

Engineering Referral Response

Application Number:	DA2024/0004
Proposed Development:	Demolition works and construction of a dwelling house including swimming pool
Date:	29/05/2024
To:	Anaiis Sarkissian
Land to be developed (Address):	Lot 22 DP 7022 , 31 Kooloorra Avenue FRESHWATER NSW 2096

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

29/05/2024:

Applicant has submitted flood study internal ref: TRIM 2024/363443. Council's Flood team has provided conditions internal ref: 2024/386137. these conditions have been incorporated in the assessment.

No objections to approval subject to conditions as recommended.

For Planner:

Please include Flood Report by NB Consulting Engineers, Job No. 2404032, Issue A, Dated 17th May 2024 as part of DA approved documents.

04/04/2024:

Development Application is for the demolition of the existing structures and the construction of a new two storey dwelling, including a detached garage, new driveway, swimming pool and associated landscaping

Access

Site is corner property, existing vehicular access is from Kooloorra Avenue and the proposed vehicular access is from Gore Street. A site security gate is proposed (refer stormwater plans) which swings towards the Gore street, any gate proposed must not swing open towards the street.

Stormwater

Total site area is less than 450sqm, site falls towards street, No OSD (On-site Stormwater Detention System) is required. Proposal is to discharge site stormwater to street kerb in Kooloora Avenue.

The site is located within the basin of a remnant lagoon with a catchment discharging to Freshwater Beach, an overland flow study report is required.

A Civil Engineer should be engaged to investigate and verify whether the subject property is affected by an overland flows during a 1 in 100 ARI storm event. The study shall include:

1. The applicant is to submit a hydraulic report showing the 100 Year Average Recurrence Interval (ARI) stormwater flow over the subject site, prepared by a Chartered Professional Civil Engineer of Engineers Australia. All calculations are to be carried out in accordance with the guidelines provided in "Australian Rainfall and Run Off", a publication of the Institution of Engineers, Australia. All levels are to be shown in Australian Height Datum (AHD).
2. The 100 year ARI flood flow level must be established in AHD for the proposed future floor levels which shall be a minimum of 500 mm above the 100 year flood level. This is to ensure that the proposed future dwellings are protected in major storm events.
3. A Drains Model of the Freshwater catchment using sub-catchments, infiltration basins is to be created in the overland flow study report. Using the Drains model, the peak water level height within the infiltration basin for the critical storm event, considering tailwater effects, incoming catchment flows, outgoing absorption flows, and outgoing pipe flows is to be determined

The proposed development must comply with all requirements of Council's Water Management for Development Policy, Section 11, Overland Flow Flooding. Runoff from the developed site must not cause a detrimental effect on any property.

Failure to comply with Clause C4 in Warringah DCP 2011

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:

**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 street gutter in Koolooro Avenue.

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.

Building Components and Structural Soundness

B1 - All new development below the Flood Planning Level of 5.55m AHD shall be designed and constructed from flood compatible materials.

B2 – The shelter in place refuge must be designed to ensure structural integrity up to the Probable Maximum Flood level of 7.50 m AHD, with the remainder of the new development designed to ensure structural integrity up to the Flood Planning Level of 5.55m AHD. The forces of floodwater, debris load, wave action, buoyancy and immersion must all be considered.

B3 - All new and existing electrical equipment, power points, wiring and connections must be located above the Flood Planning Level of 5.55m AHD, protected from flood water or have residual current devices installed to cut electricity supply during flood events.

Details demonstrating compliance are to be submitted to the Principal Certifier for approval.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

Emergency Response

E1 - The shelter-in-place refuge must:

a)	Have a floor level at or above the Probable Maximum Flood level of 7.50 m AHD; and
b)	Have a floor space that provides at least 1m ² per person; and
c)	Be intrinsically accessible to all people on the site, plainly evident, and self-directing, with sufficient without reliance on electrical means.

Details demonstrating compliance are to be submitted to the Principal Certifier for approval.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

Vehicle Crossings Application

The Applicant is to submit an application with Council for driveway levels to construct one vehicle crossing 3 metres wide in accordance with Northern Beaches Council Standard vehicle crossing profile and in accordance with Section 138 of the Roads Act 1993.

