Infrastructure & Services Report

SCEGGS Darlinghurst
215 Forbes St,
Darlinghurst NSW 2010

contents

Rev	Date	Description of Revision	Prepared By	Reviewed By
0	03/08/18	Draft	MR, AS	MS
1	16/08/18	Draft	MR, AS	MS
2	19/10/18	Final Report	MR, AS	MS
3	26/10/18	Final Report	MR, AS	MS
4	7/11/18	Final Report	MR, AS	MS
5	13/11/18	Final Report	MR, AS	MS

The reader's attention is drawn to the following important information:

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1.introduction

1.1 general

The SSD DA seeks development consent for:

Concept approval of the 2040 Masterplan for the SCEGGS Darlinghurst campus, including:

- Conceptual approval for the demolition of the following buildings:
  - Wilkinson House fronting Forbes Street
  - Library and science building fronting Bourke Street
  - The old gym building at the northern end of Thomson Street
  - Part of the additions to the Barham Building fronting Forbes Street
- Building envelopes and land use for the following new buildings:
  - Four-storey school building at the corner of Forbes Street and St Peters Street for general school purposes
  - Maximum seven storey multi-purpose building fronting Bourke Street for general school purposes and a potential centre based child care facility
  - On-site vehicular drop-off with associated car parking from Bourke Street within the multi-purpose building
  - Maximum three-storey administration building fronting Forbes Street for general school purposes
- Conservation works to the existing Barham Building within the school premises to remove non-original building fabric and use for general school purposes

Detailed consent for the demolition of Wilkinson House, basement excavation, and construction of a new four storey building (new Wilkinson House) comprising approximately 1,507sqm of gross floor area (GFA) and a maximum height of 15m for the purposes of new teaching and education spaces.

erbas™ have been engaged to undertake master planning of the Wilkinson House redevelopment, new Multi-purpose Building, new Administration Building and restoration of the Barham Building for hydraulic, electrical and fire services infrastructure at SCEGGS Darlinghurst with the aim to identify any performance or maintenance concerns with the hydraulic, electrical and fire systems located within the areas as defined by the scope.

The scope includes;

- Services related input required to assist in the lodgement of the SSDA package including the Master Planning aspects, and the early design development phase of the refurbishment/redevelopment of Wilkinson House.
- Discuss, review and confirm client brief, project objectives and relevant design criteria to assist with cost planning;
- Review available site information and collate into a relevant report detailing major items anticipated for the development of the next phases of works;
- Discuss potential project effects on infrastructure with authorities / utilities;
- Review existing documentation;
- Life Cycle costing estimates on existing site infrastructure;
- Assessment of any relevant alternative system solutions;

This Infrastructure Management Report will outline;

- Authority services alignments;
- Existing service assessments (where information is available);
- Essential services over view;
- Intended services strategies.

The information used to compile this report is current at the time of issue. It is noted that any future infrastructure or adjoining development plans not available for public information have not been considered in its preparation.

Construction compliance issues that will need to be addressed by any future upgrades include:

- Compartmentation and separation;
- Provisions for escape;
- Construction of exits;
- Access for people with disabilities;
- Atrium (interconnecting floors) construction.

It was concluded that several of the existing building services systems are inherently non-compliant with current standards, including those legislated by BCA 2016. This is not unexpected as standards have been updated or introduced since the original construction. Any service augmentation or capacity assessment has taken this into account and should not affect the outcome or recommendations herein.

The information within this report has assumed optimal use of available site information whilst also considering the Building Code of Australia, relevant Australian Standards and Codes, client driven design guidance and best practice industry guidelines.

Whilst a number of documents are available for the site and its surrounding buildings their currency has been considered and caution has been taken. The supplied documents deal with some of the more recent project executions and relevance toward the applied Council Standards has been drawn where it could be reasonably assumed.

Where specific information was not able to be verified within the remit of the site visit these aspects have been noted to be further investigated. Any collected information will be added to this report in the next revision. It is important to note no intrusive testing or measurements have been carried out to date to the exception of those carried out under previous project completions.

The services strategy herein includes for conceptual master planning and expectations sufficient for Department assessments, or SEARS review.

The information contained within this report has been prepared by erbas™ to provide detail for the master planning aspects of SCEGGS Darlinghurst. The intent of this report is to provide a detailed overview of the existing services, and to create an infrastructure methodology framework to enable a review to take place to generate costs and subsequent planning approach.

