

## Engineering Referral Response

<b>Application Number:</b>	DA2021/1039
<b>Date:</b>	08/08/2022
<b>To:</b>	Adam Susko
<b>Land to be developed (Address):</b>	Lot 2566 DP 752038 , 16 Wyatt Avenue BELROSE NSW 2085 Lot 2597 DP 752038 , 16 Wyatt 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

The submitted flood report by ACOR Consultants dated 08 June 2021 has been reviewed and the hydrologic and hydraulic modelling are considered acceptable. There are a number of anomalies within the report and corresponding stormwater plans that require clarification as follows.

1. All post development maps provided in the flood report show flows along the rear of proposed building 2 which is inconsistent with the stormwater plans which include a flood wall along this portion of the proposed driveway. The flood maps are to be amended to suit the driveway design to ensure no flows cross the driveway with potential to enter the proposed basement of building 2.
2. The proposed driveway includes two sections where the driveway is at 0% grade, between chainages 118 to 126.97 and 172 to 188. It is considered that a minimum grade of 1% be provided to ensure any surface or floodwater is directed down the driveway. The cross fall of the driveway is to ensure flows are directed away from the proposed buildings. All cross sections are to be amended to suit.
3. The submitted cross section through the OSD basin is inconsistent with the existing ground levels. Existing and proposed levels are to be provided on the section and an additional cross section is to be provided due to the significant change of levels in the proposed location of the basin.
4. Details of the level spreader are to be provided.
5. Details of the flood dispersion area.

6. Sections through the proposed flood storage area.
7. A typical section through the proposed grass swale.

In terms of the proposed culvert under the access road, it is considered that the report includes two scenarios for 50% blockage of the culvert and 100% blockage to demonstrate the impact on the flood regime. Additional post development flood maps are to be provided for each scenario. A section through the culvert is to be provided detailing the inlet, junction pit and outlet including rip rap.

With regard to the proposed driveway crossing design, the proposed levels are to be amended to suit Council's standard drawing A4/3330/3 NL which is available on Council's website.

As portions of the access driveway are elevated, a vehicle barrier design is to be provided in accordance with AS/NZS 2890.1:2004. The plans and cross sections are to be amended to suit.

Development Engineers cannot support the application due to insufficient information to assess the stormwater management and vehicular access to the site in accordance with WLEP 2000.

#### **Amended plans and report received 21/12/2021 & 1/6/2022**

The amended Flood Study by ACOR Consultants dated 3 December 2021 has been reviewed and is considered acceptable. The amended Civil Engineering plans by ACOR Consultants, project number NSW210450 drawing numbers C1.01C, C1.02C, C1.05C, C1.06C, C1.07C, C1.08A, C3.01C, C3.02B, C4.01B, C4.10B, C4.11B, C4.12B, C5.01C and C7.01B dated 07.05.21, 09.06.21 and 03.12.21 respectively are satisfactory subject to conditions.

The revised proposal relies upon the construction of the access driveway through 14 Wyatt Avenue and the creation of a right of way over the driveway. It is considered that Planning must include deferred commencement conditions in this approval to ensure the driveway is constructed and right of way is created prior to activation of this consent.

As this development creates a new access driveway to a multi residential development, conditions have been included to align the new driveway for this development at number 16 with the approved driveway for number 14 with tapering to occur beyond the new crossing to meet the existing bitumen pavement in Wyatt Ave. As the works on number 14 have yet to be approved or constructed, the conditions provided for these works extend to the boundary of number 12.

Development Engineering support the proposal, 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 Security Bond (Road works)**

The applicant is to lodge a bond with Council of \$25,000 as security against any damage or failure to complete the construction of road pavement/shoulder reconstruction works 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.

### **Construction, Excavation and Associated Works Security Bond (Crossing / Kerb)**

The applicant is to lodge a Bond of \$15,000 as security against any damage or failure to complete the construction of any vehicular crossings, kerb and gutter, any footpath works and removal of any redundant driveways required 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**

### **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.

### **On-site Stormwater Detention Details**

The Applicant is to provide 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 ACOR Consultants, project number NSW210450 drawing numbers C1.01D, C1.02D, C1.05D, C1.06D, C1.07D, C1.08D, C3.01D, C3.02C dated 27.06.22. Detailed drainage plans are to be prepared by a suitably qualified Civil Engineer, who has membership to Engineers Australia, National Engineers Register (NER) and registered in the General Area of Practice for civil engineering.

