

Green Square Integrated Community Facility and School Infrastructure Management Plan

Prepared for: School Infrastructure NSW

Attention: School Infrastructure NSW

Date: 19/05/2021

Prepared by: Antonio Lo Monte / Peter Mizza

Ref: 46826

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P:\46826\PROJECT DOCUMENTATION\MULTI DISCIPLINE\INFRASTRUCTURE MANAGEMENT PLAN\MD-IMP_003.DOCX

Revision

Revision	Date	Comment	Prepared By	Approved By
001	07-12-2020		FMP	Antonio LoMonte
002	12.03.2021		ALM	Antonio LoMonte
003	19.05.2021		ALM	Antonio LoMonte

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1. Introduction

This Infrastructure Management Plan (IMP) is provided to address the sections of the Secretary's Environmental Assessment Requirements (SEARs) relating to utilities infrastructure for the proposed project. The new 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.

The existing electrical, communications, water and sewer services along the boundary of the site are sufficient in capacity to service the site. All required authority works have been done or are in the process of being procured.

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.

This IMP outlines the advice obtained through consultation of the relevant authorities as per the SEARs. In section 2 of this report, 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 are outlined. Section 4 provides the new development site details; and section 5 elaborates the details for each service. Finally, in section 6, the report's conclusion and the respond to SEARs are provided.

2. Development Description

The proposed development is located at 3 Joynton Ave, 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 Infrastructure Management Plan (IMP) addresses the below SEARs item relating to utility infrastructure (under 'Key Issues', Item 15, first point) for the proposed project. A summary of the requirements is also provided.



SEARs Reference	Item	How this is addressed
Key Issues - Item 15	Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure.	Potable and Fire Services Water and Sewer: - Existing Capacity: Sections 5.4 to 5.6 of this IMP outlines the communications with Sydney Water regarding the existing water and sewer mains that can cater this development for its potable water, fire water and sewer drainage demands. According to the calculations and communication outcomes detailed in this section, the Sydney Water existing water and sewer assets around this site are sufficient to serve this development. - Augmentation requirements: No augmentation has been required based on the approval received from the authorities. - Easement requirements: No easement requirements have been required based on the approval received from the authorities. - Staging of infrastructure: There have not been any staging requirements based on the approval received from the authorities. Gas Supply: - This development is not utilising any gas. Electrical and Communication - Existing Capacity: Section 5.2 of this IMP outlines the liaison with City of Sydney in regards to the power supply arrangement to the site. - Augmentation requirements: The existing substation will be removed from the site and new power supply on the private City of Sydney network provided to the building. - Easement requirements: No easements are needed for the electrical and communication supply to the building. - Staging of infrastructure: No particular staging requirements for the electrical or communications supply to the building



4. Site Details

4.1 Site Location

The 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 below.



Figure 1: Site Location

5. Utility Services

5.1 Existing Electrical and Telecommunications Infrastructure

On the site there is an existing building with service infrastructure to be demolished/removed.

5.1.1 Existing Electrical Infrastructure

The lot has a power supply fed from Portman St to an Ausgrid 1.5MVA kiosk substation (S65968) which feeds the Private Wire Network switchboard labelled as the 'PWN main switchboard'. The PWN main switchboard feeds lots within the Green Square Joynton Avenue precinct.

The existing building on the proposed site houses a redundant Ausgrid substation S4250 which is to be demolished. An ASP Level 3 Ausgrid certified design AN-21501 has been provided for the removal of the existing substation.



Figure 2: Existing Electrical Infrastructure

5.1.2 Existing Communications Infrastructure

The existing communications installation is redundant and shall be removed. The NBN connection to the existing building is to be removed.

NBN and Telstra have existing cabling infrastructure reticulating down both Portman St and Joynton Ave.

