

Macquarie University
**Macquarie University Central
Courtyard Precinct (MUCCP)
Redevelopment – State Significant
Development Application**
Utilities Management Plan

251278-00

Issue | 20 October 2017

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 251278-00

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1 Introduction

This report supports a State Significant Development Application (SSDA) submitted to the Department of Planning and Environment (DP&E) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

Macquarie University (MU) is seeking development consent for the first phase of the Macquarie University Central Courtyard Precinct (MUCCP) redevelopment. Under this application consent is sought for redevelopment of Building C10A, construction of two student accommodation buildings (Buildings R1 and R2) and redevelopment of the landscaped Central Courtyard.

2 Background

MU is a teaching and research institution of international, national and state significance. It is ranked among the top two per cent of universities in the world and holds a 5-star QS rating. MU is renowned for its innovative research and its commercial partnerships, with more than 100 leading companies located on Campus or in the surrounding Macquarie Park high-tech precinct.

The University was founded in 1964 and has since grown into a large research university with over 30,000 students and 3,000 staff. More than \$1 billion has recently been invested in MU facilities and infrastructure to ensure students and staff can thrive in an inspiring and technologically advanced learning environment.

In March 2014, MU adopted the ‘Macquarie University Campus Master Plan 2014’. The Master Plan builds on the approved MU Concept Plan 2009 and sets out the physical framework to accommodate the University’s predicted needs, while ensuring flexibility into the future and enhancing the existing qualities of the University’s Campus. Ongoing changes in teaching methodologies, new course opportunities, a desire to increase industry engagement and the potential for commercial opportunities on the Campus were all key considerations in the development of the Master Plan.

3 Site Description

The MUCCP is situated in the centre of the University campus, within Precinct A. The MUCCP currently contains Buildings C9A and C10A (the Student Hub) which are subject to a separate demolition DA to City of Ryde Council, Buildings C8A, C7A and the landscaped Central Courtyard. The MUCCP is a key component of the University campus.

Figure 1 shows the location of the MUCCP within the context of the University campus.

