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DOLTONE HOUSE GROUP

Redevelopment of Deepwater Motorboat Club Site, Milperra

Infrastructure Services Report

Issue No. 2

17th March 2014

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Water & Environment

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DOLTONE HOUSE GROUP

REDEVELOPMENT OF DEEPWATER MOTORBOAT CLUB SITE, MILPERRA
INFRASTRUCTURE SERVICES REPORT

Disclaimer

Project 301015-02379 - REDEVELOPMENT OF DEEPWATER MOTORBOAT CLUB SITE, MILPERRA

REV	DESCRIPTION	AUTHOR	REVIEWER	WORLEY-PARSONS APPROVAL	DATE
1	Draft Report for Internal Review	Tim Michel	Chris Thomas		13-03-2014
2	Final Report - Issued for inclusion with Development Application	Tim Michel	Chris Thomas	Chris Thomas	17-03-2014

CONTENTS

APPENDICES

1 INTRODUCTION

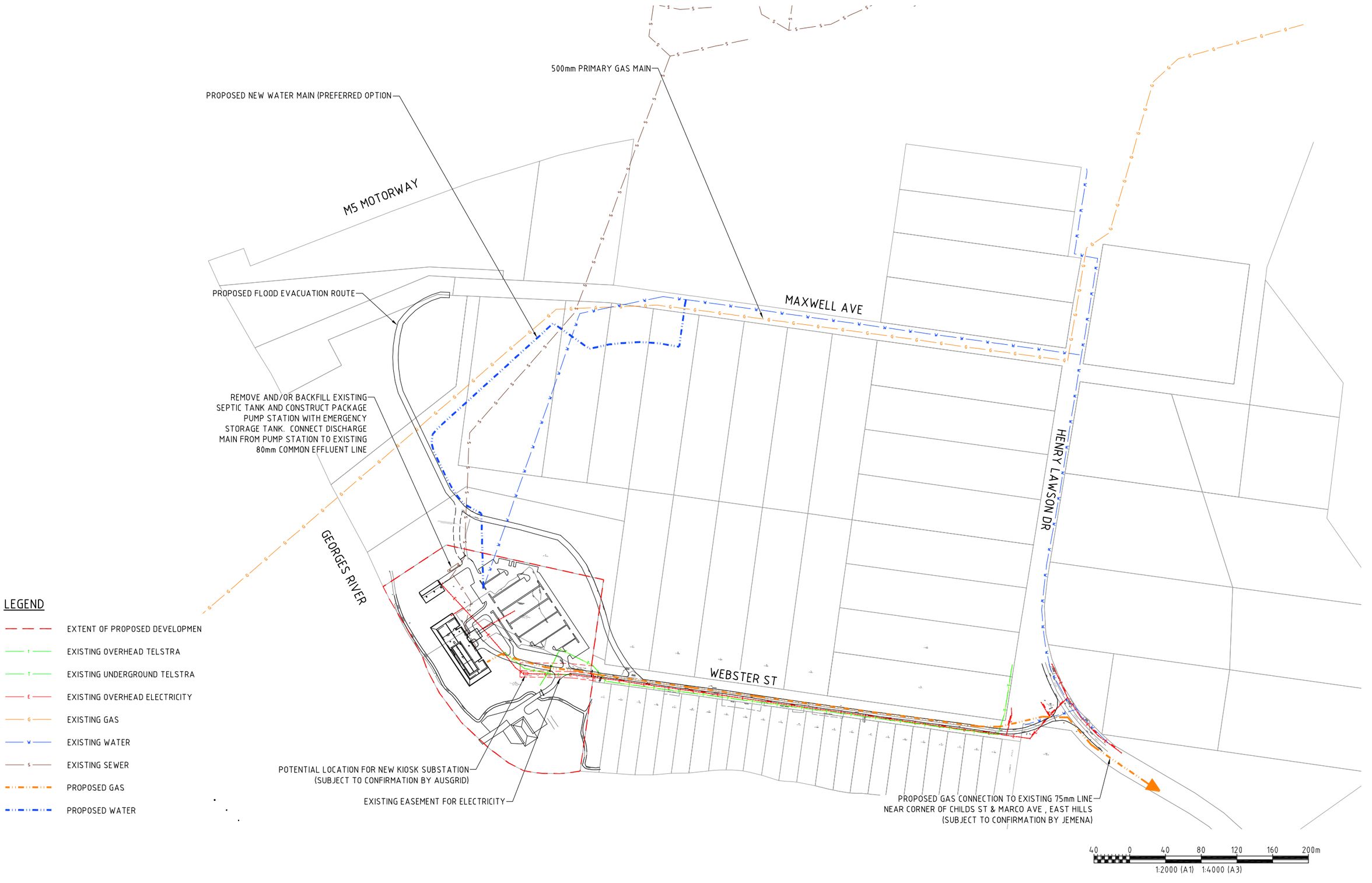
This Infrastructure Services Report (ISR) has been commissioned by the property owner, Doltone House Group, to identify infrastructure required to service the proposed redevelopment of the Deepwater Motor Boat Club site. The report also identifies existing infrastructure in the vicinity of the site, capacity limitations associated with that infrastructure and potential upgrades and/or extension works that would be required to adequately service the site.

