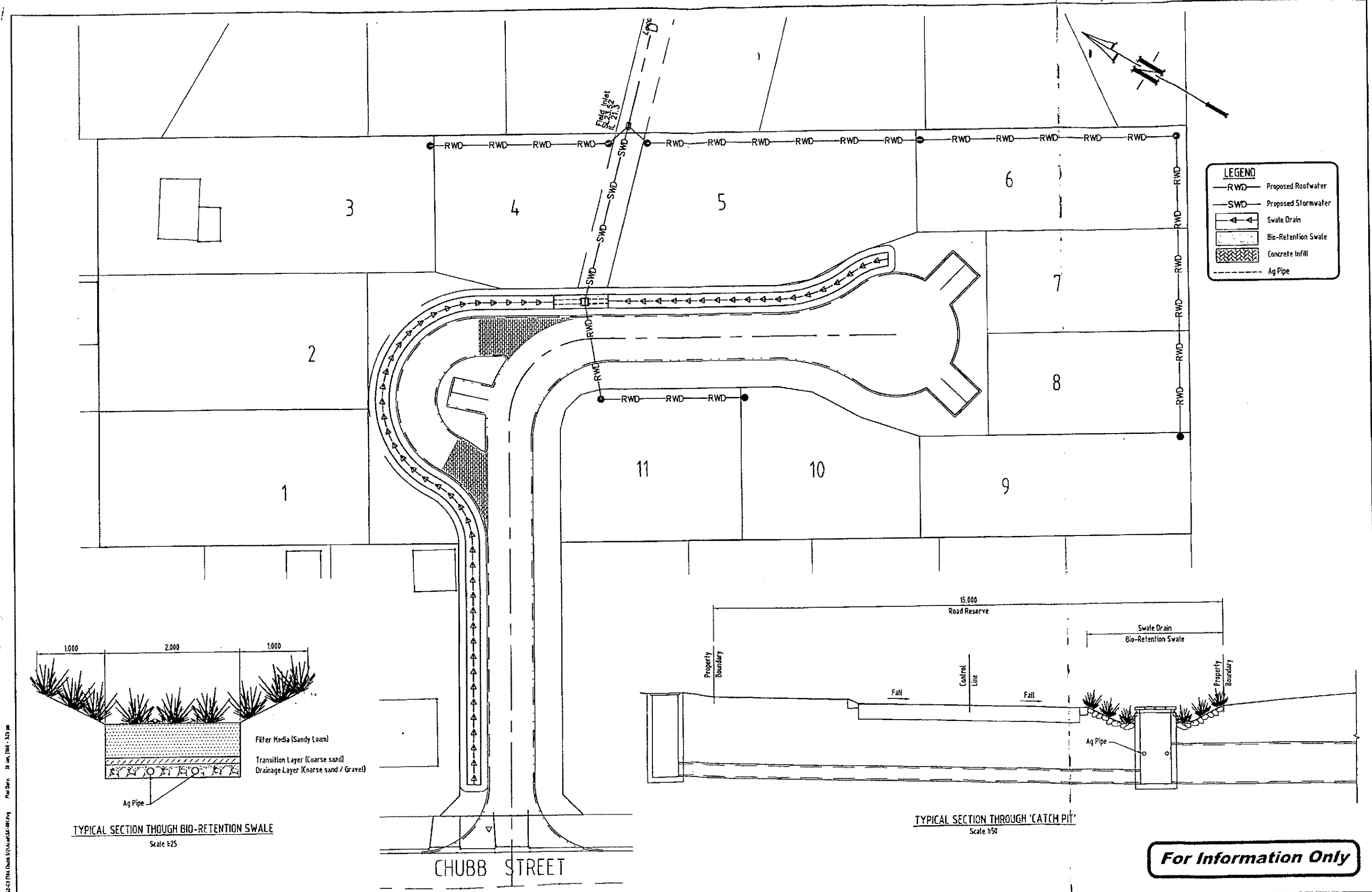


5 REFERENCES

- QUDM (1994) *Queensland Urban Drainage Manual* prepared by Neville Jones and Associates, & Australian Water Engineering for QDPI, BCC and Institute of Municipal Engineering (Queensland), Edition 1-2 November 1994.
- WBNM (2005) *Watershed Bounded Network Model WBNM2003 – User Manual*, University of Wollongong, June 2005.
- Willis (2007) *Ipswich Ideal Pty Ltd - Stormwater Quality Management Plan Proposed Residential Subdivision 70A Chubb Street, One Mile - Reference: 06-010; Daniel Willis 31 December 2007.*

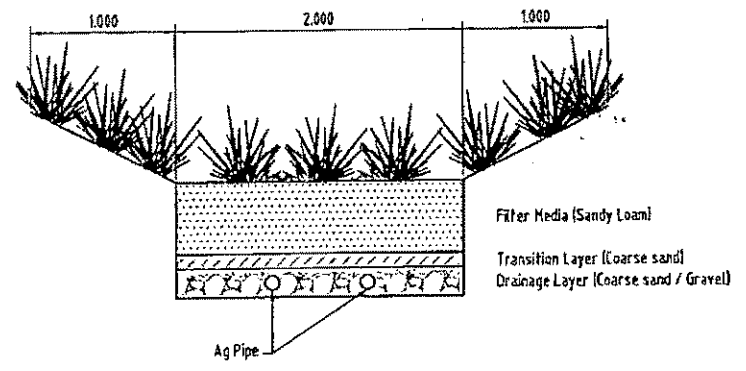


APPENDIX A
INFORMATION REQUEST

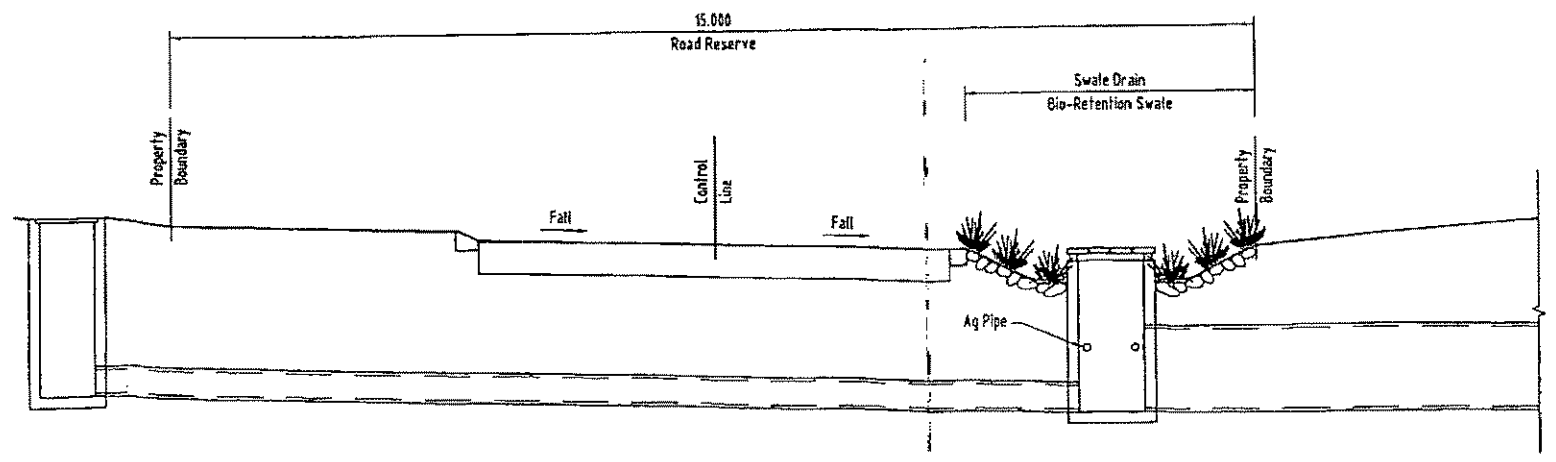


LEGEND

- Proposed Roofwater (RWD)
- Proposed Stormwater (SWD)
- Swale Drain
- Bio-Retention Swale
- Concrete Infill
- Ag Pipe



TYPICAL SECTION THOUGH BIO-RETENTION SWALE
Scale 1:25



TYPICAL SECTION THROUGH 'CATCH PIT'
Scale 1:50

For Information Only

CAD File Name: S:\Projects\17952-01\17952-01\17952-01.dwg Plot Date: 21 Jun 2009 1:33 PM		SCALE 	CLIENT Ipswich Ideal Pty Ltd	CONSULTING ENGINEER 205 Boundary Street Ipswich QLD Australia Tel: 07 3631 4322 Email: admin@dksc consulting.com.au	SCALE AS SHOWN DRAWN CHECKED DESIGNED DATE	PROJECT No: 07052 DRAWING No: SK-001 REV: A
A FIRST ISSUE REVISION DETAILS		DATE: 18.01.09 DRAWN: JHH	APPROVED (RPEQ 7181)	DATE	PROJECT No: 07052 DRAWING No: SK-001 REV: A	DRAWING TITLE: STORMWATER TREATMENT FILE NUMBER: .dwg

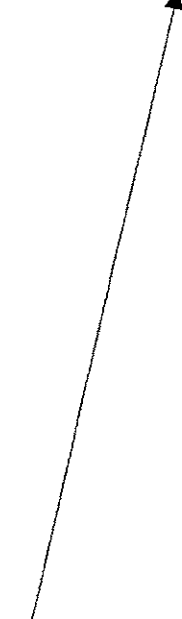
APPENDIX A:

MUSIC Concept Diagram – Pre-developed Flows

Urban

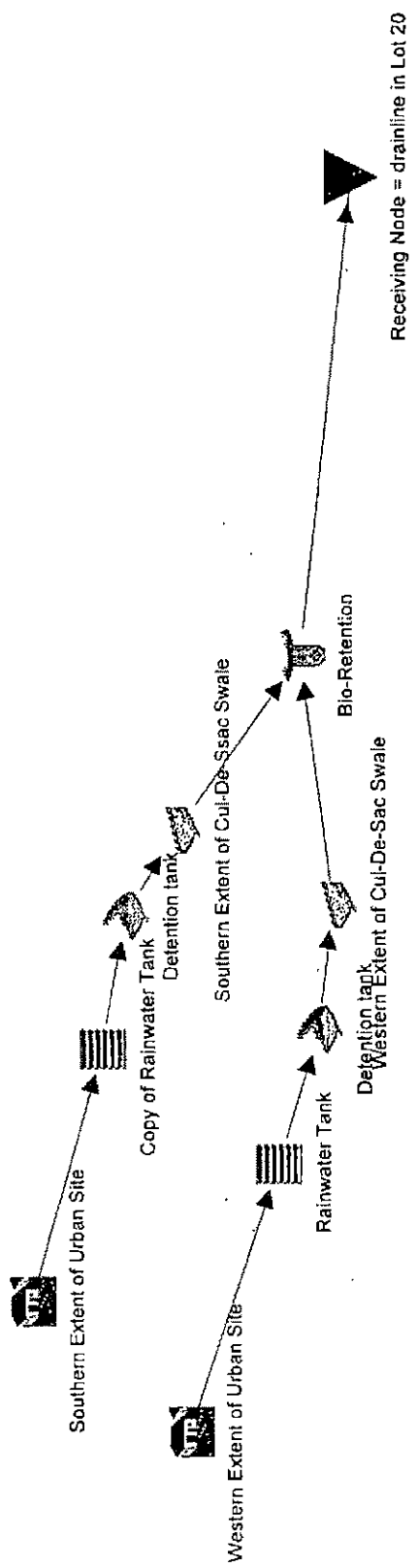


Receiving Node



APPENDIX B:

MUSIC Concept Diagram – Post Developed Flows





APPENDIX C:

Statistical MUSIC Data Outputs for Post Developed Flows



Receiving Node = drainline in Lot 20

Treatment Train Effectiveness

	Flow (ML/yr)	TSS (kg/yr)	TP (kg/yr)	TN (kg/yr)	Gross Pollutants (kg/yr)
Sources	1.31	295	0.570	2.73	45.5
Residual Load	1.23	10.9	98.2E-3	1.42	0.00
% Reduction	5.8	96.3	82.8	47.9	100.0

ATTACHMENT C
Subdivision Layout Plan prepared by Saunders Havill Group

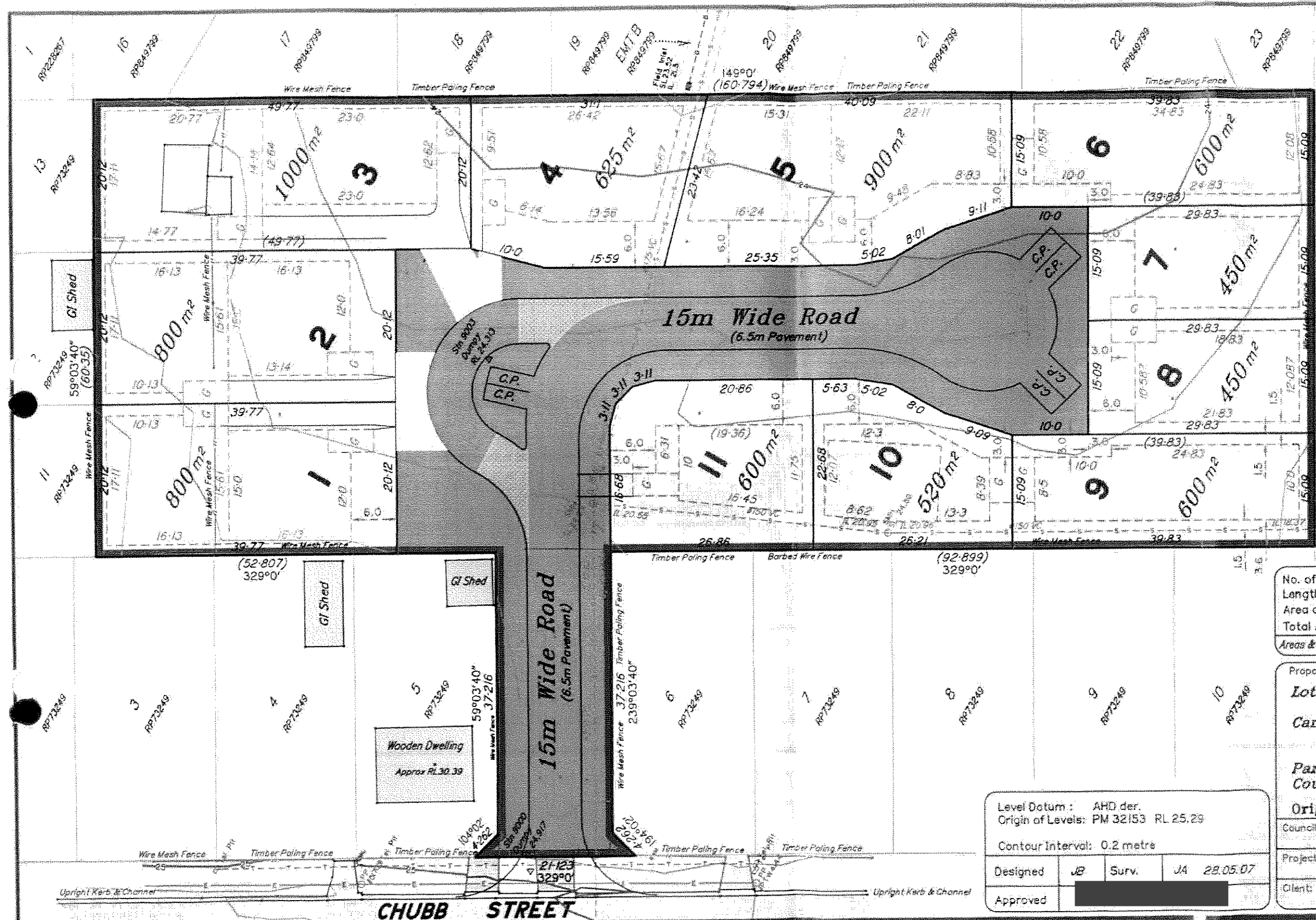
NOTES

This plan was prepared as a provisional layout to accompany a development application. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers of lots and contours and other physical features shown have been compiled from existing information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with development approval conditions. No reliance should be placed on the information on this plan for detailed subdivision design or for any financial dealings involving the land.

The Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than as a document prepared for the sole purpose of accompanying a development application and which may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

* This note is an integral part of this plan/data. Reproduction of this plan or any part of it without this note being included in full will render the information shown on such reproduction invalid and not suitable for use.



No. of Proposed Lots	11
Length of New Road	135 m
Area of New Road	2970 m ²
Total Area of Subdivision	1.032 ha

Areas & Dimensions are approximate only & subject to Survey.

Proposed Subdivision of:	Lots 1-11
	Cancelling Lot 14 on RP73249
	Parish of Brassall County of Churchill
	Original Portion 73
Council:	Ipswich C.C.
Project:	Chubb St, One Mile
Client:	Ipswich Ideal Pty Ltd

Level Datum:	AHD der.			
Origin of Levels:	PM 32153 RL 25.29			
Contour Interval:	0.2 metre			
Designed	JB	Surv.	JA	28.05.07
Approved	[Redacted Signature]			

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 Fax: 071 321 9423

Proposal Plan

Scale 1:500 - Lengths are in Metres.



Saunders Havill Group
 town planning
 reference:
 Job No. 4828
 Draw No. 4628.P2a
 Scale 1:500
 Date 16.08.07
 Client: Ipswich Ideal Pty Ltd

ATTACHMENT D
Stormwater Management Plan and Flooding Report prepared by Cardno



Cardno
Engineering the Future

CHUBB STREET DEVELOPMENT, ONE MILE



STORMWATER MANAGEMENT PLAN AND FLOODING REPORT



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Document Control					
Version	Date	Author		Reviewer	
		Name	Initials	Name	Initials
2	9 August 2005				

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CHUBB STREET DEVELOPMENT, ONE MILE STORMWATER MANAGEMENT PLAN AND FLOODING REPORT

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APPENDICES

APPENDIX A MIKE 11 CROSS-SECTIONS

1. INTRODUCTION

It is proposed to develop the land at 8 Georgette Street, 84 Chubb Street, and 100 Chubb Street, One Mile (refer Figure 1) for residential purposes (refer Figure 2).

In response to the development application lodged with respect to the site, Council issued an information request dated 24 March 2005. This report provides a response to the information request in relation to the following issues.

- flooding;
- local runoff; and
- water quality.

2. BREMER RIVER FLOODING

2.1 General

The Bremer River is located on the eastern boundary of the site. When the river is in flood, a portion of the site is inundated. Council has defined the following flood levels for both 84 Chubb Street and 100 Chubb Street:

- 100 Year Event 23.8 m AHD
- 20 Year Event 18.9 m AHD

The extent of inundation of the site produced by a 100 year event in the Bremer River is shown on Figure 2. The proposed development requires that filling be undertaken over part of the site inundated by Bremer River flooding. As the filling could impact on flood levels in the Bremer River, a hydraulic study was undertaken to quantify the impact and to determine the ameliorative measures required to ensure that flood levels are not increased as a result of development.

2.2 Scope of Hydraulic Study

Ipswich City Council has completed detailed hydraulic modelling of the Bremer and Brisbane River systems using the DHI program Mike-11. Council provided a reach of this model for use in the flood investigation. The data provided included cross sections, flow hydrographs (assuming ultimate catchment development) and the stage hydrograph calculated using the overall model at the downstream end of the reach.

The truncated model reach, which extends both upstream and downstream of the site, extends from cross-section BREM 1000700 to BREM 1004150. Sheet 40 of the Ipswich Rivers Flood Study is reproduced as Figure 2 and shows the extent of the truncated model and the location of cross sections within the reach.

Due to the broad area modelled by Council, the cross sections supplied to Cardno were at a spacing of about 500 metres. To provide additional cross sections in the region of interest, additional survey of the site and surrounding areas was undertaken by Terranean Mapping Technologies.

Based on the survey, cross-sections were extracted at approximately 100m intervals throughout the site as shown in Figure 2. These cross-sections were inserted into the existing model. Where new cross-sections were located near or at existing cross-sections the latest cross-section data was adopted. As the survey did not include areas below the water line, appropriate bed levels were calculated for each new cross section based on the cross sections in the Council Mike-11 model. The cross sections used in the MIKE-11 model are shown in Appendix A.

2.3 Methodology

To determine the impact of the proposed development on flood levels, a 'base case' was established using the truncated existing conditions Mike-11 model with ultimate catchment flows, and inserting the new cross-sections (refer Section 2.2).

The 'developed case' model was then established by modifying the base case Mike-11 model to reflect the proposed filling. To offset the loss in storage produced by the filling, compensatory earthworks are proposed in the area between the development and the riverbank. The earthworks have been limited to areas at or above 20 m AHD in order to minimise the change in level of available storage (i.e. to prevent the replacement of high level storage with low level storage which is less effective). The level of 20 m AHD is above the defined 20 year flood level and therefore considered to be suitable for the creation of storage.

The extent of proposed earthworks are shown in Figure 3. The cross sections affected by the proposed development are between BREM1002600 (upstream) and BREM1003000. Appendix A contains the modified cross sections used to represent the development case relative to the existing case.

The cross sections indicate that the proposed filling on its own will reduce the storage volume of the Bremer River by approximately 13,000 m³. However, this is more than offset by the proposed cut volume of approximately 24,000 m³.

The 'base case' MIKE 11 model used the resistance values from the original model, duplicating them in the new cross-sections. The resistance values used in the 'developed case' model were the same as for the 'base case' model. The radius type of Resistance Radius was used for the computation of processed data, as it was the radius type used in the previous Council Mike-11 model.

The base case and developed case models were run for the 100 year ARI local flood event. A recent review done by Brisbane City Council of the hydrology used in its modelling has meant that flows from Brisbane River have been changed. While the Council Mike-11 model is being reviewed to reflect these changes, it can be assumed that the 100 year ARI event can be modelled using what was considered to be the 50 year event flows. The 100 year ARI flood levels quoted by council correspond to Mike-11 results of the 50 year ARI event. The critical storm duration for this event is the 50 year 30 hour flooding of Brisbane River, and so this storm event was used for the analysis. Unfortunately, there are no flows available to adequately model the 20 year ARI event.

The 'base case' was calibrated so that results matched those obtained by Council. The 'base case' was then modified to account for the proposed development.

2.4 Results

Anticipated peak flood level results are summarised in Table 1 for the base case and proposed development case under the peak flood event. Included in Table 1 is a summary of the afflux resulting from the proposed development. A positive value indicates an increase in flood level.

As the results in Table 1 show, the peak water levels for the developed case are generally less than those for the base case for the 100 year ARI local flood event, by as much as 41mm.

It should be noted that the flood levels in Table 1 for the site are comparable to the 100 year ARI flood level of 23.8m AHD that Council quotes for the site.

The impact of the proposed development produces a maximum increase of 5 mm in flood level within the site for the 100 year ARI local flood event. However the flood levels are generally decreased, by as much as 41 mm, indicating that the development can proceed without adversely impacting on flood levels. It is expected that the final shape of the compensatory works will be developed as part of detailed design.

Table 1 Anticipated Peak Flood Levels

Cross-section	100 Year Event			
	Previous Council Model (mAHD)	Base Case Peak Flood Level (mAHD)	Developed Case Peak Flood Level (mAHD)	Afflux (mm)
BREM 1000700.00	25.25	25.17	25.14	-32
BREM 1001120.00	25.12	25.05	25.02	-32
BREM 1001700.00	24.88	24.80	24.76	-35
BREM 1002300.00	24.33	24.32	24.27	-41
BREM 1002600.00		24.03	24.01	-28
BREM 1002700.00	23.87	23.86	23.85	-17
BREM 1002800.00		23.66	23.65	-10
BREM 1002900.00		23.52	23.52	5
BREM 1003000.00		23.39	23.39	-3
BREM 1003050.00		23.38	23.38	0
BREM 1003100.00		23.35	23.35	0
BREM 1003200.00	23.37	23.30	23.30	0
BREM 1003700.00	23.09	23.09	23.09	0
BREM 1004150.00	22.94	22.94	22.94	0

Note: Sections within site shaded

The peak velocities calculated in Mike-11 were also compared. As Table 2 shows there is no significant change in peak velocities for the developed case.

Table 2 Anticipated Peak Velocities

Cross-section	100 Year Event		
	Base Case Peak Velocity (m/s)	Developed Case Peak Velocity (m/s)	Afflux (m/s)
BREM 1000700.00	0.94	0.94	0.00
BREM 1000910.00	0.81	0.81	0.00
BREM 1001120.00	0.67	0.67	0.00
BREM 1001410.00	0.77	0.77	0.00
BREM 1001700.00	1.22	1.22	0.00
BREM 1002000.00	1.15	1.15	0.00
BREM 1002300.00	1.11	1.12	0.00
BREM 1002450.00	1.24	1.24	0.00
BREM 1002600.00	1.47	1.47	0.00
BREM 1002650.00	1.52	1.52	0.00
BREM 1002700.00	1.60	1.58	-0.02
BREM 1002750.00	1.71	1.70	-0.01
BREM 1002800.00	1.84	1.83	-0.01
BREM 1002850.00	1.74	1.71	-0.03
BREM 1002900.00	1.67	1.61	-0.06

Cross-section	100 Year Event		
	Base Case Peak Velocity (m/s)	Developed Case Peak Velocity (m/s)	Afflux (m/s)
BREM 1002950.00	1.67	1.67	0.00
BREM 1003000.00	1.78	1.78	0.00
BREM 1003025.00	1.88	1.88	0.00
BREM 1003050.00	2.00	2.00	0.00
BREM 1003075.00	1.62	1.62	0.00
BREM 1003100.00	1.51	1.51	0.00
BREM 1003150.00	1.30	1.30	0.00
BREM 1003200.00	1.14	1.14	0.00
BREM 1003450.00	1.25	1.25	0.00
BREM 1003700.00	2.05	2.05	0.00
BREM 1003925.00	1.52	1.52	0.00
BREM 1004150.00	1.13	1.13	0.00

Note: Sections within site shaded

3. LOCAL RUNOFF

3.1 General

Local runoff from the site has the potential to increase as a result of development. Although the flood levels calculated for the Bremer River are based on full catchment urbanisation, the proposed level of urbanisation of the site is greater than that anticipated for the region. Therefore, it will be necessary to reduce the peak flow discharged from the site in order that flood levels in the Bremer River are not affected. This will be achieved by the construction of a detention basin as part of the development.

Given that an existing dam exists on the banks of the river (refer Figure 4), it is proposed to increase the size of the dam to provide the required detention volume and then to direct all stormwater runoff from the site to the detention basin. It is intended that only areas above the 20 year flood level (18.9 m AHD) will be considered as providing effective storage for local runoff.

The required detention basin size was determined using the empirical preliminary detention basin sizing guidelines contained in the *Queensland Urban Drainage Manual* (Neville Jones and Associates et al, 1992)(QUDM). It is recognised that as part of detailed design the size of the detention basin will need to be confirmed by the use of a runoff routing model to confirm that the peak runoff from the site does not increase for all events up to and including the 100 year event.

3.2 Hydrology

The peak flow discharged from the site for the pre-developed (i.e. prior to any development occurring on the site) and developed cases was calculated using the Rational Method in accordance with QUDM). For the analysis, it was conservatively assumed that the existing site was undeveloped.

Appropriate rainfall intensities for the site were derived in accordance with Ipswich City Council Standard Drawing STD.D026 (Revision B, 1998).

The calculation of peak flow rate for the pre-developed and developed cases is presented below.

- **Pre Developed Case**

The catchment area draining to the proposed detention basin is 4.95 hectares. The travel distance to the proposed limit of development is 200 metres.

The time of concentration for the catchment was calculated using the Friend's Equation from QUDM (Equation 5.05.1) with the following data:

- Horton roughness value of 0.045 (averaged grassed surface)
- Overland sheet flow path length 50 metres
- Slope of 2 percent along flow path

Table 5.05.2 of QUDM recommends that the length over which Friend's equation should be used in rural situations is between 50 and 200 metres. A length of 50 metres was considered reasonable for the site.

Friend's Equation produced a travel time of 15.4 minutes.

For the remaining 150 metres of flow distance, recourse was made to the channel flow times presented in Table 5.05.6 of QUDM. For a fall of 5 metres and a length of 150 metres, a travel time of 5.1 minutes was obtained, providing an overall time of concentration of 20.5 minutes. The 100 year rainfall intensity associated with this time of concentration is 191 mm/h.

For a fraction impervious of zero, a runoff coefficient of 0.66 was adopted for the 10 year event (Table 5.04.2 of QUDM) together with a frequency factor of 1.2 for the 100 year event (Table 5.04.3 of QUDM).

The above values provided a peak flow for the 100 year event of 2.08 m³/s.

- **Proposed Development**

With the development in place, the time of concentration of the catchment will be reduced. Based on standard inlet times (Table 5.05.1 of QUDM), the time of concentration to the gully pits was taken as five minutes.

To this was added 300 metres of pipe travel (the likely pipe network will result in a longer travel distance than the current direct overland flow distance). Based on the channel flow times presented in Table 5.05.6 of QUDM and a fall of 5 metres, a travel time of 3.8 minutes was obtained, providing an overall time of concentration of 8.8 minutes. The 100 year event rainfall intensity associated with this time of concentration is 270 mm/h.

Due to the relatively high density of the development, a runoff coefficient of 0.85 was adopted for the 10 year event (Table 5.04.2 of QUDM). Applying a frequency factor of 1.2 resulted in a runoff coefficient of unity for the 100 year event.

The above values provided a peak flow for the 100 year event of 3.72 m³/s.

3.3 Detention Basin Sizing

Based on the peak flows calculated for the pre-developed and developed cases, an estimate of the detention basin size required to reduce the peak flow from the developed case to match that produced by the site prior to development was made using the empirical relations presented in Section 6.06.1 of QUDM.

The required basin volume was calculated using each of the four available equations. The largest volume estimate was 1,155 m³ (Equation 6.03). For other cases where detailed design has been completed, it has been found that the actual volume required is about double that suggested by the empirical equations. Consequently, a volume of 2,300 m³ was adopted for the site.

The surface area of the existing dam is about 960 m². Assuming a 1.5 metre depth of water for the 100 year event (to minimise safety concerns) and a batter of 1 in 3, a land

area of 1,900 m² is required. Based on existing contours, it should be straightforward to create a detention basin with this area, as shown indicatively on Figure 4.

3.4 Ground Conditions

At a meeting held with Council in relation to the project, the high erosion potential of the soils in the area was noted. In particular, it is understood that Council is concerned in relation to the concentrated discharge of runoff down the relatively steep bank of the Bremer River.

As noted in Section 3.1, runoff from the site for events up to the 100 year event will be directed to a detention basin located near the top of the bank of the Bremer River. As noted in Section 3.2, the detention basin will reduce the peak flow discharged from the developed site to 2.08 m³/s for the 100 year event. The slope of the bank between the detention basin and the Bremer River is about 1 in 13.5. At this slope, the entire 100 year event flow can be conveyed via twin 525 mm diameter pipes. This would allow the runoff from the site to be piped down the face of the river bank and outlet near the standing water level in the river, thereby avoiding any potential for the riverbank to scour.

However, the flow velocity in the pipes for the 100 year event will be approaching 5.5 m/s (a single pipe at a grade of 1 in 13.5 would convey the flow at a velocity greater than 6 m/s which is unacceptable according to QUDM). To minimise the potential for scour at the outlet of the pipes, it is proposed that a manhole and reduction in grade would be introduced near the pipe outlet to reduce the velocity of flow. The velocity of flow in a 1,200 mm diameter pipe at a grade of 1 in 200 would be less than 2.5 m/s. The energy loss associated with the reduction in velocity would be contained within the manhole and therefore unable to cause scour of the river bank. Standard outlet protection measures such as gabions would be used at the outlet of the larger pipe to protect the river bank as the width of flow expands and the velocity of flow reduces to a magnitude insufficient to cause scour.

A typical detail of the proposed works is provided in Figure 4.

4. WATER QUALITY MANAGEMENT

4.1 Construction Phase

During the construction phase, the potential exists for increases in the amount of pollutants, particularly sediment, exported from the site. However, given that the majority of works relate to the construction of buildings, the actual area of open area disturbed by the works will be relatively small.

During this period, an Erosion and Sediment Control Plan will be required as part of the overall Environmental Management Plan prepared for the construction phase.

Consequently, the site is classified as being low risk with respect to erosion and sediment control. However, it is still considered prudent to adopt appropriate erosion and sediment control measures during the construction phase.

It is considered that the completion of construction activities in accordance with the Sediment and Erosion Control Plan developed using the Institution of Engineers Australia publication *Soil Erosion and Sediment Control, Engineering Guidelines for Queensland Construction Sites* (June 1996) will minimise the nature of any adverse impacts during the construction phase.

4.2 Operational Phase

Given the size of the proposed development, it is considered that the development will be deemed as having a significant water quality impact under Council's Planning Scheme Policy No 3 (April 2004, p PSP3-10). As such, Set A of the water quality objectives specified in Table 2.3.1 of the Planning Scheme Policy No 3 are applicable. The water quality objectives for those indicators applicable to residential developments are listed in Table 3. It can be noted that the values presented in the table are median values.

Table 3 Water Quality Objectives

Indicator	Objective
Suspended solids	15 mg/L for combined wet and dry periods 90%ile < 100 mg/L for wet weather periods
Total Phosphorus	0.07 mg/L
Total Nitrogen	0.65 mg/L
Oils and grease	No visible films or odour
Faecal coliforms	1000 organisms/ 100 mL (minimum of 5 samples taken at regular intervals not exceeding one month, with 4 of 5 not exceeding 4000 organisms/ 100 mL)
Litter/ gross pollutants	No anthropogenic (man-made) material greater than 5 mm in any dimension.

In order to satisfy Council's water quality objectives, it will be necessary to treat runoff from the site. Based on previous modelling of developments, the following treatment train is proposed for the site:

- Gross pollutant traps.
- Bioretention system.

The gross pollutant traps would be proprietary devices located in the underground drainage system and would remove litter, coarse sediment and oil and grease. The traps would provide pre-treatment of runoff prior to its discharge to the bioretention system. The logical location for the bioretention system is in the base of the detention basin (refer Figure 4).

Bioretention devices consist of a vegetated storage area over an infiltration trench. Given the fall of land, it will be possible to drain the infiltration trench to the pipe draining the detention basin. The basin would be designed to store and treat the runoff volume associated with the three month design event (taken as half the one year event). Runoff in excess of the three month event would be drained via the outlet pipe for the detention basin.

Sizing of the gross pollutant traps and the bioretention system will be completed as part of detailed design. The relevant design parameters for the design will be as follows:

- Gross pollutant traps - treatment of runoff from three month event
- Bioretention systems - storage area sized to capture runoff from three month event
- runoff to drain over a period of not less than 24 hours.

It is expected that the ownership of the devices and responsibility for maintenance will remain with the Body Corporate for the development.

The likely performance of the system was assessed using the AQUALM program. The removal efficiencies of the treatment devices were adopted from Table C4.3 of the Brisbane City Council *Water Quality Management Guidelines* (Version 1, 2000). The adopted removal efficiencies are presented in Table 4. It can be noted that the efficiency of the bioretention system was taken to be the combined performance of a swale and infiltration system.

Table 4 Adopted Removal Efficiencies

Indicator	Removal Efficiency (%)	
	Gross Pollutant Trap	Bioretention System
Suspended Solids	40	82
Total Nitrogen	20	66
Total Phosphorus	20	66

The model data adopted for the analysis are summarised in Table 5.

Table 5 Adopted Model Data

Data	Source
Rainfall	Rainfall records for Ipswich 040101 with missing records generated from factored records for Amberley 040004. The generated rainfall record extended from 1978 to 1998 with a mean annual rainfall of 854 mm.
Evaporation	Mean monthly pan evaporation records were obtained from Samford, with an average annual evaporation of 1519 mm.
Rainfall-runoff relations	As specified in the Brisbane City Council publication <i>Guidelines for Pollutant Modelling in Brisbane</i> (Version 7, October 2003) for urban areas.
Pollutant Export	As specified in the Brisbane City Council publication <i>Guidelines for Pollutant Modelling in Brisbane</i> (Version 7, October 2003) for urban areas.

The AQUALM model considered the 21 year period from 1st January 1978 to 31 December 1998, with the results for the first year of simulation discarded in order to allow the moisture stores to reach equilibrium. The median concentrations predicted by the AQUALM model are listed in Table 6.

Table 6 AQUALM Model Results

Indicator	Model Result (mg/L)	Water Quality Objective (mg/L)	Meets Water Quality Objective?
Suspended Solids	1.9, combined wet and dry periods 30, 90 th %ile wet weather	15 100	Yes
Total Nitrogen	0.50	0.65	Yes
Total Phosphorus	0.04	0.07	Yes

With reference to Table 6, it can be concluded that the proposed treatment system, subject to detailed design, will allow the water quality objectives specified by Council, to be met.

At present, it is not possible to model indicators other than sediment and nutrients. However, it is considered that the proposed measures will provide adequate treatment with respect to oils and grease, faecal coliforms, and litter.

5. INFORMATION REQUEST ISSUES

Specific responses to the issues raised in the information request that are dealt with in this report are presented below.

2. (a) Stormwater

"The developer is requested to submit a stormwater management plan that identifies among other things the proposed methods of stormwater control for overland flows and constructed drainage systems from the proposed development. Further, the Developer is requested to submit preliminary hydraulic calculations for the major and minor storm events prepared by an RPEQ in accordance with QUDM which identifies the increase in stormwater runoff generated by the full development, the location and treatment of discharge points such that the proposed development will not adversely affect downstream properties"

The detailed response to this issue is provided in Section 3. It is proposed to construct a detention basin at the boundary of the development to offset the increase in peak flow produced by the development. Discharge from the detention basin will be piped to the base of the river bank in order to eliminate the potential for bank erosion.

2. (d) Flooding

"The developer is requested to submit a hydraulic and ground stability study prepared by a RPEQ for the subject site that addresses the following:

- (i) **The likely impact of the proposed development, including associated earthworks, both upstream and downstream from the site, particularly in terms of changes to depth, duration or velocity of flood waters and duration of warning time;**
- (ii) **Geology of the site and any related problems;**
- (iii) **Instability features such as slips, soil creep etc**
- (iv) **Effects of existing vegetation and of any possible removal and or modification of same; and**
- (v) **Likely impacts in terms of watercourse bank stability."**

The flooding investigation undertaken in relation to the site is described in Section 2. The impact of proposed filling is to be offset by the excavation of a volume greater than that filled. The analysis of the proposed works indicated a slight reduction in flood level for the proposed works.

Overall, it is considered that the works will have a negligible impact on the duration or velocity of flooding or warning times.

The Geology of the site is not likely to be affected by the development but this will need to be considered in detail as part of detailed design. Further, the development of the adjacent land suggests that soil creep and slips are not likely on this site. Again, this will be considered as part of detailed design.

In relation to item (iv), there is little vegetation on the site and therefore this item is not considered to be relevant. However, it would be expected that any works on the bank of the river would be accompanied by landscaping to ensure that a stable batter is achieved.

3. (a) Stormwater Quality

"In order to demonstrate compliance with the Scheme, the applicant is to supply either of the following:

- (i) A conceptual design Stormwater Management Plan (the "conceptual design SQMP") must be prepared by a suitably qualified and experienced professional and be developed in accordance with the *Australian Runoff Quality Design Guidelines, Australian Institute of Engineers, 2003* and must demonstrate, through appropriate pollutant export modelling (eg AQUALM or MUSIC), that the predicted pollutant levels in the stormwater from the Catchment will meet the pollutant levels identified in Table 1 below."

Section 4 of this report details the proposed water quality treatment measures for the site and presents the results of modelling of the conceptual system. The modelling indicated that the treatment measures will allow the water quality objectives defined by Council to be achieved.

6. CONCLUSION

A residential development is proposed for Chubb Street, One Mile (refer Figure 1 and Figure 2). In response to the information request issued by Council in relation to the proposed development, consideration has been given to the following issues, with outcomes as summarised below.

- **Flooding**

Modelling of the proposed development and compensatory earthworks has indicated that the development can proceed without adversely impacting on flood levels.

- **Local Drainage**

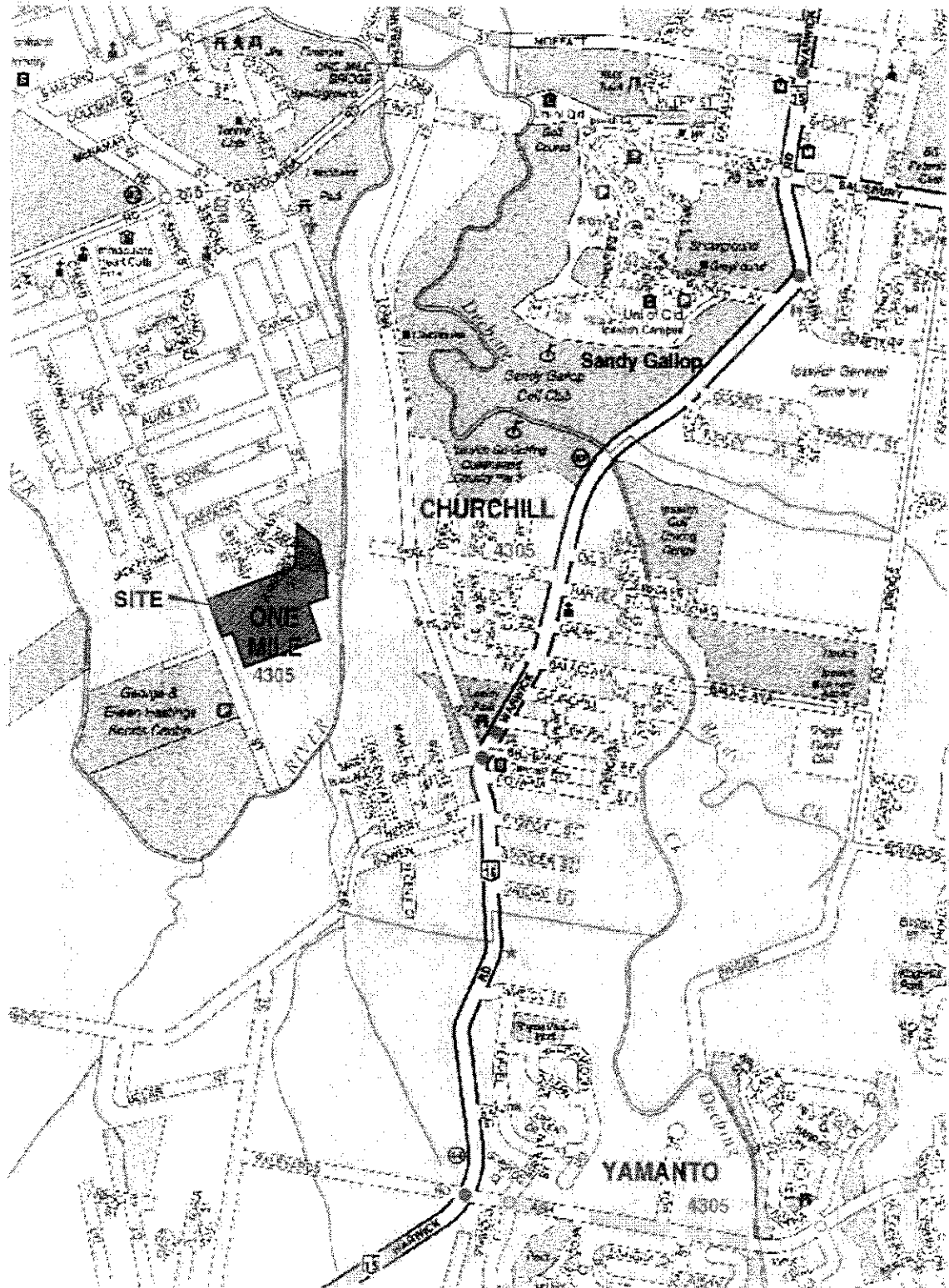
A detention basin will be constructed to reduce the peak flow from the developed site to match that produced for the existing case.

- **Water Quality**

A stormwater treatment system has been proposed for the development that will allow the water quality objectives identified by Council to be achieved.

FIGURES

- Figure 1** **Locality Plan**
- Figure 2** **Proposed Development and New Cross-sections**
- Figure 3** **Sheet 40 of Ipswich Rivers Flood Study**
- Figure 4** **Detention Basin Size**



Location plan sourced from Brisbane, Gold Coast & Sunshine Coast 2001 LBD - CD-RGP Universal Press Pty Ltd.

