Dicker Data 238 – 258 Captain Cook Drive, Kurnell

Commercial Development

State Significant Development- Secretary Environment Assessment Requirements
Hydraulic Services Assessment

Prepared for:

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04.04.18

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Project Number: 6152

Revision

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000	08.12.17	Client Review	MB
001	30.01.18	Client Review	MB
002	08.02.18	Final	MB
003	27.02.18	Updated Final	MB
004	04.04.18	Updated Final	MB

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Introduction

The Secretary Environment Assessment Requirements (SEAR) Hydraulic Services Assessment Brief has been prepared at the request of Devkon Developments for the development of the proposed site at 238 - 258 Captain Cook Drive, Kurnell.

The proposed development site has frontage to Captain Cook Drive bounded by Commercial buildings on each three boundaries.

This report comprises of Harris Page and Associates review of SEARS report for the proposed development and services information received from each Authority and design intent.

Scope of Services

Authority Hydraulic Services included within this assessment are as follows:

Service	Authority
Sewer Drainage	Sydney Water Corporation
Potable Cold Water	Sydney Water Corporation
Gas (Natural)	Jemena

Project Description

In accordance with concept Architectural plans received the proposed development comprises a Office and Warehouse and generally as follows:

Ground Level
- Entry and Common Areas
- Cafe
- Office
- Warehouse
- Carpark
- Loading Dock

Level 1
- Office

Level 2
-Office

Roof
- Office and Warehouse Roof

Section 78A (8A) of the Environmental Planning and Assessment Act 1979 – State Significant Development

Soils and Water

A description of the water demands and a breakdown of water supplies

The potable cold water demands for the development serve sanitary fixtures (showers, basins, kitchen sinks), cafe, potable cold water rainwater reuse top up (refer to the table below)

A description of measures to minimise water use
The installation of rainwater reuse tank is to serve the development sanitary fixtures (water closet and urinals) and irrigation. The rainwater reuse tank shall be sized to serve 13,781m^2 of irrigated land and all sanitary fixtures in accordance with Bureau of Methodology average monthly rainfall. Potable cold water to rainwater tank top up will be required only to serve in periods when there is no rainfall (refer to the table below).

Average Daily Water Usage Demands	
548 People Occupancy	
Potable Water	
Fixture	Flow Rate
Shower	25 PEOPLE X 5M SHOWER = 1125L
Kitchen Sink	2L PER PERSON /DAY = 1096L
Basin	2L PER PERSON /DAY = 1096L
CAFÉ	150L PER HOUR /8 HOURS 1,200L
Rainwater Reuse Top Up	Approx 3000L per day (back up supply if required)
	Total 7,517L per day or 13.71L /PER PERSON
Rainwater Reuse Water	
Fixture	Flow Rate
Water Closet	Male /Female 1 x time a day at 4.5L and Female 4 Times at 3L 2 x 4.5L = 9 X 548 = 4932L 3 x 3L = 9 X 274 =2466L
Urinal	Male 3 x times a day 3x 1L = 3 X 274 = 822L
Irrigation	Average of 13,000L per day over 1 year
	Total 21,220L per day or 15L /PER PERSON

An assessment of the volumetric water licensing requirements
The development does not require a volumetric water license. Potable cold water to serve the development shall be from Sydney Water - water main located in Captain Cook Drive to serve sanitary fixtures, cafe, rainwater reuse top up, fire sprinkler and fire hydrants (refer to Appendix A and F)

A description of all wastewater generated onsite and consideration of options to avoid and/ or minimise discharge form the site
Approximately 8000m^2 of warehouse roof shall reticulate to the rainwater reuse tank to serve sanitary fixtures and irrigation for the development. When the rainwater reuse tank is full, the overflow from the rainwater reuse tank will discharge into main stormwater line through the detention tank.

Waste

Details of any proposed sewage treatment

The drainage to serve the cafe shall discharge through a 2000L grease arrestor and then reticulate to 20,000L collection tank (refer to Appendix B). The Sydney Water sewer main is rising main, it is located in Captain Cook Drive and sized at 200mm. It requires a pump discharge connection from the 20,000L collection tank to the rising main (Refer to Appendix F).

Infrastructure Requirements

A detailed description of the infrastructure and essential services required for the development

Sydney Water

Located on Captain Cook Drive is 300mm Authority Water Main to serve sanitary fixtures, cafe, rainwater reuse top up ,fire sprinklers and fire hydrants.
Located on Captain Cook Drive is 200mm Authority sewer rising main to serve sanitary fixtures and trade waste from the cafe (Refer to Appendix A and Appendix F)

Jemena

Located on Captain Cook Drive is a 300mmm gas main at 1050 kPa to serve Mechanical plant, cafe and heating (Refer to Appendix A and Appendix E).

Identification of any infrastructure upgrade required

Sydney Water

Submitted a Sydney Water Services Feasibility Assessment via Water Service Coordinator (RMA Infrastructure) on the development approximate water and waste water usage for sanitary fixtures. The feasibility study was received on the 23rd of January 2018. Sydney Water can accommodate the development proposed water and waste water usage with connection to the 300mm water main and 200mm sewer rising main. Once D.A is approve for the development an application is to be lodge for Section 73 Certificate to Sydney Water (Refer to Appendix C and D)

Jemena

Harris Page and Associates have been in consultation with Jemena on potential gas loads for development. Base of the potential gas loads subject to design development Jemena can meet the development requirements.

OUT 17/32026 – Department of Primary Industries

Department of Primary Industries

Assessment of any volumetric water licensing requirements (including those for ongoing water take following completion of construction)
The development does not require a volumetric water license. Potable cold water to serve the development will be from Sydney Water -water main located in Captain Cook Drive to serve sanitary fixtures, café, rainwater reuse top up, fire sprinkler and fire hydrants (refer to Appendix A and F)

DOC17/404720-01- Department of Planning and Environment

Department of Planning and Environment

Water Quality-

1) **Promotes integrated water cycle management that optimises opportunities for sustainable water supply, wastewater and stormwater management and reuse initiatives where it is safe and practicable to do so.**

The installation of rainwater reuse is to serve the development sanitary fixtures (water closet and urinal) and irrigation. The rainwater reuse tank shall be sized to serve 13781m2 of land to be irrigated and all sanitary fixtures in accordance with Bureau of Methodology average monthly rainwater data. Potable cold water to rainwater tank will be required only to serve in periods when there is no rainfall.

2) **Information on any stormwater reuse, retention and detention strategies to minimise changes to hydrological (flow) regime of receiving waterways.**

Approximately 8000m^2 of warehouse roof shall reticulate to the rainwater reuse tank to serve sanitary fixtures and irrigation for the development. Once the rainwater reuse tank is full, the overflow from the tank will discharge in stormwater line through the detention tank.

