UTILITIES REPORT

MOREE HOSPITAL REDEVELOPMENT– ASB

MECHANICAL, ELECTRICAL, HYDRUALIC SERVICES

JHA

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1. EXECUTIVE SUMMARY

This report has been prepared in accordance with the anticipated requirements listed in the "Environmental/Development Constraints and Required Reports-Moree Hospital Upgrade-V1" for Moree Hospital Redevelopment. Current draft REF deliverables pertaining to electrical & hydraulic services are noted as per below:

- Services report identifying any required augmentation/adjustments to essential services.
- Services Plans- Site Plan identifying any required augmentation/adjustments to essential services.

The scope of works currently encompassed within the REF:

Demolition of Building 5

The existing Building 5 is getting demolished.

New ASB

A new Acute Services Building (ASB) is getting built.

The associated infrastructure & utilities upgrades for engineering services form the basis of this report and are limited to the below:

- New power & communication supply to the proposed ASB Building.
- New power supply to Building 4 that is currently fed from Building 5.
- Rerouting of the fibre optic cables currently reticulating through Building 5.
- New authority sewer drainage connection point to convey the discharges from the proposed ASB Building.
- New authority cold water connection point to supply the potable water needs of the proposed ASB Building.
- Capping off cold & hot water supply and existing combined fire hydrant/hose reel supply from Building 5.
- Capping off and removal of sewer drainage connections from Building 5.
- Inground services diversion along proposed service yard of ASB Building.

This report has been prepared by JHA Consulting Engineers (Electrical & Hydraulic services) to identify, analyse & conclude the effects of existing infrastructure services & utilities on the hospital's operational performance. The primary objective of this analysis is to advise the client on necessary upgrades required to bring existing services up to an improved quality standard. It should be noted that medical gas, mechanical, and fire services have not been included within this report due to minimal interfacing with infrastructure.

This document and related work have been prepared following JHA Consulting Engineers Quality and Environmental Management Systems, which are based on AS/NZS ISO 9001 and ISO 14001.

2. INTRODUCTION

The objective of the Moree Hospital Redevelopment (MHR) Project is to align the recommendations of the endorsed CSP with new contemporary patient care facilities to support the adoption of new and improved models of care. The primary focus of this Project is to provide asset replacement through consolidation of services into a new two-story Acute Services Building (ASB). The ASB will be located on the south section of the existing site along Alice Street and provide a new main access to the campus.

The Project scope to redevelop Moree Hospital, in line with the CSP, include the master planning and delivery of the following:

- Emergency care services
- Overnight inpatient beds
- Operating theatre
- Imaging services
- Birthing suites
- Pathology shell space
- Clinical support services

In addition to the above clinical services, the redevelopment will also incorporate associated works such as:

- A new hospital main entry and Front of House
- Back of House services
- Modifications to existing carparking
- Landscaping
- decommissioning & demolition of redundant existing facilities
- A new substation, and
- A new loading dock & services yard area

3. MECHANICAL SERVICES

3.1 INFRASTRUCTURE ASSESSMENT

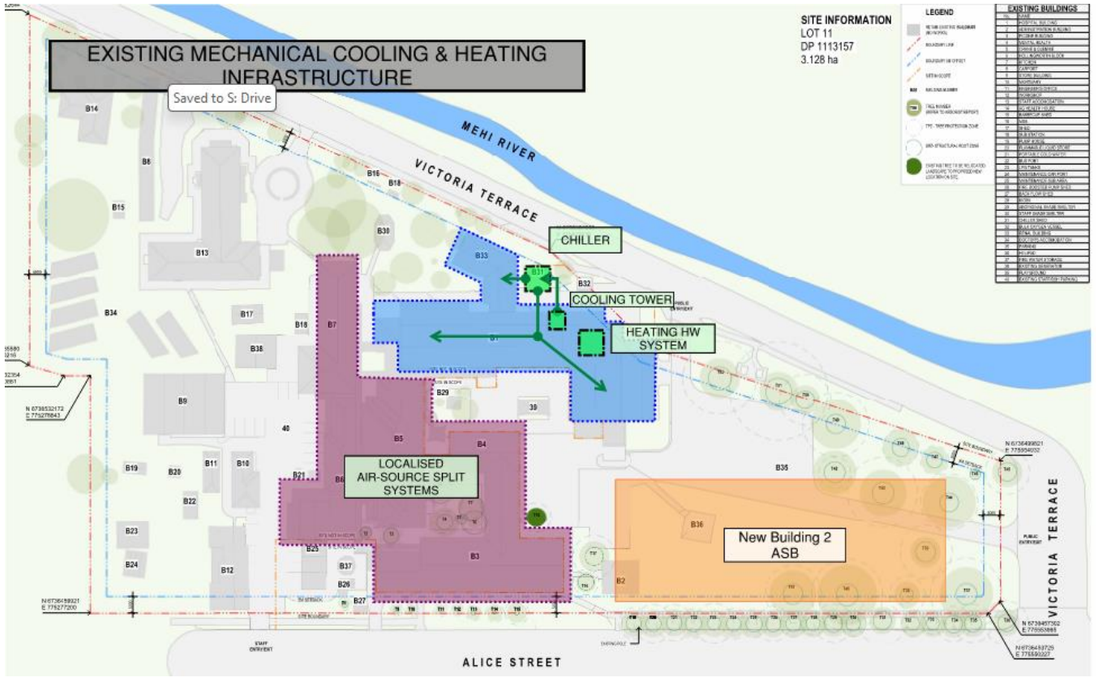


Figure 3-1: Mechanical service infrastructure across the hospital

3.1.1 EXISTING CENTRAL ENERGY / PRIMARY PLANT CONFIGURATION

3.1.1.1 Chilled Water System

The current cooling and heating needs of the site are provided through a combination of a centralised water-based system and traditional air-cooled DX systems. The existing renal building (Building 33) and acute services building (Building 1) is served by a water-cooled chilled water system, while the other buildings on the site are equipped with localised DX systems for the cooling and heating demand.

A section of the ground floor in the existing building, specifically the maternity department, has been disconnected from the chilled water system and is currently being served by three in-ceiling ducted DX systems. Similarly, the renal department, which is a recent addition to the existing building, is connected to the existing chilled water circuit.

The existing chilled water system is appeared to be in good condition and is approximately 7 years old. It is expected to continue operating adequately with regular maintenance.

The current cooling thermal plant consists of:

- One Smardt WA044 (R134a) water-cooled chiller with a capacity of 400 kW.
- Two chilled water pumps.
- Two condenser water pumps.

The cooling tower serving the chiller is installed on the roof of the building 1 and appear to be in fair condition.

Figure 3-2: Existing Chiller & CT Plant

3.1.1.2 Space Heating Hot Water System

The existing Building 1 and Building 33 utilises two LPG gas-fired water boilers, which are situated in the central AHU roof plantroom. These boilers serve the purpose of providing space heating as well as supplying heat to a set of heat exchangers that meet the domestic hot water needs of the site.

The heating boilers have a total capacity of 540 kW. This capacity is allocated to fulfill the space heating requirements of the existing main building, as well as to meet a domestic demand of 360 kW for hot water usage.

Figure 3-3: Existing Heating Hot Water Plant

3.2 DESIGN PRINCIPLES

3.2.1 CONSIDERATION OF THE EXISTING BUILDING 1 CENTRAL THERMAL ENERGY PLANT (CEP) & THE NEW LOCALISED CEP TO SERVE THE ASB

The current building planning indicates that part of the Building 1 would be retained and repurposed for alternative used. The extent of the planning is un-clear at the current stage. It is therefore envisaged that the existing CEP serving Building 1 and Building 33 shall remained to facilitate the continuous operation.

The new Building 2 ASB is proposed with new localised CEP to cater for the cooling and heating demand for the following considerations:

- Allow the continuous operation of the existing Building 1 CEP system to serve the Building 33 Renal and provide flexibility for future refurbishment / redevelopment of Building 1
- The existing CEP capacity is insufficient to cater for the addition of the new ASB. Expansion of the existing CEP will be required.
- A local new CEP at the ASB independent from existing Building 1 CEP will alleviate the reliance on the existing infrastructure and the need expansion through site
- New ASB CEP will be provided with suitable redundancy to facilitate the critical area operation within the new ASB should part of the system is not operational.
- Alleviate the new for upgrading the existing Building 1 CEP control interface to the new ASB

Based on the above, it is recommended that the new Building 2 ASB to be provided with dedicated central chilled water and space heating hot water.

3.2.2 ELECTRIFICATION OF SYSTEMS

The existing heating system relies on Three (3) LPG storage tanks to facilitate the space heating and domestic hot water heating.

Design directive of utilising the electrical heat pump technology in lieu of reliance of the fossil fuel heating system is proposed. This is also conformed with the HI's initiatives and the initial design provision put forth during the previous services design concept.

As a result, design principle for heating systems by utilising electrical driven heating hot water generation has developed. Electric heat pumps have been proposed for mechanical heating.

