Our Job Number: 240803
6 June 2025

Attn: Rohani UT Holdings Pty Ltd
c/- Walsh Architects: Scott Walsh scott@walsharchitects.com.au

STORMWATER CONCEPT DESIGN STATEMENT

RE: STORMWATER MANAGEMENT PLANS FOR A PROPOSED MULTI-DWELLING HOUSING DEVELOPMENT WITH BASEMENT CARPARK AT 439 CONDAMINE STREET, ALLAMBIE HEIGHTS NSW

At the request of Rohani UT Holdings Pty Ltd, RTS Civil Consulting Engineers Pty Ltd was engaged to prepare a stormwater management plan for the proposed residential multi-dwelling housing with basement carparking at 439 Condamine Street, Allambie Heights. The stormwater management plans are referenced below:

- SW001A - COVERPAGE, NOTES & CALCULATIONS SHEET 1 OF 2
- SW002A - COVERPAGE, NOTES & CALCULATIONS SHEET 2 OF 2
- SE100A - SEDIMENT & EROSION CONTROL PLAN
- SE200A - SEDIMENT & EROSION CONTROL PLAN DETAILS
- SW100A - BASEMENT 1 STORMWATER MANAGEMENT PLAN
- SW101A - STORMWATER MANAGEMENT PLAN
- SW102A - SITE STORMWATER CATCHMENT PLAN
- SW200A - STORMWATER DRAINAGE DETAILS SHEET 1 OF 2
- SW201A - STORMWATER DRAINAGE DETAILS SHEET 2 OF 2

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 discussions with Council engineers.

Below is a summary of the stormwater requirements and recommendations:

1. The subject site is described as DP369828, 439 Condamine Street, Allambie Heights.
    a. The site area is approximately 1,125m^2 and is grading down toward the south-western boundary (toward Condamine Street).
    b. The site contains a single and double storey dwelling with tile and metal roofs, brick garage, concrete driveways, and various paved paths. Fences, retaining walls, and steps are surrounding the site.
    c. Site levels range from approximately RL 6.2m AHD at the front of the property to RL 8.9m AHD at the rear.
    d. The site is accessed via Condamine Street. The existing site appears to discharge stormwater directly Condamine Street.

2. There currently is an existing kerb inlet pit fronting 437 Condamine Street, Allambie Heights. This pit drains to an existing 375mm diameter Rienforced Concrete Pipe (RCP) which connects to a 1050mm diameter RCP Council drainage pipeline draining an upstream catchment. See Figure 1.0 for details.
    a. It is proposed to provide a new 375mm diameter RCP and pit system to the existing downstream pit which maintains the existing development drainage regime.
    b. DRAINS modelling of the existing and proposed stormwater pipeline regime has been assessed. Refer to Figure 2.0.
    c. It is proposed to pipe the development flows to the new 375mm diameter RCP and pit via a water quality system.
3. The development site is located within a natural overland flow path. As a result, the site is partially burdened by overland flows. A hydraulic impact assessment has been undertaken to assist with development planning requirements. Please refer to the separate report for hydraulic impact 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. Please refer to Figure 2.0 of this report.
4. Onsite Stormwater Detention (OSD) is typically required under Appendix 16 of Council's Water Management for Development Policy. However, the proposed development at 439 Condamine Street is located at the downstream end of the local catchment, directly adjacent to a flood-affected area associated with the Manly Lagoon Floodplain.

    In this context, the site does not contribute to upstream flow attenuation, and the introduction of OSD would provide no meaningful flood mitigation benefit. On the contrary, detaining site runoff may worsen peak flood conditions in the adjacent low-lying areas by releasing flows during the critical flood period.
    a. This position is consistent with the principles outlined in the Northern Beaches Council Stormwater Management Policy, which allows OSD requirements to be waived where:
        i. The site is located at the downstream end of a catchment,
        ii. OSD would not provide a net benefit to downstream flood risk,
        iii. Immediate discharge is hydraulically preferable to avoid coinciding with peak flood events, and
        iv. The development site is impacted by overland flows. Please refer to Figure 2.0 of this report. A hydraulic impact assessment has been undertaken to assist with development planning requirements. Please refer to the separate report for hydraulic impact recommendations.
    b. Supporting hydraulic analysis demonstrates that delaying site discharge through OSD would in fact align peak flows with downstream flood peaks contributing to a counterproductive outcome. Refer to Figure 3.0 for a hydrograph comparison with

data from the Manly Lagoon Floodplain Risk Management Study (Figure 7-5), highlighting the misalignment introduced by detention.