The site is located within the Bankstown Local Government Area (LGA) and is known as 30 Webster Street, Milperra. It comprises part Lot A in Deposited Plan (DP) 405225 and Lot D in DP 391154 and covers an area of 4.08 hectares.

The ISR has been prepared to accompany the Development Application (DA) for the proposed refurbishment of the site and outlines strategies to provide the following services to the site for the proposed development:

- Potable Water;
- Wastewater;
- Electricity;
- Gas; and,
- Road and Drainage.

Dial Before You Dig (DBYD) plans have been sourced to identify all existing services in the vicinity of the site. These plans identify services currently within or adjacent to the site and include assets under the ownership of Sydney Water, AusGrid, Jemena and Telstra. The location of existing services relative to the site is illustrated on **Figure 1**.



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ISSUE	DATE	ISSUE DESCRIPTION
A	28.02.14	ISSUED TO CLIENT

N
NORTH

DOLTONE HOUSE DEEPWATER

EXISTING & PROPOSED SERVICES PLAN

FIGURE 1

LOCATION: S:\02379 - DEEPWATER MOTOR BOAT CLUB REDEVELOPMENT\110 DRAWINGS\SKETCHES\30105-02379-FIGURE_S_1.DWG
USER NAME: phil.cornish CTB FILE: Worley-Full.ctb Plotter:None
PLOT DATE & TIME: 14/3/2014 2:27:57 PM
SAVE DATE & TIME: 14/3/2014 1:42:10 PM

2 PROPOSED DEVELOPMENT

The proposed development is described as follows:

- Alterations and additions to the existing two storey clubhouse building for use as a function centre with a 800 seat capacity and 900 persons for cocktail functions (part ground level and all of the first floor) and expansion of the existing motorboat club area at ground level.
- Conversion of the pool and pool building into a new 112 seat restaurant.
- New boat shed to be constructed in between the southern and eastern boat ramp, capable of storing 30 small craft plus a small craft launching facility.
- Landscaping, car parking, road works, emergency access route from the site via Maxwell Avenue and ancillary infrastructure and services.

3 POTABLE WATER

3.1 Existing Services

An existing Sydney Water potable water main extends for approximately 450 metres along the northern side of Maxwell Avenue. It is primarily a 100 mm diameter ductile iron cement (mortar) lined (DICL) pipe, with a section approximately 20 metres long at the western end of Maxwell Avenue being a 90 mm diameter asbestos cement (AC) pipe. The existing water main terminates approximately 320 metres north of the site (refer to **Figure 1**).

The Sydney Water DBYD plan also shows a 100 mm diameter cast iron cement lined (CICL) stub water main that terminates at the intersection of Webster Street and Henry Lawson Drive approximately 450 metres east of the site. The DBYD plan indicates there are no water mains within Webster Street; however it is likely that there is an existing service connection that provides water to an amenities block on the southern side of Webster Street.

There is a 50 mm diameter service connection that currently services the site. This service connection extends from Sydney Water's main in Maxwell Avenue and into the northern part of the site via Deepwater Reserve (refer to **Figure 1**). The alignment of this service connection is heavily vegetated and the connection itself is understood to be in poor condition.

Two fire hydrants are currently located on the site. These are in poor condition.

3.2 Future Requirements

An upgrade of the existing water supply will be required in order to service the proposed development. An Anticipated Requirements application has been lodged with Sydney Water (via a Water Servicing Coordinator) to determine specific requirements for the provision of a water supply connection to the site. It is anticipated that Sydney Water will issue a Notice of Requirements prior to May 2014.

The size of the proposed connection is subject to confirmation by Sydney Water, but is not likely to be any greater than 100 mm in diameter. The pipeline material is also subject to confirmation based on Sydney Water's requirements; however it could be constructed of PVC, DICL or CICL pipe or an alternative material such as PE if approved by Sydney Water.

A preliminary assessment of two options for the provision of potable water to the site has been undertaken and is presented below.

3.2.1 Option A – Service Connection via Deepwater Reserve

This option would involve providing a service connection to the development from the existing water main in Maxwell Avenue via the proposed flood evacuation route to Maxwell Avenue (refer to **Figure 1**).

This route would require construction of the service connection, approximately 580 metres long, partly within or immediately adjacent to the existing road that runs through Deepwater Reserve and partly through an existing clearing through the reserve. This route is advantageous as it could potentially result in a lesser environmental impact when compared to a direct route from the site to Maxwell Avenue, which is likely to disturb vegetation within Deepwater Reserve.

