Canva

8-24 KIPPAX STREET, SURRY HILLS

FLOOD EMERGENCY RESPONSE PLAN

Prepared for: Canva
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8 - 24 KIPPAX STREET, SURRY HILLS

FLOOD EMERGENCY REPONSE PLAN

ISSUE AUTHORISATION

PROJECT: 8-24 Kippax Street, Surry Hills
Project No: 7039

Rev	Date	Purpose of Issue / Nature of Revision	Prepared by	Reviewed by	Issue Authorise by
01	10/04/24	Issue for DA	MZV	PAL	PAL

Executive Summary

enstruct Group have been engaged by Canva to provide a Flood Emergency Response Plan (FERP) for the development of 8-24 Kippax Street, Surry Hills.

The aim of the FERP is to assess the impact of a 1% Annual Exceedance Probability (AEP) storm and larger events up to and including the Probable Maximum Flood (PMF) and recommend appropriate procedures for personnel onsite to follow to maximise their safety and reduce risk of death and injury due to flooding and flood water. This report will raise awareness of the risk of flooding and will include flood warnings, safe evacuation routes, designated safe assembly areas, and evacuation management plans.

The FERP will also discuss 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.

Contents

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 school community who are responsible for the documentation and maintenance of the flood risk management plan and strategy at Nepean Creative and Performing Arts High School.

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 (SES).

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
AP	Assembly Point
ARI	Average Recurrence Interval
DDA	Disability Discrimination Act
ECO	Emergency Control Organization
EPC	Emergency Planning Committee
FERP	Flood Emergency Response Plan
FRMP	Flood Risk Management Plan
FFL	Finished Floor Level
PMF	Probable Maximum Flood
SES	State Emergency Service
WIP	Warden Intercommunication Point

1 Introduction

enstruct Group have been engaged by Canva as Civil engineering consultants for the refurbishment works at 8-24 Kippax Street, Surry Hills. The upgrade and refurbishment works include:

- Strip out of the existing fit out back to cold shell,
- Loading Dock relocation,
- External upgrades, including façade,
- Rooftop terrace,
- New End Of Trip (EOT) facility, and
- Base building services upgrades including fire safety, central MEP, lift replacement, structural enhancements, security upgrades etc.

1.1 The Site

The subject site is located 8-24 Kippax Street, Surry Hills, and falls within the Local Government Area (LGA) of City of Sydney (CoS). The site is bound by Sophia Street to the north, Terry Street to the west, Kippax Street to the south, and a commercial building to the east. The site is approximately 100m from Central Station. The Terry Street frontage grades steeply to the north, and Kippax Street and Sophia Street grade to the west.

The existing building consists of a nine-storey commercial building with an additional two basement levels. It was built in the 1960's and last underwent refurbishment in the 1990's. The site area is approximately 1,034m^2, however, the commercial office space totals around 8,500m^2.

Figure 1: Subject Site (Source: NearMaps)

1.2 Existing Stormwater Drainage

City of Sydney stormwater mapping provided through Dial Before You Dig indicates the Council stormwater network surrounding the site. The Council network run through both Kippax Street and Sophia Street, adjacent to the site. There is an existing stormwater pit at the north-west corner of the site. Refer to **Figure 2**.

Figure 2: City of Sydney Council Stormwater Network (Source: CoS Council)

2 Flood Behaviour

2.1 Post-development Flood Conditions

The proposed development requires no change to the building footprint with mainly internal works to be undertaken, including modifications to entry points and some interior floor levels. The proposed development also requires an extension of the existing Council drainage system in Sophia Street to allow for stormwater discharge from the property.

In order to model the proposed flood conditions, the existing Council TuFLOW model was updated to use the 2019 ARR Rainfall Data and to include the proposed drainage in Sophia Street. Further, there seemed to be some anomaly in the existing flood model where flood waters were entering 1-15 Foveaux Street. The model was adjusted to reflect the existing conditions so that this anomaly was removed.

The proposed conditions indicate no change from the existing conditions at the development site, other than at the new grated inlet pit where the flood depth will be locally lower. The model indicates the proposed flood conditions to match the existing flood depths between <50mm-600mm surrounding the property in the 1% AEP event, and flood depths between 200mm-800mm in the PMF event. Refer to the figures below.

