CONCORD HOSPITAL (CONCEPT AND STAGE 1) REDEVELOPMENT

SERVICES INFRASTRUCTURE MANAGEMENT PLAN
ELECTRICAL AND COMMUNICATIONS

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1. Introduction

This SSDA report seeks consent for the proposed redevelopment of Concord Repatriation General Hospital to improve and replace outmoded facilities to meet the substantial growth in clinical service demand across the hospital’s catchment:

- Concept approval is sought for the redevelopment indicatively comprising 82,000sqm GFA, to be undertaken in two (2) stages including:
  - Clinical Services Building (CSB) and multi storey carpark (Stage 1); and
  - Acute Services Building (ASB) and multistorey carpark (Stage 2).

- Detailed approval is sought for the Stage 1 construction of the proposed CSB (44,000sqm GFA) and the construction of a multi-storey car park located to the north of Hospital Road.

Detailed development approval for the proposed Stage 2 works will be completed at a later date and does form not part of this SSDA. The Stage 1 Detailed works are estimated to be completed by end 2021.

The proposed Concept redevelopment is in accordance with the concept architectural package prepared by Jacobs.

The proposed Stage 1 detailed development (CSB and multistorey carpark) is in accordance with the architectural drawings prepared by Jacobs.

The areas in the below staging plans have been assessed and are included within this report.
STAGE 1 PROPOSAL

1.1 Secretary’s Environmental Assessment Requirements (SEARs)

Item 12: Utilities

Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure.
2. Electrical Infrastructure

2.1 Existing Supply Authority Electrical infrastructure

The Supply Authority at Concord Hospital is Ausgrid. Concord Hospital is an HV customer and obtains supply at 11kV from Ausgrid at the intake HV switchroom adjacent Substation #1.

2.2 Proposed Onsite Electrical Infrastructure

The electrical maximum demand calculated for the proposed new Clinical Services Building equates to 3MVA. An Application for Additional Load was lodged with Ausgrid. As part of the required Authority works, it will be necessary to upgrade the incoming HV switching Station and upgrade the existing Supply Authority protection scheme which is currently quite dated. A new onsite substation consisting of 2 x 1,500kVA transformers will be established to service the new Clinical Services Building.

In addition, the existing HV cable network will be upgraded to comprise of two HV network rings. These works are required as the existing network is dated and a section of the network required relocation as was reticulated through the proposed site of the new Clinical Services Building. Existing Substations #2, #3, #4 and #5 will be decommissioned. These substations are to be replaced by a new Substation #4 (1 x 1,500kVA), Substation #2 (1 x 1,000kVA) and Substation #3 (1 x 500kVA).

2.3 Standby Power

One off 1,000kVA standby generator shall be provided for the new Clinical Services Building. A 10,000L in-ground double skinned fuel tank to be provided to allow for 24 fuel storage capacity. The design shall comply with AS 3010 and AS 1668.2. In addition, suitable attenuation of the air intake and outlet fans as well a suitable silencer of the engine exhaust shall be provided to meet required acoustic performance.

As part of the proposed works the existing 11kV on-site generator, which has reached end of life, will be decommissioned. To allow for the decommissioning of the 11kV generator, it will be necessary to install a new 400kVA standby generator at Substation #4.

A centralised UPS room shall be established to supply continuous power to communication systems, medical and surgical lighting.

2.4 New Multi-Story and On-Grade Car Parks

The proposed 5 level multi-storey car park to the north of Hospital Road will be supplied from the Ausgrid LV street network. Lighting for the car park shall consist of weatherproof LED batons with pole top luminaires used on the top level. Security to the car park shall consist of boom gates, CCTV and help call points located on each level.

The proposed on-grade car park adjacent (north east) of the existing main public hospital building shall be supplied from new Substation #2. Lighting shall consist of pole top LED luminaires. Security to the car park shall consist of boom gates, CCTV and help call points.
2.5 General Power and Miscellaneous Services

One off Low Voltage Main Switch Rooms to be established. Main Switch Rooms to have an FRL of 12/120/120. The Main Switch Room to have two off fire rated, outward opening, self-closing doors which are spaced apart. A series of distribution boards throughout the development shall provide power. Reticulation shall be via dedicated electrical riser cupboards. The Development shall be provided with small power, voice and data provisions, electronic security, access control and CCTV monitoring.

2.6 Photovoltaic System

Consideration is being given to the installation of a PV array on the new development.

2.7 Summary of Power Network Capacity

Ausgrid have confirmed that the existing 2 HV feeders supplying the site are capable of providing the additional power required for the development. The intake HV switching station and private HV hospital network will be upgraded as described in section 2.2.
3. Carrier Telecommunication services

3.1 Carrier Telecommunication services in proximity to the proposed site

The existing communication infrastructure at the site is well established with an existing Campus Distributor located in the PABX Room in Building 4 and a secondary Campus Distributor located at the Data Centre in Building 58. It is not envisaged that new/additional Carrier Services will be required to support the proposed Clinical Services Building.

3.2 Proposed Communication Services to new Clinical Services Building

It will be required to relocate all existing communication cables reticulated through the proposed site of the Clinical Services Building. A communications cable audit has been undertaken to ensure that these cables can be re-routed without causing widespread communication outages to the existing Hospital operation.

It is intended that communication services to the Clinical Services Building will be supplied from the existing Primary and Secondary Campus Distributors located on the Concord Hospital site. New Building Distributors shall be established at the Clinical Services Building.

3.3 Distributed Antenna System

A new Distributed Antenna System (DAS) is to be provided to ensure that there is 100% mobile phone coverage. A fire rated room, 5,000mm x 4,000mm in size, to be provided for the Distributed Antenna System. The room shall house the Telco racks and equipment required for the DAS.

3.4 New Clinical Services Building Communication

Communication Floor Distributors (FD) shall be 3,400mm x 3,300mm with an FRL of 120/120/120 and shall be utilised to feed the Technical Outlets (TO) throughout the building. Diverse backbone cabling pathways shall be provided to each FD. Floor Distributors shall be located so that the ‘90m rule’ for structured horizontal cabling is not exceeded. Structured horizontal cabling shall consist of Cat 6A shielded cables.

3.5 Summary of Carrier Network Capacity

The development will be supplied from existing hospital infrastructure and there is no requirement for additional carrier lead-ins.