3) **The EA should provide information on the sewage management arrangements for the projects. If connection is proposed to the existing Sydney Water system , the EA should document these discussions with Sydney Water . It should demonstrate it can cater for any new loads. Information should be sought on whether any additional load will impact the system environmental performance, especially in relation to sewage overflows from any existing sewage pumping stations and discharge from any associated sewerage treatment plant. The EPA policy is that for new systems there should be no pollution of waters, as a result of overflows during dry weather and that overflows during wet weather should be avoided.**

The drainage to serve the cafe shall discharge through a 2000L grease arrestor and then The drainage to serve the cafe will discharge through a 2000L grease arrestor and then reticulate to 20,000L collection tank (refer to Appendix B). The Sydney Water sewer main is rising main, it is located in Captain Cook Drive and sized at 300mm. It requires a pump discharge connection from the 20,000L collection tank to the rising main (Refer to Appendix A).

Submitted a Sydney Water Services Feasibility Assessment via Water Service Coordinator (RMA Infrastructure) on the development approximate water and waste water usage for sanitary fixtures. The feasibility study was received on the 23rd of January 2018. Sydney Water can accommodate the development proposed water and waste water usage with connection to the 300mm water main and 200mm sewer rising main. Once D.A is approve for the development an application is to be lodge for Section 73 Certificate to Sydney Water (Refer to Appendix C and D)

Sydney Water

Infrastructure Requirements

1) **The proponent should demonstrate demands and satisfactory servicing arrangements for drinking water, wastewater and recycled water (if required).**

Submitted a Sydney Water Services Feasibility Assessment via Water Service Coordinator (RMA Infrastructure) on the development approximate water and waste water usage for sanitary fixtures. The feasibility study was received on the 23rd of January 2018. Sydney Water can accommodate the development proposed water and waste water usage with connection to the 300mm water main and 200mm sewer rising main. Once D.A is approve for the development an application is to be lodge for Section 73 Certificate to Sydney Water (Refer to Appendix C and D)

Average Daily Water Usage Demands	
470 People Occupancy	
Potable Water	
Fixture	Flow Rate
Shower	20 PEOPLE X 5M SHOWER = 900L
Kitchen Sink	2L PER PERSON /DAY = 940L
Basin	2L PER PERSON /DAY = 940L
CAFÉ	150L PER HOUR /8 HOURS 1,200L
Rainwater Reuse Top Up	Approx 3000L per day (back up supply if required)
	Total 6,980L per day or 14.85L /PER PERSON
Rainwater Reuse Water	
Fixture	Flow Rate
Water Closet	Male /Female 1 x time a day at 4.5L and Female 4 Times at 3L 2 x 4.5L = 9 X 470 = 4230L 3 x 3L = 9 X 235 =2115L
Urinal	Male 3 x times a day 3x 1L = 3 X 235 = 705L
Irrigation	Average of 13,000 per day over 1 year
	Total 20,050L per day or 15L /PER PERSON

Integrated Water Cycle Management

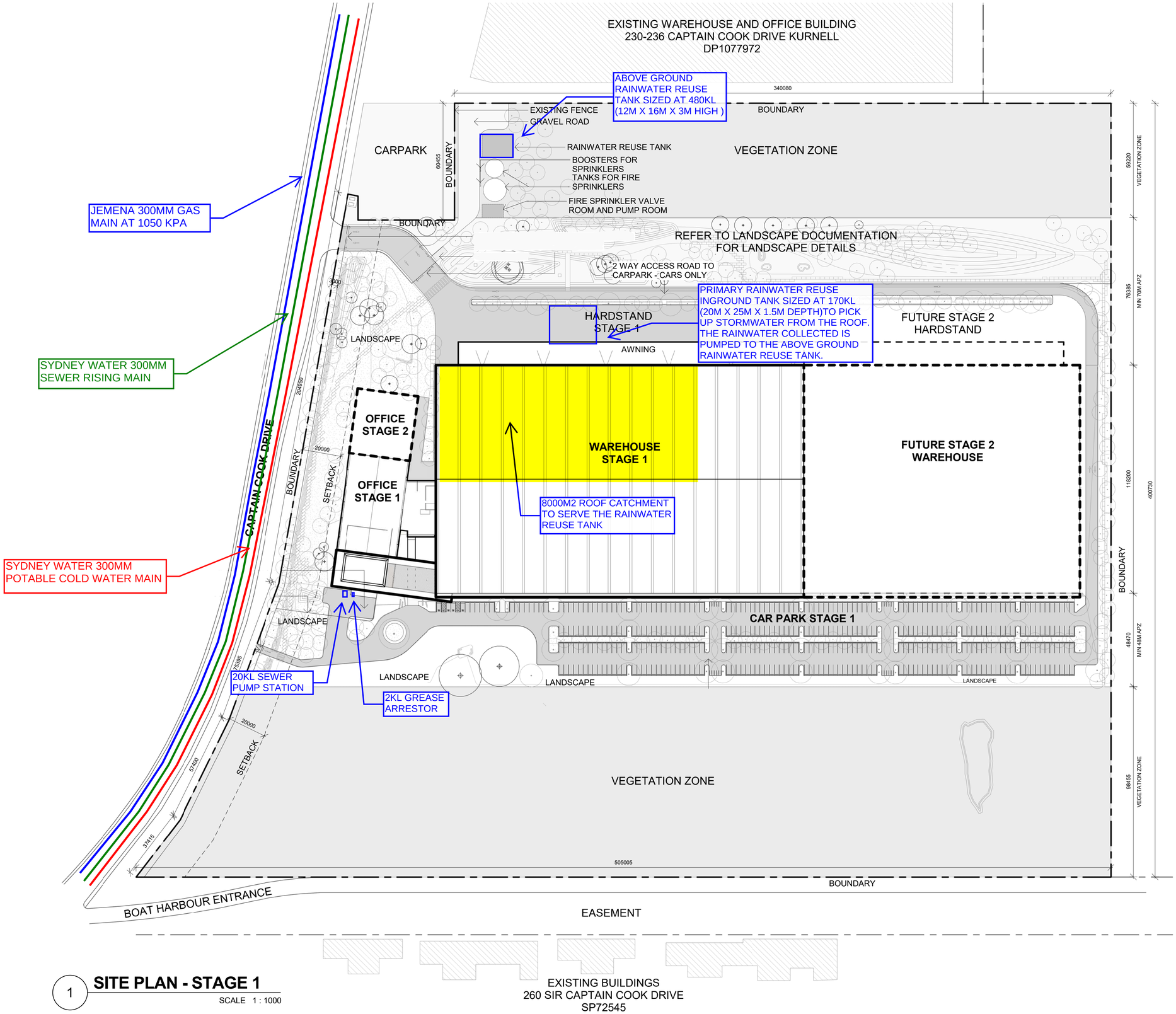
2) **The proponent should outline any sustainability initiative that will reduce the demand for drinking water including any proposed alternative water supply, proposed end uses of drinking and non-drinking water, demonstration of water sensitive urban design and any proposed water conservation measures. This will allow Sydney Water to determine the impact of the proposed development on our existing services and capacity to service the development.**

Approximately 8000m² of warehouse roof shall reticulate to the rainwater reuse tank to serve sanitary fixtures and irrigation for the development. Once the rainwater reuse tank is full, the overflow from the tank will discharge in stormwater line through the detention tank.