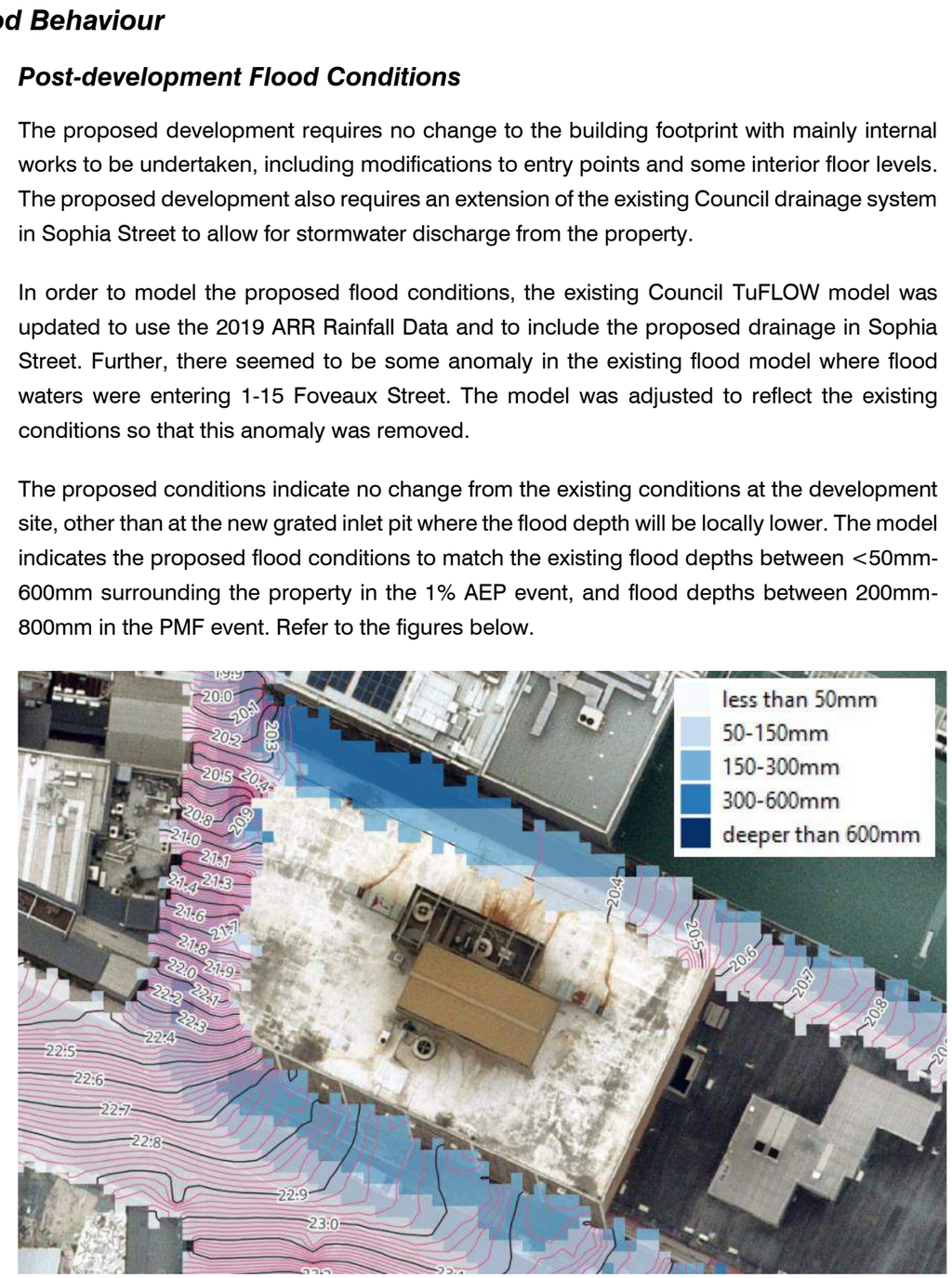


Figure 3: Post-development Site Flood Contour Map 1% AEP

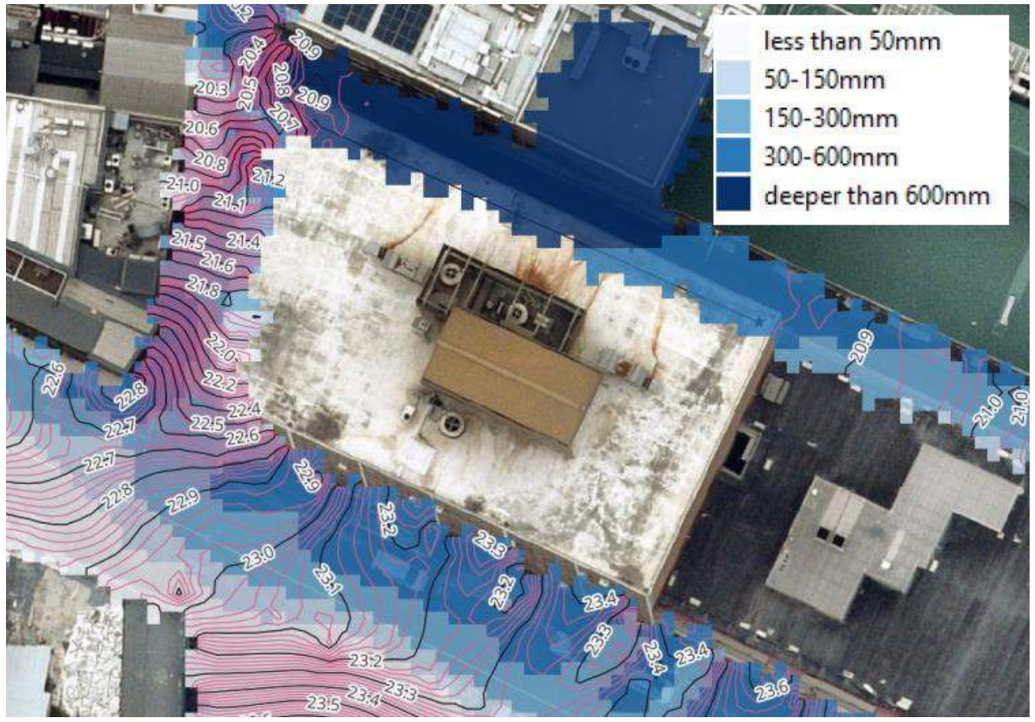


Figure 4: Post-development Site Flood Contour Map PMF

Additional post-development flood mapping is available in **Appendix A**.

2.2 Flood Behaviour and Hazard Category

The CoS Darling Harbour Catchment Floodplain Risk Management Study identifies the site as a Low Flood Island (LFI) Emergency Response Plan (ERP) classification. The Office of Environment and Heritage (OEH) in collaboration with the SES has identified any site classified as an LFI will likely need rescue/medivac and evacuation in the case of a flood emergency.

Further, the CoS Darling Harbour Catchment Floodplain Risk Management Study identifies the flood waters on Kippax Street and Terry Street to be a main floodway of this catchment, and the flood waters in Sophia Street to be a main flood storage.

The flood hazard classification surrounding the property in the 1% AEP storm event is shown in **Figure 5**. The classification along the property frontage on Kippax Street varies depending on local topography; in some areas it is generally safe for people, vehicles, and buildings, however, where there are small sag points, it can become unsafe for vehicles and people. It is expected the main entry should be safe for people to exit the building onto Kippax Street. The steep slope in Terry Street results in a high velocity of flood waters in the 1% AEP storm event, increasing the flood hazard level to unsafe for vehicles and people and requiring the building to have special engineering design and construction. The hazard level along the eastern

portion of the property frontage along Sophia Street is generally safe for people, vehicles, and buildings. The flood hazard gets more severe as Sophia Street meets Terry Street.

The flood hazard classification surrounding the property in the PMF storm event is shown in **Figure 6**. The flood hazard level in Sophia Street worsens to unsafe for vehicles, children and the elderly, in Terry Street to unsafe for vehicles and people and the building will be vulnerable to failure, and in Kippax Street, it is unsafe for vehicles and people and the building needs special engineering design and construction.