The drainage plans must address the following:

1. Pool style fencing around the perimeter of the OSD basin and/or the embankments.
2. Access to the basin for future inspection and maintenance.
3. Maintenance manual for the basin and drainage system for the site.
4. Orifice plate design and details.
5. Outlet pipe design from OSD basin.
6. Pit details.

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 the disposal of stormwater and stormwater management arising from the development.

### **Submission Roads Act Application for Civil Works in the Public Road**

The Applicant is to submit an application for approval for infrastructure works on Council's roadway. Engineering plans for the new development works within the road reserve and this development

consent are 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 driveway crossing, kerb and gutter and road pavement and footpath along the frontage of the site which are to be generally in accordance with the 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. Construction of road shoulder and kerb and gutter along the full frontage of the site to provide for a 10 metre wide (kerb to kerb) road carriageway from the boundary to number 12 up to the proposed driveway crossing and then tapered to match the existing bitumen edge at number 18.
2. Construction of a 1.5 metres wide concrete footpath along the frontage of the site between the proposed bin path up to the boundary of number 12.
3. Construction of a 5.5 metre wide vehicle crossing in accordance with Council's drawing A4/3330/3 NL.

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 ensure engineering works are constructed in accordance with relevant standards and Council's specification.

### **Vehicle Driveway Design**

The Applicant is to ensure driveway gradients within the private property do not exceed a gradient of 1 in 4 (25%) with transition gradients in accordance with AS/NZS2890.1:2004. Access levels across the road reserve are to comply with the allocated vehicle profile detailed in this consent. Any elevated sections of driveway must include a barrier system in accordance with the requirements of section 2.4.5 of AS/NZS 2890.1:2004.

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

Reason: To ensure suitable vehicular access to private property.

### **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.

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 Council's Road Reserve (Temporary road anchors)**

Should the proposal require shoring to support an adjoining property or Council land, the Applicant shall provide the adjoining properties with engineering drawings, detailing the proposed shoring works for their consideration and approval.

Written approval from Council under Section 138 of the Roads Act 1993 is required if temporary ground anchors are to be used within Council's road reserve. The Owner's approval is to be submitted to the 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.

### **Overland Flow Path and Flood Storage Compliance Certificate**

An overland flow path and flood storage system must be designed and constructed in accordance with Council's Water Management for Development Policy and the 1% AEP Flood Study prepared by ACOR Consultants Version 3.0 dated 03/12/21 and the concept drainage drawings prepared by ACOR Consultants, project number NSW210450 drawing numbers C1.01D, C1.02D, C1.05D, C1.06D, C1.07D, C1.08B, C3.01D, C3.02C dated 27.06.22.

The plans must address the following:

1. A minimum freeboard of 500mm to all habitable floor level and the basement garages for all storm events up to the 1% AEP.
2. Detailed engineering plans for all flood walls and flood storage area required to achieve the freeboard.
3. Detailed overland flow path plan with dimensions and sections to define the area required to contain the flow up to the 1% AEP.
4. Details of the pipe and headwall downstream of the flood storage area.
5. Relocation of the existing 50kL rainwater tank to ensure it is clear of overland flow.
6. Structural certification for all slabs to be capable of withstanding the forces imposed by the 1% AEP overland flow, including hydrostatic, hydrodynamic, debris impact and buoyancy forces.
7. Fencing to be light / open style within the site and solid flood walls around all boundaries to provide a safe passage for overland flow.

The applicant is to provide plans including specifications and details showing the overland flow path and flood storage system to the Certifying Authority for approval prior to the issue of the Construction Certificate. Such details are to be accompanied by a certificate from a practicing Civil Engineer who has membership with Engineers Australia, National Engineers Register (NER) and registered in the General Area of Practice for Civil Engineering.

Reason: To ensure appropriate provision for overland flow through the development site.

