

Our ref: L.A12029.004.02\_NEP-DA\_FIA\_Addendum1\_FINAL.docx

23 February 2023

SINSW  
c/o: JohnStaff  
Level 5, 9 Castlereagh Street  
Sydney NSW 2000  
Milsons Point, NSW Australia 2061

Attention: Priya Mekala

Dear Priya

**RE: NARRABEEN EDUCATION PRECINCT – ADDENDUM #1 TO FLOOD RISK AND IMPACT ASSESSMENT FOR DEVELOPMENT APPLICATION**

**Background**

Northern Beaches Council (“Council”) has undertaken a preliminary assessment of Development Application DA2022/1649 for alterations and additions to Narrabeen Sports High School (NSHS) and Narrabeen North Public School (NNPS) for the Narrabeen Education Precinct (NEP) development. The outcomes of Council’s preliminary assessment are outlined in their letter dated 3 February 2023.

As an outcome of this preliminary assessment, it is noted that Council has no flood-related objections for the construction of Building D at NNPS (refer Council letter dated 3 February 2023). However, Council has requested additional flooding information in relation to the proposed works associated with the two storey extension of Building A at NSHS. The following responds to those flooding related items raised by Council and provides additional supporting information, where required. Please note that this letter forms an addendum to the ‘Narrabeen Education Precinct - Flood Risk and Impact Assessment for DA’ (BMT, 2022) (document reference: ‘R.A12029.001.01\_NEP-DA\_FIA\_FINAL.pdf’) (hereafter referred to as the “NEP DA FIA”).

**Response to Council’s Request for Further Information**

**Updated Flood Planning Level**

It is noted that Council has extracted flood information from the ‘Narrabeen Lagoon Flood Study; (NLFS) (2013) and has indicated the following adopted flood information applies to NEP:

- 1% AEP flood level = 3.03 mAHD
- 1% AEP flood level with climate change = 3.79 mAHD
- Probable Maximum Flood (PMF) level = 4.87 mAHD.

Therefore, Council’s adopted Flood Planning Level (FPL) for the NEP site is 3.53 mAHD (i.e. 3.03 mAHD plus 0.5 m freeboard). This FPL of 3.53 mAHD should be adopted for NEP (i.e. in lieu of 3.46 mAHD as outlined in the NEP DA FIA).

### Floor Levels within NNPS Building A Extension

As outlined in the NEP DA FIA, as an educational establishment, the NEP is classified as “Vulnerable & Critical Land Use”. Minimum habitable FFLs must be set at the higher of the FPL and PMF level. Therefore the minimum FFL requirement for development within NEP is the PMF level of 4.87 mAHD.

As noted by Council, the ground floor Finished Flood Levels (FFL) for the Building A extension are as follows:

- Stage = 3.32 mAHD
- Amenities, change rooms and first aid room = 2.42 to 2.55 mAHD

Level 1 of the Building A extension has a FFL of 5.9 mAHD and is therefore located higher than the PMF level of 4.97 mAHD.

Whilst these proposed FFLs are situated below the 1% AEP flood level, FPL and PMF level, the above listed ground floor facilities questioned by the Council are co-located with the gymnasium (existing and proposed for refurbishment) due to functional adjacency requirements. The Applicant intends to construct and furnish these areas with flood compatible materials that would not be damaged during a flood event. It is noted by Council in their letter dated 3 February 2023 that areas to be refurbished may retain their existing FFLs.

Additional information addressing Council's concerns regarding the proposed FFLs, including further details of the use of these areas, the likely specific contents of store rooms and the potential for floodwaters to damage contents, is provided below.

### First Aid Room

The first aid room provides the facilities for *initial* first aid treatment. Under the EFSG (school design guidelines) direct access is required to the gymnasium. Additionally, as advised by SINSW, a clear line of sight is also required from the gymnasium into the first aid room due to child protection concerns. Therefore, it is not practical to locate the first aid room above the PMF level of 4.87 mAHD.

