

105-153 MILLER STREET NORTH SYDNEY

FLOOD EMERGENCY RESPONSE PLAN

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ISSUE AUTHORISATION

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Executive Summary

enstruct Group have been engaged by Investa Custodian (2) Pty Ltd as Trustee for 105 Miller Street North Sydney Trust (Investa) to provide a Flood Emergency Response Plan (FERP) for the development at 105 Miller Street, North Sydney.

The FERP aims to provide appropriate recommendations for procedures and actions for on-site personnel to maximise their safety and reduce the risk of death and injury due to flooding and floodwater. The FERP aims to raise awareness of the risk of flooding by outlining flood warnings, safe evacuation routes, designated safe assembly areas, and evacuation management plans.

The FERP is based upon the key principles of emergency management as set out in the Support for Emergency Management Planning (NSW Government, 2023).

Furthermore, the FERP discusses the flooding conditions in the vicinity of the site, proposed methods of detecting flooding, proposed routes for refuge, and details of management of all personnel on site during a flooding event.

Flood threat levels are to be informed through flood bulletins and weather warnings. This communication is to be further broadcast to students, and staff through social media and other communication channels.

Based on a Floodplain Risk Management Study and Plan (FRMSP) by WMA Water for North Sydney Council, and a Flood Impact Risk Assessment (FIRA) by enstruct for the proposed development, site evacuation is to the north only, with safe H1 routes to exit the site, given that the depth and/or velocity permits to do so. Prior to this, it is recommended that the site is closed when extreme weather events are forecast. The management strategy can be summarised as:

- Close the site where there is sufficient flood warning or where there is extreme weather conditions forecast by the BOM
- Evacuate the site where there is sufficient warning and the site is occupied
- Failing the above measure, shelter in place until the storm subsides, on a building level located above the PMF level.

Based on the FIRA, it is noted that portions of the site are subject to flooding during a PMF. Finished floor levels have all been located above the predicted 1% AEP levels with freeboard. As a result, the safest option for site occupants if the site has not already been closed and/or evacuated, is to shelter in place for a short period of time until flood waters recede. Consequently, this flood emergency management plan is recommended to be prepared, reviewed, updated and implemented in perpetuity to provide adequate access to emergency services and procedures where extreme weather is forecast, and in the event of flood events.

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I. Definitions

For the purpose of this Plan, the definitions below apply:

Assembly area(s)

The designated place or places where people assemble during the course of an evacuation.

Emergency

An event that arises internally, or from external sources, which may adversely affect the occupants or visitors in a facility, and which requires an immediate response.

Emergency plan

The written documentation of the emergency arrangements for a facility, generally made during the planning process. It consists of the preparedness, prevention and response activities and includes the agreed emergency roles, responsibilities, strategies, systems and arrangements.

Emergency Planning Committee (EPC)

Elected persons from the community who are responsible for the documentation and maintenance of the flood emergency response plan and strategy at 105 Miller Street North Sydney.

Emergency Control Organiser (ECO)

A person or persons appointed by the emergency planning committee to direct and control the implementation of the facility's emergency response procedures.

Evacuation

The orderly movement of people from a place of danger.

Refuge

An area that is specifically designed to protect people from flood and provides direct access to an exit.

Notes:

1. An area of refuge is intended to facilitate a safe delay in egress from the floor or area, thus constituting a space for people to await assistance for their evacuation.
2. Refuges are normally nominated by the relevant warden.

Warden intercommunication point (WIP)

The location on a floor or evacuation zone that includes a handset provided through which instructions can be received from the intercommunication panel via the emergency intercom system.

II. Abbreviations

The following abbreviations are used in this Emergency Plan document:

AHD	Australian Height Datum
AEP	Annual Exceedance Probability
AED	Automated External Defibrillator
AP	Assembly Point
ARI	Average Recurrence Interval
DDA	Disability Discrimination Act
ECO	Emergency Control Organization
EPC	Emergency Planning Committee
FERP	Flood Emergency Response Plan
FFL	Finished Floor Level
PMF	Probable Maximum Flood
SES	State Emergency Service
WIP	Warden Intercommunication Point

1 Introduction

This Flood Emergency Response Plan (FERP) has been prepared to support a state-specific development (SSD) for the proposed redevelopment at 105 Miller Street as a tertiary institution (the development). This document is submitted to the Department of Planning, Housing and Infrastructure (DPHI) on behalf of our client, Investa Custodian (2) Pty Ltd as Trustee for 105 Miller Street North Sydney Trust (Investa) to support a State Significant Development Application (SSDA) for the redevelopment and adaptive reuse of an existing state heritage building at 105 Miller Street, North Sydney (the site) as a tertiary institution (university). The development will be carried out at 105 Miller Street, North Sydney (the site). The purpose of this report is to establish flood emergency preparations and procedures for the site.

1.1 Site Description

The address of the site is 105-153 Miller Street, North Sydney and is legally described as Lot 2 in DP 792740. The site sits in the heart of the North Sydney Central Business District (CBD), immediately south of the Victoria Cross Metro Station and in walking distance of the North Sydney Train Station.

The site has a total area of 6,640m², with three street frontages, to Miller Street, Brett Whiteley Plaza and Denison Street. The Miller Street frontage is occupied by a landscaped area, pedestrian walkway and retail frontage. The site has a highly visible interface with Brett Whiteley Plaza, which is identified as a key public open space in North Sydney. A range of retail occupancies are located on the Denison Street frontage of the site, set back under a low awning. Figure 1 shows the site and its context. The North Sydney MLC Centre and associated turfed public domain currently occupy the site. The existing building comprises a modular building mass with a 13-storey north-south oriented western wing, a central service core and a 6-storey eastern wing, setback from the southern boundary.



Figure 1 Aerial view of the site

1.2 Key Principles of Emergency Management (EM)

It is NSW SES's primary strategy to evacuate out of a floodplain to remove the community from the hazard to an area of safety with available resources. When this cannot be achieved, a set of principles have been developed to assist in EM. These principles are aimed at assisting councils when setting strategic directions for communities through recommendations under the Flood Risk Management (FRM) with technical assistance from NSW SES and strategically considering redevelopment in existing evacuation constrained areas. The key principles of EM are noted below alongside how they are used in the FERP:

- **Principal 1 - Any proposed EM strategy should be compatible with any existing community EM Strategy**

The FERP should be read in conjunction with the North Sydney Council (NSC) requirements including the North Sydney LGA-Wide Floodplain Risk Management Study and Plan (2022).

This is to ensure that plans, maps and the FERP strategy proposed for the university is compatible with the evacuation strategies identified in existing NSC floodplain management plans or by NSW SES.

- **Principle 2 - Decisions should be informed by understanding the full range of flood EM risks to the community**

This FERP is based on the flood study stated in enstruct's Flood Impact and Risk Assessment (FIRA) dated June 2025, and the North Sydney LGA-Wide Floodplain Risk Management Study and Plan (FRMSP) dated November 2022.

- **Principle 3 - Development of the floodplain does not impact on the ability of the existing community to safely and effectively respond to a flood**

This FERP is based on enstruct's FIRA dated June 2025 where this development demonstrates a low existing flood risk and only minor local impacts on flooding.

- **Principle 4 - Decisions on redevelopment within the floodplain are supported by an EM strategy that does not increase risk to life from flooding**

Section 7 of the FERP demonstrates that in the event of flooding there are alternative access points where the students and staff can evacuate the site to where there are adequate services to sustain the community.

- **Principle 5 - Risks faced by the itinerant population need to be managed**

As the university has a variety of people visiting the university daily, the FERP is written with these types of people in mind so that in the event of flooding, they can move to an assembly point and evacuate if needed in an orderly fashion.

▪ **Principle 6 - Recognise the need for effective flood warning and associated limitations**

The steps and procedures set out in this FERP provides an effective flood warning strategy so as to give the university community the opportunity to respond to a flood threat in an appropriate and timely manner.

▪ **Principle 7 - Ongoing community awareness of flooding is critical to assist effective emergency response**

Section 9 explains that the FERP should be reviewed regularly and updated as required. The FERP has been prepared in conjunction with the SES, so that any changes to the local flood strategy is included in the FERP.

2 Project Description

The proposed development is a refit of the Miller Street wing, and a reconstruction of the Denison Street wing with new tower containing learning and office spaces.

The proposed development involves the construction of learning and administrative spaces on the site through a refit of the Miller Street wing and a reconstruction for the Denison Street wing with a new tower containing learning and office spaces.

The Denison Wing will contain 12 floors of learning spaces and 6 floors of administrative space. The Miller Wing will contain 11 floors of learning spaces. Approximately 48,000 sqm of GFA is proposed.

- Adaptive reuse and restoration of the Miller Street wing;
- Demolition of the Denison Street wing, central core structure and pavilion on the northwestern corner of Miller Street;
- Construction of a new Denison Street wing, comprising ground level retail and educational establishment uses above;
- Construction of a new central core structure, comprising the lift core and building services;
- Alterations to the ground level to deliver a significantly enhanced public domain;
- Construction of an almost double height ground floor retail and the delivery of a new public open space along Miller Street; and
- Basement carparking and loading dock accessed from a relocated entry off Denison Street.