## **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 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.

### **Progress Certification Section 138 Roads Act Approval**

The applicant shall provide written certification is to be provided by a suitably qualified engineer upon completion and/or as and when requested by the Roads Authority for the following stages of works:

- (a) Silt and sediment control facilities
  - (b) Laying of stormwater pipes and construction of pits
  - (c) Proof Roll
  - (d) Sub-grade trimmed and compacted \*\*
  - (e) Base-course laid and compacted \*\*
  - (f) Kerb and gutter construction
  - (g) Pavement
  - (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 the Section 138 Roads Act approval.

### **Civil Works Supervision**

The Applicant shall ensure all civil works approved in the Section 138 Roads Act approval are supervised by an appropriately qualified and practicing Civil Engineer.

Details demonstrating compliance are to be submitted to the Principal Certifying Authority and/or Roads Authority.

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

### **Footpath Construction**

The applicant shall construct a 1.5 metre wide concrete footpath in accordance with the following:

- (a) All footpath works are to be constructed in accordance with the Section 138 Roads Act approval.
- (b) Council is to inspect the formwork prior to pouring of concrete to ensure the works are in accordance with the Section 138 Roads Act approval for the 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 (infrastructure works to be handed over to Council)**

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
- (d) Prior to pouring of kerb and gutter
- (e) Subgrade level / basecourse level / subbase
- (f) Sealing road pavement

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.

Reason: To ensure new Council infrastructure is constructed in accordance with Auspec 1 Council's design and specification standards.

### **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 5.5 metres wide in accordance with Northern Beaches Council Drawing No A4-3330/3 NL and the Roads Act application approval. 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 kerb, 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.

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.

### **Kerb and Gutter Construction**

The Applicant is to construct kerb and gutter and associated works along the entire frontage of the site in accordance with Northern Beaches Council Drawing No. A4 2276/A and the Roads Act approval. Prior to the pouring of concrete, the works are to be inspected by Council and an approval issued.

The approval is to be submitted to the Principal Certifying Authority.

Reason: To facilitate the preservation of on street parking spaces.

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

### **Certification of Civil Works on Council Land**

The Applicant shall submit a suitably qualified Civil Engineer's certification that the completed works in the road reserve have been constructed in accordance with this consent and the approved Section 138 Roads Act approval. Works as executed data certified by a registered surveyor prepared in accordance with Council's 'Guideline for preparing Works as Executed Data (details overdrawn in red on a copy of the approved Section 138 Roads Act plans) for the Council Assets in an approved format shall be

submitted to Council for acceptance prior to the release of the Occupation Certificate. Any damage to Council's assets are to be rectified in accordance with Council's requirements prior to the release of the security bonds.

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

Reason: To ensure compliance of works within Council's Section 138 Roads Act approval.

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

The Applicant shall lodge the Legal Documents Authorisation Application with Council. The application is to include the original completed request forms (NSW Land Registry standard forms 13PC and/or 13RPA) and a copy of the Works-as-Executed plan (details overdrawn on a copy of the approved drainage plan) and Hydraulic Engineers' certification for the completed on-site stormwater disposal system works and overland flow path and flood storage and flood wall works.

The Applicant shall create on the Title a positive covenant in respect to the ongoing maintenance of the on-site stormwater disposal structures and the overland flow path, and restriction as to user over the on-site stormwater disposal structures and overland flow path within this development consent restricting any alteration to the level and/or any construction on the land. The terms of the positive covenant and restriction as to user are to be prepared to Council's standard requirements at the applicant's expense and endorsed by Northern Beaches Council's delegate prior to lodgment 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 as to user for on-site storm water detention and the overland flow path is to be submitted.

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

Reason: To ensure the on-site stormwater disposal system and overland flow path is maintained to an appropriate operational standard and is not altered.

### **Certification Elevated Parking Facility Work**

The Applicant shall submit a Structural Engineers' certificate certifying that the elevated parking facility was constructed in accordance within this development consent and the provisions of Australian/New Zealand Standard AS/NZS 2890.1:2004 parking facilities - Off-street car parking, in particular Section 2.4.5 Physical controls.

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

Reason: Compliance with this consent.