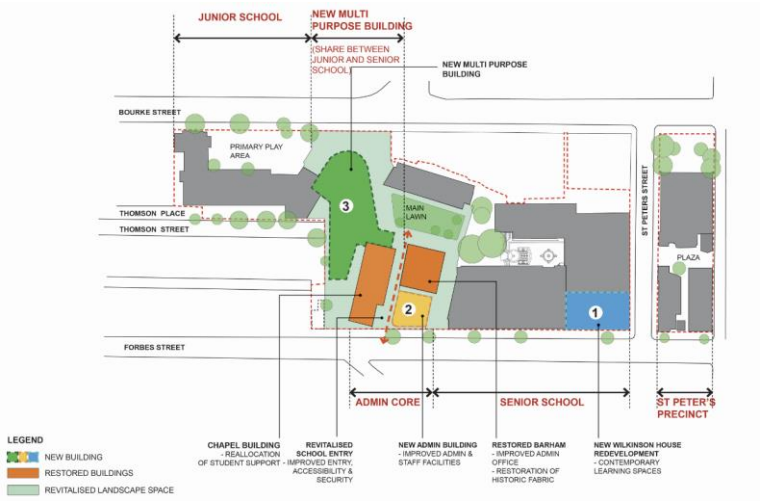

Figure 1; existing masterplan

1.2 limitations

The preparation of this documents planning approach for each of the major building services disciplines is based upon review of the existing approved strategic direction for the master planning of the campus to, '*improve on existing school facilities and to improve the quality of the teaching and learning environment.*'

The approach for each of the services disciplines is based upon preliminary planning in tandem with a high level analysis of the existing services condition and layouts.

This report does not currently incorporate specific fire engineering solutions or identified constraints, though it does consider the retention of the existing fire engineering to be retained on the site wherever feasible. However, it is noted any suggestion herein is to be tested against existing and required fire compliances as the project planning develops.

This report does not incorporate any specific requirements of the project that may be imposed as part of any required development conditions.

The following methodology was used to develop the strategies herein;

- Consideration of the current master planning methodology and reports available
- A review of as built documentation;
- A non-intrusive inspection of the existing site including plant and exposed services arrangements;
- Commentary on the adequacy of plant and systems to meet a minimum performance when weighted against the current Standards of performance;

The recommendations herein remain fluid and changeable once the needs of the project are further refined.

1.3 applicable documents

The following standards will be applicable throughout the project:

- National Construction Code BCA (2016);
- NSW Statutory Regulations;
- Relevant Australian Standards including but not limited to AS 1170, AS2118, AS 2441, AS 2419, AS 1668.1, AS 1668.2, AS 3666, AS 4254, AS 1432, AS 3000, AS 3008, AS3500 and AS 5601;

1.4 sources of information

This report is based upon the following information:

- Briefing documentation supplied via Google share drive;
- Architectural plans (where available);
- Existing external utilities information;
- Non-intrusive site investigation.

2. overview of existing site

2.1 general

SCEGGS Darlinghurst is located in the central suburb of Darlinghurst and is accessed by Bourke Street from the West, Forbes Street from the East and St Peters Street from the North. The Campus has multiple existing buildings on the site. On the Southern side it is surrounded by residential dwellings. The site area is estimated at 13,676m².

Wilkinson House (Gwydir Flats) was built in 1926-27. It was purchased in 1960 by SCEGGS to be utilised for boarding accommodation and is now used as general-purpose classrooms and tutorial areas. It has been identified as an item of moderate heritage significance as a three storey inter-war apartment building, typical of architect designed apartment buildings of the 1920s. It is understood that the site is located within the East Sydney and Darlinghurst Conservation Area (CA18) in the South of Sydney LEP.

The systems installed within Wilkinson House appear to be amended and reworked at various stages over time and the service configurations appear to meet a typical expectation for a building of this age. There are several standards of performance currently being applied within Wilkinson House that would need to be considered within the building and around it.

Further there appears to be installations within the fire services arrangements that support Engineered Solutions for the other buildings. This means future planning needs to be considerate to replace any strategy that may be removed by future planning so as not to risk deficiency in the remaining buildings.

Also, of consideration is the recent (3-5 years) completion of the electrical substation works located within the Forbes Street entry way. Further investigations are required with the supply authority to ascertain whether sufficient allocation exists to service any service upgrade to replace the existing overhead power supply connecting Wilkinson House currently.

The assumptions of this report are considerate to the requirements of an SSD Application as seeking approval for the following components of the future development:

- Site preparation works, including temporary services and facilities to support demolition and clearance of the existing areas as required by the works;
- Services termination sufficient to facilitate safe reconfiguration the proposed layouts;
- Services re integration to the new building form by staged construction of new services and extension of existing services where deemed appropriate to service the new layouts and building uses;
- Fit out of new floors in accordance with Council criteria and to meet the current construction standards;
- Advice for any required infrastructure augmentation and integration of services required for the Public domain improvements surrounding the site;
- Installation of services to meet equivalent quality of the current Standard requirements;

3.services executive summary

The detailed impact assessment of the Project had the following focus areas;

- Existing infrastructure capacity and redundancy;
- Existing infrastructure proximity to the footprint;
- Services augmentation or diversions that may be required;

Summary Statement;

The Water, Gas, Sewer and Electrical infrastructure has been reviewed and the result of the investigations and enquiries outlined herein is that **there appears to be sufficient capacity in the surrounding infrastructure to support the Project without the need for major augmentation or diversion of the surrounding supplies available to the campus.**

Various temporary strategies for protection of utility infrastructure will need to be employed during construction. Some services had been identified as traversing the site during previous development of the Science & Technology Centre. Venting re arrangement and stormwater diversions have been subsequently completed and appear to leave the site free of major service crossings in the current state.

