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## Waste Management Facility, Botany

Infrastructure Assessment – Water, Sewer & Stormwater

PREPARED FOR:

**Coombes Property Group Pty Ltd**

# Waste Management Facility, Botany

Infrastructure Assessment – Water, Sewer & Stormwater

## DOCUMENT HISTORY

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## **Waste Management Facility, Botany**

*Infrastructure Assessment – Water, Sewer & Stormwater*

### **EXECUTIVE SUMMARY**

This Infrastructure Assessment report has been prepared as part of a DA seeking consent for a construction and demolition (C&D) waste management facility at 2-4 Hale Street, Botany (Lot 1 DP 562374) (the subject site). The proposal is classified as State Significant Development (SSD) under Section 4.36 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and is subject to NSW Planning Secretary's Environmental Assessment Requirements (SEARs, SSD-62855708, 25 Oct 2023).

The focus of this report is to demonstrate that the proposed development can be serviced from surrounding infrastructure.

Based on the investigations into the existing surrounding infrastructure, preliminary engagement with Sydney Water and the development proposal we believe the site is adequately serviced with provisions for water supply, sewage and stormwater drainage.

Sydney Water Feasibility Case Number: CN212482 has been lodged and will form the basis for future detailed (Section 73) application process to be undertaken during the design phase of the project.

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### RESPONSE TO SUBMISSIONS COMMENTS

A response to this submission was provided by NSW Department of Climate Change, Energy, the Environment and Water (their ref: OUT24/13198) dated 29/08/2024 – and the response is summarised below:

DCCEEW Comment	Proponent Response	Location Addressed
<p>1.0 Site Water Demands 1.1 Recommendation — pre-determination That the proponent:</p> <ul style="list-style-type: none"><li>• Quantifies construction water demands and identifies sources to meet this demand.</li><li>• Confirms consultation has occurred with the relevant potable water supply authority to demonstrate this is a feasible option.</li></ul> <p>Explanation Insufficient information has been provided to understand site water demands. The report provides estimates of take during operation but not during construction. Construction take must be quantified and sources identified. Operational take is noted to be sourced from Potts Hill Authority, but it is unclear if the feasibility of this option has been confirmed.</p>	<p>This site is serviced by a Sydney Water main that will be utilised for water supply. Using standard rate of 5m<sup>3</sup>/m<sup>2</sup> for total construction period water usage, the total water demand for the site for total construction duration is estimated to be 7439m<sup>2</sup> x 5m<sup>3</sup> = 37195m<sup>3</sup> and the existing ø80mm water supply to the site will be used for construction purposes until the new tapings are established.</p> <p>We have confirmation from Sydney Water (case number 212482) that the site will be serviced by the water and sewer mains in Hale Street.</p>	<p>Section 2.4</p>

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<p>2.0 Water take and licensing</p> <p>The proponent notes groundwater is not expected to be impacted. However, based on the information provided it is unclear if this is to be the case. The groundwater tests noted water to 2m below ground level with the remediation action plan noting shallow groundwater to 1m below ground level. The EIS notes that excavation would be to a maximum of 3m with the removal of UST tanks. This would suggest the potential for excavation activities to intercept groundwater. There is also potential for GW interception with footing construction, however there is no detail on footing construction methods. Quantification of maximum potential groundwater take is required along with demonstration sufficient entitlement can be obtained unless an exemption applies</p>	<p>It is noted that groundwater well logs (tests) do not provide standing groundwater levels and show only moisture content (dry, moist, wet, saturated). Table D of Appendix A in the DSI report (Appendix M) provides the depth to groundwater from the ground level, which is consistent with the levels outlined in the RAP.</p> <p>A geotechnical investigation for the proposed development was undertaken by JKGeotechnics on 16 April 2024. During these investigation works, standing water was measured at a depth of 1.5 m in MW1, located in the middle of the site next to one of USTs. During the detailed site investigation on 21 March 2022, standing water was measured at a depth of 1.2 m in MW 1.</p> <p>The construction methodology for removing of USTs will be development by the construction contractor. The methodology may include the use shoring systems to minimise groundwater seepage, scheduling the work during the dry season when groundwater levels are lower, and limiting the duration of open excavations. This will help to minimise groundwater extraction and reduce the potential for drawdown of surrounding groundwater resources. The USTs removal and disposal will be undertaken in accordance with Australian Standard AS 4976-2008: The removal and disposal of underground petroleum storage tanks.</p> <p>Excavation validation samples will be analysed at a laboratory NATA accredited for the required analyses on an accelerated turnaround time (i.e. 24 hr) to allow for excavations to be backfilled as soon as possible and mitigate the potential risks.</p> <p>The geotechnical investigation report (JKGeotechnics, April 2024) recommends that all footings for the new building consist of piles founded in the underlying natural sands to avoid excavation below the groundwater level. The recommended piling method for footing installation aims to minimise interaction with groundwater on site. The piling methodology will be developed by the construction contractor.</p> <p>Typically, piles are filled with concrete immediately after drilling is completed, and only a minimal amount of groundwater is usually extracted.</p>	<p>Appendix P of the RTS Report.</p>
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DCCEW Comment	Proponent Response	Location Addressed
3.0 Groundwater impacts and dewatering requirements If the take of groundwater is found to be greater than 3 ML per year, the proponent must assess the impacts due to aquifer interference activities in accordance with the NSW Aquifer Interference Policy and framework (2012).	As above	