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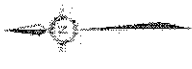
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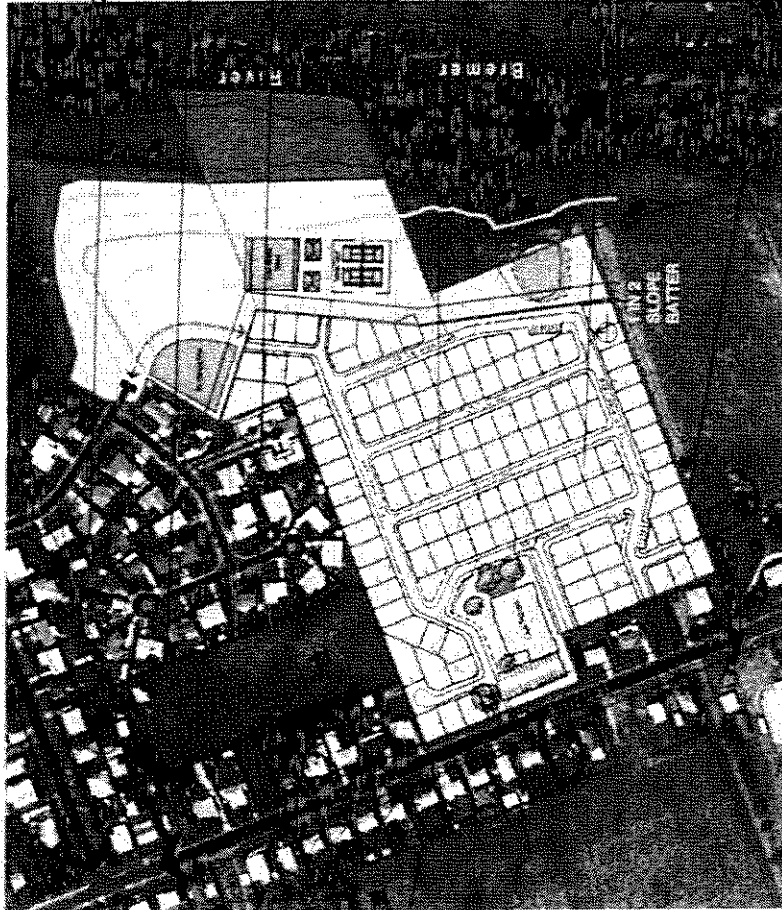
FIGURE 1 LOCALITY PLAN

Project No.: 3500/06



LEGEND

- Proposed Development Fill Limit
- Proposed Excavation Limit
- MIKE 11
- Cross section



TYPICAL SECTION
Scale: 1:3000



Scale: 1:3000 (A4)

FIGURE 2

PROPOSED DEVELOPMENT AND NEW CROSS-SECTIONS

Project No: 19050742

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Cardno CONTINUUM GROUP



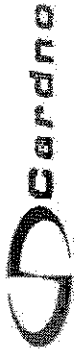
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FIGURE 3
SHEET 40 OF
IPSWICH RIVERS FLOOD STUDY

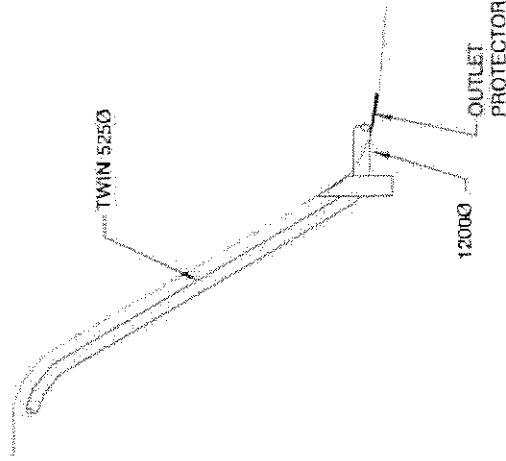
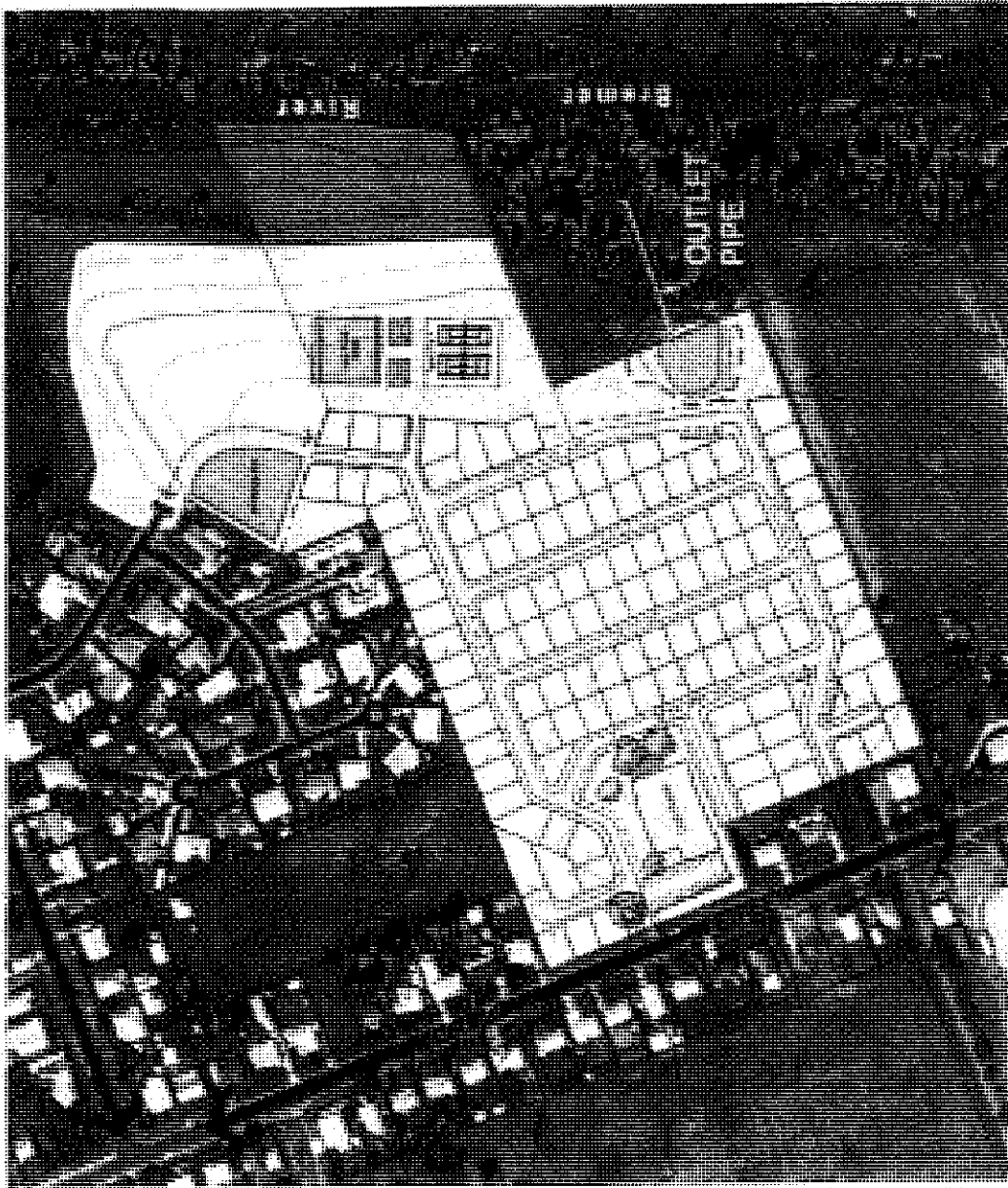
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Rev: Orig. Date: August 2005

Project No.: 3500/49



CHUBB ST DEVELOPMENT, ONE MILE
STORMWATER MANAGEMENT PLAN



PROFILE OF OUTLET PIPE

SCALE: NTS

Scale 1:4000 (A4)

FIGURE 4

DETENTION BASIN SIZE

Project No: 3500/49

LEGEND

Proposed Detention Basin

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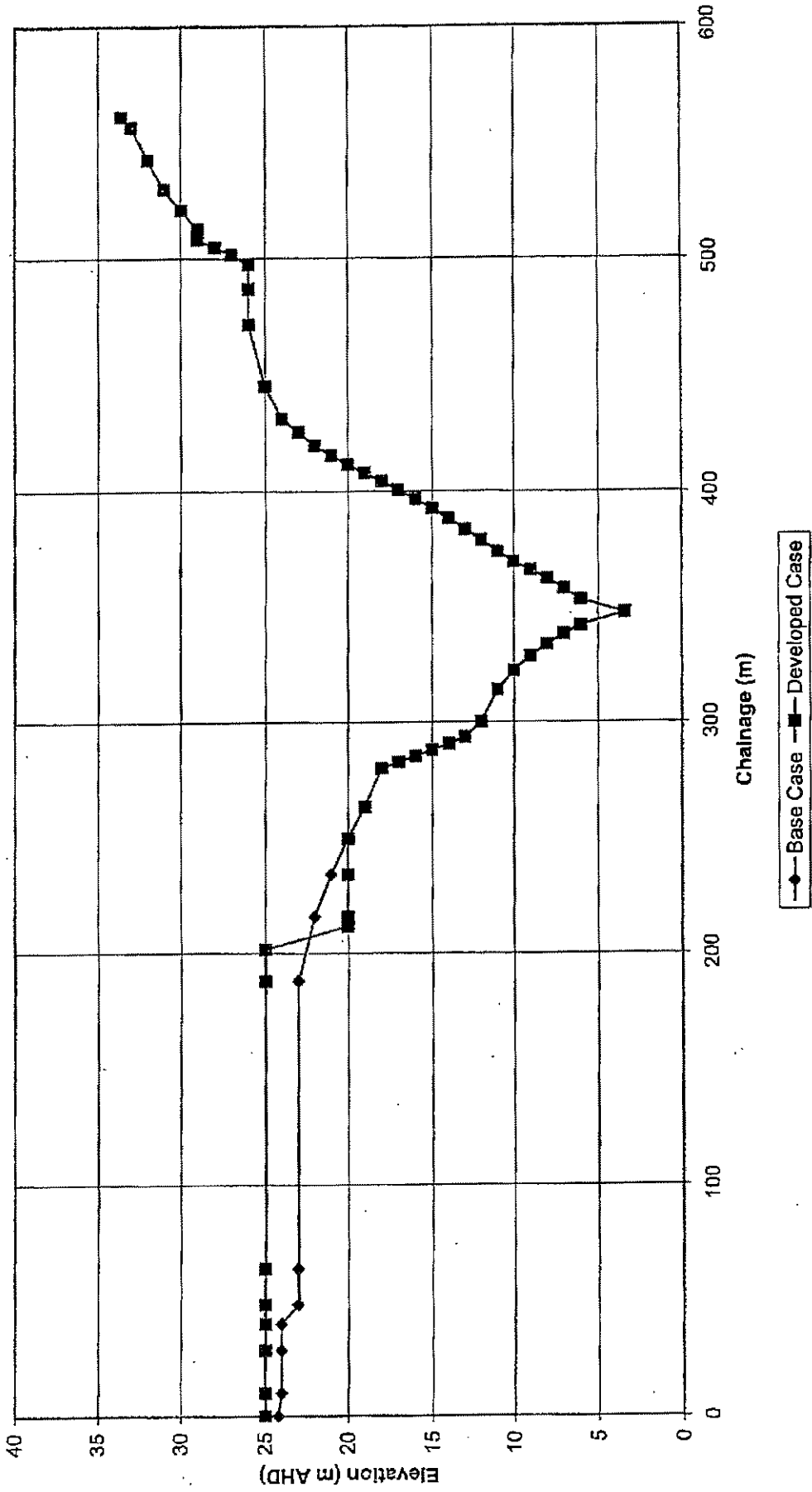
Rev. Orig. Date: August, 2005

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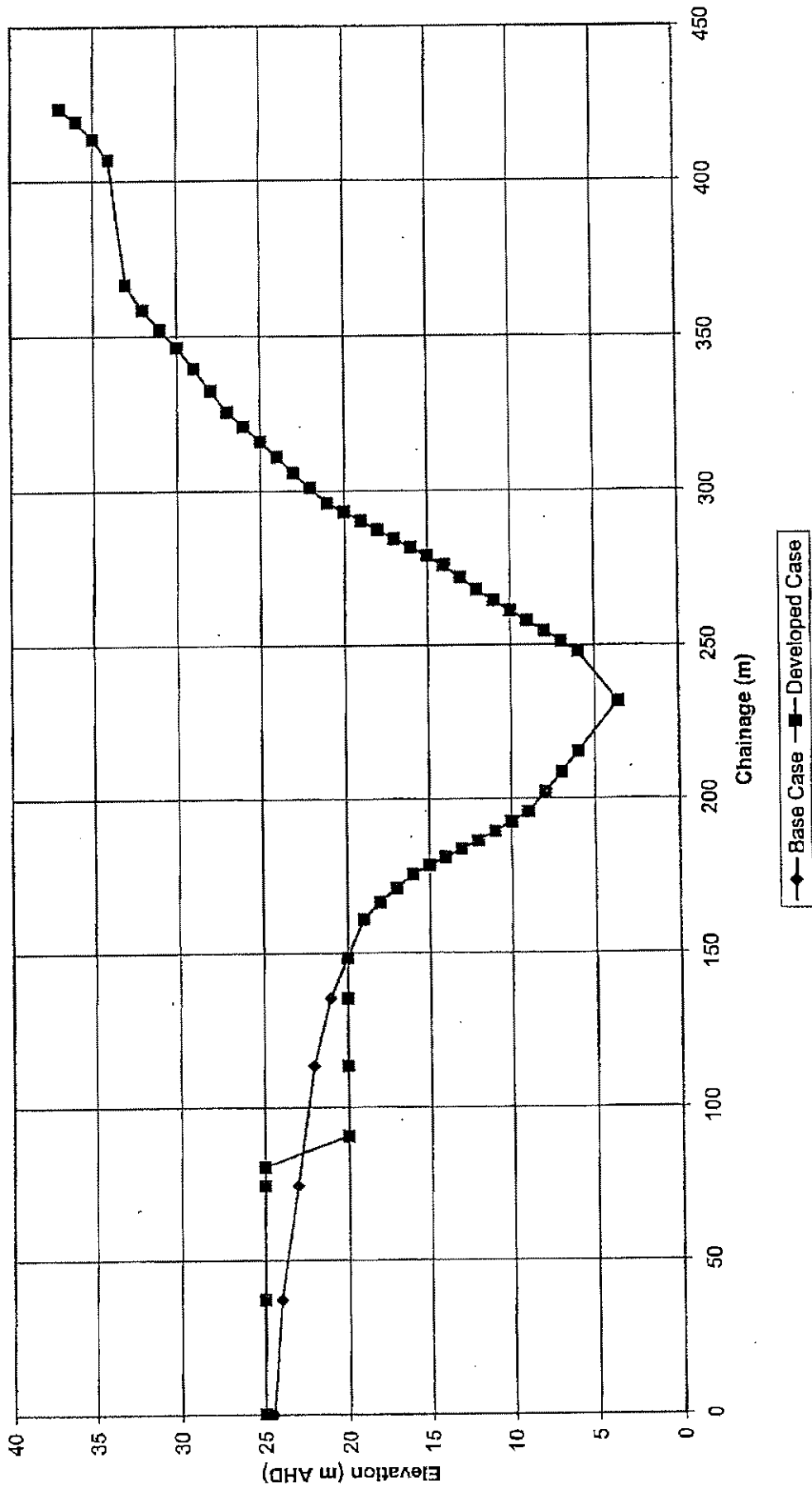
APPENDIX A

MIKE 11 CROSS-SECTIONS

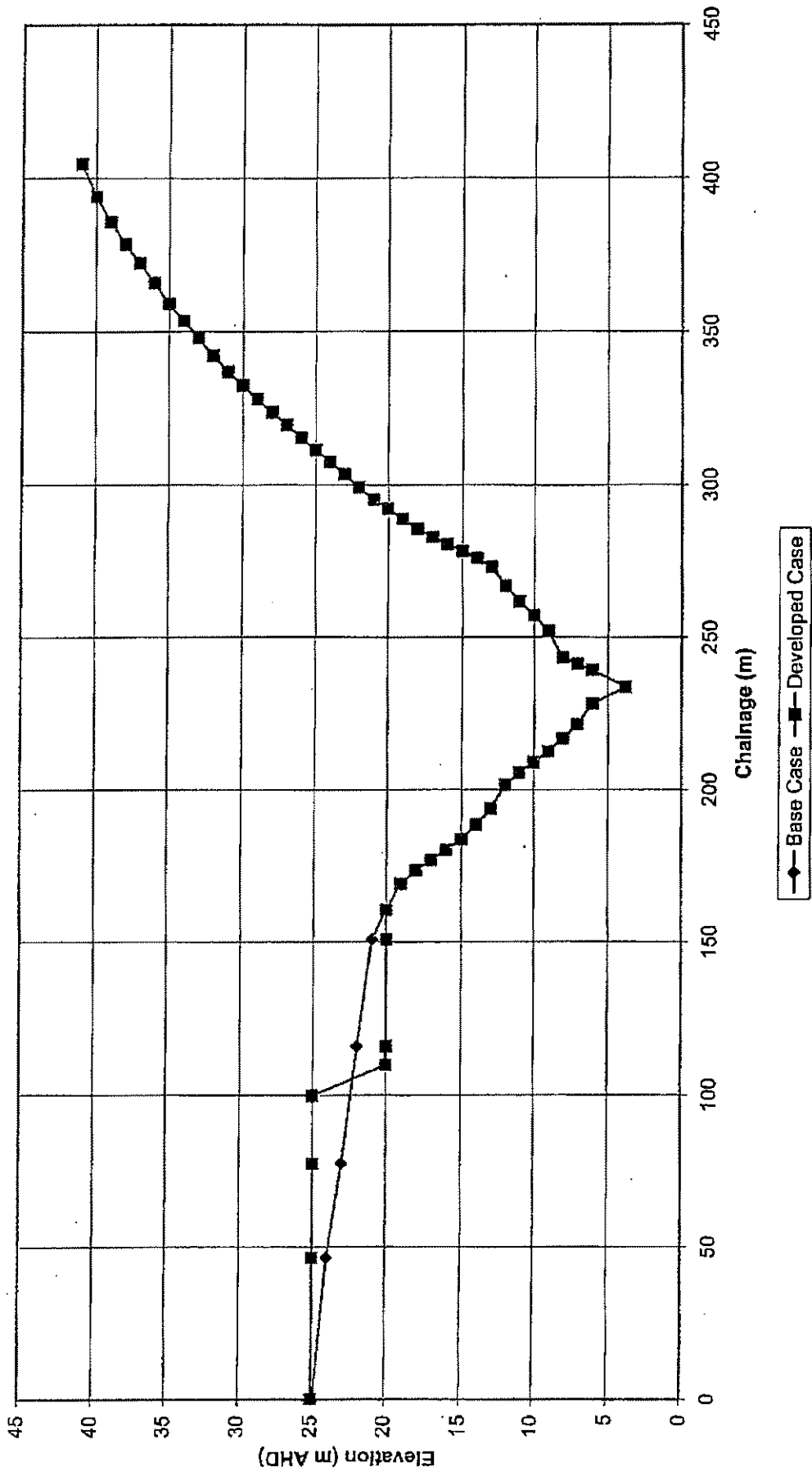
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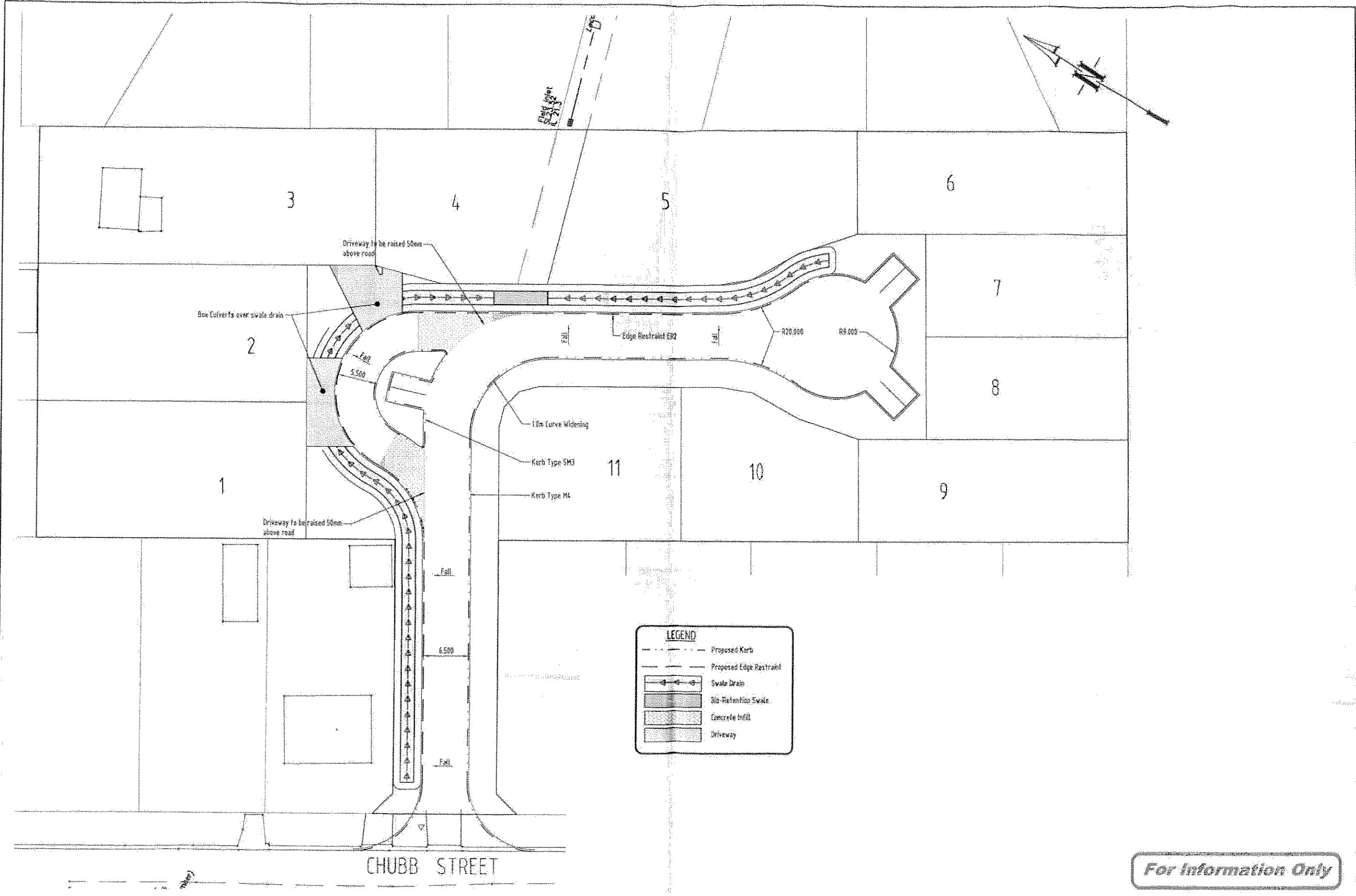
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BREM 1002800



ATTACHMENT E
Subdivision Layout Showing Road Details prepared by DKS Consulting Engineers



DATE: 26/01/2018 10:52 AM

REV	REVISION DETAILS	DATE	DRAWN
A	FIRST ISSUE	18/01/08	JHH

SCALE	1:100
CLIENT	Ipswich Ideal Pty Ltd

CLIENT
Ipswich Ideal Pty Ltd

DESIGNER
dks consulting

2018/01/08
18/01/08
18/01/08
18/01/08

SCALE	AS SHOWN	JOB DESCRIPTION
DRAWN		
CHECKED		
DESIGNED		

APPROVED (RPER TR)	DATE
--------------------	------

DRAWING TITLE	FILE NUMBER
LAYOUT PLAN	049
PROJECT No.	07052
DRAWING No.	SK-002
REV.	A

For Information Only

ATTACHMENT B
Stormwater Quality Management Plan

Reference: 06-010

Ipswich Ideal Pty Ltd

**STORMWATER QUALITY MANAGEMENT
PLAN**

**Proposed Residential Subdivision
70A Chubb Street, One Mile**

**PO BOX 7044
SIPPY DOWNS, QLD. 4556**

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1.0 INTRODUCTION

1.1 GENERAL

This report has been prepared in response to Item 2 of an information request issued by Ipswich City Council for an application for a lot reconfiguration development permit relating to the subdivision of land located at 70A Chubb Street, One Mile. The proposal involves the subdivision of the existing parcel into 11 urban residential allotments. The location of the land is shown on Figure 1, with the context of the land in relation to the Bremer River shown as Figure 2. A subdivision plan showing site contour information determined by survey has been included as Figure 3 of this report.



FIGURE 1:
Locality Plan

1.2 SITE DESCRIPTION

The holds frontage to Chubb Street and is situated within the urban suburb of One Mile approximately 3 kilometres from the Ipswich City Centre. The subject land comprises 1.032

hectares and is currently a vacant urban parcel supporting lawn. Land to the north and east comprises low density residential development, typically comprising single and two storey detached dwellings, whilst land to the south adjoins the tennis centre and local sports oval (refer Figure 1). Land to the west of Chubb Street comprises a row of existing, older housing stock with new allotments developed for a similar land use located further to the west.

Approval has been granted by Council for the construction of in excess of 100 retirement units on the land to the south. This will see the redevelopment of the tennis centre, resulting in the subject land being surrounded on all sides by urban residential development.

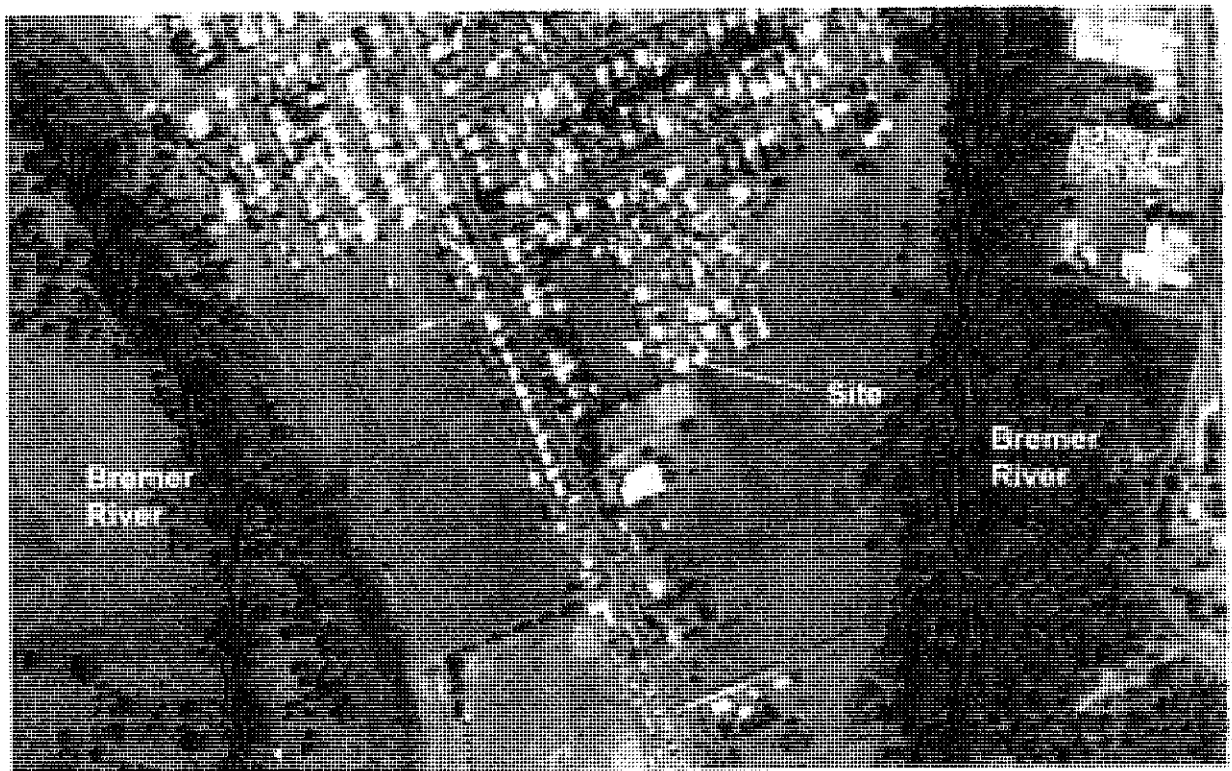


FIGURE 2:

Locality in Relation to the Bremer River

1.3 TOPOGRAPHY

The land is flat with minimal fall from Chubb Street to the rear of the property. The overall topographical relief is less than 800 mm across the entire site. Drainage of the site appears to be slow and occurs as sheet flow to the low point which corresponds with the sewerage/drainage easement on Lot 20 immediately to the east.

Low flows entering the easement travel through an underground drainage system and eventually discharge into land dedicated as park which drains via overland flow through a series of vegetated swales for a considerable distance until it enters the Bremer River. Major flows appear to travel through an overland flow path onto the adjoining street to the east and eventually move through the vegetated swale/overland flow path to the Bremer River.

1.4 CATCHMENT AREAS

For the purposes of this assessment, the existing catchment comprises the subject land as the area is surrounded by residential development fronting local streets with kerb and channel. Given the existing land use in the area is residential in nature and the subject land simply comprises one large residential allotment surrounded by residential development, the existing land use within the catchment subject to this assessment has been assumed to be low density urban residential.

The developed catchment will result in all new allotments draining to a new internal cul-de-sac, thereby ensuring the extent of the developed catchment is defined with the property boundary of the parent parcel.

2.0 LEGISLATION AND STATUTORY REQUIREMENTS

2.1 ENVIRONMENTAL PROTECTION ACT

The *Environmental Protection Act, 1994* provides for the protection of Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (*ecologically sustainable development*). This is to be achieved by an integrated management program that is consistent with ecologically sustainable development. The Act is supported by a number of Environmental Protection Policies as well as Regulations. The Environmental Protection Agency has responsibility for the administration of the Act and the subordinate policies and regulations.

The Environmental Protection (Water) Policy seeks to achieve the object of the Act in relation to Queensland waters and provides a framework for—

- (a) identifying environmental values for Queensland waters; and
- (b) deciding and stating water quality guidelines and objectives to enhance or protect the environmental values; and
- (c) making consistent and equitable decisions about Queensland waters that promote efficient use of resources and best practice environmental management; and
- (d) involving the community through consultation and education, and promoting community responsibility.

Of relevance to this assessment, Schedule 1 of the EPP (Water) sets out the environmental values and water quality objectives for the Bremer River, including all tributaries of the Bremer River estuary. These are defined specifically as part of Basin 143 and are detailed in the *Bremer River Environmental Values and Water Quality Objectives*, published by the Department in March 2007.

2.2 INTEGRATED PLANNING ACT

2.2.1 General

The Integrated Planning Act seeks to achieve ecological sustainability by coordinating and integrating planning at the local, regional and State levels, managing the process by which development occurs and managing the effects of development on the environment (including managing the use of premises). The Act allows for the establishment of planning instruments

that allow consistency of decision making at state, regional and local levels of governance. Those relevant to the site have been discussed below:

2.2.2 South East Queensland Regional Plan

The South East Queensland Regional Plan was prepared in accordance with Section 2.5A of the *Integrated Planning Act 1997* to provide a sustainable growth management strategy for the Region to the year 2026 and encompasses 18 separate local authorities, including Ipswich City. The Regional Plan is both a statutory instrument and a planning instrument and is a higher order planning document that takes precedence over the local government planning scheme for the area. The Regional Plan sets out a number of desired regional outcomes, with outcome 11 related to water management for the region. A number of principles and policies have been detailed in relation to this outcome, including Principle 11.5 which seeks to protect and enhance the ecological health and water quality of surface and groundwater, including regional waterways, wetlands, estuaries and Moreton Bay.

The policies that undergird this principle and are relevant to this assessment include:

- 11.5.1 Protect or improve the quality of receiving waters through land use planning, development standards and land management practices.
- 11.5.3 Ensure the potential impacts of development on water quality in receiving waters are taken into account in planning and development decisions.
- 11.5.4 Minimise development impacts on the natural water cycle by adopting water sensitive design and water quality standards.

In this regard, the South East Queensland Regional Plan encourages local government to require all development proposals to demonstrate, prior to approval, how stormwater (or sewage effluent) generated or affected by the development will be managed. Treatment should use the best management practices to ensure discharged water does not adversely affect environmental values and meets water quality standards.

2.2.3 Ipswich Planning Scheme

The Ipswich Planning Scheme establishes a number of planning provisions that relate to water quality. Section 4.3.3 of the Scheme sets out specific outcomes for the urban area which apply to this designation. Section 4.3.3(3) details specific outcomes in relation to environmental

management. Subclause (a) requires that the quality of stormwater runoff from a use or site is similar to or better than the established water quality standards for the receiving waters or lawful point of discharge. Given that the area currently drains to a large overland flow path which extends for some distance over land before entering the Bremer River, this assessment has focussed on identifying appropriate stormwater quality improvement devices to be included in the proposed development to achieve a reduction in pollutant loads such that the quality of stormwater runoff from the site is considerably better than the current water quality being discharged from the area.

Sections 12.5.3 (2)(k & l) and Table 12.5.2 (31) of the Reconfiguration of a Lot Code relate specifically to stormwater management, with Section 12.5.3 (2)(l) of the Code setting out that stormwater quality management systems are required which:

- ensure that disturbance to natural riparian systems is minimised including the minimisation of erosion and scour resulting from changed water regimes; and
- ensure stormwater discharge to receiving waters, both during construction and in developed catchments, does not degrade the quality of water in the receiving environments.

Table 12.5.2 (31) of the Reconfiguration of a Lot Code details the specific outcomes for the Code and requires that stormwater drainage systems:

- (a) minimise the environmental impact of urban run-off on surface receiving water quality and on other aspects of the natural environment;
- (b) optimise the interception, retention and removal of water-borne pollutants through the use of appropriate 'fitness for use' criteria, prior to the stormwater's discharge to receiving waters;
- (c) ensure the continuation, in healthy condition, of a wide diversity of wetland environments in the urban landscape;
- (d) ensure that 'first flush' diversion or treatment systems are able to be installed to lessen the impact of shock pollution loadings to receiving waters; and
- (e) optimise the integration of stormwater infrastructure with open space management objectives.

The proposed development seeks to satisfy these outcomes by demonstrating that the provision of various stormwater quality improvement devices within the development will assist in meeting Council's stormwater quality requirements. In this regard, all stormwater flows associated with

the first flush are to be directed through an appropriate treatment train to meet the above requirements.

Of final consideration, Planning Scheme Policy 3 – General Works, Part 2 – Stormwater Drainage, Division 3 – Water Quality Control requires any application for development that is likely to have a significant adverse impact on water quality is to be supported by a Water Quality Management Plan that details the temporary and permanent methods of water quality control that are to be included in the development. The Planning Scheme Policy defines a series of criteria for determining whether development is likely to have a significant adverse impact on water quality as follows:

- (a) any development (or development proposal) located in a waterway corridor or a wetland area;
or
- (b) multiple residential or commercial uses with an impermeable surface area (not including roof area) in excess of 2500m²; or
- (c) major subdivisions; or
- (d) industrial activities that have at least 2000m² in uncovered storage/working space; or
- (e) industrial activities that are impact assessable; or
- (f) uncovered car parks with at least 100 spaces.

The scheme goes on to define a major subdivision as the reconfiguring of a lot within an urban area which—

- (a) requires the construction of an Industrial Collector, Collector Street, Internal Connecting Road or higher order road; or
- (b) involves the creation of 75 or more residential lots or 100 or more dwelling units (or their equivalent), or any combination thereof which would generate 750 or more vehicle trips per day.

Given the proposed development does not comply with any of the nominated criteria, the current application is not required to be supported by a Water Quality Management Plan. Nonetheless, an assessment of likely water quality impacts is still required to satisfy the requirements of Council's Reconfiguration of a Lot Code.

2.3 RELEVANT GUIDELINES

2.3.1 Bremer River Water Quality Objectives

The spatial extent and boundaries of water types described in the Bremer River Water Quality Objectives documentation are shown on Plan WQ1432 (refer Figure 4). The water types are based on the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC, 2000) and the Queensland Water Quality Guidelines (2006).

The document classifies water within the Bremer River into different water types on the basis of the Australian Water Quality Guidelines and the Queensland Water Quality Guidelines. Plan WQ1432 shows the water within the area of One Mile comprising lowland freshwaters which are described as larger slow flowing freshwater streams and rivers, shown as freshwaters under 150 metres altitude. This water type has been further divided into three sub types in South East Queensland derived from work carried out for the Ecosystem Health Monitoring Program:

- **lowland freshwaters:** Larger (third, fourth and fifth order), slow flowing and meandering streams and rivers. Gradient very slight. Substrates sometimes cobble and gravel but more often silt, sand or mud.
- **wallum/tannin-stained freshwaters:** Tannin-stained, generally low gradient, small to mid-sized streams, many with sandy substrates and low pH, tea-coloured water draining through wallum vegetation.
- **coastal freshwaters:** Mix of small and large slow-flowing lowland rivers and creeks between Caboolture and NSW border that flow across the coastal plain. Substrates often cobble despite low gradient. Does not include steeper upland streams that feed these systems.

The document classifies the affected waters within this locality of the Bremer River as *lowland freshwater* with a number of environmental values prescribed. The water quality objectives detailed are based on the Aquatic Ecosystem Environmental Value which is the most stringent of the values listed in Table 1. From Table 2 of the Bremer River document, the following water quality objectives are nominated to protect aquatic ecosystems for all freshwaters within Ipswich City (only those of relevance to this assessment) have been included:

- Suspended solids: 15 mg/L;

- Total Nitrogen: 650 ug/L; and
- Total phosphorous: 70 ug/L.

Whilst it is acknowledged that the proposed development can assist in meeting these requirements, it is also noted that the stormwater from this site will drain via a number of overland flow paths which have treatment capacity prior to entering the Bremer River. Of further note, additional stormwater from the surrounding urban environment will also mix with runoff from the site prior to entering the River.

2.3.2 Water Sensitive Urban Design Technical Design Guidelines

The Technical Design Guidelines for South East Queensland have been published by Healthy Waterways and describe appropriate methods for the detailed design of some common structural stormwater management measures in South East Queensland. The Guidelines detail that experience within Australia and overseas has identified some problematic issues with the application of concentration-based receiving water targets or water quality objectives as discharge criteria for urban stormwater. The issues identified include selection of a representative median concentration for stormwater flow, which is highly variable. In addition, the substantial increase in runoff volume that typically accompanies urban development can increase pollutant loads to receiving waters (even if concentrations are not increased) and also damage urban streams through increased erosion. For these reasons many authorities across Australia, including South East Queensland are moving towards the use of load-based objectives.

Council's information request sets out the following pollutant reduction targets for the development:

- 80% for total suspended solids;
- 60% for total phosphorus;
- 45% for total nitrogen; and
- 90% for gross pollutants.

This is consistent with the load reduction targets published in Section 1.5 of the Water Sensitive Urban Design Technical Design Guidelines for South East Queensland published by Healthy Waterways.

In this regard, consideration of the above reduction requirements will be used as the basis for this assessment.

2.3.3 Guideline Specifications for Soil Media in Bioretention Systems

The Guideline Specifications for Soil Media in Bioretention Systems has been prepared by the Facility for Advancing Water Biofiltration. These Guidelines provide specific details on the media nature and composition for biofiltration systems.

3.0 WATER QUALITY PARAMETERS

3.1 POTENTIAL POLLUTANTS

The development of the site will increase the overall volume of stormwater discharged from the site. Stormwater in urban environments may be characterised by an increase in the following contaminants:

- Nitrogen, which can be derived from fertilisers, imported soils, or organic matter derived from lawns, gardens and animal waste;
- Phosphorous, typically applied in the form of fertilisers, detergents used externally, such as car washing, etc, and through the importation of soil;
- Suspended solids;
- Gross pollutants, including litter, etc; and
- Petroleum hydrocarbons, principally from driveways and roads within the area.

Modelling of potential pollutants has been undertaken using the MUSIC software package (Version 3) developed by the CRC for Catchment Hydrology. The model allows for the following target pollutants to be modelled in terms of their likely generation rate, concentration and load based outputs, and the effectiveness of various mitigation devices proposed.

The majority of stormwater generated onsite will be discharged into the Bremer River several hundred meters to the east.

3.2 MUSIC INPUTS

3.2.1 Climate Data

Rainfall data is based on a 10 year dataset for Amberley at 6 minute intervals. Some evaporation data is based on monthly datasets.

3.2.2 Source Node Details

Three generic source nodes are available in MUSIC:

- Urban
- Agricultural; and
- Forested.

The Brisbane City Guidelines detail specific land uses that correlate to the City Plan land use classifications. For the purposes of this assessment, the Urban Residential source node has been adopted. This is used to describe low to high density residential areas and activities servicing local neighbourhood needs. Such areas are predominantly comprised of housing allotments, together with all associated facilities, including roads, parks, school grounds, etc. The Guidelines detail that it is typical for Urban Residential areas to contain less than 50% total impervious area.

Source node data for the MUSIC catchment model has been summarised below. Given that the overall catchment is of limited area and the nature of the land use remains unchanged for the purposes of the model (ie. it exists as an urban allotment and is proposed for urban development), pre and post developed scenarios have adopted the standard datasets recommended by the Brisbane City Guidelines for Pollutant Export Modelling in Brisbane (Version 7.0). The existing site has limited impervious areas (ie. 5% allowed for), while the proposed development will result in approximately 45%, or 4,650 square metres of the site comprising impervious surfaces.

Node Description	Area (ha)	Effective Impervious Area (ha)
Existing Residential	1.032	0.016
Proposed Residential	1.032	0.148

* effective impervious area has been determined in accordance with Table 2.2 of the Brisbane City Guidelines as 31% of total impervious area, which is assumed to be 50% of the total area.

Pollutant concentrations have been derived from the Brisbane City Guidelines for Pollutant Export Modelling in Brisbane (Version 7.0) and have been summarised as follows:

Land Use	Parameter	Total Suspended Solids (Log ₁₀ mg/L)		Total Phosphorous (Log ₁₀ mg/L)		Total Nitrogen (Log ₁₀ mg/L)	
		Base Flow	Storm Flow	Base Flow	Storm Flow	Base Flow	Storm Flow
Residential	Mean	1.0	2.18	-0.97	-0.47	0.20	0.26
	Standard deviation	0.34	0.39	0.31	0.31	0.20	0.23

The pollutant concentrations relate to both the pre and post developed scenarios.

Provision has been made in the model for the inclusion of a 5KL water tank with each new residence, equating to a total volume of 55KL water storage occurring within the catchment. Opportunity exists for onsite detention to occur for an additional 55KL, comprising an additional 5KL of storage that drains using a pipe discharge of restricted diameter for each allotment.

3.2.3 Treatment Node Details

The following treatment methods have been proposed for the development:

- Grassed swales; and
- Bioretention systems.

A plan showing the location of these elements has been included as Figure 5. Details relating to each of these aspects have been discussed below:

Swales

Grassed swales are proposed along the proposed cul-de-sac. In general accordance with the principles of water sensitive urban design, the proposed roadway will adopt a single cross fall, with all stormwater runoff being directed towards a swale that will run the full length of the road. Given the discharge point from the swale system will be towards the centre of the site partway along the extent of the new cul-de-sac, it has been assumed that the swale system will comprise two swales that extent half of the length of the cul-de-sac length. The swales will be grassed or comprise rock lined, vegetated swales suited for the removal of sediment and suspended solids, with capacity to also remove nitrogen and phosphorous. Examples of suitable swales have been shown below:



The parameters of the swale system within the MUSIC model have been detailed in the following table:

Catchment (ha)	Length of Swale (m)	Base Width (m)	Top Width (m)	Depth (m)
0.516	55	2.0	4.0	0.5
0.516	55	2.0	4.0	0.5

All swales were modelled with a bed slope of 0.25%, a vegetation height of 0.1 metres and a seepage loss of 30mm/hr. A shorter length has been adopted than the entire roadway as the final few metres will comprise the bioretention system as well as the tendencies for initial flows to be contained on the pavement at either end of the new roadway.

Bioretention Systems

Bioretention systems rely on a filter media and plants to attenuate flows and remove the concentration of pollutants from stormwater runoff. A single bioretention system is proposed for this development, comprising a filtration system situated towards the centre of the swale system which convey low level flows to the outlet within the drainage easement on Lot 20 to the east.

The parameters of the bioretention system within the MUSIC model have been detailed in the following table:

Surface Area (m ²)	Depth (m)	Median Particle Diameter (mm)	Ksat (mm/hr)
15	1.0	0.65	350

A concept diagram of the MUSIC model pre and post developed flows has been provided in Appendices A and B respectively.

3.3 MUSIC OUTPUTS

3.3.1 General

Outputs from the modelling scenarios identifying the effectiveness of the treatment train have been presented below.

Parameter	Pre-developed Flow	Post Developed Flow Without Treatment			Post Developed Flow With Treatment	% Reduction
		Vest Catchment	South Catchment	Combined Catchments		
Flow (ML/yr)	5.26	0.653	0.653	1.31	1.23	5.8
Total Suspended Solids (kg/yr)	974	149	146	295	10.9	96.2
Total Phosphorus (kg/yr)	2.00	0.288	0.282	0.570	0.098	82.8
Total Nitrogen (kg/yr)	10.3	1.38	1.35	2.73	1.42	47.9
Gross Pollutants (kg/yr)	1.97	22.7	22.7	45.5	0.00	100.0

The proposed treatment train meets Council's required targets as detailed below.

Parameter	Reduction Target (%)	Reduction Achieved (%)
Total Suspended Solids (kg/yr)	80	96.2
Total Phosphorus (kg/yr)	60	82.8
Total Nitrogen (kg/yr)	45	47.9
Gross Pollutants (kg/yr)	90	100.0

The effectiveness of each treatment node has been detailed as follows:

3.3.2 Swales

Swale performance has been shown in the following tables.

Western Extent of Cul-de-sac

Parameter	Source Node Output	Output from Swale	% Reduction
Flow (ML/yr)	0.653	0.624	4.5
Total Suspended Solids (kg/yr)	149	10.2	93.2
Total Phosphorus (kg/yr)	0.288	0.0845	70.6
Total Nitrogen (kg/yr)	1.38	0.976	29.1
Gross Pollutants (kg/yr)	22.7	0.00	100.0

Southern Extent of Cul-de-sac

Parameter	Source Node Output	Output from Swale	% Reduction
Flow (ML/yr)	0.653	0.624	4.5
Total Suspended Solids (kg/yr)	146	10.4	92.9
Total Phosphorus (kg/yr)	0.282	0.0846	70.0
Total Nitrogen (kg/yr)	1.35	0.972	27.9
Gross Pollutants (kg/yr)	22.7	0.00	100.0

The swale system proposed along the edge of the internal roadway is highly effective at capturing total suspended solids and gross pollutants, with considerable effectiveness at reducing phosphorous. All stormwater from either end of the cul-de-sac will be directed through the swale into a bioretention system positioned prior to discharge to the underground drainage system.

3.3.3 Bioretention System

Bioretention system performance has been shown in the following table. The bioretention system is situated at the centre of the swale at the point where the drainage system deviates across proposed Lot 4 to the existing drainage easement on existing Lot 20 to the east. The effectiveness of bioretention system at decreasing nitrogen concentrations and gross pollutants is clearly indicated in the tabulated results.

Parameter	Source Node Output	Output from Bioretention System	% Reduction
Flow (ML/yr)	1.31	1.23	5.8
Total Suspended Solids (kg/yr)	295	10.9	96.3
Total Phosphorus (kg/yr)	0.570	0.0982	82.8
Total Nitrogen (kg/yr)	2.73	1.42	47.9
Gross Pollutants (kg/yr)	45.5	0.00	100.0

3.3.4 Treatment Train Summary

The modelling has indicated that the use of a swale for the length of the new road as well as a single bioretention system at the sag in the road where stormwater runs eastward to join with the existing drainage infrastructure will be sufficient to ensure the target reduction criteria are satisfied. A summary print out from the MUSIC program for post developed flows has been included as Appendix C.

3.4 MAINTENANCE

3.4.1 General

The use of swales and bioretention system as stormwater quality improvement devices in the proposed development will result in some maintenance in the medium term. The extent of maintenance envisaged is anticipated to be as follows:

3.4.2 Swale

The grassed swale which will extend along the new cul-de-sac before discharging through a bioretention system into a piped underground drainage system across Lot 20 and on to the Bremer River will result in a build up of sediment over time. The likely costs of having this material removed and the base of the swale reinstated is not anticipated to be substantial and may be required once every ten years.

3.4.3 Bioretention System

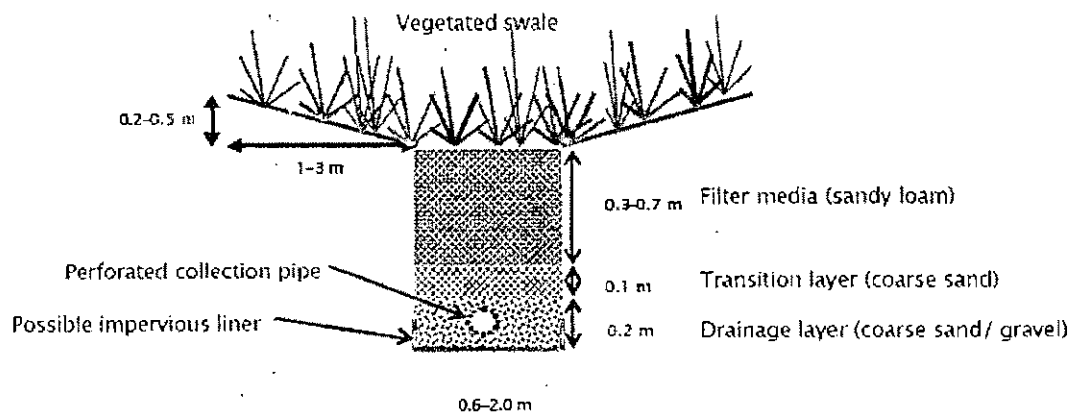
It is envisaged that the bioretention system will accumulate some sediment over time. As this system is proposed to be located within the road reserve, intermittent maintenance will be required by the local authority. Due to the relatively small size of the catchment and the nature of the land use, the volume of sediment is not likely to be excessive. Any maintenance replacing the filter media within these systems will ensure that the new media complies with the following details.

The bioretention system comprises three layers of media. Filter media (600mm deep or as specified in the engineering design), a transition layer (100mm deep) and a drainage layer (150mm deep). The filter material may be of siliceous or calcareous origin and is to be placed with minimal light compaction to avoid subsidence and uneven drainage. The prescribed

hydraulic conductivity will generally be around 350mm/hr. Soils used as filtration media should be within the following ranges

- Clay 2-4% (<0.002 mm)
- Silt 4-8% (0.002-0.05 mm)
- Very Fine Sand 5-10% (0.05-0.15 mm)
- Fine Sand 10-25% (0.15-0.25 mm)
- Medium to Coarse Sand 60-70% (0.25-1.0 mm)
- Coarse Sand 7-10% (1.0-2.0 mm)
- Fine Gravel <3% (2.0-3.4 mm)

Soils modelled in the MUSIC scenario have comprised soils with a 0.6mm diameter in the filtration zone with a hydraulic conductivity value of 350mm/hr. It is acknowledged that the K_{SAT} value is towards the upper end of the range, however this has been deliberate as a means of reducing the potential for ponding to occur during minor rainfall events given the low grades within the area. Vegetation species envisaged for the system include a variety of sedges. A typical cross section of a bioretention system has been shown below (source: BCC Draft Water Sensitive Urban Design Engineering Guidelines, Chapter 3 – Bioretention Swales, August 2005).



The transition and drainage layers of the biofiltration device will be in general accordance with the Guideline Specifications for Soil Media in Bioretention Systems prepared by the Facility for Advancing Water Biofiltration.

4.0 CONCLUSION

This assessment has examined the water quality associated with the proposed subdivision of land at 70A Chubb Street into 11 allotments. This assessment seeks to ensure that a reduction in water borne pollutants for gross pollutants, suspended solids, total nitrogen and total phosphorous occurs in a manner consistent with Council's requirements and the reduction targets detailed in the Healthy Waterways documentation.

