



# INFRASTRUCTURE REQUIREMENTS AND UTILITIES

47277\_SIR\_01 - 600-660 Elizabeth St, Redfern (Redfern Place)

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Date 2024-06-13 - Revision 01.

# INTRODUCTION

This report accompanies a detailed State Significant Development Application that seeks approval for a mixed-use development at 600-660 Elizabeth Street, Redfern (Redfern Place). The development proposes four buildings comprising community facilities, commercial/office, affordable/social/specialist disability housing apartments and new public links and landscaping.

This document has been prepared to address Issue 14 and 22 in the Planning Secretary's Environmental Assessment requirements. In particular, the following points:

Item	SEARS Requirement	Relevant Section of Report
14.1	Provide an Integrated Water Management Plan for the development that: <ul style="list-style-type: none"> <li>• Is prepared in consultation with the local council and any other relevant drainage or water authority.</li> <li>• Outlines the water-related servicing infrastructure required by the development (informed by the anticipated annual and ultimate increase in servicing demand) and evaluates opportunities to reduce water demand (such as recycled water provision)</li> <li>• Details the proposed drainage design (stormwater and wastewater) for the site including any on-site treatment, reuse and detention facilities, water quality management measures, and nominated discharge points.</li> <li>• Demonstrates compliance with the local council or other drainage or water authority requirements and avoids adverse downstream impacts.</li> </ul>	Page 10 & 12
14.2	Where water and drainage infrastructure works are required that would be handed over to the local council, or other drainage or water authority, provide full hydraulic details and detailed plans and specification of proposed works that have been prepared in consultation with, and comply with the relevant standards, the local council or other drainage or water authority.	Page 10 & 12
22	In consultation with relevant service providers:	Page 13
22.1	<ul style="list-style-type: none"> <li>• Assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site.</li> </ul>	All pages
22.2	<ul style="list-style-type: none"> <li>• Identify any infrastructure required on-site and off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained.</li> </ul>	All pages
22.3	<ul style="list-style-type: none"> <li>• Provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be coordinated, funded and delivered to facilitate the development.</li> </ul>	Page 4



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Engineering Lead

# SITE OVERVIEW

This report accompanies a detailed State Significant Development Application that seeks approval for a mixed-use development at 600-660 Elizabeth Street, Redfern (Redfern Place). The development proposes four buildings comprising community facilities, commercial/office, affordable/social/specialist disability housing apartments and new public links and landscaping.

The project site comprises Lot 1 in DP 1249145. It has an area of approximately 10,850m<sup>2</sup>. Part of the site currently accommodates the existing Police Citizens Youth Club (PCYC) (to be demolished and replaced). The remaining portion of the site is vacant with remnant vegetation.

The SSDA seeks approval for redevelopment of the site, including:

- Demolition of existing buildings
- Tree removal
- Bulk earthworks including excavation
- Construction of a community facility building known as Building S1
- Construction of two residential flat buildings (known as Buildings S2 and S3) up to 14 and 10 storeys respectively, for social and affordable housing.
- Construction of a five storey mixed use building (known as Building S4) comprising commercial uses on the ground level and social and specialist disability housing above.
- Construction of one basement level below Buildings S2, S3 and part of S4 with vehicle access from Kettle Street.
- Site-wide landscaping and public domain works including north-south and east-west pedestrian through site link.
- For a detailed project description refer to the Environmental Impact Statement prepared by Ethos Urban.

This report is based on the package dated 2024.06.06. These drawings and area schedules were used as the basis of this preliminary analysis.



# STAGING IMPLICATIONS

The site will be built in a single stage. From a utilities connection perspective, the building power, water, communications, sewer & gas connections will be constructed as part of this. This will include all relevant infrastructure, such as substation, meters, fire pumps and the like.

The proposed development has three stages to consider for the infrastructure utility works and the programme for applications, design and construction need to be carefully developed in order to meet the overall development programme.

## Decommissioning Utilities

Decommission of existing services to buildings and then buildings demolished. Clean site for excavation.

- Power: Application to Ausgrid as part of the overall substation application process in conjunction with a Level 3 ASP.
- Communications: Existing NBN and Telstra connections to be decommissioned and diverted, where required.
- Gas: No work required
- Water: Sydney Water Tapin application to disconnect water (or modify for construction purposes)
- Sewer: Sydney Water Tapin application to disconnect sewer (or modify for construction purposes)

## Early Works Utility Modifications

To allow the early works of shoring and excavation the following scope is to be considered;

- Power: HV Feeder extended to the site in consultation with Ausgrid and a Level 2 ASP. Substation to be designed by an Level 3 ASP. Any required undergrounding works to be completed.
- Communications : Chosen fibre to be extended to the site.
- Gas: No work required.
- Water: Supply - No work required.
- Sewer: Undertake building plan approval process to instigate major works scope. Make allowance in program for design submission and approval including the detailed sewer analysis with Sydney Water to confirm relocation requirements and final connection location.