5. 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. Figures 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 system and Stormwater Quality Improvement Devices (SQID) located within three 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 tanks (4,800L in total), are either:
        i. 2 x OceanGuard200um (by Ocean Protect) located within grated pits and 1 x Stormfilter (690Psorb cartridge by Ocean Protect) within an 900 x 900 pit with 900 x 900 access grate.

            OR

        ii. Equivalent approved devices.
6. Although there is no Council rainwater harvesting requirement, the development is expected to be required by BASIX to provide a rainwater harvesting system.
    a. A minimum volume of 800L per unit of rainwater harvesting is required according to the BASIX certificate.
    b. The rainwater tank system shall provide for the in accordance with the requirements of the BASIX certificate, Sydney Water and AS3500.3.
    c. The tanks are to be watertight in accordance with HB 230-2008 Rainwater Tank Design and Installation Handbook of Australia.
    d. The rainwater harvesting system is to overflow into the adjacent site drainage system directed to the relevant downstream SQID's.
    e. A total of 4,800L rainwater harvesting volume has been provided.
7. A 7,350L minimum volume pump-out tank with 2 x 10 L/s pumps are required to comply based on the following requirements:
    i. Total seepage inflows during and post-excavation are estimated to be less than 3 L/min however must be confirmed by geotechnical engineer prior to construction approval. Accordingly, basement drainage infrastructure has been designed to accommodate this minor inflow without the need for significant dewatering systems or tanking. A drained basement solution is considered appropriate, subject to confirmation during detailed design and construction phases.
    ii. The pump-out system has been designed in accordance with AS3500.3 and Council requirements.

iii. 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.

iv. 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.

v. 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.

vi. 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 as well as potential basement seepage waters.

vii. 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 design statement and the accompanying stormwater management documentation comprehensively address the site-specific considerations and Council's policy objectives. Given the site's downstream catchment location, proximity to known flood-affected areas, and the demonstrated hydraulic detriment of OSD, we respectfully request that Council formally waive the requirement for OSD in accordance with its Stormwater Management Policy.

Should any further clarification or supporting information be required, including provision of the DRAINS or MUSIC model files, please do not hesitate to contact the undersigned.

Yours sincerely

RTS CIVIL CONSULTING ENGINEERS PTY LTD

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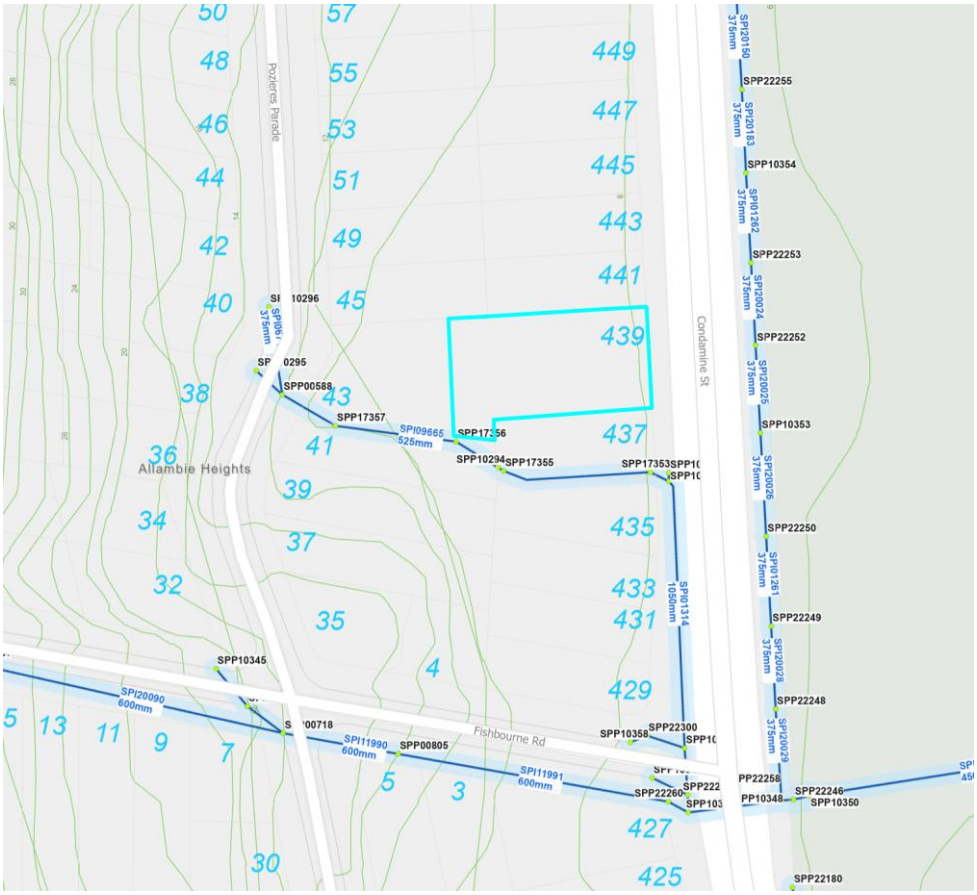