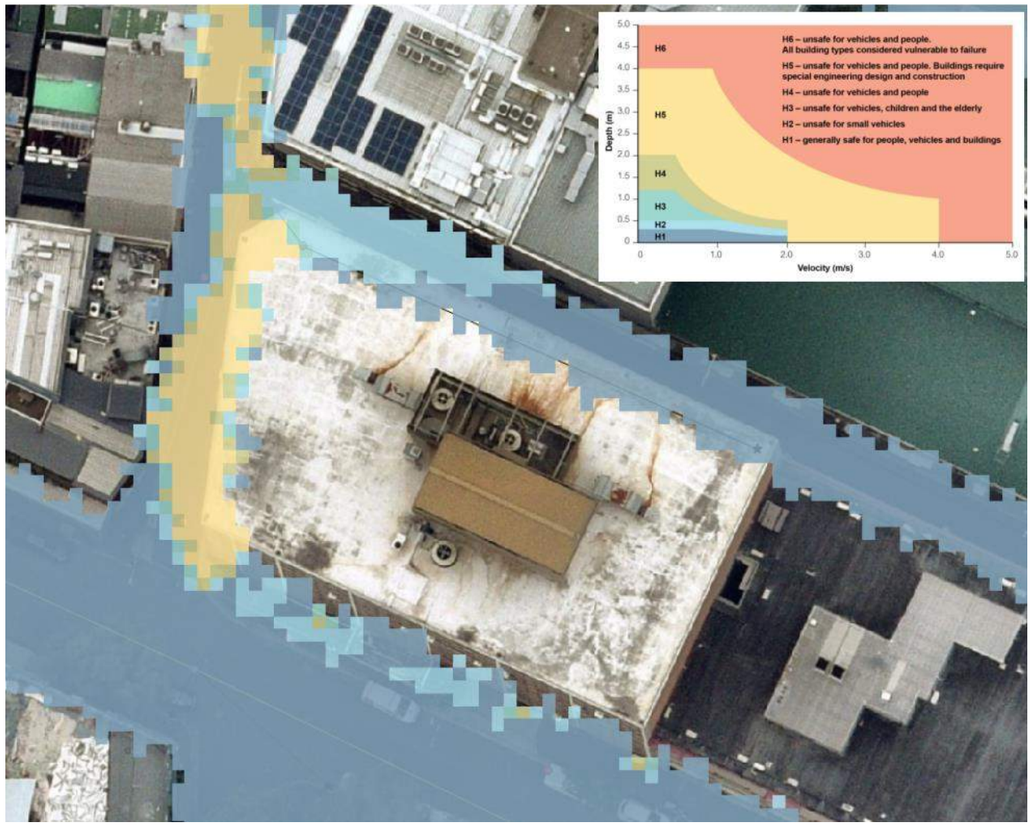


Figure 5: 1% AEP Post-development Flood Hazard Map

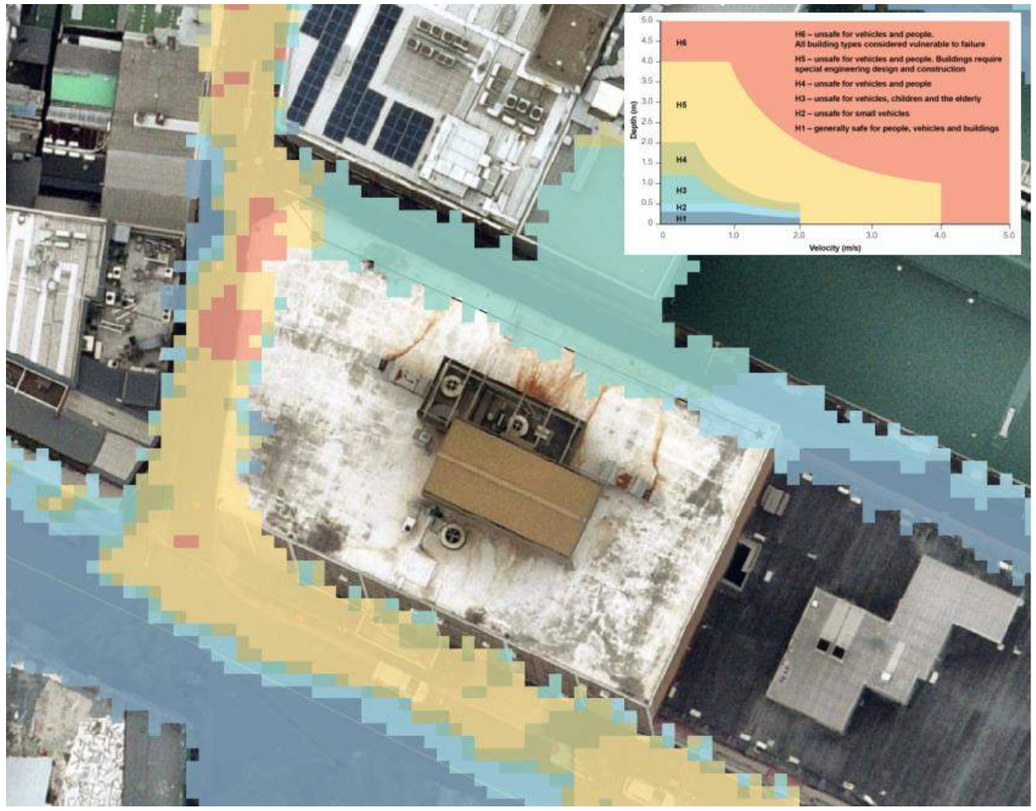


Figure 6: Post-development Site Flood Hazard Map PMF

3 *Flood and Evacuation Warnings*

There are several official flood warnings issued by the Bureau of Meteorology, State Emergency Service (SES) and NSW Police which can assist in the preparation of a potential flood. The 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 Bulletins (SES):

NSW SES Flood Bulletins provide information on likely flood consequences and what actions are required to protect yourself and your property.

Evacuation Warning (SES):

When flooding is likely to cut evacuation routes or inundate property, the NSW SES issues an Evacuation Warning to indicate that you should get prepared to evacuate. Being prepared will allow you to respond quickly if an Evacuation Order is issued.

Sydney Alert (NSW Police):

Special arrangements have been put in place to manage a serious emergency event in the Sydney CBD or North Sydney CBD.

Sydney ALERT is one of the communication tools that would be used to provide information to the building managers, emergency wardens and security staff with information and instructions to help them manage and assist staff and others in the building during an emergency, including direct advice from emergency services personnel.

3.1 Other warnings will be:

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 highest levels of the project. 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 702 ABC SYDNEY 702 AM, 2CH 1170 AM, 2DAY FM 104.1 FM, 2GB 873 AM, 2ME 1638 AM, 2SM/GORILLA 1269 AM, 2UE 954 AM, C91.3 FM 91.3 FM, MIX 106.5 106.5 FM, NOVA 96.9 FM, RADIO 2MORO 1620 AM, RADIO 2RDJ 88.1 FM, SBS RADIO 97.7 FM, SYDNEY'S 95.3 95.3 FM, TRIPLE M 104.9 FM and WFSM 101.7 FM.