A response to this submission was also provided by Sydney Water (their ref: 217853, 212452) dated 30/08/2024 . The comments are acknowledged and there are no issues with regards to the comments.

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### 1. INTRODUCTION

This Infrastructure Assessment report has been prepared as part of a DA seeking consent for a construction and demolition (C&D) waste management facility at 2-4 Hale Street, Botany (Lot 1 DP 562374) (the subject site).

It is planned that the proposed C&D waste management facility will be licenced and designed to accept up to 300,000 tonnes per annum of C&D waste. It would operate as a waste transfer station undertaking receipt, basic sorting, and recycling with aggregation of material for bulk transport to Luddenham advanced resource recovery facility or another approved facility within the KLF group where more advanced sorting and recycling would be undertaken.

The new C&D waste management facility must be designed and managed such that it can operate within the parameters of the surrounding water, sewer and stormwater network.

The focus of this report is to demonstrate that the proposed development can be serviced from surrounding infrastructure.

#### 1.1 DOCUMENTS REFERENCED IN THIS REPORT

This report refers to, and should be read in conjunction with, all documents submitted as part of this application. These include, and are not limited to: Flood Impact Assessment, Infrastructure, Ecologically Sustainable Development, and Landscape Masterplan reports:

- CJ Arms, 2024. Integrated Water Management Strategy. Dec 2024
- CJ Arms, 2024. Landscape Concept Design. Dec 2024
- CJ Arms, 2024. Hale Street, Botany. Flood Impact Assessment Report. Dec 2024
- JBS&G, 2022. Detailed Site Investigation. 2-4 Hale St Botany. Report 65803/156685. Sept 2024
- Planning Secretary's Environmental Assessment Requirements SEARs, 25 Oct 2023. SSD-62855708 SEARs Waste Management Facility, Botany. including issued Govt Authority Advice on SEARs (appended).
- SEARs, 25 October 2023. NSW Planning Secretary's Environmental Assessment Requirements Waste Management Facility, Botany.

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### 1.2 DEVELOPMENT PROPOSAL

Reference is made to the architectural master plan for the proposed development, which is included in Appendix A. Proposed Infrastructure Connections.

Please also refer to the architecture drawing set and planning documents submitted as part of this DA.

The subject site covers a total area of around 7,435 m<sup>2</sup>. The development proposal for the site includes a single large warehouse and ancillary buildings with a combined GFA of 3992.5 m<sup>2</sup>, comprising:

- Warehouse (3,670 m<sup>2</sup>)
- Office (260 m<sup>2</sup>)
- Gatehouse (14.5 m<sup>2</sup>)
- Pump room (48 m<sup>2</sup>)

In addition to the warehouse and office, the site will be laid out and developed to include:

- Vehicle access via Hale Street, including 2 new crossovers (one for cars and one for trucks)
- Large hardstand area, for vehicle ingress, egress, and turning
- On-grade car parking (14 spaces) for staff and visitors
- Inground weighbridges
- Substation (relocated from current location)
- Appropriate setbacks from site boundaries
- Landscape buffer to Hale St
- Water management elements, including rainwater tank and biofiltration

To prepare the subject site for development, the existing buildings will be demolished, and the existing substation will be relocated.

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## 2. SUBJECT SITE – EXISTING

### 2.1 LOCALITY

Refer Figure 1 below for general site location.

The subject site is located at 2-4 Hale Street, Botany and is identified as Lot 1 in Deposited Plan (DP) 562374 in the Bayside Local Government Area (LGA).

The subject site covers a total area of 7,439 m<sup>2</sup>.



Figure 1: Locality Plan (Source: Nearmap, Jan 2024)

### 2.2 EXISTING TOPOGRAPHY

Refer to Figure 2 for topographical survey map. Topographical data has been obtained from a topographical level and features survey (United Surveyors, May 2022).

