Statement of Ashley Simon Horneman

I, Ashley Simon Horneman, Project Manager for the Ferry Terminal Upgrade Program, Brisbane City Council, of 266 George Street, Brisbane, in the State of Queensland, state on oath as follows:

1. Attachment "**ASH-01**" is a copy of a notice from the Commission of the Queensland Floods Commission of Inquiry (**Commission**) dated 2 September 2011 requiring me to provide certain information to the Commission in the form of a Statement by 9 September 2011 (**Notice**). This Statement is provided in response to the Notice.

2. For the purposes of responding to the Notice and preparing this Statement I have, in my position as Project Manager for the Ferry Terminal Upgrade Program of the Brisbane City Council (**Council**), had access to:

   (a) the business records of Council; and

   (b) Council officers,

   to obtain information to provide a response to the Notice. Unless otherwise stated, the matters set out in this Statement is based on my own knowledge and the information derived from the above sources.

3. The documents from the above sources and attached to this Statement have been collated by me and Council officers under my instruction.

4. I set out below my response to each of the questions set out in the Notice.

Qualifications and Background

5. I hold the following qualifications:

   (a) Bachelor of Engineering (Maritime), Australian Maritime College;

   (b) Diploma of Project Management (AIM).

6. I have been qualified as a Maritime Engineer for fifteen years.

7. I initially undertook a secondment with the Council in its Public Transport unit, and I have been employed by Council in my current position as Project Manager, for the Ferry Terminal Upgrade Program for the last two and a half years. Prior to joining Council, I was employed by WorleyParsons as a Senior Maritime Engineer for approximately six years.

[redacted] [redacted]

Ashley Simon Horneman Witness

General Observations

8. To assist the Commission in understanding my specific responses to the questions asked, it maybe useful to set out the following observations.

9. *First*, there are a large number of standards and policies which apply and applied in the design and construction of terminals on the River since the first terminals were constructed. It would be impossible to address all of these in this statement, not least because all such standards have changed over time. I have therefore focused this statement on flood level and load design standards and policies, as I consider that those standards are of most concern to the Commission. If the Commission wishes me to comment on other matters, I will do so.

10. *Second*, flood level standards, where they are included in the design documents referred to in this statement, are expressed as height levels at relevant points in the River for various Defined Flood Events (**DFE**), usually Q10, Q25 and Q100. Flood load levels require a little more explanation. In the design documents referred to in this statement, flood load levels are expressed as velocities. Those velocities are converted into a design load by a formula. The design load then provides the parameter against which the design of the terminal can be undertaken. This is an orthodox manner for expressing and determining design load. When designing to a particular DFE, it is normal for the design engineer to consider adding a factor of safety by referring to design standards. The Guidelines for Design of Marinas provide as guidance for a designer, factors of safety for current loads. As I read them, those guidelines recommend a factor of 1.25 for piles, and 1.5 for pontoons. However, the factor to be adopted is ultimately a matter of professional judgment for the Registered Professional Engineer of Queensland who is responsible for the design. I refer below to a large number of different design specifications for various terminal structures. It is not clear to me what factors have been adopted for those structures.

Response to the Notice

1.	**The standards and policies used in designing and constructing the CityCat and CityFerry terminals prior to the 2010/2011 flood events, including references to any external entities that assess compliance with these standards and policies.**

[redacted]

Ashley Simon Horneman

[redacted]

Witness

Pre-CityCat (Pre-1996)

11. In or about 1996, CityCats were first introduced in Brisbane. These CityCats were owned by both Council and privately. Those CityCats traditionally operated from the following terminals:-

(a) Apollo Road, Bulimba;

(b) Brett's Wharf, Hamilton;

(c) Commercial Road, Teneriffe;

(d) Oxford Street, Bulimba;

(e) Hardcastle Park, Hawthorne;

(f) Merthyr Road, New Farm;

(g) Wynnum Road, Norman Park;

(h) New Farm Park, New Farm;

(i) Park Avenue, Mowbray Park;

(j) Sydney St, New Farm;

(k) Eagle Street/Riverside, Brisbane City;

(l) Holman Street, Kangaroo Point;

(m) Thornton Street, Kangaroo Point;

(n) QUT-Gardens Point, Brisbane City;

(o) Cultural Centre/Southbank, South Brisbane;

(p) Orleigh Park, West End;

(q) University of QLD, St Lucia; and

(r) TJ Doyle Memorial Drive, Dutton Park.

