05/ 09 / 2019 181375 CAAA

TKD Architects

Darlinghurst Masterplan

Flood Advice

The following advice is regarding flood planning levels for the SCEGGS Darlinghurst Masterplan. It is based on flood modelling from the City of Sydney's approved flood model and the City of Sydney Interim Floodplain Management Policy.

The Interim Floodplain Management Policy outlines the flooding requirements for the City of Sydney. Flood Planning Levels of a development depend on the type of development and usage. The Flood Planning Levels that apply to the proposed development are outlined in Table 1.

Table 1: Flood Planning Level Requirements

Development	Flood Planning Level
Schools and Childcare Facilities	Merits approach presented by the applicant with a minimum of the 1% AEP flood level + 0.5m
Below Ground Carpark	1% AEP flood level + 0.5m or the PMF (whichever is the higher)

The extent of the proposed site is too large for a single Flood Planning Level to be relevant to all buildings. The Flood Planning Levels for the 4 primary components of development have been assessed separately.

Table 2: Flood Planning Levels

Location on site	Flood Planning Level
Wilkinson House	RL34.00m AHD
Proposed Basement Carpark	RL 28.95m AHD
Multi-Purpose Building Forbes Street	RL 41.70m AHD
Administration Building	RL 41.300m AHD

The City of Sydney Council have commissioned a TUFLOW model for the Woolloomooloo catchment. TTW purchased this model from Council and have used the results because they are more accurate than the flood maps provided on the Council website. Figure 1 shows the extent of the 1% AEP flood around the proposed site.

