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To: **Hale Capital Development Management Pty Ltd.**

Project: **339-349 Horsley Road, Milperra – Service Infrastructure Assessment**

Our Ref: **SY075383.001**

Date: **AUGUST 2022**

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Revision:

Issue	Date	Comment
A	06/2022	Issue for comment
B	08/2022	Edits

EXECUTIVE SUMMARY

Servicing Capability

- Potable Water
  - Estimated Potable Water Demand
    - Average Day Demand 24kl/day
    - Max Day Demand 43kl/day
  - Potable water reticulation system exists adjacent to the site. A 100mm water main and 150mm water main provides frontage to the site for connection of potable water supply.
  - Pressure and flow response indicates reasonable flow and adequate pressure from existing 150mm water main in Horsley Road.
- Waste Water
  - Estimated Waste Water Demand 23kl/day
  - The site is served by a 225mm sewer main located within the site along the frontage to Horsley Road.
  - Adequate waste water capacity exists to serve the proposed development.
- Electricity
  - The site is currently serviced by existing Ausgrid high voltage cable in Horsley Road.
  - Electrical demand has been calculated as 2.0MVa.
  - Applications for decommissioning the existing padmount substation and provision of a new padmount substation are being prepared by the electrical consultant for lodgement with Ausgrid.
- Telco
  - NBN is the network provider for the area and has established underground fibre optic cables within Horsley Road.
- Gas
  - Jemena have a 1,050kPa gas reticulation main in Horsley Road immediately along the frontage of the site. This main is available for connection.

