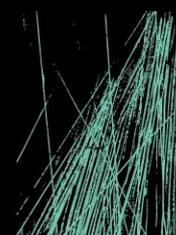


SERVICES REPORT

AUSTRAL PUBLIC SCHOOL UPGRADE

ELECTRICAL SERVICES



JHA

JHASERVICES.COM

This report is prepared for the nominated recipient only and relates to the specific scope of work and agreement between JHA and the client (the recipient). It is not to be used or relied upon by any third party for any purpose.

DOCUMENT CONTROL SHEET

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Project Name	Upgrade to Austral Public School
Description	Utilities
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1. INTRODUCTION

This Electrical Services Report has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the upgrade of Austral Public School (APS) (the activity). The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP.

The proposed activity is for the upgrades to the existing APS at 205 Edmondson Avenue, Austral, NSW, 2179 (the site).

Site Description

APS is located at 205 Edmondson Avenue, Austral on the south-eastern corner of the intersection between Edmondson Avenue and Tenth Avenue. The site has an area of 2.986 ha and comprises of 6 allotments, legally described as:

- Lot 1 DP 398105
- Lot 1 DP 398106
- Lot 1 DP 509613
- Lot 1 DP 512119
- Lot 2 DP 509613
- Lot 865 DP2475

The site currently comprises an existing co-educational primary (K-6) public school with:

- 8 permanent buildings;
- 14 demountable structures;
- interconnected paths;
- covered walkways;
- play areas: and
- at-grade parking.

The Austral Community Pre-school is also located within the site.

The existing buildings are clustered in the northern part of the site, ranging between 1 to 2 storeys in height. There is a sports oval in the south-eastern portion of the site, and a densely vegetated informal play area located in the south-western portion of the site.

The substation is subject to Endeavour Energy approval and is not required to be approved under the REF activity.

