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Flood Emergency Response Plan

Uniting Edinglassie Village ILU

Prepared for Uniting / 14 February 2024

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Contents

1.0 Introduction

Taylor Thomson Whitting have prepared a Flood Emergency Response Plan (FERP) for the proposed redevelopment of the Uniting Edinglassie Independent Living Units at Emu Plains. The site is located at 6 Troy Street, 5-7 Emerald Street, 9-11 Emerald Street and 1-3 Emerald Street, Emu Plains.

This FERP has been prepared to respond to the Consent Condition (DA18/0306) imposed on the previous Residential Aged Care Facility:

"Condition 102. Prior to the issue of a Construction Certificate a Flood Emergency Response Plan shall be prepared by a suitably qualified Civil/Hydraulic Engineer for the development in consultation with SES and submitted to the Principal Certifying Authority."

Following the previous development, additional works have been proposed to the site to construct 5 buildings containing 147 independent living units and a communal clubhouse (under DA22/1171).

The purpose of this FERP is to summarise the flood risks within the site, identify preparation measures that should be undertaken, and provide an action plan with steps to be completed during a flood event.

We note that this plan is preliminary only as the proposed Independent Living Units design is at a development application stage only. It is anticipated that a condition of consent will be imposed on the development to update this plan prior to Occupation Certificate.

Figure 1.1:Site Location

1.1 Reference Documents

In the preparation of this FERP, the following documents were referred to:

- Civil Engineering Report and Flood Impact Assessment prepared by TTW dated 17 October 2023
- Emu Plains Overland Flow Flood Study Report prepared by BMT dated 2020
- Flood Study Edinglassie Village prepared by TTW dated 2 August 2018
- Edinglassie Emu Plains Emergency Manual prepared by Uniting dated December 2019
- Flood Emergency Response Plan prepared by TTW dated 3 March 2020
- Hawkesbury Nepean Flood Plan prepared by NSW Government dated September 2015
- Nepean River Flood Study prepared by Penrith City Council dated November 2018

2.0 Flood Behaviour

This report has been based on the Flood Report prepared for the redevelopment conducted by TTW and Penrith City Council's Nepean River Flood Study. The following section provides a summary of the findings. The analysis was based on review of Council documentation as well as conducting a TUFLOW model for the local catchment.

2.1 Flood Source

The existing flooding condition affecting the site occurs through localised overland flow from upstream catchments. TTW undertook modelling to ascertain the effects of catchment flooding due to local overland flow – for further details refer to the Civil Engineering Report and Flood Impact Assessment prepared by TTW dated 17 October 2023.

The site is considered a local flood storage and predominantly affected by overland flows of the Great Western Highway as well as overland flows of Forbes Street.

Overland Flows from Great Western Highway:

- Overland flows of the walker Street catchment accumulate at a low point in Brougham Street and overtop onto Great western Highway.
- Overflows continue running east over Great western Highway up to the intersection of Great Western Highway and Russell Street where partially flow north through Russel Street as well as continue to flow east through Great Western Highway toward the site.
- The portion of overland flows that run east over Great Western Highway then merge with flows from MacKay Street at a point to the west of intersection of Great Western Highway and Troy Street before running towards a sag point in Troy Street near the western site boundary.
- Floodwaters over the Troy Street sag point reach up to a level of 26.82m AHD during the 1% AEP flood event and overtop onto the site.

Overland Flows from Forbes Street:

Overland flows of Forbes Street accumulate over an existing sag point up a level of 27.60m AHD before overtopping onto the EMU Plains Public School and flow north toward the site.

2.2 Overland Flow Peak Flood Levels

Flood results confirm that:

- Flood levels reach up to 26.8m across the site.
- Proposed high flow network effectively bypasses the overland flows entering the site from western and southern boundaries to downstream and renders the proposed buildings and basement car park entrances flood free in the 1% AEP flood event and minor local overland flows on the site are generally shallow and of low hazard.
- Flood hazards remain typically low across the site except for an area near the southwestern site boundary.