Figure 1.0 – Figure of Adjacent Council Stormwater Assets (Northern Beaches Council Mapping)

Figure 2.0 – Council Flood Maps and Predicted Overland Flow Extent

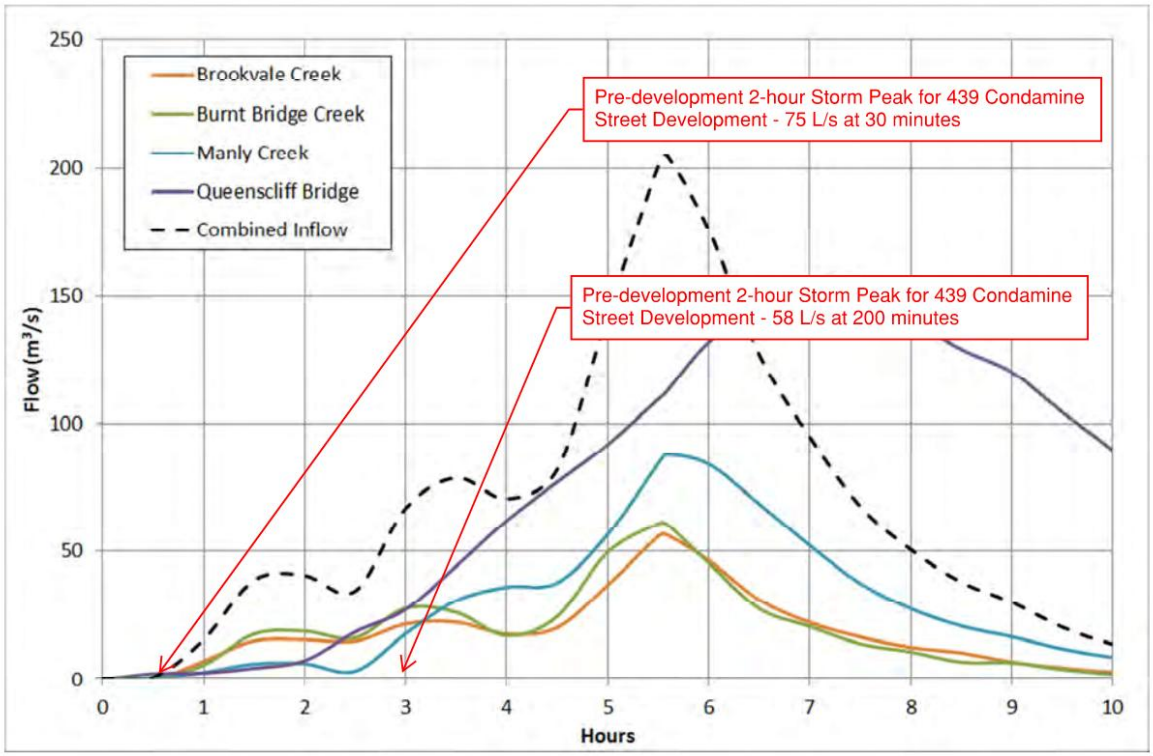
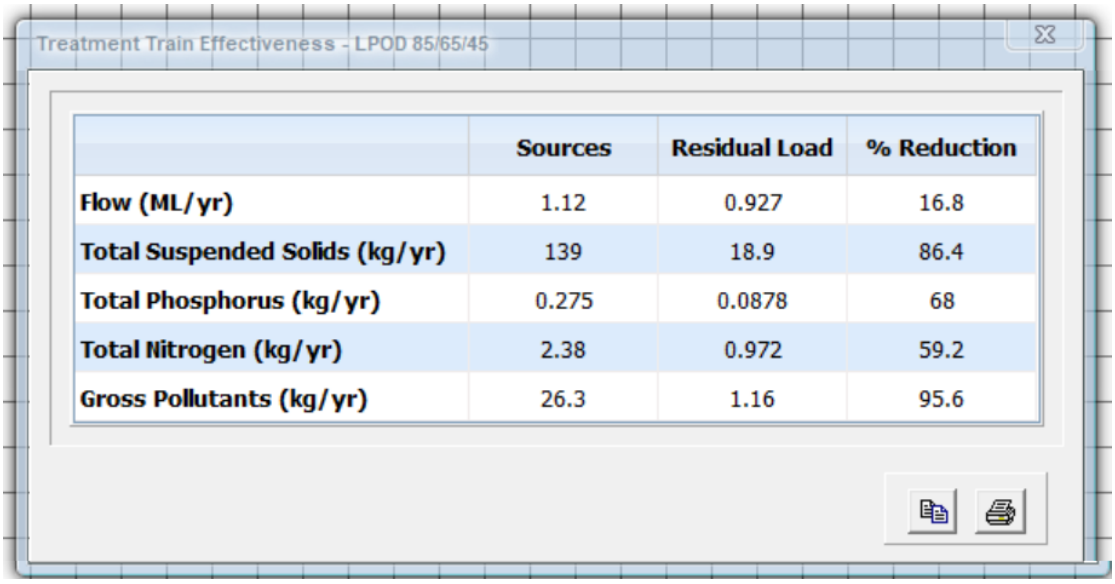


