IGS INTEGRATED GROUP SERVICES

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Lots 4-5, 6-7 and 8 Buchan Avenue, Edmondson Park

Infrastructure Due Diligence Report

Date: 4th March 2026
Project Number: EN-N25_274

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Version	Date	Author		Reviewer	
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1. INTRODUCTION

1.1 General

Urban Property Group has commissioned IGS to carry out a desktop engineering services due diligence / infrastructure report of the three proposed development sites located at Edmondson Park to understand the location and strategy of the existing services to further assess the services to be retained and reused, relocated, or demolished.

1.2 Development Site

The combined site is located at 4-5, 6-7, and 8 Buchan Avenue, Edmondson Park, and is legally described as Lots 4, 5, 6, 7 and 8 in DP1275478. The site has a total area of approximately 3.1 hectares, with a primary street frontage of approximately 298m to Buchan Avenue, and a secondary street frontage of approximately 186m to Horrie Road. The combined site is owned by UPG Edmondson Parkland Pty Ltd.

The site is located approximately 330m from the Edmondson Park Train Station and directly adjacent to a future high school (currently under construction). The site is also approximately 400m northwest of Frasers Ed Square Town Centre, placing it in a highly accessible and active urban precinct. The site and its surroundings are currently undeveloped presenting a significant opportunity for coordinated and well-integrated urban development.

It is noted that earthworks, subdivision, and the construction of the major and minor roads surrounding the site has been undertaken under previous development consents.

Figure 1 below provides an aerial image for the site. Figure 2 shows the local plan.

Figure 1: Aerial view of the site

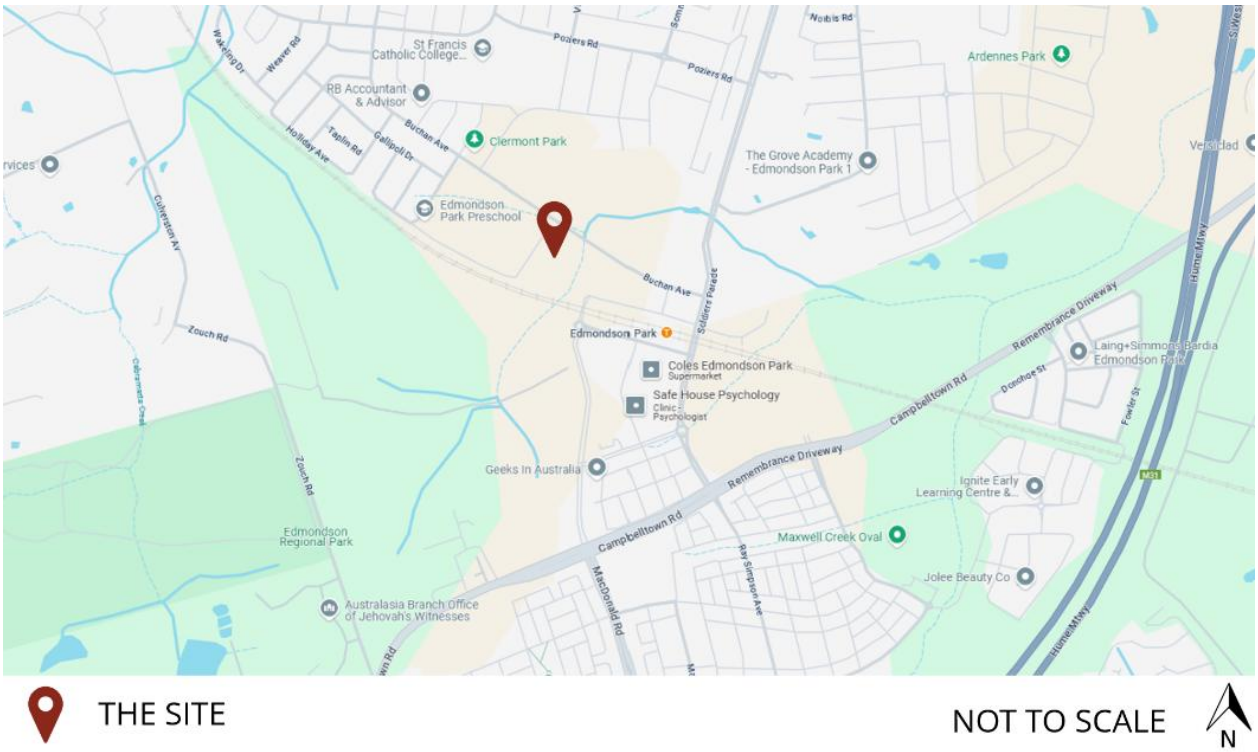

Figure 2: Location plan

The proposed amendments to the Precincts SEPP, as outlined above, will facilitate the following development, sought via a concurrent SSDA. Specifically, the proposed works sought under the SSDA include:

- Construction of fourteen residential towers (ranging in height between 6 to 40 storeys) over five podiums (ranging in height between 2-5 storeys), comprising:
    - Mixed use podiums in Site 5.
    - Public library in Site 3.
    - A total of 1,805 residential apartments located above in a combination of build-to-sell, affordable, and co-living formats.
- Basement car parking.
- Associated landscaping and public domain improvements, including a new publicly accessible plaza, public library and through-site links.

It is noted that the project will commit to providing 15% of the GFA as affordable housing for a minimum of 15 years, to be managed by a registered Community Housing Provider (CHP).

For a detailed description of the proposed development, refer to the Environmental Impact Statement (EIS) prepared by Beam Planning, and the Architectural Drawings prepared by Plus Architecture.