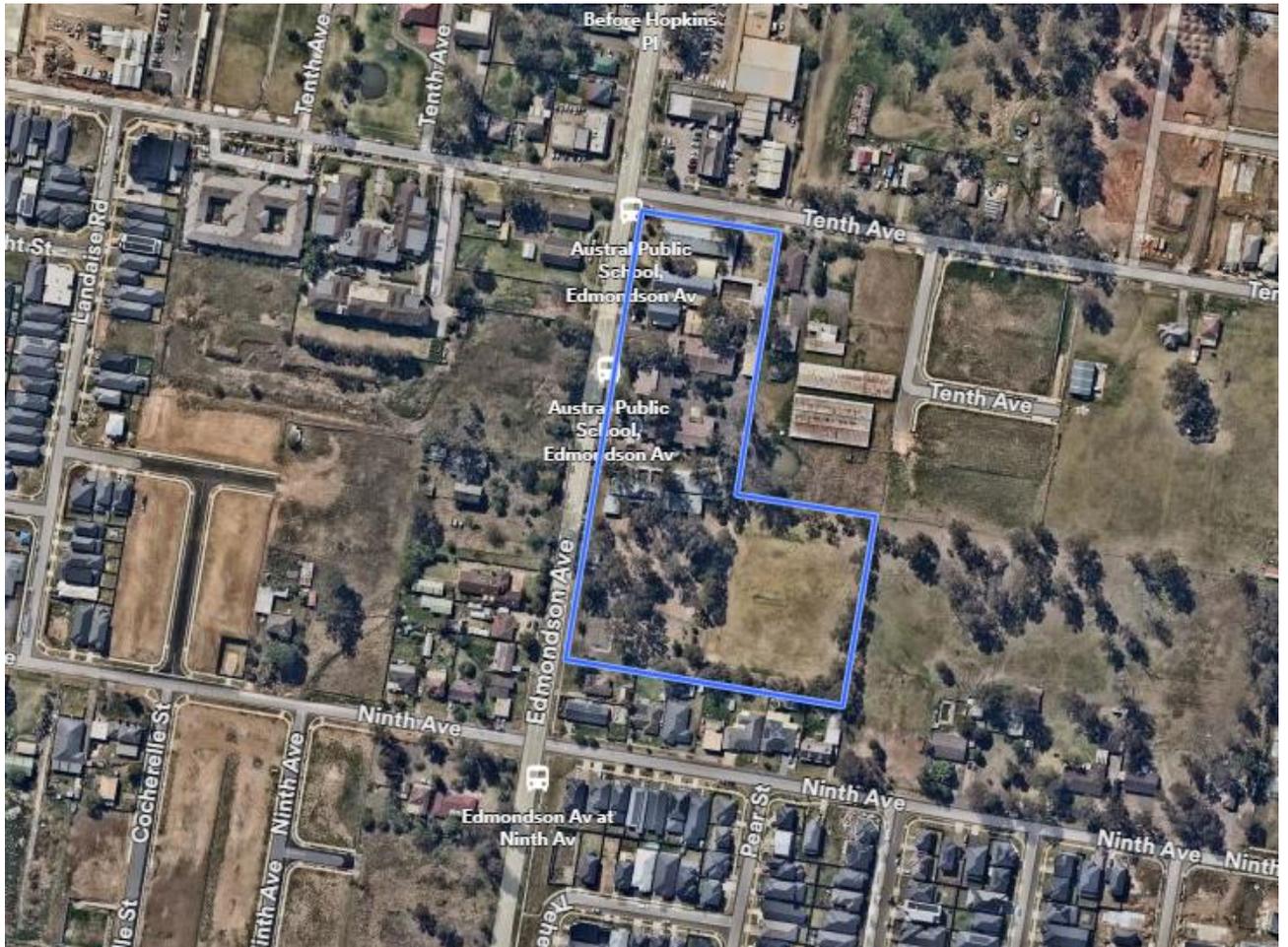


Figure 1 Aerial image of site (source: NearMap, taken 7 Sept 2023)

Proposed Activity Description

The proposed activity involves alterations and additions to the existing APS, including the following:

- Demolition of existing structures and removal of trees, as well as other site preparation works;
- The erection of a new 3-storey building comprising teaching spaces that includes 20 permanent teaching spaces and 3 support teaching spaces;
- Refurbishment and change of school function of Building I from classrooms to a Library;
- At-grade parking (57 new spaces, including 1 accessible space);
- New driveway and access gate from Edmondson Road;
- Erection of a substation within the site on the northern boundary;
- Upgrade of the sports field;
- Internal pathways, fencing, utility upgrades and associated works; and
- Off-site public domain improvements including retention and upgrading of the Kiss & Drop area and a temporary pedestrian road crossing on Tenth Avenue.

The intent of the activity is to allow for upgrades to APS that will provide a CORE 35 primary school compliant with the EFSG. The works will increase the capacity of the school from 681 students and 40 FTE teachers to 734 students and 64 FTE teachers, respectively. Furthermore, provision within the expanded 734 student capacity will be made for the creation of 30 support class students places.

Figure 2 below shows the scope of works for the proposed activity.

