



13th December 2022

TAMWORTH MENTAL HEALTH UNIT MAIN WORKS HYDRAULIC SERVICES UTILITY SERVICES REPORT

HYDRAULIC SERVICES TAMWORTH MENTAL HEALTH UNIT – MAIN WORKS Utility Report

01	13 th December 2022	Utility Report
Rev #	Date	Description

APPROVALS

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1 INTRODUCTION

Warren Smith Consulting Engineers (WSCE) have been engaged by Health Infrastructure to prepare a Utility Services Report for the proposed works of Tamworth Mental health Unit at Tamworth Hospital relating to the hydraulic services.

The Tamworth Hospital site ("the site") is located at Dean Street, North Tamworth NSW 2340, shown in **Figure 1** (approximate site location identified in red). The site is encompassed by Johnston Street on the south and Dean Street on the east,



Figure 1: Aerial view of property boundary (Source: Google Maps)

The proposed development is new medical facility called the Tamworth Mental Health Unit, shown in blue on Figure 1 and Figure 2.

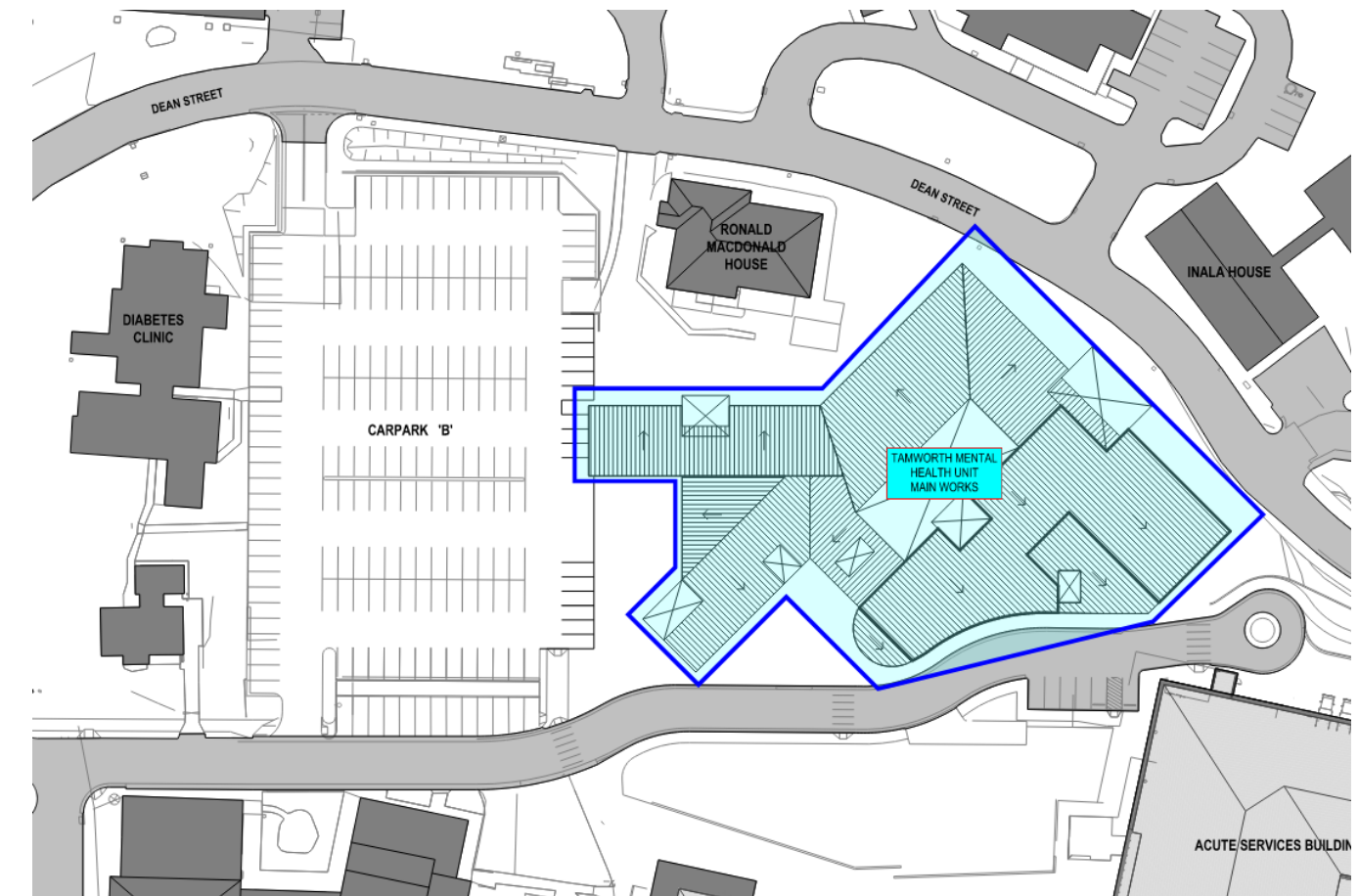


Figure 2: Site Layout with the footprint of the new Tamworth Mental Health Unit

2 DEMOLITION

To enable space for the new development, three buildings are to be demolished: two Rotary Lodge buildings and the Staff Accommodation Building. Shown in Figure 3. The Rotary Lodges are used for accommodation for patient family and friends, and there are 10 rooms in total. Each building has a communal kitchen and laundry facility. The Staff Accommodation has four rooms with a communal kitchen and laundry.