The site falls between 1-3% in a general direction towards the south-east corner of the site. Hale Street, which fronts the site, drains from west to east at a gentle grade of 0.4 %.

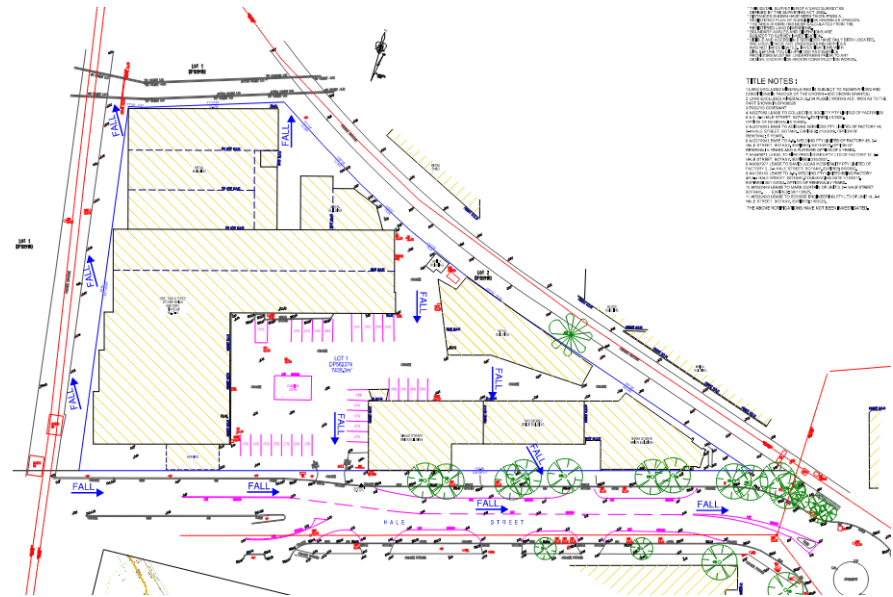


Figure 2: Existing Survey Plan

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### 2.3 STORMWATER DRAINAGE NETWORK – EXISTING

The subject site currently discharges surface water (stormwater) via several kerb outlets into Hale Street. There is no stormwater drainage network in Hale Street fronting the subject site and drainage is conveyed completely via surface runoff along kerb and channel. The closest kerb inlet pit is on Hale Street approx. 22m downstream from the subject site's southeastern boundary.

There are two downpipe connections from the existing building that discharge directly into the open stormwater drain (Sydney Water channel) to the north of the site. These downpipe connections will be removed as part of redevelopment, and all from the site will be discharged towards Hale St at the front of the site (Figure 3).

Set back areas from the western and northern boundaries of the site are essentially landlocked and currently drain outwards from the site towards the northern drainage channel (Figure 4).



Figure 3. Current site conditions, north of the existing building, showing existing downpipe connections (to be removed).



Figure 4. Current site conditions, west of the existing building – set back between existing building and site boundary.

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### 2.4 SEWER AND WATER NETWORK – EXISTING

#### 2.4.1 Water Supply

The existing  $\varnothing 80\text{mm}$  water meter for the current property is located at the main driveway at the end of the Hale St bridge (Figure 5 - Existing Water Meter).

The location of this existing service is not suitable for the proposed development, and it will require relocation.

It does not appear that the existing site has a dedicated fire service connection, however if one is discovered it will require removal.

Using standard rate of  $5\text{m}^3/\text{m}^2$  for total construction period water usage, the total water demand for the site for total construction duration is estimated to be  $7439\text{m}^2 \times 5\text{m}^3 = 37195\text{m}^3$  and the existing  $\varnothing 80\text{mm}$  water supply to the site will be used for construction purposes until the new tapings are established. The existing water supplies are sufficient for the water supply during construction and can be removed once the new connections are established. This will form part of the detailed design phase of the project in connection with the Section 73 process with Sydney Water.



Figure 5 - Existing Water Meter

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### 2.4.2 Sewer Drainage

The existing sewer branch (indicated in yellow below) is understood to have no existing data associated with it. It appears to be connected to the existing manhole in Hale Street and its location is potentially suitable for the new facility.

Figure 6 - Existing Sewer Network has been provided by our Water Services Coordinator from Sydney Waters asset register.

