

Engineering Referral Response

Application Number:	DA2023/0514
Proposed Development:	Construction of a secondary dwelling and a garage
Date:	20/10/2023
To:	Phil Lane
Land to be developed (Address):	Lot 67 DP 7413 , 45 Redman Road DEE WHY NSW 2099

Reasons for referral

This application seeks consent for the following:

- New Dwellings or
- Applications that require OSD where additional impervious area exceeds 50m² 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

1. Amend plans to show a concrete or paved internal driveway to the garage in the secondary dwelling. It is unclear from the submitted plans, how this will be achieved.
2. The development has failed to address how stormwater will be discharged from the site.
3. The site cannot drain to the street via gravity.
4. Council policy requires that a drainage easement be sought from downstream property owners for sites that cannot drain to the street via gravity. Please refer to *Appendix 2 - Sample Easement Letter of Councils Water Management for Development Policy Version 2 26 February 2021*.
5. If a drainage easement is not granted and proof of this is provided to Council as per point 4, the applicant is required to discharge stormwater in accordance with Appendix 3 or Appendix 4 of Councils *Water Management for Development Policy Version 2 26 February 2021*.
6. If the applicant chooses the the levels spreader option as per Appendix 4, the entire impervious area of development including internal driveway and roof area will need to drain to the on-site detention tank prior to connection to a level spreader. Likewise the entire impervious area of development is to be connected to any absorption pit.

Engineering Comments 21.07.23

I have reviewed the stormwater management plans by Prime Consulting Engineers.

My comments are as follows:

1. Due to the topography of the site, a drainage easement from downstream properties is not seen as feasible. Therefore the requirement for a drainage easement refusal letter as per Appendix 2 of Councils *Water Management for Development Policy Version 2 26 February 2021* is waived.

2. The absorption pit design however does not appear to comply with the requirements of Appendix 3 of Councils *Water Management for Development Policy Version 2 26 February 2021*. It is not clear from what source the soil absorption rate is obtained as there is no Geotechnical report submitted. Also, there is no evidence of the depth to rock. Please refer to Appendix 3 of Councils *Water Management for Development Policy Version 2 26 February 2021*.
3. If an absorption pit is not deemed feasible as per Appendix 3, then refer to Appendix 4 of Councils *Water Management for Development Policy Version 2 26 February 2021* for Level Spreader design requirements.
4. An absorption pit will also require a Level Spreader as per Appendix 3 for storms in excess of the 2% AEP.
5. Please note that the Absorption Pit and Level Spreader system or Level Spreader system need to be installed parallel to a contour and a minimum of 3 metres away from any building or boundary.

Engineering Comments 06.09.23

I have reviewed the stormwater management plans dated 05.09/2023 by Prime Consulting Engineers. My comments are as follows:

1. For charged systems Council will accept a minimum fall of 1.5 metres from rainwater tank/ roof gutter to discharge point/ property boundary.
2. The final section of pipe on private property needs to drain to the kerb or Council's stormwater pipe by gravity.
3. With regards to the proposed design, the invert of the private pit would need to be above the obvert of Councils 300 pipe.
4. Amended design should show all pit names, invert levels as well rainwater tank outlet levels.
5. Amended design needs to demonstrate how the additional works can drain to Council's pipe or as previously advised the absorption pit or level spreader solution needs to be investigated.

Engineering Comments 22.09.23

The stormwater management plans provide for stormwater discharge from the new development using a level spreader. The geotechnical report indicates that absorption is not feasible, hence the level spreader option is supported. The design however does not provide for an on-site detention system as per Appendix 4 of Council's *Water Management for Development Policy Version 2 26 February 2021*. The requirements are reproduced below for your information:

1. Level spreader is to be designed by a suitably qualified and experienced Civil Engineer, who has Membership to the Institution of Engineers Australia.
2. Stormwater flows from the proposed roof areas (secondary dwelling + shed) are to be restricted for all storm events up to and including the 1% AEP storm event. This system will require the provision of an on-site stormwater detention system.
3. The discharge through the on-site detention system must not exceed the 20% AEP state of nature storm event.
4. Flows from the on-site detention system shall be dispersed through a level spreader.
5. The level spreader should not be located within three metres of the side or rear boundary, or three metres from any on-site building or neighbouring buildings.
6. The OSD system is to be sized so that all run off from the proposed roof areas up to the 1% AEP event is restricted to the 20% event for a 100% pervious area equivalent in size to the proposed area of development.
7. No credit can be claimed for rainwater tank volumes.

The level spreader should be moved further away from the new dwelling and shed to reduce the risk of affectation from stormwater flows.