The first aid room is only a temporary assessment room rather than an area where injured or ill students will remain for extended periods of time. Instead, severely ill/injured child will be transferred to an existing sick bay within NSHS. Please refer to “Clinic ER0010” located in existing building Block E to which the severely ill/injured student will be transferred, refer floor plan for Block E below in Figure 1.1.

Considering the concerns that have been raised by Council regarding potential floodwaters and the use of the first aid room by students with mobility impairments, it is noted that the Applicant will detail the management strategy for the use of the first aid room in the in Safety in Design Report for NSHS and include this in the School's Flood Emergency Response Plan.

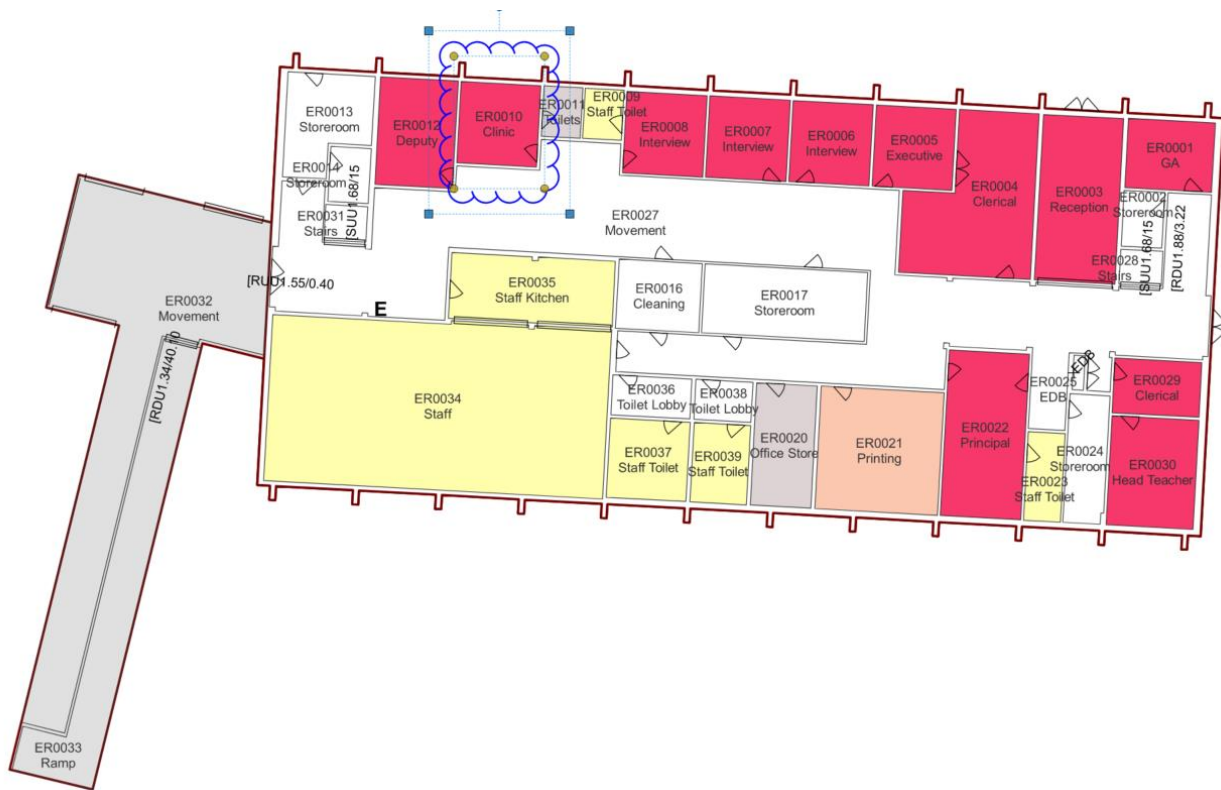


Figure 1.1 Block E Floor Plan Showing the Location of Clinic ER0010 and GA Room ER0001