12. The terminals referred to in paragraph 11 above were designed and constructed at various times from the early 1920's until 1996. I do not know whether these structures were designed

[redacted] [redacted]

Ashley Simon Horneman **Witness**

to the relevant Australian Standards of the time, as I am not aware of any records within Council, nor was I able to locate documents that define the standards and policies used for the design and construction of these terminals in the time available to prepare this statement.

13. Australian Standard AS3962 "Guidelines for the Design of Marinas" (**Guidelines**) was first published in 1992 and therefore ferry terminals designed prior to this would not have used this Australian Standard as a basis for design.

14. I understand that, prior to 1992, designs may have used existing structural Australian Standards and the requirements of the Department of Environment and Resource Management (**DERM**) (then the Department of Environment).

15. In 1995/1996, the CityFerry terminals referred to in paragraph 11 above were upgraded to accept CityCat vessels. I have located the plans which would have gone to construction contractor/s who undertook the work. Those plans have a common design basis reflected in the "General Notes" document applicable to each upgrade. The General Notes document is, so far as I can see, the same for each upgrade. Attachment "**ASH-02**" is a copy of a typical General Notes page used by Council for the upgrade program. The General Notes do not contain flood levels. They do contain a flood velocity applied to all sites (see paragraph 10 above). The flood velocity adopted is 2.5m/s as appears at item D2 under the heading Design Data. The General Notes do not indicate the DFE to which the flood velocity applies. I would normally assume that it is based on a Q100 event because that was, and is, a common standard for ferry terminal design in the River. However, I note that the design velocity for the new terminals referred to in the next paragraph is 3 m/s which is almost certainly a Q100 level velocity. Accordingly, I am uncertain as to the basis for the calculation of the 2.5m/s.

16. In addition to the upgrades referred to in paragraph 11 above, four new purpose built CityCat terminals were built at:-

    (a) a new site at University of QLD;

    (b) Guyatt Park, St Lucia;

    (c) North Quay, Brisbane City; and

    (d) South Bank, South Brisbane.

17. I have located the construction plans for these four terminals. Attachment "**ASH-03** " is a copy of design drawings for these terminals that includes notes on the design standards used.

[redacted] [redacted]

Ashley Simon Horneman **Witness**

The drawings provide for flood design levels specific to each site for Q10 and Q100 (see drawing B30-901). The flood velocity adopted is 3 m/s as appears at item D2 under the heading Design Data (see drawing B30-902). That flood velocity is almost certainly calculated for a Q100 event.

Post-CityCat (1996 to January 2011)

18. In and around 2001 the following terminals were upgraded:

    (a) New Farm Park, New Farm;

    (b) Park Avenue, Mowbray Park;

    (c) Sydney St, New Farm; and

    (d) Holman Street, Kangaroo Point.

19. I have located the construction plans for the upgrade of the four terminals. Attachment "**ASH-04**" is a copy of design drawings for these terminals that include notes on the design standards used. The drawings provide for flood design levels specific to each site for Q25 and Q100 (see drawing G-004). The flood velocity adopted is 3 m/s as appears at item D2 under the heading Design Data (also see drawing G-004). The flood velocity is calculated for a Q100 event.

20. In and around 2003 and 2004, the following terminals were upgraded:

    (a) Regatta, Toowong; and

    (b) Riverside, Brisbane City.

21. I have located the construction plans for the upgrade of the Regatta terminal. Attachment "**ASH-05**" is a copy of design drawings for this terminal that include notes on the design standards used. The drawings provide for flood design levels specific to this site of Q25 and Q100 (see drawing RG-S-003). The flood velocity adopted is 3 m/s as appears at item D2 under the heading Design Data (also see drawing RG-S-003). The flood velocity is calculated for a Q100 event. In the time available I was not able to locate any information for the Riverside terminal. I will continue to search for this information and if I am able to locate it, I will provide a copy to the Commission.

