



Attachment 6 to Item 2.1.1.

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and Partners Consulting
Engineers

Date of meeting: 27 February 2025

Location: Council Chambers

Time: 10am

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HYDRAULIC SERVICES REPORT

Proposed Kurrajong Heights Hotel & Accommodation

Date: 14th November 2024
Issue: E
Ref. No: 21078

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Document Control

Revision	Date	Description	Prepared	Reviewed	Approved
1	07.12.2021	Prelim DA issue	GS		
A	13.12.2021	Final DA Issue	GS	LD	GS
B	24.01.2022	Final DA Issue	GS	LD	GS
C	03.02.2022	LPG Added	GS	LD	GS
D	01.11.2024	Revised Population Figures	ST	LD	LD
E	14.11.2024	Water Usage Figure amended	ST	LD	LD

Generally

This services report is prepared for the Development Application for a proposed hotel and accommodation facility located at 27 Douglas Road, Kurrajong Heights. The application is to be submitted to Hawkesbury City Council for approval.

The Hydraulic services proposed will comply with the following authority and Australian standards:

- AS 3500.1 2018 Water Services
- AS 3500.2 2018 Sanitary Plumbing and Drainage
- AS 2419.1 2005 Fire Hydrant Installation
- AS 1546.3 2008 On-site Wastewater Treatment
- AS 5601.1 2013 Gas Installations
- Hawkesbury City Council LEP 2012 and DCP 2002
- Good Design Practice

This report shall be read in conjunction with the following Hydraulic Services drawings:

H1101	COVER PAGE & DRAWING SCHEDULE
H1401	SITE PLAN
H2101	GRAVITY SERVICES PLAN – LOWER GROUND PART 1
H2102	GRAVITY SERVICES PLAN – LOWER GROUND PART 2
H2801	SCHEMATIC PLAN
H5101	DETAIL SHEET

Services covered in this report:

- Potable water supplies
- Rainwater harvesting
- Fire hydrant service
- Wastewater treatment
- LPG Service

Potable Water Supply

Kurrajong Heights is not currently serviced with an authority piped reticulated potable water system and this service will be a stand-alone on-site system as follows:

On-site storage tank with partial rainfall top-up and road tank delivery service.

The storage capacity is based upon:

Hotel portion 3.8 litres/day/sq m	
1243 sq m x 3.8	= 4723 l/day
Accommodation 360l/room/day	
10 x 360	= 3,600 l/day
General Cleaning	= 1000l/day
Total	= 9,323 l/day @ 100% Capacity
	= 4,662 l @ 50% Capacity

Allow 7 days storage= 65kL.

We are allowing storage capacity of 100kL on site.

Electric pressure pumps will deliver potable water to all outlets via filtration treatment.

Rainwater Harvesting

Approximately 810 m² of roof area will receive rainwater and deliver to the rainwater tank. Based upon an annual average rainfall of 729kL/annum and a monthly average of 60.75 kL, we propose to provide a 75kL capacity tank on site.

The harvested rainwater will supply all WC's, urinals and landscaping.

Electric pressure pumps will deliver rainwater to all outlets listed above.

Potable water will back-up the RW service via a solenoid valve and in tank float controls.

Fire Hydrant Services

This service will be a stand-alone storage / booster system in accordance with AS 2419.1 2005. Dual storage tanks comprising 100% storage for a 20 litre per second flow system with each tank capacity of 144 kL will be provided.

Dual diesel booster pumps will draw water from those tanks to supply fire hydrants around the site to cover all buildings in accordance with the standard.

Brigade appliance suction couplings and booster assembly will be provided at the property frontage including the required appliance hard stand.

An electric booster pump will deliver stored water to the Brigade suction coupling located at Wanks Hill Road entry in accordance with the standard.

A separate dedicated 10kL storage tank solely for firefighting with suction couplings will be provided adjacent the appliance hard stand in accordance with the Rural Fire and Rescue requirements.

Wastewater Treatment

Kurrajong heights has no authority provided gravity waste drainage system and the project will be provided with an onsite waste treatment plant with provisions for private contractor waste disposal via road tankers. No on-site disposal will be permitted or proposed.

The waste treatment system will receive all toilet / ablution wastes, kitchen waste (pretreated via a grease arrestor) bar wastes and accommodation amenities.

All laundry washing will be not carried out on site and will be picked up and completed off site.

The proposed waste treatment service will be provided by a 'Biocycle' system comprising a 15 kL clarification tank, 2 x 50kL treatment tanks and 2 x 150 kL holding tanks.

Holding tanks are sized for 28 days storage based upon peak population of 285 persons / day including staff and accommodation patrons.

A primary suction coupling will be provided at the loading dock with a suction coupling for the private contractor connection for disposal of treated wastes off site on a periodic basis.

The complete system will be in accordance with:

- AS/NZS 1546.3:2008 On-Site domestic wastewater treatment units – Aerated Wastewater Treatment Systems
- Hawkesbury City Council relevant standards, chapters and conditions for on site waste treatment and effluent disposal.
- Basis of system sizing:

Accommodation of 10 units x 2 persons @ 150l/day = 3000

Bistro/Bar 80 persons @ 30l/person/day = 2400

Bar 175 persons @ 20l/person/day = 3500

Staff 20 persons @ 30l/person/day = 600

Daily Total = 9500 l @ 100% Capacity

= 4750 l @ 50% Capacity

Treatment System:

Receiving / balance / clarification tank	1 x 15 kL
Aerobic treatment tanks	2 x 50 kL
Treated holding tanks (28 days)	2 x 150 kL

Liquid Petroleum Gas Service (LPG)

LPG tank/s are intended to be used in the development to service the kitchen cooking appliances and possibly also for hot water and heating to be resolved at construction certificate design stage. The location of the LPG tank in the development is to be determined at the time construction certificate design plans are prepared in consultation with and in accordance with the specifications of an LPG tank supplier such as Elgas, and in accordance with the Gas Supply Act and Regulation and relevant Australian Standards referenced in these statutes. Elgas has been consulted in the preparation of the DA and is able to service the development with LPG tank supply.

The whole service will be in accordance with AS/NZS 5601.1 2013 Gas Installations Part 1: General Installations.

Frequency of Service Vehicles

Reference should be made to the Traffic Impact Assessment Report prepared by TRAFFIX. The development requires refuse collection and servicing (including waste treatment service) to be conducted by a maximum size vehicle of an 8.8m long medium rigid vehicle (MRV). The service vehicles would only access the development during off-peak periods and generally outside of operational hours.

At this current stage during DA, the hours of arrival of the service vehicles are difficult to predict and will be an operational matter.

Nevertheless, based on the information at hand, the proposed wastewater holding tanks are sized for 28 days storage based upon peak population of 285 persons / day including staff and accommodation patrons with an estimated Daily Total of 9500L @ 100% Capacity and 4,750 l @ 50% Capacity, the projected frequency of pumping would be 1 to 2 times ever fortnight, from the primary suction coupling provided in the loading dock based on a 15,000L 8m vehicle similar to the below inset.

Large
Height: 3.4m
Length: 8m
Volume: 15,000 L
Application: Commercial septic tank pump out and bulk loading