## Utility works for the Proposed development

Refer to the subsequent sections of this report for details.

- Power: Builders supply to be further coordinated with Ausgrid. Potential for a temporary power source from a nearby substation, or a temporary substation to be provided during the development phase. New substation arrangement to be built once the site has been developed to the ground floor.
- Communications: Telstra, NBN, Optus or AARNet adjacent to the site.
- Gas: All electrical development, gas not required.
- Water supply: Finalised Section 73 application with proposed connection to the adjacent water main.
- Sewer: Finalised Section 73 Application with confirmation of sewer connection as per early works statement.

# ELECTRICAL INFRASTRUCTURE



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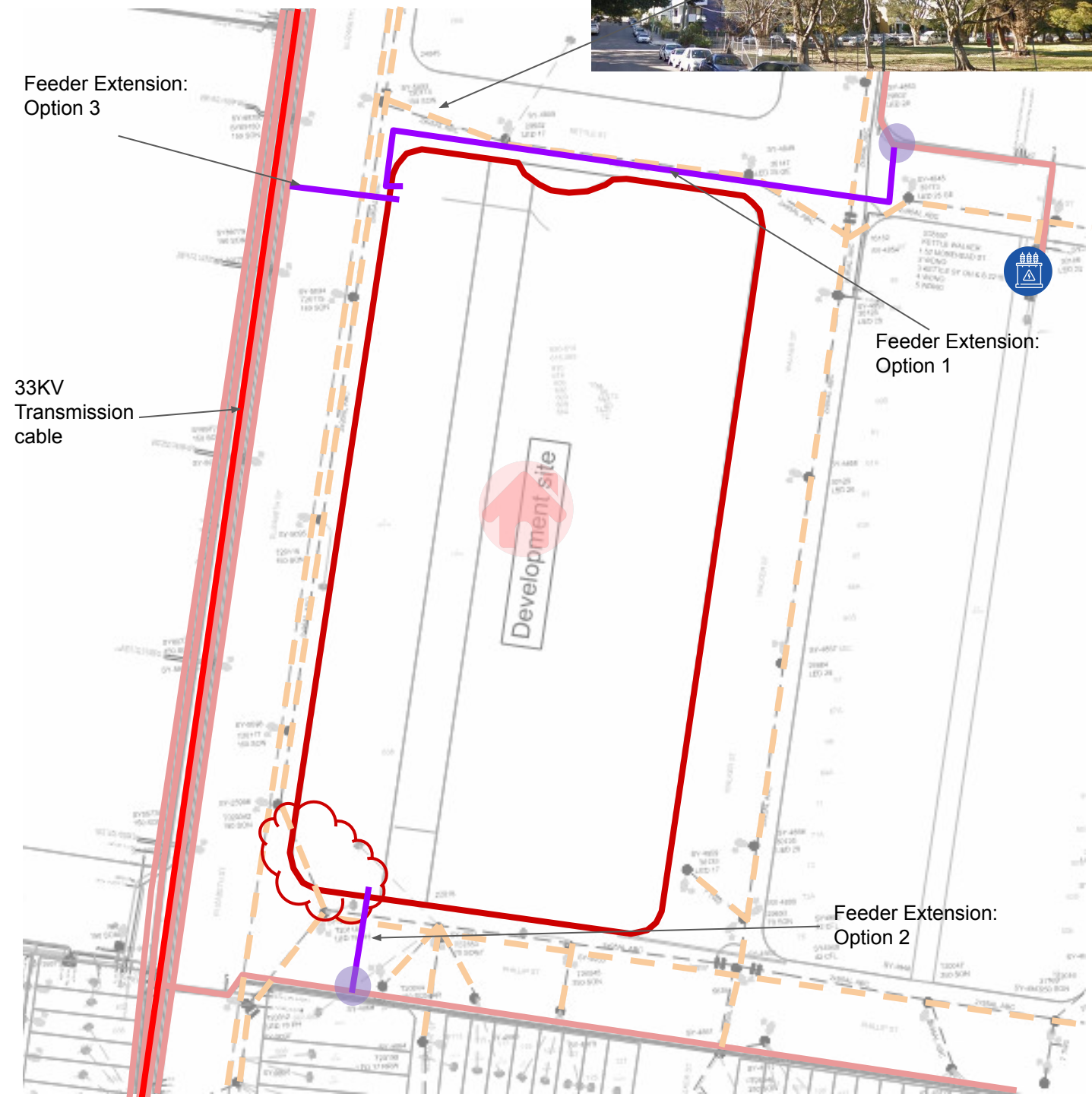
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## EXISTING POWER INFRASTRUCTURE

The Ausgrid network maps indicate that the nearest High Voltage available for substation loop-in is adjacent to the site with connection opportunities along Philip Street and Walker Street. There is additionally High Voltage available on Elizabeth Street, however cutting into this feeder will likely be more expensive, due to the presence of the transmission cable and extensive Sydney Water Assets on Elizabeth Street.