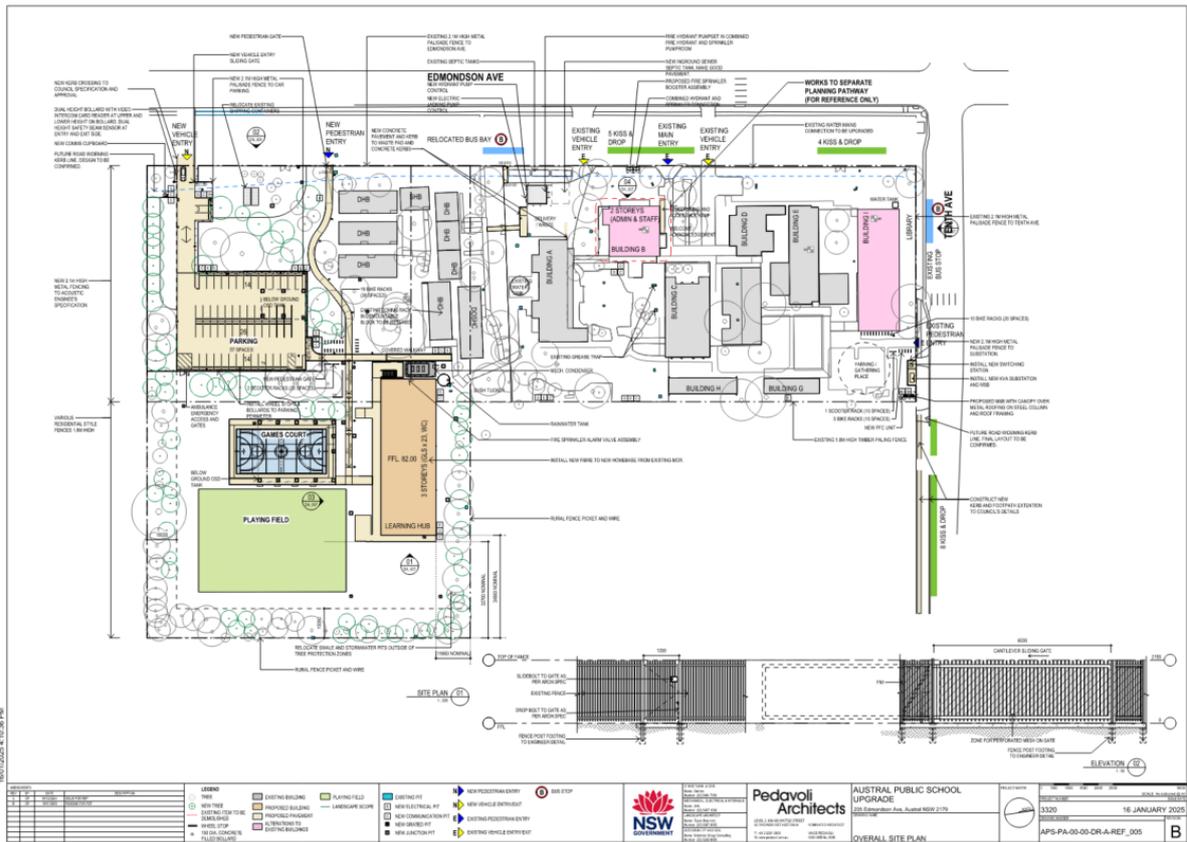


Figure 2 Proposed Site Plan (Source: Pedavoli Architects, Overall Site Plan (Rev B))

2. ELECTRICAL INFRASTRUCTURE

2.1 EXISTING SERVICES

Endeavour Energy is the electrical supply authority for the Austral area. APS is currently supplied via an existing overhead service cable from pole PL857624. The overhead service main terminates onto a private pole within the school's boundary.

