

# INFRASTRUCTURE MANAGEMENT REPORT MERCANTILE HOTEL

Engineering Services



PREPARED FOR WELSH MAJOR ARCHITECTS

#### DOCUMENT CONTROL

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# 1 Introduction

Calibre Group have been engaged to prepare an Infrastructure Management Report of the existing Local Authority infrastructure installed in and around the Mercantile Hotel, at 25-27 George Street, The Rocks, Sydney, NSW. This report is in response to the requirement in the Secretary's Environmental Assessment Requirements (SEARS) for the SSDA.

This report covers the following infrastructure;

- Electricity Network
- Sewer drainage
- Potable water supply
- Natural gas supply

The objective of this report is to provide advice on any impact to existing Local Authority infrastructure that arises from the proposed development to the existing Mercantile Hotel.

The following figure indicates the location of the site with scope of inspection highlighted:



Figure 1.1 Site Locality Plan

## 1.1 Limitations

The advice in the report is based on desktop studies of the existing survey information and Dial Before You Dig documentation received. Calibre has not carried out physical investigations of the existing services such as pot-holing, etc.

## 1.2 Reference Documents

The following documents have been referenced in the preparation of this infrastructure report;

- Architectural drawings prepared by Welsh Major
- Survey Information
- Dial Before You Dig information

# 2 Electrical Services

## 2.1 Existing Site Electrical Infrastructure

It is envisaged at this stage that there will not be any implications on existing Electrical Infrastructure or stakeholders that are external, or not local, to the Mercantile Hotel.

The existing Mercantile Hotel building is served by a Low Voltage (LV) 3-phase supply by Ausgrid. The supply appears to be fused by the supply authority at 200 Amps based on visual inspection. The supply is CT metered by an EDM I ATLAS Mk10A with serial number 215152420 and NMI NCCC002882.

The Main Switchboard (MSB) serving the entire site appears to be limited to 160 Amps via a Hager Moulded Case Circuit Breaker (MCCB) with trip unit set to 160 Amps based on visual inspection. Although not confirmed, for the purposes of DA it is assumed the main switchboard bus is rated to maximum 160 Amps, and that any increase in supply will trigger upgrade or replacement of the building Main Switch Board.

## 2.2 Proposed Site Electrical Infrastructure

Based on initial maximum demand estimates for the proposed development electrical requirements post renovation works, it has been identified that the existing supply fused at 200Amps/Phase provided sufficient supply capacity without upgrade by the Supply Authority. It is however, as detailed in the DA electrical drawings, recommended that the main switchboard and MCCB be upgraded to support the 200Amps/phase supply. These works are not expected to affect any existing electrical infrastructure or stakeholders external to the Mercantile Hotel.

As the preceding information is based on only limited visual inspection, it is recommended at this stage that the Supply Authority (Ausgrid) supply availability request is made to verify existing electrical supply infrastructure and capacity.

## 2.3 Communications

It is envisaged at this stage that changes to communication infrastructure for the Mercantile Hotel as a result of renovations works will be local to the building with existing communication infrastructure connections and will not affect any external stakeholders or existing infrastructure.

### 3 Sewer Drainage

There is currently an existing 150 diameter sewer (Vitrified Clay pipe) located in the road adjacent the existing hotel, reticulating along George Street. There appears to be two property connections servicing the hotel, and these are believed to be 100mm diameter.

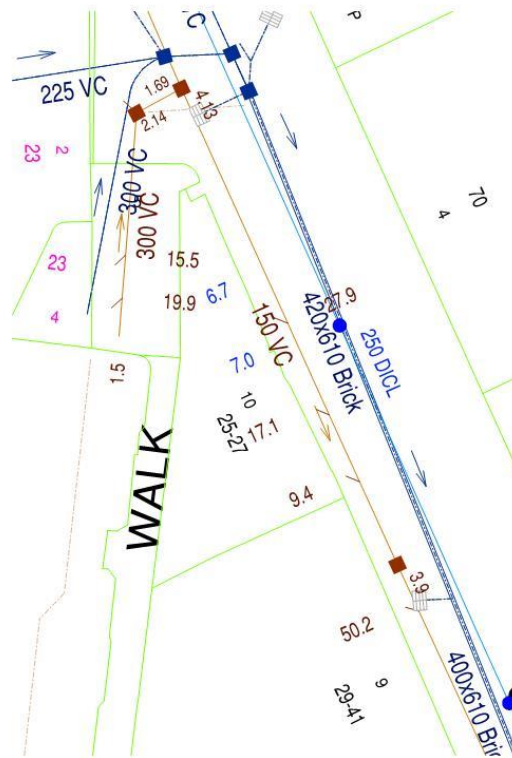


Figure 3.1 – Existing Sewer – 150VC (indicated in brown line)