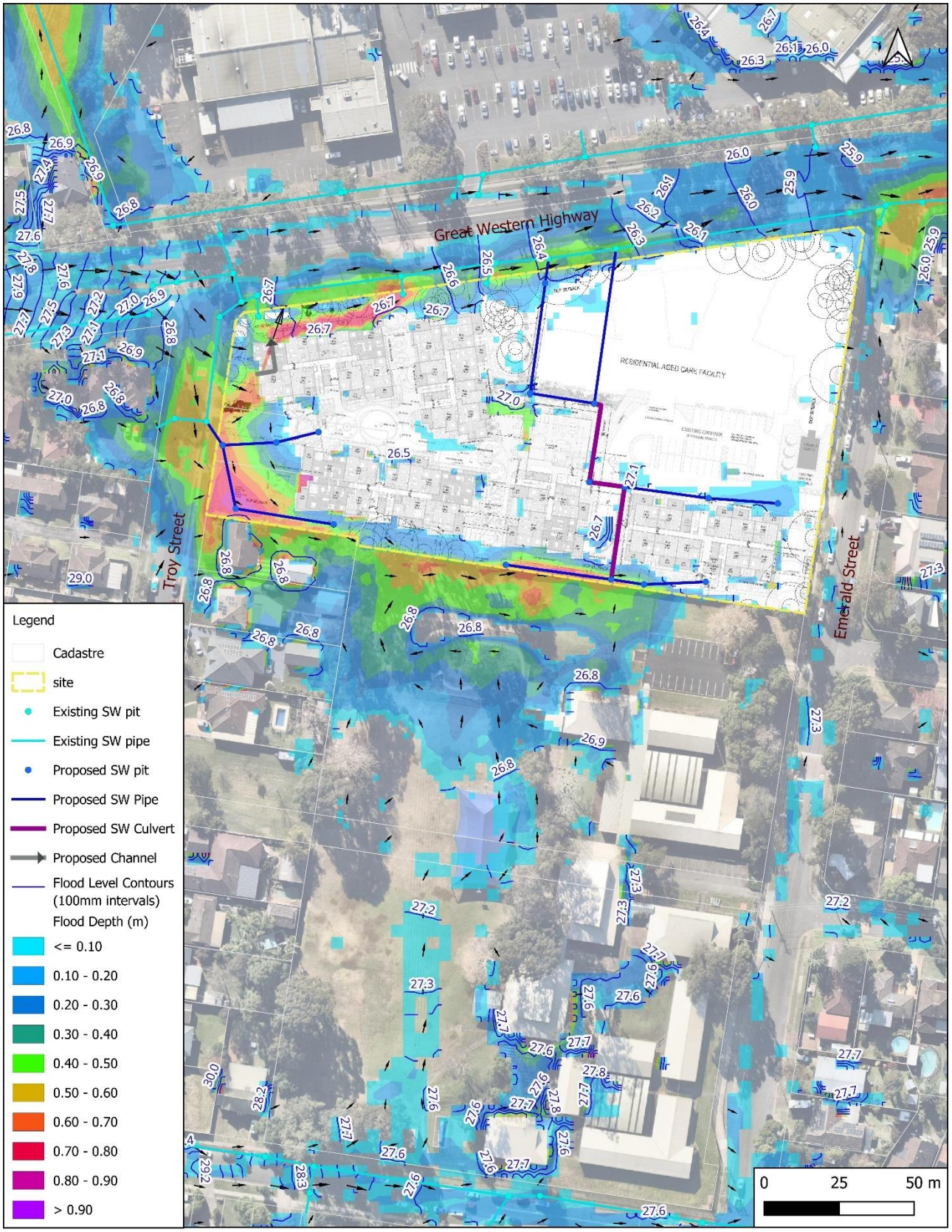

Figure 2.1: 100 Year Flood Depth Grading and Levels
(Source: TTW Flood Study)

3.0 Flood Warnings and Evacuation

3.1 Flood Watches and Warnings

Severe weather and thunderstorm warnings are issued by the Bureau of Meteorology (BOM) www.bom.gov.au. These warnings are continually updated with a description of the likely conditions (including predicted extreme rainfall depth).

BOM issues flood alerts, advice and watches for the Hawkesbury Nepean River through coordination with the SES, water agencies and local councils.

A **Standard Emergency Warning Signal** (SEWS) will be used by SES to precede all *Top Priority* Flood Warnings and all Evacuation Warnings. Once activated Evacuation Orders are broadcast over the radio stations.

