

Our Job Number: 240501
18 September 2024

Attn: Catalina Twelve Pty Ltd
c/- Walsh Architects: Scott Walsh scott@walsharchitects.com.au

STORMWATER CONCEPT DESIGN STATEMENT

RE: STORMWATER MANAGEMENT PLANS FOR A PROPOSED COMMERCIAL DEVELOPMENT WITH BASEMENT CARPARK AT 2 SYDENHAM ROAD, BROOKVALE NSW

At the request of Catalina Twelve Pty Ltd, RTS Civil Consulting Engineers Pty Ltd was engaged to prepare a stormwater management plan for the proposed new commercial development with basement carpark at 2 Sydenham Road, Brookvale. The stormwater management plans are referenced below:

- SW001A - COVER PAGE, NOTES & CALCULATIONS SHEET 1 OF 2
- SW002A - COVER PAGE, NOTES & CALCULATIONS SHEET 2 OF 2
- SE100A - SEDIMENT & EROSION CONTROL PLAN
- SE200A - SEDIMENT & EROSION CONTROL PLAN DETAILS
- SW100A - BASEMENT 2 & 1 STORMWATER MANAGEMENT PLAN
- SW101A - GROUND FLOOR STORMWATER MANAGEMENT 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 Lot 6 of section 8 in DP1521, 2 Sydenham Road, Brookvale. Site levels range from approximately RL 16.5m AHD fronting Sydenham Road to RL 16.0m AHD grading to Charlton Lane.
2. The site area is approximately 1,012m². The existing site contains a double storey commercial building. The site is located on the corner of Sydenham Road and Charlton Lane.
3. There currently are existing stormwater outlets on Sydenham Road and Charlton Lane discharging stormwater to the kerb and gutter.
 - a. It is proposed to provide 2 x new kerb outlets, one on Sydenham Road and one on Charlton Lane. These outlets will be more than 15m apart and will simply replace existing outlets.
 - b. The main reason for maintaining two outlets is to allow for a more efficient onsite stormwater detention (OSD) system. Refer Point 4 of this letter for further details.
4. Onsite stormwater detention (OSD) is required according to Section 9.3.2 Council's Water Management Policy (2021) for Region 2.

- a. The OSD volume required by Council for the development according to Table 8 of Council's Water Management Policy is 20,6200 L.
 - b. The full computation method has been applied in accordance with Section 9.3.2.5 of Council's Water Management Policy. Therefore, the Permissible Site Discharge (PSD) required by Council for the total development site is to ensure the runoff from the site after development is not to exceed the runoff from the total site prior to the development for all storm durations for the 20% AEP, 5% AEP and a 1% AEP storm event.
 - c. The DRAINS model indicates that a minimum OSD volume of 14,600L is required to achieve Council's PSD rate for the total development. Therefore, it is proposed to provide a minimum of 14,600L to comply with Council's OSD and PSD requirements.
 - d. Figure 1.0 of this report considers a summary of the hydrologic and hydraulic calculations. Calculations indicate that the Council required PSD is achieved for the proposed development. It can be seen from the DRAINS model that the Council required volume exceeds the minimum OSD requirements.
 - e. The OSD is proposed to be contained in a belowground cast insitu concrete tank located below the level 1 slab (above the driveway entrance) located within a common area.
 - f. The OSD outlet pipe is proposed to be directed to the new a grated boundary junction pit. This pit has two outlets, one on Sydenham Road and one on Charlton Lane. This is because the maximum kerb discharge allowed according to Section 9.3.3.2.3 of Council's Water Management Policy is 25 L/s. The PSD is therefore slit into the two outlets. Each outlet will not exceed 19 L/s to ensure the PSD is maintained and maximum kerb discharge is not exceeded.
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. Figure 2.0 of this report displays the MUSIC model calculations which indicate the proposed development meets the stormwater pollutant reduction targets required by Council.
 - b. The Stormwater Quality Improvement Devices (SQID's) located within the OSD tank and associated pits will achieve the Council targets on the treatment train.
 - c. The SQID's proposed to treat the development size are 3 x Oceanguard filtration devices produced by Ocean Protect or an equivalent approved device located within 2 x 450 x 450 grated pits as well as 4 x 690 Stormfilter Cartridge produced by Ocean Protect or an equivalent approved device located within the OSD tank. Refer Figures 3.0 a d 4.0 of this report.
6. There is no Council or BASIX requirement to provide a rainwater harvesting system for this development.
7. 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 10 L/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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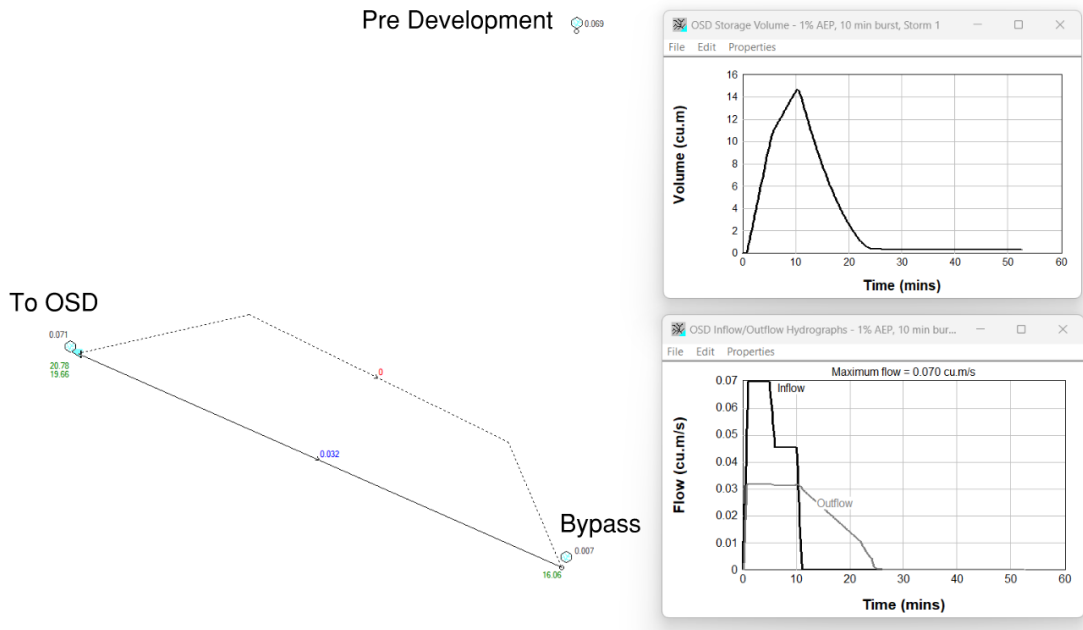