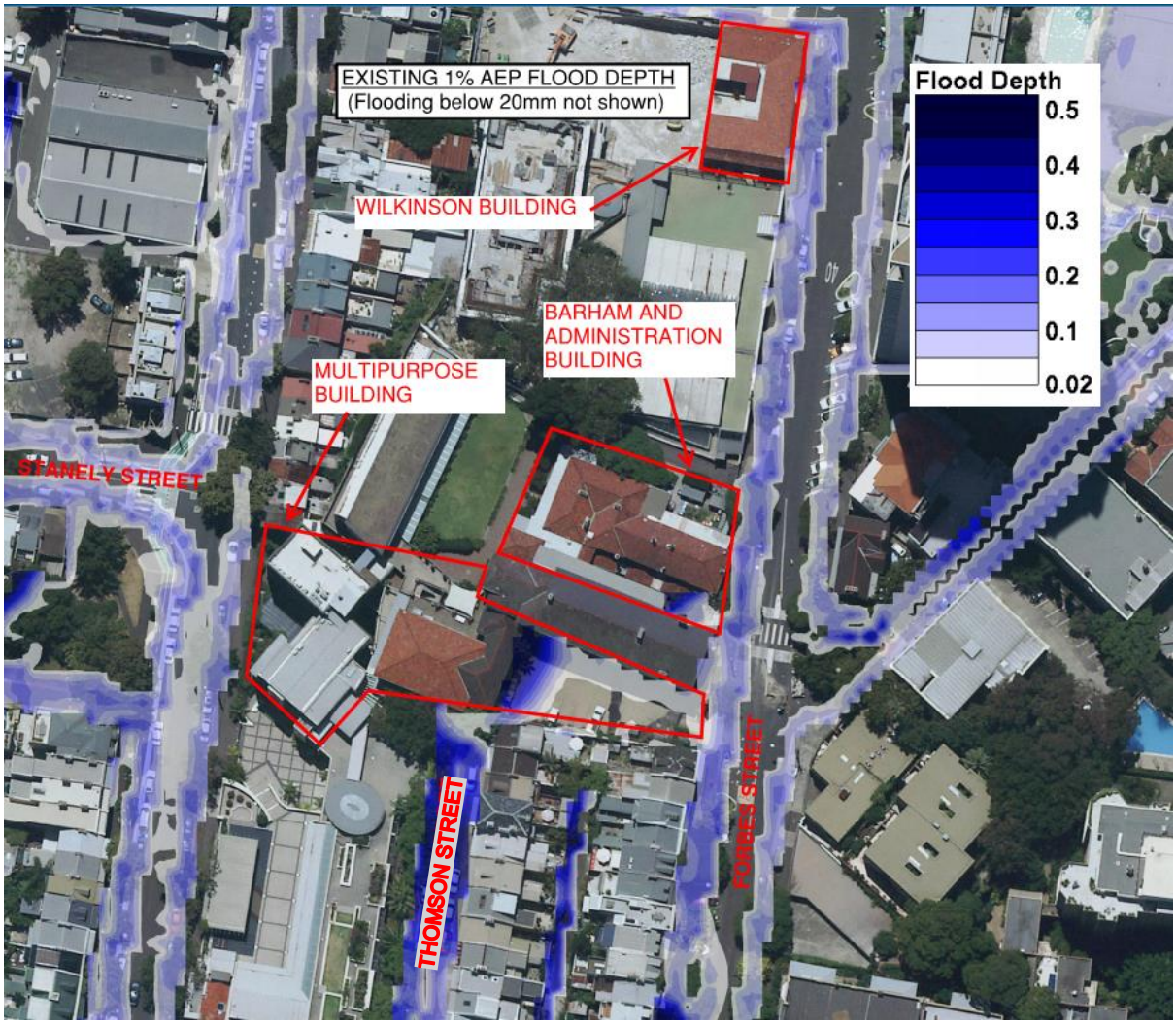

Figure 1: 1% AEP Flood Extent

The 1% AEP Flood Level at the Wilkinson House is 33.50m (all levels to AHD) at its highest point. Summing the required 0.5m freeboard to the 1% Flood Level gives a Flood Planning Level of RL 34.00m. The ground floor level of the existing Wilkinson Building is RL 33.36m and the new Wilkinson building is proposed to have a ground floor level of RL 33.50m. Entrances and openings to the Wilkinson Building will be above the Flood Planning Level of RL 34.00m. All materials below the 1% Flood Level will be flood compatible and the structures will be designed to withstand the forces of floodwater.

The Multi-Purpose Building includes an underground car park on Bourke Street and the Flood Planning Level is governed by the greater of the 1% Flood Level plus 0.5m or the PMF. Council's Flood Model shows the PMF level adjacent to the proposed carpark entry to be RL 28.50m. The 1% Flood Level at the proposed carpark entry is 28.45m on the southern side and 28.20m on the northern side, the FPL is 28.95m and 28.70m respectively. A driveway crest will be provided at RL 28.96m to protect the underground car park from flooding.
The eastern end of the Multi-Purpose building backs onto Forbes Street. The 1% AEP flood level here is RL41.20m and the Flood Planning Level is RL41.70m. The floor level of the Multi-Purpose building adjacent to Forbes Street is RL42.3m and the building is protected.

The Administration building is adjacent to Forbes Street and the 1% AEP flood level is RL 40.80m. The Flood Planning Level for the administration building is RL 41.30m. This is above the current existing ground floor level of RL40.55m. Entrances to the Administration building will protected and material below the 1% Flood Level will be flood compatible

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The TUFLOW model shows ponding at the Forbes Street carpark in the location of the proposed Stage 2 development (Multi-Purpose building). Some overland flow is expected to come from Forbes Street and towards Thomson Street. The development will block this flow and affect the flood conditions for both Forbes Street and Thomson Street. Council's Interim Floodplain Management Policy states that the filling of flood prone land requires a flood assessment to show that the change in levels will not increase the flood affection elsewhere.