A ***Flood watch*** is issued by the BOM up to four days prior to a flood event. A watch is generally updated daily and may be issued before, during or after rainfall has occurred.

Flood warnings are issued by the BOM when flooding is occurring or expected to occur in a particular area. Warnings may include specific predictions of flood depths dependent on real-time rainfall and river level data. These warnings are distributed to Council, Police and the relevant local SES, as well as being available on the BOM website, through telephone weather warnings and radio broadcasts.

SES Evacuation Warning is a warning message from SES advising the community to prepare for likely evacuation. The warning advises people what to do and what to prepare to take with them.

A ***Flood Evacuation Order*** is a notification to the community, authorised by the SES, when the intent of an Incident Controller is to instruct a community to immediately evacuate in response to an imminent threat. It also advises where people should go and may advise which evacuation route to take.

3.2 Coordination of Flood Evacuation Warnings and Orders

The overall coordination of the regional road evacuation routes will be conducted by the Evacuation Coordination Desk at the NSW SES Sydney Western Region Headquarters as shown in Figure 3.1.

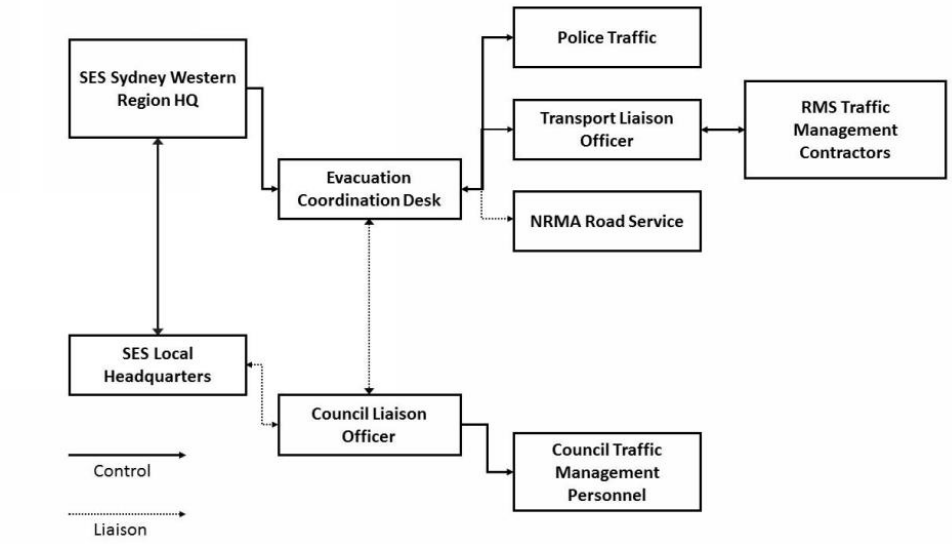

Figure 3.1: Evacuation Coordination Flow Chart
Source: Hawkesbury Nepean Flood Plan

The NSW SES Sydney Western Region Incident Controller will decide when to issue Evacuation Warnings and Evacuation Orders for specific Sectors for Riverine Flooding.

The Incident Controller ("Evacuation Coordination Desk") will distribute these warnings to other NSW SES control centres; metropolitan media outlets for immediate broadcast; and the Joint Media Information Centre. The Incident Controller will also advise Police and the NSW Transport Management Centre to begin traffic management procedures on regional evacuation routes.

The Incident Controller will distribute an evacuation warning through the following systems (when available) internet, fax, email, text message, and automatic telephone dialling with pre-recorded messages.

NSW Local Controllers will distribute Evacuation Warnings through Warden systems. Emergency service personnel using public announcement systems in vehicles, and door knocking.

Uniting staff on site will be responsible for monitoring information from the SES regarding evacuations required in the area and conducting the evacuation. Staff responsibilities are further detailed in Section 4.1.

For localised overland flooding, Uniting staff will be responsible for Evacuation Warnings and Evacuation Orders.

3.3 Evacuation Alarm System

The RACF has an evacuation tone within the building that alerts staff when evacuation is required. Staff are made aware of this procedure through evacuation drills and staff education through inductions.