1.3 Report Outline

This report presents the findings of a desk study review with respect to the following utility infrastructure lead-in services and authority assets:

- Electrical
- Telecommunications
- Sewer
- Water
- Council

1.4 Mandatory BCA Energy Efficiency Requirements

BCA classification(s) of the development are as follows in table 1:

Table 1: Construction Matrix

BCA Classification	Class 2	Residential / Apartments
	Class 5	Commercial Offices
	Class 6	Retail
	Class 7a	Basement Carparking
Rise in Storeys	40	
Type of Construction	Type A Construction	
Maximum Height (RL) (m)	135 m RL	

Mandatory BCA Energy Efficiency requirements are as follows:

- Part J1&J2 – Energy Efficiency
- Part J4 – Building Fabric
- Part J5 – Building Sealing
- Part J6 – Air Conditioning and Ventilation
- Part J7 – Artificial Lighting and Power
- Part J8 – Hot Water Supply
- Part J9 – Energy Metering

Additional requirements to be considered (if applicable):

- BASIX
- NatHERS
- NABERS
- Apartment Design Guide (ADG)

1.5 Utilities Services Review

A utilities review has been carried out in consultation with the relevant local authorities to identify the existing utilities in the vicinity of the site.

Dial Before You Dig (DBYD) requests were submitted, in addition to Technical Enquiries to Electrical, Water and Telco utilities surrounding the new development site to investigate the presence of existing infrastructure utilities and their capacities.

The following utilities with interests/assets in the vicinity of the site were notified in this process as per table 2 below:

Table 2: List of Notified Authorities

Seq. No.	Authority Name	Phone	Status
262765632	Endeavour Energy	(02) 9853 4161	NOTIFIED
262765630	Jemena Gas West	1300 880 906	NOTIFIED
262765628	Liverpool City Council	1300 362 170	NOTIFIED
262765629	NBN Co NswAct	1800 687 626	NOTIFIED
262765631	Sydney Water	132092	NOTIFIED
262765633	Telstra NSW Central	1800 653 935	NOTIFIED

2. ELECTRICAL

2.1 Electrical Demand

The maximum demand of the proposed development has been assessed based on the 3 Sites. Based on this assessment, the maximum demand of the 3 sites are as follow:

- Site 3 Demand is 3061A with 75% diversity factor applied.
- Site 4 Demand is 2691A with 85% diversity factor applied.
- Site 5 Demand is 6111A with 80% diversity factor applied.

Electrical Maximum Demand Calculation
UPG - EDMONDSON PARK - SITES 3, 2174
Residential Development
3 Levels Of Basement Carparking
16 Lifts
502 Apartments

Job No: EN - N25_274

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BASEMENTS	Area (m2)	Quantities	VA/m2		VA	I (A)	Subdivided I (A)
Carpark (Mechanically Ventilated)	23525		5		117625	168.0	
Carpark Lighting	23525		5		117625	168.0	
EV Charger (With Load Management)		680	*1500*		1020000	1478.26	*(not included in the load)*
							336.1
General	**Area (m2)**	**Quantities**	**VA/m2**	**Load (A)**	**VA**	**I (A)**	**Subdivided I (A)**
Common Space	9500		10		95000	135.7	
Services	1100		15		16500	23.6	
Lift		16		40		640.0	
							799.3
POWER	**Area (m2)**	**Quantities**	**W**	**VA**	**A**	**I (A)**	**Subdivided I (A)**
1 BED		*167*	3000		501000	715.7	
2 BED		*260*	3500		910000	1300.0	
3 BED		*75*	4000		300000	428.6	
ELECTRIC COOKTOP		*502*			1	502.0	
							2946.3
Total (without ADMD)							4081.6
Total with 75% Diversity applied							3061.2

Figure 3: Site 3 Maximum Demand Calculation

Electrical Maximum Demand Calculation
UPG - EDMONDSON PARK - SITES 4, 2174
Residential Development
3 Levels Of Basement Carparking
7 Lifts
434 Apartments

Job No: EN - N25_274

BASEMENTS	Area (m2)	Quantities	VA/m2		VA	I (A)	Subdivided I (A)
Carpark (Mechanically Ventilated)	10945		5		54725	78.2	
Carpark Lighting	10945		5		54725	78.2	
EV Charger (With Load Management)		526	*1500*		789000	1143.48	*(not included in the load)*
							156.4

General	Area (m2)	Quantities	VA/m2	Load (A)	VA	I (A)	Subdivided I (A)
Common Space	8570		10		85700	122.4	
Services	1593.5		15		23902.5	34.1	
Lift		7		40		280.0	
							436.6

Apartement	Area (m2)	Quantities	W	VA	A	I (A)	Subdivided I (A)
1 BED		*102*	3000		306000	437.1	
2 BED		*273*	3500		955500	1365.0	
3 BED		*59*	4000		236000	337.1	
ELECTRIC COOKTOP		*434*			1	434.0	
							2573.3

Total (without ADMD)	**3166.2**
Total with 85% Diversity applied	**2691.3**

Figure 4: Site 4 Maximum Demand Calculation

Electrical Maximum Demand Calculation
UPG - EDMONDSON PARK - SITES 5, 2174
Residential Development
3 Levels Of Basement Carparking
16 Lifts
709 Apartments, 180 Co-living

Job No: EN - N25_274

BASEMENTS	Area (m2)	Quantities	VA/m2		VA	I (A)	Subdivided I (A)
Carpark (Mechanically Ventilated)	27081		5		135405	193.4	
Carpark Lighting	27081		5		135405	193.4	
EV Charger (With Load Management)		*709*	*1500*		1063500	1541.3	*(not included in the load)*
							386.9

General	Area (m2)	Quantities	VA/m2	Load (A)	VA	I (A)	Subdivided I (A)
Common Space	11528		10		115280	164.7	
Services	1971		15		29565	42.2	
Lift		16		40		640.0	
							846.9

Apartement	Area (m2)	Quantities	W	VA	A	I (A)	Subdivided I (A)
CO-LIVING		*180*	2500		450000	642.9	
STUDIO		*174*	2000		348000	497.1	
1 BED		*243*	3000		729000	1041.4	
2 BED		*206*	3500		721000	1030.0	
3 BED		*86*	4000		344000	491.4	
ELECTRIC COOKTOP		*889*			1	889.0	
							4591.9