The installation of rainwater reuse tank is to serve the development sanitary fixtures (water closet and urinals) and irrigation. The rainwater reuse tank shall be sized to serve 13,781m² of irrigated land and all sanitary fixtures in accordance with Bureau of Methodology average monthly rainfall. Potable cold water to rainwater tank top up will be required only to serve in periods when there is no rainfall.

Appendix A

Site Plan



1 **SITE PLAN - STAGE 1**

SCALE 1 : 1000

PRELIMINARY

WMK Architecture
L1 346-348 Kent St
Sydney NSW 2000
Telephone 02 9299 0401
Facsimile 02 9299 0402
wmkarchitecture.com
ABN 25 082 956 929

0 1 2 3 4m 1:100

Issue	Description	Date

Client DICKER DATA PTY LTD

DICKER DATA

Project 238-258 CAPTAIN COOK DRIVE, KURNELL, NSW 2231

Title SITE PLAN STAGE 1

Drawing No.	Issue
DA001A	
Scale 1 : 1000@A1	**Drawing Size** A1
Project No. 16202	**Drawn By** PK
CAD Reference \DWG\-REVIT	

Dimensioned Drawings to take precedence over scaling. Contractor to verify all dimensions on site before construction. All inconsistencies to be reported to the Architect immediately. This drawing and its contents remain the copyright of WMK Architecture Pty Ltd ©

Appendix B

Sydney Water Pressure Sewerage Manual

Sydney WATER

Home owner's manual

Pressure sewerage system

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1 Introduction

This is your *Home owner's manual* for the pressure sewerage equipment located on your property. Please read this manual and store it in a safe place.

2 Emergency contact numbers

For emergency attendance to your wastewater system please call Sydney Water on **13 20 90** (24 hours). Let the operator know you are connected to a pressure sewerage system and have your SL number ready. The SL number is located on the alarm control panel.

3 What to do if the alarm sounds

When the collection/pump unit alarm sounds it will beep and a red light will come on. If this happens you should:

a **silence the alarm** by pressing the button under the alarm control panel. Please note that you cannot turn off the red light. It will turn off when the problem has been fixed and the collection/pump unit is working correctly

b **call Sydney Water** on **13 20 90** to report that the alarm has been activated.

Do not turn off the electricity supply at your electrical distribution board as this may result in wastewater overflows.

Power service interruption (blackouts)

If the alarm sounds immediately after a power service interruption, silence the alarm, but wait one hour before calling Sydney Water.

Storage inside the collection tank can reach the alarm level during power service interruptions but will return to normal once power is restored. If the red light has turned off after one hour, the system has returned to normal operation.

If the red light is still on after one hour please call Sydney Water.

During a power service interruption do not use more water than necessary for your essential daily needs.

c **minimise water going to the system** when the alarm is on (or during a power service interruption)

- Keep showers brief.
- After taking a bath, leave the plug in, or bucket water onto the lawn.
- Switch off any drainage (automated or manual) from swimming pools and spas.
- Do not leave taps running.
- Avoid using the washing machine unless you can direct the water to a plugged laundry tub (where it can be transferred by bucket onto the garden).
- Do not use dishwashers.

You can still use the wastewater system. Toilets can still be flushed and normal kitchen activities can proceed, just minimise water use.

If it appears that a power service interruption will be longer than eight hours, Sydney Water may visit your property to manually pump out wastewater from the collection/pump unit.

Ensure that Sydney Water can get access to the collection/pump unit. Please ensure any gates on your property to access the collection/pump unit are unlocked and animals are secured.

If the alarm sounds and then turns off regularly please consider the following:

- do you have an appliance connected to your plumbing that is emptying a large amount of water quickly into the drain?
- is the alarm sounding after rain? This may indicate rainwater is entering your sanitary drainage.

These issues will need to be investigated. Please report them to Sydney Water by calling **13 20 90**.

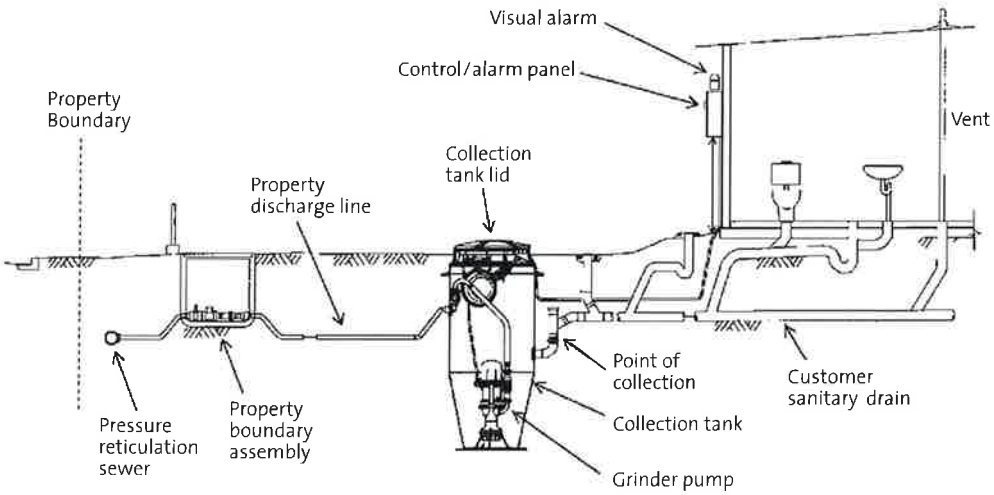
Continue to use your wastewater system as normal, and silence the alarm if it sounds.

4 The parts of the pressure sewerage system

Pressure sewerage systems have five main components:

1 a **property boundary kit** in a small pit
2 a **grinder pump** in a **collection tank**
3 a **property discharge line**
4 the **control/alarm panel**
5 the **customer sanitary drain**.

Figure 1 – Typical pressure sewerage system installation



4.1 Property boundary kit

Between our property discharge line and the main wastewater pipes there is a one-way valve and isolation valve. These will:

- prevent flows from other properties entering your property
- allow your property to be isolated for repairs
- allow flushing of the system if required.

Under no circumstances should you operate these valves.

4.2 Grinder pump

The grinder pump is housed within a collection tank on your property. The tank has mechanical and electrical parts. The grinder pump breaks up solids to allow them to be pumped through the property discharge line to our main wastewater pipes. The collection tank is buried on your property, but the top needs to stick out from the ground to allow access for servicing.

The collection tank should be about 150mm out of the ground at all times. This will allow access for service calls when required. The collection tank cover must not be buried or covered in any way.

4.3 Property discharge line

The property discharge line connects the collection/pump unit to the property boundary kit. This line is used to discharge wastewater from the property.

