

Hydraulic Services Report

BWC 2/25

Blacktown Workers Sports Club

Site A: Outdoor Sports Facilities – 221 Walters Road, Arndell Park

Site B: Seniors Living Village – 170 Reservoir Road, Arndell Park

Client: Paynter Dixon Constructions Pty Ltd
Level 2, 2 Richardson Place
NORTH RYDE NSW 2113

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Proposed Development: Sports Club and Facilities

Client: Paynter Dixon Constructions Pty Ltd
Local Authority Blacktown City Council
Authority Reference #: N/A
Wood & Grieve Reference: 28811-SYD-C-R-FRM



David Steblina
For and on behalf of
Wood & Grieve Engineers

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A	10.12.2015	Draft	DMS
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Introduction- Blacktown Workers Sports

1. Introduction

The purpose of this report is to advise on the Authority services available to provide sufficient infrastructure for the provision of:

- Potable water services
- Fire services reticulation
- Sewer drainage
- Gas services

2. Executive summary

In review of the information tabled, the site has suitable Infrastructure facilities (as stated in the Introduction above) to service the proposed development as described below.

The receipt of a NOR from Sydney water will confirm any required upgrades or adjustments as may be necessary.

Existing Conditions- Blacktown Workers Sports

3. Existing Conditions

3.1 Property Detail

Address: 170 Reservoir Road, Arndell Park NSW 2148
Real Property Description: Lot 14 on DP6796, Lot 10 and 11 on DP818679, Lot 14, 16 and 17 on DP 809530:
DP 809530: Lot 200 & 201 on DP880404
Total Site Area: 209,000 m2 (20.9Ha)

The site is bounded by:

- Reservoir Road to the east,
- Holbecke Road and warehouses to the north,
- Walters Road to the west,
- Penny Place and warehouses to the south

Refer to locality plan in figure 1.

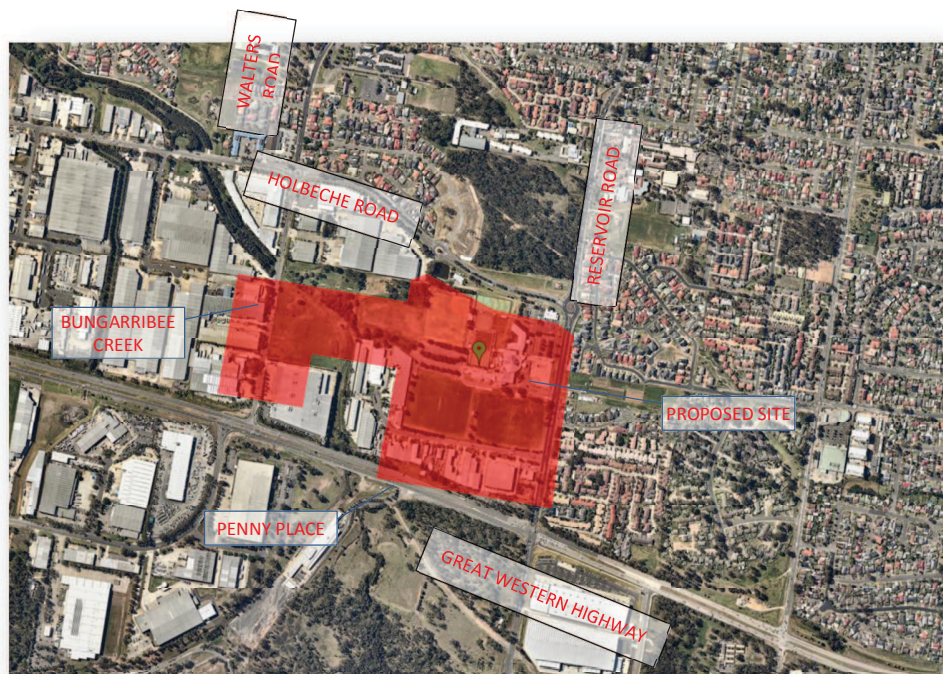


Figure 1. Site Locality Plan

- Blacktown Workers Sports

The proposed development will be split into two sites (shown in **Figure 2**)

