

Engineering Referral Response

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| Application Number: | DA2019/0078 |
| To: | Jordan Davies |
| Land to be developed (Address): | Lot 24 DP 13900 , 17 Playfair Road NORTH CURL CURL 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

2nd Development Engineering Referral

The applicant discussed with Mr James Leigh, Acting Executive Manager, on site about the installation of precast box culvert and overland flow issue in relation to the application.

An additional information was submitted on 13/9/2019.

A discussion and assessment was undertaken by Development Engineering and Stormwater & Floodplain Engineering.

We both raise no further objection to the application subject to the conditions of consent.

1st Development Engineering referral

Subdivision:

The Applicant shall demonstrate that each proposed allotment provides adequate area for the development of future dwellings. Works undertaken for the purpose of subdivision shall ensure that appropriate provision is made for future development, including any flood mitigation works for the protection of future dwellings from the impact of overland flows. Building envelopes shall be nominated on the plan of subdivision to inform the future development of land, with relevant restrictions that shall include, but not be limited to, the minimum RL of future dwellings.

Overland Flow:

As previously advised, the proposed future dwellings suspended over the overland flow path is not supported. The conveyance and/or storage of overland flows beneath buildings is generally not supported by Council. Council's Engineers are not satisfied that the Applicant has exhaustively investigated all design

solutions to address this matter. The Applicant shall investigate and propose appropriate overland flow flood mitigation measures which may include, but not be limited to, the provision of compensatory flood storage at the rear of the property, reduction and/or adjustment of indicative building envelopes, provision of impermeable flood walls adjacent to northern easement, alternate drainage arrangements, or a combination of these measures.

Concurrence from Council's Floodplain and Stormwater Engineering sections will be required.

It is recommended that the Applicant consult further with Council's Engineers regarding any future proposed design solution.

Council's Stormwater Assets:

In accordance with Council's Building Over or Adjacent to Constructed Council Drainage Easements Technical Specification, the pipeline at the rear of the property shall provide a minimum 1 metre clearance off the edge of the easement (to the outside edge of the pipe) and shall be appropriately conditioned as part of any future approval.

The proposed application cannot be supported by Development Engineering due to lack of information to address:

- Clarity of proposed subdivision with clause C1 Subdivision.
- Stormwater drainage and overland flows for the development in accordance with clause C4 Stormwater.
- Council's stormwater assets for the development in accordance with clause C6 Building Over or Adjacent to Constructed Council Drainage Easements.

Further assessment dated 30/9/2019

Development Engineering and Certification Team and Stormwater & Floodplain Engineering Team have reviewed the applicant's memorandum (trim no. 2019/369780) and advise the following:

1. Council does not support either of the two solutions/options that were proposed in the above response. Council does not support overland flows to pass under suspended slab dwellings as proposed as the optimum solution. The second solution would result in unacceptable impact on 15 Playfair Road and is not supported by Council.

2. Council is led to believe that hydraulics consultant has exhausted options to achieve no adverse impacts (maximum 20mm difference in the 1% AEP storm) on flooding with the full buildings on ground solution. However, insufficient information is submitted to substantiate the above advice.

In summary, Council is not satisfied that the applicant has exhaustively investigated all design solutions based on full buildings-to-ground solution configuration with no adverse impacts of flooding.

The proposed application cannot be supported by Development Engineering due to lack of information to address:

- Clarity of proposed subdivision with clause C1 Subdivision.
- Stormwater drainage and overland flows for the development in accordance with clause C4 Stormwater.

Note:

Any flood modelling information submitted with future Development Applications will be peer reviewed by an independent consultant engaged by Council.

Referral Body Recommendation

Recommended for approval, subject to conditions

Refusal comments

Recommended Engineering Conditions:

FEES / CHARGES / CONTRIBUTIONS

Construction, Excavation and Associated Works Bond (Drainage)

A Bond of \$ 115,000 as security against any damage or failure to complete the construction of Stormwater drainage works as part of this consent.

