INFRASTRUCTURE MANAGEMENT PLAN

NEW PRIMARY SCHOOL IN EDMONDSON PARK

ELECTRICAL, COMMUNICATION AND HYDRAULIC SERVICES

JHA

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DOCUMENT CONTROL SHEET

Project Number	210104
Project Name	New Primary School in Edmondson Park
Description	Infrastructure Management Plan – Electrical, Communications and Hydraulic Services
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Prepared By

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Revision History

Issued To	Revision and Date							
Anthony Mayo	**REV**	1	5					
RCC	**DATE**	16/04/2021	14/05/2021					
Anthony Mayo	**REV**	2						
RCC	**DATE**	4/05/2021						
Isaac Pinkerton	**REV**	3						
	DATE	10/05/2021						
Anthony Mayo	**REV**	4						
RCC	**DATE**	11/05/2021						

CONTENTS

1 INTRODUCTION

JHA Engineers have been engaged by RCC to provide the design of Hydraulic, Electrical and Communications services for the new primary school in Edmondson Park.

The document is designed to achieve a summarised, succinct and coherent written description detailing information on the existing and proposed infrastructure, any augmentation and easement requirements for the development for the provision of utilities including staging of infrastructure. The document will also identify any potential impacts of the proposed construction and operation on the existing utility infrastructure and service provider assets, and demonstrate how these will be protected or impacts mitigated.

The SSDA seeks approval for a new core 35 new primary school in Edmondson Park accommodating 1,012 students and a coldshell 40 place pre-school at the site. The works comprise:

- Site preparation and excavation;
- Land use for the purpose of a new primary school in Edmondson Park and pre-school;
- Construction of new buildings including:
  - A three storey building on the western portion of the site primarily addressing Faulkner Way comprising 36 homebases, 4 special support unit teaching spaces, staff room, administration office at the ground floor and library at the first floor addressing the corner of Buchan Avenue and Faulkner Way, and student amenities;
  - A single storey coldshell preschool building for educational programs for children the year before they commence kindergarten, accommodating 40 places. The pre-school building will be connected at the southern end of the three storey building; and
  - A single storey building on the eastern portion of the site comprising a communal hall, out of school hours care facility, 8 homebases and covered outdoor learning area.
- Landscaping and public domains works including tree planting, a sports court and creation of various assembly, play and learning zones;
- A drop-off and pick-up zone, and bus zone on Buchan Avenue;
- An at-grade staff carpark in the southern part of the site with ingress and egress provided off Faulkner Way at the south-west corner of the site;
- Primary pedestrian entrance from Buchan Avenue and an additional entrance on Faulkner Way for the ground floor support unit; and
- Other ancillary infrastructure and utilities works and digital signage.

SEARS 15. Utilities · In consultation with relevant service providers:	
Assess of the impacts of the development on existing utility infrastructure and service provider assets surrounding the site.	Refer to section 2.1 Existing Electrical Services, and section 2.3.1 Existing Telecommunication Services
Identify any infrastructure upgrades required off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained.	Refer to section 2.2.2.2 New Kiosk Substation and section 2.4.1 Telecommunication Early Enabling Works.
Provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated, funded and delivered to facilitate the development.	Refer to section 2.2.2.3 Supply Options

The document is not designed as a specification or bill of materials, nor is it intended to provide detail of the equipment, fitting or services selection.

This report should be read in conjunction with the Architectural design drawings and other consultant's design reports submitted as part of this application.

The following documentation has been considered for the preparation of this report:

- Architectural drawings prepared by Tanner Kibble Denton

2 ELECTRICAL SERVICES

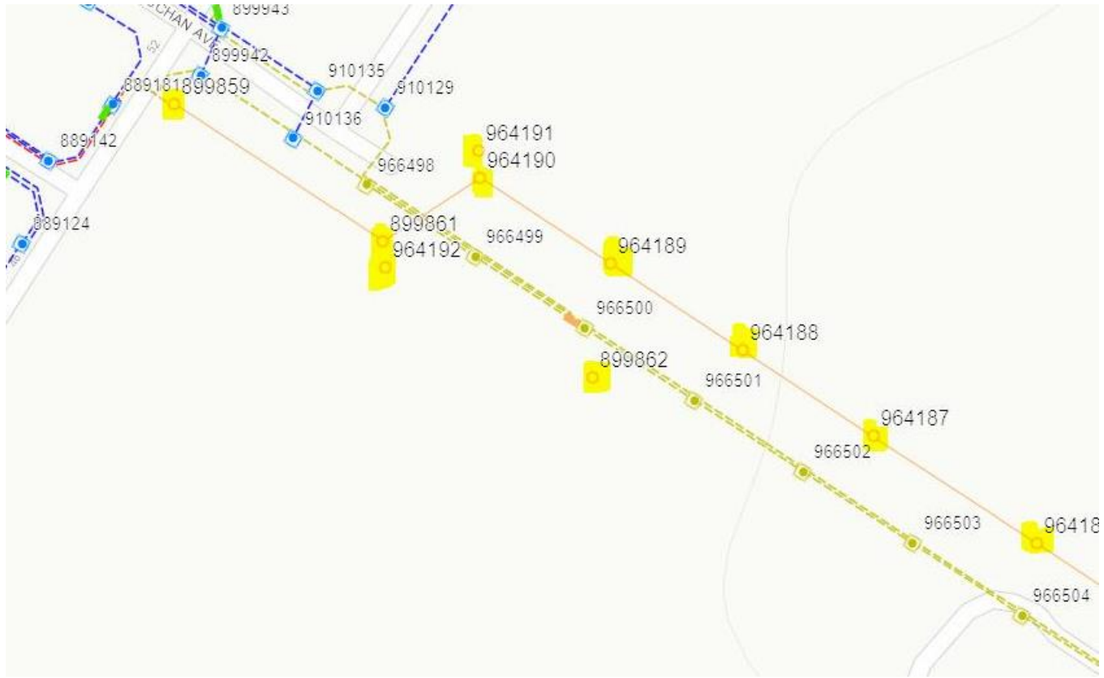
2.1 EXISTING ELECTRICAL SERVICES

2.1.1 ELECTRICAL POWER SUPPLY

Edmondson Park is within the Endeavour Energy (EE) electrical distribution network. The new primary school in Edmondson Park is a green field project and has no current connection. There is currently HV within the street on Buchan Ave and Faulkner Way.

Figure 2.1 shows the existing HV infrastructure running through the current site. This will be relocated and undergrounded as part of a separate project, which will occur prior to the start of the proposed new primary school in Edmondson Park.

Figure 2.1(a) – EE GIS Network Diagram



2.2 PROPOSED ELECTRICAL SERVICES

2.2.1 MAXIMUM DEMAND

JHA have assessed the project floor yield, area, proposed use, and carried out a maximum demand calculation to assess its impact to current infrastructure onsite.

2.2.1.1 THE PROJECT ELECTRICAL DEMAND

The proposed new building will include admin/staff area, hall, general learning space, labs, library, and Air-Conditioning to internal most spaces.

Based on past/recent projects of similar sites, and taking consideration of the above, below is the anticipated maximum demand for the site.