There are existing overhead power lines that run within the vicinity of the site. Ausgrid will be consulted to ensure construction works do not impact the LV overhead power lines where Ausgrid Access/Clearance Requirements can be met. eg access for plant and equipment and scaffolding. Ausgrid and/or the City of Sydney may require these overhead assets to be undergrounded, which will be carried out as parts of works.



**Power Infrastructure Map**

- Below Ground High Voltage Power
- - - Overhead High Voltage Power
- Below Ground Low Voltage Power
- - - Overhead Low Voltage Power
- Substation
- Development Location
- Proposed Power Connection Strategy

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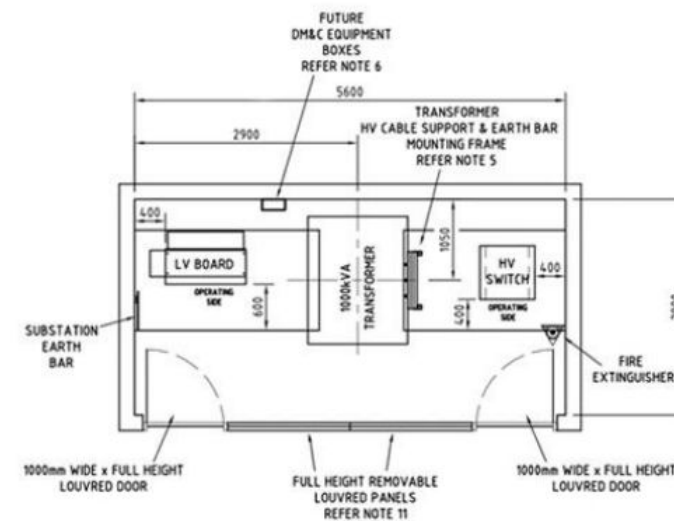
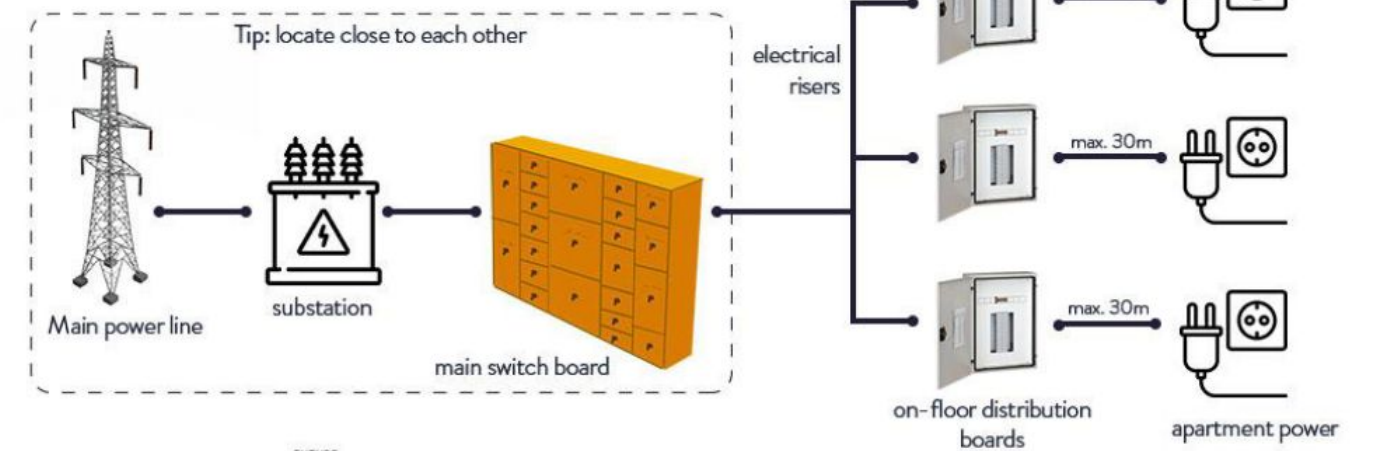
## LOCAL AUTHORITY INTERFACE

### PROPOSED ELECTRICAL SERVICES

The preliminary maximum demand is 3,529 amps (1,922 kVA diversified). The site will require two new 1,000 kVA chamber substations located on the ground floor of the PCYC building.

As part of the next phase of works, an ASP Level 03 will be engaged to begin the detailed design of this substation including consultation with Ausgrid.

