



## Response to SSD-799307758 application: Flood Addendum, Northern Precinct

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**From:** Carlos Figueroa (WSP Water Resource Engineer)  
Michele Zornitta (WSP Technical Executive)  
**Subject:** **Environmental Impact Statement – Waterloo Metro Quarter – Northern Precinct (SSD-79307758)**  
**Our ref:** PS219170-HYD-MEM0WMQN-Rev0  
**Date:** **13 March 2026**

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### Introduction

This flood addendum has been prepared to respond to the comments provided by the Department of Planning, Housing and Infrastructure and the Conservation Programs, Heritage and Regulation Group associated with the Waterloo Metro Quarter Northern Precinct (SSD-79307758).

It addresses the comments relating to the Northern Precinct associated with the Flood Impact Assessment report (Reference document: Waterloo Metro Quarter Over Station Development SSD-79307758 Northern Precinct, Flood Impact Assessment, August 2025).

### Comment 1 - Flood Planning Levels and Climate Change

#### CPHR Comment

CPHR notes that several areas of the development have floor levels with no or less than 100mm freeboard to the 1% Annual Exceedance Probability (AEP) flood level. Climate change, including that which has already occurred, may increase flood levels to the degree that proposed floor levels would no longer be above the 1% AEP flood level.

A climate change sensitivity analysis was carried out in the Northern Precinct FIA using a 10% increase in rainfall intensity, which resulted in small increases to the 1% AEP flood level that would not impact on proposed floor levels. However, the 10% increase is not consistent with the latest guidance per Australian Rainfall and Runoff (ARR). It is likely that greater increases in flood levels would be predicted with the latest methodologies.

By contrast, CPHR considers the approach for Areas 17 and 18 outlined in the Northern Precinct FIA to be reasonable, given the floor level which is below the flood planning level comprises a corridor leading to the fire stairs and does not constitute a habitable area.

#### Recommendations

- Apply freeboard to the retail floor levels.
- Alternatively, use the latest methodologies in Australian Rainfall and Runoff to develop more accurate estimates of changes to flood levels under climate change conditions.

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WSP acknowledges that every project we work on takes place on First Peoples lands. We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

## WSP Response

1. A climate change analysis was undertaken for the Northern Precinct as documented in the flood impact assessment report assuming a 10% increase in rainfall intensity. The increase in rainfall intensity was adopted in accordance with the Interim Floodplain Management Policy, which was used to define the Flood Planning Level (FPL) for the Northern Precinct.
2. WSP undertook engagement with the City of Sydney prior to SSSA lodgement and were advised to use the Interim Floodplain Management Policy to guide the selection of the FPL and the associated Finished Floor Levels (FFLs).
3. The adopted FFLs for the Northern Precinct are consistent with City of Sydney requirements.
4. In response to the CPHR comment, WSP completed a further investigation on climate change considering a 30% increase in rainfall intensity to align with the latest updates of Australian Rainfall and Runoff guidelines. The increase in rainfall intensity was included in the flood model to generate peak flood levels for the relevant critical durations at the site.
5. Table 1 below includes the update of peak flood levels for areas below the Probably Maximum Flood (PMF) level at the Northern Precinct (refer to Figure 1 for ground floor level layout) with the inclusion of the flood model results for the 30% increase in rainfall intensity. Table 1 shows that:
  - a) Areas 1 and 2 have Finished Floor Levels (FFLs) above the 1% AEP (considering 30% increase in rainfall intensity to account for climate change) flood level.
  - b) Areas 6 and 7 are marginally below the 1% AEP, respectively 20 mm and 30 mm (considering 30% increase in rainfall intensity to account for climate change) flood level.
6. Further flood modelling incorporating a 30% increase in rainfall intensity to account for climate change indicates that only Areas 6 and 7 are below the peak flood level, with a maximum exceedance of up to 30 mm. Noting the marginal exceedance, Areas 6 and 7 are provided with direct access to an internal refuge area that is above the PMF.
7. The increase in flood levels of up to 30 mm under the climate change scenario (30% increase in rainfall intensity) for Areas 6 and 7 has been reviewed and is considered acceptable, noting the balance achieved between FFLs and street activation outcomes. Furthermore, a 30 mm increase in the 1% AEP flood level, including the climate change allowance (30% increase in rainfall), is considered to have a negligible impact on flood risk for these areas, as appropriate emergency evacuation provisions are in place.

Table 1: Peak flood level, Northern precinct and FFL

Area	Peak flood level	Proposed FFL
<b>Area 1 (Retail 1)</b>	1% AEP: 16.71 m AHD 1% AEP + 10% (CC): 16.72 m AHD 1% AEP +30% (CC): 16.73 m AHD PMF: 16.94 m AHD	16.82 m AHD (above 1% AEP +30%CC)
<b>Area 2 (Retail 2)</b>	1% AEP: 16.58 m AHD 1% AEP + 10% (CC): 16.63 m AHD 1% AEP +30% (CC): 16.67 m AHD PMF: 16.94 m AHD	16.72 m AHD (above 1% AEP +30%CC)
<b>Area 6 (Retail 6)</b>	1% AEP: 15.86 m AHD 1% AEP + 10% (CC): 15.87 m AHD 1% AEP +30% (CC): 15.88 m AHD	15.86 m AHD ( <b>20 mm below</b> 1% AEP +30%CC)



## WSP Response

1. Section 7 of the flood impact assessment report demonstrates that occupants of the Northern precinct can be safe in a flood emergency.
2. As indicated in Figure 1 Area 1, 2, 7 and 6 are below the PMF levels. However, these areas are provided with direct access to a shelter area above the PMF flood level that can be used as shelter in place in case of a flood emergency.
  - a) Area 1 (Proposed FFL 16.820 m AHD, which is 120 mm below the PMF flood level) incorporates direct internal access to a stepped in zone above the PMF at RL 17.130 m AHD.
  - b) Area 2 (Proposed FFL 16.720 m AHD, which is 220 mm below the PMF flood level) provides direct access to Raglan Walk area which is flood free (i.e. above PMF zone).
  - c) Area 6 (Proposed FFL 15.865 m AHD, 575 mm below the PMF flood level) incorporates direct internal access to a stepped in zone above the PMF at RL 16.700 m AHD.
  - d) Area 7 (Proposed FFL 15.955 m AHD, 485 mm below the PMF) incorporates direct internal access to a raised zone above the PMF provides access to a stepped in zone at RL 16.700 m
3. Figure 2 illustrates the proposed evacuation routes to areas above the PMF. The flood emergency response plan, refer to Appendix 1, for the Northern Precinct will include details on evacuation including warning time.
4. WSP has commenced engagement with NSW SES (refer to Appendix 2) and will continue to liaise with NSW SES to refine the flood emergency response plan post approval.
5. Occupants of lower levels (shared basement) are protected from flooding as all access points are at or above the PMF or the 1% AEP + 500mm flood level, whichever is higher. Additionally:
  - a) All penetrations into the basements are to be constructed to ensure full watertightness, water resistance and avoid any possible entrance of flood water into the basement.
  - b) During a flood emergency, occupants will be moved to higher levels above the PMF.
6. A flood risk management plan will be prepared prior occupancy of the building.

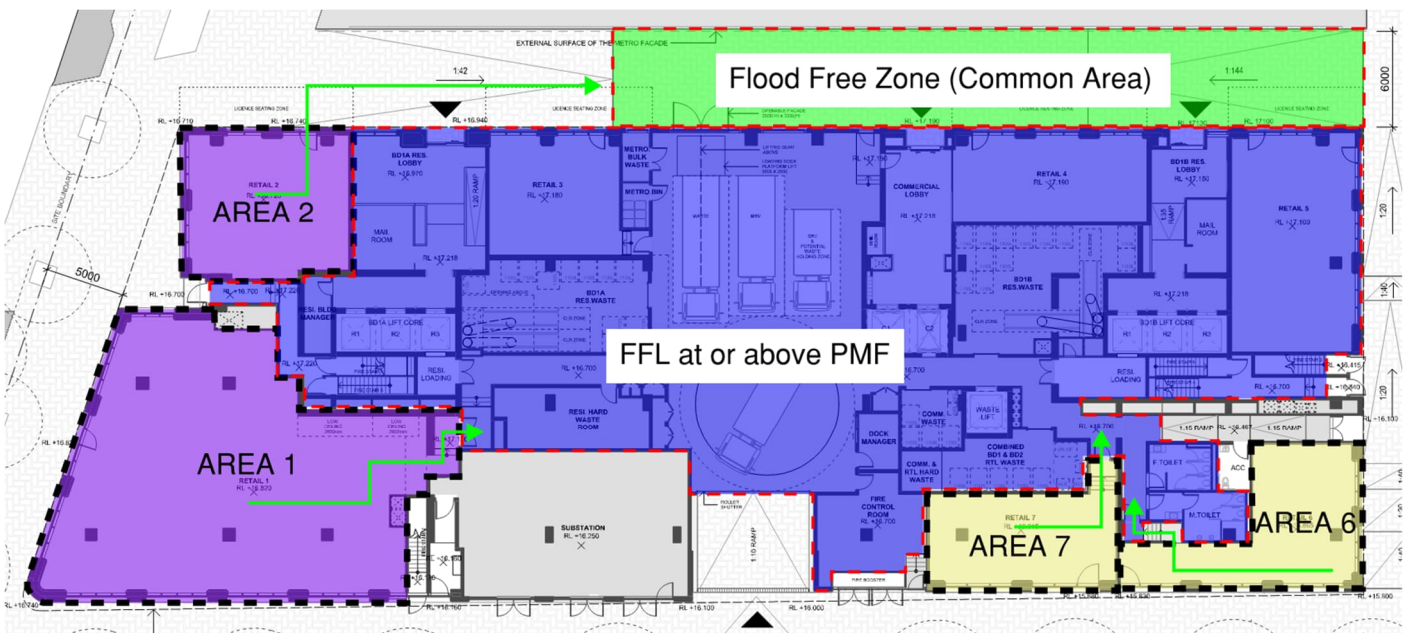


Figure 2: Northern Precinct areas above PMF and internal access to refuge



## Department of Planning, Housing and Infrastructure – Request for Information

### **DPHI Comment**

#### 7. Flood Impacts

Review the flood planning levels with climate change sensitivity analysis for the Northern Precinct either by applying freeboard to the retail floor levels, or alternatively using the latest methodologies in the Australian Rainfall and Runoff Guidebook to develop more accurate estimates of changes to flood levels under climate change conditions

### **WSP Response**

1. A climate change sensitivity analysis for the Northern precinct has been undertaken by using the latest methodologies in the Australian Rainfall and Runoff Guidebook. WSP has provided this analysis on Page 2 of this addendum.

### **DPHI Comment**

#### 7. Flood Impacts

Submit revised emergency management and evacuation strategy detailing approach for occupants that need to relocate to on -site shelter, including the basement and details on the emergency management for the childcare centre

### **WSP Response**

1. A draft Flood Emergency Response Plan (FERP) has been developed, refer to Appendix 1. The childcare centre is located within the Central Precinct and will be addressed via the Response to Submissions for SSD-79307746.

### **DPHI Comment**

#### 7. Flood Impacts

Any emergency management and evacuation strategy should be prepared in accordance with the Shelter -in-Place Guideline for Flash Flooding and in consultation with the NSW SES.

### **WSP Response**

1. The emergency management evacuation strategy has been prepared in accordance with the Shelter-in-Place Guideline for Flash Flooding and WSP has commenced engagement with NSW SES, refer to Appendix 2. WSP will continue to refine the FERP in consultation with NSW SES post-approval.



## Appendix 1 – Flood emergency response plan for Northern Precinct (including shared basement)

**Design  
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*future* /**

WL Developer Pty Ltd

**Waterloo Metro Quarter  
Over Station Development  
SSD-79307758 Northern  
Precinct**

Flood Emergency  
Response Plan

**wsp**

March 2026

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## Waterloo Metro Quarter Over Station Development SSD-79307758 Northern Precinct Flood Emergency Response Plan

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Rev	Date	Details
A	10/03/2026	DRAFT Plan for client comments
B	13/03/2026	Final DRAFT issue to client for finalisation
C		

	Name	Date	Signature
Prepared by:	Carlos Figueroa	13/03/2026	
Reviewed by:	Karen Brakell (FIEAust, CPEng)	13/03/2026	
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WSP acknowledges that every project we work on takes place on First Peoples lands.  
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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# Abbreviations

AEP	Annual Exceedance Probability
BOM	Bureau of Meteorology
DPHI	Department of Planning, Infrastructure and Housing
FERP	Flood Emergency Response Plan
ISO	International Standards Organisation
LGA	Local Government Area
m AHD	Metres Australian Height Datum
NBN	National Broadband Network
PMF	Probable Maximum Flood
RL	Reduced Level
SEARs	Secretary's environmental assessment requirements
SERM	State Emergency and Rescue Management
SES	State Emergency Service
SSD	State Significant Development
WMQ	Waterloo Metro Quarter

# 1 INTRODUCTION

This Flood Emergency Response Plan (FERP) has been prepared for Waterloo Metro Quarter Northern Precinct, including buildings 1A, 1B and shared basement.

The intent of the FERP is to address the comments provided by the Department of Planning, Housing and Infrastructure and the Conservation Programs, Heritage and Regulation Group associated with the Waterloo Metro Quarter Northern Precinct (SSD-79307758).

This DRAFT<sup>1</sup> FERP has been prepared in accordance with the following documents and policies:

- City of Sydney Council Flood Emergency Sub Plan (EMAPLAN) (SES, 2023)
- Sydney Metropolitan Region Emergency Management Plan (EMPLAN) (SES, 2022)
- NSW State Flood Plan (EMPLAN) (SES, 2024)
- Waterloo Design Amenity Guidelines (NSW, 2020)
- Interim floodplain management policy (City of Sydney Council, 2014)
- Waterloo Metro Quarter State Significant Precinct Study (NSW, 2018) (NSW, 2018)
- Australian Rainfall and Runoff 4.2 version guidelines (ARR, 2019)
- Alexandra Canal Floodplain Risk Management Study (City of Sydney, 2020)
- Waterloo Metro Quarter Over Station Development - Stormwater Management Strategy and Flood Impact Assessment (WSP, 2020)
- Floodplain Risk Management Manual (DPE, 2023)
- Shelter-in-Place Guidelines for Flash Flooding (CPHR, 2023)
- Support for Emergency Management Guideline (EM01) (DPE, 2023)
- Understanding and Managing Flood Risk Guideline (FB01) (DPE, 2023)

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<sup>1</sup> The FERP will be in DRAFT form until the client agrees the document content and contact details.