**Store Rooms**

- The PE and Large Equipment Stores include sports equipment such as balls, and gym equipment such as large mats, or vaults, that are used within the gym, so needs direct, level access to / from the gym. Due to the nature of this equipment, it is designed for outdoor, all weather use and/or flood resilient in design (e.g. vaults have metal supports, mats have waterproof coverings, etc). Therefore, items stored in these areas would not suffer high value flood damage.
- The Sports Store is used to store outdoor equipment for use at the sports courts and pitches. It requires access from the sports pitches and may need to be accessed outside school hours, thus it is accessed externally. It is noted that this outdoor sports equipment is designed for outdoor, all weather use. Therefore, items stored in these areas are water resilient and would not suffer high value flood damage.
- The P&C Store is currently located on the ground floor within part of the building which is being demolished. This store is used by the wider school community to store equipment used during out of school hours events (such as school fairs). It is assumed that this may include BBQ equipment, bunting, folding tables, etc. An external entry is required because this store is used out of school hours. Items stored in these areas are flood resilient (e.g. folding plastic/steel design tables), designed for outdoor and all-weather use (e.g. BBQ equipment) and/or are low value items (e.g. bunting) that would not suffer high value flood damage.
- The Bulk Store is used by the General Assistant (“GA” or Janitor). This room is for the storage of bulk goods and requires easy access for deliveries. This room may sometimes contain a desk and workbench for the GA. The GA also currently has a desk within the main Administration building, refer floor plan for Block E in Figure 1.1. It is noted that the Applicant intends to store the high value computing equipment in the existing GA room in Block E. Any high value items within the Bulk Store that may be damaged by floodwaters (e.g. electrical tools) will be stored above the FPL.



## Flood Storage

It is acknowledged that the extension to Building A is larger in area than the structure to be demolished and therefore, the extension of Building A would result in a reduction of available flood storage below the 1% AEP flood level. The following unmitigated 1% AEP flood storage volumes have been estimated based on the assumption that existing and proposed buildings result in complete loss of flood storage during a flood:

- Current loss of available 1% AEP storage from Building A section to be demolished = 117 m<sup>3</sup>
- Loss of available storage from proposed Building A extension (i.e. without any allowance of compensatory flood storage) = 295 m<sup>3</sup>
- Change in available 1% AEP flood storage volume within NSHS as a result of proposed Building A works = 178 m<sup>3</sup>

Opportunities for compensatory flood storage are raised within Council's letter dated 3 February 2023 and were discussed with Council's Ms Valerie Tulk on 15 February 2023. In line with this advice and where considered feasible based on suitable areas that could practically be ingressed by floodwaters, compensatory flood storage will be incorporated into the design of the Building A extension by allowing floodwaters to enter and be temporarily stored within:

- the ground floor amenities (toilets and change rooms) through the open style security gates into these facilities (refer Drawing Number AR-H-3010 in DA plans).
- the Outdoor Store, P&C Store and Bulk Store through a gap under external doors.

In order to reduce water passing from these areas into other internal areas within Building A, flood doors will be installed at internal accessways between the amenities and ground floor circulation area and an impenetrable hob will be constructed along internal walls, where required, to reduce water penetration of the walls.

The compensatory 1% AEP flood storage volume within the above listed areas is estimated to be 124 m<sup>3</sup>. Therefore, the nett loss of available flood storage during the 1% AEP flood as a result of the Building A extension with provision of compensatory flood storage as outlined above is estimated to be 54 m<sup>3</sup>.


## Lift Motor

The lift proposed for NSHS is MRL (Machine Room Less) lifts. Lift motors are located inside the shaft which is located at the highest level served. Lift equipment will be above FPL of 3.53 mAHD.

We trust that this document suitably addresses the concerns detailed in Council's letter dated 3 February 2023 with respect to flooding. Please feel free to contact the undersigned (ph.: (02) 8960 7755 or email: [jacquie.hannan@bmtglobal.com](mailto:jacquie.hannan@bmtglobal.com)) if you require any further clarification.

Yours Sincerely,

**BMT**



**Jacquie Hannan**  
**Principal Engineer**