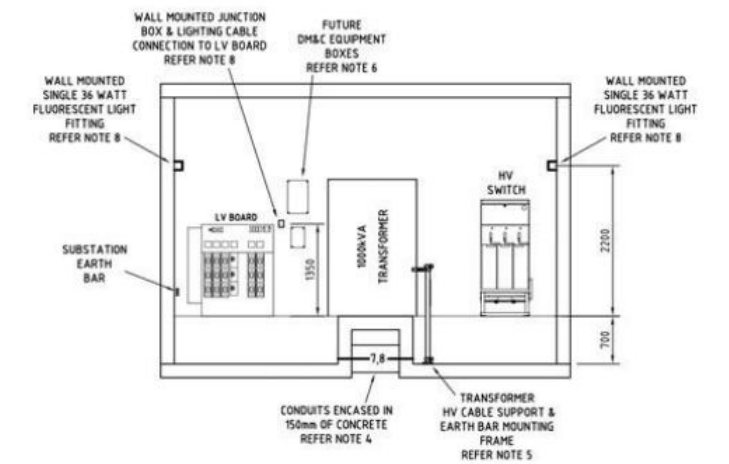
Electrical infrastructure overview



Chamber substation plan



Ventilation louvres on the front of a chamber substation



Chamber substation section



Inside a chamber substation

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## Mobile base stations

There are no carrier mobile base stations located on this site.



## Mobile Base Station Map



Existing Mobile Base Station



Development Location

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## NBN

The existing NBN carrier service infrastructure is illustrated below. As shown, there is a connection opportunity available for this site. The existing NBN fibre serving the site will be ended to be removed prior to excavation. There are also existing NBN pits that may clash with the development and will be relocated where required. Consultation with NBN will be undertaken during the next stage of the project to coordinate the required works.

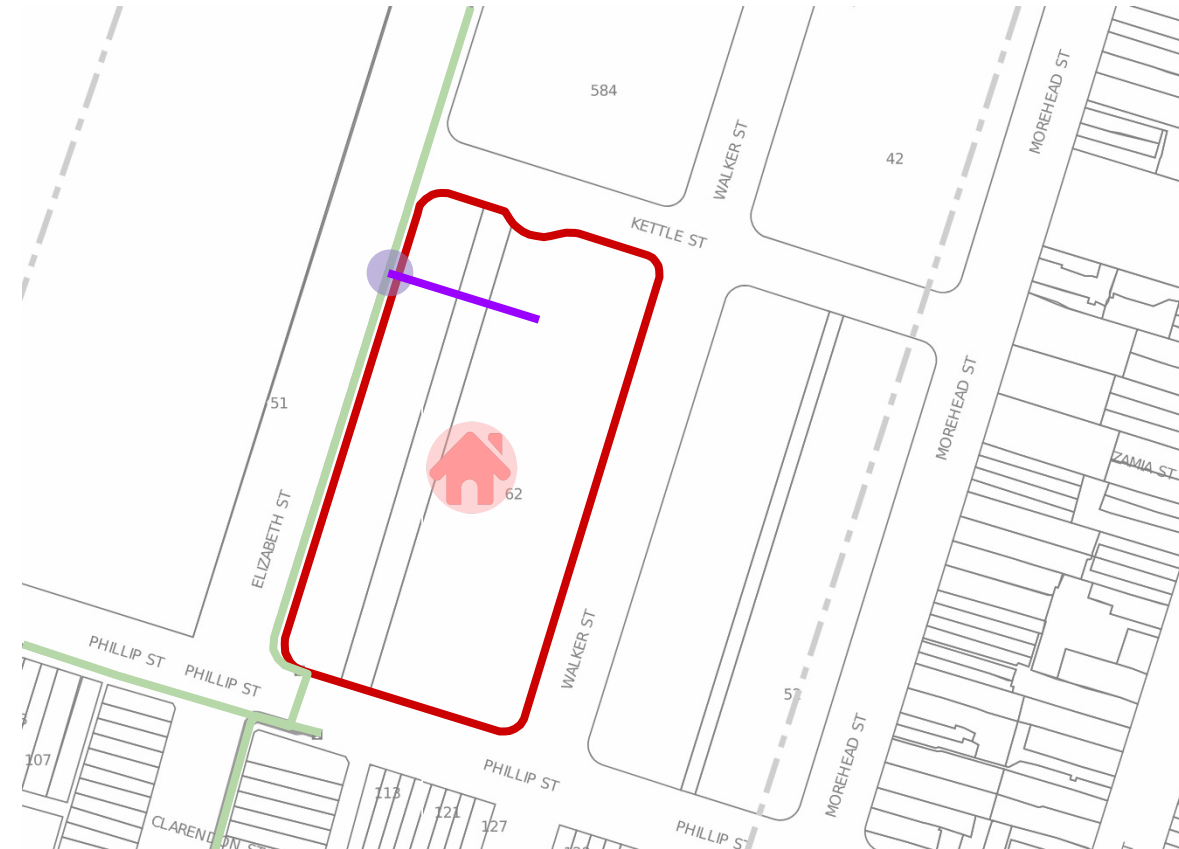


**Fibre Infrastructure Map**



## Optus

The existing Optus carrier service infrastructure is illustrated below. As shown, there are connection opportunities available for this site. Consultation with Optus will be undertaken during the next stage of the project to coordinate the required works.



