

89 George Street, Parramatta  
Report on the existing Hydraulic  
infrastructure & impact to the  
development

Client

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Authorised for Issue

.....  
Project Leader

.....  
Date

## EXECUTIVE SUMMARY

On the basis of the information being correct, for existing services locations, diameters pressures and levels of the existing infrastructure that was available from the local authorities and utility operators.

The conclusion from our preliminary investigation indicates the proposed development can proceed into the next phase supported from our review of the existing infrastructure, we conclude that the existing infrastructure subject to site surveys to confirm levels and locations of existing services including section 73 with Sydney Water Corporation approval can be used for the connection of the proposed building hydraulic services.

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# 1 Introduction

## 1.1 General

Woods Bagot has commissioned WSP Lincolne Scott to prepare a report and comment on the impact of the proposed development on the existing infrastructure for the proposed 89 George Street commercial development. The site is located on George Street in Parramatta.

## 1.2 Aim

This report identifies the existing Authorities infrastructure that is located in the immediate area of the proposed development including relocation and diversion of the existing 150mm. vitrified clay sewer that runs through the development.

Authorities' infrastructure includes for:

- Water
- Sewerage
- Natural Gas

## 1.3 Sources of Information

The following sources of information were used in compiling this report:

- Authorities Infrastructure Plans (obtain through Dial Before You Dig)
- Discussions with relevant Authorities

## 1.4 Scope of Works

Scope of works for this report includes:

- Review of existing services and capacity to service the proposed development.
- Fire Protection requirements
- Outline of proposed drainage systems and diversion works required
- Stormwater and rainwater harvesting
- Natural Gas

# 2 Project Detail of Proposed Scope

The project details of the proposed development are given below:

89 George Street is proposed to have a new building to be built which consists of four basement levels, Ground Floor Lobby / Cafeteria, twelve (12) commercial office floors and a roof top plantroom.

# 3 Water Supply

The development site has frontage to the following water mains:

- 150mm diameter water main in George Street

### 3.1 Water Supply to Site

For the following works to provide a new metered water supply Section 73 Notice of Requirements is required to be lodged with Sydney Water, once the development has consent, a Sydney Water coordinator is to be appointed for the new connection to be approved by Sydney Water Corporation.

The property is currently served by a 150mm diameter water main that is acting as both cold water supply and street hydrant protection.

It has been determined that there is approximately 300kPa supply pressure at street level. This being indicative of the water pressure available it may be necessary to install cold water pressure booster pump sets and increase the available pressure to serve the proposed building.

It is envisaged that a 150mm diameter tee connection will be required to the street main and supply all the water demands including the domestic cold water, fire hydrants, fire hose reels and sprinkler services.

## 4 Sewer Drainage

The development site has a 225mm Sydney Water Corporation (SWC) Sewer main traversing the adjacent properties on George Street.

For the following diversion works and approval by Sydney Water Corporation Section 73 Notice of Requirements is required to be lodged with Sydney Water, once the development has consent, a Sydney Water coordinator is to be appointed to outline the adjustments / deviation of infrastructure as follows.

The existing property currently has two Sydney Water Corporation (SWC) sewer mains running through the site (refer to Appendix – Existing Services Plans). The main sewer run lies parallel to George Street approximately 43m back from the street boundary, the second sewer main is a branch line that runs to the rear of the property just off parallel to the Western boundary.

To accommodate the proposed development, including four levels of car parking, it is proposed that the existing SWC sewer main be relocated and redirected so that the bulk of the site can be released for construction. The proposal for the diversion of the sewer main would be to pick up the branch main as it enters the target site, redirecting the sewer round to the Western boundary then North to George Street, picking up all branches from the West, once the line is perpendicular to the existing sewer main in George Street, turn West again utilizing the installation of a new manhole riser then running to the existing manhole located at the front of Number 83 George Street.

Preliminary calculations and interpretation of currently available data indicates that there is sufficient depth of cover to make a connection to the existing sewer manhole in George Street.

The upstream end of the remaining existing sewer main, parallel to George Street will require to be extended, through the proposed building, piping to atmosphere as a main vent.

Considerations for this proposal are as follows:

1. Sewer service and drainage from existing neighbouring properties will need to be free flowing and always maintained during construction.
2. Diversion of the sewer main will require careful and specific planning.
3. Detailed site and roadway survey will need to be conducted to ensure feasibility of proposal.
4. Diversion of sewer main to George Street manhole will most likely require “out of hours” works as George Street is heavily used during most days.
5. Engagement of a “Water Service Coordinator” (WSC) as early as possible, in the design stage, will allow for an easier transition from SWC design stage to construction stage. While WSC designers are typically fairly quick in producing deliverable product, the approval process in Sydney Water can take several weeks.
6. Design allowances including spatial will be required by the Architect for both the proposed lateral pipe run, around the inside of the South and Western walls, and the inclusion of sewer main vent that would require to be extended upto high level and terminate to atmosphere within the building.

## 5 Gas Supply

The development site has frontage to Jemena natural gas mains in the following:

- 110mm low pressure at 7 kPa main in George Street

A new connection from the Jemena gas main located on the opposite (north) side of George Street shall be made to supply natural gas to the development as required.

Jemena has confirmed that the existing infrastructure has sufficient capability to service the development.

No gas main amplifications or extensions are required.

## 6 Stormwater and Rainwater Harvesting

The site is located within the Parramatta City Council catchment/control area and as such is subject to the requirements of the Upper Parramatta Catchment Trust (UPRCT) On-Site Stormwater Detention handbook.

The UPRCT OSD hand book proscribes a gross detention/discharge rate of 455m<sup>3</sup>/ha / 38.5L/s/ha; based on an approximate by-pass calculation of 5%.

Detailed calculations for final tank dimensions, discharge rates and storage volumes need to be finalized.

Flood levels advised by the Parramatta City council are

- 20 Year ARI event of storm - 8.54 AHD
- 100 Year ARI event of storm - 8.56 AHD
- The flow rate 100 Year ARI - 2 cumsecs (cubic metre / second)

It is proposed that all roof catchment areas, balcony catchment areas and “clean water” catchment areas be directed to the stormwater system via the rainwater reclamation tank, then onto the OSD tank before final discharge to the council stormwater main located in George Street.

Previous analysis of the council stormwater system indicates that there will be a requirement to extend the existing stormwater pipework, from the front of Number 91 George Street, approximately 35m upstream, West, toward the site.

## 7 Rainwater Harvesting

As a part of the ESD proposal for the building a rainwater retention tank is to be included as part of the total OSD storage volume.

It is proposed that the captured water volume be used for toilet/urinal flushing as well as irrigation purposes.

It is expected that the rainwater reclamation will go towards reducing the final calculated detention volume.

## 8 Fire Hydrants and Fire Hose reels:

As the building is proposed to be in excess of 25m in height; a dedicated internal Fire Hydrant system will need to be incorporated into the building.

The Hydrant system will be fed from the 150mm diameter SWC Water main located in George Street, through a parallel Booster Pump/Booster valve arch set up.

The Fire hydrant booster pump will require being located within a mechanically ventilated room with immediate access to a fire stair.

Fire hose reels will be served off the domestic, metered, cold water service. At least one Fire hose reel, per floor level, and will require being located within 4m of the stair / emergency fire exit and at least one hose reel will need to be located beside a fire hydrant.

Typically this means that the Fire Hydrant hose reel cupboard is to be located within 4m of the fire stair.

## APPENDIX A

- Existing Site Services – Water, Sewer and Gas
- Proposed Diversion Works





