

# Building Services Utility Report

8a/10 Lee Street, Sydney NSW 2000



Revision 00

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## Revision Information

<b>Project</b>	Atlassian YHA Building
<b>Title</b>	Building Services Utility Report
<b>Client</b>	ATLASSIAN
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## Revision Schedule

Revision	Date	Issue Name	Author	Authorised
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## Contents

<b>1</b>	<b>Introduction</b> .....	<b>4</b>
<b>2</b>	<b>Reference Design Documentation</b> .....	<b>5</b>
<b>3</b>	<b>Building Utilities – Site Services</b> .....	<b>5</b>
<b>4</b>	<b>Electrical</b> .....	<b>6</b>
<b>5</b>	<b>Communications</b> .....	<b>9</b>
<b>6</b>	<b>Hydraulics</b> .....	<b>6</b>
6.1	<i>Water</i> .....	11
6.2	<i>Sewer</i> .....	13
6.3	<i>Gas</i> .....	14



# 1 Introduction

The project will involve the construction of a commercial office building to accommodate Atlassian as the anchor tenant. The YHA shall own separate strata located on the.

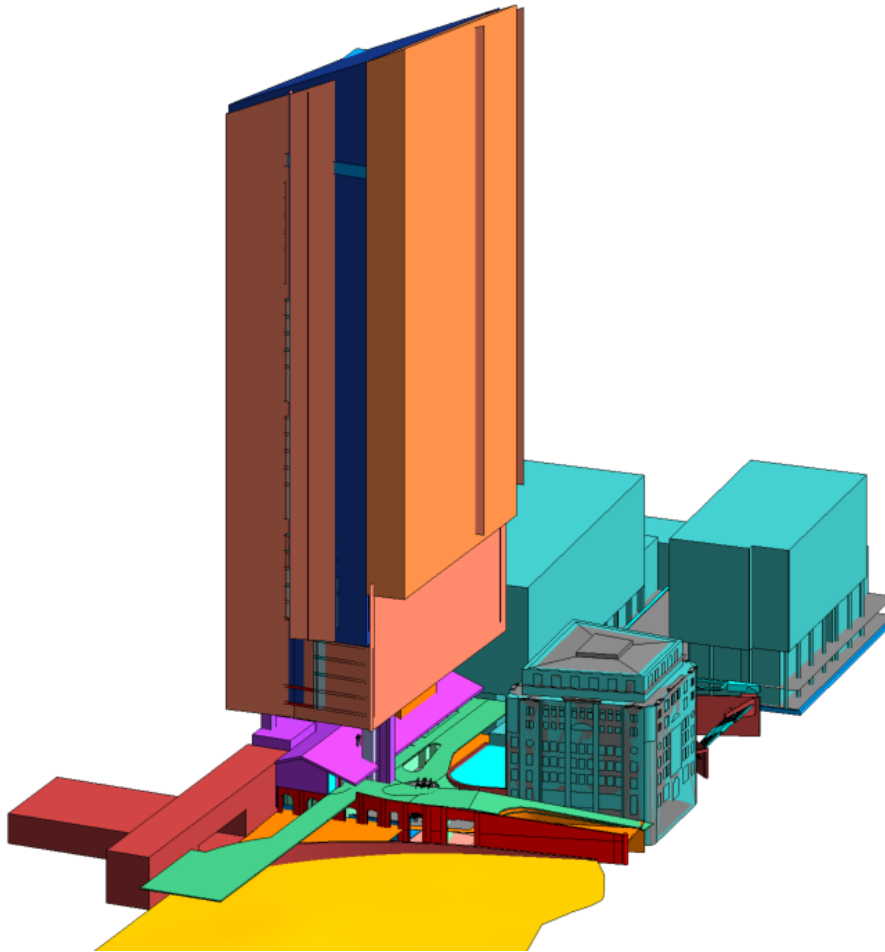


Figure 1 : Proposed development

This utility report considers the necessity of various network authorities that would need to be consulted for connection of the new commercial building.

