

Engineering Referral Response

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| Application Number: | DA2018/1574 |
| To: | Rebecca Englund |
| Land to be developed (Address): | Lot 11 DP 577062 , 23 Fisher 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

Comments 8/5/19

The amended Stormwater management by ADW Johnson (dated February 2019) has been reviewed and is still not satisfactory for the following reasons:

1. As required by Councils "On site detention technical specification" the minimum information which includes a detailed stormwater drainage plan detailed in section 3.1.3 has not been provided.
2.
 - The DRAINS model submitted is not satisfactory. No detailed information has been input into the DRAINS model for either of the proposed OSD basins. A detailed assessment of the OSD design cannot be undertaken. A preliminary assessment indicates that the proposed basin may need to be increased in size.
 - No detail has been provided of the proposed OSD basin for the northern catchment, including any levels or sections.
 - The Report states that existing stormwater infrastructure within St David Avenue does not have capacity to accommodate flows from the development. However, this is based on assumptions and not on surveyed information. No detail, calculations, or DRAINS model has been provided for assessment of the capacity check.
 - The Report states that OSD is proposed within the footprint of Building C to ensure that

existing stormwater infrastructure can accommodate flows from the development. However, no detail has been provided as to location, sizing, levels or sections. (see point 1 minimum information)

Amended Comment (following receipt of amended plans)

The amended Stormwater management by ADW Johnson (dated February 2019) has been reviewed and is still not satisfactory for the following reasons:

1. As required by Councils "On site detention technical specification" the minimum information which includes a detailed stormwater drainage plan detailed in section 3.1.3 has not been provided.
2. The DRAINS model is required to be submitted to Council to be run and reviewed so Council can verify all the input and output files and establish the correct OSD storage volume.
3. Downstream connection details to Councils stormwater drainage system need also to be provided together with a downstream network capacity check using DRAINS particularly for the St Davids drainage line which is connected into the Dee Why CBD network.

Original Comment

1. The proposal is not supported because On Site Stormwater Detention has not been provided and this requirement was communicated at the most recent pre lodgement a meeting . On-site Stormwater Detention in accordance with the Northern Beaches Council's Warringah "On-site Stormwater Detention Technical Specification" Drainage plans detailing the provision of On-site Stormwater Detention. The post development flows are to be limited to the state of nature condition i.e. 0% impervious for all storm events up to and including the 1 in 100 year ARI. The size and location of all proposed detention tanks are to be shown on the architectural and landscaping plans to ensure there is no conflict. All requirements of the Technical Specification for this type of development are to be addressed.
2. It is noted that the site is positioned over two separate catchments, Dee Why Lagoon North and Dee Why Lagoon, flows continue to discharge to their existing catchments. A capacity check of each downstream system that the site proposes to drain into is to be provided as part of the application.
3. The basement structures need to be tanked in accordance with the Sydney Coastal Councils "Groundwater management handbook- a guide for Local Government" A geotechnical report is to address this requirement.

Referral Body Recommendation

Recommended for refusal

Refusal comments

Recommended Engineering Conditions:

FEES / CHARGES / CONTRIBUTIONS

Construction, Excavation and Associated Works Bond (Shared Pedestrian Footpath Construction)

A Bond of \$75000 as security against any damage or failure to complete the construction of the shared pedestrian footpath and associated works as part of this consent.

Reason: Protection of Council's Infrastructure

Construction, Excavation and Associated Works Bond (Maintenance for civil works)

The developer/applicant must lodge with Council a Maintenance Bond of \$20000 for the construction of shared pedestrian footpath. The Maintenance Bond will only be refunded on completion of the six month Maintenance Period, if work has been completed in accordance with the approved plans and to the satisfaction of Council. The maintenance bond is to be apid prior to Council issuing practical completion and may be exchanged for the works bond.

Reason: To ensure adequate protection of Council infrastructure

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

Stormwater Disposal

Stormwater shall be disposed of to an existing approved system or in accordance with Northern Beaches Council's WARRINGAH WATER MANAGEMENT POLICY PL850, A certificate is to be provided to the Principal Certifying Authority stating the Stormwater drainage design is in accordance with the former Warringah council "On Site Detention Technical specification" . The certification is to be submitted with the Construction Certificate application by a qualified experienced practicing Civil Engineer, with Corporate membership of the Institute of Engineers Australia (M.I.E.) stating that downstream Council drainage systems can accommodate the additional flows or provide drainage plans demonstrating compliance with Council's requirements.

Stormwater drainage plans ans a report demonstrating compliance are to be submitted to the Principal Certifying Authority for approval prior to the issue of the Construction Certificate.

