

Engineering Referral Response

Application Number:	DA2020/0014
Date:	08/05/2020
To:	Anne-Marie Young
Land to be developed (Address):	Lot 51 DP 740538 , 1772 Pittwater Road BAYVIEW NSW 2104

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

The subject site is located adjacent to a Council drainage system which collects stormwater from the road reserve into a grated drain in front of the adjoining property's driveway and is piped to Pittwater through the adjoining property. The proposed development may alter the existing overland flow path and it is considered that the applicant must provide an overland flow report for assessment.

In this regard, an overland flow study is required to determine the 1 in 100 year ARI water level in the road reserve adjoining the site, through the development site and adjacent property. The study is to consider the potential flooding of the site from the overland flow on Pittwater Road. The site is adjacent to a grated pit that carries upstream stormwater. Cross sections detailing the 1 in 100 year ARI water surface level are to be provided at appropriate intervals.

The flood levels of the receiving water must be indicated on the drainage layout plan (if applicable). Water surface profiles are to be detailed for the existing and proposed conditions for the development site as well as both upstream and downstream of the development site. Drains and the Hec-Ras computer program are preferred for this application.

The consultant must establish the pre development and post development 100 year ARI stormwater flows to ensure the adjoining properties are not worse off post development.

The 100 year ARI flood flow level must be established in AHD for the proposed future floor levels and

basement entry levels which shall be a minimum of 500 mm above the 100 year flood level. This is to ensure that the proposed future dwellings and basement areas are protected in major storm events.

Overland flow is not permitted under any new dwelling structures. The Hec-Ras model must ensure this requirement is complied with in the relevant post developed condition scenarios.

The proposed development must comply with all requirements of Pittwater Council's Pittwater 21 DCP 2014 Clause B5.12 Stormwater Drainage Systems and Natural Watercourses. This may require the retention (and possible expansion) of existing surface flow paths.

The proposed driveway grade from the existing road reserve appears to be incorrect. In this regard the applicant is to provide a cross section on the high side of the driveway from the existing path to the proposed garage. The profile is to be in accordance with Council's Maximum Low Profile A4 3330/7 ML which can be found in Council's Minor Works Specification.

Development Engineers cannot support the application due to insufficient information to address Clauses B5.12 and B6.1 of Pittwater 21 DCP 2014.

The submitted Geotechnical report has been assessed and it meets the requirements of the DCP.

Additional information submitted 14/4/20 and 7/5/20

The revised flood report and plan indicating the provision of a sunken culvert to collect flow and divert the flow around the proposed dwelling has been assessed and is considered acceptable subject to conditions. The proposed driveway crossing is also satisfactory.

No objection to approval, subject to conditions as recommended.

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 Bond (Drainage works)

The applicant is to lodge a bond of \$10,000 as security against any damage to Council's stormwater drainage infrastructure as part of this consent.

Details confirming payment of the bond are to be submitted to the Certifying Authority 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, prepared by an appropriately qualified and practicing Civil Engineer, indicating all details relevant to the collection and disposal of stormwater from the site, buildings, paved areas and where appropriate adjacent catchments. The design is to be in accordance with Northern Beaches Council's Pittwater 21 Development Control Plan 2014 Clause B5.11 and the concept drawing by Barrenjoey Consulting Engineers Pty Ltd, drawing number 200303 SW1 and SW2, Issue DA-A dated 04.05.2020. The drainage plans must address the following:

1. Stormwater from the proposed dwelling is to be collected and connected to the proposed diversion swale and connection is to be in accordance with Clause B5.11 of Pittwater 21 DCP 2014.
2. The proposed diversion channel is to be designed to cater for all storms up to and including the 1% AEP.
3. The proposed grated drain is to include an appropriate blockage factor to ensure all flows up to the 1% AEP are adequately collected.
4. The proposed diversion channel is to be designed to include a 500mm freeboard to ensure all flows up to the 1% AEP are adequately contained around the proposed dwelling.
5. The diversion channel is to be constructed of masonry and cannot rely upon any existing retaining walls around the proposed building and outdoor entertaining areas include the pool and spa.

Detailed drainage plans, including Engineering Certification are to be submitted to the Certifying Authority for approval prior to the issue of the Construction Certificate.

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

Geotechnical Report Recommendations have been Incorporated into Designs and Structural Plans

The recommendations of the risk assessment required to manage the hazards as identified in the Geotechnical Report prepared by White Geotechnical Group dated 31 January 2020 are to be incorporated into the construction plans. Prior to issue of the Construction Certificate, Form 2 of the Geotechnical Risk Management Policy for Pittwater (Appendix 5 of P21 DCP) is to be completed and submitted to the Accredited Certifier. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Construction Certificate.

Reason: To ensure geotechnical risk is mitigated appropriately.

Traffic Management and Control

The Applicant is to submit an application for Traffic Management Plan to Council for approval prior to issue of the Construction Certificate. The Traffic Management Plan shall be prepared to RMS standards by an appropriately certified person.

Reason: To ensure appropriate measures have been considered for site access, storage and the operation of the site during all phases of the construction process.