Table 2.2: Preliminary Maximum Demand

Level	Space	Area *(m^2)*	Assumed General Lighting & Power Use *(VA/m^2)*	Assumed Airconditioning Use *(VA/m^2)*	Load *(kVA)*	Load per Phase *(A)*
Ground Floor	GROUND FLOOR	2628	21	35	147	204
Level 1	LEVEL 1	2800	21	35	157	218
Level 2	LEVEL 2	2620	21	35	147	204
					Total	626
					15% Spare	94
					Total + 15% Spare (as per EFSG)	719

This allowance is based on:

- Estimated mechanical loads (AS3000 only table C3. With full air-conditioning system in all student spaces – include Admin and Hall areas);
- LED lighting throughout. No stage lighting;
- General power provisions (circa 6-10 GPO's) for a typical classroom;
- Knowledge and experience of similar sites.
- EFSG requirements

Based on estimated load allowances and assumed air conditioned areas, we estimate the site maximum demand will be in the order of 719 A/phase (incl. 15% spare capacity).

2.2.2 NEW KIOSK SUBSTATION AND NEW MAIN SWITCHBOARD

2.2.2.1 ESTABLISHMENT OF NEW KIOSK SUBSTATION AND NEW MAIN SWITCHBOARD

Based on the maximum demand calculated for new primary school in Edmondson Park is a new 1000kVA kiosk substation and new main switchboard are proposed to be installed on site.

The new 1000kVA KL kiosk substation is proposed to be fused at 1600 Amps LV in a 1600 Amps LV panel with the SPD set at 1000 Amps at the new site MSB.

2.2.2.2 NEW KIOSK SUBSTATION

JHA have carried out a desktop study for a feasibility on the new substation locations.

There are numerous restrictions and easements required to be considered when locating a suitable location such as factoring a 5300mm x 3300mm easement for the kiosk substation arrangement, 3m fire separation restriction to non 2 hr. FR structures, 10m away from fire boosters, 6m to any ventilation openings). The configuration of substation explored are in the form of an outdoor KL Kiosk Substation or KK Kiosk Substation.

Based on the requirements above, JHA have proposed the following location for the new KL kiosk substation which is located on the Buchan Avenue street frontage as per Figure 2.3.

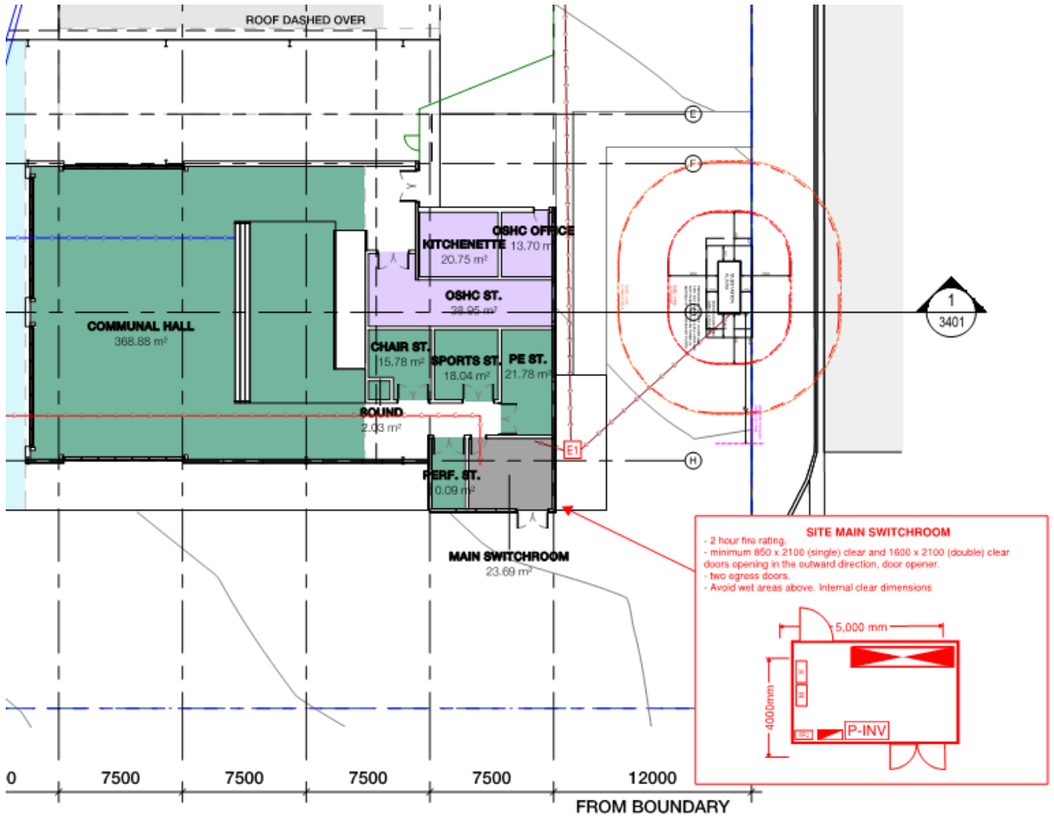


Figure 2.3 – Proposed new Kiosk substation and new MSB location

2.2.2.3 SUPPLY OPTIONS

JHA Electrical carried out a high level feasibility study on potential supply options subject to available space and negotiations with EE. An application for connection for Edmondson Park additional load needs to be submitted to EE for formal review and approval.

In summary below, an application has been submitted to the Authority, refer Appendix 4.2

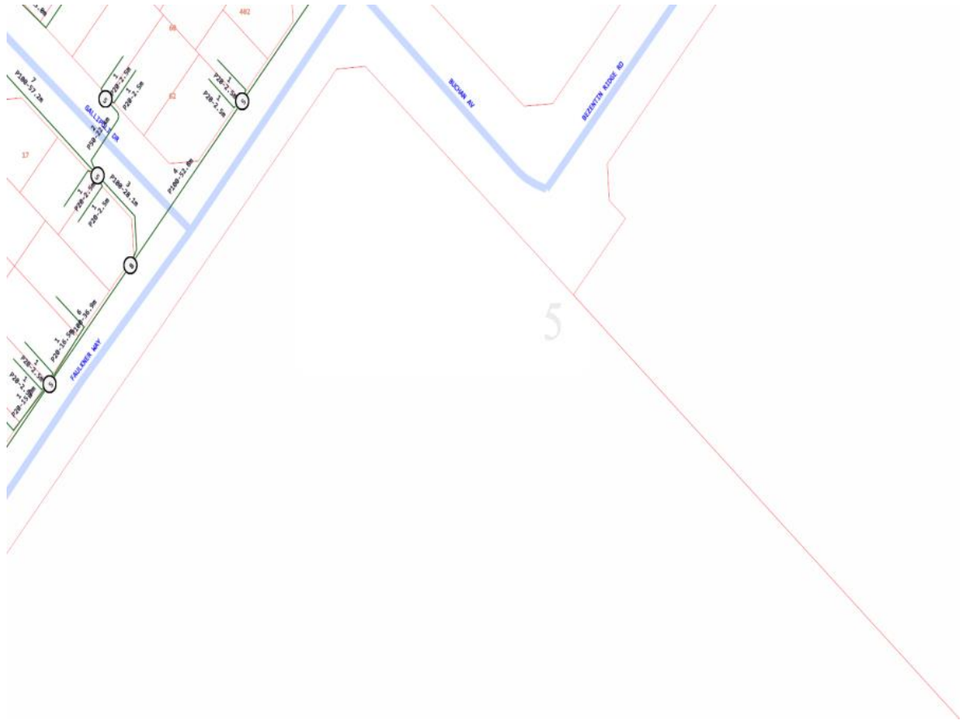
Responsibility	Actions	Estimated Time Frame	Comments
JHA	To prepare the maximum demand calculation for the new building	0.5 week	Preliminary estimate calculated, however will require Mechanical strategy /loads from Mechanical consultant to finalize.
JHA (RCC/JHA)	Agree on the preferred substation options	TBC	
JHA	JHA to submits Application For Connection (AFC) for additional load to EE	1 week	
Endeavour Energy	EE to Review network arrangements and submit network connection offer	3 weeks	EE will take up to 3 weeks to review the application and issue the permission to connect letter
JHA	ASP3 design + EE Certification process A copy of the Kiosk Substation Spatial Requirement is appended at the rear of this report	6 months	ASP3 design + EE Certification process