It is understood that Council provided in principle approval to the property owner to construct a water main through Deepwater Reserve in 2012, subject to a number of conditions including reinstatement of any disturbed surfaces to pre-construction condition, provision of works-as-executed drawings, a certificate of compliance and a water meter.

3.2.2 Option B – Service Connection via Webster Street

This option would involve providing a service connection to the development; approximately 570 metres long; from the existing 100 mm stub main near the intersection of Henry Lawson Drive and Webster Street (refer to **Figure 1**). The service connection would be constructed within the road reserve of Webster Street.

It is noted that the northern side of Webster Street is densely vegetated. If the connection was to be provided on the northern side of the roadway it is likely that the main would need to be within the extent of existing road pavement to minimise impacts on vegetation. Construction of a service connection on the southern side of the street is likely to result in a lesser environmental impact and lower construction cost as it would require less excavation and reinstatement of AC pavement.

3.3 Preferred Option

Option A is the preferred option for providing a water connection to the site as it likely to result in a lower capital cost in comparison to Option B, due to the pipeline route being partly within an existing clearing in Deepwater Reserve. Adoption of the preferred option is subject to any specific requirements noted by Sydney Water on the Notice of Requirements.

3.4 Other Water Servicing Provisions

Due to the poor condition of the existing fire hydrants on the site, it is recommended that these hydrants be replaced to satisfy the requirements for fire fighting at the site.

It is noted that four 20,000 litre water storage tanks will be installed in the undercroft section of the function centre building. These water tanks will collect roof runoff and will be used to irrigate the open space and garden areas of the site.

4 WASTEWATER

4.1 Existing Services

The existing sewerage service at the site consists of a septic tank, which pumps into an 80 mm diameter effluent main (refer to **Figure 1** and Sewer Location Diagram contained in **Appendix 1**). This main discharges into Sydney Water's sewerage system at the rear of Maygar Close, Milperra, at a point approximately 600 metres north of the site.

Apart from the existing sewerage infrastructure that services the site, the nearest Sydney Water sewerage to the site is at the corner of Henry Lawson Drive and Cheatle Street, East Hills, which is located approximately 1.4 kilometres south-east of the site.

The existing septic tank on the site is located to the east of the disused swimming pool. This septic tank was installed in the mid-1970s, although it is understood that there was an earlier septic tank to the southern side of the club house building. The condition of the existing septic tank is unknown.

4.2 Future Requirements

Provision of a suitable option for wastewater management and disposal will be required in order to service the proposed development. As there is no gravity sewerage in close proximity to the site, some form of on-site sewage management system with appropriate effluent disposal will be required for the development. A discussion of the requirements for on-site sewage management that are applicable to the development is presented in the following sections.

Given the proposed increase in patronage for the site compared to the previous and current uses, the existing septic tank will not have sufficient capacity to service the proposed development. The existing tank should either be removed from the site or at the very least dewatered, cleaned and backfilled.

4.2.1 On-Site Sewage Management

Typical on-site sewage management system requirements in NSW are outlined in *On-site Sewage Management for Single Households* (NSW Department of Local Government, 1998), commonly known as 'The Silver Book'. The overall objectives of these guidelines is '*to guide communities in New South Wales towards sustainable on-site management of domestic sewage and wastewater while protecting and enhancing the quality of public health and the environment in the long term*'.

While The Silver Book does not specifically apply to commercial development, the overarching principles are applicable to the proposed development and are considered appropriate to adopt in terms of sewerage servicing of the site. With regard to sewerage systems for commercial developments, The Silver Book notes that '*Under Clause 11A of the Clean Waters Regulation 1972, the EPA has responsibility for approving and licensing waste management facilities installed on premises used for commercial and industrial purposes*'.

Since publication of The Silver Book, the *Clean Waters Regulation 1972* has been repealed and was replaced by the *Protection of the Environment Operations Act 1997* (POEO Act).

The POEO Act applies to the operation and licensing of sewage treatment systems that 'involve the discharge or likely discharge of wastes or by-products to land or waters'. Under the POEO Act, licenses apply to sewerage systems with a processing capacity that exceeds 2,500 equivalent persons (EP) or 750 kL/day. Given the size of the proposed development, a license would not be required under the POEO Act.

Considering the type and location of the proposed development, a partial on-site sewage management system is considered the only appropriate means of on-site sewage management (refer to Section 5.5 of The Silver Book). Either of these systems would need to incorporate waste removal by means such as a tanker pump-out or a common effluent system (CES) as per the existing arrangement.

