

# SJOG Richmond Hospital

## Electrical Services

Infrastructure Management Plan

**Prepared for:** Silver Thomas Hanley (Aus) Pty Ltd

**Attention:** Brent Railton

**Date:** 01 October 2020

**Prepared by:** Allan Wong

**Ref:** 43762

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# Revision

Revision	Date	Comment	Prepared By	Approved By
001	31/01/2020	Preliminary Issue	AW	SMB
002	01/10/2020	SSDA Issue	AW	SMB

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# 1. Introduction

Wood & Grieve Engineers has been engaged by St John of God Health Care Inc to prepare an external lighting strategy report for the proposed St John of God Richmond Campus redevelopment.

The St John of God Richmond Campus is located at 177 Grose Vale Road, North Richmond in New South Wales. The site is located outside the township of North Richmond on a 10-hectare site.

A significant feature of the site is Belmont House. Built in 1892 this substantial building is of historical significance and has a commanding position on the site overlooking lawns and mature specimen trees.

The current facility on the site has developed on site since 1953 when the Hospitaller Order of the Brother of St John of God (SJOG) purchased the site.

Over the years the hospital has been extended and developed to meet the expanding role of a mental health facility.

The hospital currently is a mix of building of various ages and several them do not meet with current guidelines for health facilities, or the expectations of the private patients.

## 1.1 Proposed development

The hospital is now commencing a redevelopment at Richmond that will see mental health undergo a total service transformation.

Currently an 88-bed hospital of varying room types including shared rooms and shared facilities, the new development will deliver the following:

- 112 sole occupancy bedrooms with ensuites;
- Generous lounge and break out areas within the Residence Pavilions;
- Large dining area with various seating arrangements for a restaurant feel;
- Alfresco dining areas;
- Café;
- Pharmacy;
- Group rooms and associated clinical support areas, and
- ECT & TMS Suite.

The above will form the bulk of the new building which will be linked together with a multi-use space that will have informal seating areas and provide a communal area from the residences to dining pavilion.

Refurbishment of the existing administration building will include the new home of the Chapel, as well as reception and waiting area upgrades. Xavier House will be completely refurbished to house the relocated and expanded CTC, Medical Centre and Education Hub.

Along with the demolition of the sub-standard building stock and proposed new build, site wide infrastructure will be upgraded, extended parking and traffic management implemented with landscaping to the new buildings undertaken.

A future residence of 28 beds is also allowed for to allow the hospital to expand to a total of 140 beds in the future.

A wellness centre has been identified as a key component for the health and well-being of clients staying at the facility.



## 1.2 SEARs Requirements

This report addresses the requirements outlined in the Planning Secretary's Environmental Assessments Requirements (SEARs) for the SSDA application for St John of God Richmond Hospital.

This report addresses the specific requirement with regards to Utilities as follows:

- 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.

## 1.3 Design Criteria

The Electrical Services will be designed in accordance with, but not limited to, the following codes, standards and guidelines:

- Service and Installation Rules of NSW
- Endeavour Energy Network Standards
- Relevant Australian Standards

## 1.4 Local context

The St John of God Richmond Hospital (Lot 11 DP 1134453) is located just to the south of the Hawkesbury centre and to the east of the Railway Station on a site at 177 Grose Vale Road, North Richmond. The campus occupies an elongated irregular shaped area of some 10 ha with an extensive 100m frontage to Grose Vale Road.

Entrance to the main site is via an access road (approx. 580m long) from Grose Vale Road. The surrounding terrain consists of natural landscape (cleared for grazing and other agricultural activity).

The surrounding uses comprise:

- the Catalina Stud which adjoins to the north and east
- the Darley Farm which adjoin to the west
- the Hawkesbury River to the south
- the Kingsford-Smith Village to the north



Figure 1 Aerial Image and Locality Map (Source: Nearmaps)

2.

## 2.1

The Distribution Network Service Provider (DNSP) for the site is Endeavour Energy.

The site is served by an Endeavour Energy external padmount substation (No. 3646), which is located adjacent to the northern side of the Xavier/St Raphael/St Joseph's Unit building.