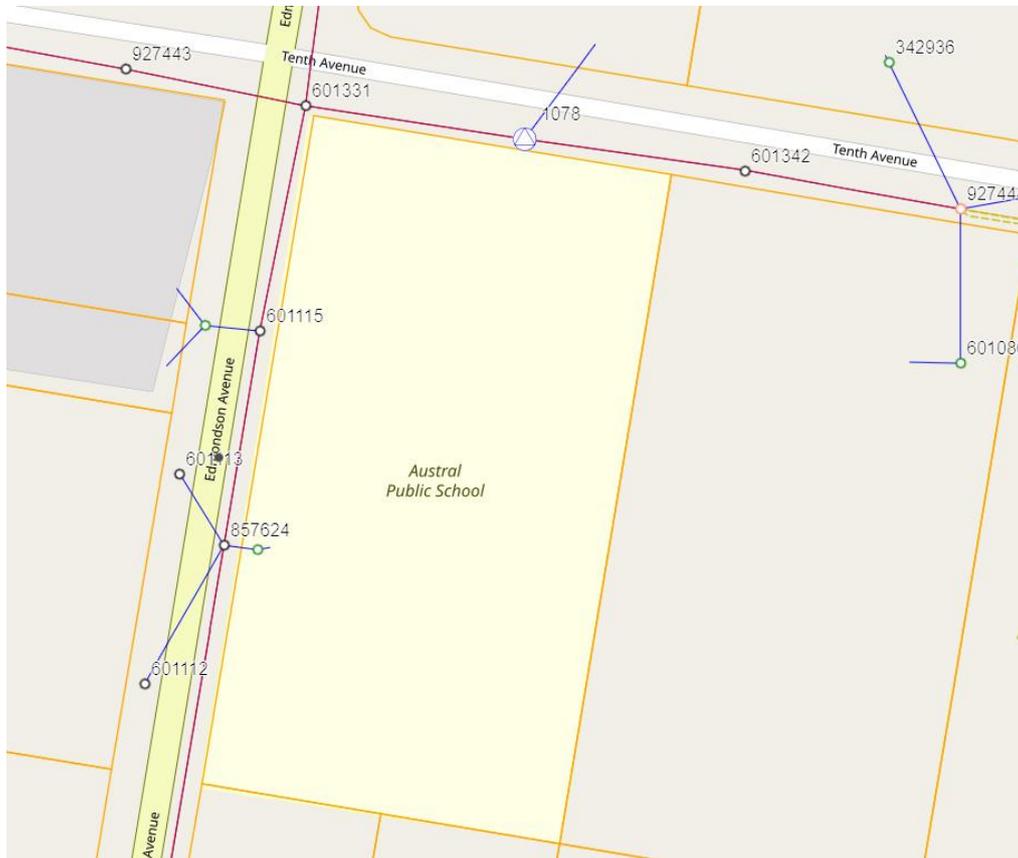


Figure 3: Endeavour Energy GIS Extract – LV and HV

From the above Endeavour Energy extract, the existing high voltage supply (HV – red line) is located along Edmondson Avenue and Tenth Avenue.

The existing main switchboard (MSB) is located within Block B. The consumer main reticulates from the private pole to the MSB. Refer to the site plan in for the MSB location. The MSB has the following properties:

- Supply: 200A
- Fault Level: unknown
- Form: unknown (likely 2b)
- IP rating: unknown (likely IP42)
- Build date: unknown (likely in the 1990s)

Based on the interval meter data (NMI 4310027944-0) of the site sent through by School Infrastructure NSW, the maximum demand of APS is currently 105 kVA (147 Amps).



Figure 4: Existing main switchboard at APS (BR001)

2.2 PROPOSED SERVICES

Based on the preliminary load calculations of the redevelopment, the masterplan works (inclusive of Stages 1 & 2) will require a new three-phase power supply of ~1000 Amps). The existing electrical supply to the site has been considered and determined to not have suitable capacity to provide the overall masterplan site (inclusive of Stages 1 & 2) with power. A new padmount substation will be required, along with new main switchboard.

There is existing overhead high voltage (HV) cables on both Edmondson Avenue and Tenth Avenue. The current proposed location of the padmount substation is along Tenth Avenue. Existing redundant gas pipes would need to be removed from this location prior to landing the padmount substation. In addition, a new site main switchboard would need to be established for the site. Current proposed location of the new site main switchboard is adjacent the new padmount substation within the canopy.

The substation is subject to Endeavour Energy approval and is not required to be approved under the REF activity.

The existing main switchboard within Block B will need to be back fed by the new site main switchboard. The new buildings will be supplied by the new site main switchboard via new sub-main reticulation.

2.2.11 SUBSTATION

As a minimum, the Endeavour Energy substation site requires the following as per Endeavour Energy standards:

- Minimum 2.75m x 5.5m easement
- Substation easement to be open to sky
- No utilities, other services or any foreign structures are allowed to encroach the substation easement (no water tank within 5m of substation)
- Substation site shall be flat and levelled over the entire easement area
- Comply with 1:100 flood levels for wherever the easement is located
- In case of substations being installed deep within private property, Endeavour Energy cable runs must be provided with a minimum 1m wide easement.
- Substation is located at the front property boundary with unrestricted 24/7 vehicle access to the substation directly from a public street; OR
- If the substation is installed deep within private property, unrestricted 24/7 right of way access is needed:
 - o Minimum 4500mm wide and 3500mm height
 - o Capable of sustaining 25 tonne/metre
 - o Minimum headroom of 5500mm in the vicinity of the substation
 - o Minimum turning circle inside radius of 5m and width of 2.8m including mirrors and 10.3m long. The maximum gradient of access way in front of the substation shall be 1:15 or 3.9 degrees.