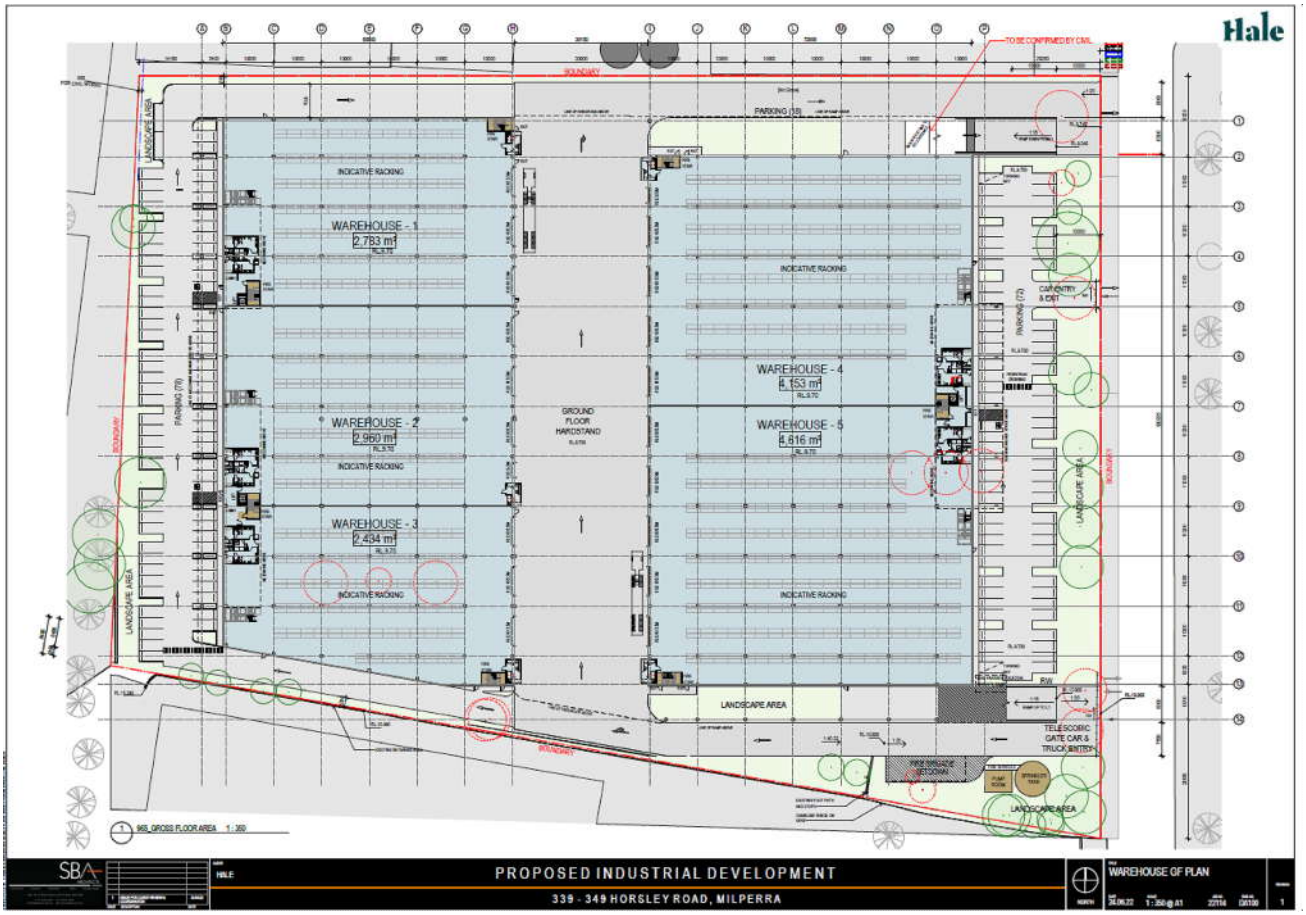
1.0 INTRODUCTION

It is anticipated that a State Significant Development (SSD) application will be made to Department of Planning and Environment by the proponent of the development.

The proposed development is described as the construction of a two-storey warehouse and distribution centre comprising 37,313m^2 G.L.A including ancillary office space, landscaping, bicycle and car parking.

The site is described as Lots 140 & 141 in DP550194 located within a well-established and well serviced industrial precinct. Substantial infrastructure has been installed by the utility service operators that will provide adequate capacity to service the proposed development.

Concept architectural layout has been provided that is the basis of comments within this report. The architectural is shown as follows:



1.1 SEARS REQUIREMENTS

Sears requirements outlined in SSD-45998963 from the Department of Planning and Environment have been used. Those requirements outline key issues one of which is the following:

Infrastructure Requirements & Utilities	How It Is Addressed	Section of this Report
Assess the impacts of the development on existing utility infrastructure & service provider assets surrounding the site. Infrastructure Delivery, Management and Staging Plan	Identify existing services through site inspection and utilising existing service utility plans	Section 3, 4, 5 & 6
Identify any infrastructure upgrades required onsite and offsite to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained.	Determine demand requirements for the development, determine if any upgrades or infrastructure amplifications required.	Appendix A & B
Provide infrastructure staging plan, description of how infrastructure requirements would be coordinated, funded and delivered to facilitate the development.	Assess existing infrastructure if staging of any upgrades (if required) will be required and if so what funding is required	Sec 8

2.0 SERVICE AUTHORITIES:

The service authorities who provide infrastructure services to this area are:

(a) Sydney Water: Potable Water & Waste Water Infrastructure
(b) Ausgrid: Electrical Infrastructure
(c) NBN Co: Telecommunications Infrastructure
(d) Jemena: Gas Infrastructure

3.0 POTABLE WATER AND WASTE WATER

3.1 POTABLE WATER

a) Immediately adjacent to the site along the frontage of Horsley Road are a 100mm and 150mm water main.

b) A pressure and flow enquiry has been lodged with Sydney Water and the results are shown in Appendix A. . Adequate service is available from the 150mm main in Horsley Road to support the development.

c) Potable Water Average Day Demand is estimated at 24kl/day for warehouse/distribution development with associated office facilities (refer Appendix A). This calculates as a demand of 0.6litres/second over a 12 hour working shift. This level of demand can be catered by the existing 150mm main in Horsley Road.

d) Sydney Water Sec 73 process is an asset creation process that would outline any system amplifications if required.

e) Pressure and Flow enquiry has been lodged with Sydney Water and response is included in Appendix A. Reasonable flow and adequate pressure is available from 150mm water main in Horsley Road.