The substation is rated to 500kVA and supplies one main switchboard



**Figure 2 Endeavour Energy Map Indicating Existing HV Feeder**

The existing substation is to be upgraded from 500kVA to 1,000kVA, which would have a nominal full load rating of 1,333A. Endeavour Energy has confirmed that there is presently no capacity in the existing HV feeder (27454), which is sourced from North Richmond Zone Substation, to cater for upgrade of the substation to 1,000kVA (Refer to Appendix A Endeavour Energy Connection Offer issued 15/10/19).

From further investigation from the Level 3 Designer the following works are being proposed to Endeavour as our solution

- Augmentation of HV overhead from Pole No 294783 on Tyne Crescent to Pole No280356 on Christopher Place, this is approx. 800m of Overhead upgrade works of which include 56m is below Endeavour Energy 132kV Transmission
- Augmentation of HV overhead from Pole No. 755066 on Gross Vale Road to Pole No. 794582 on Gross Vale Road. Approx 320m of HV overhead to be upgraded
- Augmentation of HV Overhead from Pole No 431726 on Gross Vale Road to Pole No. 431787 on Gross Vale Road. Approx 420m of HV Overhead to be upgraded

## 2.2 Proposed Electrical Infrastructure

From further investigation from the Level 3 Designer the following works are being proposed to Endeavour as our solution

- Augmentation of HV overhead from Pole No 294783 on Tyne Crescent to Pole No280356 on Christopher Place, this is approx. 800m of Overhead upgrade works of which include 56m is below Endeavour Energy 132kV Transmission
- Augmentation of HV overhead from Pole No. 755066 on Gross Vale Road to Pole No. 794582 on Gross Vale Road. Approx 320m of HV overhead to be upgraded
- Augmentation of HV Overhead from Pole No 431726 on Gross Vale Road to Pole No. 431787 on Gross Vale Road. Approx 420m of HV Overhead to be upgraded

The proposed method of supply submitted to Endeavour Energy is to upgrade the existing substation from 500kVA to 1,000kVA.

The proposed site electrical infrastructure capacity includes spare capacity to enable future building expansion.

The current kiosk substation is located within the property boundary, adjacent to the northern side of the Xavier/St Raphael/St Joseph's Unit building. The existing substation location complies with Endeavour Energy network standards with regards to fire and smoke separation to nearby structures.

The existing easements will be utilised and modifications to these are not anticipated to be required.

New consumer mains from the kiosk substation will be reticulated via underground conduits to the main switchboard located in the Main Switchroom in the undercroft of the Xavier Building.

## 2.3 Construction Period Services Continuity

Minimal disruption is expected during the construction period. However, this is subject to final HV augmentation requirements.





## 3. Telecommunications Carrier Services

### 3.1 Existing Telecommunication Infrastructure

Existing Telstra plans identify an incoming 100-pair copper cable to site with some pairs terminated or left discontinued prior to connection at the site MDF. The existing Telstra drawings within the area indicate only 50-pair incoming Telstra copper is terminated at the MDF. This is incorrect as Telstra records on site and as confirmed with Logical Choice (the PABX contractor) show 100-pair incoming. The Telstra plan also identifies two separate fibre cables entering the site from divergent paths and terminating within the main PABX room located within the Medical Centre.