4.4 Control/alarm panel

The power and control functions for the pump are in a locked panel on the wall of your house, or on a freestanding post near the collection tank. An alarm will sound if there is a problem with the grinder pump (refer to Section 3).

Only Sydney Water staff can work or service the control/alarm panel.

The electrical equipment inside the control/alarm panel and the alarm light work on 240-volt power. Please tell Sydney Water of any damage to this installation. Please stay away from any damaged part.

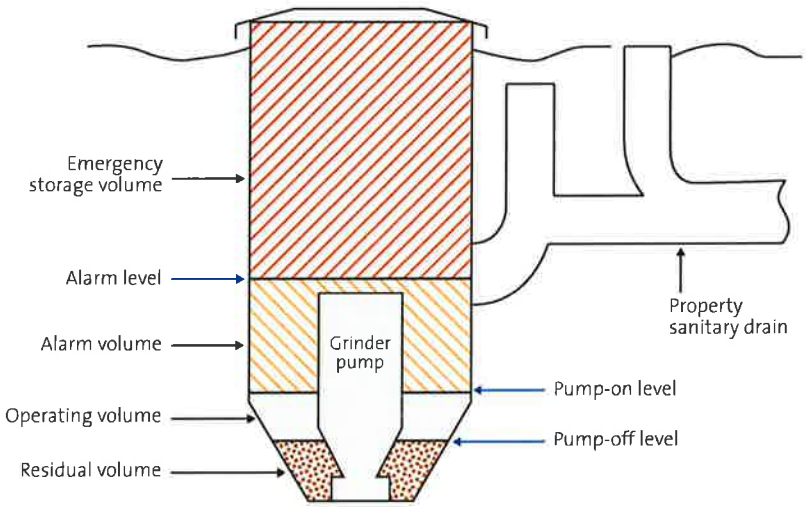
4.5 Customer sanitary drain

Your customer sanitary drain transfers the wastewater from your toilet and other sanitary fittings and drains to the collection tank.

5 How pressure sewerage systems work

Pressure sewerage systems differ from conventional gravity systems because they depend on a collection/pump unit to transfer wastewater off the property. A small collection/pump unit installed on the property pumps the wastewater into our main wastewater pipes.

Figure 2 – Cross section view of the collection/pump unit



The grinder pump works in the following way:

- The pump grinds up any solids in the tank so they can pass through the property discharge line to our main wastewater pipes.
- The collection tank will store household wastewater until the 'pump-on' level is reached. When this occurs the pump will automatically turn on and pump the wastewater to the main wastewater pipes.
- When the level of wastewater falls to the 'pump-off' level, the pump will automatically switch off.
- Typically a pumping cycle will take one to two minutes, and will occur several times a day.
- If the pump fails to operate, the level of wastewater will continue to increase until it reaches 'alarm level'. When this happens an alarm will sound and a light will flash on your alarm/ control panel. This level is about one third the total capacity of the tank, so there is still a lot of tank capacity after the alarm has been activated.
- The alarm may also be activated as a result of power returning after a power service interruption. In all cases the alarm will automatically turn off when the storage level drops below the alarm level. The audible alarm can be switched off by pressing the small button under the control/alarm panel.
- The collection tank has a maximum capacity of about 700 litres.

You can continue to use essential services after the alarm sounds. However, it is strongly recommended you minimise water use until the system is repaired (refer to Section 3c).

6 Special precautions

6.1 Going on holidays

Before you leave, you should:

- partially fill the bathtub and then release it into the drain or run your washing machine through a cycle. This will flush clean water through the system
- tell your neighbours what to do if the alarm goes off. They can contact Sydney Water in the event of an alarm
- not turn off the power to the collection/pump unit. If the power to the unit is turned off, the alarm will not sound to warn the neighbours if any problems occur.

It is highly unlikely that there will be an alarm incident while you are away on holidays, as no wastewater will be entering the system.

6.2 Items that should not be put down the sewer

Some things are not meant to go into the sewer and can block the property discharge line, damage the grinder pump, endanger our workers and cause environmental pollution.

The following must not to be discharged into this or any other household wastewater system under any circumstances:

- rocks, broken glass, sand, metal, seafood shells, kitty litter
- nappies, nappy liners, cotton buds, socks, rags, pantyhose, clothes, plastic objects, sanitary napkins or tampons
- paints (water soluble or oil based), explosives, flammable materials, lubricating oil, chemicals, grease, petrol, diesel
- milk, food scraps or cooking oil.

If you are in doubt about what you can put into the wastewater system, please call **13 20 90** or visit sydneywater.com.au

7 Repairs

Sydney Water will service and repair the main wastewater pipes and all of the pressure sewerage equipment on your property, provided it is used in accordance with this *Home owner's manual.*

The Sydney Water *Customer Contract* and the Pressure Sewerage System Agreement between the householder and Sydney Water outline your rights to ongoing maintenance and repairs of the pressure sewerage equipment on your property.

Sydney Water is not responsible for the customer sanitary drain to the collection tank, or the extension of the household electrical cable between your electrical distribution box and the control/alarm panel.

Repairs to the customer sanitary drain are your responsibility.

7.1 Warranties/repair costs

The cost of operating and servicing the wastewater system is included in the quarterly wastewater service charge paid by the property owner to Sydney Water.

The exceptions to this will be if you have:

- discharged something into the collection/pump unit that you have been told not to (refer to Section 6.2)
- interfered with the collection/pump unit, or its controls
- interfered with or damaged the property discharge line or property boundary assembly
- sealed off the venting to the collection/pump unit.

7.2 Service arrangements

In most cases repairs will involve replacing the grinder pump. This can be done on your property and should take less than one hour to complete once a service crew is on site.

8 Frequently asked questions

8.1 What do I do if I think a pipe has burst?

Wet ground or water eruptions from the ground between the collection tank and property boundary kit may indicate a burst property discharge line.

If the ground around the collection tank is wet or you suspect the property discharge line is damaged please call Sydney Water on **13 20 90** immediately (and turn off the power to the pump at your electrical distribution box).

Please minimise water use to the system (as suggested in section 3c) if you have a burst pipe.

8.2 What do I do if the alarm is activated when I am not at home?

The alarm will continue to sound until it is cancelled, and the red light will remain on. If you arrive home and the alarm is activated and the red light is on, please call Sydney Water on **13 20 90**.

If you allow your neighbours to access your property they may silence the alarm for you. If they do, they should call Sydney Water on your behalf.

8.3 Can I put anything on top of the collection tank cover?

The collection tank cover is safe to walk over but vehicles must be kept off it.

8.4 Can roof and rainwater be discharged into the pressure sewerage system?

The pressure sewerage system is **not** designed for stormwater. Sydney Water prohibits the discharge of stormwater into any wastewater system.

The wastewater system is sealed and therefore no stormwater should enter it. If stormwater does enter, the grinder pump may not be able to keep up with the extra flow. This could cause an overflow on your property and the alarm to activate.

If you notice the alarm activating regularly, after or during rain, please contact Sydney Water so we can investigate.