Reason: Protection of Council's Infrastructure

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

Stormwater Drainage Application

A Stormwater drainage application under Section 68 of the Local Government Act 1993 is to be submitted to Council for approval. The submission is to include four (4) copies of Civil Engineering plans for the design of the new stormwater pipeline, inter- allotment drainage, building footprint, filling and levelling for the overland flow channel 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 plan shall be prepared by a qualified civil engineer. The design must include the following information:

1. The design of the proposed drainage system shall be provided including the location of all pipes, pits and channels.
2. A longitudinal section of the piped system to the new point of connection including pipes size, class, gradients, flow rate and hydraulic grade line
3. The cross sections of finished surface levels of the new overland flow channel with 1% AEP overland flow level
4. A structural design of the proposed overland flow channel. All structures of the channel must be built within the development site including the grate and all retaining structures.
5. The proposed stormwater easement must be plotted on the engineering plan. The proposed pipeline shall be located in the center of the proposed both 1.8 m wide and 3 m wide easements.
6. The proposed level of the building platform for both lots must be plotted on the plan. Council drainage channel must be cut, filled and compacted with VENM to levels in accordance with plans prepared by Cardno, drawing Number 59918041-DA-005 and dated 12/9/2019

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 Principal Certifying Authority 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

Survey 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 Principal Certifying Authority 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 public footways and roadways adjacent to the site shall be maintained in a safe condition at all times during the course of the work.

Reason: Public Safety.

Civil Works Supervision

All civil works approved in the Construction Certificate are to be supervised by an appropriately qualified and practising 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.

Notification of Inspections

Council's Development Engineer is to be given 48 hours notice when the works reach the following stages:

- (a) Installation of Silt and Sediment control devices
- (b) Prior to backfilling of pipelines
- (c) Prior to pouring of stormwater gully pits

NOTE: Any inspections carried out by Council do not imply Council approval or acceptance of the work, and do not relieve the developer/applicant from the requirement to provide an engineer's certification. Council approval or acceptance of any stage of the work must be obtained in writing, and will only be issued after completion of the work to the satisfaction of Council and receipt of the required certification

Reason: To ensure new Council infrastructure is constructed to Council's requirements.

Maintenance of Sediment

Sedimentation and erosion controls are to be effectively maintained at all times during the course of

construction and shall not be removed until the site has been stabilised or landscaped to the Principal Certifying Authority's satisfaction.

Reason: To ensure sediment controls are effective

Site Entry Access way

An all-weather access way at the front of the property consisting of 50-75mm aggregate or similar material at a minimum thickness of 200mm and 15metres long laid over geotechnical fabric is to be constructed prior to commencement of works and maintenance over the works period.

Reason: To reduce sediment being taken offsite

Protection of Adjoining Property - Excavation

Where excavations extend below the level of the base of the footings of a building on an adjoining allotment of land, the person causing the excavation must preserve and protect the building from damage and, if necessary, underpin and support the adjoining building in an approved manner.

Reason: To ensure private and public safety

Site Management Sign

A clearly legible Site Management Sign is to be erected and maintained throughout the course of the works. The sign is to be centrally located on the main street frontage of the site and is to clearly state in legible lettering the following:

- The builder's name, builder's telephone contact number both during work hours and after hours
- That no works are to be carried out in Council's Road Reserve without prior application and approval of a Road Opening Permit from Council.
- That a Road Opening Permit issued by Council must be obtained for any road openings or excavation within Council's Road Reserve associated with development of the site, including stormwater drainage, water, sewer, electricity, gas and communication connections.
- During the course of the road opening works the Road Opening Permit must be visibly displayed at the site.
- That no skip bins or materials are to be stored on Council's Road Reserve.
- That the contact number for Northern Beaches Council for permits is 9970 1111.

Reason: To ensure that contractors on site are aware of council permits that need to be obtained and contact for the bulder/foreman.

Site filling - Virgin Excavated Natural Material (VENM)

Where site fill material is necessary, fill materials must:

1. be Virgin Excavated Natural Material (VENM) only, as defined in: The Protection of the Environment Operations Act 1997
2. be free of slag, hazardous, contaminated, putrescibles, toxic or radioactive excavated material and soil, rock or similar material. Putrescibles and non-putrescibles solid waste (including demolition material) is not permitted.
3. Certification is to be provided to the Principal Certifying Authority by a N.A.T.A. approved laboratory.

Reason: To ensure protection of the natural environment

**CONDITIONS THAT MUST BE COMPLIED WITH PRIOR TO THE ISSUE OF ANY STRATA
SUBDIVISION OR SUBDIVISION CERTIFICATE**

Provision of Services for Subdivision

The applicant is to ensure all services including, water, electricity, telephone and gas are provided, located and certified by a registered surveyor on a copy of the final plan. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure that utility services have been provided to the newly created lots

Creation of Right of Carriageway Benefiting Council

A 1.8 m wide right of carriageway (under the provisions of Section 88B of the Conveyancing Act) is to be created on the final plan of subdivision in favour of Council. The right of carriageway must be located on the northern side of the proposed Lot 1 from the front property boundary to proposed Council's drainage easement.