22. In and around 2009 and 2010, the following terminals were upgraded:

(a) Orleigh park, West End (constructed post-flood); and

(b) Oxford Street, Bulimba (design only, construction postponed).

23. Attachment "**ASH-06** " is a copy of the Design Basis Report for the West End Ferry Terminal Replacement dated 7 September 2009. The design criteria are set out in section 2 of the report at table 2.1 which provides the design Q100 flood level and the DFE. At West End, the DFE is higher than Q100. The flood velocity adopted is 2.02 m/s. The flood velocity is calculated for a Q100 event. Following the flood event, my colleagues and I became concerned that that flood velocity was an underestimate. Accordingly, Council commissioned design engineers GHD to review the flood velocity and the design. GHD identified an estimated flood velocity of 5 m/s but it turned out that the existing design was sufficient to accommodate loads derived from that velocity. Attachment **"ASH-07"** is a copy of the GHD report.

24. Attachment **"ASH-08"** is a copy of Council's Design Brief for the Bulimba Ferry Terminal Upgrade. The design criteria for this upgrade are set out in section 5 which provides the design requirements for Q100 and associated current velocity on floating structures.

25. Prior to the 2011 flood, Council intended that the following terminals would be upgraded:

(a) Hardcastle Park, Hawthorne;

(b) Bretts Wharf, Hamilton; and

(c) Commercial Road, Teneriffe.

26. The design for the Hawthorne and Hamilton terminals has been completed and construction on the Teneriffe terminal has commenced. Attachment "**ASH-09**" is a copy of the Design Basis Report for the upgrade of all three terminals. Because of the close proximity of the terminals, the Q100 level is the same (see section 4.6, Design Water Levels). The flood velocities have some minor variances (see section 4.6, Design Current), which are for the Q100 flood level.

27. In the time available, I have not been able to locate design documentation for the design standards for the Maritime Museum or the QUT Gardens Point terminals. I will continue to search for this information and if I am able to locate it, I will provide a copy to Clayton Utz for provision to the Commission.

[redacted]

Ashley Simon Horneman **Witness** [redacted]

28. I note that the design standards for terminals that have been subject to upgrades varies from year to year, depending on the development in the relevant design and construction standards at the time.

2.	**The reconstruction works scheduled for the CityCat and CityFerry terminals to repair damage caused by the 2010/2011 flood events.**

29. In addressing this request and the next request, I will explain how Council has responded, and intends to respond, to the impact of the flood event on the terminals.

30. As at the date of the flood event, there were 24 terminals which supported the CityCat and CityFerry services. Following the flood event, of those 24 terminals:

(a) ten terminals were categorised as usable with minor works. In general terms this meant that the terminals could be reinstated for use within a short time frame. The kind of work required for this category involved cleaning and replacement of electrical components;

(b) seven terminals were categorised as usable with moderate works. These terminals required repairs to pile brackets, removal of broken balustrades, repairs to roof structures and removal of debris; and

(c) the remaining seven terminals were categorised as requiring major repairs. The terminals in this category suffered extensive damage to and/or destruction of, piles, pontoons, gangways and/or waiting areas.

31. In addition to ferry terminals, there are two ferry mooring sites at Dutton Park and St Lucia which were destroyed and require reinstatement.

32. The terminals in the minor and moderate damage categories were (with one exception) reinstated and recommissioned relatively quickly after the flood event. (The exception was River Plaza, which was, on reflection, treated as a major repair case). Obviously, for those terminals, there were no works scheduled which could in my view be characterised as "reconstruction works" and further, all work has in any event been long completed.

33. Of the eight terminals (including River Plaza) which suffered major damage, Council decided to reinstate them on a temporary basis pending the replacement of those terminals with new terminals constructed to different flood design standards generally reflecting the flood event.

[redacted] [redacted]

Ashley Simon Horneman Witness

Pending the design and construction of these new terminals, the existing major damage terminals were reinstated as temporary terminals. The seven so reinstated were:-

(a) University of Queensland;

(b) Regatta;

(c) North Quay;

(d) Queensland University of Technology;

(e) Maritime Museum terminal (formally River Plaza);

(f) Holman Street; and

(g) Sydney Street.