8.5 What do I do if I want to build a garage, car port or garden shed in the future?

No temporary or permanent structure can be built over or near the property discharge line or the collection/pump unit without Sydney Water's approval.

8.6 What do I do if I want to build an extension to my house?

The property discharge line can be moved to extend the house or build a swimming pool, shed etc. When considering any modifications to your property, you should check the property wastewater service diagram to locate the pressure sewerage equipment and plan your work with that in mind.

Call Sydney Water to know what is involved in relocating any of our assets.

You should not build over or near the collection/pump unit or the property discharge line without approval from Sydney Water.

If you want to build in this location, please call Sydney Water on 13 20 90.

8.7 Can I still landscape my garden?

Yes, but it is important that there is enough space available to access the collection/pump unit at all times (in case servicing is required).

Landscaping over the property discharge line is permitted, provided the collection tank cover remains accessible for service, and is not covered or put into a low-lying depression.

If the property discharge line requires repairs, Sydney Water will need to access it. If landscaping needs to be removed, Sydney Water will try to minimise disruption to the garden.

8.8 Can I install a swimming pool or large spa?

If you already have a swimming pool or large spa, you should continue to dispose of water or backwash from it in the same way.

If your local council requests that you discharge water or backwash into the wastewater system, or if you are proposing to install a new swimming pool or large spa, water could enter the collection/pump unit faster than the system can pump it out. This will cause the alarm to sound, and may also cause an overflow.

In this case you will have to install an additional collection tank on your property, at your cost. This will hold any backwash (or other cycle) and will progressively release water into the customer sanitary drain at a rate of less than 30 litres per minute.

This will avoid nuisance alarms and unnecessary Sydney Water call outs to the property.

8.9 What happens if I have a party at my house?

The system is designed to accommodate sudden increases in wastewater caused by parties or large numbers of visitors. This will not affect the pressure sewerage system.

Contact us

Visit **www.sydneywater.com.au**

Enquiries
Call 13 20 92

Service difficulties and emergencies
Call 13 20 90

Postal address
Sydney Water
PO Box 399
Parramatta NSW 2124

SW122 11/13 Printed on recycled paper

Appendix C

Sydney Water Feasibility Study

Case Number: 168061

23 January 2018

DEVKON
c/- RMA INFRASTRUCTURE PTY LTD

FEASIBILITY LETTER

Developer:	**DEVKON**
Your reference:	**W-10987**
Development:	**Lot 1 DP225973 238-258 CAPTAIN COOK DR, Kurnell**
Development Description:	**Proposed office and warehouse**
Your application date:	**20 November 2017**

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Developer Works Deed (Deed) or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:

- if you change your proposed development eg the development description or the plan/ site layout, after today, the requirements in this Letter could change when you submit your new application; and

- if you decide to do your development in stages then you must submit a new application

(and pay another application fee) for each stage.

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

What You Must Do To Get A Section 73 Certificate In The Future.

To get a Section 73 Certificate you must do the following things. You can also find out about this process by visiting www.sydneywater.com.au > Plumbing, building & developing > Developing > Land development.

1. **Obtain Development Consent from the consent authority for your development proposal.**

2. **Engage a Water Servicing Coordinator (Coordinator).**

   You must engage your current or another authorised Coordinator to manage the design and construction of works that you must provide, at your cost, to service your development. If you wish to engage another Coordinator (at any point in this process) you must write and tell Sydney Water.

   For a list of authorised Coordinators, either visit www.sydneywater.com.au > Plumbing, building & developing > Developing > Providers > Lists or call **13 20 92.**

   The Coordinator will be your point of contact with Sydney Water. They can answer most questions that you might have about the process and developer charges and can give you a quote or information about costs for services/works (including Sydney Water costs).

3. **Developer Works Deed**

   After the Coordinator has submitted your new application, they will receive the Sydney Water Notice and Developer Works Deed. You and your accredited Developer Infrastructure Providers (Providers) will need to sign and lodge both copies of the Deed with your nominated Coordinator. After Sydney Water has signed the documents, one copy will be returned to the Coordinator.

   The Deed sets out for this project:

   - your responsibilities;
   - Sydney Water's responsibilities; and
   - the Provider's responsibilities.

   You must do all the things that we ask you to do in that Deed. This is because your development does not have sewer services and you must construct and pay for the following works extensions under this Deed to provide these services.

   Note: The Coordinator must be fully authorised by us for the whole time of the agreement.

4. **Water and Sewer Works**

   4.1 **Water**

   Your development must have a frontage to a water main that is the right size and can be used for connection.

Sydney Water has assessed your application and found that:

- The 300mm CICL water main in Captain Crook Drive is available to serve your proposed development.

4.2 Sewer

Your development must have a sewer main that is the right size and can be used for connection. That sewer must also have a connection point within your development's boundaries.

Sydney Water has assessed your application and found that:

- **You must construct a waste water main extension to serve your development**. The terms of the Deed define this extension as 'Major Works'.
- Wastewater services in this area are provided via a low pressure sewerage system.
- A connection will need to be made into the 200HDPEP to provide a connection point within the boundary or Right Of Carriage Way and Easement for Services of your lot. This will consist of a sewer lateral and a boundary kit.
- Sydney Water's ability to provide a sewer service is limited by available capacity in the existing system.
- The developer will be required to install on-site sewage collection tanks and pump from these tanks. The pump and tank and alarm equipment will be owned and maintained by the property owner and is at the property owners cost.
- The developer is responsible for submitting to SWC the preliminary sizing of the pumped main and the basis for the sizing. The flow from the development should also be restricted to a maximum of 2 l/s. You are required to make a "Pump to Sewer" application to connect through the Sydney Water Tap in service. Visit sydneywater.com.au under "Plumbing, building and developing > Connections & disconnections > Apply to connect" or Sydneywater.com.au/tapin.

5. Ancillary Matters

5.1 Asset adjustments

After Sydney Water issues this Notice (and more detailed designs are available), Sydney Water may require that the water main/sewer main/stormwater located in the footway/your property needs to be adjusted/deviated. If this happens, you will need to do this work as well as the extension we have detailed above at your cost. The work must meet the conditions of this Notice and you will need to complete it **before we can issue the Certificate**. Sydney Water will need to see the completed designs for the work and we will require you to lodge a security. The security will be refunded once the work is completed.

5.2 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have the written permission of the

relevant property owners and tenants. You must use Sydney Water's **Permission to Enter** form(s) for this. You can get copies of these forms from your Coordinator or the Sydney Water website. Your Coordinator can also negotiate on your behalf. Please make sure that you address all the items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce their impacts. You will be responsible for all costs of mediation involved in resolving any disputes. Please allow enough time for entry issues to be resolved.