This includes:

- > Electrical
- > Communications
- > Water (Potable and Fire)
- > Gas
- > Sewer
- > Stormwater



## 2 Reference Design Documentation

This report has been prepared for the 8a/10 Lee Street development project based on the preliminary architectural design drawings by EC3 Architects and Dial before You Dig information provided by:

- Ausgrid
- AAPT / PowerTel
- Jemena Gas South
- AARNet
- City of Sydney
- NBN Co
- Nextgen
- Optus
- PIPE Networks
- RailCorp Central
- Roads and Maritime Services
- Sydney Water
- Telstra
- Verizon Business
- Vocus Communications

## 3 Building Utilities – Site Services

The following infrastructure will be provided to the development:

- Electricity supply and reticulation
- Telecommunications
- Water services
- Sewer services
- Gas Services



## 4 Electrical

Ausgrid is the Distribution Network Service Provider/Utility that will provide an electrical connection to the development site.

The redeveloped site is currently located on the fringe of Ausgrid's Triplex network and could be served from two possible zone substations in the vicinity: Sydney South ZS at Haymarket or Belmore Park ZS.

To the immediate west of the development site there are two substations, with the northernmost substation supplying the Adina Apartments and the southernmost connecting with a number of high-voltage feeders crossing the Central Station railway lines and continuing into Surry Hills. These feeders cross the southern boundary of the site through the Devonshire Tunnel. It will be important to avoid disturbing this infrastructure during the development as it serves a large number of customers in the area.

Which Ausgrid network serves the development site will have an impact on the types of substation that are permissible within the development area, with a corresponding impact on spatial allowances and the reliability of the upstream network infrastructure. The triplex network typically brings three separate high-voltage feeders into each substation, while the regular network operates as a ring main.

The estimated demand for the development site is approximately 4750kVA. This is based on the following electrical allowances:

- commercial office: 90VA/m<sup>2</sup> (50VA/m<sup>2</sup> light and power, 40VA/m<sup>2</sup> mechanical systems)
- retail: 100VA/m<sup>2</sup> (60VA/m<sup>2</sup> light and power, 40VA/m<sup>2</sup> mechanical systems)
- YHA accommodation: 40VA/m<sup>2</sup> (20VA/m<sup>2</sup> light and power, 20VA/m<sup>2</sup> mechanical systems)
- house services: 30VA/m<sup>2</sup>
- diversity factor – tenanted areas: 0.7
- diversity factor – house areas: 0.8
- future provision/spare capacity: 20%

It will be necessary to submit an application for connection to Ausgrid to determine the capacity available on the existing high-voltage network, what would be the connection point for the new development and to determine what other network upgrades are proposed in the area due to the proposed development around Central Station.