3.3 PROPOSED WORKS TO ACUTE SERVICES BUILDING (ASB)

3.3.1 OVERVIEW

The construction of the new Acute Services Building (ASB) will require the following Mechanical Services works to be undertaken:

- External Cooling and Heating plant (CEP). Foundation / Structural support for these plant to be constructed adjacent Building 3 and Building 6
- Demolition of maintenance shed, existing fire tank and pumps
- New structural for the CEP and associated pump systems. Pump systems to be provided with enclosure
- Trenching for pipework and cable reticulation from the location of the CEP to ASB

3.3.2 PROPOSED CEP LOCATION

During the Schematic Design phase, various options for plant room location and arrangement was instigated. The current Mechanical CEP location is shown per below excerpt:

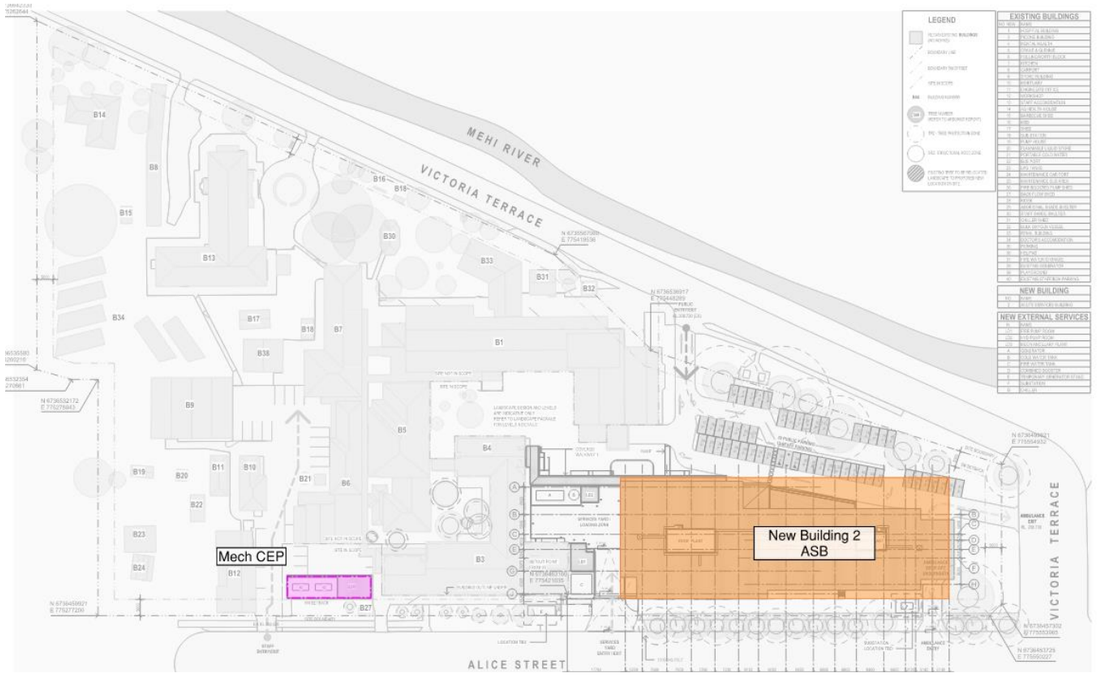


Figure 3-4: Mechanical CEP (in Pink) Location to ASB (in Orange)

3.3.3 DEMOLITION WORKS

To facilitate the installation of the mechanical CEP, the following existing structural / facilities will require to be demolished.

- Standalone maintenance shed
- Existing fire tank
- Existing fire pump

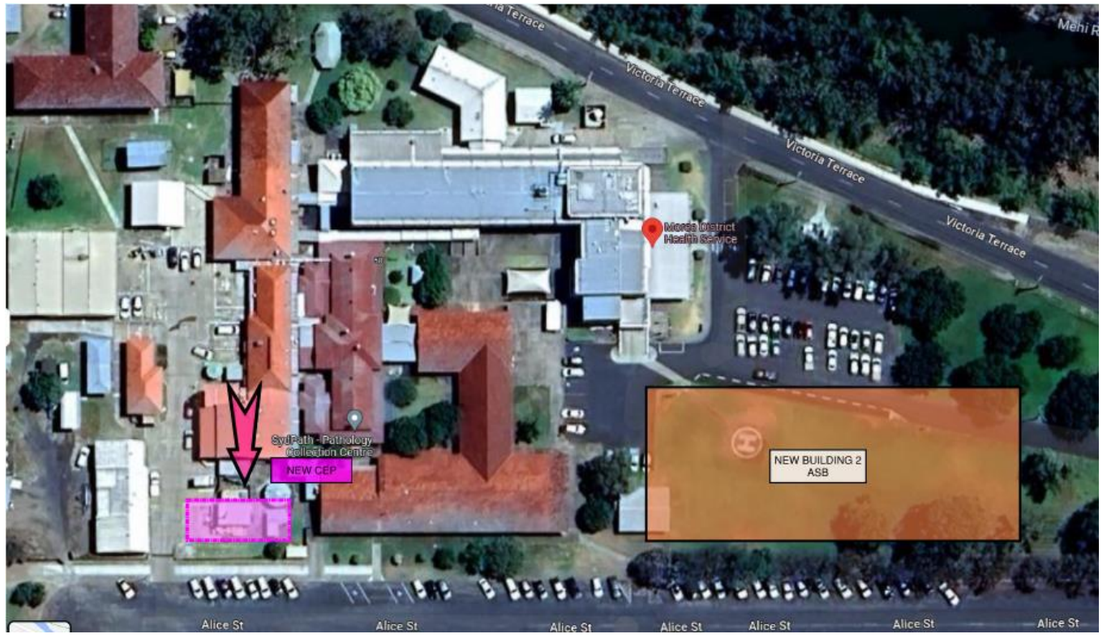


Figure 3-5: Mechanical CEP (in Pink) against existing facilities to be demolished

It is anticipated that a new fire system will be in place and commissioned prior to the demolition of the existing fire tank and pump.

3.3.4 CHILLED WATER (CHW) & HEATTING WATER (HHW) PIPE RETICULATION

- Two set of CHW and HHW pipes will be provided between the Mech CEP and ASB
- BMCS cable will be installed
- Power submain from ASB to Mech CEP will be installed
- Concrete trench along Alice Street from the Mech CEP to ASB will be constructed for the installation of pipes and cable. Trench indicated in Blue.

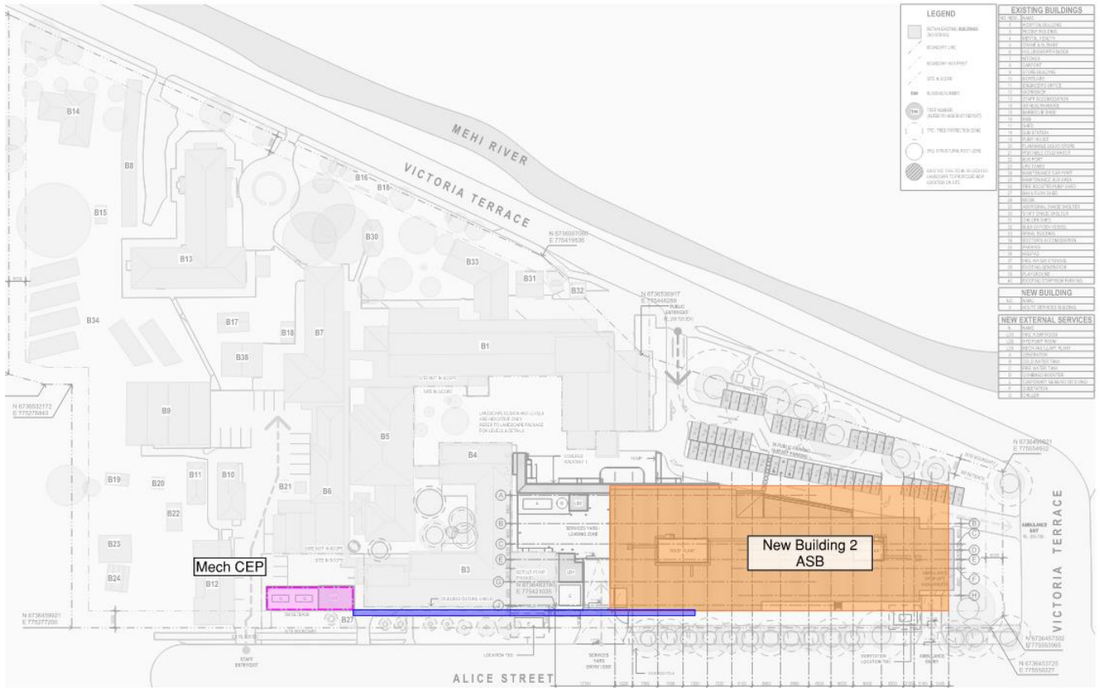


Figure 3-6: Mechanical Pipe Trench in Blue

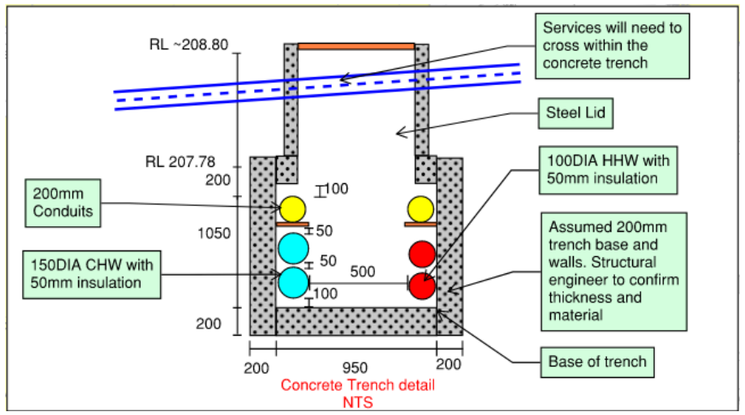


Figure 3-7: Nominal Trench Concept Arrangement

4. ELECTRICAL SERVICES

Electrical Infrastructure & utilities to be assessed within this REF report include:

- Overview of existing electrical & communications infrastructure
- Rerouting of existing fibre optic cables currently reticulating through Building 5
- New power supply to Building 4 that is currently fed from Building 5
- Electrical & Communications Utility services to the proposed ASB

4.1 INFRASTRUCTURE ASSESSMENT

4.1.1 ELECTRICAL SERVICES

4.1.1.1 Existing infrastructure

Substation and Generator

The existing hospital is a Low Voltage (LV) customer, whereby Essential Energy has ownership of the electrical substation currently supplying power to the site and requires easements over substations and HV cabling. Currently, the site is being served by 1-off substation and 1-off standby diesel generator. The locations of this infrastructure and the areas served are shown in the below image.