2.3 EXISTING TELECOMMUNICATIONS SERVICES

2.3.1 TELECOMMUNICATIONS INCOMING SERVICES

Edmondson Park is proposed to be connected to NBN into the new campus distributor.

Figure 2.5 – NBN Street availability shown in Faulkner Way.



2.4 PROPOSED TELECOMMUNICATIONS SERVICES

2.4.1 TELECOMMUNICATIONS EARLY ENABLING WORKS

A new site main communications room is proposed to be built for the new development. The new site main communications room location has taken consideration of potential future development.

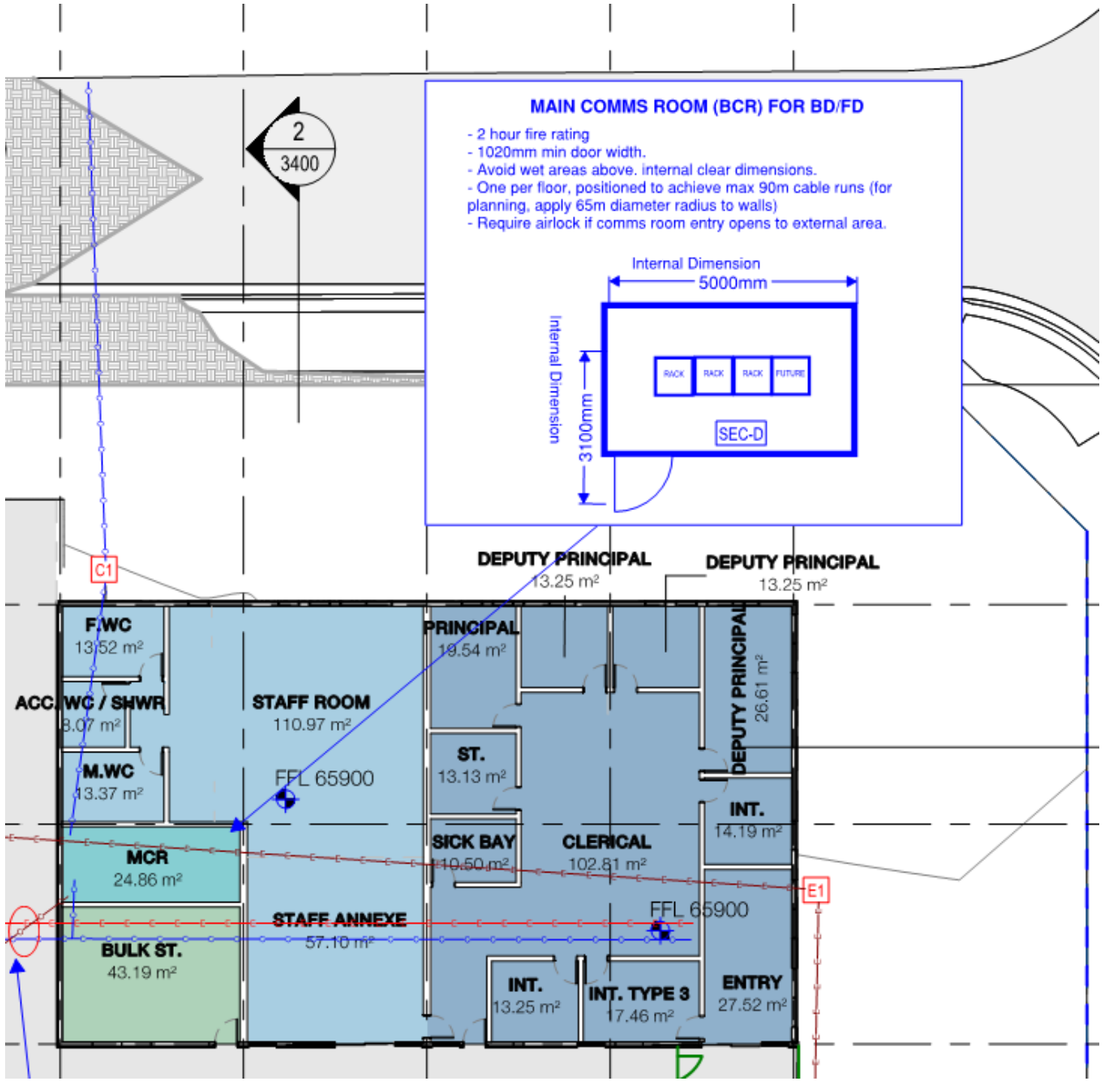


Figure 2.6 – Proposed Communications Site Reticulation Pathway

2.4.2 CAMPUS DISTRIBUTOR / BUILDING DISTRIBUTOR

2.4.2.1 CAMPUS DISTRIBUTOR

A new campus distributor (4-off communications racks) will be installed in the new site main communications room in the new building. The campus distributor shall be served via a new fibre lead-in cable from Faulkner Way (final provider TBC).

The main communication room shall be sized to house 3 cabinets as per the EFSG, based on the arrangement and size of the cabinet, the proposed size of the main communication room is: 5m (W) x 3.1m (D). Refer to figure below for details.

The campus distributor shall then feed all other building distributors throughout the new primary school in Edmondson Park via the school backbone fibre.

