

26/11/2024

Richard Crookes Construction  
Level 14, 558 Pacific HWY  
St Leonards, NSW 2065

**RE: Cumberland Westmead Integrated Mental Health Centre – Flood Mitigation – Domestic Water Supply**

**SSDA: SSD-44034342**

Attn: Marek Sorm

As requested by Richard Crookes Construction (RCC) via ACONEX on 13 November 2024, we write this statement which outlines the flood mitigation approach being proposed for the domestic water supply to ensure reliability during an extreme flood event.

We understand the flood event will occur over a 10 hour duration and the facility will have a 4 hour pre-warn of the event occurring, which will offer the facility engineers appropriate time to implement the mitigation strategies as described below.

The objective of the mitigation approaches is to ensure continued operations, knowing that flood event has maximum level (AHD) of RL18900, which would result in the lowest floor level of the building being submerged with water up to a height of 1400mm.

In succinct terms, the potable (drinking) water storage tanks and ancillary pressure pumps, which supply drinking water to the entire building, are situated in a lower ground plantroom which would be affected by the flood event. It shall be noted that under the proposed mitigation approach, some floors of the building will be without a reliable drinking water supply.

We understand that the primary mitigation measures to prevent flood waters from entering the plantroom is:

1. the water proofing of the 1400mm high walls that surround the plantroom
2. the flood gate
  - a. which we have been (verbally) advised by Marek on 14th November (5:00pm) that is not 100% water tight and that flood water will infiltrate the plantroom over the 10hour flood event. Marek advised that we are to use the metric of 5000L of infiltrated water
3. provision of one-way valves on the sanitary drainage branches serving the plantroom floor wastes
4. provision of one-way valves on the stormwater drainage branches serving the fire test drain sump and PCW tank overflow sumps
  - a. in addition, the rim of these sumps will be set at RL18900

The secondary measures are:

1. a by-pass pipe on the cold water supply, which will provide gravity pressure to the building, in the scenario that the PCW pressure pumps are rendered to be useless
  - a. the attached schematic indicates the gravity pressure zones that will be available
2. install a skimmer pump in the cold water plantroom that will be activated when the flood water level, within the plantroom exceeds 5000L (upon breach of the flood gate). The skimmer pump (if activated) will discharge flood water externally to the building, free to atmosphere at an RL20000 (no less)
  - a. Nb! We have calculated that the 5000L will be 92mm deep in the cold water plantroom, which has the water level lower than the PCW tank and pump plinths.

- i. we have calculated that 8000L will be the volume of water within the plantroom at 150mm deep (or top of plinth)
- b. Skimmer pump power to be supplied from the essential power supply

As per ACONEX correspondence RCC-GCOR-001184, dated 25 November 2024, we note that RCC have endorsed the above-mentioned mitigation approach.

Should you have any queries or seek clarification of the above, please contact the undersigned.