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 site 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 Emergency Kit

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

- A copy of the building 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 level of the 8-24 Kippax Street development 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

Table 1 shows those involved in the management of flood response at site, and their responsibilities.

Table 1: Personnel and Responsibilities

Personnel	Responsibility
Emergency Control Organisation	• Coordinate flood evacuation drills
Chief Warden	• 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.

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 person at the site.

- 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.”
- Local Surry Hills Police Station on (02) 9265 4144.

7 Assembly Point (AP) and Evacuation Routes

If there are persons in the building once an official flood warning is issued, occupants should have sufficient time to seek refuge at the AP. The AP should be allocated on level 1 or above. Persons residing on levels other than that of the AP, are expected to use the emergency fire stairwell outlined in yellow on **Figure 8** to access the AP. For those persons with a disability or mobility impairment either temporary or permanent, access to the AP should be via the central Lifts (Lift A-D). On-site refuge is recommended for this site for all flood events once an official flood warning is issued. Evacuation should be coordinated with emergency services and may be acceptable in smaller storms events. If occupants delay leaving the site, they may become isolated by the flood water which may prevent safe exit from the site until the storm event subsides.

The entry on Sophia Street, circled in yellow on **Figure 7**, is expected to be accessible for people and vehicles in all events up to the 1% AEP storm event. In The main entry on Kippax Street, circled in yellow on **Figure 8**, is expected to be accessible for people and vehicles in all events up to the 20% AEP storm event. In storms greater than the 20% AEP storm event, up to the 1% AEP storm event, the main entry is likely to remain accessible as long as there are no localised sags in its vicinity. If instructed by emergency services to evacuate, all persons at the site are expected to be able to evacuate in an orderly manner from the main entry on Kippax Street in all storms up to the 20% AEP storm event, or from the entry on Sophia Street in any storm up to the 1% AEP event.

Any vehicles in the loading dock should be able to exit in the case of evacuation in all storms up to the 1% AEP storm event, or if it is indicated as safe to do so. Persons and vehicles should avoid Terry Street in the case of any flood warning or event.

7.1 Lifts A, B, C, and D

Due to head height restraints and the proposal to retain the existing structure, the lift entry levels cannot be raised above the FPL for basement levels. Lifts A, B, C and D will include the following flood mitigation strategies:

- The elevator car will be equipped with controls that prevent the cab from descending into floodwaters including:
  - Installation of a pit water sensor;

- Provision of flood operation mode (lift controller program);
- Installation of a pit pump (if the water ingress is expected to be at a low rate).

In the flood operation mode (program) the lift would receive a signal from the sensor, terminate any existing calls and park the lift at ground floor. Signals in the car would advise passengers of the situation and the doors would open to allow people to exit. Once the passengers have alighted, the lift can sit midway in the lift shaft so that the lift and counterweights are not in the flood waters. For further details, refer to the Lift Operators Specification.

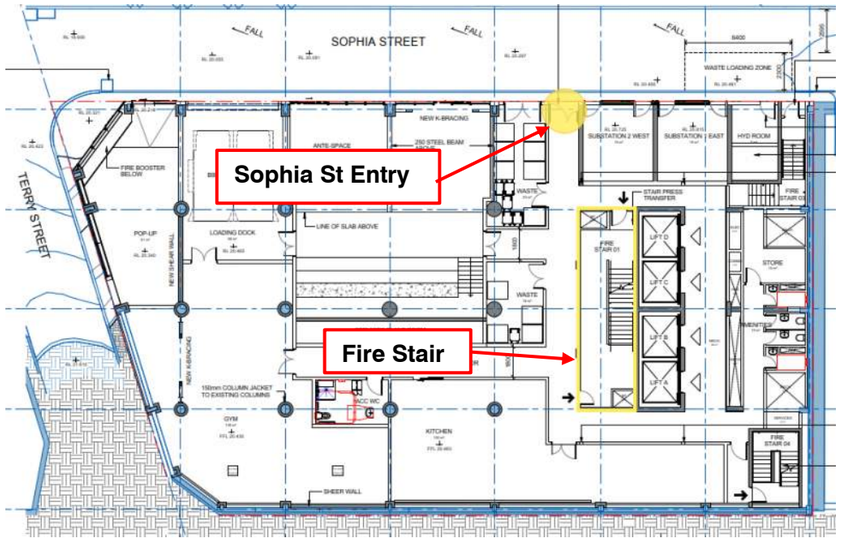


Figure 7: Emergency Evacuation Route and Entry/Exit (Lower Ground Flood Map)

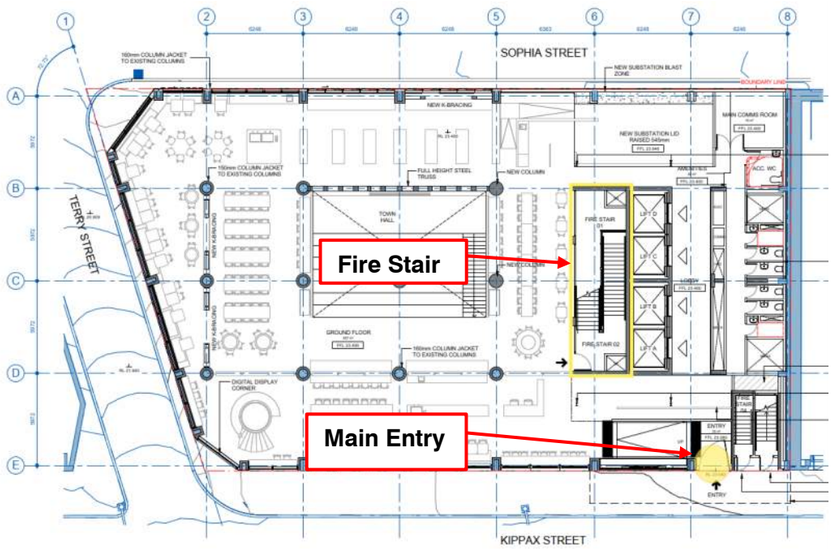


Figure 8: Emergency Evacuation Route and Entry/Exit (Ground Flood Map)

8 Flood Response Actions

8.1 Evacuation Drills

Evacuation drills are designed to increase flood awareness within the building. These drills are to be undertaken annually to familiarise patrons of the building, specifically of the commercial sectors, of the procedures when responding to a flood event.