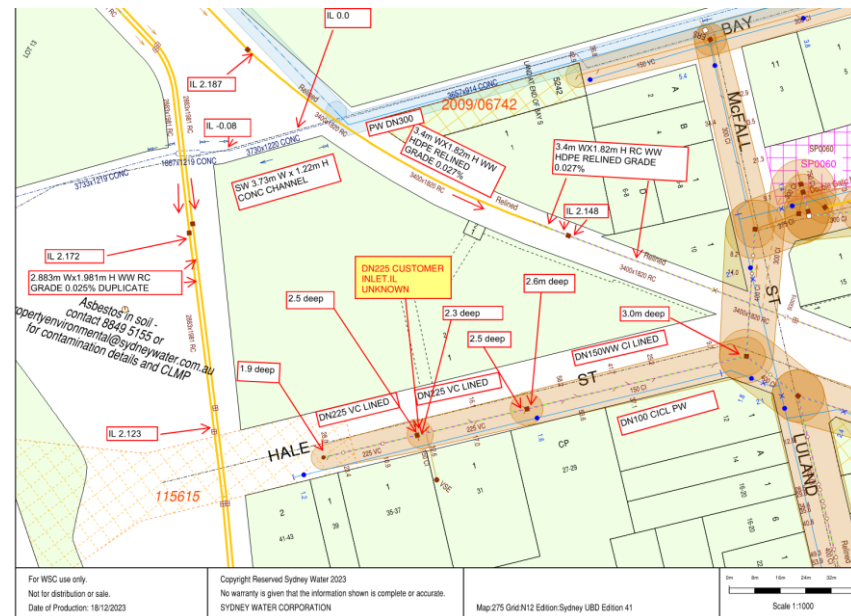


Figure 6 - Existing Sewer Network

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### 3. PROPOSED CONNECTIONS

The proposed integrated water strategy for the project is defined in some detail in *CJ Arms, 2024. Integrated Water Management Strategy. March 2024.*

A summary of the resulting infrastructure connection requirements is provided below – forming the basis for the feasibility application made to Sydney Water in February 2024 (feasibility application CN212482).

The available pressure and flow has been requested from Sydney Water and is provided in Figure 7 - Pressure & Flow Data on the right.

This data has been used to inform the basis of design for water and fires services for the project – and these are discussed on the following pages.



#### Statement of Available Pressure and Flow

Will Barlow  
24 Hickson Road  
Millers Point, 3000

Attention: Will Barlow

Date: 04/01/2024

Pressure & Flow Application Number: 1797296  
Your Pressure Inquiry Dated: 2023-12-18  
Property Address: 2 Hale Street, Botany 2019

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: Hale Street	Side of Street: South
Distance & Direction from Nearest Cross Street	16 metres West from McFall Street
Approximate Ground Level (AHD):	3 metres
Nominal Size of Water Main (DN):	100 mm

#### EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	72 metre head
Minimum Pressure	42 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	42
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	10	39
	15	36
	20	31
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	10	37
	15	33
Maximum Permissible Flow	20	28

(Please refer to reverse side for Notes)

Figure 7 - Pressure & Flow Data

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### 3.1 DOMESTIC WATER

It is proposed to make a new connection to the existing  $\phi$ 100mm main in Hale Street – removing the old  $\phi$ 80mm supply as its location is not suitable.

The basis for domestic water supply is based around the following assumptions (simultaneous demands in brackets):

- Flow of 0.5 L/s for fire hose reels (*not concurrent with building demands*)
- Flow of 0.5 L/s for the office building consisting of the following inputs:
  - 9 handbasins (0.1 L/s)
  - 1 accessible shower (0.1 L/s)
  - 2 kitchen sinks (0.1 L/s)
  - Hose taps/safety showers in factory (0.2L/s)
- Top up of rainwater tank/non-potable system (1.5 L/s)

The resultant requirement we have requested from Sydney Water is for a minimum 2 L/s flow rate ( $\phi$ 50mm meter).

### 3.2 GROUNDWATER

No groundwater extraction or surface water dams are required for this development. There is a short-term possibility of groundwater interception during the remediation phase of the development of the site and this is addressed in other specialised reports relating to this matter.

Similarly, footing and other construction methods are expected to be configured to consider groundwater during the design phase of the project.

References to these items can be found in the JKGeotechnics Geotechnical Investigation (their ref: 36596PNrpt).

### 3.3 FIRE SERVICES

From a single new fire connection, it is proposed to provide two separate fire systems for the development:

- one for fire hydrants including a break tank and dual fire pumpset
  - supplied using 100% of the available 20 L/s from the  $\phi$ 100mm main in Hale Street (*confirmed by Pressure and Flow data from Sydney Water*)
- one for fire sprinklers, based on storing 100% of the sprinkler demand onsite with dual fire pumpset
  - requires refill rate of 1,000,000 litres in 18 hours (15 L/s)

As such we have requested 20 L/s flow rate ( $\phi$ 100mm service) from Sydney Water as part of the feasibility process underway.