Retail	Area (m2)	Quantities	W	VA	A	I (A)	Subdivided I (A)
SUPERMARKET	*1784*	1	150	267600		600.0	
RETAIL	*1641*	*8*	150	246150		356.7	
CHILDCARE	*1623*		150	243450		250.0	
COMMUNAL	*512*	*3*	100	51200		74.2	
GYM	*2450*		150	367500		532.6	
							1813.6

Total (without ADMD)	**7639.2**
Total with 80% Diversity applied	**6111.4**

Figure 5: Site 5 Maximum Demand Calculation

The new development will require Chamber Substations to cater for the maximum electrical demand of the building as follows:

- Site 3: 2x1500kVA Chamber Station located at Lower Ground level.
- Site 4: 2x1500kVA Chamber Station located at Lower Ground level.
- Site 5: 3x1500kVA Chamber Station located at Ground level.

Below is a typical Endeavour Energy Surface Chamber Substation layout with 2 off 1500kVA transformers.

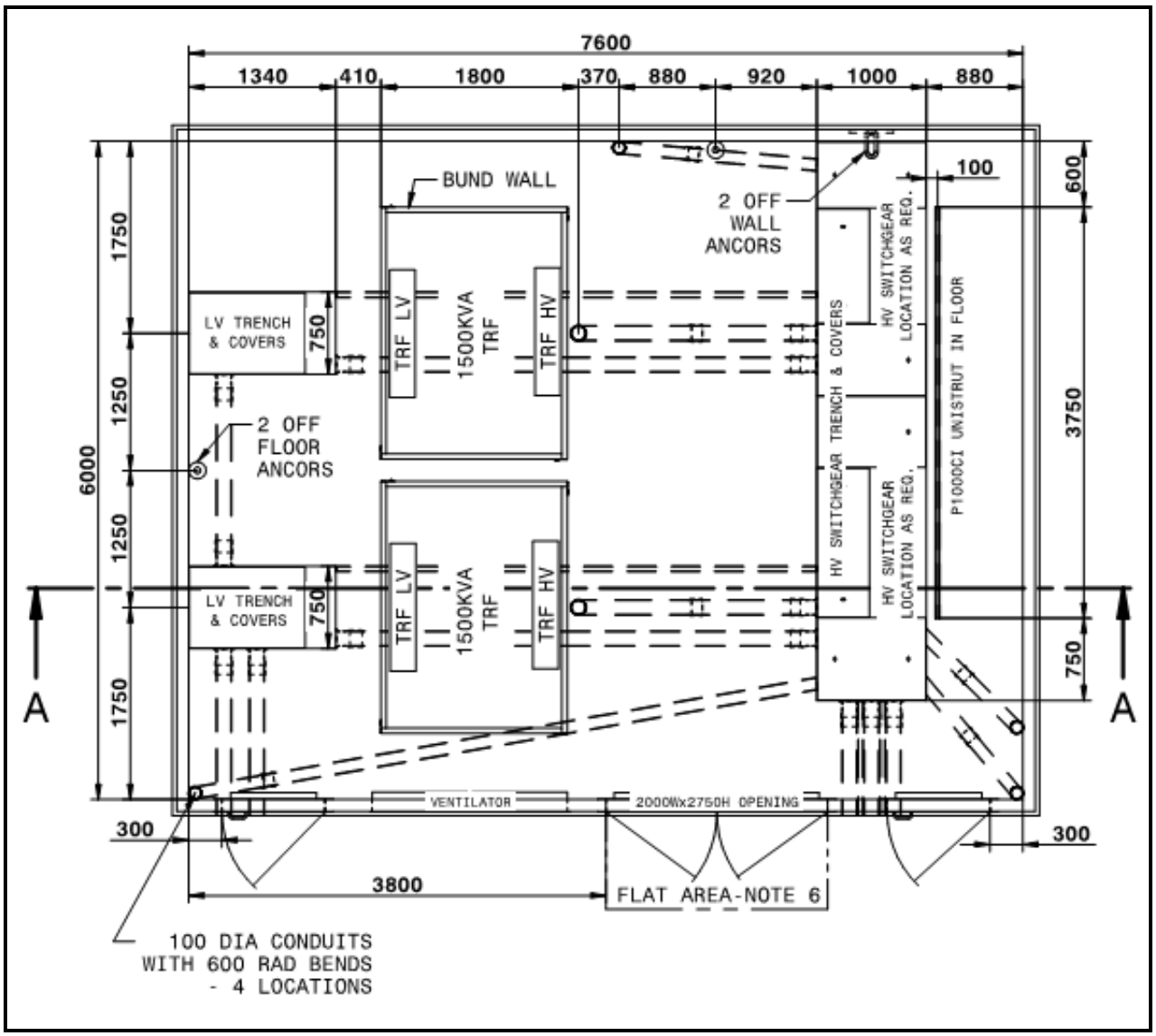


Figure 6: Endeavour Energy Surface Chamber Substation Layout - 2 Transformers

2.2 Existing Electrical Infrastructure

Endeavour Energy has extensive existing infrastructure around the vicinity of the site. There are existing 11kV & 33kV underground cables running through the development site. These assets will need to be protected with sufficient easements during the course of construction, and/or relocated prior to commencement of excavation works. Underground cables are also found along MCfarlane Rd and Bezentin Ridge Rd which can be utilised to bring the Electrical power supply to the site

In response to a supply offer from Endeavour Energy, the supply authority has confirmed the existing HV feeder has sufficient capacity to cater for the maximum electrical demand of the new development sites.