Figure 2 : Ausgrid DBYD Extract

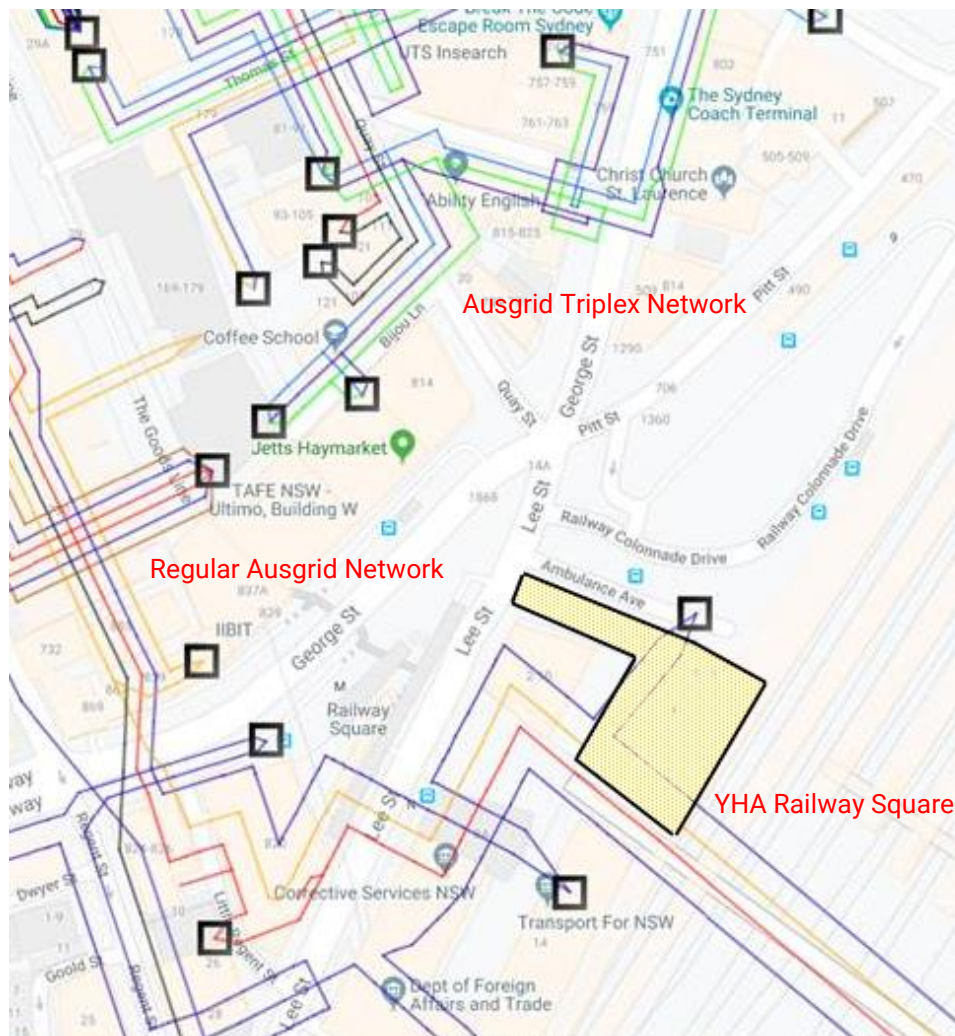


Figure 3 : Ausgrid Network (Triplex Network to the North)

The process for connecting a development to the Ausgrid network is described in the contestable connections process flowchart, available here: <https://www.ausgrid.com.au/-/media/Documents/ASP/Design/Contestable-Connections-Process-Flowchart.pdf>

The major steps in the process are:

- Optionally submit a preliminary enquiry to answer general questions about the Ausgrid Network available to the development site
- Submit an Application for Connection – Ausgrid will assess the development and provide a Design Information Package (DIP), detailing the design and installation requirements required to connect the development to the Ausgrid network
- Engage an accredited Level 3 Service Provider (ASP 3) to liaise with Ausgrid and to develop a certification connection design, including detailed design of the substations and required network modifications
- Engage an accredited Level 1 Service Provider (ASP 1) to undertake the construction phase of the connection works