It is assumed that a similar system will be put in place at the Independent Living Units, however this is subject to detailed design.

4.0 Flood Response Responsibilities and Important Telephone Numbers

4.1 Staff Responsibilities

In the event of a severe flood, various staff members will be responsible for specific tasks as detailed in Table 4.1.

Table 4.1: Staff Flood Responsibilities

Role	Location	Responsibilities
Uniting	N/A	▪ Update Emergency Management Plan to include the recommendations of this report. ▪ Assist with evacuation coordination.
Emergency Coordinator	Within RACF and other site staff	▪ Coordinate flood evacuation drills. ▪ Decide if evacuation is required prior to warnings from SES and if necessary commence a partial or full evacuation of the facility. ▪ Liaise with SES. ▪ Ensure any resident or staff member who advises of or is observed with any sign of distress is placed in the care of appropriate paramedical personnel. ▪ Ensure evacuation pack is taken to the assembly area. ▪ Prepare a Flood Emergency Kit that includes a portable radio, torch, spare batteries, first aid materials, emergency contact numbers, candles, waterproof matches, waterproof bags and required medication. ▪ Assign a warden to meet emergency services.
Area Wardens	Within RACF and other site staff	▪ Coordinate evacuation of their designated floor and assist in evacuation. ▪ Direct wardens to commence evacuation of non-ambulatory residents. ▪ Direct warden to conduct a final check of all parts of the area to ensure it is clear of occupants. Instruct wardens to check toilets, store rooms and all occupiable spaces on their floor or in their area. ▪ Advise the Emergency Coordinator that the area has been evacuated. ▪ Proceed to the evacuation assembly area and remain in charge of residents and visitors until the All Clear is given.

Wardens	Within RACF and other site staff	▪ Lead ambulatory residents and visitors in single file to the evacuation area. A second warden is to follow the evacuees to ensure they all stay together. ▪ Provide assistance to any person who falls or trips. ▪ Allow room for Emergency Services personnel. ▪ When directed conduct a final check of all parts of the area to ensure it is clear of occupants. ▪ Prevent any person from re-entering the evacuated area uncles authorised to do so by the Emergency Coordinator.

4.2 Key Contact Details

In the event of a severe flood, key telephone numbers have been listed in Table 4.2 below:

Table 4.2: Key Contact Numbers

Within Edinglassie Village		
Emergency Coordinator	**Phone Contact**	**Shift**
Service Manager	1800 864 846 4735 0705	Day
Registered Nurse on Duty	4735 0718	Afternoon
Registered Nurse on Duty	4735 0718	Night
Registered Nurse on Duty	4735 0718	Weekend
Emergency Officers		
Area Wardens		
Registered Nurse on Duty	4735 0718	Day
Registered Nurse on Duty	4735 0718	Afternoon
Registered Nurse on Duty	4735 0718	Night
Registered Nurse on Duty	4735 0718	Weekend
External Contacts		
Service	**Phone Contact**	
Police/Ambulance	000	
State Emergency Services	132 500	
Police – Penrith Station	4721 9444	
Nepean Hospital	4734 2000	

5.0 Assembly Point and Evacuation Routes

5.1 On-Site Refuge

5.1.1 Residential Aged Care Facility

Ground floor levels have been set above the 1 in 100-year flood level with a minimum of 500mm freeboard provided. Due to the vulnerable building occupants and additional two upper floors (level one at a finished level of 31.15m and level two at a finished level of 34.50m), a shelter in place strategy is considered appropriate during major flooding events as approved during prior consultation with SES. It is noted that the site contains a commercial kitchen which can provide food and water during the evacuation to upper floors of the building.

Penrith City Council's draft Nepean River Flood Study indicates riverine flooding in the region will result in ponding up to 5m or at RL 30.9m in the Probable Maximum Flood (PMF). As a result, on site refuge should occur on both the first and second floors of the building to provide protection from the PMF. For Riverine Flooding, evacuation is to follow the procedures dictated by Penrith City Council of the Bureau of Meteorology via flood alert, advice or warning.

5.1.2 Independent Living Units

Ground floor levels have been set above the 1 in 100 year flood level with a minimum of 500mm freeboard provided. A shelter in place strategy within the upper two floors (FFL 31.15m and FFL 34.50m) of the ILU buildings during an extreme flood event has been declined by Council due to limited access to toilets, food, and water within the shared lobby areas.

