COCKLE BAY PARK REDEVELOPMENT

Appendix HH-1 - Utility Services Infrastructure Assessment (USIA)

State Significant Development,

Development Application (SSD DA)

Prepared for DPT Operator Pty Ltd and DPPT Operator Pty Ltd

30th September 2021

Revision [B]

Warren Smith
Consulting Engineers

CONTENTS

Introduction

This report has been prepared to accompany a detailed State Significant Development (SSD) Development Application (DA) (Stage 2) for a commercial mixed-use development, Cockle Bay Park, which is submitted to the Minister for Planning and Public Spaces pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The development is being conducted in stages comprising the following planning applications:

- Stage 1 – Concept Proposal setting the overall 'vision' for the redevelopment of the site including the building envelope and land uses, as well as development consent for the carrying out of early works including demolition of the existing buildings and structures. This stage was determined on 13 May 2019, and is proposed to be modified to align with the Stage 2 SSD DA.
- Stage 2 – detailed design, construction, and operation of Cockle Bay Park pursuant to the Concept Proposal.

The Site

The site is located at 241-249 Wheat Road, Sydney to the immediate south of Pyrmont Bridge, within the Sydney CBD, on the eastern side of the Darling Harbour precinct. The site encompasses the Cockle Bay Wharf development, parts of the Eastern Distributor and Wheat Road, Darling Park and Pyrmont Bridge.

The Darling Harbour Precinct is undergoing significant redevelopment as part of the Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP) including Darling Square and the W Hotel projects. More broadly, the western edge of the Sydney CBD has been subject to significant change following the development of the Barangaroo Precinct.