The assessment details that the inclusion of a bioretention system of some 15 square metres surface area will be necessary at the sag in road where the stormwater drainage is directed eastwards towards the existing drainage infrastructure on Lot 20, across parkland further to the east and into the Bremer River. The development of the cul-de-sac will see the road profile adopt a single cross fall and vegetated swale along its length prior to draining through the bioretention system and into the easement on Lot 20 for discharge. Modelling has indicated that the inclusion of these treatments together with a 5KL rainwater storage tank and 5KL detention tank arrangement for each property will assist in adequately reducing contaminants to meet the nominated targets.



FIGURE 3:
Subdivision Layout Plan

NOTES

This plan was prepared as a preliminary report to accompany a development application. The information on this plan is not suitable for any other purpose.

Property dimensions, areas, numbers, etc. and contours and other physical features shown on this plan are based on the best available information and may not have been verified by field survey. These may need verification if the development application is approved and development proceeds, and may change when a full survey is undertaken or in order to comply with the relevant approval conditions. No warranty is made by the applicant in relation to this plan for detailed information or for any financial dealings involving the land.

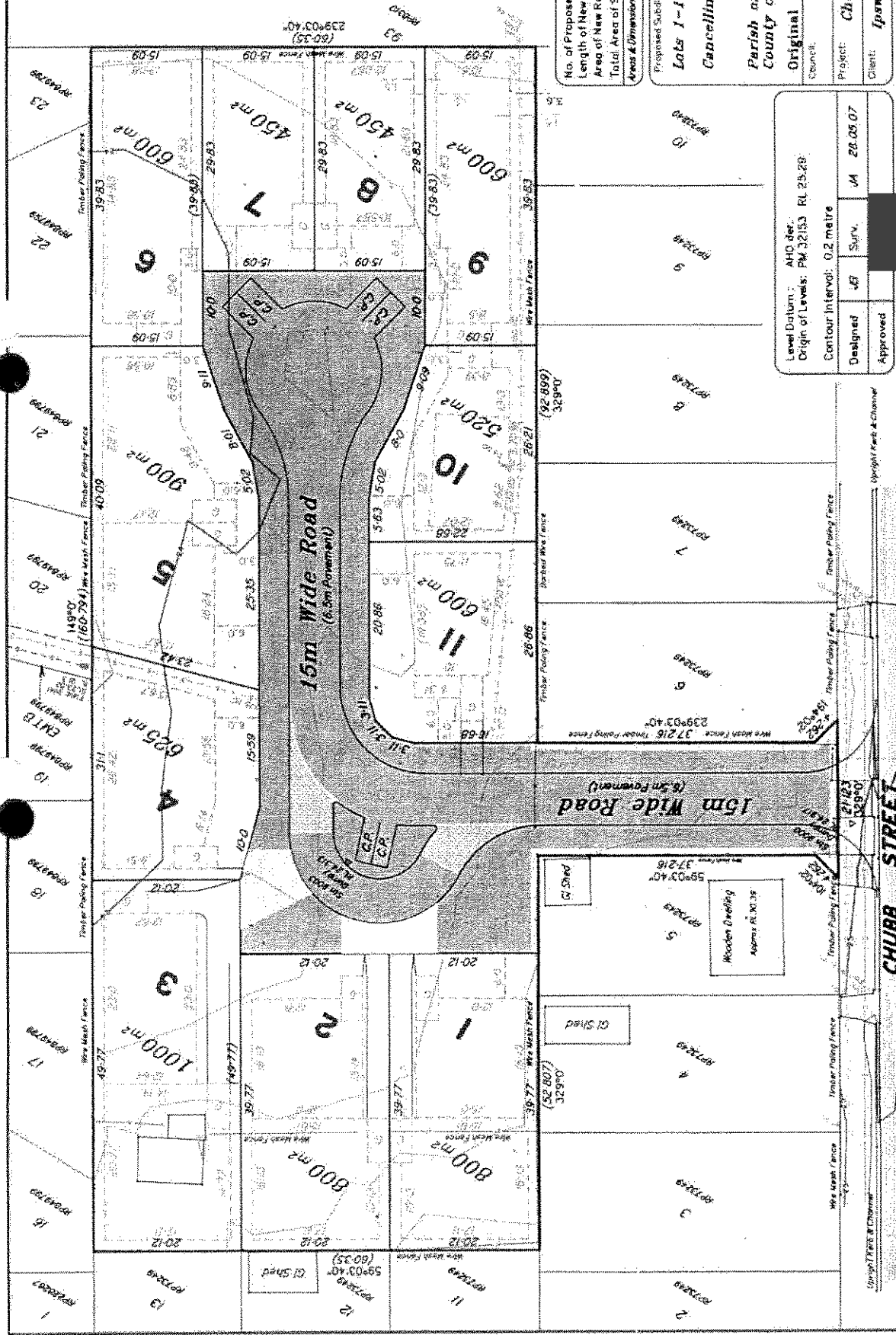
The Saunders Havill Group therefore disclaims any liability for any loss or damage whatsoever or howsoever incurred, arising from any party using or relying upon this plan for any purpose other than that intended. The applicant is advised to seek professional advice for the advice of accountants and other development application and what may be subject to alteration beyond the control of the Saunders Havill Group. Unless a development approval states otherwise, this is not an approved plan.

This plan is a proposed plan of the land. It is not a final plan and any part of it which is not being included in full will render the information shown on it a reproduction and not suitable for use.

No. of Proposed Lots	11
Length of New Road	135 m
Area of New Road	2970 m ²
Total Area of Subdivision	1,038,714
Area of Unreserved c.4	approximate only & subject to Survey

Proposed Subdivision of
Lots 1-11
Cancelling Lot 14 on RP73849
Parish of Brassall
County of Churchill
Original Portion 73
Churchill
Ipswich C.C.
Project: Chubb St, One Mile
Client: Ipswich Ideal Pty Ltd

Level Datum:	AHD sea level
Origin of Levels:	PM 32153 PL 25.28
Contour Interval:	0.2 metre
Designed	4/7
Survey	JA 20-09-07
Approved	



reference:
Saunders Havill Group
Town Planning
Job No. 4024
July 19, 2007
Scale 1:500
Date 16/08/07
N - Building Enquiries: 0800 555 510
W - Road Design Enquiries: 0800 555 510
Client: Ipswich Ideal Pty Ltd

Proposal Plan

Scale 1:500 - Lengths are in Metres.



SAUNDERS HAVILL GROUP
 Land and Subdivision Development Consultants since 1978
 Consulting Surveyors
 Landscape Architects
 Environmental Planners
 Town & Environmental Planners
 112-114 North Street Ipswich QLD 4700
 Tel: 07 553 1000 Fax: 07 553 1001

FIGURE 4:

Bremer River Plan WQ1432 Showing Extent of Water Types

WATERS OF THE BREMER RIVER ESTUARY CATCHMENT

Part of Basin 143

This plan forms part of the Waters of the Bremer River Estuary Catchment scheduling document, prepared pursuant to the Environment Protection (Water) Policy 1997.

Legend

Water types

Marine/Estuarine Waters

- open coastal
- enclosed coastal waters, lower estuary
- middle estuary
- upper estuary
- tidal canals, constructed estuaries, marinas and boat harbours

Lowland Freshwaters (<150m)

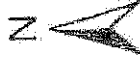
- lowland streams
- wallum streams
- coastal streams

Upland Freshwaters (>150m)

- upland streams

Other

- Local Government boundary
- Wetland, lakes and reservoirs
- Bundamba Creek
- Sub-catchments

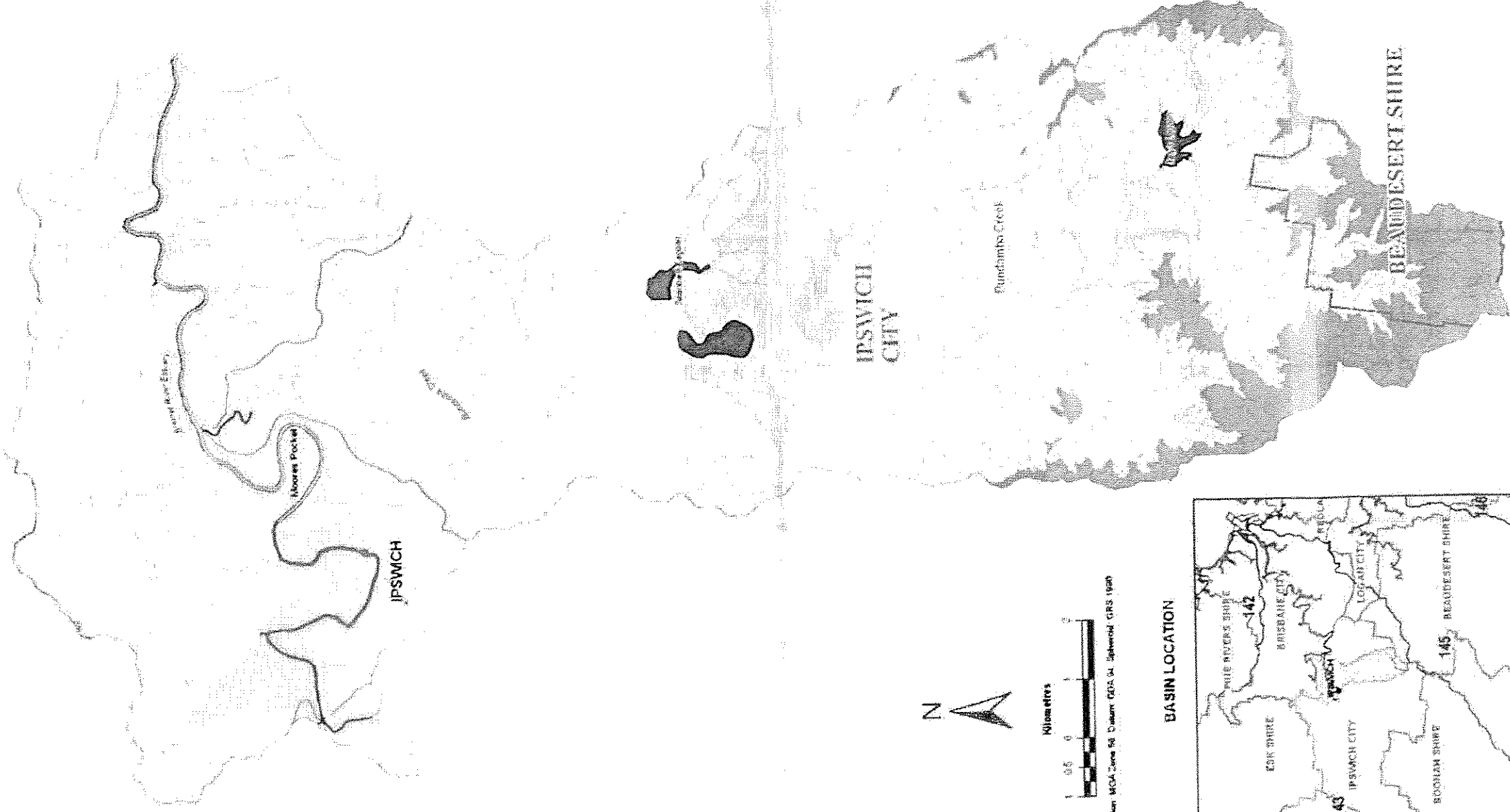
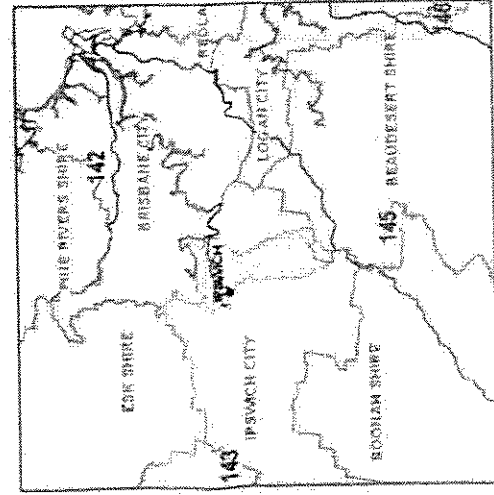


Kilometres



Projection: MGA Zone 56 Datum: GDA 94 Spheroid: GRS 1980

BASIN LOCATION



Notes

1. State boat harbours and approved navigation channels, existing and proposed, along with existing and proposed levee banks, existing and proposed water storage and abstraction structures, approved plans for the placement of unpermitted abutments or moorings, abutments, culverts and structures in existing abutments are all areas of activities that are not located within the boundaries of waters of high ecological value.
2. The boundaries in the plan are indicative only. The water type and levels of aquatic vegetation are not indicated in the plan as shown in the Environmental Protection Agency of 1997 Act. The boundaries for water protection purposes may vary from those shown in this plan. For further information please refer to the scheduling document of which this plan is a part.
3. Catchments and sub-catchments marked with the GDA 94 datum. Coastal Protection System set to AOC500 (see a good approximation).

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PLAN WQ1432

Plan Sheet 11/007



Queensland Government
Environmental Protection Agency

FIGURE 5:

Layout Plan Showing Location of Stormwater Quality Improvement Devices

Reference: 06-010

Your ref: 6749/07 JAH:JH

6 May 2008

The Development Manager
Development Branch
Ipswich City Council
PO Box 191
IPSWICH QLD 4305

Attention: [REDACTED]

Dear [REDACTED]

**RESIDENTIAL SUBDIVISION
70A CHUBB STREET, ONE MILE**

I refer to Council's additional request for information dated 14 March 2008 and have provided the following information to assist Council in its assessment of this application:

1. Stormwater Management

- (a) A cross section plan has been included as Attachment A identifying that sufficient space exists for the swale to be located in the existing road reserve. The swale comprises a 1.2 metre wide base at a depth of 0.35 metres. The swale batter extends from the base at a grade of 1 on 6 toward the property frontage, with a series of bollards extending 0.65 metres from the edge of the kerb sitting above the top of a small retaining structure to separate the swale from the balance of the roadside verge. The batter of the swale is flatter than the maximum slope of 1 in 4 permitted in Council's policy. It is therefore maintained that the layout has sufficient capacity to accommodate the swale system including required setbacks, street bollards and the like.
- (b) A revised stormwater management plan prepared by EHA has been included as Attachment B. The document includes calculations demonstrating that the proposed concrete access driveways over the swale areas to proposed Lots 1 to 4 are immune to flows associated with a Q_2 storm event, and do not create any damming affect for storm events up to a Q_{100} event.
- (c) A revised Stormwater Quality Management Plan has been included as Attachment C for Council's consideration. The plan includes amendments which have been

completed pursuant to email correspondence with [REDACTED] dated 28 March 2008 and addressing the items nominated by Council as follows:

- (i) Section 3.2.2 of the revised Stormwater Quality Management Plan details that the proposed development will result in approximately 45%, or 4,650 square metres of the site comprising impervious surfaces. This determination has been based on the following:
- Given that the building envelope requirement is limited to 150 square metres for each allotment, a roof area of 150 square metres has been allowed for each new allotment proposed. This is not inconsistent with the size of dwelling already existing in the area.
 - An additional 100 square metres has been provided per lot for driveways, sheds, etc.
 - Allowance has been made for 300 square metres of roof area for duplex lots (lots 1, 2, 3 and 5). This is deemed to be conservative as any possible unit development is likely to comprise a two storey townhouse separated by a party wall.

On an allotment basis, this would equate to 7 allotments x 150 square metres plus 100 square metres = 1,750 square metres of impervious area PLUS 4 allotments x 300 square metres plus 100 square metres = 1,600 square metres of impervious area, or a total of 3,350 square metres of impervious area.

In addition, an allowance has been made in determining the impervious area for a road of 120 metres approximate length with 6.5 metres width, equating to an additional 720 square metres. Assume an additional area is allowed for the cul-de-sac head of 80 square metres, a total area of 800 square metres is attributed to the road.

Assuming 110 metres length of swale of 4 metres width (what was originally allowed for), an additional 440 square metres is included in the impervious surface.

In summary, the impervious surface is therefore calculated as 3,350 square metres plus 800 square metres plus 440 square metres, or 4,650 square metres.

It is noted that Council only permits the use of effective impervious area as specified in the Guidelines where treatment of external catchments occurs. As this is not the case for the subject land, this assessment has been based on 45% of the site, or 4,650 square metres comprising the impervious area, as opposed to using the effective impervious area calculation which Table 2.2 of the Brisbane City Guidelines details as being 31% of the total impervious area for an urban residential area. In this regard, the impervious area has been determined as follows:

Node Description	Area (ha)	Impervious Area (ha)
Existing Residential	1.032	0.016
Proposed Residential	1.032	0.4650

- (ii) The filter media size for the revised MUSIC model is 0.5m. This is detailed in Section 3.2.3 of the Stormwater Quality Management Plan.
 - (iii) The K_{SAT} value for the bioretention facility has been amended to 200mm/hour in the revised MUSIC simulation.
 - (iv) The surface area for the filter area comprises 20 metres length by the 1.2 metre base of the swale, or 24 square metres. The extended detention depth is 0.12 metres (the Guidelines allow up to 300mm depth) and therefore the surface area is 42 square meters.
 - (v) The batters for the bio-retention swale are at a grade of 1 in 6 which is flatter than the 1 in 4 requirement specified in the Guidelines.
 - (vi) The guidelines within the model specify a range for heavy clays of 0 – 0.36mm/hour. As Council would be aware, drainage calculations allow for ongoing and continual loss factors and in this regard (as has been provided in the EHA report), and accordingly, a seepage loss value of 0.3mm has been used in the MUSIC model as this value is considered to be toward the lower end of the range.
 - (vii) The filter depth used in the revised MUSIC model is 0.7 metres in accordance with the Guidelines.
 - (viii) The depth of the drainage layer in the revised MUSIC simulation complies with the minimum within the WSUDTDG of 0.2 metres
 - (ix) The grade of the swale system draining to the bioretention facility is 0.25%. The requirement for energy dissipation or a coarse sediment settlement forebay is not required by the Guidelines and has not been included in this assessment. Irrespective of this matter, sufficient capacity exists in the swale through proposed Lot 4 to accommodate energy dissipation if required.
 - (x) While rainwater tanks have been included in the model at a rate of 5KL of storage for each detached house and 3KL of storage for each unit on potential duplex lots (ie. 4 lots total), no other detention devices have been included other than the swales.
- (d) The swale lengths proposed in the Stormwater Management Plan prepared by EHA and the Stormwater Quality Management Plan are identical and comprise 100 metres for the western swale and 45 metres for the southern swale.
- (e) Revised plans showing the layout of the treatment train and a cross section of the road reserve including the swales has been included as Figures 5 and 6 of the Stormwater Quality Management Plan included as Attachment C to this correspondence.

2. Stormwater SMP

- (a) The SMP for the proposed development prepared by EHA has been amended. The 5 year ARI peak discharge has is not increased from the developed site as all stormwater discharge from the development is maintained at pre-development flows for all storm events up to and including Q100.
- (b) The SMP for the proposed development prepared by EHA has been amended to demonstrate that flows from the proposed bioretention basin and existing grated gully pit (Asset No 4964) will not exceed the capacity of the 375 diameter drainage main (Asset No 4557).

3. Internal Road

The layout plan (07052-SK-002-A) has been amended such that the four (4) car parking spaces previously provided at the cul-de-sac head have been removed. The location of the footpath and other services are also shown in the layout plan as requested by Council.

This concludes the applicant's response to Council's information request. I trust the above information is to your satisfaction and request Council proceeds with its assessment of the application.

Please do not hesitate to contact me directly on 0412 788 532 should you have any queries in relation to this matter.

Yours faithfully,



B.App.Sc. GDURP MURP MPIA

Encl.

CC: Ipswich Ideal Pty Ltd

ATTACHMENT A
Cross Section Plan of Proposed Road and Stormwater Infrastructure

ATTACHMENT B
Revised Stormwater Management Plan prepared by EHA

ATTACHMENT C
Revised Stormwater Quality Management Plan



STORMWATER MANAGEMENT PLAN

PROPOSED DEVELOPMENT
CHUBB ST, IPSWICH

Report Prepared by Environmental Hydrology Associates (EHA Pty Ltd)
for DKS Consulting

6 May 2008

Report Number SW-07-08-REP-001 Rev D



Limitations Statement

The sole purpose of this report and the associated services performed by EHA Pty Ltd (EHA) is to provide a report detailing a stormwater management plan for the proposed development at Chubb St, Ipswich in accordance with the scope of services set out in the contract between EHA and DKS Consulting ('the Client'). That scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the data sources for the relevant sites.

EHA derived the data in this report primarily from, examination of records in the public domain, interviews with individuals with information about the sites, data relevant to the sites provided by the Client and other parties, and limited site investigation and analysis made as indicated.

The passage of time, manifestation of latent conditions or impacts of future events may require further exploration at the sites and subsequent data analysis, and re-evaluation of the findings, observations and conclusions expressed in this report.

In preparing this report, EHA has relied upon and presumed accurate certain information (or absence thereof) relative to the sites including survey information, Ipswich City Council data and publicly available hydrological data. Except as otherwise stated in the report, EHA has not attempted to verify the accuracy or completeness of any such information.

No warranty or guarantee, whether express or implied, is made with respect to the data reported or to the findings, observations and conclusions expressed in this report. Further, such data, findings, observations and conclusions are based solely upon site conditions, information, drawings supplied by the Client and others in existence at the time of the investigation.

Any cost projections detailed in this report have been provided in good faith based on reasonable unit costs as advised by relevant reputable contractors. It should be noted that the passage of time may result in cost escalations.

This document has been prepared solely for the benefit of the Client and is issued in confidence for the purpose only for which it is supplied. Unauthorised use of this document in any form whatsoever is prohibited. No liability is accepted by EHA Pty Ltd or any employee, contractor or subconsultant of this company with respect to its use by any other person.

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1 INTRODUCTION AND SITE DESCRIPTION

Subdivision of a lot at 70A Chubb St Ipswich is proposed. The lot is described as Lot 14 RP73249, and has an area of approximately 1.03 hectares.

A development application for reconfiguration of this lot into 11 lots has been lodged with the Ipswich City Council (Application No 6749/07). Council reviewed the application and requested further information on 20th September 2007.

A locality plan showing the lot, the surrounding lots, and contours is included as Figure 1.

The information request included the following items with respect to stormwater drainage and flooding is found in Appendix A.

1 Stormwater - SMP

- b) *The SMP required in (a - please refer to Appendix A) above, should document the proposed works and management strategies for stormwater runoff, discharge, and water quality control generally within the proposed development catchment. The SMP should, amongst other issues, address the following:*
- I. Identify the increase in stormwater runoff generated by the development;*
 - II. Identify management strategies to ensure that stormwater discharge from the development is maintained at pre-development flows for all storm events up to and including Q100 (i.e. provision of detention / retention devices) and that stormwater discharge from the site does not adversely affect the downstream properties; and*
 - III. Identify management strategies to ensure that the predicted pollutant levels (through appropriate pollutant export modelling such as AQUALM or MUSIC) in the stormwater from the catchment meet the pollutant loads identified in (a) and Table 2.3.1: Water Quality Objectives of Planning Scheme Policy 3 - General Works, Part 2 - Stormwater Drainage - Division 3 - Water Quality Control.*
- c) *The applicant is requested to submit preliminary hydraulic calculations prepared by an RPEQ in accordance with QUDM which identifies the increase in stormwater runoff generated by the proposal, the location and treatment of discharge points such that the proposed development will not adversely effect the down stream properties. The stormwater discharge from the proposed development should be maintained at pre-development flows. The applicant should identify the proposed method of stormwater detention and clearly identify any stormwater detention structures on the development plan. Should the applicont propose to construct stormwater infrastructure through adjoining property under separate private ownership and / or concentrate, redirect stormwater discharge on to adjoining property under separate private ownership then the Applicant should obtain and forward to Council the written approval of the awner of the affected property. The downstream landowner's consent should also be supplied for any proposed changes if required.*



2 Flooding

The applicant is requested to submit a plan of the proposal development, which has been prepared by a RPEQ, superimposed with the inundation line of the 1 in 100 ARI Flood event. Council has information which suggests that this property is effected by this Flood line. The applicant is therefore requested to demonstrate that the requirements of Ipswich Planning Scheme Part 11, Division 4, Section 7 - Flooding and Urban Storm Flow Path Areas have been addressed.

This report addresses the requirements relating to stormwater quantities and flooding. A separate report is to be prepared addressing the stormwater quality requirements, including that mentioned in item 1 (b) (iii) of the request.

This report (Rev C) is a revision of an earlier report (Rev B – dated 29 January 2008) which included 5 kL rainwater tank detention storage as well as detention in proposed swales as part of the stormwater management plan.

Council responded to the earlier stormwater management plan (Rev B) with a further information request by letter of 14th March 2008. This requested that discharges be maintained to pre-development flows for all storm events up to and including 100 year ARI storm event, and also requested additional information regarding the downstream impacts of connecting a 675 mm stormwater drainage pipe to the existing gully pit (asset No. 4964).

A further e-mail from Council (from Jayanthi Weerasooriya dated 7th April) stated that Council will require all detention infrastructure to be located on land (or in an easement) under its control. Therefore Council will not support the concept of extra storage on each property as it feels there is no ability for it to prevent land owners using the full 10KL as storage, rather than retaining 5KL for detention purposes

This report (Rev C) proposes stormwater detention on Council land, which does not include rainwater tank detention.

1.1 SITE DESCRIPTION

The lot is accessed from Chubb Street by an easement as shown in Figure 1. The land slopes to the east, and the ground levels vary from about RL 24.8 m AHD (near the entrance) about RL 23.8 m AHD at the north-east boundary. The average land slope is approximately 1.3%. The site is cleared, and contains one shed, equivalent to rural residential type of development.

Runoff from the site drains north-easterly to a drainage easement between Nos 8 and 10 Battersby St. The drainage easement is approximately 4.3 metres wide, and has a 375 mm diameter stormwater pipe contained within it.



1.2 PROPOSED DEVELOPMENT

The development will involve subdivision of the Lot 14 into 11 lots with approximate areas ranging from 450 m² to 900 m². Concept plans showing the layout are included as Appendix B. These plans have been used for the stormwater drainage investigation, and may not represent the final layout.

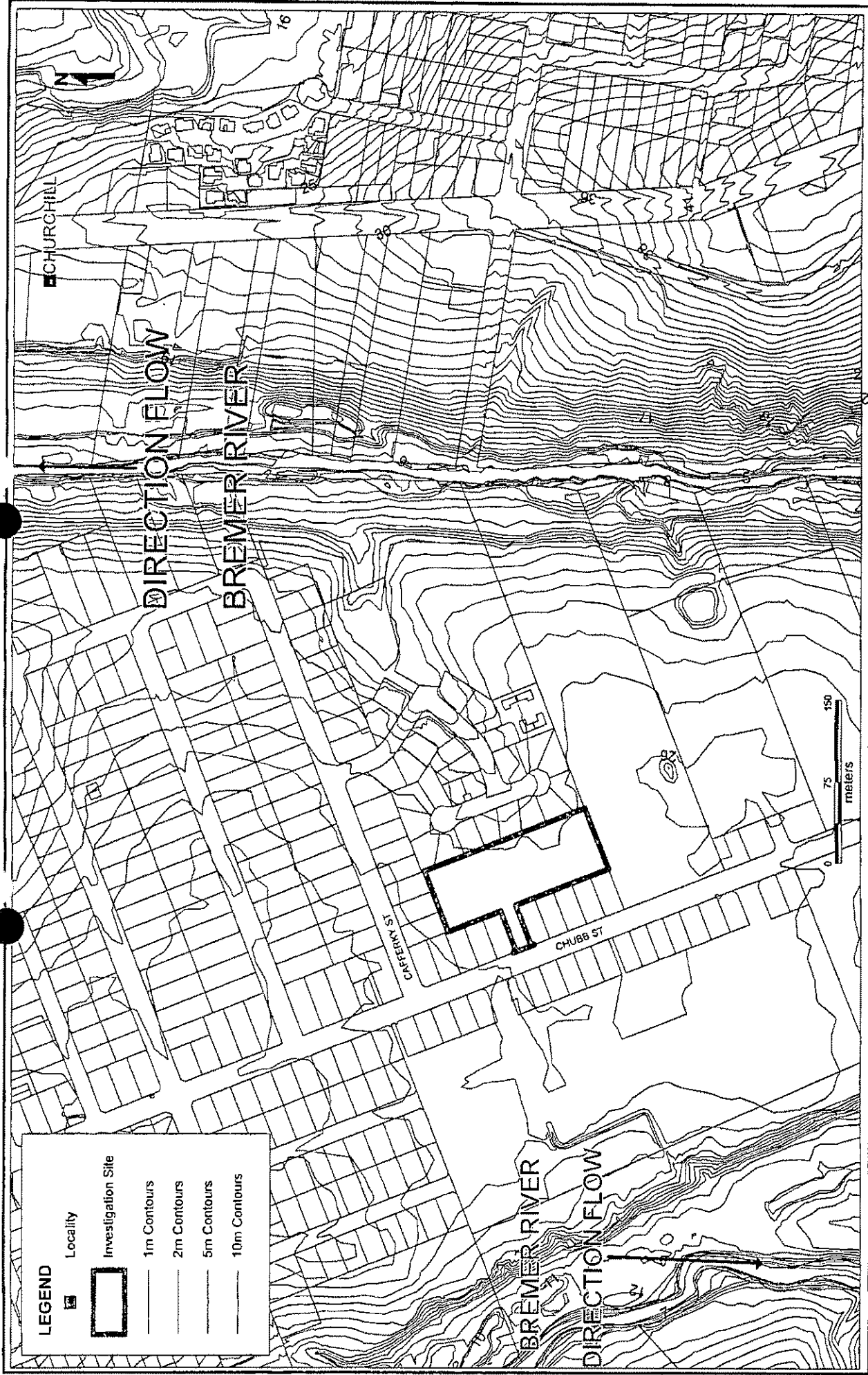


Figure 1
LOCALITY PLAN



2 FLOODING

Design flood levels for the site from Bremer River flooding have been obtained from Ipswich City Council (Ravi Raveenthiran). The design flood level information has been derived from a flood study of the Bremer River and tributaries carried out by SKM for Council in 2000-2001 using a Mike-11 hydrodynamic model. A subsequent review of the flood study by an expert panel recommended some modifications to the SKM flood frequency analysis from which the design discharges were estimated.

Currently the flood study is being revised, but in the interim, Council has adopted a 100-year flood level that is equivalent to the SKM-derived 50-year flood level for existing development.

The site is contained within a loop of the Bremer River. Figure 2 shows the locations of the cross sections of the Bremer River adjacent to the site that were used in the flood modelling. The 100-year ARI peak flood levels at these cross sections are listed in Table 1.

Table 1. Estimated 100-year ARI peak flood levels near site (Bremer River Flooding)

Cross Section Label (see Figure 2)	100 year ARI Peak Flood Level (RL m AHD)
BREM1003700	23.20
BREM1003200	23.48
BREM1002700	23.97
BREM1002300	24.44
BREM1001700	24.99
BREM1001120	25.23
BREM1000700	25.36

The site is closest to cross sections BREM1003200 and BREM1002700. By interpolation of the peak flood levels at these cross sections, the 100 year ARI peak flood level at the site is estimated to be approximately RL 23.67 m AHD.

The estimated extent of flooding from the 100 year ARI flood event is shown in Figure 2. It should be noted that Chubb St is the high point along a "peninsular" around which the Bremer River loops. The peak Bremer River flood levels on the western (upstream) side of this peninsular are higher than on the eastern side of the peninsular, and may overtop Chubb St by a small amount. The amount of overtopping and magnitude of the lateral flow is expected to be insignificant.

Based on the above information, the ground levels of the site are expected to be almost completely above the 100 year ARI flood level.



Figure 2
EXTENT OF 100 YEAR ARI FLOODING EVENT



3 STORMWATER QUANTITY MANAGEMENT

The peak discharges from the site are expected to increase as a result of the development. Peak discharges from the site have been estimated, and management measures proposed to reduce the 100 year ARI peak from the developed site.

3.1 ESTIMATE OF PEAK DISCHARGE FROM SITE

The site drains to an existing drainage easement. Peak discharges have been estimated using the rational method procedure as described in the Queensland Urban Drainage Manual (QUDM 1992). The time of concentration for the existing site was determined using the Friends overland sheet flow time procedure in QUDM while the time of concentration for the developed site was determined as the standard inlet time for developed areas with slopes less than 3%.

Table 2 lists the relevant parameters for the rational method together with the estimated 5 year ARI and 100 year ARI peak discharges.

Table 2. Estimation of Peak Discharge from existing and developed site

Parameter / Value	Existing Site	Developed Site
Approximate Catchment Area (m ²)	10300	10300
Time of Concentration (min)	15	10
Equivalent catchment development	Rural residential	Medium Density Residential
Runoff coefficient C ₁₀	0.74	0.79
2 year ARI Peak Discharge (m ³ /sec)	0.144	0.181
5 year ARI Peak Discharge (m ³ /sec)	0.209	0.262
10 year ARI Peak Discharge (m ³ /sec)	0.252	0.314
20 year ARI Peak Discharge (m ³ /sec)	0.309	0.384
50 year ARI Peak Discharge (m ³ /sec)	0.404	0.502
100 year ARI Peak Discharge (m ³ /sec)	0.478	0.591



3.2 PROPOSED STORMWATER DETENTION MEASURES

3.2.1 Preliminary Sizing

Some methods of initial detention basin sizing are given in Section 6 of the Queensland Urban Drainage Manual (QUDM 1994). For this development the volumes are listed in Table 3.

Table 3. Initial Retention Basin Sizing

Peak Q_{100} Inflow	0.591	m^3/sec
Inflow Volume 100 yr ARI	532	m^3
Peak Q_{100} Outflow	0.478	m^3/sec
Retention Basin size (m^3)	47	Culp 1948
	102	Boyd 1989
	50	Carroll 1990
	74	Basha 1994
Average	68	m^3

A total of 68 m^3 or greater temporary flood storage volume would be required. Detailed analyses for other sites indicate that these initial basin size formulae may under-predict the actual volume required.

3.2.2 Stormwater Quality Treatment

A separate report (Willis 2007) has been prepared on the proposed methods of treating stormwater to achieve stormwater quality targets. The proposed method is to treat the runoff using two swales, and a bio-retention basin. The locations of the swales and the bio-retention basin are shown in Appendix B.

3.2.3 Description of proposed stormwater detention

Underground detention storage configurations were investigated, but large detention storage volumes were found to be required to provide the required mitigation. With the proposed subdivision, there were only limited opportunities for provision of shallow surface detention storage. As stated previously some flood detention storage in rainwater tanks on the individual lots was proposed in an earlier version of this plan, however Council considered that it could not maintain control over this detention storage therefore other solution was required.

It is proposed therefore to provide temporary flood storage by means of :

- detention storage in the proposed swales; and
- detention storage in a proposed drainage easement through Lot 4.

Detention Storage in Proposed Swales

Detention storage will be available in the proposed swales. The proposed swale dimensions (from Appendix B) are 1.2 metres bed width, 3.3 metres top width, and depth of 0.35 metres (Willis 2007).



A 1 in 6 batter is proposed on the property side of the swale, and a near vertical low retaining wall is assumed on the road side of the swale. The bed gradient of the each swale is assumed to be approximately 0.25%.

The north-west swale has a total length of approximately 100 metres, while the south-east swale has a length of approximately 45 metres. The total swale length is therefore approximately 145 metres.

The inlet pit from the proposed bio-retention basin and the stormwater pipe connecting the proposed inlet pit to the existing inlet pit have been sized. An inlet pit riser pipe diameter of 0.75 metres (or of equivalent perimeter dimensions if square or rectangular) is proposed. The inlet pit sill level is proposed to be 120 mm above the bed of the bio-retention basin to provide the required extended detention depth. A 375 mm diameter pipe will connect the proposed and existing gully pits.

Detention Storage in proposed drainage easement through Lot 4

A drainage easement of 8 metres width is proposed through Lot 4. This easement will contain a channel 0.45 metres deep, 4.6 metres bed width, with 1 in 6 batters on one side, and near vertical wall on the other side. This will give a top width of 7.3 metres. The channel will connect the swale to the existing drainage easement between Nos 8 and 10 Battersby Street. The invert of the channel should have a slight grade back to the field inlet in the swale bio-retention filter area so it will drain. The swale and the channel at their junction will have the same invert level. Major flood flows from the site would pass through the channel and discharge over a low weir to the existing drainage easement. A weir with crest length of 1.4 metres and crest level of 0.25 metres above bed level is proposed.

3.2.4 Modelling of proposed stormwater detention

Modelling of the proposed stormwater quantity management measures has been carried out using the Watershed Bounded Network Model (WBNM 2005), a flood runoff-routing model developed by University of Wollongong. WBNM is an event based hydrologic model and calculates flood hydrographs from storm rainfall hyetographs. It can be used for modelling natural, part urban and fully urban catchments. For urban catchments, it calculates runoff from pervious and impervious surfaces and routes it through the major system of open watercourses. Flood detention structures can be modelled using WBNM.



A simple WBNM model was set up to model the storm runoff from the existing site. Model parameters were adjusted so that the peak discharges from the model were consistent with the estimates obtained by the rational method, listed in Table 2. To model the runoff from the developed site with no mitigation measures, the impervious area in the model was adjusted to be consistent with the developed situation.

The following WBNM model parameters were adopted:

- Lag parameter: 2.9
- Impervious area lag parameter: 0.10
- Directly connected impervious area fraction (existing): 0%
- Directly connected impervious area fraction (developed): 40%

The loss parameters for the 100 year and the 5 year ARI events shown in Table 4 were adopted for the modelling.

Table 4. Adopted loss parameters for WBNM.

Parameter/Value	5 year ARI Storm Event	100 year ARI Storm Event
Initial Loss pervious areas (mm)	18	0
Initial Loss impervious Areas (mm)	0	0
Continuing Loss pervious areas (mm/hr)	5	2.5
Continuing Loss impervious areas (mm/hr)	0	0

With the above parameters, the peak discharges predicted for the developed site with and without mitigation are listed in Table 5 for various storm durations for the 100 year ARI flood event.



Table 5. Peak discharge estimates for the 100 year ARI flood event using WBNM.

Storm Duration (min)	Rainfall (mm)	Estimated Peak Discharges (m ³ /s)	
		Developed Site No Mitigation	Developed Site with easement channel and swale detention
15	54.4	0.53	0.39
20	64.0	0.54	0.42
30	79.6	0.57	0.42
45	97.7	0.51	0.42
60	112.3	0.59	0.46
90	125.7	0.45	0.39
	Max Q	0.59	0.46

Various detention measures such as underground storage, surface ponds and channels, and rainwater tank detention storage were included in the model of the developed site to find an arrangement that would result in mitigation of the 100 year ARI and lower ARI flood peaks to approximately the same as that which would occur from the existing site (Table 2 lists pre-development discharges).

The detention volumes in the proposed easement channel and roadside swales as described in Section 3.2.3 were modelled. Table 6 lists the detention volume versus outflow relationship for different depths.



Table 6. Storage outflow characteristics of two swales and open channel through the easement.

Height above bed of swak/open channel	Detention Storage in swales	Detention storage in open channel	Outflow (field inlet, and weir)
(m)	(m ³)	(m ³)	(m ³ /s)
0	0.0	0.0	0.000
0.05	1.4	5.6	0.000
0.10	6.0	11.5	0.000
0.15	14.1	17.8	0.017
0.20	25.4	24.4	0.075
0.25	40.4	31.4	0.155
0.30	56.5	38.8	0.276
0.35	74.8	46.5	0.354
0.40	95.3	54.5	0.412
0.45	118.0	62.9	0.480

The above arrangement was modelled using WBNM, and the resulting peak discharges from the site for the 100 year ARI event for a range of storm durations are listed in Table 5.

The peak discharges for the developed site both with and without the mitigation measures for the other ARI's (for the critical storm durations) are listed in Table 7.



Table 7. Peak discharge estimates for the developed site, using WBNM.

Average Recurrence Interval (yrs)	Peak discharge No mitigation (m ³ /sec)	Peak discharge With mitigation measures (m ³ /sec)	Max depth in open channel (m)	Max temporary flood storage (m ³)
2	0.18	0.14	0.242	68
5	0.26	0.21	0.273	83
10	0.31	0.26	0.292	92
20	0.38	0.31	0.321	106
50	0.50	0.40	0.387	142
100	0.59	0.46	0.433	171

The results indicate that the detention storage provided by the combined open drain and swales can effectively maintain the peak post-development flood discharges up to an ARI of 100 years from the site to no greater than the discharges from the existing site. The maximum depth in the swale varies from 0.24 metres for the 2 year ARI event and is 0.43 metres for the 100 year ARI event. The peak water depths, and the maximum temporary flood storage are listed along with the discharges in Table 7.

Accordingly, the combined swale and easement channel detention proposed is a satisfactory means of mitigating any increase in design floods from the site due to the proposed development.



4 SUMMARY AND CONCLUSIONS

A residential development involving reconfiguration of a 1 hectare area property into 11 lots with internal road access is located at 70A Chubb St, One Mile, Ipswich.

Ipswich City Council issued an information request for the development application for this site. Among other things, the information request required:

- a plan showing the extent of flooding for the 100 year ARI flood event (from the Bremer River), and how this impacts the property; and
- management strategies to ensure that stormwater discharge from the development is maintained at pre-development flows for all storm events up to and including Q100 (i.e. provision of detention / retention devices) and that stormwater discharge from the site does not adversely affect the downstream properties.

Information on studies of flooding from the Bremer River was obtained from Ipswich City Council. From this information, the peak flood levels for the 100 year ARI flood event close to the site were obtained. Figure 2 is a plan showing the extent of flooding from the Bremer River for the 100 year ARI flood event. The peak flood level near the site is approximately RL 23.67 m AHD. Virtually all the ground levels of the site are expected to be above the 100 year ARI flood level.

On-site flood detention is proposed on the developed site to mitigate the increase in peak discharges from the site due to the increase of impervious areas with development.

Road-side swales connected to an open channel passing through a drainage easement in Lot 4 are proposed. The dimensions of the swales and channel are given in a previous section. The total detention storage in the swales and open channel is approximately 170 m³.

Modelling of this arrangement using the Watershed Bounded Network Model (WBNM) indicates that after development of the site, the peak discharges for flood events up to the 100 year ARI flood will be maintained at pre-development magnitudes. Rainwater tanks have not been included in the modelling, and it is expected that these would provide some additional flood mitigation capacity.

There will be driveway crossings over the swale to gain access to Lots 1 to 4. As part of the detailed design these cross-overs will be sized to be above flood levels in the swales, and not to cause any significant flow restriction. There does not appear to be any issue with the sizing of these cross-overs to provide the required flood immunity.



5 REFERENCES

- QUDM (1994) *Queensland Urban Drainage Manual* prepared by Neville Jones and Associates, & Australian Water Engineering for QDPI, BCC and Institute of Municipal Engineering (Queensland), Edition 1-2 November 1994.
- WBNM (2005) *Watershed Bounded Network Model WBNM2003 – User Manual*, University of Wollongong, June 2005.
- Willis (2007) Ipswich Ideal Pty Ltd - Stormwater Quality Management Plan Proposed Residential Subdivision 70A Chubb Street, One Mile - Reference: 06-010; Daniel Willis 31 December 2007.



APPENDIX A
INFORMATION REQUEST

06-010
6749/07 JAH:JH

3810 7779

20 September 2007

Dear [REDACTED]

Re: Development Application Information Request (Section 3.3.6)
Application Number: 6749/07
Proposal: Reconfiguring One (1) Lot into Eleven (11) Lots
Property Location: 70A Chubb Street, One Mile

Upon review of the abovementioned Development Approval Application and supporting information we require further information to satisfactorily assess this application. The information requested is set-out below.

1. Stormwater -SMP

- (a) The applicant is requested to demonstrate that any stormwater drainage system proposed complies with section 4.3.3(3)(a) of the Urban Areas Code and the Reconfiguration of a Lot Code sections 12.5.3 (2)(k & l) and Table 12.5.2 (31). To this end, the applicant is required to submit a Stormwater Management Plan (SMP) prepared by a Registered Professional Engineer of Queensland (RPEQ) in accordance with QUDM that demonstrates compliance with the environmental values and water quality objectives as outlined within the South-East Queensland Regional Plan (SEQ RP) Part 11. In accordance with the SEQ RP, a reduction in the average annual pollutant load as required by the Southeast Queensland Regional Plan as follows:

- 80% for total suspended solids;
- 60% for total phosphorus;
- 45% for total nitrogen; and
- 90% for gross pollutants.

It is expected that water sensitive urban design be proposed to achieve these values. As such the applicant is requested to demonstrate that any proposed stormwater infrastructure to meet

Ipswich Ideal Pty Ltd
Attn: [REDACTED]
PO Box 7044
SIPPY DOWNS QLD 4556

the objectives be in accordance with the Water Sensitive Technical Design Guidelines for South East Queensland published by Healthy Waterways.

- (b) The SMP required in (a) above, should document the proposed works and management strategies for stormwater runoff, discharge, and water quality control generally within the proposed development catchment. The SMP should, amongst other issues, address the following:

- (i) Identify the increase in stormwater runoff generated by the development;
- (ii) Identify management strategies to ensure that stormwater discharge from the development is maintained at pre-development flows for all storm events up to and including Q100 (i.e. provision of detention/retention devices) and that stormwater discharge from the site does not adversely affect the downstream properties; and
- (iii) Identify management strategies to ensure that the predicted pollutant levels (through appropriate pollutant export modelling such as AQUALM or MUSIC) in the stormwater from the catchment meet the pollutant loads identified in (a) and Table 2.3.1: Water Quality Objectives of Planning Scheme Policy 3 – General Works, Part 2 – Stormwater Drainage, Division 3 – Water Quality Control.
- (c) The applicant is requested to submit preliminary hydraulic calculations prepared by an RPEQ in accordance with QUDM which identifies the increase in stormwater runoff generated by the proposal, the location and treatment of discharge points such that the proposed development will not adversely effect the down stream properties. The stormwater discharge from the proposed development should be maintained at pre-development flows. The applicant should identify the proposed method of stormwater detention and clearly identify any stormwater detention structures on the development plan. Should the applicant propose to construct stormwater infrastructure through adjoining property under separate private ownership and/or concentrate, redirect stormwater discharge on to adjoining property under separate private ownership then the Applicant should obtain and forward to Council the written approval of the owner of the affected property. The downstream landowner's consent should also be supplied for any proposed changes if required.

2. Flooding

The applicant is requested to submit a plan of the proposal development, which has been prepared by a RPEQ, superimposed with the inundation line of the 1 in 100 ARI Flood event. Council has information which suggests that this property is affected by this Flood line. The applicant is therefore requested to demonstrate that the requirements of Ipswich Planning Scheme Part 11, Division 4, Section 7 – Flooding and Urban Storm Flow Path Areas have been addressed.

3. Waste Storage & Collection

- (a) The Developer is required to provide information that demonstrates that the development will include adequate provisions for waste storage and collection that is consistent with Ipswich Planning Scheme Policy 3 – General Works; Section 1.1.6 Culs-De-Sac- Turning areas.

- (b) The Developer is required to demonstrate that the waste storage and collection areas allow servicing vehicle forward motion entry to the waste containers and forward motion entry and exit to and from the site. The following dimensions are given as a minimum of front-, rear- and side- loading truck dimensions for a guide to design for the adequate emptying of the bin and manoeuvring of the truck:

	Front/Load	Rear/Load	Side/Load
Length overall	10.9 m	8.2 m	8.7 m
Length when loading	12.6 m	9.5 m	3.0 m
Travelling overhead clearance required	4.0 m	3.0 m	3.5 m
Loading overhead clearance required	6.5m x 10m*	3.0 m	3.0 m
Access width required	3.8 m	3.8 m	4.0 m
Turning radius	14 m	8.0 m	11.1 m
Gross vehicle mass (GVM)	28 tonne	13.6 t	13.6 t

*from the back of the bin

These standards do not override the requirements of the Reconfiguring a Lot Code.

4. Lot Layout and Arrangement

It is considered by Council that proposed Lots 10 and 11 shall be problematic for the location of future dwellings and ancillary structures based on setback distances from Council Infrastructure and the requirements of Schedule 5 – Boundary Clearances. Consideration should be given to the proposed turning area (creating access to lots 1, 2 and 3) and opportunities for maximising lot yield and configuration in this portion of the site utilising a standard road reserve width and possible rear hatchet lot configuration. This is to be considered in conjunction with possible reconfiguration opportunities for Lots 10 and 11 and the future practical application of minimum 10 x 15metre building location envelopes over these lots and inclusive of carparking, recreation space and outbuilding construction in the future.

Considering the above, the applicant is to requested to re-consider the proposed lot layout and demonstrate to Council that the proposed is consistent with the requirements of the Planning Scheme.