4.services

From the information reviewed on site, also verified by documentation received from the relevant authorities we can ascertain the connections and mains within the surrounding streets appear adequate to service the development.

Sewer drainage connection originate from different connection points for each building also. Wilkinson House connects to the 225 VC sewer main within St Peters Street. Barham Building appears to connect to the 450 SGW sewer main within Forbes Street and the existing Library Building connects to 225 VC sewer main within Bourke Street.

It is reasonable to assume the sewer load for any future refurbishment or redevelopment will be adequately serviced by the surrounding infrastructure. The existing main is located within the road and is noted as being concrete encased. The Wilkinson House service connection is the last connection on this sideline, this can sometimes indicate there will be a sewer vent to consider with these works, however this has been dealt with as part of the previous stage works and is therefore not an issue burdening the site.

The feasibility assessment has found that the sewerage service diagram is out of date and further investigations of the sewer exiting the site will need to be investigated by a water service coordinator during the Section 73 process. Currently Sydney Water is undertaking the process of separating the sewer and stormwater systems in Forbes Street. Due to this a new main will be constructed to serve the development and will require an extension to the development at the developer's expense. Refer to section 6.3 for feasibility letter from Sydney Water.

Potable water service connections originate from different connection points for each building. Wilkinson House connects to the 150mm PVC main on Forbes Street, as does the Barham Building but from a separate connection point. The current existing Library Building connects via the 150mm DICL main in Bourke Street. Mains flow data is yet to be received however it is reasonable to assume the potable water demands for any future refurbishment or redevelopment will be adequately serviced by the surrounding infrastructure.

It is considered that any new service supply will require local pressure boosting to maintain adequate performing pressure. Supply quantity (flow) shall not be diminished or affected within the current assumption of a reorganised floor plate with similar population figures.

Potable water sources are readily available from the street mains while alternate sources may be used as per the SEARs document Integrated Water Management Plan. Rainwater capture for reuse in the drainage of WCs is an option if rainwater tanks and filtration devices are installed. However, due to the minimal amount of fixtures within the project the cost may outweigh the benefit on using alternate water sources.

The feasibility assessment has found that existing main in Forbes Street where the building connect is the preferred connection point.

Hydrant and sprinkler protection also connects to this infrastructure located within Forbes Street. The wet fire systems installed within Wilkinson House appear to be amended and reworked overtime. There is several standards of performance currently being applied within Wilkinson House.

There are a number of drencher applications that have been applied to the site and these have been installed to support various Fire Engineered Solutions. Each Solution has been put in place to address short falls of performance or compliances of some of the adjoining buildings. Any existing strategy that is applied to Wilkinson House would be required to be reviewed against each planning proposal to ensure a site wide strategy is developed in its place.

Whilst the pump arrangements and Sprinkler and Drencher valve sets have undergone recent upgrades (3-5 years) the installations within Wilkinson house remain of an earlier Standard of performance. The most notable of these being that hydrants are located external to fire isolated passageways. This is indicative of an Ordinance 70 installation, yet the pump arrangement appears consistent with an approach required by the current provisions of AS2419.

The sprinkler installations are burdened with additional drenchers that appear retrospective to previous project completion requirements due to proximity of new structures to the existing Wilkinson House.

It is considered that any new works requiring upgrade of the services will be challenging as complete renewal of the installed wet fire systems will most likely be required. This would involve the removal of the existing building fabric and installation of new isolated pathways to accommodate the installation of hydrants within fire isolated passages. The interconnection of floors would need to be addressed via an engineered solution also. To remediate this will likely require mechanical ventilation and smoke control to be added.

The feasibility assessment has found that due to the many water meters on the site and increased water usage over time, Sydney Water recommends a further assessment of the firefighting ability of the site.

Any new works proposed through the SSDA process will invoke a requirement for the upgrade of services to meet the new and current standards. It is noted that whilst the base system appears to have a level of compliance the works required internally would constitute major works as realignment as the structure and framework of the building do not consider the standards required to facilitate any services changes easily.

Wilkinson House contains **smoke detection and emergency and exit lighting** also installed to meet various Standards of compliance as the campus plans have developed and changes of use to the building have been implemented over time. The overarching interconnection of the systems means that similar to the hydrant and sprinkler systems the backbone of the system appears to reach a level of compliance, whilst the internal structured cabling does not within the confined of Wilkinson House.

The overall essential services systems currently installed within Wilkinson house are layered. Each system has been adapted reactively in an attempt to keep the performance of the systems up to the required level. The resulting fire systems require a consolidated approach to achieve a consistent level of compliance with all adjoining buildings. In order for the system to come back in line with the current standards and meet the performance provisions of the building code of Australia 2016 significant works will be required.

