# Water Management Referral Response

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| **Application Number:** | DA2021/0212 |

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| **Date:** | 20/07/2021 |
| **To:** | Lashta Haidari |
| **Land to be developed (Address):** | Lot 101 DP 1209504 , 5 Skyline Place FRENCHS FOREST NSW 2086 |

**Reasons for referral**

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

**Officer comments**

The applicant has provided further drawings and reports to demonstrate how the resolution in the design of the development to address previous comments of the Northern Beaches Water Management Officer (provided as a superseded response under the following comments).
The following comments are provided in response to reference to the Sustainability Report (Northrop, 02/06/21), revised architectural plan DA201 and DA202 rev B and relevant stormwater and water quality report and plan (ING Consulting, 25,05,2021)

Proposed Development
The development application consists of construction of a mixed-use development comprising 3 separate buildings with heights proposed from 3 - 12 storeys with a maximum height of 30-35 metres. The proposed development includes 941m2 of commercial floorspace and 133 apartments comprising. Approximately 3,200m2 (42% site of area) of landscaped open space is provided as well as basement parking.

The proposal was assessed under the current creek and water management legislation framework, the relevant parts of the Warringah LEP, DCP and Protection of Waterways and Riparian Lands Policy (Policy PL740).

The supplied reports and plans were considered. It is noted that the water quality treatment chain has been modified with the inclusion of a 65 000L tank for reuse (irrigation and communal use), refer page 9 and 25 sustainability report.

The community submissions for the review were considered.
For the purpose of the development application the supplied documentation has been assessed satisfactory.

The proposed stormwater treatment chain includes a stormwater reuse and proprietary cartridges system prior to the connection with local stormwater network system.

The proposed treatment chain performance is satisfactory in principles and comply with Council Water Management for Development Policy objectives.

Due to the sensitivity of the downstream environment it is imperative that an erosion and sediment management strategy is developed to ensure protection of this area. .
Construction activity and scheduling impacting on the downstream environment requires further assessment to determine acceptable water quality and water quantity thresholds during construction. Should the applicant demonstrate that this is achieved, the application can be supported, and on this basis conditions of consent are provided.

Superseded

This application does not meet the objectives for Water Sensitive Urban Design.

1. A development proposal of this size should have a stormwater plan that is supported by a water management report that details how they have met the Water Sensitive Urban Design objectives outlined in the Water Management for Development Policy.
2. The applicant has not provided a MUSIC model file (.sqz).
3. The building footprint includes a basement over the entire area of the lot, which means there is no opportunity for infiltration of rainfall to groundwater (important to maintaining flows in Trefoil Creek). The geotech report identifies groundwater at at depth of 8.3m with possible areas of perched groundwater. While incorporating vegetated treatment into the landscaped areas will reduce runoff partially through evaporation and infiltration into the immediate soil, the basement would need to be built with an impervious layer above it to stop water entering and therefore creates a significant barrier between the 4.5m deep soil area and groundwater below the basement that feeds Trefoil Creek.
4. The applicant may have addressed the requirement to remove pollutants from stormwater (I need the MUSIC file to confirm this) through the use of filtration cartridges but has not met the other objectives of Water Sensitive Urban Design (replicating the natural water cycle, reduced potable water use, reduced runoff).
5. Two 10-level high rise buildings full of residential apartments have one 5KL rainwater tank. This is a significantly undersized rainwater tank for a Water Sensitive development. The applicant should be providing large rainwater tanks that are connected to toilets at least and preferably laundries as well throughout the development. Stormwater reuse is a clear objective of the Seniors SEPP.
6. The proposed water management does not agree at all with the vision for Frenchs Forest, through which we have sought to create a water sensitive precinct. High rises will be required to incorporate green roofs and walls to increase the use of stormwater and reduce runoff. There are added benefits for the issues identified in Point 7.
7. Frenchs Forest is already identified as a location susceptible to urban heat island effect, making the application of vegetated treatments critical. This application does not adequately respond to this growing risk. Responding to the suggestions raised in point 6 may help.

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**

**Soil and Water Management Plan (SWMP)**

A Soil and Water Management Plan (SWMP) shall be prepared by a suitably qualified Civil Engineer, who has membership to the Institution of Engineers Australia, National Professional Engineers Register (NPER3) and implemented onsite prior to commencement. The SWMP must meet the requirements outlined in the Landcom publication Managing Urban Stormwater: Soils and Construction - Volume 1, 4th Edition (2004) and Council's Water Management Policy. The SWMP must include the following as a minimum:-

Site boundaries and contours
Vehicle access points, proposed roads and other impervious areas (e.g. parking areas and site facilities)
Location of all drains, pits, downpipes and waterways on and nearby the site
Planned stages of excavation, site disturbance and building
Demonstrated staging of works including stormwater management and sediment control
Stormwater management and discharge points
Integration with onsite detention/infiltration
Sediment control basin locations and volume (if proposed)
Proposed erosion and sediment controls and their locations
Location of washdown and stockpile areas including covering materials and methods
Vegetation management including removal and revegetation
A schedule and programme of the sequence of the sediment and erosion control works or devices to be installed and maintained
Inspection and maintenance program
Northpoint and scale.

All Site drainage and sediment and erosion control works and measures as described in the SWMP, and any other pollution controls, as required by these conditions, shall be implemented prior to commencement of any other works at the Site.

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

Reason: To promote the long-term sustainability of ecosystem functions.

**Detailed Design of Stormwater Treatment Measures - Major**
A certificate from a Civil Engineer, stating that the stormwater treatment measures have been designed in accordance with the development application documentation 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.