Under the provisions of the *Integrated Planning Act 1997*, the applicant has three (3) options available in response to this Information Request. The Applicant must give the Development Manager and each Referral Agency (if applicable):

1. all of the information requested; or
2. part of the information requested together with a notice asking the Development Manager and each Referral Agency (if applicable) to proceed with the assessment of the application; or
3. a notice:
 - (a) stating that the applicant does not intend to supply any of the information requested; and
 - (b) asking the Development Manager and each Referral Agency (if applicable) to proceed with the assessment of the application.

Access PD Online at www.ipswich.qld.gov.au to view, search and print property information, interactive mapping, track development applications and the Ipswich Planning Scheme. Undertake a development enquiry as part of the Property Search function to identify the planning scheme provisions that apply to a particular use on a property. PD Online - information at your fingertips 24 hours a day, 7 days a week.

Response to this Information Request should be forwarded to:-

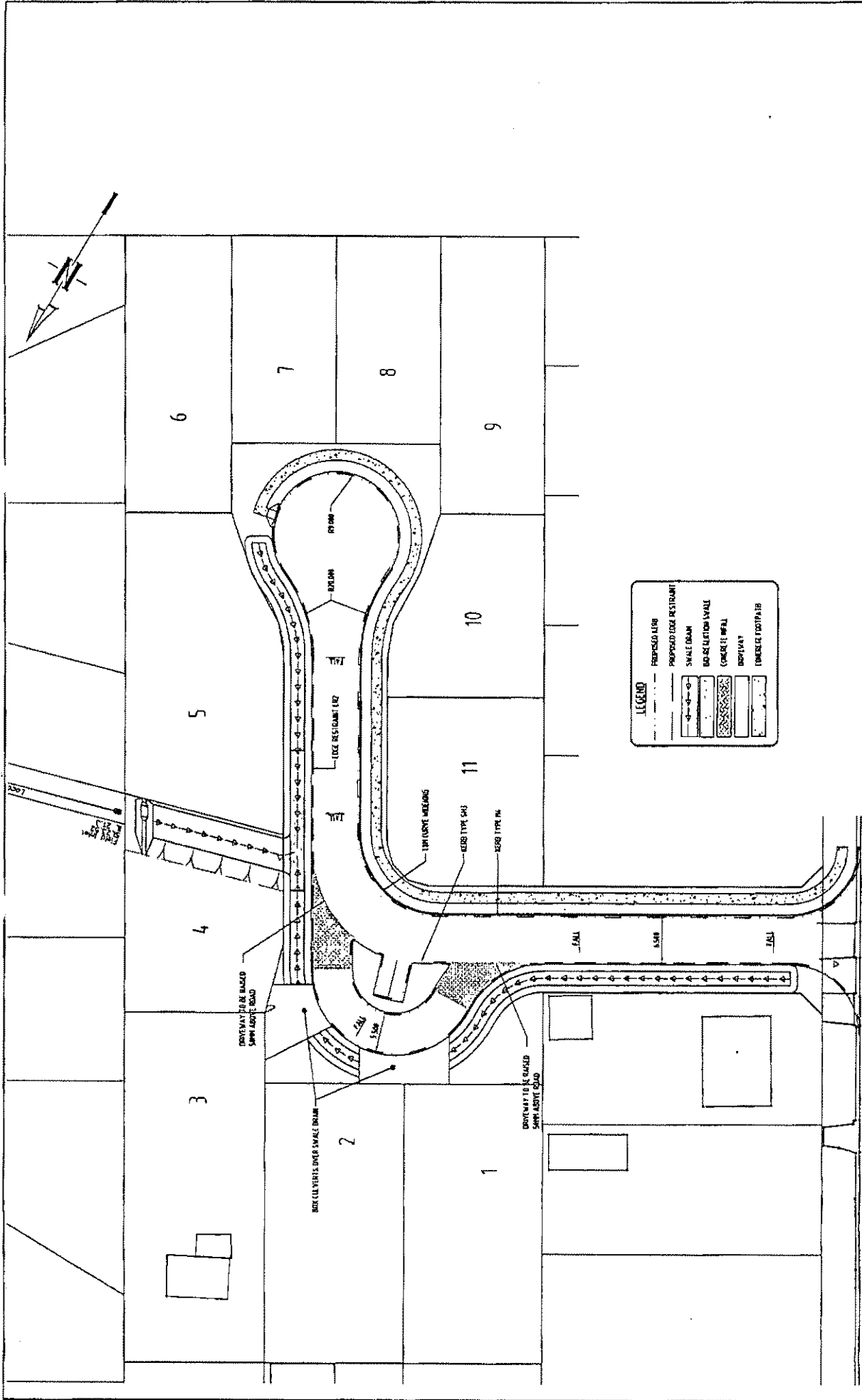
The Development Manager
Development Branch
Ipswich City Council
PO Box 191
IPSWICH QLD 4305

Yours sincerely

Brett Davey
**ACTING DEVELOPMENT TEAM CO-
ORDINATOR - CENTRAL/WEST**



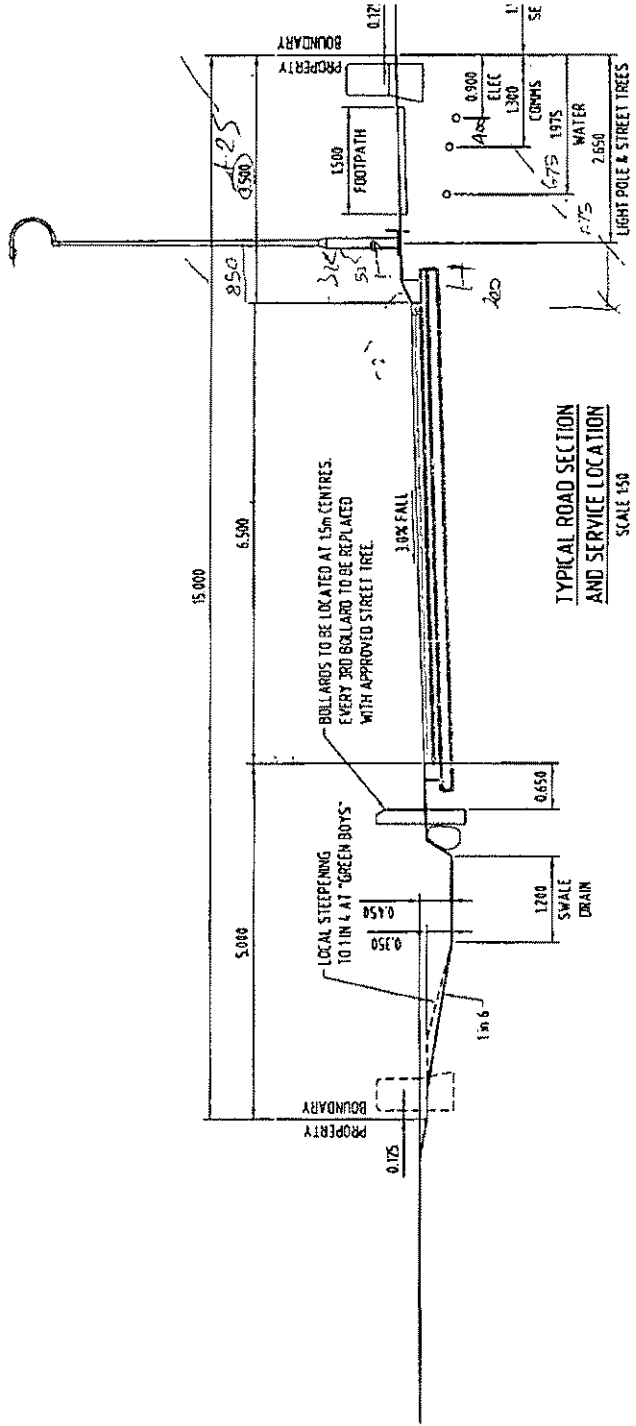
APPENDIX B
SITE LAYOUT



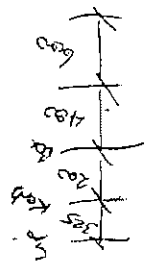
For Information Only

	<p>PROPOSED IDEAL RESTRAINT</p> <p>SWALE DRAIN</p> <p>BOX CULVERTION WALL</p> <p>CONCRETE WPA</p> <p>DRIVEWAY</p> <p>DRIVEWAY RESTRAINT</p>			
<p>DATE: 15/01/2024</p> <p>TIME: 10:30 AM</p> <p>PROJECT: 07052</p> <p>SCALE: SK-002</p> <p>REV: 8</p>	<p>DATE: 15/01/2024</p> <p>TIME: 10:30 AM</p> <p>PROJECT: 07052</p> <p>SCALE: SK-002</p> <p>REV: 8</p>	<p>DATE: 15/01/2024</p> <p>TIME: 10:30 AM</p> <p>PROJECT: 07052</p> <p>SCALE: SK-002</p> <p>REV: 8</p>	<p>DATE: 15/01/2024</p> <p>TIME: 10:30 AM</p> <p>PROJECT: 07052</p> <p>SCALE: SK-002</p> <p>REV: 8</p>	<p>DATE: 15/01/2024</p> <p>TIME: 10:30 AM</p> <p>PROJECT: 07052</p> <p>SCALE: SK-002</p> <p>REV: 8</p>

Ipswich Ideal Pty Ltd
 d&sc consulting
 15/01/2024



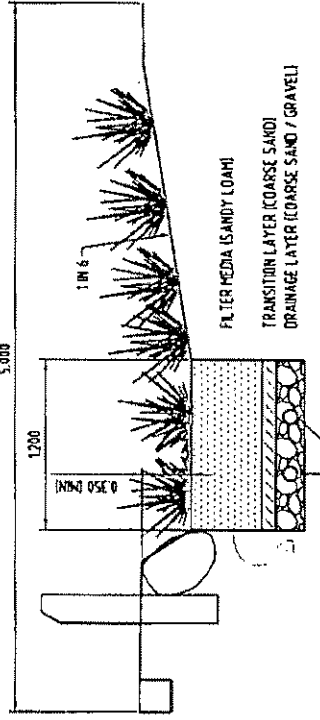
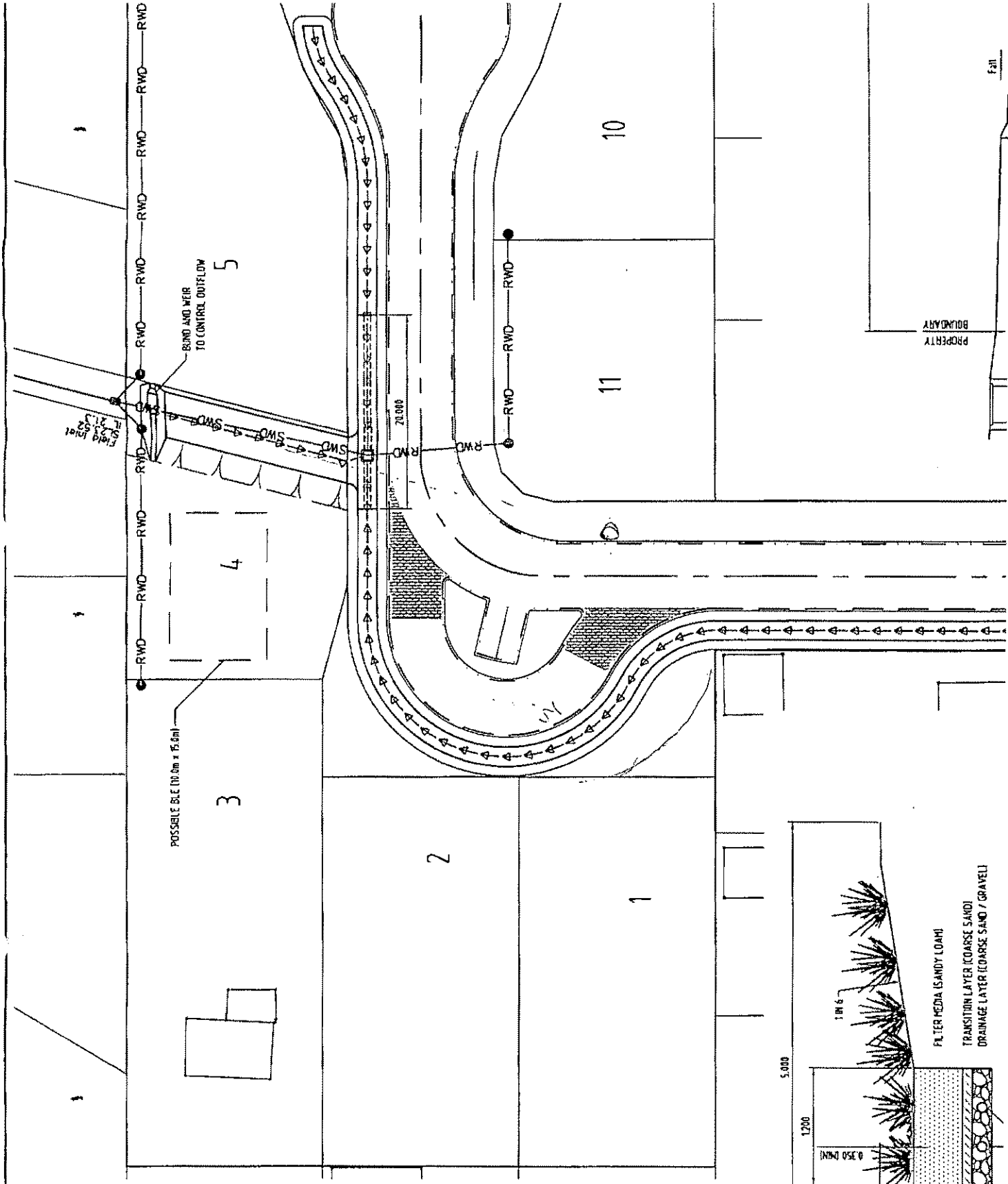
TYPICAL ROAD SECTION
AND SERVICE LOCATION
SCALE 1:50



1

LEGEND

	PROPOSED ROOFWATER
	PROPOSED STORMWATER
	SWALE DRAIN
	BIG-RETENTION SWALE
	CONCRETE INFILL
	SLOTTED PVC PIPE



PCL XL error

Warning: IllegalMediaSize

Reference: 06-010

Ipswich Ideal Pty Ltd

**STORMWATER QUALITY MANAGEMENT
PLAN (REV B)**

**Proposed Residential Subdivision
70A Chubb Street, One Mile**

PO BOX 7044
SIPPY DOWNS, QLD. 4556
PH: 0412 788 532

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1.0 INTRODUCTION

1.1 GENERAL

This report has been prepared in response to Item 2 of an information request issued by Ipswich City Council for an application for a lot reconfiguration development permit relating to the subdivision of land located at 70A Chubb Street, One Mile. The proposal involves the subdivision of the existing parcel into 11 urban residential allotments. The location of the land is shown on Figure 1, with the context of the land in relation to the Bremer River shown as Figure 2. A subdivision plan showing site contour information determined by survey has been included as Figure 3 of this report.



FIGURE 1:
Locality Plan

1.2 SITE DESCRIPTION

The holds frontage to Chubb Street and is situated within the urban suburb of One Mile approximately 3 kilometres from the Ipswich City Centre. The subject land comprises 1.032

hectares and is currently a vacant urban parcel supporting lawn. Land to the north and east comprises low density residential development, typically comprising single and two storey detached dwellings, whilst land to the south adjoins the tennis centre and local sports oval (refer Figure 1). Land to the west of Chubb Street comprises a row of existing, older housing stock with new allotments developed for a similar land use located further to the west.

Approval has been granted by Council for the construction of in excess of 100 retirement units on the land to the south. This will see the redevelopment of the tennis centre, resulting in the subject land being surrounded on all sides by urban residential development.



FIGURE 2:

Locality in Relation to the Bremer River

1.3 TOPOGRAPHY

The land is flat with minimal fall from Chubb Street to the rear of the property. The overall topographical relief is less than 800 mm across the entire site. Drainage of the site appears to be slow and occurs as sheet flow to the low point which corresponds with the sewerage/drainage easement on Lot 20 immediately to the east.

Low flows entering the easement travel through an underground drainage system and eventually discharge into land dedicated as park which drains via overland flow through a series of vegetated swales for a considerable distance until it enters the Bremer River. Major flows appear to travel through an overland flow path onto the adjoining street to the east and eventually move through the vegetated swale/overland flow path to the Bremer River.

1.4 CATCHMENT AREAS

For the purposes of this assessment, the existing catchment comprises the subject land as the area is surrounded by residential development fronting local streets with kerb and channel. Given the existing land use in the area is residential in nature and the subject land simply comprises one large residential allotment surrounded by residential development, the existing land use within the catchment subject to this assessment has been assumed to be low density urban residential.

The developed catchment will result in all new allotments draining to a new internal cul-de-sac, thereby ensuring the extent of the developed catchment is defined with the property boundary of the parent parcel.

2.0 LEGISLATION AND STATUTORY REQUIREMENTS

2.1 ENVIRONMENTAL PROTECTION ACT

The *Environmental Protection Act, 1994* provides for the protection of Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends (*ecologically sustainable development*). This is to be achieved by an integrated management program that is consistent with ecologically sustainable development. The Act is supported by a number of Environmental Protection Policies as well as Regulations. The Environmental Protection Agency has responsibility for the administration of the Act and the subordinate policies and regulations.

The Environmental Protection (Water) Policy seeks to achieve the object of the Act in relation to Queensland waters and provides a framework for—

- (a) identifying environmental values for Queensland waters; and
- (b) deciding and stating water quality guidelines and objectives to enhance or protect the environmental values; and
- (c) making consistent and equitable decisions about Queensland waters that promote efficient use of resources and best practice environmental management; and
- (d) involving the community through consultation and education, and promoting community responsibility.

Of relevance to this assessment, Schedule 1 of the EPP (Water) sets out the environmental values and water quality objectives for the Bremer River, including all tributaries of the Bremer River estuary. These are defined specifically as part of Basin 143 and are detailed in the *Bremer River Environmental Values and Water Quality Objectives*, published by the Department in March 2007.

2.2 INTEGRATED PLANNING ACT

2.2.1 General

The Integrated Planning Act seeks to achieve ecological sustainability by coordinating and integrating planning at the local, regional and State levels, managing the process by which development occurs and managing the effects of development on the environment (including managing the use of premises). The Act allows for the establishment of planning instruments

that allow consistency of decision making at state, regional and local levels of governance. Those relevant to the site have been discussed below:

2.2.2 South East Queensland Regional Plan

The South East Queensland Regional Plan was prepared in accordance with Section 2.5A of the *Integrated Planning Act 1997* to provide a sustainable growth management strategy for the Region to the year 2026 and encompasses 18 separate local authorities, including Ipswich City. The Regional Plan is both a statutory instrument and a planning instrument and is a higher order planning document that takes precedence over the local government planning scheme for the area. The Regional Plan sets out a number of desired regional outcomes, with outcome 11 related to water management for the region. A number of principles and policies have been detailed in relation to this outcome, including Principle 11.5 which seeks to protect and enhance the ecological health and water quality of surface and groundwater, including regional waterways, wetlands, estuaries and Moreton Bay.

The policies that undergird this principle and are relevant to this assessment include:

- 11.5.1 Protect or improve the quality of receiving waters through land use planning, development standards and land management practices.
- 11.5.3 Ensure the potential impacts of development on water quality in receiving waters are taken into account in planning and development decisions.
- 11.5.4 Minimise development impacts on the natural water cycle by adopting water sensitive design and water quality standards.

In this regard, the South East Queensland Regional Plan encourages local government to require all development proposals to demonstrate, prior to approval, how stormwater (or sewage effluent) generated or affected by the development will be managed. Treatment should use the best management practices to ensure discharged water does not adversely affect environmental values and meets water quality standards.

2.2.3 Ipswich Planning Scheme

The Ipswich Planning Scheme establishes a number of planning provisions that relate to water quality. Section 4.3.3 of the Scheme sets out specific outcomes for the urban area which apply to this designation. Section 4.3.3(3) details specific outcomes in relation to environmental

management. Subclause (a) requires that the quality of stormwater runoff from a use or site is similar to or better than the established water quality standards for the receiving waters or lawful point of discharge. Given that the area currently drains to a large overland flow path which extends for some distance over land before entering the Bremer River, this assessment has focussed on identifying appropriate stormwater quality improvement devices to be included in the proposed development to achieve a reduction in pollutant loads such that the quality of stormwater runoff from the site is considerably better than the current water quality being discharged from the area.

Sections 12.5.3 (2)(k & l) and Table 12.5.2 (31) of the Reconfiguration of a Lot Code relate specifically to stormwater management, with Section 12.5.3 (2)(l) of the Code setting out that stormwater quality management systems are required which:

- ensure that disturbance to natural riparian systems is minimised including the minimisation of erosion and scour resulting from changed water regimes; and
- ensure stormwater discharge to receiving waters, both during construction and in developed catchments, does not degrade the quality of water in the receiving environments.

Table 12.5.2 (31) of the Reconfiguration of a Lot Code details the specific outcomes for the Code and requires that stormwater drainage systems:

- (a) minimise the environmental impact of urban run-off on surface receiving water quality and on other aspects of the natural environment;
- (b) optimise the interception, retention and removal of water-borne pollutants through the use of appropriate 'fitness for use' criteria, prior to the stormwater's discharge to receiving waters;
- (c) ensure the continuation, in healthy condition, of a wide diversity of wetland environments in the urban landscape;
- (d) ensure that 'first flush' diversion or treatment systems are able to be installed to lessen the impact of shock pollution loadings to receiving waters; and
- (e) optimise the integration of stormwater infrastructure with open space management objectives.

The proposed development seeks to satisfy these outcomes by demonstrating that the provision of various stormwater quality improvement devices within the development will assist in meeting Council's stormwater quality requirements. In this regard, all stormwater flows associated with

the first flush are to be directed through an appropriate treatment train to meet the above requirements.

Of final consideration, Planning Scheme Policy 3 – General Works, Part 2 – Stormwater Drainage, Division 3 – Water Quality Control requires any application for development that is likely to have a significant adverse impact on water quality is to be supported by a Water Quality Management Plan that details the temporary and permanent methods of water quality control that are to be included in the development. The Planning Scheme Policy defines a series of criteria for determining whether development is likely to have a significant adverse impact on water quality as follows:

- (a) any development (or development proposal) located in a waterway corridor or a wetland area; or
- (b) multiple residential or commercial uses with an impermeable surface area (not including roof area) in excess of 2500m²; or
- (c) major subdivisions; or
- (d) industrial activities that have at least 2000m² in uncovered storage/working space; or
- (e) industrial activities that are impact assessable; or
- (f) uncovered car parks with at least 100 spaces.

The scheme goes on to define a major subdivision as the reconfiguring of a lot within an urban area which—

- (a) requires the construction of an Industrial Collector, Collector Street, Internal Connecting Road or higher order road; or
- (b) involves the creation of 75 or more residential lots or 100 or more dwelling units (or their equivalent), or any combination thereof which would generate 750 or more vehicle trips per day.

Given the proposed development does not comply with any of the nominated criteria, the current application is not required to be supported by a Water Quality Management Plan. Nonetheless, an assessment of likely water quality impacts is still required to satisfy the requirements of Council's Reconfiguration of a Lot Code.

2.3 RELEVANT GUIDELINES

2.3.1 Bremer River Water Quality Objectives

The spatial extent and boundaries of water types described in the Bremer River Water Quality Objectives documentation are shown on Plan WQ1432 (refer Figure 4). The water types are based on the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC, 2000) and the Queensland Water Quality Guidelines (2006).

The document classifies water within the Bremer River into different water types on the basis of the Australian Water Quality Guidelines and the Queensland Water Quality Guidelines. Plan WQ1432 shows the water within the area of One Mile comprising lowland freshwaters which are described as larger slow flowing freshwater streams and rivers, shown as freshwaters under 150 metres altitude. This water type has been further divided into three sub types in South East Queensland derived from work carried out for the Ecosystem Health Monitoring Program:

- **lowland freshwaters:** Larger (third, fourth and fifth order), slow flowing and meandering streams and rivers. Gradient very slight. Substrates sometimes cobble and gravel but more often silt, sand or mud.
- **wallum/tannin-stained freshwaters:** Tannin-stained, generally low gradient, small to mid-sized streams, many with sandy substrates and low pH, tea-coloured water draining through wallum vegetation.
- **coastal freshwaters:** Mix of small and large slow-flowing lowland rivers and creeks between Caboolture and NSW border that flow across the coastal plain. Substrates often cobble despite low gradient. Does not include steeper upland streams that feed these systems.

The document classifies the affected waters within this locality of the Bremer River as *lowland freshwater* with a number of environmental values prescribed. The water quality objectives detailed are based on the Aquatic Ecosystem Environmental Value which is the most stringent of the values listed in Table 1. From Table 2 of the Bremer River document, the following water quality objectives are nominated to protect aquatic ecosystems for all freshwaters within Ipswich City (only those of relevance to this assessment) have been included:

- **Suspended solids:** 15 mg/L;

- Total Nitrogen: 650 ug/L; and
- Total phosphorous: 70 ug/L.

Whilst it is acknowledged that the proposed development can assist in meeting these requirements, it is also noted that the stormwater from this site will drain via a number of overland flow paths which have treatment capacity prior to entering the Bremer River. Of further note, additional stormwater from the surrounding urban environment will also mix with runoff from the site prior to entering the River.

2.3.2 Water Sensitive Urban Design Technical Design Guidelines

The Technical Design Guidelines for South East Queensland have been published by Healthy Waterways and describe appropriate methods for the detailed design of some common structural stormwater management measures in South East Queensland. The Guidelines detail that experience within Australia and overseas has identified some problematic issues with the application of concentration-based receiving water targets or water quality objectives as discharge criteria for urban stormwater. The issues identified include selection of a representative median concentration for stormwater flow, which is highly variable. In addition, the substantial increase in runoff volume that typically accompanies urban development can increase pollutant loads to receiving waters (even if concentrations are not increased) and also damage urban streams through increased erosion. For these reasons many authorities across Australia, including South East Queensland are moving towards the use of load-based objectives.

Council's information request sets out the following pollutant reduction targets for the development:

- 80% for total suspended solids;
- 60% for total phosphorus;
- 45% for total nitrogen; and
- 90% for gross pollutants.

This is consistent with the load reduction targets published in Section 1.5 of the Water Sensitive Urban Design Technical Design Guidelines for South East Queensland published by Healthy Waterways.

In this regard, consideration of the above reduction requirements will be used as the basis for this assessment.

2.3.3 Guideline Specifications for Soil Media in Bioretention Systems

The Guideline Specifications for Soil Media in Bioretention Systems has been prepared by the Facility for Advancing Water Biofiltration. These Guidelines provide specific details on the media nature and composition for biofiltration systems.

3.0 WATER QUALITY PARAMETERS

3.1 POTENTIAL POLLUTANTS

The development of the site will increase the overall volume of stormwater discharged from the site. Stormwater in urban environments may be characterised by an increase in the following contaminants:

- Nitrogen, which can be derived from fertilisers, imported soils, or organic matter derived from lawns, gardens and animal waste;
- Phosphorous, typically applied in the form of fertilisers, detergents used externally, such as car washing, etc, and through the importation of soil;
- Suspended solids;
- Gross pollutants, including litter, etc; and
- Petroleum hydrocarbons, principally from driveways and roads within the area.

Modelling of potential pollutants has been undertaken using the MUSIC software package (Version 3) developed by the CRC for Catchment Hydrology. The model allows for the following target pollutants to be modelled in terms of their likely generation rate, concentration and load based outputs, and the effectiveness of various mitigation devices proposed.

The majority of stormwater generated onsite will be discharged into the Bremer River several hundred meters to the east.

3.2 MUSIC INPUTS

3.2.1 Climate Data

Rainfall data is based on a 10 year dataset for Amberley at 6 minute intervals. Some evaporation data is based on monthly datasets obtainable from the Bureau of Meteorology.

3.2.2 Source Node Details

Three generic source nodes are available in MUSIC:

- Urban
- Agricultural; and
- Forested.

The Brisbane City Guidelines detail specific land uses that correlate to the City Plan land use classifications. For the purposes of this assessment, the Urban Residential source node has been adopted. This is used to describe low to high density residential areas and activities servicing local neighbourhood needs. Such areas are predominantly comprised of housing allotments, together with all associated facilities, including roads, parks, school grounds, etc. The Guidelines detail that it is typical for Urban Residential areas to contain less than 50% total impervious area.

Source node data for the MUSIC catchment model has been summarised below. Given that the overall catchment is of limited area and the nature of the land use remains unchanged for the purposes of the model (ie. it exists as an urban allotment and is proposed for urban development), pre and post developed scenarios have adopted the standard datasets recommended by the Brisbane City Guidelines for Pollutant Export Modelling in Brisbane (Version 7.0). The existing site has limited impervious areas (ie. 5% allowed for), while the proposed development will result in approximately 45%, or 4,650 square metres of the site comprising impervious surfaces. This determination has been based on the following:

- Given that the building envelope requirement is limited to 150 square metres for each allotment, a roof area of 150 square metres has been allowed for each new residence. This is not inconsistent with the size of dwelling already existing in the area.
- An additional 100 square metres has been provided per lot for driveways, sheds, etc.
- Allowance has been made for 300 square metres of roof area for duplex lots (proposed Lots 1, 2, 3 and 5). This is deemed to be conservative as any possible unit development is likely to comprise a two storey townhouse separated by a party wall.

On an allotment basis, this would equate to 7 allotments x 150 square metres plus 100 square metres = 1,750 square metres of impervious area PLUS 4 allotments x 300 square metres plus 100 square metres = 1,600 square metres of impervious area, or a total of 3,350 square metres of impervious area.

In addition, an allowance has been made in determining the impervious area for a road of 120 metres approximate length with 6.5 metres width, equating to an additional 720 square metres. Assume an additional area is allowed for the cul-de-sac head of 80 square metres, a total area of 800 square metres is attributed to the road.

Assuming 110 metres length of swale of 4 metres width (what was originally allowed for), an additional 440 square metres is included in the impervious surface.

In summary, the impervious surface is therefore calculated as 3,350 square metres plus 800 square metres plus 440 square metres, or 4,650 square metres.

It is noted that Council only permits the use of effective impervious area as specified in the Guidelines where treatment of external catchments occurs. As this is not the case for the subject land, this assessment has been based on 45% of the site, or 4,650 square metres comprising the impervious area, as opposed to using the effective impervious area calculation which Table 2.2 of the Brisbane City Guidelines details as being 31% of the total impervious area for an urban residential area. In this regard, the impervious area has been determined as follows:

Node Description	Area (ha)	Impervious Area (ha)
Existing Residential	1.032	0.016
Proposed Residential	1.032	0.4650

Pollutant concentrations have been derived from the Brisbane City Guidelines for Pollutant Export Modelling in Brisbane (Version 7.0) and have been summarised as follows:

Land Use	Parameter	Total Suspended Solids (Log ₁₀ mg/L)		Total Phosphorous (Log ₁₀ mg/L)		Total Nitrogen (Log ₁₀ mg/L)	
		Base Flow	Storm Flow	Base Flow	Storm Flow	Base Flow	Storm Flow
Residential	Mean	1.0	2.18	-0.97	-0.47	0.20	0.26
	Standard deviation	0.34	0.39	0.31	0.31	0.20	0.23

The pollutant concentrations relate to both the pre and post developed scenarios.

Provision has been made in the model for the inclusion of a 5KL water tank with each new detached residence, with a 3KL water storage included for each unit on the 4 allotments suitable for duplex developments. This equates to a total volume of 59KL water storage occurring within the catchment.

All detention on site is to occur through the swales which are to be constructed along the length of the road system and through the southern extent of proposed Lot 4.

3.2.3 Treatment Node Details

The following treatment methods have been proposed for the development:

- Grassed swales; and
- Bioretention systems.

A plan showing the location of these elements has been included as Figure 5. Details relating to each of these aspects have been discussed below:

Swales

Grassed swales are proposed along the proposed cul-de-sac. In general accordance with the principles of water sensitive urban design, the proposed roadway will adopt a single cross fall, with all stormwater runoff being directed towards a swale that will run the full length of the road. Given the discharge point from the swale system will be towards the centre of the site partway along the extent of the new cul-de-sac, it has been assumed that the swale system will comprise two swales, with the western swale extending some 100 metres in length at a grade of 0.25%, while the southern swale is somewhat shorter at 45 metres length. The swales are most likely to comprise rock lined, vegetated swales suited for the removal of sediment and suspended solids, with capacity to also remove nitrogen and phosphorous. Examples of suitable swales have been shown below:



The parameters of the swale system within the MUSIC model have been detailed in the following table:

Catchment (ha)	Length of Swale (m)	Base Width (m)	Top Width (m)	Depth (m)
0.45 (southern)	45	1.2	3.3	0.35
0.582 (western)	100	1.2	3.3	0.35

All swales were modelled with a bed slope of 0.25%, a vegetation height of 0.5 metres and a seepage loss of 30mm/hr. The seepage loss value is in the middle of the range provided in the MUSIC model for heavy clay soils (0 – 0.36mm/hr) and has been adopted to reflect the initial loss coefficient (as well as providing some provision for ongoing loss). The swale length proposed is slightly shorter than the entire new roadway length as the final few metres will comprise the bioretention system as well as the tendencies for initial flows to be contained on the pavement at either end of the new roadway.

Bioretention Systems

Bioretention systems rely on a filter media and plants to attenuate flows and remove the concentration of pollutants from stormwater runoff. A single bioretention system is proposed for this development, comprising a filtration system situated towards the centre of the swale system which convey low level flows to the drainage swale proposed across proposed Lot 4 to outlet within the drainage easement on Lot 20 to the east.

The parameters of the bioretention system within the MUSIC model have been detailed in the following table:

Surface Area (m ²)	Filter Area (m ²)	Depth (m)	Median Particle Diameter (mm)	Ksat (mm/hr)
42	24	0.7	0.50	200

The model indicates that the bioretention filter will sit within the 3.3 metre wide swale and will comprise a length of 20 metres by 1.2 metre width. The depth of extended detention has been determined as 120mm.

Please note that given the low grades envisaged for the swale, coupled with the effectiveness of such systems in achieving sediment capture, a coarse sediment settlement forebay has not been proposed. This may be revisited at design stage for the project.

A concept diagram of the MUSIC model pre and post developed flows has been provided in Appendices A and B respectively.

3.3 MUSIC OUTPUTS

3.3.1 General

Outputs from the modelling scenarios identifying the effectiveness of the treatment train have been presented below.

Parameter	Pre-developed Flow	Post Developed Flow Without Treatment			Post Developed Flow With Treatment	% Reduction
		West Catchment	South Catchment	Combined Catchments		
Flow (ML/yr)	5.26	1.69	1.30	2.99	2.91	2.7
Total Suspended Solids (kg/yr)	974	384	290	675	32.2	95.2
Total Phosphorus (kg/yr)	2.00	0.739	0.567	1.31	0.250	80.9
Total Nitrogen (kg/yr)	10.3	3.55	2.72	6.27	3.43	45.2
Gross Pollutants (kg/yr)	1.97	63.1	48.8	112	0.00	100.0

The proposed treatment train meets Council's required targets as detailed below.

Parameter	Reduction Target (%)	Reduction Achieved (%)
Total Suspended Solids (kg/yr)	80	95.2
Total Phosphorus (kg/yr)	60	80.9
Total Nitrogen (kg/yr)	45	45.2
Gross Pollutants (kg/yr)	90	100.0

The effectiveness of each treatment node has been detailed as follows:

3.3.2 Swales

Swale performance has been shown in the following tables.

Western Extent of Cul-de-sac

Parameter	Source Node Output	Output from Swale	% Reduction
Flow (ML/yr)	1.69	1.65	2.5
Total Suspended Solids (kg/yr)	384	25.9	93.3
Total Phosphorus (kg/yr)	0.739	0.220	70.2
Total Nitrogen (kg/yr)	3.55	2.57	27.5
Gross Pollutants (kg/yr)	63.1	0.00	100.0

Southern Extent of Cul-de-sac

Parameter	Source Node Output	Output from Swale	% Reduction
Flow (ML/yr)	1.30	1.29	1.3
Total Suspended Solids (kg/yr)	290	26.0	91.1
Total Phosphorus (kg/yr)	0.567	0.183	67.7
Total Nitrogen (kg/yr)	2.72	2.02	25.5
Gross Pollutants (kg/yr)	48.8	0.00	100.0

The swale system proposed along the edge of the internal roadway is highly effective at capturing total suspended solids and gross pollutants, with considerable effectiveness at reducing phosphorous. All stormwater from either end of the cul-de-sac will be directed through the swale into a bioretention system positioned prior to discharge to an open swale through the southern extent of proposed Lot 4 prior to entering the underground drainage system on Lot 20.

3.3.3 Bioretention System

Bioretention system performance has been shown in the following table. The bioretention system is situated at the centre of the swale at the point where the drainage system deviates across proposed Lot 4 to the existing drainage easement on existing Lot 20 to the east. The effectiveness of bioretention system at decreasing nitrogen concentrations and gross pollutants is clearly indicated in the tabulated results.

Parameter	Source Node Output	Output from Bioretention System	% Reduction
Flow (ML/yr)	2.99	2.91	2.7
Total Suspended Solids (kg/yr)	675	32.2	95.2
Total Phosphorus (kg/yr)	1.31	0.25	80.9
Total Nitrogen (kg/yr)	6.27	3.43	45.2
Gross Pollutants (kg/yr)	112	0.00	100.0

3.3.4 Treatment Train Summary

The modelling has indicated that the use of a swale for the length of the new road as well as a single bioretention system at the sag in the road where stormwater runs eastward to join with the existing drainage infrastructure will be sufficient to ensure the target reduction criteria are satisfied. A summary print out from the MUSIC program for post developed flows has been included as Appendix C.

It is worth noting that the grassed swale in Lot 4 will also have additional capacity to polish wastewater, however this has not been included in the model.

3.4 MAINTENANCE

3.4.1 General

The use of swales and bioretention system as stormwater quality improvement devices in the proposed development will result in some maintenance in the medium term. The extent of maintenance envisaged is anticipated to be as follows:

3.4.2 Swale

The vegetated swale which will extend along the new cul-de-sac before discharging through a bioretention system into the swale in proposed Lot 4 which drains to the piped underground drainage system in Lot 20 and on to the Bremer River. The swale will result in a build up of sediment over time. The likely costs of having this material removed and the base of the swale reinstated is not anticipated to be substantial and may be required once every ten years.

3.4.3 Bioretention System

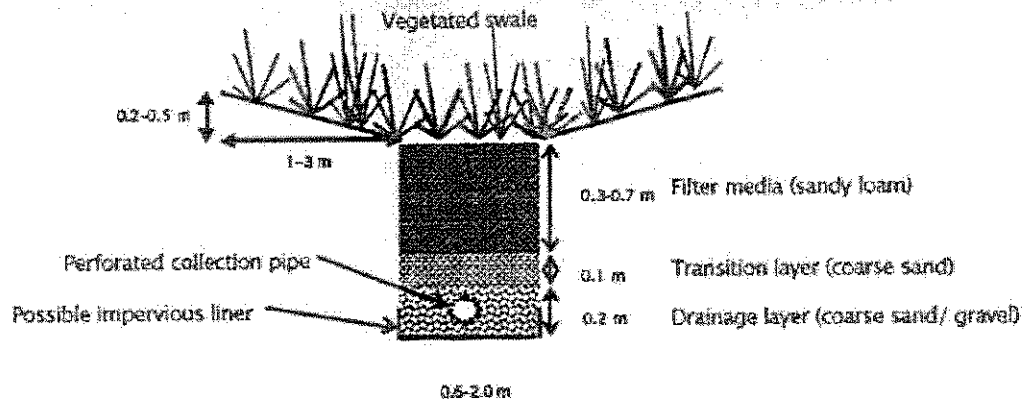
It is envisaged that the bioretention system will accumulate some sediment over time. As this system is proposed to be located within the road reserve, intermittent maintenance will be required by the local authority. Due to the relatively small size of the catchment and the nature of the land use, the volume of sediment is not likely to be excessive. Any maintenance replacing the filter media within these systems will ensure that the new media complies with the following details.

The bioretention system comprises three layers of media. Filter media (600mm deep or as specified in the engineering design), a transition layer (100mm deep) and a drainage layer (200mm deep). The filter material may be of siliceous or calcareous origin and is to be placed with minimal light compaction to avoid subsidence and uneven drainage. The prescribed hydraulic conductivity will generally be around 200mm/hr. Soils used as filtration media should be within the following ranges

- Clay 2-4% (<0.002 mm)
- Silt 4-8% (0.002-0.05 mm)
- Very Fine Sand 5-10% (0.05-0.15 mm)
- Fine Sand 10-25% (0.15-0.25 mm)
- Medium to Coarse Sand 60-70% (0.25-1.0 mm)
- Coarse Sand 7-10% (1.0-2.0 mm)
- Fine Gravel <3% (2.0-3.4 mm)

Soils modelled in the MUSIC scenario have comprised soils with a 0.5 mm diameter in the filtration zone with a hydraulic conductivity value of 200mm/hr. Vegetation species envisaged for the system include a variety of sedges. A typical cross section of a bioretention system has

been shown below (source: BCC Draft Water Sensitive Urban Design Engineering Guidelines, Chapter 3 – Bioretention Swales, August 2005).



The transition and drainage layers of the biofiltration device will be in general accordance with the Guideline Specifications for Soil Media in Bioretention Systems prepared by the Facility for Advancing Water Biofiltration. A cross sectional diagram indicating the location of stormwater infrastructure with respect to the road carriageway and the property boundaries of the new allotments has been included as Figure 6.

4.0 CONCLUSION

This assessment has examined the water quality associated with the proposed subdivision of land at 70A Chubb Street into 11 allotments. The assessment seeks to ensure that a reduction in water borne pollutants for gross pollutants, suspended solids, total nitrogen and total phosphorous occurs in a manner consistent with Council's requirements and the reduction targets detailed in the Healthy Waterways documentation.

The assessment details that the inclusion of a bioretention system with a filter area of some 24 square metres will be necessary at the sag in road where the stormwater drainage is directed eastwards across an open swale towards the existing drainage infrastructure on Lot 20, across parkland further to the east and into the Bremer River. The development of the cul-de-sac will see the road profile adopt a single cross fall and vegetated swale along its length prior to draining through the bioretention system and into the easement on proposed Lot 4 for discharge to Lot 20. Modelling has indicated that the inclusion of these treatments together with a 5KL rainwater storage tank for each property supporting a detached residence and 3KL storage for each unit on properties supporting a duplex will assist in adequately reducing contaminants to meet the nominated targets.



FIGURE 3:
Subdivision Layout Plan

FIGURE 4:
Bremer River Plan WQ1432 Showing Extent of Water Types



FIGURE 5:
Layout Plan Showing Location of Stormwater Quality Improvement Devices





FIGURE 6:

Cross Section Showing Location of Stormwater Quality Improvement Devices





APPENDIX A:
MUSIC Concept Diagram – Pre-developed Flows





APPENDIX B:

MUSIC Concept Diagram – Post Developed Flows

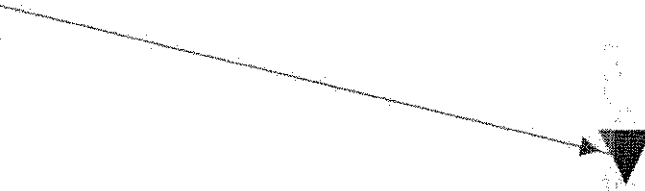


APPENDIX C:
Statistical MUSIC Data Outputs for Post Developed Flows

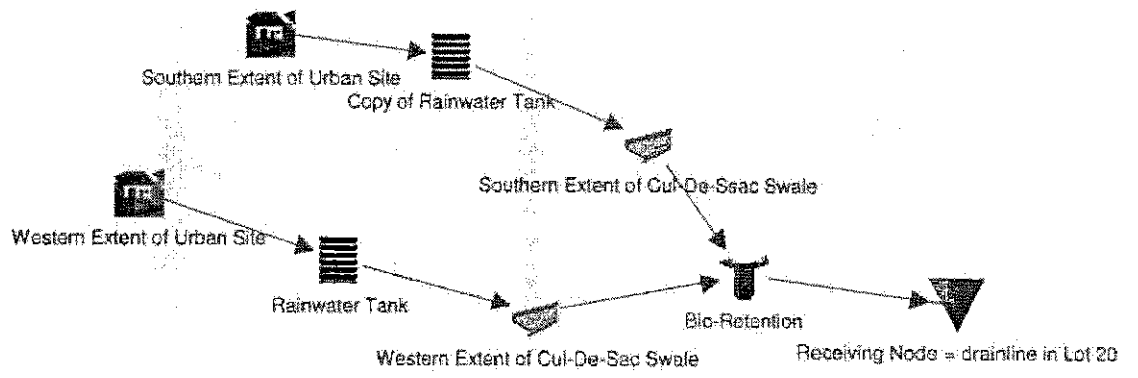




Urban

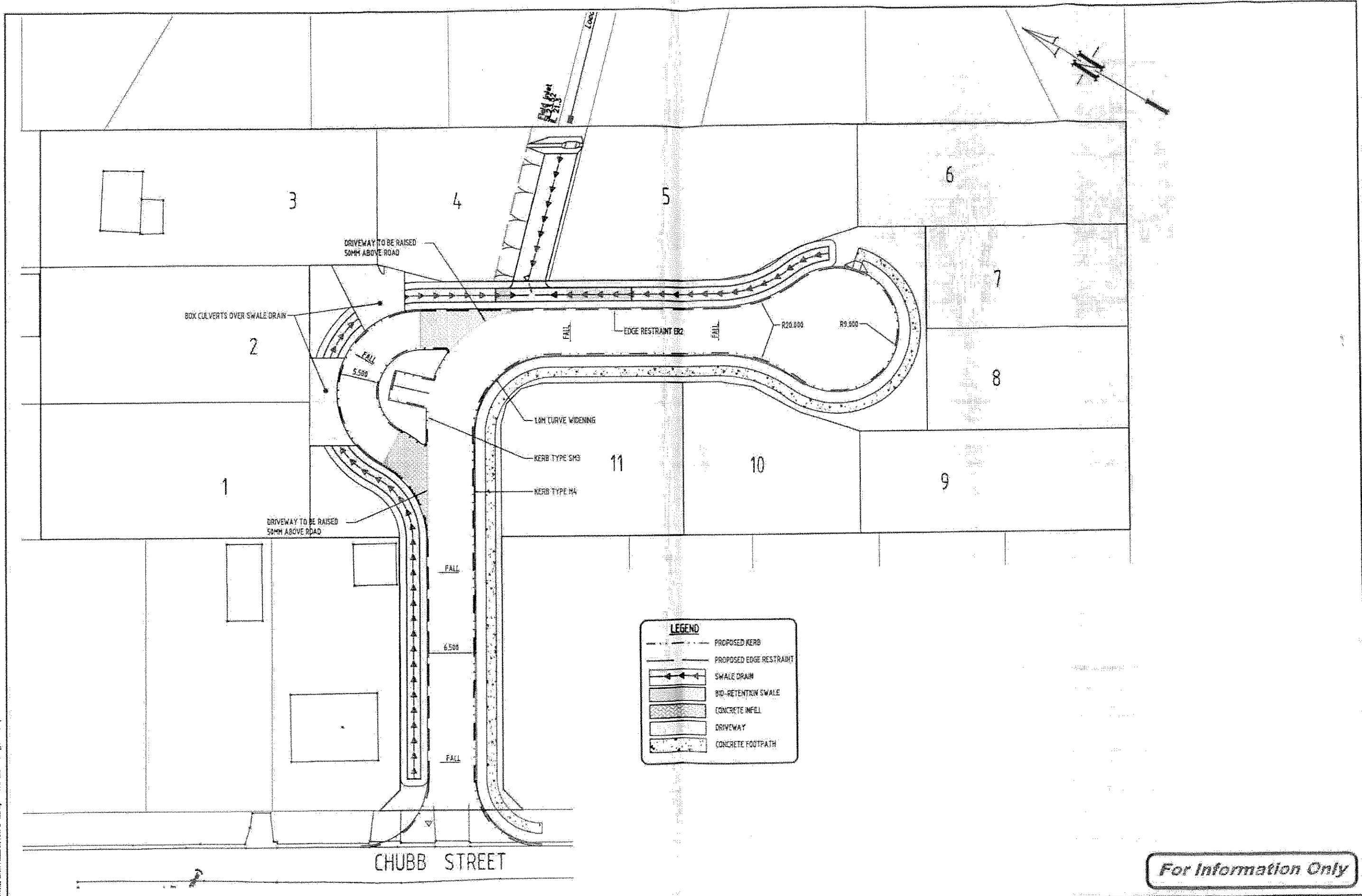


Receiving Node



Treatment Train Effectiveness

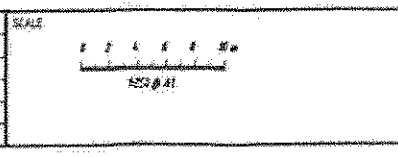
	Flow (ML/yr)	TSS (kg/yr)	TP (kg/yr)	TN (kg/yr)	Gross Pollutants (kg/yr)
Sources	2.99	675	1.31	6.27	112
Residual Load	2.91	32.2	0.250	3.43	0.00
% Reduction	2.7	95.2	80.9	45.2	100.0



For Information Only

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REV	REVISION DETAILS	DATE	APPR
B	SWALE DRAIN AMENDED	02.05.08	CDA
A	FIRST ISSUE	18.01.08	CDA



CLIENT
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APPROVED	DATE	04/05/16
DRAWN	DESIGNED	CHECKED
JH	JH	CDA

JOB DESCRIPTION

DRAWING TITLE		LAYOUT PLAN
PROJECT No	DRAWING No	REV
07052	SK-002	B

WATERS OF THE BREMER RIVER ESTUARY CATCHMENT


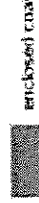
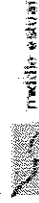
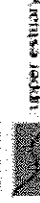
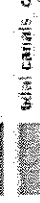
Part of Basin 143

This plan forms part of the Waters of the Bremer River Estuary Catchment scheduling document, prepared pursuant to the Environmental Protection (Water) Policy 1997.