**Fibre Infrastructure Map**





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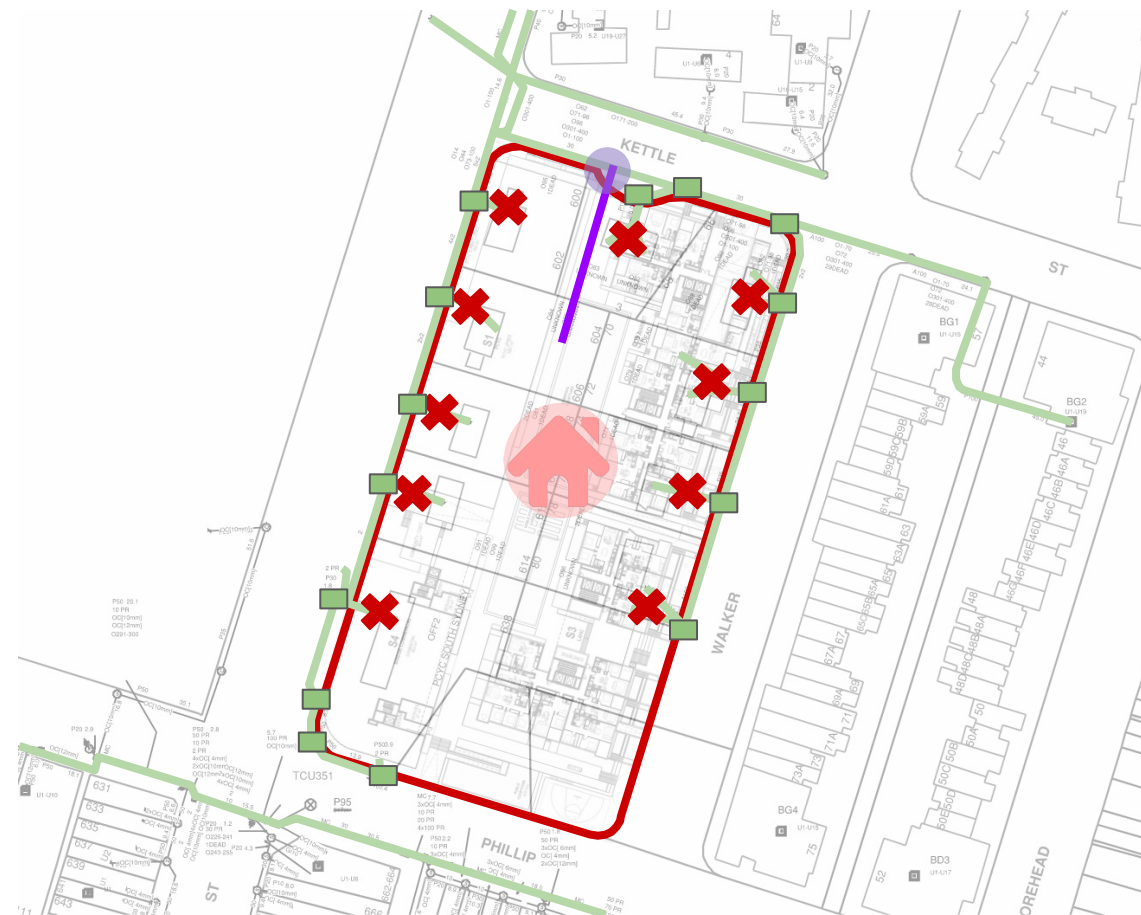
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## Telstra

The existing Telstra carrier service infrastructure is illustrated below. As shown, there are connection opportunities available for this site. The existing Telstra fibre serving the site will need to be removed prior to excavation. There are also existing Telstra pits that may clash with the development and will be relocated where required. Consultation with Telstra will be undertaken during the next stage of the project to coordinate the required works.