3.2 WASTE WATER

a) A 225mm sewer line serves the subject property. The 225mm pipe size is a standard size required by Sydney Water for commercial and industrial developments.

b) This existing main will adequately cater for the proposed development.

c) Waste Water discharge is estimated as 23kl/day or 0.5litres/second over a 12 hour work shift – a level of discharge that will be adequately catered for by the existing Sydney Water system.

4.0 ELECTRICITY

a) The client has engaged a Level 3 ASP Consultant to investigate and design a new electrical connection for the development.

b) Electrical demand for the development has been estimated at approximately 2.0MVa. The Level 3 ASP has calculated maximum demand requirements as shown in Appendix B of this report. The electrical design consultant has also lodged application with Ausgrid to determine supply requirements for the development but it is anticipated that padmount substations will be required to be installed as part of the new development .

c) Due to the site being located in a well-established industrial area the "After Diversity Maximum Demand (ADMD)", which calculates a demand over a larger "holistic" area (i.e., the industrial precinct), would ensure that sufficient electrical service would be available to support a range of development types within the industrial precinct – including the development proposed for the subject site.

5.0 GAS

a) Jemena is the utility supplier for gas. Jemena has installed a 1,050kPa high pressure gas main in Horsley Road.

b) Prior user of the subject site was connected to this gas main.

c) The subject site is adequately serviced by this existing gas main.

6.0 TELCOMMUNICATIONS

a) NBN Co is the network provider for this area.

b) Prior to NBN Co being the provider for this area Telstra had fibre optic systems within Horsley Road. The prior user of the subject site was connected to this reticulation system.

c) The subject site is adequately serviced by the existing fibre optic system in Horsley Road.

7.0 EXPECTED IMPACTS ON EXISTING INFRASTRUCTURE

There is expected to be no other impact on existing infrastructure to the site.

8.0 INFRASTRUCTURE STAGING & DELIVERY PLAN

8.1 SYDNEY WATER INFRASTRUCTURE

Sydney Water has a standard asset creation path through their Sec 73 process.

The development does not have any substantial impact on the delivery of potable water and waste water services to the site and as such no amplification of existing Sydney Water assets is expected.

The site is already serviced by Sydney Water assets so no staging of delivery of any Sydney Water asset is required.

8.2 ELECTRICITY

Based on an electrical demand estimate of 1.5MVa it may be that the adjacent padmount substation installed within 319-367 Horsley Drive may not have spare capacity to service the proposed development. A new padmount substation may be required to service the development. The high voltage feeder in Horsley Road would supply feed to that substation if required.

8.3 TELCO & GAS

Existing assets exist to serve the proposed development.

8.4 COST

All assets will be delivered through the service utility organisations asset creation path and this instance those assets will be developer funded.

APPENDIX A
POTABLE WATER & WASTE WATER DEMAND

1. The Client has provided a concept site plan prepared by SBA Architects dwg. 22114 DA100.

2. The architectural plan outlines the following development areas:

   (a) Warehouse 34,109m^2
   (b) Office 3,204m^2

Potable Water

Development Type	Floor Area	EP/m^2	EP	P.W Demand/EP	P.W Demand
Warehouse	34,109	1EP/250m^2	136	80litres/day	11kl/day
Office	3,204	1EP/20m^2	160	80litres/day	13kl/day
				Total	**24kl/day**

So: Average Day Demand 24klday
Max Day Demand 43kl/day

Waste Water

An estimate of 95% of Potable Water for Waste Water discharge:

24kl/day x 0.95 = 23kl/day

Conclusion
Sufficient capacity exists within the existing Sydney Water reticulation systems to service the proposed development.

Statement of Available Pressure and Flow

Sydney WATER

Lilliane Moujalli
23-29 South Street
Rydalmere, 2116

Attention: Lilliane Moujalli Date: 04/07/2022

Pressure & Flow Application Number: 1439748
Your Pressure Inquiry Dated: 2022-06-24
Property Address: 339 Horsley Road, Milperra 2214

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: Horsley Road	Side of Street: West
Distance & Direction from Nearest Cross Street	86 metres South from Amour Street
Approximate Ground Level (AHD):	13 metres
Nominal Size of Water Main (DN):	150 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	49 metre head
Minimum Pressure	28 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 15 20 25 30 40 50 60	28 27 27 26 24 21 18 14
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main) Maximum Permissible Flow	10 15 20 25 30 40 50 60 67	27 26 25 24 23 20 16 12 9

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

swtapin@sydneywater.com.au

General Notes

This report is provided on the understanding that (i) the applicant has fully and correctly supplied the information necessary to produce and deliver the report and (ii) the following information is to be read and understood in conjunction with the results provided.