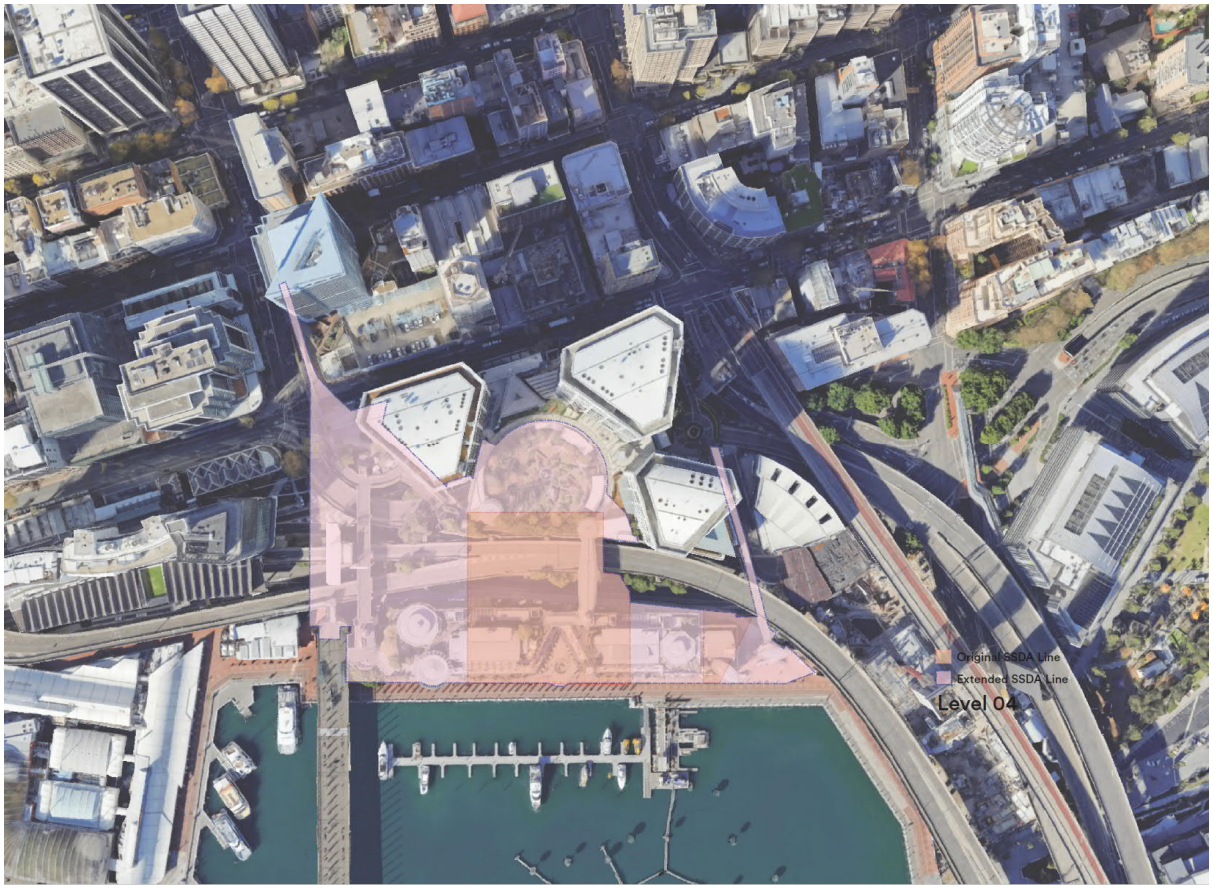


Figure 1 - Site Location

Response to SEARs

The Infrastructure Management Plan – Sewer, Water and Natural Gas is required by the Secretary's Environmental Assessment Requirements (SEARs) for SSD 7684. This table identifies the SEARs and relevant reference within this report.

This report has been prepared in response to the Secretary's Environmental Assessment Requirements (SEARS) dated 12 November 2020 for SSD-9978934. Specifically, this report has been prepared to respond to those SEARS summarised in Table 1.

TABLE 1 - SEARs requirements		
Item	**Description of Requirement**	**Section Reference (this report)**
C29 – Utilities	Sewer, Water and Natural Gas	HH-1

Standards & Design Guidelines

The hydraulic services will be designed to the minimum of the following Standards, except where noted in the deviation list:

- EP&A – ACT & Regulation
- Plumbing & Drainage – Act & Regulation
- National Construction Code (NCC) – 2019
- Plumbing Code of Australia (PCA) – 2019
- AS 3500-2018 – Plumbing and Drainage Set
- AS 5061-2013 – Gas Installations
- Trade Waste requirements (based on Local Guidelines)
- Local Stormwater requirements
- Sydney Water / Jemena
- AS/NZS 3718-2005 Water supply Tap ware
- NSW Health Department Circulars
- DIN 1988-300 Drinking water supply systems; pipe sizing
- DVGW W551-2004 Drinking water heating and drinking water piping systems; technical measures to reduce Legionella growth; design, construction, operation, and rehabilitation of drinking water installations
- AS 1170.4 Structural design actions Earthquake actions in Australia

Project Design

The basis of the design is to deliver hydraulic services to the project that are fit for purpose and meet the performance requirements shown in Table 0

Table 0 - Development criteria

Design Criteria		Detail
Building Type		Retail and Commercial
Number of floors	Retail Tenancies	4 floors
	Commercial Tenancies	35 floors
	Mid rise plant levels	2 floors
	Roof top plant levels	2 floors
GFA (maximum allowable)	Retail Tenancies	14,000m2
GFA (maximum allowable)	Commercial Tenancies	75,000m2

Utility Services

SEWER AND WATER SERVICES: A Sydney Water Corporation Notice of Anticipated Requirements for Section 73 Subdivider/Developer Compliance Certificate (Sydney Water Act 1994, Part 6 Division 9) PENDING DEVELOPMENT CONSENT has been issued to Sydney Water under Case Number is 193883 - lodged on 2nd September 2021.

