Green Square Integrated Community Facility and School

Integrated Water Management Plan

Prepared for: School Infrastructure NSW

Attention: School Infrastructure NSW

Date: 19/05/2021

Prepared by: Antonio Lo Monte

Ref: 46826

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Stantec

Revision

Revision	Date	Comment	Prepared By	Approved By
001	12.03.2021	For Review	ALM	Antonio LoMonte
002	27.04.2021	Final submission	ALM	Antonio LoMonte
003	19.05.2021	Final submission reviewed	ALM	Antonio LoMonte

Contents

1. Introduction

This Integrated Water Management Plan (IWMP) is provided to address the sections of the Secretary's Environmental Assessment Requirements (SEARs) relating to utilities infrastructure for the proposed project, Community Facility and School. This project involves the development of a new primary school with 24 home bases, a Canteen, Cola, Library, multi-purpose games court, administration, outdoor learning areas, communal hall, multi-purposes spaces and a courtyard.

This IWMP outlines the advice obtained through consultation of the relevant authorities as per the SEARs. In section 2, a description of the new development of the Community Facility and School is provided. In section 3, the addressed SEAR item, and a summary of the requirements and actions are outlined. Section 4 provides the new development site details, and elaborates the details for the SEAR item requirements, services details and carried out actions. Finally, in section 6, conclusion and the authorities' approvals are provided.

2. Development Description

The proposed development is located at 3 Joynton Avenue, Zetland. The development is known as the Green Square Integrated Community Facility and School. This is a joint project between School Infrastructure NSW and the City of Sydney Council.

The development will comprise a 4-storey building made up of various indoor and outdoor functional spaces including:

- Primary education facilities for up to 600 kindergarten to year 6 students
    - Indoor and outdoor learning spaces
    - Administration and staff rooms
    - Library and School community hall
- shared multi-function spaces within for school and community use
    - 2 x multipurpose community facilities rooms to be operated solely by City of Sydney
    - 2 x multipurpose rooms to be shared by the City of Sydney and the primary school
- At ground level there is:
    - play spaces which will be a shared use between school and community
    - multipurpose games court

3. Addressed SEARs Items

This report addresses the below SEARs item relating to utility infrastructure for the proposed project.

SEARs Reference	Item	How this is addressed
Key Issues – Item 15	Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design.	• Section 4 of this IWMP outlines the uses of potable and non-potable water. Non-potable water from the existing non-potable water mains around this site are to feed the toilets, washdown and irrigation system top-up. It is to be mentioned that irrigation is mainly served by the rainwater collected from the roofs but is toped-up from the non-potable water service. All other water uses are to be fed by potable water services. • Section 4 of this IWMP also outlines the existing Sydney Water potable water services, and Green Square Water non-potable water services around this site that will cater this development. The details of the communications with these authorities are also provided. • Water efficiency measures are covered in ESD – Green Star report. • Water sensitive urban design is covered within the civil design.

4. Site Details and Services

4.1 Site Location

The proposed site sits on Lot 2, DP1174641 between Joynton Ave and Portman St, shared with other City of Sydney facilities. The site is shown in the hatched area in Figure 1.

Figure 1: Site Location

4.2 Proposed Potable Water Infrastructure

The existing 150mm Sydney Water potable water services around the development site are owned and operated by Sydney Water. Refer to Figure 2 below.

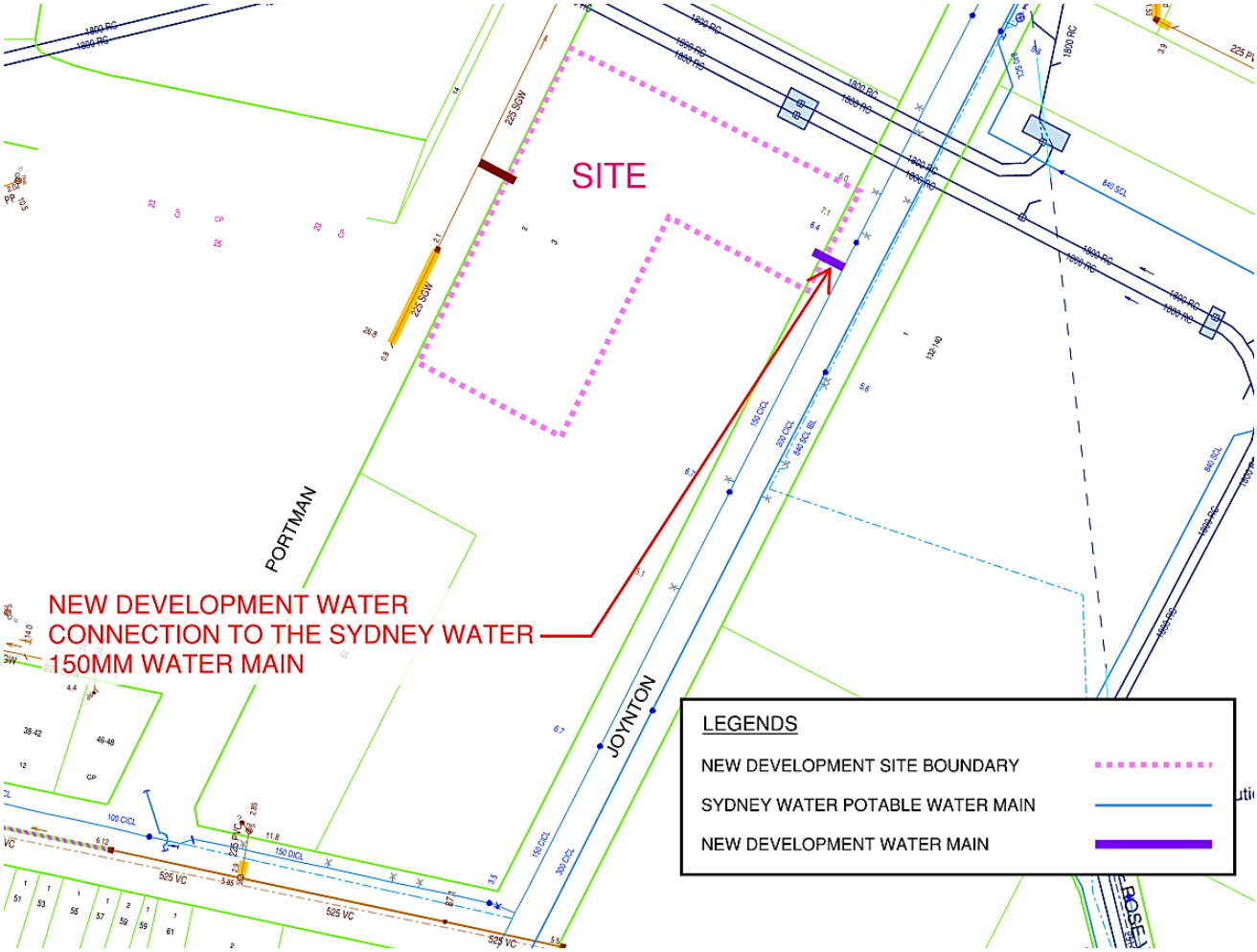

Figure 2: Incoming potable water connection

4.2.1 Supply Requirements

The expected daily demand of potable water calculated in accordance with Sydney Water's Water Demand Calculation Guide is shown in Figure 3 below. As per this table, School is a special use with an estimated potable water demand of 20 litres per day per student. Note that the average daily water use figures nominate water usage; discharge is 80% of the usage as adopted by Water Servicing Australia Code.

Development Type	Development Sub-Type	Key Metric	Metric Unit	Average Demand (L/Metric unit/Day)
	Printing Manufacturing	As required		
	Beverage Manufacturing	As required		
	Light Factory Unit	Developed floor area	Square metre	2.82
	Warehousing	Developed floor area	Square metre	2.82
	Transport / Bus depot	Site area	Square metre	0.91
Special Uses	University	Student	Each student	20.00
	School	Student	Each student	20.00
	Hospital	Bed	Each bed	271.00
	Religious assemblies	Developed floor area	Square metre	1.30
	Government depot	Site area	Square metre	0.91
	Community Centre / Library	Floor area	Square metre	1.84
	Sports Fields with amenities	As required		
	Parks & Reserves	As required		
	Services: Police, Ambulance, etc	Floor area	Square metre	1.40

Figure 3: Sydney Water's Water Demand Calculation Guide

Based on the above calculation guide, with a capacity of 650 staff / Students @ 20L/per person per day, the average demand would be approximately 13,000 L/day.