Engineering Comments 20.10.23

Amended stormwater plans have shown a connection from the secondary dwelling using a charged

system to Council's pipe at front of property. Conditions will be provided requiring detailed design for the s68 application.

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:

FEES / CHARGES / CONTRIBUTIONS

Construction, Excavation and Associated Works Security Bond(s)

The applicant is to lodge a bond with Council for the following:

Drainage Works

As security against any damage or failure to complete the construction of stormwater drainage works required as part of this consent a bond of **\$5,000**.

Details confirming payment of the bond(s) are to be submitted to the Principal Certifier prior to the issue of the Construction Certificate.

Reason: Protection of Council's infrastructure.

CONDITIONS TO BE SATISFIED 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 **the street - Council pipe**.

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.

Stormwater Drainage Application

The applicant is to provide a stormwater drainage application under Section 68 of the Local Government Act 1993 to Council for approval. The submission is to include four (4) copies of Civil Engineering plans for the design of the **private stormwater connection into Council's pit/ pipe** which are to be generally in accordance with the civil design approved with the Development Application and Council's specification for engineering works - AUS-SPEC #1. The form can be found on Council's website at www.northernbeaches.nsw.gov.au > Council Forms > Stormwater Drainage Application Form.

The plans must address the following requirements:

1. Council's stormwater infrastructure is to be surveyed and plotted using a registered surveyor.
2. Provide a pipe longitudinal section from rainwater tank to Council's pipe.
3. Stormwater discharge from the final section of pipe is to flow by gravity to Council's pipe with a minimum 1% pipe gradient.
4. The invert level of the last pit on private land is to be above the obvert level of Council's pipe. This is to be shown on the pipe longitudinal section and verified by survey.
5. Connection into Council pipe is to be in accordance with Council's Standard Drawing No. S1016.

The fee associated with the assessment and approval of the application is to be in accordance with Council's Fees and Charges. Details demonstrating compliance are to be submitted to the Certifier prior to the issue of the Construction Certificate.

Reason: To ensure appropriate provision for disposal and maintenance stormwater management and compliance with the BASIX requirements, arising from the development.

Pre-Construction Stormwater Assets Dilapidation Report

The Applicant is to submit a pre-construction / demolition Dilapidation Survey of Council's Stormwater Assets is to be prepared by a suitably qualified person in accordance with Council's Guidelines for Preparing a Dilapidation Survey of Council Stormwater Asset, to record the existing condition of the asset prior to the commencement of works. Council's Guidelines are available at: <https://files.northernbeaches.nsw.gov.au/sites/default/files/documents/general-information/engineering-specifications/2009084729guidelineforpreparingadilapidationsurveyofcouncilstormwaterassets2.pdf>

The pre-construction / demolition dilapidation report must be submitted to Council for approval and the Certifier prior to the issue of the Construction Certificate.

Reason: Protection of Council's infrastructure.

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

Post- Construction Stormwater Assets Dilapidation Report (Council stormwater assets)

The Applicant shall submit a post-construction Dilapidation Survey of Council's Stormwater Assets is to be prepared by a suitably qualified person in accordance with Council's Guidelines for Preparing a Dilapidation Survey of Council Stormwater Asset in order to determine if the asset has been damaged by the works. Council's Guidelines are available at

<https://files.northernbeaches.nsw.gov.au/sites/default/files/documents/general-information/engineering-specifications/preparingdilapidationsurveyforcouncilstormwaterassets.pdf>

The post-construction / demolition dilapidation report must be submitted to Council for review and approval. Any damage to Council's stormwater infrastructure is to be rectified prior to the release of any Drainage security bonds. Council's acceptance of the Dilapidation Survey is to be submitted to the Principal Certifying Authority prior to the issue of the Occupation Certificate.

Reason: Protection of Council's infrastructure.

Certification of Council Drainage Works and Works as Executed Data in accordance with Local Government S68 Approval

The Applicant shall submit certification by a suitably qualified Civil Engineer, who has membership to Engineers Australia, National Engineers Register (NER) or Professionals Australia (RPENG) that the completed works have been constructed in accordance with this consent and the approved Section 68 approved plans. Works as Executed data (details overdrawn on a copy of the approved drainage plan) certified by a registered surveyor in relation to boundaries and/or relevant easements prepared in accordance with Council's 'Guideline for preparing Works as Executed data for Council Stormwater Assets' within the subject site, shall be submitted to the Principal Certifier prior to the issue of the Occupation Certificate.

Reason: To ensure compliance of drainage works with Council's specification for engineering works.

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.