Due to the ongoing operational and maintenance costs associated with pump-out by a tanker, this is not considered to be a suitable option to service the development. Provision of an effluent disposal main that would discharge sewage from the site to Sydney Water's sewerage system is considered preferable. On the basis that effluent disposal to Sydney Water's system is to be adopted for the site, it is considered appropriate to provide a septic tank in lieu of an alternative on-site system such as an Aerated Wastewater Treatment System (AWTS).

In lieu of a septic tank, a packaged submersible pump station with a dry valve pit and emergency storage tank is considered to be the most suitable option for the collection and transfer of sewage from the site to Sydney Water's system. A typical arrangement of such a system is presented in **Figure 5.1**.

In accordance with Sydney Water's requirement for maximum pumped discharge to its sewerage system, the pump capacity would be no greater than 2 l/s. The pump wet well would contain two submersible pumps that would be operated in duty and standby mode. The emergency storage tank would be sized to provide storage in the event of a power outage at the site, failure of the pumps or the effluent main.

A preliminary estimate of the required storage tank capacity for the proposed development has been prepared based on the NSW Health Department *Septic Tank and Collection Well Accreditation Guideline* (2001), which requires at least 24 hours storage at average dry weather flows. On the basis of the required septic tank capacity under these guidelines, a storage tank of up to 50 kL would need to be provided on the site. If the time required for a tanker to access the site in the event of a pump station outage is less than 24 hours, this volume could potentially be reduced. The required storage volume would be subject to further design by a hydraulic consultant at a later stage of the development. If the required storage tank capacity is greater than 5,000 litres, accreditation from the NSW Health Department would be required for the tank.

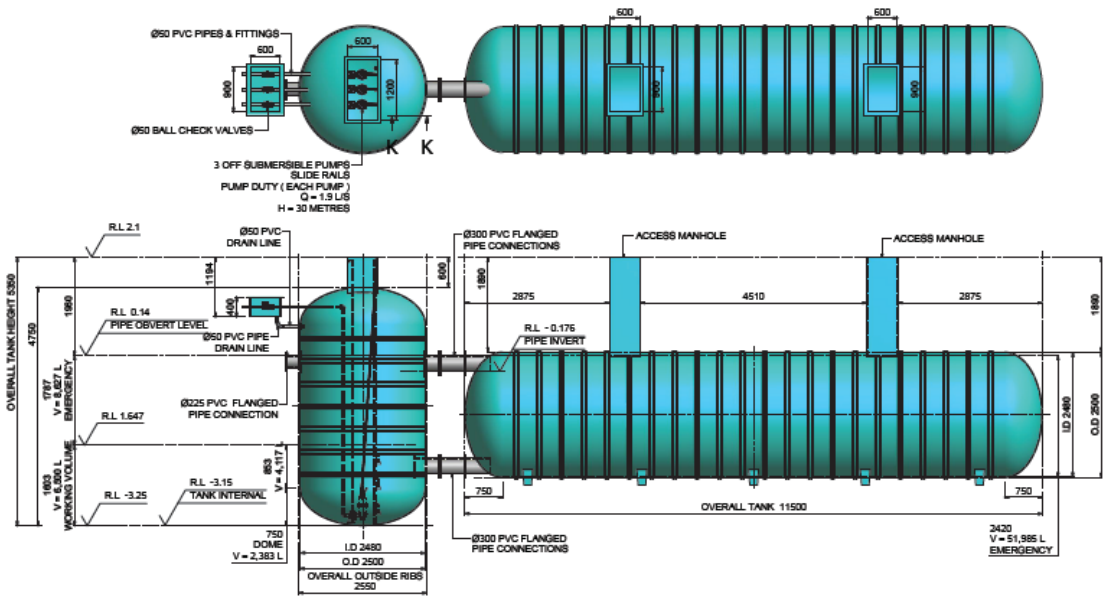

Figure 5.1: Typical Plan and Section of a submersible pump station with emergency storage tank

Source: www.allpumps.com.au

A high level assessment of two options for connection of the proposed on-site sewage management system to Sydney Water's sewerage system has been undertaken. These two options are:

Option A - Connection via the existing effluent main to the rear of Maygar Close, Milperra.

Option B Connection via a new effluent main to Sydney Water's sewerage system at East Hills.

A preliminary assessment of the two options to connect to Sydney Water's sewerage system is presented below.

4.2.2 Option A – Connection via existing effluent main

This option would involve utilising the existing 80mm effluent main to pump from the septic tank to Sydney Water's sewerage system on the northern side of the M5 Motorway. Based on the estimated pump capacity required to adequately service the septic tank, it is likely that the existing main has sufficient capacity to cater for the proposed development.

As the condition of the existing main is unknown, it is likely that a condition assessment of the main will be required to determine its suitability to be retained to service the development.

4.2.3 Option B – Connection via new effluent main

In the event that the existing effluent main from the site could not be utilised or augmented to service the development, Option B would involve constructing a new 90mm effluent main from the site to Sydney Water's sewerage system in East Hills. A potential route for this effluent main is presented in **Figure 1**.