## 2 PURPOSE OF PLAN

The purpose of this response plan is to provide information and a clear set of instructions specific to the building manager and all occupants of the Waterloo Metro Quarter Northern Precinct (including buildings 1A, 1B and shared basement) for managing the response to flood emergency. Northern Precinct plan is shown in Figure 2-1 together with an overview of the development for context.



Figure 2-1: Waterloo Metro Quarter site, with sub-precincts

The Northern Precinct comprises a 4-storey retail and commercial podium, with two residential towers above (see Figure 2-2 for reference). The two towers of 24 residential storeys and 21 residential storeys (plus plant) will comprise 39 affordable housing units and 275 market dwellings. Specially, the precinct comprises:

- A podium containing:
  - Vehicle entrance and loading dock facilities accessed off Botany Road
  - Ground-level retail tenancies, commercial and residential lobbies
  - Three levels of commercial office floorspace, totalling around 4,915 m<sup>2</sup>
- Two residential apartment towers with a total of 314 units:
  - Building 1A: 24 residential storeys
  - Building 1B: 21 residential storeys
  - Communal open space located on the roof of the Metro box connected to Northern Precinct via a bridge link over Raglan Walk
- A pedestrian thoroughfare through the site and public domain works



Figure 2-2: Northern Precinct proposed buildings (view from Botany Rd and Raglan St)

### 3 CONTEXT OF PLAN

The Waterloo Metro Quarter Northern Precinct FERP is site specific and should be read in conjunction with:

- City of Sydney Council Flood Emergency Sub Plan (EMAPLAN) (SES, 2023),
- Sydney Metropolitan Region Emergency Management Plan (EMPLAN) (SES, 2022),
- NSW State Flood Plan (EMPLAN) (SES, 2024)
- NSW State Emergency Management Plan (EMPLAN)
- Sydney CBD Safety Sub Plan (NSW, 2023)
- NSW State Disaster Plan (NSW Government, 2024).

This plan has been developed to complement these regional state plans but not replace them, so the reader and final user of this document should be aware of that. This document complements the FERP for Waterloo Metro Quarter Central Precinct.

# 4 AUTHORITY

The City of Sydney Council Flood Emergency Sub Plan forms an integral component of the City of Sydney Council Local Emergency Management Plan (EMPLAN) and is formally endorsed by the Local Emergency Management Committee (LEMC). It is developed and issued under the legislative authority of the State Emergency and Rescue Management Act 1989 (NSW), the State Emergency Service Act 1989 (NSW), and the NSW State Emergency Management Plan (EMPLAN).

The City of Sydney Council EMPLAN remains continuously active. It provides a standing framework for coordinating support, resources, and interagency cooperation whenever required by combat agencies—most notably the NSW State Emergency Service (NSW SES). Because the EMPLAN is always in effect, it does not require a formal activation process.

## 5 REVIEW AND UPDATE OF PLAN

The plan must be reviewed at least once every five years, aligning with the review cycle of the City of Sydney Council Flood Emergency Sub Plan (SES, 2023). A review should also be undertaken following any significant flood event affecting the site.

All building personnel must be trained in this document as a part of the site induction. The FERP is to be read through and understood as a part of the 'Building Safety Rules' and the Induction Checklist. Further flood emergency response training must be undertaken by building wardens and safety officers in accordance with the requirements of the 'Emergency Management Procedure'.

The building manager should continually read this FERP, approximately every 6 months in order to have a thorough understanding of the procedure to be undertaken in the case of a flood event.

In addition, a minimum of one drill emergency exercise is to be conducted every five years, or within two years of the plan being reviewed, to ensure the building personnel are able to act quickly and responsibly in a real flood event. This will confirm ongoing readiness and operational effectiveness.

# 6 CONTACTS

Relevant contacts for this plan include:

Table 6-1: Contact Organisations and contact details

ORGANISATION	CONTACT NUMBER	WEBPAGE
State Emergency Services (SES)	132 500	<a href="https://ses.nsw.gov.au">https://ses.nsw.gov.au</a>
Bureau of Meteorology (BOM)	1300 659 219	<a href="http://www.bom.gov.au/nsw/warnings/">http://www.bom.gov.au/nsw/warnings/</a>
City of Sydney	02 9265 9333	<a href="http://www.cityofsydney.nsw.gov.au">http://www.cityofsydney.nsw.gov.au</a>
NSW Police and NSW Fire and Rescue	000	
Endeavour Energy	131 003	<a href="https://www.endeavourenergy.com.au/">https://www.endeavourenergy.com.au/</a>
Building manager	<b>TBC</b>	

The City of Sydney SES unit at 125 Railway Parade, Erskineville, NSW 2043 is the local SES unit.




Other contacts relevant for this plan include the building occupants and building service providers. Building management documents should be referred to for contact details of building occupants.

## 6.1 Online Resources

Web resources are the most update source of data available during a flood emergency.

In addition to the above webpages the following mobile/desktop applications should be installed on the building managers computers and mobile phone and other management staff with a responsibility for occupants welfare at the site.

Table 6-2: Web online resources

ONLINE RESOURCE		RECOMMENDATION
NSW <a href="#">Hazards Near Me app</a>   <a href="#">NSW Government</a>		The building manager should have this application installed with the “my watch zone” set for City of Sydney.
NSW Live Traffic <a href="#">Live Traffic NSW</a>		The building manager should have the location active on their mobile phone to be able to provide up to date information for traffic incidents and road closures around the site.
BOM Weather <a href="http://www.bom.gov.au/">http://www.bom.gov.au/</a>		The building manager should have this application installed to stay aware of weather warnings and meteorological updates. Access hourly and 7-day forecasts, radar and warnings directly from the Bureau of Meteorology.

ONLINE RESOURCE	RECOMMENDATION
	<p>It is recommended that all available sources of information be considered, including other weather services but ensure reputable sources of information are utilised to gather information about the flood and rainfall event.</p>
<p>Emergency Plus  <a href="https://www.emergencyplus.com.au/">https://www.emergencyplus.com.au/</a>            The Emergency+ app is a free app developed by Australia’s emergency services and their Government and industry partners.</p>	<div data-bbox="692 602 900 808" data-label="Image"> </div> <p>The application should be recommended to the building tenants as it shares your precise location with emergency services when required. Use your mobile device’s GPS functionality to accurately communicate your location and provide critical details to emergency call-takers.</p>

# 7 ASSUMPTIONS

This flood emergency response plan is based on information that was available at the time the plan was produced (March 2026). This includes information that was provided by Waterloo Developer Pty Ltd and available from the Environmental Impact Statement Appendix W - Flood Impact Assessment (WSP 2025) Document PS219170-HYD-REP-WMQN for the Northern Precinct.

WSP has commenced engagement with NSW SES (refer to Appendix A for correspondence). WSP will seek feedback from the SES to finalise the FERP post-approval.

This plan is based on the assumption that a dedicated building manager will be appointed for the development. The building manager will be contactable 24 hours a day and will have basic emergency management training. As part of this training, they will be familiar with the contents of this document and will know where to access it immediately in the event of a flood or other emergency.

For the development itself, it is assumed that each building will be equipped with an internal warning and communication system. This system will remain operational during a flood emergency and will allow the building manager or emergency personnel to issue timely alerts, instructions, and safety information to all occupants as required.

It is also assumed that a comprehensive Building Services Manual will be available on-site. This manual (or an equivalent document) should clearly identify and map the location of all essential building services, both internal and external. It should also include up-to-date contact details for all relevant service providers to support rapid response in the event of an emergency, malfunction, or service disruption.

Building services may include, but are not limited to:

- Electrical infrastructure: switchboards, meters, isolation points, backup power systems, and any associated safety equipment
- National Broadband Network (NBN) connection points and associated hardware
- Telecommunications systems: internal cabling, distribution boards, and service entry points
- Water supply infrastructure: pipes, pumps, isolation valves, meters, and any pressure or filtration systems
- Sewerage and wastewater systems: pipes, pumps, backflow prevention devices, and inspection points
- Waste and refuse storage areas: including recycling facilities and any compacting or containment equipment

In addition, the Building Services Manual should outline routine maintenance requirements, emergency shutdown procedures, and any known vulnerabilities or flood-sensitive components. Ensuring this information is readily accessible will support efficient decision-making and reduce risks during a flood event.

## 8 DISCLAIMER

This flood emergency response plan is the sole responsibility of the owners/managers of Waterloo Metro Quarter Northern Precinct (considering building 1A and 1B). WSP Australia does not accept any responsibility for any omission or error in this plan, or for any loss, damage or inconvenience, which may result from the plan's implementation.

Should assumptions or circumstances change then it is the responsibility of the owner to update the plan as necessary. Any other changes that may result in the plan not being completely relevant include:

- Change in the layout of the site and buildings
- Change in ownership of the building
- Change in management of development
- Change in staff managing the development
- Change in City of Sydney Council Flood Emergency Sub Plan.

# 9 MAPS

The development site is located within the City of Sydney Local Government Area (LGA). The site is situated about 3.3 kilometres south of Sydney CBD and eight kilometres northeast of Sydney International Airport within the suburb of Waterloo.

The site area, known as Waterloo Metro Quarter, comprises land to the west of Cope Street, east of Botany Road, south of Raglan Street and north of Wellington Street. The heritage-listed Waterloo Congregational Church at 103–105 Botany Road is within this street block but does not form a part of the Waterloo Metro Quarter site boundaries (see Figure 9-1 for site reference).

The area surrounding the site consists of commercial premises to the north, light industrial and mixed-use development to the south, residential development to the east and predominantly commercial and light industry uses to the west.

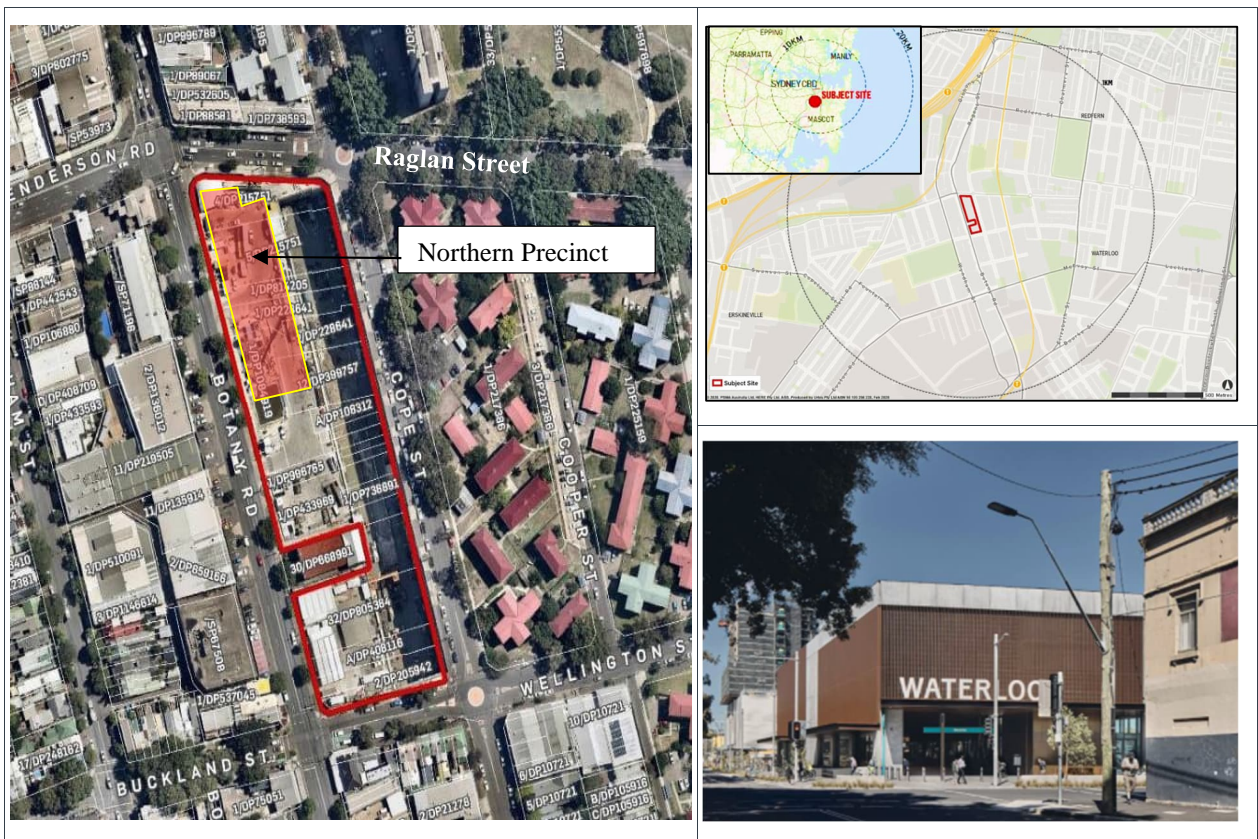


Figure 9-1: Administrative detail of the Northern Precinct in relation to WMQ site and location

The administrative detail of the Northern Precinct DA comprises the following allotments and legal description:

- 130–134 Cope Street (Lot 12 DP 399757) (Part)
- 1368 Raglan Street (Lot 4 DP 215751)
- 59 Botany Road (Lot 5 DP 215751)
- 65 Botany Road (Lot 1 DP 814205)
- 67 Botany Road (Lot 1 DP 228641)
- 124–128 Cope Street (Lot 2 DP 1274225)
- 69–83 Botany Road (Lot 1, DP 1084919)
- 130–134 Cope Street (Lot 12 DP 399757)

The relevant maps for this FERP are included in Appendix B including the floor plan maps and a range of flood maps including 5% Annual Exceedance Probability (AEP), 1% AEP and the Probable Maximum Flood (PMF) event.

Interpretation of the general flood information is included in Section 10.

**Map 1 - Waterloo Metro Quarter Flood Impact Assessment – Flood Depth - Proposed Scenario 5% AEP**

This map shows that the proposed site conditions are affected by flood inundation for the 5% AEP event.