The essential services for Wilkinson House specifically appear to be functioning as expected however any further augmentation to meet the current level of performance would require a complete renewal of each system meaning providing separate fire rated cabling pathways, constructing fire isolated passageways, installing new system components would be required to bring Wilkinson House to a level reaching compliance with the current standard

Natural gas is currently connected in multiple locations throughout the site. The existing Library is serviced by a regulator connected to the 210kPa network main within Bourke Street. The other buildings in this scope are connected to the 210kPa network main via Forbes Street through separate connections.

It is possible for each building to be connected to natural gas. At this stage we are considering gas supply for the future design of the proposed developments and no significant work are anticipated to incorporate this into the strategy.

The existing **main electrical infrastructure**, including **switchboard and general power distribution**, appears to be original base-build. The majority of the services appear to be from the original install dates although some of the base building installations were replaced during multiple refurbishments and changes of use over the years.

The documentation received to-date indicates that the site supply of electrical services have been recently upgraded by the addition of a substation within the Forbes Street entry way.

Maximum demand of Wilkinson House (fully air-conditioned) is around 250A, and this can be accommodated without installation of a second substation or upgrade of the existing main switchboard. However the existing switchboard and electrical supply to the building will probably need to be upgraded.

A **new surface chamber substation** and main switchboard may be required for the future Multi-Purpose Building. Both of these would be located inside the Multi-Purpose Building.

A **new main switchboard** will be required in accordance with AS 3439 and will be located within a two hour fire rated purpose made room (in the Multi-Purpose Building). The switchboard shall accommodate Current Transformers for Authority metering. The switchboard shall also incorporate a 'point of entry' surge protection device associated the building voice /data network installation. The doors to this room shall be outward opening, full height swinging type and lockable.

Further to the assessment of the existing infrastructure, it is anticipated that service renewal for the following systems will be required for the project:

- distribution boards and sub-mains;
- electrical sub-metering;
- surge protection;
- internal and external lighting, including controls;
- telecommunication services;
- emergency and exit lighting system.

On the assumption the base building services required for Wilkinson House **will have air conditioning but with some operable windows**. Also containing **low use commercial hot water** facility with a primary fuel source being natural gas we can state that a high load is not anticipated within the Project sites.

ESD principles will also will provide downward pressure on the maximum demand by influential equipment selections such as led lighting solutions and other smart technologies to stagger equipment start times and non-active sensor shut downs can all be applied to the site to assist with this calculation.

The **existing lighting** installation comprises mixture of recessed/surface fluorescent fittings. The majority of the lighting installation is original or has extended past its life expectancy.

The **emergency and exit lighting** appears to be regularly maintained. The emergency fittings have been upgraded and replaced in years as part of maintenance.

The reconfiguration of the buildings will incorporate detailed assessment of each rooms required use as defined within the client user room data sheets. Reasonable assumption can be made to the required systems at this stage by interpretation of the NCC (2016), AS3000 and past experience with projects of similar uses and configurations.

At this stage it is anticipated the incoming service arrangement is sufficient to utilise for the development. The main switchboard is to be further assessed during due diligence reporting, however is considered unsuitable to be reconfigured to supply the project, it will require renewal.

The building will require structured cabling communication voice and data network. The telecommunications system shall be installed in accordance with the Australian Communications and Media Authority (AMCA) requirements. Provision for voice over IP (VoIP) will be allowed within the design. WIFI access will be made available in all public areas including resident suites

A new lead-in **fibre optic cable connection** will be required for the proposed works. Investigations will be made into the provision of fibre optic cabling from the street to the lead-in communications room on the ground floor, terminated at a wall mounted fibre termination cabinet.

A new lead-in **voice grade copper cable connection** will be required for the proposed works. New Cat 3 voice grade cabling will be provided from the street to the lead-in communications room on the ground floor, terminated at a wall mounted Krone type MDF.

The Multi-Purpose building will require a **main communications room** located on the ground level. This room will be the termination point for the voice and fibre services and will also house the main server equipment for the building. The communications room will be required to be 2hr fire rated with and the door is to be lockable.

Lighting required for external public areas may be required on the north and eastern facades. This may be subject to further assessment from Council. The position and type of luminaires shall be selected to comply with the requirements of AS 4282 (Obtrusive Lighting Code)

Internal lighting will be provided based upon performance, energy efficiency, ease of maintenance, aesthetic look and budget. The lighting, as a minimum, will be designed to comply with the energy efficiency requirements of Section J of the NCC2016.

The following lighting control strategies are proposed:

Provision of motion sensors throughout to switch off the lights after period of no occupancy detection.

Provision of sunset switches to switch off external lighting during the day.

Lighting shall be provided in accordance with AS1680 for maintained lighting levels. Lighting shall generally be low energy linear LED lighting. Lighting levels shall need to be further defined as the design progresses.

5. sustainability

As with many of our past School projects we understand each school aspires to demonstrate environmental leadership, responsibility and a reduced carbon footprint.