For a detailed project description, refer to the Environmental Impact Statement prepared by Beam Planning and the Architectural Drawings prepared by FJC



Figure 2 Proposed Development (Denison Street Level)

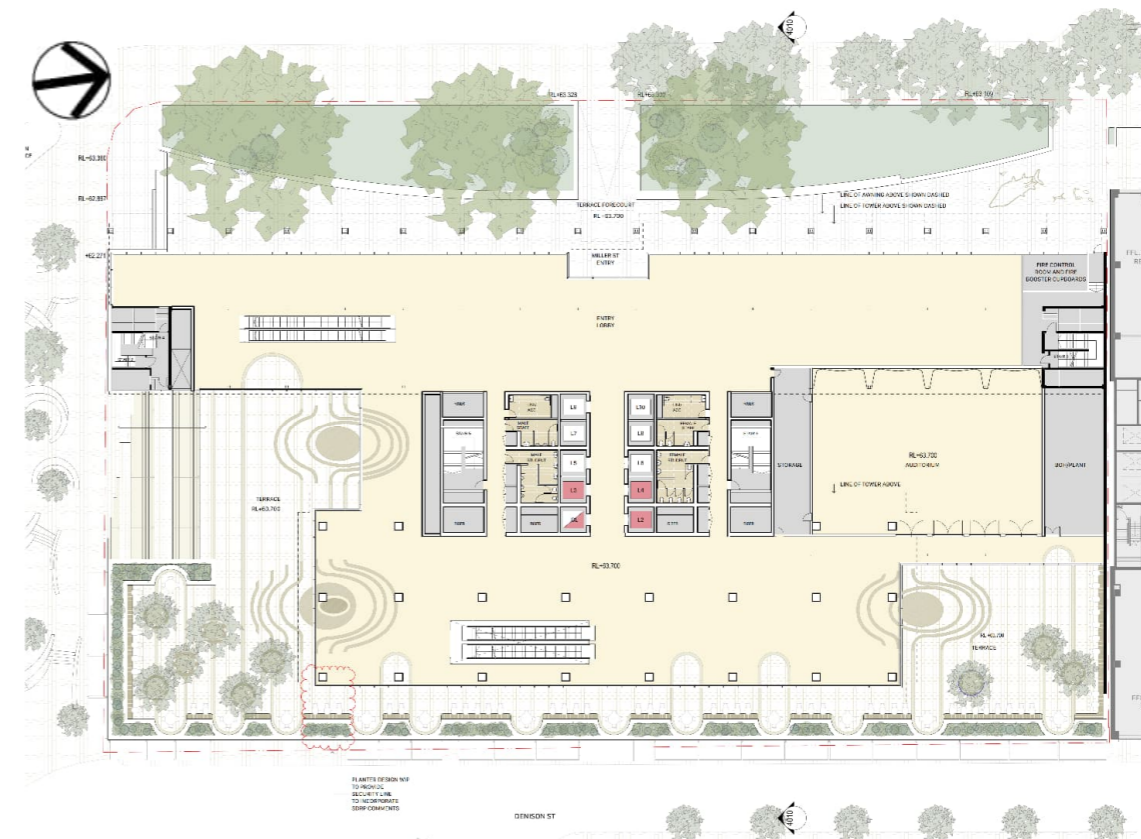


Figure 3 Proposed Development (Miller Street Level)

2.1 Key Access point

Key access points to the site are through the main entrance on Miller street, the entrance on Denison Road, as well as access to Brett Whitely’s Place through the western terrace. Additionally, the site can be accessed through the carpark entry on Denison Road.

2.2 Key Flood Behaviour

2.2.1 Existing Flood Behaviour

The current flood behaviour on the school site and surrounding area is based on the FIRA prepared by enstruct in June 2025, and the North Sydney LGA-Wide Floodplain Risk Management Study and Plan prepared in November 2022.

