



# **Attachment 12 to Item 2.1.1.**

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## **Hydraulic Services Report**

Date of meeting: 27 February 2025  
Location: Council Chambers  
Time: 10am



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# HYDRAULIC SERVICES REPORT

## Proposed Kurrajong Heights Hotel & Accommodation

Date: 3<sup>rd</sup> February 2022

Issue: C

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

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 Practise

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

12 x 360 = 4320 l/day

General Cleaning = 1000l/day

Total = 10,043 l/day

Allow 7 days storage= 70kl.

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 m<sup>2</sup> 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 gravitywaste 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 (pre treated 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 14 days storage based upon peak population of 474 persons / day including staff and accommodation patrons.

A suction coupling will be provided at Douglas Road boundary 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 12 units x 2 persons @ 150l/day =	3600
Bistro/Bar 130 persons @ 30l/person/day	= 3900
Bar 300 persons @ 20l/person/day	= 600
Staff 20 persons @ 30l/person/day	= <u>600</u>
Daily Total	= <u>14100l</u>

Treatment System:

Receiving / balance / clarification tank	1 x 15 kl
Aerobic treatment tanks	2 x 50 kl
Treated holding tanks (14 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.