Note,

- driveways are to be in plain concrete only.
- any gate proposed must not swing open towards the street
- new vehicle crossing in Gore Street to be at least 1m away from existing power pole.
- reinstate redundant layback and vehicular crossings along frontage of site in Kooloora Avenue to conventional kerb and gutter, footpath or grassed verge as appropriate with all costs borne by the applicant.

The fee associated with the assessment and approval of the application is to be in accordance with Council's Fee and Charges.

A Council approval is to be submitted to the Certifier prior to the issue of the Construction Certificate.

Reason: To facilitate suitable vehicular access to private property.

Pools

The pool and pond coping is to be less than 150mm above natural ground level.

All electrical equipment associated with the pool (including pool pumps) is to be waterproofed and/or located at or above the Flood Planning Level of 5.55m AHD.

All chemicals associated with the pool are to be stored at or above the Flood Planning Level of 5.55m AHD.

Pool fencing shall be open to allow for the unimpeded movement of flood waters. It must be designed with a minimum of 50% open area from the natural ground level up to the 1% AEP flood level of 5.55m AHD.

Details demonstrating compliance are to be submitted to the Principal Certifier for approval.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

Fencing

New fencing (including pool fencing, boundary fencing, balcony balustrades and accessway balustrades) shall be open to allow for the unimpeded movement of flood waters. It must be designed with a minimum of 50% open area along any straight length, from the natural ground level up to the 1% AEP flood level. Openings shall be a minimum of 75mm x 75mm.

Details demonstrating compliance are to be submitted to the Principal Certifier for approval.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

Car Parking

D5 - The floor level of the proposed garage shall be set at or above the 1% AEP flood level of 5.05m AHD.

Details demonstrating compliance are to be submitted to the Principal Certifier for approval.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

Flood Effects Caused by Development

There is to be no filling of the land or any other reduction of the available flood storage which results in a net loss of storage below the 1% AEP flood level of 5.05m AHD.

The flood storage compensation works, outlined in the Flood Risk Management Report by NB Consulting Engineers, Job No. 2404032, Issue A, Dated 17th May 2024, are to be completed in accordance with the report.

Details demonstrating compliance are to be submitted to the Principal Certifier for approval.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

Floor Levels

C1 - New floor levels within the development shall be set at or above the Flood Planning Level of 5.55m AHD.

Details demonstrating compliance are to be submitted to the Principal Certifier for approval.

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.

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

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.

Reinstatement of Kerb

The Applicant shall reinstate all redundant laybacks and vehicular crossings to conventional kerb and gutter, footpath or grassed verge as appropriate with all costs borne by the applicant.

Details demonstrating compliance are to be submitted to the Principal Certifier prior to the issue of an Occupation Certificate.

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

Building Components and Structural Soundness

B2 - A suitably qualified structural engineer is to certify the structural integrity of the shelter in place up to the Probable Maximum Flood level of 7.50 m AHD, and the remainder of the new development up to the Flood Planning Level of 5.55 m AHD. The depth, velocity, debris load, wave action, buoyancy and immersion must all be considered.

B3 - A suitably qualified electrician or contractor is to certify that all new and existing electrical equipment, power points, wiring and connections are located above the Flood Planning Level of 5.55m AHD, are protected from flood water or have residual current devices installed to cut electricity supply during flood events.

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

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone

property and reduce public and private losses in accordance with Council and NSW Government policy.

Certification of Works as Executed

A suitably qualified engineer and/or registered surveyor is to certify that the completed works have been constructed in accordance with this consent and the approved plans with respect to the following:

1.	Floor levels for ground floor, shelter in place refuge and garage are set at or above the required
2.	There has been no filling on the land other than what has been approved
3.	The flood storage compensation works, outlined in the Flood Risk Management Report by NB A, Dated 17th May 2024, have been completed in accordance with the report.
4.	Openings are provided in fencing where required for the free passage of flood waters

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

Reason: To reduce the impact of flooding and flood liability on owners and occupiers of flood-prone property and reduce public and private losses in accordance with Council and NSW Government policy.