However, during previous consultation with SES regarding the Residential Aged Care development (RAC), shelter in place was expressed to be preferential due to the vulnerability of site residents. Flood evacuation of the ILU's should therefore occur to the first story lobby of the RAC building as demonstrated in the Flood Evacuation Assembly Point shown in Figure 5.2. An example evacuation route for ILU residents and visitors to the RAC is provided in Figure 5.1 below. For Riverine Flooding, evacuation is to follow the procedures dictated by Penrith City Council or the Bureau of Meteorology via flood alert, advice or warning.

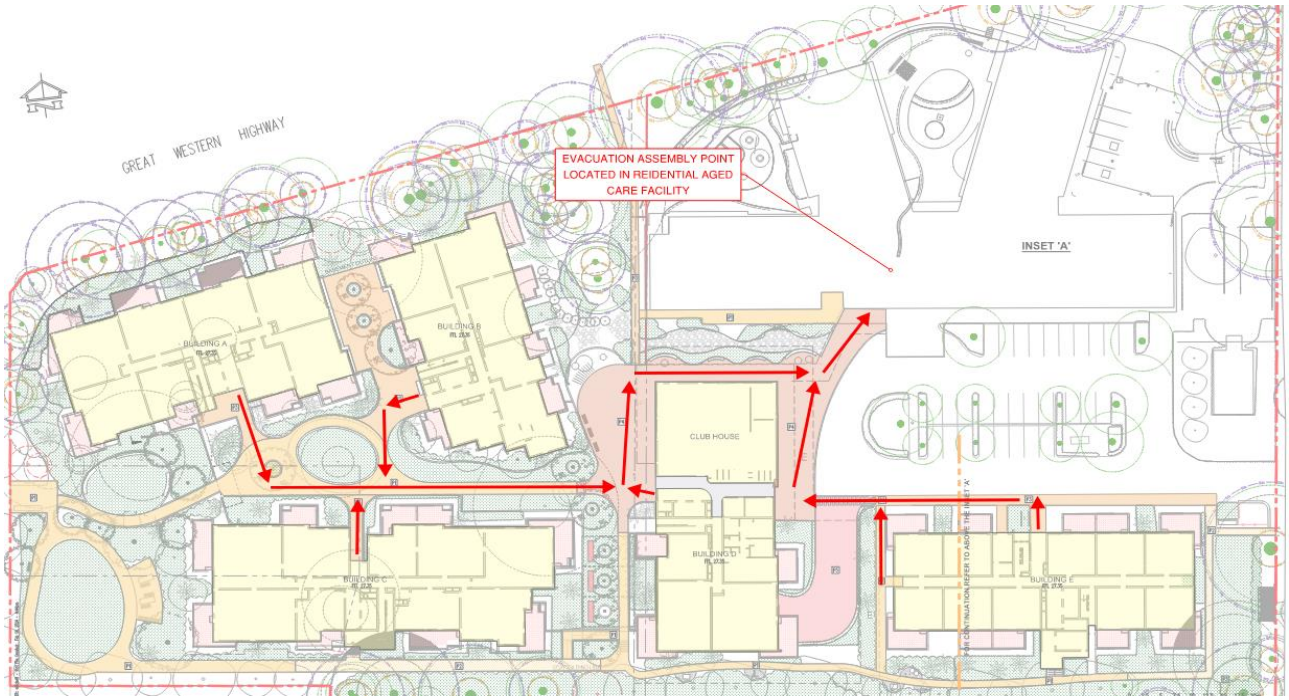

Figure 5.1: ILU Flood Evacuation Route to RAC Assembly Point (Levels 1 and 2)

5.2 Emergency Assembly Point

5.2.1 Residential Aged Care Facility

The assembly point in the event of a flood emergency will be located on the first and second floor of the building within the common living areas shown in Figure 5.2. These locations are both communal areas located adjacent to stair access and above the anticipated PMF flood level.

