



2-8 Highgate Road, Lindfield Building Services Report

Prepared for CPDM

Revision History

REVISION	DATE	BY	CHECKED	COMMENTS
A	21/02/2025	NL/TB	CL	Preliminary Issue
B	06/03/2025	NL/TB	CL	Preliminary Issue - Revised
C	14/04/2025	NL/TB	CL	Final Issue

The recipient of the latest issue as noted above will be responsible for superseding/destroying all previous documents.

Contents

1.	Overview of Project	4
2.	Electrical Services	5
2.1.	Power Supply	5
2.1.1.	Existing and anticipated supply requirements	5
2.1.2.	Proposed Services	6
2.2.	Telecommunications	6
2.2.1.	Existing and anticipated supply requirements	6
2.2.2.	Proposed Services	7
<hr/>		
3.	Hydraulic and Wet Fire Protection Services	8
3.1.	Drainage Services / Sewer System	8
3.1.1.	Existing and anticipated supply requirements	8
3.1.2.	Proposed Services	9
3.2.	Water Services	9
3.2.1.	Existing and anticipated supply requirements	9
3.2.2.	Proposed Services	10
3.3.	Natural Gas	10
3.3.1.	Existing and anticipated supply requirements	10
3.3.2.	Proposed Services	11
3.4.	Wet Fire Protection Services	11
3.4.1.	Existing and anticipated supply requirements	11
3.4.2.	Proposed Services	13
<hr/>		
4.	Conclusion	14

1. Overview of Project

This Building Services Infrastructure Report is prepared on behalf of CPDM to understand the existing Electrical and Hydraulic infrastructure and proposed Electrical and Hydraulic Services for 2-8 Highgate Road, Lindfield NSW 2070.



Figure 1. Site Location

Source: Architectural Concept prepared by PBD Architects

The proposed development involves the demolition of existing buildings, subdivision, site preparation works, and the construction of a residential development consisting of nine floors of apartment units (Ground Floor to Level 8) and two levels of basement car parks.

2. Electrical Services

The following sections provide an overview of the existing electrical services infrastructure identified from a desktop study.

2.1. Power Supply

2.1.1. Existing and anticipated supply requirements

Currently the site is composed of four residential houses. The power is served aerially from two different street power poles which connect each residential house.



Figure 2. Existing houses

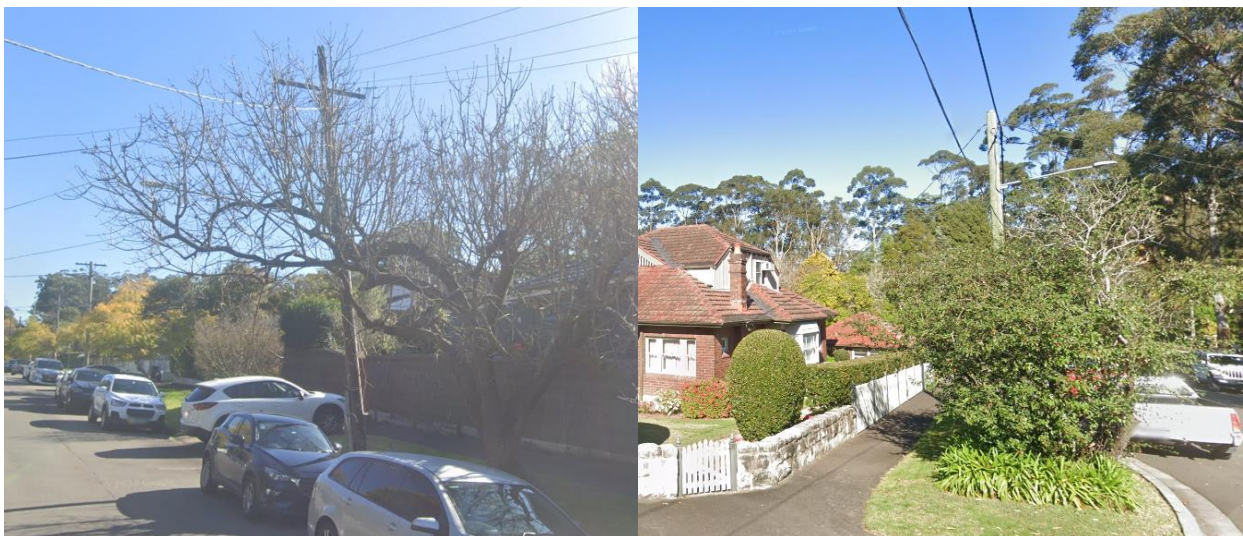


Figure 3. Existing power poles

2.1.2. Proposed Services

The site will most likely require a significant high voltage connection to reticulate to a substation within the front boundary of the future development lot.