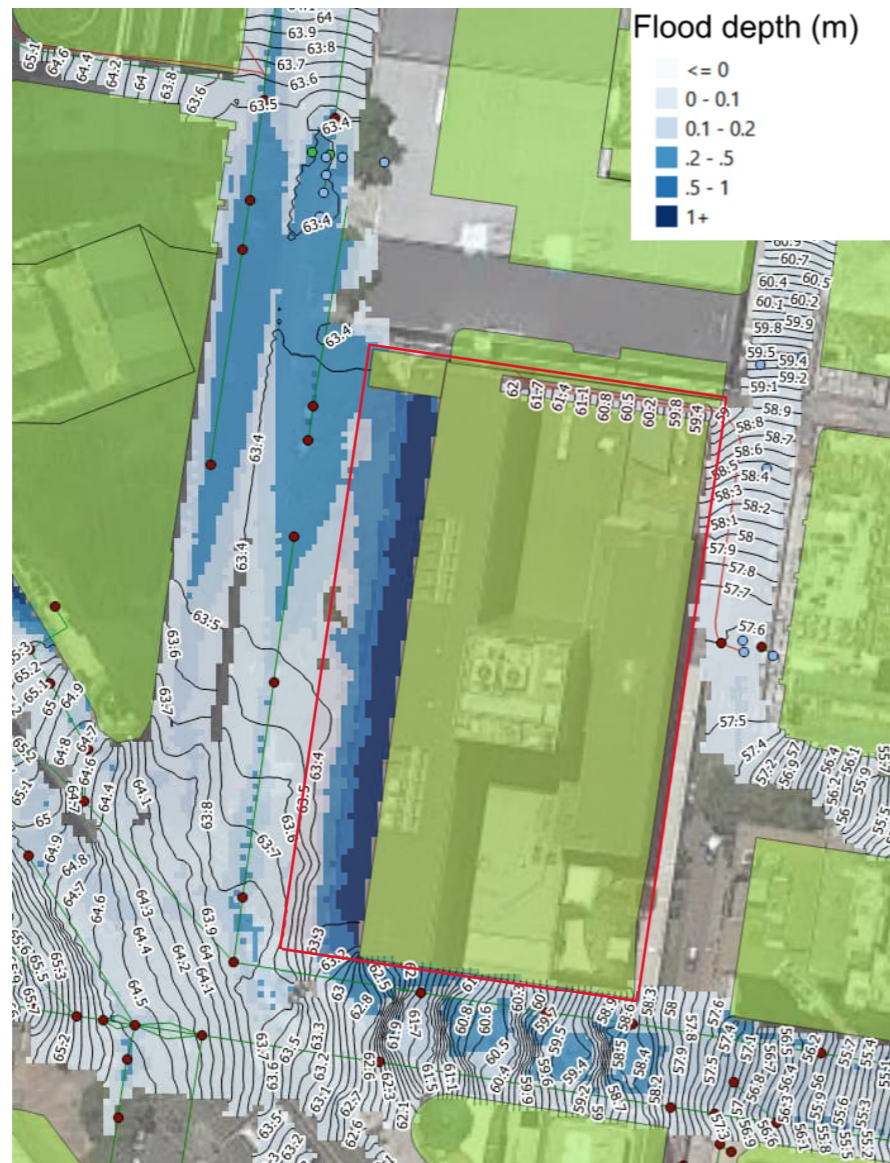


Figure 4 Existing conditions (with Metro) 1% AEP flood model results

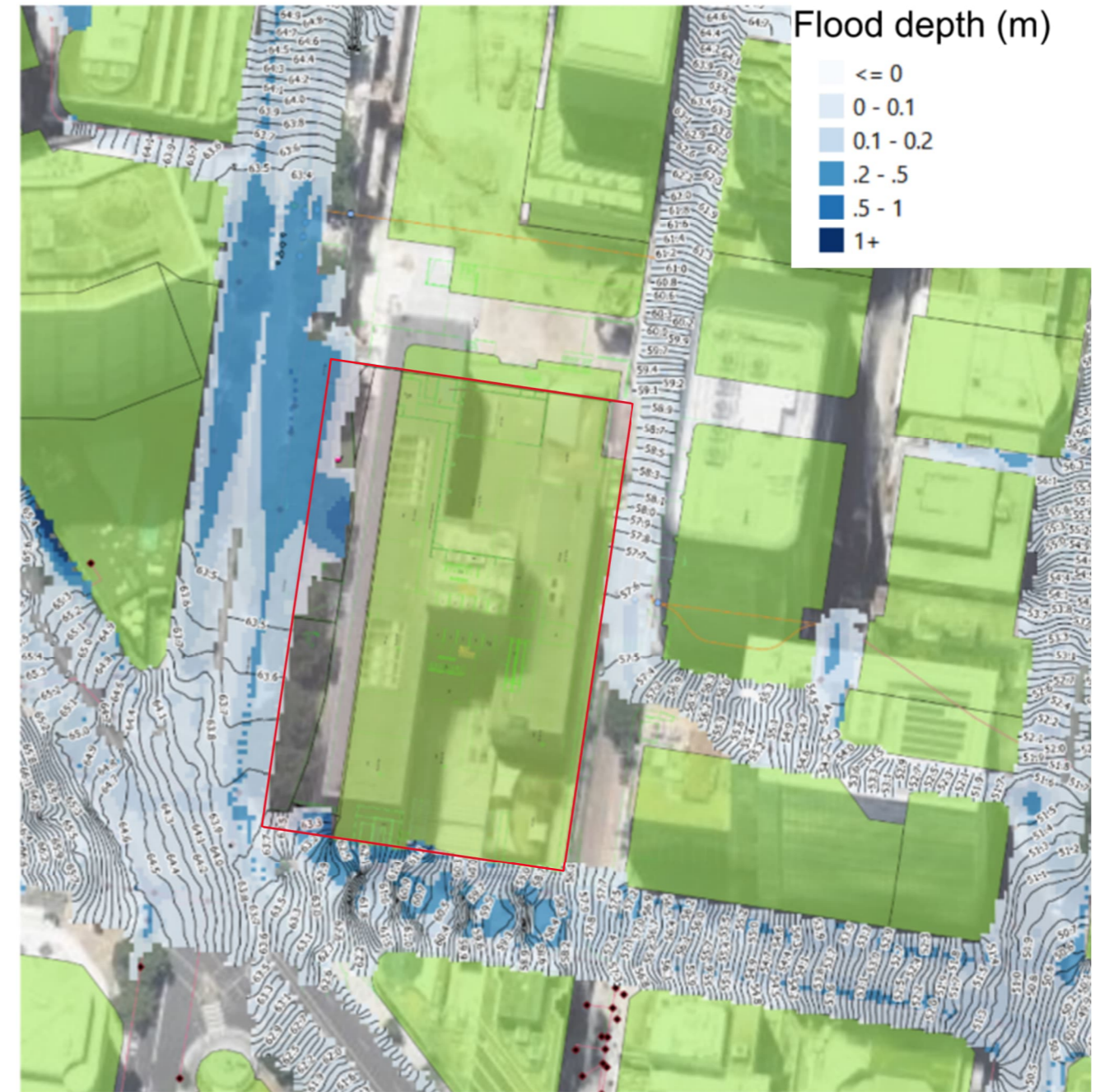


Figure 5 Proposed conditions 1% AEP flood model results

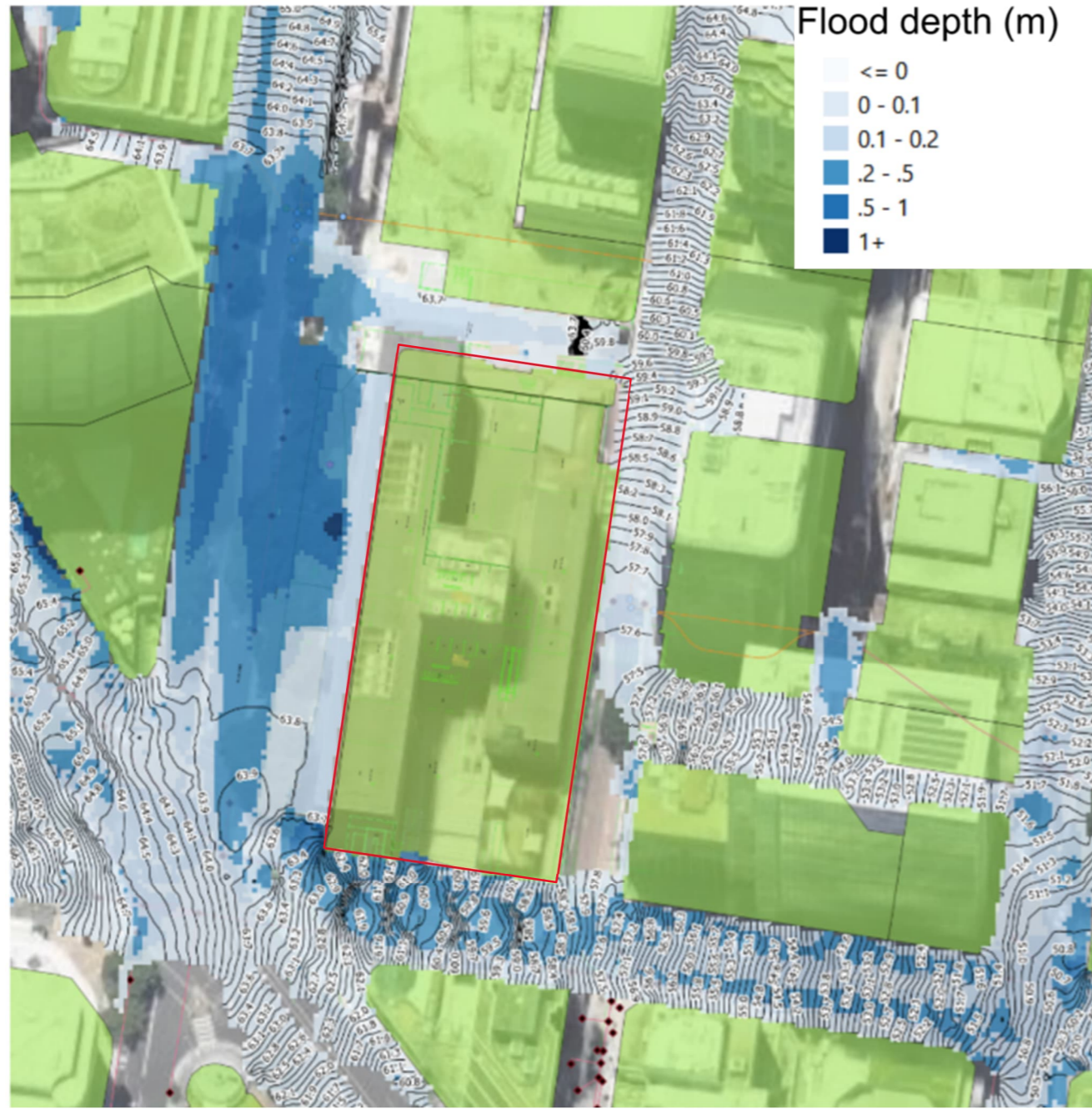


Figure 6 Proposed conditions 1 in 2000 AEP flood model results

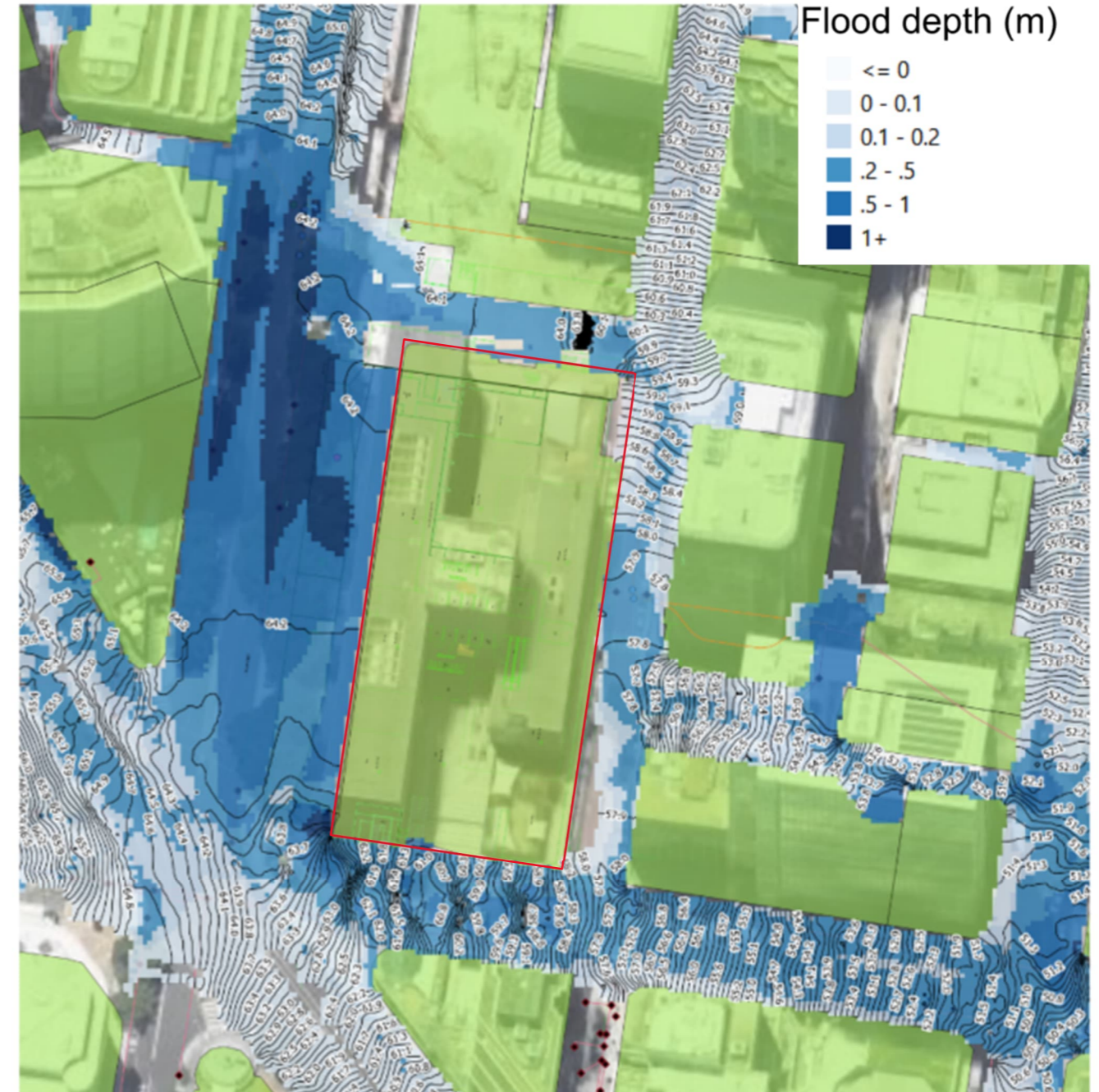


Figure 7 Proposed conditions PMF flood model results



Figure 8 1% AEP Flood Hazard (proposed conditions) Refer to Figure 11 for colour legend