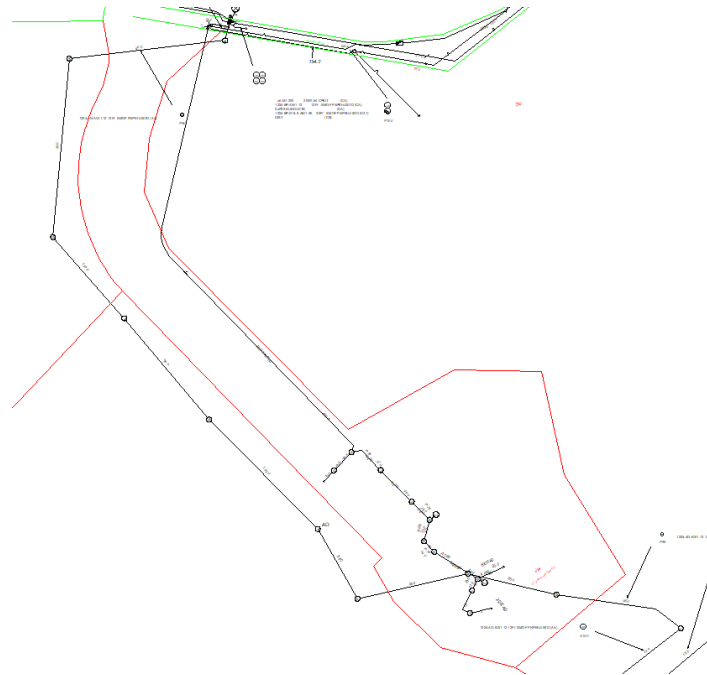


Figure 3 Telstra Network Mapping

### 3.2 Proposed Telecommunication Infrastructure

A new campus distributor room will be established in the existing Xavier building. Connectivity will be provided between the new campus distributor room and communications rooms throughout the site.

The existing incoming Telstra copper and fibre lead-in pathways contained within the property boundary will be diverted to the new campus distributor room location.

### 3.3 In-building Mobile Coverage

A new distributed antenna system (DAS) will be provided within the new building to provide mobile coverage. A new campus distributor room will be provided to house carrier equipment. The design of the system will comply with the Mobile Carrier Forum (MCF) DAS Design Specification.

### 3.4 Construction Period Services Continuity

Minimal disruption to telecommunication carrier services to the site is expected during construction. It is not proposed to construct new buildings over the existing telecommunications carrier plant.



# Appendix A Endeavour Energy Application Offer



15 October 2019

**Endeavour Energy Ref: NCL1648 – 2019/01791/001**  
**Customer Ref:**

Wood & Grieve Engineers  
Level 6 Building B 207 Pacific Highway  
ST LEONARDS NSW 2065

**Attention: Steven Brims**

**CONNECTION OFFER – STANDARD CONNECTION SERVICE**

**NCL1648 – LOT 11, DP 1134453, Connection of Load Application: 177 Grose Vale Road,  
NORTH RICHMOND**

Thank you for your application providing information of the proposed development at the above location. Your application has been registered under the above reference number. Please quote this reference number on all future correspondence.

This connection offer is made in accordance with the Terms and Conditions of the Model Standing Offer for a Standard Connection Service available on our website. To accept this offer, please complete the enclosed Notice of Advice form and obtain your Level 3 Accredited Service Provider (ASP) signature on the form prior to returning it to Endeavour Energy.

Endeavour Energy has completed a preliminary desk top assessment of the information provided in your application and issued an enclosed Supply Offer. Your next step is to obtain the services of a Level 3 ASP to prepare and provide an electrical design to Endeavour Energy in the form of a Proposed Method of Supply. This activity is customer funded contestable work and you will need to pay for it. An estimate of fees related to review of your design is attached.

A list of the Accredited Service Providers is available at the NSW Trade and Investment website: <https://energysaver.nsw.gov.au/households/you-and-energy-providers/installing-or-altering-your-electricity-service> or can be obtained via phone 13 77 88.

Please note under the National Electricity Rules (NER) customer may choose to enter into a negotiated agreement. A negotiation framework describing this process is available on our website.

Should you have any enquiries regarding your application please contact the undersigned.

Yours faithfully,



Waheed Ebrahimi  
Contestable Works Engineer  
Ph: 98535643  
Email: cwtech@endeavourenergy.com.au

15 October 2019

**Endeavour Energy Ref: NCL1648 – 2019/01791/001**

Endeavour Energy  
PO Box 811  
Seven Hills NSW 1730  
[cwadmin@endeavourenergy.com.au](mailto:cwadmin@endeavourenergy.com.au)

**Attention:** Contestable Works Administrator

**NOTICE OF ADVICE**

**APPOINTMENT OF ACCREDITED DESIGNER FOR THE PROPOSED DEVELOPMENT AT:  
LOT 11, DP 1134453, 177 GROSE VALE ROAD, NORTH RICHMOND**

**\* Please complete and return when a Level 3 Service Provider has been nominated\***

Please accept this letter as notification that I intend to proceed with the development described above. I own or am developing the land and works on the land, (and/or where relevant on public land). I intend to supply this development to Endeavour Energy requirements.