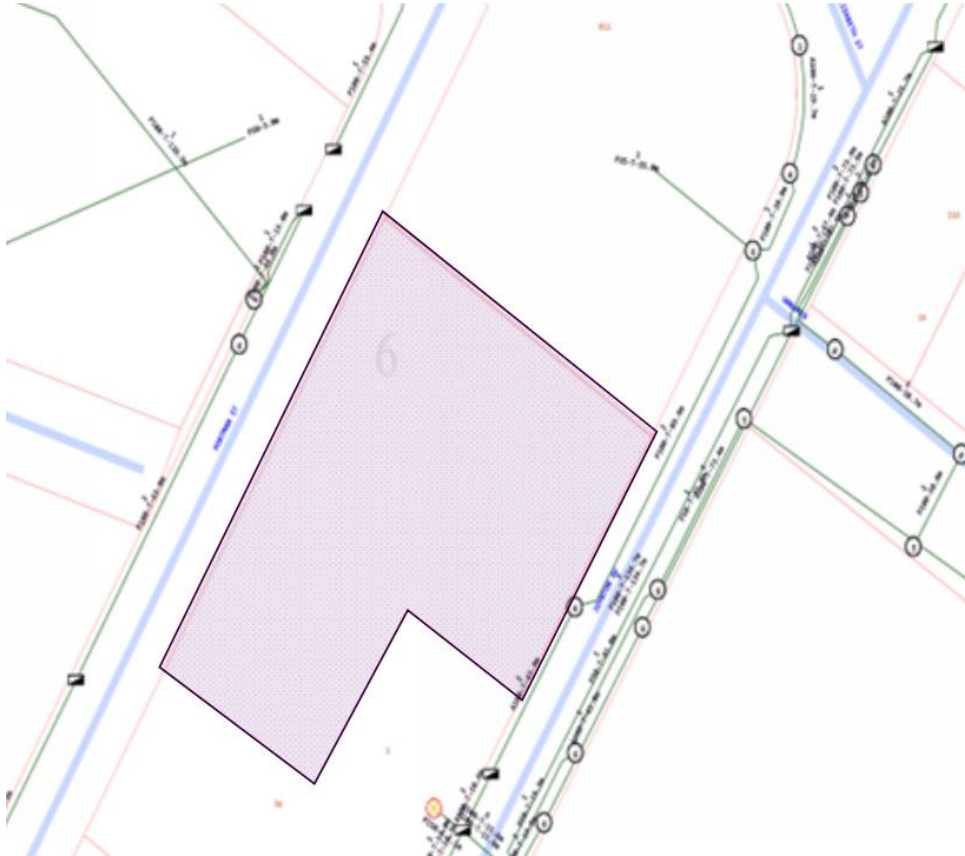


Figure 3: NBN/Telstra DBYD

5.2 Proposed Electrical Infrastructure

The supply to the new community facility and school site is proposed to be fed from the existing PWN main switchboard and terminated at a pillar or pit within the site boundary for the school development. The proposed power supply to the school shall be 630A from the City of Sydney network. Information of the power supply requirements have been issued through to City of Sydney technical representatives for their review.

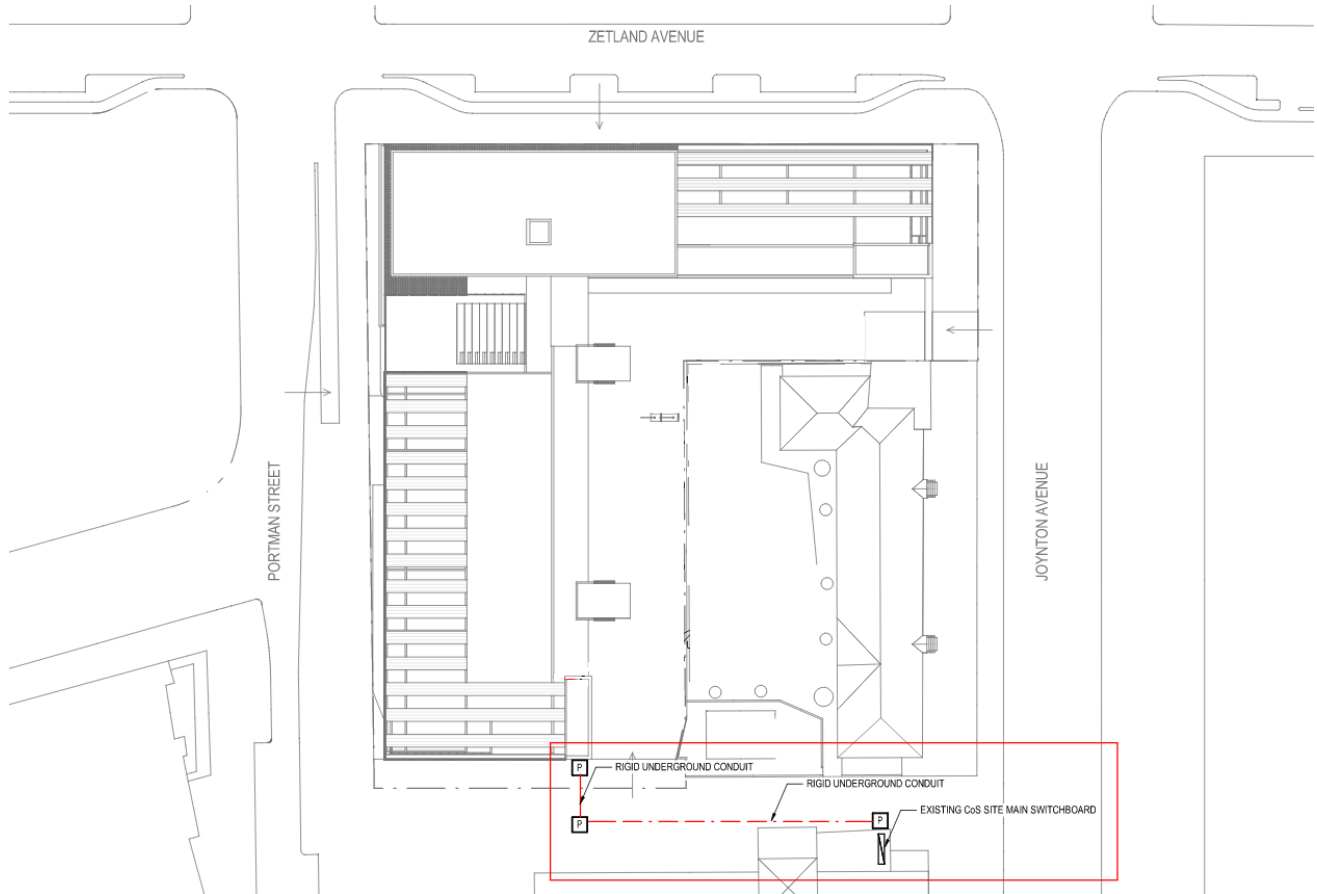


Figure 4: Proposed Incoming Electrical Supply

5.2.1 Communications with Agency

Coordination meetings have been held with City of Sydney technical representatives on the following dates:

- Site visit 12th June 2020 to review the existing infrastructure
- Coordination meeting 28th April 2021.

Outcome

The agreed outcome from these meetings was an in principle agreement for the 630A to be fed from the existing PWN MSB and the design information shall be sent to City of Sydney.

5.3 Proposed Telecommunications Infrastructure

Communications supply runs in the streets adjacent to the site. This pit network is proposed to be retained and utilised for an incoming communications supply to the new development. The final position of incoming communications pit shall be determined in later design stages.