This option is likely to have a lower capital cost and result in lesser environmental impacts than reconstructing the existing effluent main described for Option A. However, if the existing effluent main through Deepwater Reserve is found to be in good condition and can be maintained to service the development, it is unlikely that further consideration of Option B would be warranted.

4.2.4 Preferred Option

On the basis that the existing 80mm effluent main in Deepwater Reserve is in good condition and can be maintained to service the development, Option A is the preferred connection option to Sydney Water's sewerage system, in series with a septic tank as described in **Section 4.2.1**.

Ongoing operation and maintenance of the proposed pump station and storage tank will be the responsibility of the property owner.

An Anticipated Requirements application has been lodged with Sydney Water (via a Water Servicing Coordinator) to determine specific requirements for the provision of sewerage infrastructure to the site. It is anticipated that Sydney Water will issue a Notice of Requirements prior to May 2014. Adoption of the preferred option is subject to any requirements noted by Sydney Water on the Notice of Requirements.

5 ELECTRICITY

5.1 Existing Services

The site is currently serviced by the electricity provider, Ausgrid. Overhead power lines are located along the southern side of Webster Street. A pole mounted transformer that provides 200 amps of electricity for the site is located adjacent to the site driveway. Power lines extend to service the existing club house and pool buildings. A fuse box is attached to the pool building.

It is noted on the Certificates of Title for the site, the following seven metre wide easements for electricity purposes apply to the site. These are shown on **Figure 1**.

Lot A in Deposited Plan 405225

R71219 easement for electricity purposes affecting that Part of the land within described shown as so burdened in Vol 7969 Fol 184

Lot D in Deposited Plan 391154

R71219 easement for electricity purposes affecting the Part of the land above described shown so burdened in Vol 7007 Fol 29

5.2 Future Requirements

Ausgrid has advised that a maximum of 400 amps is permitted to be supplied by a pole mounted transformer. It is proposed to upgrade electricity services to the site to provide up to 500 amps to services the new function centre, restaurant and boat shed. This would need to be provided by a new kiosk substation, which would need to be elevated above a specified design flood level. The kiosk substation would nominally be located on the existing easement for electricity purposes, as shown on **Figure 1**.

Any further requirements for the upgrade of electricity infrastructure to service the site would be confirmed subsequent to a formal connection request to Ausgrid.

6 GAS

6.1 Existing Services

It is understood that the site was previously serviced by two above-ground liquid petroleum gas (LPG) tanks that were historically located near the pool. The gas dispensing system that previously had a Workcover Authority inspection tag dated 1997 has since been removed from the site. This is the only known gas storage tank that was located on the site.

The site is not currently connected to a reticulated gas service. The nearest gas main to the site is a 500mm diameter high pressure Primary Main, owned by Jemena, which is located approximately 400 metres to the north-east of the site (refer to **Figure 1**). The nearest gas reticulation lines to the site, also operated by Jemena, are:

- A 32mm main at the corner of Glencorse Avenue and Flanders Avenue, Milperra, located approximately 1,100 metres north-east of the site and on the northern side of the M5 Motorway.
- A 75mm main located in Marco Avenue, East Hills, approximately 1,200 metres south-east of the site.

6.2 Future Requirements

The proposed function centre and restaurant will require gas to supply their kitchen appliances. Based on gas demands from similar sites, it is estimated that the gas demand for the development would be in the order of 70,000 megajoules (MJ) per month.

Jemena has advised that connection to the Primary Main is not a feasible option to service the development as it would require construction of a Primary Receiving Station.

There are two potential options for the provision of gas to the development:

A. Connection to Jemena's gas reticulation network.

B. Provision of LPG tanks on the site.

A preliminary assessment of these two options has been undertaken and is presented below.

6.2.1 Option A – Connection to Jemena's Network

This option would involve providing a service connection to Jemena's existing gas network. It is unlikely that the existing 32mm gas line at the corner of Glencorse Avenue and Flanders Avenue would be a suitable connection point due to its limited capacity. The 75mm gas line in Marco Avenue is the most likely connection point to Jemena's network, although the feasibility of this connection point is unknown and is subject to confirmation by Jemena after a Commercial Connection Application has been submitted and processed.

A potential pipeline route from the site to the existing gas main in Marco Avenue is presented in **Figure 1**. It is envisaged that this route would be within road reserve along Webster Avenue and Henry Lawson Drive, with the potential to traverse Kelso Park to provide the most direct route to the connection point in Marco Avenue subject to landowner approval.

A number of constraints would be posed by this route and would be subject to further assessment if connection is deemed to be feasible by Jemena. These constraints include crossing Henry Lawson Drive and Kelso Creek and obtaining consent from any landowners that may be affected by the pipeline construction.