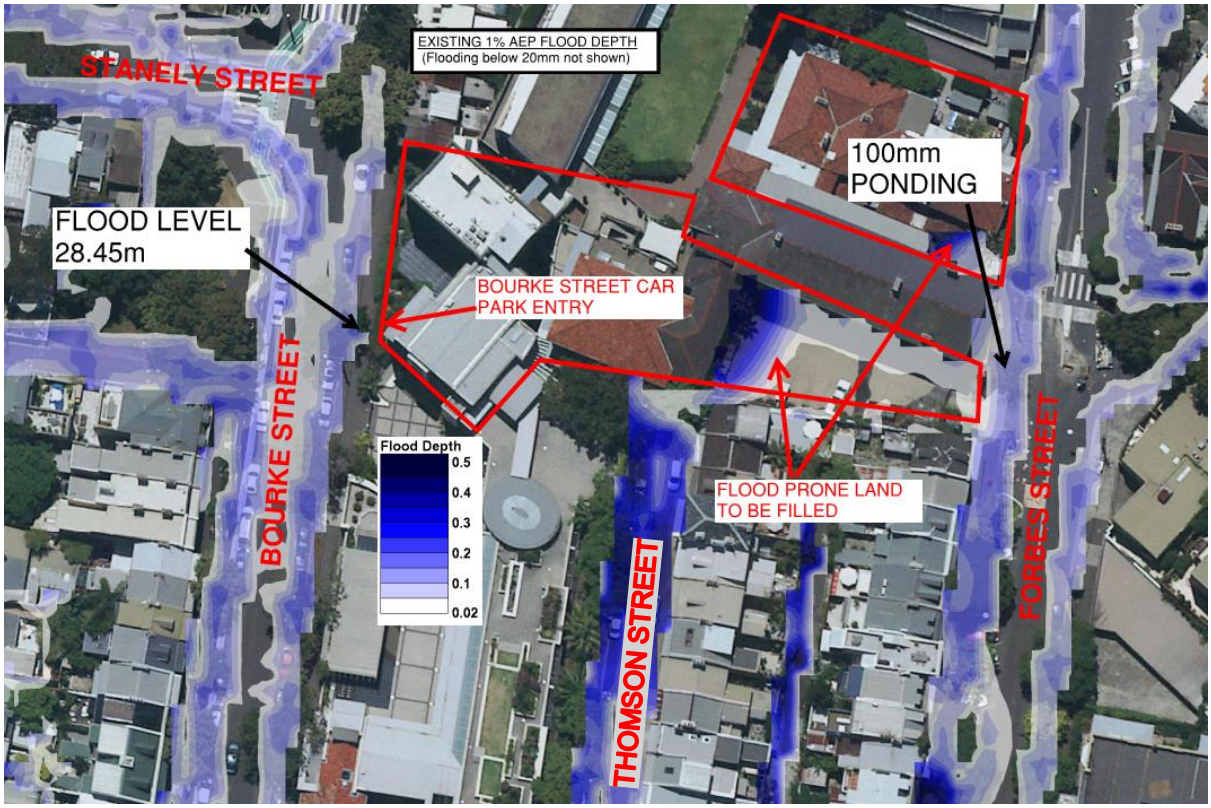

Figure 2: 1% AEP existing development

Council's TUFLOW model was amended by blocking the flow path along the site boundary on Forbes street. This increases the flood levels immediately downstream on Forbes Street. Flood levels are raised up to 50mm in the 1% AEP flood. The worsening flood conditions only occur adjacent to the SCEGGS property and does not negatively impact other properties. The block also decreases the flood level of Thomson Street because flood waters from Forbes Street do not contribute to the ponding. Figure 3 shows the 1% flood with the proposed development blocked out of the flood model.

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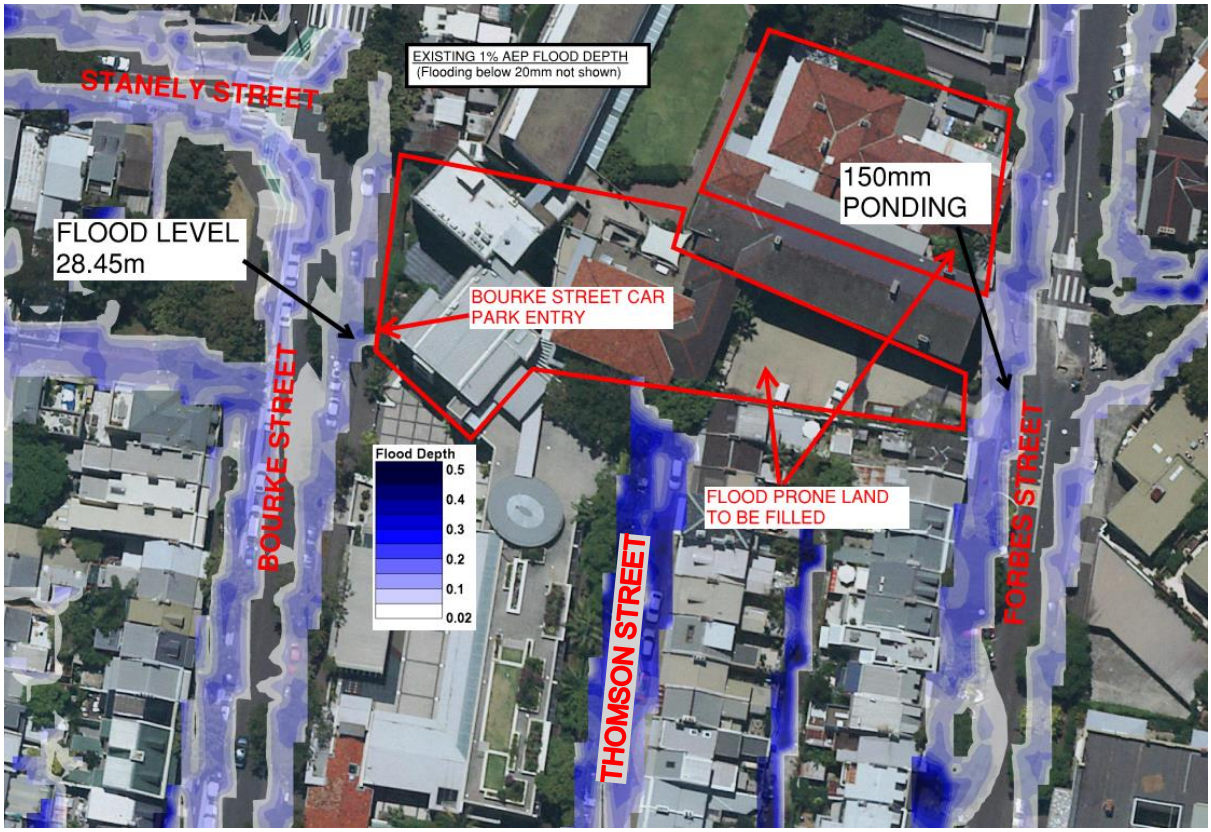

Figure 3: 1% AEP Flood with proposed development blocked out

Thomson Street is a low point and floodwaters will pond here and may spill over the retaining wall and into the SCEGGS property. If the floodwaters spill over the retaining wall, an overland flow path exists through the SCEGGS property towards Bourke Street as shown in Figure 4.