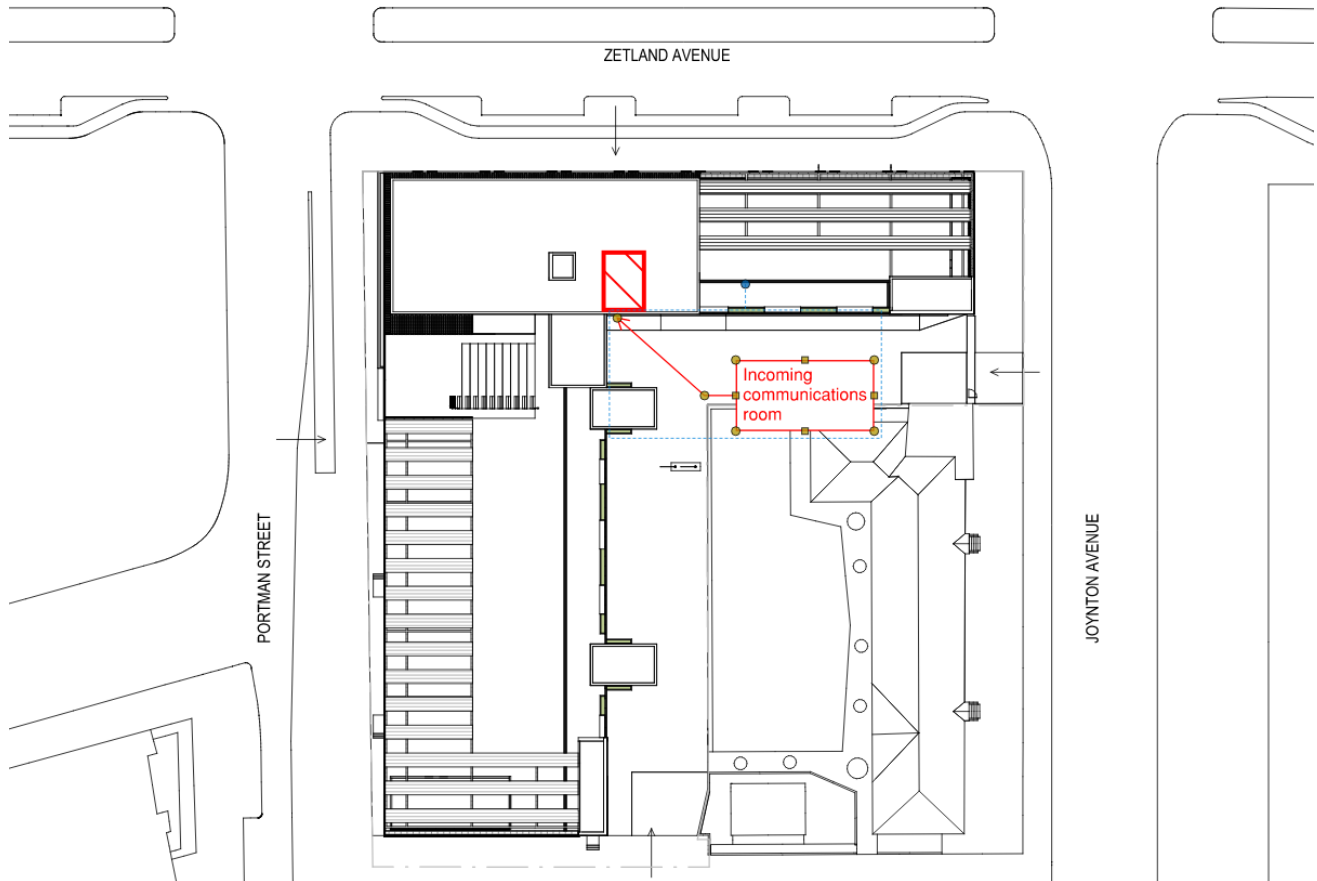


Figure 5: Proposed Incoming Comms Room Location

5.3.1 Communications with Agency

Coordination meetings have been held with Department of Education Information Technology Directorate technical representatives on the following dates:

- Coordination meeting 25th February 2021.

Outcome

The agreed outcome from these meetings was an acceptance from the DoE ITD for the incoming communications supply to be fed from Joynton Ave conduit pathways. Final connection details shall be provided in the Construction issue of documentation.

5.4 Proposed Sewer Infrastructure

There are existing Sydney Water sewer drainage services running through the external boundary of the Community School and Facility development site in the Portman Street at the west of the site, which are suitable for connection. The sewer main from the development area connects to the Sydney Water existing 225mm sewer main via a connection (junction) allowed for the connection of this site and adequately sized for the new development of the Community Facility and School.

Detailed calculations of the sewer drainage have determined a total sewer fixtures unit of 400FU, which can be served by a sewer line of 150mm @ 1% slope as per AS/NZ3500.2:2018 Plumbing and drainage Part 2: Sanitary plumbing and drainage.

Figure below illustrates the site new sewer main connection to the Sydney Water main on the Sydney Water Assets plan.

