



## INNER SYDNEY HIGH SCHOOL

### SSD 16\_7610 INFRASTRUCTURE SERVICES REPORT

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#### Date:

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Project No. 31979

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# Revision

REVISION	DATE	COMMENT	APPROVED BY
1	23/04/2017	First Issue	RBAR
2	03/05/2017	Final SSD Issue	RBAR
3	08/06/2017	Revised Final SSD Issue	RBAR

REVISION

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# Introduction

## 1. Introduction

The NSW Department of Education (DoE) are preparing a State Significant Development Application (SSD 16\_7610) for the development of 'inner Sydney High School' located at the corner of Cleveland and Chalmers Streets, Surry Hills (the 'site').

The inner Sydney High School is proposed to accommodate up to 1200 students to take enrolment pressure off surrounding high schools exceeding student capacity, and accommodate future population growth within City of Sydney Local Government Area (LGA). The high school will contain high quality classrooms, collaborative learning spaces and associated facilities.

Specifically, this proposal seeks development consent for the following works at the site:

- Internal reconfiguration and refurbishment of the existing heritage listed buildings on the site to create:
  - o General and specialist learning areas;
  - o Amenities; and
  - o Staff workplaces for teachers and administrative staff.
- Construction of a thirteen (13) storey plus roof level (approximately 56.5m from Chalmers Street), multi-purpose school building, containing:
  - o Collaborative general and specialist learning hubs with a combination of enclosed and open spaces;
  - o Library and Resource Hubs;
    - Staff workplaces;
  - o Student canteen;
  - o Indoor Movement Complex and other indoor recreation and performance spaces;
  - o Outdoor learning and recreational areas.
- Associated site landscaping and public domain improvements; and
- Augmentation and construction of ancillary infrastructure and utilities as required.

## 2. The site

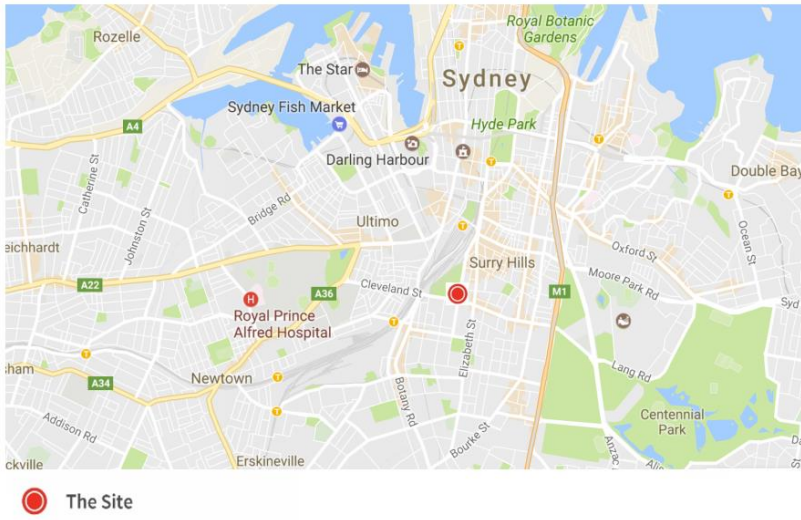
The site is located at 244 Cleveland Street Surry Hills, on the corner of Cleveland and Chalmers Street Sydney. The site is located within the City of Sydney Local Government Area (LGA). The site covers an area of approximately 0.57 Ha.

The site is composed of three individual lots that include

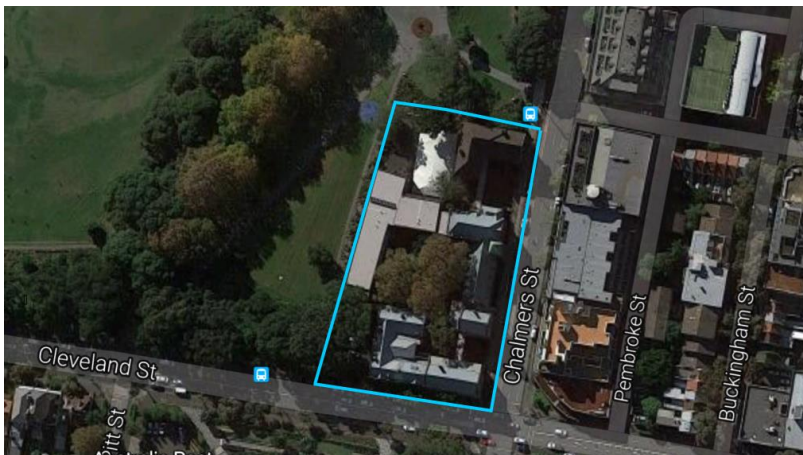
- Lot 1 DP797483,
- Lot 1 DP797484,
- Lot 8 DP 821649.