Legend

Water types

Marine/Estuarine Waters

-  open coastal
-  erickson coastal waters: lower estuary
-  middle estuary
-  upper estuary
-  tidal canals, constructed estuaries, marinas and boat harbours




Lowland Freshwaters (<150m)

-  lowland streams
-  volcanic streams
-  coastal streams

Upland Freshwaters (>150m)

-  upland streams

Other

-  Local Government boundary
-  Wetland lakes and reservoirs
-  Sub-catchments

Notes

1. State boat harbours and approved navigable channels, existing and proposed, and possible future shipping channels, existing and proposed, like a marine sand extraction site, approved sites for the placement of environmental easures or marine wetlands, capital and maintenance dredging activities are all areas or activities that are not located within the boundaries of waters of high ecological value.
2. The boundaries in this plan are indicative only. The water types and levels of aquatic ecosystem protection depicted in this plan are based on historic field or part of a continuous field of data collected by the Queensland Department of Environment and Heritage. For further information, please contact the Queensland Department of Environment and Heritage, PO Box 15156, Brisbane City East QLD 4002.
3. Localities and features shown, including the GDA84 datum, are based on the Queensland Department of Environment and Heritage's Geographical Information System (GIS) data.

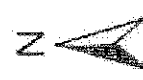
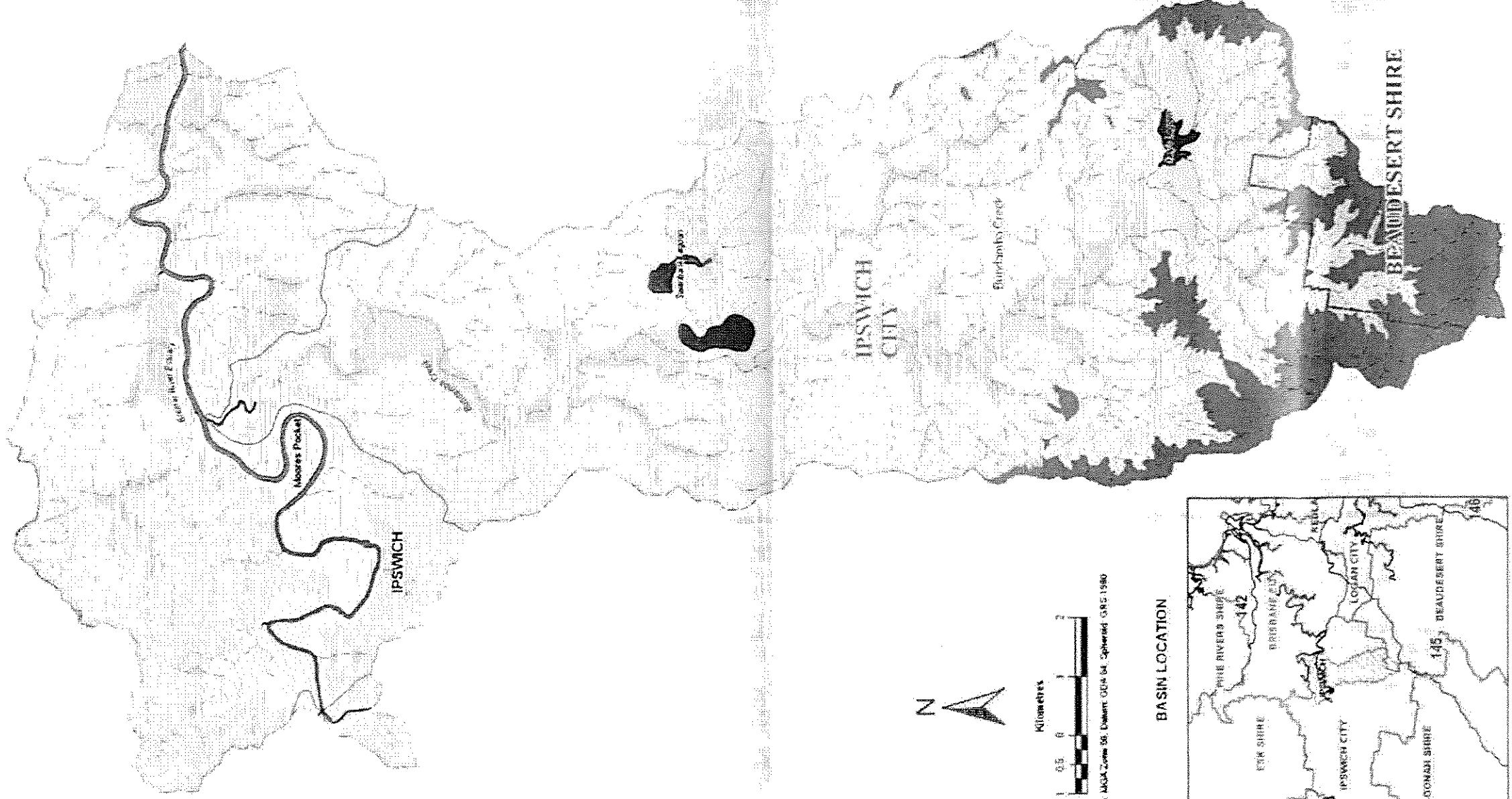
The State of Queensland
Environmental Protection Agency 2007

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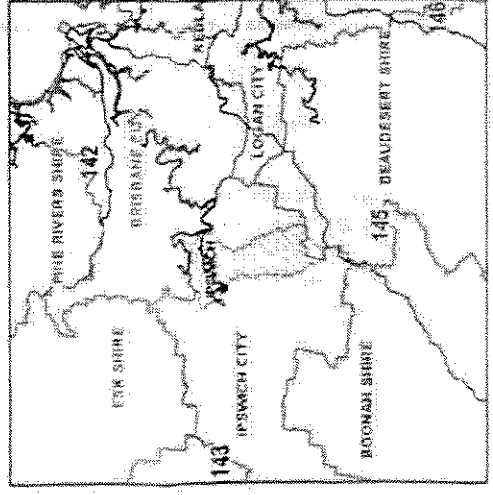
PLAN WQ1432

Plan version 1.0 (2007)



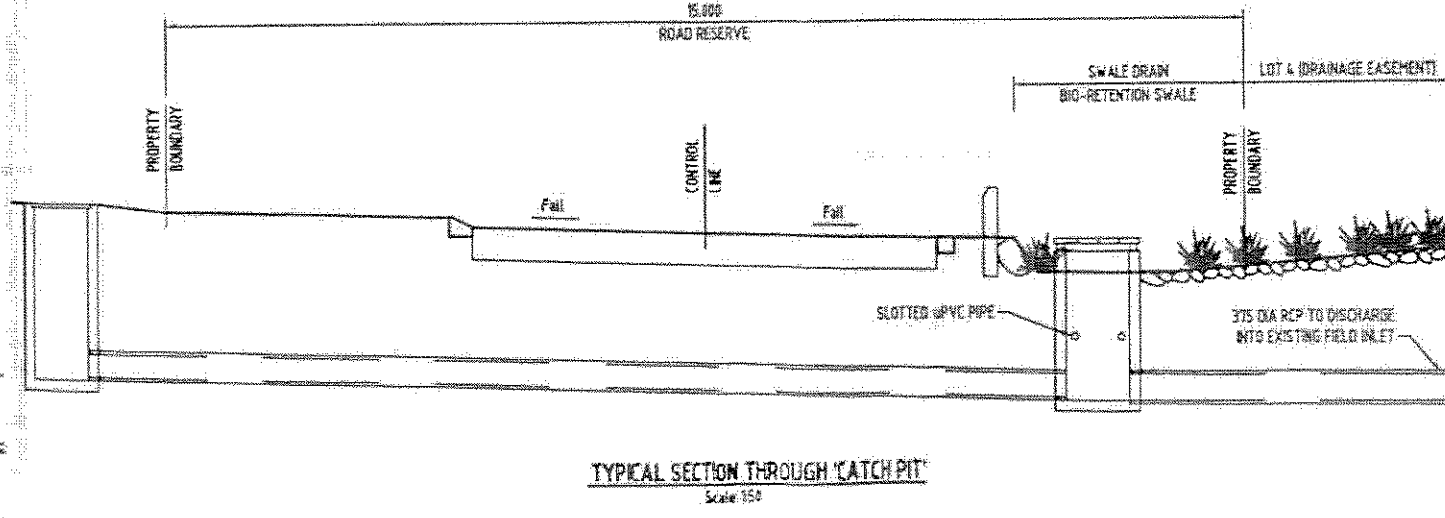
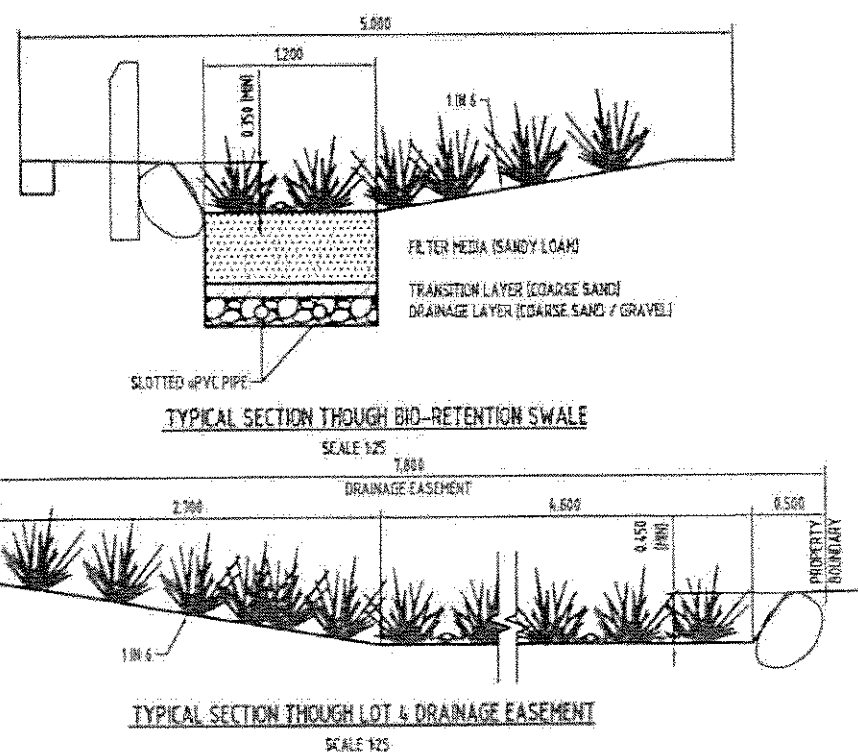
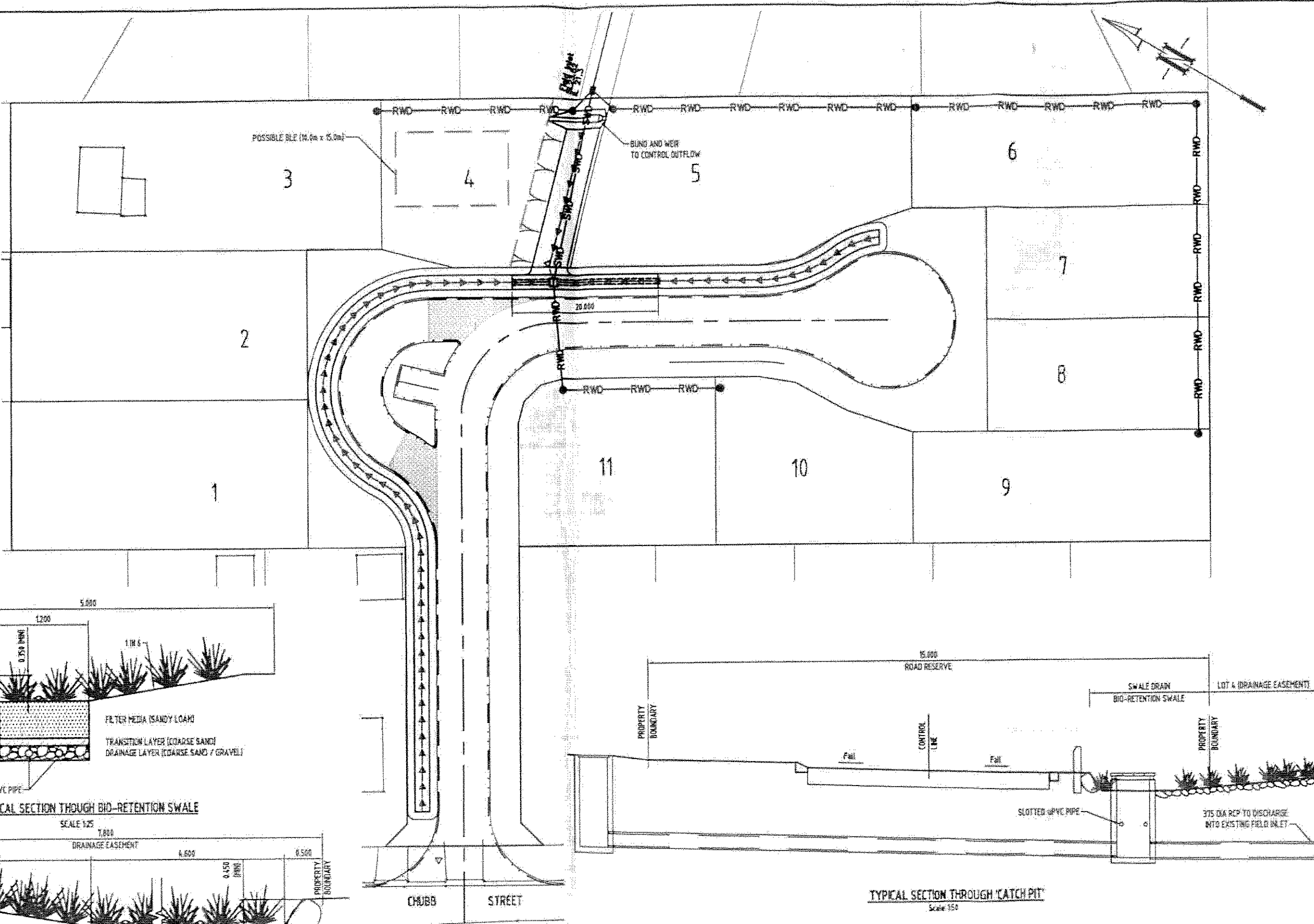
Projection: MGA Zone 56, Datum: GDA84, Spheroid: GRS 1980

BASIN LOCATION



LEGEND

- PROPOSED ROOFWATER
- PROPOSED STORMWATER
- SWALE DRAIN
- BIO-RETENTION SWALE
- CONCRETE INFILL
- SLOTTED uPVC PIPE



For Information Only

Date: 16 May 2008 10:10 AM
 File: 07052-01.dwg
 User: jph

REV	REVISION DETAILS	DATE	APPR
B	SWALE DRAIN AMENDED	02.05.08	EDA
A	FIRST ISSUE	16.01.08	CSA

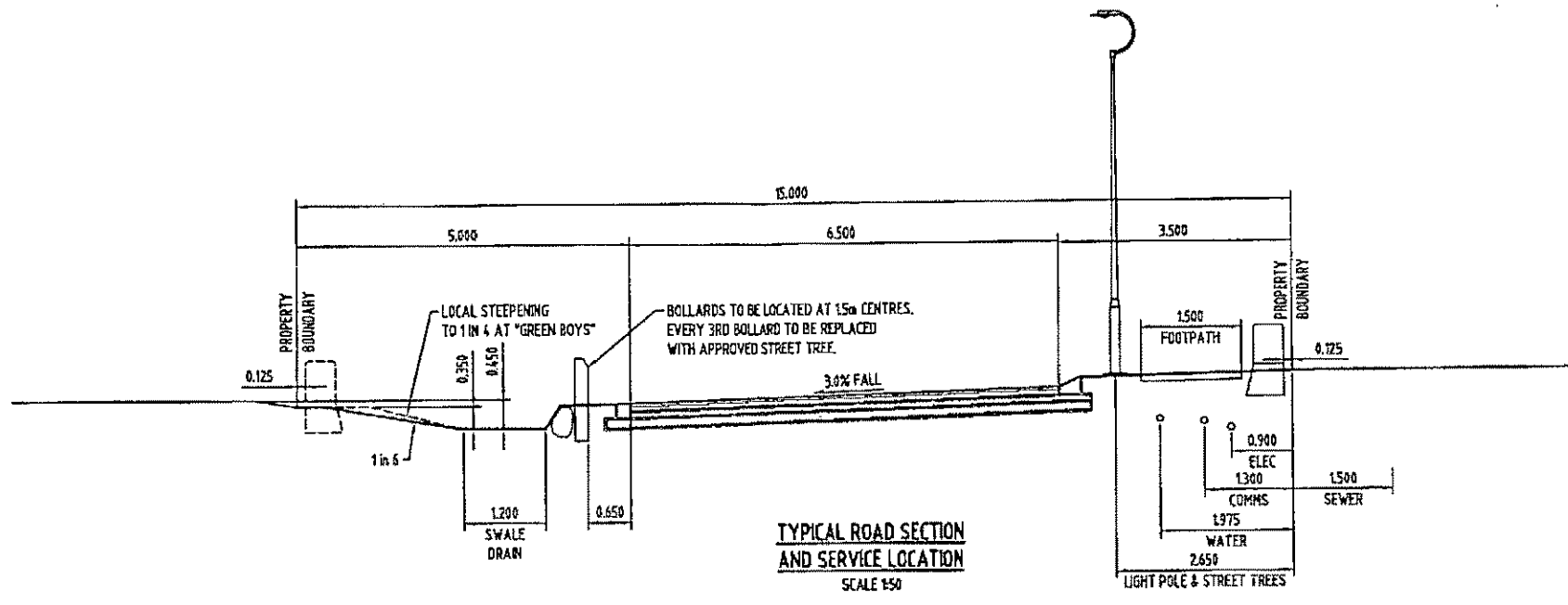
CLIENT
Ipswich Ideal Pty Ltd

CONSULTING ENGINEER
dkiconsulting

360 Boundary Street
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Tel: (07) 3811 4536
E-mail: info@dkiconsulting.com.au

DATE	DATE	DATE
06.05.08		
DRAWN	DESIGNED	CHECKED
JPH	JPH	EDA

DRAWING TITLE STORMWATER TREATMENT	
PROJECT No: 07052	DRAWING No: SK-001
REV: B	



TYPICAL ROAD SECTION AND SERVICE LOCATION
SCALE 1:50

For Information Only

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REV	DATE	DESCRIPTION
A	01.05.08	FIRST ISSUE
		REVISION DETAILS

SCALE	1:50
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CLIENT
Ipswich Ideal Pty Ltd



CONSULTING ENGINEER
395 Boundary Street
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4074
Tel: 07 3831 4335
Email: enquiries@dksconsulting.com.au

APPROVAL	[Signature]
DATE	06.05.08
DRAWN	JHH
DESIGNED	JHH
CHECKED	CDA

JOB DESCRIPTION

DRAWING TITLE TYPICAL CROSS SECTION		
PROJECT No	DRAWING No	REV
07052	SK-003	A

6749/07

13 May 2008

MEMORANDUM

TO: SENIOR DEVELOPMENT PLANNER — ~~BRETT DAVEY~~

FROM: SENIOR ENVIRONMENTAL PLANNER - [REDACTED]

RE: DECISION NOTICE
RECONFIGURING ONE (1) LOT INTO ELEVEN (11) LOTS
70A CHUBB STREET, ONE MILE

Brett,

I'm satisfied the amended stormwater management plan meets the requirements of Councils outstanding issues letter and therefore recommend the following conditions for inclusion within any development approval.

1. Stormwater

- (a) Stormwater quality for the development shall achieve the following water quality objectives as outlined within the South-east Queensland Regional Plan (SEQ RP) Part 11.
- 80% for total suspended solids;
 - 60% for total phosphorus;
 - 45% for total nitrogen; and
 - 90% for gross pollutants
- (b) The water quality objectives listed in (a) shall be achieved through the implementation of the rainwater tanks, swales and bio-retention swale in accordance with the Stormwater Quality Management Plan (Rev B) prepared by Daniel Willis Town Planning & Environment reference 06-010 and dated 2 May 2008.
- (c) Detailed cross sections and final locations for stormwater infrastructure required by (b) shall be submitted for approval in conjunction with any application for Operational Works and be in accordance with the Water Sensitive Technical Design Guidelines for South East Queensland specifically Chapters 10 Plant Selection for WSUD, Chapter 2 Swales (Incorporating Buffer Strips) and Chapter 3 Bio-retention Swales published by Healthy Waterways.

- (d) Bollards shall be installed along the swale drain interface in accordance with Ipswich City Council's Standard Drawing SP.43 Revision B at maximum of 1.5m centres at an alignment of 650mm from the edge of kerb. Every 3rd bollard shall be required to be replaced with an approved street tree. The Developer shall submit a Streetscape Plan (including bollard and interface details) for approval in conjunction with application for Operational Works that generally complies with Typical Cross Section (Drawing number SK-003 Project number 07052 Revision A) prepared by dks Consulting Engineer dated 06 May 2008.



SENIOR ENVIRONMENTAL PLANNER



6749/07

16/06/08

M E M O R A N D U M

TO: SENIOR ENGINEERING OFFICER
FROM: DEVELOPMENT ENGINEER
RE: **DEVELOPMENT APPLICATION**
INTEGRATED PLANNING ACT 1997 - SECTION 3.2.1(1)
ENGINEERING ASSESSMENT REPORT

Application No: 6749/2007/RAL
Applicant: Ipswich Ideal Pty Ltd
Property Location: 70a Chubb Street One Mile Qld 4305

Proposal	Development	Approval Type
One (1) Lot into Eleven (11) Lots	Reconfiguring a Lot	Development Permit.

Date Received: 22 August 2007

The following comments are made in respect of the above proposed development.

1. APPLICABLE CODES

This application has been assessed against the following codes:-

- (a) Ipswich Planning Scheme – January 2006;
- (b) Ipswich Planning Scheme Part 12, Div 5 – Reconfiguring a Lot Code;
- (c) Ipswich Planning Scheme Part 12, Div 6 – Residential Code;
- (d) Ipswich Planning Scheme Policy 3 – General Works;
- (e) Ipswich Planning Scheme Policy 5 – Infrastructure Contributions;
- (f) Ipswich City Council Standard Drawings;
- (g) Australian Model Code for Residential Development (Amcord) Edition 2 – 1990;
- (h) Queensland Urban Drainage Manual;
- (i) Australian Rainfall and Runoff (The Institution of Engineers, Australia);
- (j) Policy Guidelines for Earthworks (including allotment filling); Australian Standard 3798 – Guidelines on Earthworks for Commercial and Residential Developments; and
- (k) Water Act 2000.

The proposal generally complies with or has been conditioned to comply with the above codes.

2. EXISTING CONDITIONS AND COMMENTS

3. OTHER DEVELOPMENT APPROVALS REQUIRED

From an engineering perspective, further Development Permits, as required by the *Integrated Planning Act 1997*, shall be obtained in respect of any Operational Works in relation to this approval before any such works are commenced.

RECOMMENDATION

Is this the correct plan reference?

A. Based on engineering grounds only, it is recommended that the application for Code Assessment - Development Permit - Reconfiguring a Lot of land at 70a Chubb Street One Mile Qld 4305 as proposed by Ipswich Ideal Pty Ltd and detailed on plan numbers 07052-SK-001 Revision B, dated 06/05/2008, prepared by dks Consulting, be approved, subject to the following terms and conditions being completed by the Developer, to the satisfaction of the Senior Development Engineer:

1. Terms

- (a) RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required. Furthermore, the RPEQ required for the analysis and reporting for mining shall be experienced in the analysis of underground and surface mining within the Ipswich area.
- (b) QUDM - The Queensland Urban Drainage Manual, produced by the Queensland Department of Primary Industries.
- (c) Queensland Streets - The Design Guidelines for Subdivisional Street Works, prepared for the Institute of Municipal Engineers of Australia (QLD).
- (d) AMCORD - The Australian Model Code of Residential Development produced by the Commonwealth Department of Housing and Regional Development.
- (e) DMR - Department of Main Roads.
- (f) MUTCD - The Manual of Uniform Traffic Control Devices, published by DMR.
- (g) Ipswich Water - Commercial Business Unit of Ipswich City Council providing water and sewerage services.
- (h) DNRM - Department of Natural Resources and Mines.

2. Roadworks

- (a) The proposed access road shall be designed and constructed with asphaltic concrete surfacing to a width of 6.5 m for the full length of all property frontages. A minimum 4.25 m verge width on one side of road shall be provided to accommodate relevant services as shown in ICC Standard Drawings SR 22 and SR 23. Works shall include:
- (i) Concrete kerb and channel on both sides;
 - (ii) Concrete footpath 1.5 m wide on one side, with kerb ramps designed in accordance with ICC Standard Drawing SR.18; and
 - (iii) Stormwater drainage infrastructure designed in accordance with Council's Planning Scheme Policy 3 – General Works, Queensland Urban Drainage Manual, the Department of Main Roads Drainage Design Manual and Stormwater Management Plan, dated 6 May 2008, prepared by EHA Pty Ltd in that order of precedence.
- (b) Roadworks shall be designed and constructed in accordance with Council's Standards, Queensland Streets, Austroads Publications, AMCORD, the relevant and appropriate roadworks design standards and guidelines, and any other documentation deemed appropriate by Council. Such design and construction shall ensure that road carriageway widths are consistent with the road function and position in the road hierarchy and are in accordance with the relevant design speed environment.
- (c) Road pavement designs shall comply with Ipswich City Council's *Planning Scheme Policy 3 - General Works, Part 1 – Standard for Design of Roadworks*. All roads shall have two way cross-falls in accordance with Council's adopted standards. *X*
- The minimum dedicated road widths, pavement widths and footpath requirements shall be in accordance with Ipswich City Council's *Code for Reconfiguring A Lot* and Standard Drawings.
- (d) The road pavement widths and geometric layout shall be sufficient to make adequate provision for Council's refuse collection vehicles and public transport movements.
- (e) A vehicle turning area shall be provided at the end of "No through" road and cul-de-sac. Circular cul-de-sac turning heads, based on a minimum turning circle of 9.0 m radius, are preferred. "T" and "Y" shaped turning heads are generally not to be used.
- (f) Traffic slow down devices shall be provided generally in accordance with Queensland Streets.
- (g) "No Through Road" signs shall be erected at the entries to cul-de-sacs and terminating roads.
- (h) All traffic signs and delineation shall be installed in accordance with MUTCD.

X The Developer shall provide minimum 1.5 m wide concrete footpaths on one side of proposed access road.

is this covered by (a)(ii) above. No need to repeat.

Yes - amended.

The construction of footpaths shall be in accordance with Council's Standard Drawing SR.19. The concrete footpaths shall be on the same side as the street lights, and the maximum longitudinal grade shall not exceed 1:8.

- (j) Kerb ramps are to be constructed in accordance with Council's Standard Drawing SR.18 at all intersections and at additional locations where required to connect the concrete pathways and cycleways. Generally at "T" intersections, 4 kerb ramps are required.
- (k) The Developer shall upgrade the intersection of Chubbs Street and proposed access road in accordance with the AUSTRROADS Publication "Guide to Traffic Engineering Practice, Part 5, Intersections at Grade". Any requirements of the Department of Main Roads shall be met.
- (l) Provision shall be made for 6 m, three chord truncations at intersections. The 6.0 m distance is measured along each frontage from the property corner.
- (m) The Developer shall provide concrete threshold treatment to all internal "T" intersections (modified or otherwise) in accordance with ICC Standard Drawing SR 28.

3. Access/Parking

- (a) Vehicular access from the roadways to all allotments shall be capable of being provided.
- (b) Design and construction of all access and parking shall be in accordance with the provisions of the Ipswich City Council Parking Code and the Australian Standards (2890 series).
- (b) Any internal access driveways to proposed Lots 1,2,3, and 4 through/over the proposed road side swale drain shall be approved by the Senior Development Engineer and shall be constructed as part of this development. Due consideration shall be given in the design of the swale drain to ensure stormwater flows from the upstream catchment are not impeded or restricted to impact on upstream or downstream properties of the proposed development. Details of how the Developer intends to achieve these objectives shall be submitted to Council for approval as part of the Operational Works Application.

4. Water

- (a) The Developer shall provide a reticulated water supply system together with valves and fire hydrants, in accordance with the "Guidelines for Planning and Design of Urban Water Supply Systems", which connects into Council's existing reticulation system.
- (b) A blue, bi-directional raised reflective pavement marker (RRPM) shall be provided to all hydrants. The marker shall be installed in accordance with the Department of Main Roads Fire Hydrant Indication System Technical Guideline.
- (c) The developer shall construct 100 mm diameter watermain to adequately service this development from existing 150 mm diameter main in Chubbs Street and connect into

100 mm main in 8 Battersby Street. The site shall be served from two directions and shall not be in the form of a single dead end supply. All other mains shall be looped around the cul-de-sac head to join back on to itself.

- (d) All works on live water mains are to be carried out by Council in accordance with Council's policy, and at the Developer's expense.
- (e) Where concrete footpaths are to be constructed, the Developer shall provide 100 mm diameter conduits under the footpath and in line with the conduits under the road, for future ease of installing the individual water services. The letter "W" shall be embossed in the concrete to mark the location of the conduit.
- (f) The Developer shall lodge a private works request on the prescribed Council form, for Council to supply a cost estimate to:
 - (i) provide a suitable metered water connection for each proposed allotment;
 - (ii) amend the existing connection if necessary; and
 - (iii) seal off any existing water connections if necessary.

The appropriate fees are to be paid prior to Council signing any plan of survey.

- (g) Wherever possible, the water main shall be constructed on the opposite side to the concrete footpaths. Where the water main is under a concrete footpath, the Developer shall provide a water connection (up to, but excluding the provision of meters) to each allotment, including the provision of approved pre-cast concrete or cast iron boxes over the stop cock.

5. Sewerage

- (a) The Developer shall provide a sewerage reticulation system with appropriate house connection branches, designed to command the whole of each of the proposed allotments.
- (b) In the positioning of Building Location Envelopes (BLE's) or Stormwater structures on allotments, the Developer shall comply with one of the following:
 - (i) All structures shall be a minimum of 1.5 m clear of the outer edge of the existing or proposed sewers;
 - or
 - (ii) Should it be deemed impractical for the structure(s) to be constructed clear of the existing or proposed sewer, then the Developer shall either:
 - Relay the sewer around the proposed structure(s) or BLE, or

Replace the existing sewer in polyethylene wrapped cement lined ductile iron (DICT) pipe for the length to be overbuilt, with access chambers constructed at both ends of the DICT section, unless approved otherwise by Ipswich Water.

- (c) Approval to build over sewers shall be obtained from the Senior Development Engineer. The following requirements are to be met:
- (i) The part of the sewer to be built over shall be straight for the whole distance under the structure;
 - (ii) Access chambers shall be positioned on the sewer outside the structure. Unhindered entry to access chambers shall be provided at all times; and
 - (iii) Whenever a footing crosses a sewer or is located within 1.5 m of the sewer, the footing shall be designed with piers of minimum diameter 450 mm each side of the sewer, penetrating at least 300 mm below the invert of the sewer. No footing shall impose a load on the sewer.
- (d) The Developer shall pay the full cost for Council to provide a suitable connection into the existing sewerage reticulation system. All works on live sewers are to be carried out by Council at the Developer's expense, unless arranged otherwise with Ipswich Water.
- (e) No work on the sewerage reticulation system shall commence prior to the approval of the Operational Works application.

6. Stormwater

The Developer shall provide all necessary stormwater drainage (both internal and external to the development) and such drainage works (except for roofwater systems) shall be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

Overland flow paths shall be suitably designed to cater for the water from a storm event with an ARI of 100 years. In the case where the piped system is carrying part of the flow, the overland flow paths shall be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system, noting the requirements of QUDM.

- (b) A suitable roofwater system shall be designed in accordance with QUDM, for allotments that do not have adequate fall from within the allotment to the design invert level of the kerb and channel. The design is to be to a minimum Level II in QUDM.
- (c) All stormwater flows within and adjacent to the development, other than inter-allotment drainage, shall be confined to dedicated roads, drainage reserves, registered drainage easements or within parkland. The registered drainage easements, if related to piped drainage, shall be centrally located over such underground pipe system and shall be not less than 4.0 m wide, except for drainage easements required for side boundaries which may be 3.0 m wide where approved by the Senior Development Engineer. In addition,

the easements shall be of suitable width to contain the predicted overland flow from the storm event with an ARI of 100 years in that location.

- (d) No ponding, concentration or redirection of stormwater shall occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.
- (e) The Developer shall develop the site only from a stormwater perspective generally in accordance with the proposed Stormwater Management Plan, dated 6 May 2008, prepared by Environmental Hydrology Associates Pty Ltd and in conjunction with the following conditions:-

- (i) Any additional rainwater tanks other than what is required under the Queensland Development Code and used specifically as a stormwater attenuation device would not be supported by Council.
- (ii) The Developer shall provide stormwater detention by proposed swales and drainage easement through Lot 4 on the subject land, which shall be designed and constructed to ensure that flows, at any point downstream in the catchment, are not increased by the development for any combination of frequency and duration from the storm event with an ARI of 2 years up to up to and including the storm event with an ARI of 100 years.
- (iii) The sides of any grassed embankment and/or basin shall not exceed maximum 1:6 grade unless otherwise approved by the Senior Development Engineer. Appropriate provision for managing low flows and maintenance shall be made to the satisfaction of the Senior Development Engineer.
- (iv) The developer shall demonstrate that all discharges from the proposed drainage reserve are within all QUDM requirements.

What if it isn't
'a enough
st happens?
Not sure if
this can be
achieved

7.

The developer shall demonstrate that the overland flowpath (existing drainage reserve) between 8 & 10 Battersby Street has sufficient width in accordance with QUDM requirements to cater for flows associated with a storm event with an ARI of 100 years.

— if it cannot be, there is room to widen the detention area into lot 5 + release the water slower by throttling the Stormwater drainage plans are to be submitted and approved by the Senior Development Engineer, in conjunction with the submission of an Operational Works application. *banded area + the pipe.*

- (g) Appropriate works shall be carried out to ensure that stormwater drainage from the new kerb and channel discharges suitably into the existing drainage system.
- (h) Pollutant control devices shall be installed in the stormwater system. Locations and types of the devices shall be approved by the Senior Development Engineer.

7. Public Utilities

- (a) Adequate provision shall be made in all proposed dedicated roads, access strips and easements, to cater for the public utility services that would normally serve the development.
- (b) The Developer shall provide appropriate road crossing conduits in accordance with Council's Standard Drawings SR.22 and SR.23. Where concrete footpaths are to be constructed, the conduits shall be extended to the property boundaries.
- (c) Street lighting shall be installed by the Developer in accordance with the Australian Standard 1158.3.1 Table 1.1. All street lighting associated with the development shall be certified by a RPEQ. Street lighting shall be installed on the same side as concrete footpaths (where applicable).
- (d) The Developer shall provide underground electricity/telecommunications within the development, constructed in the approved allocation as detailed in Council's Standard Drawings SR.22 and SR.23. Electricity/telecommunication drawings shall be co-ordinated with the civil engineering design documents, to ensure that service clashes are avoided. Where allotments front an existing overhead electricity/telecommunication service, these allotments may connect to such service subject to the approval and requirements of the service provider.
- (e) The Developer shall provide an Energex approved electrical reticulation layout plan. The electricity layout shall also be shown on the water reticulation layout plans.
- (f) The Developer shall provide each allotment with an electricity supply.
- (g) Prior to the signing of Plan of Survey by Council, the Developer shall provide Council with a copy of a Certificate for Electricity Supply from Energex for the supply of electricity to the development.
- (h) Telephone and cable services may be laid in a combined trench with electricity cables, subject to the approval of Energex and the authorised telephone/cable service provider.
- (i) The Developer shall make suitable arrangements for the provision of telephone and (where applicable) cable services to all proposed lots within the development. Documentary evidence that discussions have commenced with any authorised telephone/cable service provider, on the provision of telephone/cable services, shall be provided prior to the signing of the plan of survey by Council.

8. Erosion & Silt Management

- (a) The Developer shall be responsible for the installation and maintenance of silt management facilities from the time of commencement of construction until the development has been released "Off Maintenance" by Council. All silt management facilities are to be in accordance with the document "Soil Erosion and Sediment Control" published by the Institution of Engineers Australia, or equivalent.
- (b) The Developer shall lodge a \$5 000 siltation and erosion performance bond with Council, prior to the commencement of works, which shall only be released by Council at the

termination of the maintenance period. Where Council determines that a draw-down of the bond is required, the Developer shall restore the bond to its full amount within 10 days of a notice from Council to that effect. Such bond shall guarantee adequate performance in the circumstances (i) and (ii) below:

- (i) In the event that instructions issued to the Consulting Engineer by the Senior Development Engineer for the installation of erosion control measures, are not complied with within 24 hours, Council will call upon the bond to the extent required to carry out the necessary works.
- (ii) If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.

Should the Developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council shall complete the work and recover all costs from the Developer associated with that work.

9. Operational Works – Municipal Works
(ie Works being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) The Developer shall comply with the requirements of the documents entitled "Planning Scheme Policy 3 - General Works" and "Standard Drawings".
- (c) All engineering drawings submitted to Council shall be in accordance with Council's Planning Scheme Policy 3 - General Works and Standard Drawings, and shall include as a minimum the following:
 - (i) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ;
 - (ii) The drawings shall be submitted as three A3 size sets and one full size set; and
 - (iii) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (d) Municipal works shall require a detailed design certified by a RPEQ, the design approved by Council Engineers with appropriate fees payable, a works pre-start meeting on-site and various detailed construction and audit inspections by Council Officers. A twelve

month maintenance period is applicable for the works as well as the payment of a maintenance security deposit.

- (e) All works shall be supervised by a RPEQ competent in civil works and shall be undertaken by a nominated principal contractor experienced in the construction of municipal works. Council reserves the right to request evidence of the principal contractor's competency. Should it be deemed by the Senior Development Engineer that the contractor does not have the necessary competency or has constructed substandard works for Council in the past, Council reserves the right to reject the nominated contractor.
 - (f) Municipal works shall be accepted "On Maintenance" prior to commencement of use. A maintenance bond equal to 5% of the construction cost (minimum of \$5,000.00) shall be retained by Council for a minimum period of twelve months, or until such time as the works are accepted "Off Maintenance" by Council.
 - (g) "As Constructed" plans for municipal works shall be submitted to Council and approved prior to the formal acceptance of the works "On Maintenance".
 - (h) On completion of the works a certificate shall be submitted to Council by a RPEQ certifying that the works have been constructed in accordance with Council's construction standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.
 - (i) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent in regard to the works relevant to the Operational Works approval.
 - (j) Prior to the commencement of any municipal works associated with developments other than the subdivision of land, Council shall require the provision of a bond equivalent to not less than 10% (minimum of \$5,000.00) of the value of the works as security for the performance of the various construction obligations (including the provision of engineering certification and "As Constructed" information). The bond shall be reduced to an amount of not less than 5% of the value of the works upon formal acceptance of the works "On Maintenance" and shall be retained by Council during the maintenance period as security for the performance of the maintenance obligations. The bond shall be returned upon formal acceptance of the works "Off Maintenance".
10. Operational Works – Internal Works
(ie Works not being handed over to Council)
- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.

- (b) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ.
- (c) The drawings shall be submitted as three A3 size sets and one full size set. Where municipal works are also being undertaken, it is usually appropriate to make a combined submission.
- (d) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (e) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent.
- (f) A certificate shall be submitted to Council by a RPEQ certifying that the completed works have been constructed in accordance with Council's requirements and standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.

11. Plan of Survey

- (a) The Developer shall grant, free of cost to or compensation payable by Council, minimum 8.0 m wide easement located in southern side of proposed Lot 4. The final width of the easement may depend on the width of the associated Q100 flow as specified in Condition 6(e) above.

The documentation associated with this easement may be prepared by the Developer in a form satisfactory to Council's City Solicitor, or the Developer may submit easement plans, only where Council is party to the easements, to Council for the preparation of easement documents at the Developer's expense.

- (b) Adequate permanent survey marks shall be installed. The Developer shall submit a certificate signed by a licensed surveyor, stating that after the completion of all works associated with the development, permanent survey marks are in their correct position, in accordance with the plan of survey.

12. General

- (a) All disturbed verge areas and allotments shall be graded, grassed and left in a mowable condition. The grass cover shall be obtained as early as possible during the development and an acceptable grass cover shall be achieved before the development can be accepted "Off Maintenance".
- (b) Street name signs shall be manufactured to Council specifications and shall be erected in accordance with Council's Standard Drawing SR.26 at each intersection.
- (c) With reference to any works, on land under other private ownership, written permission for the works shall be obtained and forwarded to Council. Similarly, written clearances

shall be obtained after the works are completed, unless otherwise accepted by the Senior Development Engineer.

- (d) All works required for this development shall take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works shall be altered at the cost of the Developer.
- (e) Any allotment filling for a greater depth than 500 mm to provide for building platforms shall be conducted in accordance with Australian Standard 3798. Test results as required by Australian Standard 3798, and a certificate of quality and uniformity of fill shall be provided by a RPEQ. The level of responsibility shall be Level 1.
- (f) All imported and exported materials shall be transported only on routes approved by the Senior Development Engineer.
- (g) For batters resulting from cutting and filling of the site and producing slopes greater than 1:6, Council requires a RPEQ to certify that they are stable and properly drained.
- (h) Approval of the Senior Development Engineer is required for any fill intended to be placed over Council's underground services.

B. Further Advice

1. Portable Long Service Leave

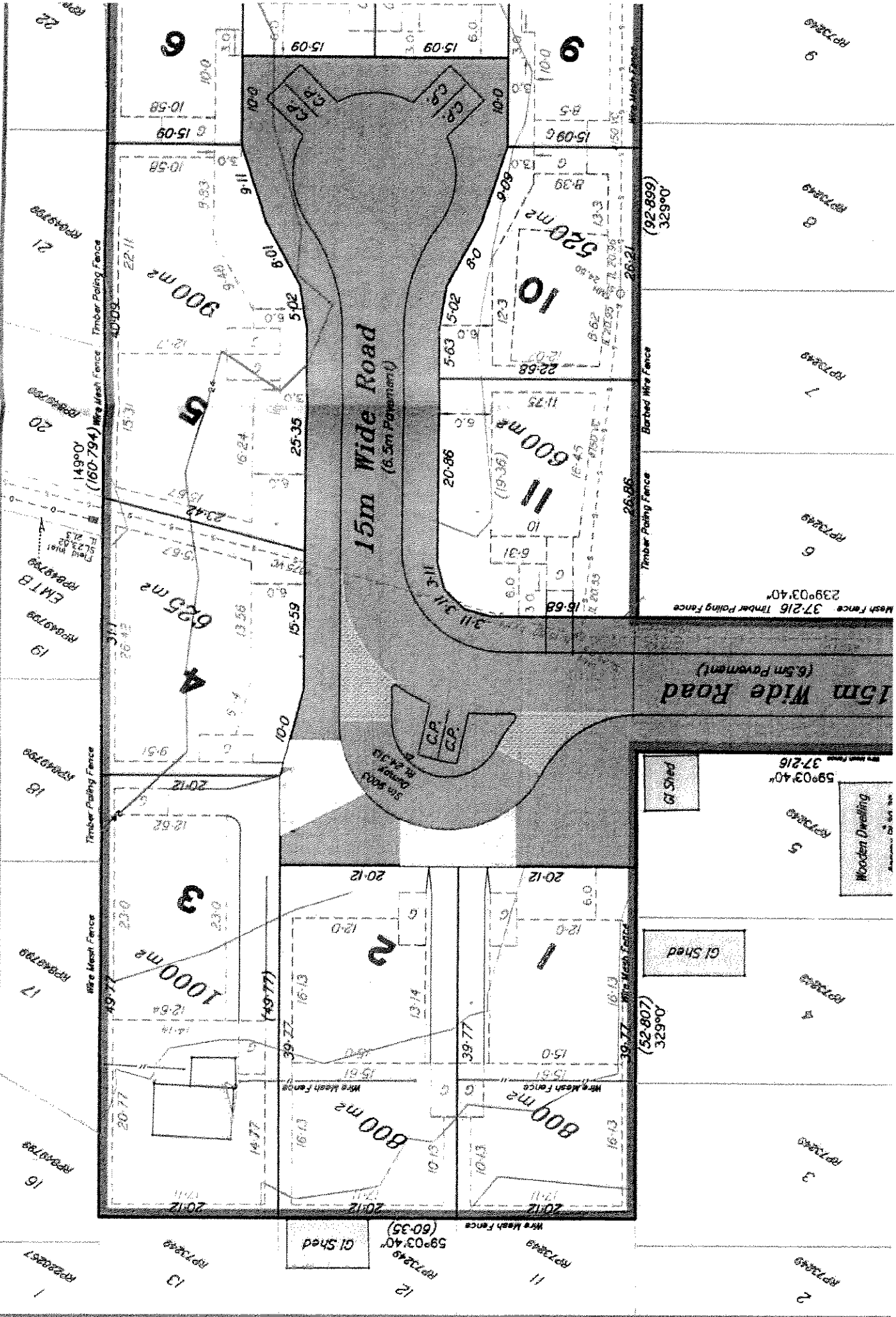
From 1 January 2000, the Building and Construction Industry (Portable Long Service Leave) Levy must be paid prior to the issue of a development permit where one is required for the 'Building and Construction Industry'. This applies to Building Works, Operational Works and Plumbing and Drainage Works applications, as defined under the *Integrated Planning Act 1997*, where the works are \$80 000 or more and matching the definition of 'Building and Construction Industry' under the *Building and Construction Industry (Portable Long Service Leave) Act 1991*.

Council will not be able to issue a Decision Notice without receipt of details that the Levy has been paid. Should you require clarification in regard to the amendments to the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, you should contact QLeave on 1800 803 481 (free call) or (07) 3212 6855.


DEVELOPMENT ENGINEER

Endorsed by:

Aaron Katt
SENIOR ENGINEERING OFFICER
DATE: June 2008



6749/07 [REDACTED]

3 September 2008

M E M O R A N D U M

TO: DEVELOPMENT TEAM CO-ORDINATOR - CENTRAL WEST

FROM: DEVELOPMENT PLANNER - [REDACTED]

RE: DEVELOPMENT APPLICATION - CODE ASSESSMENT
INTEGRATED PLANNING ACT 1997 - SECTION 3.2.1(1)

Appn No: 6749/2007

Applicant: Ipswich Ideal Pty Ltd

Real Property Description: Lot 14 RP73249

Property Location: 70A Chubb Street, One Mile

Division: 8

Proposal	Development	Approval Type Requested
Reconfiguring a Lot - One (1) Lot into Eleven (11) Lots	Reconfiguring a Lot	Development Permit.