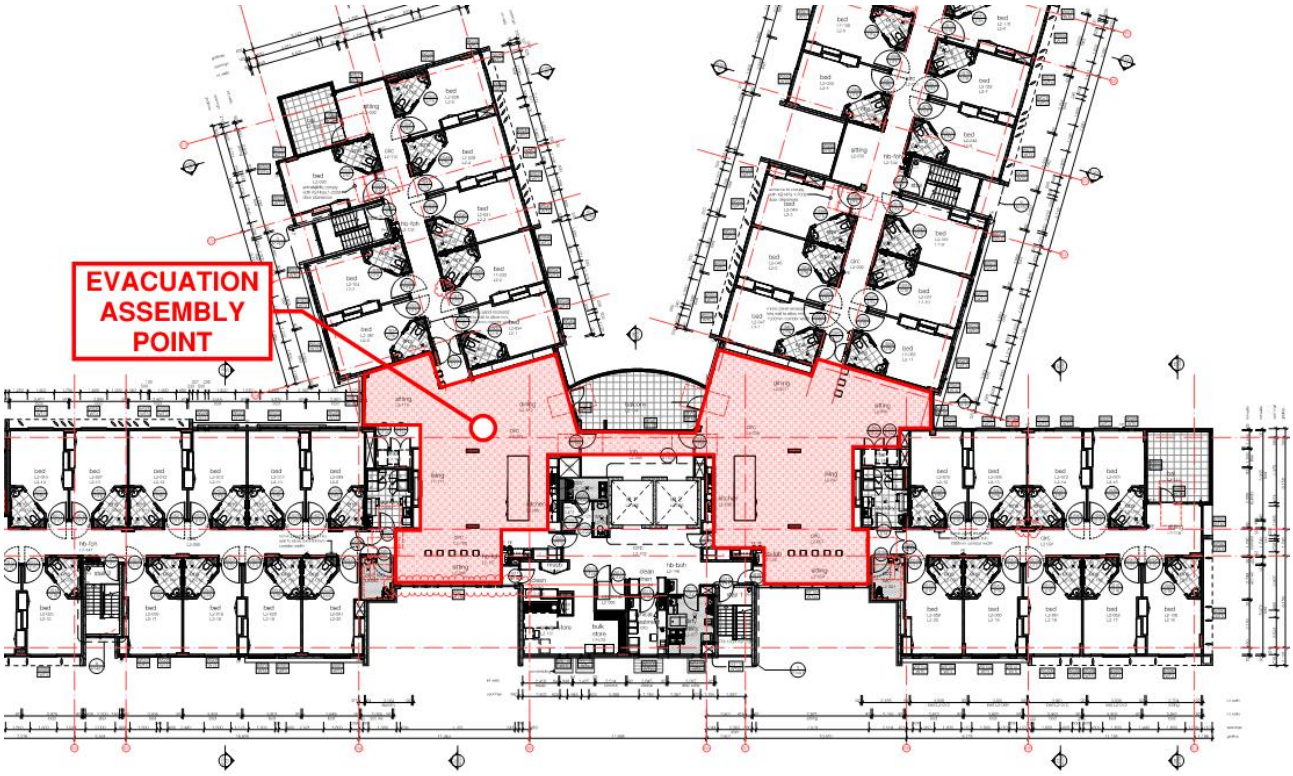

Figure 5.2: Flood Evacuation Assembly Point (Levels 1 and 2)

5.2.2 Independent Living Units

Should an extreme flood event occur, and an evacuation warning not be issued by Penrith City Council or the Bureau of Meteorology, it is recommended that flood evacuation to the RAC Flood Evacuation Assembly Point and shelter in place be performed in line with previous advice received during consultation with SES regarding the RAC FEMP strategy. A preliminary flood evacuation route to the evacuation assembly point located in the RAC is provided in Figure 5.1 and is to be refined following consultation with SES during the detailed design stage of the development.

6.0 Preparation for Flood Response

6.1 Education

As part of the preparation for a flood event, those with responsibilities within this Plan should review and be familiar with their roles. Inductions should be held to educate staff on their role during a flood event.

As part of education of the residents, evacuation drills should be conducted regularly to ensure residents are aware of the procedures for evacuation.

6.2 Evacuation Drills

It is recommended that evacuation drills be held at a minimum of twice yearly to ensure all staff and residents are aware of and familiar with their flood response actions, the sound of the alert and the location of the assembly point.