1. Under its Act and Operating Licence, Sydney Water is not required to design the water supply specifically for fire fighting. The applicant is therefore required to ensure that the actual performance of a fire fighting system, drawing water from the supply, satisfies the fire fighting requirements.

2. Due to short-term unavoidable operational incidents, such as main breaks, the regular supply and pressure may not be available all of the time.

3. To improve supply and/or water quality in the water supply system, limited areas are occasionally removed from the primary water supply zone and put onto another zone for short periods or even indefinitely. This could affect the supply pressures and flows given in this letter. This ongoing possibility of supply zone changes etc, means that the validity of this report is limited to one (1) year from the date of issue. It is the property owner's responsibility to periodically reassess the capability of the hydraulic systems of the building to determine whether they continue to meet their original design requirements.

4. Sydney Water will provide a pressure report to applicants regardless of whether there is or will be an approved connection. Apparent suitable pressures are not in any way an indication that a connection would be approved without developer funded improvements to the water supply system. These improvements are implemented under the Sydney Water 'Urban Development Process'.

5. Pumps that are to be directly connected to the water supply require approval of both the pump and the connection. Applications are to be lodged online via Sydney Water Tap in™ system -
Sydney Water Website – www.sydneywater.com.au/tapin/index.htm. Where possible, on-site recycling tanks are recommended for pump testing to reduce water waste and allow higher pump test rates.

6. Periodic testing of boosted fire fighting installations is a requirement of the Australian Standards. To avoid the risk of a possible 'breach' of the Operating Licence, flows generated during testing of fire fighting installations are to be limited so that the pressure in Sydney Water's System is not reduced below 15 metres. Pumps that can cause a breach of the Operating Licence anywhere in the supply zone during testing will not be approved. This requirement should be carefully considered for installed pumps that can be tested to 150% of rated flow.

Notes on Models

1. Calibrated computer models are used to simulate maximum demand conditions experienced in each supply zone. Results have not been determined by customised field measurement and testing at the particular location of the application.

2. Regular updates of the models are conducted to account for issues such a urban consolidation, demand management or zone change.

3. Demand factors are selected to suit the type of fire-fighting installation. Factor 1 indicates pressures due to system demands as required under Australian Standards for fire hydrant installations. Factor 2 indicates pressures due to peak system demands.

4. When fire-fighting flows are included in the report, they are added to the applicable demand factor at the nominated location during a customised model run for a single fire. If adjacent properties become involved with a coincident fire, the pressures quoted may be substantially reduced.

5. Modelling of the requested fire fighting flows may indicate that local system capacity is exceeded and that negative pressures may occur in the supply system. Due to the risk of water contamination and the endangering of public health, Sydney Water reserves the right to refuse or limit the amount of flow requested in the report and, as a consequence, limit the size of connection and/or pump.

6. The pressures indicated by the modelling, at the specified location, are provided without consideration of pressure losses due to the connection method to Sydney Water's mains.

APPENDIX B
ELECTRICAL DEMAND

1. The Client has provided a concept site plan prepared by SBA Architects dwg. 22114 DA100.

2. The architectural plan outlines the following development areas:

   (a) Warehouse 34,109m^2
   (b) Office 3,204m^2

The attached Maximum Demand Assessment by the Level 3 ASP is summarised as following:

Description	Diversified Demand
Lighting, Appliance Derived Demand and Airconditioning	987kVa
General Demand, Cooling/Refrigeration	996kVa
Total **Say**	**1,983kVa** **2MVa**

Conclusion
Sufficient capacity exists within the existing Ausgrid reticulation systems to service the proposed development with installation of 2 padmount substations required.

Maximum Demand Assessment

Preliminary Assessment Based On Power Density Assessment.