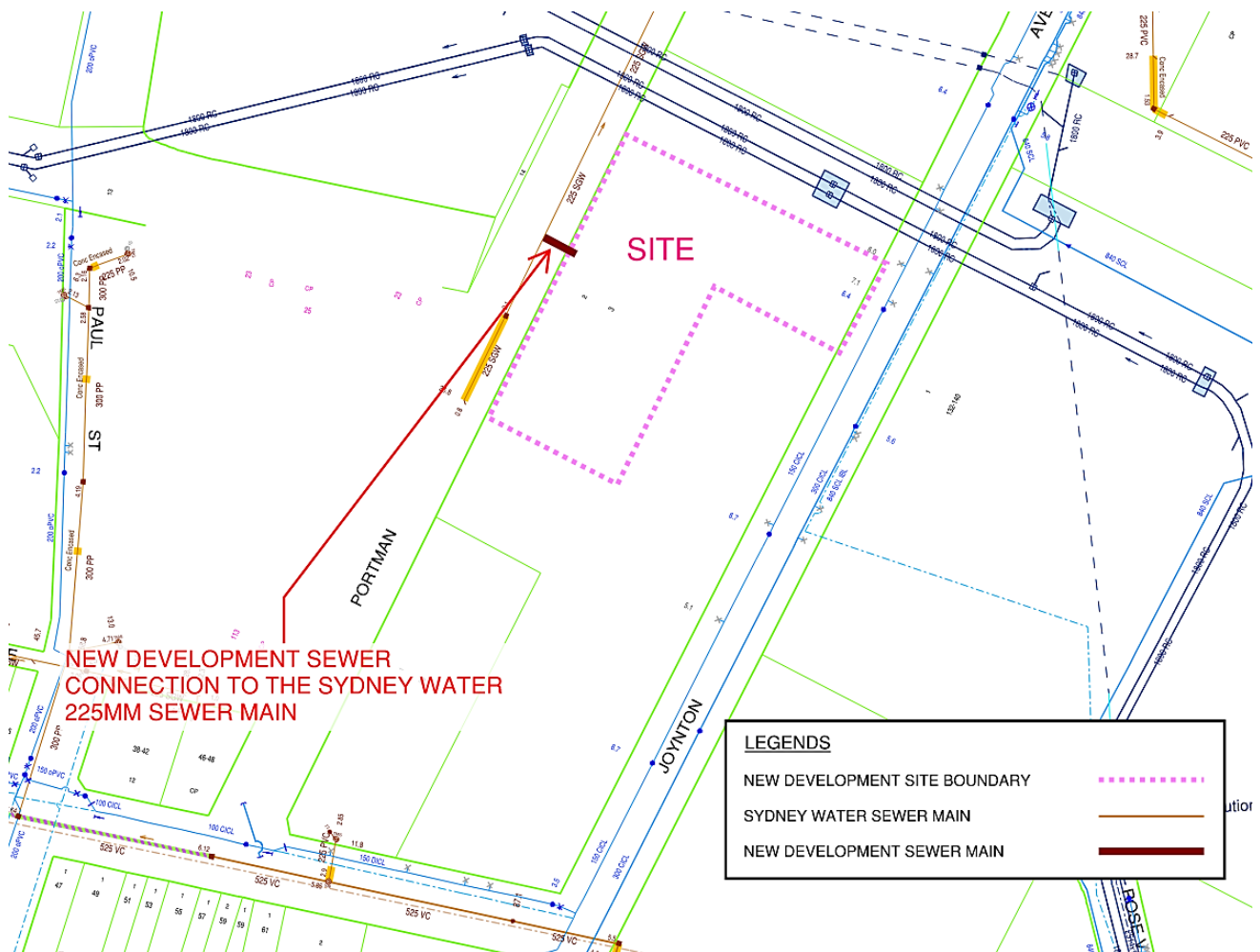


Figure 6: Connection to Sydney Water Sewer Main – Extract from Sydney Water Assets Plan

Also, the figure below demonstrates the connection point of the new sewer main line to outside of the site towards the Sydney Water sewer main on an extract of the hydraulic services drawing, level 00, sewer and stormwater.