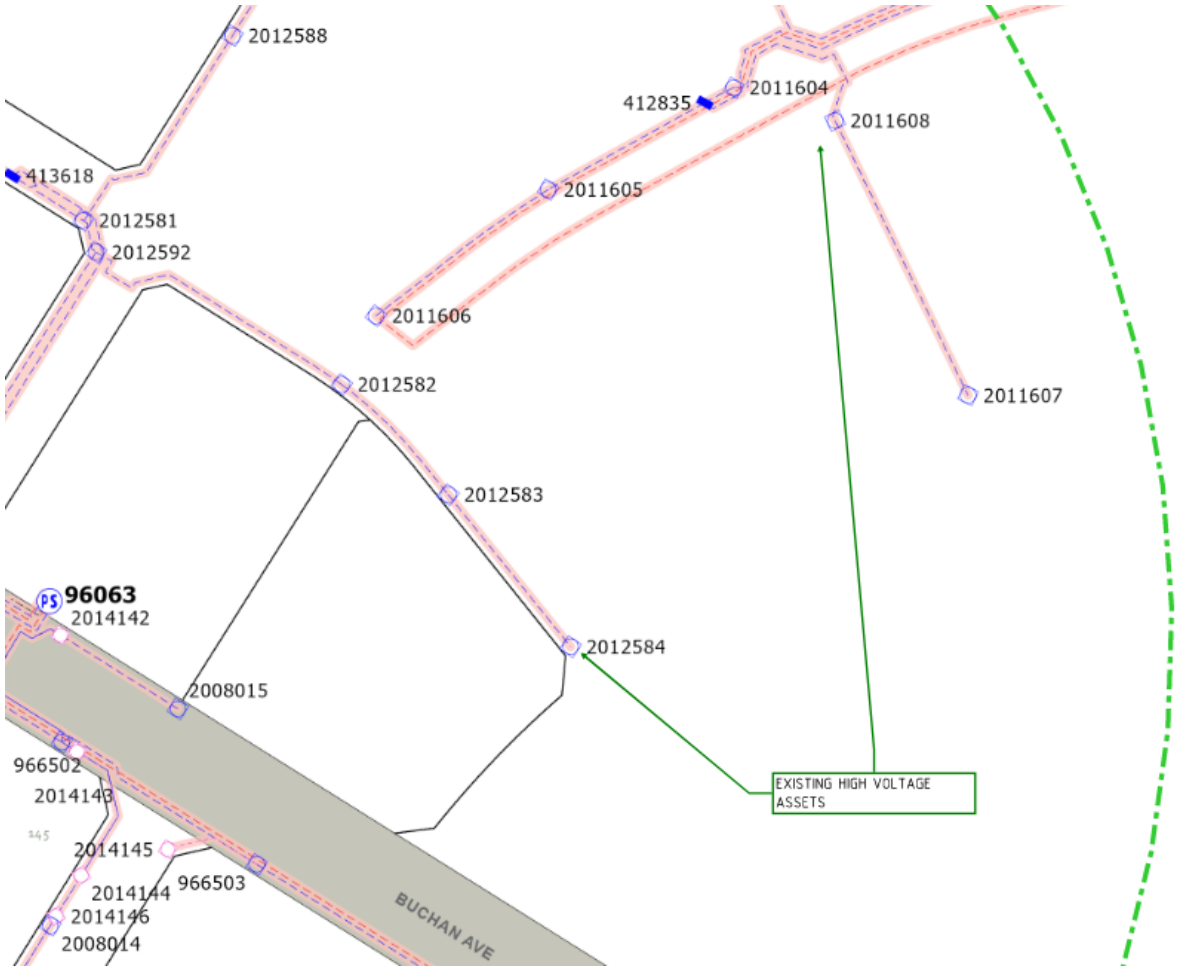


Figure 7: Endeavour Energy HV Infrastructure within Vicinitiy of the New Development

A load assessment of the construction load such as tower cranes, hoists, site sheds, etc, will be required to assess the Temporary Builder's Supply (TBS) strategy to the site.

In addition to the HV network within the vicinity of the new development, Endeavour Energy also has a series of LV assets and Street Lights. These assets can be decommissioned and removed, or relocated, as required during construction in accordance to the consent conditions.

Attention shall be made for the earthing of substation due to the stray current as a railway line passes near the site.

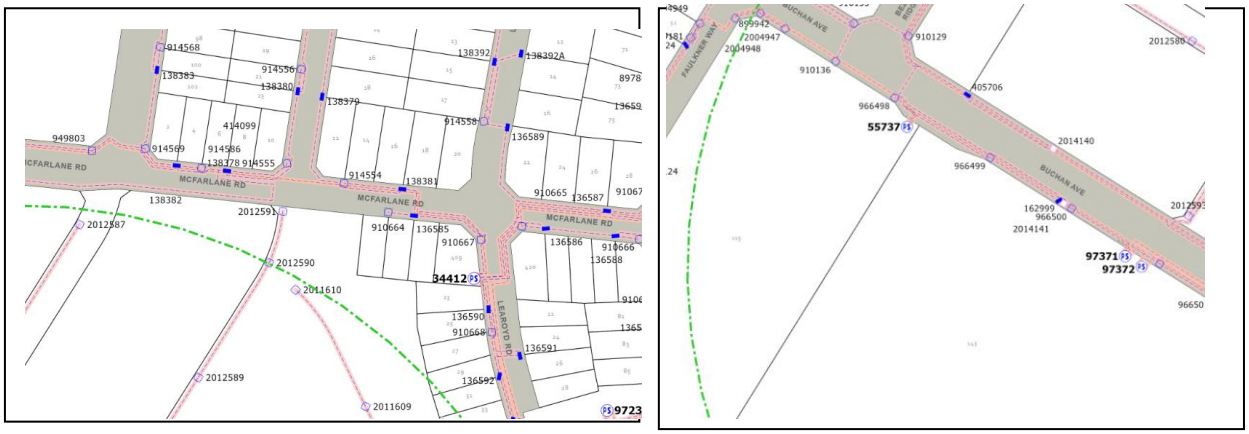


Figure 8: Endeavour Energy and SL (Left) and LV (Right) Infrastructure within Vicinitiy of the New Development

2.3 Electrical Summary

- Existing 11kV & 33kV underground cables running through the development site shall be protected with sufficient easements and/or relocated prior to excavation.
- TBS supply strategy shall be determined subject to construction loads.
- 2x1500KVA transformers will be required for the new development site 3.
- 2x1500KVA transformers will be required for the new development site 4.
- 3x1500KVA transformers will be required for the new development site 5.
- **Endeavour Energy has advised there is sufficient capacity to connect the new Chamber/Indoor substations.**
- Existing LV assets and Street lighting requirements will be as per consent conditions.