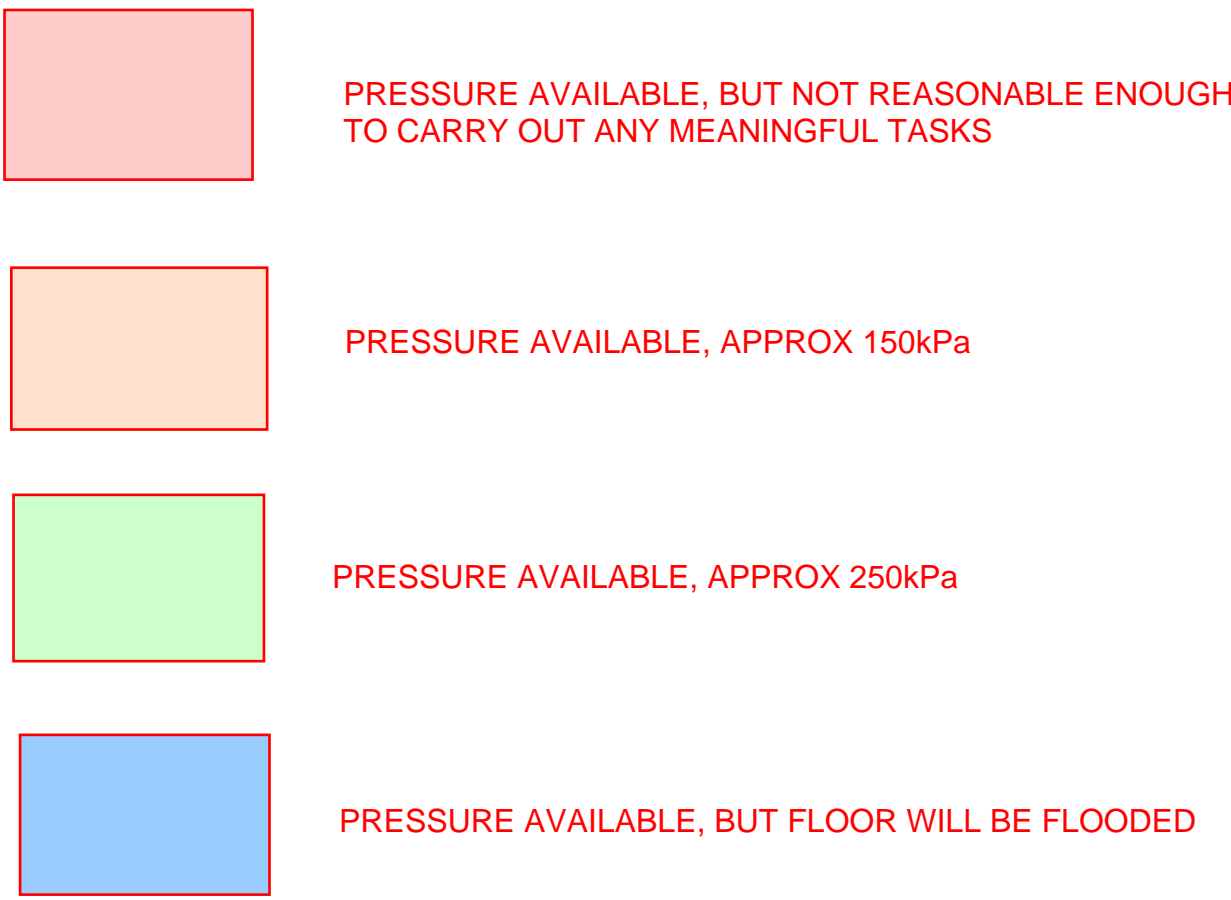
Yours faithfully,  
**ACOR CONSULTANTS PTY LTD**

A handwritten signature in blue ink, appearing to read 'Rhys Edwards', with a long horizontal flourish extending to the right.

Rhys Edwards  
Hydraulic Team Leader | Senior Consultant  
[redwards@acor.com.au](mailto:redwards@acor.com.au)  
0421 760 925

Enclosed: Hydraulic Services Mitigation Plans

COLOUR CODING LEGEND



NA240565 - IMHC - HYDRAULICS

FLOOD MITIGATION STRATEGY - DOMESTIC COLD WATER (ESSENTIAL SERVICE)

ACOR / CENTRAL PLUMBING

R.EDWARDS

15 NOV 2024

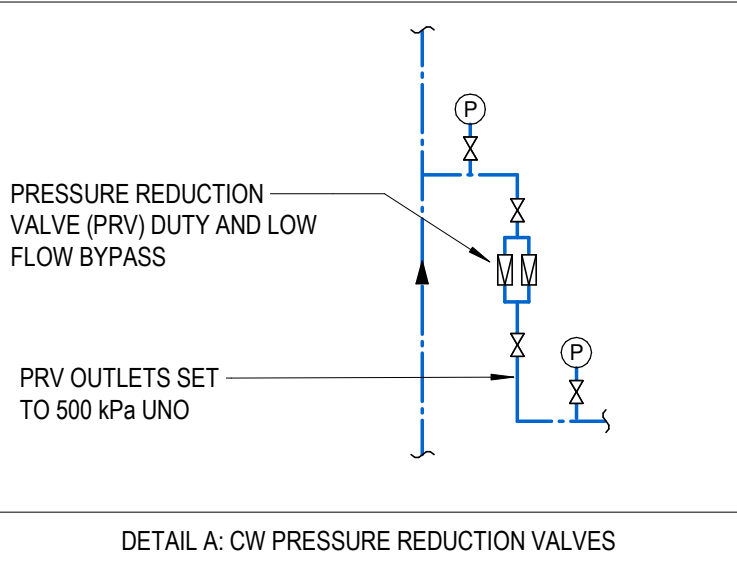
NOTES:

- PIPE SIZES ARE NOT FINAL AND ARE SUBJECT TO ONGOING DESIGN DEVELOPMENT.
- PRVs AND SUBSIDIARY METERS ARE LOCATED IN ACCESSIBLE RISERS.
- REFER TO PLANS FOR DETAILED FLOOR LAYOUTS AND QUANTITIES OF FIXTURES AND VALVING. THIS SCHEMATIC IS FOR GUIDANCE / INFORMATION ONLY.

DESIGN CRITERIA

HYDRAULIC SERVICE	DESIGN STANDARD OR GUIDE
DOMESTIC COLD WATER	NCC 2022 Vol1 & Vol3 AS3500.1.2021, HEALTH INFRASTRUCTURE GUIDELINES

ITEM	PARAMETER
WORKING VELOCITIES IN WATER SERVICES PIPES	MAX 1.5m/s
MAXIMUM OPERATIONAL WATER PRESSURE	500 kPa
MINIMUM OPERATIONAL WATER PRESSURE	250 kPa



Statement of Available Pressure and Flow

Matthew Stivala  
151 Clarence Street  
Sydney, 2000

Attention: Matthew Stivala Date: 06/10/2021

Pressure & Flow Application Number: 1241982  
Your Pressure Inquiry Dated: 2021-09-15  
Property Address: 166-174 Hawkesbury Road, Westmead 2145