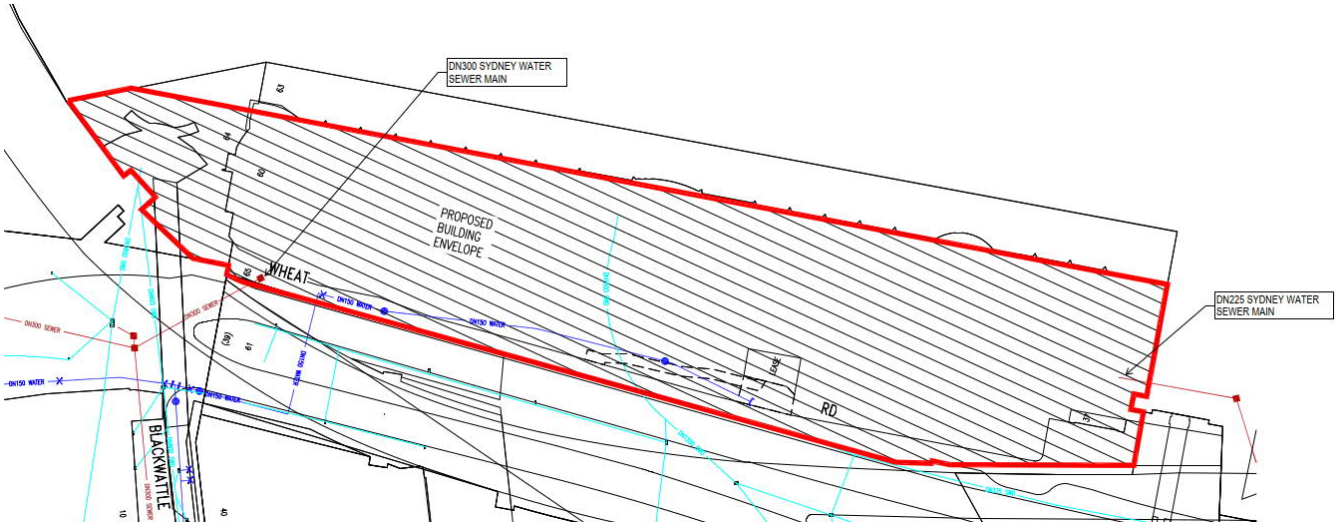
NATURAL GAS SERVICE: A Jemena New Connections – Commercial application has been issued to Jemena under #000377306 – lodged 25th September 2021.

Sewer Mains (Utility)

Existing Sewer Mains

The site has access to two (2) Sydney Water sewer mains. These connections are located as follows:

- 300mm sewer main at the southern end of the development.
- 225mm sewer main at the northern end of the development.



Sewer Available Capacity

To express the results in a total daily sewer discharge, an estimate of the average daily sewer discharge in terms of L/Day has been made by adopting information derived by the NSW Water Directorate. Where the standard equivalent tenement figures suggest that a 60% water to sewer discharge factor is appropriate. Refer to table below for this calculation.

Sewer discharge calculation

Total Units	Average Sewer Discharge 60% of L/ unit/day	Total Average Daily Sewer Discharge (kL)
Office and Café / Fast Food	60% of 89,000 = 53,400	53.4