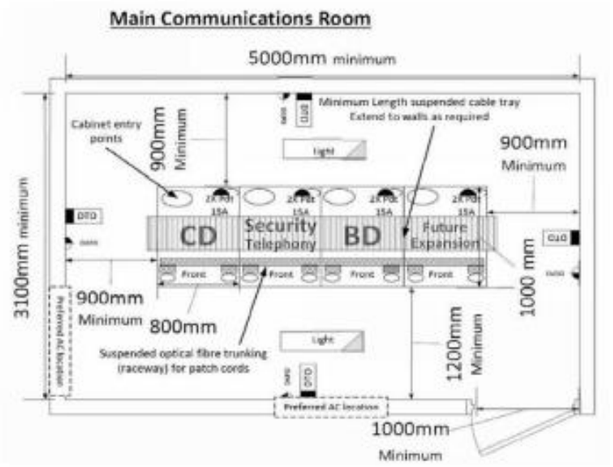


Figure 2.7(a) –Site Main Communications Room Spatial Requirement

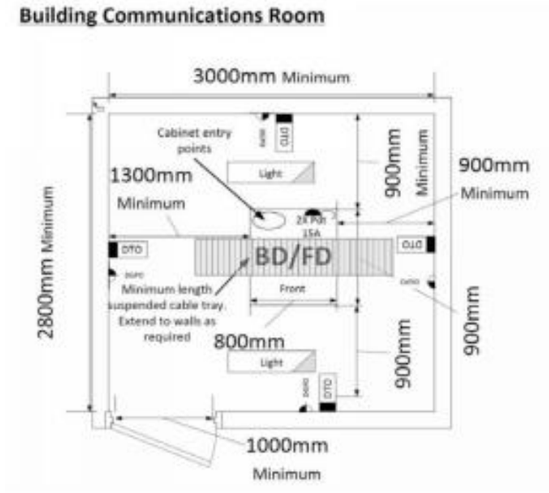


Figure 2.7(b) –Building Communications Room Spatial Requirement

2.4.2.2 BUILDING DISTRIBUTOR

According to SINSW Structured Cabling System Specification, multi-level building requires minimum 1-off building communications room per level. The building communications room shall be located centrally with a 70m radius cabling length requirement (additional building communications room shall be provided if cabling length exceeds 70m radius).

The building communications room shall be sized to house 2 cabinets as per the EFSG, based on the arrangement and size of the cabinet, the proposed size of the building communications room is: 3m (W) x 2.8m (D). Refer to figure below for details.

3 HYDRAULIC SERVICES

3.1 EXISTING HYDRAULIC SERVICES

3.1.1 SEWER DRAINAGE

EXISTING SERVICES

The site for new primary school in Edmondson Park is surrounded by the following existing sewerage infrastructure

- S1 – 150mm PVC pipeline and sewer manhole in the corner of Buchan Avenue and Faulkner Way
- S2 – 150mm PVC pipeline and sewer manhole in the corner of Gallipoli Drive and Faulkner Way

Diagram 3.1 below, illustrates the surrounding authority sewer mains

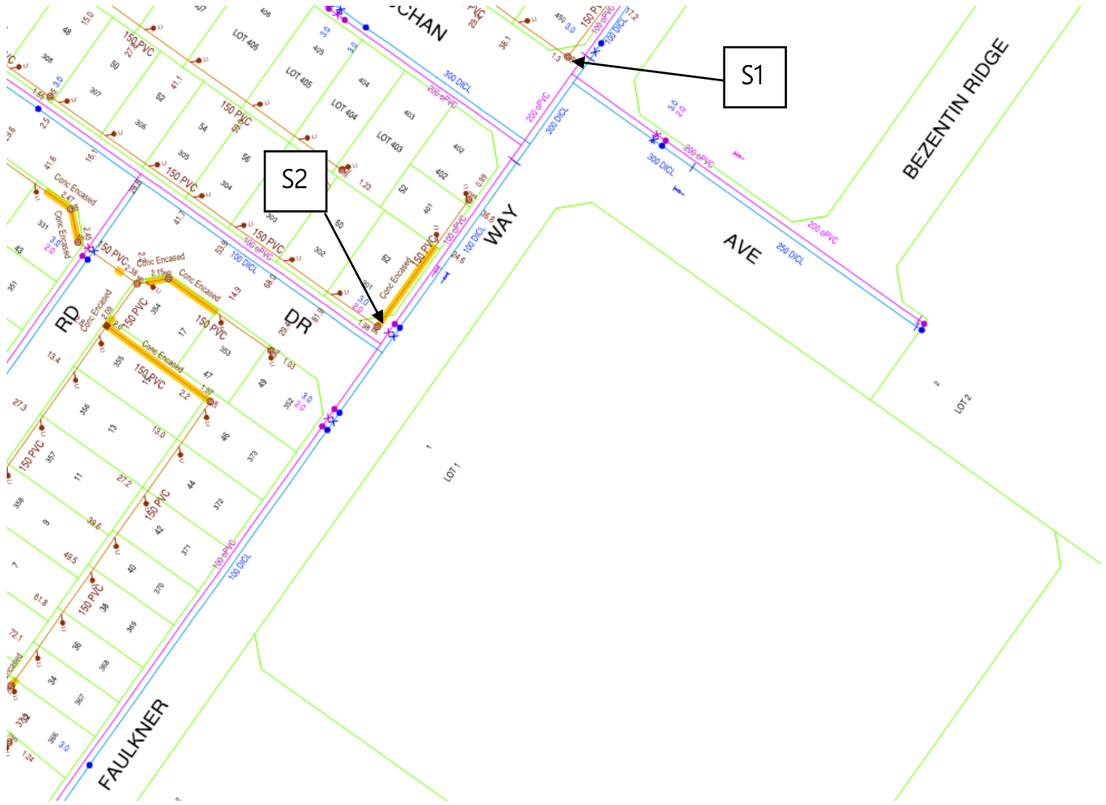


Diagram 3.1: Existing Sewer Infrastructure Map

PROPOSED SEWER SERVICES

The site for new primary school in Edmondson Park is to be served by the sewer main proposed to be installed along Buchan Avenue North East of Lot 2 as per attached diagram below.

- S3 – DN225mm UPVC pipeline and TMS along Buchan Avenue

Diagram 3.2 below, illustrates the proposed sewer main along Buchan Avenue.

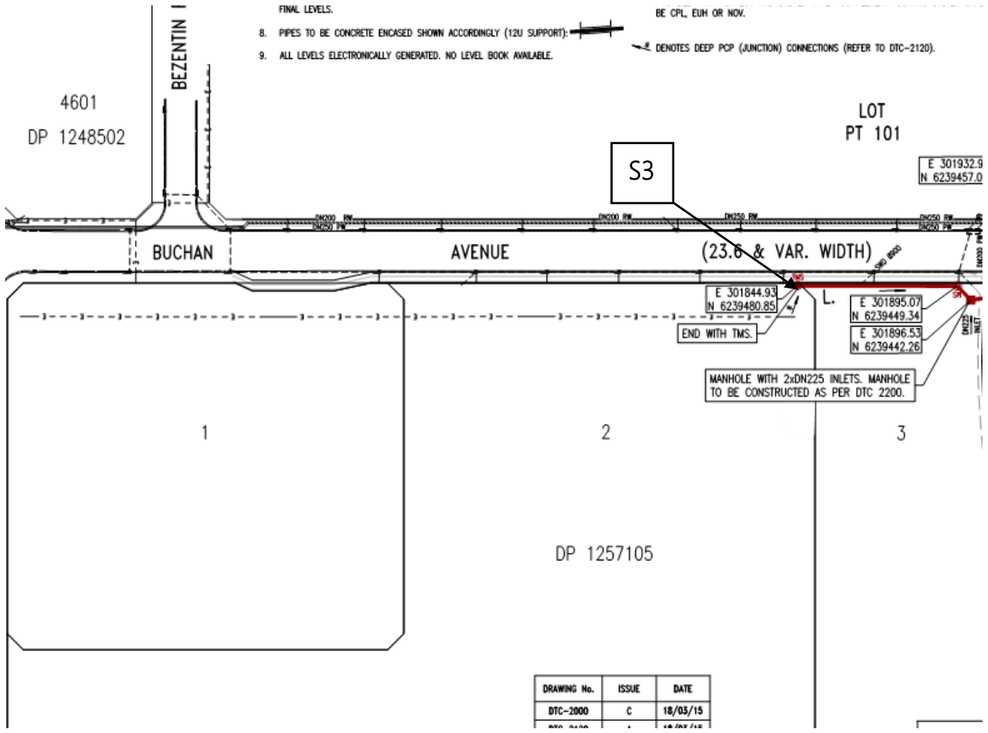


Diagram 3.2: Proposed Sewer Infrastructure for Edmondson Park

3.1.2 POTABLE WATER / RECYCLED WATER

The site for new primary school in Edmondson Park has frontage to the following authority water mains and recycled water mains:

- W1: 300/250mm DICL water main in Buchan Ave
- RW1: 200 oPVC recycled water main in Buchan Ave
- W2: 100mm DICL water main in Faulkner Way
- RW2: 100 oPVC recycled water main in Faulkner Way

JHA has applied for the pressure and flow information for the water services from Sydney Water and are currently awaiting the results.