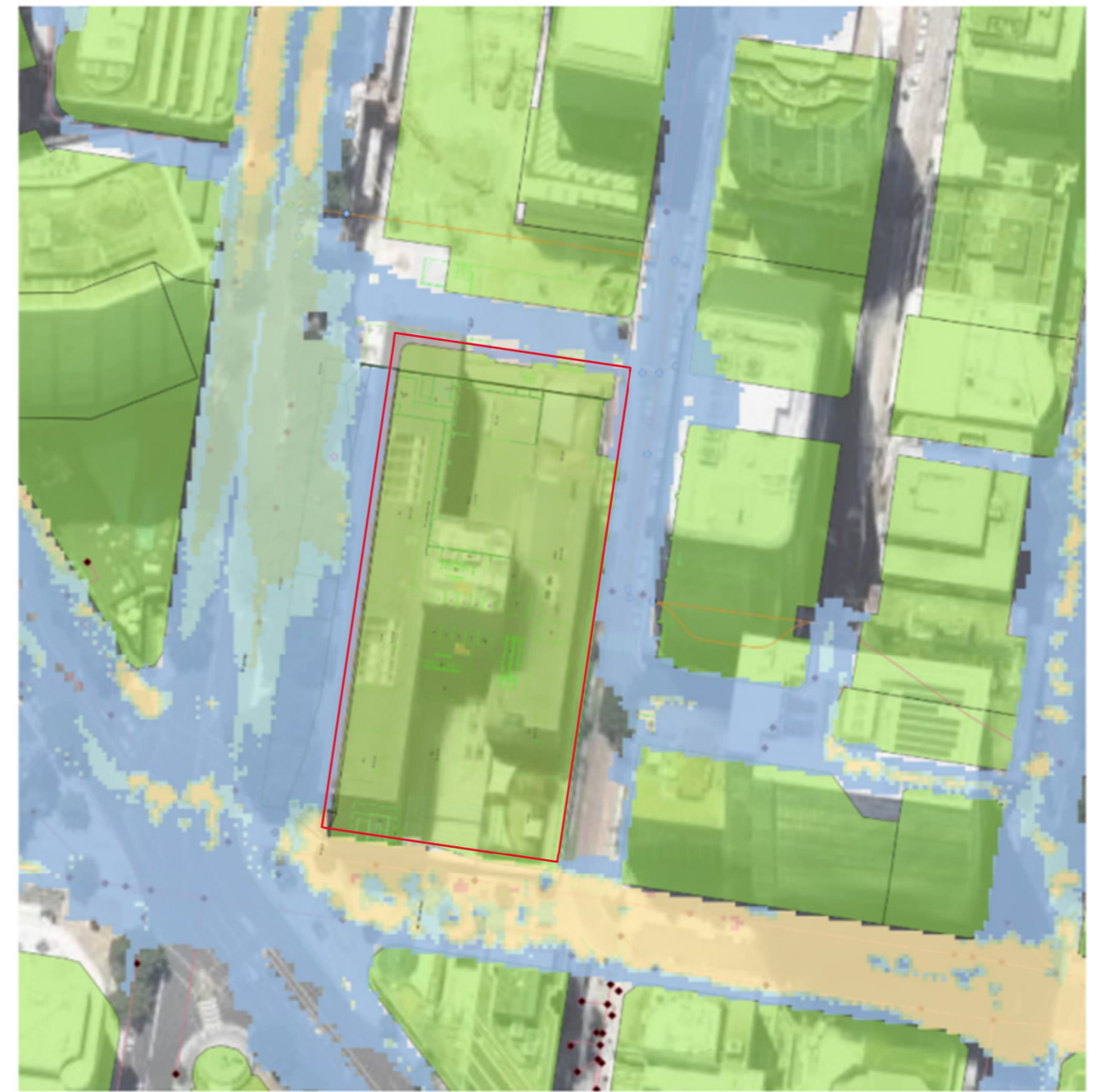


Figure 9 0.05% AEP Flood Hazard (proposed conditions) Refer to Figure 11 for colour legend

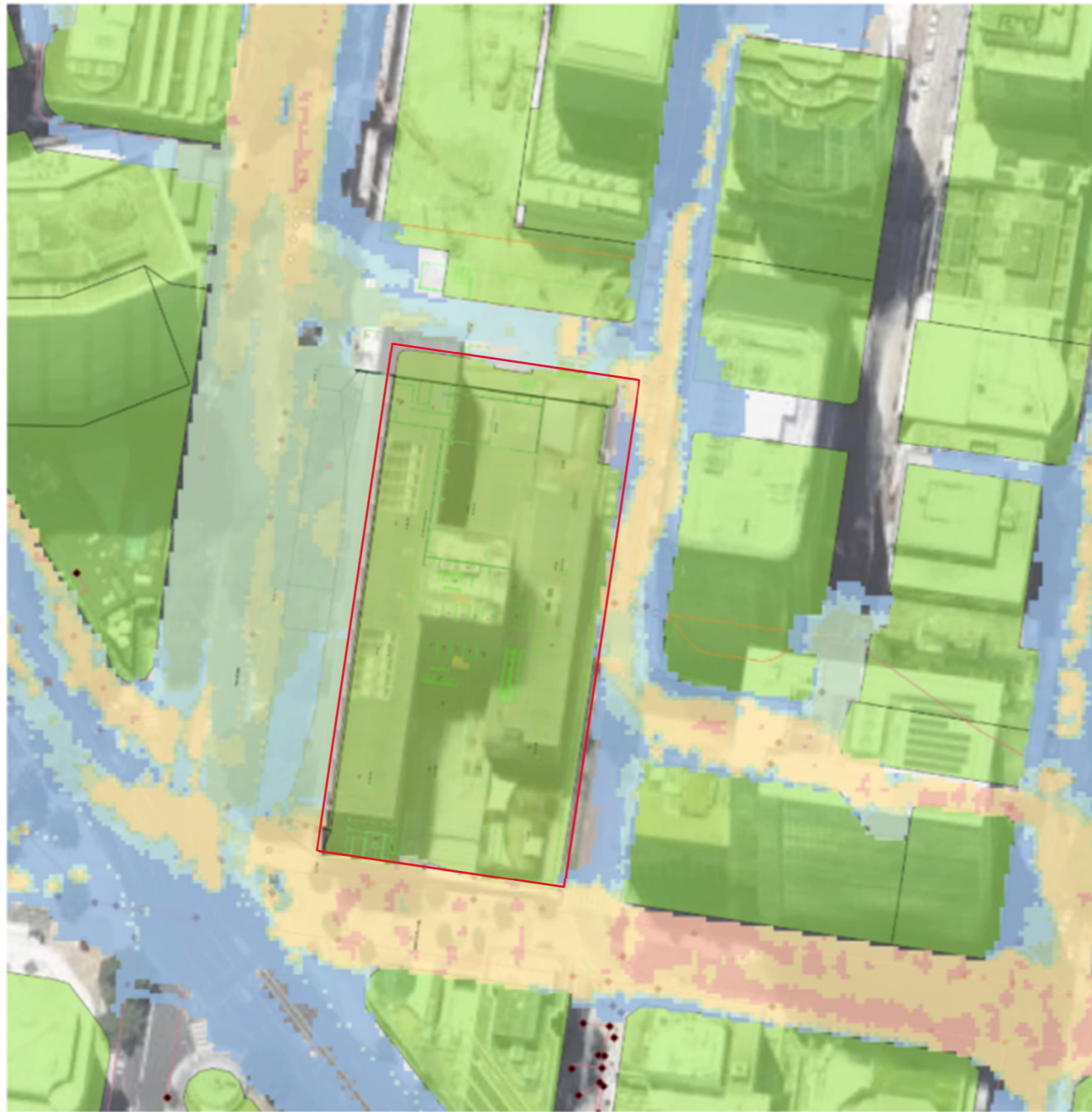


Figure 10 PMF Flood Hazard (proposed conditions) Refer to Figure 11 for colour legend