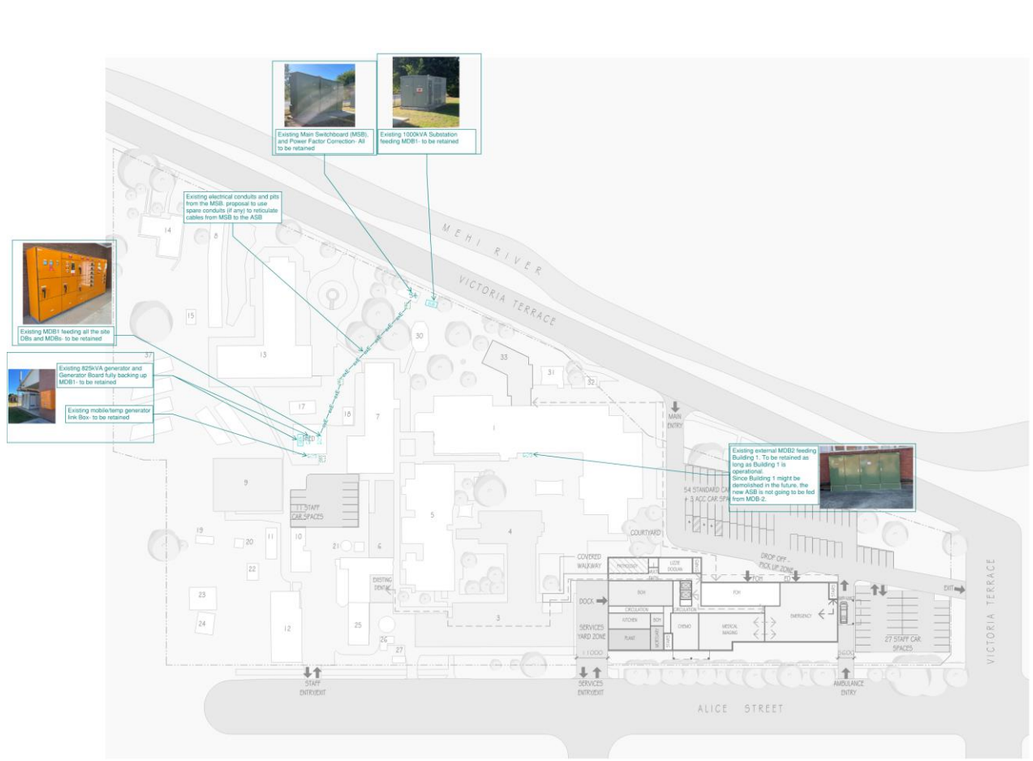


Figure 4-1 Existing Electrical Infrastructure

A brief summary of the areas served by the existing substation and diesel generator is also provided in the below table:

Substation/Generator	Size	Location	Areas Serving
Substation	1000 kVA	North Boundary of the hospital along Victoria Terrace	All the existing Hospital Buildings
Standby Diesel Generator	825 kVA	In the Shed located South of Shed 17	100% of all the existing Hospital Buildings

Table 4-1: Summary of the location and size of the Electrical substation and the Standby Diesel Generator serving the campus.

4.1.1.2 Capacity Assessment

Substation

An existing maximum demand assessment was conducted by JHA based on the Maximum Demand reading from the main power meter located at Main Distribution Board 1 (MDB1) which currently supplies all the site. Based on the power meter reading at MDB1, the overall maximum demand (30-minute average) of the site is 612.7A.

Figure 4-2: Maximum Demand Reading of the Incoming Supply of MDB1

JHA also acquired the electricity billing data for the months from Jan 2022 to June 2022 from the Authority Energy Meter (NMI: NFFFNRKE19) registered to Moree Health Service from the site's Electricity Retailer, Shell Energy. Based on the billing data, the maximum demand (30-minute average) of the site was recorded as 355.16kVA or 493.8A in January 2022.

As noted above, the maximum demand reading from the main power meter at MDB1 was higher than the demand noted on the acquired electricity bills. We believe that the reason is that 6 months bills are not sufficient to capture the maximum demand. Thus, we

deduce that the overall site maximum demand is **613.7A** as read on MDB's power meter and that the spare capacity of the existing 1000kVA Substation is around **770A**.

Building 1's maximum demand was determined to be **322.4A** through a reading from the main power meter at MDB2 which is the MDB feeding Building 1 only.

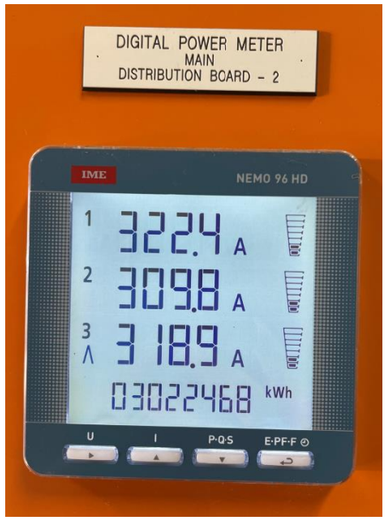


Figure 4-3: Maximum Demand Reading of the Incoming Supply of MDB2

Building 1 will be partially operational after the ASB is built and after the departments relocate from Building 1 to the ASB. It is proposed that the Gd floor of Building 1 will be occupied by a Chemo department, Consult Rooms, Dental Surgery, a Gymnasium and other clinical and non-clinical rooms. A new medical gas plant room might be added as noted in the Medical Gas Section. Also, a potential 20A-3ph mechanical unit might be added to serve the chemo department. The total area of this floor is around 1300m2. Thus, the load is anticipated to be around 230A (by using 125VA/m2). The reason for using 125VA/m2 is mainly because the mechanical plant room is central and thus usually requires higher than the ESG's 50VA/m2 dedicated for mechanical considering the proportionality of a services for small buildings.

Thus, the total site maximum demand after decommissioning Floor 1 of Building 1 but excluding the new ASB's load is estimated to be around 522A. The spare capacity of the existing substation would be around 829A.

Given the location of the existing substations with respect to the REF works, it will be a costly exercise to try to make use of any spare capacity to serve the REF works. No augmentation is proposed to the existing substation.

Existing Essential Energy Pole Along Alice Street

An existing Essential Energy pole (No. 120800191) seems to be within the loading dock entry (see below figure). The pole seems to serve two purposes:

- hold the fibre optic cable connected to Building 3's facade- this cable will be rerouted as part of the early works.

- providing support to the power pole on the corner of Alice and Auburn Street using a Ground Stay Wire within the ASB boundary.

Thus, the two poles must stay aligned for support (see attached markup clarity).

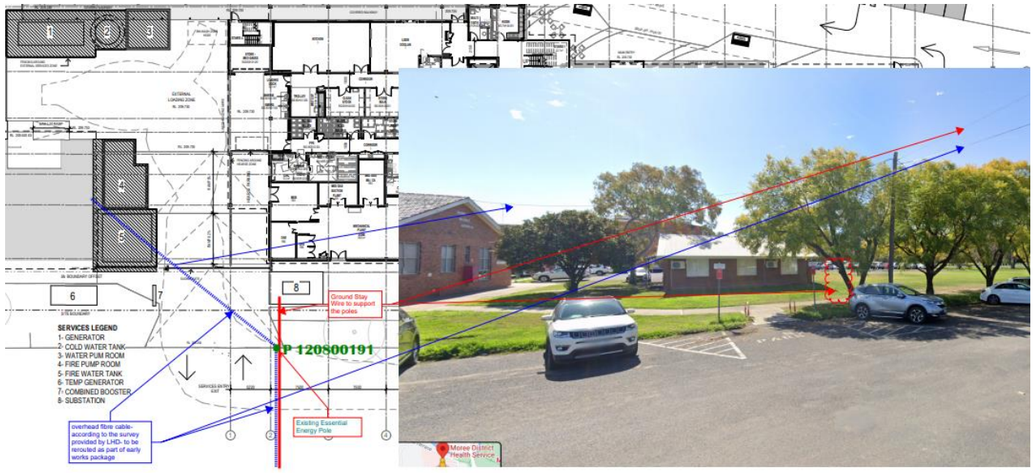


Figure 4-4: Existing Essential Energy pole to be retained.

No augmentation is proposed to the existing Essential Energy Pole No. 120800191.