Diagram 3.3 below illustrates the surrounding authority water mains.

Diagram 3.3: Water Infrastructure Map

Diagram 3.4: Gas Infrastructure Map

3.1.3 GAS SERVICES

The site for new primary school in Edmondson Park has frontage to the following authority natural gas mains:

- G1: 110m PE @ 210 kPa gas main in Buchan Ave
- G2: 32mm NY @ 210 kPa gas main in Faulkner Way
- G3: 32mm NY @ 210 kPa gas main in Faulkner Way

Diagram 3.4 below illustrates the surrounding authority gas mains.

3.2 PROPOSED HYDRAULIC SERVICES

3.2.1 SEWER DRAINAGE & TRADE WASTE

3.2.1.1 CONNECTION POINT

As per the latest developer contract plan (Case No: 175873WW) from Landcom services there would be a new Ø225 sewer main along the north east end of Lot 2 along Buchan Avenue.

In order to confirm if this sewer main has sufficient capacity to accommodate the load from the proposed development, a section 73 application will be lodged to Sydney Water once development approval is obtained. This proposal is typical and it is understood that it would be acceptable by Sydney Water. A Water Servicing Coordinator (WSC) will need to be engaged for these design works to ensure all Sydney Water requirements are met and the relevant consents are provided.

As per the survey plan, site is sloping towards the east and the depth of sewer at the connection point is roughly 4.6m from the surface level as per drawing CASE175873WW-D-2.2. We have currently used the survey plan and the FFL provided on the architectural plan for the main sewer run from site to the authority connection point.

Diagram 3.5 illustrates the proposed sewer connection point.

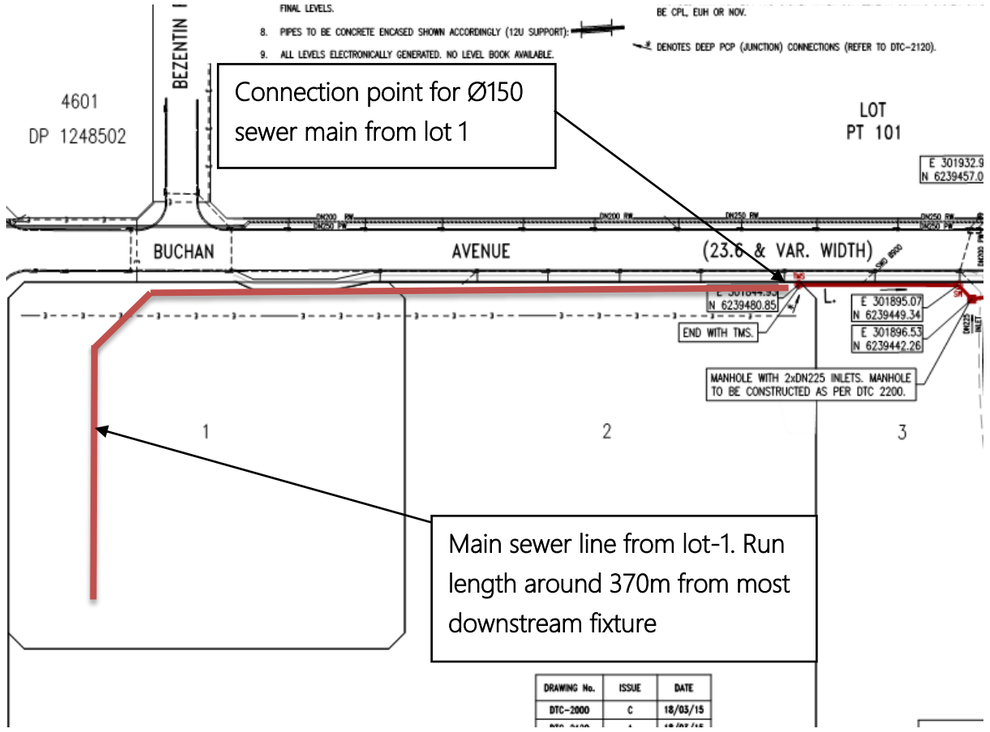


Diagram 3.5: Sewer Connection Point

3.2.1.2 LOAD ESTIMATION

At this current stage of the design process, sewer loads for the new primary school in Edmondson Park cannot be confirmed and will need to be revisited.

It is anticipated that the new Ø225mm sewer services will be sufficient to serve the new primary school in Edmondson Park.

3.2.2 WATER SUPPLY

3.2.2.1 CONNECTION POINTS

The existing 300mm CICL potable water main on Buchan Avenue in the northern side of the site is envisaged to be the most appropriate water connection point for the site to service both the fire and potable water requirements.

A connection at this main allows a direct path to the main vehicular entry, in which the required fire hydrant booster assembly will need to be located to code requirements. Fire hydrants will be required to provide coverage for the proposed development. The proposed location for the booster assembly and pump set is as shown in the diagram below.

The potable water service from this main will extend into a master Sydney Water meter located adjacent the fire booster assembly with a RPZD backflow prevention device to Sydney Waters requirements.

Furthermore, the recycled water main can be utilised to service the recycled water demands of the site. This will be used to top up the rainwater harvesting tank, which will be a requirement under the ESFG.

Diagram 3.6 illustrates proposed domestic cold water connection lines to the proposed development.

Diagram 3.6: Potable Water Connection Point

3.2.2.2 LOAD ESTIMATION – WATER

At this current stage of the design process, the potable water loads for the new primary school in Edmondson Park cannot be confirmed and will need to be revisited, however, from a potable water perspective, this main will be sufficient to serve the new primary school in Edmondson Park.

A pressure and flow inquiry has been submitted to the Authority, refer to appendix 4.4.

3.2.2.3 LOAD ESTIMATION – FIRE

From a fire perspective, it is anticipated that the fire hydrant demand will be two (2) fire hydrants operating simultaneously (i.e. 20L/s flow rate). The 300mm CICL main is most likely able to achieve this and as a result, will not require any fire water tanks. Further review of the developed design will be required to confirm the site fire water demand.

A pressure and flow inquiry has been submitted to the Authority, refer to appendix 4.4.

3.2.3 GAS SUPPLY

The existing 110mm pipeline located in Buchan Avenue in the northern side of the site is envisaged to be of sufficient capacity for the proposed development.