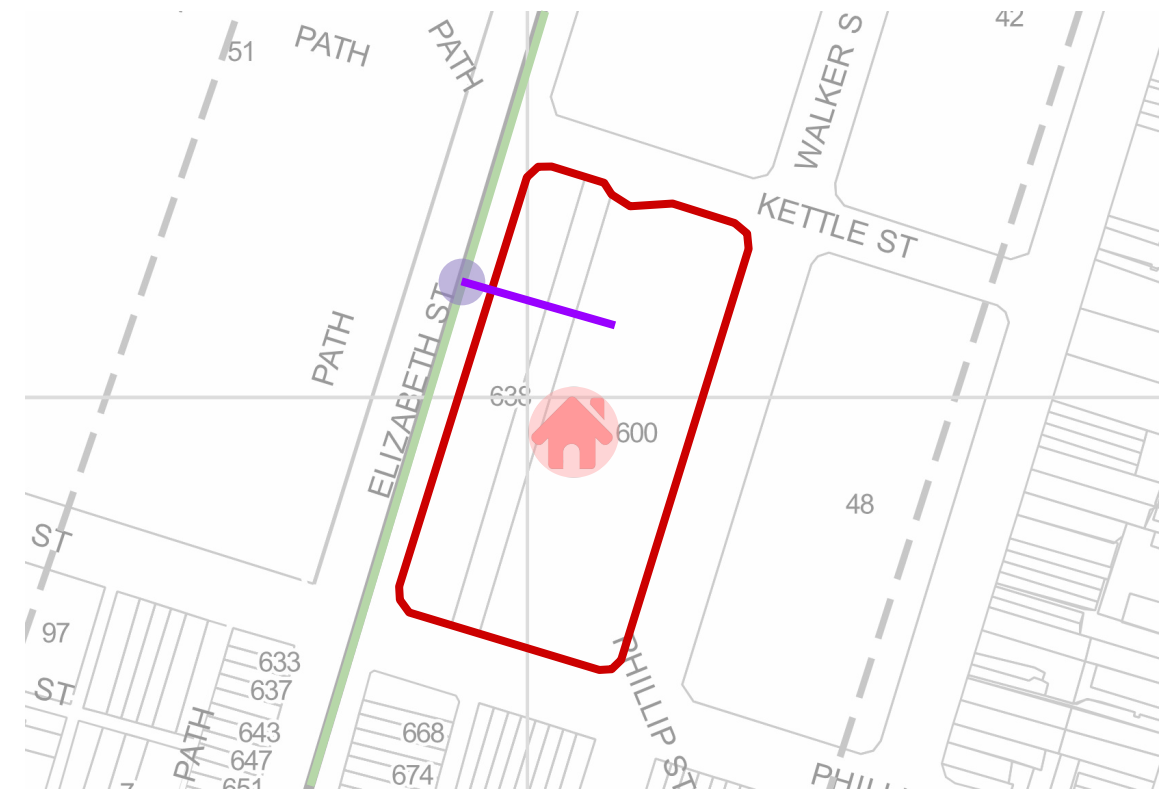


**Fibre Infrastructure Map**

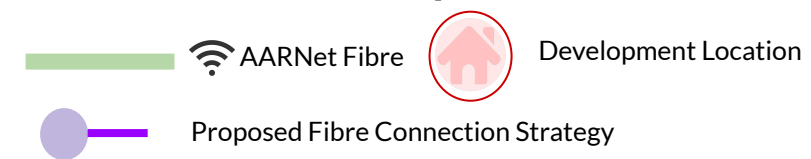


## AARNet

The existing AARNet carrier service infrastructure is illustrated below. As shown, there are connection opportunities available for this site. Consultation with AARNet will be undertaken during the next stage of the project to coordinate the required works.



**Fibre Infrastructure Map**



# WATER INFRASTRUCTURE

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## LOCAL AUTHORITY INTERFACE

The proposed connection point and existing water mains are illustrated in the adjacent image. The site has multiple existing water mains running adjacent to the site.

Based on the preliminary calculations the water usage is 84 kL/Day, as such this site is likely to require a new 200mm mains water connection. The existing water supply on Elizabeth Street should be sufficient to support this development, We recommend a new 200mm water main connection to the Elizabeth Street connection point as illustrated in the adjacent image.

A Sydney Water Coordinator will be engaged during the next stage of the project to begin consultation with Sydney Water.

### Water Saving Opportunities

The project has utilised the following initiatives to conserve water and minimise the impact on existing infrastructure:

1. The project has utilised highly efficient fixtures and fittings to meet sustainability targets
2. The site has a rainwater reuse tank for irrigation purposes



### Water Infrastructure Map

- Water Main
- Recycled Water Main
- Development Location
- Proposed Water Connection Strategy

# GAS INFRASTRUCTURE

## AUTHORITY INTERFACE

There is a medium pressure 210 kPa gas main running adjacent to the proposed site with possible connection points on Elizabeth Street as illustrated in the adjacent image.

## INTRODUCTION

We do understand that gas will not be utilised in this development, meaning a gas connection and gas regulator set will not be required.