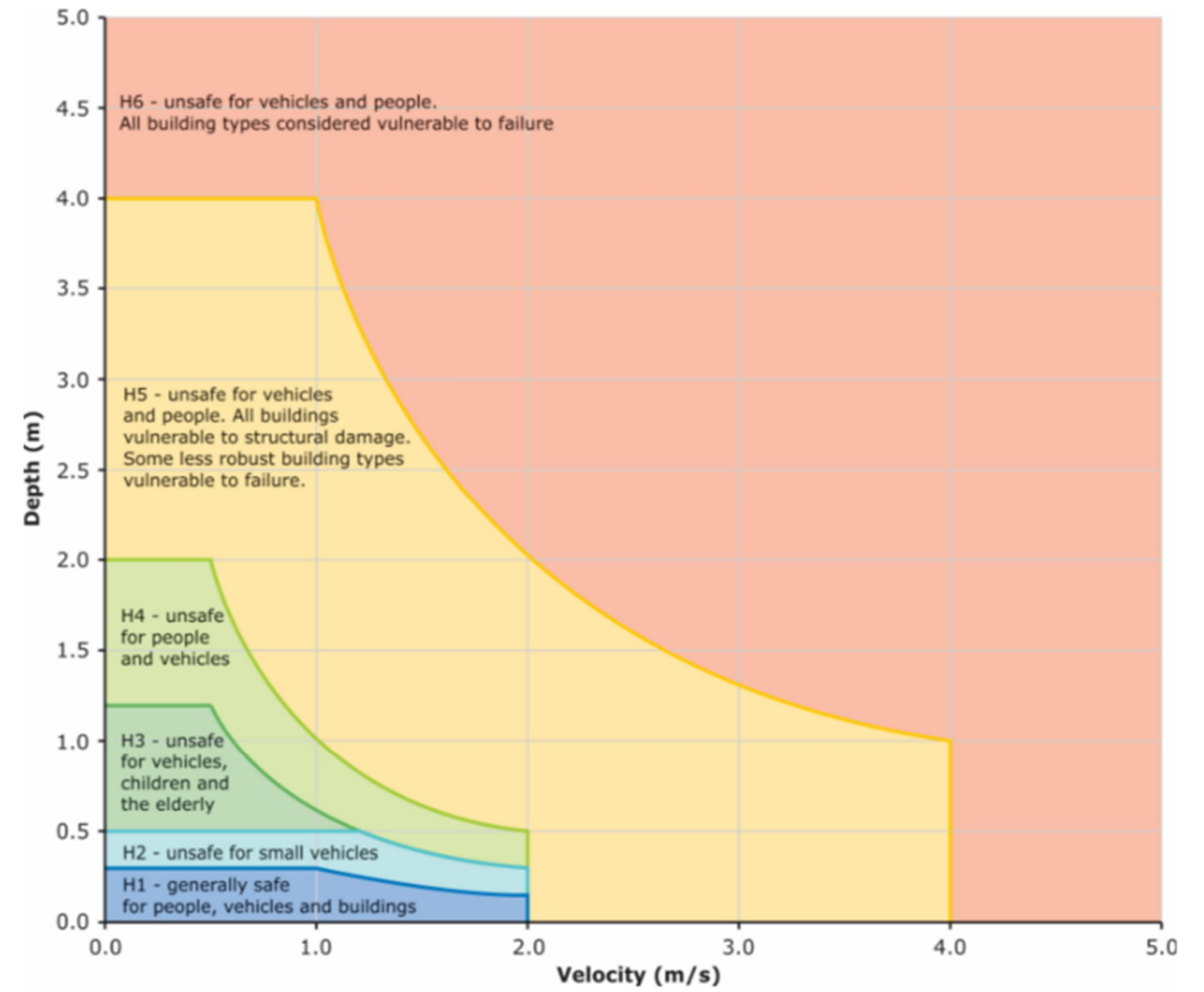


Figure 11 Flood Hazard Categories

The primary access route to 105 Miller Street is via Miller Street, which connects to major roads such as Pacific Highway and Warringah Freeway. The site experiences localized flooding due to its lower-level colonnade, which is prone to water accumulation. However, proposed development plans include raising this level and installing a flood storage tank, aimed at mitigating both flood impacts and flood risks.

During heavy rainfall events, overland flows occur at Brett Whiteley Place, situated at the southern end of the building. This contributes to water movement across the site, particularly in extreme weather scenarios.

The primary evacuation route leads to Denison Street, directing people toward the Metro Station at the northern edge of the site. This provides access to public transport options and serves as a safe assembly point during emergency situations.

The Pacific Highway generally follows the ridge line, so there is only a low flood risk along this route. This route is available for use for emergency vehicles during all events up to the 1 in 2000 AEP flood. During the peak of a PMF event, the site becomes isolated by **H5** flood hazard on Little Spring Street. Due to the nature of the catchment being relatively small with steep terrain, the duration of site isolation is expected to be less than one hour.

Regarding Hazard Classification, evacuation routes via Denison Street are expected to remain safe for people, vehicles, and buildings in storms up to the 1 in 2,000-year event. However, extreme flood scenarios, such as a PMF event, may require sheltering in place until water levels recede.

Regarding Hazard Classification, the evacuation routes from the site to the east through Denison Street is noted as **H1**, generally safe for people, vehicles and buildings for storms up to the 1 in 2,000-year storm event. However, surrounding conditions can go up to the **H5** category, so caution must be taken.

3 Flood and Evacuation Warnings

Due to the centrality of the North Sydney Central Business District (CBD), there should be ample warning for rising flood waters. Various official flood warnings will be issued by the Bureau of Meteorology, State Emergency Service (SES) and NSW which can assist in the preparation of a potential flood. These warning types are:

Severe Weather Warnings (Bureau of Meteorology):

Severe Weather Warnings are provided for potentially hazardous or dangerous weather that is not directly related to severe thunderstorms, tropical cyclones or bushfires. They are issued for sustained winds of gale force; wind gusts of 90km/h or more; very heavy rain that may lead to flash flooding and abnormally high tides.

Severe Thunderstorm Warnings (Bureau of Meteorology):

A Severe Thunderstorm Warning is issued if the severe phenomena are directly caused by the thunderstorm and include wind gusts of 90km/h or more; gale force winds; tornados; blizzards\ heavy rainfall that is conducive to flash flooding; hail with a diameter of at least 2cm; abnormally high tides and unusually large surf waves expected to cause dangerous conditions on the coast.

Flood Watch (Bureau of Meteorology):

A Flood Watch is issued by the Bureau of Meteorology if flood producing rain is expected to happen in the near future and flooding is expected to be above Minor level. A Flood Watch covers a river basin or catchment. The general weather forecasts can also refer to flood producing rain. You should be prepared to act should flooding occur.

Flood Warning (Bureau of Meteorology):

A Flood Warning is issued by the Bureau of Meteorology when flooding is expected to occur or is happening. Flood Warnings provide a predicted flood level and time at which a river will reach that level. Flood Warnings are issued in relation to flood gauges which are situated at a certain point on a river. Flood Warnings may contain observed, peak or predicted river heights.

NSW SES Flood Warnings (SES):

Flood warnings are issued via the NSW SES website, NSW SES social media channels and by listening to local ABC radio stations. These warnings include likely consequences, and what actions are required to protect yourself and your property.

Alongside this, the NSW SES issues warnings in line with the Australian Warning System (AWS), to provide an additional channel for communities to access important warning information.

Evacuation Warning (SES):

When flooding is likely to cut evacuation routes or inundate property, the NSW SES issues warnings in line with the Australian Warning System (AWS). The AWS is a nationally consistent, three-tiered approach designed to make warnings clearer and lead people to take action ahead of severe weather events. The warning system comprises warning levels, action statements, hazard icons, colours and shapes. Being prepared will allow you to respond quickly if a warning is issued.



It is important to inform occupants on the site of current advice and warnings. This can be done via the PA system. Typically, visitors and any itinerant population may seek advice from the reception. For this reason, it is imperative that reception staff are kept informed of any evolving flood situations.

Monitor the flood situation:

In addition to receiving an official warning, monitoring the situation before flooding begins to impact the site is important. Monitoring the situation can be undertaken by personally witnessing the height and rate at which floodwaters are rising; maintaining contact with other people in the building and local and government radio stations to receive and share updates on the flood situation.

The likelihood of flash flooding:

Severe Weather Warnings and Severe Thunderstorm Warnings issued by the Bureau of Meteorology warn of the possibility of flash flooding.

When flash flooding is likely, leaving low-lying businesses (evacuation) well before flash flooding begins is the best action to take, but only if it is safe to do so. If you are trapped by rising floodwater, seek refuge in the nearest building within the university site. Stay there and call '000' (triple zero) if you need rescue.

All warnings will be issued through the Bureau of Meteorology website, television and local radio stations for weather warnings such as, but not limited to 576 ABC RADIO NATIONAL, 630 ABC NEWS RADIO, 702 ABC RADIO SYDNEY, 873 2GB, 1107 SBS RADIO, 1269 2SM, 88.0 BONDI FM, 95.3 SMOOTH FM RADIO, 96.9 NOVA RADIO, 97.7 SBS RADIO, 98.5 2000 FM, 103.2 HOPE 103.2, 104.9 TRIPLE M 104.9, 106.5 KIIS 1065.

4 Flood Response Preparation

It is the responsibility of the Emergency Planning Committee as part of the site Emergency Management Plan that they prepare the school for a flood event. This will be achieved through induction training, nomination of flood wardens reporting to the Chief Warden during emergency events, education of flood risks and behaviour, and the preparation and maintenance of a Floodsafe Emergency Kit.

The Emergency Planning Committee is also to organise evacuation drills and flood emergency kits to prepare all site personnel for flood risks.