**Map 2 - Waterloo Metro Quarter Flood Impact Assessment – Flood Depth - Proposed Scenario 1% AEP**

This map shows that the proposed site conditions are affected by flood inundation for the 1% AEP event.

**Map 3 - Waterloo Metro Quarter Flood Impact Assessment – Flood Depth - Proposed Scenario PMF**

This map shows that the proposed site conditions are affected by flood inundation for the PMF event.

**Map 4 - Waterloo Metro Quarter Flood Impact Assessment – Flow Velocities - Proposed Scenario 5% AEP**

This map shows the 5% AEP flood velocity for the site.

**Map 5 - Waterloo Metro Quarter Flood Impact Assessment – Flow Velocities - Proposed Scenario 1% AEP**

This map shows the 1% AEP flood velocity for the site.

**Map 6 - Waterloo Metro Quarter Flood Impact Assessment – Flow Velocities – Proposed Scenario PMF**

This map shows the PMF event flood velocity for the site.

# 10 FLOOD INFORMATION

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## 10.1 Site development and floor levels

The Waterloo Metro Quarter site is situated within the Alexandra Canal catchment. This catchment covers around 12 km<sup>2</sup> of the Sydney City Council Local Government Area.

The broader catchment topography ranges from about 55.0–60.0 m AHD in the northeast (its highest point) to approximately 10.0–5.0 m AHD in the southwest, which represents the lowest elevations. Surface water generally drains toward Alexandra Canal, with the eastern portion of the catchment flowing southwest and the western portion flowing south to south-east. Overall, the landform slopes gradually from the north, northeast, and east toward the canal in the southwest.

The WMQ site itself is relatively flat, with a gentle fall toward the south. According to the flood study, ground levels across the site range from approximately 17.0–17.5 m AHD at the higher points to around 14.0–15.0 m AHD at the lower points.

- Northern boundary (Raglan Street): Elevations range from approximately 16.5–17.0 m AHD at the intersection of Raglan Street and Botany Road, decreasing slightly to around 16.0–16.5 m AHD at Raglan Street and Cope Street intersection.
- Eastern boundary (Cope Street): Levels fall from approximately 16.0–16.5 m AHD at Raglan and Cope Street to about 14.5–15.0 m AHD at the intersection of Cope and Wellington Street.
- Western boundary (Botany Road): Elevations range from approximately 16.5–17.0 m AHD at Raglan Street and Botany Road, sloping down to around 14.5–15.0 m AHD at Botany Road and Wellington Street crossing.

The Northern Precinct site includes two new buildings and associated infrastructure as described in Section 2. A set of plans for the overall Northern Precinct with levels have been included below for the ease of interpretation of the current FERP.

### 10.1.1 Northern Precinct (Building 1A and 1B)

The lowest floor level of the building is set at 15.830 metre above sea level (m AHD). Around the outside of the building, the lowest ground point is on the southwest corner at Botany Road, where the street drops to about 15.800 m. As this is the lowest spot around the whole site, it is the area where water will be visible on the surface during heavy rain. Northern Precinct external elevations and main views (west, east, north and south) are shown in Figure 10-1, Figure 10-2, Figure 10-3 and Figure 10-4 respectively.

Along Botany Road (west view in Figure 10-1), the street slopes downward from north to south. The two lowest building entrances here are Retail 7 (15.880m AHD) and Retail 6 (15.830m AHD). These entrances sit very close to the lowest street level, which makes them the most exposed to potential flooding. The entrances to the Substation and the Fire Control Room on this side of the building sit approximately at 16.160m AHD and 15.900m AHD. The Fire Control Room entrance, however, includes an internal floor that is raised to 16.700 m AHD.

At Raglan Lane (east view in Figure 10-2) the ground rises to the south, from 16.710m AHD to 17.100m AHD. The lowest entrances on this side Retail 2 (16.720m AHD) and the Building 1A Lobby (16.970m AHD) are much higher than the low points on Botany Road.

At Raglan Street (north view in Figure 10-3), the lowest entrance is a fire stair at 16.700m AHD, but the internal floor behind it is raised much higher at 17.220m AHD, which are higher than the levels along Botany Road.

At Grit Lane (south view in Figure 10-4), the street slopes downward from east to west, with the lowest building entry at 16.100m AHD. This entrance leads to the loading dock ramp. Although this is a low point, it is still higher than the Botany Road corner.

For internal areas of the Building 1A and 1B finished floor levels have been adopted at PMF or the 1% AEP + 500mm flood for all ingress points. This mitigates flood risk at the basement and fulfills the project requirements. All penetrations into the basements are to be constructed to ensure full watertightness, water resistance and avoid any possible entrance of flood water into the basement.

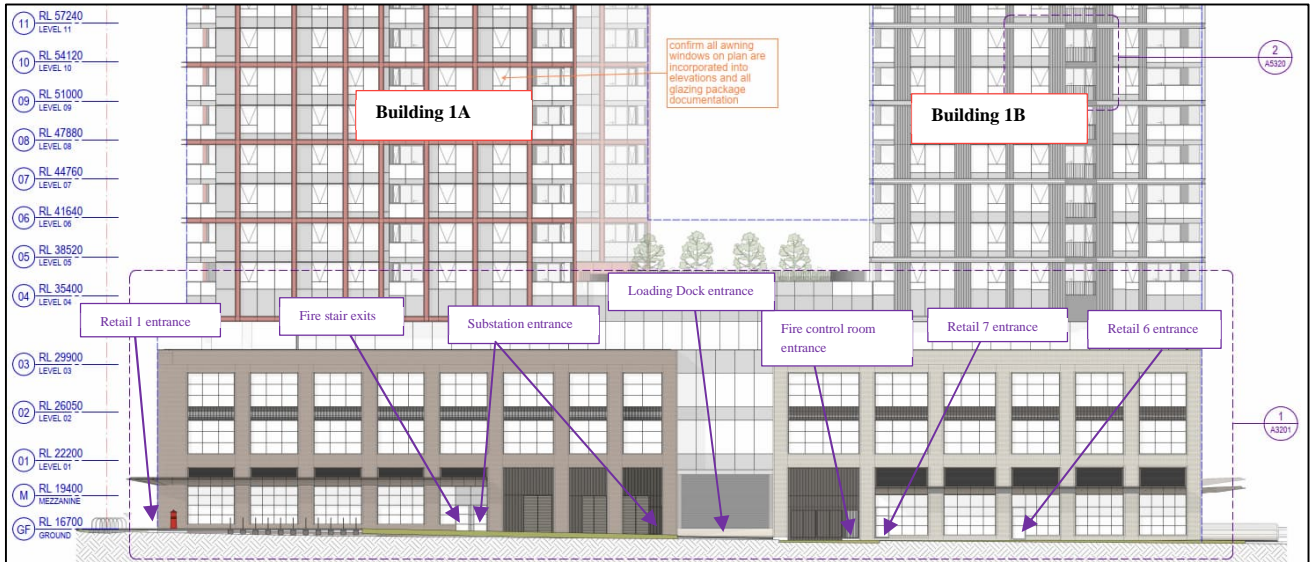


Figure 10-1: Northern Precinct external elevation – west view (from Botany Rd)

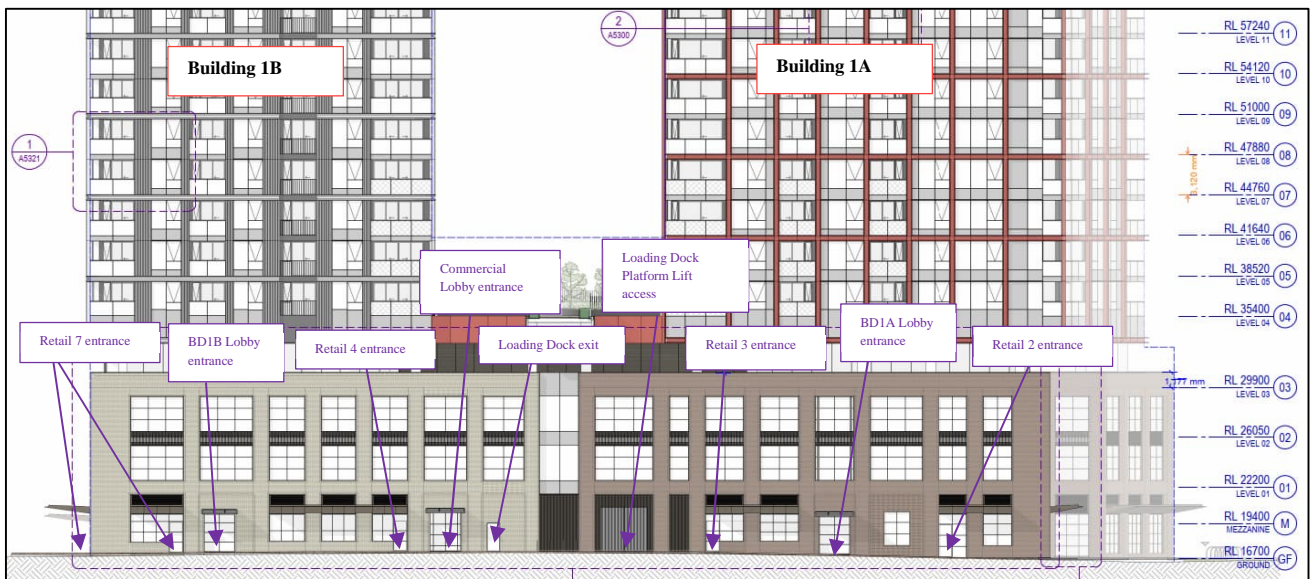


Figure 10-2: Northern Precinct external elevation – east view (from Raglan Walk and Metro Station)

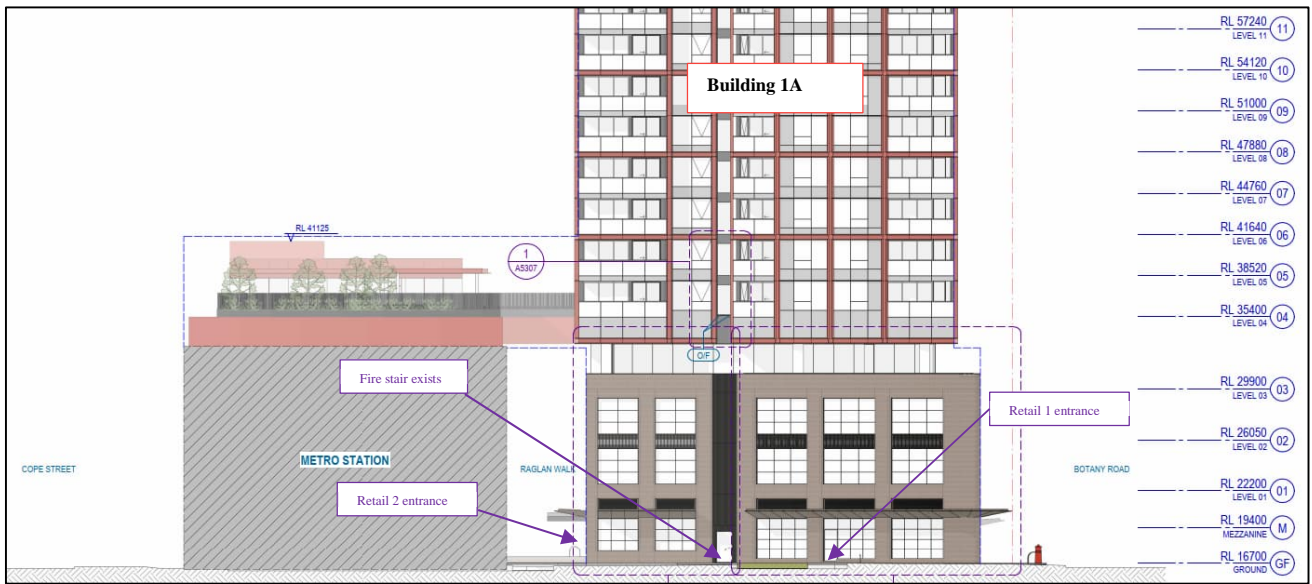


Figure 10-3: Northern Precinct external elevation – north view (from Raglan St.)