Date Received: 22 August 2007

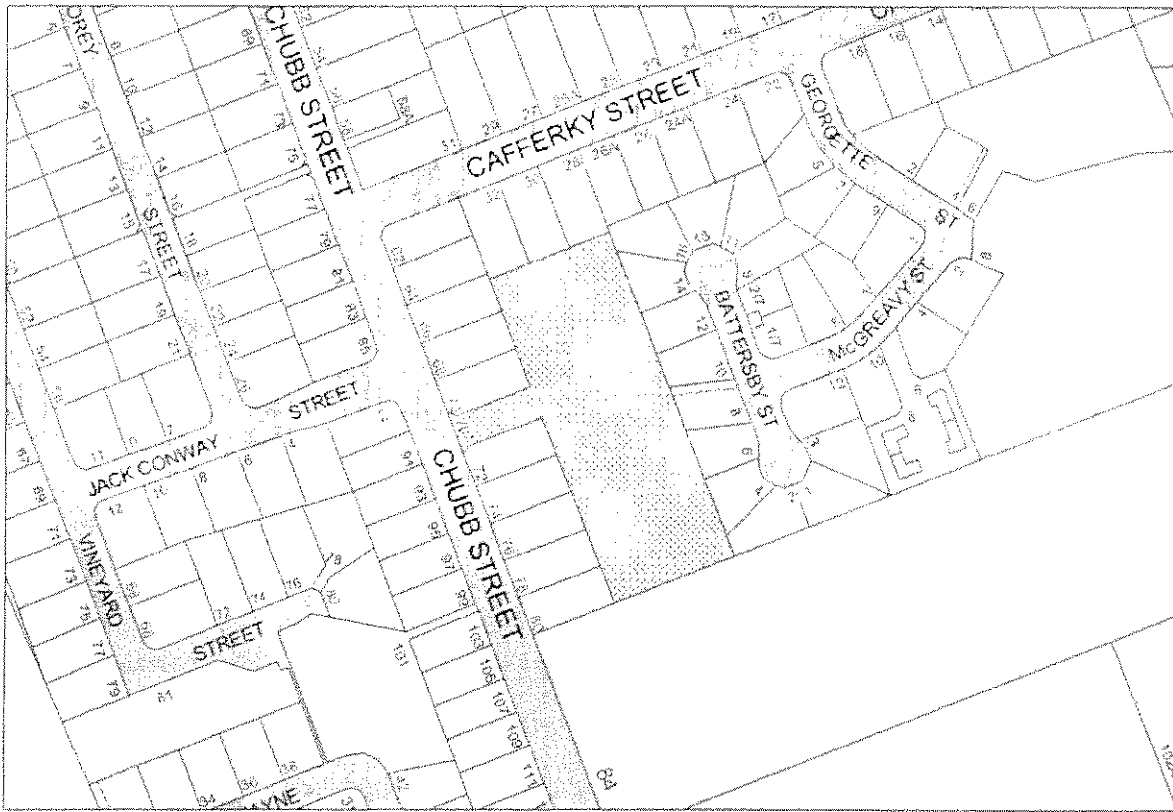
Start Date for Decision Stage: 9 May 2008

Stat. Date for Determination: 4 August 2008

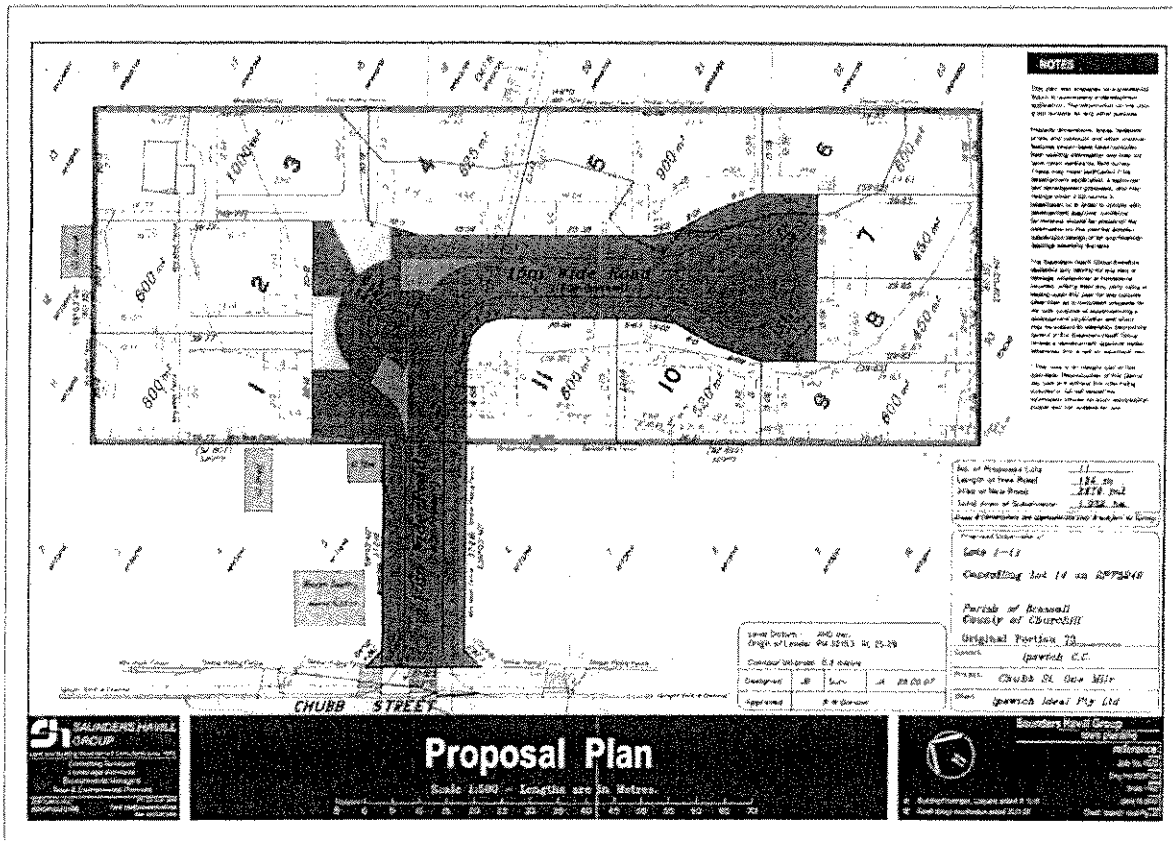
Site Area: 1.032 ha

Zone: Residential Low Density (RL2)

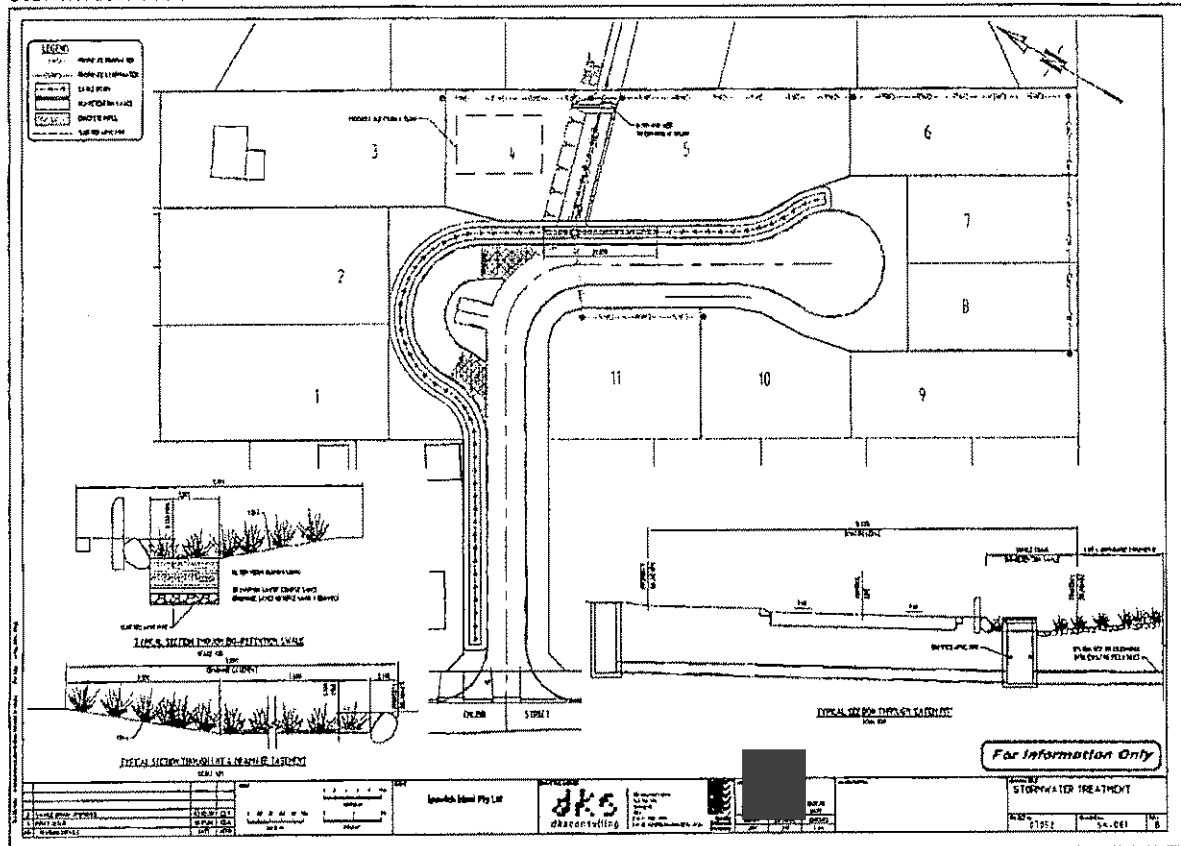
SITE LOCATION



PROPOSAL PLAN



Stormwater Plan



SUMMARY

This Development Application seeks approval to reconfigure One (1) Lot into Eleven (11) Lots on land described as 70A Chubb Street, One Mile. The subject site is a "T" shaped lot with a total area of 1.032ha and direct access to Chubb Street via a fifteen (15) metre wide access handle. The site is also contained within the Residential Low Density (RL2) Zone pursuant to the Planning Scheme. The site is currently vacant and slopes gently from the west down to the east across the lot (ie. generally away from Chubb Street).

The subject proposal seeks to create eleven (11) new lots and a new cul-de-sac road. The proposal generally complies with the overall lot size and configuration of the surrounding area with lot sizes ranging between 450m² and 1000m². The Developer has also indicated through the inclusion of building location envelopes (BLE) that dwellings can be adequately accommodated on all lots with appropriate setback distances. These BLE's are indicative only and are not approved as part of this development.

The proposal has demonstrated that future roofwater from all proposed lots can be adequately treated through a kerbside bioretention swale and associated bioretention basin located along the northern road alignment prior to being discharged to the stormwater drain to the north of the site. Extensions to the existing sewer infrastructure that traverses existing Lot 14 can adequately service all proposed lots.

Council's records indicate that the site is affected by OV5 – Q100 Flooding overlay however the Applicant submitted a hydraulic study for the area which identified the actual Q100 flood level of 23.8m AHD thus demonstrating that the site is free of Q100 flood impacts.

The Residential Low Density Zone (RL2), provides for a dwelling density not exceeding 15 dwellings per hectare. The proposed reconfiguration is consistent with the specific outcomes sought for this Sub Area and generally complies with the requirements of the Reconfiguring a Lot Code.

The Developer is required to pay a monetary contribution of \$236,781.00 towards the construction of social, parkland, water, sewer and roadworks trunk infrastructure across the city in accordance Planning Scheme Policy 5 – Infrastructure. The Developer is also required to construct a footpath for the length of the proposed new road in this instance, in accordance with Planning Scheme Policy 3 – General Works.

No referral or advice agencies are applicable in this instance and public notification of this application is not required under the *Integrated Planning Act 1997*.

In summary, it is considered that the proposal to permit the reconfiguring of one (1) Lot into eleven (11) Lots is suitable for the subject site and should be approved, subject to the conditions detailed below.

RECOMMENDATION

- A. That the Developer be advised that Development Application No. 6749/2007 is determined as outlined in the table below and is subject to the conditions specified below.

Proposal	Development	Decision	Approval Type
Reconfiguring a Lot - One (1) Lot into Eleven (11) Lots	Reconfiguring a Lot	Approved	Development Permit.
	Carrying out Operational Work	Approved	Preliminary Approval.

Further Development Permits Required

Further Development Permits, as required by the *Integrated Planning Act 1997*, shall be obtained in respect of any Operational Works in relation to this approval before any such works are commenced.

Conditions of Assessment Manager (Ipswich City Council)

- 1. Basis of Approval

Subject to these conditions, the facts and circumstances set out in the application and all relevant Council Local Laws and/or Planning Scheme Policies shall be adhered to.

- 2. Plan of Survey

- (a) The Developer shall submit a plan of survey to conform with:

- (i) Proposal Plan No. 4628/P2b prepared by Saunders Havill Group and dated 5 October 2007 and
 - (ii) Stormwater Treatment plan number 07052-SK-001 Revision B prepared by dks Consulting, dated 6 May 2008
- (b) The existing shed structure located in the northern corner of the site shall be removed/demolished prior to Council signing the plan of survey.
 - (c) The Developer shall grant, free of cost to or compensation payable by Council, minimum 8.0 m wide easement located along the southern side of proposed Lot 4. The final width of the easement may depend on the width of the associated Q100 flow as specified in Condition 11(b)(v) above.

The documentation associated with this easement may be prepared by the Developer in a form satisfactory to Council's City Solicitor, or the Developer may submit easement plans, only where Council is party to the easements, to Council for the preparation of easement documents at the Developer's expense.

- (d) Adequate permanent survey marks shall be installed. The Developer shall submit a certificate signed by a licensed surveyor, stating that after the completion of all works associated with the development, permanent survey marks are in their correct position, in accordance with the plan of survey.

3. Rates in Arrears

In accordance with the provisions of the *Integrated Planning Act 1997*, all rates and other expenses as a charge against the land shall not be in arrears at the date of signing of the plan of survey.

4. Streetscape Works

- (a) The Developer shall plant street trees for the presentation of the estate. A Streetscape Plan shall be submitted by the Developer in conjunction with the submission of an operational works application. Such a plan shall be in accordance with Council's Streetscape Policy to the satisfaction of the Development Manager - Planning. Streetscaping shall be provided at a density of one tree per allotment or one per twenty (20) metres of road frontage whichever is the lessor. An increased density along the proposed Drainage Reserve of one tree per ten (10) metre spacings is required.
- (b) The plans shall indicate the following:
 - (i) all existing trees within the dedicated road, including those to be retained and those to be removed;
 - (ii) location / proximity of services within the road reservation; and

- (iii) details of proposed planting including common and botanical names and height and spread at maturity.

Note:

Species shall be in accordance with the Ipswich Street Tree Strategy. Root intrusive trees shall not be planted in the dedicated road reserve unless specifically approved by Council. In this respect, the Developer or agent should liaise with Council's Health Parks and Recreation Department prior to any planting for determination of species selection.

- (c) Such streetscaping shall be designed and executed in accordance with the approved plan to the requirements and satisfaction of the Chief Operating Officer - Health Parks and Recreation and completed prior to Council signing any plan of survey.
- (d) The Developer shall maintain street trees for a period of twelve (12) months after an On Maintenance inspection by the Chief Operating Officer - Health Parks and Recreation.

5. Infrastructure Contributions

In accordance with the current Council Policies in relation to infrastructure contributions, the Developer shall pay, prior to the Council dating and signing any plan of survey, the following monies to Council:

Contribution	Sector	Rate	Proposal	Calculation
Social Infrastructure	Leichhardt – One Mile (Sector C5)	Level 1: \$51.89/ Person Level 2: \$200.31/ Person Level 3: \$78.42/ Person Unit Charge = 1.1041 Total = \$365.03/ Person	Number of Lots (> 450m ²): 9 @ 2.74 Persons/Lot Number of Lots (≤ 450m ²): 2 @ 2.74 Persons/Lot Existing Credit of 2.74 Persons/Lot Proposal = 27.4 EP	\$365.03 x 27.4 = \$10,001.82 Total = \$10,001.00
Parks Infrastructure	Leichhardt – One Mile (Sector C5)	Level 1: \$1,289.70/ Person Level 2: \$592.30/ Person Level 3: \$651.84/ Person Unit Charge = 1.1041 Total = \$2,797.61/ Person	Number of Lots (> 450m ²): 9 @ 2.74 Persons/Lot Number of Lots (≤ 450m ²): 2 @ 2.74 Persons/Lot Existing Credit of 2.74 Persons/Lot Proposal = 27.4 EP	\$2,797.61 x 27.4 = \$76,654.51 Total = \$76,654.00
Water Supply	Brassall Low Level (Zone	\$1,120.00/EP	Number of Lots (> 450m ²): 9 @ 3.3 EP	\$1,236.59 x 31.8 = \$39,323.56

	WT4)	Unit Charge = 1.1041 Total = \$1,236.59/ Person	Number of Lots (\leq 450m ²): 2 @ 2.7 EP Existing Credit of 3.3 EP Proposal = 31.8 EP	Total = \$39,323.00
Sewerage Contributions	SP1 (Catchment 1)	\$1,768.00/EP Unit Charge = 1.1041 Total = \$1,952.04/ Person	Number of Lots ($>$ 450m ²): 9 @ 3.3 EP Number of Lots (\leq 450m ²): 2 @ 2.7 EP Existing Credit of 3.3 EP Proposal = 31.8 EP	\$1,952.04 X 31.8 = \$62,074.87 Total = \$62,074.00
Roadworks Contributions	Leichhardt – One Mile (Sector 46)	\$679.00/Vehicle Trip Unit Charge = 1.1041 Total = \$749.68/ Person	Number of Lots: 11.0 @ 6.5 Vehicle Trips/Lot Existing Credit of 6.5 Vehicle Trips Proposal 65.0 Vehicle Trips	\$749.68 x 65.0 = \$48,729.20 Total = \$48,729.00
Total for Development				\$236,781.00

The contributions above shall be applicable for a period of twelve (12) months from the date of the development approval, and thereafter shall be based on the infrastructure contribution rates applicable at the date when payment is made.

6. Engineering Requirements

The following engineering requirements, detailed in Conditions 7 – 17, shall be completed to the satisfaction of the Senior Development Engineer.

Terms

- (a) RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required. Furthermore, the RPEQ required for the analysis and reporting for mining shall be experienced in the analysis of underground and surface mining within the Ipswich area.
- (b) QUDM - The Queensland Urban Drainage Manual, produced by the Queensland Department of Primary Industries.
- (c) Queensland Streets - The Design Guidelines for Subdivisional Street Works, prepared for the Institute of Municipal Engineers of Australia (QLD).

- (d) AMCORD - The Australian Model Code of Residential Development produced by the Commonwealth Department of Housing and Regional Development.
- (e) DMR - Department of Main Roads.
- (f) MUTCD - The Manual of Uniform Traffic Control Devices, published by DMR.
- (g) Ipswich Water - Commercial Business Unit of Ipswich City Council providing water and sewerage services.
- (h) DNRM - Department of Natural Resources and Mines.

7. Roadworks

- (a) The proposed access road shall be designed and constructed with asphaltic concrete surfacing to a width of 6.5 m for the full length of all property frontages. A minimum 4.25 m verge width on one side of road shall be provided to accommodate relevant services as shown in ICC Standard Drawings SR 22 and SR 23. Works shall include:
 - (i) Concrete kerb and channel on both sides;
 - (ii) Concrete footpath 1.5 m wide on one side, with kerb ramps designed in accordance with ICC Standard Drawing SR.18. The construction of footpaths shall be in accordance with Council's Standard Drawing SR.19. The concrete footpaths shall be on the same side as the street lights, and the maximum longitudinal grade shall not exceed 1:8. and
 - (iii) Stormwater drainage infrastructure designed in accordance with Council's Planning Scheme Policy 3 – General Works, Queensland Urban Drainage Manual, the Department of Main Roads Drainage Design Manual and Stormwater Management Plan, dated 6 May 2008, prepared by EHA Pty Ltd in that order of precedence.
- (b) Roadworks shall be designed and constructed in accordance with Council's Standards, Queensland Streets, Austroads Publications, AMCORD, the relevant and appropriate roadworks design standards and guidelines, and any other documentation deemed appropriate by Council. Such design and construction shall ensure that road carriageway widths are consistent with the road function and position in the road hierarchy and are in accordance with the relevant design speed environment.
- (c) Road pavement designs shall comply with Ipswich City Council's *Planning Scheme Policy 3 - General Works, Part 1 – Standard for Design of Roadworks*. All roads shall have two way cross-falls in accordance with Council's adopted standards.

The minimum dedicated road widths, pavement widths and footpath requirements shall be in accordance with Ipswich City Council's *Code for Reconfiguring A Lot* and Standard Drawings.

- (d) The road pavement widths and geometric layout shall be sufficient to make adequate provision for Council's refuse collection vehicles and public transport movements.
- (e) A vehicle turning area shall be provided at the end of "No through" road and cul-de-sac. Circular cul-de-sac turning heads, based on a minimum turning circle of 9.0 m radius, are preferred. "T" and "Y" shaped turning heads are generally not to be used.
- (f) Traffic slow down devices shall be provided generally in accordance with Queensland Streets.
- (g) "No Through Road" signs shall be erected at the entries to cul-de-sacs and terminating roads.
- (h) All traffic signs and delineation shall be installed in accordance with MUTCD.
- (i) The construction of footpaths shall be in accordance with Council's Standard Drawing SR.19. The concrete footpaths shall be on the same side as the street lights, and the maximum longitudinal grade shall not exceed 1:8.
- (j) Kerb ramps are to be constructed in accordance with Council's Standard Drawing SR.18 at all intersections and at additional locations where required to connect the concrete pathways and cycleways. Generally at "T" intersections, 4 kerb ramps are required.
- (k) The Developer shall upgrade the intersection of Chubbs Street and proposed access road in accordance with the AUSTRROADS Publication "Guide to Traffic Engineering Practice, Part 5, Intersections at Grade". Any requirements of the Department of Main Roads shall be met.
- (l) Provision shall be made for 6 m, three chord truncations at intersections. The 6.0 m distance is measured along each frontage from the property corner.
- (m) The Developer shall provide concrete threshold treatment to all internal "T" intersections (modified or otherwise) in accordance with ICC Standard Drawing SR 28.

8. Access/Parking

- (a) Vehicular access from the roadways to all allotments shall be capable of being provided.
- (b) Design and construction of all access and parking shall be in accordance with the provisions of the Ipswich City Council Parking Code and the Australian Standards (2890 series).
- (c) Any internal access driveways to proposed Lots 1,2,3, and 4 through/over the proposed road side swale drain shall be approved by the Senior Development Engineer and shall be constructed as part of this development. Due consideration

shall be given in the design of the swale drain to ensure stormwater flows from the upstream catchment are not impeded or restricted to impact on upstream or downstream properties of the proposed development. Details of how the Developer intends to achieve these objectives shall be submitted to Council for approval as part of the Operational Works Application.

9. Water

- (a) The Developer shall provide a reticulated water supply system together with valves and fire hydrants, in accordance with the "Guidelines for Planning and Design of Urban Water Supply Systems", which connects into Council's existing reticulation system.
- (b) A blue, bi-directional raised reflective pavement marker (RRPM) shall be provided to all hydrants. The marker shall be installed in accordance with the Department of Main Roads Fire Hydrant Indication System Technical Guideline.
- (c) The developer shall construct 100 mm diameter watermain to adequately service this development from existing 150 mm diameter main in Chubb Street and connect into 100 mm main in 8 Battersby Street. The site shall be served from two directions and shall not be in the form of a single dead end supply. All other mains shall be looped around the cul-de-sac head to join back on to itself.
- (d) All works on live water mains are to be carried out by Council in accordance with Council's policy, and at the Developer's expense.
- (e) Where concrete footpaths are to be constructed, the Developer shall provide 100 mm diameter conduits under the footpath and in line with the conduits under the road, for future ease of installing the individual water services. The letter "W" shall be embossed in the concrete to mark the location of the conduit.
- (f) The Developer shall lodge a private works request on the prescribed Council form, for Council to supply a cost estimate to:
 - (i) provide a suitable metered water connection for each proposed allotment;
 - (ii) amend the existing connection if necessary; and
 - (iii) seal off any existing water connections if necessary.

The appropriate fees are to be paid prior to Council signing any plan of survey.

- (g) Wherever possible, the water main shall be constructed on the opposite side to the concrete footpaths. Where the water main is under a concrete footpath, the Developer shall provide a water connection (up to, but excluding the provision of meters) to each allotment, including the provision of approved pre-cast concrete or cast iron boxes over the stop cock.

10. Sewerage

- (a) The Developer shall provide a sewerage reticulation system with appropriate house connection branches, designed to command the whole of each of the proposed allotments.
- (b) In the positioning of Building Location Envelopes (BLE's) or Stormwater structures on allotments, the Developer shall comply with one of the following:
 - (i) All structures shall be a minimum of 1.5 m clear of the outer edge of the existing or proposed sewers; or
 - (ii) Should it be deemed impractical for the structure(s) to be constructed clear of the existing or proposed sewer, then the Developer shall either:

Relay the sewer around the proposed structure(s) or BLE, or

Replace the existing sewer in polyethylene wrapped cement lined ductile iron (DICL) pipe for the length to be overbuilt, with access chambers constructed at both ends of the DICL section, unless approved otherwise by Ipswich Water.

- (c) Approval to build over sewers shall be obtained from the Senior Development Engineer. The following requirements are to be met:
 - (i) The part of the sewer to be built over shall be straight for the whole distance under the structure;
 - (ii) Access chambers shall be positioned on the sewer outside the structure. Unhindered entry to access chambers shall be provided at all times; and
 - (iii) Whenever a footing crosses a sewer or is located within 1.5 m of the sewer, the footing shall be designed with piers of minimum diameter 450 mm each side of the sewer, penetrating at least 300 mm below the invert of the sewer. No footing shall impose a load on the sewer.
- (d) The Developer shall pay the full cost for Council to provide a suitable connection into the existing sewerage reticulation system. All works on live sewers are to be carried out by Council at the Developer's expense, unless arranged otherwise with Ipswich Water.
- (e) No work on the sewerage reticulation system shall commence prior to the approval of the Operational Works application.

11. Stormwater

- (a) Stormwater quality for the development shall achieve the following water quality objectives as outlined within the South-east Queensland Regional Plan (SEQ RP) Part 11.
 - (i) 80% for total suspended solids;

- (ii) 60% for total phosphorus;
 - (iii) 45% for total nitrogen; and
 - (iv) 90% for gross pollutants
- (b) The water quality objectives listed in (a) shall be achieved through the implementation of the swales and bio-retention swale in accordance with the Stormwater Quality Management Plan (Rev B) prepared by Daniel Willis Town Planning & Environment reference 06-010 and dated 2 May 2008 and the Stormwater Management Plan Report No. SW-01-08-REP-001 Revision D) prepared by Environmental Hydrology Associates Pty Ltd and dated 6 May 2008, subject to the following:-
- (i) Any additional rainwater tanks other than what is required under the Queensland Development Code and used specifically as a stormwater attenuation device would not be supported by Council.
 - (ii) The Developer shall provide stormwater detention by proposed swales and drainage easement through Lot 4 on the subject land, which shall be designed and constructed to ensure that flows, at any point downstream in the catchment, are not increased by the development for any combination of frequency and duration from the storm event with an ARI of 2 years up to and including the storm event with an ARI of 100 years.
 - (iii) The sides of any grassed embankment and/or basin shall not exceed a maximum 1:6 grade unless otherwise approved by the Senior Development Engineer. Appropriate provision for managing low flows and maintenance shall be made to the satisfaction of the Senior Development Engineer.
 - (iv) The developer shall demonstrate that all discharges from the proposed drainage reserve are within all QUDM requirements.
 - (v) The developer shall demonstrate that the overland flowpath (existing drainage reserve) between 8 & 10 Battersby Street has sufficient width in accordance with QUDM requirements to cater for flows associated with a storm event with an ARI of 100 years.
- (c) Detailed cross sections and final locations for stormwater infrastructure required by (b) shall be submitted for approval in conjunction with any application for Operational Works and be in accordance with the Water Sensitive Technical Design Guidelines for South East Queensland specifically Chapters 10 Plant Selection for WSUD, Chapter 2 Swales (Incorporating Buffer Strips) and Chapter 3 Bio-retention Swales published by Healthy Waterways.
- (d) Bollards shall be installed along the swale drain interface in accordance with Ipswich City Council's Standard Drawing SP.43 Revision B at maximum of 1.5m centres at an alignment of 650mm from the edge of kerb. Every 3rd bollard shall be required to be replaced with an approved street tree. The Developer shall submit a Streetscape

Plan (including bollard and interface details) for approval in conjunction with application for Operational Works that generally complies with Typical Cross Section (Drawing number SK-003 Project number 07052 Revision A) prepared by dks Consulting Engineer dated 06 May 2008.

- (e) Appropriate works shall be carried out to ensure that stormwater drainage from the new kerb and channel discharges suitably into the existing drainage system.
- (f) The Developer shall provide all necessary stormwater drainage (both internal and external to the development) and such drainage works (except for roofwater systems) shall be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

Overland flow paths shall be suitably designed to cater for the water from a storm event with an ARI of 100 years. In the case where the piped system is carrying part of the flow, the overland flow paths shall be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system, noting the requirements of QUDM.

- (g) A suitable roofwater system shall be designed in accordance with QUDM, for allotments that do not have adequate fall from within the allotment to the design invert level of the kerb and channel. The design is to be to a minimum Level II in QUDM.
- (h) All stormwater flows within and adjacent to the development, other than inter-allotment drainage, shall be confined to dedicated roads, drainage reserves, registered drainage easements or within parkland. The registered drainage easements, if related to piped drainage, shall be centrally located over such underground pipe system and shall be not less than 4.0 m wide, except for drainage easements required for side boundaries which may be 3.0 m wide where approved by the Senior Development Engineer. In addition, the easements shall be of suitable width to contain the predicted overland flow from the storm event with an ARI of 100 years in that location.
- (i) No ponding, concentration or redirection of stormwater shall occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.

12. Public Utilities

- (a) Adequate provision shall be made in all proposed dedicated roads, access strips and easements, to cater for the public utility services that would normally serve the development.
- (b) The Developer shall provide appropriate road crossing conduits in accordance with Council's Standard Drawings SR.22 and SR.23. Where concrete footpaths are to be constructed, the conduits shall be extended to the property boundaries.

- (c) Street lighting shall be installed by the Developer in accordance with the Australian Standard 1158.3.1 Table 1.1. All street lighting associated with the development shall be certified by a RPEQ. Street lighting shall be installed on the same side as concrete footpaths (where applicable).
- (d) The Developer shall provide underground electricity/telecommunications within the development, constructed in the approved allocation as detailed in Council's Standard Drawings SR.22 and SR.23. Electricity/telecommunication drawings shall be co-ordinated with the civil engineering design documents, to ensure that service clashes are avoided. Where allotments front an existing overhead electricity/telecommunication service, these allotments may connect to such service subject to the approval and requirements of the service provider.
- (e) The Developer shall provide an Energex approved electrical reticulation layout plan. The electricity layout shall also be shown on the water reticulation layout plans.
- (f) The Developer shall provide each allotment with an electricity supply.
- (g) Prior to the signing of Plan of Survey by Council, the Developer shall provide Council with a copy of a Certificate for Electricity Supply from Energex for the supply of electricity to the development.
- (h) Telephone and cable services may be laid in a combined trench with electricity cables, subject to the approval of Energex and the authorised telephone/cable service provider.
- (i) The Developer shall make suitable arrangements for the provision of telephone and (where applicable) cable services to all proposed lots within the development. Documentary evidence that discussions have commenced with any authorised telephone/cable service provider, on the provision of telephone/cable services, shall be provided prior to the signing of the plan of survey by Council.

13. Erosion & Silt Management

- (a) The Developer shall be responsible for the installation and maintenance of silt management facilities from the time of commencement of construction until the development has been released "Off Maintenance" by Council. All silt management facilities are to be in accordance with the document "Soil Erosion and Sediment Control" published by the Institution of Engineers Australia, or equivalent.
- (b) The Developer shall lodge a \$5 000 siltation and erosion performance bond with Council, prior to the commencement of works, which shall only be released by Council at the termination of the maintenance period. Where Council determines that a draw-down of the bond is required, the Developer shall restore the bond to its full amount within 10 days of a notice from Council to that effect. Such bond shall guarantee adequate performance in the circumstances (i) and (ii) below:
 - (i) In the event that instructions issued to the Consulting Engineer by the Senior Development Engineer for the installation of erosion control measures, are not

complied with within 24 hours, Council will call upon the bond to the extent required to carry out the necessary works.

- (ii) If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.

Should the Developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council shall complete the work and recover all costs from the Developer associated with that work.

14. Operational Works – Municipal Works
(ie Works being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) The Developer shall comply with the requirements of the documents entitled "Planning Scheme Policy 3 - General Works" and "Standard Drawings".
- (c) All engineering drawings submitted to Council shall be in accordance with Council's Planning Scheme Policy 3 - General Works and Standard Drawings, and shall include as a minimum the following:
 - (i) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ;
 - (ii) The drawings shall be submitted as three A3 size sets and one full size set; and
 - (iii) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (d) Municipal works shall require a detailed design certified by a RPEQ, the design approved by Council Engineers with appropriate fees payable, a works pre-start meeting on-site and various detailed construction and audit inspections by Council Officers. A twelve month maintenance period is applicable for the works as well as the payment of a maintenance security deposit.
- (e) All works shall be supervised by a RPEQ competent in civil works and shall be undertaken by a nominated principal contractor experienced in the construction of municipal works. Council reserves the right to request evidence of the principal contractor's competency. Should it be deemed by the Senior Development Engineer that the contractor does not have the necessary competency or has

constructed substandard works for Council in the past, Council reserves the right to reject the nominated contractor.

- (f) Municipal works shall be accepted "On Maintenance" prior to commencement of use. A maintenance bond equal to 5% of the construction cost (minimum of \$5,000.00) shall be retained by Council for a minimum period of twelve months, or until such time as the works are accepted "Off Maintenance" by Council.
- (g) "As Constructed" plans for municipal works shall be submitted to Council and approved prior to the formal acceptance of the works "On Maintenance".
- (h) On completion of the works a certificate shall be submitted to Council by a RPEQ certifying that the works have been constructed in accordance with Council's construction standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.
- (i) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent in regard to the works relevant to the Operational Works approval.
- (j) Prior to the commencement of any municipal works associated with developments other than the subdivision of land, Council shall require the provision of a bond equivalent to not less than 10% (minimum of \$5,000.00) of the value of the works as security for the performance of the various construction obligations (including the provision of engineering certification and "As Constructed" information). The bond shall be reduced to an amount of not less than 5% of the value of the works upon formal acceptance of the works "On Maintenance" and shall be retained by Council during the maintenance period as security for the performance of the maintenance obligations. The bond shall be returned upon formal acceptance of the works "Off Maintenance".

15. Operational Works – Internal Works
(ie Works not being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ.
- (c) The drawings shall be submitted as three A3 size sets and one full size set. Where municipal works are also being undertaken, it is usually appropriate to make a combined submission.

- (d) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (e) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent.
- (f) A certificate shall be submitted to Council by a RPEQ certifying that the completed works have been constructed in accordance with Council's requirements and standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.

16. General

- (a) All disturbed verge areas and allotments shall be graded, grassed and left in a mowable condition. The grass cover shall be obtained as early as possible during the development and an acceptable grass cover shall be achieved before the development can be accepted "Off Maintenance".
- (b) Street name signs shall be manufactured to Council specifications and shall be erected in accordance with Council's Standard Drawing SR.26 at each intersection.
- (c) With reference to any works, on land under other private ownership, written permission for the works shall be obtained and forwarded to Council. Similarly, written clearances shall be obtained after the works are completed, unless otherwise accepted by the Senior Development Engineer.
- (d) All works required for this development shall take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works shall be altered at the cost of the Developer.
- (e) Any allotment filling for a greater depth than 500 mm to provide for building platforms shall be conducted in accordance with Australian Standard 3798. Test results as required by Australian Standard 3798, and a certificate of quality and uniformity of fill shall be provided by a RPEQ. The level of responsibility shall be Level 1.
- (f) All imported and exported materials shall be transported only on routes approved by the Senior Development Engineer.
- (g) For batters resulting from cutting and filling of the site and producing slopes greater than 1:6, Council requires a RPEQ to certify that they are stable and properly drained.
- (h) Approval of the Senior Development Engineer is required for any fill intended to be placed over Council's underground services.

17. Compliance with Conditions

- (a) Unless otherwise stated all conditions shall be completed prior to signing and dating of the relevant plan of survey or as determined by the Development Manager.
- (b) All conditions shall be completed to the satisfaction of the Development Manager.

18. Minor Alterations

Notwithstanding the requirements detailed in this approval, any other minor alterations and/or modifications acceptable to the Development Manager will suffice.

19. When Approval Takes Effect

This approval has effect in accordance with the provisions of Section 3.5.19 of the Integrated Planning Act 1997 as follows:

- (a) If the applicant does not appeal the decision to the court - from the time the decision notice is given (or if a negotiated decision notice is given, from the time the negotiated decision notice is given); or
- (b) If an appeal is made to the court - subject to the decision of the court, when the appeal is finally decided or the appellant withdraws the appeal.

20. When Approval Lapses

- (a) The relevant period for this approval is 4 years starting the day the approval takes effect. The Developer is required to submit to Council an accurate plan of survey before the end of the relevant period, otherwise the approval will lapse.
- (b) An extended relevant period may be agreed upon, pursuant to Section 3.5.22 of the Integrated Planning Act 1997, provided a written notice to Council is made before the end of the relevant period. Such written notice is to be on Council's approved form, accompanied by the owner's consent and the prescribed fee in Council's Register of General Charges.

NOTE: Operational Works application(s) required to be submitted must be approved and works completed within the relevant period stated above.

B. That the Developer be further advised of the following:

1. Fire Ants

In accordance with the *Plant Protection Act 1989* and the *Plant Protection Regulation 1990*, a quarantine notice has been issued for the State of Queensland to prevent the spread of the Red Imported Fire Ant (ant species *Solenopsis Invicta*) and to eradicate it from the State.

It is the legal obligation of the land owner or any consultant or contractor employed

by the land owner to report the presence or suspicion of Fire Ants to the Queensland Department of Primary Industries on 132523 within 24 hours of becoming aware of the presence or suspicion, and to advise in writing within seven days to:

Director General
Department of Primary Industries
GPO Box 46, Brisbane QLD 4001

It should be noted that the movement of Fire Ants is prohibited, unless under the conditions of an Inspectors Approval. More information can be obtained from the Queensland Department of Primary Industries website www.dpi.qld.gov.au.

The land over which you have made a development application is within a suburb known to have Fire Ants and as such is within a "Restricted Area". The presence of Fire Ants on the site may affect the nature, form and extent of works permitted on the site. In view of this it will be necessary for you to contact the Department of Primary Industries to investigate the site and for you to implement any necessary matters required by that Department prior to the commencement of any works.

2. Portable Long Service Leave

From 1 January 2000, the Building and Construction Industry (Portable Long Service Leave) Levy must be paid prior to the issue of a development permit where one is required for the 'Building and Construction Industry'. This applies to Building Works, Operational Works and Plumbing and Drainage Works applications, as defined under the *Integrated Planning Act 1997*, where the works are \$80 000 or more and matching the definition of 'Building and Construction Industry' under the *Building and Construction Industry (Portable Long Service Leave) Act 1991*.

Council will not be able to issue a Decision Notice without receipt of details that the Levy has been paid. Should you require clarification in regard to the amendments to the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, you should contact QLeave on 1800 803 481 (free call) or (07) 3212 6855.


3. Gas Utility Service


The Developer should contact Origin Energy in order to determine whether it is appropriate for the development to be reticulated with natural gas.


DEVELOPMENT PLANNER

I have this day adopted the recommendation specified in this report.

Such action was taken pursuant to the delegation entitled "Determination of a Development Application, including Negotiated Decisions" granted to me by the Chief Executive Officer dated 16 August 2001 and 22 August 2001.


Joanne Pocock

 DEVELOPMENT TEAM
CO-ORDINATOR - CENTRAL WEST

Date: 17/9/08.



Assessment Checklist

Code Assessable Development

A. Application Details

Appln No.: 6749/2007

Division: 8

B. Preamble Assessment

1. Are the real property description and location details provided on the Application Form correct? Yes No
2. Has the 'consent of owner' been correctly obtained? Yes No
3. Has the correct fee been paid? Yes No

C. Supporting Information

1. (a) Was any supporting material lodged with the application? Yes No

- IDAS Application Forms A and F and the IDAS Assessment Checklist;
- Proposal plan prepared by Saunders Havill Group; and
- Supporting Planning Report prepared by Daniel Willis – Town Planning and Environment.

-
- (b) Are there any planning issues associated with this material? Yes No

2. (a) Is there a need for an Information Request? Yes No

Comment: An information request was sent to the Applicant dated 20 September 2007 seeking further information regarding Stormwater Management, Flooding, Waste Collection and demonstration that dwellings can be located on proposed lots within the current layout. The Applicant satisfactorily addressed all the relevant issues in correspondence dated 7 May 2008.

C. Supporting Information

(b) Are there any outstanding issues associated with the Information Response?

Yes No N/A

D. Referral / Advice Agencies

1. Are there any referral or advice agencies applicable to this development?

Yes No

2. Are there any issues associated with advice received from a Referral / Advice Agency?

Yes No N/A

E. State Planning Policies (SPP's)

1. Are there any SPP's applicable to this development?

Yes No

2. Does the development comply with any relevant SPP's?

Yes No N/A

F. Zone Code

1. What is the relevant zone code(s) for this development?

Residential Low Density (RL2)

2. (a) Does the development require Code assessment under the relevant assessment table for the zone?

Yes No

3. (a) Are there any overall or specific outcomes for the locality which apply to the development?

Yes No

(b) Does the development comply with any relevant overall or specific outcomes for the locality?

Yes No N/A

F. Zone Code

4. Does the development comply with the overall outcomes for the zone?

Yes No N/A

(2) The overall outcomes sought for the Residential Low Density Zone are the following—

(b) Uses within the Residential Low Density Zone are provided with full urban services such as reticulated water, sewerage, sealed roads, parks and other community facilities.

5. Does the development comply with the "Effects of Development – General" (including the specific outcomes and any applicable probable solutions or acceptable solutions) for the zone?

Yes No N/A

6. (a) Are there any Sub Area or Precinct provisions within the zone which apply to this development?

Yes No

(2) Sub Area RL2

(a) Specific Outcomes

(iii) A mix of housing types and lot sizes are provided in greenfield and outer infill areas.

(b) Does the development comply with these provisions?

Yes No N/A

G. Codes for a Stated Purpose or of a Stated Type (refer Part 12 of the Planning Scheme)

1. Are there any codes under Part 12 of the Planning Scheme applicable to the development?

Yes No

Comment: Reconfiguring a Lot Code.

2. Does the development comply with these codes?

Yes No N/A

H. Overlays (refer Part 11 of the Planning Scheme)

1. (a) Is the site affected by a Character Places Overlay?

Yes No

(b) Is the assessment category changed (refer Table 11.3.2)?

Yes No N/A

H. Overlays (refer Part 11 of the Planning Scheme)

(c) Does the development comply with the Character Places Overlay Code and the Character Code?

Yes No N/A

2. (a) Is the site affected by a Development Constraints Overlay?

Yes No

- OV7A – Building Height Restriction Area 15m
- OV7A – Inner Horizontal Surface RL 71.5
- OV7B – Existing Committed Urban Townships
- OV7C – Possible Noise Amenity Impacts
- OV5 – 1 in 100 Flood Line

(b) Is the assessment category changed (refer Table 11.4.3 and 11.4.4)?

Yes No N/A

(c) Does the development comply with the relevant provisions of the Development Constraints Overlay Code?

Yes No N/A

Comment: Council's records indicate that the site is affected by OV5 – Q100 Flooding overlay however the Applicant submitted a hydraulic study for the area which identified the actual Q100 flood level of 23.8m AHD demonstrating that the site is free of Q100 flood impacts in this instance.

I. Other Relevant Matters

1. (a) Are there any Planning Scheme Policy provisions which specifically apply to this development?

Yes No

- PSP 2 – Information Local Government May Request
- PSP 3 – General Works and
- PSP 5 – Infrastructure

(b) Does the development comply with these provisions?

Yes No N/A

2. (a) Are there any Implementation Guidelines which specifically apply to this development?

Yes No

- Implementation Guideline No. 13 – Variations to Development Standards

I. Other Relevant Matters

(b) Does the development comply with these Guidelines?

Yes No N/A

3. Are there any other relevant matters which pertain to this development?

Yes No N/A

I. Other Relevant Matters

4. Infrastructure Contributions – Calculation Sheet attached to this checklist?

Yes No N/A

The Developer is required to pay monetary contribution of \$236,781.00 towards the construction of social, parkland, water, sewer and roadworks trunk infrastructure across the city in accordance Planning Scheme Policy 5 – Infrastructure.

Contribution	Sector	Rate	Proposal	Calculation
Social Infrastructure	Leichhardt – One Mile (Sector C5)	Level 1: \$51.89/ Person Level 2: \$200.31/ Person Level 3: \$78.42/ Person Unit Charge = 1.1041 Total = \$365.03/Person	Number of Lots (> 450m ²): 9 @ 2.74 Persons/Lot Number of Lots (≤ 450m ²): 2 @ 2.74 Persons/Lot Existing Credit of 2.74 Persons/Lot Proposal = 27.4 EP	\$365.03 x 27.4 = \$10,001.82 Total = \$10,001.00
Parks Infrastructure	Leichhardt – One Mile (Sector C5)	Level 1: \$1,289.70/ Person Level 2: \$592.30/ Person Level 3: \$651.84/ Person Unit Charge = 1.1041 Total = \$2,797.61/Person	Number of Lots (> 450m ²): 9 @ 2.74 Persons/Lot Number of Lots (≤ 450m ²): 2 @ 2.74 Persons/Lot Existing Credit of 2.74 Persons/Lot Proposal = 27.4 EP	\$2,797.61 x 27.4 = \$76,654.51 Total = \$76,654.00
Water Supply	Brassall Low Level (Zone WT4)	\$1,120.00/EP Unit Charge = 1.1041 Total = \$1,236.59/ Person	Number of Lots (> 450m ²): 9 @ 3.3 EP Number of Lots (≤ 450m ²): 2 @ 2.7 EP Existing Credit of 3.3 EP Proposal = 31.8 EP	\$1,236.59 x 31.8 = \$39,323.56 Total = \$39,323.00
Sewerage Contributions	SP1 (Catchment 1)	\$1,768.00/EP Unit Charge = 1.1041 Total = \$1,952.04/ Person	Number of Lots (> 450m ²): 9 @ 3.3 EP Number of Lots (≤ 450m ²): 2 @ 2.7 EP Existing Credit of 3.3 EP Proposal = 31.8 EP	\$1,952.04 x 31.8 = \$62,074.87 Total = \$62,074.00
Roadworks Contributions	Leichhardt – One Mile (Sector 46)	\$679.00/Vehicle Trip Unit Charge = 1.1041 Total = \$749.68/ Person	Number of Lots: 11.0 @ 6.5 Vehicle Trips/Lot Existing Credit of 6.5 Vehicle Trips Proposal 65.0 Vehicle Trips	\$749.68 x 65.0 = \$48,729.20 Total = \$48,729.00
Total for Development				\$236,781.00

J. Summary

1. Recommended for:

- Approval - Subject to Conditions
- Refusal
- Part Refusal / Part Approval -Subject to conditions

2. Comment: This Development Application generally complies with or has been conditioned to comply with the requirements of the Ipswich Planning Scheme.


DEVELOPMENT PLANNER

Date:


Joanne Pocock

DEVELOPMENT TEAM CO-ORDINATOR - CENTRAL/WEST

Date: 17/9/08



Assessment Checklist

Code Assessable Development

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3. Has the correct fee been paid? Yes No

C. Supporting Information

1. (a) Was any supporting material lodged with the application? Yes No

- IDAS Application Forms A and F and the IDAS Assessment Checklist;
- Proposal plan prepared by Saunders Havill Group; and
- Supporting Planning Report prepared by Daniel Willis – Town Planning and Environment.