6.2.2 Option B – Provision of LPG Tanks

This option would require on-site storage of LPG in an appropriately sized bulk storage tank or bottles. These vessels would be refilled on a regular basis by a gas supplier such as Elgas or Origin Energy. Based on the estimated gas demand for the development, two potential scenarios for LPG storage and the likely frequency of refill are presented below:

- 2 x 210kg bottles – each 760mm diameter, 1450mm high; refill approximately once every eight days.
- 1 x 1000kg tank – 1065mm diameter, 2200mm long; refill approximately once every three weeks.

A suitable location to site a gas tank or bottles is subject to confirmation. It is likely that the undercroft of the proposed building extension would be the most appropriate location.

6.2.3 Preferred Option

Option A is the preferred option for supplying gas to the proposed development as it would derive a number of benefits, including:

- Removing the need to store gas on-site.
- Lower operating costs compared to bottled gas.
- Providing a secure and reliable gas supply.

While this option is currently preferred for the reasons stated above, its feasibility is subject to confirmation from Jemena, as well as an assessment of the capital cost and constraints associated with the pipeline route.

7 ROADS AND DRAINAGE

7.1 Existing Services

The site is accessible from Webster Street which is an existing two-lane bitumen sealed road which provides access to Henry Lawson Drive. A concrete driveway then provides access to the bitumen surfaces car parking area and the clubhouse. An unpaved road provides access to the two boat launching ramps. A publicly accessible pathway extends along the foreshore.

Maxwell Avenue commences from just outside the site near the point of entry from Webster Street. It is unpaved and travels in a north-westerly direction over part of the site and then through the Council owned Deepwater Reserve until it meets the paved section of Maxwell Avenue. It is noted that the unpaved section of Maxwell Avenue is currently closed to vehicular access by gates.

Formal drainage infrastructure on the site is limited to a concrete culvert under the access road to the existing building.

7.2 Future Requirements

Existing roads and drainage infrastructure will be upgraded as part of the proposed redevelopment of the site. A new road will be constructed from the northern edge of the car parking area to provide service road access to the restaurant and a link to the unpaved Maxwell Avenue, which will be upgraded (raised) so that it can function as a flood emergency evacuation route. The proposed route that would provide flood evacuation from the site is presented on the Site Context Plan prepared by Axil Architects (refer to **Appendix 2**) and the Stormwater Management Plan prepared by WorleyParsons (refer **Appendix 6**).

8 CONCLUSION

This report documents the preferred infrastructure servicing strategy for the proposed development of Doltone House Deepwater at 30 Webster Street, Milperra. This strategy includes servicing requirements for securing supply of potable water, sewerage, electricity and gas for the proposed development.

In summary, the proposed servicing strategy would consist of the following augmentation works to existing infrastructure:

- **Potable Water**

  Construction of a new service connection between the site and Maxwell Avenue via the proposed flood evacuation route and Deepwater Reserve. The proposed pipeline would be aligned along the existing roadway edge and through a clearing in the reserve, thereby avoiding the need to remove vegetation.

  The requirements for a potable water connection to the site will be confirmed upon receipt of a Notice of Anticipated Requirements from Sydney Water, which is expected to be issued prior to May 2014.

- **Sewerage**

  Removal of the existing septic tank and construction of a package pump station with an emergency storage tank. The pump station would be owned and operated by the property owner and would discharge via the existing 80 mm effluent main into Sydney Water's sewerage system adjacent to Maygar Close, Milperra.

  The requirements for sewerage servicing will be confirmed upon receipt of a Notice of Anticipated Requirements from Sydney Water, which is expected to be issued prior to May 2014.

- **Electricity**

  Pending confirmation of the power demand for the development, a kiosk substation may need to be constructed within the existing electricity easement on the site.

  The requirements for any electricity upgrades will be confirmed upon submission of a formal connection application to Ausgrid.

- **Gas**

  Construction of a service connection between the site and Jemena's existing gas network at Marco Avenue, East Hills. The feasibility of this connection will be confirmed by Jemena upon completion of a Connection Application.

- **Roads and Drainage**

  Upgrades will be undertaken to all internal roads and drainage and Maxwell Avenue will be raised to form a flood evacuation route through Deepwater Reserve which will connect the site to Henry Lawson Drive.

9 REFERENCES

- NSW Department of Local Government (*January 1998*), *'On-site Sewage Management for Single Households'*
- NSW Health Department (*December 2001*), *'Septic Tank and Collection Well Accreditation Guideline: Part 4 Local Government (Approvals) Regulation, 1999*.

Appendix 1 Sewer Location Diagram

M.W.S. & D.B.

CITY OF Bankstown. Copy of Diagram No. 493121.

SUBURB OF Bankstown.

