

Our Job Number: 230203

20 July 2023

Attn: Laxland 3 Pty Ltd

c/- Walsh Architects: Scott Walsh scott@walsharchitects.com.au

STORMWATER CONCEPT DESIGN STATEMENT

RE: STORMWATER MANAGEMENT PLANS FOR A PROPOSED NEW SEPP SENIORS SCHEME DEVELOPMENT WITH BASEMENT CARPARK AT 52-54 BRIGHTON STREET, FRESHWATER NSW

Please find attached the stormwater management concept plans in support of the pre-lodgement meeting for 52-54 Brighton Street, Freshwater.

At the request of Laxland 3 Pty Ltd, RTS Civil Consulting Engineers Pty Ltd was engaged to prepare a stormwater management plan for the proposed new SEPP Seniors Scheme development with basement carpark at 52-54 Brighton Street, Freshwater. The stormwater management plans are referenced below:

- SW001A - COVER PAGE, NOTES & CALCULATIONS
- SW100A - SITE STORMWATER CATCHMENT PLAN, EASEMENT & FLOOD WALL PLAN
- SW101A - BASEMENT STORMWATER MANAGEMENT PLAN
- SW102A - GROUND STORMWATER MANAGEMENT PLAN
- SW103A - LEVEL 1 & ROOF STORMWATER MANAGEMENT PLAN
- SW200A - STORMWATER DRAINAGE DETAILS SHEET 1 OF 2
- SW201A - STORMWATER DRAINAGE DETAILS SHEET 2 OF 2
- SW300A - STORMWATER EASEMENT PIPELINE LONGITUDINAL SECTION

The designed stormwater management plans (referenced above) are in general accordance with the intent of the Building Code of Australia, Australian Standards AS3500.3 – Stormwater Drainage, the National Construction Code, Australian Rainfall & Runoff, Northern Beaches Council Council's Water Management Policy (2021), and Council's Pre-lodgement Meeting Notes dated 7 June 2023.

Below is a summary of the stormwater requirements and recommendations:

1. The subject site is described as Lot A DP 3843323 & 38 DP 14450, 52-54 Brighton Street, Freshwater. Site levels range from approximately RL 13.0m AHD at the rear to RL 10.6m AHD grading to Brighton Street.
2. The total combined site area is approximately 2,053m² - Lot A being 1,037m² and Lot 38 being 1,016m². The total existing site contains two double storey residences with sheds, a swimming pool and concrete driveways. The site is located to the northern side of Brighton Street, near the junction of Brighton Street and Waratah Street.
3. There currently is an existing 600mm and 675mm diameter reinforced concrete pipe (RCP) Council drainage pipeline through the property frontage. The existing site drainage for the lots is partially connected to Brighton Street below ground drainage pipeline with remaining runoff being directed to Council's kerb and gutter. There is also a 450mm and 675mm diameter reinforced concrete pipe (RCP) Council drainage pipeline fronting the development site.
 - a. It is proposed to relocate the stormwater pipeline. Potential alignments along the eastern and western boundaries were both explored. The eastern alignment option is not recommended due to arborist requirements and excessive relocation works that would

be required to the existing Sydney Water sewer main.

- b. DRAINS modelling of the existing and proposed stormwater pipeline regime has been assessed. As a result, the new pipeline relocation is recommended to be a minimum of 750mm in diameter. Refer to Figure 1.0 of this report demonstrating no overflow for all storms up to and including the 1% AEP storm event. The alignment has been recommended by Council as to be the alignment most likely to be supported.