The current electrical infrastructure to the site does not have the capacity to support the new buildings and new high voltage cabling and infrastructure is required to be installed to the site together with a substation.

An Ausgrid power application needs to be lodged, to get a connection offer for the site. A Level 3 ASP will need to be engaged.

The applicant will continue to liaise with Ausgrid to progress the high voltage reticulation and electrical supply to the site. This will then proceed into the level 3 design for the agreed design package.

2.2. Telecommunications

2.2.1. Existing and anticipated supply requirements

The various houses at Highgate Road are supplied with telecommunications supplies from the various Telstra pits and manholes along Highgate and Woodside Avenue.



Figure 4. Existing manhole (left) and pit (right)

We have confirmed that NBN services are currently available to each of the residencies, feeding from the Telstra pits acting as the incoming NBN fibre. There are no known issues associated with the development of the site and the telecommunications network.

3. Hydraulic and Wet Fire Protection Services

The following sections provide an overview of the existing hydraulic and fire protection services infrastructure identified on a desktop study of proposed development area.

3.1. Drainage Services / Sewer System

3.1.1. Existing and anticipated supply requirements

Information obtained on the Sydney Water Map from the Dial Before You Dig (DBYD) enquiry indicates that existing lots 2, 4, 6 and 8 sanitary drainages are currently connecting to the exiting Ø225mm SGW authority gravity sewer services located within the proposed development area and Ø225mm VC authority gravity sewer services reticulating along Woodside Road.

These services can be utilized to accommodate the sanitary drainage connections for the proposed development.



Figure 6. Sydney Water existing sewer infrastructure layout for the site as per Dial Before You Dig (BYDA)

3.1.2. Proposed Services

The existing sanitary drainage connections from Lots 2, 4, 6, and 8 to the Ø225 SGW Sydney Water authority sewer main will need to be decommissioned and capped off. A new connection point to be determined during the detailed design stage, in accordance with Sydney Water requirements.

Additionally, a Section 73 Certificate from Sydney Water will be required for the project, as the new development's building structure is likely to interfere with the existing authority sewer lines running through the lots. Sydney Water will issue a Notice of Requirements (NOR), outlining the conditions for building over or near existing authority assets.

To facilitate this process, the client will need to engage an accredited Water Services Coordinator (WSC) to assist with the Section 73 Certificate application and ensure compliance with Sydney Water's regulations.

The below calculation outlines the estimated average water demand per day for the new proposed building, based on the provided Scoping Report from PBD Architects (20/11/2024).

Development Type	Development Sub-Type (Sydney Water)	Total Floor Area (GFA) - m ²	Dwelling / Bed / Student	Sydney Water Value	Average Water Demand L/Metric Unit/Per Day	Average Sewer Discharge L/Metric Unit/Per Day
Residential	High Rise Units	15,600.00	-	3.34	52,104.00	41,683.20
TOTAL		15,600.00			52,104.00	41,683.20

3.2. Water Services

3.2.1. Existing and anticipated supply requirements

The information obtained on the Sydney Water Map from the Dial Before You Dig (DBYD) enquiry indicates that authority water mains are available along Highgate Road (Ø100mm CICL), Woodside Avenue (Ø100mm CICL & Ø300mm CICL), and Reid Street (Ø100mm CICL).

These services can be utilized to accommodate new potable cold-water connections for the proposed development, and potentially be used as one water supply for wet fire services.



Figure 7. Sydney Water existing watermain infrastructure layout for the site as per Dial Before You Dig (BYDA)

3.2.2. Proposed Services

The existing cold-water connections from Lots 2, 4, 6, and 8 to the Ø100 CI CL Sydney Water authority watermains on Highgate Road, Woodside Street and Reid Street will need to be decommissioned and capped off.

It is estimated that a new Ø65mm cold water supply and a Ø50mm authority water meter will be required to serve the new development. Services and new connection point to be determined during the detailed design stage, in accordance with Sydney Water requirements.

3.3. Natural Gas

3.3.1. Existing and anticipated supply requirements

The information obtained on Jemena Map from the Dial Before You Dig (DBYD) enquiry indicates that authority natural gas mains are available along Highgate Road (Ø32mm NY 210 kPa) where lots 2, 4 and 6 are currently connected, and Reid Street (Ø32mm NY 210 kPa) where lot 8 is currently connected.

A new gas connection is expected to be required to meet the demands of the proposed development.



Figure 8. Jemena existing natural gas infrastructure layout for the site as per Dial Before You Dig (BYDA)

3.3.2. Proposed Services

The use of gas appliances is subject to client preferences and the Building Sustainability Index (BASIX) requirements, which are part of the State Significant Development Application (SSDA) process in NSW. BASIX establishes water, energy efficiency, and thermal comfort performance standards for new residential buildings.