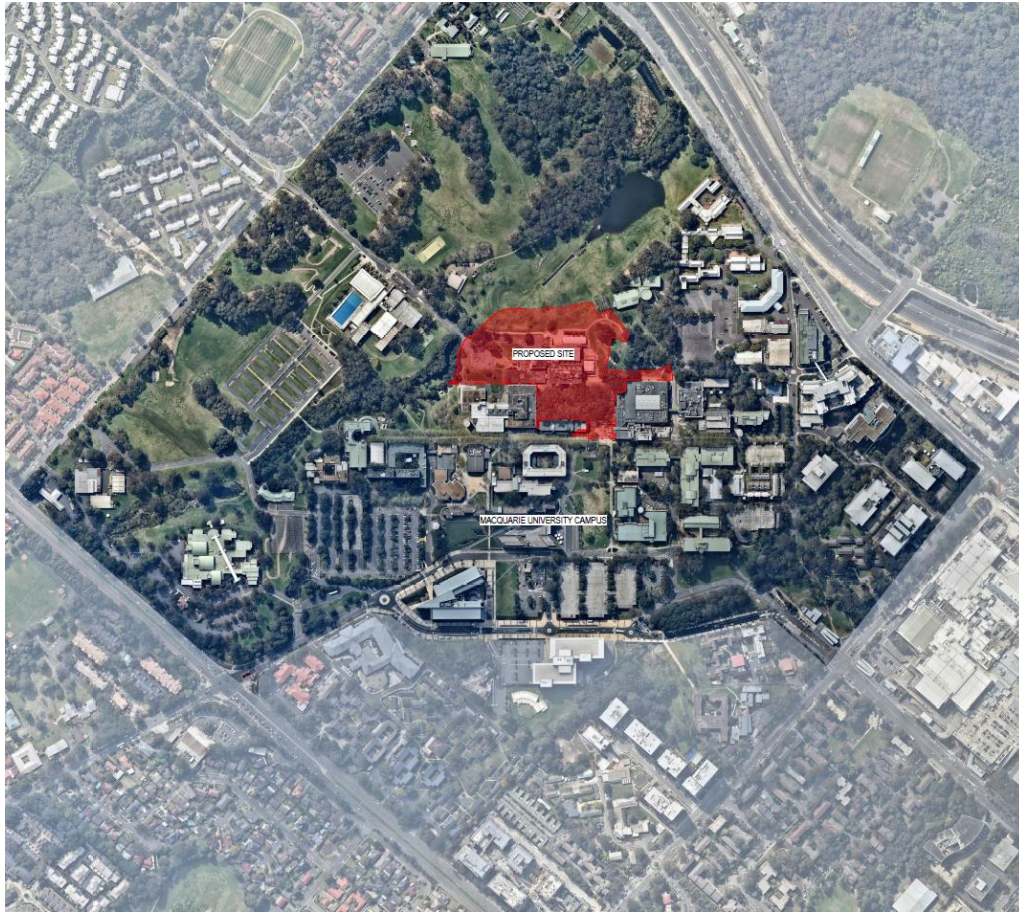


Figure 1 - Location of the site

4 Overview of the Proposed Development

In accordance with the Master Plan, MU has identified the opportunity to move student accommodation to the heart of the campus. The Master Plan also acknowledges the importance of the MUCCP, and the need to retain the Precinct as a key focus of the University's civic and administrative functions, with active edges for retail, and food and beverage uses.

MU is seeking to secure development consent for the first phase of the MUCC precinct redevelopment. Consent is sought for redevelopment of Building C10A (known as 1 Central Courtyard), construction of two student accommodation buildings (R1 and R2) and redevelopment of the landscaped Central Courtyard. The proposal comprises:

- Construction of a new, multi-storey Student Hub (1 Central Courtyard) in place of existing Building C10A, with ancillary retail uses.

- Construction of two student accommodation buildings (Building R1 and R2) to provide approximately 340 student beds and integrated academic uses.
- Redevelopment of the landscaped Central Courtyard.
- Construction of a shared basement including plant, loading and waste management facilities, end of trip facilities and accessible parking.
- Installation of a new substation.
- Installation of utilities and services to accommodate the proposed development.
- Upgrade of the western extent of Science Road to accommodate fire brigade access.
- Tree removal and landscaping.

The extent of the SSDA works is shown in Figure 2.