At this stage, it is envisaged that the existing gas authority (Jemena) mains have sufficient capacity for required load for the development. It is our assumption at this stage that gas is required for this site for any cooking with in the canteen and also for any mechanical heating.

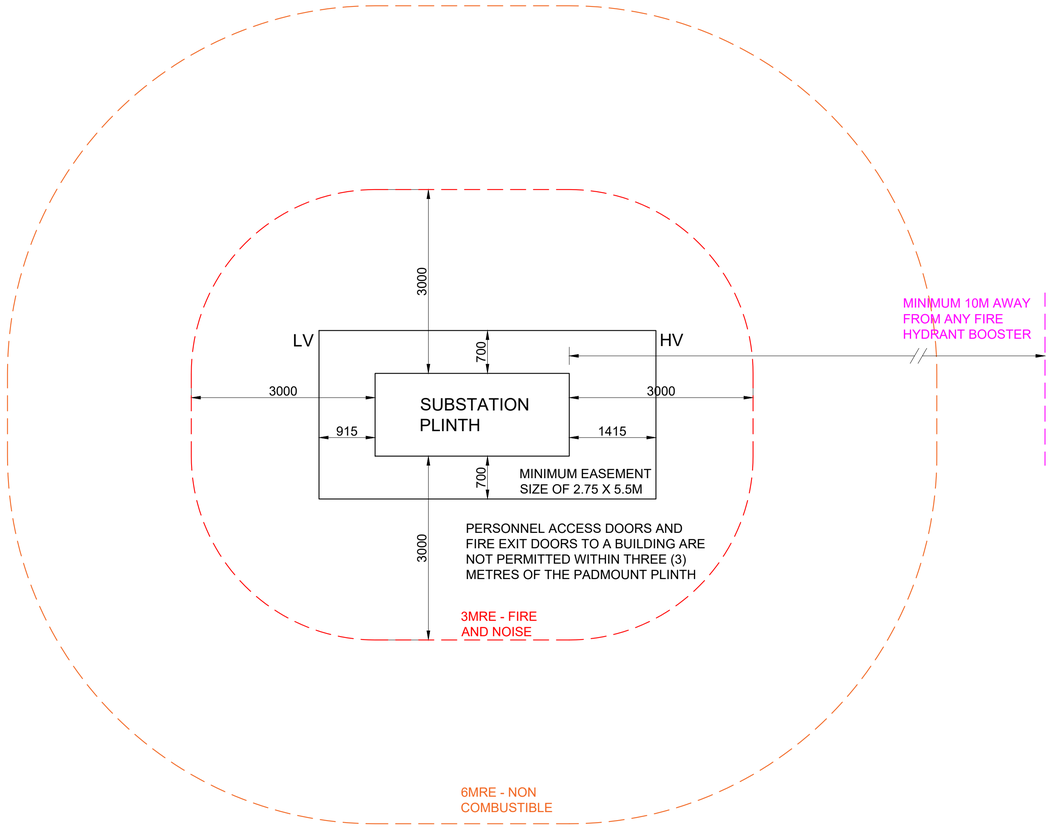
At any stage the gas based system for hydraulics can be substituted with the following –

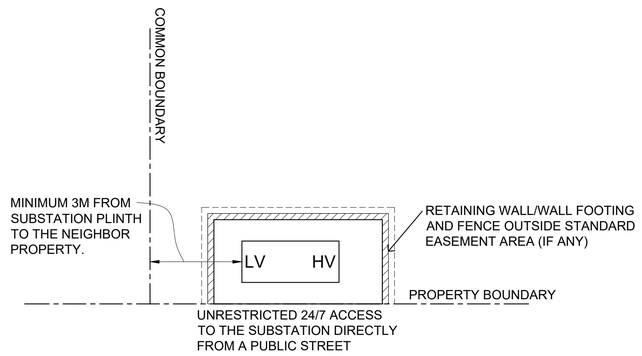
- Electric hot water system. This would have additional electrical demand.
- Electric cook tops – Architectural to confirm if electric or gas cook tops are used for canteen.
- Kiln to have electric heating.

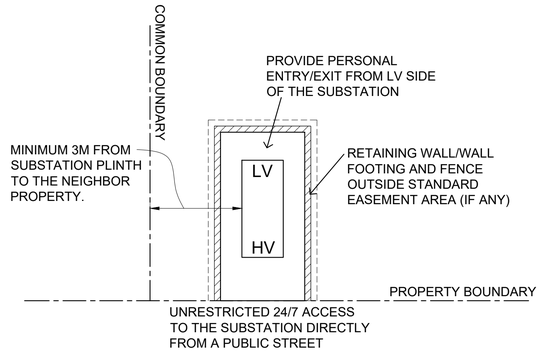
A natural gas application to the authority will need to be reviewed, and a formal gas offer will be provided for acceptance of the new primary school in Edmondson Park

4 APPENDIX

4.1 ENDEAVOUR ENERGY SUBSTATION SPATIAL – SINGLE PADMOUNT







ENDEAVOUR ENERGY
SUBSTATION LOCATION, BUILDING AND EASEMENT MINIMUM REQUIREMENT

SUBSTATION SITE:

1. SUBSTATION MINIMUM EASEMENT SIZE TO BE 2.75M X 5.5M.
2. SUBSTATION EASEMENT TO OPEN TO SKY.
3. NO UTILITIES, OTHER SERVICES OR ANY FOREIGN STRUCTURES ARE ALLOWED TO ENCROACH THE SUBSTATION EASEMENT (NO WATER TANK WITHIN 5M OF SUBSTATION).
4. SUBSTATION SITE SHALL BE FLAT AND LEVELED OVER THE ENTIRE EASEMENT AREA.
5. COMPLY WITH 1:100 FLOOD LEVELS, FOR WHEREVER THE EASEMENT IS LOCATED.
6. IN CASE OF SUBSTATIONS BEING INSTALLED DEEP WITHIN PRIVATE PROPERTY, ENDEAVOUR ENERGY CABLE RUNS MUST BE PROVIDED WITH A MINIMUM 1M WIDE EASEMENT.

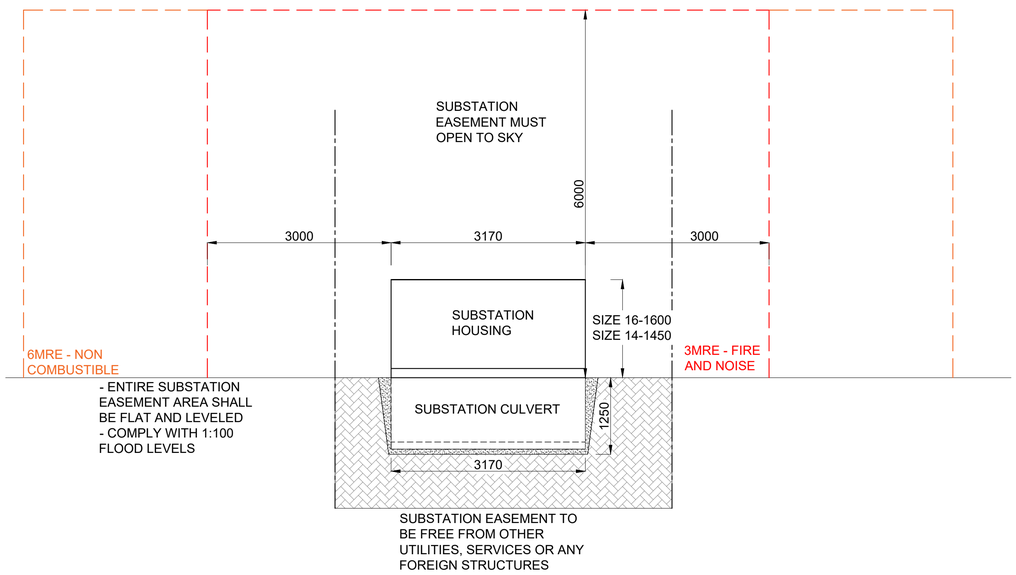
SUBSTATION SEGREGATION:

