

Water Management Referral Response

Application Number:	DA2019/1072
Date:	30/04/2020
To:	Renee Ezzy
Land to be developed (Address):	Lot 1 DP 219265 , 1797 Pittwater Road MONA VALE NSW 2103 Lot 2 DP 219265 , 38 Park Street MONA VALE NSW 2103 Lot 4 DP 76695 , 1795 Pittwater Road MONA VALE NSW 2103

Reasons for referral

Council's Water Management Officers are required to consider the likely impacts.

Officer comments

The application has been found to satisfactorily address stormwater quality, sediment management and groundwater. Conditions have been applied.

Council has no experience of Ocean Protect's Filterra System (for water quality management) and is allowing the installation on this occasion, as we are interested in observing its efficacy once operational. The catchment is regarded as suitable to test the system, as this development will discharge to the Mona Vale Drain system, which collects stormwater from Mona Vale's industrial area and is therefore not overly sensitive. Council will be interested to see how the system contributes to Council's water sensitive urban design objectives, including reducing urban heat island effects and improving amenity and liveability. Reviews of the Filterra System have shown that regular maintenance and removal of any sediment build-up and the sacrificial mulch layer (replaced every 6-12 months) is critical to ensure runoff can pass through the system.

It is disappointing that a development of this size has not made more effort to incorporate rainwater re-use, as this is by far the most effective way to reduce the impact of stormwater runoff.

A condition has been placed to respond to dewatering should it be required. Council proactively regulates sediment management, so care should be taken with the installation and management of sediment and erosion controls on site.

Second review comments:

The applicant has not provided sufficient water quality treatment to satisfy Pittwater 21 DCP B5.9 requirements.

The applicant has provided a MUSIC model. On review of the MUSIC model:

1. we find that while the Filterra Bioscape System has been designed with a high-flow bypass but the MUSIC model does not include a bypass, claiming that the bio-retention will treat 100% of flows. We recommend a high flow bypass for the 3-month ARI flow.
2. The saturated hydraulic conductivity is way too high and significantly lifts the performance of the basin beyond what could possibly be achieved. The figure used is 3550mm/hr. Northern Beaches Council allows up to 250mm/hr. When the figure is adjusted in the model, the targets for sediment, nitrogen and phosphorus removal are not met.

Treatment efficiencies need to be improved to meet our targets (see below). It may help if additional

treatment is considered for the bypass area, which is over 400sqm and only has baskets proposed.

First round of comments:

The applicant was provided with information on water quality requirements at the PLM, and notes provided to the planner on 13/08/2019.

The proposed solution is inadequate and does not meet Pittwater 21 DCP B5.9 requirements.

Development Location/Type

What catchment is the development sited? Mona Vale Creek > Pittwater

What type of development is proposed? Subdivision

What is the size of the development? 2399.12sqm

Water Conservation and Reuse

Is the development subject to BASIX? Yes

Is a rainwater tank proposed? Yes

Stormwater Quality

Does Stormwater Quality requirements apply to the development? Yes

Which Stormwater Quality Targets Apply?

Pittwater 21 DCP B5.9 - tertiary treatment that removes both particulate and dissolved pollutants and no increase in pollutants to waterways. We accept treatment that meets the targets of post development load reductions (compared to pre-development) of GP 90%, TSS 85%, TP 65% and TN 45%.

1. Stormwater treatment measures must be included in the Stormwater Management Plan, with detail provided of each measure.
2. The treatment train should include some form of infiltration basin and a gross pollutant trap, but can otherwise include any other Water Sensitive Urban Design measure that will achieve the treatment objectives. This can include green roofs, green walls, stormwater reuse, pervious paving etc. Use of filtration cartridges is not supported for this development due to the need for infiltration.

Has a water quality model been submitted? No

Comment: A MUSIC model file must be provided with the DA to allow Council to review the model and parameters used.

Have water quality treatment devices been proposed? A sediment sump and screen in the boundary pit.

Comment: This solution is not acceptable.

Is the development likely to increase runoff? Yes

Is a positive covenant required? Yes

Comment: 5. A restriction as to user and positive covenant will be placed over the asset(s) and the applicant is required to provide an operation and maintenance plan for each asset. The responsibilities of the strata association in terms of maintaining and replacing the stormwater treatment measures must

be made clear in the appropriate documents. (provided at CC)

Is an Operation and Maintenance Plan required? Yes

Comment: See above

Groundwater Management

Does the development potentially impact on Groundwater? Yes

Is it Integrated Development? No

Has a Geotechnical assessment being provided? Yes

Comment: The geotechnical report provided has satisfactorily addressed groundwater, and groundwater management will not be required.

Is the site potentially contaminated? No

Will groundwater be discharged from the site? No

Sediment and Erosion Control

A satisfactory sediment and erosion control plan has been provided.

The proposal is therefore supported.