5.3 Costs

Construction of these **future** works will require you to pay project management, survey, design and construction costs **directly to your suppliers**. Additional costs payable to Sydney Water may include:

- water main shutdown and disinfection;
- connection of new water mains to Sydney Water system(s);
- design and construction audit fees;
- contract administration, Operations Area Charge & Customer Redress prior to project finalisation;
- creation or alteration of easements etc; and
- water usage charges where water has been supplied for building activity purposes prior to disinfection of a newly constructed water main.

Note: Payment for any Goods and Services (including Customer Redress) provided by Sydney Water will be required prior to the issue of the Section 73 Certificate or release of the Bank Guarantee or Cash Bond.

Your Coordinator can tell you about these costs.

OTHER THINGS YOU MAY NEED TO DO

Shown below are other things you need to do that are NOT a requirement for the Certificate. They may well be a requirement of Sydney Water in the future because of the impact of your development on our assets. You must read them before you go any further.

Approval of your building plans

Please note that your building plans must be approved. This can be done at Sydney Water Tap in™. Visit www.sydneywater.com.au > Plumbing, building & developing > Building > Sydney Water Tap in™ or call 13 20 92.

This is not a requirement of the Certificate but the approval is needed because construction/ building works may impact on existing Sydney Water assets (e.g. water and sewer mains). In any case, these works MUST NOT commence until Sydney Water has granted approval.

Your Coordinator can tell you about the approval process including:

- Possible requirements;

- Costs; and
- Timeframes.

Note: You must obtain our written approval before you do any work on Sydney Water's systems. Sydney Water will take action to have work stopped on the site if you do not have that approval. We will apply Section 44 of the *Sydney Water Act 1994.*

Disused Sewerage Service Sealing

Please do not forget that you must pay to disconnect all disused private sewerage services and seal them at the point of connection to a Sydney Water sewer main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed drainer. The licensed drainer must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Soffit Requirements

Please be aware that floor levels must be able to meet Sydney Water's soffit requirements for property connection and drainage.

Fire Fighting

Definition of fire fighting systems is the responsibility of the developer and is not part of the Section 73 process. It is recommended that a consultant should advise the developer regarding the fire fighting flow of the development and the ability of Sydney Water's system to provide that flow in an emergency. Sydney Water's Operating Licence directs that Sydney Water's mains are only required to provide domestic supply at a minimum pressure of 15 m head.

A report supplying modelled pressures called the Statement of Available pressure can be purchased through Sydney Water Tap in™ and may be of some assistance when defining the fire fighting system. The Statement of Available pressure, may advise flow limits that relate to system capacity or diameter of the main and pressure limits according to pressure management initiatives. If mains are required for fire fighting purposes, the mains shall be arranged through the water main extension process and not the Section 73 process.

Large Water Service Connection

A water main are available to provide your development with a domestic supply. The size of your development means that you will need a connection larger than the standard domestic 20 mm size.

To get approval for your connection, you will need to lodge an application with Sydney Water Tap in™. You, or your hydraulic consultant, may need to supply the following:

- A plan of the hydraulic layout;
- A list of all the fixtures/fittings within the property;

- A copy of the fireflow pressure inquiry issued by Sydney Water;
- A pump application form (if a pump is required);
- All pump details (if a pump is required).

You will have to pay an application fee.

Sydney Water does not consider whether a water main is adequate for fire fighting purposes for your development. We cannot guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

Disused Water Service Sealing

You must pay to disconnect all disused private water services and seal them at the point of connection to a Sydney Water water main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed plumber. The licensed plumber must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Other fees and requirements

The requirements in this Notice relate to your Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements. These include:

- plumbing and drainage inspection costs;
- the installation of backflow prevention devices;
- trade waste requirements;
- large water connections and
- council fire fighting requirements. (It will help you to know what the fire fighting requirements are for your development as soon as possible. Your hydraulic consultant can help you here.)

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

END

W-_____

Section 73 Application Entry Form

Is the Developer the same as the Applicant? ☒ Yes ☐ No

If yes please provide both Applicant and Developer Information, If no only provide Developer Information

Applicant Information		Developer Information	
Name:	Mark Bramble/Harris Page and Associates	Name:	Devkon
ABN/ACN:	79008548098	ABN/ACN:	N/A
Address:	2/32 Carrington St Sydney	Address:	1-15 Barr St, Balmain, NSW 2041
Phone:	9262 1600	Phone:	0435846040
Email:	mbramble@harrispage.com.au	Email:	djones@devkon.com.au

Development Location

Lot No.:_____ Deposited Plan No. _____

Street No.: 238-258 Street Name: Capatin Cook Dr Suburb: Kurnell

Property Use

Developed ☒ Vacant ☐

Proposed Development

Commercial: ☒ Residential ☐ Industrial: ☐ Rural: ☐

Mixed: ☐ Special: ☐ Dual Occupancy: ☐ Other: ☐

If other please provide a description: Office and warehouse

Subdivision Required ☐ Yes ☒ No (if Yes please ensure you have submitted a PPN certificate with this form)

Consent Information

Authority: _____ DA No.: n/a Operation Date: _____

	Expected Demands				
Service	**Average (KL/Day)**	**Maximum (KL/Day)**	**Peak (L/Sec)**	**Usage Pattern**	**Automatic Timer**
Water	7	16	3	8h	N/A
Waste Water	12.8	12.8	1	8h	N/A
Recycled Water	7	7	1.10	8h	N/A
Irrigation System	1	1	.5	1h	yes
Process Water					N/A

Service	No. Fire Hose Reels	Fire Hydrant	Fire Sprinkler	Wall Drencher
Fire Fighting	25	yes	yes	yes

Appendix D

Sydney Water Pressure and Flow Statement

Statement of Available Pressure and Flow

Sydney WATER

Michael Lock
Carrington Street
Sydney, 2000

Attention: Michael Lock Date: 10/06/2017

Pressure & Flow Application Number: 245275
Your Pressure Inquiry Dated: 2017-05-19
Property Address: 238-258 Captain Cook Drive, Kurnell 2231

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Captain Cook Drive	Side of Street: South
Distance & Direction from Nearest Cross Street	750 metres West from Sir Joseph Banks Drive
Approximate Ground Level (AHD):	4 metres
Nominal Size of Water Main (DN):	300 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	108 metre head
Minimum Pressure	45 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	45
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5	46
	10	46
	15	45
	20	45
	26	45
	30	45
	40	45
	50	45
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	5	45
	10	44
	15	44
	20	44
	26	44
	30	44
	40	44
	50	44
Maximum Permissible Flow	120	41

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

connections@sydneywater.com.au

Appendix E

Jemena Dial Before You Dig

Network Protection

High Pressure - Assets Affected

In reply to your enquiry, there are **High Pressure Gas Mains** in the vicinity of your intended work, as generally illustrated on the attached map. There may also be other mains or services at the location, as discussed in the warning below. For an explanation of the map, please see the key below.
The following excavations guidelines apply:

Excavation Guidelines:

Prior to **any** excavations in this area, you ***must*** contact the High Pressure Response Coordinator on **1300 665 380**. ***(Appointments will be coordinated with availability of a Jemena Representative)*** to arrange a survey. For all works in the vicinity of High Pressure Gas Mains you must arrange for a Jemena Representative to attend and supervise all excavations. Charges apply for attendance of any works outside the hours of 7am to 4pm, Monday to Friday ("**Standard Business Hours**") and for any attendance during Standard Business Hours that is longer than 2 hours.
In accordance with clause 34(5) of the Gas Supply (Safety and Network Management) Regulation 2013 (NSW), you should be informed that all excavation, (including pot-holing by hand to confirm the location of pipes) should be performed in accordance with "***Work Near Underground Assets Guideline"*** *published in 2007 by the Work Cover Authority.*
A copy of this Guideline is available at: www.workcover.nsw.gov.au

KEY

	MAX ALLOWABLE OPERATING PRESSURE	
T	TRUNK PIPELINE	7000 kPa
P	PRIMARY MAIN	3500 kPa
S	SECONDARY MAIN	1050 kPa
400	NETWORK MAIN	400 kPa
	NETWORK MAIN	300 kPa
	NETWORK MAIN	210 kPa
100	NETWORK MAIN	100 kPa
30	NETWORK MAIN	30 kPa
	NETWORK MAIN	7 kPa
	NETWORK MAIN	2 kPa
	PROPOSED MAINS	

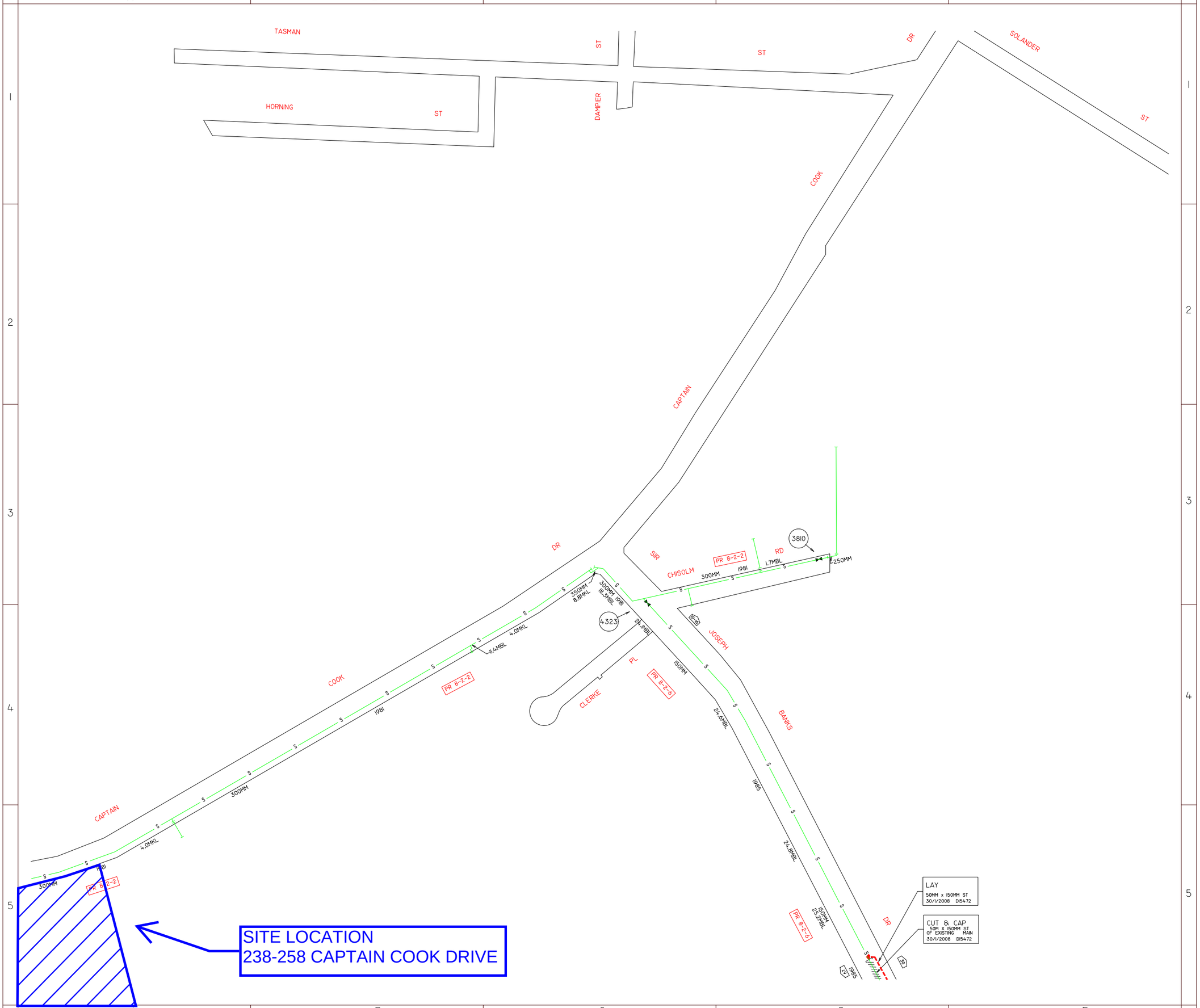
	VALVE
S	SYSTEM PRESSURE REGULATOR
	SIPHON
123	NETWORK NODE
123S	NETWORK VALVE NODE
1298	VALVE NUMBER
6NB	6 INCH CAST IRON MAIN
150MM	150MM STEEL MAIN
110MM PE/NY	110MM POLYETHYLENE/NYLON MAIN
6 NB 50MM NY	50MM NYLON INSERTED INTO 6NB CAST IRON MAIN
1.2MBL	DISTANCE IN METRES OF MAIN FROM BOUNDARY LINE
1957	YEAR LAID
123	HOUSE NUMBER
P	PRESSURE MONITORING STATION
	MUNICIPALITY BOUNDARY
	NETWORK BOUNDARY
PR 11-2 3	STEEL MAIN PROJECT NUMBER

Warning: The enclosed plans show the position of Jemena Gas Networks (NSW) Ltd's underground gas mains and installations in public gazetted roads only. **Individual customers' services and services belonging to other third parties are not included** on these plans. These plans have been prepared solely for the use of Jemena Gas Networks (NSW) Ltd and Jemena Asset Management Pty Ltd (together "**Jemena**") and any reliance placed on these plans by you is entirely at your own risk. The plans may show the position of underground mains and installations relative to fences, buildings etc., as they existed at the time the mains etc were installed. The plans may not have been updated to take account of any subsequent change in the location or style of those features since the time at which the plans were initially prepared. Jemena makes no warranty as to the accuracy or completeness of the enclosed plans and does not assume any duty of care to you nor any responsibility for the accuracy, adequacy, suitability or completeness of the plans or for any error, omission, lack of detail, transmission failure or corruption in the information provided. Jemena does not accept any responsibility for any loss that you or anyone else may suffer in connection with the provision of these plans, however that loss may arise (including whether or not arising from the negligence of Jemena, its employees, agents, officers or contractors). The recipient of these plans must use their own care and diligence in carrying out their works and must carry out further surveys to locate services at their work site. Persons excavating or carrying out other earthworks will be held responsible for any damage caused to Jemena's underground mains and equipment. Jemena advises that you may be required to carry out potholing by hand if required by a Jemena Representative to confirm the location of Jemena's main and installations. This must also be performed by you under the supervision of a Jemena Representative and be carried out in accordance with the Working Near Underground Assets Guideline published in 2007 by Work Cover Authority

In case of Emergency Phone 131 909 (24 hours)

Admin
1300 880 906

Warning Action Required
Warning Action Required



KURNELL 4A

SCALE 1:2000

50 0 50 100 150 200

THIS MAP UPDATED ON 02/03/2017
THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES SCALED FROM THIS PLAN MAY NOT BE ACCURATE.