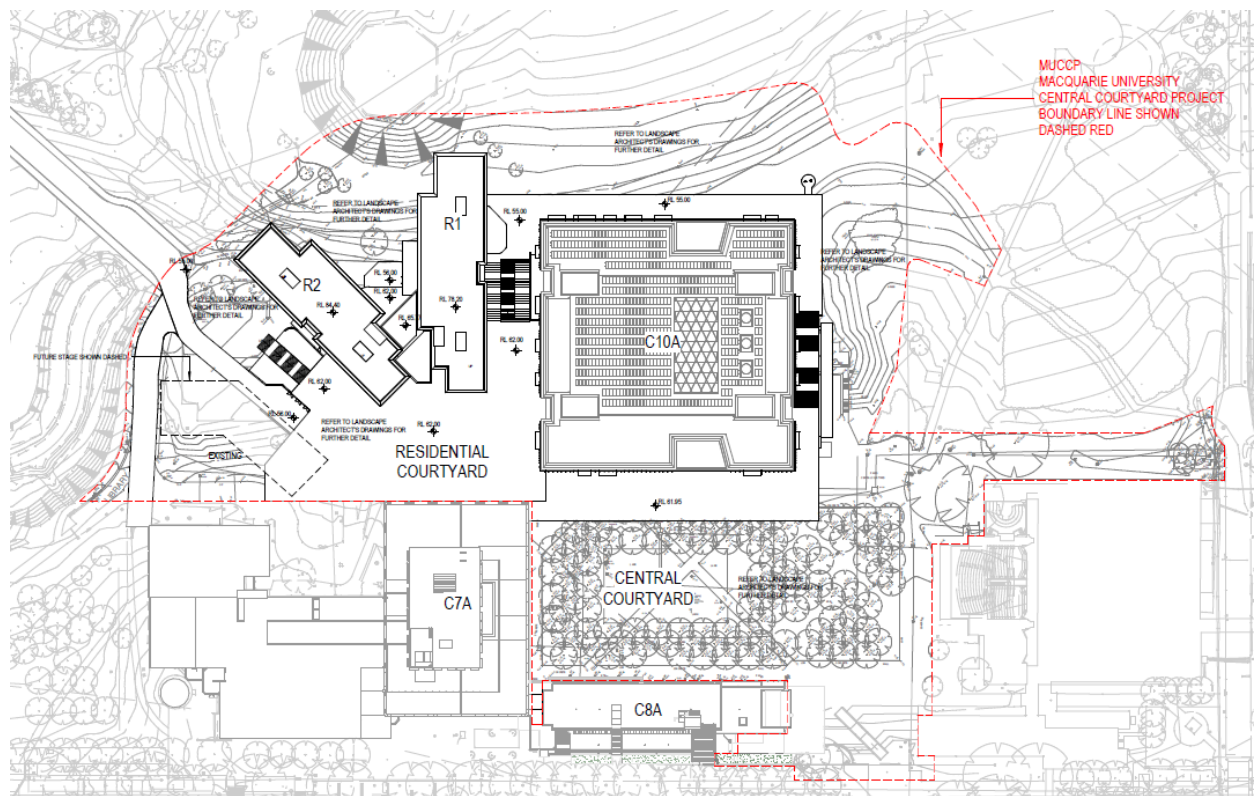


Figure 2 – Extent of the MUCCP SSDA

5 Utilities

5.1 General

Refer attached utility services sketch for services connection intent.

5.2 Electricity

Macquarie University has accepted an offer from Ausgrid for the establishment of a new 4.5MVA Surface Chamber Substation. Macquarie University has informed and applied for the full capacity of the new substation from Ausgrid, which under Ausgrid's current limits provides a 5,600-amp supply.

Ausgrid has approved the application and established a new Ausgrid project number (SC12106).

In addition, Macquarie University has provided the following information to Ausgrid, in order to assist the Authority's determination and approval of the connection application. That being: -

- Electrical load on the existing 4.5MVA substation S8723 will progressively be unloaded and the substation decommissioned in 2019.
- A second application for a smaller 3MVA chamber substation will follow in approximately six months' time.
- The second application is for a smaller substation to replace the decommissioned S8723
- The estimated load for the second substation is 1.1MVA.

Ausgrid has verbally confirmed that there is sufficient capacity in the existing HV cables serving the campus via Gymnasium Road. This will be formalised by Ausgrid during the detailed design process,

5.3 Communications

Fibre to the precinct will be provided from the University's existing Optical fibre network.

Copper cabling to the precinct will be provided from the University's existing copper network.

We will be lodging an application to NBN to obtain NBN services to each of the new residential buildings.

5.4 Water

Macquarie University confirms there are no issues with the existing campus private water network infrastructure's ability to supply the project at current Sydney Water street mains pressure. The private network is monitored for flow

and pressure on the campus BMS system. The private network is also modelled by DBA with 6 monthly updates performed on the model for data downloaded from Sydney water to update the model.

Previous modelling has shown there is more than ample capacity within the existing infrastructure, to supply adequate flow and head.

Sustainability initiatives including rainwater recycling will be used to reduce water consumption within the MUCCP project. Refer to separate ESD report prepared for this SSDA.

No Sydney Water assets are located within the site boundary and there will be no adverse impacts on authority assets as part of these works.

5.5 Gas

In addition to the original 100Kpa campus gas supply, two new 210kpa unmetered Gas Inlet Services have been run into the campus. One along University Avenue for precinct E and one along Gymnasium road for the MUCCP project. The gymnasium supply currently has a restriction at the Culloden road intersection. Limited by the size of the service 38mm isolating valve on Culloden road. The valve is currently programmed for replacement (75mm valve) under a separate project with Jemena, to increase the capacity of the 90mm bore / 110mm OD service running down Gymnasium road, to service the MUCCP project.

5.6 Sewer

In regards to any sewer upgrade requires, we are proposing to connect directly to the Sydney Water pipework at Mars creek instead of connecting to any existing Macquarie University sewer pipework.

As the connection point is a Sydney Water asset, Macquarie University will engage a water service coordinator (WSC), who will work directly with Sydney Water to assess the requirement to upgrade the sewer line.