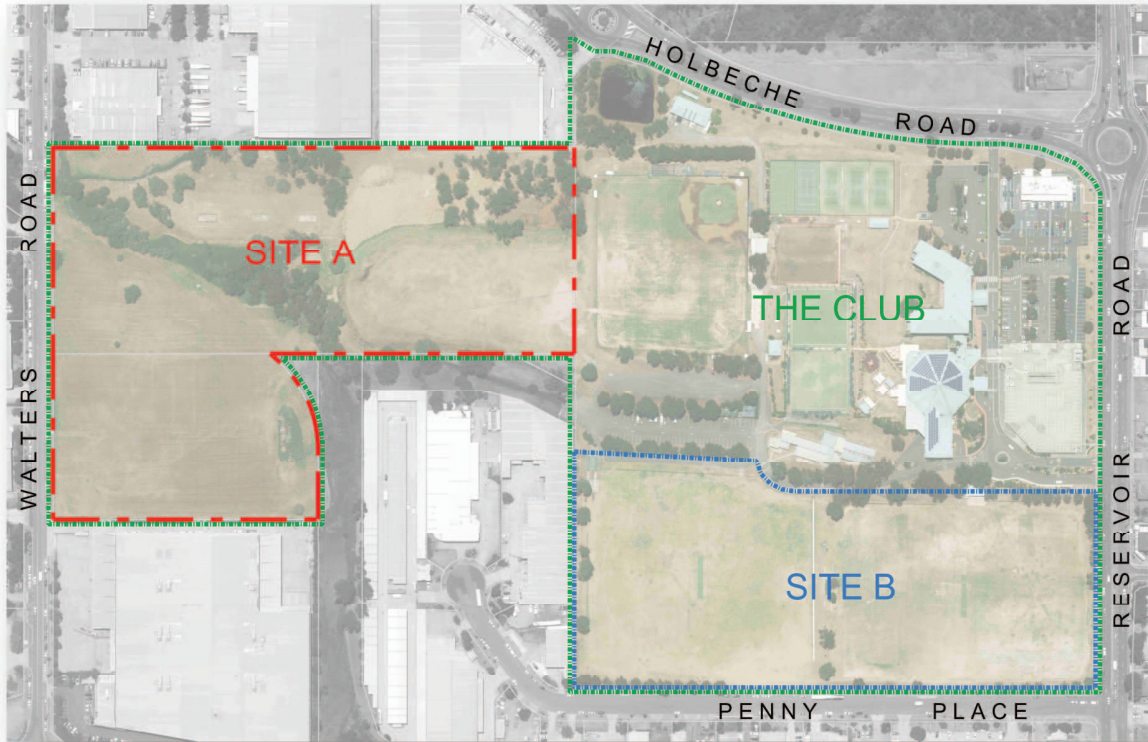


Figure 2. Proposed Site layout showing breakdown

4. Basis of Information

This report is based on the following sources of information:

- Dial Before You Dig information
- Discussions with Water servicing Coordinator (WSC)
- Discussions and Advice from WGE internal civil section.
- Information provided by Paynter Dixon Constructions Pty Limited

Limitations of this report are as follows:

- All information provided by others, particularly verbal information has been taken at face value.
- No formal discussions with Authorities (feedback only available through a formal submission)

Infrastructure Cost Estimates- Blacktown Workers Sports

5. Infrastructure Cost Estimates

5.1 Hydraulics (Sewer, Water, & Gas)

Option 1

	DESCRIPTION	AMOUNT
1.	Sewer Capping off works	N/A
2	Sewer Main extension – (potential cost only subject to NOR)	\$150,000
3.	Water main extension	N/A
5.	Gas Main extension	N/A
4	Total	\$150,000

Hydraulic Services- Blacktown Workers Sports

6. Hydraulic Services

6.1 Definitions used

SWC- “Sydney Water Corporation” licensed agency which provides water, waste water, recycled water and some Stormwater services in Sydney, the Illawarra and the Blue Mountains.

WSC- “Water Servicing Coordinator” the WSC is a private Company that is licensed to mediate between SWC and the general public. The WSC provides a design and project management role for the extension, diversion and adjustment of SWC water, sewer and Stormwater systems.

NOR- “Notice of requirements” The NOR is a documented provided by SWC on application through the WSC and details the specific project requirements needed to service and provide water and sewer infrastructure to the site in question. The NOR outlines whether there are any adjustments, diversion and/or upgrades requires to their Infrastructure. The cost of these works is usually borne by the developer.

The NOR is required as part of the Construction certificate approval process, so becomes a mandatory document necessary for each project. A NOR cannot be obtained unless an approved Development consent has been granted from Council.

Feasibility NOR- as the NOR above, however this can be applied for prior to receipt of a Development Consent from Council. The Feasibility NOR outlines the intended works required or otherwise to service the site. This document can be used for planning and costing purposes however cannot form part of the formal documentation. Upon receipt of the Consent another application through the WSC for a NOR is required. The conditions may or may not change and SWC is under no obligation to stand by the advice granted in the Feasibility NOR.