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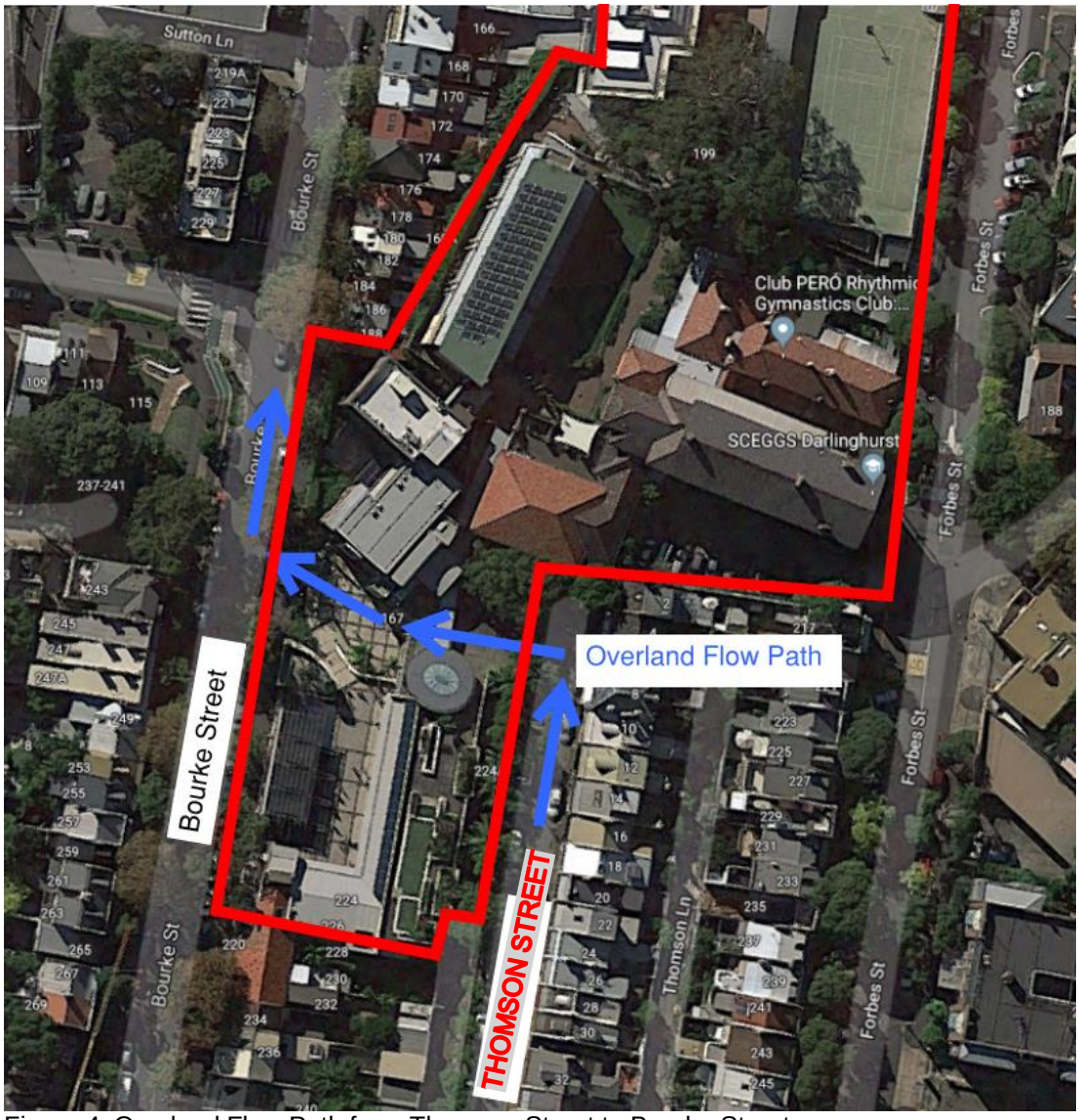

Figure 4: Overland Flow Path from Thomson Street to Bourke Street.

Should you require anything further please contact the undersigned.

Yours faithfully,
TAYLOR THOMSON WHITTING (NSW) PTY LTD
in its capacity as trustee for the
TAYLOR THOMSON WHITTING NSW TRUST

Duncan Upton
Civil Engineer

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