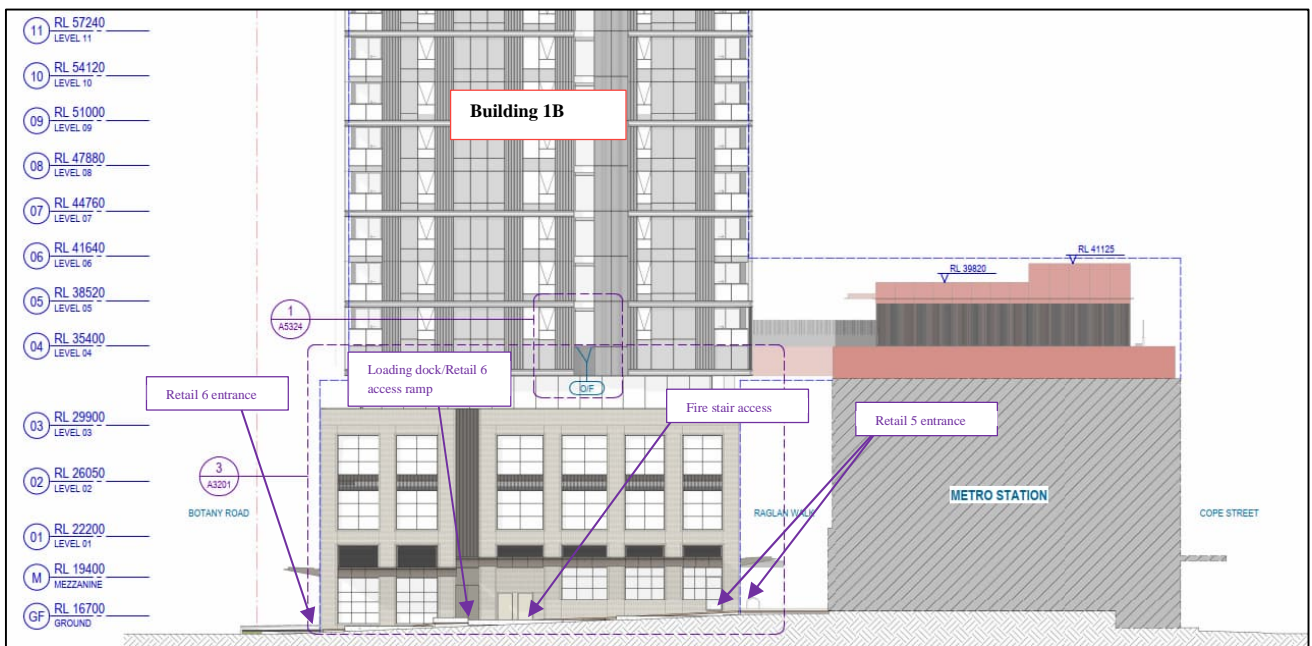


Figure 10-4: Northern Precinct external elevation - south view (from Grit Lane)

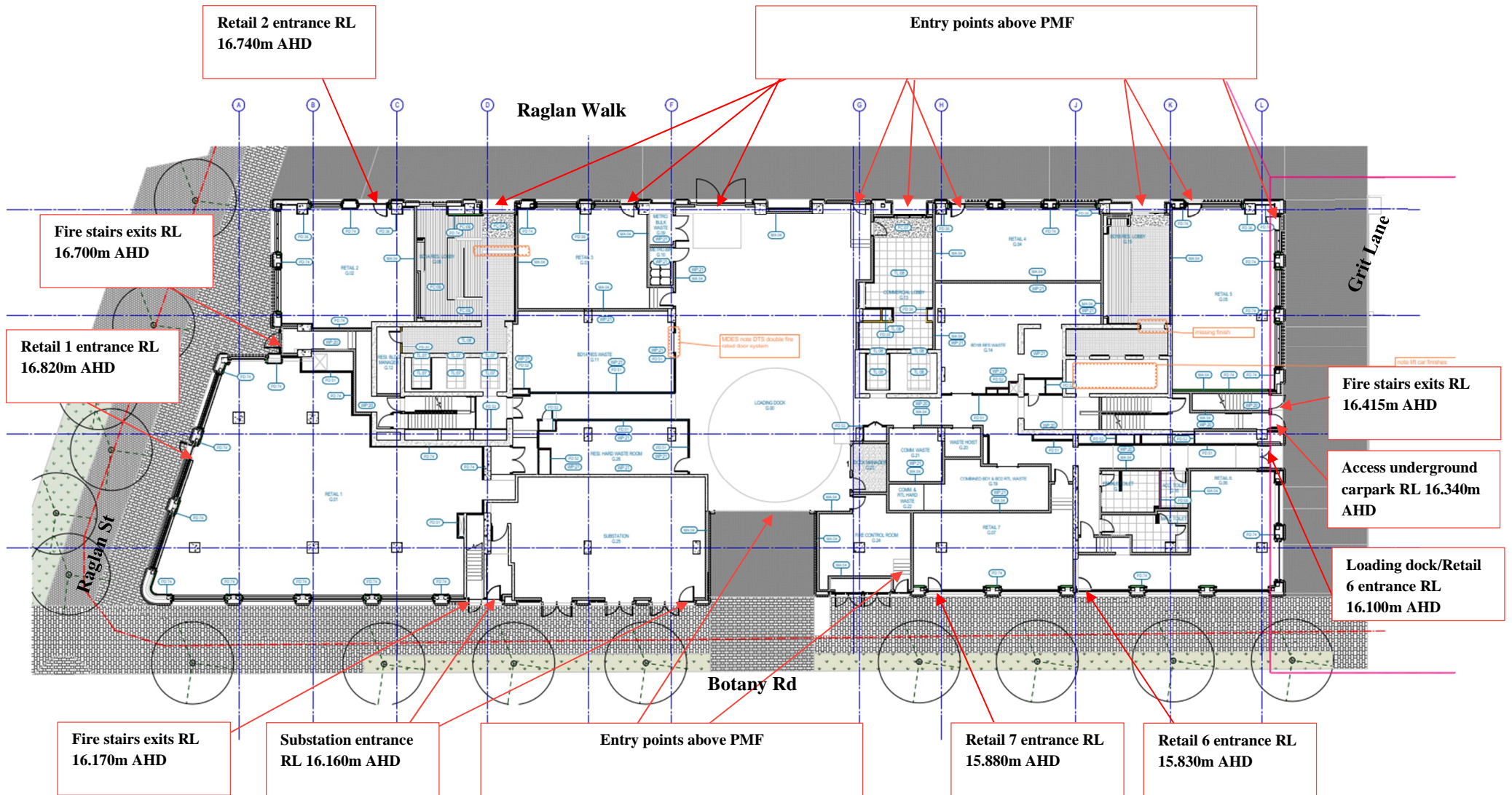


Figure 10-5: Northern Precinct ground floor plan with main access/exits point

## 10.2 Nature and Extent of flooding

Flooding throughout the Alexandra Catchment is a combination of:

- Mainstream flooding, which tends to occur around Alexandra Canal and the open channels; but does not extend to the WMQ site.
- Overland local flooding due to intense rainfall. This type of flooding is defined as *inundation by local run-off on its way to a waterway, rather than overbank flow from a waterway* (NSW Government, 2023). This is the main cause of flooding to the WMQ site influenced by the capacity of the stormwater network and overland flow paths.

The site area is characterized by numerous 'trapped' low points which are locations where water drain slowly due to limited capacity of stormwater network. As a result of the low points water tends to pond (>0.6m for a 5% AEP) at these locations. In the proximity of the WMQ site there are records of overland flooding occurring in 2011 at the Botany Road and Buckland Street (Buckland Street is a western continuation of Wellington Street).

Overland flooding originates east of Raglan and Wellington streets, and north of Cope St and Botany Rd converging towards the lower points that bound the WMQ site. The low points identified around the site are at the intersection of Cope St and Raglan St, intersection of Cope and Wellington, intersection of Buckland and Wyndham Street and on Botany Rd in front of the Congregational Church (south of Northern Precinct). The multiple directions of overland flooding around the site are presented in Figure 10-6.

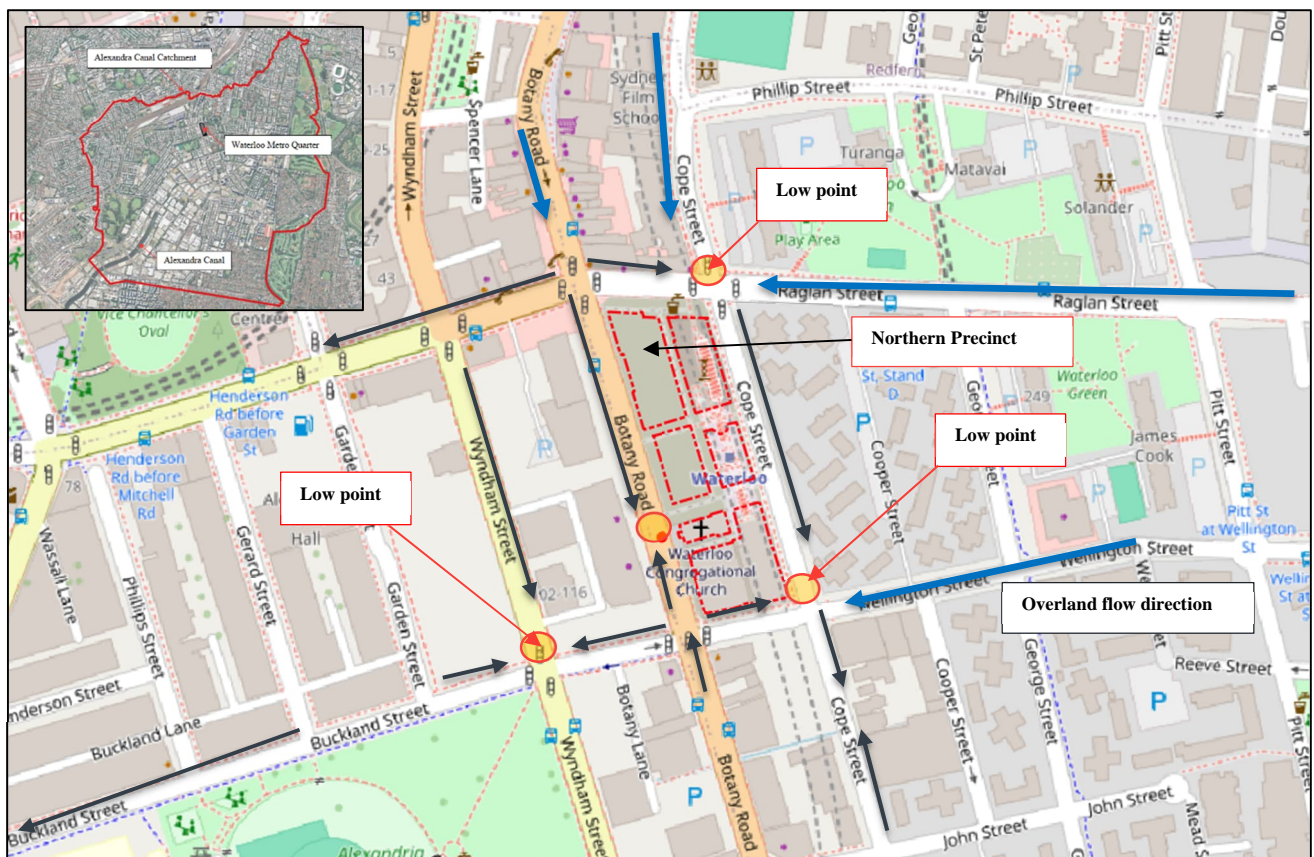


Figure 10-6: Waterloo Metro Quarter site - overland flooding direction

Maps 1, 2 and 3 (Appendix B) illustrate the extent of overland flooding around the WMQ site for the 5% AEP, 1% AEP and PMF events.

During the 1% AEP event the maximum flood level at Botany Road reaches up to RL16.715m AHD at Retail 1 entrance and 16.170m AHD in front of the Fire Stairs access. In the PMF event, flood levels increase to 16.940m AHD at Retail 1 and approximately 16.421m AHD in front of the Fire Stairs exit. For the southern areas of the building flood levels reach up to 15.860m AHD in the 1% AEP.

Along Raglan Street, the flood level in front of entry points is 16.586m AHD during the 1% AEP event, which rises to 16.942m AHD during the PMF event.

At Raglan Walk and Grit Lane, there is no observed flooding towards building boundaries up to and including the 1% AEP event. The nearest flooding would be seen in Raglan Street and Botany Road.

Under PMF conditions, flooded areas increase and water begins to propagate towards building boundaries specially at the street corners. At Raglan Walk for instance, PMF flood levels are estimated at 16.942m AHD for Retail 2 entrance and building 1A Lobby access. Along Grit Lane, partial inundation occurs during the PMF, with a flood level of 16.440m AHD at Retail 6 boundary, Loading Dock access, and Fire Stairs exit.

Flood depths are estimated to be shallow (typically up to 0.2 metres) around the precinct boundaries while PMF conditions produce depths of up to 0.8 metres along Botany Road to the south and less than 0.4 metres along Raglan Street.

For detailed spatial information, refer to the flood maps provided in Appendix B.

---

## 10.3 Time to Peak Flood Level

The WMQ Northern Precinct site is subject to flooding that is rapid and sudden in nature. Flash flooding is considered for any event that occurs within six hours of rain falling. It can happen after a short burst of heavy rain, such as from a thunderstorm (BOM, [Understanding floods](#), accessed 04/03/2026 11:40 AM).

The time to reach peak water levels for the vicinity of WMQ site (Botany Road, Raglan Street, and Cope Street) varies across several locations based on the rainfall depths and duration of the storm.

For Northern Precinct area, the time to peak flood levels after the start of the storm ranges from 20 to 55 minutes.

---

## 10.4 Duration of Flooding

Due to the highly impervious nature of a dense urban area and the relatively small size of drainage catchments, flood behaviour in the local area is typically of short duration. The duration of inundation and visible flood risk to the site is estimated to be between 3-6 hours in the surrounding streets, along Botany Rd, Raglan St and Cope St.

---

## 10.5 Flood Emergency Response Classification

NSW SES has developed Flood Emergency Response Planning Classification of Communities to inform their priorities for management a flood emergency. The WMQ site is classified as a High flood island which is an area of higher ground that remains above flood levels (up to the Probable Maximum Flood) but becomes surrounded by floodwater (in this case the whole WMQ site). The site is however only isolated between 3-6 hours and there is no immediate risks to occupants of the Northern Precinct.

---

## 10.6 Flood Event Information

The nature of flooding at the site means warning time for an event is very short. Constant monitoring of the weather forecasts and warnings will be a key step in managing the flood risk of the site. Providing sufficient warning time has the potential to reduce the social impacts of the flood as well as reducing the strain on emergency services.

Flooding at the site is a result of rainfall and the BoM monitor rainfall across the City of Sydney Local Government Area and the Cooks River and Botany Bay catchment.

The emergency response to any flooding of the Alexandra Catchment will be coordinated by the lead combat agency, the SES from their Local Command centre located at Erskineville.

The site is within the Flood Watch area for the Cooks River. The BoM use the Tempe Bridge (Gauge #213415), which crosses the Cooks River, to provide forecasts for catchments subject to flooding of a flashy nature such as the Cooks River and Alexandra Canal and therefore this site. There are multiple information sources that distribute flood event and rainfall information that would provide some indication of the potential for a flash flood event at the site. These are listed below.

#### 10.6.1 *Bureau of Meteorology (BoM)*

The BoM is the main source for flood event and rainfall information, and they issue public weather and flood warning products before and during a flood. BoM will issue a severe weather/flood warning to the Regional SES headquarters. Where that alert is relevant to the Alexandra Catchment, the SES Regional Command will pass the BoM's warning on to the Local Command based in Erskineville. In some cases, 2-3 days advanced notice may be available. However, at other times it may only be possible to issue a flood warning a few hours in advance, if at all.

