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CONSULTANT ADVICE

PROJECT NAME:	Wee Waa High School	PROJECT #:	210538
Subject:	Water Service storage	Revision:	JHA – CAN – H - 002

The following Consultant's Advice is provided as an outline the design of water supply and fire hydrant system for the above project. These arrangements have been discussed and agreed in principle with Narrabri Council representatives Leon Ross and Marc Harris.

Water Service

The main water supply shall be via a new 50mm connection extended from the existing Water main located in Mitchell Street and will extend to water meter with Backflow prevention in the form of Reduced Pressure Zone Device.

The flow rate in the Mitchell Street is very low for our intended usage. The static pressure is 275kpa however drops rapidly when flow rates are increased. For example, at 4.23L/s the operating pressure is 20kpa, these fluctuations could cause problems for other water uses locally and possibly operational failures of council infrastructure. Additionally, the operating pressure is unsuitable for the proposed flow rates, JHA have calculated a Probable Simultaneous Flow Rate of 3L/s.

For the above reasons JHA are proposing a break tank to be supplied with water from the water main via backflow prevention and metering and then to provide pumps to supply pressure and flow to the school. This concept has been discussed and agreed with Leon Ross from Narrabri Council on 17/03/22, a subsequent meeting was held on 2/05/22 with Leon and Marc Harris with all in agreeance of the proposal.

The break tank is proposed as in ground with the pump located at surface level. The volume of the tank JHA have documented as 20,000L, the reason for this is we understand that council have had some issued with water main pumps in the past so we have opted for storage of 48hr use.

Component	Pumps	Design Criteria	Population	Proposed storage tank
Supply water break tank	3L /s Dual Duty / Standby arrangement	48hr Storage	300	20,000L

Fire Hydrant Service

The new building system is designed in accordance with the provision of the NCC, AS 2419.1, AS 2941 and the requirements of F&R NSW.

As discussed in the water services section the flow rate of the water main is low, in regards to the Fire hydrant system we require 20L/s in accordance with AS2419.1.

AS2419 states that if the authority water main cannot meet the designed flow rate, water shall be stored on site for a four (4) hour duration and there shall be two (2) off tanks to allow for maintenance.

Component	Pumps	Design Criteria	Proposed storage tank(s)
Fire Hydrant tank	20L /s diesel Dual Pumps	4hr Storage @ 20L/s	144,000L 2 off

Yours sincerely,

Mitchell McLennan

Senior Associate