3. TELECOMMUNICATIONS

3.1 Telecommunications Infrastructure in the Vicinity of the Site

Response from the respective Telecommunication providers and NBN shows multiple existing and proposed conduits, pits and manholes within the vicinity of the site.
The telecommunications services identified are expected to have the capacity to service the future needs of the proposed development.

3.2 Existing Services

There are multiple telecommunications carriers with assets in the area to service the development and surrounding site. Carriers identified as having assets in the area are:

1. Liverpool City Council
2. NBN Co
3. Telstra NSW

3.3 Liverpool City Council

Liverpool City council asset drawings received from the DBYD enquiry show a number of existing pits along Benzentin Ridge Rd as per figure 7.
As part of the demolition process, this infrastructure will need to be protected. Services within the development site (not identified in DBYD maps) will need to be disconnected and removed or relocated in consultation with Liverpool City council.

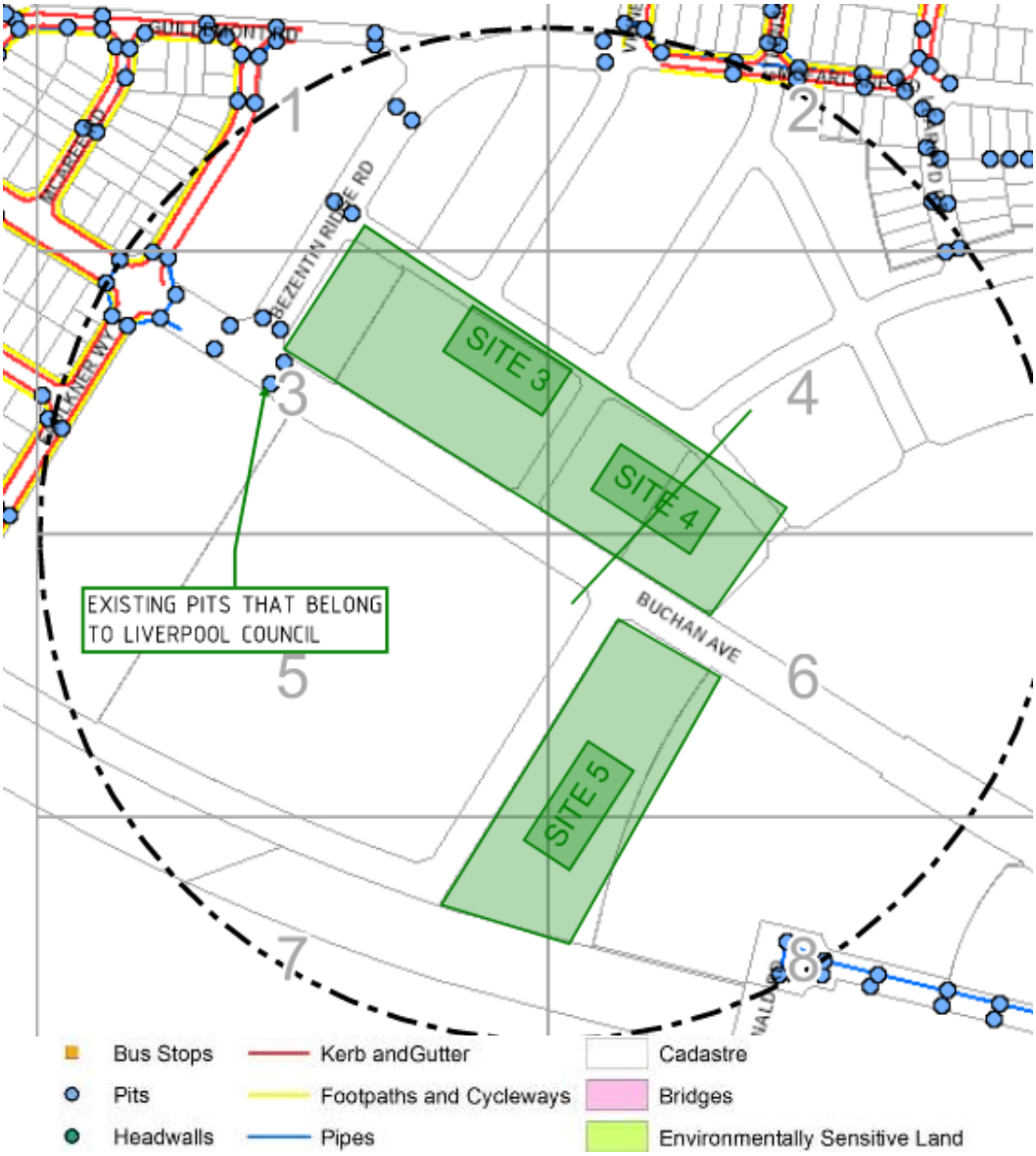
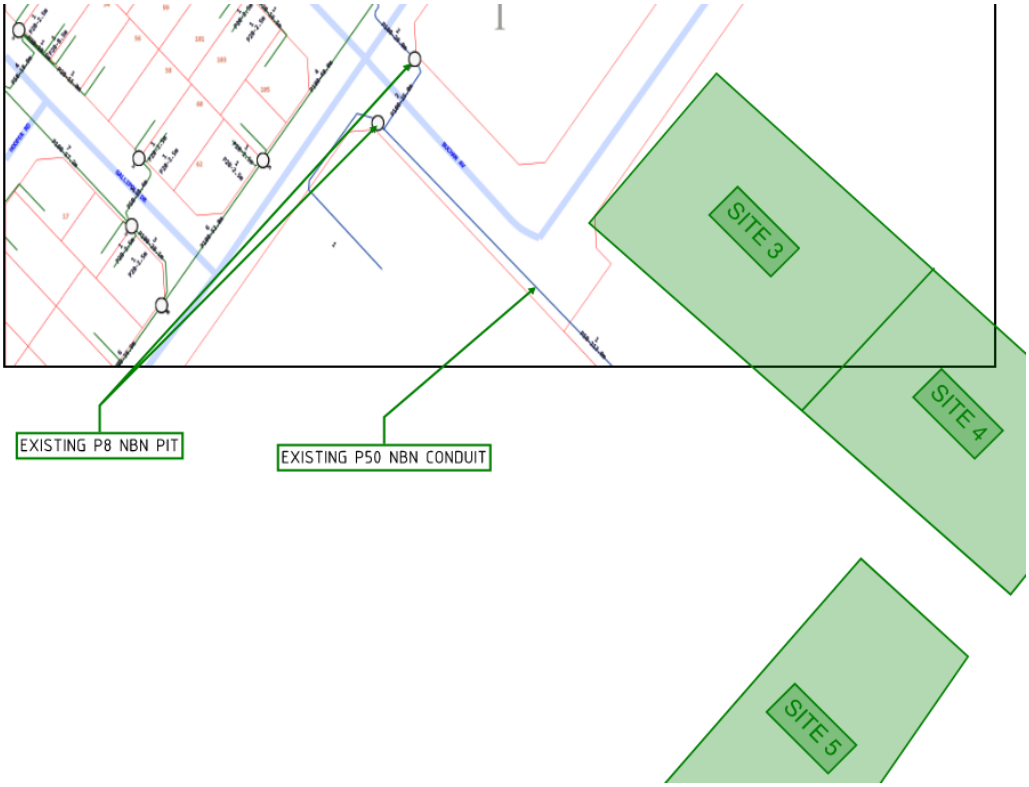