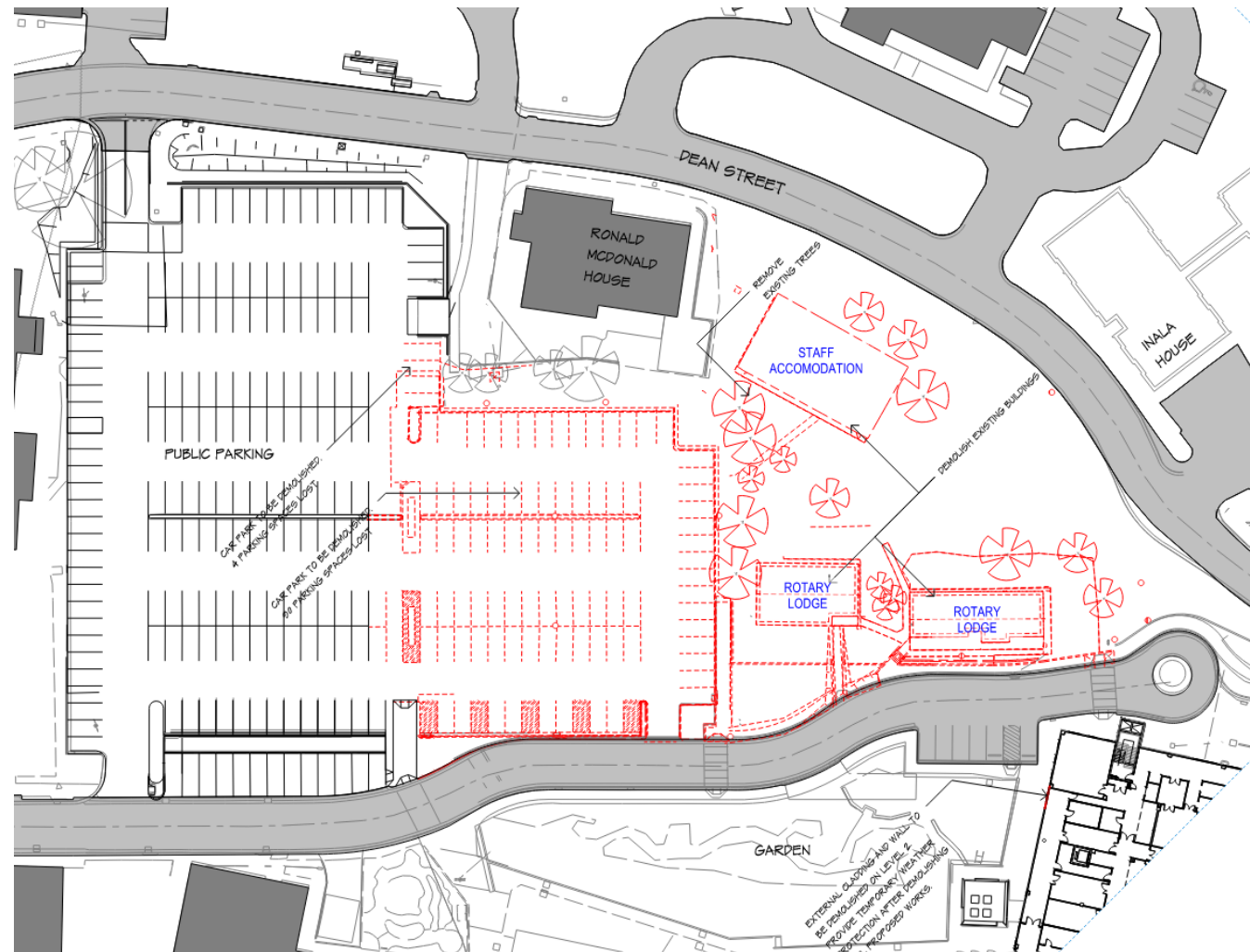


Figure 3: Demolition Layout Plan (STH Architects)

3 HYDRAULIC SERVICES DEMAND CALCULATIONS

3.1 WATER DEMAND CALCULATIONS

The calculations below are to inform the Network Utility Operator of the water and sewer demand changes caused by the development.

3.1.1 ROTARY LODGE BUILDINGS – COMMUNAL ROOMS - TO BE DEMOLISHED

Due to the demolition of the Rotary Lodge Buildings, there is a reduced water demand. The average daily water demand for the combined Rotary Lodge Buildings has been calculated using Water Directorate, which shows that the demand to be calculated is based on the number of Rooms. A summary of average daily water demand for this building classification is given in Table 3-1.

Table 3-1 Average Daily Water Demand per Room

Classification	Metric Unit	Average Water Demand (ET)
Accommodation - Motel	Rooms	0.3 ET

This data was used to calculate the total demand for both the Rotary Lodge buildings and is surmised in Table 3-2.

Table 3-2 Average Daily Water Demand for Rotary Lodge Buildings

Total Rooms	Average Demand (ET)	Total Average Daily Water Demand (ET)
10	0.3	3 ET

3.1.2 STAFF ACCOMODATION – TO BE DEMOLISHED

