

Our Ref 80816199 IMPv01

Contact Peter Waugh



16 June 2016

HEALTH INFRASTRUCTURE
C/- ROOT PROJECTS AUSTRALIA PTY LTD
Level 5 Kyle House
27-31 Macquarie Place
SYDNEY NSW 2000

Attention: Mr John Cole Clark – Project Manager

Dear Sir

**RE: FORENSIC PATHOLOGY AND CORONER COURT (FPCC)
SEAR APPLICATION – INFRASTRUCTURE MANAGEMENT PLAN**

At your request Cardno has prepared a Civil Infrastructure Management Plan to be read in conjunction with the following:

- Warren Smith + Partners Hydraulic and Fire Services Infrastructure Management Plan.
- Jacobs SEAR application of key issues item 10 “utilities” describing electrical, communications and proposed ICT Infrastructure.

Civil Infrastructure

The 7.71 ha site is currently serviced by aged open channel drainage infrastructure which discharges under Joseph Street into Carnarvon Golf Course. The proposed FPCC site is 1.75ha of which 1.3ha is developed with approximately 125m of access road off Weeroona Road.

- The site is not flood affected as advised by others but has significant overland flow traversing through it. It is within the Haslams Creek Catchment Creek which is locally flood affected closer to its outlet and has been subject to a number of flood assessments so development upstream is sensitive to downstream flooding impacts. PMF flood level has been estimated as RL24.98 at Carnarvon Golf Course Basin from flood contour maps developed by Bewsher Consulting Pty Ltd, and unverified Council update by Haskoning Australia.
- Storm water to be collected and controlled within the development property for major and minor events prior to entering Council system. Detention requested by Council *“to ensure peak flow rates at any point within the downstream drainage system do not increase as a result of the development during all storm events up to the 100 year ARI”*. As the site is to be consolidated, drainage easements and/or controls would be limited to inter-allotment flows and ultimate discharge point(s).

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- The site drains to Nottingham Road local drainage system via the Carnarvon Golf Course where a detention pond exists. A critical culvert under Joseph Street exists which our new drainage will be directed to and we will ensure the culvert does not need to be upgraded. Detailed survey and hydraulic analysis has confirmed capacity and performance in the design events of 1 in 20 year and 1 in 100 year AEP storms
- Cardno Water Engineering consultants have performed an overland flow flood analysis for the 1 in 20, 1 in 100 years and PMF flows for the catchment upstream of Joseph Street which includes the following contributory areas:

Botanica site immediately to the East of the precinct

Weeroona Road pit inlet discharge

Juniperina Juvenile Justice Centre and Sunning Hill School

Portion of adjacent railway corridor.

Both existing and future conditions have been checked and the results of this analysis are available.

The recommendations of this overland flow flood study note that after extension of the existing RMS box culvert underneath Joseph Street (existing 1500 x 600) with a 1500mm wide x 600mm high (clear) box culvert within the site, no significant alteration in overland flow flood levels exist at the southern end of the FPCC development provided it is not filled. The future precinct stormwater strategy is to be ascertained with options presented to check extent of future proofing in the current stage to facilitate the next stages with minimal or no disruption to the FPCC drainage infrastructure. Detention maybe required for the full Stage 3 Precinct development.

Overland flow from the north of the site for events up to the 1:100 year storm will be diverted around the new development building and carpark with the help of drainage kerbs, swales and diversion channels to ensure overland flow protection up to extreme events for the adopted building level of RL35.85.

The Staged Precinct Infrastructure Plan would dictate the following civil stormwater approach:

- **Stage 1**

Constructing an underground pipe network from the FPCC development site via a stormwater quality treatment discharge device to the new 1500mm x 600mm deep box culvert extension from Joseph Street box culvert inlet.

The treatment device would reduce gross pollutants suspended solids, total phosphorus and total nitrogen and to acceptable council requirements. Maintenance access to the device is required to remove and clean collected solids.

The new culvert will have 6 drainage inlet points and overland flow inlet pits incorporated for this and future development.

- **Future Stages**

Construction of a network of drainage pits and pipes as the development proceeds with amplification of the proposed culvert on a pre-determined route and detention as required for the future impermeable areas.

A treatment device would form part of the layout servicing total precinct inflows. Maintenance access to the device is also required as noted in Stage 1.

The remaining portions of the aged open channel drainage infrastructure would be renewed as a box culvert and covered designed for a 1% average exceedance probability storm (1 in 100 year recurrence interval) and overland flow strategy for blockage and extreme events including ponding areas or enclosed storage .

Roads

Roads and carpark will be engineered flexible pavements, (asphalt wearing surface and unbound/bound base courses) bearing on compacted subgrade with select concrete areas or asphalt covered concrete sub bases. They will be graded to drain to kerb, gutters and pits to the precinct drainage network.