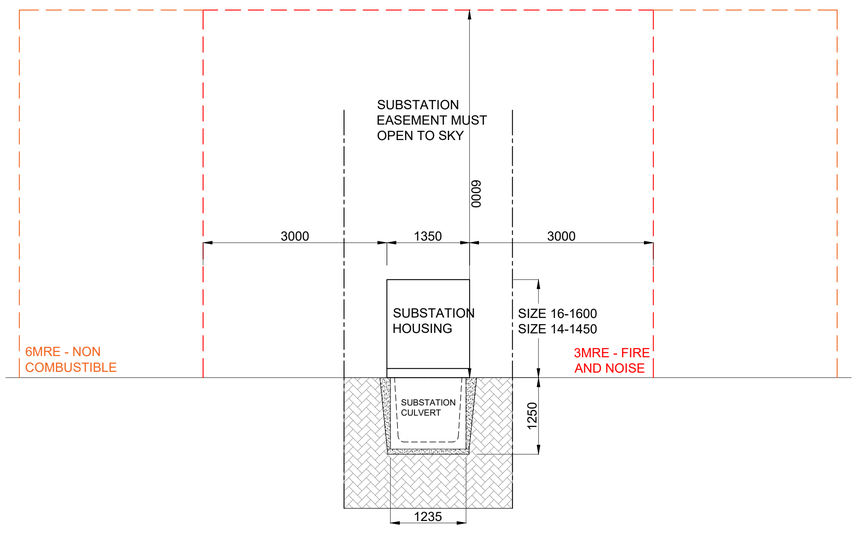
1. EASEMENT MUST BE LOCATED AS SUCH THAT THE SUBSTATION PLINTH IS 3M FROM THE NEIGHBOR BOUNDARY.
2. FIRE RATING OF ANY BUILDING STRUCTURE WITHIN THE FIRST 1.5M FROM THE SUBSTATION CUBICLE NEEDS TO BE 2HRS FIRE RATED AND IN THE FOLLOWING 1.5M NEEDS TO BE 1HR FIRE RATED. ANY STRUCTURE WITHIN 6M NEEDS TO BE CONSTRUCTED OF NON-COMBUSTIBLE MATERIAL.
3. NO FIXED GLASS/WINDOWS WITHIN 3M OF SUBSTATION CUBICLE.
4. NO FIRE EGRESS PATHS ARE ALLOWED WITHIN 3M OF SUBSTATION EASEMENT.
5. SUBSTATION CUBICLE NEEDS TO BE AT LEAST 10M AWAY FROM ANY FIRE HYDRANT BOOSTER. NOTE: IF A FIRE PUMP ROOM IS WITHIN 10M OF SUBSTATION, FIRE AUTHORITY APPROVAL MAY BE REQUIRED.
6. AS DESIGNER'S (ASP3) DUTY OF CARE, IT IS TO BE ENSURED THAT "THE ZONE OF INFLUENCE" OF ANY NEARBY SYDNEY WATER ASSET BE ADEQUATELY AWAY FROM THE SUBSTATION CULVERT. IF NOT, CLIENT IS REQUESTED TO GATHER WRITTEN APPROVAL FROM SYDNEY WATER FOR THE LOCATION OF THE SUBSTATION.
7. MINIMUM SEPARATION FROM SUBSTATION EARTHING SYSTEM TO COMMUNICATION ASSETS AND SWIMMING POOL TO BE AS PER SITE SPECIFIC EARTHING DESIGN.

SUBSTATION ACCESS:

VEHICLE ACCESS TO THE SUBSTATION:

1) SUBSTATION IS LOCATED AT THE FRONT PROPERTY BOUNDARY WITH UNRESTRICTED 24/7 VEHICLE ACCESS TO THE SUBSTATION DIRECTLY FROM A PUBLIC STREET; OR
2) IF THE SUBSTATION IS INSTALLED DEEP WITHIN PRIVATE PROPERTY UNRESTRICTED 24/7 RIGHT OF WAY ACCESS IS NEEDED. RIGHT OF WAY ACCESS IS REQUIRED TO BE:
   - MINIMUM OF 4500MM WIDE AND 3500MM HEIGHT.
   - CAPABLE OF SUSTAINING 25-TONNE/METRE.
   - MINIMUM HEADROOM OF 5500MM IN THE VICINITY OF THE SUBSTATION.
   - MINIMUM TURNING CIRCLE INSIDE RADIUS OF 5 METRES A WIDTH OF 2.8 METRES INCLUDING MIRRORS AND 10.3 METRES LONG. THE MAXIMUM GRADIENT OF ACCESS WAY IN FRONT OF THE SUBSTATION SHALL BE 1:15 OR 3.9 DEGREES.





REVISIONS / AMENDMENTS

Rev	Date	Description	Verified
1	06.08.2014	ISSUED FOR INFORMATION	BB
2	11.08.2014	AMMENDED CULVERT DETAIL	BB
3	11.11.2014	AMMENDED FIRE RESTRICTION ZONE	BB
4	11.11.2014	AMMENDED EASEMENT AREA	BB
5	22.01.2015	AMMENDED NOTES	BB
6	08.04.2020	AMMENDED NOTES	BB

CLIENT

ARCHITECT

CONSULTANT

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PROJECT

TITLE

STANDARD EE SPATIALS

ENDEAVOUR ENERGY STANDARD
SINGLE PADMOUNT SUBSTATION

FOR INFORMATION
NOT TO BE USED FOR CONSTRUCTION

DRAWN	CHECKED	APPROVED	SCALE	CREATED
LF	BB	BB	NTS	MAY 14

JOB No.	DRAWING No.	REV
	L3-11	5

4.2 ENDEAVOUR ENERGY SUPPLY OFFER

11 May 2021
Endeavour Energy Ref: UCL10914
Customer Ref:
JHA Consulting Engineers
101 Miller Street
NORTH SYDNEY NSW 2060
Attention: Aaron Townsend

CONNECTION OFFER – STANDARD CONNECTION SERVICE

UCL10914– LOT 1, DP 1257105, Connection of Load Application: Buchan Avenue, EDMONDSON PARK

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,

Vishal Chavan
Contestable Works Engineer
Ph: 02 9853 7923
Fax: 9853 7925
Email: cwtech@endeavourenergy.com.au

APPLICATION NO: UCL10914
DATE: 11 May 2021

SUBJECT: SUPPLY OFFER FOR
Buchan Avenue, EDMONDSON PARK

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.