Due to the demolition of the Staff Accommodation, there is a reduced water demand. The average daily water demand for the Staff Accommodation Building has been calculated using Water Directorate, which shows that the demand to be calculated is based on the number of rooms. The building resembles a Boarding House with communal kitchen and laundry. A summary of average daily water demand for this building classification is given in Table 3-3.

Table 3-3 Average Daily Water Demand per Bed

Classification	Metric Unit	Average Water Demand (ET)
Accommodation – Boarding House	Beds	0.33 ET

This data was used to calculate the total demand for the Staff Accommodation itself and is surmised in Table 3-4

Table 3-4 Average Daily Water Demand for Staff Accommodation

Total Beds	Average Demand (ET)	Total Average Daily Water Demand (ET)
4	0.33	1.32 ET

3.1.3 TAMWORTH MENTAL HEALTH UNIT – NEW DEVELOPMENT

The water demand for the Tamworth Mental Health Unit has been calculated using the Water Directorate, which shows that the demand to be calculated based the number of beds. The new development is a medical facility that houses patients with medical needs. The use of the building most resembles a Medical Hostel. A summary of average daily water demand for this building classification is given in Table 3-5.

Table 3-5 Average Daily Water Demand per Bed for Medical Hostel

Classification	Metric Unit	Total Average Daily Water Demand (ET)
Accommodation – Hostel (Medical)	Beds	0.7 ET

This data was used to calculate the total demand for the Tamworth Mental Health Unit is surmised in Table 3-6.