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

Submission Roads Act Application for Civil Works in the Public Road

An Application for Works to be approved within Council Roadway, including engineering plans for the shared pedestrian footpath construction in Fisher road is to be submitted to Council for approval under the provisions of Sections 138 and 139 of the Roads Act 1993. The application is to include four (4) copies of Civil Engineering plans for the design of the shared pedestrian footpath and retaining walls which are to be generally in accordance with the Development Application and Council's specification for engineering works - AUS-SPEC #1 and/ or Council's Minor Works Policy. The plan shall be prepared by a qualified structural engineer. The design must include the following information: 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 Council prior to the issue of the Construction Certificate

Reason: To provide public and private safety.

Tanking of Basement Level

The basement area is to be permanently tanked. Details of the tanking are to be prepared by a suitably qualified Engineer. Where temporary dewatering works are required on the development site during construction, the developer/applicant must apply for and obtain a bore license from the NSW Office of Water. The bore license must be obtained prior to commencement of dewatering works. All requirements of the NSW Office of Water are to be complied with and a copy of the approval must be submitted to the Principal Certifying Authority. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of the Construction Certificate.

Reason: To prevent ingress of sub-surface flows into the basement area and to comply with State Government Requirements

Stormwater Drainage/ On-site Stormwater Detention

A Stormwater Drainage plan incorporating On-site Stormwater Detention system must be designed and constructed in accordance with Northern Beaches Council's current WARRINGAH WATER MANAGEMENT POLICY PL850. .

Detailed drainage plans are to be prepared by a qualified experienced practicing Civil Engineer, with Corporate membership of the Institute of Engineers Australia (M.I.E.) .

The drainage plans must address the following:

- i) Stormwater discharges from the developed site are to be limited to the pre-developed state of nature flows up to the 1 in 100 year ARI as required by the former Warringah Council On Site Stormwater Detention Technical Specification.
- ii) The Council Fisher Road drainage network is to be analysed to determine the capacity using a DRAINS model. If the capacity of the downstream drainage system is less than the 1 in 5 year ARI event then either the system shall be upgraded at the applicants cost or a Detention Structure is to be sized to reduce the post development flows to a level that can be accommodated within the existing downstream Council network.

Detailed drainage plans, including engineering certification confirming the above requirements have been satisfied and complying with Council's requirements and specifications, are to be submitted to the Principal Certifying Authority for approval prior to the issue of the Construction Certificate.

Reason: To ensure appropriate provision for the disposal of storm water and storm water management arising from the development.

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.

Shoring of Adjoining Property

Should the proposal require shoring to support an adjoining property or Council land, owner's consent for the encroachment onto the affected property owner shall be provided with the engineering drawings.

Council approval is required if temporary ground anchors are to be used within Council land. A Temporary Ground Anchors (Road Reserve) Application is to be submitted with Council for assessment and approval subject to 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 that owners consent is obtained for ancillary works, and to ensure the protection of adjoining properties and Council land.

Vehicle Crossings Application

A Driveway Levels and Formwork Inspections Application shall be made with Council subject to the payment of the fee in accordance with Council's Fees and Charges. The fee includes all Council inspections relating to the driveway construction and must be paid.

Approval of the application by Council is to be submitted to the Principal Certifying Authority prior to the issue of the Construction Certificate.

Reason: To facilitate suitable vehicular access to private property.

Pre-commencement Dilapidation Report

The applicant must prepare and submit a pre-commencement dilapidation report providing an accurate record of the existing condition of adjoining public and private properties and public infrastructure (including roads, gutter, footpaths, etc). A copy of the report must be provided to Council, any other owners of public infrastructure and the owners of adjoining and affected private properties.

Reason: Protection of Council's and Private Party's Infrastructure during construction.

CONDITIONS THAT MUST BE ADDRESSED PRIOR TO ANY COMMENCEMENT

Public Liability Insurance - Works on Public Land

Any person or contractor undertaking works on public land must take out Public Risk Insurance with a minimum cover of \$20 million in relation to the occupation of, and approved works within Council's road reserve or public land, as approved in this consent. The Policy is to note, and provide protection for Northern Beaches Council, as an interested party and a copy of the Policy must be submitted to Council prior to commencement of the works. The Policy must be valid for the entire period that the works are being undertaken on public land.

Reason: To ensure the community is protected from the cost of any claim for damages arising from works on public land.

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.

Property Boundary Levels

The property boundary levels shall match the existing levels except where modified for the vehicular crossing. The applicant shall design and construct having regard for the existing levels. No approval is granted for any change to existing property alignment levels to accommodate the development. Details demonstrating compliance are to be submitted to the Principal Certifying Authority.