We anticipate that consideration of the environmental framework to be used by the school will contain some key elements of this framework would ensure the provision of:

- Natural light and ventilation used throughout;
- Planted roofs for increased biodiversity, insulation, environmental awareness/teaching outcomes; and reduced heat island effect and storm water runoff;
- Rainwater collection and reuse;
- High quality internal environmental quality (IEQ) throughout;
- Intelligent BMS
- Centralised plant wherever feasible to serve the school's needs for power, cooling and water capture.

We anticipate this will be achieved by a bespoke environmental framework, not under Green Star Design and As-built framework and to contribute positively to energy efficiency and environmental sustainability by reducing energy consumption during the life of the proposed development.

The environmental approach has no major planning or infrastructure influences however will need to become a key part of the initial planning processes to ensure a consistent site wide approach is maintained without any unacceptable off-site impacts to adjoining or surrounding properties or the public domain in terms of amenity, traffic, social and environmental impacts.

The project design team is to integrate a sustainable and passive design approach from the earliest inception of the project to reduce energy use, conserve water and create a healthier and more sustainable environment. These elements contribute to the development of a high-quality building with substantially lower energy consumption than would otherwise be developed.

6.1 sydney water

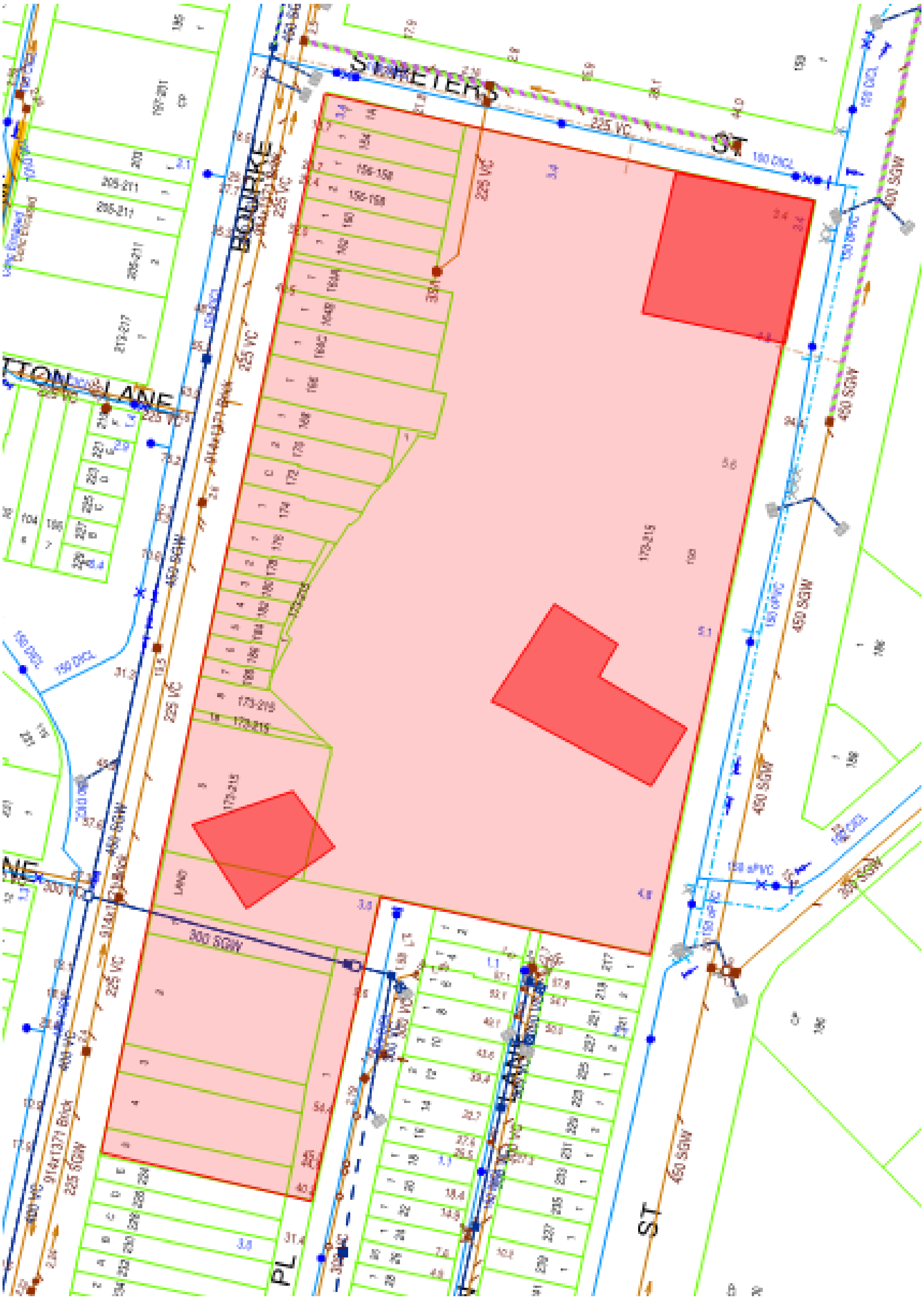

Figure 3 – SYDNEY WATER underground services map of the site

6.2 pressure and flow statements

Statement of Available Pressure and Flow

Sydney WATER

Michael Slatter
15 Atchison Street
St Leonards , 2065

Attention: Michael Slatter Date: 14/09/2018

Pressure & Flow Application Number: 497367
Your Pressure Inquiry Dated: 2018-08-01
Property Address: 173-215 Forbes St, Darlinghurst 2010