34. The exception in the major damage category is the terminal located at West End, which was already planned as a permanent upgrade prior to the flood event and was completed on 30 July 2011 as a permanent facility. I refer further to that work in paragraph 23.

35. Given the matters in the previous two paragraphs, once again I observe that there now remain no works scheduled to repair damage to terminals which suffered major damage because all of that work is also completed.

36. Notwithstanding that, however, there is presently on foot a process directed to the permanent replacement of the seven terminals which suffered major damage with new terminals built to flood design criteria based on the flood event and more advanced three dimensional modelling. The construction of these new terminals could not properly be characterised as repairing damage caused by the flood but they are works being carried out in response to the flood event and, presumably, are of interest to the Commission.

37. On 1 May 2011, the Queensland State Government announced an International Design Competition for architectural consultants to provide Concept Designs for permanent structures to replace the seven interim ferry terminals and two mooring structures.

38. On 29 July 2011, the winner of this competition was announced. Since this announcement Council has commenced the reconstruction project. In summary, the reconstruction includes the following distinct phases:-

(a) Planning and data gathering;

[redacted] [redacted]

Ashley Simon Horneman **Witness**

(b) Concept Design competition;

(c) Detailed Design;

(d) Town Planning Approvals; and

(e) Construction.

39. That project has reached the stage where Council is procuring a detailed design consultant. The tender is to be advertised in the Australian Newspaper on 10 September 2011.

3.	**Whether the reconstruction works for the CityCat and CityFerry terminals adopt different building and design requirements compared to the building and design requirements used for the damaged terminals prior to the 2010/2011 flood events or whether the terminals will be replaced 'like for like'.**

40. All the terminals which have been reinstated, whether suffering minor, moderate or major damage, have been reinstated to their former design. Accordingly, their flood design standards, along with all other design aspects, are substantively the same as they were prior to the flood event.

41. However, that is not the end of the matter. As I have observed above, seven of the eight terminals which suffered major damage are to be replaced.

42. The replacement terminals will be a very different design to that constructed in the past. The new designs will incorporate a deflection structure at the upstream end of the pontoon and the pontoon itself will be streamlined to reduce drag forces. The new designs will also incorporate a retractable gangway that is removed from the path of the flood flow. Attachment "**ASH-10**" is a copy of the successful concept design for the new terminals provided by a group led by Cox Rayner architects.

43. The replacement terminals will be built to flood design standards derived from Council's improved (three dimensional) modelling of the January 2011 flood event. I refer to the tender for detailed design of the new terminals. Attachment "**ASH-11**" is a copy of Council's Ferry Terminal Design Specification which will be provided to tenderers.

44. It is my expectation that flood design levels derived from the flood event will be superior to the flood design standards which have been previously adopted in the design of the existing terminals. Also important is that the design standards will deal specifically with debris

loading. Since the flood event, Council has undertaken design reviews of the terminal designs for new terminals which were planned prior to the flood event (see paragraph 23). For the West End and Teneriffe terminal designs, those reviews considered the adequacy of the existing design standards for debris loading for a 15 tonne floating pontoon impact and 2 tonne log impact on the pontoon and/or gangway. It is likely Council will adopt a similar approach to debris loading for the reconstructed terminals and moorings

45. The precise design standards for the new terminals will be determined in consultation with the successful tenderer. It is for that reason that the tender document does not specify such levels in any detail. Council has not yet finally fixed the particular design standards. I would not expect, however, that Council would be dictating the safety factor to be included in any design. That would be a matter for the judgment of the design engineer.

46. Finally, new terminals have been or are being constructed which were the result of planned work prior to the flood event. These works do not fall within the scope of the Requests. I can provide further details in respect of these if the Commission seeks that assistance.

I make this statement conscientiously believing the same to be true, and by virtue of the provisions of the Oaths Act 1987 (Qld).

[redacted]

Ashley Simon Horneman

[redacted]

Witness

Dated 9 September 2011

Signed and declared by Ashley Simon Horneman
at Brisbane in the State of Queensland
this 9th day of September 2011
Before me:

[redacted]

Signature of person before whom the declaration is made

[redacted]

Signature of declarant

Kathryn Joy Tuck, Solicitor.

Full name and qualification of person before whom the declaration is made