Jemena- Gas Utility provider

Hydraulic Services- Blacktown Workers Sports

6.2 Project risks

The following points have been identified as project risks and cannot be confirmed until a formal NOR has been received and an application to Jemena can be submitted.

- Water main- a suitably sized water main to serve the site may not be able to be connected to the 900mm trunk main. Upgrade and extension works may be required from and adjacent main
- SWC may require the precinct wide sewer to be connected to connection “B” as shown on drawing H-02. This will involve an upgrade through the Riparian zone.
- A feasibility NOR may change from the formal NOR between receipt of the first to confirmation of the final.
This may change the design and cost management considerations.

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7. Hydraulic Services

7.1 Water supply

7.1.1 Existing Supply Authority Network

Information obtained from Sydney Water Indicates suitable mains fronting the site off Reservoir Road, Walters Road and Penny Lane.

Drawing H-01 shows a 900 mm Sydney Water trunk main which may be made available for this site and dependent on the NOR.

The Authority Water and Sewer design Code nominates minimum size water main needs to front a development. The table indicates as follows.

WSA 03-2002-2.2

3.2.2 Minimum pipe sizes

Pipe sizes generally shall not be less than:

(a) DN 100 for residential zones.

(b) DN 150 for industrial and commercial zones.

TABLE SW 3.0

MINIMUM PIPE SIZES FOR PARTICULAR DEVELOPMENT

<i>ZONING/DEVELOPMENT</i>	<i>MINIMUM PIPE SIZE (DN)</i>
<i>Low and medium density residential</i>	<i>100</i>
<i>High density residential (4 storeys)</i>	<i>150</i>
<i>Multiple developments of high density residential (8 storeys)</i>	<i>200</i>
<i>Industrial and commercial</i>	<i>150</i>

Given the size of the seniors living Stage SWC may require an extension off the 900mm trunk main to ensure there is satisfactory water supplying the site

7.1.2 Internal reticulation

It is anticipated the site will be provided with 2 x separate water supplies.

- 1- Precinct wide Fire supply
- 2- Precinct wide Potable water supply

Precinct wide water supply- A master meter will record all water usage reticulated on site. We believe this will be located at the main frontage off reservoir Road.

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Each “sub-lot” created or strata titled building would be provided with a SWC water meter. Further SWC meters would be provided for each individual apartment in accordance with SWC metering policy.

Each strata title holder will be invoiced directly from SWC. The primary boundary water meter will be provided as a check meter.

There will be no “non-potable” water provided on site.

Sporting facilities water- Subject to conditions of the NOR, SWC may suggest a secondary connection to Walters Road. This pipework would service all the amenities to the west of the sports club.

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7.2 Sewer supply

7.2.1 Existing Supply Authority Network

Information obtained from SWC indicates suitable sewer main fronting the site off Walters Road and Penny Lane refer H-02

7.2.2 Internal reticulation

It is anticipated the site will be serviced by two separate points of connection:

- 1- Penny Place- "A"- a 300mm sewer main extends down Penny Place. The fixture unit loads calculated to for 800 seniors living apartments and a 200 bed RACF requires a 300mm sewer connection. Extension from the 450mm main adjacent to the Riparian zone would require an upgrade which would involve crossing the water way. The Penny Place connection would suitably cater for the needs of the development.
- 2- Connection "B"- would cater for localized amenity requirements at the western end of the site. It would also accommodate the connection of a sewer rising main which we believe would be required to accommodate the drainage for the NW grandstand facilities.

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7.3 Gas supply

7.3.1 Existing Supply Authority Network

Information obtained from Jemena indicates suitable gas mains fronting Reservoir Road and Walters Road- refer H-03.

Initial discussions with Jemena confirm the availability of this main for connection.

7.3.2 Internal reticulation

There are 2 options for providing this site with a gas and metering system:

- 1- Traditional metering- A single gas supply would extend from the Authorities main and reticulate to each seniors living building. Each building would accommodate a master gas meter, with individual meters serving each apartment. Each strata title holder would receive a gas bill dependent on usage.
- 2- Embedded energy- With the change of consumer protocols, embedded energy companies are able to enter into a contract with the body corporate or land owner to provide a fixed rate of gas consumption based over a period of agreed time. These deals can include the supply installation and maintenance of Centralised gas hot water systems for each of the 10 apartment buildings and RACF. This is an economical way of providing pipework and hot water infrastructure that is paid for and maintained by a 3rd party. The gas supply would be either metered in its entirety through a precinct wide gas meter or individual building meters, dependent on the signed agreement.
Independent apartment gas metering would not be required as the Embedded energy provider would charge the tenant based on the number of points within the apartment. Usually this method is cheaper for the consumer.