The site is currently in use and in operation by the Cleveland Street Intensive English Public High School.

# The site



**Figure 1 – Site Context**



**Figure 2 – Project Location**

# Electrical Infrastructure

## 3. Electrical Infrastructure

### 3.1 Existing Electrical infrastructure

The Supply Authority for the site is Ausgrid. At present the site is serviced from the overhead LV network in Chalmers Street (pole SY-6106) via 2 x 4c x 95mm<sup>2</sup> AL bundled conductor.

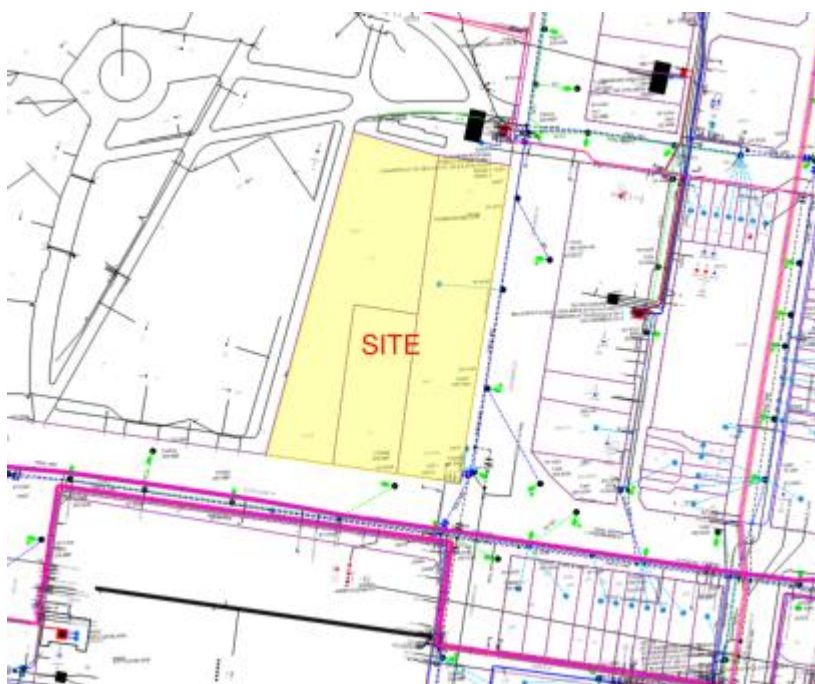


Figure 3 - Existing Ausgrid network

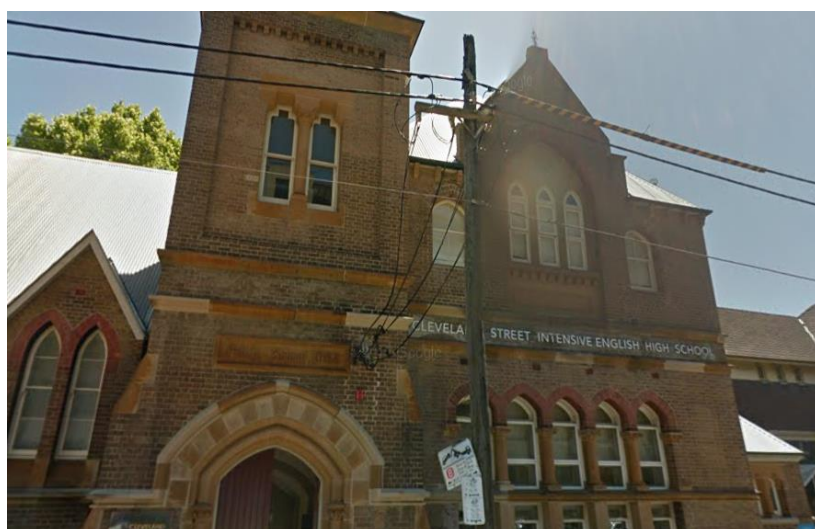


Figure 4 - Existing Supply to School

# Electrical Infrastructure

## 3.2 Proposed Electrical Augmentation to support Development

The electrical maximum demand calculated for the proposed development equates to 2,438A. An Application for Connection was lodged with the Supply Authority which confirmed that two off chamber substations, each consisting of 1 x 1,000kVA transformers would be required for the development. The proposed substations will be surface chamber type substations and be located on the southside of the building. The substation shall comply to the Ausgrid network standards.

The Ausgrid AP/AE reference number for this project is #800158173.