Also, detailed calculations have determined the potable water flow requirements is 7.1 Litres per second probable simultaneous demand as calculated in accordance with Australian/New Zealand Standard AS/NZS3500.1:2018 Plumbing and drainage Part 1: Water services.
Fire services demand calculation determines a required flow rate of 20 litres per second based on the operation of 2 fire hydrants simultaneously detailed as below:

- Building Class: 9B; 4 Storeys; Fire compartment floor area >500sqm and ≤5000sqm
- No. of fire hydrant outlets require to flow simultaneously: 2
- Each fire hydrant outlet flow: 10 l/s → Total fire hydrant flow = 2 × 10 = 20 l/s

Based on the flow rates detailed above, the minimum total water flow rate required to service this site is 27.1 litres per second.

According to the statement of available pressure and flow issued by Sydney Water in June 2020, shown in figure 4 below, the existing Sydney Water potable water supply with the maximum permissible flow of 52 litres per second is able to provide the required flow to service the new development of the Community Facility and School.

Pressure & Flow Application Number: 878956
Your Pressure Inquiry Dated: 2020-05-26
Property Address: 3 Joynton Avenue, Zetland 2017

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: Joynton Avenue	Side of Street: West
Distance & Direction from Nearest Cross Street	90 metres South from Elizabeth Street
Approximate Ground Level (AHD):	20 metres
Nominal Size of Water Main (DN):	150 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	55 metre head
Minimum Pressure	28 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	28
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5 10 15 20 26 30 40 50	28 28 27 26 25 24 20 15
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main) Maximum Permissible Flow	5 10 15 20 26 30 40 50 52	28 27 27 26 24 23 19 14 13

(Please refer to reverse side for Notes)

Figure 4: Sydney Water statement of available pressure and flow

4.3 Proposed Non-Potable Water Infrastructure

A connection is to be made to the City of Sydney recycled water main, this main is to be connected to an onsite buffer tank. As per the notice of requirements from Green Square and Altogether Water, there has been an allowance of 1.68l/s peak demand and a total daily demand of 45.60kL/day, this is based on residential calculations for the site.

Peak daily demand:	45.60	kL/day
Peak hour demand:	1.68	L/s
Minimum pressure at bulk delivery point:	15	m head
Size of property service line:	50	mm diameter

Figure 5: Table from Notice of Requirement (NOR) for non-potable water connection certificate - Version 2, 15th December 2016

Based on the designed number of toilets on the project and the calculated allowance from the City of Sydney recycled water supply, the required demand for ablutionary use (15,000 litres stored in buffer tank), and top-up of the rainwater tank is within the daily demand allowed by Green Square Water. Thus, the allowed 50mm property service line for the new development of the Community Facility and School is sufficient to cater the site's demand.

Figure 5 below illustrates the rainwater / non-potable water integration diagram for this development. As shown in this diagram, the site main non-potable water line is connected to a buffer tank. There is also a rainwater tank which is filled mainly from the roofs rainwater and used for irrigation. A top-up line from the buffer tank has been provided to the irrigation system.

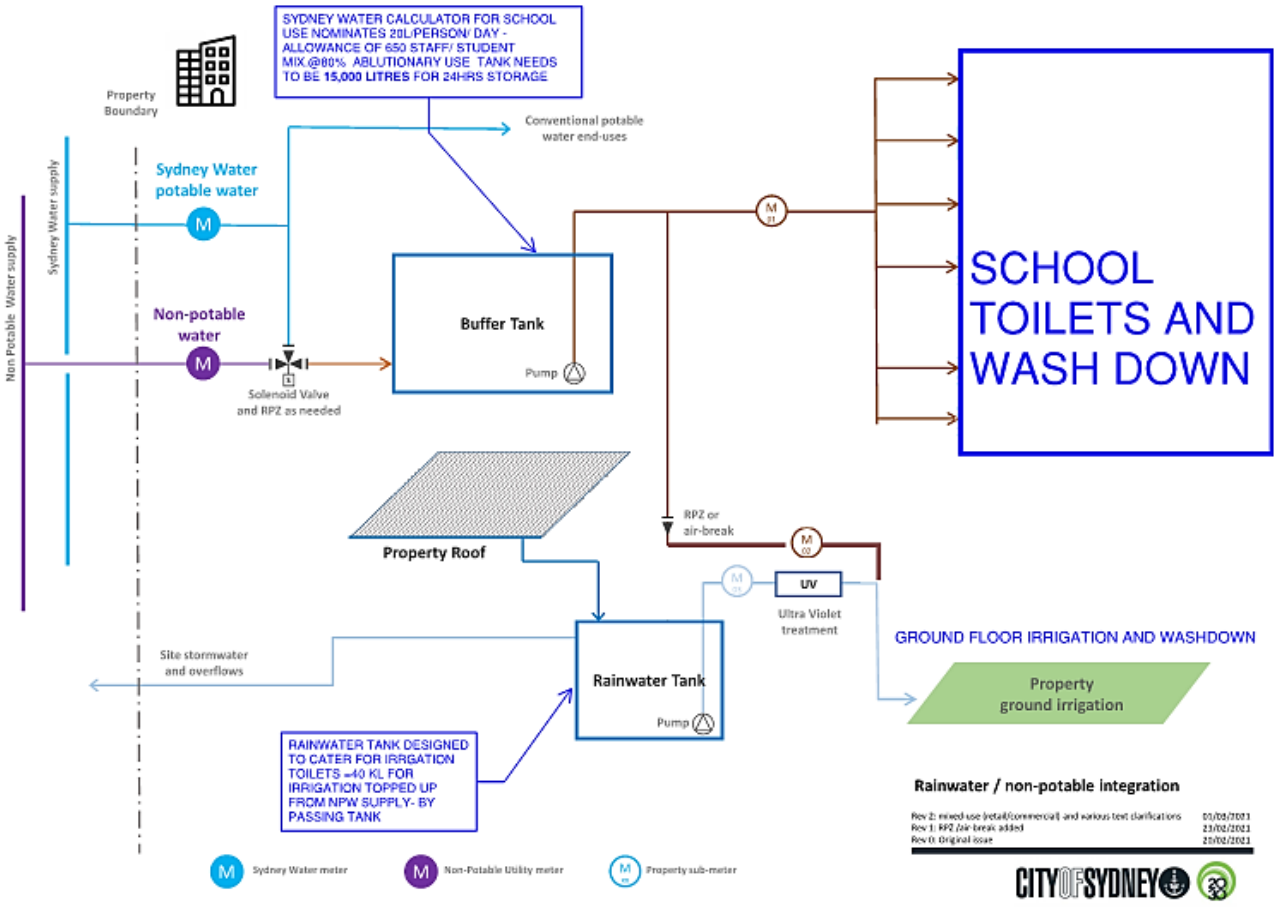

Figure 5: Site schematic indicating Potable, Non-potable and Rainwater re-use interconnections

Figure 6 below is an extract from the Green Square water reuse scheme which illustrates the recycled water treatment plant and the reticulation around the Green Square. Around the Community Facility and School development site, there is a 100mm recycled service available from Portman Street. Our site will be connecting to this service.