Figure 9: Liverpool City Council Infrastructure in the Vicinity of the Site (Source: DBYD)

3.4 NBN Co

According to DBYD information, the National Broadband Network (NBN) has assets and a series of distribution and services pits in the vicinity of the subject site and along Buchan Avenue. To bring NBN into the premisses a P100 conduit is required as per NBN Pit & Pipe design guidelines. The distribution pit located at the front of Buchan Avenue (denoted with number 8) has capacity for the required P100 Lead-In-Conduit given the main communications room is within the maximum run length of a P100 conduit as per NBN design guidelines. Final location of the main communications rooms and pit requirements tbc in design development stages.

As part of the demolition process, this infrastructure will need to be protected. Services within the development site (not identified in DBYD maps) will need to be disconnected and removed or relocated in consultation with NBN.



5	Pit with size "5"
2E	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
2 PO – T- 25.0m P40 – 20.0m 5 — 9	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
2 10.0m 5 — 9	2 Direct buried cables between pits of sizes ,"5" and "9" are 10.0m apart.

Figure 10: NBN Infrastructure Along Buchan Avenue (Source: DBYD)

3.5 Telstra NSW

As shown in Figure 9, the development site is referred to as Telstra Co Site on the Telstra maps received from DBYD. However, around the proposed development site at Mcfarlane St a number of Telstra assets existing close to the site can be utilised to bring the Telstra local network to the site if required.
Additional pits and conduits are required subject to detailed existing Telstra assets on site (can be requested directly from Telstra) and detail design development.