The following are substation segregation requirements as per Endeavour Energy standards:

- Easement must be located as such that the substation plinth is 3m from the neighbour boundary.
- Fire rating of any building structure within the first 1.5m from the substation cubicle needs to be 2 hour fire rated and in the following 1.5m needs to be 1 hour fire rated. Any structure within 6m needs to be constructed of non-combustible material.
- No fixed glass/windows within 3m of substation cubicle.
- No fire egress paths are allowed within 3m of substation easement.
- Substation cubicle needs to be at least 10m away from any fire hydrant booster. If a fire pump room is within 10m of substation, fire authority approval may be required.
- Zone of influence of any nearby Sydney Water asset to be adequately away from the substation culvert. If not, Client is requested to gather written approval from Sydney Water for the location of substation.
- Minimum separation from substation earthing system to communication assets and swimming pool to be as per site specific earthing design.

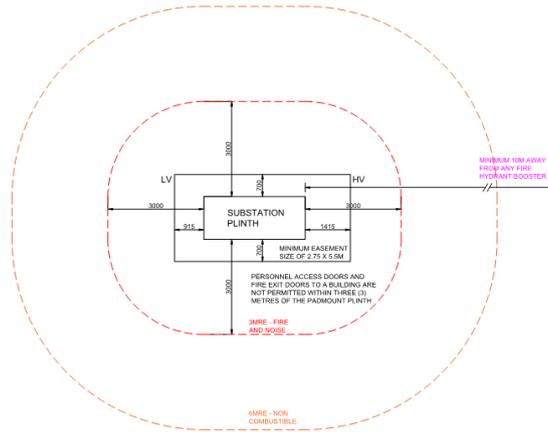


Figure 5: Endeavour Energy Padmount Substation Spatial

2.3 MITIGATION MEASURES

As described in Section 2.2, a new padmount substation is required to be established for the project as part of the electrical utility works. However, the substation is subject to Endeavour Energy approval and is not required to be approved under the REF activity. As such, mitigation measures are not applicable for the substation.

2.4 CUMULATIVE IMPACT ASSESSMENT

Located in the South West Growth Area (SWGA), the site and surrounding areas are poised for substantial growth and densification. Austral is undergoing significant change and transition following recent rezoning by the NSW Government. Further transformation is anticipated with the future rezoning of the nearby Leppington Town Centre, approximately 750 metres south of the site. This town centre is the focus of an active Planning Proposal which, if approved, is expected to greatly impact the character and context of the surrounding area.

2.4.1 ELECTRICITY

Electrical infrastructure is owned and maintained by the supply authority Endeavour Energy. As part of the process to establish a new substation, notifications are sent out to council and nearby residents of the proposed infrastructure works, with the opportunity to provide feedback. Through this consultation process, the cumulative impact of the proposed infrastructure work can then be assessed and managed through the design process.

2.5 CONCLUSION

Based on the proposed Endeavour Energy works and mitigation measures, we believe that the works:

- 1) is not considered to be a significant impact.

3. APPENDIX A – ENDEAVOUR ENERGY SUPPLY OFFER

Standard Connection Offer

30 January 2024

Endeavour Energy Ref: ULL3625

Customer Ref:

Prakash Neupane

JHA Consulting Engineers

20/2 Market Street

Sydney NSW 2000

ULL3625 – LOT 865, DP 2475, Connection of Load Application: 205 EDMONDSON AVENUE, AUSTRAL

Thank you for your application for Endeavour Energy to provide connection services in respect of the proposed development at the above location ("**Proposed Development**"). Your application for connection services in respect of the Proposed Development ("**Connection Application**") has been registered under the above reference number. Please quote this reference number on all future correspondence relating to the Connection Application.

Endeavour Energy has completed a preliminary desk top assessment of the information provided in the Connection Application and is pleased to make the Supply Offer enclosed with this letter. The enclosed Supply Offer is to provide standard connection services for the Proposed Development in accordance with the terms and conditions of Endeavour Energy's Model Standing Offer for a Standard Connection Service ("**Connection Offer**"). A copy of Endeavour Energy's Model Standing Offer for a Standard Connection Service is available on our website at <https://www.endeavourenergy.com.au/connections/connection-contracts-and-fees>.