Existing Essential Energy Poles within the proposed carpark

Three existing Essential Energy poles are within the proposed construction works area:

1. Pole No. 120800193: This pole seems to be a legacy pole and is currently unused. It is proposed to be decommissioned subject to Essential Energy approval.
2. Pole No. 120800197: This pole seems to be currently holding private hospital lighting. It is proposed to be retained untouched or decommissioned subject to Essential Energy approval and to the new carpark design.
3. Pole No. 120800198: This pole seems to be currently holding private hospital lighting. It is proposed to be retained untouched or decommissioned subject to Essential Energy approval and to the new carpark design.

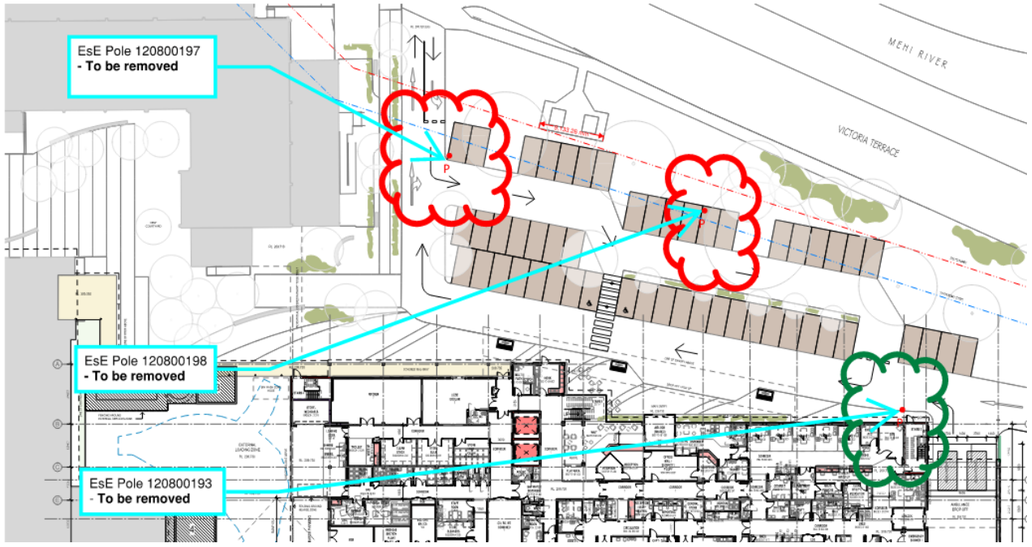


Figure 4-5: Existing Essential Energy Poles in the carpark

Figure 4-6: The Existing Generator Rating

Diesel Generator

There is one 825kVA containerised diesel stand-by generator that is backing up 100% of the existing hospital load via MDB1. As noted in the previous section, the site maximum demand is 613.7A or 442kVA. Thus, the spare capacity of the generator is around 380kVA. When building 1 is demolished, additional capacity of 322.4A will be available. However, as noted before, there will be an overlap where both Building 1 and the ASB are operating at the same time and thus disconnection of MDB2 cannot occur before the ASB is built.

A 4000L fuel tank is located next to the diesel generator.

A generator link box is located close to the generator in order to link a temporary generator in the event of the failure of the on-site generator.

Given the location of the existing generator with respect to the proposed ASB (namely the distance between this supply and the proposed building), it will be a costly exercise to try to make use of any spare capacity to even partially serve the new ASB.

No augmentation is proposed to the existing generator.

Figure 4-7: Containerised Generator and Link Box (Left)- Fuel Tank (Right)

4.1.2 COMMUNICATIONS SERVICES

Data Backbone Infrastructure

Currently, the hospital has one Campus Distributors (CD) for the data backbone cabling reticulation, which is in Building 4.

It was noted through visual inspection that the current CD is not compliant with the ICT Cabling Standards in the following aspects:

- Spatially: Clearances around the racks and equipment are not achieved

- Cooling: One wall mounted A/C system was observed and thus there doesn't seem to be a redundant cooling unit
- Power Supplies to the racks: No captive outlets were observed.

The pathway for the lead-in fibre-optic cable into CD1 seems to be within the construction zone of the proposed ASB. Further investigation is required to confirm the above. If confirmed, a new fibre-optic cable is proposed to be installed to prior to the decommission of the existing cable as part of an early works package. This strategy ensures the continuity of the ICT network across the hospital throughout the new works. However, approval from the carrier is required to be obtained.

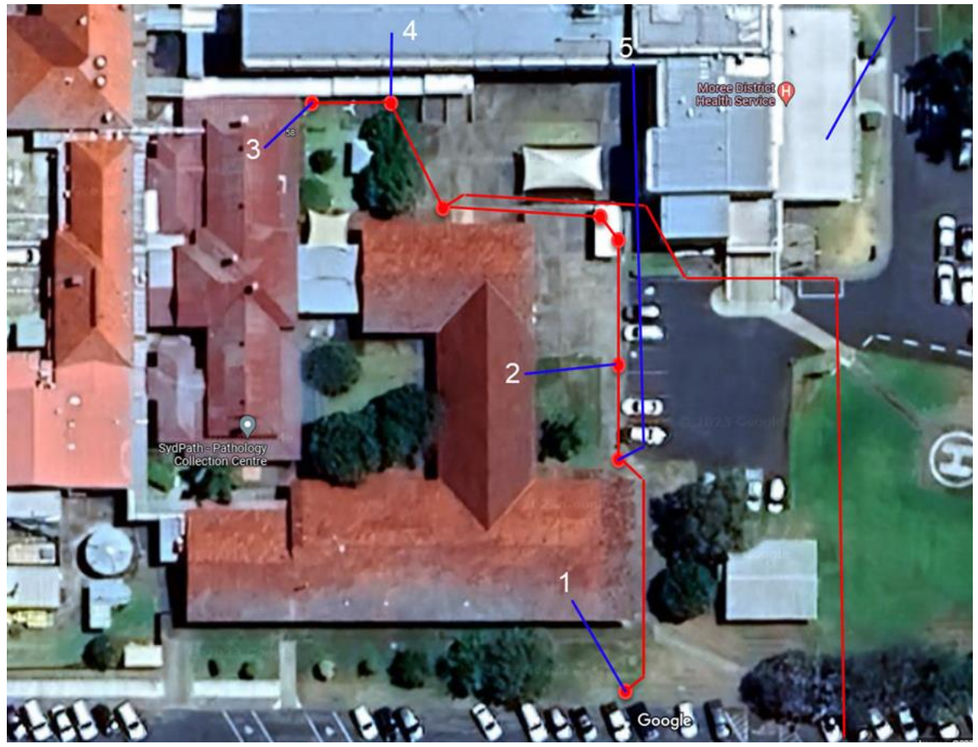


Figure 4-8: Location of the Existing fibre and copper pathway as per DBYD (red denotes conduits and blue denotes cable entry to building, 2 is the approximate location of the existing CD)

An existing private aerial fibre optic cable is currently reticulating from an Essential Energy Pole to Building 3 that will be retained. It is proposed to retain the existing aerial fibre connection- to be confirmed once the design is more developed.

Figure 4-9: Existing Essential Energy pole and Fibre Optic Cable to be retained.

Voice Backbone Infrastructure

The existing voice lead-in terminates in the existing CD.

The pathway for the copper is the same as the fibre cables and thus will need to be relocated as part of the early works to retain the operation of the systems.

4.2 PROPOSED INFRASTRUCTURE WORKS TO ACUTE SERVICES BUILDING (ASB)

4.2.1 ELECTRICAL SERVICES

Substation

A dedicated 1000kVA substation is proposed for the ASB, fed through aerial cables from by Essential Energy's HV cables along Victoria Road. The location of the substation is yet to be confirmed awaiting the submission of the application to Essential Energy and the start of the negotiation design process. However, prelim location is west of the ambulance entry adjacent the building but maintaining the required clearances around the substation.

The HV cable is proposed to be aerial along Alice Street connecting the HV network on Victoria Terrace. The proposal is subject to Essential Energy's approval.

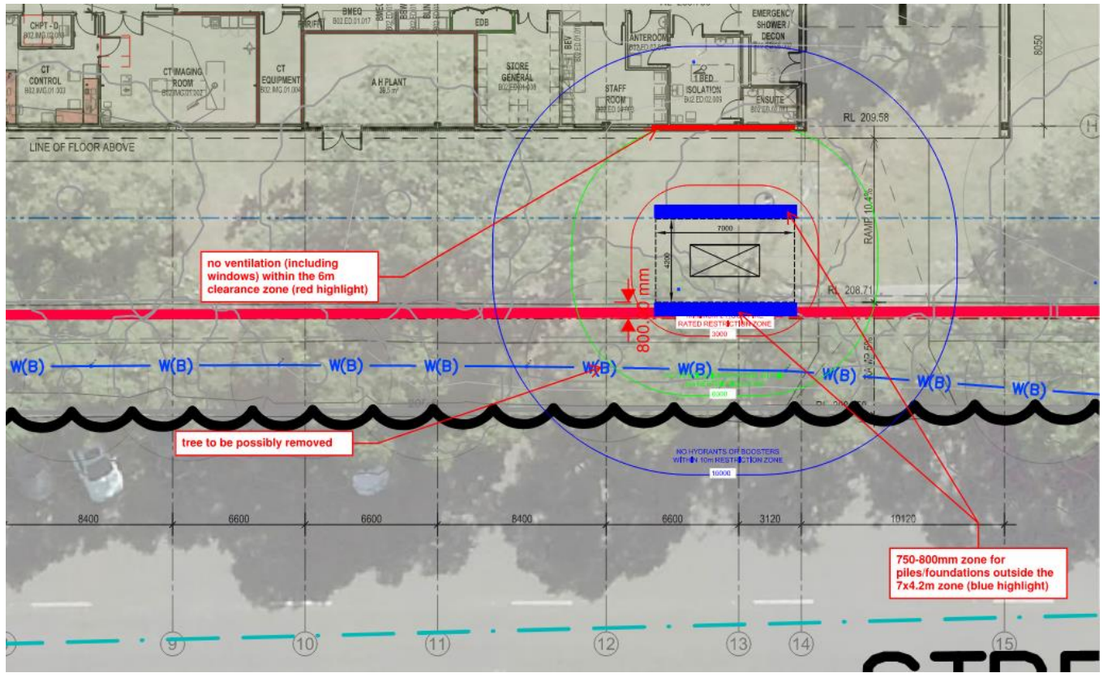


Figure 4-10: Proposed Substation location and HV reticulation (Subject to Essential Energy Approval of the design)

Generator

A dedicate 350kVA-400kVA containerised generator is proposed for the ASB. This solution is more cost effective than connecting to the existing generator. Also, this solution does not create an interruption to the existing hospital's operation.