Structural Adequacy and Excavation Work

Excavation work is to ensure the stability of the soil material of adjoining properties, the protection of adjoining buildings, services, structures and / or public infrastructure from damage using underpinning, shoring, retaining walls and support where required. All retaining walls are to be structurally adequate for the intended purpose, designed and certified by a Structural Engineer, except where site conditions permit the following:

- (a) maximum height of 900mm above or below ground level and at least 900mm from any property boundary, and
- (b) Comply with AS3700, AS3600 and AS1170 and timber walls with AS1720 and AS1170.

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

Reason: To provide public and private safety.

Vehicle Crossings Application

The Applicant is to submit an application for driveway levels with Council in accordance with Section 138 of the Roads Act 1993. The fee associated with the assessment and approval of the application is to be in accordance with Council's Fee and Charges.

An approval is to be submitted to the Certifying Authority prior to the issue of the Construction Certificate.

Reason: To facilitate suitable vehicular access to private property.

Certification of Structures Located Adjacent to Council Pipeline or Council Easement

All structures are to be located clear of any Council pipeline or easement. Footings of any structure adjacent to an easement or pipeline are to be designed in accordance with Council's Water Management Policy; (in particular Section 6 - Building Over or Adjacent to Constructed Council Drainage Systems and Easements Technical Specification). Structural certification prepared by a suitably qualified Structural Engineer demonstrating compliance are to be submitted to Council and their acceptance submitted to the Certifying Authority prior to the issue of the Construction Certificate.

Reason: Protection of Council's infrastructure

Pre-Construction Stormwater Assets Dilapidation Report

The Applicant is to submit a pre-construction / demolition Dilapidation Survey of Council's Stormwater Assets within the road reserve and the adjoining property 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 approval issued to the Certifying Authority prior to the issue of the Construction Certificate.

Reason: Protection of Council's infrastructure.

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.

Civil Works Supervision

The Applicant shall ensure all civil works approved in the Construction Certificate are supervised by an appropriately qualified and practicing Civil Engineer.

Details demonstrating compliance are to be submitted to the Principal Certifying Authority.

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

Traffic Control During Road Works

Lighting, fencing, traffic control and advanced warning signs shall be provided for the protection of the works and for the safety and convenience of the public and others in accordance with RMS Traffic Control At Work Sites Manual (<http://www.rms.nsw.gov.au/business-industry/partners-suppliers/documents/technical-manuals/tcws-version-4/tcwsv4i2.pdf>) and to the satisfaction of the Roads Authority. Traffic movement in both directions on public roads, and vehicular access to private properties is to be maintained at all times during the works

Reason: Public Safety.

Vehicle Crossings

The Applicant is to construct one vehicle crossing 4 metres wide in accordance with Northern Beaches Council Drawing No A4-3330/5 EL and the driveway levels application approval. An Authorised Vehicle Crossing Contractor shall construct the vehicle crossing and associated works within the road reserve in plain concrete. The redundant crossing is to be restored to footpath. Prior to the pouring of concrete, the vehicle crossing is to be inspected by Council and a satisfactory "Vehicle Crossing Inspection" card issued.

A copy of the vehicle crossing inspection form is to be submitted to the Principal Certifying Authority.

Reason: To facilitate suitable vehicular access to private property.

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

The stormwater drainage works including the diversion channel, shall be certified as compliant with this consent and all relevant Australian Standards and Codes by a suitably qualified Civil Engineer. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Occupation Certificate.

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

Certification of Structures Located Adjacent to Council Pipeline or Council Easement

All structures are to be located clear of any Council pipeline or easement. Footings of any structure adjacent to an easement or pipeline are to be designed in accordance with Council's Water Management Policy; (in particular Section 6 - Building Over or Adjacent to Constructed Council Drainage Systems and Easements Technical Specification). Structural certification prepared by a suitably qualified Structural Engineer demonstrating compliance are to be submitted to Council and their acceptance submitted to the Principal Certifying Authority prior to the issue of the Occupation Certificate.

Reason: Protection of Council's infrastructure

Geotechnical Certification Prior to Occupation Certificate

The Applicant is to submit the completed Form 3 of the Geotechnical Risk Management Policy (Appendix 5 of P21 DCP) to the Principal Certifying Authority prior to issue of the Occupation Certificate.

Reason: To ensure geotechnical risk is mitigated appropriately.

Post Construction Stormwater Assets Dilapidation Report

The Applicant is to submit a post construction / demolition Dilapidation Survey of Council's Stormwater Assets within the road reserve and the adjoining property 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 post construction / demolition dilapidation report must be submitted to Council for approval and the approval issued to the Certifying Authority prior to the issue of the Occupation Certificate.

Reason: Protection of Council's infrastructure.

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

Maintenance of Stormwater Diversion Channel

The stormwater diversion channel constructed on the site generally in accordance with the concept drawing by Barrenjoey Consulting Engineers Pty Ltd, drawing number 200303 SW1 Issue DA-A dated 05.05.2020 is to be maintained in a working order to ensure all flows are captured and adequately diverted around the dwelling and outdoor structures on the site with the discharge controlled to ensure there is no scouring at the connection to Pittwater at the rear of the site.

Reason: To ensure the property is protected from overland flows.