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: Bourke Street	Side of Street: West
Distance & Direction from Nearest Cross Street	5 metres South from Stanley Street
Approximate Ground Level (AHD):	28 metres
Nominal Size of Water Main (DN):	150 mm (Nominated asset number 2591498)

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	57 metre head
Minimum Pressure	37 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	37
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5 10 15 20 26 30 40 50	40 39 39 39 38 38 36 34
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 67	36 36 36 35 35 34 33 31 27

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

swtapin@sydneywater.com.au

Sydney Water Corporation ABN 49 776 225 038
1 Smith St Parramatta 2150 | PO Box 399 Parramatta 2124 | DX 14 Sydney | T 13 20 92 | www.sydneywater.com.au
Delivering essential and sustainable water services for the benefit of the community

Statement of Available Pressure and Flow

Sydney WATER

Michael Slatter
15 Atchison Street
St Leonards , 2065

Attention: Michael Slatter Date: 14/09/2018

Pressure & Flow Application Number: 497363
Your Pressure Inquiry Dated: 2018-08-01
Property Address: 173-215 Forbes St, Darlinghurst 2010

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: Forbes St	Side of Street: West
Distance & Direction from Nearest Cross Street	40 metres South from St Peters St
Approximate Ground Level (AHD):	38 metres
Nominal Size of Water Main (DN):	150 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	47 metre head
Minimum Pressure	26 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	26
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5 10 15 20 26 30 40 50	29 29 28 28 27 26 24 21
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	26 25 25 24 23 22 20 17 16

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

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6.3 feasibility letter

Sydney WATER

Case Number: **173706**

24 October 2018

SCEGGS DARLINGHURST
c/- ROSE ATKINS RIMMER

FEASIBILITY LETTER

Developer:	**SCEGGS DARLINGHURST**
Your reference:	**36/25535**
Development:	**Lot LAND DP53158 BOURKE ST, Darlinghurst**
Development Description:	**Knockdown and rebuild of 2 buildings on site and Refurb of another building**
Your application date:	**23 August 2018**

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**

   It would appear that your feasibility application is served from existing mains and does not require any works to be constructed at this time. Sydney Water will confirm this with you after you have received Development Approval from Council and your Coordinator has submitted a new Development application and Sydney Water has issued you with a formal Notice of Requirements.

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 150mm watermain in Forbes St will be the preferred location to serve the proposed buildings for daily water usage purposes. WSC to investigate.**

   - **However, the school currently has 5 water meters on site, to possibly 4 different streets. The historical usage of water based on Sydney Water records is higher than the quoted flows provided by the Water Servicing Coordinator.**

   - **It is highly recommended that the WSC/Developer assesses whether the fire-**

fighting needs of the development can be met from the existing network. WSC to investigate.

- **The Statement of Available Pressure and Flow recently submitted/provided to the School Hydraulic Consultant, may need to be re-issued due to changes in the SW Network as these changes are not updated in Hydra at this stage (report attached).**

  - Sydney Water will confirm this with you after you have received Development Approval from Council and your Coordinator has submitted a new Development application and Sydney Water has issued you with a formal Notice of Requirements.

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:

- **The available Sewerage Service Diagram is out of date, therefore the exiting property connections servicing the existing site will need to be investigated/ documented by your Water Servicing Coordinator.**

- **Sydney Water is currently in the process of separating the sewer and stormwater systems in Forbes St.**

- **The new main being constructed will serve the SCEGG development. However, an extension of the Sydney Water sewer main will required to be extended within the development boundaries after the project in Forbes St is completed. At the developer expenses. Your WSC can provide more information about this**

- Sydney Water will confirm this with you after you have received Development Approval from Council and your Coordinator has submitted a new Development application and Sydney Water has issued you with a formal Notice of Requirements.

4.3 Building over of adjacent to stormwater assets

Our available records indicate, there is a Sydney Water's 300mm stormwater pipe located through your property at East – West direction between Thomson Street and Bourke Street near the northern end of Thomson Street.

Sydney Water's guidelines for building over or adjacent to stormwater assets outline the process and design requirements for such activities. As per the guidelines, the applicant is advised of the following:

- No building or permanent structure is to be constructed over the stormwater channel /

pipe or within **1m** from the outside wall of the stormwater asset. Permanent structures include (but are not limited to) basement car park, hanging balcony, roof eves, hanging stairs, stormwater pits, stormwater pipes, elevated driveway, basement access or similar structures. This clearance requirement would apply for unlimited depth and height.

