

## Engineering Referral Response

<b>Application Number:</b>	DA2023/1000
<b>Proposed Development:</b>	Demolition works and construction of a dwelling house including swimming pool and double garage.
<b>Date:</b>	13/11/2023
<b>To:</b>	Dean Pattalis
<b>Land to be developed (Address):</b>	Lot 79 DP 232295 , 22 Birrong Avenue BELROSE NSW 2085

### Reasons for referral

This application seeks consent for the following:

- New Dwellings or
- Applications that require OSD where additional impervious area exceeds 50m<sup>2</sup> or
- Alterations to existing or new driveways or
- Where proposals affect or are adjacent to Council drainage infrastructure incl. watercourses and drainage channels or
- Torrens, Stratum and Community Title Subdivisions or
- All new Commercial and Industrial and RFB Development with the exception of signage or
- Works/uses in flood affected areas

And as such, Council's development engineers are required to consider the likely impacts on drainage regimes.

### Officer comments

In accordance with Council's Water Management for Development Policy Version 2 26 February 2021 (WMfDP), the applicant is nominally required to undertake the following sequential process:

1. Obtain an easement from a downstream property to connect to the street. Use Appendix 2 of the WMfDP as proof of acceptance or rejection of easement request.
2. If an easement request is rejected, the applicant is required to investigate the feasibility of an absorption pit as per Appendix 3 of the WMfDP. This will require a geotechnical report and permeability testing.
3. If an absorption pit is not feasible, the applicant is required to construct an on site detention system and a level spreader as per the requirements of Appendix 4 of the WMfDP. The on site detention system will be required to restrict flows back to the state of nature (100 % pervious pre-development) 20% AEP event.

Review of Stormwater plans by Hyve Designs.

1. The charged line into the On site detention basin is not supported. Amended plans need to show the basin located on the downstream side of the dwelling with gravity flows from rainwater tank into OSD basin.
2. The top water level in the OSD basin for the 1% AEP storm event is to be a minimum of 300mm below all habitable floor levels and 150mm below the garage level. The submitted design has not satisfied this criteria.

3. The on site detention basin does not appear to have been designed to attenuate flows back to the state of nature event. Provide DRAINS model or alternate method of calculating OSD and orifice size.

### **Engineering comments 04.11.23**

An easement refusal letter from the most suitable downstream property has been provided. Step 1 has been satisfied. A Geotechnical report has been submitted after the first development engineering response. The borehole data from the report indicated that rock is found approximately 1.3 metres from the surface. This makes the suitability of an Absorption system unlikely. Step 2. can be considered to be satisfied. Step 3 however has not been satisfied. The following matters also require attention:

Review of Stormwater plans by Hyve Designs.

1. The charged line into the On site detention basin is not supported. Amended plans need to show the basin located on the downstream side of the dwelling with gravity flows from rainwater tank into OSD basin.

2. The top water level in the OSD basin for the 1% AEP storm event is to be a minimum of 300mm below all habitable floor levels and 150mm below the garage level. The submitted design has not satisfied this criteria.

3. The on site detention basin does not appear to have been designed to attenuate flows back to the state of nature event. Provide DRAINS model or alternate method of calculating OSD and orifice size. The on-site detention system needs to be designed so that all post-development flows from the site up to the 1% AEP are attenuated back to the 20% State of Nature event (100% pervious pre-development).

### **Engineering Comments 13.11.23**

The on-site detention system has been moved to the rear of dwelling and amended design provided. I have no further objections to the proposed development.

The proposal is therefore supported.

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

### **Recommended Engineering Conditions:**

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

### **On-Site Stormwater Detention Details**

The Applicant is to provide a certification of drainage plans detailing the provision of on-site stormwater detention in accordance with Northern Beaches Council's Water Management for Development Policy, and generally in accordance with the concept drainage plans prepared by **Hyve Designs**, job number **SC23043**, dated **08.11.2023**. Detailed drainage plans are to be prepared by a suitably qualified Civil Engineer, who has membership to Engineers Australia, National Engineers Register (NER) or Professionals Australia (RPENG) and registered in the General Area of Practice for civil engineering.