**Environmental Management Plan (EMP)**
The applicant must provide an environmental management plan (EMP) to describe all the environmental management activities and control measures that will be implemented to avoid environmental impacts. All potential off-site impacts should be considered prior to construction occurring and an effective plan should be developed to manage impacts on the natural environment, and to prevent foreseeable nuisance and health impacts on sensitive environments.
The EMP must demonstrate that the staging of works and erosion control measures mitigate the

impacts to the downstream environment.

The EMP shall include the Soil and Water Management Plan and proposed staging of works.

The EMP is to be submitted to Council for approval.

Evidence required to satisfy these conditions must be submitted to Council within two (2) years of the date of this consent, or the consent will lapse in accordance with Section 95 of the Environmental Planning and Assessment Regulation 2000.

Reason: To protect native vegetation, wildlife, habitats and receiving waterways

## CONDITIONS TO BE COMPLIED WITH DURING DEMOLITION AND BUILDING WORK

**Installation and Maintenance of Sediment and Erosion Controls**
Council proactively regulates construction sites for sediment management.

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 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.

Reason: Protection of the receiving environment.

**Substitution of Stormwater Treatment Measures**
The substitution of an "equivalent" device for the stormwater treatment measure approved under the Development Consent must 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.

**Dewatering Management**
Tailwater (surface water and rainwater): Please contact catchment@northernbeaches.nsw.gov.au for advice on Council's water quality requirements for a single instance of dewatering tailwater that collects in an excavation during works. A dewatering permit application must be made for expected multiple instances or continuous dewatering of tailwater.

Groundwater: A permit from Council is required for any dewatering of groundwater. An application for interference with an aquifer is required to the Natural Resources Access Regulator. Contact catchment@northernbeaches.nsw.gov.au for more information about permits.

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.

All approvals, water discharges and monitoring results are to be documented and kept on site. Copies

of all records shall be provided to the appropriate regulatory authority, including Council, upon request.

Reason: Protection of the receiving environment and groundwater resources.

**Monitoring Erosion and Sediment Control Site performance**

Monitor the site and adjust erosion and sediment control (ESC) practices to maintain the required performance standard defined by the project ecologist to guarantee the protection of the site downstream environment.
Monitor the effectiveness of the ESC through a combination of site inspection and water quality monitoring.

Water quality monitoring
A specific water quality sampling program designed to monitor the effectiveness of the ESC shall be implemented during the construction period and reported to the Certifying Authority. Record shall be keep on site and made available at Council request.

Sites inspections
All erosion and sediment control measures shall be inspected:
-at least daily when rain is occurring
-at least weekly at all times, even if works is not occurring on site
-within 24 hours prior expected rainfall
-within 18 hours of rainfall event of sufficient intensity and duration to cause on-site runoff

A "site checklist“ is to be signed by a suitably qualified Civil Engineer (who has membership to the Institution of Engineers Australia, National Professional Engineers Register (NPER-3)) and construction site superintendent.

a suitably qualified Civil Engineer shall issue compliance certification of the erosion and sediment control monitoring program as per the requirements of this consent.

The Soil and Water Management Plan is a living document that can and should be modified as sites conditions change.

If the site inspections detect a risk or a failure in the adopted ESC measures, then the source of this risk/failure must be investigated and corrected.

The site checklist and proposed ESC correction must submitted the same day of the visit to the Certifying Authority.

The water quality report is to be submitted to the Certifying Authority.

Reason: To protect the downstream environment

**Stormwater Treatment Measures commissioning and maintenance**
Filter media and vegetation must not be installed in the stormwater treatment measures until construction work is 80 percent complete.
The stormwater treatment measures may be used as sediment settling basins during construction work on the site. Sediment basins should be periodically emptied of sediment where sediment levels are

likely to impact downstream environments in large rainfall events (ie 70% of basin capacity). All sediment (100%) must be removed prior to installing the filter media.

Reason: Protection of the stormwater treatment measures and 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 Stormwater management plans prepared by Stantec CL-520 01/02.
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 Stormwater Treatment Measures Operations and Maintenance plan will allow the measures to perform to the design criteria.
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 the 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 Measures 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 Subdivision/Occupation <DELETE ONE> 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.

**Installation of Rainwater Tanks**
Rainwater tanks shall comply with the following:

a) Be fitted with a first-flush device that causes initial rainwater run-off to bypass the tank and must drain to a landscaped area. The first flush device will not be permitted to connect to the stormwater system
b) Have a sign affixed to the tank stating the contents is rainwater
c) Be constructed or installed in a manner that prevents mosquitoes breeding, such as the use of

mesh to protect inlets and overflows

d) Have its overflow connected to an existing stormwater drainage system that does not discharge to an adjoining property, or cause a nuisance to adjoining owners

e) Pumping equipment must be housed in a soundproof enclosure

f) Where the rainwater tank is interconnected to a reticulated water supply, it must be installed in accordance with Plumbing Code of Australia, particularly backflow/cross connection prevention requirements

A certificate from a licenced plumber shall be submitted to the Principal Certifying Authority prior to the release of the Occupation Certificate.

Reason: To conserve potable water.

**Community Title Management Statement**
The Community Management Statement must specifically list the stormwater treatment measures that will be maintained under community title. The statement must also include the Stormwater Treatment Measure Operation and Maintenance Plan.

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.

**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 referenced in 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<insert condition - if pasting use the 'paste plain text button' above>

Reason: <insert reason>

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

**Maintenance of Stormwater Treatment Measures - Major**
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.

Where replacement cartridges or other necessary components for the system become unavailable, an alternative system is required to be retrofitted into the development to achieve an equivalent pollutant reduction outcome. Evidence supporting the replacement must be retained on site and made available to Council as required.

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.