Reason: To maintain the existing profile of the nature strip/road reserve

Progress Certification (Road & Subdivision)

Written certification is to be provided by a suitably qualified engineer upon completion and/or as and when requested by the Council for the following stages of works

- (a) Footpath sub-grade trimmed and compacted **
- (d) Base-course laid and compacted **
- (f) Kerb and gutter construction
- (g) Pouring of concrete for the shared pedestrian footpath.
- (h) Landscaping and vegetation
- (i) Clean-up of site, and of adjoining Council roadway and drainage system. (**To be tested by a recognised N.A.T.A. approved laboratory). 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

Footpath Construction

The applicant shall reconstruct the footpath in Fisher road to a 2.5m wide shared pedestrian footpath from the existing shared pedestrian footpath fronting the Police Citizens Youth Club building to the corner of St Davids avenue.

The works shall be in accordance with the following:

- (a) All footpath works are to be constructed in accordance with Council's Specification
- (b) Council is to inspect the formwork prior to pouring of concrete to ensure the works are in accordance with Council's specification for footpath. Details demonstrating compliance are to be submitted to the Principal Certifying Authority.

Reason: To ensure compliance of footpath 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

- (a) Prior to pouring of kerb and gutter
- (b) Shared Footpath subgrade level / basecourse level

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.

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 Principal Certifying 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 provision of one vehicle crossing 5.5 metres wide in accordance with Northern Beaches Council Drawing No A4-3330/ [INSERT] and specifications. An Authorised Vehicle Crossing Contractor shall construct the vehicle crossing and associated works within the road reserve in plain concrete. All redundant laybacks and crossings are to be restored to footpath/grass. Prior to the pouring of concrete, the vehicle crossing is to be inspected by Council and a satisfactory "Vehicle Crossing Inspection" card issued.

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

Reason: To facilitate suitable vehicular access to private property.

Maintenance of 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.

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

Cleaning of Vehicles Leaving Site

Adequate measures shall be undertaken to remove clay from vehicles leaving the site so as to maintain public roads in a clean condition.

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

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

Authorisation of Legal Documentation Required for Onsite Detention

The original completed request forms (NSW Land Registry standard forms 13PC and/or 13RPA) must be submitted to Council, with a copy of the Works-as-Executed plan (details overdrawn on a copy of the approved drainage plan), hydraulic engineers certification and Compliance Certificate issued by an

Accredited Certifier in Civil Works. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of any interim / final Occupation Certificate.

Reason: To create encumbrances on the land.

On-Site Stormwater Detention Compliance Certification

Upon completion of the on-site stormwater detention (OSD) system, certification from a consulting engineer and a "work as executed" (WAE) drawing certified by a registered surveyor and overdrawn in red on a copy of the approved OSD system plans are to be provided to Council. 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.

Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of any interim / final Occupation Certificate.

Reason: To ensure stormwater disposal is constructed to Council's satisfaction. (DACENF10)

Positive Covenant and Restriction as to User for On-site Stormwater Detention

A positive covenant shall be created on the title of the land requiring the proprietor of the land to maintain the on-site stormwater detention structure in accordance with the standard requirements of Council. The terms of the positive covenant 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 NSW Land Registry Services. Northern Beaches Council shall be nominated as the party to release, vary or modify such covenant.

A restriction as to user shall be created on the title over the on-site stormwater detention system, restricting any alteration to the levels and/or any construction on the land. The terms of such restriction are to be prepared to Council's standard requirements at the applicant's expense and endorsed by Council prior to lodgement with NSW Land Registry Services. Northern Beaches Council shall be nominated as the 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 any interim / final Occupation Certificate.

Reason: To ensure the on-site detention and/or pump system is maintained to an appropriate operational standard.

Retaining wall

The retaining wall works shall be certified as compliant with all relevant Australian Standards and Codes by a Structural Engineer. Details demonstrating compliance are to be submitted to the Principal Certifying Authority prior to the issue of any final Occupation Certificate.

Reason: Public and Private Safety

Post-Construction Road Reserve Dilapidation Report

The applicant must bear the cost of all restoration works to Council's property damaged during the course of this development. All building work must have been carried out in accordance with the provisions of the Building Code of Australia

Note: Where by Council is not the Principal Certifying Authority, Refund of the trust fund deposit will also be dependent upon receipt of a final Occupation Certificate by the Principal Certifying Authority,

Post Construction Dilapidation Report and infrastructure inspection by Council.

Reason: To ensure security against possible damage to Council property.

Post-Construction Dilapidation Report

The applicant must prepare and submit a post-construction dilapidation report. The report must clearly detail the final condition of all property, infrastructure, natural and man-made features that were originally recorded in the pre-commencement dilapidation report. A copy of the report must be provided to Council, any other owners of public infrastructure and the owners of adjoining and affected private properties

Reason: To ensure security against possible damage to Council and private property.

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

Restoration of Damaged Public Infrastructure

Restoration of all damaged public infrastructure caused as a result of the development to Council's satisfaction. Council's written approval that all restorations have been completed satisfactorily must be obtained and provided to the Private Certifying Authority with the Occupation Certificate application.

Reason: To ensure public infrastructure is returned to the state it was in prior to development.