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

Reason: Council's subdivision standards and the statutory requirements of the Conveyancing Act 1919

Survey Plan - Construction Identification

A declaration by a registered surveyor shall be provided to Council as evidence that all construction has been effected within the appropriate property, easement boundaries and rights of carriageway. This shall be in the form of a copy of the final subdivision or easement plan, with the distances from the boundaries to the edges of these structures endorsed in red thereon and signed by the surveyor. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure accurate location of buildings, access and services

Sydney Water Compliance Certification

A Section 73 Compliance Certificate under the Sydney Water Act 1994 must be obtained from Sydney Water Corporation. Application must be made through an authorised Water Servicing Co-ordinator. Please refer to the Building Developing and Plumbing section of the web site www.sydneywater.com.au <<http://www.sydneywater.com.au>> then refer to "Water Servicing Coordinator" under "Developing Your Land" or telephone 13 20 92 for assistance. Following application a "Notice of Requirements" will advise of water and sewer infrastructure to be built and charges to be paid. Please make early contact with the Co-ordinator, since building of water/sewer infrastructure can be time consuming and may impact on other services and building, driveway or landscape design. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure compliance with the statutory requirements of Sydney Water

Creation of Drainage Easement Benefiting Council

Under the provisions of Section 88B of the Conveyancing Act 1919, a minimum 3 m wide drainage easement located centrally over Council's pipe and a minimum 1.8 m wide drainage easement located centrally over Council's channel must be created on the final plan of subdivision in favour of Council.

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

Reason: Council's Subdivision standards and statutory requirements of the Conveyancing Act 1919

Release of Subdivision Certificate

The Final plan of subdivision will not be issued by Council until the development has been completed in accordance with terms and conditions of the development consent.

Reason: To ensure that the plans relate to approved development

Subdivision Certificate Application

Prior to the issue of the Subdivision Certificate, a completed Subdivision Certificate form, a final plan of subdivision prepared in accordance with the requirements of the Conveyancing Act 1919 are to be submitted to Council. Nine copies of the final plan of subdivision are to be submitted. All plans of survey are to show connections to at least two Survey Co-ordination Permanent Marks. The fee payable is to be in accordance with Council's fees and charges

Reason: Statutory requirement of the Conveyancing Act 1919

Certification of Drainage and stormwater overland flow works and Works as Executed Data

A suitably qualified Civil Engineer shall certify that the completed driveway, fill and stormwater overland flow path works have been constructed in accordance with this consent and the approved Construction Certificate plans. Works as Executed work as executed" (WAE) drawing certified by a registered surveyor and overdrawn in red on a copy of the approved construction certificate plan are to be provided to Council for approval.

Additionally a Compliance Certificate is to be issued by an Accredited Certifier in Civil Works registered with the Institute of Engineers Australia, stating that the works are in accordance with the approved plans.

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

Post-Construction Dilapidation Survey

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 on Council's web site.

The post construction dilapidation report must be submitted to the Council for review. Any damaged to Council's stormwater infrastructure is to be rectified in accordance with Council's technical specifications prior to the release of the security bond.

Reason: Protection of Council's Infrastructure

Restriction as the User (Stormwater Overland flow)

A restriction as to user shall be created on the title over the area affected by the 100 year ARI stormwater overland flow in order to :

1. Prohibit the alteration of the final stormwater overland flow path.
2. Prohibit the erection of any structure (including fencing) within the overland flowpath without the written permission of Northern Beaches Council.
3. The future floor level of any dwelling and structures is not to be less than the building platform levels indicated in plans prepared by by Cardno, drawing Number 59918041-DA-005 and dated 12/9/2019.

Such levels are to be detailed in Australian Height Datum on the Section 88B instrument and related to Australian Height Datum and submitted Council for approval.

4. The future building footprint of any dwelling and structures is not to be larger than the building platform indicated in plans prepared by by Cardno, drawing Number 59918041-DA-005 and dated 12/9/2019.

Northern Beaches Council shall be nominated as a party to release, vary or modify such restriction. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate.

Reason: To ensure no modification of the stormwater overland flow path and the building platform without Council's approval

Title Encumbrances

All easements, rights of carriageway, positive covenants and restrictions as to user as indicated on the plans and required by this consent are to be created on the title naming Northern Beaches Council as the sole authority empowered to release or modify. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Subdivision Certificate

Reason: To ensure proper management of land