4.1 Flood Inundation Time

Peak flood levels were observed during the 30-minute storm event to several hours for the 1% AEP and the PMF storm event. The high intensity short duration flood behaviour is considered flash flooding and there would be insufficient or no warning following the start of the storm event. This is considered short duration 'flash flooding' and the warning provided would be for immediate safety precautions such as evacuation off street retail frontage, emergency evacuation out of areas where significant water will be stored, temporary refuge in buildings on site, and accounting for people on site.

4.2 Evacuation Drills

Evacuation drills run through the flood management procedure onsite and are designed to increase flood awareness for all students, staff, and visitors of the campus. These drills are to be undertaken annually to familiarise all personnel of the procedures when responding to a flood event.

Flood Emergency Kit

Potential items for a flood emergency kit are outlined at www.floodsafe.com.au and reproduced below:

- A copy of the school Emergency Management Plan;
- A torch with spare batteries;
- A first aid kit;
- Waterproof bag for valuables;
- A copy of emergency numbers; and
- Battery operated radio with AM and FM frequency access (with spare batteries).

The kit should be kept on each floor throughout the building for efficient deployment in the event of an emergency. The contents of the kit and management during a flood event will be

the responsibility of the Chief Warden. This storage area should also be used for protecting hazardous materials and valuable goods from flood water.

5 Flood Response Personnel

Summarised below are the personnel involved in the management of the flood response at the site, and corresponding responsibilities. This table should be updated prior to occupation of the site.

Table 1 Personnel and Responsibilities

Emergency Response Role	Responsible Person	Responsible Person's name	Phone Number	Responsibility
Emergency Control Organisation	Building Management			<ul style="list-style-type: none"> Coordinate flood evacuation drills Ensure appropriate training to be conducted
Chief Warden	Building Manager			<ul style="list-style-type: none"> Monitor weather daily for upcoming extreme rainfall events; Decide when evacuation is required; Liaise and communicate with SES or Emergency Services personnel if they attend site; and Manage the evacuation process in consultation with SES or Emergency Services. Maintain orderly evacuation
Floor Warden	Delegated Safety Officer			<p>Make site users aware of the broader area flood risk, and appropriate actions during flooding.</p> <p>Maintain orderly evacuation</p> <p>Support Chief Warden</p>

6 Emergency Contact

The Chief Warden is to be contactable via the WIP phone at all times to ensure they are ready to assist any students or staff.

- For emergency assistance during flood events, please call the SES on 132 500.
- If you are in a life-threatening situation please call Police, Fire or Ambulance on “000” (triple zero).
- Local North Sydney Police Station on 02 9956 3199.

7 Assembly Point (AP) and Evacuation Routes

Flood warnings may not be issued by the SES, so this is not a reliable indicator that evacuation is required. If the SES flood warnings are issued with sufficient time prior to the flood emergency overnight, it is recommended that entry points at Miller Street remains closed to prevent staff, students, deliveries, and visitors from entering the carpark.

If the flood warning is issued during operation hours, the carpark entry at Denison street is to be closed to prevent vehicles from leaving the site, Occupants should assemble at designated evacuation points, ensuring all individuals are accounted for before organising departures into suitable care or transport options. The southern entry at Brett Whiteley Place should not be used due to overland flow risks. This warning buffer allows sufficient time for site occupants to leave the site through provided evacuation routes via Denison street before they are obstructed as the water level rises in large storm events. If occupants delay leaving the site, they may become isolated by the floodwater at the western boundary, which may prevent safe exit from the site until the storm event subsides.

Monitor radio and other communications, taking particular notice of:

During flood events, occupants should monitor emergency broadcasts and local updates, paying particular attention to:

- Miller Street: A pedestrian route from the site to the adjacent Metro Station remains flood free during a 1% AEP storm event, but this becomes inundated during larger storm events. All other parts of Miller Street are subject to dangerous levels of flood hazard.
- Denison Street: This is the primary evacuation route toward the Metro Station. If flooding is reported here, evacuation should not be attempted.
- Pacific Highway and Berry Street: These roads provide access to broader transport networks. Evacuation should only proceed if these roads remain open.
- The evacuation route to Royal North Shore Hospital which should be taken for further evacuation or if medical attention is necessary.

5.1 People with Disability and Sensory Considerations

Flood evacuation procedures/protocols are to consider the requirements of those with disability and sensory considerations. A disability and sensory conditions register is to be maintained by the high school for these purposes.

As the refuge space is on level 2 of the Miller Wing, access should be considered under circumstances where disabled access should be provided to those who cannot use the stairwell.

If there is no warning due to flash flooding, during operation hours, then the driveway is to be closed to prevent vehicles from leaving the site. Occupants should remain inside, ideally elevated from the ground floor, until the storm event subsides. Staff should inform the Chief Warden that all individuals are present and accounted for or otherwise.

For events outside of operation hours, where the site is used by external parties, including the local community, election polling centres, recreational activities, etc., all parties must be familiar with this FERP and be provided with necessary access to evacuation assembly points and routes.

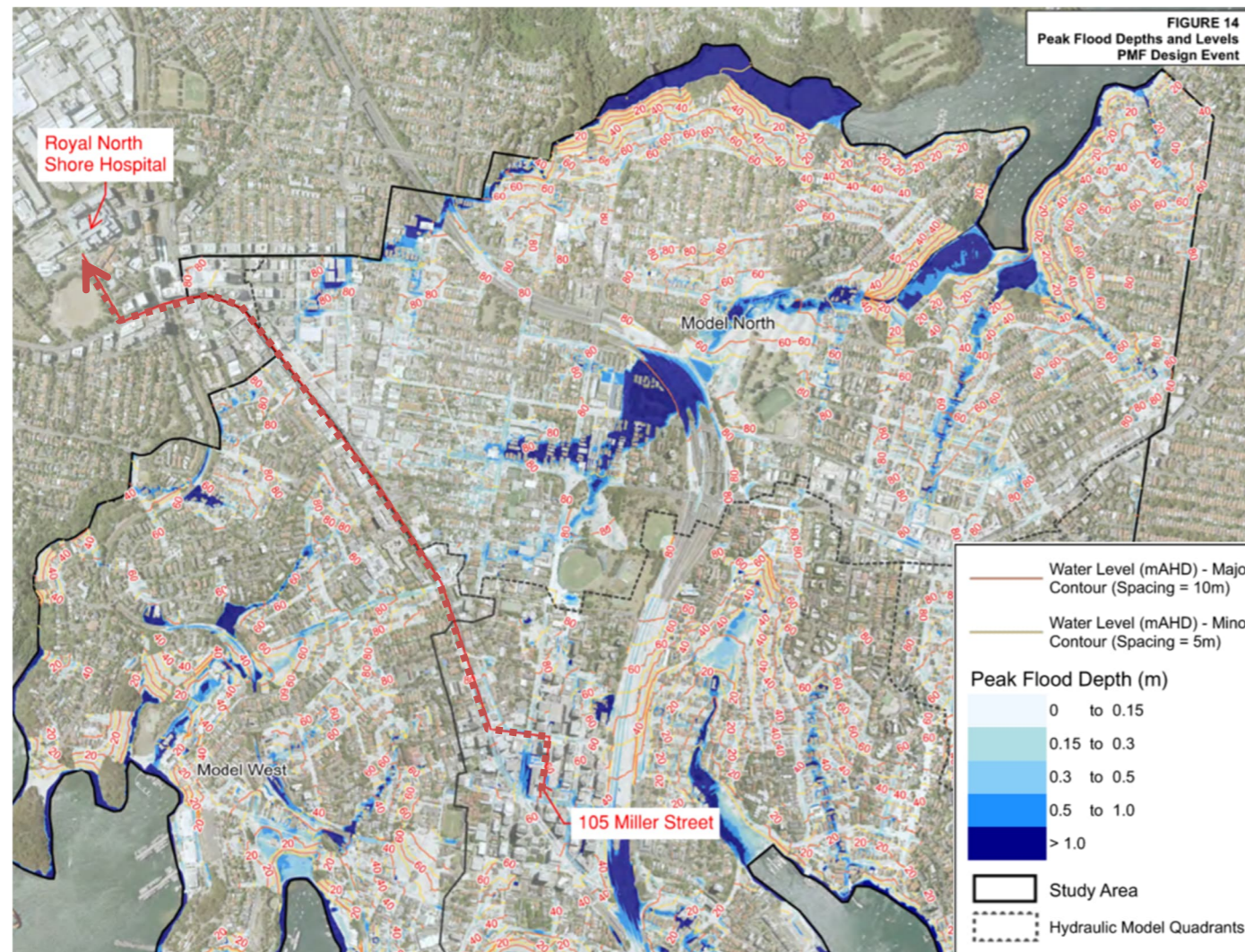


Figure 12 Access/Egress Route to Royal North Shore Hospital (Source: North Sydney FRMSP)

8 Flood Response Actions

8.1 Close the site



When Flood Advice has been issued, prepare to close the site. To minimise risk to the community, staff and students should be advised to stay at home.