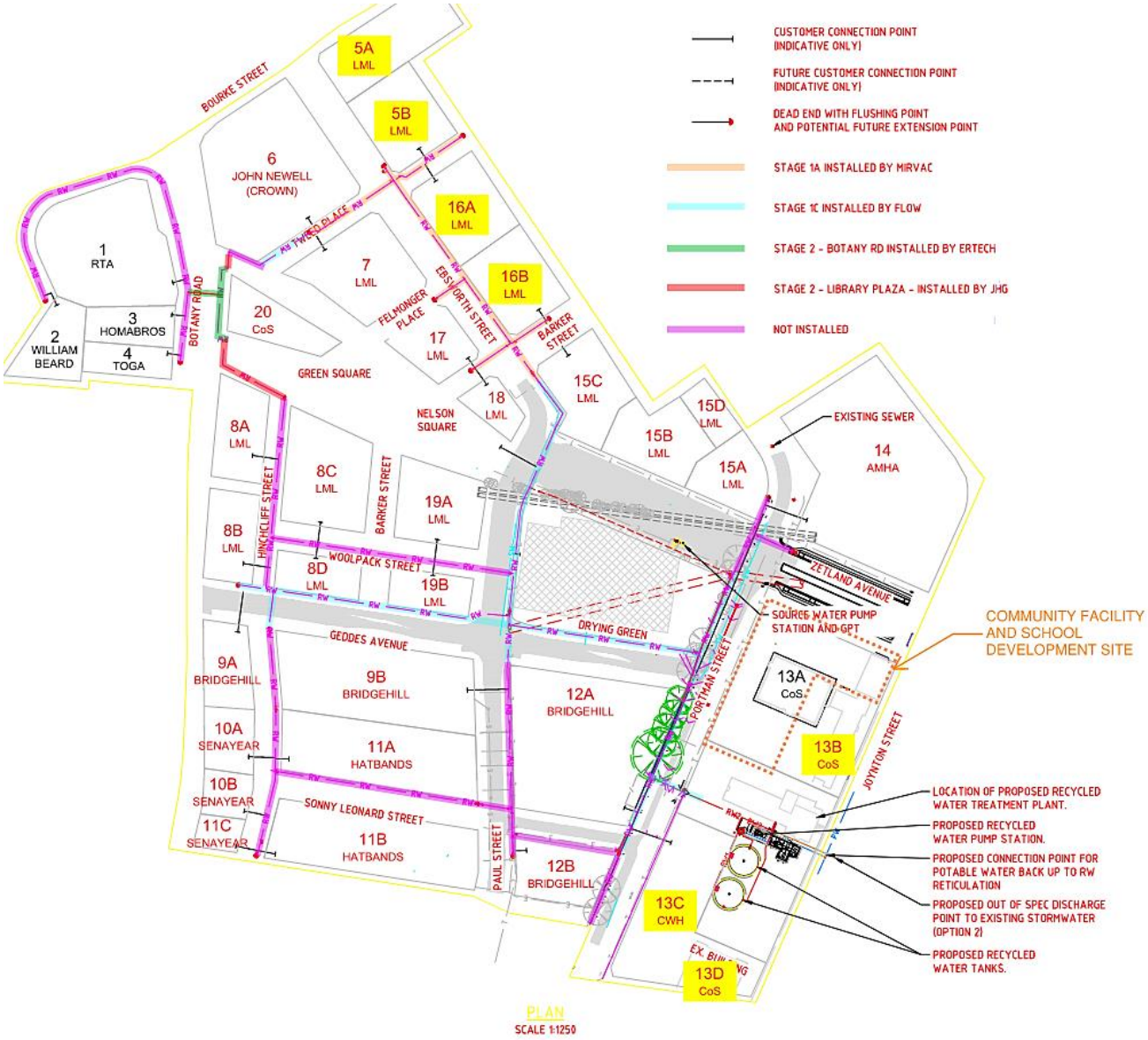

Figure 6: Green Square Recycled Main reticulation layout

4.4 Water efficiency Measures

- Refer to ESD – Green Star report.

4.5 Water Sensitive Urban Design

- This is covered within the civil design

5. Conclusion and Authority Approvals

This Integrated Water Management Plan (IWMP) is provided to address the sections of the Secretary's Environmental Assessment Requirements (SEARs) relating to utilities infrastructure for the proposed project, Community Facility and School. The addressed item is Key Issues, Item 15: "Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design".

This IWMP outlined the advice obtained through consultation of the relevant authorities as per the SEARs.

As for potable water, an application to extend water and sewer mains was made to Sydney Water in September 2014 including a master plan indicating the proposed connections.
This application was approved in October 2014 (Case Number: 141131) provided that the required actions outlined in the approval letter be done. Refer to the appendix: Sydney Water for the full details of the required actions.
Also, a statement of available pressure and flow on the relevant Sydney Water potable water main was issued by Sydney Water in June 2020.
The required potable water demand of the site was calculated and after comparing the outcomes with the permissible figures in the pressure and flow statement, it was determined that the existing Sydney Water mains and the allowed connections are sufficient to cater this development.

For non-potable water, a notice of requirement for non-potable water connection certificate was issued by Green Square Water-Flow in December 2016. Refer to the appendix: Notice of Requirements for non-potable water connection certificate – Version 2 for details.
Flow (retail supplier's licence number 13_001R), and its network operator, Green Square Water Pty Ltd (network operator's licence no. 15_031) operate in accordance with their respective licences issued pursuant to the Water Industry Competition Act 2006 (NSW). These licences allow for the provision of Green Square Water's recycled water for the following Authorised Purposes including flushing toilets, supplying the only cold water taps for washing machines, irrigation, water features, cooling tower make-up and street cleaning.
The required non-potable water demand of this development was calculated and after comparing the outcomes with the figures allowed in the Green Square Water notice of requirements, it was determined that the existing non-potable water services around this development site and the allowed connection are sufficient to cater this development.

Case Number: 141131-Stage 2A

8 January 2015

ROSE ATKINS RIMMER

Dear Sir/Madam

Property: **Portman Street, Zetland**
Your Reference: **61/22967/2A**
Plan Identification Number: 141131WW

Attached is the Waste Water Design Package for the location of works shown above. This package was received by Sydney Water and dated 31 October 2014/Version No. 1. **You have indicated that this plan is for tendering purposes.** After you have engaged a Constructor and the following matters have been addressed, this plan can be used for construction. If there are any changes after tendering, you must give us the appropriate Project Variation documents.

After you tell us who the approved Constructor is, lodge both the completed ITP and executed Deed Poll with Sydney Water, we will review them and then release your ITP. This will complete your Design Package and enable you to start construction.

For that package:

(a) The following costs will be invoiced to your Company at the finalisation of these works:

Contract Administration
This fee will be invoiced to your company at the current hourly rate of $136.30 (includes $12.37 GST). It is for time spent by the Development Services Officer during the design, construction and connection phases of this work.

Notes:

- **An invoice can be issued for the above costs before finalisation. However, if costs are incurred after that invoice we will charge you at finalisation.**
- **To obtain an invoice before finalisation, you must email the Sydney Water Case Manager.**
- **The Tax Invoice must be paid to Sydney Water within 30 days of being issued.**
- **You should tell your developer/applicant client of these Sydney Water costs before proceeding with this work.**

(b) If Sydney Water needs additional site inspections, you will be invoiced at the current hourly rate at the completion of this work.

(c) At the finalisation of these works, and before we can issue the Section 73 Compliance Certificate or the release of the Security Bond, the Developer will need to pay any outstanding Developer (DSP) or Recovery charges **directly to Sydney Water**. Remember that you need to obtain an invoice so these charges can be paid. The invoice can be obtained by contacting the Sydney Water Case Manager.

Connections
While connections to existing Sydney Water assets are generally at the end of construction, the constructor, in conjunction with the WSC, must review the design prior to commencement of works and identify all connections to Sydney Water's existing assets. All connections at any stage of construction must only proceed after obtaining the appropriate approval from Sydney Water.

(d) Before connection, the Generic Asset Hazards (detailed in Instructions to Water Servicing Coordinators (Major Works)) **must** be addressed in your Safe Work Plan and Environmental Management Plan.

The Generic Asset Hazards/Conditions - At the Point of Connection, listed in the Provider Instructions, **must** be addressed in your Safe Work Plan and Environmental Management Plan.

Notes:

Remember that:

1. There are work environment hazards that include (but are not limited to) traffic and the closeness of other utility services;
2. All developers, constructors and individuals have an OH&S obligation and a duty of care when working near underground plant; and
3. Any person who destroys, damages or interferes with any Sydney Water asset is liable to compensate Sydney Water.

(e) Extra hold points might be included in the ITP by Sydney Water when you lodge the Construction Commencement Notice.

(f)

The new works will be connecting to a main that is deemed critical to the system and so you need to implement Sydney Water's Health and Safety Procedure – Flow Management and Isolation of Hydraulic Assets (HSP-070) and submit, via email, a Flow Management Plan addressing any specific requirements provided by Sydney Water.

Submit your Wastewater Form 'A' FIFM requests via email address: wastewaterfifm@sydneywater.com.au

All Wastewater FIFM requests, enquiries, issues and correspondence are also to be submitted via the above email address.

Connection to Sydney Water's asset cannot be carried out prior to submission of a valid Inspection and Test Plan (ITP) and implementation of an approved Flow Management Plan.

Dependent Works

The completion of these works is also dependent upon the satisfactory completion of the stage 1 and 2 works on Case No. 137446ww.

Construction Commencement Sydney Water Contact

You must send your Construction Commencement Notice to Sydney Water's Developer Works Inspections team at Email: DeveloperConnectionsdwi@sydneywater.com.au as set down in the Instructions to Water Servicing Coordinators (Major Works).