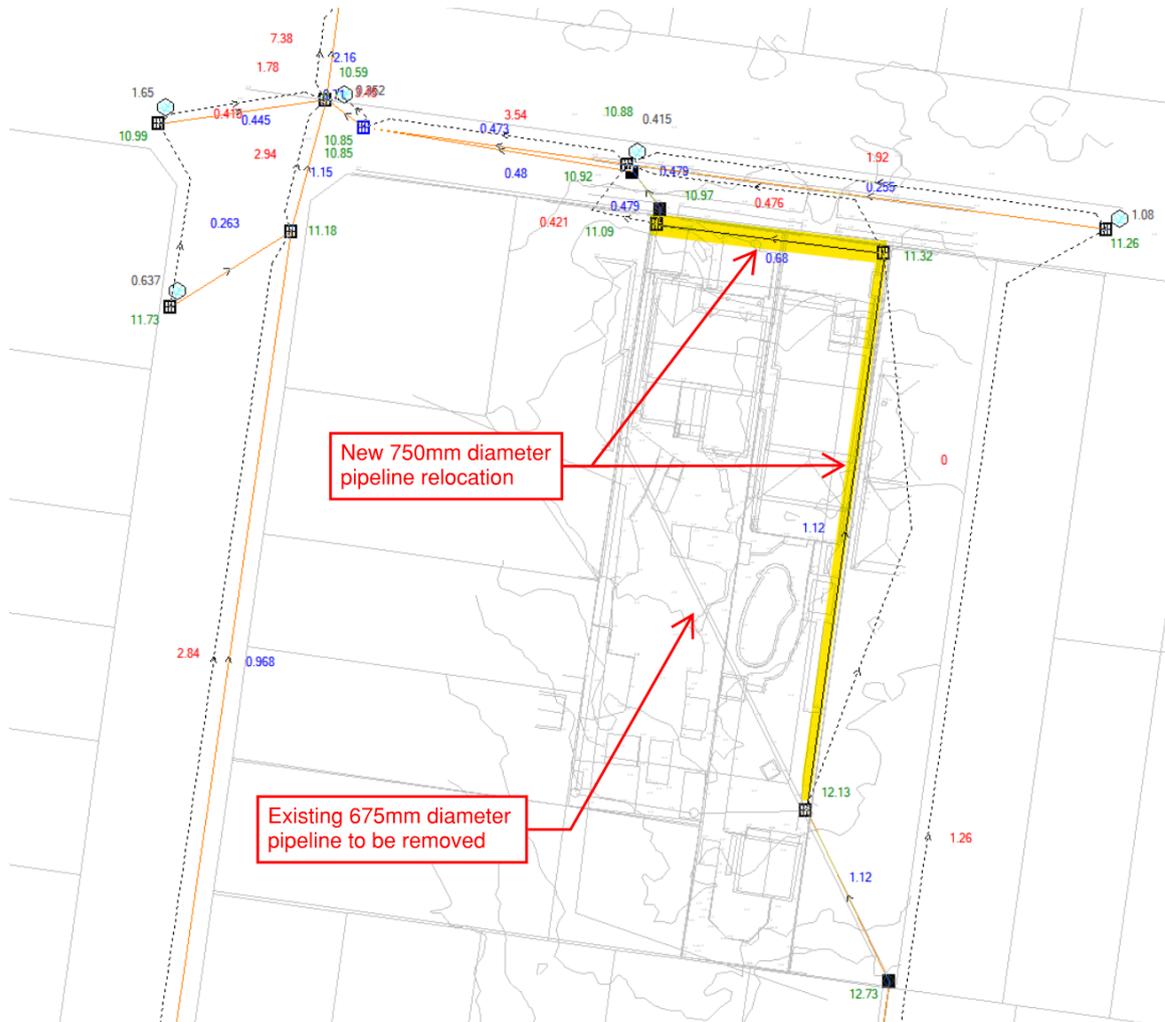


Figure 1.0 – 1% AEP DRAINS Model for Proposed Pipeline Relocation

4. It is proposed to pipe the development flows to the existing 675mm diameter RCP. Connection to the nearest downstream Council pit has been confirmed as acceptable in principle according to Council engineers.
5. The development site is located within a natural overland flow path. As a result, the site is burdened by overland flows. A hydraulic overland flow investigation has been undertaken to assist with development planning requirements. Please refer to the separate report for hydraulic overland flow recommendations.
 - a. As the development site is impacted by overland flows and located in close proximity to downstream flooding, the development should be onsite stormwater detention (OSD) is exempt. This has been confirmed by Council engineers. Please refer to Figure 2.0 of this report.