-
- (b) Are there any planning issues associated with this material? Yes No

2. (a) Is there a need for an Information Request? Yes No

Comment: An information request was sent to the Applicant dated 20 September 2007 seeking further information regarding Stormwater Management, Flooding, Waste Collection and demonstration that dwellings can be located on proposed lots within the current layout. The Applicant satisfactorily addressed all the relevant issues in correspondence dated 7 May 2008.

C. Supporting Information

(b) Are there any outstanding issues associated with the Information Response?

Yes No N/A

D. Referral / Advice Agencies

1. Are there any referral or advice agencies applicable to this development?

Yes No

2. Are there any issues associated with advice received from a Referral / Advice Agency?

Yes No N/A

E. State Planning Policies (SPP's)

1. Are there any SPP's applicable to this development?

Yes No

2. Does the development comply with any relevant SPP's?

Yes No N/A

F. Zone Code

1. What is the relevant zone code(s) for this development?

Residential Low Density (RL2)

2. (a) Does the development require Code assessment under the relevant assessment table for the zone?

Yes No

3. (a) Are there any overall or specific outcomes for the locality which apply to the development?

Yes No

(b) Does the development comply with any relevant overall or specific outcomes for the locality?

Yes No N/A

F. Zone Code

4. Does the development comply with the overall outcomes for the zone?

Yes No N/A

(2) The overall outcomes sought for the Residential Low Density Zone are the following—

(b) Uses within the Residential Low Density Zone are provided with full urban services such as reticulated water, sewerage, sealed roads, parks and other community facilities.

5. Does the development comply with the "Effects of Development – General" (including the specific outcomes and any applicable probable solutions or acceptable solutions) for the zone?

Yes No N/A

6. (a) Are there any Sub Area or Precinct provisions within the zone which apply to this development?

Yes No

(2) Sub Area RL2

(a) Specific Outcomes

(iii) A mix of housing types and lot sizes are provided in greenfield and outer infill areas.

(b) Does the development comply with these provisions?

Yes No N/A

G. Codes for a Stated Purpose or of a Stated Type (refer Part 12 of the Planning Scheme)

1. Are there any codes under Part 12 of the Planning Scheme applicable to the development?

Yes No

Comment: Reconfiguring a Lot Code.

2. Does the development comply with these codes?

Yes No N/A

H. Overlays (refer Part 11 of the Planning Scheme)

1. (a) Is the site affected by a Character Places Overlay?

Yes No

(b) Is the assessment category changed (refer Table 11.3.2)?

Yes No N/A

H. Overlays (refer Part 11 of the Planning Scheme)

(c) Does the development comply with the Character Places Overlay Code and the Character Code?

Yes No N/A

2. (a) Is the site affected by a Development Constraints Overlay?

Yes No

- OV7A – Building Height Restriction Area 15m
- OV7A – Inner Horizontal Surface RL 71.5
- OV7B – Existing Committed Urban Townships
- OV7C – Possible Noise Amenity Impacts
- OV5 – 1 in 100 Flood Line

(b) Is the assessment category changed (refer Table 11.4.3 and 11.4.4)?

Yes No N/A

(c) Does the development comply with the relevant provisions of the Development Constraints Overlay Code?

Yes No N/A

Comment: Council's records indicate that the site is affected by OV5 – Q100 Flooding overlay however the Applicant submitted a hydraulic study for the area which identified the actual Q100 flood level of 23.8m AHD demonstrating that the site is free of Q100 flood impacts in this instance.

I. Other Relevant Matters

1. (a) Are there any Planning Scheme Policy provisions which specifically apply to this development?

Yes No

- PSP 2 – Information Local Government May Request
- PSP 3 – General Works and
- PSP 5 – Infrastructure

(b) Does the development comply with these provisions?

Yes No N/A

2. (a) Are there any Implementation Guidelines which specifically apply to this development?

Yes No

- Implementation Guideline No. 13 – Variations to Development Standards

I. Other Relevant Matters

(b) Does the development comply with these Guidelines?

Yes No N/A

3. Are there any other relevant matters which pertain to this development?

Yes No N/A

I. Other Relevant Matters

4. Infrastructure Contributions – Calculation Sheet attached to this checklist?

Yes No N/A

The Developer is required to pay monetary contribution of \$236,781.00 towards the construction of social, parkland, water, sewer and roadworks trunk infrastructure across the city in accordance Planning Scheme Policy 5 – Infrastructure.

Contribution	Sector	Rate	Proposal	Calculation
Social Infrastructure	Leichhardt – One Mile (Sector C5)	Level 1: \$51.89/ Person Level 2: \$200.31/ Person Level 3: \$78.42/ Person Unit Charge = 1.1041 Total = \$365.03/Person	Number of Lots (> 450m ²): 9 @ 2.74 Persons/Lot Number of Lots (≤ 450m ²): 2 @ 2.74 Persons/Lot Existing Credit of 2.74 Persons/Lot Proposal = 27.4 EP	\$365.03 x 27.4 = \$10,001.82 Total = \$10,001.00
Parks Infrastructure	Leichhardt – One Mile (Sector C5)	Level 1: \$1,289.70/ Person Level 2: \$592.30/ Person Level 3: \$651.84/ Person Unit Charge = 1.1041 Total = \$2,797.61/Person	Number of Lots (> 450m ²): 9 @ 2.74 Persons/Lot Number of Lots (≤ 450m ²): 2 @ 2.74 Persons/Lot Existing Credit of 2.74 Persons/Lot Proposal = 27.4 EP	\$2,797.61 x 27.4 = \$76,654.51 Total = \$76,654.00
Water Supply	Brassall Low Level (Zone WT4)	\$1,120.00/EP Unit Charge = 1.1041 Total = \$1,236.59/ Person	Number of Lots (> 450m ²): 9 @ 3.3 EP Number of Lots (≤ 450m ²): 2 @ 2.7 EP Existing Credit of 3.3 EP Proposal = 31.8 EP	\$1,236.59 x 31.8 = \$39,323.56 Total = \$39,323.00
Sewerage Contributions	SP1 (Catchment 1)	\$1,768.00/EP Unit Charge = 1.1041 Total = \$1,952.04/ Person	Number of Lots (> 450m ²): 9 @ 3.3 EP Number of Lots (≤ 450m ²): 2 @ 2.7 EP Existing Credit of 3.3 EP Proposal = 31.8 EP	\$1,952.04 x 31.8 = \$62,074.87 Total = \$62,074.00
Roadworks Contributions	Leichhardt – One Mile (Sector 46)	\$679.00/Vehicle Trip Unit Charge = 1.1041 Total = \$749.68/ Person	Number of Lots: 11.0 @ 6.5 Vehicle Trips/Lot Existing Credit of 6.5 Vehicle Trips Proposal 65.0 Vehicle Trips	\$749.68 x 65.0 = \$48,729.20 Total = \$48,729.00
Total for Development				\$236,781.00

J. Summary

1. Recommended for:

- Approval - Subject to Conditions
- Refusal
- Part Refusal / Part Approval -Subject to conditions

2. Comment: This Development Application generally complies with or has been conditioned to comply with the requirements of the Ipswich Planning Scheme.


DEVELOPMENT PLANNER

Date:


Joanne Pocock
DEVELOPMENT TEAM CO-ORDINATOR - CENTRAL/WEST

Date: 17/9/08

Your reference
Our reference 6749/07 JAH:MM
Contact Office
Telephone 3810 7779



City of
Ipswich

Ipswich City Council

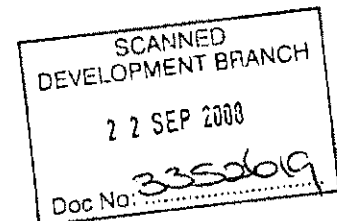
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Ipswich Ideal Pty Ltd
PO Box 7044
SIPPY DOWNS QLD 4556

17 September 2008



INTEGRATED PLANNING ACT 1997

DEVELOPMENT APPLICATION DECISION NOTICE

Application Details

Application No: 6749/07
Real Property Description: Lot 14 on RP 73249
Property Location: 70A Chubb Street, One Mile
Names and Addresses of all Referral Agencies: N/A
Decision Date: 17 September 2008
Decision: Approved subject to the conditions detailed below.
Decision Authority: Team Co-ordinator - Central West

Approval Details:

Proposal	Development	Decision	Approval Type
Reconfiguring a Lot - One (1) Lot into Eleven (11) Lots	Reconfiguring a Lot	Approved	Development Permit.
	Carrying out Operational Work	Approved	Preliminary Approval.

Further Development Permits Required

Further Development Permits, as required by the *Integrated Planning Act 1997*, shall be obtained in respect of any Operational Works in relation to this approval before any such works are commenced.

Conditions**Assessment Manager (Ipswich City Council)****Conditions applicable to this approval under *Integrated Planning Act*:**1. Basis of Approval

Subject to these conditions, the facts and circumstances set out in the application and all relevant Council Local Laws and/or Planning Scheme Policies shall be adhered to.

2. Plan of Survey

(a) The Developer shall submit a plan of survey to conform with:

- (i) Proposal Plan No. 4628/P2b prepared by Saunders Havill Group and dated 5 October 2007 and
- (ii) Stormwater Treatment plan number 07052-SK-001 Revision B prepared by dks Consulting, dated 6 May 2008

(b) The existing shed structure located in the northern corner of the site shall be removed/demolished prior to Council signing the plan of survey.

(c) The Developer shall grant, free of cost to or compensation payable by Council, minimum 8.0 m wide easement located along the southern side of proposed Lot 4. The final width of the easement may depend on the width of the associated Q100 flow as specified in Condition 11(b)(v) above.

The documentation associated with this easement may be prepared by the Developer in a form satisfactory to Council's City Solicitor, or the Developer may submit easement plans, only where Council is party to the easements, to Council for the preparation of easement documents at the Developer's expense.

- (d) Adequate permanent survey marks shall be installed. The Developer shall submit a certificate signed by a licensed surveyor, stating that after the completion of all works associated with the development, permanent survey marks are in their correct position, in accordance with the plan of survey.

3. Rates in Arrears

In accordance with the provisions of the *Integrated Planning Act 1997*, all rates and other expenses as a charge against the land shall not be in arrears at the date of signing of the plan of survey.

4. Streetscape Works

- (a) The Developer shall plant street trees for the presentation of the estate. A Streetscape Plan shall be submitted by the Developer in conjunction with the submission of an operational works application. Such a plan shall be in accordance with Council's Streetscape Policy to the satisfaction of the Development Manager - Planning. Streetscaping shall be provided at a density of one tree per allotment or one per twenty (20) metres of road frontage whichever is the lessor. An increased density along the proposed Drainage Reserve of one tree per ten (10) metre spacings is required.
- (b) The plans shall indicate the following:
- (i) All existing trees within the dedicated road, including those to be retained and those to be removed;
 - (ii) Location / proximity of services within the road reservation; and
 - (iii) Details of proposed planting including common and botanical names and height and spread at maturity.

Note:

Species shall be in accordance with the Ipswich Street Tree Strategy. Root intrusive trees shall not be planted in the dedicated road reserve unless specifically approved by Council. In this respect, the Developer or agent should liaise with Council's Health Parks and Recreation Department prior to any planting for determination of species selection.

- (c) Such streetscaping shall be designed and executed in accordance with the approved plan to the requirements and satisfaction of the Chief Operating Officer - Health Parks and Recreation and completed prior to Council signing any plan of survey.
- (d) The Developer shall maintain street trees for a period of twelve (12) months after an On Maintenance inspection by the Chief Operating Officer - Health Parks and Recreation.

5. Infrastructure Contributions

In accordance with the current Council Policies in relation to infrastructure contributions, the Developer shall pay, prior to the Council dating and signing any plan of survey, the following monies to Council:

Contribution	Sector	Rate	Proposal	Calculation
Social Infrastructure	Leichhardt – One Mile (Sector C5)	Level 1: \$51.89/ Person Level 2: \$200.31/ Person Level 3: \$78.42/ Person Unit Charge = 1.1041 Total = \$365.03/ Person	Number of Lots (> 450m ²): 9 @ 2.74 Persons/Lot Number of Lots (≤ 450m ²): 2 @ 2.74 Persons/Lot Existing Credit of 2.74 Persons/Lot Proposal = 27.4 EP	\$365.03 x 27.4 = \$10,001.82 Total = \$10,001.00
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Total for Development				\$236,781.00

The contributions above shall be applicable for a period of twelve (12) months from the date of the development approval, and thereafter shall be based on the infrastructure contribution rates applicable at the date when payment is made.

6. Engineering Requirements

The following engineering requirements, detailed in Conditions 7 – 17, shall be completed to the satisfaction of the Senior Development Engineer.

Terms

- (a) RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required. Furthermore, the RPEQ required for the analysis and reporting for mining shall be experienced in the analysis of underground and surface mining within the Ipswich area.
- (b) QUDM - The Queensland Urban Drainage Manual, produced by the Queensland Department of Primary Industries.
- (c) Queensland Streets - The Design Guidelines for Subdivisional Street Works, prepared for the Institute of Municipal Engineers of Australia (QLD).
- (d) AMCORD - The Australian Model Code of Residential Development produced by the Commonwealth Department of Housing and Regional Development.
- (e) DMR - Department of Main Roads.
- (f) MUTCD - The Manual of Uniform Traffic Control Devices, published by DMR.
- (g) Ipswich Water - Commercial Business Unit of Ipswich City Council providing water and sewerage services.
- (h) DNRM - Department of Natural Resources and Mines.

7. Roadworks

- (a) The proposed access road shall be designed and constructed with asphaltic concrete surfacing to a width of 6.5 m for the full length of all property frontages. A minimum 4.25 m verge width on one side of road shall be provided to accommodate relevant services as shown in ICC Standard Drawings SR 22 and SR 23. Works shall include:
 - (i) Concrete kerb and channel on both sides;
 - (ii) Concrete footpath 1.5 m wide on one side, with kerb ramps designed in accordance with ICC Standard Drawing SR.18. The construction of footpaths shall be in accordance with Council's Standard Drawing SR.19. The concrete footpaths shall be on the same side as the street lights, and the maximum longitudinal grade shall not exceed 1:8. and
 - (iii) Stormwater drainage infrastructure designed in accordance with Council's Planning Scheme Policy 3 – General Works, Queensland Urban Drainage Manual, the Department of Main Roads Drainage Design Manual and Stormwater Management Plan, dated 6 May 2008, prepared by EHA Pty Ltd in that order of precedence.
- (b) Roadworks shall be designed and constructed in accordance with Council's Standards, Queensland Streets, Austroads Publications, AMCORD, the relevant and appropriate roadworks design standards and guidelines, and any other documentation deemed appropriate by Council. Such design and construction shall ensure that road carriageway widths are consistent with the road function and position in the road hierarchy and are in accordance with the relevant design speed environment.
- (c) Road pavement designs shall comply with Ipswich City Council's *Planning Scheme Policy 3 - General Works, Part 1 – Standard for Design of Roadworks*. All roads shall have two way cross-falls in accordance with Council's adopted standards.

The minimum dedicated road widths, pavement widths and footpath requirements shall be in accordance with Ipswich City Council's *Code for Reconfiguring A Lot* and Standard Drawings.

- (d) The road pavement widths and geometric layout shall be sufficient to make adequate provision for Council's refuse collection vehicles and public transport movements.
- (e) A vehicle turning area shall be provided at the end of "No through" road and cul-de-sac. Circular cul-de-sac turning heads, based on a minimum turning circle of 9.0 m radius, are preferred. "T" and "Y" shaped turning heads are generally not to be used.
- (f) Traffic slow down devices shall be provided generally in accordance with Queensland Streets.
- (g) "No Through Road" signs shall be erected at the entries to cul-de-sacs and terminating roads.
- (h) All traffic signs and delineation shall be installed in accordance with MUTCD.

- (i) The construction of footpaths shall be in accordance with Council's Standard Drawing SR.19. The concrete footpaths shall be on the same side as the street lights, and the maximum longitudinal grade shall not exceed 1:8.
- (j) Kerb ramps are to be constructed in accordance with Council's Standard Drawing SR.18 at all intersections and at additional locations where required to connect the concrete pathways and cycleways. Generally at "T" intersections, 4 kerb ramps are required.
- (k) The Developer shall upgrade the intersection of Chubbs Street and proposed access road in accordance with the AUSTROADS Publication "Guide to Traffic Engineering Practice, Part 5, Intersections at Grade". Any requirements of the Department of Main Roads shall be met.
- (l) Provision shall be made for 6 m, three chord truncations at intersections. The 6.0 m distance is measured along each frontage from the property corner.
- (m) The Developer shall provide concrete threshold treatment to all internal "T" intersections (modified or otherwise) in accordance with ICC Standard Drawing SR 28.

8. Access/Parking

- (a) Vehicular access from the roadways to all allotments shall be capable of being provided.
- (b) Design and construction of all access and parking shall be in accordance with the provisions of the Ipswich City Council Parking Code and the Australian Standards (2890 series).
- (c) Any internal access driveways to proposed Lots 1,2,3, and 4 through/over the proposed road side swale drain shall be approved by the Senior Development Engineer and shall be constructed as part of this development. Due consideration shall be given in the design of the swale drain to ensure stormwater flows from the upstream catchment are not impeded or restricted to impact on upstream or downstream properties of the proposed development. Details of how the Developer intends to achieve these objectives shall be submitted to Council for approval as part of the Operational Works Application.

9. Water

- (a) The Developer shall provide a reticulated water supply system together with valves and fire hydrants, in accordance with the "Guidelines for Planning and Design of Urban Water Supply Systems", which connects into Council's existing reticulation system.
- (b) A blue, bi-directional raised reflective pavement marker (RRPM) shall be provided to all hydrants. The marker shall be installed in accordance with the Department of Main Roads Fire Hydrant Indication System Technical Guideline.
- (c) The developer shall construct 100 mm diameter watermain to adequately service this development from existing 150 mm diameter main in Chubb Street and connect into 100 mm main in 8 Battersby Street. The site shall be served from two directions and shall not be in the form of a single dead end supply. All other mains shall be looped around the cul-de-sac head to join back on to itself.

- (d) All works on live water mains are to be carried out by Council in accordance with Council's policy, and at the Developer's expense.
- (e) Where concrete footpaths are to be constructed, the Developer shall provide 100 mm diameter conduits under the footpath and in line with the conduits under the road, for future ease of installing the individual water services. The letter "W" shall be embossed in the concrete to mark the location of the conduit.
- (f) The Developer shall lodge a private works request on the prescribed Council form, for Council to supply a cost estimate to:
 - (i) Provide a suitable metered water connection for each proposed allotment;
 - (ii) Amend the existing connection if necessary; and
 - (iii) Seal off any existing water connections if necessary.

The appropriate fees are to be paid prior to Council signing any plan of survey.

- (g) Wherever possible, the water main shall be constructed on the opposite side to the concrete footpaths. Where the water main is under a concrete footpath, the Developer shall provide a water connection (up to, but excluding the provision of meters) to each allotment, including the provision of approved pre-cast concrete or cast iron boxes over the stop cock.

10. Sewerage

- (a) The Developer shall provide a sewerage reticulation system with appropriate house connection branches, designed to command the whole of each of the proposed allotments.
- (b) In the positioning of Building Location Envelopes (BLE's) or Stormwater structures on allotments, the Developer shall comply with one of the following:
 - (i) All structures shall be a minimum of 1.5 m clear of the outer edge of the existing or proposed sewers; or
 - (ii) Should it be deemed impractical for the structure(s) to be constructed clear of the existing or proposed sewer, then the Developer shall either:

Relay the sewer around the proposed structure(s) or BLE, or

Replace the existing sewer in polyethylene wrapped cement lined ductile iron (DACL) pipe for the length to be overbuilt, with access chambers constructed at both ends of the DACL section, unless approved otherwise by Ipswich Water.

- (c) Approval to build over sewers shall be obtained from the Senior Development Engineer. The following requirements are to be met:

- (i) The part of the sewer to be built over shall be straight for the whole distance under the structure;
- (ii) Access chambers shall be positioned on the sewer outside the structure. Unhindered entry to access chambers shall be provided at all times; and
- (iii) Whenever a footing crosses a sewer or is located within 1.5 m of the sewer, the footing shall be designed with piers of minimum diameter 450 mm each side of the sewer, penetrating at least 300 mm below the invert of the sewer. No footing shall impose a load on the sewer.
- (d) The Developer shall pay the full cost for Council to provide a suitable connection into the existing sewerage reticulation system. All works on live sewers are to be carried out by Council at the Developer's expense, unless arranged otherwise with Ipswich Water.
- (e) No work on the sewerage reticulation system shall commence prior to the approval of the Operational Works application.

11. Stormwater

- (a) Stormwater quality for the development shall achieve the following water quality objectives as outlined within the South-east Queensland Regional Plan (SEQ RP) Part 11.
 - (i) 80% for total suspended solids;
 - (ii) 60% for total phosphorus;
 - (iii) 45% for total nitrogen; and
 - (iv) 90% for gross pollutants
- (b) The water quality objectives listed in (a) shall be achieved through the implementation of the swales and bio-retention swale in accordance with the Stormwater Quality Management Plan (Rev B) prepared by Daniel Willis Town Planning & Environment reference 06-010 and dated 2 May 2008 and the Stormwater Management Plan Report No. SW-01-08-REP-001 Revision D) prepared by Environmental Hydrology Associates Pty Ltd and dated 6 May 2008, subject to the following:-
 - (i) Any additional rainwater tanks other than what is required under the Queensland Development Code and used specifically as a stormwater attenuation device would not be supported by Council.
 - (ii) The Developer shall provide stormwater detention by proposed swales and drainage easement through Lot 4 on the subject land, which shall be designed and constructed to ensure that flows, at any point downstream in the catchment, are not increased by the development for any combination of frequency and duration from the storm event with an ARI of 2 years up to and including the storm event with an ARI of 100 years.

- (iii) The sides of any grassed embankment and/or basin shall not exceed a maximum 1:6 grade unless otherwise approved by the Senior Development Engineer. Appropriate provision for managing low flows and maintenance shall be made to the satisfaction of the Senior Development Engineer.
- (iv) The developer shall demonstrate that all discharges from the proposed drainage reserve are within all QUDM requirements.
- (v) The developer shall demonstrate that the overland flowpath (existing drainage reserve) between 8 & 10 Battersby Street has sufficient width in accordance with QUDM requirements to cater for flows associated with a storm event with an ARI of 100 years.
- (c) Detailed cross sections and final locations for stormwater infrastructure required by (b) shall be submitted for approval in conjunction with any application for Operational Works and be in accordance with the Water Sensitive Technical Design Guidelines for South East Queensland specifically Chapters 10 Plant Selection for WSUD, Chapter 2 Swales (Incorporating Buffer Strips) and Chapter 3 Bio-retention Swales published by Healthy Waterways.
- (d) Bollards shall be installed along the swale drain interface in accordance with Ipswich City Council's Standard Drawing SP.43 Revision B at maximum of 1.5m centres at an alignment of 650mm from the edge of kerb. Every 3rd bollard shall be required to be replaced with an approved street tree. The Developer shall submit a Streetscape Plan (including bollard and interface details) for approval in conjunction with application for Operational Works that generally complies with Typical Cross Section (Drawing number SK-003 Project number 07052 Revision A) prepared by dks Consulting Engineer dated 6 May 2008.
- (e) Appropriate works shall be carried out to ensure that stormwater drainage from the new kerb and channel discharges suitably into the existing drainage system.
- (f) The Developer shall provide all necessary stormwater drainage (both internal and external to the development) and such drainage works (except for roofwater systems) shall be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

Overland flow paths shall be suitably designed to cater for the water from a storm event with an ARI of 100 years. In the case where the piped system is carrying part of the flow, the overland flow paths shall be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system, noting the requirements of QUDM.

- (g) A suitable roofwater system shall be designed in accordance with QUDM, for allotments that do not have adequate fall from within the allotment to the design invert level of the kerb and channel. The design is to be to a minimum Level II in QUDM.

- (h) All stormwater flows within and adjacent to the development, other than inter-allotment drainage, shall be confined to dedicated roads, drainage reserves, registered drainage easements or within parkland. The registered drainage easements, if related to piped drainage, shall be centrally located over such underground pipe system and shall be not less than 4.0 m wide, except for drainage easements required for side boundaries which may be 3.0 m wide where approved by the Senior Development Engineer. In addition, the easements shall be of suitable width to contain the predicted overland flow from the storm event with an ARI of 100 years in that location.
- (i) No ponding, concentration or redirection of stormwater shall occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.

12. Public Utilities

- (a) Adequate provision shall be made in all proposed dedicated roads, access strips and easements, to cater for the public utility services that would normally serve the development.
- (b) The Developer shall provide appropriate road crossing conduits in accordance with Council's Standard Drawings SR.22 and SR.23. Where concrete footpaths are to be constructed, the conduits shall be extended to the property boundaries.
- (c) Street lighting shall be installed by the Developer in accordance with the Australian Standard 1158.3.1 Table 1.1. All street lighting associated with the development shall be certified by a RPEQ. Street lighting shall be installed on the same side as concrete footpaths (where applicable).
- (d) The Developer shall provide underground electricity/telecommunications within the development, constructed in the approved allocation as detailed in Council's Standard Drawings SR.22 and SR.23. Electricity/telecommunication drawings shall be co-ordinated with the civil engineering design documents, to ensure that service clashes are avoided. Where allotments front an existing overhead electricity/telecommunication service, these allotments may connect to such service subject to the approval and requirements of the service provider.
- (e) The Developer shall provide an Energex approved electrical reticulation layout plan. The electricity layout shall also be shown on the water reticulation layout plans.
- (f) The Developer shall provide each allotment with an electricity supply.
- (g) Prior to the signing of Plan of Survey by Council, the Developer shall provide Council with a copy of a Certificate for Electricity Supply from Energex for the supply of electricity to the development.
- (h) Telephone and cable services may be laid in a combined trench with electricity cables, subject to the approval of Energex and the authorised telephone/cable service provider.

- (i) The Developer shall make suitable arrangements for the provision of telephone and (where applicable) cable services to all proposed lots within the development. Documentary evidence that discussions have commenced with any authorised telephone/cable service provider, on the provision of telephone/cable services, shall be provided prior to the signing of the plan of survey by Council.

13. Erosion & Silt Management

- (a) The Developer shall be responsible for the installation and maintenance of silt management facilities from the time of commencement of construction until the development has been released "Off Maintenance" by Council. All silt management facilities are to be in accordance with the document "Soil Erosion and Sediment Control" published by the Institution of Engineers Australia, or equivalent.
- (b) The Developer shall lodge a \$5 000 siltation and erosion performance bond with Council, prior to the commencement of works, which shall only be released by Council at the termination of the maintenance period. Where Council determines that a draw-down of the bond is required, the Developer shall restore the bond to its full amount within 10 days of a notice from Council to that effect. Such bond shall guarantee adequate performance in the circumstances (i) and (ii) below:
 - (i) In the event that instructions issued to the Consulting Engineer by the Senior Development Engineer for the installation of erosion control measures, are not complied with within 24 hours, Council will call upon the bond to the extent required to carry out the necessary works.
 - (ii) If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.

Should the Developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council shall complete the work and recover all costs from the Developer associated with that work.

14. Operational Works – Municipal Works (ie Works being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) The Developer shall comply with the requirements of the documents entitled "Planning Scheme Policy 3 - General Works" and "Standard Drawings".
- (c) All engineering drawings submitted to Council shall be in accordance with Council's Planning Scheme Policy 3 - General Works and Standard Drawings, and shall include as a minimum the following:

- (i) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ;
- (ii) The drawings shall be submitted as three A3 size sets and one full size set; and
- (iii) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (d) Municipal works shall require a detailed design certified by a RPEQ, the design approved by Council Engineers with appropriate fees payable, a works pre-start meeting on-site and various detailed construction and audit inspections by Council Officers. A twelve month maintenance period is applicable for the works as well as the payment of a maintenance security deposit.
- (e) All works shall be supervised by a RPEQ competent in civil works and shall be undertaken by a nominated principal contractor experienced in the construction of municipal works. Council reserves the right to request evidence of the principal contractor's competency. Should it be deemed by the Senior Development Engineer that the contractor does not have the necessary competency or has constructed substandard works for Council in the past, Council reserves the right to reject the nominated contractor.
- (f) Municipal works shall be accepted "On Maintenance" prior to commencement of use. A maintenance bond equal to 5% of the construction cost (minimum of \$5,000.00) shall be retained by Council for a minimum period of twelve months, or until such time as the works are accepted "Off Maintenance" by Council.
- (g) "As Constructed" plans for municipal works shall be submitted to Council and approved prior to the formal acceptance of the works "On Maintenance".
- (h) On completion of the works a certificate shall be submitted to Council by a RPEQ certifying that the works have been constructed in accordance with Council's construction standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.
- (i) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent in regard to the works relevant to the Operational Works approval.
- (j) Prior to the commencement of any municipal works associated with developments other than the subdivision of land, Council shall require the provision of a bond equivalent to not less than 10% (minimum of \$5,000.00) of the value of the works as security for the performance of the various construction obligations (including the provision of engineering certification and "As Constructed" information). The bond shall be reduced to an amount of not less than 5% of the value of the works upon formal acceptance of the works "On Maintenance" and shall be retained by Council during the maintenance period as security for the performance of the maintenance obligations. The bond shall be returned upon formal acceptance of the works "Off Maintenance".

15. Operational Works – Internal Works

(ie Works not being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ.
- (c) The drawings shall be submitted as three A3 size sets and one full size set. Where municipal works are also being undertaken, it is usually appropriate to make a combined submission.
- (d) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (e) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent.
- (f) A certificate shall be submitted to Council by a RPEQ certifying that the completed works have been constructed in accordance with Council's requirements and standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.

16. General

- (a) All disturbed verge areas and allotments shall be graded, grassed and left in a mowable condition. The grass cover shall be obtained as early as possible during the development and an acceptable grass cover shall be achieved before the development can be accepted "Off Maintenance".
- (b) Street name signs shall be manufactured to Council specifications and shall be erected in accordance with Council's Standard Drawing SR.26 at each intersection.
- (c) With reference to any works, on land under other private ownership, written permission for the works shall be obtained and forwarded to Council. Similarly, written clearances shall be obtained after the works are completed, unless otherwise accepted by the Senior Development Engineer.
- (d) All works required for this development shall take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works shall be altered at the cost of the Developer.

- (e) Any allotment filling for a greater depth than 500 mm to provide for building platforms shall be conducted in accordance with Australian Standard 3798. Test results as required by Australian Standard 3798, and a certificate of quality and uniformity of fill shall be provided by a RPEQ. The level of responsibility shall be Level 1.
- (f) All imported and exported materials shall be transported only on routes approved by the Senior Development Engineer.
- (g) For batters resulting from cutting and filling of the site and producing slopes greater than 1:6, Council requires a RPEQ to certify that they are stable and properly drained.
- (h) Approval of the Senior Development Engineer is required for any fill intended to be placed over Council's underground services.

17. Compliance with Conditions

- (a) Unless otherwise stated all conditions shall be completed prior to signing and dating of the relevant plan of survey or as determined by the Development Manager.
- (b) All conditions shall be completed to the satisfaction of the Development Manager.

18. Minor Alterations

Notwithstanding the requirements detailed in this approval, any other minor alterations and/or modifications acceptable to the Development Manager will suffice.

19. When Approval Takes Effect

This approval has effect in accordance with the provisions of Section 3.5.19 of the Integrated Planning Act 1997 as follows:

- (a) If the applicant does not appeal the decision to the court - from the time the decision notice is given (or if a negotiated decision notice is given, from the time the negotiated decision notice is given); or
- (b) If an appeal is made to the court - subject to the decision of the court, when the appeal is finally decided or the appellant withdraws the appeal.

20. When Approval Lapses

- (a) The relevant period for this approval is 4 years starting the day the approval takes effect. The Developer is required to submit to Council an accurate plan of survey before the end of the relevant period, otherwise the approval will lapse.

- (b) An extended relevant period may be agreed upon, pursuant to Section 3.5.22 of the Integrated Planning Act 1997, provided a written notice to Council is made before the end of the relevant period. Such written notice is to be on Council's approved form, accompanied by the owner's consent and the prescribed fee in Council's Register of General Charges.

NOTE: Operational Works application(s) required to be submitted must be approved and works completed within the relevant period stated above.

Advice

*The following advices are offered for your information only
and should not be viewed as mandatory conditions of this approval.*

Assessment Manager (Ipswich City Council)

1. **Fire Ants**

In accordance with the *Plant Protection Act 1989* and the *Plant Protection Regulation 1990*, a quarantine notice has been issued for the State of Queensland to prevent the spread of the Red Imported Fire Ant (ant species *Solenopsis Invicta*) and to eradicate it from the State.

It is the legal obligation of the land owner or any consultant or contractor employed by the land owner to report the presence or suspicion of Fire Ants to the Queensland Department of Primary Industries on 132523 within 24 hours of becoming aware of the presence or suspicion, and to advise in writing within seven days to:

Director General
Department of Primary Industries
GPO Box 46, Brisbane QLD 4001

It should be noted that the movement of Fire Ants is prohibited, unless under the conditions of an Inspectors Approval. More information can be obtained from the Queensland Department of Primary Industries website www.dpi.qld.gov.au.

The land over which you have made a development application is within a suburb known to have Fire Ants and as such is within a "Restricted Area". The presence of Fire Ants on the site may affect the nature, form and extent of works permitted on the site. In view of this it will be necessary for you to contact the Department of Primary Industries to investigate the site and for you to implement any necessary matters required by that Department prior to the commencement of any works.

2. **Portable Long Service Leave**

From 1 January 2000, the Building and Construction Industry (Portable Long Service Leave) Levy must be paid prior to the issue of a development permit where one is required for the 'Building and Construction Industry'. This applies to Building Works, Operational Works and Plumbing and Drainage Works applications, as defined under the *Integrated Planning Act 1997*, where the works are \$80 000 or more and matching the definition of 'Building and Construction Industry' under the *Building and Construction Industry (Portable Long Service Leave) Act 1991*.

Council will not be able to issue a Decision Notice without receipt of details that the Levy has been paid. Should you require clarification in regard to the amendments to the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, you should contact QLeave on 1800 803 481 (free call) or (07) 3212 6855.

3. Gas Utility Service

The Developer should contact Origin Energy in order to determine whether it is appropriate for the development to be reticulated with natural gas.

Pursuant to the provisions of the *Integrated Planning Act 1997*, I also enclose herewith a copy of the relevant sections concerning:

- Making representations about conditions during the applicant's appeal period (i.e. Negotiated Decision Notice); and
- The institution of an appeal.

Access PD Online at www.ipswich.qld.gov.au to view, search and print property information, interactive mapping, track development applications and the Ipswich Planning Scheme. Undertake a development enquiry as part of the Property Enquiry function to identify the planning scheme provisions that apply to a particular use on a property. PD Online - information at your fingertips 24 hours a day, 7 days a week.

Yours faithfully



DEVELOPMENT MANAGER - PLANNING

Extract from the Integrated Planning Act

Division 4 – Representations about conditions and other matters

Application of div 4

3.5.16 This division applies only during the applicants appeal period.

Changing conditions and other matters during the applicant's appeal period

- 3.5.17 (1) This section applies if the applicant makes representations to the assessment manager about a matter stated in the decision notice, other than a refusal or a matter about which a concurrence agency told the assessment manager under section 3.3.18(1).
- (2) If the assessment manager agrees with any of the representations, the assessment manager must give a new decision notice (the *negotiated decision notice*) to –
- (a) the applicant; and
 - (b) each principal submitter; and
 - (c) each referral agency; and
 - (d) if the assessment manager is not the local government and the development is in a local government area – the local government.
- (3) Only 1 negotiated decision notice may be given.
- (4) The negotiated decision notice –
- (a) must be given within 5 business days after the day the assessment manager agrees with the representations; and
 - (b) must be in the same form as the decision notice previously given; and
 - (c) must state the nature of the changes; and
 - (d) replaces the decision notice previously given.
- (5) If the assessment manager does not agree with any of the representations, the assessment manager must, within 5 business days after the day the assessment manager decides not to agree with any of the representations, give a written notice to the applicant stating the decision about the representations.
- (6) Before the assessment manager agrees to a change under this section, the assessment manager must reconsider the matters considered when the original decision was made, to the extent the matters are relevant.
- (7) If the development approved by the negotiated decision notice is different from the development approved in the decision notice in a way that affects the amount of an infrastructure charge or regulated infrastructure charge, the local government may give the applicant a new infrastructure charges notice under 5.1.8 or regulated infrastructure charges notice under section 5.1.18 to replace the original notice.
- (8) If the development approved by the negotiated decision notice is different from the development approved in the decision notice in a way that affects the amount of a regulated State infrastructure charge, the relevant State infrastructure provider may give the applicant a new regulated State infrastructure charges notice under section 5.3.4 to replace the original notice.

Applicant may suspend applicant's appeal period

- 3.5.18 (1) If the applicant needs more time to make the written representations, the applicant may, by written notice given to the assessment manager, suspend the applicants appeal period.
- (2) The applicant may act under subsection (1) only once.
- (3) If the written representations are not made within 20 business days after the day written notice was given to the assessment manager, the balance of the applicants appeal period restarts.
- (4) If the written representations are made within 20 business days after the day written notice was given to the assessment manager –
- (a) if the applicant gives the assessment manager a notice withdrawing the notice under subsection (1) – the balance of the applicants appeal period restarts the day after the assessment manager receives the notice of withdrawal; or
 - (b) if the assessment manager gives the applicant a notice under section 3.5.17(5) – the balance of the applicant's appeal period restarts the day after the applicant receives the notice; or
 - (c) if the assessment manager gives the applicant a negotiated decision notice – the applicant's appeal period starts again the day after the applicant receives the negotiated decision notice.

Division 8—Appeals to court relating to development applications**Appeals by applicants**

- 4.1.27. (1) An applicant for a development application may appeal to the court against any of the following—
- (a) the refusal, or the refusal in part, of a development application;
 - (b) a matter stated in a development approval, including any condition applying to the development, and the identification of a code under Section 3.1.6;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a period mentioned in 3.5.21;
 - (e) a deemed refusal.
- (2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the “applicant’s appeal period”) after the day the decision notice or negotiated decision notice is given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

Appeals by submitters

- 4.1.28. (1) A submitter for a development application may appeal to the court only against—
- (a) the part of the approval relating to the assessment manager’s decision under section 3.5.14 or 3.5.14A; or
 - (b) for an application processed under section 6.1.28(2)—the part of the approval about the aspects of the development that would have required public notification under the repealed Act.
- (2) To the extent an appeal may be made under subsection (1), the appeal may be against 1 or more of the following—
- (a) the giving of development approval;
 - (b) any provision of the approval including —
 - (i) a condition of, or lack of condition for, the approval; or
 - (ii) the length of a period mentioned in section 3.5.21 for the approval.
- (3) However, a submitter may not appeal if the submitter—
- (a) withdraws the submission before the application is decided; or
 - (b) has given the assessment manager a notice under section 3.5.19(1)(b)(ii)
- (4) The appeal must be started within 20 business days (the *submitter’s appeal period*) after the decision notice or negotiated decision notice is given to the submitter.

Appeals for matters arising after approval given (co-respondents)

- 4.1.30. (1) For a development approval given for a development application, a person to whom any of the following notices have been given may appeal to the court against the decision in the notice—
- (a) a notice giving a decision on a request for an extension of a period mentioned in section 3.5.21;
 - (b) a notice giving a decision on a request to make a minor change to an approval
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.
- (3) Subsection (1)(a) does not apply if the approval resulted from a development application (superseded planning scheme) that was assessed as if it were an application made under a superseded planning scheme.
- (4) Also, a person who has made a request mentioned in subsection (1) may appeal to the court against a deemed refusal of the request.
- (5) An appeal under subsection (4) may be started at any time after the last day the decision on the matter should have been made.

Appeals for matters arising after approval given (no co-respondents)

- 4.1.31. (1) A person to whom any of the following notices have been given may appeal to the court against the decision in the notice—
- (a) a notice giving a decision on a request to change or cancel a condition of a development approval;
 - (b) a notice under section 3.5.33A(9)(b) or 6.1.44 giving a decision to change or cancel a condition of a development approval.
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.
- (3) Also, a person who has made a request mentioned in subsection (1)(a) may appeal to the court against a deemed refusal of the request.
- (4) An appeal under subsection (3) may be started at any time after the last day the decision on the matter should have been made.

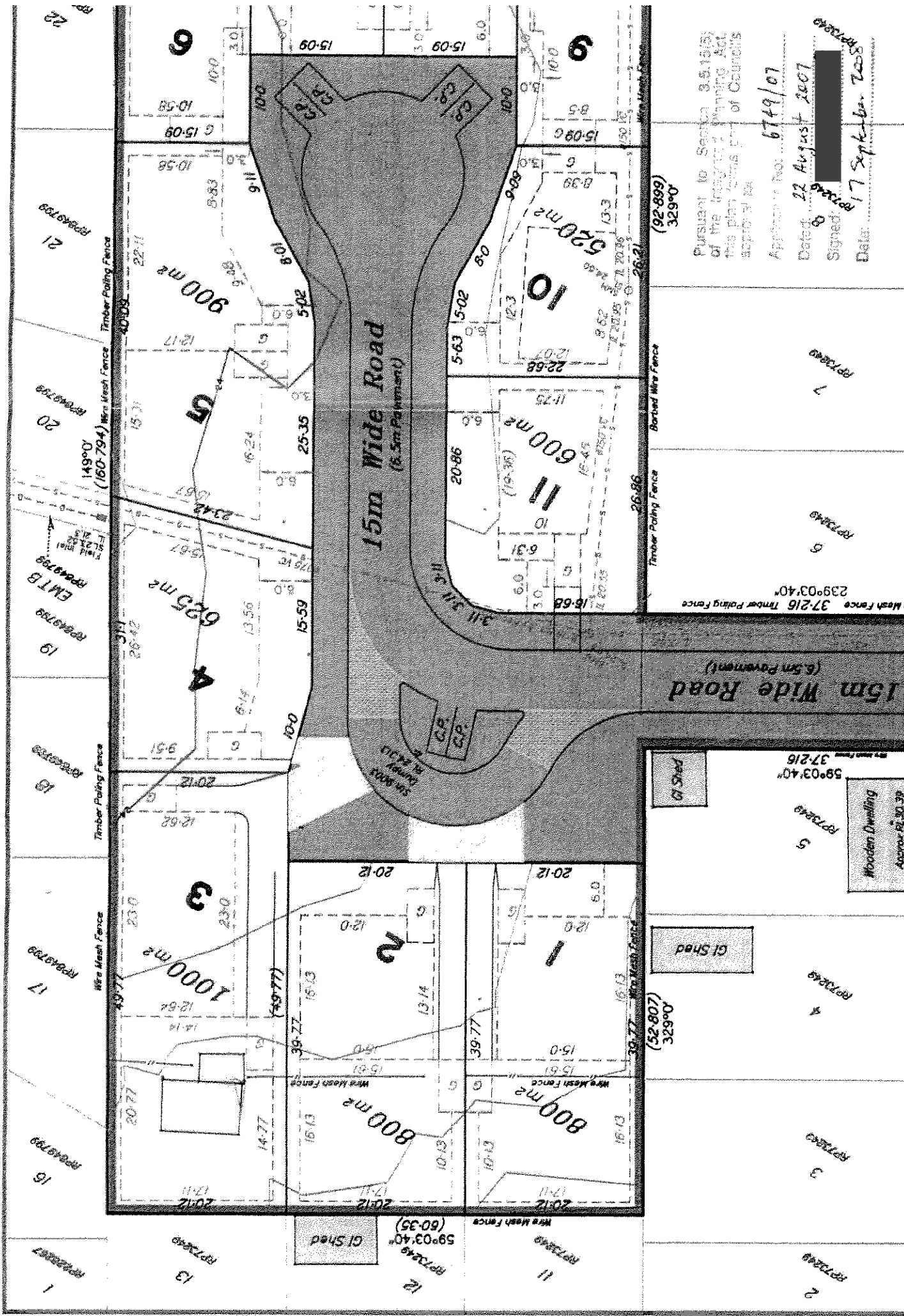
- * Appeals on matters relating to the Building Act 1975 the following also applies: -

Jurisdiction of tribunals

- 4.2.7. (1) A tribunal has jurisdiction to decide any matter that under this or another Act may be appealed to it.
(2) However, an appeal to a tribunal under this Act may only be about—
(a) a matter under this Act that relates to the *Building Act 1975* (other than a matter under that Act that may or must be decided by the Building Services Authority) or the *Plumbing and Drainage Act 2002*; or
(b) a matter prescribed under a regulation.

Appeals by applicants

- 4.2.9. (1) An applicant for a development application may appeal to a tribunal against any of the following—
(a) the refusal, or the refusal in part, of a development application;
(b) a matter stated in a development approval, including any condition applying to the development, but not including the identification of a code under section 3.1.6;
(c) the decision to give a preliminary approval when a development permit was applied for;
(d) the length of a period mentioned in section 3.5.21;
(e) a deemed refusal.
(2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the “applicant’s appeal period”) after the day the decision notice or negotiated decision notice is given to the applicant.
(3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.



Pursuant to Section 3.5.15(5) of the Integrated Planning Act, this plan forms part of Council's approval.

Approver No: 6749/07
 Dated: 22 August 2007
 Signed: [Redacted]
 Date: 17 September 2007

Mesh Fence 37-216 Timber Paling Fence 239-03-40

15m Wide Road (6.5m Pavement)

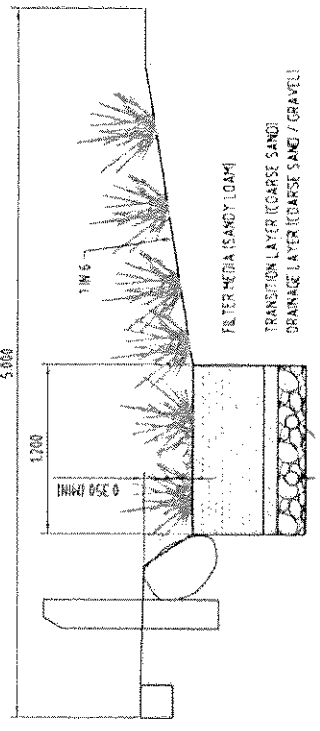
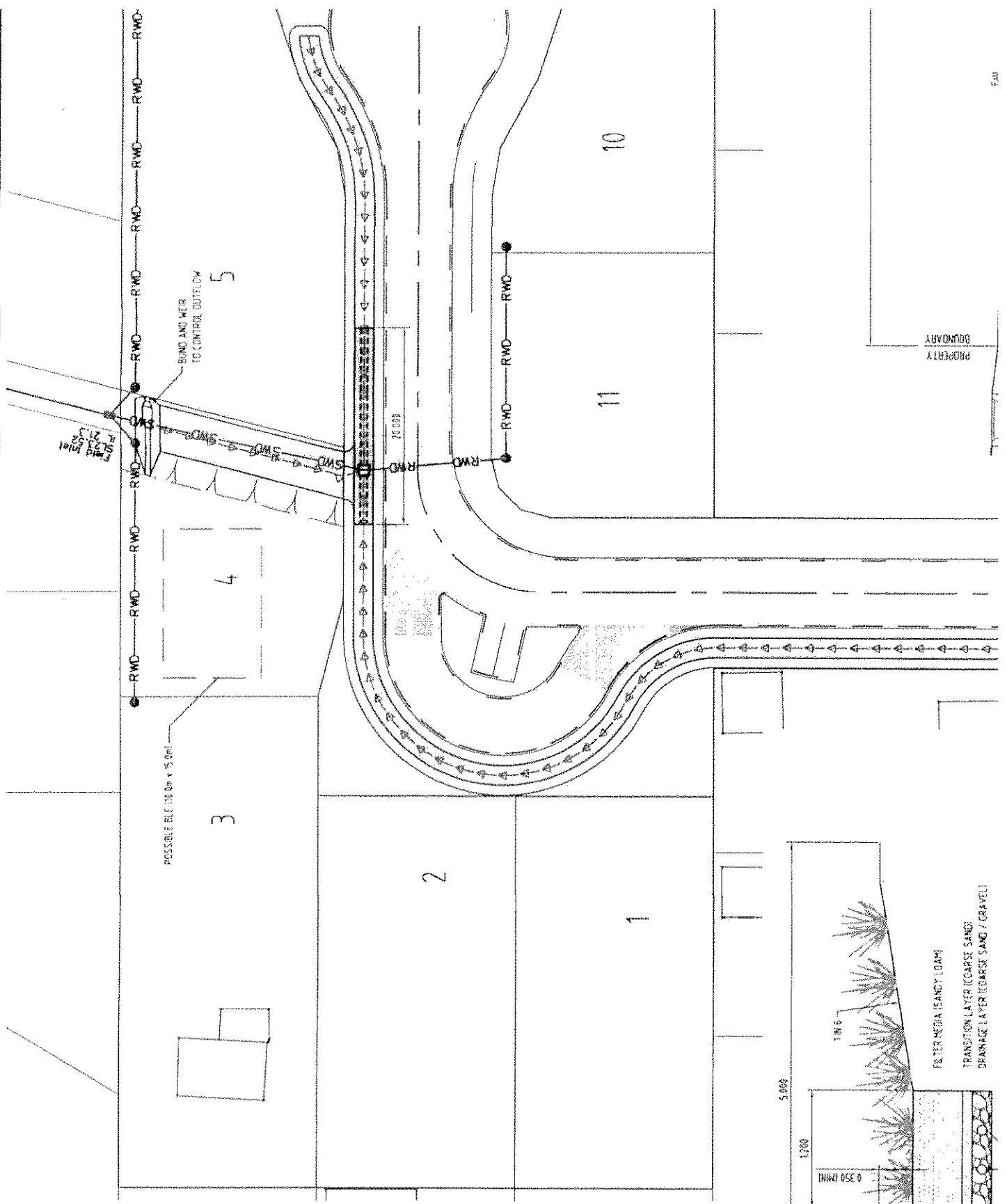
59-03-40
 37-216
 Wooden Dwelling
 Approx 19.30.39

GI Shed
 52-807
 329-0

59-03-40
 60-35
 GI Shed
 52-807
 329-0

LEGEND

- RWD — PROPOSED ROOF WATER
- SWD — PROPOSED STORM WATER
- SWALE DRAIN
- BIG-RETENTION SWALE
- CONCRETE INFILL
- SCOTTED PAVE PIPE



MADE PUBLIC
POSTED 24/10/08

Your reference
Our reference 6749/07 JAM:RT
Contact Officer [REDACTED]
Telephone 3810 7779



City of
Ipswich

Ipswich City Council

45 Roderick St
PO Box 191
Ipswich QLD 4305
Australia

Tel (07) 3810 6666
Fax (07) 3810 6731

Web www.ipswich.qld.gov.au

Ipswich Ideal Pty Ltd
PO Box 7044
SIPPY DOWNS QLD 4556

SCANNED
DEVELOPMENT BRANCH
27 OCT 2008
Doc No: 3410857

23 October 2008

INTEGRATED PLANNING ACT 1997

DEVELOPMENT APPLICATION NEGOTIATED DECISION NOTICE
*Note: This Negotiated Decision Notice replaces Council's previous
Decision Notice dated 17 September 2008*

Application Details

Appn No: 6749/07
Real Property Description: Lot 14 RP73249
Property Location: 70A Chubb Street, One Mile
Names and Addresses of all Referral Agencies: N/A
Negotiated Decision Date: 23 October 2008
Decision: Approved subject to the conditions detailed below.
Decision Authority: Team Co-ordinator - Central West
Nature of Change: Condition 2(a)(i) is to be amended
Conditions 7(a) and 7(c) are to be amended and
Condition 9(c) is to be amended.