8.2 Evacuation

Once a Flood Warning or Flood Bulletin for the City CBD has been issued

- Sound evacuation tone**;**
- Chief Flood Warden to be on hand if any person requires guidance;
- Chief Flood Warden to make contact with Emergency Services to request assistance;
- Leave signage at site entrance that evacuation has occurred, and to where;
- Any person within the site is to move towards the site entrance in an orderly fashion;
- Chief Flood Warden to maintain regular communication with all persons, providing updates on the situation;
- Site to be shut down, where possible of all, but essential power; and
- All persons at the site to evacuate to designated evacuation point.

9 Revision of Flood Emergency Response Plan

This plan should be reviewed if the CoS Council requirements or the CoS Darling Harbour Catchment Floodplain Risk Management Study and Maps are revised, and if the street drainage surrounding the site is upgraded.

The Emergency Planning Committee shall be responsible for ensuring the Flood Risk Management 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.

10 Conclusion

The site at 8-24 Kippax Street, Surry Hills is currently susceptible to flooding from the floodway along Kippax Street and Terry Street, and the flood storage in Sophia Street. The proposed development is has sought to minimise the risk of flooding of the property in accordance with CoS Interim Flood Management Policy, and a FERP has been established to ensure that property patrons are equipped to seek refuge on-site in the case of a flood emergency.

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.

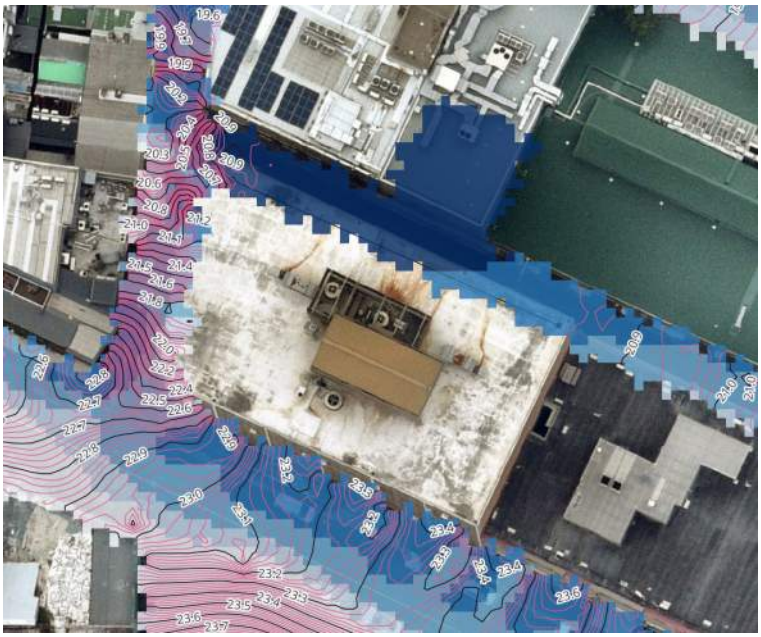
This FERP should be reviewed if the CoS Council requirements or the CoS Darling Harbour Catchment Floodplain Risk Management Study and Maps are revised, and if the street drainage surrounding the site is upgraded.

Further, this FERP is reviewed regularly (on a yearly basis).

APPENDIX A

Post-Development Flood Maps

PMF



Legend:

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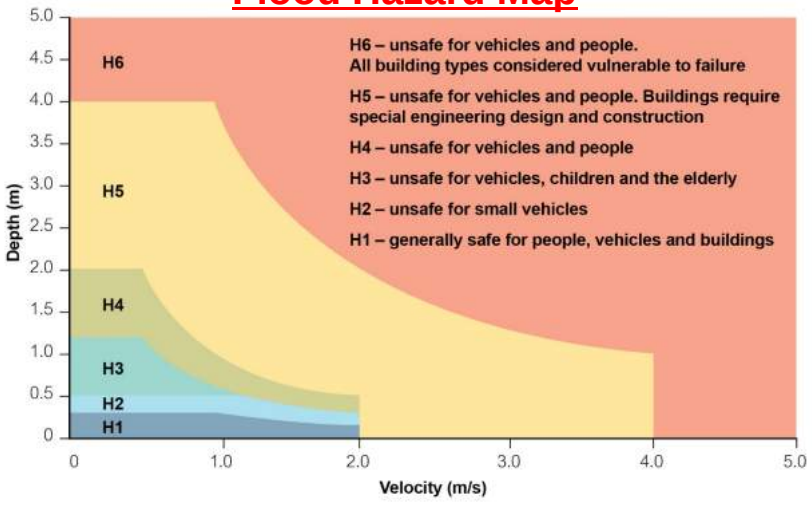
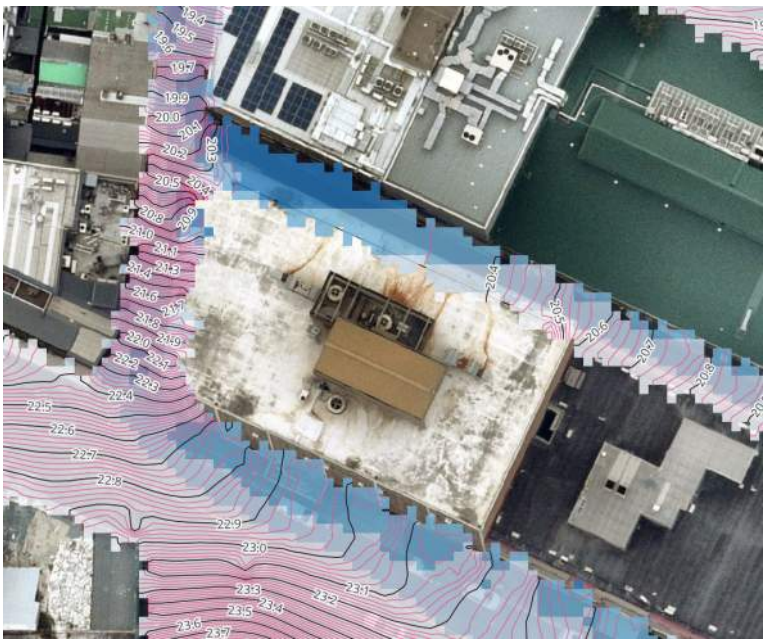
- 300-600mm
- deeper than 600mm

