



7829/H/AC

28 March, 2018

John Holland Pty Ltd
Level 3, Emporium
1000 Ann Street
FORTITUDE VALLEY, QLD 4006

Attention : Daniel Chittick

Dear Sir,

**Re : Services Strategy – Hydraulic Services
Lismore Base Hospital – Stage 3C - North Tower Extension**

We confirm the following services strategies for the above noted phase of works;

Integrated Water Management Plan

- Water supply and stormwater discharge for Stage 3C - North Tower Extension is supported by the existing Stage 3A and 3B infrastructure.
- The North Tower Extension will be supplied from the Stage 3A via a direct connection to the authorities watermain in Uralba Street via a water meter located adjacent to the Uralba street frontage.
- A Water storage tank is provided to ensure a water supply (limited time period) to the facility should the water main fail is located within the high level plantroom located in Stage 3B (South Tower level 12).
- The installation of the water storage tank will also reduce “peaks” in water draw-off with a slower more steady draw-off from the towns main supply.
- To reduce contamination of the potable water supply backflow prevention devices will be installed as per the requirements of AS3500
- The installation of water saving taps and outlets to reduce water consumption will be adopted.
- Rainwater / wastewater reuse has not been considered for any part of the earlier Stage 3A or 3B works due to the potential risks associated with contamination and susceptibility of patients to health issues arising from potential contamination. Similarly there is no intention to provide recycled water for any water supply in Stage 3C - North Tower Extension.

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Infrastructure Management Plan

- **Sewer Drainage** – Sanitary plumbing and sewer drainage from the Stage 3C – North Tower Extension will connect into the Stage 3B sewer drainage system. The Stage 3B sewer drainage system is connected to the existing hospital's 225mm sewer located in a north westerly direction from the site. Council has advised that due to the limited increase in beds as part of the proposed development works, there will not be a significant impact on the sewer demand from the site and therefore the existing authority sewer system will be adequate to service the proposed Stage 3C – North Tower Extension works.
- **Water Supply** – Water supply to the Stage 3C – North Tower Extension development will extend from the Stage 3A redevelopment which connects to the authorities watermain in Uralba Street via a water meter located adjacent to the Uralba street frontage. Water will initial supply an onsite water storage tank with water from this tank supplying domestic cold water fixtures and fittings as well as hot water plant, mechanical plant to service both the Stage 3B works and the Stage 3C – North Tower Extension. Given the demand on the authority water supply will not be significant and the use of water storage to minimise the peak demand of water supply required from the Council watermain to service the development, the existing Council water supply is considered suitable to support the Stage 3C – North Tower Extension.
- **Gas Supply** – Gas supply to the Stage 3C development will extend from the Stage 3A redevelopment which connects into the Elgas Liquefied Petroleum Gas (LPG) main located in Uralba Street. Gas will supply domestic hot water plant and mechanical heating plant via a gas meter located adjacent to the Uralba street frontage. Elgas has advised that there is ample capacity in their system to supply gas to the development as Lismore Hospital is one of the few properties that they supply with piped gas. Furthermore the gas pressure arriving at the site is significantly higher than that needed for the equipment on site thus the local mains supply is suitably oversized to service the development.
- **Stormwater Drainage** – The Stage 3C – North Tower Extension stormwater drainage system connects to the existing Stage 3B stormwater drainage system. Design of stormwater drainage, onsite stormwater detention, etc. has been undertaken by the Civil Engineer as part of the previous Stages 3A and 3B. The Stage 3C – North Tower Extension is a vertical extension of Stage 3B and does not have any impact on hard surface area. Therefore the existing stormwater drainage system is capable of supporting the Stage 3C – North Tower Extension (refer to attached drawing DD-3B2-H2001-NTX(D) for the NTX stormwater drainage schematic).

Yours faithfully,

DONNELLEY SIMPSON CLEARY CONSULTING ENGINEERS PTY LTD

Adrian Cassar
Associate