Table 3-6 Average Daily Water Demand for Tamworth Mental Health Unit

Total Beds	Average Demand (ET)	Total Average Daily Water Demand (ET)
37	0.7	25.9 ET

3.1.4 TOTAL WATER DEMAND

The total additional water demand for the Tamworth Hospital – Main Works development is 13.6 kL/day and surmised in Table 3-7

Table 3-7 Total Additional Water Demand for Tamworth Mental Health Unit – Main Works

Rotary Lodge Buildings	Staff Accommodation	Tamworth Mental Health Unit	Total
-3 ET	-1.32 ET	25.9 ET	21.58 ET

*Standard Water ET = 230 kL/annum or 630 L/day as stated in the Water Directorate

3.2 SEWER DRAINAGE DISCHARGE CALCULATIONS

3.2.1 ROTARY LODGE BUILDINGS - TO BE DEMOLISHED

Due to the demolition of the Rotary Lodge Buildings, there is a reduced sewer demand. The average daily sewer demand for the combined Rotary Lodge Buildings has been calculated using Water Directorate, which shows that the demand to be calculated is based on the number of Rooms. A summary of average daily sewer demand for this building classification is given in Table 3-8.

Table 3-8 Average Daily Sewer Demand per Room

Classification	Metric Unit	Average Sewer Demand (ET)
Accommodation - Motel	Rooms	0.45 ET

This data was used to calculate the total demand for the Rotary Lodge itself and is surmised in Table 3-9.

Table 3-9 Average Daily Sewer Demand for Rotary Lodge Buildings

Total Rooms	Average Demand (ET)	Total Average Daily Sewer Demand (ET)
10	0.45	4.5 ET

3.2.2 STAFF ACCOMODATION – TO BE DEMOLISHED

Due to the demolition of the Staff Accommodation, there is a reduced sewer demand. The average daily sewer demand for the Staff Accommodation Building has been calculated using Water Directorate, which shows that the demand to be calculated is based on the number of rooms. The building resembles a Boarding House with communal kitchen and laundry. A summary of average daily sewer demand for this building classification is given in Table 3-10.

Table 3-10 Average Daily Sewer Demand per Bed

Classification	Metric Unit	Average Sewer Demand (ET)
Accommodation – Boarding House	Beds	0.5 ET

This data was used to calculate the total demand for the Staff Accommodation itself and is surmised in Table 3-11.

Table 3-11 Average Daily Sewer Demand for Staff Accommodation

Total Beds	Average Demand (ET)	Total Average Daily Sewer Demand (ET)
4	0.5	2 ET

3.2.3 TAMWORTH MENTAL HEALTH UNIT – NEW DEVELOPMENT

The sewer demand for the Tamworth Mental Health Unit has been calculated using the Water Directorate, which shows that the demand to be calculated based the number of beds. The new development is a medical facility that houses patients with medical needs. The use of the building most resembles a Medical Hostel. A summary of average daily sewer demand for this building classification is given in Table 3-12.

Table 3-12 Average Daily Sewer Demand per Bed for Medical Hostel

Classification	Metric Unit	Total Average Daily Sewer Demand (ET)
Accommodation – Hostel (Medical)	Beds	1.11 ET

This data was used to calculate the total demand for the Tamworth Mental Health Unit is surmised in Table 3-13.

Table 3-13 Average Daily Sewer Demand for Tamworth Mental Health Unit

Total Beds	Average Demand (ET)	Total Average Daily Sewer Demand (ET)
37	1.11	41.07 ET

3.2.4 TOTAL SEWER DEMAND

The total additional Sewer demand for the Tamworth Mental Health Unit – Main Works development is 13,234L and surmised in Table 3-14.

Table 3-14 Total Additional Sewer Demand for Tamworth Hospital – Main Works

Rotary Lodge Buildings	Staff Accommodation	Tamworth Mental Health Unit	Total
-4.5 ET	-2 ET	41.07 ET	34.5 ET

*Standard Sewer ET = 140 kL/annum or 383.6 L/day as stated in the Water Directorate

3.3 GAS DEMAND CALCULATIONS

There are no changes to the gas demands for the site, as neither the existing buildings nor the new buildings have gas requirements.

4 HYDRAULIC SERVICES CONNECTIONS

4.1 WATER & SEWER

Existing water supply and sewer discharge connections will be retained for the proposed main works. These existing connection locations have been illustrated in Table 4-1 below.