- The applicant is required to submit the elevation drawings with the stormwater channel/ pipe, to ensure that the proposed buildings and permanent structures are 1m away from the outside face of the stormwater channel.

Please refer to the relevant guidelines for further detail on requirements and the process for approval.

Dilapidation Survey Report

The proponent is required to undertake a dilapidation survey report / CCTV report of the Sydney Water's stormwater pipe prior to commencement of any work on the site, if the proposed development work is within 5m from the Sydney Water's stormwater pipe. This report should extent at least 10m upstream and downstream from the property boundary. A copy of this dilapidation report is to be provided to Sydney Water.

This dilapidation survey report/ CCTV Report is to be carried out again upon completion of the all construction work.

Sydney Water will confirm this with you after you have received Development Approval from Council and your Coordinator has submitted a new Development application and Sydney Water has issued you with a formal Notice of Requirements.

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.

6. **Approval of your Building Plans**

You must have your building plans approved **before the Certificate can be issued. Building construction work MUST NOT commence until Sydney Water has granted approval.** Approval is needed because construction/building works may affect Sydney Water's assets (e.g. water and sewer mains).

Your Coordinator can tell you about the approval process including:

- Your provision, if required, of a "Services Protection Report" (also known as a "pegout"). This is needed to check whether the building and engineering plans show accurately where Sydney Water's assets are located in relation to your proposed building work. Your Coordinator will then either approve the plans or make requirements to protect those assets before approving the plans;
- Possible requirements;
- Costs; and
- Timeframes.

You can also find information about this process (including technical specifications) if you either:

- visit www.sydneywater.com.au > Plumbing, building & developing > Building > Building over or next to assets. Here you can find Sydney Water's *Technical guidelines - Building over and adjacent to pipe assets*; or
- call 13 20 92.

Notes:

- **The Certificate will not be issued until the plans have been approved and, if required, Sydney Water's assets are altered or deviated;**
- **You can only remove, deviate or replace any of Sydney Water's pipes using temporary pipework if you have written approval from Sydney Water's Urban Growth Business. You must engage your Coordinator to arrange this approval; and**
- **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*.**

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.

Requirements for Business Customers for Commercial and Industrial Property Developments

If this property is to be developed for Industrial or Commercial operations, it may need to meet the following requirements:

Trade Wastewater Requirements

If this development is going to generate trade wastewater, the property owner must submit an application requesting permission to discharge trade wastewater to Sydney Water's sewerage system. You must wait for approval of this permit before any business activities can commence.

The permit application can be made on Sydney Water's web page through Sydney Water Tap in.

http://www.sydneywater.com.au/tapin/index.htm

It is illegal to discharge Trade Wastewater into the Sydney Water sewerage system without permission.

A **Boundary Trap** is required for all developments that discharge trade wastewater where arrestors and special units are installed for trade wastewater pre-treatment.

If the property development is for Industrial operations, the wastewater may discharge into a sewerage area that is subject to wastewater reuse. Find out from Business Customer Services if this is applicable to your development.

Backflow Prevention Requirements

Backflow is when there is unintentional flow of water in the wrong direction from a potentially polluted source into the drinking water supply.

All properties connected to Sydney Water's supply must install a testable **Backflow Prevention Containment Device** appropriate to the property's hazard rating. Property with a high or medium hazard rating must have the backflow prevention containment device tested annually. Properties identified as having a low hazard rating must install a non-testable device, as a minimum.

Separate hydrant and sprinkler fire services on non-residential properties, require the installation of a testable double check detector assembly. The device is to be located at the boundary of the property.

Before you install a backflow prevention device:

1. Get your hydraulic consultant or plumber to check the available water pressure versus the property's required pressure and flow requirements.
2. Conduct a site assessment to confirm the hazard rating of the property and its services. Contact PIAS at NSW Fair Trading on **1300 889 099**.

For installation you will need to engage a licensed plumber with backflow accreditation who can be found on the Sydney Water website:

http://www.sydneywater.com.au/Plumbing/BackflowPrevention/

Water Efficiency Recommendations

Water is our most precious resource and every customer can play a role in its conservation. By working together with Sydney Water, business customers are able to reduce their water consumption. This will help your business save money, improve productivity and protect the environment.

Some water efficiency measures that can be easily implemented in your business are:

- Install water efficiency fixtures to help increase your water efficiency, refer to WELS (Water Efficiency Labelling and Standards (WELS) Scheme, http:// www.waterrating.gov.au/
- Consider installing rainwater tanks to capture rainwater runoff, and reusing it, where cost effective. Refer to http://www.sydneywater.com.au/Water4Life/InYourBusiness/ RWTCalculator.cfm
- Install water-monitoring devices on your meter to identify water usage patterns and leaks.
- Develop a water efficiency plan for your business.

It is cheaper to install water efficiency appliances while you are developing than retrofitting them later.