Figure 3.0 – Figure of Hydrograph Comparisons for the Development Site and Corresponding Catchment (Manly Lagoon Floodplain Risk Management Study (Figure 7-5))



	Sources	Residual Load	% Reduction
Flow (ML/yr)	1.12	0.927	16.8
Total Suspended Solids (kg/yr)	139	18.9	86.4
Total Phosphorus (kg/yr)	0.275	0.0878	68
Total Nitrogen (kg/yr)	2.38	0.972	59.2
Gross Pollutants (kg/yr)	26.3	1.16	95.6

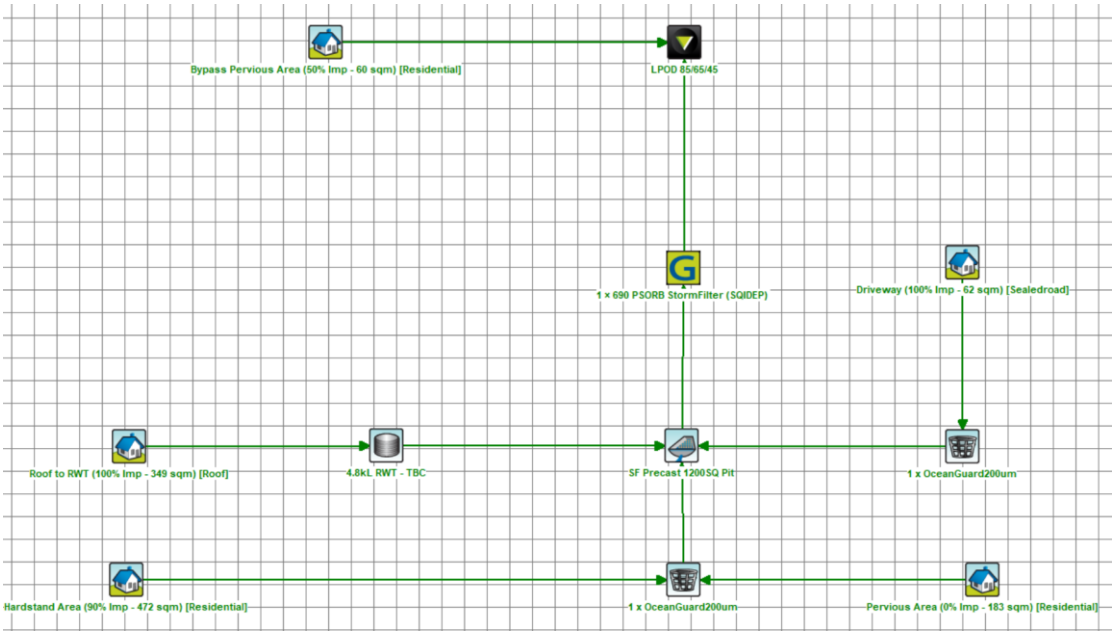


Figure 3.0 - Calculation Summary of the Development MUSIC Model (Ocean Protect)