The generator will be in the services yard- West of the ASB. The cables between the generator and the ASB will reticulate in inground conduits.

Fuel storage will be sized for 24 hours continuous full load operations as per the ESG requirements. The fuel tank will be close to the generator or possibly within the same container. This is subject to the design by the vendor during construction phase.

Figure 4-11: Proposed Generator location in the Loading Dock Area and the inground conduit reticulation

4.2.2 COMMUNICATION SERVICES

To achieve a redundant fibre pathway, it is proposed to connect the new campus distributer in the ASB to the nbn network on Victoria Terrace. A pit will be located within the boundary and conduits will terminate at the site boundary.

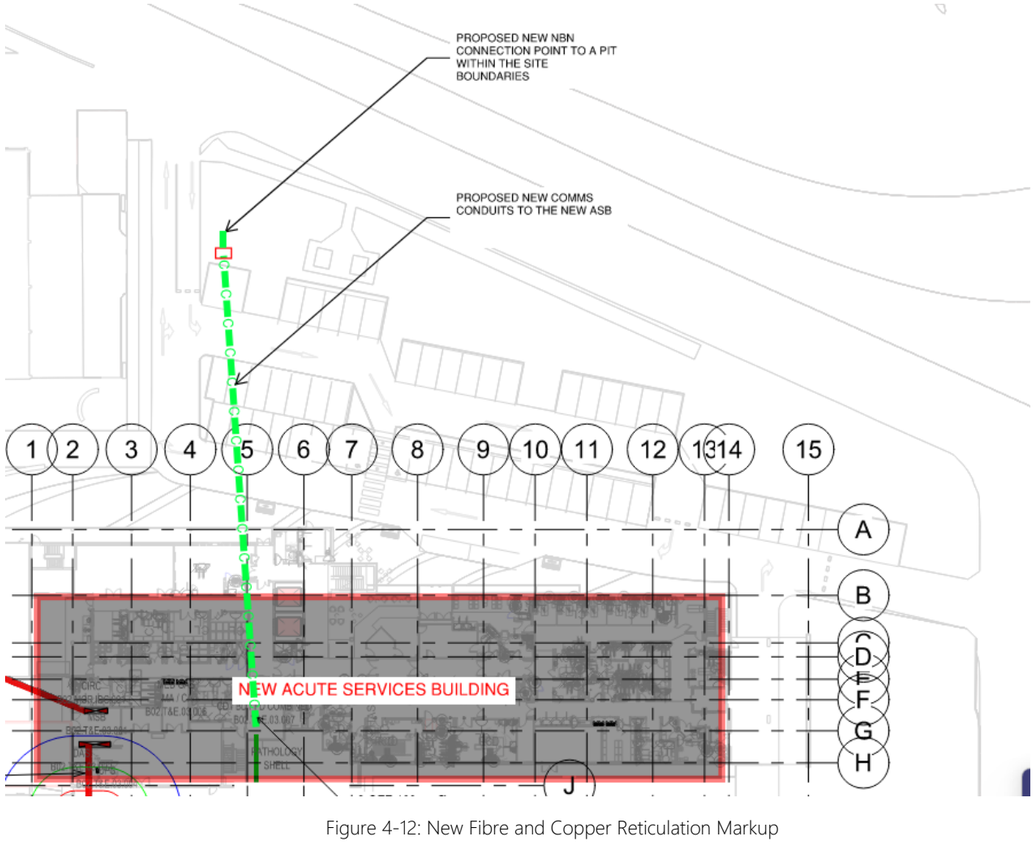


Figure 4-12: New Fibre and Copper Reticulation Markup

4.3 DEMOLITION OF EXISTING BUILDING 5 (COMMUNITY HEALTH – MENTAL HEALTH & REHABILITATION)

4.3.1 OVERVIEW

Demolition of the existing Building 5 will require the following electrical and communications services works:

4. Decommissioning the power connection- internal private connection (no implication on authority connections)
5. Decommissioning the communications connections internal private connection (no implication on authority connections)
6. Rerouting the power connection to Building 4- internal private connection (no implication on authority connections)

All the works related to Building 5 decommissioning are private reticulations and do not involve augmentation to authority infrastructure.

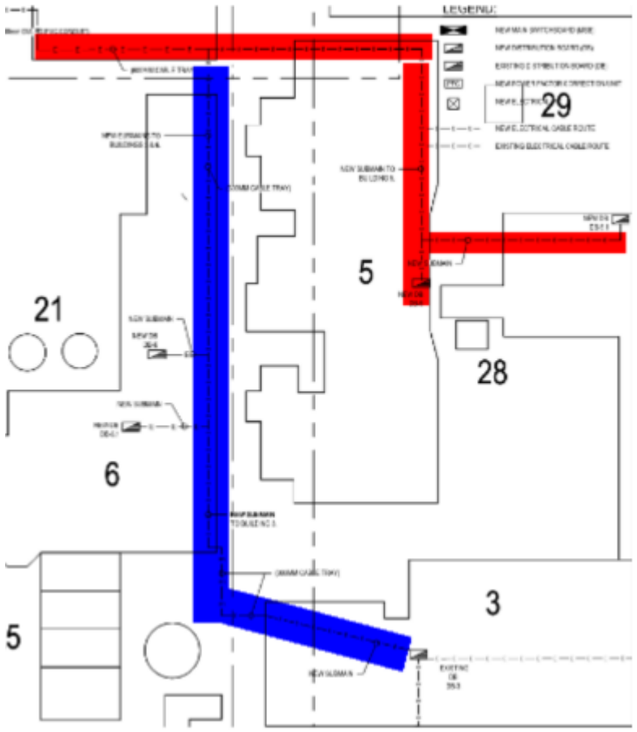


Figure 4-13: Red hatched cables to be decommissioned- Blue-hatched cable to be further investigated to confirm the reticulation won't be affected by the demolition of Building 5.

5. HYDRAULIC SERVICES

Hydraulic Infrastructure & utilities to be assessed within this REF report include:

- New sewer drainage connection to the proposed ASB Building.
- New cold water supply point to the proposed ASB Building.
- Demolition of existing Building 5
- Inground services diversion along proposed service yard of ASB Building.

5.1 EXISTING AUTHORITY INFRASTRUCTURE

5.1.1 SEWER DRAINAGE

The existing hospital gravity drains via 2 x 150mm connection points, to the authorities main in Alice St. Based on survey plans obtained it appears as if the site has been broken up into 2 catchments. The connection points and associated catchments are illustrated on the below diagram:

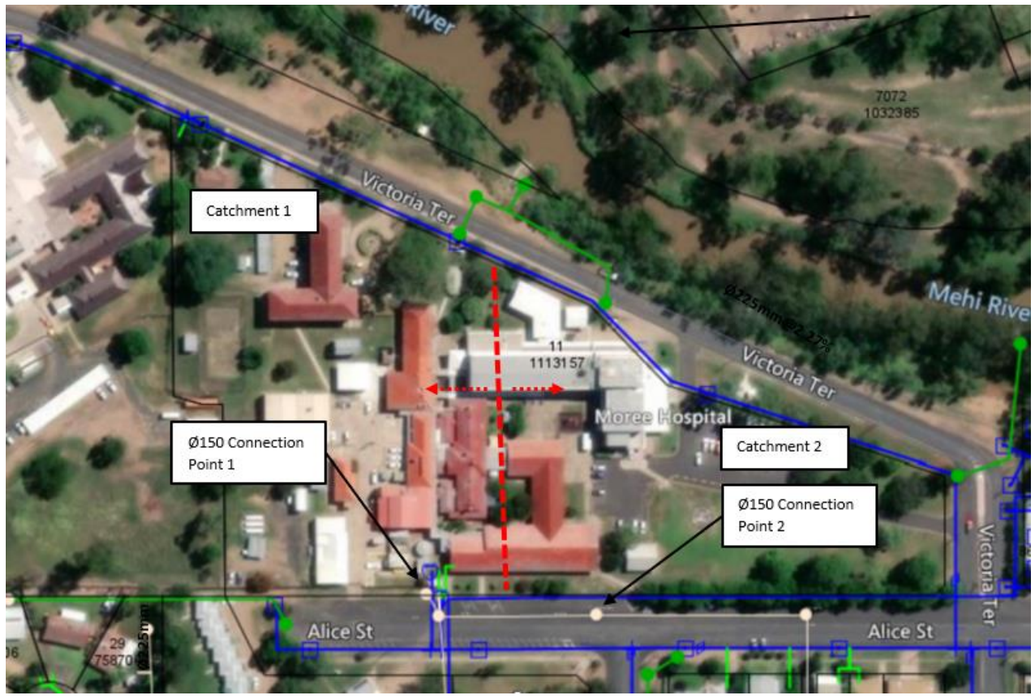


Figure 5-1: Diagram showing existing sewer connection points and associated catchments.