It is assumed that gas consumption will not be proposed for the new development, as councils are actively promoting energy-efficient practices and encouraging the transition to more sustainable alternatives to reduce greenhouse gas emissions in new buildings.

If natural gas services are not required for the project, the existing gas connections shall be removed from the site as part of the works.

3.4. Wet Fire Protection Services

3.4.1. Existing and anticipated supply requirements

The information obtained on the Sydney Water Map from the Dial Before You Dig (DBYD) enquiry indicates that authority water mains are available along Highgate Road (Ø100mm CICL), Woodside Avenue (Ø100mm CICL & Ø300mm CICL), and Reid Street (Ø100mm CICL)

Recent the pressure and flow statement received from Sydney Water undertaken on the available on the Ø100 water main located on Highgate Road indicates a very low value, making the watermain not suitable to be used as a water supply for the project fire services.

It is assumed that the existing watermains along Woodside Avenue (Ø100mm CICL), and Reid Street (Ø100mm CICL), will have similar results from Sydney Water, as they are part of the same interconnected network. The Ø300mm CICL reticulating along Woodside Avenue may have different results.

Therefore, A Water Services Coordinator (WSC) shall be engaged for the project to investigate authority infrastructure upgrades and water connection options. Otherwise, full size water storage tanks will be necessary to be installed to serve the development wet fire protection system.



Statement of Available Pressure and Flow

Edward Moreno
119-121 Kembla Street
Wollongong, 2500

Attention: Edward Moreno

Date: 19/02/2025

Pressure & Flow Application Number: 2070271
Your Pressure Inquiry Dated: 2025-02-12
Property Address: 6 Highgate Road, Lindfield 2070

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Highgate Road	Side of Street: East
Distance & Direction from Nearest Cross Street	30 metres South from Reid Street
Approximate Ground Level (AHD):	94 metres
Nominal Size of Water Main (DN):	100 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	36 metre head
Minimum Pressure	29 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	28
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	10 11	21 19
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	10	20
Maximum Permissible Flow	11	17

(Please refer to reverse side for Notes)

Figure 9. Sydney Water Statement of Available Pressure and Flow No 2070271 – Ø100mm CICL watermain at Highgate Road

3.4.2. Proposed Services

It is assumed that the new development is to be provided with wet fire protection services listed below:

- **Hydrant system** in accordance with the requirements of **BCA clause E1.D2** and **AS 2419.1 – 2021**.
- **Automatic Fire Sprinkler system** in accordance with the requirements of **BCA clause E1.D4**, and **AS 2118.1 – 2017 Amdt 2 2020** or **AS 2118.6 – 2012**
- **Fire Hose Reel system** in accordance with the requirements of **BCA clause E1.D3** and **AS 2441 – 2005**, excluding coverage for Class 2 residential areas.
- **Portable Fire Extinguishers system** in accordance with the requirements **BCA clause E1D14**, **AS2444:2001**

Given the proposed building height (over 25m) and the low pressure and flow results received from Sydney Water for the Ø100mm water main on Highgate Road (No 2070271), it is assumed that fire pumps shall be required for the development. As a result, a fire pump room with direct street access shall be provided.

Additionally, a fire brigade booster assembly is required to serve both the hydrant and sprinkler systems. This assembly shall be positioned near (not more than 20m) the principal pedestrian entrance of the development to comply with regulatory requirements.

Based on a preliminary assessment of the Preliminary Architectural Drawings from PBD Architects (Revision P2 - 24/02/2025), the estimated water demand for the wet fire system is 27 L/s.

For a building exceeding 25m in effective height, a dual water supply is required for the combined fire hydrant and sprinkler system. Therefore, a fire water storage tank shall be installed.

JN has submitted extra Pressure and Flow Enquiry to Sydney Water to assess the capacity of the Ø100mm CICL and Ø300mm CICL authority water mains on Woodside Avenue.

Once response from Sydney Water is received, JN will assess whether a full-size or reduced-size fire water storage tank will be required for the project. The estimated capacity for a full-size tank is 360,000L.

A Water Services Coordinator (WSC) shall be engaged for the project to investigate authority infrastructure upgrades and water connection options.

4. Conclusion

JN confirms that the site can be adequately serviced for the proposed development, subject to the completion of relevant authority applications, adherence to required processes, and any necessary infrastructure upgrades. Further consultation with relevant agencies and service providers will be conducted during the detailed design phase. The infrastructure report will be updated upon completion of the infrastructure design / services connections.