Flood Contour Map

Flood Hazard Map



1% AEP



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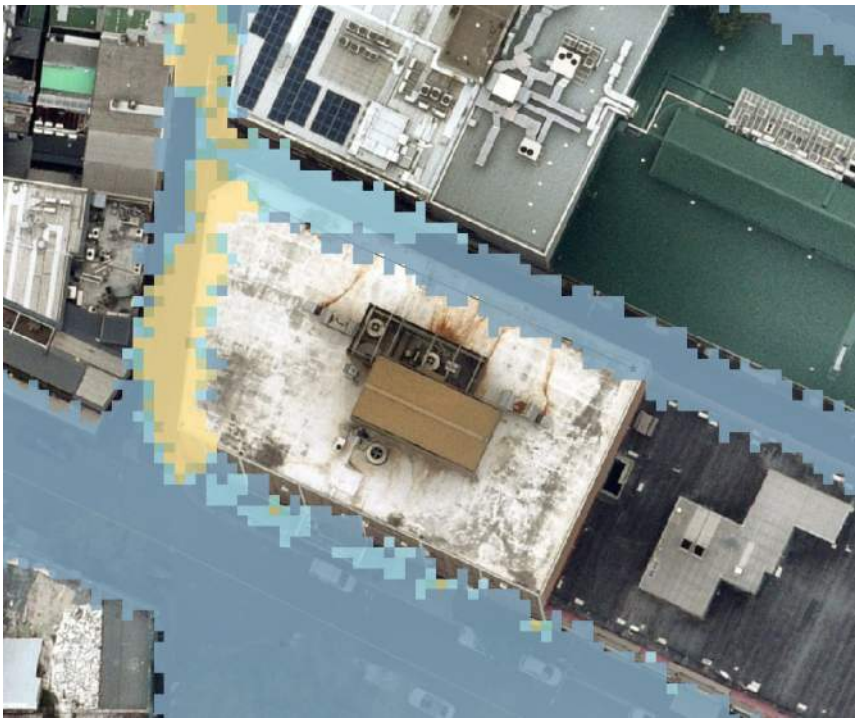

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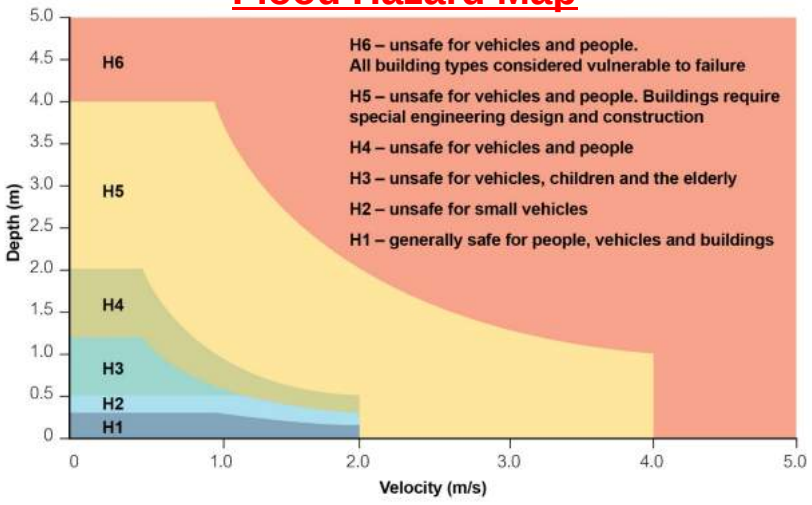
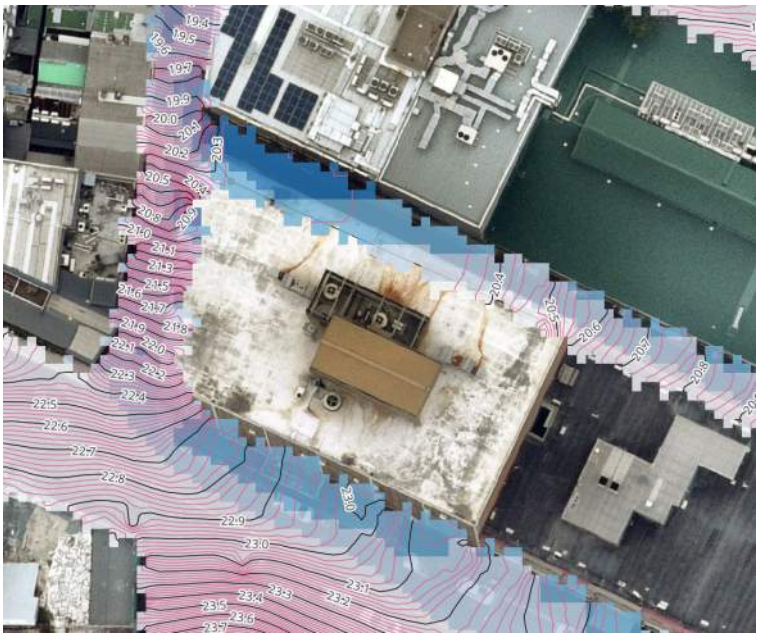


5% AEP



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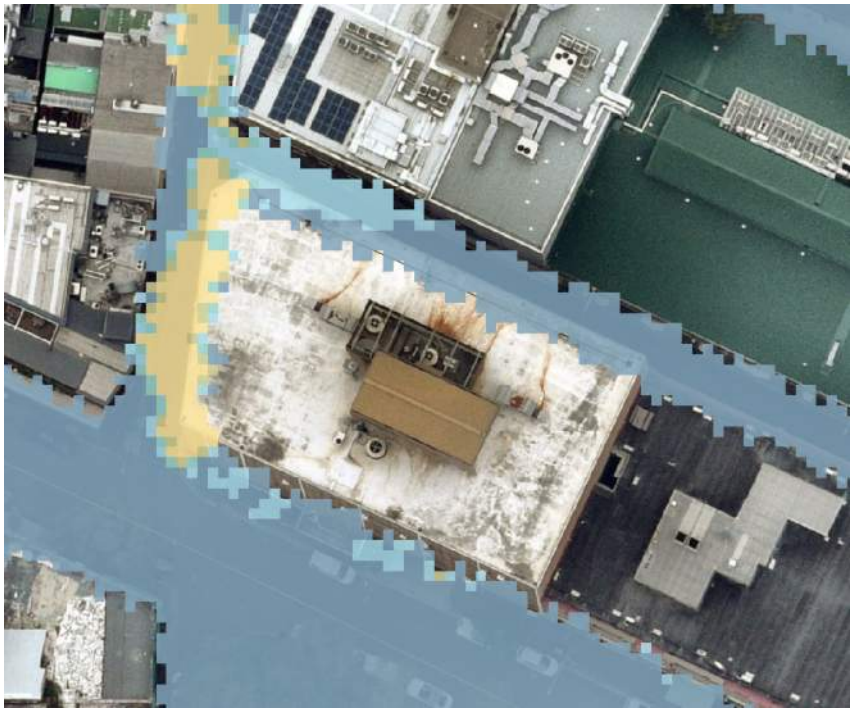