Figure 1.0 - Calculation Summary of the Development DRAINS Model

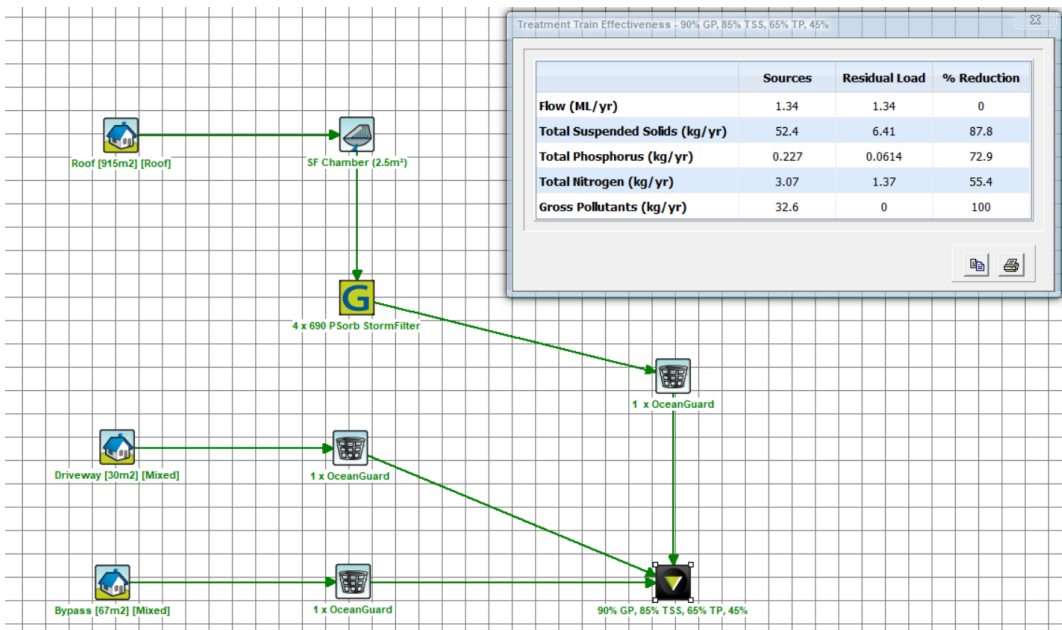


Figure 2.0 - Calculation Summary of the Development MUSIC Model