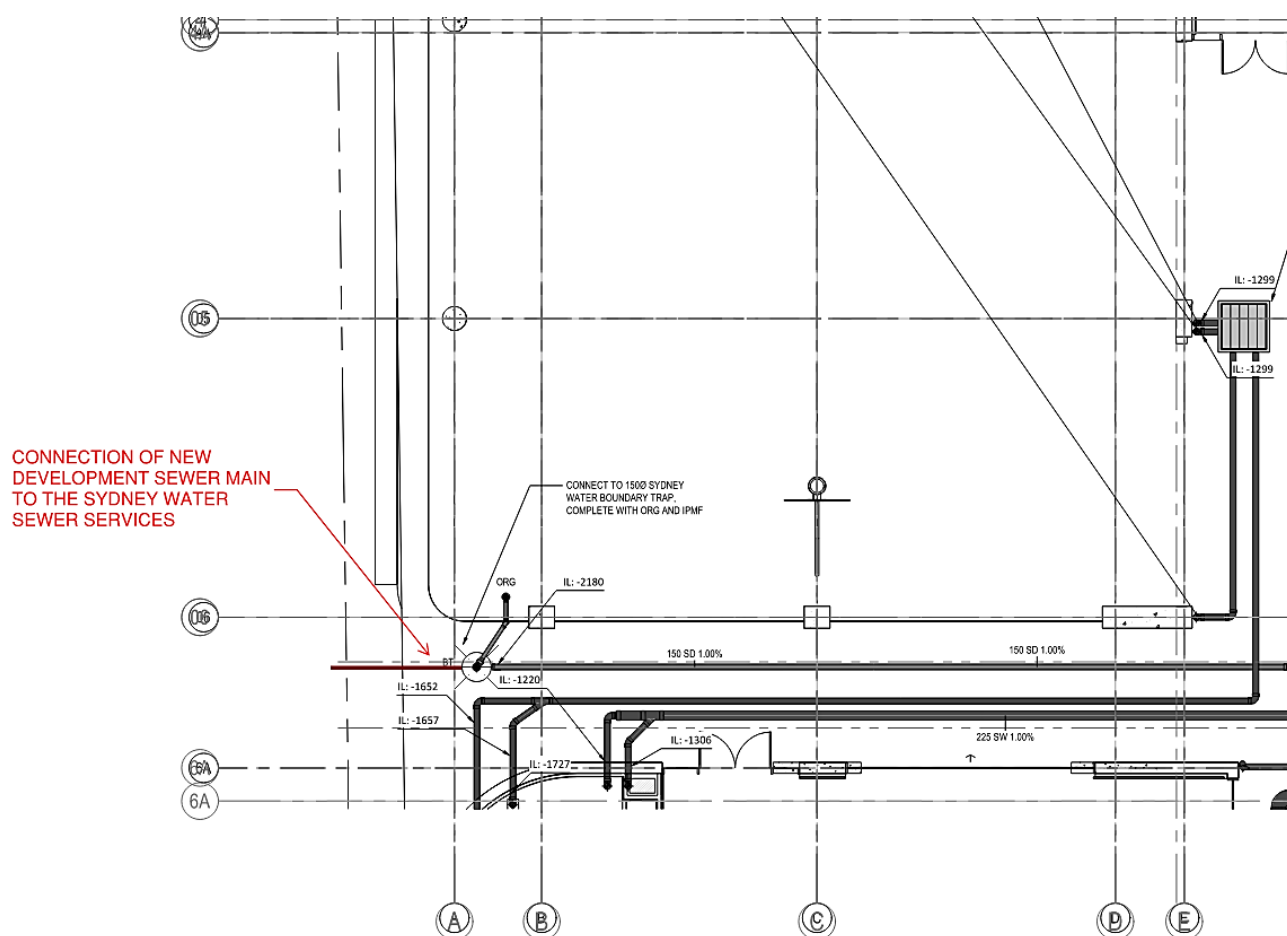


Figure 7: Extract from Hydraulic Services Drawing; Sewer and Stormwater - Level 00 - North

5.4.1 Communications with Authorities

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.

Next Steps

The successful plumbing contractor as part of the head contractor will apply for connection post construction commencement.

5.5 Proposed Potable Water Infrastructure

There is an existing 150mm potable water main around the site owned and operated by Sydney Water. This existing water supply in Joynton Avenue at the east of the Community Facility and School development site is able to provide adequate flow to service the development. A new water connection from this Sydney Water main will be provided to the development site.

Detailed calculations of the potable water demands have determined a water flow requirement of 7.1 litres per second probable simultaneous demand. The calculation has been carried out in accordance with AS/NZS 3500.1:2018 Plumbing and drainage Part 1: Water services.

According to the statement of available pressure and flow issued by Sydney Water in June 2020, shown in the figure below, the existing Sydney Water potable water supply 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	28
	10	28
	15	27
	20	26
	26	25
	30	24
	40	20
	50	15
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	5	28
	10	27
	15	27
	20	26
	26	24
	30	23
	40	19
	50	14
Maximum Permissible Flow	52	13

(Please refer to reverse side for Notes)

Figure 8: Sydney Water statement of available pressure and flow

Figure below illustrates the site new water main connection to the Sydney Water potable water main on the Sydney Water Assets plan.