Supply Offer

The enclosed Supply Offer forms part of this Connection Offer and it will assist your Level 3 Accredited Service Provider (ASP) to develop the most efficient design solution to meet your needs. Some general requirements that will need to be addressed by your nominated Level 3 ASP includes, but is not limited to:

- Field visit to verify physical site details
- Details of new and existing assets, including quantities
- Substation location, HV switchgear and earthing details
- Construction methods and isolation point requirements.
- Asset Valuation
- Environmental Assessment (Summary Environmental Report)

A sketch of the proposed design utilising our Geographic Information System (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.

Payment of design related ancillary network services.

Ancillary Network Services (ANS) are the main connection services we provide to customers for which ANS fees are payable. ANS include our interactions with ASPs to ensure that the contestable network services they provide, meet the design and technical requirements to be connected to and form part of our network.

The design related ANS fees payable for this project will be sent to you with a Design Brief. Payment of Design related ANS fees must be made before we can accept your L3 ASP design submission and commence design checking.

Please note that further ANS fees will also apply for the construction and connection phase of the project. These fees will be conveyed to you after the receipt of a signed Letter of Intent indicating that you will proceed with the construction phase of the project. We may also amend or charge you further ANS fees if your application details or project scope changes.

Accepting this Connection Offer

To accept this Connection Offer, please:

- a) appoint a Level 3 Accredited Service Provider (ASP);
- b) confirm your appointed Level 3 ASP contact details in the attached Notice of Advice form; and
- c) complete and sign the Notice of Advice form yourself and return it to Endeavour Energy.

A list of the Accredited Service Providers is available at the Energy NSW website:

<https://energysaver.nsw.gov.au/households/you-and-energy-providers/installing-or-altering-your-electricity-service> or can be obtained via phone on 13 77 88.

If you accept this Connection Offer, a connection contract will be formed between Endeavour Energy and the retail customer or real estate developer who requires the connection services for the Proposed Development ("**Developer**") on and from the date that Endeavour Energy receives the completed Notice of Advice form. The connection contract will be on the terms and conditions of the Supply Offer and Model Standing Offer for a Standard Connection Service.

If you accept this Connection Offer and you are not the Developer, you will be accepting this Connection Offer as the Developer's authorised agent.

Next steps

Your next step after accepting this Connection Offer is to engage your Level 3 ASP to prepare and provide an electrical design to Endeavour Energy in the form of a Proposed Method of Supply. Under the Model Standing Offer for a Standard Connection Service, this activity is "Customer Funded Contestable Work", and you will need to pay for it.

Please note under the National Electricity Rules (NER) the Connection Customer may choose to enter a negotiated connection contract. A negotiation framework describing this process is available on our website at <https://www.endeavourenergy.com.au/your-energy/our-services/your-right-to-negotiate>.

Should you have any enquiries regarding your application please contact the undersigned, who has been appointed as Endeavour Energy's representative for the purposes of this Connection Offer.

Yours Faithfully,

Darwesh Swamy
Customer Network Engineer
Ph: (02) 9853 5621
Email: CWTech@endeavourenergy.com.au

Enclosed:

1. Supply Offer
2. Initial Funding Arrangements
3. Notice of Advice – to be completed and returned when you have engaged your L3 ASP

Supply Offer

(Based on desktop assessment)

30 January 2024

Endeavour Energy Reference: ULL3625

Development Details & Applicant's Assessed Load:	Project site – Lot 865 DP2475 at 205 Edmondson Ave, Austral is proposed to be developed into a new education facility – Austral Public School. The assessed load demand for this site is 1000Amps.
Endeavour Energy Assessed Load:	As per the site's MD provided in the application.
Development & Site Plans received/not received:	Development plan received.
HV/LV Connection Point & Connection Asset Requirements:	Install a new 1000kVA PM Substation on the development site and extend 11kV feeder no. HINCHINBROOK - Second Ave – 48185 to the new Substation. Install new Type 2 2500A LV CB in the new Sub's LV Switchgear to establish supply arrangement to the site's MSB.
Network Constraints & Limitations:	Existing supply arrangement to the site is inadequate which need to be removed and new underground supply need to be installed, hence the above proposal.
Transmission Assets:	Transmission assets are unknown to the site.
Connection Options:	Level 3 ASP is required to prepare a proposed method of supply and submit to Endeavour Energy for approval. The scope of works is to be undertaken in accordance with the Terms and Conditions of the Model Standing Offer for a Standard Connection Service and must comply with all relevant policies, regulations, and network standards.