END

Project Management Initials: | Designer: BK | Checked: | Approved: | ISO A1 594mm x 841mm

Last saved by: REYNOLDST (2015-01-27) Last Plotted: 2015-01-27
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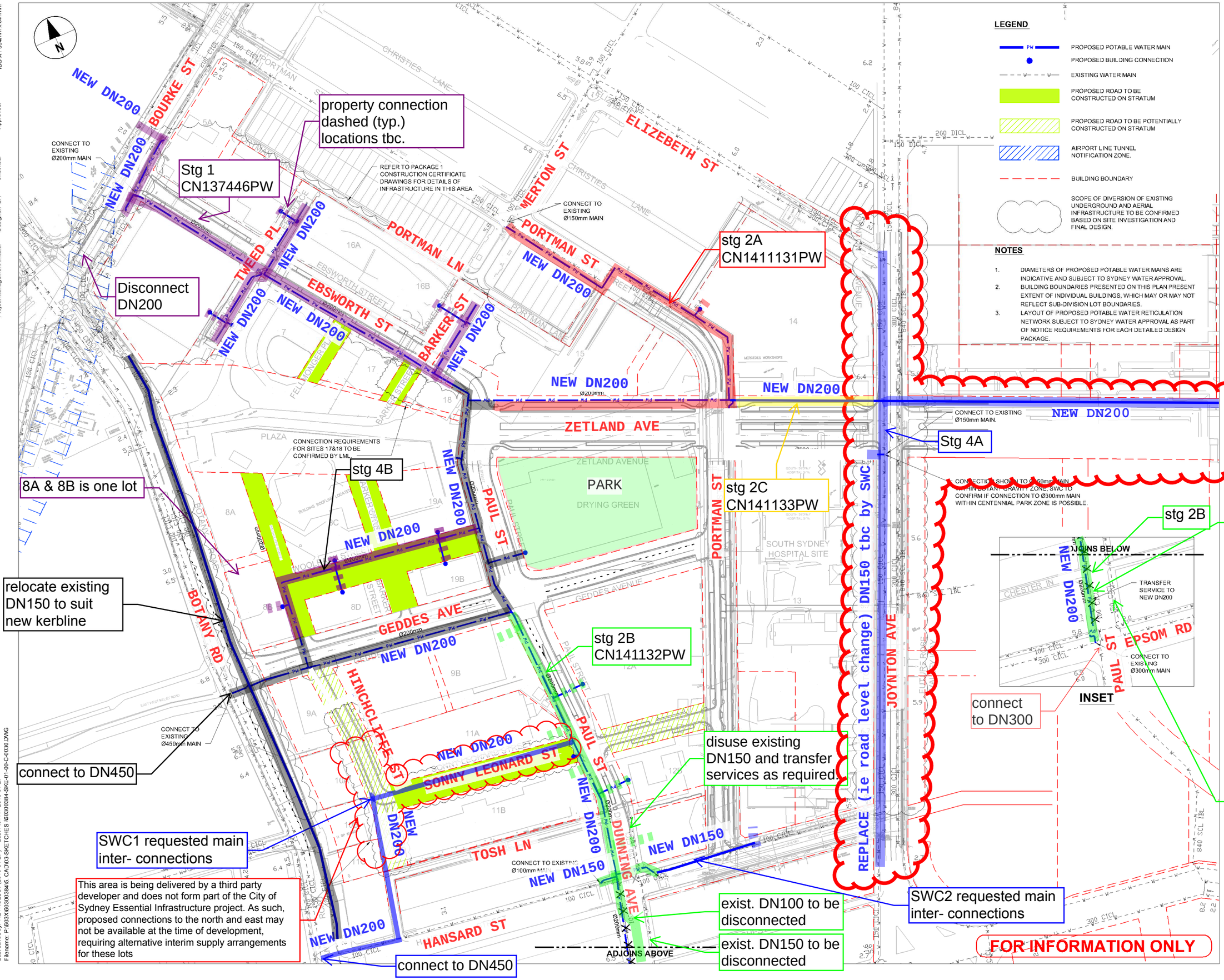


LEGEND

- PROPOSED POTABLE WATER MAIN
- PROPOSED BUILDING CONNECTION
- EXISTING WATER MAIN
- PROPOSED ROAD TO BE CONSTRUCTED ON STRATUM
- PROPOSED ROAD TO BE POTENTIALLY CONSTRUCTED ON STRATUM
- AIRPORT LINE TUNNEL NOTIFICATION ZONE.
- BUILDING BOUNDARY
- SCOPE OF DIVERSION OF EXISTING UNDERGROUND AND AERIAL INFRASTRUCTURE TO BE CONFIRMED BASED ON SITE INVESTIGATION AND FINAL DESIGN.

NOTES

1. DIAMETERS OF PROPOSED POTABLE WATER MAINS ARE INDICATIVE AND SUBJECT TO SYDNEY WATER APPROVAL.
2. BUILDING BOUNDARIES PRESENTED ON THIS PLAN PRESENT EXTENT OF INDIVIDUAL BUILDINGS, WHICH MAY OR MAY NOT REFLECT SUB-DIVISION LOT BOUNDARIES.
3. LAYOUT OF PROPOSED POTABLE WATER RETICULATION NETWORK SUBJECT TO SYDNEY WATER APPROVAL AS PART OF NOTICE REQUIREMENTS FOR EACH DETAILED DESIGN PACKAGE.

AECOM

PROJECT

GREEN SQUARE TOWN CENTRE EIPD - PHASE 01

CLIENT

CITY OF SYDNEY

CONSULTANT

AECOM Australia Pty Ltd
Level 21, 420 George Street, Sydney, NSW 2000
PO Box Q410, QVB PO, Sydney, NSW, 1230
+61 2 8934 0000 tel +61 2 8934 0001 fax
www.aecom.com

SCALE BAR

0 25 50

13	11.12.2015	ADD BOTANY ROAD AND ZETLAND AVENUE EAST
12	30.06.2015	MODIFY HINCHENCLIFFE
11	04.06.2015	INFO-PAUL ST AMNEDED
10	10.02.2015	ISSUED FOR INFORMATION
09	27.01.2015	ISSUED FOR INFORMATION
08	23.10.2014	ISSUED FOR INFORMATION
07	15.09.2014	ISSUED FOR INFORMATION
06	02.09.2014	ISSUED FOR INFORMATION
05	17.06.2014	ISSUED FOR INFORMATION
04	28.10.2013	ISSUED FOR INFORMATION
I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