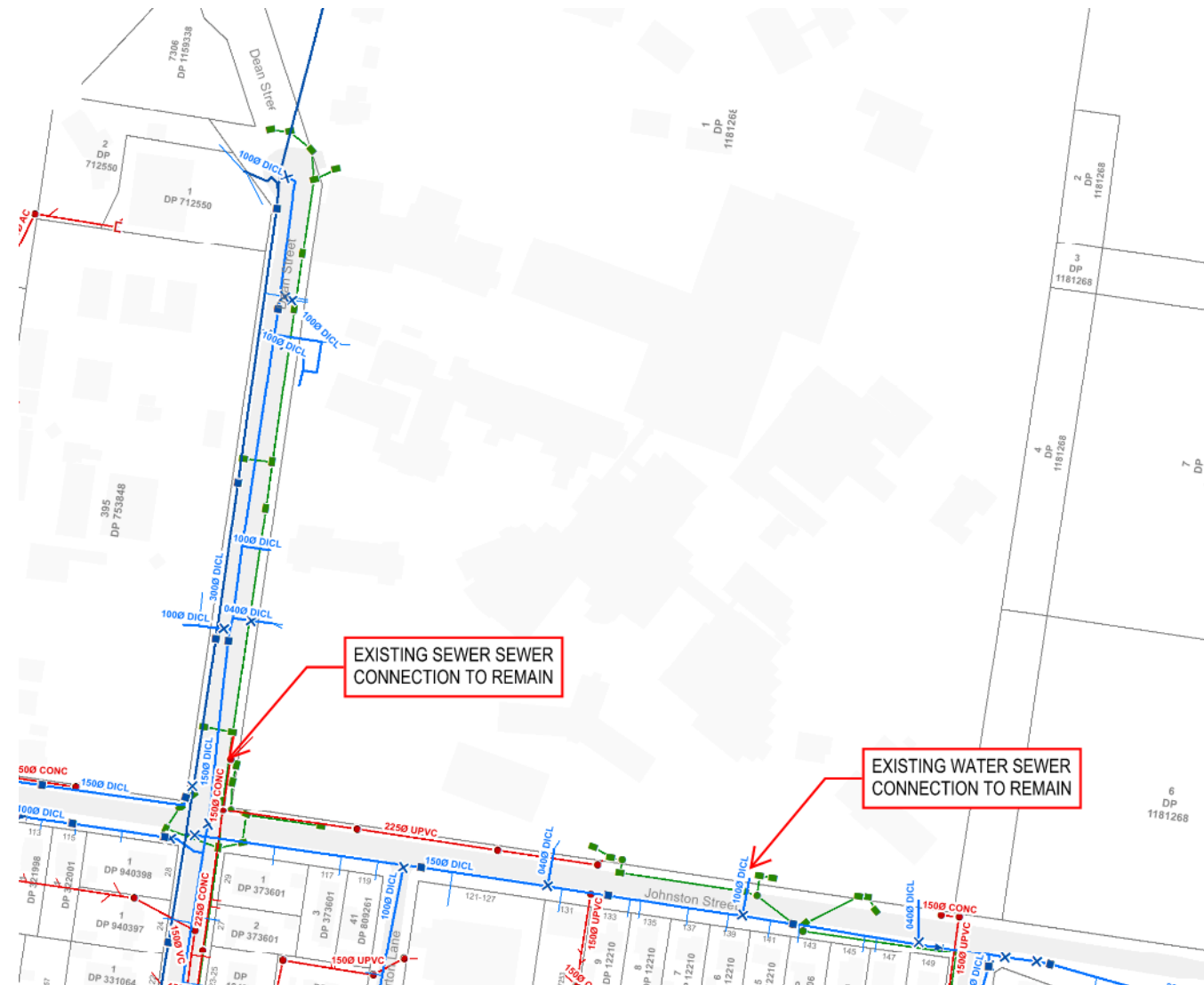


Table 4-1: Existing water and sewer connections

4.2 GAS

The existing gas connection will be retained for the proposed mains works.