For the site the following warning are applicable:

- Severe Thunderstorm Warnings with reference to heavy rainfall
- Regional Severe Thunderstorm Warnings with reference to heavy rainfall
- Detailed Severe Thunderstorm Warnings (for Sydney) with reference to heavy rainfall
- Severe Weather Warnings with reference to heavy rainfall
- Flood Watches
- Flood Warnings

The relevant web page is [New South Wales Warnings Summary \(http://www.bom.gov.au/nsw/warnings/\)](http://www.bom.gov.au/nsw/warnings/)

#### 10.6.2 *State Emergency Service (SES)*

The SES will issue flood event and severe information via the “Hazards near me” application and their website. The information from SES is based on the BoM data. The home page located here will indicate the area of the hazard [Home | NSW State Emergency Service \(https://www.ses.nsw.gov.au/\)](https://www.ses.nsw.gov.au/).

# 11 FLOOD RESPONSE MANAGEMENT PLAN

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## 11.1 Priorities

This plan emphasises that protecting human life is the highest priority. Its focus is on ensuring the safety and wellbeing of all building occupants, and every recommended action is based on the principle that people come before property.

At the same time, site managers and staff are encouraged to take any additional steps—outside the scope of this plan—to reduce the risks that flooding may pose to buildings, equipment, and other assets.

This plan outlines the prevention, preparedness, and response measures specifically relevant to a flood emergency.

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## 11.2 Flood Risk

The available flood information in Section 10 should be read by building owners and operators and by each new building manager. The information in this section provides a non-technical summary of the flood risk to support the action plan and dissemination of information.

Flooding at the WMQ site will occur when stormwater from north of Raglan Street flows south down Botany Rd and Cope St and stormwater flows east of Cope Street travel west along Wellington Street and pond in the low points at the intersection of Wellington and Cope Streets and Wellington Street and Botany Road.

Flooding will occur following heavy intense rainfall and will only occur for a relatively short period of time but potentially up to 1-2 hours.

Once the rainfall has stopped and the water has drained from the site bounding streets then the flood event is over at the site. But for each intense heavy rainfall event there could be further flooding.

The main risks to occupants and staff in the Northern Precinct (Buildings 1A and 1B) come from floodwater approaching the southern side along Botany Road (near Retail 6 and 7), the Raglan Street frontage (near Retail 2), and the corner where both streets meet (near Retail 1). The risks are deep, fast-moving water which can knock people off their feet and can cause vehicles to float. There is also some potential for water to flow between buildings along Grit Lane, although this is considered unlikely. Floodwater will be visible in Botany Road and Raglan Streets.

Shelter-in-place guidelines (CPHR, 2023) have been used to inform design of the internal layout of the Northern Precinct (Buildings 1A and 1B) and this FERP.

The key messages to disseminate:

- The flood risk will occur for a short period of time, and the building is the safest place to remain as it has predominantly ground level above the PMF flood event.
- We have a plan in place (this plan) to manage events of this nature.
- Please remain calm and do not enter the surrounding floodwater outside the building.
- It is important to note that there may be a flood risk to patrons and staff beyond the site. All patrons and staff are responsible for making their own enquires about the flood risk beyond the site.


## 11.3 Plan of Action


This plan is activated by a “Severe Thunderstorm Warnings (for Sydney) with reference to heavy rainfall” issued by the Bureau of Meteorology.

As indicated above the purpose of this management plan is to provide information and a clear set of instructions specific to the Waterloo Metro Quarter Northern Precinct manager, occupants and temporary visitors (considering building 1A and 1B) and is to be used when a Severe Thunderstorm Warning takes place. The warning may contain reference to flash flooding and provide a forecast for flood heights in the Cooks River at Tempe Bridge. The gauge details indicate that the NSW SES Flood Classification for the gauge outlines a minor flood event as a reading of 1.3metres on the gauge. (MHL, accessed 3 April 2025)

The following table provides a step-by-step set of instructions to follow. It is based on the information at the time of preparing this plan.

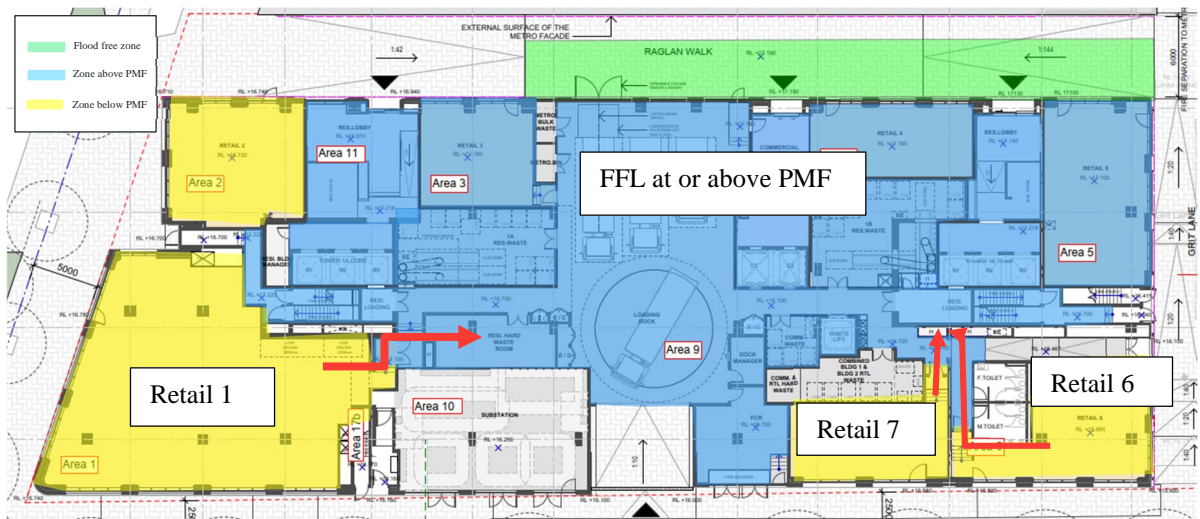
Table 11-1: Plan of Action

ITEM	ACTION	DETAILS
The plan is activated by the issue of a severe weather/thunderstorm warning for Sydney city	Monitor	BOM warnings website <a href="#">New South Wales Warnings Summary</a>
	Monitor	Review NSW Hazards near me Application 
	Monitor	<a href="#">Home   NSW State Emergency Service</a> – for the latest advice on the event
	Listen (every 30 min)	ABC Local Radio (frequency 702)
Visual inspection – 15 minutes after heavy rainfall has started	Inspect – every 15 minutes	Visually inspect the lower points along Raglan St, Cope St, Wellington St and Botany Rd to check for stormwater flows above the road surface. Do not enter the stormwater flows. Visually inspect the overland flow path between the Northern Precinct and Central Precinct at Grit Lane. Check for flows approaching Raglan Walk from Raglan St. Do not enter the stormwater flows. If stormwater flows are present move on to the next steps in the plan.

ITEM	ACTION	DETAILS
Notify occupants	Notify#	<p>Notify the building occupants of the flooding in the building bounding streets and ask them to <b>remain</b> within the building.</p> <p>Retail 1 occupants can remain within the building evacuating the area through a stepped in zone that internally leads to loading dock. Then, assemble in the loading dock areas (safe from flooding up to PMF) while the flood progress takes place (refer to Figure 11-1 and context description below).</p> <p>Retail 2 occupants should relocate towards Raglan Walk to assemble in an area free of flooding (safe from flooding up to PMF) while the flood progress takes place (refer to Figure 11-2 and context description below).</p> <p>Retail 6 and 7 occupants can remain within the building evacuating the area through a stepped in zone that internally leads to loading dock. Then, assemble in the loading dock areas (safe from flooding up to PMF) while the flood progress takes place (refer to Figure 11-1 and context description below).</p> <p>Occupants of the basement below the Northern Precinct and Central Precinct are protected from flooding as all access points are at or above the PMF flood level. Occupants of the basement should be moved to higher levels as soon as possible from the start of the event. (refer to Figure 11-3, Figure 11-4, Figure 11-5).</p> <p>For other areas such as Substations and the Fire Control Room are sections of the building that tend to have restricted access by the building manager. Hence, the responsible building manager will inform occupants of these areas on evacuation procedures to adopt in case of flooding emergency.</p>
	Erect	Erect warning notices at all pedestrian and access points (see Appendix C for sample notice).
During the event	Monitor (continue)	BOM Severe Weather warning via website <a href="#">New South Wales Warnings Summary</a>
	Monitor	Review NSW Hazards near me Application 
	Monitor	<a href="#">Home   NSW State Emergency Service</a> – for the latest advice on the event

ITEM	ACTION	DETAILS
	Inspect	<p>Visually inspect the lower points on Raglan St, Cope St, Wellington St and Botany Rd to check for stormwater flows above the road surface and drainage blockage on the streets.</p> <p>Do not enter the stormwater flows.</p> <p>Visually inspect the overland flow path between the Northern Precinct and Central Precinct at Grit Lane. Check for flows approaching Raglan Walk from Raglan St.</p> <p>Do not enter the stormwater flows.</p> <p>If stormwater flows are present continue to ask people to remain in the building.</p>
	Listen (every 15 minutes)	ABC Local Radio (frequency 702)
<p><b>HOLD POINT</b> – the local flood event will end when there is no longer water ponding at building boundaries especially on Botany Rd, Raglan St and Grit Lane.</p>	Notify	<p>Notify all occupants of the building areas that the floodwater has subsided. The occupants are free to make their own decision about leaving the premises.</p> <p>The Severe weather warning may still be in place for the region and it may still be affecting other areas of the region beyond the premises.</p> <p>If the severe weather warning is still in place then notify all occupants and it is their responsibility to make their own decisions on the risks once they leave the premises.</p>
After the event*	Inspect	<p>Visually inspect all entrances to confirm they are clear of floodwaters and debris.</p> <p>Visually inspect the overland flow path between the Northern Precinct and Central Precinct at Grit Lane. Check for flows approaching Raglan Walk from Raglan St.</p> <p>Visually inspect the pedestrian accesses and building facilities exits.</p> <p>Checking for damage and debris.</p> <p>Visually inspect utilities and waste storage areas.</p>

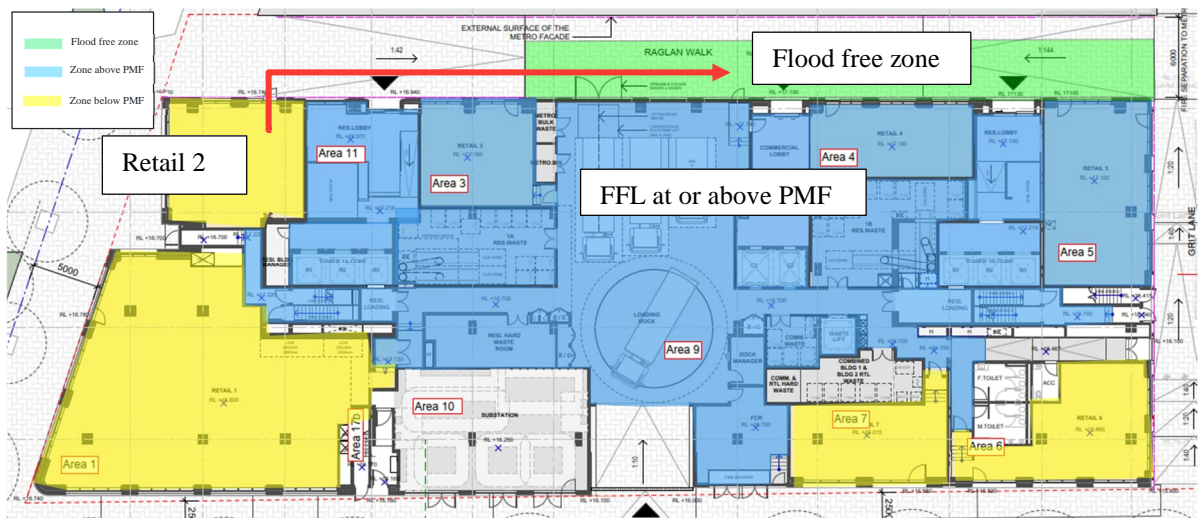
## Retail 1, 6 and 7



These areas are provided with access to a stepped in area above the PMF flood level that can be used as shelter in place in case of a flood emergency

Figure 11-1: Northern Precinct – shelter access within the building above PMF in case flood emergency for Retail 1, 6 and 7.