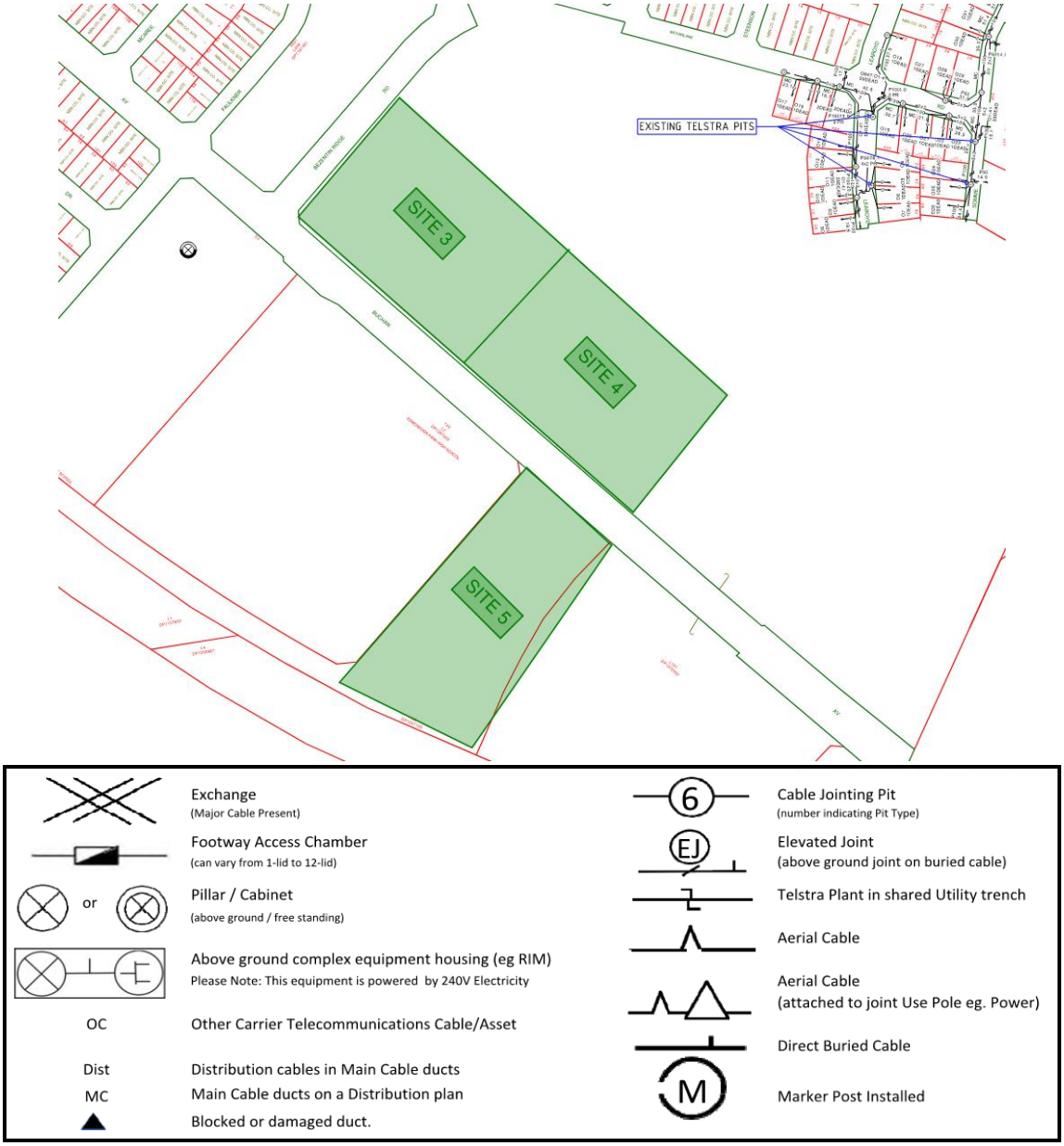


Figure 11: Telstra Infrastructure Along Mcfarlane St (Source: DBYD)

3.6 Summary and Conclusions

The most accessible Telco on the vicinity of the site is NBN.co however, NBN and Other Telcos' local networks can be extended to be brought to the site.

4. NATURAL GAS

4.1 Gas Maximum Demand

The gas maximum demand has been estimated at:

- 75,000 MJ/h diversified load.

This is based on the Heating Ventilation and Air Conditioning (HVAC) System being a reverse cycle. It has been assumed that centralised hot water plant, cook tops and food retail units will require gas (subject to electrification requirements / conditions / client direction).

4.2 Jemena Infrastructure in the Vicinity of the Site

There is an existing 110mm PE 210 kPa medium pressure gas mains running through Buchan Ave:

Figure 12: Jemena Natural Gas Infrastructure (Source: DBYD)

4.3 Summary and Conclusions

Jemena have adequate infrastructure in the vicinity of the site and can cater for the proposed new development.

The existing 110mm 210kPa Natural Gas main is expected to be capable of supplying the gas demand, subject to Jemena approval.

5. MAINS WATER

5.1 Water Maximum Demand

Water maximum demand has been estimated as follows:

- Cold Water 700 kL/day;
- Recycled Water 300 kL/day;
- Fire Hydrant System 20 L/s;
- Fire Sprinkler System 25 L/s;

5.2 Existing Services

There are no major water services within the site that will need to be decommissioned and/or diverted. Any minor water services within the site, if present, can be readily decommissioned during site works/demolition.

5.3 Mains Water Infrastructure in the Vicinity of the Site

Sydney Water is the responsible authority for the provision of potable water to the site.
There is a 250 mm DICL potable water main located in Buchan Avenue at the frontage of the development. Figure 11 below indicates the above-mentioned Sydney Water infrastructure in the vicinity of the site. There is a 200 mm oPVC recycled water main in Buchan Avenue which will be utilised for toilet flushing and irrigation demand.

Each Strata will be provided with a dedicated Sydney Water Master Meter and backflow prevention assembly as per Sydney water metering guideline which also enables separation of services between each stratum.