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

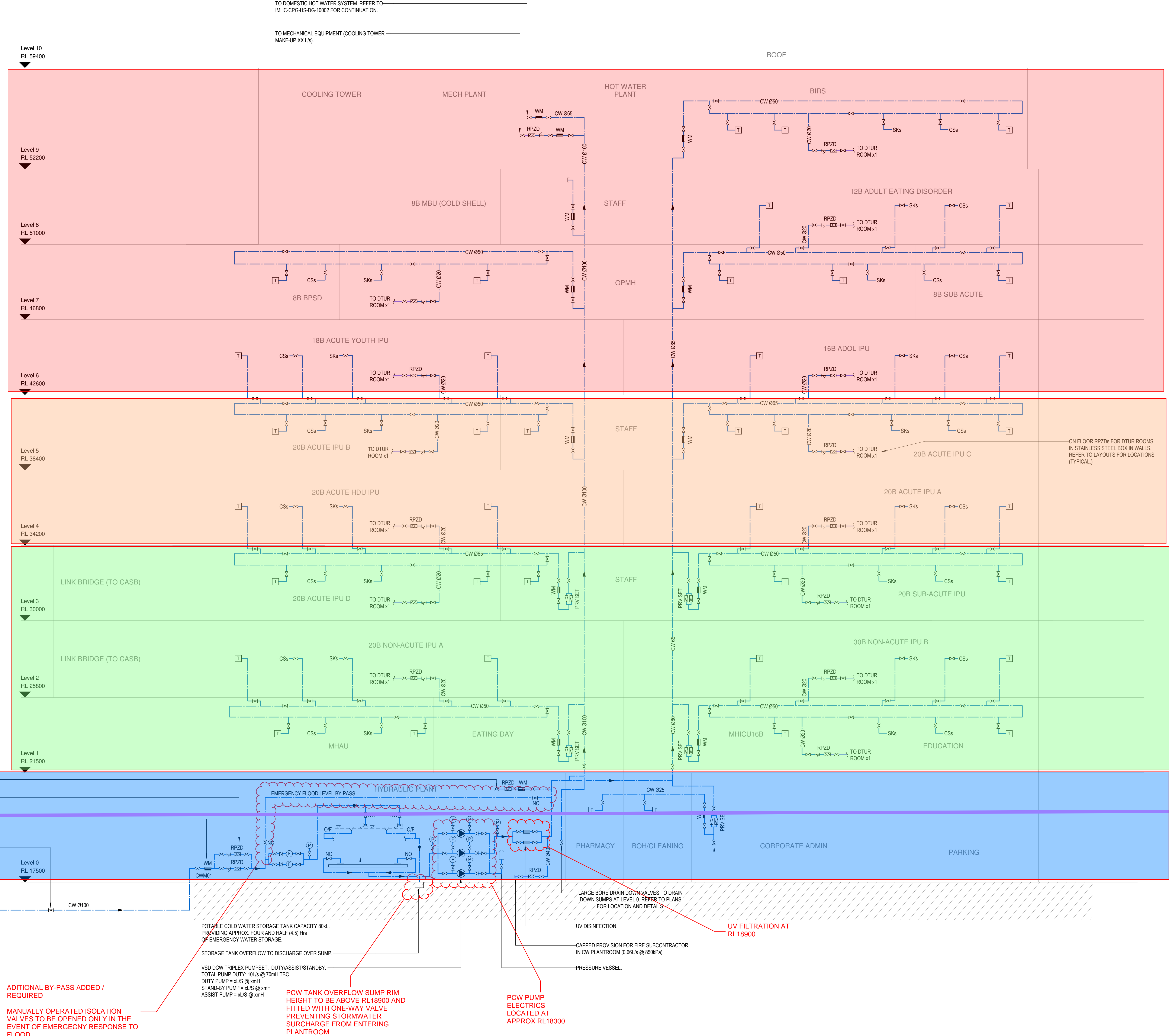
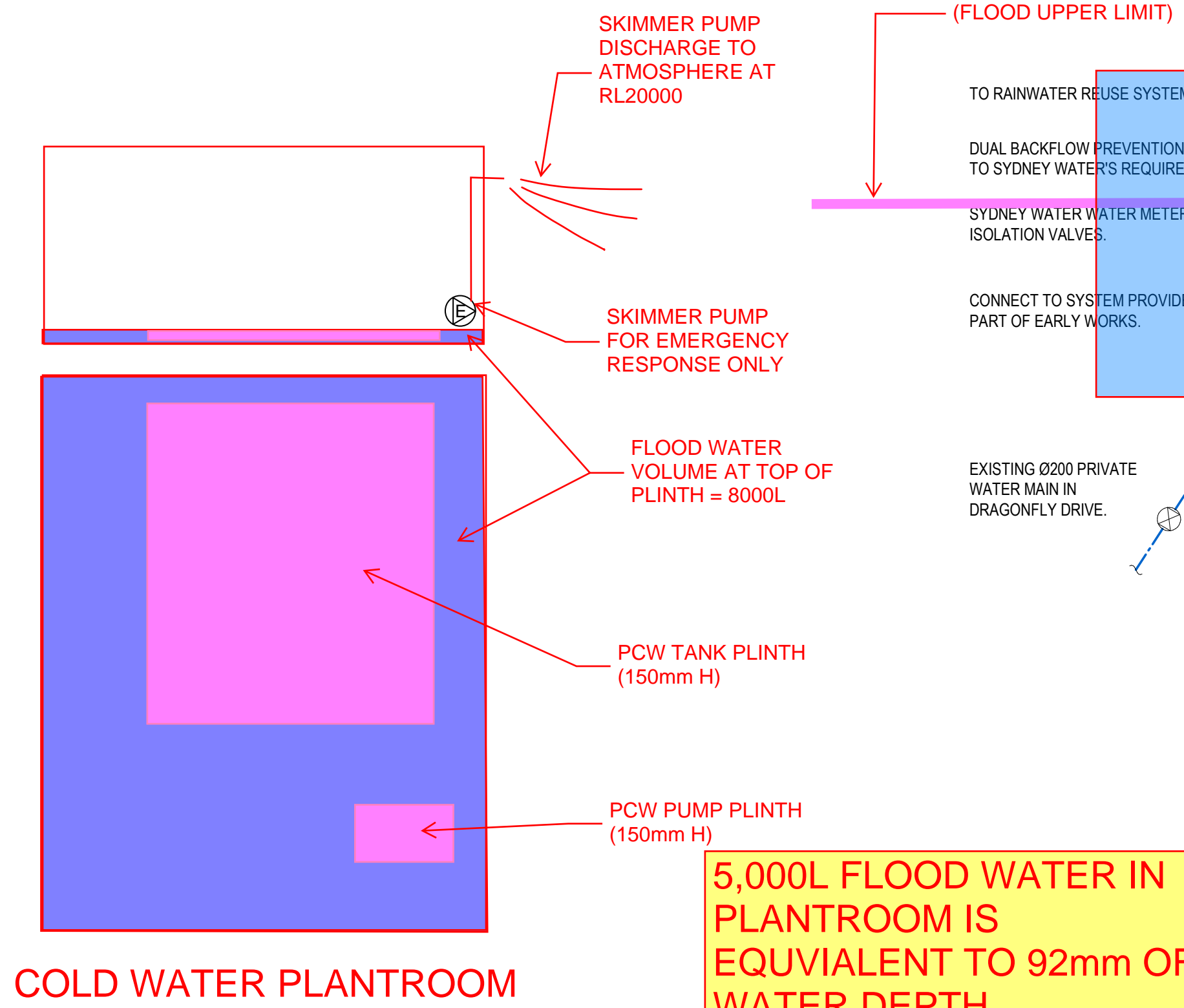
Street Name: Darcy Road	Side of Street: East
Distance & Direction from Nearest Cross Street	15 metres South from Mons Road
Approximate Ground Level (AHD):	18 metres
Nominal Size of Water Main (DN):	200 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	98 metre head
Minimum Pressure	35 metre head

