



Junee Correctional Centre Expansion

197 Park Lane
JUNEE NSW 2663

Hydraulic Services Infrastructure Report for R.E.F.

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SY160030
Wednesday, 12 October 2016

HYDRAULIC SERVICES INFRASTRUCTURE REPORT

Report No: A

Document History

Project	June Correctional Centre Expansion
Document Name	Hydraulic Services
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Revision	Addendum	Description	Signature	Date
A		Initial Draft		

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1.0 Introduction

1.1 Overview

This report, prepared by SPP Group, provides a description of the proposed engineering services infrastructure systems to support the new Junee Correctional Centre Expansion, which is located in 197 Park Lane, JUNEE.

The existing facility currently is provided with the following infrastructure connections:-

1 x 80 mm metered domestic water main

1 x 150mm domestic metered water main

1 x 110mm metered natural gas service provided to the first stage regulator at 210Kpa, the internal mains are reduced outside the existing facility to reticulate internally at 160kpa.

The above three services are collocated with a locked fenced enclosure outside the perimeter secure fence line

The site has an existing sewage pump station located within the secure fence line to the north east areas of the site, which pumps macerated raw sewage through a 150mm rising main to discharge into an existing Junee Shire Council Gravity sewer connection located in Park Lane.

Initial discussions have occurred with the following infrastructure providers:-

- Goldfields Water County Council
- Junee Shire Council
- Jemna Gas

The purpose of this document is to identify that consideration of the existing infrastructure has been duly considered and that the proposed development should not have an adverse effect on the existing authority services in the area.

2.0 Infrastructure Services

2.1 Water Supply

Relevant Authority – Goldfields Water County Council

It is proposed that the new development will be treated as a standalone facility separate from the existing infrastructure inside of the secure fence line.

The water to the new 480 bed additions will be stored in two storage tanks of equal capacity and will provide up to three days operational storage capacity for the new 480 bed facility only or reduced operational capacity for the total facility.

This is based on the provision of 300lt/p/d per inmate and 50lt/p/d per staff member.

This stored water is to provide supply when the Authority takes the supply infrastructure out of operation for servicing, which we are advised occurs for a period of two to three days once a year.

Quality of the stored water will be maintained by incoming pre-filtration into the tanks complete with aeration within the tanks, chlorine injection is being considered and will be dependent on the quality of the Goldfields Water County Council supply.

Potable water will be provided to the site in a minimum 150mm main that will provide an individual isolated connections to each building of varying sizes relevant to the requirements of the individual building. It is proposed to provide a domestic water ring main within the new additions to ensure security of supply

This water will be pressurized by a pump set operating on essential power consisting of at least a triplex pump set with variable speed vertical head pumps operating in duty/duty/standby and duty/duty/duty configuration with the capacity to install a fourth pump as required.

2.2 Fire Water Supply

Relevant Authority – Fire & Rescue NSW

The new works will provide a standalone fire hydrant system to the existing facility, this will consist of two fire storage tanks of equal capacity to a pump house where there will be dual electric and diesel fire pumps. These pumps will be assisted with a jacking pump that will have capacity to operate at minimum four fire hose reels.

Storage tanks will be sized to meet the requirements of the BCA and the relevant Australian Standards.

The storage tanks will be filled by the domestic water service.

Inclusive in the pump house will be the fire booster and storage tank suction connection.

The site will be provided with a minimum 150mm fire ring main with external twin pillar fire hydrants positioned within 50 m of hard stand to allow brigade access to each hydrant. Each hydrant will be a minimum of 10m from the building it services.

2.3 Sewer Drainage

Relevant Authority – Junee Shire Council

There are currently two options under consideration for the disposal of the generated sewage from the site, these are:-

1. Provision of an onsite Sewerage Treatment Plant with disposal of treated effluent within the boundaries of the facility.
2. Continuation of discharge to the Junee Sewerage gravity infrastructure for treatment by the Junee Shire Council.

This document addresses item 2 above.

The facility currently discharges its sewage waste via an existing sewerage pump station within the existing centre and a 150mm rising main to the existing authority gravity sewerage main in Park Lane.

It is intended that the proposed additions will utilise the existing rising main and combine the sewage wastes from the existing centre with the proposed centre into a new sewerage wet well and pump station to be located outside of the secure perimeter fence line complete with new grinders and pumps suitable for the upgraded flow.

In addition to the new pump station it is also intended to provide a 24 hours emergency storage system to allow for surge capacity in the system and periods when the authority discharge may be unavailable.

This 24 hours emergency storage is based on 90% of the inflow rate of 300l/p/d for the entire site personnel of approximately 1350 inmates and 300 staff.

We are led to believe that the existing Junee Shire Council treatment facility will be upgraded to cater for the additional capacity generated by the additions to the centre.

2.4 Gas Supply

Relevant Authority – Jemna / Origin

The site is serviced by an existing 110mm, 210 kpa high pressure natural gas supply which is reduced at the service compound to 160kpa, it is intended to tap into this existing 160kpa service and reticulate gas to the proposed addition. However an upgrade to the current meter and first stage regulator may be required due to the usage load.

Gas is currently used for cooking, heating and hot water generation. It is likely that this will be the same use in the new facility.

Initial discussion have been held with Jemna however the next step is to submit an application to Origin for the gas supply. This will not occur until closer to tender stage.

If there is insufficient gas flow within the infrastructure mains an alternative option would be to provide a standalone gas insitu tank.