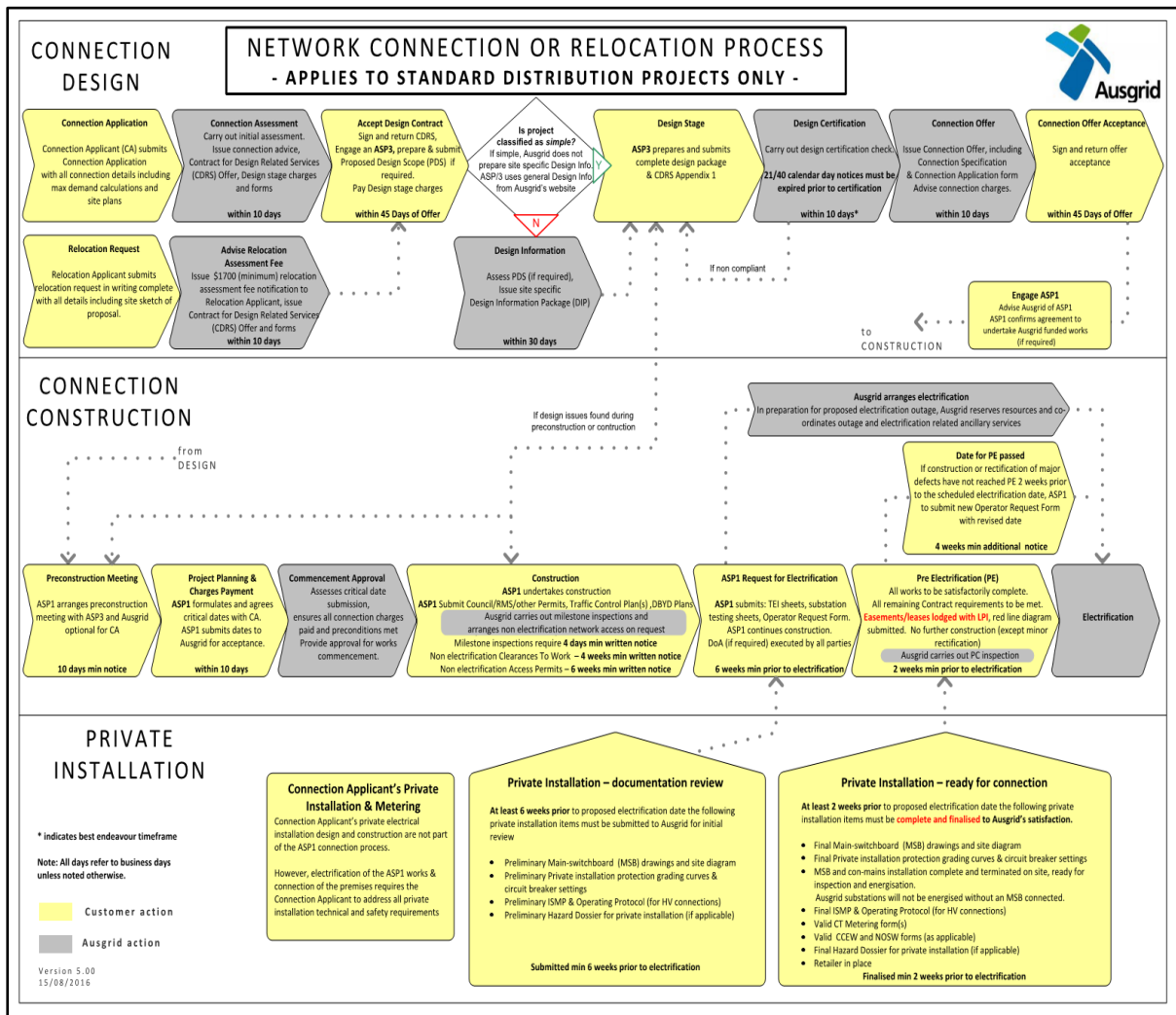


Figure 4 : Ausgrid Contestable Works Flowchart

## 5 Communications

The current NBN rollout map currently indicates that the NBN fibre rollout to the area has extended to the commercial Development. The default provider for the commercial building will be NBN however other carriers are present in the vicinity of the development.