Approval Details:

Proposal	Development	Decision	Approval Type
Reconfiguring a Lot - One (1) Lot into Eleven (11) Lots	Reconfiguring a Lot	Approved	Development Permit.
	Carrying out Operational Work	Approved	Preliminary Approval.

Further Development Permits Required

Further Development Permits, as required by the *Integrated Planning Act 1997*, shall be obtained in respect of any Operational Works in relation to this approval before any such works are commenced.

Conditions**Assessment Manager (Ipswich City Council)*****Conditions applicable to this approval under Integrated Planning Act:*****1. Basis of Approval**

Subject to these conditions, the facts and circumstances set out in the application and all relevant Council Local Laws and/or Planning Scheme Policies shall be adhered to.

2. Plan of Survey

(a) The Developer shall submit a plan of survey to conform with:

- (i) **Proposal Plan No. 4628/P2 prepared by Saunders Havill Group and dated 16 August 2007 and**
- (ii) Stormwater Treatment plan number 07052-SK-001 Revision B prepared by dks Consulting, dated 2 May 2008

(b) The existing shed structure located in the northern corner of the site shall be removed/demolished prior to Council signing the plan of survey.

(c) The Developer shall grant, free of cost to or compensation payable by Council, minimum 8.0 m wide easement located along the southern side of proposed Lot 4. The final width of the easement may depend on the width of the associated Q100 flow as specified in Condition 11(b)(v) above.

The documentation associated with this easement may be prepared by the Developer in a form satisfactory to Council's City Solicitor, or the Developer may submit easement plans, only where Council is party to the easements, to Council for the preparation of easement documents at the Developer's expense.

- (d) Adequate permanent survey marks shall be installed. The Developer shall submit a certificate signed by a licensed surveyor, stating that after the completion of all works associated with the development, permanent survey marks are in their correct position, in accordance with the plan of survey.

3. Rates in Arrears

In accordance with the provisions of the *Integrated Planning Act 1997*, all rates and other expenses as a charge against the land shall not be in arrears at the date of signing of the plan of survey.

4. Streetscape Works

- (a) The Developer shall plant street trees for the presentation of the estate. A Streetscape Plan shall be submitted by the Developer in conjunction with the submission of an operational works application. Such a plan shall be in accordance with Council's Streetscape Policy to the satisfaction of the Development Manager - Planning. Streetscaping shall be provided at a density of one tree per allotment or one per twenty (20) metres of road frontage whichever is the lessor. An increased density along the proposed Drainage Reserve of one tree per ten (10) metre spacings is required.
- (b) The plans shall indicate the following:
 - (i) All existing trees within the dedicated road, including those to be retained and those to be removed;
 - (ii) Location / proximity of services within the road reservation; and
 - (iii) Details of proposed planting including common and botanical names and height and spread at maturity.

Note:

Species shall be in accordance with the Ipswich Street Tree Strategy. Root intrusive trees shall not be planted in the dedicated road reserve unless specifically approved by Council. In this respect, the Developer or agent should liaise with Council's Health Parks and Recreation Department prior to any planting for determination of species selection.

- (c) Such streetscaping shall be designed and executed in accordance with the approved plan to the requirements and satisfaction of the Chief Operating Officer - Health Parks and Recreation and completed prior to Council signing any plan of survey.
- (d) The Developer shall maintain street trees for a period of twelve (12) months after an On Maintenance inspection by the Chief Operating Officer - Health Parks and Recreation.

5. Infrastructure Contributions

In accordance with the current Council Policies in relation to infrastructure contributions, the Developer shall pay, prior to the Council dating and signing any plan of survey, the following monies to Council:

Contribution	Sector	Rate	Proposal	Calculation
Social Infrastructure	Leichhardt – One Mile (Sector C5)	Level 1: \$51.89/ Person Level 2: \$200.31/ Person Level 3: \$78.42/ Person Unit Charge = 1.1041 Total = \$365.03/ Person	Number of Lots (> 450m ²): 9 @ 2.74 Persons/Lot Number of Lots (≤ 450m ²): 2 @ 2.74 Persons/Lot Existing Credit of 2.74 Persons/Lot Proposal = 27.4 EP	\$365.03 x 27.4 = \$10,001.82 Total = \$10,001.00
Parks Infrastructure	Leichhardt – One Mile (Sector C5)	Level 1: \$1,289.70/ Person Level 2: \$592.30/ Person Level 3: \$651.84/ Person Unit Charge = 1.1041 Total = \$2,797.61/ Person	Number of Lots (> 450m ²): 9 @ 2.74 Persons/Lot Number of Lots (≤ 450m ²): 2 @ 2.74 Persons/Lot Existing Credit of 2.74 Persons/Lot Proposal = 27.4 EP	\$2,797.61 x 27.4 = \$76,654.51 Total = \$76,654.00
Water Supply	Brassall Low Level (Zone WT4)	\$1,120.00/EP Unit Charge = 1.1041 Total = \$1,236.59/ Person	Number of Lots (> 450m ²): 9 @ 3.3 EP Number of Lots (≤ 450m ²): 2 @ 2.7 EP Existing Credit of 3.3 EP Proposal = 31.8 EP	\$1,236.59 x 31.8 = \$39,323.56 Total = \$39,323.00
Sewerage Contributions	SP1 (Catchment 1)	\$1,768.00/EP Unit Charge = 1.1041 Total = \$1,952.04/ Person	Number of Lots (> 450m ²): 9 @ 3.3 EP Number of Lots (≤ 450m ²): 2 @ 2.7 EP Existing Credit of 3.3 EP Proposal = 31.8 EP	\$1,952.04 x 31.8 = \$62,074.87 Total = \$62,074.00

Roadworks Contributions	Leichhardt – One Mile (Sector 46)	\$679.00/Vehicle Trip	Number of Lots: 11.0 @ 6.5 Vehicle Trips/Lot	\$749.68 x 65.0 = \$48,729.20
		Unit Charge = 1.1041	Existing Credit of 6.5 Vehicle Trips	Total = \$48,729.00
		Total = \$749.68/Person	Proposal 65.0 Vehicle Trips	
Total for Development				\$236,781.00

The contributions above shall be applicable for a period of twelve (12) months from the date of the development approval, and thereafter shall be based on the infrastructure contribution rates applicable at the date when payment is made.

6. Engineering Requirements

The following engineering requirements, detailed in Conditions 7 – 17, shall be completed to the satisfaction of the Senior Development Engineer.

Terms

- (a) RPEQ - A Registered Professional Engineer of Queensland, suitably qualified and experienced in the particular area of expertise required. Furthermore, the RPEQ required for the analysis and reporting for mining shall be experienced in the analysis of underground and surface mining within the Ipswich area.
- (b) QUDM - The Queensland Urban Drainage Manual, produced by the Queensland Department of Primary Industries.
- (c) Queensland Streets - The Design Guidelines for Subdivisional Street Works, prepared for the Institute of Municipal Engineers of Australia (QLD).
- (d) AMCORD - The Australian Model Code of Residential Development produced by the Commonwealth Department of Housing and Regional Development.
- (e) DMR - Department of Main Roads.
- (f) MUTCD - The Manual of Uniform Traffic Control Devices, published by DMR.
- (g) Ipswich Water - Commercial Business Unit of Ipswich City Council providing water and sewerage services.
- (h) DNRM - Department of Natural Resources and Mines.

7. Roadworks

- (a) The proposed access road shall be designed and constructed with asphaltic concrete surfacing to a width of 6.5 m for the full length of all property frontages. A minimum 4.25 m verge width on one side of road shall be provided to accommodate relevant services as shown in ICC Standard Drawings SR 22 and SR 23. The maximum area to implement the swale is 4.25m in width at some sections. The applicant shall adjust the cross section of swale at those locations such that the maximum slope of the batter is 1 in 4. Any reduction in stormwater quality and detention quantity requirements as stated in the Stormwater Management Plan prepared by EHA (Report No. SW-07-08-REP-001 Rev. D) and dated 6 May 2008 shall be compensated for through the use of the proposed road verge in front of Lots 1 and 2. Any such modifications shall be submitted with the lodgement of an operational works application. Works shall include:
- (i) Concrete kerb and channel on both sides;
 - (ii) Concrete footpath 1.5 m wide on one side, with kerb ramps designed in accordance with ICC Standard Drawing SR.18. The construction of footpaths shall be in accordance with Council's Standard Drawing SR.19. The concrete footpaths shall be on the same side as the street lights, and the maximum longitudinal grade shall not exceed 1:8. and
 - (iii) Stormwater drainage infrastructure designed in accordance with Council's Planning Scheme Policy 3 – General Works, Queensland Urban Drainage Manual, the Department of Main Roads Drainage Design Manual and Stormwater Management Plan, dated 6 May 2008, prepared by EHA Pty Ltd in that order of precedence.
- (b) Roadworks shall be designed and constructed in accordance with Council's Standards, Queensland Streets, Austroads Publications, AMCORD, the relevant and appropriate roadworks design standards and guidelines, and any other documentation deemed appropriate by Council. Such design and construction shall ensure that road carriageway widths are consistent with the road function and position in the road hierarchy and are in accordance with the relevant design speed environment.
- (c) Road pavement designs shall comply with Ipswich City Council's *Planning Scheme Policy 3 - General Works, Part 1 – Standard for Design of Roadworks*. The proposed road shall have single way cross-fall to accord with the stormwater system design as identified in the approved plans.

The minimum dedicated road widths, pavement widths and footpath requirements shall be in accordance with Ipswich City Council's *Code for Reconfiguring A Lot* and Standard Drawings.

- (d) The road pavement widths and geometric layout shall be sufficient to make adequate provision for Council's refuse collection vehicles and public transport movements.
- (e) A vehicle turning area shall be provided at the end of "No through" road and cul-de-sac. Circular cul-de-sac turning heads, based on a minimum turning circle of 9.0 m radius, are preferred. "T" and "Y" shaped turning heads are generally not to be used.

- (f) Traffic slow down devices shall be provided generally in accordance with Queensland Streets.
- (g) "No Through Road" signs shall be erected at the entries to cul-de-sacs and terminating roads.
- (h) All traffic signs and delineation shall be installed in accordance with MUTCD.
- (i) The construction of footpaths shall be in accordance with Council's Standard Drawing SR.19. The concrete footpaths shall be on the same side as the street lights, and the maximum longitudinal grade shall not exceed 1:8.
- (j) Kerb ramps are to be constructed in accordance with Council's Standard Drawing SR.18 at all intersections and at additional locations where required to connect the concrete pathways and cycleways. Generally at "T" intersections, 4 kerb ramps are required.
- (k) The Developer shall upgrade the intersection of Chubb Street and proposed access road in accordance with the AUSTRROADS Publication "Guide to Traffic Engineering Practice, Part 5, Intersections at Grade". Any requirements of the Department of Main Roads shall be met.
- (l) Provision shall be made for 6 m, three chord truncations at intersections. The 6.0 m distance is measured along each frontage from the property corner.
- (m) The Developer shall provide concrete threshold treatment to all internal "T" intersections (modified or otherwise) in accordance with ICC Standard Drawing SR 28.

8. Access/Parking

- (a) Vehicular access from the roadways to all allotments shall be capable of being provided.
- (b) Design and construction of all access and parking shall be in accordance with the provisions of the Ipswich City Council Parking Code and the Australian Standards (2890 series).
- (c) Any internal access driveways to proposed Lots 1,2,3, and 4 through/over the proposed road side swale drain shall be approved by the Senior Development Engineer and shall be constructed as part of this development. Due consideration shall be given in the design of the swale drain to ensure stormwater flows from the upstream catchment are not impeded or restricted to impact on upstream or downstream properties of the proposed development. Details of how the Developer intends to achieve these objectives shall be submitted to Council for approval as part of the Operational Works Application.

9. Water

- (a) The Developer shall provide a reticulated water supply system together with valves and fire hydrants, in accordance with the "Guidelines for Planning and Design of Urban Water Supply Systems", which connects into Council's existing reticulation system.

- (b) A blue, bi-directional raised reflective pavement marker (RRPM) shall be provided to all hydrants. The marker shall be installed in accordance with the Department of Main Roads Fire Hydrant Indication System Technical Guideline.
- (c) The developer shall construct a 100 mm diameter watermain to adequately service this development from the existing 150 mm diameter main in Chubb Street. This main shall be looped around the cul-de-sac head to join back on to itself.
- (d) All works on live water mains are to be carried out by Council in accordance with Council's policy, and at the Developer's expense.
- (e) Where concrete footpaths are to be constructed, the Developer shall provide 100 mm diameter conduits under the footpath and in line with the conduits under the road, for future ease of installing the individual water services. The letter "W" shall be embossed in the concrete to mark the location of the conduit.
- (f) The Developer shall lodge a private works request on the prescribed Council form, for Council to supply a cost estimate to:
 - (i) Provide a suitable metered water connection for each proposed allotment;
 - (ii) Amend the existing connection if necessary; and
 - (iii) Seal off any existing water connections if necessary.

The appropriate fees are to be paid prior to Council signing any plan of survey.

- (g) Wherever possible, the water main shall be constructed on the opposite side to the concrete footpaths. Where the water main is under a concrete footpath, the Developer shall provide a water connection (up to, but excluding the provision of meters) to each allotment, including the provision of approved pre-cast concrete or cast iron boxes over the stop cock.

10. Sewerage

- (a) The Developer shall provide a sewerage reticulation system with appropriate house connection branches, designed to command the whole of each of the proposed allotments.
- (b) In the positioning of Building Location Envelopes (BLE's) or Stormwater structures on allotments, the Developer shall comply with one of the following:
 - (i) All structures shall be a minimum of 1.5 m clear of the outer edge of the existing or proposed sewers; or
 - (ii) Should it be deemed impractical for the structure(s) to be constructed clear of the existing or proposed sewer, then the Developer shall either:

Relay the sewer around the proposed structure(s) or BLE, or

Replace the existing sewer in polyethylene wrapped cement lined ductile iron (DI-CL) pipe for the length to be overbuilt, with access chambers constructed at both ends of the DI-CL section, unless approved otherwise by Ipswich Water.

- (c) Approval to build over sewers shall be obtained from the Senior Development Engineer. The following requirements are to be met:
 - (i) The part of the sewer to be built over shall be straight for the whole distance under the structure;
 - (ii) Access chambers shall be positioned on the sewer outside the structure. Unhindered entry to access chambers shall be provided at all times; and
 - (iii) Whenever a footing crosses a sewer or is located within 1.5 m of the sewer, the footing shall be designed with piers of minimum diameter 450 mm each side of the sewer, penetrating at least 300 mm below the invert of the sewer. No footing shall impose a load on the sewer.
- (d) The Developer shall pay the full cost for Council to provide a suitable connection into the existing sewerage reticulation system. All works on live sewers are to be carried out by Council at the Developer's expense, unless arranged otherwise with Ipswich Water.
- (e) No work on the sewerage reticulation system shall commence prior to the approval of the Operational Works application.

11. Stormwater

- (a) Stormwater quality for the development shall achieve the following water quality objectives as outlined within the South-east Queensland Regional Plan (SEQ RP) Part 11.
 - (i) 80% for total suspended solids;
 - (ii) 60% for total phosphorus;
 - (iii) 45% for total nitrogen; and
 - (iv) 90% for gross pollutants
- (b) The water quality objectives listed in (a) shall be achieved through the implementation of the swales and bio-retention swale in accordance with the Stormwater Quality Management Plan (Rev B) prepared by Daniel Willis Town Planning & Environment reference 06-010 and dated 2 May 2008 and the Stormwater Management Plan Report No. SW-01-08-REP-001 Revision D) prepared by Environmental Hydrology Associates Pty Ltd and dated 6 May 2008, subject to the following:-
 - (i) Any additional rainwater tanks other than what is required under the Queensland Development Code and used specifically as a stormwater attenuation device would not be supported by Council.

- (ii) The Developer shall provide stormwater detention by proposed swales and drainage easement through Lot 4 on the subject land, which shall be designed and constructed to ensure that flows, at any point downstream in the catchment, are not increased by the development for any combination of frequency and duration from the storm event with an ARI of 2 years up to and including the storm event with an ARI of 100 years.
- (iii) The sides of any grassed embankment and/or basin shall not exceed a maximum 1:6 grade unless otherwise approved by the Senior Development Engineer. Appropriate provision for managing low flows and maintenance shall be made to the satisfaction of the Senior Development Engineer.
- (iv) The developer shall demonstrate that all discharges from the proposed drainage reserve are within all QUDM requirements.
- (v) The developer shall demonstrate that the overland flowpath (existing drainage reserve) between 8 & 10 Battersby Street has sufficient width in accordance with QUDM requirements to cater for flows associated with a storm event with an ARI of 100 years.
- (c) Detailed cross sections and final locations for stormwater infrastructure required by (b) shall be submitted for approval in conjunction with any application for Operational Works and be in accordance with the Water Sensitive Technical Design Guidelines for South East Queensland specifically Chapters 10 Plant Selection for WSUD, Chapter 2 Swales (Incorporating Buffer Strips) and Chapter 3 Bio-retention Swales published by Healthy Waterways.
- (d) Bollards shall be installed along the swale drain interface in accordance with Ipswich City Council's Standard Drawing SP.43 Revision B at maximum of 1.5m centres at an alignment of 650mm from the edge of kerb. Every 3rd bollard shall be required to be replaced with an approved street tree. The Developer shall submit a Streetscape Plan (including bollard and interface details) for approval in conjunction with application for Operational Works that generally complies with Typical Cross Section (Drawing number SK-003 Project number 07052 Revision A) prepared by dks Consulting Engineer dated 6 May 2008.
- (e) Appropriate works shall be carried out to ensure that stormwater drainage from the new kerb and channel discharges suitably into the existing drainage system.
- (f) The Developer shall provide all necessary stormwater drainage (both internal and external to the development) and such drainage works (except for roofwater systems) shall be designed and constructed in accordance with QUDM such that the overall drainage system caters for a storm event with an ARI of 100 years.

Overland flow paths shall be suitably designed to cater for the water from a storm event with an ARI of 100 years. In the case where the piped system is carrying part of the flow, the overland flow paths shall be designed to cater for that volume which is represented by the difference between the predicted volume from the storm event with an ARI of 100 years and the capacity of the pipe system, noting the requirements of QUDM.

- (g) A suitable roofwater system shall be designed in accordance with QUDM, for allotments that do not have adequate fall from within the allotment to the design invert level of the kerb and channel. The design is to be to a minimum Level II in QUDM.
- (h) All stormwater flows within and adjacent to the development, other than inter-allotment drainage, shall be confined to dedicated roads, drainage reserves, registered drainage easements or within parkland. The registered drainage easements, if related to piped drainage, shall be centrally located over such underground pipe system and shall be not less than 4.0 m wide, except for drainage easements required for side boundaries which may be 3.0 m wide where approved by the Senior Development Engineer. In addition, the easements shall be of suitable width to contain the predicted overland flow from the storm event with an ARI of 100 years in that location.
- (i) No ponding, concentration or redirection of stormwater shall occur onto adjoining land unless specifically approved by Council in consultation with the owner of the adjoining land.

12. Public Utilities

- (a) Adequate provision shall be made in all proposed dedicated roads, access strips and easements, to cater for the public utility services that would normally serve the development.
- (b) The Developer shall provide appropriate road crossing conduits in accordance with Council's Standard Drawings SR.22 and SR.23. Where concrete footpaths are to be constructed, the conduits shall be extended to the property boundaries.
- (c) Street lighting shall be installed by the Developer in accordance with the Australian Standard 1158.3.1 Table 1.1. All street lighting associated with the development shall be certified by a RPEQ. Street lighting shall be installed on the same side as concrete footpaths (where applicable).
- (d) The Developer shall provide underground electricity/telecommunications within the development, constructed in the approved allocation as detailed in Council's Standard Drawings SR.22 and SR.23. Electricity/telecommunication drawings shall be co-ordinated with the civil engineering design documents, to ensure that service clashes are avoided. Where allotments front an existing overhead electricity/telecommunication service, these allotments may connect to such service subject to the approval and requirements of the service provider.
- (e) The Developer shall provide an Energex approved electrical reticulation layout plan. The electricity layout shall also be shown on the water reticulation layout plans.
- (f) The Developer shall provide each allotment with an electricity supply.
- (g) Prior to the signing of Plan of Survey by Council, the Developer shall provide Council with a copy of a Certificate for Electricity Supply from Energex for the supply of electricity to the development.

- (h) Telephone and cable services may be laid in a combined trench with electricity cables, subject to the approval of Energex and the authorised telephone/cable service provider.
- (i) The Developer shall make suitable arrangements for the provision of telephone and (where applicable) cable services to all proposed lots within the development. Documentary evidence that discussions have commenced with any authorised telephone/cable service provider, on the provision of telephone/cable services, shall be provided prior to the signing of the plan of survey by Council.

13. Erosion & Silt Management

- (a) The Developer shall be responsible for the installation and maintenance of silt management facilities from the time of commencement of construction until the development has been released "Off Maintenance" by Council. All silt management facilities are to be in accordance with the document "Soil Erosion and Sediment Control" published by the Institution of Engineers Australia, or equivalent.
- (b) The Developer shall lodge a \$5 000 siltation and erosion performance bond with Council, prior to the commencement of works, which shall only be released by Council at the termination of the maintenance period. Where Council determines that a draw-down of the bond is required, the Developer shall restore the bond to its full amount within 10 days of a notice from Council to that effect. Such bond shall guarantee adequate performance in the circumstances (i) and (ii) below:
 - (i) In the event that instructions issued to the Consulting Engineer by the Senior Development Engineer for the installation of erosion control measures, are not complied with within 24 hours, Council will call upon the bond to the extent required to carry out the necessary works.
 - (ii) If the Senior Development Engineer determines that silt damage has occurred on the site, or the downstream drainage system has become silted, the Developer shall be responsible for restoration. Such restoration shall be completed in the time determined by the Senior Development Engineer.

Should the Developer fail to complete the works determined by the Senior Development Engineer within the specified time, Council shall complete the work and recover all costs from the Developer associated with that work.

14. Operational Works – Municipal Works
(ie Works being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) The Developer shall comply with the requirements of the documents entitled "Planning Scheme Policy 3 - General Works" and "Standard Drawings".

- (c) All engineering drawings submitted to Council shall be in accordance with Council's Planning Scheme Policy 3 - General Works and Standard Drawings, and shall include as a minimum the following:
- (i) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ;
 - (ii) The drawings shall be submitted as three A3 size sets and one full size set; and
 - (iii) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (d) Municipal works shall require a detailed design certified by a RPEQ, the design approved by Council Engineers with appropriate fees payable, a works pre-start meeting on-site and various detailed construction and audit inspections by Council Officers. A twelve month maintenance period is applicable for the works as well as the payment of a maintenance security deposit.
- (e) All works shall be supervised by a RPEQ competent in civil works and shall be undertaken by a nominated principal contractor experienced in the construction of municipal works. Council reserves the right to request evidence of the principal contractor's competency. Should it be deemed by the Senior Development Engineer that the contractor does not have the necessary competency or has constructed substandard works for Council in the past, Council reserves the right to reject the nominated contractor.
- (f) Municipal works shall be accepted "On Maintenance" prior to commencement of use. A maintenance bond equal to 5% of the construction cost (minimum of \$5,000.00) shall be retained by Council for a minimum period of twelve months, or until such time as the works are accepted "Off Maintenance" by Council.
- (g) "As Constructed" plans for municipal works shall be submitted to Council and approved prior to the formal acceptance of the works "On Maintenance".
- (h) On completion of the works a certificate shall be submitted to Council by a RPEQ certifying that the works have been constructed in accordance with Council's construction standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.
- (i) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent in regard to the works relevant to the Operational Works approval.

- (j) Prior to the commencement of any municipal works associated with developments other than the subdivision of land, Council shall require the provision of a bond equivalent to not less than 10% (minimum of \$5,000.00) of the value of the works as security for the performance of the various construction obligations (including the provision of engineering certification and "As Constructed" information). The bond shall be reduced to an amount of not less than 5% of the value of the works upon formal acceptance of the works "On Maintenance" and shall be retained by Council during the maintenance period as security for the performance of the maintenance obligations. The bond shall be returned upon formal acceptance of the works "Off Maintenance".

15. Operational Works – Internal Works

(ie Works not being handed over to Council)

- (a) Plans relating to all civil engineering works shall be prepared and submitted for review by Council under the cover of Form 1 - Part A (Common details for all applications) and Form 1 - Part E (Planning Scheme Works). The plans shall show full construction details, layout dimensions, and finished surface levels and shall be submitted together with the appropriate fees for Council approval, prior to the commencement of construction on site.
- (b) Engineering drawings shall be marked as confirmation that they have been checked and approved by a RPEQ.
- (c) The drawings shall be submitted as three A3 size sets and one full size set. Where municipal works are also being undertaken, it is usually appropriate to make a combined submission.
- (d) A "Certificate of Design" shall be submitted by a RPEQ, certifying that the design is in accordance with all relevant engineering standards, Council's requirements and standards, relevant development conditions of approval, and sound engineering practice.
- (e) Council reserves the right to require further amendments and/or additions at a later date, should design errors or omissions become apparent.
- (f) A certificate shall be submitted to Council by a RPEQ certifying that the completed works have been constructed in accordance with Council's requirements and standards and in compliance with the approved plans and specification. It is expected that the RPEQ will undertake the necessary inspections to make this certification.

16. General

- (a) All disturbed verge areas and allotments shall be graded, grassed and left in a mowable condition. The grass cover shall be obtained as early as possible during the development and an acceptable grass cover shall be achieved before the development can be accepted "Off Maintenance".
- (b) Street name signs shall be manufactured to Council specifications and shall be erected in accordance with Council's Standard Drawing SR.26 at each intersection.

- (c) With reference to any works, on land under other private ownership, written permission for the works shall be obtained and forwarded to Council. Similarly, written clearances shall be obtained after the works are completed, unless otherwise accepted by the Senior Development Engineer.
- (d) All works required for this development shall take due regard of any and all existing services and, if considered necessary by the relevant authority or the Senior Development Engineer, such works shall be altered at the cost of the Developer.
- (e) Any allotment filling for a greater depth than 500 mm to provide for building platforms shall be conducted in accordance with Australian Standard 3798. Test results as required by Australian Standard 3798, and a certificate of quality and uniformity of fill shall be provided by a RPEQ. The level of responsibility shall be Level 1.
- (f) All imported and exported materials shall be transported only on routes approved by the Senior Development Engineer.
- (g) For batters resulting from cutting and filling of the site and producing slopes greater than 1:6, Council requires a RPEQ to certify that they are stable and properly drained.
- (h) Approval of the Senior Development Engineer is required for any fill intended to be placed over Council's underground services.

17. Compliance with Conditions

- (a) Unless otherwise stated all conditions shall be completed prior to signing and dating of the relevant plan of survey or as determined by the Development Manager.
- (b) All conditions shall be completed to the satisfaction of the Development Manager.

18. Minor Alterations

Notwithstanding the requirements detailed in this approval, any other minor alterations and/or modifications acceptable to the Development Manager will suffice.

19. When Approval Takes Effect

This approval has effect in accordance with the provisions of Section 3.5.19 of the Integrated Planning Act 1997 as follows:

- (a) If the applicant does not appeal the decision to the court - from the time the decision notice is given (or if a negotiated decision notice is given, from the time the negotiated decision notice is given); or
- (b) If an appeal is made to the court - subject to the decision of the court, when the appeal is finally decided or the appellant withdraws the appeal.

20. When Approval Lapses

- (a) The relevant period for this approval is 4 years starting the day the approval takes effect. The Developer is required to submit to Council an accurate plan of survey before the end of the relevant period, otherwise the approval will lapse.
- (b) An extended relevant period may be agreed upon, pursuant to Section 3.5.22 of the Integrated Planning Act 1997, provided a written notice to Council is made before the end of the relevant period. Such written notice is to be on Council's approved form, accompanied by the owner's consent and the prescribed fee in Council's Register of General Charges.

NOTE: Operational Works application(s) required to be submitted must be approved and works completed within the relevant period stated above.

Advice

*The following advices are offered for your information only
and should not be viewed as mandatory conditions of this approval.*

Assessment Manager (Ipswich City Council)

1. Fire Ants

In accordance with the *Plant Protection Act 1989* and the Plant Protection Regulation 1990, a quarantine notice has been issued for the State of Queensland to prevent the spread of the Red Imported Fire Ant (ant species *Solenopsis Invicta*) and to eradicate it from the State.

It is the legal obligation of the land owner or any consultant or contractor employed by the land owner to report the presence or suspicion of Fire Ants to the Queensland Department of Primary Industries on 132523 within 24 hours of becoming aware of the presence or suspicion, and to advise in writing within seven days to:

Director General
Department of Primary Industries
GPO Box 46, Brisbane QLD 4001

It should be noted that the movement of Fire Ants is prohibited, unless under the conditions of an Inspectors Approval. More information can be obtained from the Queensland Department of Primary Industries website www.dpi.qld.gov.au.

The land over which you have made a development application is within a suburb known to have Fire Ants and as such is within a "Restricted Area". The presence of Fire Ants on the site may affect the nature, form and extent of works permitted on the site. In view of this it will be necessary for you to contact the Department of Primary Industries to investigate the site and for you to implement any necessary matters required by that Department prior to the commencement of any works.

2. Portable Long Service Leave

- From 1 January 2000, the Building and Construction Industry (Portable Long Service Leave) Levy must be paid prior to the issue of a development permit where one is required for the 'Building and Construction Industry'. This applies to Building Works, Operational Works and Plumbing and Drainage Works applications, as defined under the *Integrated Planning Act 1997*, where the works are \$80 000 or more and matching the definition of 'Building and Construction Industry' under the *Building and Construction Industry (Portable Long Service Leave) Act 1991*.

Council will not be able to issue a Decision Notice without receipt of details that the Levy has been paid. Should you require clarification in regard to the amendments to the *Building and Construction Industry (Portable Long Service Leave) Act 1991*, you should contact QLeave on 1800 803 481 (free call) or (07) 3212 6855.

3. Gas Utility Service

The Developer should contact Origin Energy in order to determine whether it is appropriate for the development to be reticulated with natural gas.

Pursuant to the provisions of the *Integrated Planning Act 1997*, I also enclose herewith a copy of the relevant sections concerning:

- Making representations about conditions during the applicant's appeal period (i.e. Negotiated Decision Notice); and
- The institution of an appeal.

Access PD Online at www.ipswich.qld.gov.au to view, search and print property information, interactive mapping, track development applications and the Ipswich Planning Scheme. Undertake a development enquiry as part of the Property Enquiry function to identify the planning scheme provisions that apply to a particular use on a property. PD Online - information at your fingertips 24 hours a day, 7 days a week.

Yours faithfully



DEVELOPMENT PLANNING MANAGER

Extract from the Integrated Planning Act

Division 4 – Representations about conditions and other matters

Application of div 4

3.5.16 This division applies only during the applicants appeal period.

Changing conditions and other matters during the applicant's appeal period

- 3.5.17 (1) This section applies if the applicant makes representations to the assessment manager about a matter stated in the decision notice, other than a refusal or a matter about which a concurrence agency told the assessment manager under section 3.3.18(1).
- (2) If the assessment manager agrees with any of the representations, the assessment manager must give a new decision notice (the *negotiated decision notice*) to –
- (a) the applicant; and
 - (b) each principal submitter; and
 - (c) each referral agency; and
 - (d) if the assessment manager is not the local government and the development is in a local government area – the local government.
- (3) Only 1 negotiated decision notice may be given.
- (4) The negotiated decision notice –
- (a) must be given within 5 business days after the day the assessment manager agrees with the representations; and
 - (b) must be in the same form as the decision notice previously given; and
 - (c) must state the nature of the changes; and
 - (d) replaces the decision notice previously given.
- (5) If the assessment manager does not agree with any of the representations, the assessment manager must, within 5 business days after the day the assessment manager decides not to agree with any of the representations, give a written notice to the applicant stating the decision about the representations.
- (6) Before the assessment manager agrees to a change under this section, the assessment manager must reconsider the matters considered when the original decision was made, to the extent the matters are relevant.
- (7) If the development approved by the negotiated decision notice is different from the development approved in the decision notice in a way that affects the amount of an infrastructure charge or regulated infrastructure charge, the local government may give the applicant a new infrastructure charges notice under 5.1.8 or regulated infrastructure charges notice under section 5.1.18 to replace the original notice.
- (8) If the development approved by the negotiated decision notice is different from the development approved in the decision notice in a way that affects the amount of a regulated State infrastructure charge, the relevant State infrastructure provider may give the applicant a new regulated State infrastructure charges notice under section 5.3.4 to replace the original notice.

Applicant may suspend applicant's appeal period

- 3.5.18 (1) If the applicant needs more time to make the written representations, the applicant may, by written notice given to the assessment manager, suspend the applicants appeal period.
- (2) The applicant may act under subsection (1) only once.
- (3) If the written representations are not made within 20 business days after the day written notice was given to the assessment manager, the balance of the applicants appeal period restarts.
- (4) If the written representations are made within 20 business days after the day written notice was given to the assessment manager –
- (a) if the applicant gives the assessment manager a notice withdrawing the notice under subsection (1) – the balance of the applicants appeal period restarts the day after the assessment manager receives the notice of withdrawal; or
 - (b) if the assessment manager gives the applicant a notice under section 3.5.17(5) – the balance of the applicant's appeal period restarts the day after the applicant receives the notice; or
 - (c) if the assessment manager gives the applicant a negotiated decision notice – the applicant's appeal period starts again the day after the applicant receives the negotiated decision notice.

Division 8—Appeals to court relating to development applications**Appeals by applicants**

- 4.1.27. (1) An applicant for a development application may appeal to the court against any of the following—
- (a) the refusal, or the refusal in part, of a development application;
 - (b) a matter stated in a development approval, including any condition applying to the development, and the identification of a code under Section 3.1.6;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a period mentioned in 3.5.21;
 - (e) a deemed refusal.
- (2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the “applicant’s appeal period”) after the day the decision notice or negotiated decision notice is given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

Appeals by submitters

- 4.1.28. (1) A submitter for a development application may appeal to the court only against—
- (a) the part of the approval relating to the assessment manager’s decision under section 3.5.14 or 3.5.14A; or
 - (b) for an application processed under section 6.1.28(2)—the part of the approval about the aspects of the development that would have required public notification under the repealed Act.
- (2) To the extent an appeal may be made under subsection (1), the appeal may be against 1 or more of the following—
- (a) the giving of development approval;
 - (b) any provision of the approval including —
 - (i) a condition of, or lack of condition for, the approval; or
 - (ii) the length of a period mentioned in section 3.5.21 for the approval.
- (3) However, a submitter may not appeal if the submitter—
- (a) withdraws the submission before the application is decided; or
 - (b) has given the assessment manager a notice under section 3.5.19(1)(b)(ii)
- (4) The appeal must be started within 20 business days (the *submitter’s appeal period*) after the decision notice or negotiated decision notice is given to the submitter.

Appeals for matters arising after approval given (co-respondents)

- 4.1.30. (1) For a development approval given for a development application, a person to whom any of the following notices have been given may appeal to the court against the decision in the notice—
- (a) a notice giving a decision on a request for an extension of a period mentioned in section 3.5.21;
 - (b) a notice giving a decision on a request to make a minor change to an approval
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.
- (3) Subsection (1)(a) does not apply if the approval resulted from a development application (superseded planning scheme) that was assessed as if it were an application made under a superseded planning scheme.
- (4) Also, a person who has made a request mentioned in subsection (1) may appeal to the court against a deemed refusal of the request.
- (5) An appeal under subsection (4) may be started at any time after the last day the decision on the matter should have been made.

Appeals for matters arising after approval given (no co-respondents)

- 4.1.31. (1) A person to whom any of the following notices have been given may appeal to the court against the decision in the notice—
- (a) a notice giving a decision on a request to change or cancel a condition of a development approval;
 - (b) a notice under section 3.5.33A(9)(b) or 6.1.44 giving a decision to change or cancel a condition of a development approval.
- (2) The appeal must be started within 20 business days after the day the notice of the decision is given to the person.
- (3) Also, a person who has made a request mentioned in subsection (1)(a) may appeal to the court against a deemed refusal of the request.
- (4) An appeal under subsection (3) may be started at any time after the last day the decision on the matter should have been made.

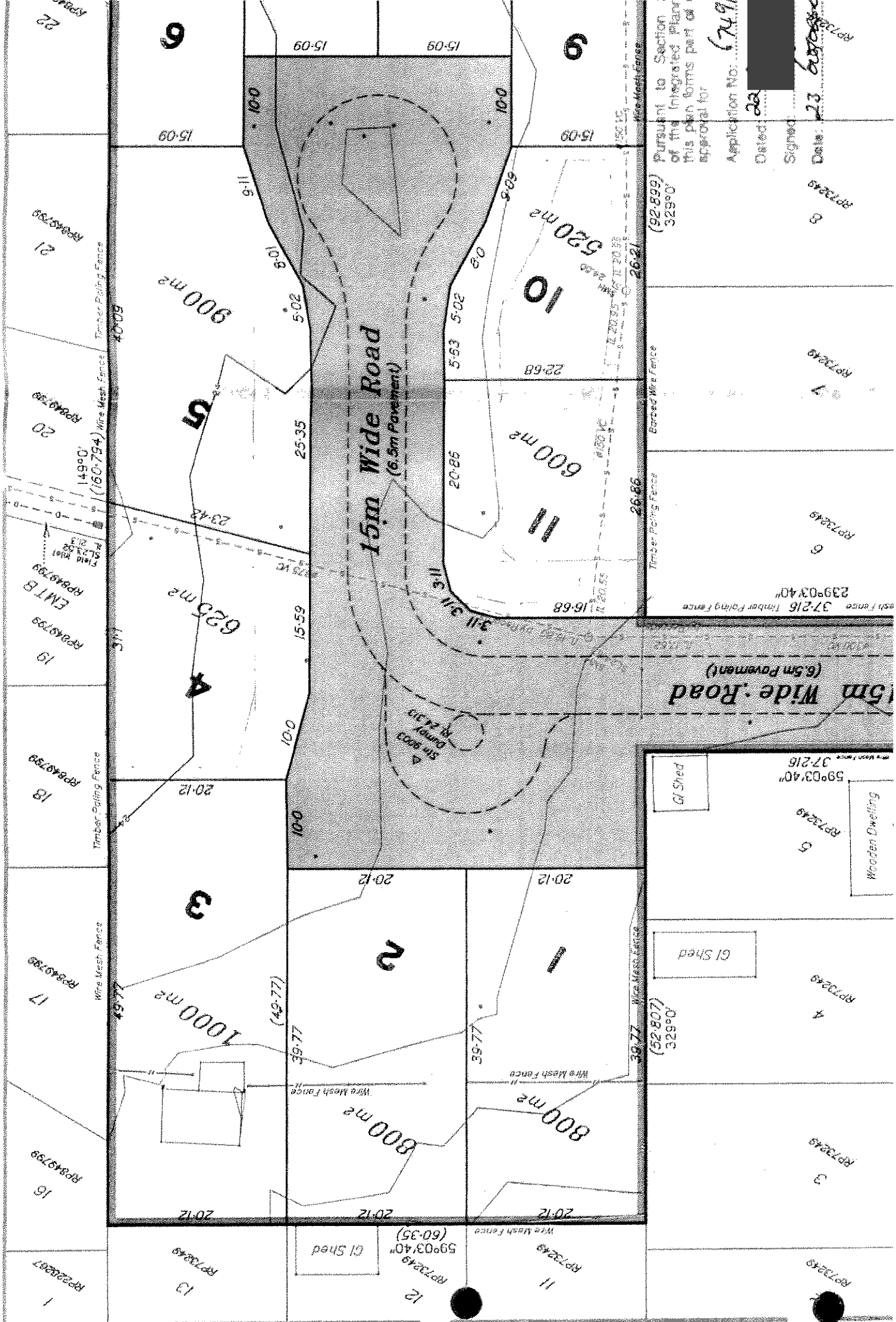
Appeals on matters relating to the Building Act 1975 the following also applies: -

Jurisdiction of tribunals

- 4.2.7. (1) A tribunal has jurisdiction to decide any matter that under this or another Act may be appealed to it.
- (2) However, an appeal to a tribunal under this Act may only be about—
- (a) a matter under this Act that relates to the *Building Act 1975* (other than a matter under that Act that may or must be decided by the Building Services Authority) or the *Plumbing and Drainage Act 2002*; or
 - (b) a matter prescribed under a regulation.

Appeals by applicants

- 4.2.9. (1) An applicant for a development application may appeal to a tribunal against any of the following—
- (a) the refusal, or the refusal in part, of a development application;
 - (b) a matter stated in a development approval, including any condition applying to the development, but not including the identification of a code under section 3.1.6;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a period mentioned in section 3.5.21;
 - (e) a deemed refusal.
- (2) An appeal under subsection (1)(a) to (d) must be started within 20 business days (the “**applicant’s appeal period**”) after the day the decision notice or negotiated decision notice is given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.



Pursuant to Section
of the Integrated Planning
this plan forms part of
approval for

Application No: **674/9**

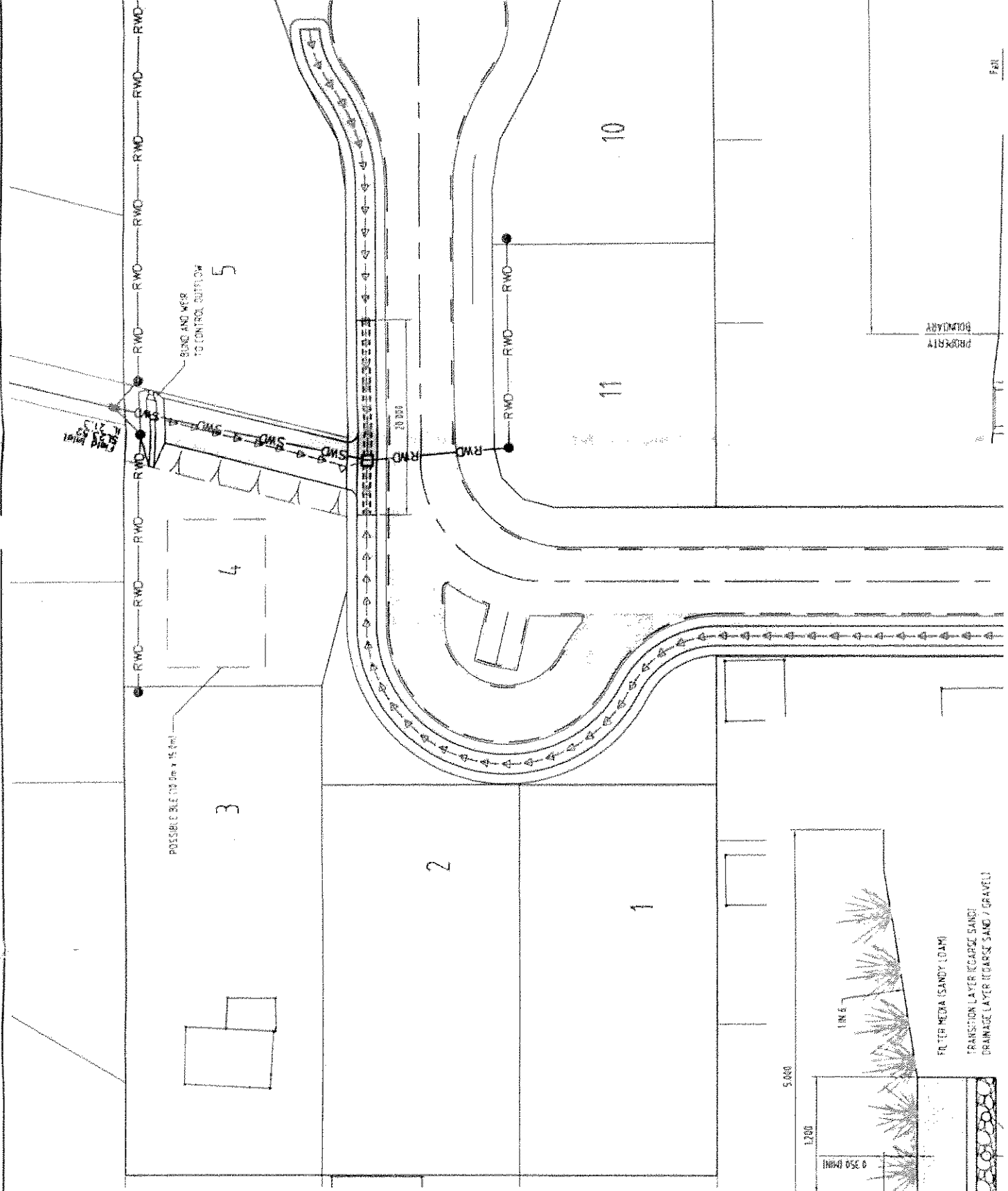
Dated: **23**

Signed: **[Signature]**

Date: **23**

LEGEND

- RWO --- PROPOSED ROOFWATER
- SWD --- PROPOSED STORMWATER
- SWALE DRAIN --- SWALE DRAIN
- BRG-RETENTION SWALE --- BRG-RETENTION SWALE
- CONCRETE WELL --- CONCRETE WELL
- SLOTTED PVC PIPE --- SLOTTED PVC PIPE



PROPERTY BOUNDARY

5000
1200
350 DRN
100
FILTER MEDIA (SANDY LOAM)
TRANSITION LAYER (COARSE SAND)
DRAINAGE LAYER (COARSE SAND / GRAVEL)