SYMBOLS AND ABBREVIATIONS

■	Manhole	⊠	Gully	O WS	Waste Stack	H	Handbasin
□ chr	Chamber	⊠ P	P Trap	IP	Inlet Pipe	S	Shower
●	[illegible]	■	Reflux Valve	MF	[illegible] Flap	Jn.	Junction
⌑	[illegible] Trap		[illegible] Eye	T	[illegible]	DW.	Dishwasher
●	Inspection Shaft	O Vent	Vent Pipe	K	[illegible] Sink	F	Floor [illegible]
■ Pit	Pit	C V	Vent Pipe	W	Water Closet	M	Washing Machine
⊟ G	Grease Intercepter	O SV	Soil Vent Pipe	B	Bath Waste	BS	Bar Sink

SEWER AVAILABLE

[illegible] is not available and a [illegible] inspection [illegible] the Board accepts no responsibility for the suitability of the drainage [illegible] ... sewerage service shown as existing in Board's records (By-law 8, [illegible] ... [illegible] of maps [illegible] ... structures, boundaries [illegible] shown hereon are approximate only.

Detail Sheet 05-56 & 05244.

Outfall S.W.

B.T.N.R

Scale 1:2000.

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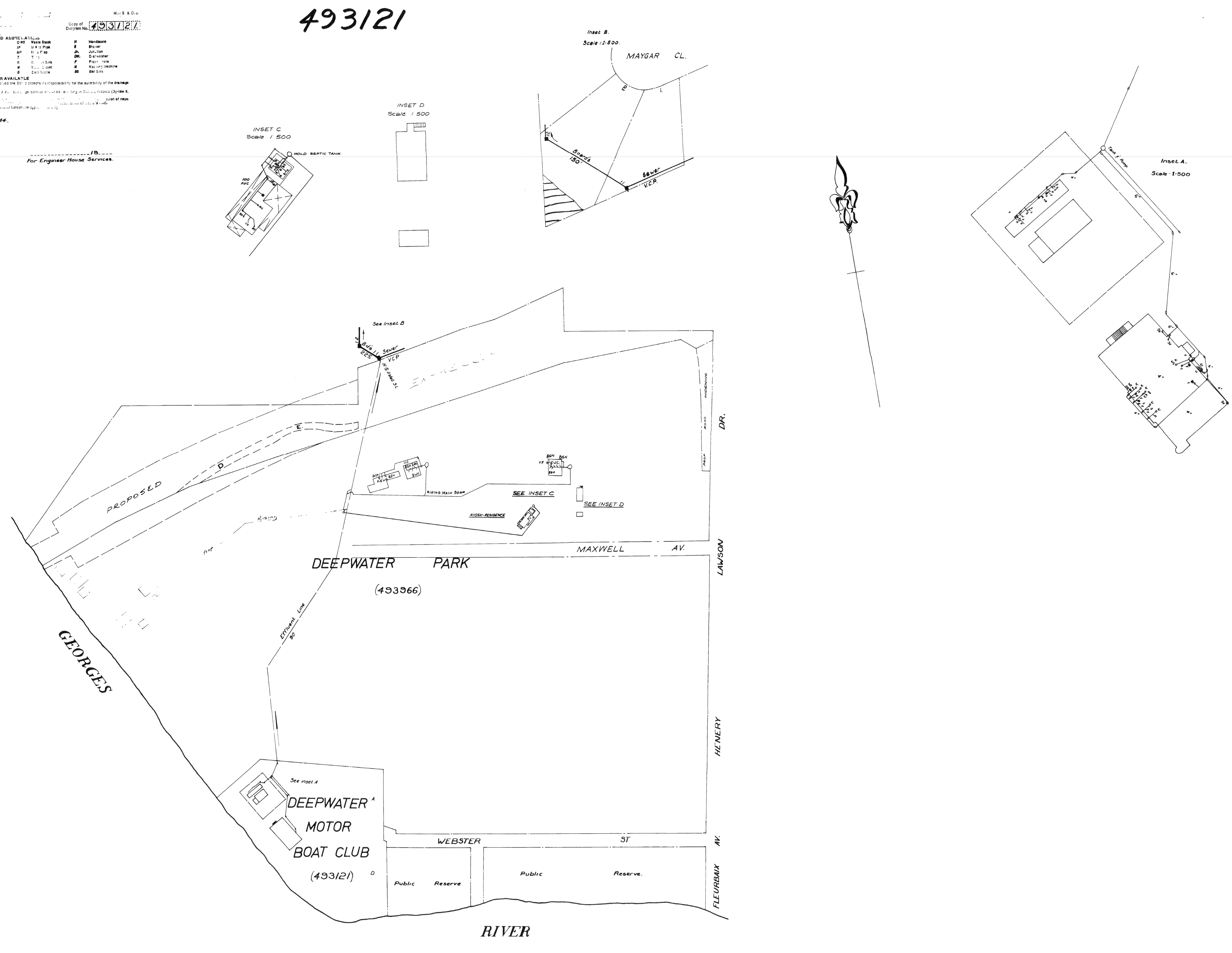
For Engineer House Services.