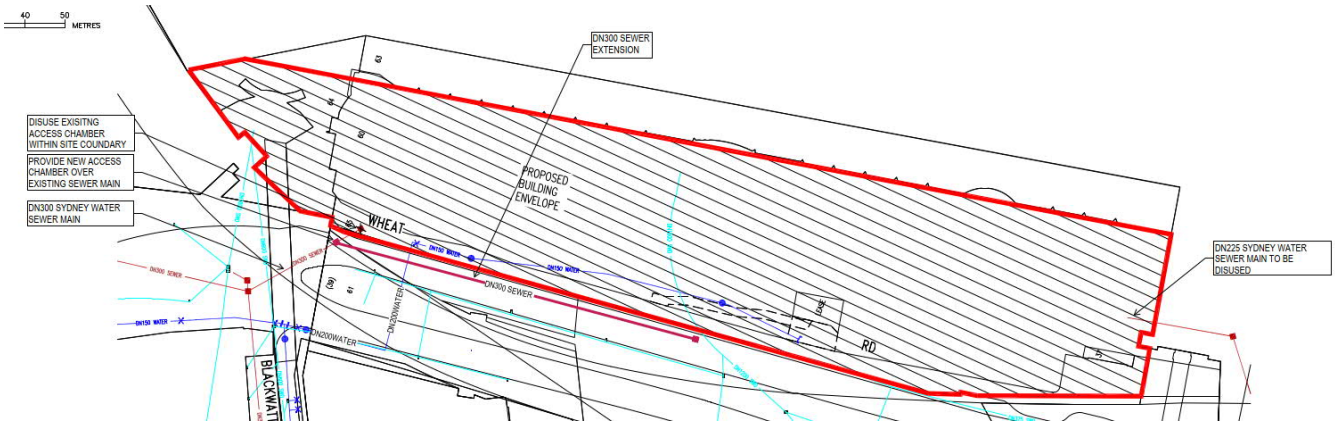
Sewer Mains Summary

Existing DN300 sewer main to be extended along the eastern boundary to the middle of the site.

New access chamber to be installed over existing sewer.

The existing 225mm sewer main at the northern end of the development will be retained to provide a gravity drainage connection for fixtures to this end of the development.

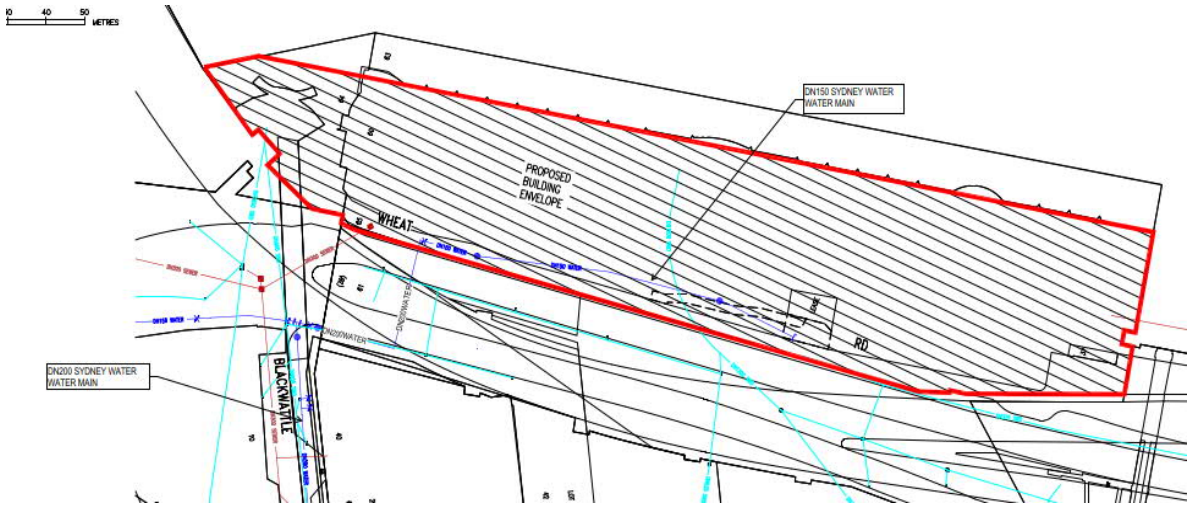
Sewerage Code of Australia. A catchment plan and flow schedule will need to be included when the design is undertaken.



Water Mains (Utility)

Existing Water Mains

The site has access to one (1) 150mm diameter Sydney Water water main along the western side of Wheat Road.



Water Available Capacity

The assumption taken in determining the average daily potable water demands for the proposed development were taken from the Sydney Water table, “Average Daily Water Use by Property Type” and is presented in the tables below.