By signing this Notice of Advice I am accepting the Terms and Conditions of Endeavour Energy's Model Standing Offer for a Standard Connection Service.

- Electricity Supply to Developments.

**The Level 3 Service Provider appointed is:** .....

**The Fees will be Paid to Endeavour Energy by:** .....

.....  
Signature of Level 3 ASP

.....  
Name of Level 3 ASP

.....  
Signature of Applicant/ Applicant's Representative

.....  
Name of Applicant/ Applicant's Representative

.....  
Date

.....  
Company Name

The signatory warrants that they are authorised to execute this Application.

**APPLICATION NO: NCL1648**  
**DATE: 15 October 2019**

**SUBJECT: SUPPLY OFFER FOR**  
177 Grose Vale Road, NORTH RICHMOND

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Endeavour Energy has carried out a desk top assessment and has prepared the attached Supply Offer for this development.

The supply offer will assist your Level 3 ASP to develop the most efficient solution to meet your needs whilst complying with Endeavour Energy's standards and with the Terms and Conditions of the Model Standing Offer for a Standard Connection Service. Please find below a list of some requirements that will need to be addressed by your nominated Level 3 ASP.

- Field visit to verify physical details
- Trench length
- Cable length
- Length of cable using existing ducts
- Length of new ducts required to be installed
- Substation location shown on a preliminary sketch and HV switchgear numbers
- Types and number of poles to be replaced or installed
- Complexity of trenching (ie rock, under-bore, commercial area etc)
- Earthing requirements and complexity
- Overhead construction and isolation point requirements
- Asset Valuation form must be completed including any extraordinary costing requirements
- Environmental issues addressed in a fully documented Environmental Assessment
- Generation requirements
- Rail Crossing requirements

A sketch of the proposed design utilising the GIS as a base must be returned with the above information.

This Supply Offer is part of the Connection Offer for a Standard Connection Service and is valid for three (3) months from the date of issue.

Where this Connection Offer has lapsed, you or your Level 3 ASP must contact Endeavour Energy with the request to extend the Connection Offer. Endeavour Energy will assess your request and will inform you of the outcome. It must be recognised that the network is being constantly extended/augmented as new customers get connected. This means that for your Connection Offer to be extended, your Supply Offer may require alteration. If this is the case, additional fees to cover administrative costs may apply.

The fees applicable to this phase of the project will need to be paid prior to design certification and are outlined in the Network Price List available on the Endeavour Energy website.

15 October 2019

**Endeavour Energy Ref: NCL1648 – 2019/01791/001**

## **SUPPLY OFFER**

(Based on a desktop assessment)

### **Development Details & Applicant's Assessed Load:**

Application for the provision of electricity for non-urban commercial site.

Existing load 500 amps per phase, additional load of 798 amps per phase and total load of 1298 amps per phase.

### **Endeavour Energy Assessed Load:**

Proposed total load of 1298 amps per phase

### **Development & Site Plans received/not received:**

Not received

### **HV/LV Connection Point & Connection Asset Requirements:**

The developer is required to engage the service of ASP level 3 to investigate and to propose a method of supply for this site that will comply with all relevant policies, regulations and network standards.

HV linkage point is: HV feeder 27454 – North Richmond (11kV feeder from zone sub) has existing load of 208 amps per phase and total prospective load will be 282.11 amps per phase. This HV feeder does not have sufficient capacity. Final HV requirement will be provided in the design brief letter based on the PMOS documents.

All service works are to comply with the NSW Service and Installation Rules.

Design with  
**community** in mind

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St Leonards NSW 2065  
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E [sydney@wge.com.au](mailto:sydney@wge.com.au)

For more information please visit  
[www.wge.com.au](http://www.wge.com.au)



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