EDGEWATER CONNECTIONS

Site Name		339-349 Horsley Road, Milperra	Client	Tactical Group			6/07/2022		
Load Group		Description	Area m2	Average Demand Rate	Derived Demand (kVA)	Utilisation Factor	Diversified Demand (kVA)	Derived Demand (kVA)	Utilisation Factor	Diversified Demand (kVA)
					Base Building			Tenant Demand		
A		**Lighting**	Area							
	(i)	Office	1,993m2	7VA/m2	14kVA	100%	14kVA			
	(ii)	Dock Office	170m2	7VA/m2	1kVA	100%	1kVA			
	(iii)	Warehouse	33,657m2	5VA/m2	168kVA	100%	168kVA			
	(iv)	Hardstand	13,000m2	2VA/m2	26kVA	100%	26kVA			
	(v)	Carpark	4,600m2	2VA/m2	9kVA	100%	9kVA			
	(vi)	Amenities	600m2	5VA/m2	3kVA	100%	3kVA			
	(vii)				0kVA	100%	0kVA			
Total Lighting Derived Demand							222kVA			0kVA
B		**General Power**	Area							
	(i)	Office	1,993m2	45VA/m2	90kVA	100%	90kVA			
	(ii)	Dock Office	170m2	45VA/m2	8kVA	100%	8kVA			
	(iii)	Warehouse	33,657m2	15VA/m2	505kVA	100%	505kVA			
	(iv)	Hardstand	13,000m2	2VA/m2	26kVA	100%	26kVA			
	(v)	Carpark	4,600m2	2VA/m2	9kVA	100%	9kVA			
	(vi)	Amenities	600m2	25VA/m2	15kVA	100%	15kVA			
	(vii)				0kVA	100%	0kVA			
Total General Power Derived Demand							652kVA			0kVA
C		**Appliances**	Units							
	(i)	Forklift Battery Charging 20A	20	14kVA				280kVA	55%	154kVA
	(ii)	Forklift Battery Charging 32A	20	22kVA				440kVA	55%	242kVA
	(iii)							0kVA	0%	0kVA
	(iv)							0kVA	0%	0kVA
	(v)							0kVA	100%	0kVA
	(vi)							0kVA	0%	0kVA
	(vii)							0kVA	0%	0kVA
Total Appliance Derived Demand							0kVA			396kVA
D		**Motors**	Units							
	(i)	Roller Shutters	39	2kVA	78kVA	15%	12kVA			
	(ii)				0kVA	0%	0kVA			
	(iii)				0kVA	0%	0kVA			
	(iv)				0kVA	60%	0kVA			
	(v)				0kVA	20%	0kVA			
			Area							
	(vi)				0kVA	0%	0kVA			
	(vii)				0kVA	0%	0kVA			
Total Connected Motor Derived Demand							12kVA			0kVA
E		**Lifts**	Units							
	(i)	Office Lift	1	14kVA	14kVA	125%	18kVA			
	(ii)	Office Lift	1	14kVA	14kVA	75%	11kVA			
	(iii)	Office Lift	1	14kVA	14kVA	50%	7kVA			
Total Lift Derived Demand							35kVA			0kVA
G		**Space - Heating/Cooling**	Area							
	(i)	Air Conditioning	1,200m2	55VA/m2	66kVA	100%	66kVA			
	(ii)	Chilled	10,000m2	60VA/m2				600kVA	100%	600kVA
	(iii)							0kVA	0%	0kVA
	(iv)							0kVA	0%	0kVA
Total Space Heating/Cooling Derived Demand							66kVA			600kVA
J		**Other**	Units							
	(i)							0kVA	30%	0kVA
	(ii)							0kVA	30%	0kVA
	(iii)							0kVA	0%	0kVA
Total Other Derived Demand							0kVA			0kVA
Derived Demand					Base Build		**987kVA**	Tenant Fit out		**996kVA**
After Diversity Maximum Demand (Amps)							**1424A**			**1438A**
Total of Base Build and Tenant Fit out										**1983kVA**
										2862A

Prepared by Edgewater Connections
6/07/2022