Note: Should you have any concerns with the referral comments above, please discuss these with the Responsible Officer.

Recommended Water Management Conditions:

CONDITIONS TO BE SATISFIED PRIOR TO THE ISSUE OF THE CONSTRUCTION CERTIFICATE

Detailed Design of Stormwater Treatment Measures

A certificate from a Civil Engineer, stating that the stormwater treatment measures have been designed in accordance with the plans dated December 2019 from Barrenjoey Consulting Engineers and Council's Water Management for Development Policy.

The certificate shall be submitted to the Certifying Authority prior to the release of the Construction Certificate.

Reason: Protection of the receiving environment

Update all external plans

All external plans for the development (particularly the landscape plans) must be updated to reflect the stormwater layout plan, including the placement of the Filterra System in the Northern corner of the site.

Details demonstrating compliance are to be submitted to the Certifying Authority for approval prior to the issue of the Construction Certificate.

Reason: To ensure stormwater devices are constructed according to the approved stormwater management plan.

CONDITIONS TO BE COMPLIED WITH DURING DEMOLITION AND BUILDING WORK

Substitution of Stormwater Treatment Measure

The substitution of an "equivalent" device for the stormwater treatment measure approved in the Development Application process must first be approved by the Principal Certifying Authority.

Details must be submitted to the Principal Certifying Authority for approval prior to installation.

Reason: To ensure stormwater is appropriately managed and in accordance with the Water Management for Development Policy.

Installation and Maintenance of Sediment and Erosion Controls

Sediment and erosion controls must be installed in accordance with Landcom's 'Managing Urban Stormwater: Soils and Construction' (2004) and the Erosion and Sediment Control Plan prepared by Barrenjoey Consulting Engineers dated September 2019 prior to commencement of any other works on site.

Erosion and sediment controls are to be adequately maintained and monitored at all times, particularly after periods of rain, and shall remain in proper operation until all development activities have been completed and vegetation cover has been re-established across 70 percent of the site, and the remaining areas have been stabilised with ongoing measures such as jute mesh or matting.

The discharge of sediment-laden waters from the site may result in clean-up orders and/or fines under Council's Compliance and Enforcement Policy and legislation including Protection of the Environment Operations Act 1997 and Contaminated Lands Act 1997. Refer to the dewatering condition for disposal of tailwater collected in the sediment pond on site.

Reason: Protection of the receiving environment

Dewatering Management

Council proactively regulates construction sites for sediment management.

Where a one-off instance of dewatering of groundwater or tailwater is required during works, Council's Catchment Team must be notified of your intention to discharge. Discharges should meet the water quality requirements below. Notification must be via the Team's email address - catchment@northernbeaches.nsw.gov.au.

If continuous dewatering or dewatering on multiple events is expected, a dewatering permit is required from Council's Catchment Team at catchment@northernbeaches.nsw.gov.au.

To obtain a permit, the following information must be contained in a dewatering management plan and provided to Council's Catchment Team:

1. Preliminary testing of groundwater/tailwater must be conducted by a NATA accredited laboratory to establish a correlation between NTU and TSS. This will allow the use of grab sampling at short notice prior to planned discharges.
2. Grab samples from at least three locations must be collected within 1 hour of discharge that comply with the parameters in the table below.
3. The groundwater/tailwater to be discharged must be compliant with the General Terms of Approval/Controlled Activity permit issued by WaterNSW (if applicable), Landcom's 'Managing Urban Stormwater: Soils and Construction' (2004) (Blue Book), Council's Compliance and Enforcement Policy

and legislation including Protection of the Environment Operations Act 1997 and Contaminated Lands Act 1997.

Parameter	Criterion	Method	Time Prior to Discharge
Oil and grease	No visible	Visual inspection	<1 hour
pH	6.5- 8.5	Probe/meter	<1 hour
Total Suspended Solids (TSS)	<50mg/L	Meter/grab sample measures as NTU	<1 hour

4. All records of approvals, water discharges and monitoring results are to be documented and kept on site. Records must include a diagram showing testing locations, and photos of the water to be discharged at the time of testing. Copies of all records shall be provided to the appropriate regulatory authority, including Council, upon request.

5. Tailwater must be discharged to the nearest stormwater pit in accordance with Council's Auspec1 Design Manual and must not spread over any road, footpath and the like. Discharge to the kerb and gutter will not be accepted. Where there is no stormwater pit within 100 metres of the site, Council's Catchment Team must be contacted to discuss alternative arrangements.

On receipt of a satisfactory dewatering management plan, Council's Catchment Team will issue a permit that will allow dewatering for up to one year.