The proposed substation design shall be based on standard Ausgrid drawing # 224408

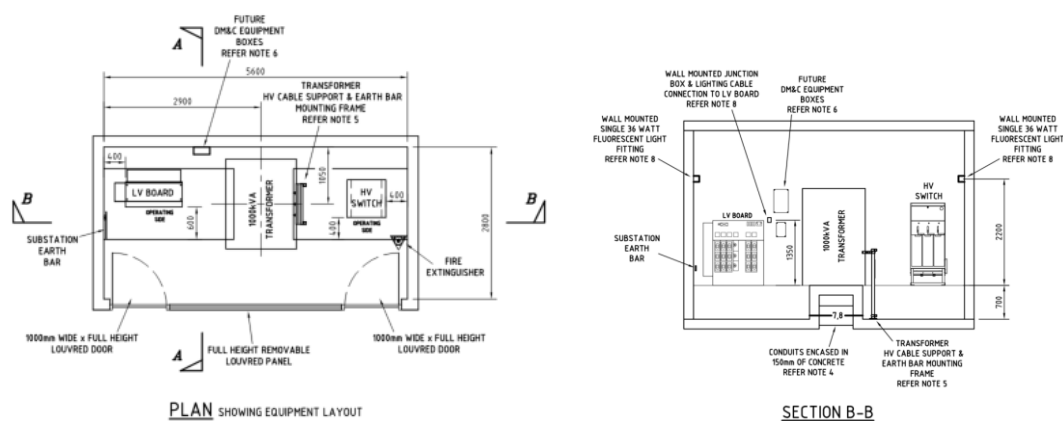


Figure 5 – Ausgrid Single Transformer Substation

## 3.3 General Power and Miscellaneous Services

A site main Switchroom is to be established. A series of distribution boards throughout the development shall provide power. Reticulation shall be via dedicated electrical riser cupboards. The Development shall be provided with small power, voice and data provisions, electronic security, access control and CCTV monitoring.



# Carrier Telecommunication services

## 4. Carrier Telecommunication services

### 4.1 Carrier Telecommunication services

The site is surrounded by major and minor telecommunications services trunk mains that run along Cleveland and Chalmers Streets. These trunk mains convey infrastructure belonging to Optus, Telstra, AAPT NextGen and NBN



Figure 6 – Telstra services adjacent site

It is noted that the existing facility is supplied with 12c SMOF and a secondary copper connection.

### 4.2 Proposed Carrier Infrastructure to support Development

An allowance for new Carrier lead-ins are being allowed for the proposed development. An NBN compliant pit and pipe system shall be installed on the property boundary off Cleveland Street to the new Site Campus Distributer.