## Retail 2



Retail 2 occupants can evacuate the area and relocate towards Raglan Walk to assemble in an area free of flooding above the PMF

Figure 11-2: Northern Precinct – Retail 2 shelter/assembly area access in case flood emergency

# Shared Basement



Figure 11-3: Shared Basement P01/P02 Entry Points to Upper Levels

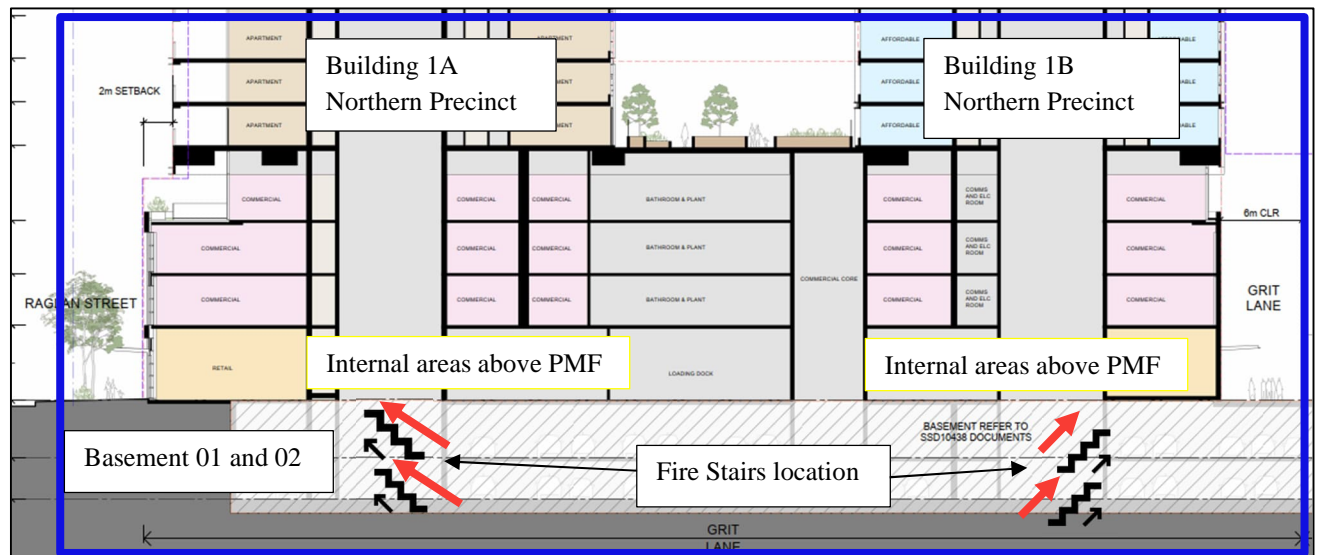


Figure 11-4: Northern Precinct - basement relocation to upper levels schematization

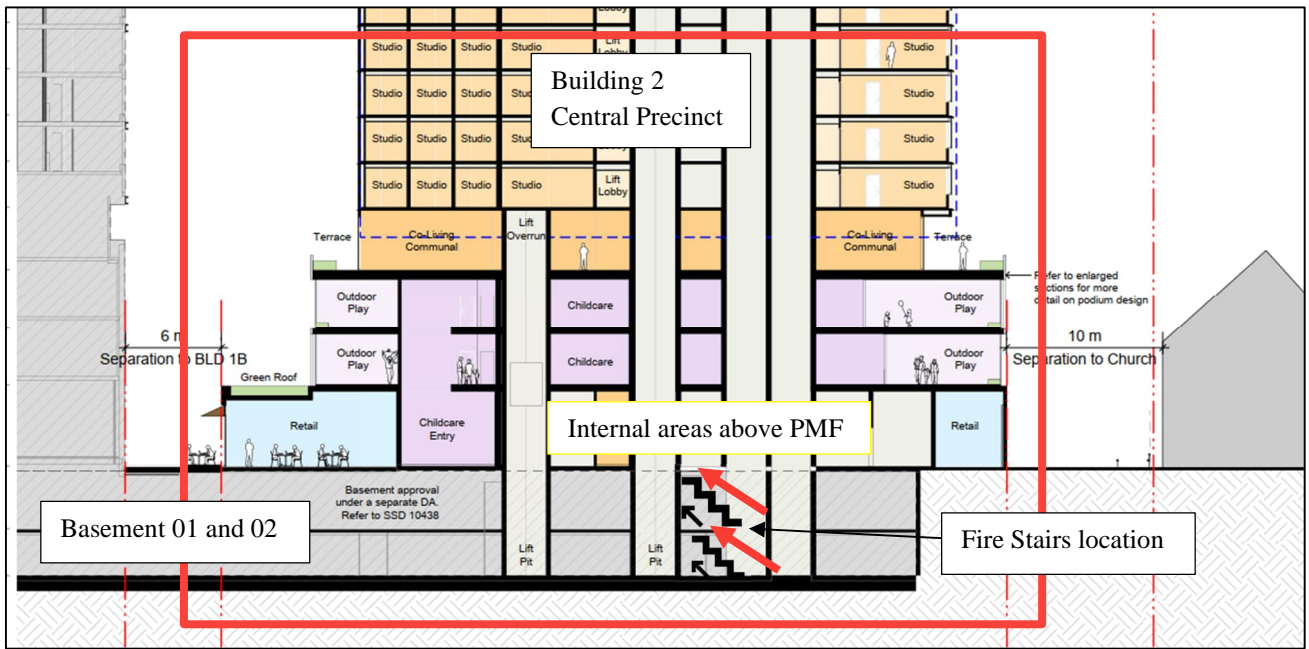


Figure 11-5: Central Precinct - basement relocation to upper levels schematization

# 12 AFTER THE EVENT

After the flood event the building manager should check that all services and utilities are working properly and have not been damaged by flood waters. Utility service providers should be contacted if there is damage to a service or if the building manager is not sure if the service has been affected by the flood event.

The loading dock entrance should be inspected for damage and debris. Photographic records of the event and after the event should be collated and stored with this document.

Pedestrian access and areas of overland flow path between buildings should be inspected for damage and accumulated debris. Again, photographic records should be collated and stored with this document.

Extra care will be taken of potential slips on a muddy floor if floodwaters have reached retail areas or other structures.

All flood-affected parts of the premises will be appropriately cleaned and utilities checked by professionals.

This plan should be reviewed following a flood event, the building owner should review this action plan to ensure the actions outlined in the plan are still relevant to the development, to check if additional actions are required, to check if additional equipment is required and to update the document content as necessary (i.e. contact information etc.).

As a minimum the document should be updated to include the photographs from the events to ensure the information is available to future managers and operators of the site.

# 13 ADDITIONAL INFORMATION

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## 13.1 Quick guide to the plan

It is recommended that a flood information card be readily available to the building manager and or building security staff. A sample information card is presented below:

<p>FLOOD INFORMATION CARD</p> <ol style="list-style-type: none"><li>1. Has a severe weather warning been issued for City of Sydney Council and the Alexandra Canal Catchment and inner suburbs? <b>CHECK</b> <a href="http://www.bom.gov.au/NSW/warnings/">http://www.bom.gov.au/NSW/warnings/</a> <b>CHECK</b> <a href="https://www.ses.nsw.gov.au/">https://www.ses.nsw.gov.au/</a></li><li>2. Is it raining? <b>CHECK Cope St, Raglan St, Wellington St and Botany Rd for flooding signs.</b></li><li>3. IF YES, this Flood emergency response plan is active, follow plan.</li></ol>
--

# 14 REFERENCES

- ARR. (2019). *Australian Rainfall and Runoff: A Guide to Flood Estimation*, © Commonwealth of Australia (Geoscience Australia), Version 4.2.
- City of Sydney. (2020). *Alexandra Canal Floodplain Risk Management Study* .
- City of Sydney Council. (2014). *Interim floodplain management policy*.
- CPHR. (2023). *Shelter-in-Place Guideline for Flash Flooding*.
- DPE. (2023). *Flood risk management guideline EM01 - Support for emergency management planning*.
- DPE. (2023). *Floodplain Risk Management Manual - ISBN: 978-1-923076-17-4 / ID: EHG20230220*.
- DPE. (2023). *Understanding and Managing Flood Risk Guideline*.
- NSW. (2018). *Waterloo Metro Quarter State Significant Precinct Study*.
- NSW. (2020). *Waterloo Design Amenity Guidelines* .
- SES. (2022). *Sydney Metropolitan Region Emergency Management Plan*.
- SES. (2023). *City of Sydney Council Flood Emergency Sub Plan* .
- SES. (2024). *NSW State Flood Plan (EMPLAN) - State Emergency Management Committee*. Published by NSW State Emergency Service.
- WSP. (2020). *Waterloo Metro Quarter Over Station Development - Stormwater Management Strategy and Flood Impact Assessment* .

# 15 LIMITATIONS

This Flood Emergency Management Plan is provided by WSP Australia Pty Limited (WSP) for Waterloo Metro Developer Pty Ltd (Client) in response to specific instructions from the Client and in accordance with CSA 6.014\_Site Wide Deed of Variation and confirmed agreement with the Client by Aconex communication dated 12/02/2026 (ref: WLDEV-MEMO-003680).

## PERMITTED PURPOSE

This Plan is provided by WSP for the purpose described in the Agreement and no responsibility is accepted by WSP for the use of the Report in whole or in part, for any other purpose (Permitted Purpose).

## QUALIFICATIONS AND ASSUMPTIONS

The services undertaken by WSP in preparing this Report were limited to those specifically detailed in the Plan and are subject to the scope, qualifications, assumptions and limitations set out in the Report or otherwise communicated to the Client.

Except as otherwise stated in the Plan and to the extent that statements, opinions, facts, conclusion and / or recommendations in the Plan are based in whole or in part on information provided by the Client and other parties identified in the Plan, those Plan actions are based on assumptions by WSP of the reliability, adequacy, accuracy and completeness of the Information and have not been verified. WSP accepts no responsibility for the Information.

WSP has prepared the Plan without regard to any special interest of any person other than the Client when undertaking the services described in the Agreement or in preparing the Plan.

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This Plan should be read in its entirety. WSP will not be responsible for interpretations or conclusions drawn by the reader.

WSP is not (and will not be) obliged to provide an update of this Plan to include any event, circumstance, revised Information or any matter coming to WSP's attention after the date of this Plan. Data reported and Conclusions drawn are based solely on information made available to WSP at the time of preparing the Plan. The passage of time; unexpected variations in ground conditions; manifestations of latent conditions; or the impact of future events (including (without limitation) changes in policy, legislation, guidelines, scientific knowledge; and changes in interpretation of policy by statutory authorities); may require further investigation or subsequent re-evaluation of the Conclusions.

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business opportunity, site deprecation costs, business interruption or economic loss) of any kind whatsoever, suffered on incurred by a third party.

# Appendix A

SES Correspondence



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# A1 Engagement with NSW SES

Correspondence will be added in PDF file

# Appendix B

Maps



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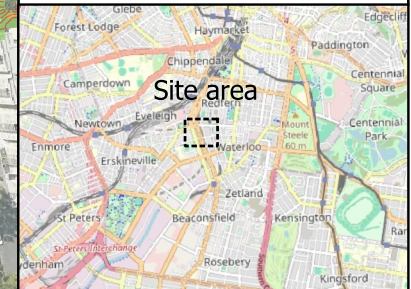
# B1 Flood Maps



# Waterloo Metro Quarter OSD Flood Study

**Figure:**  
**Title:** Flood Depth  
Proposed Scenario - 5% AEP

**Version:** 01  
**Prepared:** CF, Approved: MZ



### Legend

- Proposed Building
- Flood Level (0.25m interval)

### Flood Depth (m)

- <= 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 0.70
- 0.70 - 1
- > 1



0 40 80 m

Scale: 1:2,500

Date: 22/08/2025

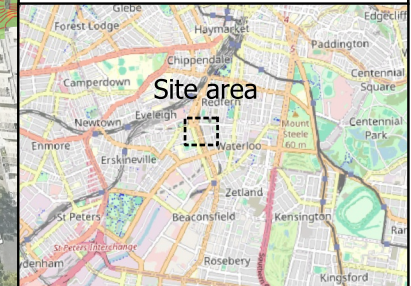
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# Waterloo Metro Quarter OSD Flood Study

**Figure:**  
**Title:** Flood Depth  
Proposed Scenario - 1% AEP

**Version:** 01  
**Prepared:** CF, Approved: MZ

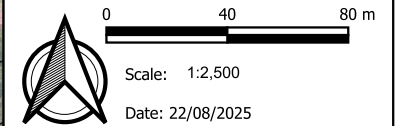


### Legend

- Proposed Building
- Flood Level (0.25m interval)

### Flood Depth (m)

- ≤ 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 0.70
- 0.70 - 1
- > 1



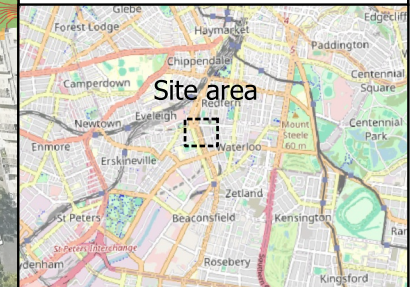
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# Waterloo Metro Quarter OSD Flood Study

**Figure:**  
**Title:** Flood Depth  
**Proposed Scenario - PMF**

**Version:** 01  
**Prepared:** CF, **Approved:** MZ



## Legend

- Proposed Building
- Flood Level (0.25m interval)

## Flood Depth (m)

- ≤ 0.10
- 0.10 - 0.30
- 0.30 - 0.50
- 0.50 - 0.70
- 0.70 - 1
- > 1



0 40 80 m

Scale: 1:2,500

Date: 22/08/2025

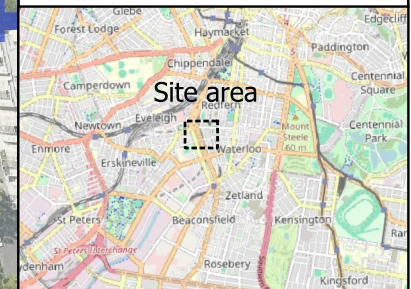
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# Waterloo Metro Quarter OSD Flood Study

**Figure:**  
**Title:** Flood Velocity  
**Proposed Scenario - 5% AEP**

**Version:** 01  
**Prepared:** CF, **Approved:** MZ



### Legend

Proposed Building

### Flow velocity (m/s)

- <= 0.25
- 0.25 - 0.5
- 0.5 - 0.75
- 0.75 - 1
- 1 - 1.5
- 1.5 - 2
- 2 - 2.5
- 2.5 - 3
- > 3



0 40 80 m

Scale: 1:2,500

Date: 22/08/2025

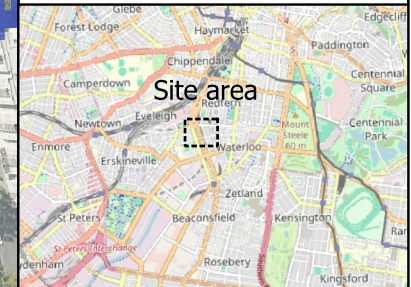
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# Waterloo Metro Quarter OSD Flood Study

**Figure:**  
**Title:** Flood Velocity  
**Proposed Scenario - 1% AEP**

**Version:** 01  
**Prepared:** CF, **Approved:** MZ



### Legend

Proposed Building

### Flow velocity (m/s)

- <= 0.25
- 0.25 - 0.5
- 0.5 - 0.75
- 0.75 - 1
- 1 - 1.5
- 1.5 - 2
- 2 - 2.5
- 2.5 - 3
- > 3



0 40 80 m

Scale: 1:2,500

Date: 22/08/2025

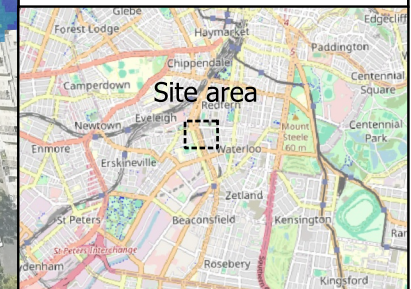
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# Waterloo Metro Quarter OSD Flood Study