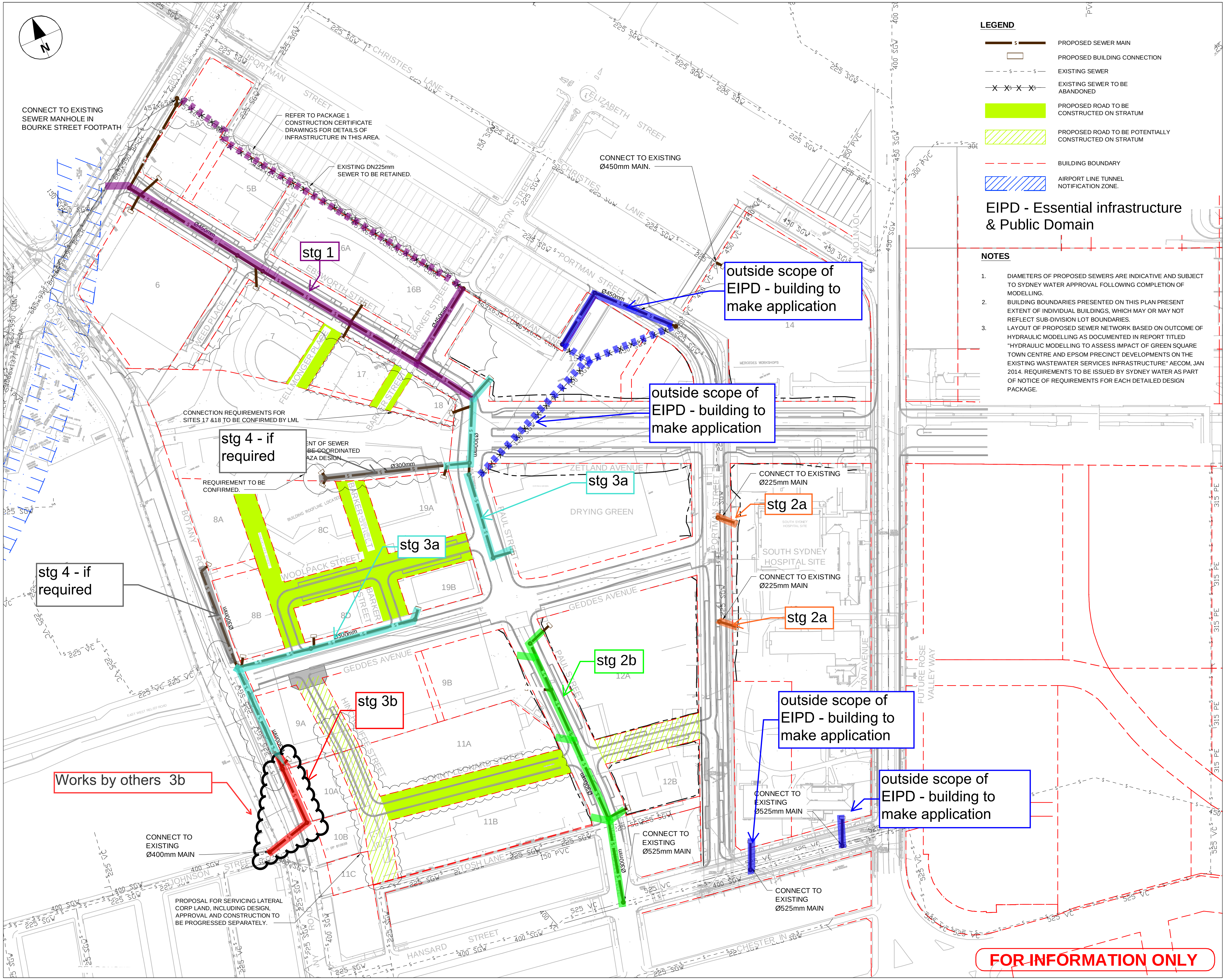
60300384

SHEET TITLE

PHASE 01
POTABLE WATER
SCHEMATIC DESIGN

SHEET NUMBER

60300384-SKE-01-00-C-0030


LEGEND
PROPOSED SEWER MAIN
PROPOSED BUILDING CONNECTION
EXISTING SEWER
EXISTING SEWER TO BE ABANDONED
PROPOSED ROAD TO BE CONSTRUCTED ON STRATUM
PROPOSED ROAD TO BE POTENTIALLY CONSTRUCTED ON STRATUM
BUILDING BOUNDARY
AIRPORT LINE TUNNEL NOTIFICATION ZONE.
EIPD - Essential infrastructure & Public Domain
NOTES
1. DIAMETERS OF PROPOSED SEWERS ARE INDICATIVE AND SUBJECT TO SYDNEY WATER APPROVAL FOLLOWING COMPLETION OF MODELLING.
2. BUILDING BOUNDARIES PRESENTED ON THIS PLAN PRESENT EXTENT OF INDIVIDUAL BUILDINGS, WHICH MAY OR MAY NOT REFLECT SUB-DIVISION LOT BOUNDARIES.
3. LAYOUT OF PROPOSED SEWER NETWORK BASED ON OUTCOME OF HYDRAULIC MODELLING AS DOCUMENTED IN REPORT TITLED "HYDRAULIC MODELLING TO ASSESS IMPACT OF GREEN SQUARE TOWN CENTRE AND EPSOM PRECINCT DEVELOPMENTS ON THE EXISTING WASTEWATER SERVICES INFRASTRUCTURE" AECOM, JAN 2014. REQUIREMENTS TO BE ISSUED BY SYDNEY WATER AS PART OF NOTICE OF REQUIREMENTS FOR EACH DETAILED DESIGN PACKAGE.
CONNECT TO EXISTING SEWER MANHOLE IN BOURKE STREET FOOTPATH
REFER TO PACKAGE 1 CONSTRUCTION CERTIFICATE DRAWINGS FOR DETAILS OF INFRASTRUCTURE IN THIS AREA.
EXISTING DN225mm SEWER TO BE RETAINED.
CONNECT TO EXISTING Ø450mm MAIN.
stg 1
outside scope of EIPD - building to make application
outside scope of EIPD - building to make application
CONNECTION REQUIREMENTS FOR SITES 17 &18 TO BE CONFIRMED BY LML
stg 4 - if required
REQUIREMENT TO BE CONFIRMED.
stg 3a
DRYING GREEN
CONNECT TO EXISTING Ø225mm MAIN
stg 2a
SOUTH SYDNEY HOSPITAL SITE
stg 3a
CONNECT TO EXISTING Ø225mm MAIN
stg 4 - if required
stg 2a
stg 2b
stg 3b
outside scope of EIPD - building to make application
Works by others 3b
CONNECT TO EXISTING Ø525mm MAIN
outside scope of EIPD - building to make application
CONNECT TO EXISTING Ø400mm MAIN
CONNECT TO EXISTING Ø525mm MAIN
CONNECT TO EXISTING Ø525mm MAIN
PROPOSAL FOR SERVICING LATERAL CORP LAND, INCLUDING DESIGN, APPROVAL AND CONSTRUCTION TO BE PROGRESSED SEPARATELY.
ZETLAND AVENUE
GEDDES AVENUE
WOOLPACK STREET
BOTANY ROAD
PORTMAN STREET
CHRISTIES LANE
ELIZABETH STREET
PAUL STREET
HANSARD STREET
JOHNSON STREET
FUTURE ROSE VALLEY WAY
FOR INFORMATION ONLY

AECOM

PROJECT
GREEN SQUARE TOWN CENTRE EIPD - PHASE 01

CLIENT
CITY OF SYDNEY

CONSULTANT
AECOM Australia Pty Ltd
Level 21, 420 George Street, Sydney, NSW 2000
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+61 2 8934 0000 tel +61 2 8934 0001 fax
www.aecom.com

SCALE BAR
0 25 50 m
1:1000

ISSUE/REVISION

I/R	DATE	DESCRIPTION
09	04.06.2015	ISSUED FOR INFORMATION
08	15.09.2014	ISSUED FOR INFORMATION
07	02.09.2014	ISSUED FOR INFORMATION
06	17.06.2014	ISSUED FOR INFORMATION
05	01.11.2013	ISSUED FOR INFORMATION
04	28.10.2013	ISSUED FOR INFORMATION
03	15.10.2013	ISSUED FOR INFORMATION

KEY PLAN

PROJECT NUMBER
60300384

SHEET TITLE
PHASE 01
SEWER
SCHEMATIC DESIGN

SHEET NUMBER
60300384-SKE-01-00-C-0032

ISO A1 594mm x 841mm
Approved:
Checked:
Designer: BK
Project Management Initials:
Last saved by: REYNOLDST (2014-09-15) Last Plotted: 2014-12-18
Filename: P:\603X\60300384\5. CAD\03-SKETCHES\60300384-SKE-01-00-C-0032.DWG

Case Number: 141131

3 October 2014

CITY OF SYDNEY COUNCIL
c/- ROSE ATKINS RIMMER

LETTER of APPROVAL
For
EXTENSION OF A SYDNEY WATER ASSET

Applicant: **CITY OF SYDNEY COUNCIL**
Your reference: **61/22967/2A**
Property location: **Portman Street, Zetland (Package 2A)**
Your application date: **10 September 2014**

Dear Applicant

Your application to extend water and sewer mains at the above location as shown on your **preliminary works plan for the GSTC Package 2A 032/09/2014** is approved provided you do the following things:

1. You must enter into an Acknowledgement to Head Developer Works Deed (Case No. 137306) with Sydney Water in the form of the enclosed Deed.

2. You must engage your current or another authorised Water Servicing Coordinator (Coordinator) to manage the design and construction of the required works to Sydney Water's standards and procedures. Before you engage another Coordinator 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. Coordinators will give you a quote or information about costs for services/ works including Sydney Water costs.

   The Coordinator generally will be the single point of contact between you and Sydney Water. They can answer most questions you might have about our process and charges.

3. After you engage a Coordinator, you and your accredited Developer Infrastructure Providers (Providers) will need to sign and lodge both copies of the enclosed 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.

If Sydney Water does not receive the signed Deed for our signing by 3 October 2015 you will need to re-apply (and pay another application fee).

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

4. 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. You must not start work on the existing water and sewer main or the proposed extension until Sydney Water advises your Coordinator. This includes the placement of any temporary pipework. Before you can do this pipework, you must engage your Coordinator to lodge an application that must include appropriate temporary pipework detail as well as the design of the proposed **extension.**

   If any work on our assets is carried out without that advice or final approval, Sydney Water will take action to have work on the site stopped. We will apply the provisions of Section 45 of the Sydney Water Act 1994.

6. Construction of these works will require you to pay project management, survey, design and construction costs **directly to your Providers**. 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.;
   - 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 release of the Bank Guarantee or Cash Bond.

   Your Coordinator can tell you about these costs.

In addition, the following is noted:

Green Square Potable Water and Wastewater Servicing Plans

The proposed works are also part of the potable water and wastewater works shown on the AECOM Potable Water and Wastewater Servicing Plans previously reviewed and accepted by Sydney Water.

Dependent Works

Dependent upon the works currently being carried out on Case No. 137446PW/WW.

END

Green Square Water

a local utility by flow

15 December 2016

Damon La'rance
Project Manager (Parks)
City of Sydney Council

Dear Damon

Notice of Requirements for non-potable water connection certificate – Version 2

Scheme:	Green Square Water
Lot:	Green Square Town Centre – Site 13A & Site 13B
Lot identifier:	< insert lot and DP identifier >

The attached schedules set out the requirements of Flow trading as Green Square Water prior to a connection certificate being issued for the abovementioned lot (Relevant Lot).

Flow (retail supplier's licence number 13_001R), and its network operator, Green Square Water Pty Ltd (network operator's licence no. 15_031) operate in accordance with their respective licences issued pursuant to the *Water Industry Competition Act 2006 (NSW)*. These licences allow for the provision of Green Square Water's recycled water for the following Authorised Purposes:

- Flushing toilets
- Supplying the only cold water taps for washing machines
- Irrigation
- Water features
- Cooling tower make-up*
- Street cleaning

**please note that the hydraulic design allowance includes cooling demand for retail and commercial spaces only. If the Relevant Lot intends to integrate residential cooling, please contact Flow immediately.*

Green Square Water's recycled water system servicing the Green Square Town Centre is also provisionally recognised as a reticulated alternative water scheme for the purpose of BASIX.