Where possible, potable water usage will be reduced using low flow taps and sanitary fixtures, typically using the following flow rates:

- Shower = 9.0L/m
- Basin = 7.7L/m
- Sink = 7.7L/m

Average Daily Water Demand

Development Type	Units	Average Demand (L/Metric Unit/Day)
Office	75,000m^2	2.27
Café / Fast Food	14,000m^2	2.48

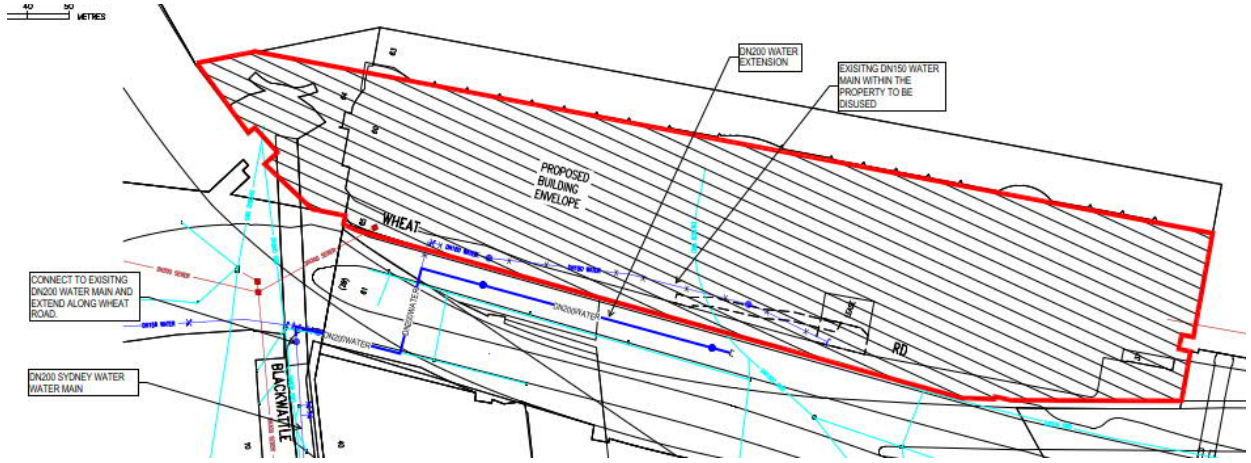
Average Daily Water Demand Calculation

Total Units	Average Demand (L/ Unit/Day)	Total Average Daily Water Demand (kL)
Office	75,000 x 2.27 = 149,804	170.250
Café / Fast Food	14,000 x 2.48 = 33,564	34,720
TOTAL		**204.970**

Water Mains Summary

Existing DN150 water main within the property boundary to be disused.

Extend DN200 water main along the eastern boundary to the middle of the site.