**Figure:**  
**Title:** Flood Velocity  
**Proposed Scenario - PMF**










**Version: 01**  
**Prepared: CF, Approved: MZ**



### Legend

 Proposed Building

### Flow velocity (m/s)

-  ≤ 0.25
-  0.25 - 0.5
-  0.5 - 0.75
-  0.75 - 1
-  1 - 1.5
-  1.5 - 2
-  2 - 2.5
-  2.5 - 3
-  > 3



0 40 80 m

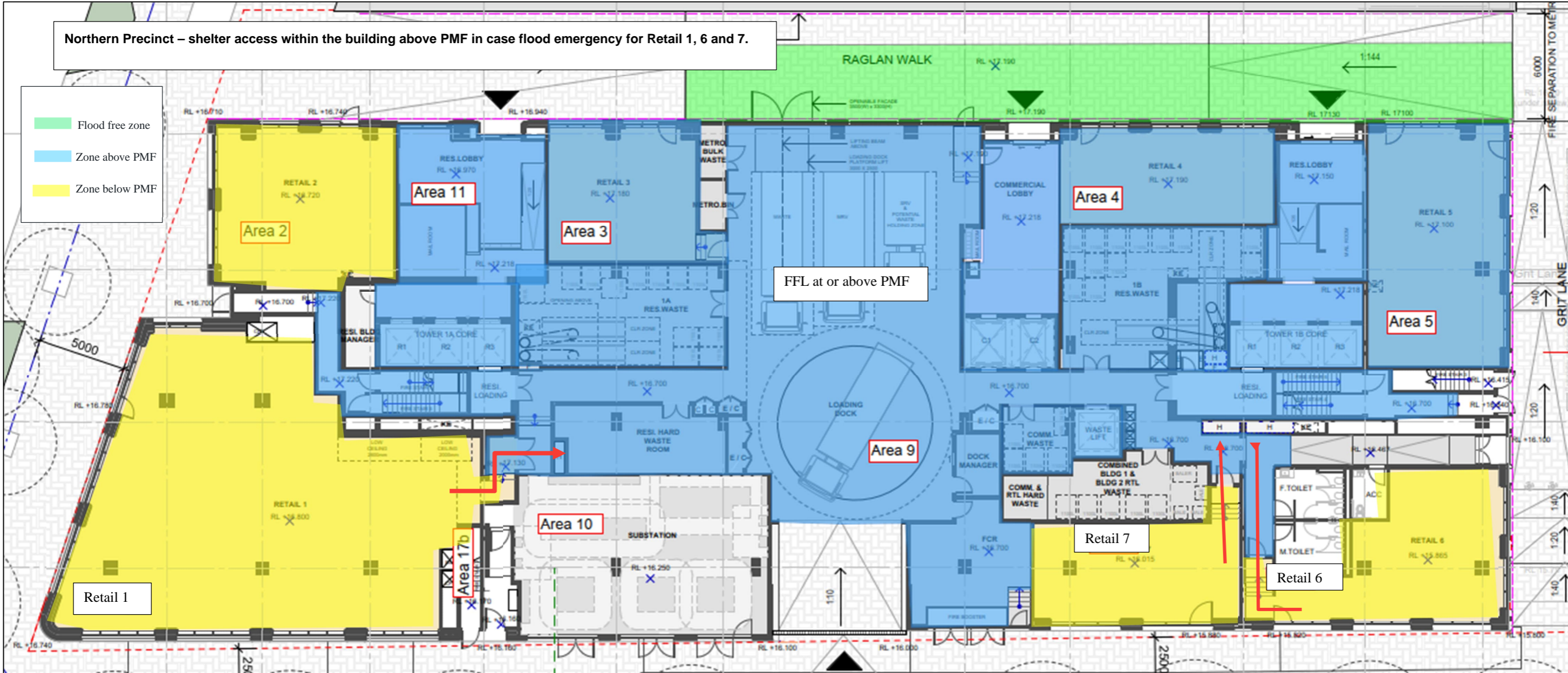
Scale: 1:2,500

Date: 22/08/2025

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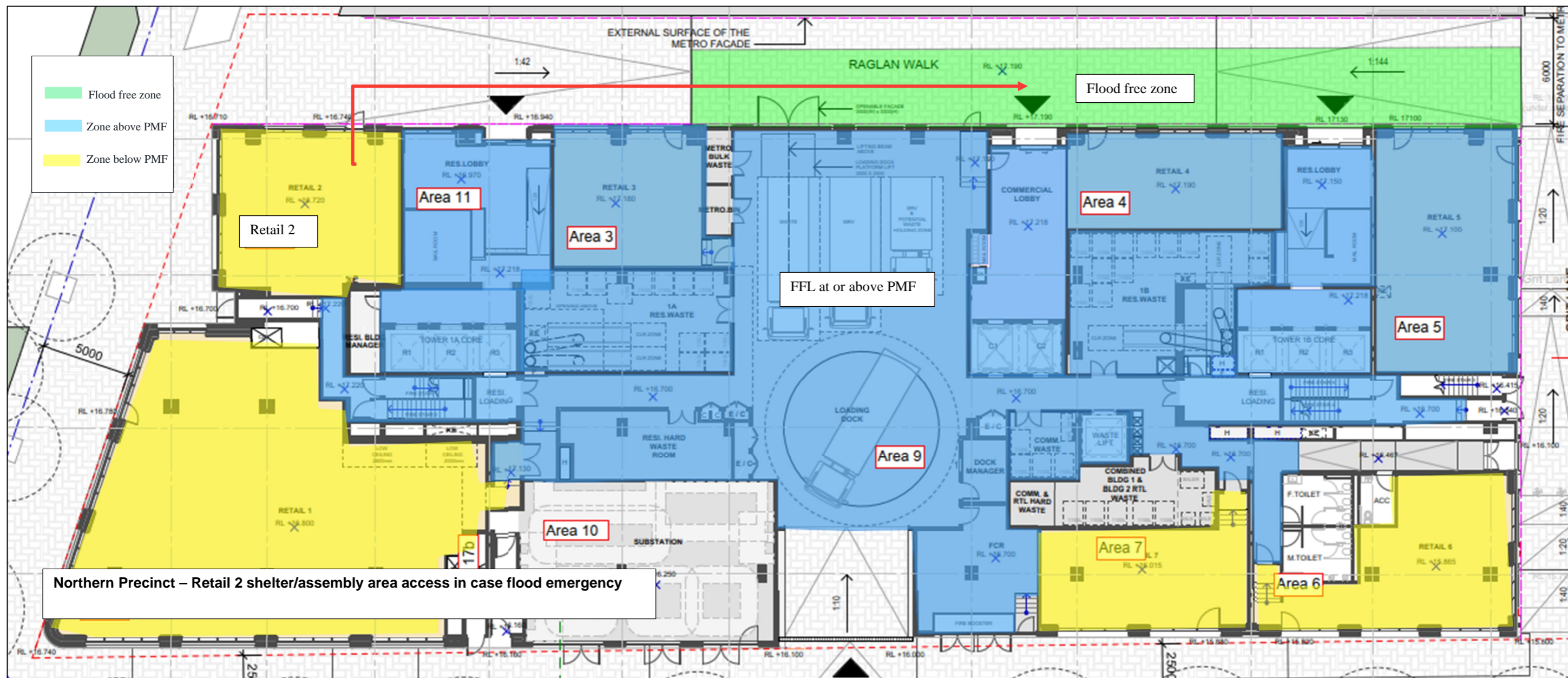
## B2 Plan Maps

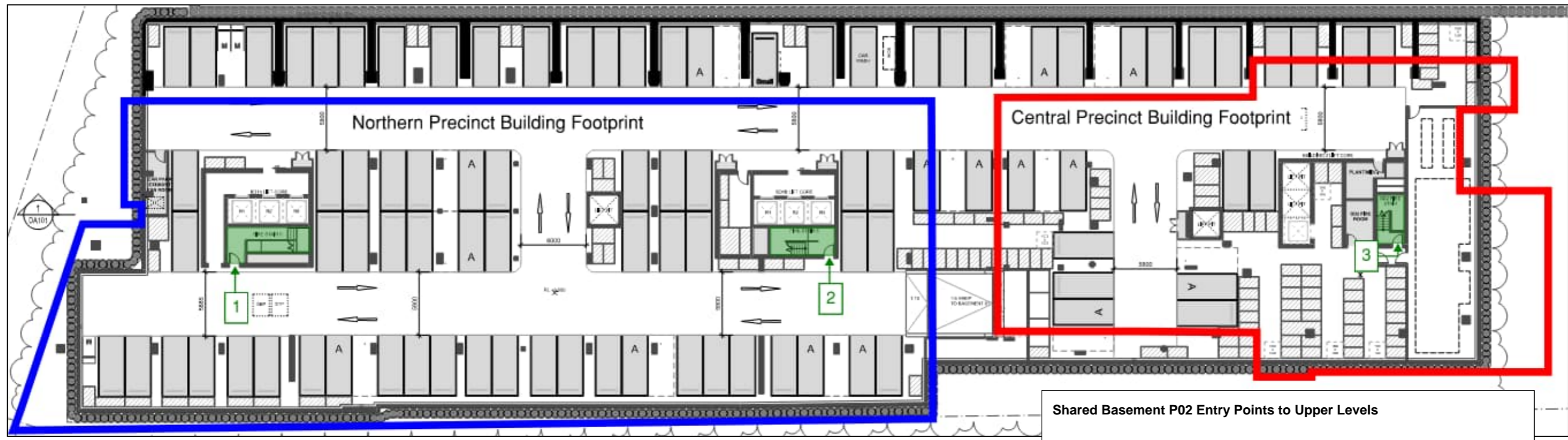


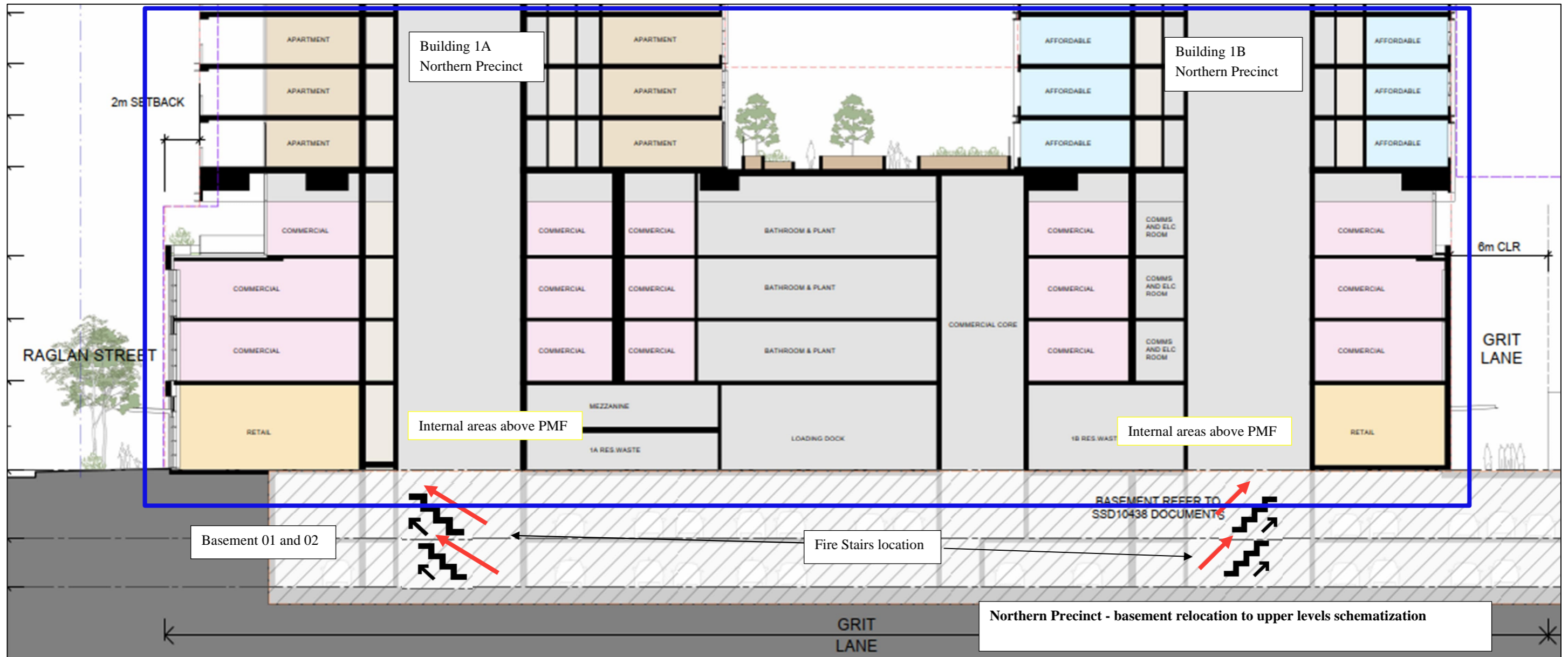
Northern Precinct – shelter access within the building above PMF in case flood emergency for Retail 1, 6 and 7.