Hydraulic design allowance

The Green Square Water non-potable water system has been designed to meet Water Services Association of Australia Water Supply Code of Australia WSA-03 requirements to service the peak hour demand at a development's bulk delivery point. Note that hydraulic engineers designing for individual developments must consider the need or otherwise for the inclusion of a buffer tank in the development's plumbing network to meet probable simultaneous demand (PSD) as per requirements outlined in Section 3 of AS3500. The Green Square Water non-potable water system service will supply the following non-potable water demand to the Relevant Lot:

Level 40, 259 George Street
Sydney NSW 2000

1300 803 803

contact@flowsystems.com.au | flowsystems.com.au

ABN 57 163 432 906

Peak daily demand:	45.60	kL/day
Peak hour demand:	1.68	L/s
Minimum pressure at bulk delivery point:	15	m head
Size of property service line:	50	mm diameter

This hydraulic design allowance has been calculated in accordance with Green Square Water's Design Summary Sheet, the Authorised Purposes and on the basis of the development yield information gleaned from the Developer's First Notice under its Voluntary Planning Agreement or other available sources. In the case of this Relevant Lot, the development yield used in assessing the hydraulic design allowance is as follows:

Residential apartments	291	
Commercial floor space	0	m^2
Retail floor space	0	m^2
Cooling requirements	no cooling	

Please inform Flow immediately if this development yield information differs significantly from the proposed development.

Further information is available at our website: www.greensquarewater.com.au.

Please do not hesitate to contact Flow if you have any queries.

Regards,

Flow Systems Pty Ltd on behalf of Green Square Water

Attachments

- Schedule 1: Technical Requirements
- Schedule 2: Administrative Requirements

Schedule 1: Technical Requirements

No.	Item	Requirement	Comment
T1	Building design	As soon as possible after receiving this Notice of Requirements, provide Green Square Water with the Development's First Notice under the relevant Voluntary Planning Agreement	This is required for Green Square Water to check that it has used the correct development specifications in its system design
T2	Design and installation specifications	Design and install non-potable water plumbing in accordance with the Plumbing Code of Australia and so that demand does not exceed the system allowances for the lot and only to supply the Approved Uses.	Note that Green Square Water's review of the hydraulic design is a hold point. Certificate(s) of Compliance (as required pursuant to by Section 15 of the Plumbing and Drainage Act 2011 (NSW)) to be provided to Green Square Water before the recycled water service can be connected.
T3	Metering requirements	Install meter(s) and associated telemetry in accordance with the Green Square Water Metering Requirements	Note: There are two versions of Green Square Water's metering requirements: 1. Bulk metering only 2. Bulk and sub-metering Both are available on the Green Square Water website: http://greensquarewater.com.au Click on "developers" then "recycled water requirements"
T4	As Built drawings	Provide as-built drawings of the non-potable water pipe connecting from the lot boundary to the bulk non-potable water meter and all associated plumbing and telemetry including data management unit and cabling.	In the event that the developer chooses to install sub-metering, as-built drawings shall be provided for all bulk and sub-meters, associated plumbing and telemetry including data management units and cabling.

Schedule 2: Administrative Requirements

No.	Item	Requirement	Comment
A1	Register the developer as a customer of Flow	Before being issued with a non-potable water meter, the developer is to register as a non-potable water customer using Flow's Integrated Water Services Application at: https://askus.flowsystems.com.au/hc/en-us/articles/205095744--Applications-and-Approvals-for-Connection	Upon practical completion and settlement the account can be transferred to the owners corporation but the developer will be responsible for payment of any non-potable water use until this point.
A2	Site inspection by Flow / Green Square Water	Provide 1 week's notice in writing to Green Square Water to carry out a site inspection of the finished installation	This is to allow Green Square Water time to confirm that the installed infrastructure can be connected and accepted.
A3	Handover checklist	Provide a completed Green Square Water Documentation Compliance Checklist complete with supporting information	Green Square Water Documentation Compliance Checklist is available on the Green Square Water website: www.greensquarewater.com.au

Proudly celebrating
30 years of service
to industry

VRT METERING SERVICES

WATER METERING GUIDELINES

EMBEDDED METERING NETWORKS

REV: 1 (19/02/2021)

Document prepared for:

altogether group

Document prepared by:

VRT Systems, a division of Vector International Pacific Pty. Ltd. ABN 15 596 735 786

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Current Revision: 1

Rev No	Date	Revision Details	Typist	Author	Verifier	Approver
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1	19/02/2021	Customer Release			SC	SC

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TABLE OF CONTENTS

1. INTRODUCTION

VRT is the Authorised Metering Supplier (AMS) for the altogether group. VRT provides solutions and services for all water metering infrastructure, depending on jurisdictional requirements, including:

- Potable water;
- Hot water;
- Recycled water;
- Chilled water; and
- Heating water.

All water metering solutions for the altogether group are required to be compatible with the VRT Advanced Metering Infrastructure (AMI). In general, this is a water meter connected to an automated reading system, with data collected by the VRT WideSky cloud solution.

To facilitate the deployment of a suitable AMI for the altogether group, VRT has provided this guideline. All hardware may be sourced through VRT for installation by the developer's contractors. Some hardware, such as water meters, may be sourced through other channels, so long as the hardware is fit for purpose and meets the requirements of this guideline.

All hardware not sourced through VRT, is to be approved by VRT prior to installation.

If there are any doubts, please contact VRT to request assistance. Enquiries can be made by calling 07 3535 9696 or via email at, sales@vrt.com.au.

2. METERING SOLUTIONS

2.1. Overview

There are three AMI solutions supported by VRT systems. All three send metering data to the VRT WideSky cloud solution.

2.2. Requirements

The developer can purchase the metering hardware direct from VRT, or from alternative sources in some instances. This guideline will clearly define which items can be sourced from alternative sources. The following requirements must be met for VRT to accept the developers metering installation. In all instances, if there is any doubt, contact VRT for guidance.

1. All meters are to be installed within common areas. Metering within apartments, under sinks, or in ceiling spaces will not be accepted.

2. The metering installation is to be completed by the developer's plumber in accordance with all applicable laws, jurisdictional requirements and manufacturer's guidelines.

3. Each metering installation is to be labelled in accordance with this guideline.

4. Commissioning documentation is to be completed by the developer's plumber in accordance with this guideline.

Once all requirements are met, VRT will inspect and sign off on the installation. All issues identified by VRT are to be rectified by the developer or their contractors before VRT can sign off on the metering installation.

2.3. Authorised Solutions

The three authorised AMI solutions for the altogether group are:

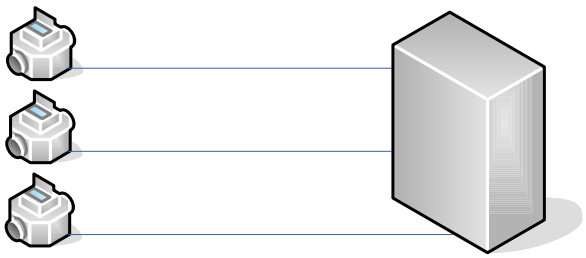
1. Hardwired Pulse Metering;

2. Hardwired M-Bus Metering; and

3. Wireless Cat-M1 Metering.

3. HARDWIRED PULSE METERING

Hardwired pulse metering is suitable for all meter types. It is best suited to installations where a small-large number of meters are installed within close proximity to the telemetry system.



Drawing 1: Typical Hardwired Pulse Metering Overview

3.1. Metering

The following water meters are recommended for use in a hardwired pulse metering AMI:

- Potable water: Honeywell Elster V100 with T-probe. Alternative sourcing is acceptable. The water meter shall be Watermarked and have a pulser/reed switch attached.
- Hot water: Honeywell Elster S110 with pulse output. Alternative sourcing is acceptable. The water meter shall be Watermarked and have a pulser/reed switch attached.
- Recycled water: Honeywell Elster V100 with T-probe, coloured lilac. Alternative sourcing is acceptable. The water meter shall be Watermarked, be painted lilac and have a pulser/reed switch attached.
- Chilled water: Siemens UH40. Alternative sourcing is acceptable. The thermal meter shall be tested to EN1434 and have a pulse output attached.
- Heating water: Siemens UH40. Alternative sourcing is acceptable. The thermal meter shall be tested to EN1434 and have a pulse output attached.

Where water meters are battery powered, battery life must be 12 years, minimum.

3.2. Telemetry

Each meter is to be wired back to a clearly labelled terminal within the telemetry hardware enclosure. The wiring to be used is shielded twisted pair, being Maser MAS1PRS485 or Unitronic 3800765 or equivalent. The total wiring run should not exceed 150m per meter.