11 May 2021

Endeavour Energy Ref: UCL10914

SUPPLY OFFER

(Based on a desktop assessment)

Development Details & Applicant's Assessed Load:
Edmondson Park Primary School

Total load- 1200 Amps/phase

Endeavour Energy Assessed Load:
1200 Amps/phase (Include AS3000 max demand calculation in the MOS package)

Development & Site Plans received:
Provide site plan with location of proposed padmount sub marked on it.

HV/LV Connection Point & Connection Asset Requirements:
New padmount substation is required on site with HV ring connection to supply the requested load.

ASP L3 is required to investigate and provide method of supply (MOS). MOS shall comply with Endeavour Energy standards and Connection Policy.

Pad sub- 33140 is located within vicinity of the site.

11 May 2021

Endeavour Energy Ref: UCL10914

Initial Funding Arrangements

Endeavour Energy Supplied Materials:
Nil

Endeavour Energy Funded and Constructed:
Nil

Endeavour Energy Funded and Level1 ASP Constructed – Reimbursement Paid by Endeavour Energy
Transformer

Reimbursement to be paid to Endeavour Energy by Customer:
Nil

Customer Funded Monopoly Services:
Network switching, commissioning, contractor inspection, ancillary fees, etc.

Customer Funded Contestable Works:
All other works required

ANCILLARY FEE ESTIMATE

(for assessment of the Proposed Method of Supply and approval of the Design)

CAP No. : UCL10914

Proposed Location: Lot 1, DP 1257105, Buchan Avenue
EDMONDSON PARK

Detailed below is the **estimate** of the proportion of applicable Ancillary Network Services Fees (GST Inclusive) related to design assessment for your information only. The final fees for this phase of the project will be sent to you with a Design Brief. Ancillary Network Services Fees will also apply for the construction and connection phase of the project (e.g., site establishment fee). 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.

Standard Connection Offer Fee	11-05-2021	$266.18
Design Information Fee	11-05-2021	$3549.26
Design Certification Fee	11-05-2021	$2661.94
Administration Fee	11-05-2021	$352.07
Estimate Total (inc GST)		$6829.45

Where Endeavour Energy assets may need to be placed on private property, property easements will be required. Urgent action should be taken to create easements so that timely acquisition and registration with the Land and Property Information (NSW) can be completed.

Endeavour Energy will accept a property tenure bond while the property owner is in the process of creating the easement. The property tenure bond will be returned after the easement has been registered.

Please do not make any fee payment at this time.

Once the design fee amount has been finalised Endeavour Energy will send a request for the fees and property tenure bond payment (if required) to your nominated Level 3 Accredited Service Provider.

4.3 SYDNEY WATER TAP IN

Transaction Summary

Tax invoice: **AAB-037424518**

Company name: **JHA Engineers**

Date requested 13 Apr 2021
Date paid 13 Apr 2021

Sydney Water Corporation
PO Box 399 Parramatta NSW 2124
A.B.N 49 776 225 038

Applicant details

Diego Montelvere
23 101 Miller St,North Sydney,2060

Transaction Details

Faulkner Way, Edmondson Park 2174

Order number: **SW-53024425**

Statement of available pressure and flow for drinking water

Application number: **1111879**

Application Fee Manual Assessment	$138.43
	(incl. GST) $0.00

Transaction total **$138.43**

(incl. GST) $0.00

4.4 PRESSURE AND FLOW INQUIRY

Statement of Available Pressure and Flow

Sydney WATER

Diego Montelvere
23 101 Miller Street
North Sydney, 2060

Attention: Diego Montelvere Date: 10/05/2021

Pressure & Flow Application Number: 1111879
Your Pressure Inquiry Dated: 2021-04-13
Property Address: Faulkner Way, Edmondson Park 2174

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Buchan Avenue	Side of Street: North
Distance & Direction from Nearest Cross Street	14 metres East from Faulkner Way
Approximate Ground Level (AHD):	68 metres
Nominal Size of Water Main (DN):	300 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	57 metre head
Minimum Pressure	24 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	24
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5 10 15 20 26 30 40	28 27 27 27 26 26 25
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	5 10 15 20 26 30 40	23 23 22 21 21 20 19
Maximum Permissible Flow	50	17

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

swtapin@sydneywater.com.au

General Notes

This report is provided on the understanding that (i) the applicant has fully and correctly supplied the information necessary to produce and deliver the report and (ii) the following information is to be read and understood in conjunction with the results provided.

1. Under its Act and Operating Licence, Sydney Water is not required to design the water supply specifically for fire fighting. The applicant is therefore required to ensure that the actual performance of a fire fighting system, drawing water from the supply, satisfies the fire fighting requirements.

2. Due to short-term unavoidable operational incidents, such as main breaks, the regular supply and pressure may not be available all of the time.

3. To improve supply and/or water quality in the water supply system, limited areas are occasionally removed from the primary water supply zone and put onto another zone for short periods or even indefinitely. This could affect the supply pressures and flows given in this letter. This ongoing possibility of supply zone changes etc, means that the validity of this report is limited to one (1) year from the date of issue. It is the property owner's responsibility to periodically reassess the capability of the hydraulic systems of the building to determine whether they continue to meet their original design requirements.

4. Sydney Water will provide a pressure report to applicants regardless of whether there is or will be an approved connection. Apparent suitable pressures are not in any way an indication that a connection would be approved without developer funded improvements to the water supply system. These improvements are implemented under the Sydney Water 'Urban Development Process'.

5. Pumps that are to be directly connected to the water supply require approval of both the pump and the connection. Applications are to be lodged online via Sydney Water Tap in™ system -
Sydney Water Website – www.sydneywater.com.au/tapin/index.htm. Where possible, on-site recycling tanks are recommended for pump testing to reduce water waste and allow higher pump test rates.

6. Periodic testing of boosted fire fighting installations is a requirement of the Australian Standards. To avoid the risk of a possible 'breach' of the Operating Licence, flows generated during testing of fire fighting installations are to be limited so that the pressure in Sydney Water's System is not reduced below 15 metres. Pumps that can cause a breach of the Operating Licence anywhere in the supply zone during testing will not be approved. This requirement should be carefully considered for installed pumps that can be tested to 150% of rated flow.

Notes on Models

1. Calibrated computer models are used to simulate maximum demand conditions experienced in each supply zone. Results have not been determined by customised field measurement and testing at the particular location of the application.

2. Regular updates of the models are conducted to account for issues such a urban consolidation, demand management or zone change.

3. Demand factors are selected to suit the type of fire-fighting installation. Factor 1 indicates pressures due to system demands as required under Australian Standards for fire hydrant installations. Factor 2 indicates pressures due to peak system demands.

4. When fire-fighting flows are included in the report, they are added to the applicable demand factor at the nominated location during a customised model run for a single fire. If adjacent properties become involved with a coincident fire, the pressures quoted may be substantially reduced.

5. Modelling of the requested fire fighting flows may indicate that local system capacity is exceeded and that negative pressures may occur in the supply system. Due to the risk of water contamination and the endangering of public health, Sydney Water reserves the right to refuse or limit the amount of flow requested in the report and, as a consequence, limit the size of connection and/or pump.

6. The pressures indicated by the modelling, at the specified location, are provided without consideration of pressure losses due to the connection method to Sydney Water's mains.