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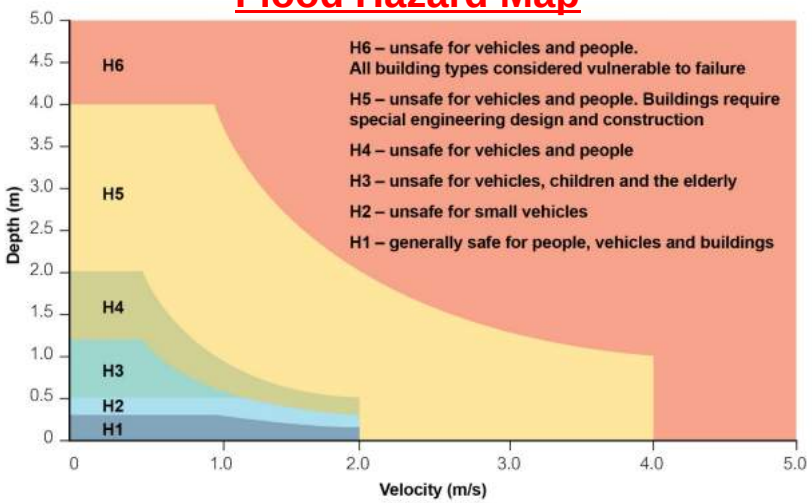
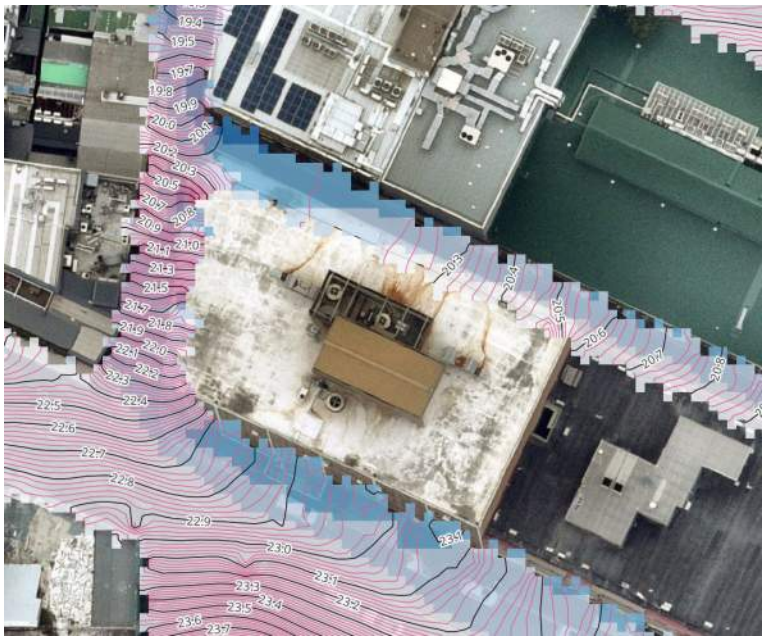


10% AEP



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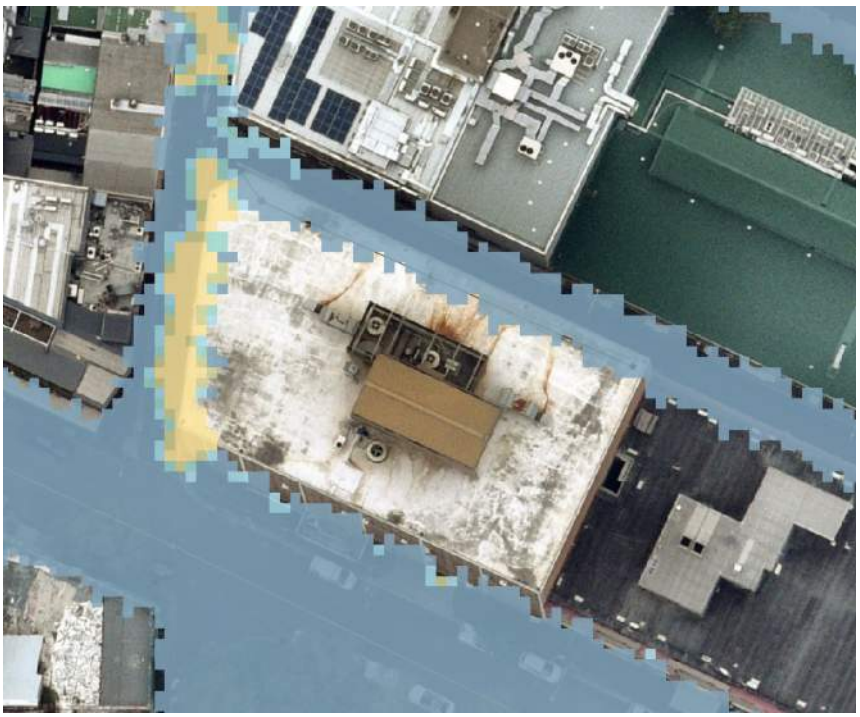

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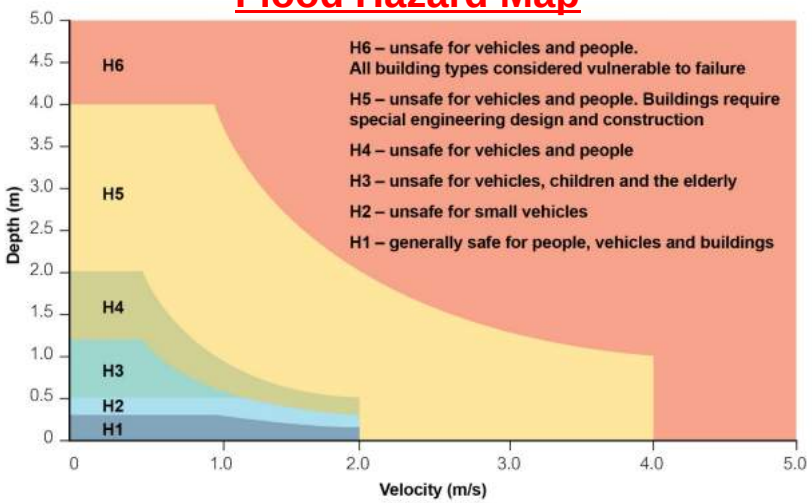
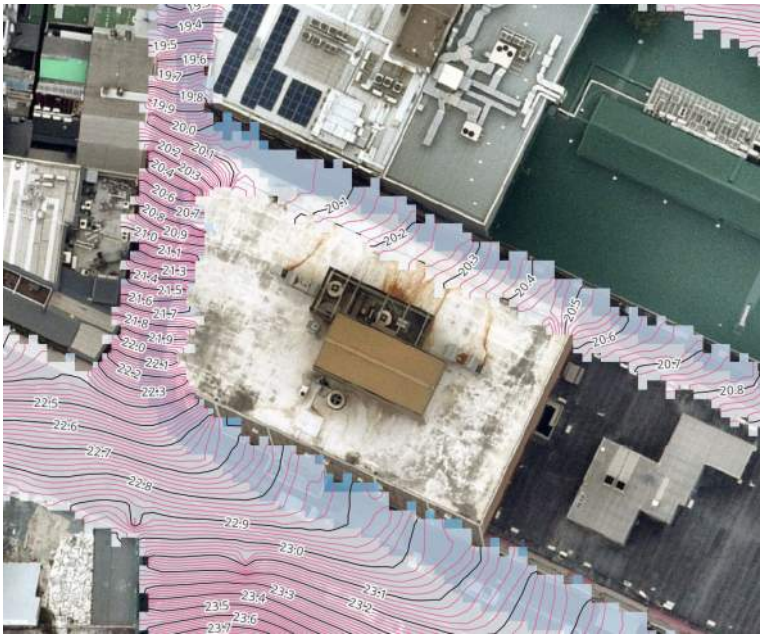