Figure 2.0 – Council Flood Maps and Predicted Overland Flow Extent

6. Water Sensitive Urban Design (WSUD) is required to ensure the stormwater quality targets are achieved according to Section 2.2.1 of Council’s WSUD & MUSIC Modelling Guidelines.
 - a. The computer program MUSIC was used to model the water quality requirements. Figure 3.0 of this report displays the MUSIC model calculations which indicate the proposed development meets the stormwater pollutant reduction targets required by Council.
 - b. The rainwater tank and Stormwater Quality Improvement Devices (SQID) located within a manhole or small tank and also in two other associated pits will achieve the Council targets on the treatment train.
 - c. The SQID’s proposed to treat the development size, in addition to the rainwater harvesting tank, are 2 x SPEL Stormsacks produced by SPEL or an equivalent approved device located within 2 x 450 x 450 grated pits as well as 2 x SPEL Filter Cartridge produced by SPEL or an equivalent approved device located within a manhole or small tank. This has been confirmed as acceptable in principle according to Council engineers.

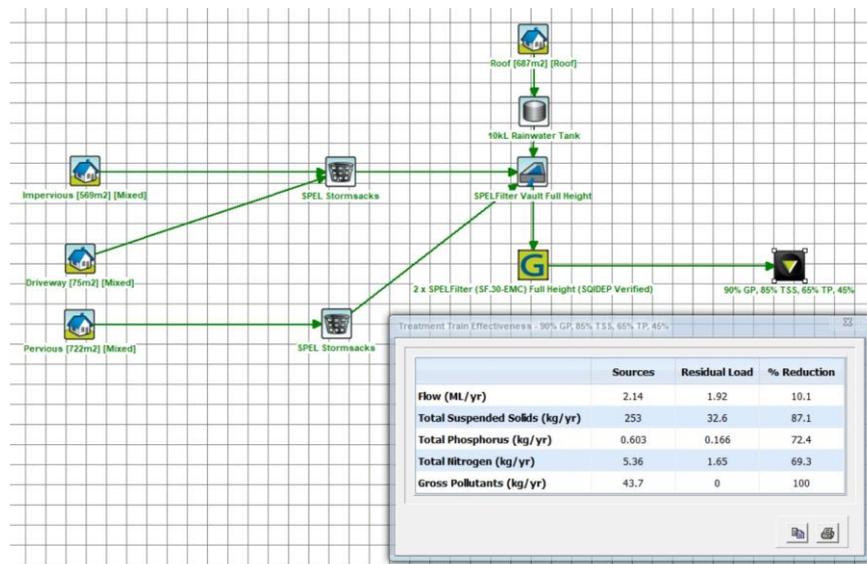


Figure 3.0 - Calculation Summary of the Development MUSIC Model

7. Although there is no Council rainwater harvesting requirement, the development is expected to be required by BASIX to provide a rainwater harvesting system.
 - a. The rainwater tank shall provide for the development to service outdoor irrigation and toilet flushing in accordance with the requirements of the BASIX certificate, Sydney Water and AS3500.3.
 - b. The tanks are to be fully watertight in accordance with HB 230-2008 Rainwater Tank Design and Installation Handbook of Australia.
 - c. The rainwater harvesting system is to overflow into the SQID.
 - d. A 10,000L rainwater harvesting volume has been recommended.
8. A 6,000L minimum volume pump-out tank with 2 x 10 L/s pumps are required to comply based on the following requirements:
 - i. The pump-out system has been designed in accordance with AS3500.3 and Council requirements.
 - ii. The pump-out system is to comprise of two (2) submersible type pumps. The two pumps are to be designed and installed to work on an alternative basis to ensure both pumps receive equal use and neither remains continuously idle.
 - iii. Each pump shall have a minimum capacity of 10L/s or shall be based on the flow rate generated from a 1% AEP 2-hour duration storm event of the area of the basement that is draining into the system, whichever is greater.
 - iv. An alarm warning device (including signage and flashing strobe light) shall be provided for the pump-out system to advise the occupant of pump failure. The location of the signage and flashing strobe light shall be shown on the stormwater management plans.
 - v. The volume of the pump-out tank shall be designed with a minimum storage capacity equivalent to the runoff volume generated from of the area of the ramp that is draining into the tank for a 1% AEP 2-hour duration storm event.
 - vi. Backflow prevention devices and measures shall be provided to the outlet of the pump-out system to minimise or eliminate the risk of backflows into the basement.

We trust that this letter and corresponding documentation meets the requirements set by Northern Beaches Council. Please contact the author if further clarification is required (or if the DRAINS or MUSIC files are required) on 0448 448 960 or via email at rhys@rtscivil.com.au.

Yours sincerely

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