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### 3.4 SEWER & TRADE WASTE

The project is proceeding with the intention of recycling any significant washdown or process water used to manage dust within the facility, however wastewater generation volumes are expected to be very low.

Rainwater is likely to be the primary source of this water and the resultant wastewater or 'trade waste' flows are considered to be extremely low.

#### Trade Waste

The process of operating the recycling facility does not lend itself to a 'wet' product as it makes handling and processing the material difficult. On this basis there is likely to be near to no process water flowing out of the facility. In the event that onsite treatment and recycling is implemented the vast majority of the water will be re-used and the only expected waste stream is to be filtrate from the treatment process.

Understanding this may attract trade waste charges or require offsite disposal the ultimate design of the facility will need to consider these elements and Sydney Water trade waste requirements including volumes and/or concentrations. Given the nature of the project (pre Development Application) it is prudent to have these detailed conversations once detailed design has commenced and we intend to make this liaison very early in that process. Regardless of the selected outcome it will comply with Sydney Water requirements in all respects.

#### Domestic Sewage

Domestic sewerage is also going to be generated from this facility from the following proposed fixtures:

- 9 handbasins
- 4 urinals
- 9 toilet pans
- 1 accessible shower
- 2 kitchen sinks
- Tundishes from pumps and air conditioning systems

At this stage there are no domestic waste fixtures proposed throughout the factory floor.

We have requested a ø150mm sewer branch from Sydney Water as part of the feasibility process underway.

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### 3.5 STORMWATER

The proposed stormwater management strategy for the project is defined in some detail in *CJ Arms, 2024. Integrated Water Management Strategy. March 2024.*

The project seeks to recycle harvested rainwater and use passive treatment systems such as raingardens to ultimately comply with water quality standards and onsite detention/flood storage requirements in accordance with Bayside Council DCP requirements.

Currently the site has no underground stormwater connection, rather a number of discharges to the kerb and channel in Hale Street and two 'illegal' downpipe connections to the channel on the north.

To service our site, Figure 8 - Proposed Stormwater Connection (right) indicates a required stormwater mains extension in pink – from near to the

Key stormwater initiatives are summarised as follows:

- Roof drainage. The intention is that the warehouse and office roofs will be drained into a 60 m<sup>3</sup> RWT. Collected roofwater will be available for nonpotable reuse.
- Minor drainage: ground level rainfall runoff (stormwater) up to and including the 5% AEP storm event.
- Major drainage: ground level runoff up to and including the 1% AEP storm event.
- Raingarden: 30 m<sup>2</sup> treatment (filter) area, located at the Hale St frontage of the site.

- Minor and major stormwater drainage and overflow from RWT will be directed through the raingarden.
- Flood storage: on ground as indicated in figure 8

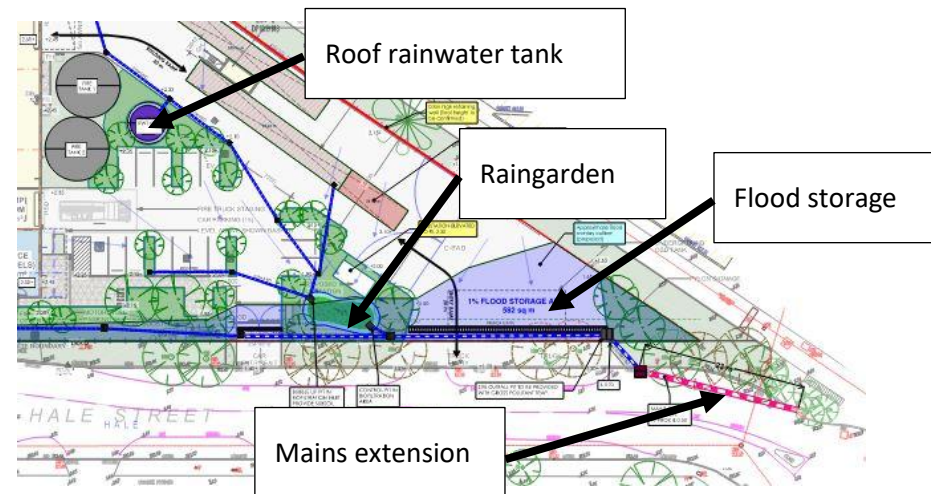


Figure 8 - Proposed Stormwater Connection

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## 4. APPENDIX A. PROPOSED INFRASTRUCTURE CONNECTIONS