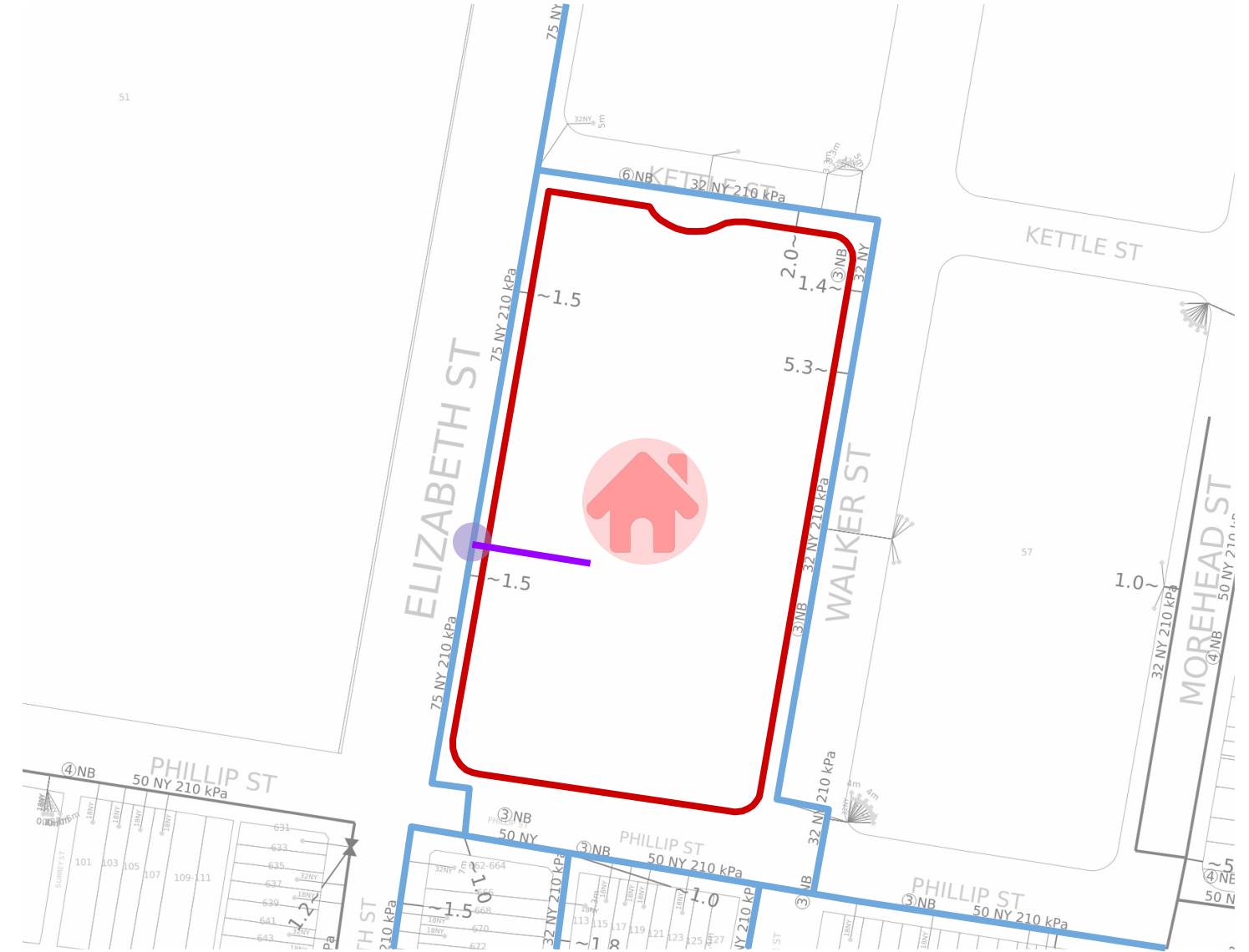
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## LOCAL AUTHORITY INTERFACE



**Gas Infrastructure Map**

- Low/Medium Pressure Gas Main
- High Pressure Gas Main
- Development Location
- Proposed Gas Connection Strategy

