30 May 2013

610 10676 Stormwater & Flooding Response 20130529.docx

CRAWFORD ARCHITECTS
Suite 100,
Jones Bay Wharf, Pirrama Rd
Pyrmont NSW 2009

Attention: Mr John Crawford

Dear John

Sydney Heritage Fleet Maritime Facility
Response to Further Correspondence

Please find herewith our response to Evans & Peck's letter dated 15 May 2013 on stormwater, flooding and climate change issues regarding the Sydney Heritage Fleet (SHF) maritime facility development. The said correspondence from Evans & Peck (E&P) embellishes on the issues raised in their earlier letter dated 17 April 2013 and includes design philosophies and recommendations for the design of the SHF development.

Flooding and Freeboard

E&P's letter provides substantial background information on the current state of sea level rise predictions, uncertainties and adaption approaches for Blackwattle Bay. We agree with E&P statement that there are uncertainties in accounting for climate induced sea level rise on the proposed facility.

SLR acknowledges and agrees with E&P's statement at the bottom of Page 4, that addressing sea level rise impacts on the proposed development requires a balance against increased cost at construction.

In response to E&P's statement on page 6, paragraph 2, SLR consulting and Crawford Architects understand the inherent impacts of ocean based flooding on the proposed facility and accordingly, as we outlined in our previous response, propose that the facility will mitigate/accommodate sea level rise impacts by:

- Adopting the ground floor as a workshop (rather than a commercial or residential dwelling) and using robust materials and finishes which will minimise flood damage and social impacts associated with inundation.
- Locating power supply points above the projected 100% AEP 2050 water level in the Harbour.
- Adopting a 50 year design life for the development, after which redevelopment/upgrading will most likely occur and any updated sea level projections would be addressed at that time.

Further to these commitments, we also propose to investigate raising the proposed ground floor level by an amount to be determined, to extent the flood immunity of the proposed facility.

SLR Consulting Australia Pty Ltd 2 Lincoln Street Lane Cove NSW 2066 Australia
(PO Box 176 Lane Cove NSW 1595 Australia)
T: 61 2 9428 8100 F: 61 2 9427 8200 E: sydney@slrconsulting.com www.slrconsulting.com
ABN 29 001 584 612

We acknowledge that after adopting the approaches outlined above, there is a residual level of risk of inundation under projected sea level rise. Given the nature of the facility, the proposed construction materials and proposed life span of the facility, the financial implications of flood recovery are considered to be acceptable.

Stormwater Flooding and Pedestrian Safety

E&P's letter provides references to the design standards that apply to the design of flood prone lands which includes footpaths around the proposed facility.

We acknowledge that SLR Consulting's flood investigation report (January 2012) was based on local catchment flooding and does not reflect the magnitude of flooding determined by the Blackwattle Bay Catchment Area Flood Study by WMA Water. We also acknowledge that SLR's investigation did not include an assessment of flooding from increased rainfall intensities in the broader catchment, as this was outside of our scope of works.

We acknowledged at the time that further investigations would be required to design pavements and egress paths that provide pedestrian safety during a 100 year Average Recurrence Interval storm event.

As stated in our previous letter response, we commit to resolve overland flooding during the next phase of design. Overland flooding information from the Blackwattle Bay Catchment Area Flood Study will inform the design of footpaths. We confirm that paths will be designed to ensure refuge from any areas that experience overland flow depths and velocities in excess of 200 mm and 1 m/s respectively.

We acknowledge and agree with E&P's recommendation at the bottom of page 7 that this should be done in consultation with the City of Sydney during detailed design.

Water Conservation

We acknowledge and agree with E&P's recommendation on page 8 that proposed stormwater harvesting tanks will be located to prevent damage from flood waters and ingress of sea water.

Stormwater Quality Management

SLR's WSUD report provides the stormwater pollution benefit provided by the proposed facility that will incorporate a green roof and rainwater tanks. We acknowledge that stormwater pollutant loads from the proposed development were shown to exceed the City of Sydney's mandatory stormwater pollution reduction targets for nitrogen, phosphorous and suspended solids.

These shortcomings in the stormwater quality management strategy will be addressed by providing street trees or vegetated biofiltration rain gardens at a rate of 2% for all hard paved areas. The locations of these WSUD elements, or equivalent stormwater controls, will be sized and located during the next phase of design. As stated in our previous letter response, bioretention street trees will be incorporated into the footpath to filter road runoff and deliver pollutant reduction.

Despite E&P's claim on page 9 of their letter that the proposed nitrogen and phosphorous reduction assessment is "not relevant", the City of Sydney has set mandatory pollution reduction targets in their Stormwater DCP and SLR commits to achieving the prescribed targets at the proposed facility.

E&P considers on page 9 that the proposed facility operations including metal fabrication, flammable goods stores and coal stockpiles have the potential to generate stormwater pollutants. We acknowledge the potential for these practices to generate pollutants. SLR acknowledges that a gross pollutant trap capable of intercepting sediment, metals and hydrocarbons is a suitable stormwater improvement device, but this would be a secondary to spills management and good housekeeping in uncovered areas including the forecourt and vessel maintenance areas.

We trust this provides you with the information you require.

Please do not hesitate to contact me directly on 0448 089 136 if you have any further questions regarding stormwater management or flooding.

Yours sincerely

SLR Consulting Australia Pty Ltd

PETER GILLAM
Associate – Land and Water