

Natural Environment Referral Response - Flood

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| Application Number: | DA2022/1649 |
| Proposed Development: | Alterations and additions to an educational establishment |
| Date: | 30/01/2023 |
| To: | Adam Susko |
| Land to be developed (Address): | Lot 12 DP 1119562 , 10 Namona Street NORTH NARRABEEN NSW 2101 Lot 3 DP 1018621 , 6 Namona Street NORTH NARRABEEN NSW 2101 |

Reasons for referral

This application seeks consent for the following:

- All Development Applications on land below the 1 in100 year flood level;
- All Development Applications located on land below the Probable Maximum Flood levels.

And as such, Council's Natural Environment Unit officers are required to consider the likely impacts on drainage regimes.

Officer comments

The proposed development is for the demolition, alterations and additions at Narrabeen North Public School (NNPS) & Narrabeen Sports High School (NSHS). Works are proposed to be undertaken in multiple stages. From the Statement of Environmental Effects, the works which are the subject of this DA include:

NNPS - construction of a new Building D at NNPS.

NSHS - alterations and additions to Building A3 including demolition of an existing two storey structure to the west of the existing gymnasium; construction of a two storey extension comprising at ground floor level a new stage to the gymnasium, amenities, change rooms, storage and a first aid room; new lift access; refurbishment of rooms along the northern wall of the gymnasium and construction of a new COLA to the south of it. The extension is significantly larger in area than the structure to be demolished.

Flood information from the Narrabeen Lagoon Flood Study (NLFS) (2013) includes:

1% AEP flood level: 3.03m AHD

1% AEP flood level with climate change: 3.79m AHD

Probable Maximum Flood (PMF) level: 4.87m AHD

The Flood Management Report refers to a 1% AEP flood level of 2.96m AHD even though it is based on the same base TUFLOW model used in the Narrabeen Lagoon Flood Study. The discrepancy is possibly because the Flood Management Report has not accounted for the 5% AEP design ocean condition, which was modelled in the NLFS and included in the 1% AEP design flood level for use in determining the FPL.

NNPS

The Building D site is affected by the Low to Medium Flood Risk Precinct and a Flood Life Hazard Category of up to H3. Floor levels for Building D are above the PMF level and the development is outside of the 1% extent.

There are no flood related objections for the construction of Building D at NNPS.

NSHS

The Building A site is affected by the Medium to High Flood Risk Precinct and a Flood Life Hazard Category of H5.

The development at NSHS is non-compliant with Clause B3.11 of the Pittwater DCP and Clause 5.21 of the Pittwater LEP. The most pertinent points are as follows:

Floor levels:

Control C2 states that "All floor levels within the development shall be at or above the Probable Maximum Flood level or Flood Planning Level (FPL), whichever is higher". The Finished Floor Levels (FFLs) in the proposed extension west of the gymnasium are not only well below the PMF level of 4.87m AHD, but also well below the 1% AEP level and FPL (even without consideration of climate change). It is considered in this case that consideration of climate change is not required for determining FFLs.

The FFL for the stage is 3.32m AHD and the FFL for the amenities, change rooms, storage and first aid room ranges from 2.42 to 2.55m AHD.

- It is considered that amenities, change rooms and corridors may be permitted at the low FFL levels, provided that they are constructed and furnished with flood compatible materials which would not be damaged during a flood event.
- The stage may be permitted at a FFL of 3.32 mAHD provided that there is suitable access from the gymnasium to the second storey for occupants to shelter in place above the PMF. This consideration assumes that the stage level has been based on an optimum height above the floor level of the gymnasium for viewing of performances.
- Storage areas generally need to be set at or above the FPL, as they usually contain items that would be damaged during a flood event. However in this case, the chair store area may be permitted at the lower FFL as it is considered that this needs to be at the same FFL as the gymnasium for access purposes. Also, chairs would probably be made from plastic and metal and so would not be damaged during a flood.
- The P&C store, the outdoor store and the bulk store need to be set at or above the FPL of 3.53m AHD.
- The cleaner store room and the student amenities adjacent to it may be permitted at the lower FFL provided that all potentially hazardous chemicals can only be stored above or are protected (in accordance with industry standards) from flood waters at the FPL of 3.53m AHD.
- The First Aid room needs to be set at or above the PMF level of 4.87m AHD, as it will be an area which may be occupied by students, including students who may be injured or ill.
- The areas to be refurbished may retain their existing FFLs.

Flood Storage:

Control A2 states that "Development shall not be approved unless it can be demonstrated in a Flood Management Report that in all events up to the 1% AEP event there is no net loss of flood storage. Consideration may be given for exempting the volume of standard piers from flood storage calculations. If Compensatory Works are proposed to balance the loss of flood storage from the development, the Flood Management Report shall include detailed calculations to demonstrate how this is achieved".

The extension of Building A reduces the available flood storage below the 1% AEP flood level. The Flood Management Report dismisses this as "negligible", although Impact Mapping in Annex E of the Flood Management Report shows some tiny areas of adverse impacts, as per the definition of adverse impacts in Section A1.9 of the Pittwater DCP. Also, the assessment only takes into account this one development and does not consider the cumulative impact of similar reduction in flood storage if this

occurred on all properties within the catchment. (Note that one of the objectives of Clause 5.21 of the LEP is to "avoid adverse or cumulative impacts on flood behaviour and the environment"). No flood storage volumes have been calculated and no compensatory flood storage has been provided.

It is considered that there is scope to incorporate compensatory flood storage into the development, eg below the stage and storage areas. The Applicant is encouraged to contact Council's Flood Team to discuss before addressing this issue.

Electrical:

It is unclear from the plans where the motor for the lift is to be located. It needs to be above the FPL and this needs to be specifically identified on the plans.

The proposed development cannot be further considered or supported until the above points have been addressed and the plans satisfactorily updated.

The proposal is therefore unsupported.

Note: Should you have any concerns with the referral comments above, please discuss these with the Responsible Officer.

Recommended Natural Environment Conditions:

Nil.