# SEWER INFRASTRUCTURE

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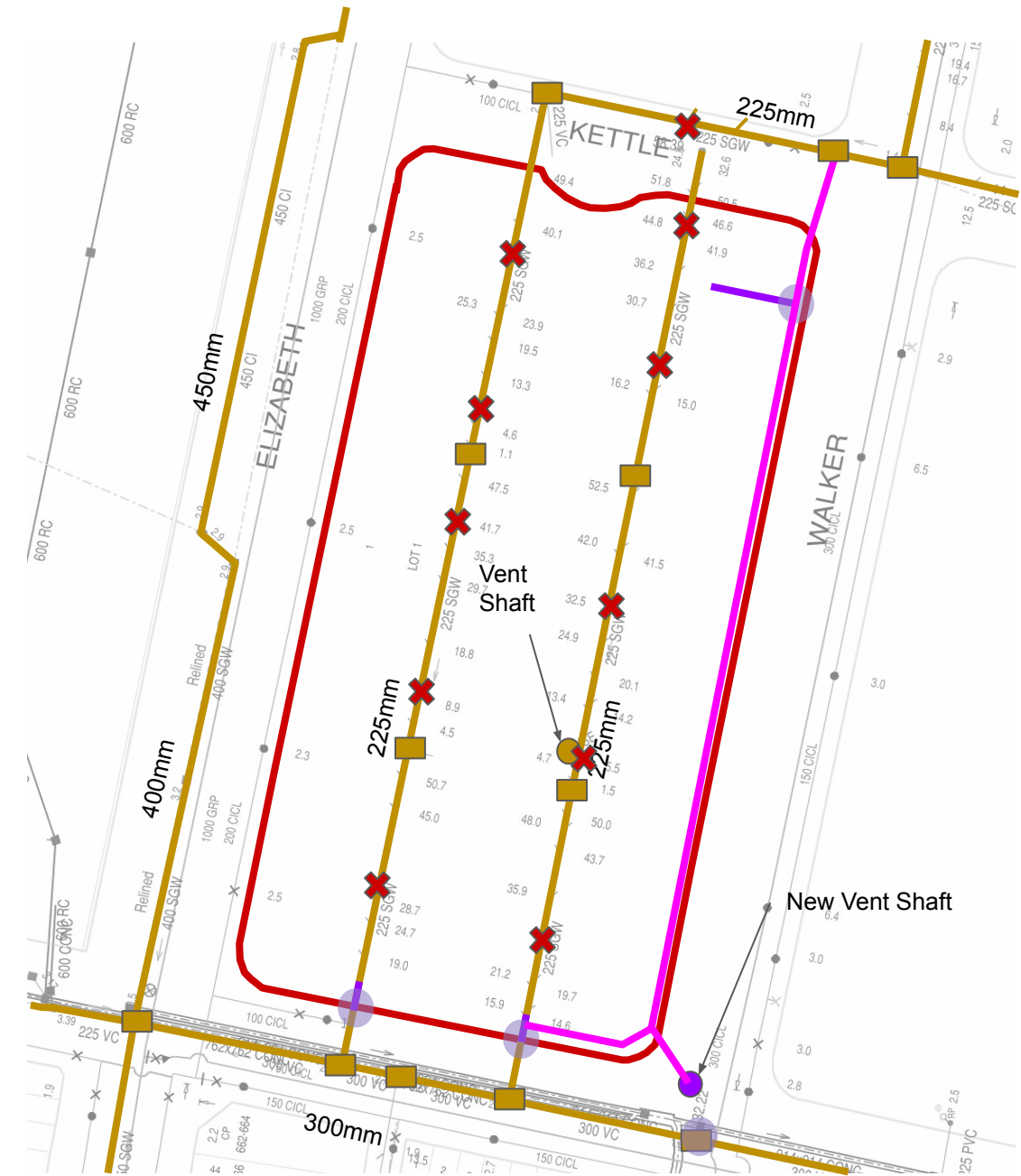
## LOCAL AUTHORITY INTERFACE

There are two 225mm sewer mains serving the existing development running through the site, as shown in the adjacent image.

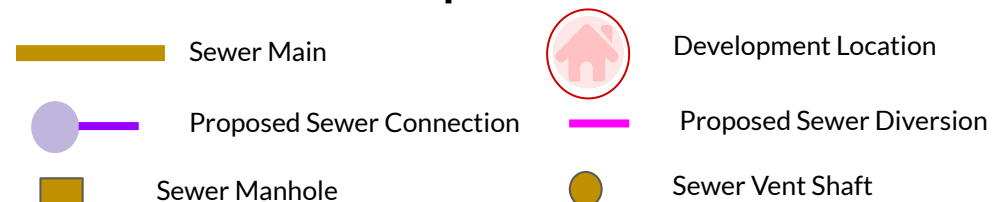
Based on the preliminary calculations the sewer usage is 67.3 kL/day. As such this site is likely to require a new 300mm mains sewer connection, or multiple 225mm connections in accordance with AS3500 pipe sizing. The existing sewer mains in and around the site may have capacity to serve this development. The connection point(s) are illustrated in the adjacent image.

There are 225mm sewer mains that run through the site. A detailed survey and invert level study (sewer peg out) will be required to confirm the exact location of this main. The sewer main will need to be modified and potentially removed or diverted prior to commencing excavation. The existing connection on Kettle Street and the sewer vent shaft will be coordinated alongside the diversion works

A Sydney Water Coordinator has been engaged and will further develop the project in consultation with Sydney Water.



**Sewer Infrastructure Map**



# LOCAL AUTHORITY INTERFACE

Direct engagement with authorities for the proposed development has been initiated, with the current status summarised below.

## Ausgrid

- Engaged Ausgrid Accredited Professional to undertake a review of the surrounding electrical infrastructure
- Reviewed the proposed site and any existing infrastructure issues
- Identified possible High voltage connection points.
- A formal application to Ausgrid is the next step to confirm final design requirements

## Sydney Water

- Engaged a Sydney Water Coordinator to undertake a review of the surrounding potable water and sewer infrastructure
- Detailed survey undertaking to define the impacts to infrastructure and proposed solution
- Concept design works for sewer diversion
- Water main assessment, including receipt of water main pressure and flow requirements. This indicates likely supply for the development
- A formal application to Sydney Water is the next step to confirm final design requirements (Section 73 Application to be applied for on receipt of approval)

## Communications

- Investigate communication providers in the area, this includes NBN, Telstra, AARNet and Optus
- Provide detailed review of existing infrastructure impacted by the development (concentrated to existing feeds to pre-development structure)
- Identify connection points to service the site and available suppliers
- A formal application following the preferred supplier to be undertaken post development approval

## Jemena

- Investigate existing infrastructure to ensure no impact to the proposed development
- Note - no application to be made as no gas to this development