Warren Smith & Partners Pty Ltd

CITYONE CONCEPT PLAN APPLICATION

HYDRAULIC INFRASTRUCTURE REVIEW

PROJECT NO. 2759

30TH APRIL 2009

ISSUE A

Prepared By :

Warren Smith and Partners Pty Limited
ACN 002 197 088
Hydraulic and Fire Engineering Consultants
1st Floor, 123 Clarence Street
SYDNEY NSW 2000
Telephone: (02) 8234 8638
Facsimile: (02) 9290 1295
Email: wsp@warrensmith.com.au

Prepared For :

Thakral Corporation Pty Ltd
Level 12
301 George Street
SYDNEY NSW 2000

Telephone: (02) 9272 8888
Facsimile: (02) 9272 8755

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1. EXISTING AUTHORITIES INFRASTRUCTURE – HYDRAULIC SERVICES

1.1 Water Supply

The development site is serviced by a 300mm diameter CICL Sydney Water watermain in George Street and a 250mm diameter CICL Sydney Water watermain in Carrington Street.

Both these Sydney Water watermains have adequate capacity to service the proposed development.

A 150mm diameter CICL Sydney Water watermain is situated in Wynyard Lane but does not have sufficient capacity to service the proposed development.

1.2 Sewer Drainage

The development site is serviced by a 400mm VCP Sydney Water sewer in Wynyard Lane and a 990mm x 660mm brick oviform Sydney Water sewer situated in George Street.

Either of these Sydney Water sewers have sufficient capacity to service the proposed development.

1.3 Stormwater Drainage

The development site is serviced by Council stormwater drainage road gullies in Margaret Street, Wynyard Lane and George Street which connect to a 300mm diameter Sydney Water VCP stormwater drainage line in George Street which adequately conveys drainage via the road corridors from the development site.

1.4 Natural Gas

The development site is serviced with Jemena Limited natural gas mains as follows:-

George Street	110mm diameter nylon	7kPa low pressure main
Carrington Street	75mm diameter nylon	7kPa low pressure main
Wynyard Lane	75mm diameter nylon 100mm diameter steel	7kPa low pressure main 1,050 kPa high pressure secondary main

The Jemena 100mm diameter 1,050kPa high pressure secondary main in Wynyard Lane has adequate capacity to service the proposed development.

2. STORMWATER CONCEPT PLAN STRATEGY

It is proposed that stormwater drainage from roof and terrace areas will be sized to cater for a 100 Year Storm Frequency Event and will be collected by a system of syphonic drainage downpipes to connect to a 300,000 Litre capacity rainwater reuse tank.

Overflow pipework from the rainwater reuse tank will be designed to gravitate to connect to the Council and Sydney Water drainage system in George Street or Carrington Street.

Sydney Water Urban Development Section, Mr Jeya Jeyadevan, have been contacted via email 15th April 2009 and Sydney Water have advised by email 30th April 2009 that they have no requirement for the provision of On Site Detention (OSD) for the development site.

Given the proposed roof area of 4,036m^2, the rainwater reuse tank has been sized on a twelve (12) month yearly basis which equates to 300,000 Litres monthly average.

It is proposed to reuse the rainwater using a suitable filtration method and store treated rainwater into a storage tank with one (1) day supply capacity for WC flushing and landscape irrigation throughout the development. The possibility of extending the landscape irrigation into Wynyard Park will be explored during the detailed design stage.

3. BLACKWATER TREATMENT AND REUSE SYSTEM

Consideration is being given to extract blackwater from the 990mm x 660mm oviform Sydney Water sewer in George Street via sewer mining technology and treat the blackwater via membrane technology to A Grade quality water as determined by the NSW Department of Health.

One (1) day's storage of the treated A Grade water could be stored in a water storage tank where A Grade treated water could be used to supply make-up water to the air conditioning cooling towers in the proposed development in lieu of the normal requirement to provide potable make-up water from Sydney Water watermains.