20% AEP



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Flood Contour Map

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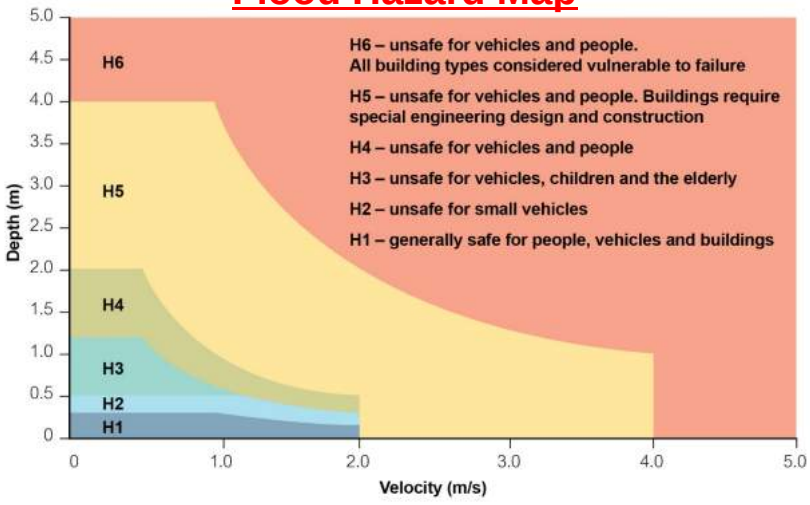
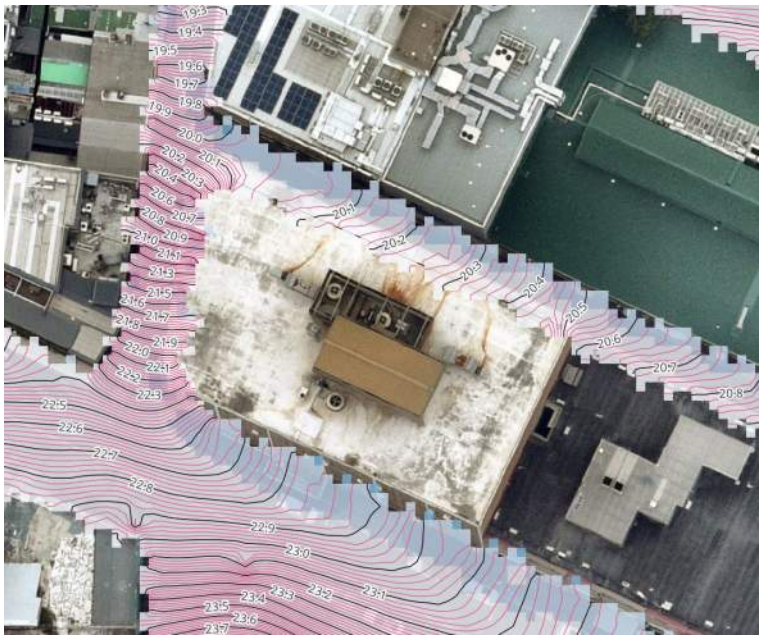


50% AEP



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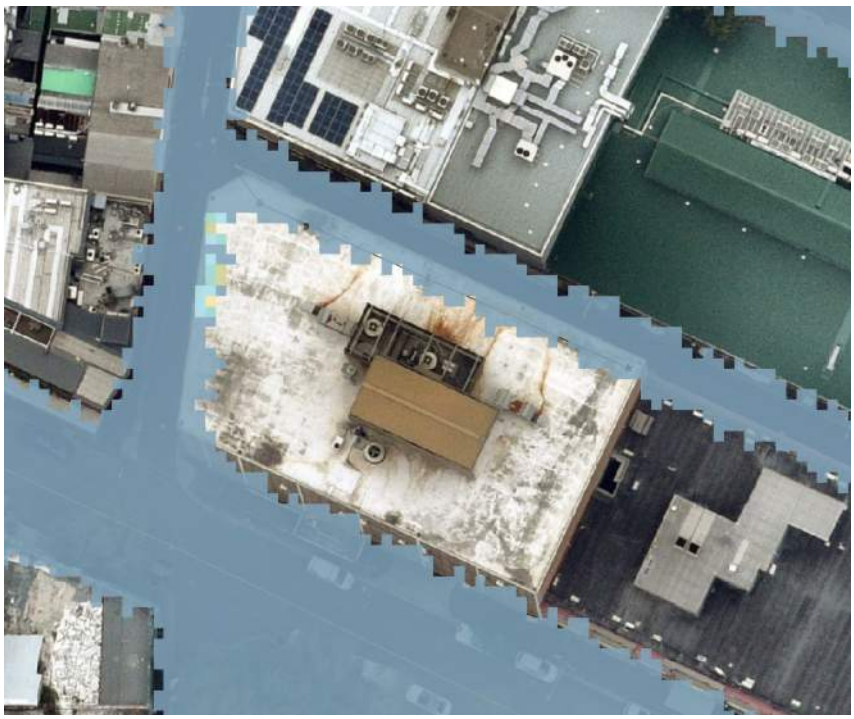

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