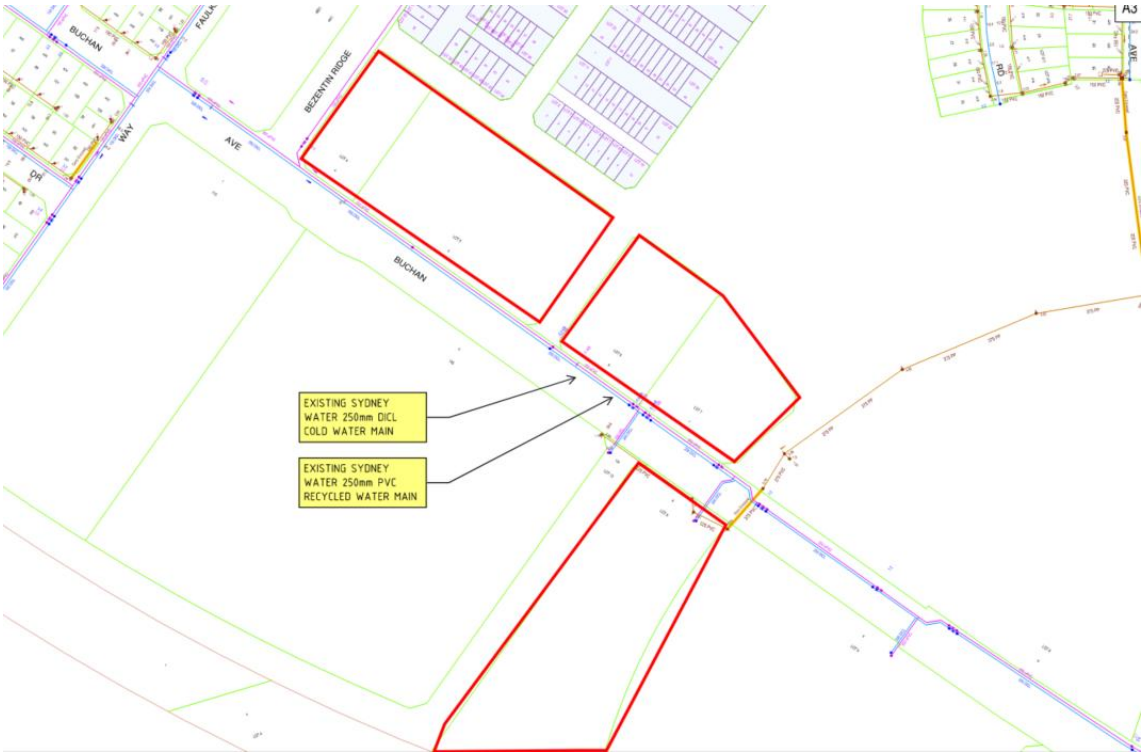


Figure 13: Sydney Water - Water Infrastructure Map (Source: DBYD)

5.4 Summary and Conclusions

No amplifications or upgrade works to the existing 250mm DICL potable water main in Buchan Avenue is expected to be required to serve the proposed developments as a single point of supply, subject to Section 73 Notice of Requirements and Sydney Water pressure and flow report. Internal pressure boosting will be required due to the height of the buildings. Water tanks will also be required to satisfy statutory fire services requirements.

6. SEWER

6.1 Sewer Maximum Demand

Sewer maximum demand has been estimated as follows:

- Sanitary / Sewer Discharge 750 kL/day.

6.2 Sewer Infrastructure in the Vicinity of the Site

Sydney Water is the responsible authority for the provision of sewer services to and through the site. There is a 375mm PVC Sydney Water sewer main in Buchan Ave which will be sufficient to cater for the drainage services requirements of the proposed new mixed-use development.
Existing sewer main is available on both sides of the Buchan Ave, this will allow sites 3,4 and 5 to be connected to a sewer line.
This will be confirmed by the Section 73 that will be lodged with Sydney Water after a Development Application (DA) is obtained.

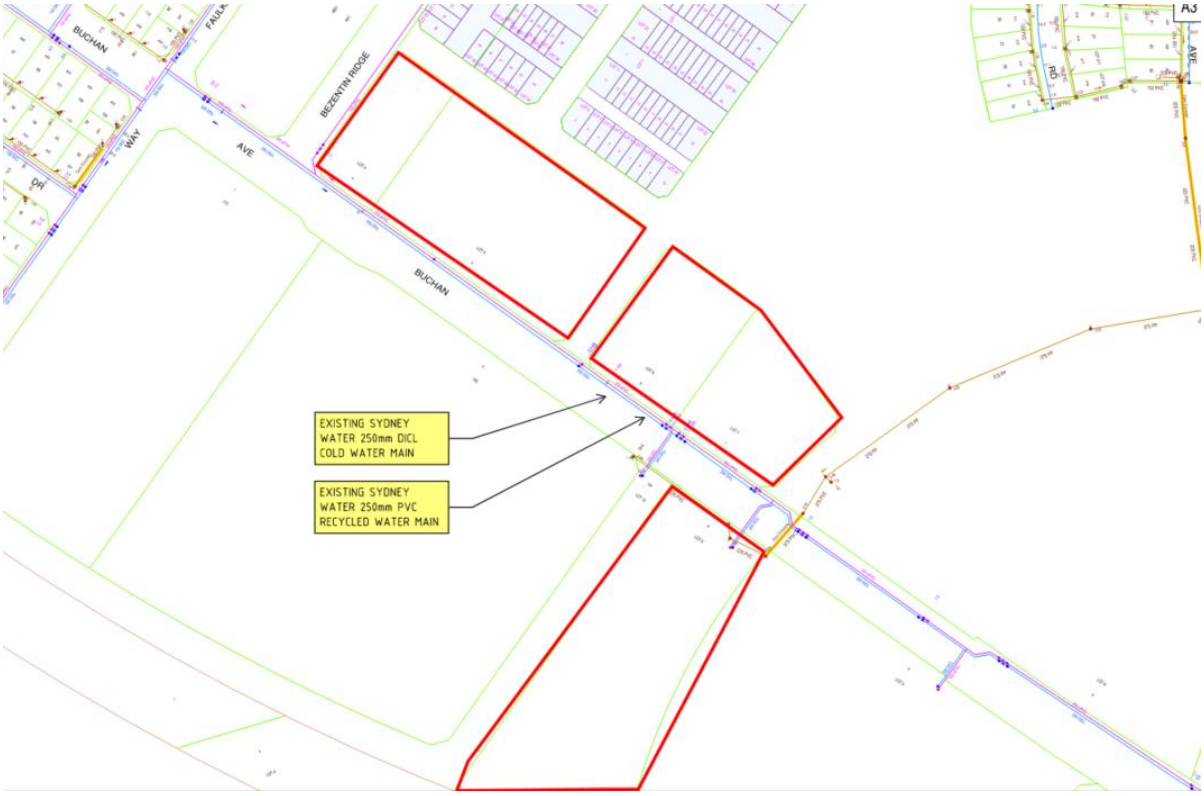


Figure 14: Sydney Water – Sewer Infrastructure Map (Source: DBYD)

6.3 Summary & Conclusions

In summary, 375mm sewer main have sufficient capacity to serve the new development. The nominated point of connection to Sydney Water sewer network will be confirmed in Section 73 NOR.
Sewer diversions will also be necessary which may need to be staged in accordance with the proposed project staging.
Extension of the existing 375mm sewer main will be required to serve Site 3 & 4 which forms part of the S73 application and design submission.