The drainage plans must address the following:

- i. **Top water level in the on-site detention system is to be a minimum of 300 mm below habitable floor levels.**
- ii. **Stormwater run-off from all roof areas and the internal driveway area is to be directed to the on-site detention system and level spreader.**
- iii. **Provision of a minimum 4 metre long level spreader.**

iv. Provision of grated access and step irons for the on-site detention system in accordance with the Water Management for Development Policy Version 2 26 February 2021 in particular Section 9.10.3 - Underground Storage Systems and Appendix 15 of the document.

Detailed drainage plans, including engineering certification, are to be submitted to the Certifier for approval prior to the issue of the Construction Certificate.

### **Stormwater Disposal**

The applicant is to submit Stormwater Engineering Plans for the new development within this development consent in accordance with AS/NZS 3500 and Council's Water Management for Development Policy, prepared by an appropriately qualified and practicing Civil or Hydraulic Engineer who has membership to Engineers Australia, National Engineers Register (NER) or Professionals Australia (RPENG) , indicating all details relevant to the collection and disposal of stormwater from the site, buildings, paved areas and where appropriate adjacent catchments. Stormwater shall be conveyed from the site to **an on-site detention system and level spreader**.

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

Reason: To ensure appropriate provision for disposal of stormwater management arising from the development.

### **Geotechnical Report Recommendations have been Incorporated into Designs and Structural Plans**

The recommendations identified in the Geotechnical Report referenced in Condition 1 of this consent are to be incorporated into the construction plans. Details demonstrating compliance are to be submitted to the Certifier prior to the issue of the construction certificate.

Reason: To ensure geotechnical risk is mitigated appropriately.

### **Vehicle Crossings Application**

The Applicant is to submit an application with Council for driveway levels to construct **one** vehicle crossing **3.0** metres wide in accordance with Northern Beaches Council Standard Drawing **A4 3330/1 N** in accordance with Section 138 of the Roads Act 1993.

Note, driveways are to be in plain concrete only.

The fee associated with the assessment and approval of the application is to be in accordance with Council's Fee and Charges.

A Council approval is to be submitted to the Certifier prior to the issue of the Construction Certificate.

Reason: To facilitate suitable vehicular access to private property.

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

### **Road Reserve**

The applicant shall ensure the public footways and roadways adjacent to the site are maintained in a safe condition at all times during the course of the work.

Reason: Public safety.

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

### **Stormwater Disposal**

The stormwater drainage works shall be certified as compliant with all relevant Australian Standards and Codes by a suitably qualified person. Details demonstrating compliance are to be submitted to the Principal Certifier prior to the issue of an Occupation Certificate.

Reason: To ensure appropriate provision for the disposal of stormwater arising from the development.

### **Positive Covenant and Restriction as to User for On-site Stormwater Disposal Structures**

The Applicant shall lodge the Legal Documents Authorisation Application with the original completed request forms (NSW Land Registry standard forms 13PC and/or 13RPA) to Council and a copy of the Works-as-Executed plan (details overdrawn on a copy of the approved drainage plan), and Civil Engineers' certification.

The Applicant shall create on the Title a restriction on the use of land and a positive covenant in respect to the ongoing maintenance and restriction of the on-site stormwater disposal structures within this development consent. The terms of the positive covenant and restriction are to be prepared to Council's standard requirements at the applicant's expense and endorsed by Northern Beaches Council's delegate prior to lodgement with the NSW Land Registry Services. 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 for on-site storm water detention and level spreader as to user is to be submitted.

Details demonstrating compliance are to be submitted to the Principal Certifier prior to the issue of an Occupation Certificate.

Reason: To ensure the on-site stormwater disposal system is maintained to an appropriate operational standard.