The telemetry hardware for the AMI can be sourced from VRT or from alternative suppliers. The minimum requirements are:

- Modbus TCP based RTU for collection of metering pulses;
- UPS battery backup for 48 hours;
- Contained within a sealable enclosure; and
- Where powered from a GPO, the GPO must be enclosed or within its own sealable enclosure.

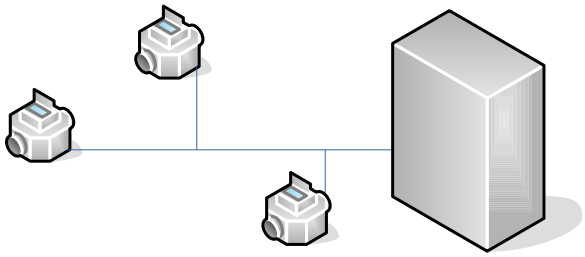
3.3. Head End System

The head end system for the AMI must be sourced through VRT to ensure compliance and compatibility with the VRT WideSky cloud solution. When sourced together, the head end system will be included in one of the telemetry system enclosures. Where sourced separately, the head end system will be supplied in its own enclosure and will require a GPO installed within or to be powered from a sealable GPO.

The head end system can communicate with multiple telemetry systems. The developer is to allow for a data connection between each telemetry system location and the head end system enclosure.

4. WIRED M-BUS METERING

Hardwired M-Bus metering is suitable for all meter types. It is best suited to installations where water meters are dispersed over a large area.



Drawing 2: Typical Hardwired M-Bus Metering Overview

4.1. Metering

The following water meters are recommended for use in a hardwired M-Bus metering AMI:

- Potable water: Alternative sourcing is acceptable. The water meter shall be Watermarked and have an M-Bus module attached.
- Hot water: Honeywell Elster S110 with M-Bus output. Alternative sourcing is acceptable. The water meter shall be Watermarked and have an M-Bus module attached.
- Recycled water: Alternative sourcing is acceptable. The water meter shall be Watermarked, be painted lilac and have an M-Bus module attached.
- Chilled water: Siemens UH-40. Alternative sourcing is acceptable. The thermal meter shall be tested to EN1434 and have an M-Bus output attached.
- Heating water: Siemens UH-40. Alternative sourcing is acceptable. The thermal meter shall be tested to EN1434 and have an M-Bus output attached.

Where water meters are battery powered, battery life must be 12 years, minimum.

4.2. Telemetry

Water meters may be wired together in a daisy-chain with one end terminated within the telemetry hardware enclosure. The daisy-chain may be star or branch topology. Ring topology is not acceptable. The wiring to be used is shielded twisted pair, being Maser MAS1PRS485 or Unitronic 3800765 or equivalent. The total wiring run should not exceed 300m per daisy-chain. There shall be no more than 40 water meters per daisy-chian.

The telemetry system for the AMI can be sourced from VRT or from alternative suppliers. The minimum requirements are:

- Modbus TCP based M-Bus relay device for collection of metering data from M-Bus enabled meters. Modbus mapping is to be defined by VRT;
- UPS battery backup for 48 hours;
- Contained within a sealable enclosure; and
- Where powered from a GPO, the GPO must be enclosed or within its own sealable enclosure.

4.3. Head End System

The head end system for the AMI must be sourced through VRT to ensure compliance and compatibility with the VRT WideSky cloud solution. When sourced together, the head end system will be included in one of the telemetry system enclosures. Where sourced separately, the head end system will be supplied in its own enclosure and will require a GPO installed within or to be powered from a sealable GPO.

The head end system can communicate with multiple telemetry systems. The developer is to allow for a data connection between each telemetry system location and the head end system enclosure.

5. WIRELESS CAT-M1 METERING

Wireless Cat-M1 metering is suitable for all meter types. It is best suited to installations where wiring is difficult or expensive to run and/or water meters are dispersed over a very large area.

Drawing 3: Typical Wireless Cat-M1 Metering Overview

5.1. Metering

The following water meters are recommended for use in a wireless Cat-M1 metering AMI:

- Potable water: Honeywell Elster V100 with T-probe. Alternative sourcing is acceptable. The water meter shall be Watermarked and have a pulser/reed switch attached.
- Hot water: Honeywell Elster S110 with pulse output. Alternative sourcing is acceptable. The water meter shall be Watermarked and have a pulser/reed switch attached.
- Recycled water: Honeywell Elster V100 with T-probe, coloured lilac. Alternative sourcing is acceptable. The water meter shall be Watermarked, be painted lilac and have a pulser/reed switch attached.
- Chilled water: Siemens UH-40. Alternative sourcing is acceptable. The thermal meter shall be tested to EN1434 and have a pulse output attached.
- Heating water: Siemens UH-40. Alternative sourcing is acceptable. The thermal meter shall be tested to EN1434 and have a pulse output attached.

Where water meters are battery powered, battery life must be 12 years, minimum.

5.2. Telemetry

The telemetry system for the AMI must be sourced through VRT to ensure compliance and compatibility with the VRT WideSky cloud solution. Each Cat-M1 telemetry device is battery powered, requiring no mains power. Each Cat-M1 telemetry device can have up to four (4) water meters attached.

Should additional wire length be required, the use of shielded twisted pair, being Maser MAS1PRS485 or Unitronic 3800765 or equivalent, is permitted. When extended, the total wiring run should not exceed 150m per meter.

5.3. Head End System

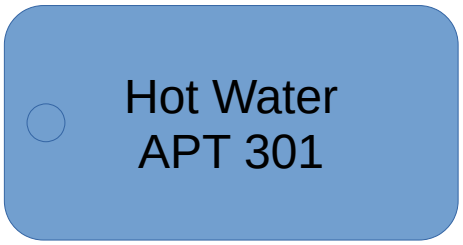
Wireless Cat-M1 metering requires no head end system. All data is transferred direct to the authorised cloud platform, WideSky.

6. LABELLING

6.1. Meter Labelling

All water meters must be labelled. The labelling shall include, at a minimum, the service type (potable, hot, recycled, chilled, heating) and the apartment name/number. The label can be printed or hand written in indelible ink. The label must be attached to the meter, not to piping. Labels shall be metal or plastic. Printed tape labels are not acceptable due to the likelihood of falling off.

The following example meets the minimum requirements.



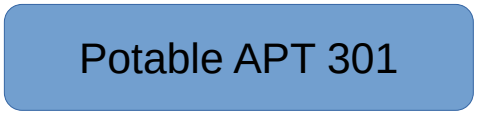
6.2. Wiring Labelling

For a hardwired metering AMI (both pulse and M-Bus), all cables must be labelled at both ends.

6.2.1. Hardwired Pulse Metering

The labelling shall include, at a minimum, the service type (potable, hot, recycled, chilled, heating) and the apartment name/number. The label can be printed or hand written in indelible ink. The label must be attached to the meter wiring at both ends. Labels shall be metal or plastic wire sleeve type labelling or equivalent. Printed tape labels are not acceptable due to the likelihood of falling off.

The following example meets the minimum requirements.



6.2.2. Hardwired M-Bus Metering

The labelling shall include, at a minimum, the service type (potable, hot, recycled, chilled, heating) and the range of apartments connected. The label can be printed or hand written in indelible ink. The label must be attached to the meter wiring at both ends. Labels shall be metal or plastic wire sleeve type labelling or equivalent. Printed tape labels are not acceptable due to the likelihood of falling off.

The following example meets the minimum requirements.

Potable APT 301 - 310

6.3. Other Labelling

Fixed equipment such as telemetry enclosures and head end enclosures are to be labelled. The labelling shall include, at a minimum, the service type(s) (potable, hot, recycled, chilled, heating) and the range of apartments connected. The label can be printed or hand written in indelible ink. The label must be attached to the meter, not to piping. Labels shall be metal or plastic. Printed tape labels are not acceptable due to the likelihood of falling off.

The following example meets the minimum requirements.

Hot & Recycled Water
APT 301-1001

7. TESTING AND COMMISSIONING

VRT shall provide commissioning documentation templates for each project. These commissioning documents must be completed in full and returned to VRT for review before a final test and inspection can be performed by VRT.

Alternatively, the developer may choose to utilise VRT's commissioning app to speed the commissioning process and reduce paperwork.

Testing and commissioning is to be completed by the developer or their nominated contractor(s). Tests to be conducted include:

- Continuity testing of all wiring;
- Power on tests of all active equipment;
- Flow test confirming accurate collection of volume measurements;
- Telemetry testing to VRT's WideSky cloud platform; and
- Documentation, including apartment details, meter serial numbers, telemetry connection details and photos of each meter in situ.

Once testing and commissioning is completed by the developer, VRT will perform a final validation and test prior to project sign-off. Any faults identified by VRT are to be rectified by the developer prior to VRT sign-off.