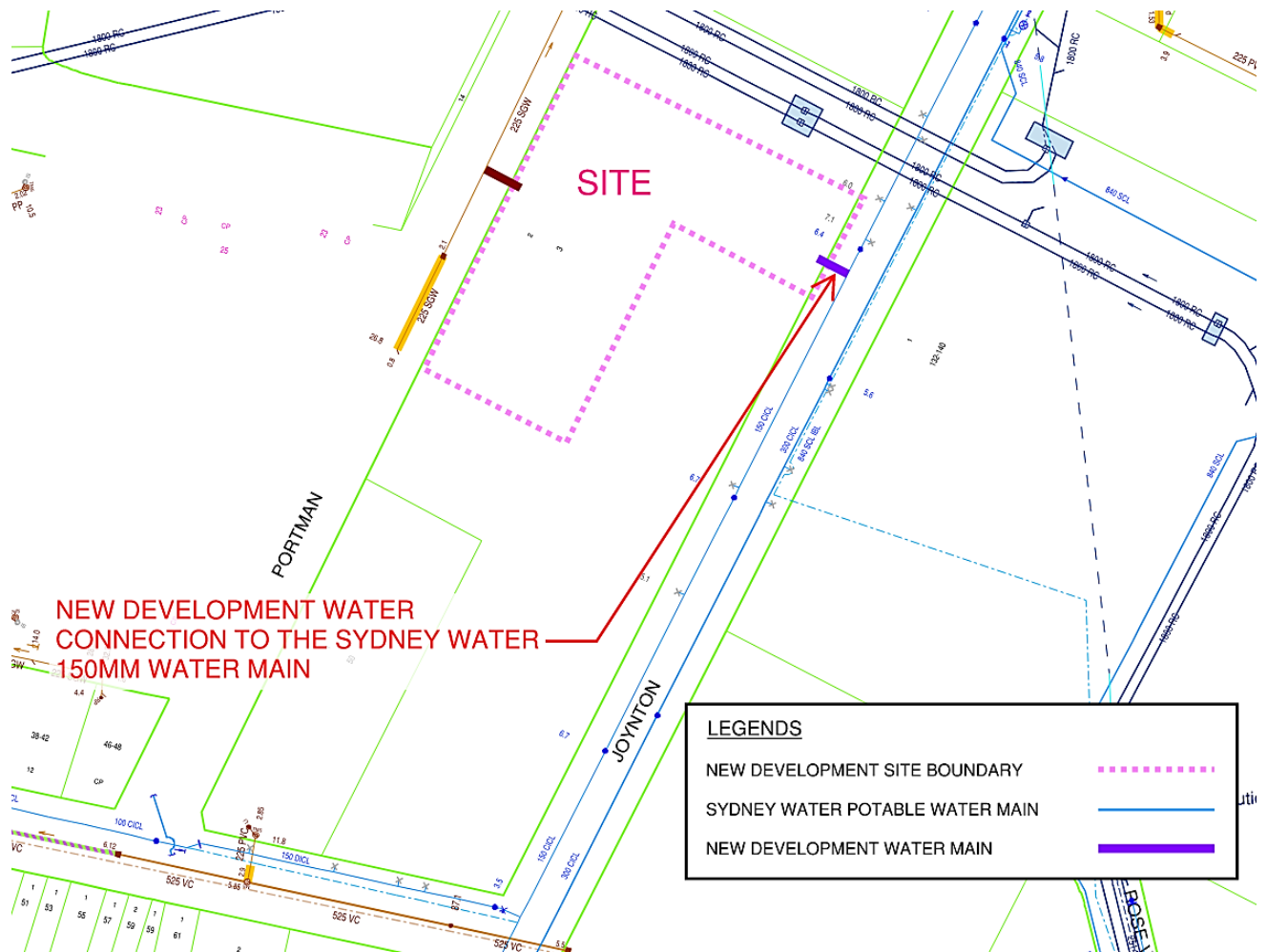


Figure 9: Connection to Sydney Water Potable Water Main – Extract from Sydney Water Assets Plan

Also, the figure below demonstrates the connection point of the new water main line – feeding potable and fire water – to outside of the site towards the Sydney Water potable water main on an extract of the hydraulic services drawing, site plan.

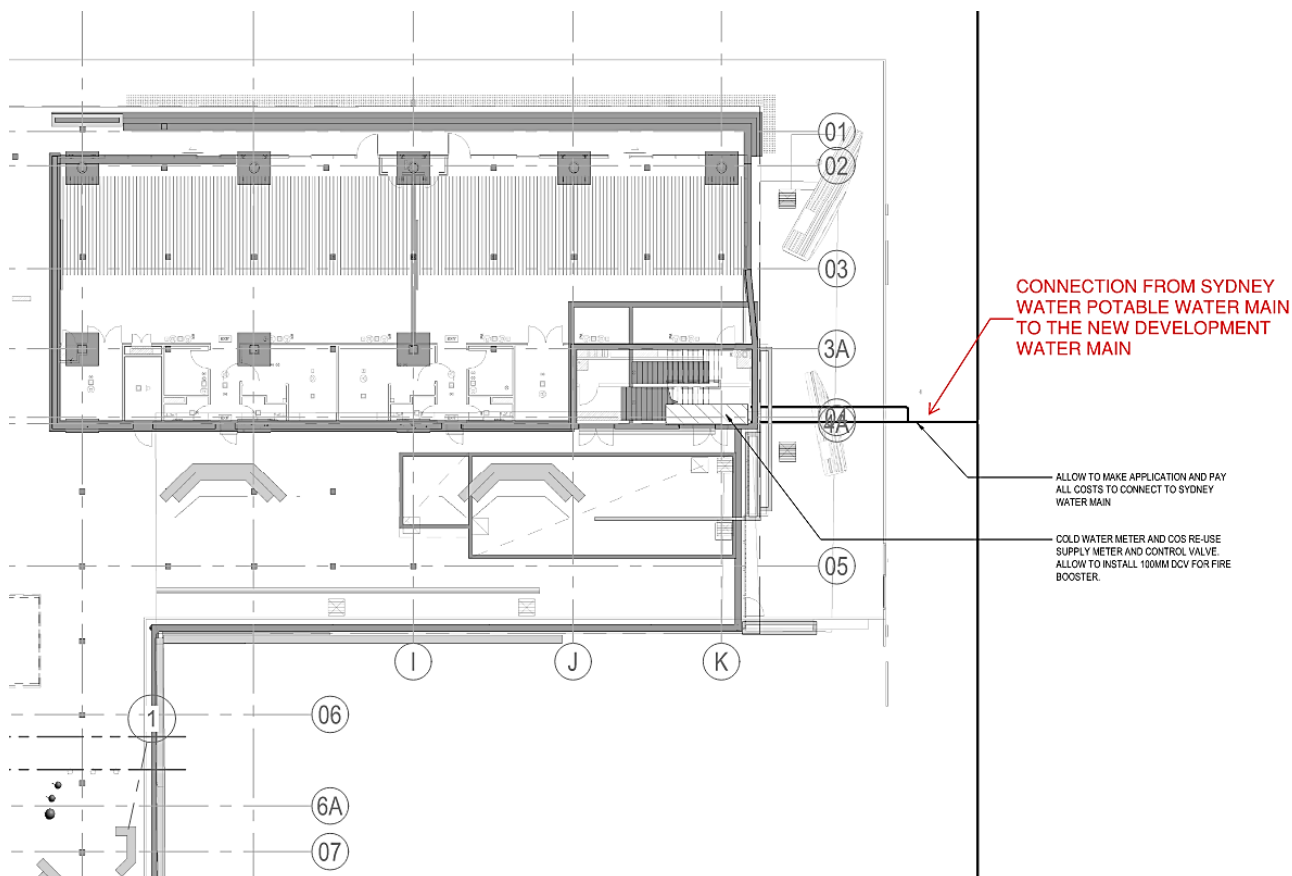


Figure 10: Extract from Hydraulic Services Drawing; Site Plan

5.5.1 Communications with Authorities

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.

Next Steps

The successful plumbing contractor as part of the head contractor will apply for connection post construction commencement.

5.6 Proposed Fire Protection Infrastructure

A new fire hydrant system will connect to an existing authority supply which will reticulate throughout the new development of the Community Facility and School. The fire hydrant will make connections into the existing Sydney Water 150mm water main in Joynton Avenue.