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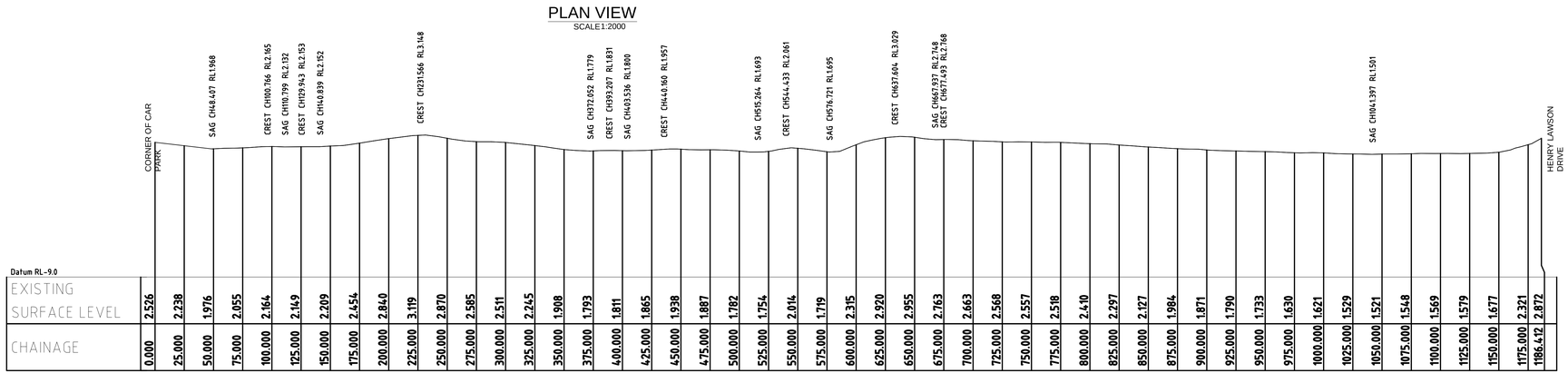
Appendix 2 Site Context Plan

Prepared by Axil Architects, 7th March 2014



PLAN VIEW

SCALE1:2000

DETAIL A: CAR PARK PLAN

SCALE1:500

Datum RL-9.0

EXISTING SURFACE LEVEL	2.526	2.238	1.976	2.055	2.164	2.149	2.209	2.454	2.840	3.119	2.870	2.585
CHAINAGE	0.000	25.000	50.000	75.000	100.000	125.000	150.000	175.000	200.000	225.000	250.000	275.000

EXISTING SURFACE LEVEL	2.511	2.245	1.908	1.793	1.811	1.865	1.938	1.887	1.782	1.754	2.014	1.719
CHAINAGE	300.000	325.000	350.000	375.000	400.000	425.000	450.000	475.000	500.000	525.000	550.000	575.000

EXISTING SURFACE LEVEL	2.315	2.920	2.955	2.763	2.663	2.568	2.557	2.518	2.410	2.297	2.127	1.984
CHAINAGE	600.000	625.000	650.000	675.000	700.000	725.000	750.000	775.000	800.000	825.000	850.000	875.000

EXISTING SURFACE LEVEL	1.871	1.790	1.733	1.630	1.621	1.529	1.521	1.548	1.569	1.579	1.677	2.321	2.872
CHAINAGE	900.000	925.000	950.000	975.000	1000.000	1025.000	1050.000	1075.000	1100.000	1125.000	1150.000	1175.000	1186.412

CL01 LONGITUDINAL SECTION

Horiz. Scale 1:2000
Vert. Scale 1:200

DIAL 1100
BEFORE YOU DIG

UNLESS DETAILED ON THIS
DRAWING ALL WORK SHALL
CONFORM TO AUS SPEC

ISSUE	AMENDMENTS	DATE
DA	DEVELOPMENT APPLICATION	07.03.2014

Client:
doltone house

Architect:
Axilarchitects
Architecture | Interior Design | Planning

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w: www.axil.com.au
ABN:53 095 103 281

Project

STAGE 1
DOLTONE HOUSE MILPERRA
DEEPWATER MOTORBOAT CLUB
30 WEBSTER STREET, MILPERRA, NSW

Title:

SITE CONTEXT PLAN AND
EVERGENCY EVACUATION ROUTE

Scale:
1:100 & 1:50 @ A1

Drawn:	Checked By:	Date:
BG	D.H.	OCT 2013
Job Number:	Drawing Number:	Issue:
266-13	A 1.02	DA

Z:\PROJECTS\2013\266-13 DOLTONE HOUSE-MILPERRA\CAD\WORKING DRAWINGS

DEVELOPMENT APPLICATION