Green Square Water

a local utility by flow

30 October 2020

Chris Collins
Manager, Green Infrastructure Implementation
City Of Sydney *(Developer)*
Town Hall House, 456 Kent Street
Sydney NSW 2000

DRAFT ONLY

Dear Chris

Re: NOTICE OF REQUIREMENTS FOR NON-POTABLE WATER CONNECTION CERTIFICATE

Relevant Lot

Scheme: Green Square Town Centre
Lot No: 2//DP1174641
Lot Identifier: Site 13A (Community Facility and School)

The attached schedules set out the requirements of Flow trading as Green Square Water prior to a connection certificate being issued for the abovementioned lot (Relevant Lot).

Flow (retail supplier's licence number 13_001R), and its network operator, Green Square Water Pty Ltd (network operator's licence no. 15_031) operate in accordance with their respective licences issued pursuant to the Water Industry Competition Act 2006 (NSW). These licences allow for the provision of Green Square Water's recycled water for the following Authorised Purposes:

- Flushing toilets
- Supplying the only cold water taps for washing machines
- Irrigation
- Water features
- Cooling tower make-up*
- Street cleaning

**please note that the hydraulic design allowance includes cooling demand for retail and commercial spaces only. If the Relevant Lot intends to integrate residential cooling, please contact Flow immediately.*

Green Square Water's recycled water system servicing the Green Square Town Centre is also provisionally recognised as a reticulated alternative water scheme for the purpose of BASIX.

Hydraulic design allowance

The Green Square Water non-potable water system has been designed to meet Water Services Association of Australia Water Supply Code of Australia WSA-03 requirements to service the peak hour demand at a development's bulk delivery point. Note that hydraulic engineers designing for individual developments must consider the need or otherwise for the inclusion of a buffer tank in the development's plumbing network to meet probable simultaneous demand (PSD) as per requirements outlined in Section 3 of AS3500. The Green Square Water non-potable water system service will supply the following non-potable water demand to the Relevant Lot:

Peak daily demand:	TBC		kL/day
Peak hour demand:	TBC		L/s
Minimum pressure at bulk delivery point:		15	m head
Size of property service line:		50	mm diameter

This hydraulic design allowance has been calculated in accordance with Green Square Water's Design Summary Sheet, the Authorised Purposes and on the basis of the development yield information gleaned from the Developer's First Notice under its Voluntary Planning Agreement or other available sources. In the case of this Relevant Lot, the development yield used in assessing the hydraulic design allowance is as follows:

Residential apartments:		
Commercial floor space:	TBC	m^2
Retail floor space:	TBC	m^2
Cooling requirements:	TBC	

Please inform Flow immediately if this development yield information differs significantly from the proposed development.

Further information is available at our website: www.greensquarewater.com.au

Please do not hesitate to contact Flow if you have any queries.

Regards,

Darren Wharton
Executive Manager, Sustainable Utility Services

For and on behalf of:

Green Square Water *(The Utility)*
Network Operator's Licence No.: 15_031
Retail Supplier's Licence No.: 13_001R

t 1300 803 803
e contact@flowsystems.com.au
w flowsystems.com.au
a Level 40, 259 George Street, Sydney NSW 2000 Australia
acn 163 432 906

Schedule 1: Technical Requirements
Schedule 2: Administrative Requirements

Schedule 1: Technical Requirements

No.	Item	Requirement	Comment
T1	**Building design**	As soon as possible after receiving this Notice of Requirements, provide Green Square Water with the Development's First Notice under the relevant Voluntary Planning Agreement	This is required for Green Square Water to check that it has used the correct development specifications in its system design
T2	**Design and installation specifications**	Design and install non-potable water plumbing in accordance with the Plumbing Code of Australia and so that demand does not exceed the system allowances for the lot and only to supply the Approved Uses.	Note that Green Square Water's review of the hydraulic design is a hold point. Certificate(s) of Compliance (as required pursuant to by Section 15 of the Plumbing and Drainage Act 2011 (NSW)) to be provided to Green Square Water before the recycled water service can be connected.
T3	**Metering requirements**	Install meter(s) and associated telemetry in accordance with the Green Square Water Metering Requirements	Note: There are two versions of Green Square Water's metering requirements: 1. Bulk metering only 2. Bulk and sub-metering Both are available on the Green Square Water website: https://www.greensquarewater.com.au/recycled-water-requirements/
T4	**As Built drawings**	Provide as-built drawings of the non-potable water pipe connecting from the lot boundary to the bulk non-potable water meter and all associated plumbing and telemetry including data management unit and cabling.	In the event that the developer chooses to install sub-metering, as-built drawings shall be provided for all bulk and sub-meters, associated plumbing and telemetry including data management units and cabling.
T5	**Rainwater Systems**	The Developer must inform **Green Square Water** if the planned development includes a rainwater **collection and reuse** system.	Rainwater systems must be separated from the recycled water system(s) and reticulation. The Utility may also require a backflow prevention device on the recycled water system, if a rainwater system is installed.

Schedule 2: Administrative Requirements

No.	Item	Requirement	Comment
A1	Register the developer as a customer of Flow	Before being issued with a non-potable water meter, the developer is to register as a non-potable water customer using Flow's Integrated Water Services Application at: https://askus.flowsystems.com.au/hc/en-us/articles/205095744--Applications-and-Approvals-for-Connection	Upon practical completion and settlement the account can be transferred to the owners corporation but the developer will be responsible for payment of any non-potable water use until this point.
A2	Site inspection by Flow / Green Square Water	Provide 1 week's notice in writing to Green Square Water to carry out a site inspection of the finished installation	This is to allow Green Square Water time to confirm that the installed infrastructure can be connected and accepted.
A3	Handover checklist	Provide a completed Green Square Water Documentation Compliance Checklist complete with supporting information	A copy of the Green Square Water Documentation Compliance Checklist can be found in the attached RW Connection Package

BULK RECYCLED WATER METERING SPECIFICATION

Meter Type

- The bulk non-potable water meter for each building is to be an Elster meter, either V300 or H4000 models. Where the Elster V100 PSM-T meter is used, they are to be factory specified with 5 x 3 number wheel counters for generating 1 Pulse/5L.
- Each bulk meter is to be fitted with a voltage-free pulse output probe (as per the manufacturer's instructions) and continuously wired back to the remote telemetry hardware.
- Each bulk non-potable water meter is to be securely tagged using a durable fixing (eg. brass or other corrosion resistant metal) to identify the individual water usage fixture (eg. "Lot 15 – Bulk RW") associated with the specific water meter.
- Each bulk meter for non-potable water must be clearly identified and colour coded lilac to distinguish from the potable cold water service.

Meter Location

All non-potable water meters must be located within common areas of the development in accordance with the following requirements:

- Be in a location that allows unimpeded visibility and access for operations (including manual meter reading) and maintenance.
- Be located at a height (bottom of meter) between 1000mm and 1500mm (or as near as practicable to these heights) above floor level.
- Be in a location that provides adequate protection to the meters from physical damage (deliberate or accidental).
- Be in a location that is dry, well ventilated and minimises the impact of water leakage (ie. any area where water meters are installed is to be designed as a wet area in case of leaks during the servicing or replacement of meters).
- Be located in a non-metallic enclosure, cupboard or room (eg. dedicated hydraulics riser or utility meter room).
- Located upstream of all recycled water connection/service points.
- Installed where there is an adequate 4G coverage with Telstra. Where not possible a repeater device may be required to carry the 4G signal to the vicinity of the meter..

Water meters must not be located in any of the following locations:

- Within individual dwellings (eg. apartments).
- Within a pit, roof cavity or ceiling space.
- In a lift shaft or lift motor room.
- In a fire stairwell or fire isolated passageway.
- In a position exposed to excessive vibration or sudden/excessive temperature variations.
- In an area that also contains material which may corrode the meter.

Telemetry Infrastructure Requirements and Location

The telemetry device must be installed in a secure enclosure (such as a lockable cabinet) close to the bulk recycle water meter. Similar to the bulk meter, the cabinet must be installed in a position protected from weather, damage and vandalism.

The lockable cabinet need to have the following characteristics:

- H300mm x W300mm x D150mm (minimum)
- Din rail mounted in the cabinet to lodge the telemetry device as shown in Figure 1.
- Double 240V 10A GPO with RCD protection. The GPO is to be connected to secure electrical panel in order to avoid energy supply interruption
- Two 15mm holes drilled on the right and left bottom for reed switch pulse cable and antenna extension
- Two sets of keys
- The maximum distance between the bulk recycled water meter and the telemetry cabinet must be 3m

Design with
community in mind

Level 6, Building B
207 Pacific Highway
St Leonards NSW 2065
Tel +61 +61 2 8484 7000

For more information please visit
www.stantec.com.au

Stantec