Detailed calculations of the fire services demand determine 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 = $2 \times 10 = 20$ l/s

According to the statement of available pressure and flow issued by Sydney Water in June 2020, shown in Figure 8: Sydney Water statement of available pressure and flow, the existing Sydney Water potable water supply is able



[illegible]

Also, the figure below demonstrates the connection point of the new water main line – feeding potable and fire water – to outside of the site towards the Sydney Water potable water main on an extract of the hydraulic services drawing, site plan.

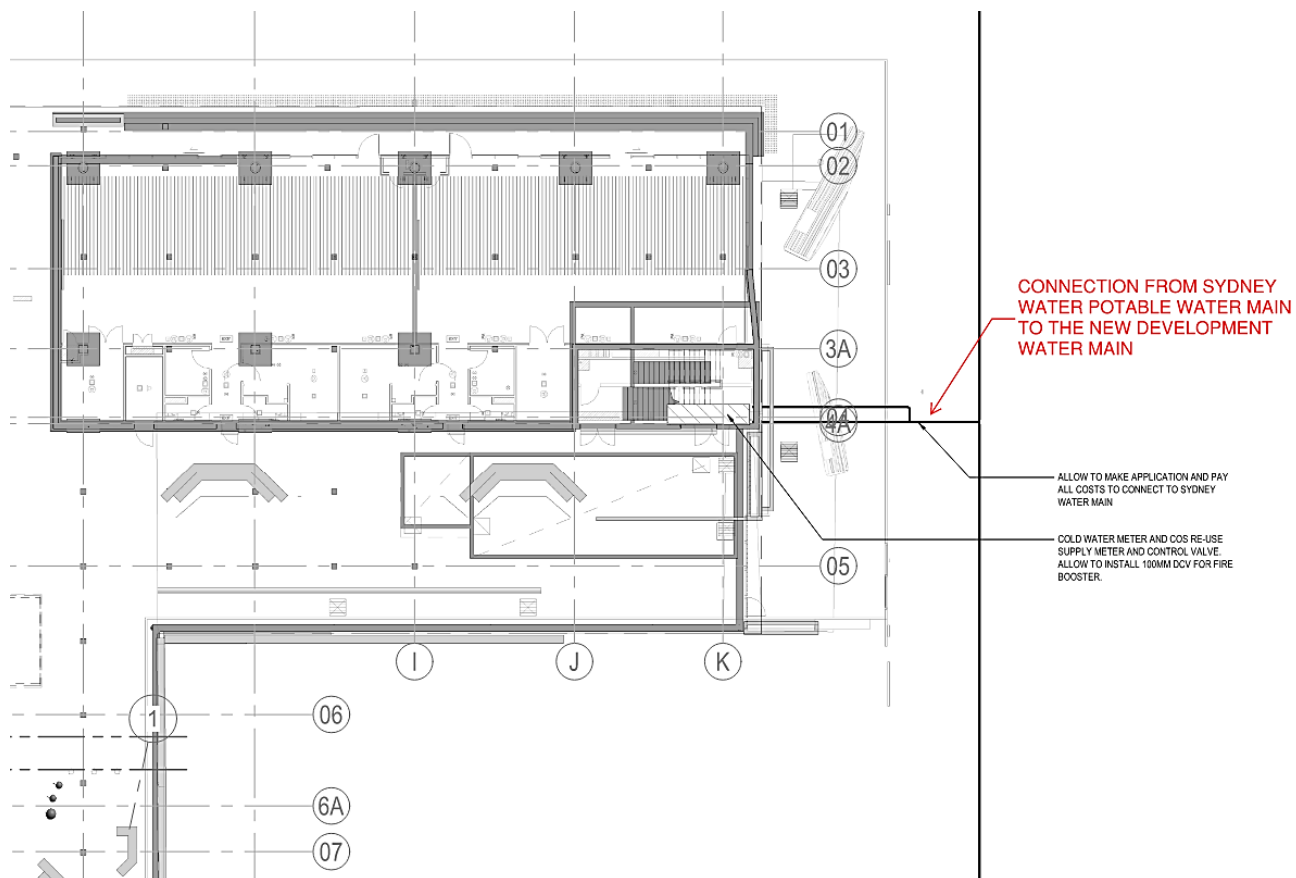


Figure 12: Extract from Hydraulic Services Drawing; Site Plan

5.6.1 Communications with Authorities

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.

Next Steps

This is done at the same time as the water connection.

6. Conclusion

This Infrastructure Management Plan (IMP) 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 Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure."

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

As for potable water, fire services water and sewer drainage, 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, fire services water demand and the sewer drainage load of this development were calculated and after comparing the outcomes with the permissible figures in the pressure and flow statement, it was determined that the existing Sydney Water potable water and sewer mains and the allowed connections are sufficient to service this development.

In conclusion, the existing electrical, communications, water and sewer services along the boundary of the site are sufficient in capacity to service the site.