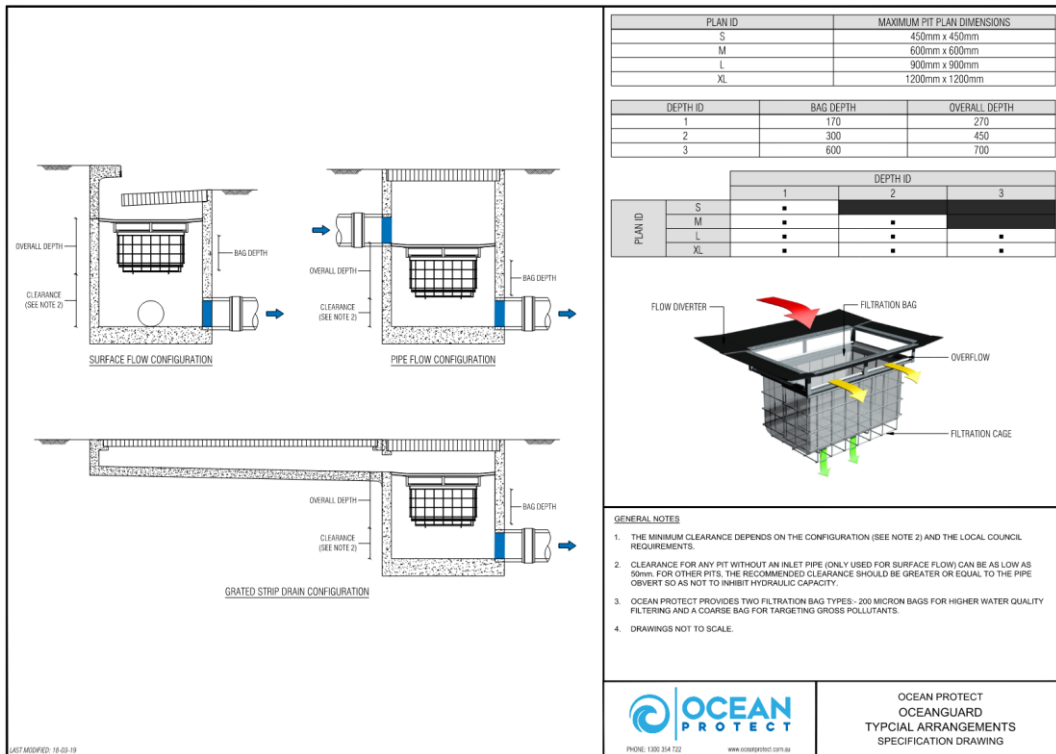


Figure 3.0 - Oceanguard Filtration Device Produced by Ocean Protect

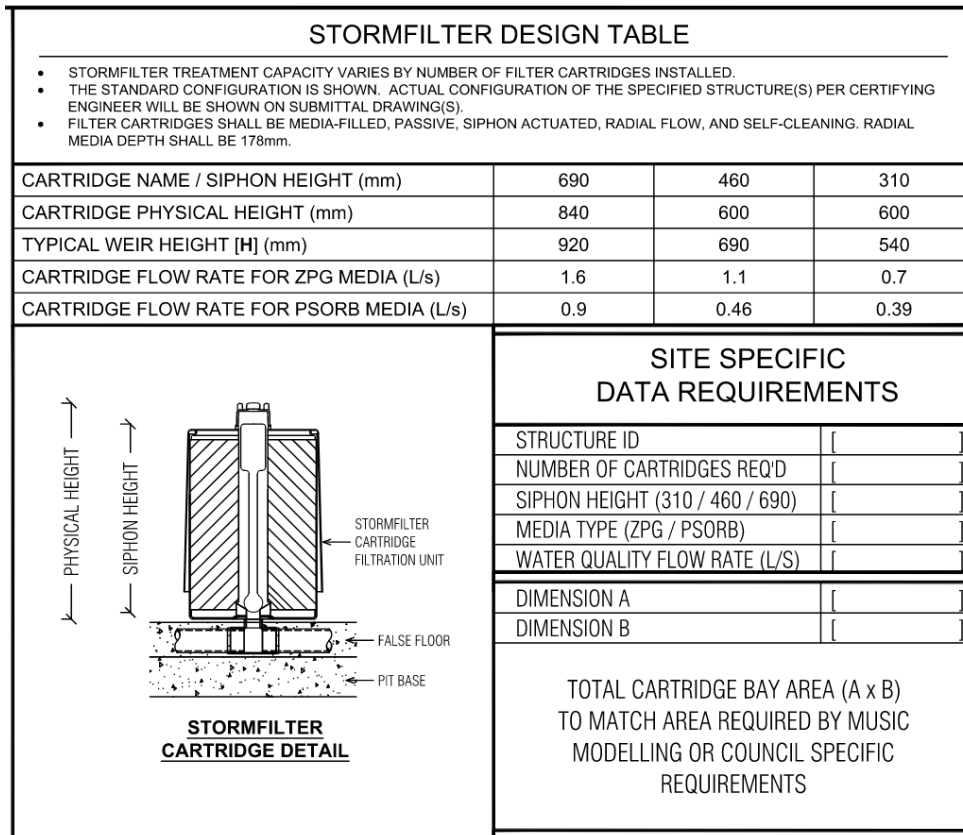


Figure 4.0 - Stormfilter Cartridge Produced by Ocean Protect