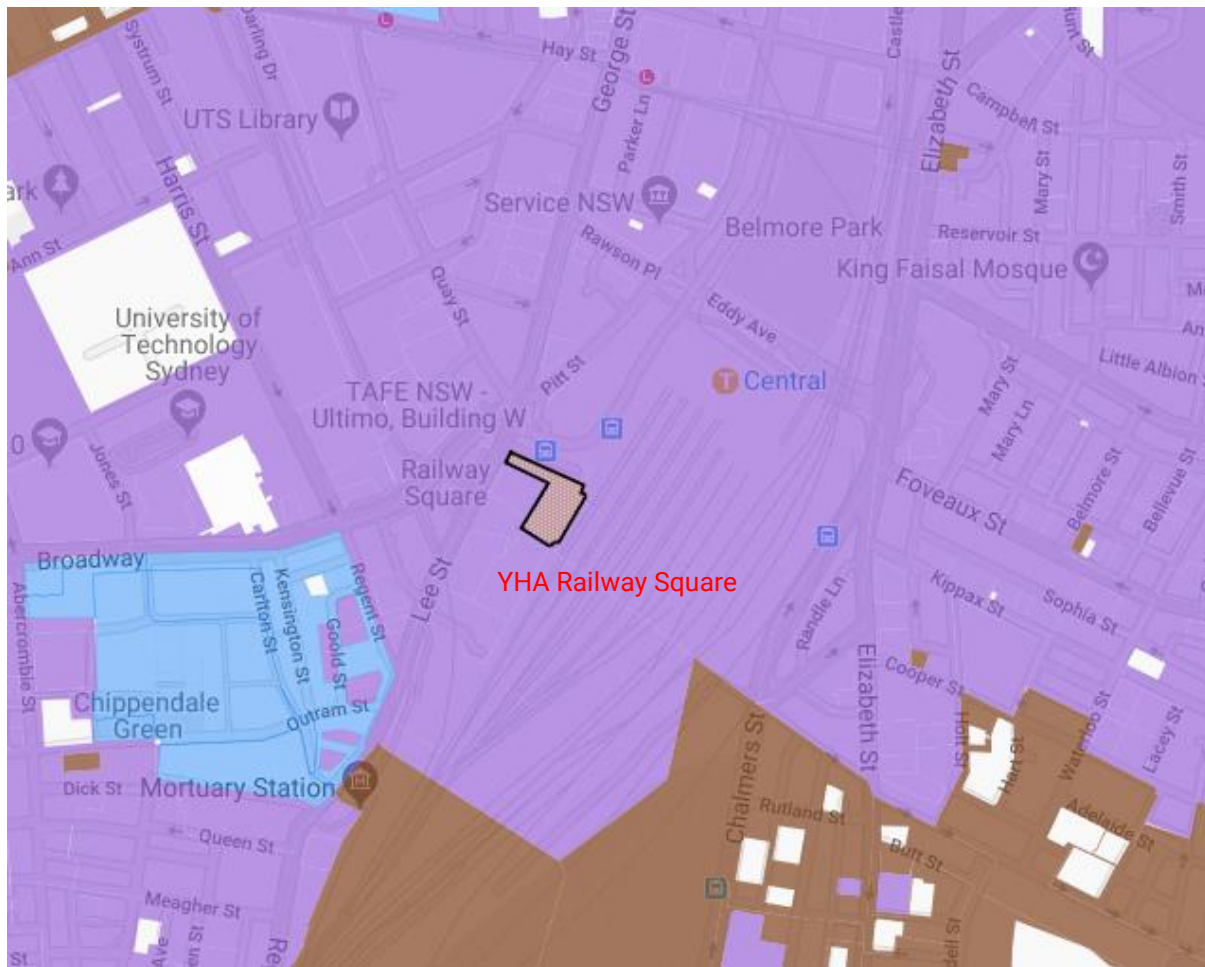


Figure 5 : NBN Coverage Map

Other network carriers with services in the vicinity of the site include:

- > Telstra
- > Optus
- > Nextgen
- > AARNet
- > Primus
- > Vocus
- > Verizon

Communications into development will be provided by means of underground fibre optic cabling. Given the site constraints, it may be difficult to provide redundant parallel lead-in cabling that follows diverse paths into the development. This will need to be further assessed during design.

Lead-in cabling will typically be distributed into two physically separate and fire isolated building distributor rooms.



To initiate the connections process with NBN, a formal application needs to be lodged to ensure the designs and construction are completed to NBN network standards. NBN will determine at the preliminary concept design stage whether spatial allowances are suitable for their proposed equipment.

It is likely for this development that a distributed antenna system will be required to provide mobile phone coverage throughout the building. This would require the establishment of a 32m<sup>2</sup> DAS room for the installation of carrier equipment, the provisioning of which is documented in the Mobile Carriers Forum (MCF) Design Specification for Distributed Antenna Systems.

To establish a DAS system, the developer will need to seek the engagement of a Lead Carrier once the design has progressed to tender phase.

## 6 Hydraulics

### 6.1 Water

#### Domestic Water Supply

Sydney Waters water service drawing shows an existing 150ømm main (A) on the junction of Lee and Pitt Street. A new potable and fire services connection will be required to service the new development. The final water tapping location and size will be subject to both coordination of the building layout as well as the final design.



Figure 6 : Cold Water Supply



### **Combined Fire Water Supply**

A fire services water supply will be provided. It will be dual supply as defined in AS2118.1-2017 & AS 2118.6-2012. The water supply will serve both the fire sprinkler system and the fire hydrant system and will consist of:

- Direct connection from the town main complete with double check valve set by the Hydraulic trade. The fire trade will connect from the Back Flow Prevention Device and continue the supply and provide all associated equipment for the Fire Brigade booster arrangement.
- Fixed on-site water storage tank divided into two equal sections so that, in the event that one section is isolated and drained for maintenance, the other section will remain in service.

- 

An electric booster pump (primary) and diesel booster pump (secondary) will be provided to boost water supplies to the peak flow rate and pressure requirements of the fire hydrant and sprinkler system. Pumps will be located in a dedicated fire pump room with direct access to a road or open space via the fire stair, as required by AS 2419.1.

### **Fire Main Reticulation**

Piping to which sprinkler installations and fire hydrants are directly connected to shall be from a 150mm ring main (single pressure zone).

Vertical portions of the ring main pipes shall be located within separate fire isolated stairs.

### **Fire Tank**

The fire service tank volume is calculated based on simultaneous flow from fire hydrants, sprinklers and a nominal quantity of internal drenchers (where required).

Construction of the water storage tank shall be off stainless steel.



