

All new construction and substantial improvements of basements below the 100 year ARI flood level (and/or Brisbane River Defined Flood level) together with stormwater and sanitary facilities are designed to ensure the structure is suitably waterproofed with walls and floors substantially impermeable to the passage of water;

- (i) All ventilation openings, driveway entry/exit ramps and pedestrian entrances into the basement are situate above the Defined Flood Level (DFL) for Brisbane River and 100 year ARI flood levels for all other flooding sources (creek, storm surge or overland flow flooding) in accordance with the Subdivision and Development Guidelines flood immunity requirements.
- (ii) Ensure all air conditioning services such as compressors and controls are located above the Defined Flood Level (DFL) for Brisbane River and 100 year ARI flood levels for all other flooding sources (creek, storm surge or overland flow flooding), or alternatively protect the services to ensure they are fully waterproofed.
- (iii) No essential electrical services (e.g. electrical switchboards or lift controls) are to be located within the basement unless situated above the DFL or 100 year ARI flood level.
- (iv) All stormwater connections are to be fully sealed ensuring no possibility of backflow into basements.
- (v) Vehicle access into a basement from a Council road will require the basement driveway to ramp up a minimum of 200mm above the adjacent road channel invert to maintain road major flow capacity and minimise/manage ingress of sheet flow entering the basement.
- (vi) Where the lowest part of a basement is below highest astronomical tide (HAT) or subject to saline groundwater conditions, an RPEQ is to certify that the design of concrete structures and construction techniques are suitable to withstand corrosive effects of salt water and provide serviceability in accordance with relevant Australian Standards.
- (vii) The basement structure and subsoil drainage/flow management must be certified by a RPEQ to manage sub-surface water flows associated with peak flood levels, tides and ground water inflows. *Note: drainage designs must design for peak flow rates in subsoil drainage expected during flood events and also account for drowned pump discharge points that may adversely impact on its capacity to dewater the sump.*
- (viii) Where a watertight "fully tanked" basement is required, the structure is suitably designed by a RPEQ to resist hydrostatic pressures and buoyancy forces as a result of peak flood levels.
- (ix) All basement drainage sumps are to provide a dual pump system that is connected to a backup power supply located above the relevant DFL or 100 year ARI flood level (not within the basement). The backup power supply and fuel capacity must be sufficient to run both pumps for a period of no less than 48 hours.
- (x) All sewer connections are to include non-return valves and designed to gravity drain to any Council system.
- (xi) The driveway aisle into a basement is to be designed and constructed to prevent ingress of driveway runoff and sheet flow entering the basement. The drainage is to accommodate 10 year ARI events and gravity feed to a lawful point of discharge.

**QFCI**

Date:

27/09/11

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Exhibit Number:

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- (xii) Unless a fully tanked watertight basement is provided, the basement area is to be used for car parking only. *Storage, toilets, transformers or other services may be at risk with sump/pump systems.*

#### TIMING

Prior to building works commencing, Prior to issue of certificate of classification, Prior to making an application for issue of compliance certificate under Section 401 of the Sustainability Planning Act 2009, Prior to Plan Seal (IPA) whichever comes first.

#### PROOF OF FULFILMENT

Where a basement is required to be made watertight below the 100 year ARI flood level, a Registered Professional Engineer of Queensland (RPEQ) shall;

- a) Submit certification to the Private Building Certifier of the stormwater and sewer hydraulic design, specifications, and plans for the construction. Certification must verify that the design and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of the relevant standards and this condition, ensuring the basement is suitably waterproofed with walls and floors substantially impermeable to the passage of water.
- b) Submit certification to the Private Building Certifier to ensure structural integrity of the building from forces resulting from floodwaters and groundwater. Certification must verify that the structural design of the basement and methods of construction are in accordance with accepted standards of practice for meeting the applicable provisions of the relevant standards and this condition.
- c) Submit As Constructed Plans and provide certification to Councils Engineering delegate that the works have been completed in accordance with the approved design, conditions and any approved modifications.