5.1.2 POTABLE WATER

The existing main hospital precinct is surrounded by authority watermains in Victoria Terrace & Alice St. The diagram below illustrates the surrounding authority watermains. Potable water to the existing hospital is supplied from the watermain in Alice St.

The existing cold-water infrastructure (connection, meter, pumps, tanks & filters) are intended to remain operational and supply water to existing buildings within the hospital precinct.

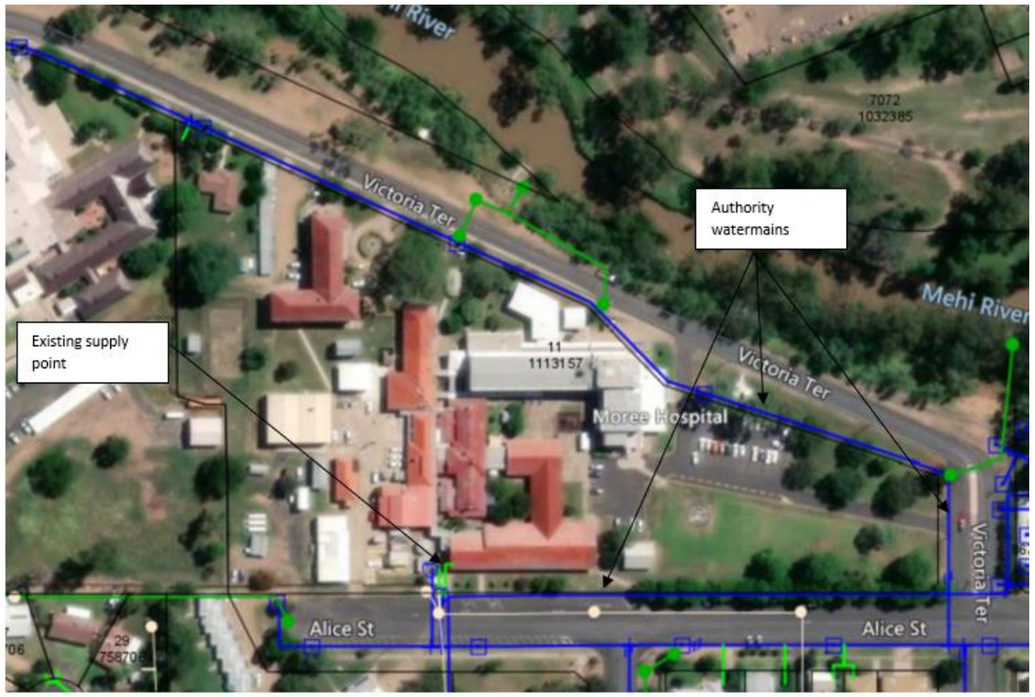


Figure 5-2: Diagram showing surrounding authority watermains and existing hospital supply point.

5.1.3 HOSPITAL INFRASTRUCTURE

The existing hospital is supplied via a single Ø80mm connection point, complete with the following:

- Ø80mm authority meter and backflow prevention device, located adjacent to the Alice St
- Water softener
- 20 kilolitre buffer tank (assumed capacity)
- Dual booster pumps
- Manifold arrangement to supply the various parts/ buildings around the existing hospital precinct.

The diagrams below provide a high-level illustration of the existing hospital potable water infrastructure.

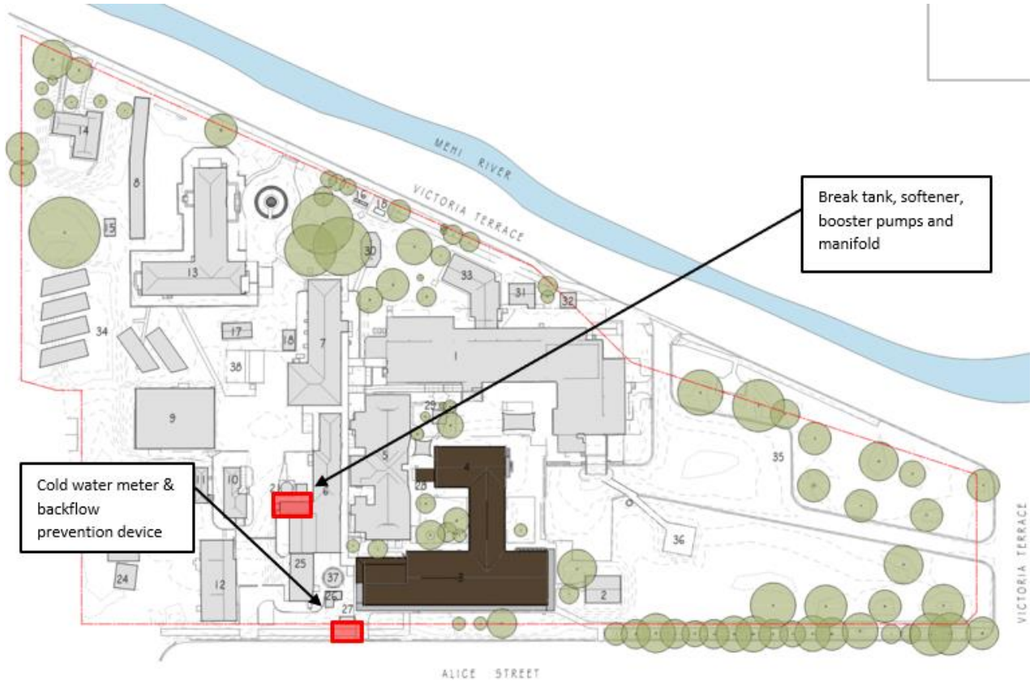


Figure 5-3: Diagram showing location of existing hospital infrastructure.

Figure 5-4: Photo of break tank, water softener, booster pumps and manifold

5.1.4 GAS

The existing main hospital precinct is supplied from 3 x 7.5kL Liquified Petroleum Gas (LPG) tanks. Refer to diagram below.

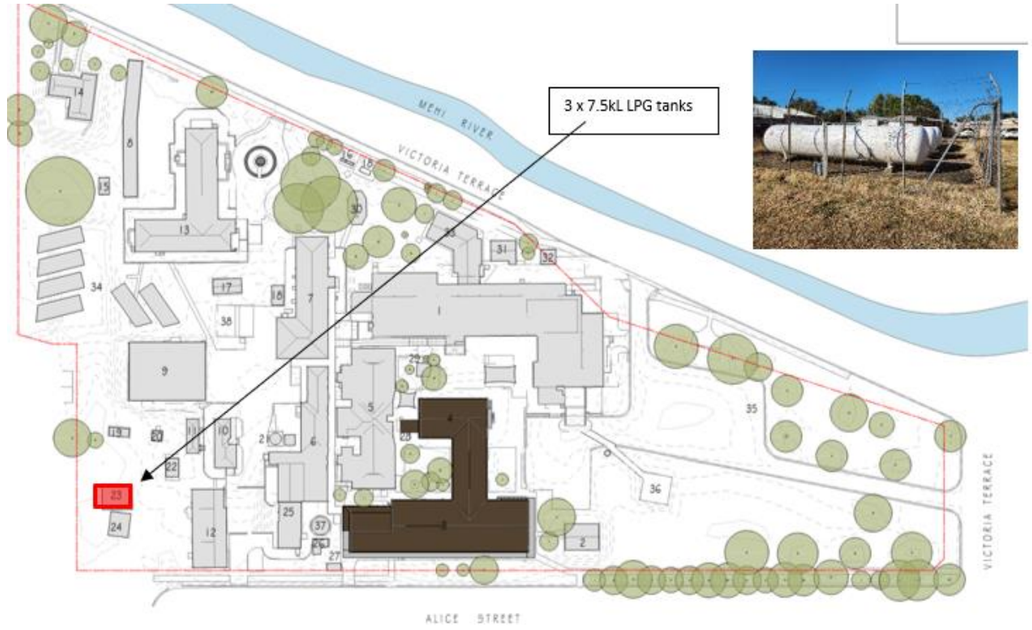


Figure 5-5: Diagram illustrates the existing gas infrastructure to the existing hospital.

5.2 PROPOSED WORKS TO ACUTE SERVICES BUILDING (ASB)

5.2.1 OVERVIEW

The construction of the new Acute Services Building (ASB) will require the following hydraulic services works to be undertaken:

- New Sewer drainage discharge point to existing authority sewer manhole
- New Stormwater drainage services (Roof water drainage) to proposed rainwater tank
- New potable water supply connection point from existing authority watermain supply
- New Centralised Electric Heat Pump Hot Water Plant
- New Centralised Reverse Osmosis water supply system in new CSSD
- No LPG gas supply to thew new ASB
- New fire hose reels
- New Fire Hydrant system
- Dry Fire Services (Fire Detection and EWIS Speakers)
- Portable fire extinguishers

A summary of the works associated with each of the above services is described in the following sections. Refer to Section 5 APPENDIX A for further details on the proposed site plan works associated with the new Acute Services Building (ASB).