6.3 Flood Emergency Kit

A Flood Emergency Kit should be prepared prior to a flood event taking place and regularly checked to ensure that supplies within the kit are sufficient and in working condition. This check could occur after the evacuation drill takes place to provide a regular schedule. The Kit should include:

- Radio with spare batteries;
- Torch with spare batteries;
- First aid kit and other medicines;
- Candles and waterproof matches;
- Waterproof bags;
- A copy of the School's Emergency Management Plan; and
- Emergency contact numbers.

This Emergency Kit should be stored in a waterproof container and is the responsibility of the Emergency Coordinator.

7.0 Flood Response Actions

A water level sensor device will be provided at the landscaped area south of the Church and adjacent to the Emerald Street driveway to indicate when water levels have reached 300mm of ponding (RL 27.10m).

This sensor will provide early flood warning to the building. This early warning system will be connected to the 24 hour reception who will then alert the Emergency Coordinator.

The Emergency Coordinator will then initiate a flood response and warning through the evacuation alarm and by alerting the Area Wardens.

Riverine Flooding Response Plan	**Local Overland Response Plan**
1. Local Councils or Bureau of Meteorology issues an alert, advice or warning. Emergency Coordinator to confirm that ponding is occurring on the Great Western Highway through visual inspection. Emergency Coordinator is to alert staff to a flood emergency scenario via the PA system and activate the evacuation alarm. Evacuation procedures as per the Staff Responsibilities are to proceed.	1. Flood water level sensor sending alert. When depth of ponding adjacent to the driveway reaches 27.10m, flood level indicates storm is greater than a 100 year event. Emergency Coordinator to confirm that ponding is occurring within the driveway through visual inspection. Emergency Coordinator is to alert staff to a flood emergency scenario via the PA system and activate the evacuation alarm. Evacuation procedures as per the Staff Responsibilities are to proceed.
2. Once alert has been removed by Local Council or Bureau of Meteorology for a minimum of 2 hours, Emergency Coordinator to confirm there is no ponding on the Great Western Highway. Emergency Coordinator to inspect the ground floor to confirm no floodwaters remain within the building. A headcount will be undertaken by Wardens to ensure all residents, staff and visitors are accounted for. Following the headcount, the Emergency Coordinator may announce that the evacuees can return to the ground floor of the building.	2. Alert will remain in place for approximately 2 hours or such time that the ponding depth recedes. Emergency Coordinator to confirm there is no ponding in the carpark for a period of at least 2 hours. Once ponding has subsided for 2 hours, the Emergency Coordinator will inspect the ground floor to confirm that no floodwaters remain within the building. A headcount will be undertaken by Wardens to ensure all residents, staff and visitors are accounted for. Following the headcount, the Emergency Coordinator may announce that the evacuees can return to the ground floor of the building.
3. Flooded areas are to remain off limits until ponding is cleared. The directions of police and SES are to be followed at all times.	3. Flooded areas are to remain off limits until ponding is cleared. The directions of police and SES are to be followed at all times.

A fact sheet summarising the above Response Plan has been attached in Appendix A. This would be suitable for distributing to staff.

8.0 Limitations and Revision of the Flood Emergency Response Plan

This FEMP only addresses the evacuation strategies during extreme flooding events for residents, staff and visitors within the site and is considered a guide only. It does not cover individual safe travel arrangements to and from the site should travel arrangement be disrupted by flooding and/or road closures.

It is Uniting's responsibility to ensure this FEMP is current and updated as necessary to be in line with relevant standards, directorate, legislation and the Regional's State Emergency Management Plan to ensure the health, safety and welfare of all staff, residents and visitors.

9.0 Recommendations

The following steps are recommended to be completed following the adoption of this FEMP:

- Update the Emergency Management Plan to include the recommendations of this FEMP.
- Update the Key Contact Details once the building is operational to include relevant area and floor wardens for the new building.
- Flood educate staff and residents through education and evacuation drills as detailed in Section 6 of this FEMP.
- Uniting to review and update this FEMP if necessary at minimum once a year.
- All staff at the site to be familiar with Flood Response Actions as detailed in Section 7 of this FEMP.

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Appendix A

Response Plan Flow Chart

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