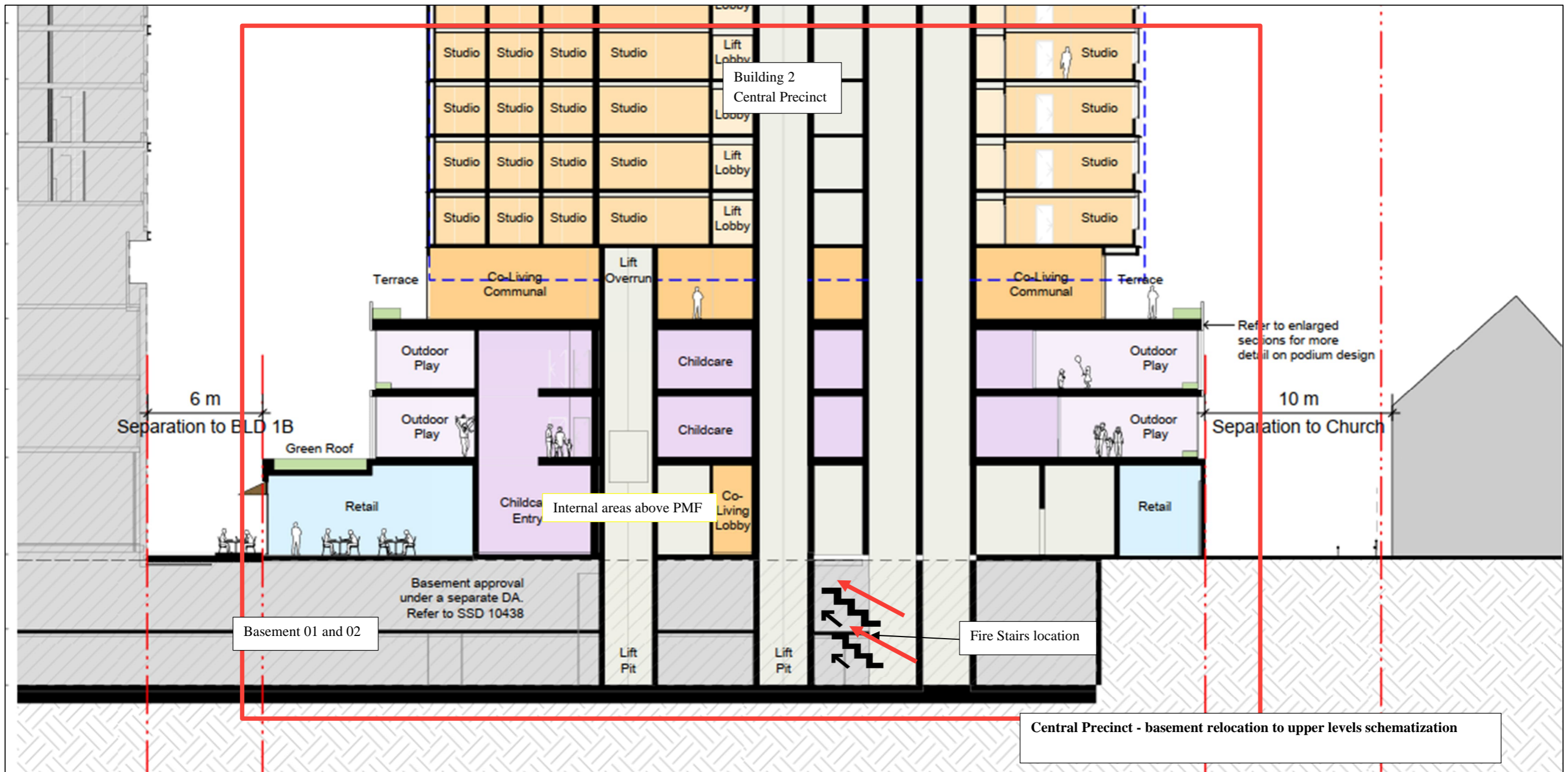
- Flood free zone
- Zone above PMF
- Zone below PMF

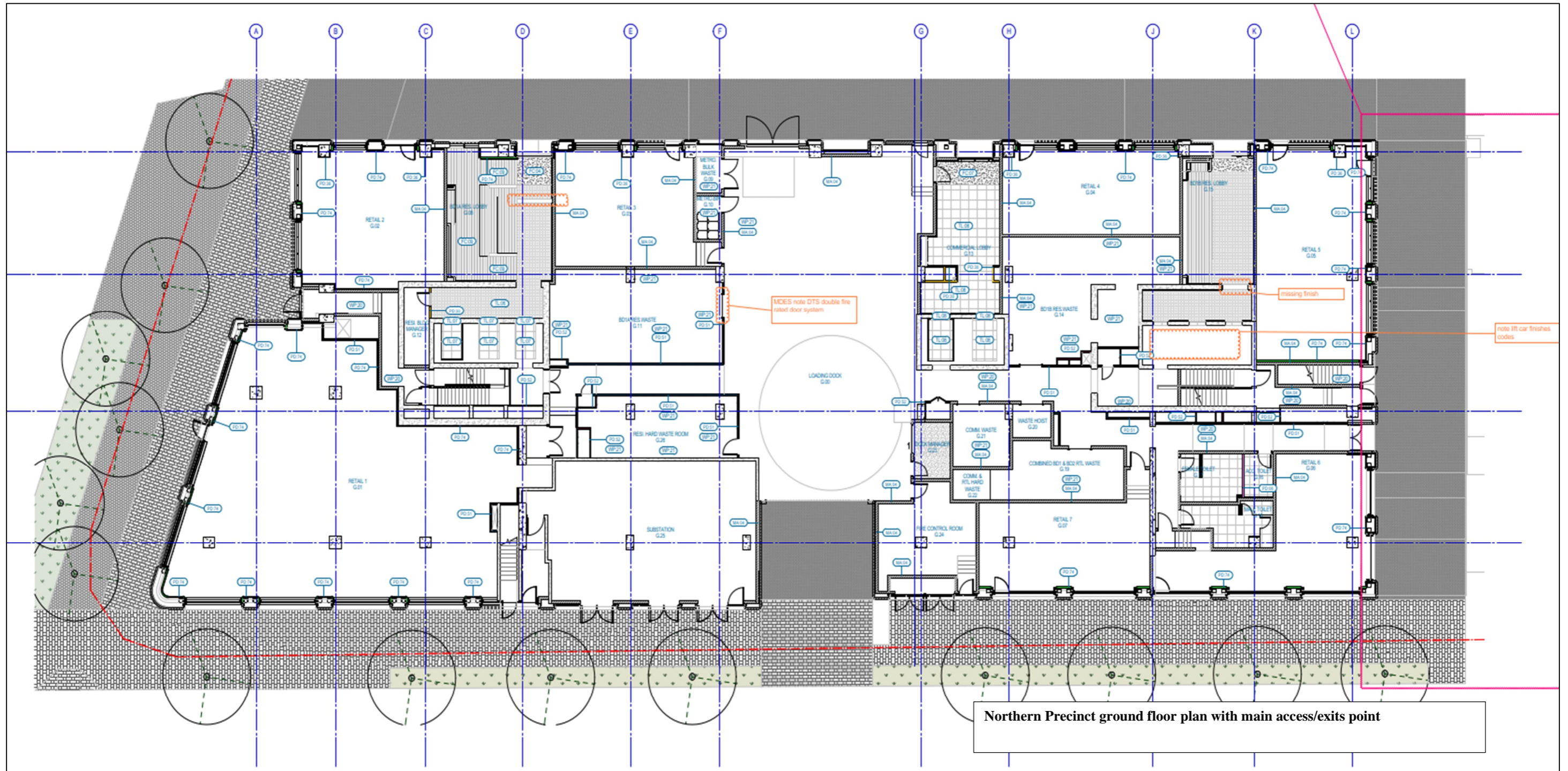
FFL at or above PMF











Northern Precinct ground floor plan with main access/exits point

# Appendix C

Sample Warning Notice



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# C1 Samples Warning Notice

## Urgent Attention – All Patrons

A severe weather warning has been issued by the Bureau of Meteorology

<http://www.bom.gov.au/nsw/warnings>

For health and safety reasons please remain in the building.

There is NO IMMEDIATE DANGER to the building or occupants, but there may be deep water on the roads beyond the building.

The deep water across the roads may be in place for 3-6 hours so please follow building management instructions until the water has subsided.

The Severe Weather warning may still be in place for the region when you leave this facility. Please refer to the following for further information and traffic details for your onward journey.

[www.ses.nsw.gov.au](http://www.ses.nsw.gov.au)

[www.livetraffic.com](http://www.livetraffic.com)



## Appendix 2 – Engagement with NSW SES



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**RE: Flood Emergency Management Plan consultation**

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**From** NSW SES Risk Reduction <rra@ses.nsw.gov.au>  
**Date** Fri 2/20/2026 2:10 PM  
**To** Figueroa Castillo, Carlos <Carlos.Figueroa@wsp.com>  
**Cc** julia.moiso@dpie.nsw.gov.au <julia.moiso@dpie.nsw.gov.au>; Zornitta, Michele <Michele.Zornitta@wsp.com>; Jin, Ivan <Ivan.Jin@wsp.com>; NSW SES Risk Reduction <rra@ses.nsw.gov.au>

Hi Carlos,

Thank you for your prompt reply as well.

At this point, for efficiency, we request that this FERP is sent to us as part of the RTS stage of the SSD process so that we can provide advice to the consent authority on the FERP, FIRA and any other relevant documents at the same time.

In the meantime, we refer you to the guidance in the [Flood Risk Management Manual](#) and [supporting toolkit](#), in particular EM01 Support for Emergency Management Planning. We also refer you to the considerations in the [Shelter in place guideline for flash flooding](#), and existing flood emergency arrangements in the Sydney City local flood emergency sub plan available [on the NSW SES website](#).

Regarding the meeting request in your original email, as NSW SES provide agency advice to the consent authority (in this case DPHI) we request that any meeting will need to be coordinated by them directly. We also request that any meetings convened by the consent authority include a clear agenda and that meeting minutes are circulated to all attendees for review prior to finalisation.

Thank you for your understanding.

Kind regards,  
Claire

■

**Claire Flashman (she / her)**

Coordinator Emergency Risk Management | Emergency Risk Assessment - Metro



E [rra@ses.nsw.gov.au](mailto:rra@ses.nsw.gov.au)

Suite 5, Level 9, 1 Rider Boulevard, Wangal Country, Rhodes NSW 2138

[www.ses.nsw.gov.au](http://www.ses.nsw.gov.au)



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OUR VISION: A TRUSTED VOLUNTEER-BASED EMERGENCY SERVICE, WORKING TOGETHER TO DELIVER EXCELLENCE IN COMMUNITY PREPAREDNESS AND EMERGENCY RESPONSE.

FOR EMERGENCY HELP IN FLOODS, STORMS AND TSUNAMI CALL THE NSW SES ON 132 500

*The NSW SES acknowledges the traditional custodians of the lands on which we walk, work and live. We recognise their continuing connection to land, waters and culture and*

*pay respect to Elders, past and present.*

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---

**From:** Figueroa, Carlos <Carlos.Figueroa@wsp.com>  
**Sent:** Friday, 20 February 2026 1:23 PM  
**To:** NSW SES Risk Reduction <rra@ses.nsw.gov.au>  
**Cc:** julia.moiso@dpie.nsw.gov.au; Zornitta, Michele <Michele.Zornitta@wsp.com>; Jin, Ivan <Ivan.Jin@wsp.com>  
**Subject:** Re: Flood Emergency Management Plan consultation

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Hi Claire,

We appreciate your prompt reply. The SSDAs relevant to the flood emergency plans are:

- **SSD-79307746** (Central Precinct)
- **SSD-79307758** (Northern Precinct)
- **SSD-10438 Mod-3** (Basement)

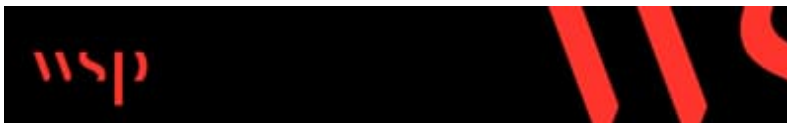
In regards to SES roles clarifications, our actions were based on CPHR's recommendation that emergency management for the buildings should include further consultation with NSW SES.

Look forward to your comments.

**Carlos Figueroa**  
Water Resources Engineer

**WSP**  
900 Ann Street, Level 12  
Fortitude Valley, 4006  
Australia

[wsp.com](http://wsp.com)



---

**From:** NSW SES Risk Reduction <rra@ses.nsw.gov.au>  
**Sent:** Friday, February 20, 2026 11:20 AM  
**To:** Figueroa, Carlos <Carlos.Figueroa@wsp.com>  
**Cc:** [julia.moiso@dpie.nsw.gov.au](mailto:julia.moiso@dpie.nsw.gov.au) <[julia.moiso@dpie.nsw.gov.au](mailto:julia.moiso@dpie.nsw.gov.au)>; NSW SES Risk Reduction

<[rra@ses.nsw.gov.au](mailto:rra@ses.nsw.gov.au)>

**Subject:** RE: Flood Emergency Management Plan consultation

Hi Carlos,

Thank you for your email, we appreciate you reaching out to NSW SES regarding this SSDA proposal for Waterloo Metro Quarter in Sydney. Could we firstly please confirm which SSD number(s) this flood emergency management plan (FERP) relates to?

Secondly, the NSW SES Emergency Risk assessment team provides advice on land use planning referrals, and as our role is to provide advice to the consent authority if possible we would appreciate if these requests could please be sent to NSW SES via the Major Projects Portal.

Thank you again for reaching out, and we look forward to hearing back from you.

Kind regards,

Claire

### Claire Flashman (she / her)

Coordinator Emergency Risk Management | Emergency Risk Assessment - Metro



E [rra@ses.nsw.gov.au](mailto:rra@ses.nsw.gov.au)

Suite 5, Level 9, 1 Rider Boulevard, Wangal Country, Rhodes NSW 2138

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FOR EMERGENCY HELP IN FLOODS, STORMS AND TSUNAMI CALL THE NSW SES ON 132 500

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---

**From:** Figueroa, Carlos <[Carlos.Figueroa@wsp.com](mailto:Carlos.Figueroa@wsp.com)>

**Sent:** Thursday, 19 February 2026 9:59 AM

**To:** NSW SES Risk Reduction <[rra@ses.nsw.gov.au](mailto:rra@ses.nsw.gov.au)>

**Subject:** Flood Emergency Management Plan consultation

**EXTERNAL EMAIL:** This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Dear SES Team,

We are seeking to arrange a consultation regarding the flood emergency management plan we are preparing as part of the SSDA for a development within the Waterloo Metro Quarter in Sydney. As the site is located in the Alexandra Canal Catchment, we would appreciate being directed to the appropriate SES representative responsible for this jurisdiction.

Our aim is to discuss flood emergency management considerations for building occupants and ensure our approach aligns with the requirements and expectations of the NSW State Emergency Service.

We would be grateful for your guidance and any relevant information you can provide.

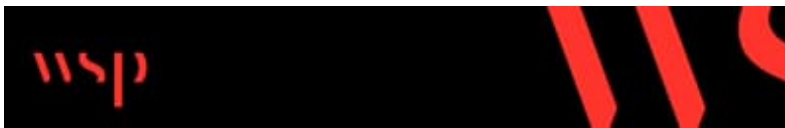
Kind regards,

**Carlos Figueroa**  
Water Resources Engineer

**WSP**

900 Ann Street, Level 12  
Fortitude Valley, 4006  
Australia

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