Reason: Protection of the receiving environment

CONDITIONS WHICH MUST BE COMPLIED WITH PRIOR TO THE ISSUE OF THE OCCUPATION CERTIFICATE

Certification for the Installation of Stormwater Treatment Measures

A certificate from a Civil Engineer, who has membership to Engineers Australia and the National Engineers Register must be provided, stating that the stormwater treatment measures have been installed in accordance with the plans prepared by Barrenjoey Consulting Engineers. The certificate must confirm that stormwater treatment measures are completed, online, in good condition and are not impacted by sediment. Vegetated measures must exhibit an 80 percent survival rate of plantings.

The certificate shall be submitted to the Principal Certifying Authority prior to the release of the Occupation Certificate.

Reason: Protection of the receiving environment

Positive Covenant, Restriction as to User and Registration of Encumbrances for Stormwater Treatment Measures

A positive covenant shall be created on the title of the land requiring the proprietor of the land to maintain the stormwater treatment measures in accordance with the standard requirements of Council, the manufacturer and as required by the Stormwater Treatment Measures Operation and Maintenance Plan.

A restriction as to user shall be created on the title over the stormwater treatment measures, restricting any alteration to the measures.

The terms of the positive covenant and restriction as to user are to be prepared to Council's standard requirements (available from Council) at the applicant's expense and endorsed by the Northern

Beaches Council's delegate prior to lodgement with the Department of Lands. Northern Beaches Council shall be nominated as the party to release, vary or modify such covenant.

A copy of the certificate of title demonstrating the creation of the positive covenant and restriction as to user is to be submitted to the Principal Certifying Authority prior to the issue of any interim / final Occupation Certificate.

Reason: To identify encumbrances on land, ensure ongoing maintenance, and ensure modification to the stormwater treatment measures is not carried out without Council's approval.

Stormwater Treatment Measure Operation and Maintenance Plan

An Operation and Maintenance Plan is to be prepared to ensure the proposed stormwater treatment measures remain effective.

The Plan must be attached to the Positive Covenant (and the community or strata management statement if applicable) and contain the following:

1. Detail on the stormwater treatment measures:

- a) Work as executed drawings
- b) Intent of the stormwater treatment measures including modelled pollutant removal rates
- c) Site detail showing catchment for each device
- d) Vegetation species list associated with each type of vegetated stormwater treatment measure
- e) Impervious area restrictions to maintain the water balance for the site
- f) Funding arrangements for the maintenance of all stormwater treatment measures
- g) Identification of maintenance and management responsibilities
- h) Maintenance and emergency contact information

2. Maintenance schedule and procedure - establishment period of one year following commissioning of the stormwater treatment measure

- a) Activity description, and duration and frequency of visits

Additionally for vegetated devices:

- b) Monitoring and assessment to achieve an 80 percent survival rate for plantings
- c) Management of weeds, pests and erosion, with weed and sediment cover limited to a maximum of 5 percent of the total area of the stormwater treatment measure

3. Maintenance schedule and procedure - ongoing

- a) Activity description, and duration and frequency of visits
- b) Routine maintenance requirements
- c) Work Health and Safety requirements
- d) Waste management and disposal
- e) Traffic control (if required)
- f) Renewal, decommissioning and replacement timelines and activities of all stormwater treatment measures (please note that a DA may be required if an alternative stormwater treatment measure is proposed)
- g) Requirements for inspection and maintenance records, noting that these records are required to be maintained and made available to Council upon request.

Details demonstrating compliance shall be submitted to the Principal Certifying Authority prior to the release of the Occupation Certificate.

Reason: Protection of the receiving environment.

Works as Executed Drawings - Stormwater Treatment Measures

Works as Executed Drawings for the stormwater treatment measures must be prepared in accordance

with Council's Guideline for Preparing Works as Executed Data for Council Stormwater Assets.

The drawings shall be submitted to the Principal Certifying Authority prior to the release of the Occupation Certificate.

Reason: Protection of the receiving environment

Community/Strata Management Statement

The Community/Strata Management Statement must specifically list the stormwater treatment measures that will be maintained under community/strata title. The statement must also include the Stormwater Treatment Measure Operation and Maintenance Plan (which includes the WAE plans and intent of the stormwater treatment measures).

Details demonstrating compliance shall be submitted to the Principal Certifying Authority prior to the release of the Occupation Certificate.

Reason: To ensure maintenance of all stormwater management assets and protection of the receiving environment.

ON-GOING CONDITIONS THAT MUST BE COMPLIED WITH AT ALL TIMES

Maintenance of Stormwater Treatment Measures

Stormwater treatment measures must be maintained at all times in accordance with the Stormwater Treatment Measure Operation and Maintenance Plan, manufacturer's specifications and as necessary to achieve the required stormwater quality targets for the development.

Vegetated stormwater treatment measures must maintain an 80 percent survival rate of plantings and limit weed cover to no more than 10 percent of the total area of the stormwater treatment measure.

Northern Beaches Council reserves the right to enter the property and carry out appropriate maintenance of the device at the cost of the property owner.

Reason: Protection of the receiving environment