- Inform students, staff and other key stakeholders via usual communication channels (email, sms, university app) that the campus will be closed.
- Update the university Facebook/Social Media pages and send an email/text message to outline campus closure and that evacuation has been required
- Close and lock the gates. Provide signage indicating that the campus is closed.
- Close carpark to prevent users from leaving

8.2 During Operation Hours and After hours



Once a Flood Watch and Act for the North Sydney area or North Sydney Council LGA has been issued:

- Sound evacuation tone
- Chief Flood Warden to be on hand if staff call or require guidance
- Chief Flood Warden to make contact with Emergency Services to notify if immediate assistance is required, or all safe and accounted for

- Update the university Facebook/Social Media pages and send an email/text message to outline campus closure and that evacuation has been required
- Occupants are to move towards the site entrance in an orderly fashion to evacuate the site.
- Chief Flood Warden to maintain regular communication with students, staff and visitors, providing updates on the situation
- Site to be shut down, where possible, of all but essential power
- Leave signage at the site entrance stating that evacuation has occurred.

- A combination of wayfinding signage and PA address system will direct site visitors to the Auditorium.
- It is close to both Miller Street and Denison Street access/egress points.

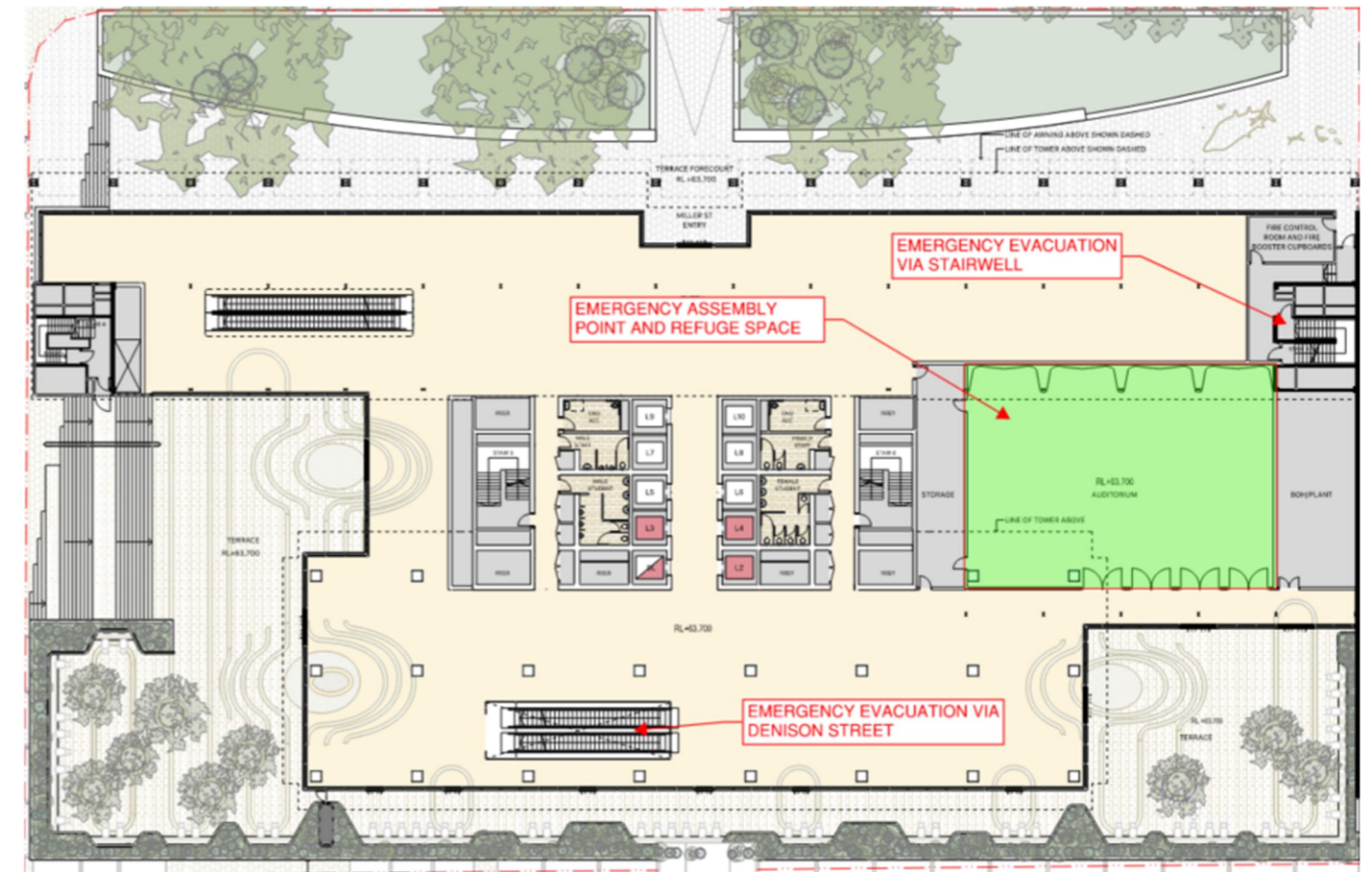


Figure 13 Proposed Refuge Space in Auditorium on Upper Ground floor

During the shelter in place, the Chief Warden shall continue to monitor the flood situation and remain in contact with Emergency Services. Once the “all clear” has been given by Emergency Services, occupants shall evacuate at the direction of the Chief Warden.

The duration of Shelter in Place is expected to be in the order of one hour. The catchment is relatively small and steep, so short duration storms dominate the flood regime. Longer duration events with a lower rainfall intensity will result in less severe flooding than the short duration intense events and are less likely to result in a requirement to shelter in place.

Emergency access and egress is available via Denison Street for all storms up to the 1 in 2,000 year event where the flood hazard is H1. In the event of a secondary emergency such as fire or medical emergency, emergency vehicles can use Denison Street during all events except for the peak of a short duration extreme rainfall event larger than a 1 in 2,000 year storm.

8.3 Shelter in Place



If an Emergency Warning has been issued, it may no longer be safe to evacuate the site. In this instance, any persons remaining on site should shelter in place:

- Sound evacuation tone
- Chief Flood Warden to be on hand if staff call or require guidance
- Chief Flood Warden to make contact with Emergency Services to notify if immediate assistance is required, or if all are safe and accounted for
- Occupants to move to a suitable relocation to a safe refuge for the PMF event.

The auditorium on the upper ground floor will be utilised as a refuge space in the event that it is not safe to leave the site due to flooding of the surrounding area. It has the following features as per the NSW Government ‘Shelter in Place guideline for flash flooding’:

- The auditorium has a floor area of approximately 380m², giving capacity for 190 people.
- Emergency provisions including bottled water, first aid kits and AED, radio and torches with spare batteries will be available in the adjacent store room.
- The auditorium is above the PMF on Denison Street.
- The structure has been designed to withstand PMF event conditions.
- There is access to toilet facilities and water supply in the adjacent bathrooms.
- Access to the Auditorium does not rely on electricity. Access from lower levels is via stairwells.

9 Shelter in Place considerations

In preparing the shelter in place flood response action, the NSW Government 'Shelter in Place guideline for flash flooding' has been addressed, as outlined in the following

Table 2 Shelter in Place Considerations

Shelter in place consideration	Response
1. Does shelter in place align with existing emergency management strategies for the area, as determined through the flood risk management process and by the NSW SES	There is no published flood emergency sub plan for the area, with Council referring to general information from the SES. The strategies outlined in this document are compatible with this information and provides guidance on actions to be taken before, during and after a flood emergency.
2. Has evacuation off-site (the primary emergency management strategy) been investigated and determined to be unachievable	Shelter in place is the final step of this Flood Emergency Response Plan. The primary strategy is to close the site and evacuate occupants. When it is no longer safe to evacuate, shelter in place is enacted.
3. Does the development include medical centres, emergency service and community facilities, and sensitive and hazardous land uses, some of which may not be suitable for shelter in place	None of the listed facilities or uses are planned for the site.
4. Shelter in place for greenfield development is not supported	The site is an adaptive re-use of a heritage building, and not a greenfield site.
5. Whether there is existing government developed flood warning systems that give advanced detailed forecasts of flash flooding to allow sufficient time to evacuate to the proposed refuge locations	BOM provides storm warnings for the area. Section 8 of this document outlines the responses to both BOM weather warnings and SES advice
6. Can the community effectively be informed of the risks associated with the emergency management strategy	By undertaking regular emergency evacuation drills, the community will become informed of the strategy and risks.