A commercial crossover at the boundary with Weeroona will be required up to 12.2m wide with general internal private road width 6.5 m suitable for cars, rigid trucks and occasional 19m long semi-trailers. Heavy Vehicle 12.5 m long truck access and occasional 19 m long semi-trailer usage. This assumes two way and inter-visibility possible throughout with nominal road widening to 7.4 m (or larger) for radius curves less than 49 m.

Public access from Main Avenue is proposed through dedicated cross overs into the front main entrance of the new FPCC facility.

Car parking and Back of House (BOH)

The public carpark will be compliant with AS 2890.1 off Street Car parking Code and will be a Class 3 carpark (short term city and town center parking, parking stations, hospitals and medical centers) for 90 degree car parking 2.6 m wide spaces x 5.4 m long with 5.8 m wide aisles. Disabled spaces to comply with AS 2890.6. Envisaged usage of up to 100 cars per day.

Dedicated staff car parking can be Class 1 with 2.4 m wide spaces x 5.4 m long with 6.2 m wide aisles.

The Staff carpark driveway and spaces immediately adjacent to the BOH area will be used temporarily for semi-trailer turning paths and therefore this pavement is locally upgraded for this proposed function.

The container storage area will be broom finished concrete to receive container foot seats to maximum 2% gradients.

Edge protection of all roads and car parking areas will be provided for vertical drops in excess of 600mm.

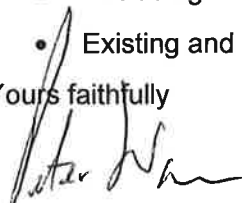
Disabled access will be compliant with the provisions of AS 2890.6. All pavements to be designed in accordance with Austroads guidelines

The Hydraulic Management Plan indicates a Sydney Water Sewer affects a portion of the site and a strategy is articulated to construct adjacent to or provide a new service to maintain adjacent hole. The Utilities management plan indicates existing, substations exist with easements and proposed kiosk substation will be required in the FPCC precinct with Right of Way to service same.

Reference to the in divided reports by WSP and Jacobs should be made to identify the following infrastructure

- Sewer Drainage Service
- Domestic Cold Water Service
- Natural Gas
- Excluding and Proposed Electrical Site Articulate
- Existing and Proposed ICT Infrastructure.

Yours faithfully



Peter Waugh
Senior Partner
for Cardno (NSW/ACT) Pty Ltd

14 June 2016

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**FPCC - SEAR (Secretary's Environmental Assessment Requirements) application key issues
item 10 "Utilities"**

Dear John,

This letter is to support the SEARs SSD application, specifically for item 10 "Utilities" Electrical and Telecommunications infrastructure.

Existing Electrical Site Reticulation

There are currently two Ausgrid substations on site serving the FASS, DoM and OEH facilities. These substations serve the following:

S.2527 (Weeroona Joseph No. 3) – Two x 1MVA transformers supplying:

1. Department of Mines #1 supply
2. Department of Mines #2 supply
3. Scientific Laboratories
4. SRA (now Sydney Trains) Signal Hut "On Light/Power Board" (inside the rail corridor)

S.437 (Weeroona Joseph No. 1) – 1MVA transformer supplying:

1. EPA Laboratory #1 Supply
2. Weeroona Road (residential)
3. WDNO
4. EPA Laboratory #2 Supply

It has been established that these substations will not be able to support the FPCC precinct due to their location, distance to the proposed FPCC building and lack of available spare capacity.

14 June 2016

FPCC - SEAR (Secretary's Environmental Assessment Requirements) application key issues item 10 "Utilities"

Proposed Electrical infrastructure

The FPCC precinct will consist of a new three-storey building with on-grade public and staff carpark areas. The overall building development is 10,181 square metres, according to STH Schedule of Accommodation (rev 15, dated 16 March 2016).

There are two access routes to the carparks, namely:

- Public carpark – off Main Road, and
- Secure Staff carpark - off Weeroona Road along the new secure access road

The FPCC building will comprise of the following main facilities:

- Mortuary,
- Coroner's Courts,
- Administrative areas, and
- Front & Back of house

Based on our maximum demand assessment a new 1.5MVA kiosk substation is proposed to support this facility. The new kiosk substation is proposed to be located on the FPCC precinct within the secure staff carpark area. Access to the substation will be via the secure entry road off Weeroona Road.

An Application for Connection has been submitted to Ausgrid and they have confirmed that a new substation will be required.

Existing Communications services

The site currently connects into the Telstra network at four locations:

- One connection at the north-east entrance from Main Avenue serving the FASS building
- One connection at the north-west end of Joseph Street serving the FASS building
- Two connections along Weeroona Road serving the OEH buildings

As the site is currently on three separate titled lots with three separate tenant/departments, each building has its own dedicated connections into the Telstra network. There are no existing internal underground ICT connections linking the various departments/buildings.

According to Dial-before-You-Dig (DBYD) data, there are Telstra, NBN and Singtel Optus infrastructure services present around the site perimeter. There are currently no Singtel Optus or NBN connections servicing the site.