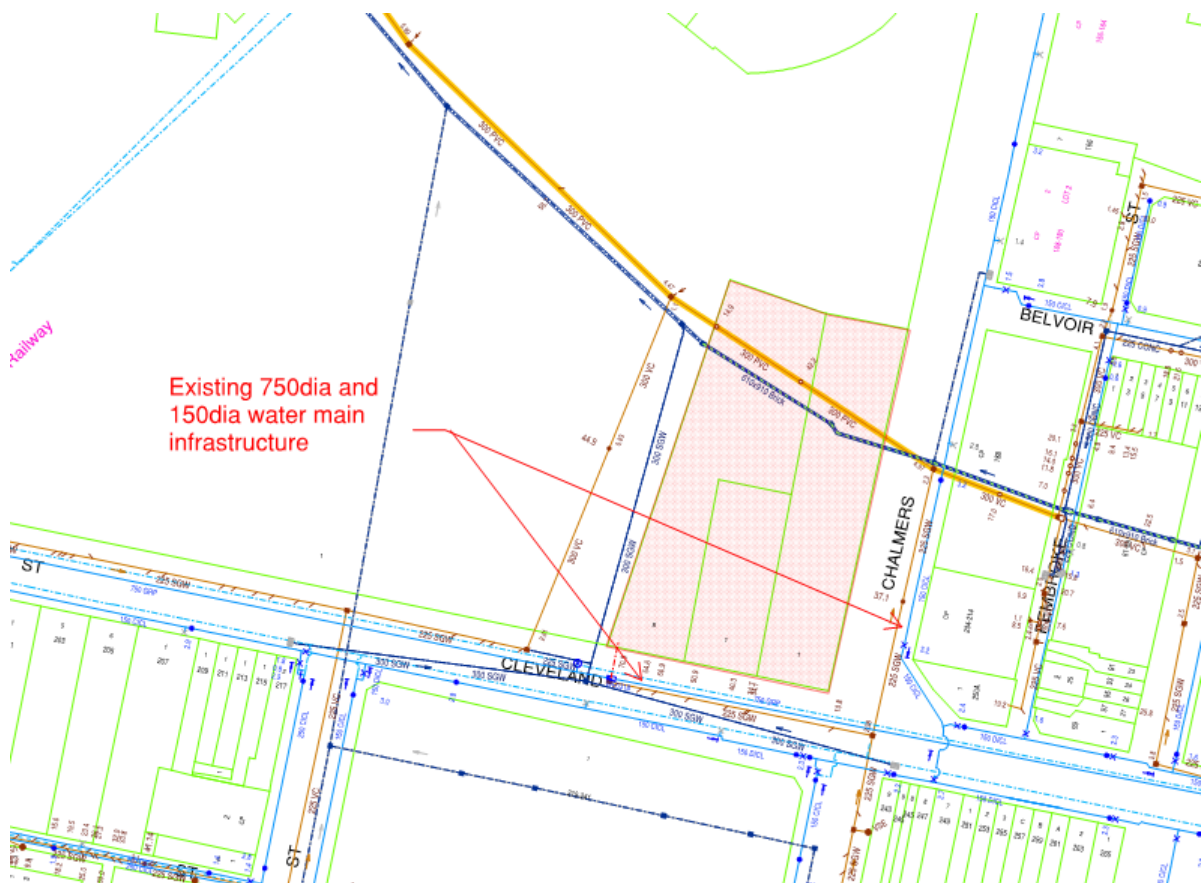


## 5. Hydraulic Services

### 5.1 Potable Water Supply

Sydney Water own and operate the water network in the area. The existing site connection will require upgrading for additional load and fire fighting supply. This will be determined through a section 73 application for Notice of Requirements (NOR)

There is substantial water main infrastructure within the area, including a 750 GRP main and smaller 150dia local reticulation network. Additionally, there is a 250dia main connecting to the 150dia from Pitt Street. With an understanding of the large infrastructure in the surrounding area, it is anticipated that supply can be provided and this will be confirmed via the Section 73 process.



## Hydraulic Services

## 5.2 Drainage

Sydney Water own and operate the sewer network in the area. The existing site connection will require upgrading for additional proposed load. This will be determined through a section 73 application for (NOR)

The sewer network in the surrounding area consists of 225dia mains in Cleveland Street and Chalmers Street, connecting into larger 300dia carriers within the park. This infrastructure is considered adequate for the proposed additional load.

There are two key risks with the Sydney Water drainage network for the site.

Risk 1: There is a 300dia concrete encased sewer main extending from east to west across the northern end of the site. Whilst this is already concrete encased, there is a concern that Sydney Water will require maintained easements and this could restrict the developable area. There are multiple options that may be requested of the developer by Sydney Water and to mitigate this risk, we advise early Water Services Coordinator (WSC) involvement.

**Risk 2:** There is a 610 x 910 Brick stormwater culvert extending in a parallel nature to the sewer main above. This is a major culvert and may restrict developable areas for this project without detailed discussions with Sydney Water. The options are highly dependent on negotiations with Sydney Water and to mitigate this risk we advise early consultation by the civil engineer with Sydney Water.

These two items are being reviewed and risks mitigated through design and consultation with the civil engineer and Sydney Water.



**Figure 8- Drainage (Sewer/Stormwater) mains**

# Hydraulic Services

## **SANITARY PLUMBING AND DRAINAGE**

Sanitary Plumbing and Drainage shall be a gravity collection system in accordance with AS 3500.2, and the NSW Code of Practice for Plumbing and Drainage requirements, extending from all Sanitary Fixtures and Waste points. An overflow relief gully and boundary trap will be provided at the point of connection to the existing sewer main serving the site.

## **TRADE WASTE DRAINAGE**

The new building will be provided with a grease waste and lab waste treatment systems. The trade waste stacks will be located within the building core, intended to service kitchens and laboratories located adjacent to the stack location. Grease waste connection points will be provided on each floor for future connection.

## **5.3 Stormwater Drainage & Downpipes and Rainwater Harvesting**

The extent of stormwater drainage documented in the hydraulic services package will include drainage from the new roof and hardstand areas and connection into the existing stormwater system. The stormwater services will be designed hydraulically for the required storm with provision for discharge to the civil engineers' stormwater detention (OSD) to limit outflows to authority requirements in accordance with the consent authority requirements.

The stormwater system shall comprise of roof eaves gutter /balcony outlets and downpipes located externally which will drop and connect into civil stormwater system. All roof drainage, stormwater drainage pipes and downpipes will be sized in accordance with AS 3500.3 and Local Council guidelines. Storm water pipework shall be generally uPVC.