## 6.2 Sewer and Stormwater

Dial Before You Dig drawings are indicating that the proposed development will be built above the existing 400mm (B) Sewer main and the existing 1500mm Stormwater main (C). There is also an existing brick Sewer main (A) reticulating close to the Pitt Street. Connecting to and building over the existing gravity mains will be subject to Sydney Water approval. Structures should be designed to avoid and protect existing in ground services.

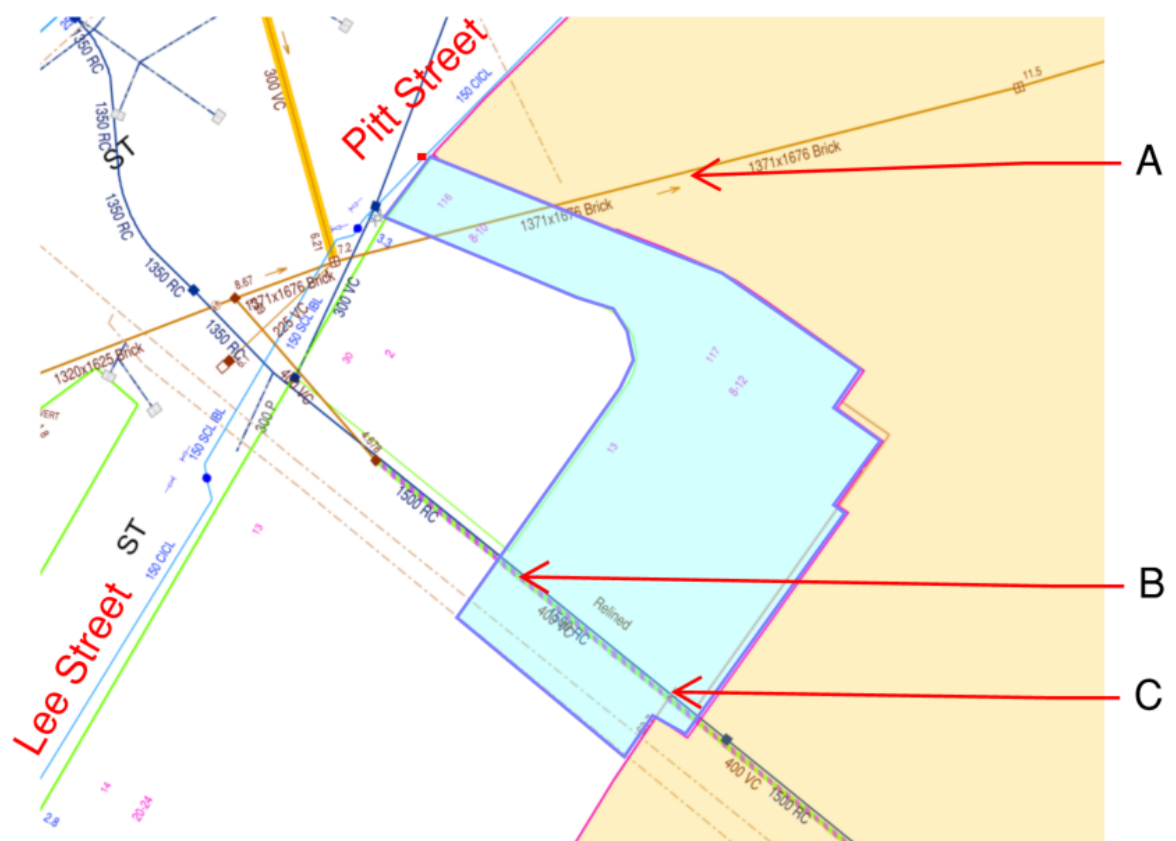


Figure 6 : Existing Sewer(A, C) and Stormwater (B) Mains Connection

The final sewer connection locations and size will be subject to both coordination of the building layout as well as the final design..

Water Services Coordinator (WSC) will undertake initial consultation with Sydney Water. The developer will undertake further consultation as the design progresses and seek approvals based on their final design.



## 6.3 Gas

Jemena's existing services documentation shows the existing 75ømm (210kPa) main (D) located in Lee St.



Figure 7 : Existing Jemena Gas Main (D)

The current proposal is to supply gas to the site via the extension of the existing 210 kPa Authority main, however this will be subject to approval from Jemena based on the required gas loads.