5.2.2 SEWER DRAINAGE AND SANITARY PLUMBING

- New sewer drainage for the new ASB will be provided. Sewer drainage for the new ASB will gravity drain to the new connection from the Alice St authority sewer main.

- Extend all new sanitary outlets in new ASB building to new connection point
- Based on the preliminary layout it is envisaged that the new private sewer line will be located external to the new building along the southern boundary.
- There are few fixtures and treatment devices, located on the western side of the new ASB, which will need to connect into existing sewer connection point 2. Diversion will need to be looked at as part of Early works package. Refer to the diagram below.

Figure 5-6: Diagram showing new ASB sewer connection point.

5.2.2.1 TRADE WASTE DRAINAGE

Trade waste drainage provisions for the new ASB shall be as follows:

- 2,000 litre grease arrestor for the new kitchen
- 1,500 litre blind pit for the ambulance bay decontamination shower
- 2,000 litre cooling pit to receive the discharges from the CSSD and associated equipment

To facilitate routine maintenance, the arrestors/ pits are proposed to be located in the service yard (western side of the new ASB).

5.2.2.2 STORMWATER DRAINAGE

- Stormwater drainage will comprise of gravity stormwater drainage system collecting surface water from roof drainage and balconies. The roof will be drained via an eaves gutter and downpipes and be directed to the proposed rainwater tank.
- Based on the preliminary layout, there will be few downpipes that will discharge and be directed into the inground Civil stormwater drainage system.

5.2.3 POTABLE COLD WATER

- A new 100Ø connection to the existing 250Ø PVC watermain along Victoria terrace will be provided to supply the potable water system of the new ASB as shown in the diagram below. It is noted that the location of the secondary connection shown is the local authority's preferred connection point.

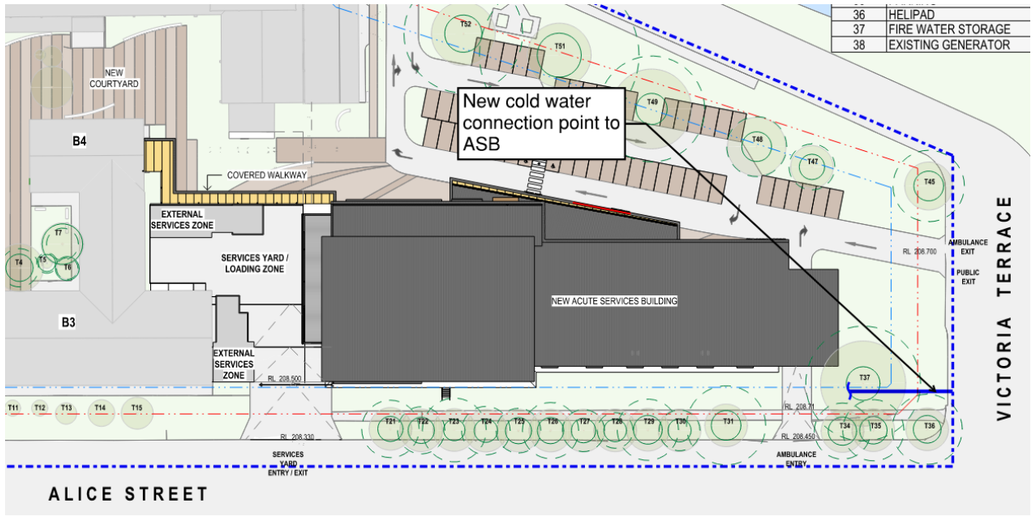


Figure 5-7: Diagram showing new ASB potable water connection point.

- The potable cold water for the new ASB will be supplied from the new connection as highlighted above, with the following hydraulic equipment and appurtenances:
  - Authority meter assembly and dual backflow prevention devices
  - Filtration
  - Cold water storage tank
  - Direct chlorine dosing
  - Duplex booster pumps
- The pressure and flow inquiry results are yet to be received from the local authority.

Refer to Section 6 APPENDIX B for the new water connection point discussion with the local authority and Section 7 APPENDIX C for the Pressure and Flow inquiry application sent to Council.

5.2.4 POTABLE HOT WATER & WARM WATER

- Potable hot water shall be provided to the new ASB building, via centralised plant and distribute to supply all hot water requirements on each level.
- Thermostatic mixing valves shall control temperature outlets, in accordance with NSW Health requirements.

5.2.5 REVERSE OSMOSIS WATER SUPPLY

- A new centralised reverse osmosis system, complete with pre-filters will be provided to supply RO water to reusable medical device cleaning and sterilisation equipment located in the new CSSD.
- RO system and filters are to be designed based on the following preliminary selection of the CSSD equipment.
  - 1 No. of steam steriliser
  - 1 No. of batch washer
  - 1 No. of Ultrasonic Cleaner

5.2.6 GAS SERVICE

- Natural gas will not be provided for heating or hot water generation for the new ASB. In the past, gas was generally considered to be a more environmentally friendly and efficient method of heat generation, however with moves towards renewable / sustainable electricity generation, it is now considered that electric heating is more sustainable than gas combustion.

5.2.7 FIRE HOSE REEL SERVICE

- New fire hose reels shall be provided from the new potable water supply.
- Fire Hose reel shall be located in dedicated fire compartments/enclosures to BCA compliant locations.
- The fire hose reel location will also include portable fire extinguisher located within the same cupboard and collocated with the supplementary fire hydrants.

5.2.8 FIRE HYDRANT SERVICE

- It is proposed that this existing external main is fed from through new combined fire and fire sprinkler infrastructure.
- A new ringmain will be extended to the new building; with a fire hydrant riser reticulating up each of the buildings fire stair to provide fire water to the new building.
- 150dia fire ringmain will reticulate throughout the new building and rise up the building within each fire stair core.
- In addition to the fire hydrants within the fire stairs, where coverage from the stairwell is insufficient to cover an area completely, additional hydrants will be installed in purpose constructed fire services cupboards in readily accessible locations. Supplementary hydrants will be installed within 4m of a required exit.

5.2.9 DRY FIRE SERVICE (FIRE DETECTION AND EWIS SPEAKERS)

- Provide new smoke detection system throughout the new building.
- New emergency warning system will be provided throughout new building.
- The new building will be provided with a dedicated a new Fire Indicator Panel, EWIS Panel and Fire Fan Control panel.

5.2.10 PORTABLE FIRE EXTINGUISHER SERVICE

- Fire extinguishers will be provided throughout the building. The number and type of extinguishers will be determined by the particular hazard in accordance with AS2444, NCC requirements and HI guidelines.

5.3 DEMOLITION OF EXISTING BUILDING 5 (COMMUNITY HEALTH – MENTAL HEALTH & REHABILITATION)

5.3.1 OVERVIEW

Demolition of the existing Building 5 will require the following hydraulic and fire services works:

- Capping off sewer drainage service
- Capping off potable water connection point
- Capping off fire hydrant outlet
- Capping off LPG service
- Decommissioning of dry fire services

A Summary of the works associate with each service is described in the following sections.

Refer to Section 8 APPENDIX D for the overview and markups associate with Building 5 demolition works.

5.3.2 SEWER DRAINAGE

- Capping off and removal of sewer drainage branch connections.

5.3.3 POTABLE WATER

- Capping off the 3 x cold water supply points. It is noted that each of the connection points has been provided with an isolation valve, which can be used for shutting off the supply.

5.3.4 POTABLE HOT & WARM WATER SERVICES

- Capping off the hot water flow and return lines at the main line.

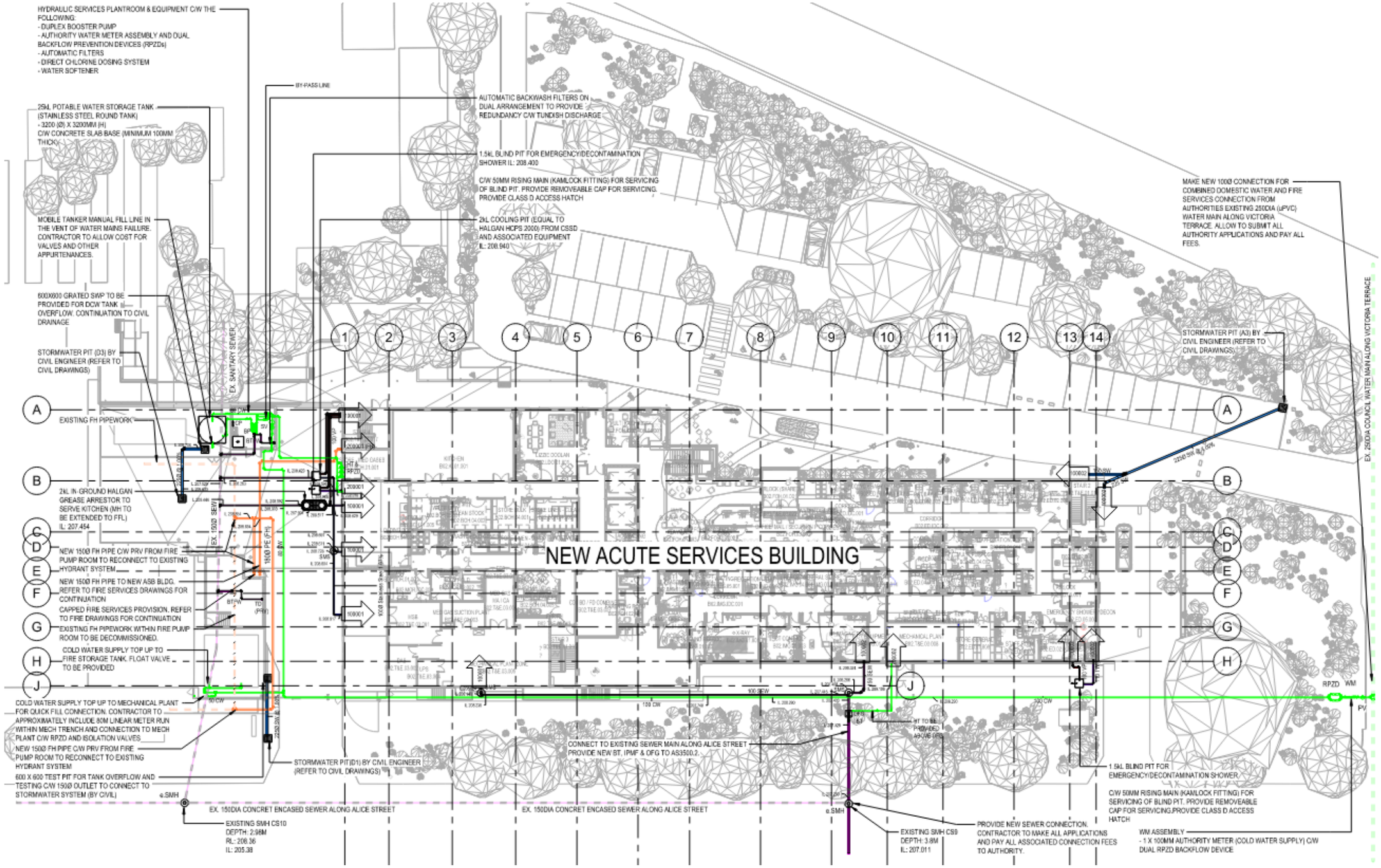
5.3.5 FIRE HOSE REEL & FIRE HYDRANT SERVICE