Proposed ICT infrastructure

Dual telecommunications lead-in carrier cables (from separate service providers) are required to support the new FPCC development. Two separate and dedicate carrier/campus distributor rooms are proposed for the new building.

The local LHD ICT team has made initial contact with the various service providers.

If you have any further questions, please do not hesitate to contact the undersigned.



14 June 2016

FPCC - SEAR (Secretary's Environmental Assessment Requirements) application key issues item 10 "Utilities"

Yours sincerely,

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HYDRAULIC AND FIRE SERVICES INFRASTRUCTURE MANAGEMENT PLAN

NSW Forensic Pathology & Coroners Court

Corner Joseph Street & Main Avenue, Lidcombe NSW 2141



PROJECT #	5279000
ISSUE	02
DATE	09.06.2016
REVISION	Infrastructure Management Plan
AUTHOR	G. Barnes
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INFRASTRUCTURE MANAGEMENT PLAN

1. INTRODUCTION

This document outlines the existing hydraulic and fire services Authorities infrastructure at the site bounded by Weeroona Road, Joseph Street and Main Avenue Lidcombe. NSW. 2141, in order to comply with requirement of the SEARs Condition 10 – Utilities – Infrastructure Management Plan.

There are currently three (3) Lots on the proposed site, with the proposal to amalgamate into one (1) Lot.

From Sydney Water Corporation records the Lots are:

- Lot 1 Weeroona Road;
- Lot 2 (480) Weeroona Road and
- Lot 2 Joseph Street.

Services include in this report are:

- Sewer Drainage Services
- Water Service – including incoming Fire Hydrant and Fire Sprinkler Services
- Natural Gas Services

2. SEWER DRAINAGE SERVICES

Sydney Water require the lodgement of a Section 73 application to be undertaken once a DA Consent has been provided, however a “Feasibility” application has been lodged with Sydney Water prior to the DA Consent being received. This will give an indication of what services

Existing Campus System

The overall site is serviced by an existing 225mm Sydney Water Corporation vitrified clay sewer main located half way along the Joseph Street frontage and enters the site at the junction of Lot 1 Weeroona Road and Lot 2 Joseph Street.

The Sydney Water Corporation sewer main then extends east, parallel to the stormwater culvert to service Lot 2 (480) Weeroona Road.

There is a 225mm Sydney Water Corporation PVC sewer main crossing the south west corner of the site through Lot 1 Weeroona Road. This sewer main is servicing properties to the east of the site and will need to remain unimpeded.

Refer Sydney Water Corporation DBYD Map.

Proposed Infrastructure Sewer Works

It is proposed to amalgamate a portion of Lot 2 with Lot 3 for a new access road to the site. It is proposed to provide a new Sydney Water sewer side line off the existing 150mm sewer main in Weeroona Road to service Lot 2, allowing the Sydney Water sewer main to be disused to the boundary of Joseph Street, which would allow an unimpeded area for the new site.

There are a number of existing house service sewer lines traversing the site area, from the buildings that are to remain on the eastern side of the precinct to the sewer connection to the west. These sewer drainage services will need to be connected together and diverted from the proposed foot print of the new building.

A new house services line will connect to the existing Sydney Water sewer main and run via gravity to the proposed building site.

3. DOMESTIC COLD WATER SERVICE

Existing Water Services

The site is fronted by the following Sydney Water Corporation watermain:

- 900mm CICL watermain in Joseph Street (not taken into consideration as this would be a main feeder);
- 450mm DICL watermain in Joseph Street; (a Statement of Available Pressure and Flow has been obtained from Sydney Water Corporation with a note indicating that whilst they have given the information a connection could not be guaranteed, therefore this main has not been taken into consideration;
- 300mm uPVC watermain in Palm Circuit (a Statement of Available Pressure and Flow has been obtained from Sydney Water Corporation, copy attached) and
- 200mm DICL watermain in Weeroona Road.

Proposed Infrastructure Water Works

Sydney Water Corporation require the domestic cold water services connections to be taken off the watermain fronting the development.

Incoming Domestic, Fire Hydrant and Fire Sprinkler Services to service the site will be taken from the 300mm uPVC main in Palm Circuit. The "Statement of Available Pressure and Flow" indicates this main to be adequate to supply the site with the assistance of pumps to boost to the required pressures and flow.

4. NATURAL GAS

Existing System

The site is fronted by the following Jemena Natural Gas mains:

- 63mm PE 210kPa natural gas main in Joseph Street;
- 50mm nylon 210kPa natural gas main in Palm Circuit and
- 350mm 1,050Pa secondary natural gas main in Weeroona Road.
-

Refer to attached Jemena mains diagram.

There is a redundant capped off natural gas main mid-way along the Joseph Street frontage which can be removed if required.

The existing facilities natural gas service comes off the Weeroona Street natural gas main.

Proposed Infrastructure Work

Jemena will only reply to enquiries on developments when a DA has been approved but the same concept as the domestic water supplies would be used, with proposed connections from Palm Circuit and Weeroona Road.