Initial Funding Arrangements

30 January 2024

Endeavour Energy Reference: ULL3625

Endeavour Energy Supplied Materials:	Nil.
Endeavour Energy Funded and Constructed:	Nil.
Endeavour Energy Funded and Level 1 ASP Constructed – Reimbursement Paid by Endeavour Energy	Capital contribution: <ul style="list-style-type: none"> ➤ 1x 1000kVA PM Substation Transformer
Reimbursement to be paid to Endeavour Energy by Customer:	<ul style="list-style-type: none"> ➤ Usage of existing spare ducts charged as per the Factsheet 11
Customer Funded Monopoly Services:	Network switching, commissioning, construction coordination, ancillary fees, etc.
Customer Funded Contestable Works:	All other works required.

Notice of Advice

[Insert date here]

Endeavour Energy Ref: ULL3625

Endeavour Energy
PO Box 811
Seven Hills NSW 1730
cwadmin@endeavourenergy.com.au

Attention: Customer Connections Administrator

APPOINTMENT OF ACCREDITED DESIGNER FOR THE PROPOSED DEVELOPMENT AT: LOT 865, DP 2475, 205 EDMONDSON AVENUE, AUSTRAL ("PROPOSED DEVELOPMENT")

Please complete and return this letter when a Level 3 ASP has been appointed

I refer to Endeavour Energy's offer to provide standard connection services in respect of the Proposed Development ("**Connection Offer**").

This letter confirms that:

- the retail customer or real estate developer for the Proposed Development ("**Developer**") owns, or is developing, the land on which the Proposed Development is to be located;
- the Developer intends to supply the Proposed Development in accordance with Endeavour Energy's requirements;
- the Developer has appointed the Level 3 Accredited Service Provider ("**Level 3 ASP**") described below for the purposes of the Proposed Development; and
- the Developer agrees to acquire standard connection services from Endeavour Energy in respect of the Proposed Development on the terms and conditions set out in the Connection Offer.

Confirmation of Key Contacts:

(1) Applicant	
Company/Name:	JHA Consulting Engineers Prakash Neupane
Address:	20/2 Market Street Sydney NSW 2000
Email:	prakash.neupane@jhaengineers.com.au
Phone:	0466 745 726 0410 208 147

(2) Developer

Company/Name:	SINSW David Spare
Address:	8/259 George Street Sydney NSW 2000
Email:	david.spare@det.nsw.edu.au
Phone:	0466 745 726

(3) L3 ASP (if you did not nominate a Level 3 ASP in your initial application, please do so below)

Company/Name:	JHA Consulting Engineers Kosma Tzannes
Address:	2 Market Street Sydney NSW 2000
Email:	kosma.tzannes@jhaengineers.com.au
Phone:	(02) 9437 1000

Please ensure all fields above are completed.

The Fees will be Paid to Endeavour Energy by*:

(*Please check only one responsible party in relevant check box below)

Applicant

Developer

Level 3 ASP

Notice of Advice Execution and Acceptance of Connection Offer:

By signing this Notice of Advice, I accept the Connection Offer made by Endeavour Energy in respect of the Proposed Development, including the terms and conditions of Endeavour Energy's Model Standing Offer for a Standard Connection Service.

Where I am accepting the Connection Offer on behalf of the Developer, I declare that:

- a) I have the authority to execute this Notice of Advice and accept the Connection Offer on their behalf; and
- b) I am not aware of any fact or circumstance that might affect my authority to execute this Notice of Advice and accept the Connection Offer on their behalf.

Developer/ Developer's Authorised Agent:

Signature of Developer/Developer's Authorised Agent

Name of Developer/Developer's Authorised Agent

Date

Company Name