- Capping off the existing combined fire hydrant/ hose reel supply to make the existing 2 x fire hose reel and fire hydrant outlet redundant. Coverage to the existing building will need to be further assessed to confirm compliance.

5.3.6 DRY FIRE SERVICES

- Building 5 does not house any Fire Services infrastructure or main plant. It does have dry fire devices which are cabled from the existing Building 3/4 Fire Indicator Panel. Building 5 comprises entirely Zone 8, 9 and 10 of the existing FIP.
- The decommissioning of Building 5 has no major impact on the existing fire services. Decommissioning of dry fire devices in Building 5 be required and the cabling removed and made safe. Reprogramming of the FIP will also have to be undertaken to remove the demolished devices and Zones 8, 9 and 10 from the FIPs programming; and an updated block plan would be required.

6. APPENDIX A – HYDRAULIC SERVICES PROPOSED SITE PLAN RETICULATION



7. APPENDIX B – APPROVED SECONDARY CONNECTION POINT CORRESPONDENCE FROM COUNCIL

From: Jason Southcoat <Jason.Southcoat@mpsc.nsw.gov.au>
Sent: Friday, August 18, 2023 12:56 PM
To: Jaini Shah <Jaini.Shah@mpsc.nsw.gov.au>
Cc: Greg Fisher <Greg.Fisher@mpsc.nsw.gov.au>
Subject: RE: New Water Connection

Hi Jaini
Where I've drawn the green line is a spot we could put a 100mm meter easy as it comes of a 250mm PVC line as far as capacity we would have to do a pressure and flow test but I would expect probably 220kpa+ and probably 15-20L/s+ out of a standard hydrant.

Kind Regards

Jason Southcoat |Water Coordinator Water & Waste

Tel: (02) 6757 3292 (M) 0428651260
Email: Jason.southcoat@mpsc.nsw.gov.au
Web: www.mpsc.nsw.gov.au

Level 2, 30 Heber Street | Moree NSW 2400 | PO BOX 420
Deliveries to
Water & Waste Depot
Broadwater Creek rd
Moree N.S.W 2400

Moree Plains Shire Council's mission is to lead the way in fostering a healthy, positive and well-resourced community.

8. APPENDIX C – PRESSURE AND FLOW APPLICATION TO COUNCIL

MOREE PLAINS SHIRE COUNCIL

REQUEST FOR PRESSURE & FLOW TEST OF COUNCIL'S WATERMAINS

I hereby make an application to have a pressure & flow test on the main adjacent to the property described herewith:

Name of Owner:		Phone
Street: VICTORIA TCE	Side:	House No:
Sub Lot:	Lot:	DP: Portion:

Valve Position	Pressure	Flow litres/minute
Closed	265 KPA	/
25% open	250 KPA.	2 L/SEC
50% open	210 KPA.	10 L/SEC.
75% open	130 KPA.	17 L/SEC
100% open	40 KPA	22 L/SEC.

Name: DANIEL HOBDAY. Signature:
(Person completing the form) (Person completing the form)

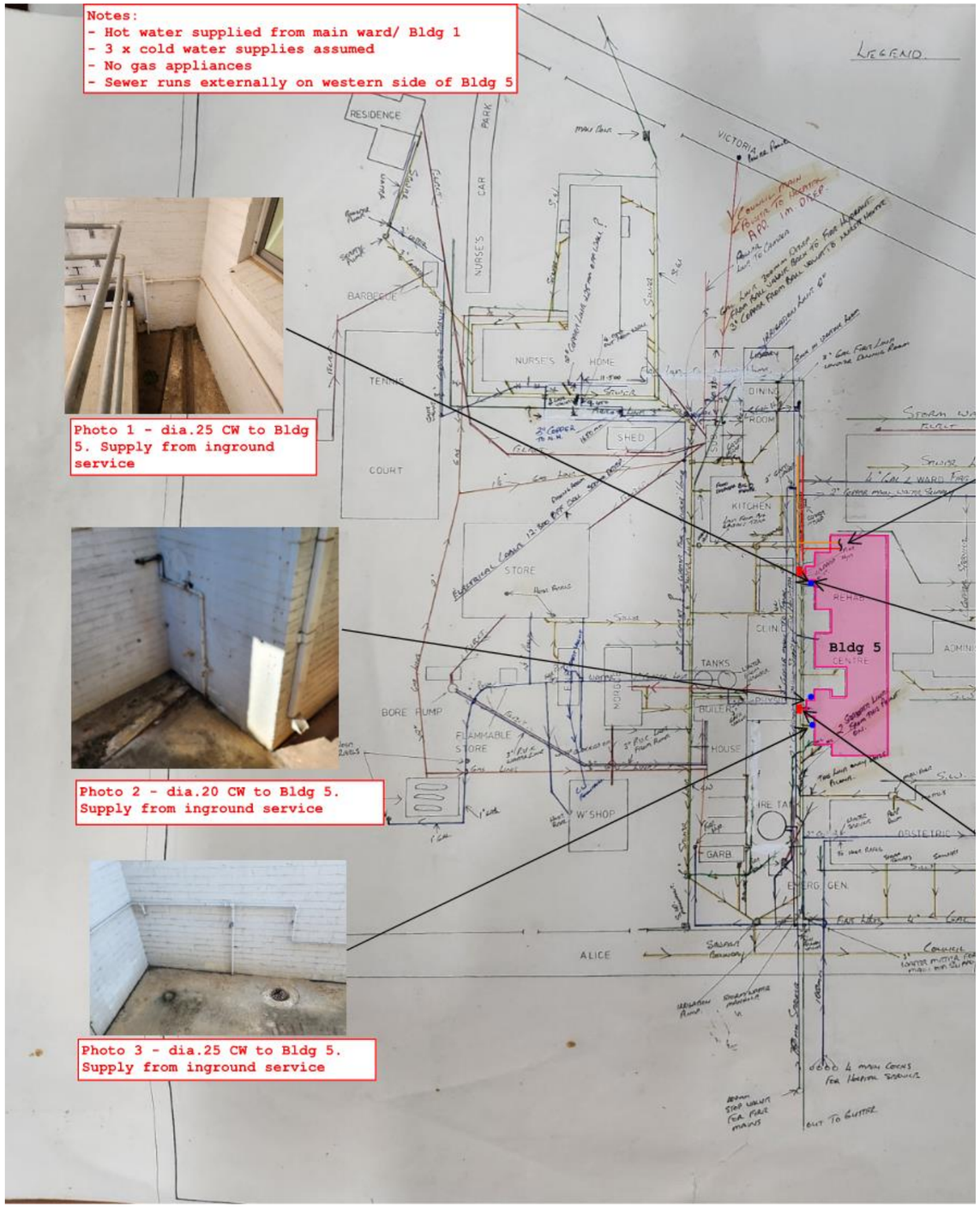
Contact No(Phone/Fax/email):
(Please circle)

Postal Address:

Date: 06/09/23.	Amount Paid:

11:00AM.

9. APPENDIX D –HYDRAULIC SERVICES BUILDING 5 DEMOLITION WORKS



10. APPENDIX E – LOG OF AUTHOTHORITY DISCUSSIONS

Authority	Department	Date	Type	Contact	Summary
Moree Plains Shire Council	Water & Waste	11/06/2023	Email	Scott Tobys	Approval of secondary water connection point
		23/05/2023	Email	Jaini Shah	Discussion on reliability and water quality
		23/05/2023 08/06/2023 15/08/2023	Phone Conversation	Scott Tobys	Discussion on reliability and water quality Sewer Connection Point