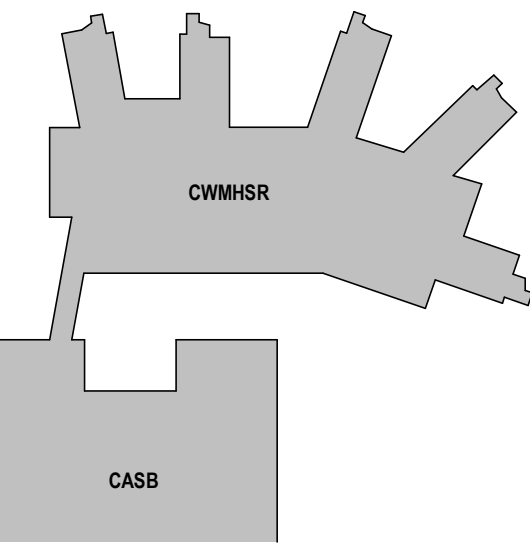
With PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	35
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5 10 15 20 26 30 40	40 39 39 38 37 37 35
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	5 10 15 20 26 30 40	34 33 32 31 30 29 27
Maximum Permissible Flow	44	26

(Please refer to reverse side for Notes)



02 16/11/24 SCHEMATIC DESIGN - FOR INFORMATION ISSUE  
01 07/11/24 SCHEMATIC DESIGN - FOR INFORMATION ISSUE  
REV DATE

KEY PLAN



HYDRAULIC FIRE



CLIENT



PROJECT MANAGER

ARCHITECT

Jacobs

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North Sydney NSW 2060  
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Web: jacobsc.com

PROJECT  
CUMBERLAND WEST MENTAL HEALTH  
SERVICES RELOCATION - INTEGRATED  
MENTAL HEALTH CENTRE

DRAWING TITLE  
HYDRAULIC SERVICES  
COLD WATER SCHEMATIC

STATUS

PRELIMINARY ISSUE

DRAWN MS	DESIGNED RE	CHECKED RE
APPROVED RE	DATE 08.11.24	
SCALE		

REVISIONS  
NA240565  
IMHC-CPG-HS-DG-10001

NOT FOR CONSTRUCTION