The existing sewer property connections appear to be adequately sized to serve the proposed additional number of fixtures, providing the maximum “Fixture Unit” count for fixtures connected to one property connection does not exceed the maximum of 164, as stated in the Plumbing Code of Australia.

It has been calculated that the proposed number of fixtures in the refurbished hotel will double, increasing the load on the existing sewer, we believe that the existing sewer will not require upgrading and it has the capacity to cope with the additional in flow from the refurbished property. The capacity of the sewer to cope with the additional load from the proposed hotel refurbishment will have to be properly assessed by an approved Sydney Water Services Co-ordinator.

It is recommended that the existing internal sanitary drainage and property connections, to be re-used, are camera surveyed prior to commencement of works on site, in order to determine the exact pipework condition and location.

## 4 Cold Water Services

A 250mm diameter DICL Sydney Water main is located in George Street. The existing water meter could not be located during a site inspection, the existing water meter size shall need to be verified.

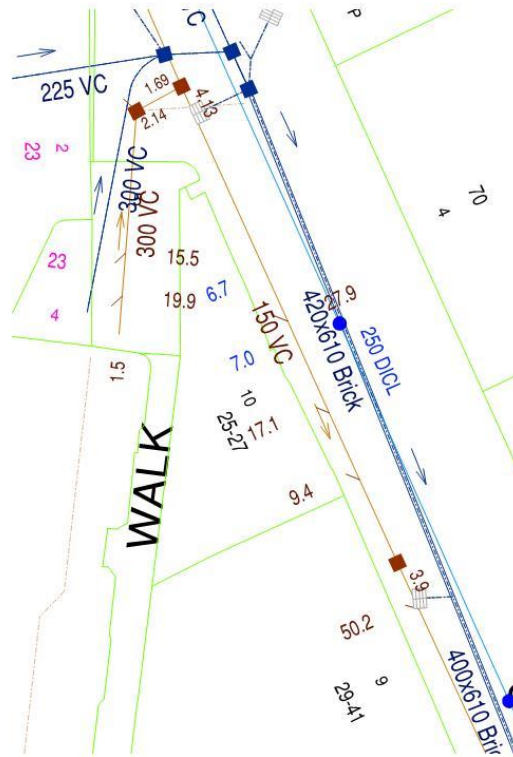


Figure 4.1 – Existing Sewer – 250DICL (indicated in blue line)

It has been calculated that the existing probable simultaneous flow rate is approximately 0.75L/s, and the proposed additional fixtures shall increase this to approximately 1.50L/s.

The existing water connection shall need to be upgraded to a 40mm service connection and water meter.

The current water main appears to have adequate capacity to cope with the proposed new development, but the capacity of the existing water main to cope with the additional load from the proposed hotel refurbishment will have to be properly assessed by an approved Sydney Water Services Co-ordinator.

## 5 Fire Service

A grade 3 water supply shall be provided from the existing Sydney Water main to serve the proposed sprinkler system throughout the building.

The Sprinkler service is an Ordinary Hazard 1 classification, and will require approximately 6L/s flow rate.

The capacity of the existing water main to cope with the additional load from the proposed hotel refurbishment will have to be properly assessed by an approved Sydney Water Services Co-ordinator.



## 6 Natural Gas Service

There is an existing 32mm natural gas service connected to the property, supplying natural gas to the commercial kitchen gas cooking ranges. It has been calculated that the existing supply is sized just adequately to cope with the current load on site, which comprises of one 6 burner oven range and a griddle plate. The proposed kitchen equipment is yet to be fully determined, but if the proposed load required was to be in excess of the existing, then the gas service shall need to be upgraded to at least a 40mm service.

The existing hotel is supplied by a 75mm nylon Jemena gas main located in George Street. If the natural gas property service connection is required to be upgraded, then the proposal shall be assessed by Jemena to determine any impact to the existing service.



Figure 6.1 – Existing Gas Infrastructure



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