CR3D	–	–
CR6B	KU4A	–
CR6D	KU4C	–

ADJOINING MAPS

	SUTHERLAND

NETWORK AREA — MUNICIPALITY AREA

Jemena NG

KEY

		MAX ALLOWABLE OPERATING PRESSURE
T	TRUNK PIPELINE	7000 kPa
P	PRIMARY MAIN	3500 kPa
S	SECONDARY MAIN	1050 kPa
400	NETWORK MAIN	400 kPa
	NETWORK MAIN	300 kPa
	NETWORK MAIN	210 kPa
100	NETWORK MAIN	100 kPa
30	NETWORK MAIN	30 kPa
	NETWORK MAIN	7 kPa
	NETWORK MAIN	2 kPa
	PROPOSED MAINS	
PR 11-2 3	STEEL MAIN PROJECT NUMBER	
P	PRESSURE MONITORING STATION	
	VALVE	
	SYSTEM PRESSURE REGULATOR	
S	SIPHON	
123	NETWORK NODE	
123S	NETWORK VALVE NODE	
1298	VALVE NUMBER	
6NB	6 INCH CAST IRON MAIN	
150MM	150MM STEEL MAIN	
110MM PE/NY	110MM POLYETHYLENE/NYLON MAIN	
6NB 50MM NY	50MM NYLON INSERTED INTO 6NB MAIN CAST IRON MAIN	
1.2MBL	DISTANCE IN METRES OF MAIN FROM BOUNDARY LINE	
1957	YEAR LAID	
	MUNICIPALITY BOUNDARY	
	NETWORK BOUNDARY	
123	HOUSE NUMBER	

KURNELL 4A

Appendix F

Sydney Water Dial Before You Dig

Guide to reading Sydney Water DBYD Plans

February 2015

Asset Information

Legend

Sewer

- Sewer Main (with flow arrow & size type text) — 225 PVC
- Disused Main
- Rising Main
- Maintenance Hole (with upstream depth to invert) — 1.7
- Sub-surface chamber
- Maintenance Hole with Overflow chamber
- Ventshalft EDUCT — VSE
- Ventshaft INDUCT — VSI
- Property Connection Point (with chainage to downstream MH) — 10.6
- Concrete Encased Section — Concrete Encased
- Terminal Maintenance Shaft — TMS
- Maintenance Shaft — MS
- Rodding Point — RP
- Lamphole
- Vertical — VERT
- Pumping Station — SP0882
- Sewer Rehabilitation

Pressure Sewer

- Pressure Sewer Main
- Pump Unit (Alarm, Electrical Cable, Pump Unit) — A
- Property Valve Boundary Assembly
- Stop Valve
- Reducer / Taper
- Flushing Point — FP

Vacuum Sewer

- Pressure Sewer Main
- Division Valve
- Vacuum Chamber
- Clean Out Point

Stormwater

- Stormwater Pipe
- Stormwater Channel
- Stormwater Gully
- Stormwater Maintenance Hole

Property Details

- Boundary Line
- Easement Line
- House Number
- Lot Number
- Proposed Land
- Sydney Water Heritage Site (please call **132 092** and ask for the **Heritage Unit**)

Water

- WaterMain - Potable (with size type text) — 200 PVC
- Disconnected Main - Potable
- Proposed Main - Potable
- Water Main - Recycled
- Special Supply Conditions - Potable
- Special Supply Conditions - Recycled
- Restrained Joints - Potable
- Restrained Joints - Recycled
- Hydrant
- Maintenance Hole
- Stop Valve
- Stop Vale with By-pass
- Stop Valve with Tapers
- Closed Stop Valve
- Air Valve
- Valve
- Scour
- Reducer / Taper
- Vertical Bends
- Reservoir
- Recycled Water is shown as per Potable above. Colour as indicated

Private Mains

- Potable Water Main
- Recycled Water Main
- Sewer Main
- Symbols for Private Mains shown grey

Pipe Types

ABS	Acrylonitrile Butadiene Styrene	**AC**	Asbestos Cement
BRICK	Brick	**CI**	Cast Iron
CICL	Cast Iron Cement Lined	**CONC**	Concrete
COPPER	Copper	**DI**	Ductile Iron
DICL	Ductile Iron Cement (mortar) Lined	**DIPL**	Ductile Iron Polymeric Lined
EW	Earthenware	**FIBG**	Fibreglass
FL BAR	Forged Locking Bar	**GI**	Galvanised Iron
GRP	Glass Reinforced Plastics	**HDPE**	High Density Polyethylene
MS	Mild Steel	**MSCL**	Mild Steel Cement Lined
PE	Polyethylene	**PC**	Polymer Concrete
PP	Polypropylene	**PVC**	Polyvinylchloride
PVC - M	Polyvinylchloride, Modified	**PVC - O**	Polyvinylchloride, Oriented
PVC - U	Polyvinylchloride, Unplasticised	**RC**	Reinforced Concrete
RC-PL	Reinforced Concrete Plastics Lined	**S**	Steel
SCL	Steel Cement (mortar) Lined	**SCL IBL**	Steel Cement Lined Internal Bitumen Lined
SGW	Salt Glazed Ware	**SPL**	Steel Polymeric Lined
SS	Stainless Steel	**STONE**	Stone
VC	Vitrified Clay	**WI**	Wrought Iron
WS	Woodstave		

Further Information

Please consult the Dial Before You Dig enquiries page on the Sydney Water website

For general enquiries please call the Customer Contact Centre on **132 092**

In an emergency, or to notify Sydney Water of damage or threats to its structures, call 13 20 90 (24 hours, 7 days)

A0

SITE LOCATION
238-258 CAPTAIN COOK DRIVE

DBYD Address: 238-258 Captain Cook Drive Kurnell NSW 2231	DBYD Job No: 12332390 DBYD Sequence No: 61207214	SYDNEY WATER CORPORATION No warranty is given that the information shown is complete or accurate.	Copyright Reserved Sydney Water 2017	Scale: 1:2000 Date of Production: 16/05/2017 16:45:34	0m 40m 80m 120m 160m Plan 1 of 1