7. The FIRA should include detailed assessment of evacuation off-site (the primary emergency management strategy) to determine that evacuation off-site is not achievable.	Section 2.2.1 of this document provides a detailed assessment of evacuation off site, demonstrating that evacuation is achievable during a 1 in 2,000 year event, but not during a PMF event
8. The FIRA should include the flood behaviour at the site, with consideration of climate change and assessment of the potential maximum duration of isolation up to and including the PMF to identify that: <ul style="list-style-type: none"> a. flash flooding is the only flood risk present at the site, whether it be from overland flooding, local creek or riverine flooding, and b. the flooding occurs within less than 6 hours from the commencement of causative rain and the duration of shelter in place due to isolation by floodwaters is less than 12 hours from the commencement of rainfall, and c. the development is not subject to high hazard flooding (e.g. floodways, high hazard H5 or H6 areas) or surrounding roadways are not subject to high hazard flooding 	<p>Section 2.2.1 of this document provides a detailed assessment of flood behaviour. The steep terrain and relatively small catchment results in a flood regime that is dominated by overland flash flooding, with no risk from riverine or long duration flooding.</p> <p>During the peak of a PMF, Denison Street experiences H5 due to the high velocity of stormwater on this steep street. During the 1 in 2,000 year event, this hazard level is H1. The site is only isolated during a short duration event more extreme than the 1 in 2,000 year event.</p> <p>The duration of isolation during this extreme event is less than 6 hours.</p>
<p>Following consideration of items 1 to 7, and if items 8a, b and c are met, and the consent authority considers shelter in place is an appropriate emergency response strategy the following items must also be considered through a FIRA:</p> <p>9. how shelter in place will be:</p> <ul style="list-style-type: none"> a. used as part of the site's emergency management response, including actions before, during and after sheltering in place, and b. communicated to occupants and visitors of the building and how this communication will be maintained for the life of the development. 	<p>Section 8 outlines the site emergency response actions before, during and after shelter in place. Shelter in place is the final option if evacuation is no longer safe.</p> <p>This FERP will be maintained as an active document with annual reviews as noted in Sections 10 and 11</p>

<p>10. An understanding of the secondary risks and how the proponent proposes they will be managed is outlined in the FIRA. Secondary risks include medical emergencies, building fire, health and wellbeing.</p> <p>a. Table 12 of EM01 should be used to consider whether the risks could be effectively managed.</p>	<p>Management of secondary risks is included in Section 8.3.</p>
<p>The consent authority should reflect the following design criteria (I to III) in relevant conditions of consent: I. the floor level of the shelter in place part of the development be above the PMF, and</p> <p>I. the floor level of the shelter in place part of the development be above the PMF, and</p>	<p>The floor level of the shelter in place is above the PMF level on Denison Street</p>
<p>II. structural soundness for conditions in a PMF event, considering flood and debris forces, be verified by a suitably qualified structural engineer</p>	<p>The structure has been designed to resist flood and debris forces.</p>
<p>III. area and access to the area does not rely on access to electricity, is self-directing, and have clearly marked internal access for all people on site, including consideration of access for potential occupants and/or visitors.</p>	<p>Access to the Auditorium does not rely on electricity. Access from lower levels is via stairwells.</p> <p>A combination of wayfinding signage and PA address system will direct site visitors to the Auditorium.</p>
<p>The consent authority may also consider the following design criteria (IV to X) when setting relevant conditions of consent depending on the scale and type of development:</p> <p>IV. protection from weather and appropriate heating and cooling</p>	<p>The shelter in place part of the development is indoors protected from weather.</p>
<p>V. access to personal hygiene facilities such as a toilet</p>	<p>Toilet facilities are located adjacent to the auditorium.</p>

<p>VI. a minimum floor space of 2 m² per person</p>	<p>The auditorium has a floor area of approximately 380m², giving capacity for 190 people</p>
<p>VII. items for self-sufficiency that are stored, maintained and are regularly updated in an accessible location above the PMF, including sufficient drinking water and food for occupants, fire extinguishers, radios and torches with spare batteries, and a first aid kit with an automated external defibrillator (AED)</p>	<p>Emergency provisions including bottled water, first aid kits and AED, radio and torches with spare batteries will be available in the adjacent store room.</p>
<p>VIII. centralised communal shelters may be considered but must be freely accessible internally at all times and externally accessible during events</p>	<p>The auditorium is accessible internally and externally via stairs to the Denison Street level.</p>
<p>IX. access is provided to onsite systems that generate power of the shelter in place location during and after the event for a full range of flood events up to the PMF</p>	<p>There is a backup generator located above the PMF level to provide power to the site during a likely power during an intense storm event.</p>
<p>X. detail how these requirements will be maintained and enforced for the life of the development.</p>	<p>Sections 10 and 11 gives guidance on updating this document into the future.</p>

10 Revision of Flood Emergency Response Plan

This plan should be reviewed if the North Sydney Council requirements or if the street drainage surrounding the site is upgraded.

The Emergency Planning Committee shall be responsible for ensuring the Flood Emergency Response Plan is reviewed annually and updated as required. As part of the review, the Emergency Planning Committee shall contact Council annually to confirm if any new street drainage upgrades are planned or have been constructed.

11 Feedback and Complaints Management Procedure

11.1 Purpose

The purpose of this procedure is to ensure that all feedback and complaints related to emergency management are handled promptly, fairly, and effectively.

11.2 Scope

This procedure applies to all staff, volunteers, and stakeholders involved in emergency management activities.

11.3 Procedure

- a. Receiving Feedback and Complaints
 - i. Feedback and complaints should be documented using a Complaint Form.
 - ii. Feedback and complaints can be issued to building management via email, phone, in person, or through an online complaint form.
 - iii. Each feedback form is assigned a number and is logged into the Feedback Reporting System.
- b. Assessment, Investigation and resolution
 - i. Building Management will assign a Complaint Manager to investigate the complaint to determine its validity and an appropriate course of action. Investigation may include interviews with relevant parties and review of documentation.
 - ii. The Complaint Manager will work with the Chief Warden and the Emergency Planning Committee as appropriate to develop a resolution plan based on the findings of the investigation.
 - iii. The resolution plan will be implemented as appropriate and monitored its effectiveness.
- c. Escalation
 - i. If the complainant is not satisfied with the resolution, the complaint will be escalated to the Chief Warden and the Emergency Planning Committee, who will review the case and provide a final decision.

11.4 Record Keeping

All feedback and complaints and their outcomes will be logged on a Complaints Register.

11.5 Continuous Improvement

The Emergency Planning Committee will regularly review and analyse complaint data to identify trends and areas for improvement.

12 SES Correspondence

SES has provided comments on this FERP. The following table outlines responses to SES feedback.

Table 3 Response to SES Feedback

SES Comments	Response
Note the site is significantly flood affected becoming a Low Flood Island with the front of the existing building inundated during the 1% Annual Exceedance Probability (AEP), and more frequent flood events.	While the front of the building is inundated during the 1% AEP event, alternative access/egress available via Denison Street. Shelter-in-place provisions are available in the event that all access is blocked.
While proposed design reduces the flood risk along the Miller Street frontage during the 1% AEP event, high hazard flooding remains on surrounding streets, including against the southern face of the building.	The steep street on the southern face of the building leads to high velocities resulting in high hazard flow in this location. Access/egress is via Denison Street when other site access is subject to dangerous conditions. Refer to Section 7
Recommend the consideration of the NSW Government Shelter in Place Guideline for flash flooding, noting it is adaptive reuse of an existing development.	The NSW Government Shelter in Place Guideline for flash flooding is considered in Section 8.3
Support the removal of plant equipment from the existing basement and the strategy of closing the site early, in advance of any flooding, where possible.	Early shutdown of the site is recommended in Section 8.1.
Recommend consideration of safety features for any proposed lifts, to ensure that floodwater does not enter the lift and ensure people do not exit into flooded areas.	Lift wells are protected from flooding during a 1% AEP event with 300mm freeboard.
Recommend ensuring users of the site are aware of the flood risk and actions to remain safe for the lifespan of the development.	Sections 10 and 11 include a procedure for keeping this document up to date for the lifespan of the development.

Additional feedback was provided by the SES following submission of the SSDA in a letter dated 25/11/2025, presented below in Table 4.

Table 4 SES SSD Agency Advice Response

SES Comments	Response
<p>In summary, we recommend the consent authority:</p> <ul style="list-style-type: none"> • Requests the proponent demonstrates consistency with the Shelter in Place Guideline (NSW Government, 2024) prior to granting consent to ensure the risk to life is adequately managed and/or mitigated. The current proposal has not demonstrated consistency and has discussed only design criteria. 	<p>Section 9 of the FERP has been added to provide more detail on the Shelter in Place provisions, responding directly to the Shelter in Place Guideline.</p>

13 Conclusion

It is important to monitor all storm warning websites such as Bureau of Meteorology and SES for campus occupants to have sufficient time to close the site and/or leave the site in a safe manner through the provided evacuation routes before they are obstructed as the water level rises in large storm events. Flood warnings may not be available.

The management strategy can be summarised as:

- Close the site where there is sufficient storm warning or where there is extreme weather conditions forecast by the BOM.
- Evacuate the site where there is sufficient warning, and the site is occupied.
- Failing the above measure, shelter in place until the storm subsides, with all the buildings located above the PMF level.

If the site were occupied up to a 1% AEP storm event, evacuation routes from the site are generally safe for people and vehicles, following evacuation procedures outlined in this FERP.

It is the responsibility of the Emergency Planning Committee as part of the site Emergency Management Plan that they prepare the building for a flood event. This will be achieved through induction training, nomination of flood wardens reporting to the Chief Warden, education of flood risks and behaviour, and the preparation and maintenance of a Floodsafe Emergency Kit.

This FERP is to be reviewed if Council revises flood planning requirements and flood studies, and if the street drainage surrounding the site is upgraded. Feedback on the plan can be provided to Building Management for input to future revisions.

Further, this FERP is reviewed regularly (on a yearly basis) and updated by the Emergency Planning Committee.