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:

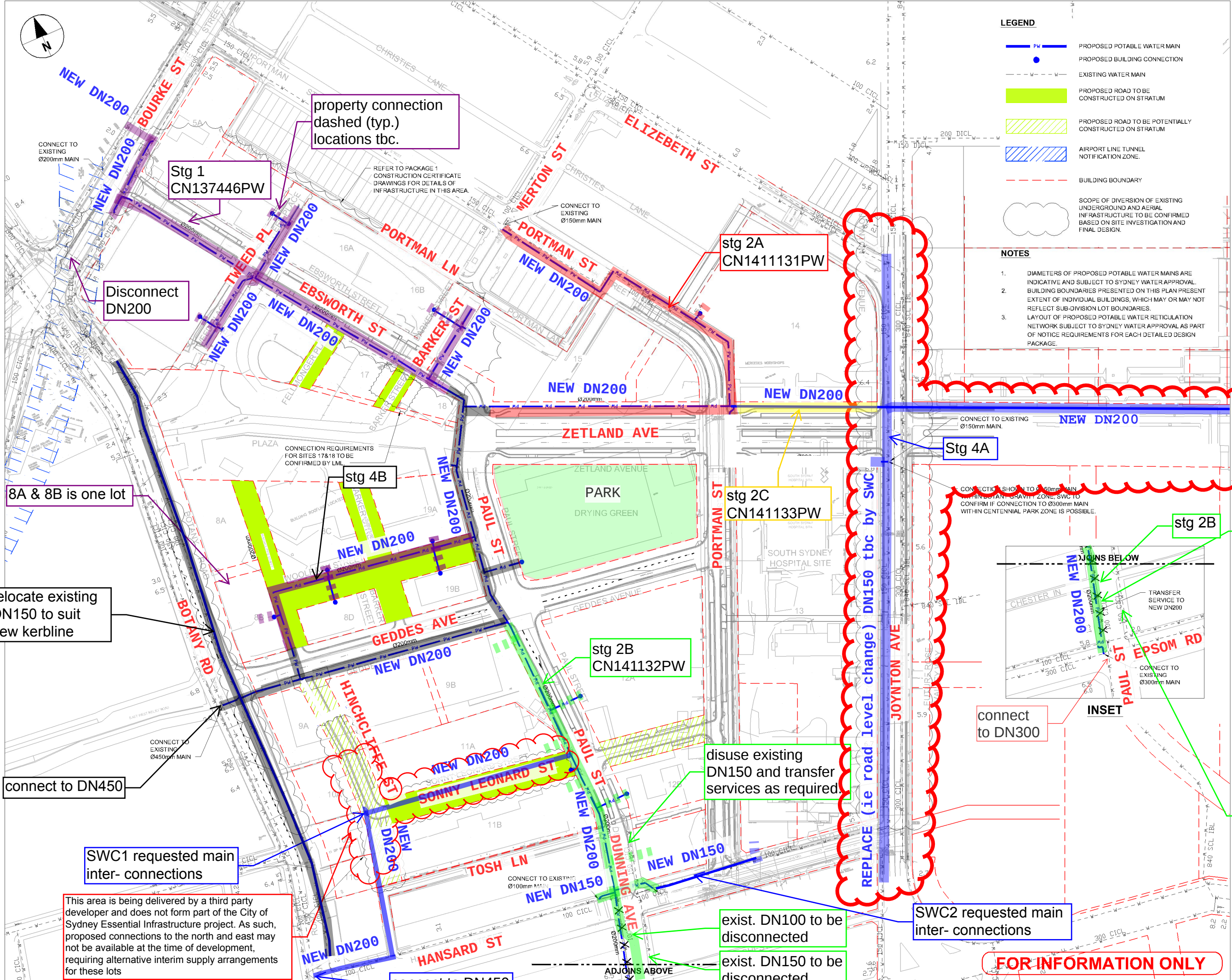
Green Square Potable Water and Wastewater Servicing Plans

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



PROJECT
**GREEN SQUARE
TOWN CENTRE
EIPD - PHASE 01**

CLIENT



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

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

SCALE BAR

0	25	50
13.11.2015	ADD BOTANY ROAD AND ZETLAND AVENUE EAST	
12.30.06.2015	MODIFY HINCENCLIFFE	
11.04.06.2015	INFO-PAUL ST AMNEEDED	
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

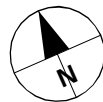
60300384

SHEET TITLE

PHASE 01
POTABLE WATER
SCHEMATIC DESIGN

SHEET NUMBER

60300384-SKE-01-00-C-0030



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

outside scope of
EIPD - building to
make application

outside scope of
EIPD - building to
make application

stg 4 - if required

stg 4 - if required

stg 2b

stg 3b

Works by others 3b

CONNECT TO
EXISTING
Ø100mm MAIN

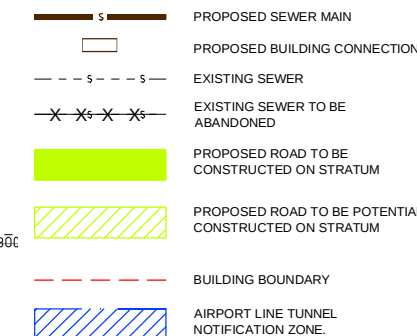
PROPOSAL FOR SERVICING LATERAL
CORP LAND, INCLUDING DESIGN,
APPROVAL AND CONSTRUCTION TO
BE PROGRESSED SEPARATELY. —

CONNECT TO
EXISTING
Ø525mm MAIN

outside scope of
EIPD - building to
make application

outside scope of
EIPD - building to
make application

LEGEND



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.



PROJECT

GREEN SQUARE
TOWN CENTRE
EIPD - PHASE 01

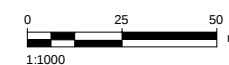
CLIENT



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

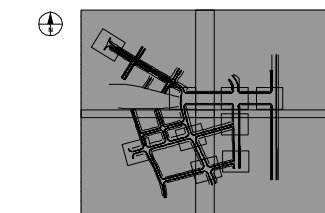
SCALE BAR



ISSUE/REVISION

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
I/R	DATE	DESCRIPTION

KEY PLAN



PROJECT NUMBER

60300384

SHEET TITLE

PHASE 01
SEWER
SCHEMATIC DESIGN

SHEET NUMBER

60300384-SKE-01-00-C-0032

FOR INFORMATION ONLY

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