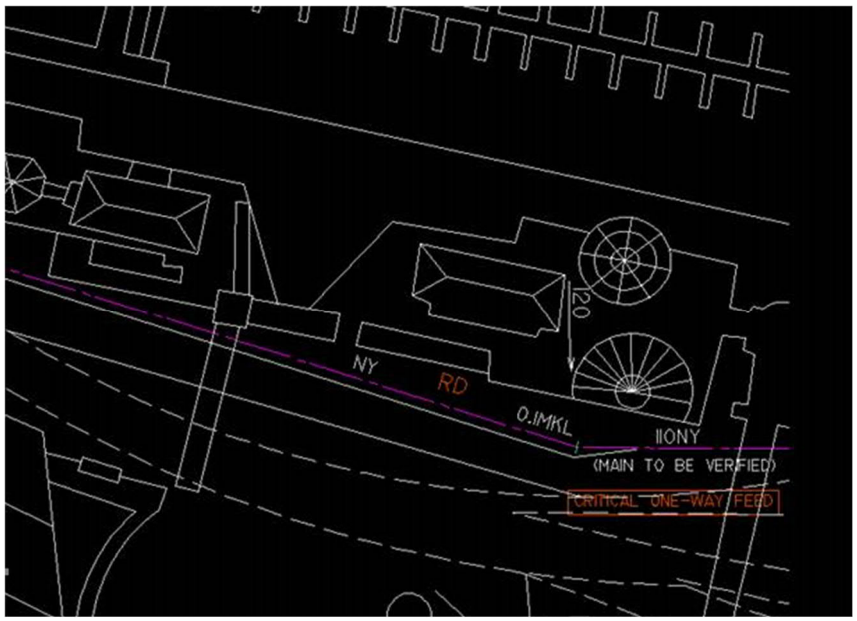


Natural Gas Mains (Utility)

Existing Natural Gas Mains

The site has access to one (1) Jemena natural gas main which is a medium pressure 210kPa 110mm diameter nylon gas main located inside the kerb along Wheat Road.

The below information was received from Jemena's Network Development team.



Natural Gas Summary

A new connection will be provided to the existing natural gas main to provide gas to the redevelopment.

A Jemena New Connections – Commercial application has been issued to Jemena under #000377306 – lodged 25th September 2021.

Schedule 1 - Sydney Water Table

"AVERAGE DAILY WATER USE BY PROPERTY TYPE"

Development Type	Development Sub-Type	Key Metric	Metric Unit	Average Demand (L/Metric Unit / Day)
Residential	Single Lot Torrens	Dwelling	Each dwelling	623.00
	Flats Torrens	Net Floor Area	Square Meter	2.36
	High Rise Units	Net Floor Area	Square Meter	3.34
	Single Lot Community	Dwelling	Each dwelling	623.00
Mixed	Residential / Commercial	Combined Floor Area	Each dwelling / Square Meter	Use separate rates for each component
	Commercial / Industrial	Combined Floor Area	Square Meter	Use separate rates for each component
Commercial	Aged Accom - Self Care	Net Floor Area	Square Meter	2.50
	Aged Accom - Hostel	Bed	Each bed	271.00
	Aged Accom - Full Care	Bed	Each bed	271.00
	Childcare	Net Floor Area	Square Meter	3.60
	Hotel / motel / serviced apartments	Room	Each room	359.94
	Office	Net Floor Area	Square Meter	2.27
	Shopping Centre	Net Floor Area	Square Meter	3.00
	Laundry / Dry Cleaner	Net Floor Area	Square Meter	10.50
	Café / Fast Food / Butcher / Deli	Net Floor Area	Square Meter	2.48
	Retail Units	Net Floor Area	Square Meter	2.48
	Medical / Veterinary	Net Floor Area	Square Meter	2.48
	Mechanical Repair	Net Floor Area	Square Meter	2.48
	Car / Boat Sales	Net Floor Area	Square Meter	2.48
	Car Wash	Net Floor Area	Square Meter	9.40
	Club	Net Floor Area	Square Meter	3.77
Industrial	Heavy Process		As required	
	Chemical Manufacturing		As required	
	Printing Manufacturing		As required	
	Beverage Manufacturing		As required	
	Light Factory Unit	Developed floor area	Square Meter	2.82
	Warehousing	Developed floor area	Square Meter	2.82
	Transport / Bus Depot	Site area	Square Meter	0.91

Development Type	Development Sub-Type	Key Metric	Metric Unit	Average Demand (L/Metric Unit / Day)
Special Uses	University	Student	Each student	20.00
	School	Student	Each student	20.00
	Hospital	Bed	Each bed	271.00
	Religious Assemblies	Developed floor area	Square Meter	1.30
	Government Depot	Site area	Square Meter	0.91
	Community Centre / Library	Floor area	Square Meter	1.84
	Sport Fields with Amenities		As required	
	Park & Reserves		As required	
	Services - Police / Ambulance etc.	Floor area	Square Meter	1.40