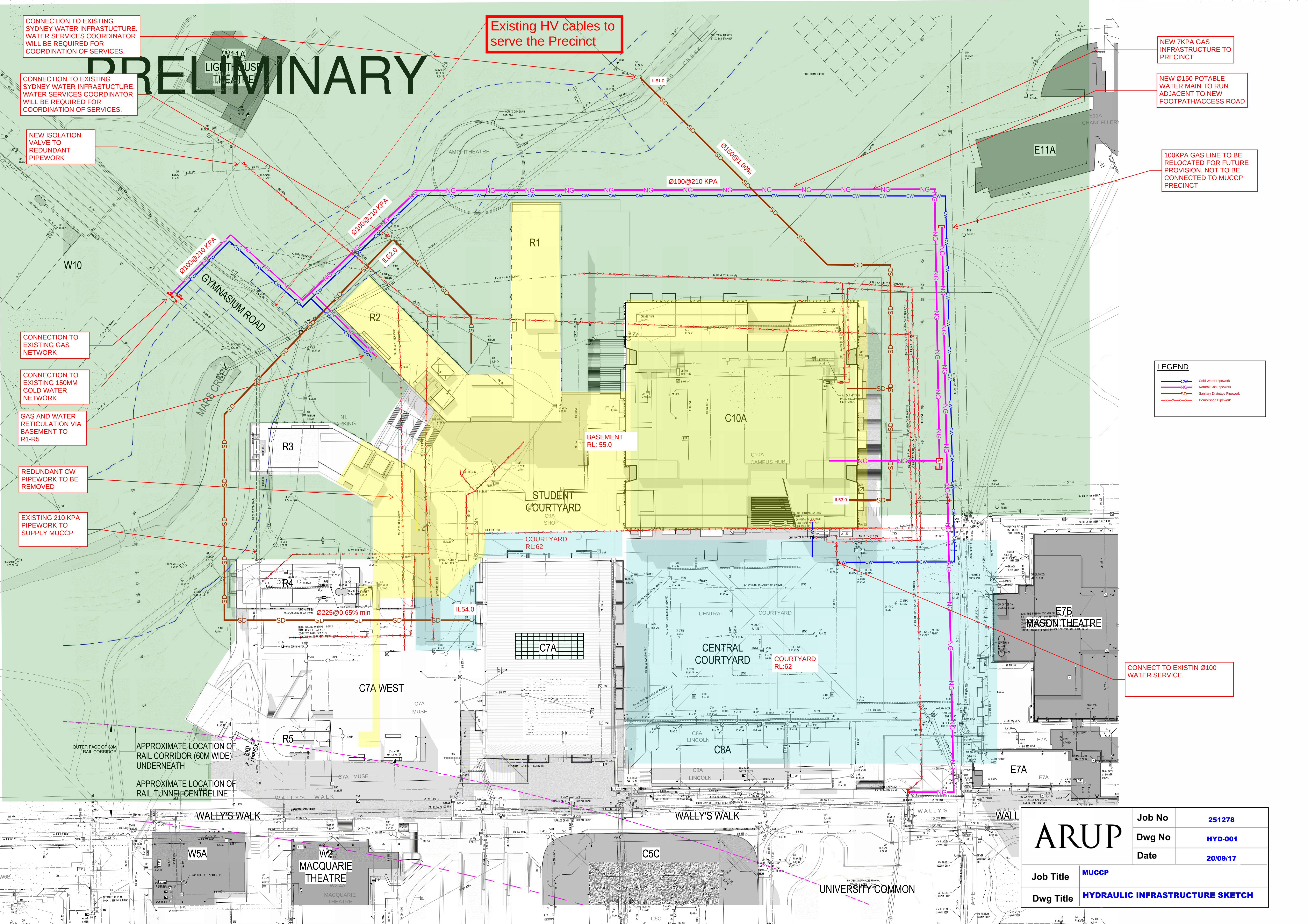
No Sydney Water sewer assets are located within the site boundary and there will be no adverse impacts on authority assets as part of these works.

EXISTING 210 KPA
PIPEWORK TO
SUPPLY MUCCP

100KPA GAS LINE TO BE RELOCATED FOR FUTURE PROVISION. NOT TO BE CONNECTED TO MUCCP PRECINCT

 CW Cold Water Pipework
 NG Natural Gas Pipework
 SD Sanitary Drainage Pipework
 X-X-X-X Demolished Pipework

CONNECT TO EXISTIN Ø100
WATER SERVICE.



Dwg Title	HYDRAULIC INFRASTRUCTURE SKETCH
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