Where possible stormwater and rainwater will be collected in a stormwater collection system. The system shall incorporate a rain water tank complete with a filtration and treatment system prior to supply into the building for non-potable reuse.

The hydraulic documentation will provide a connection point for landscape irrigation from the recycled rainwater service or potable cold water as required. The location of the connection(s) and size will be coordinated with the landscape consultant during the design phase. The extent of landscape irrigation will form part of the landscape consultant's package.

# Hydraulic Services

## 5.4 Gas Services

Jemena owns and operates the gas infrastructure in the area. There is an existing 110dia nylon gas main extending across Chalmers Street to the northern end of the existing site.

The existing 110dia Nylon gas main is expected to provide adequate supply to the site with no expected upgrades. Final application to Jemena to define connection locations and provisions to be undertaken during the next design phase.

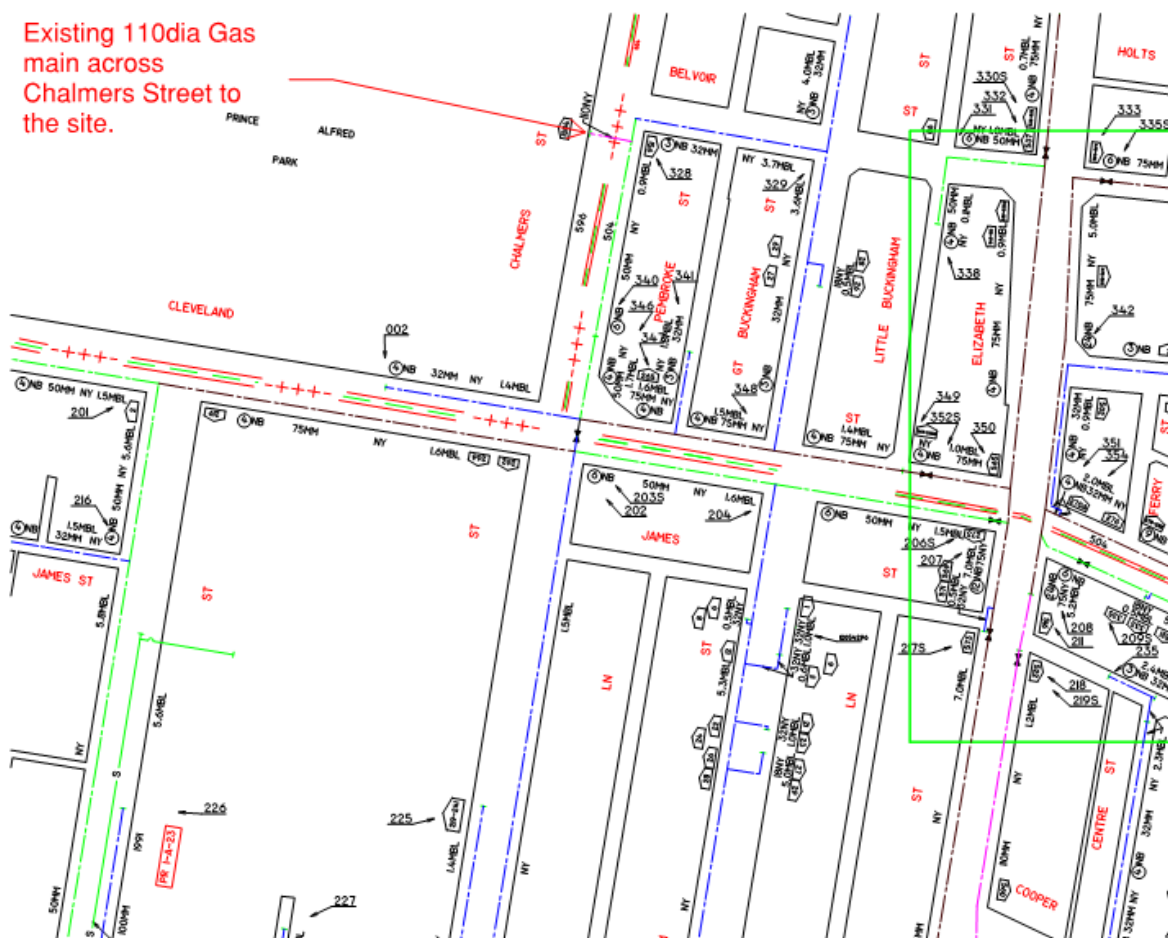


Figure 9- Gas Services

The Natural Gas supply will be designed to be extended from the Authority Gas main into the new gas meter location. A control valve shall be provided at the meter assembly to isolate gas supply for maintenance. The gas system will be designed in accordance with AS5601 and will be reticulated to kitchens and hot water heaters.