Contingency Plan Recommendations

Under Sydney Water's customer contract Sydney Water aims to provide Business Customers with a continuous supply of clean water at a minimum pressure of 15meters head at the main tap. This is equivalent to 146.8kpa or 21.29psi to meet reasonable business usage needs.

Sometimes Sydney Water may need to interrupt, postpone or limit the supply of water services to your property for maintenance or other reasons. These interruptions can be planned or unplanned.

Water supply is critical to some businesses and Sydney Water will treat vulnerable customers, such as hospitals, as a high priority.

Have you thought about a **contingency plan** for your business? Your Business Customer Representative will help you to develop a plan that is tailored to your business and minimises productivity losses in the event of a water service disruption.

For further information please visit the Sydney Water website at: http:// www.sydneywater.com.au/OurSystemsandOperations/TradeWaste/ or contact Business Customer Services on **1300 985 227** or businesscustomers@sydneywater.com.au

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

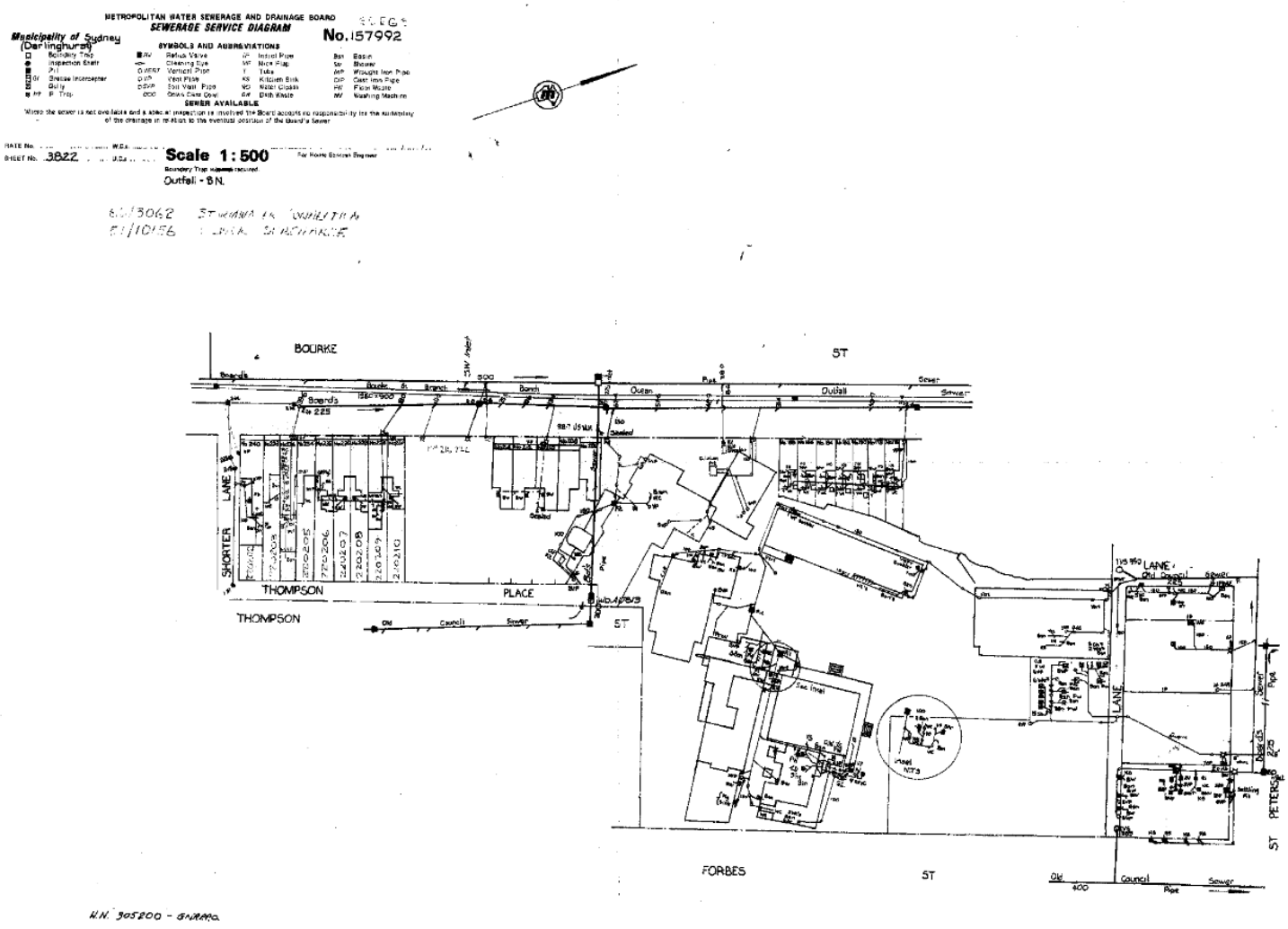
The requirements in this Notice relate to your Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements. These include:

- 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.)

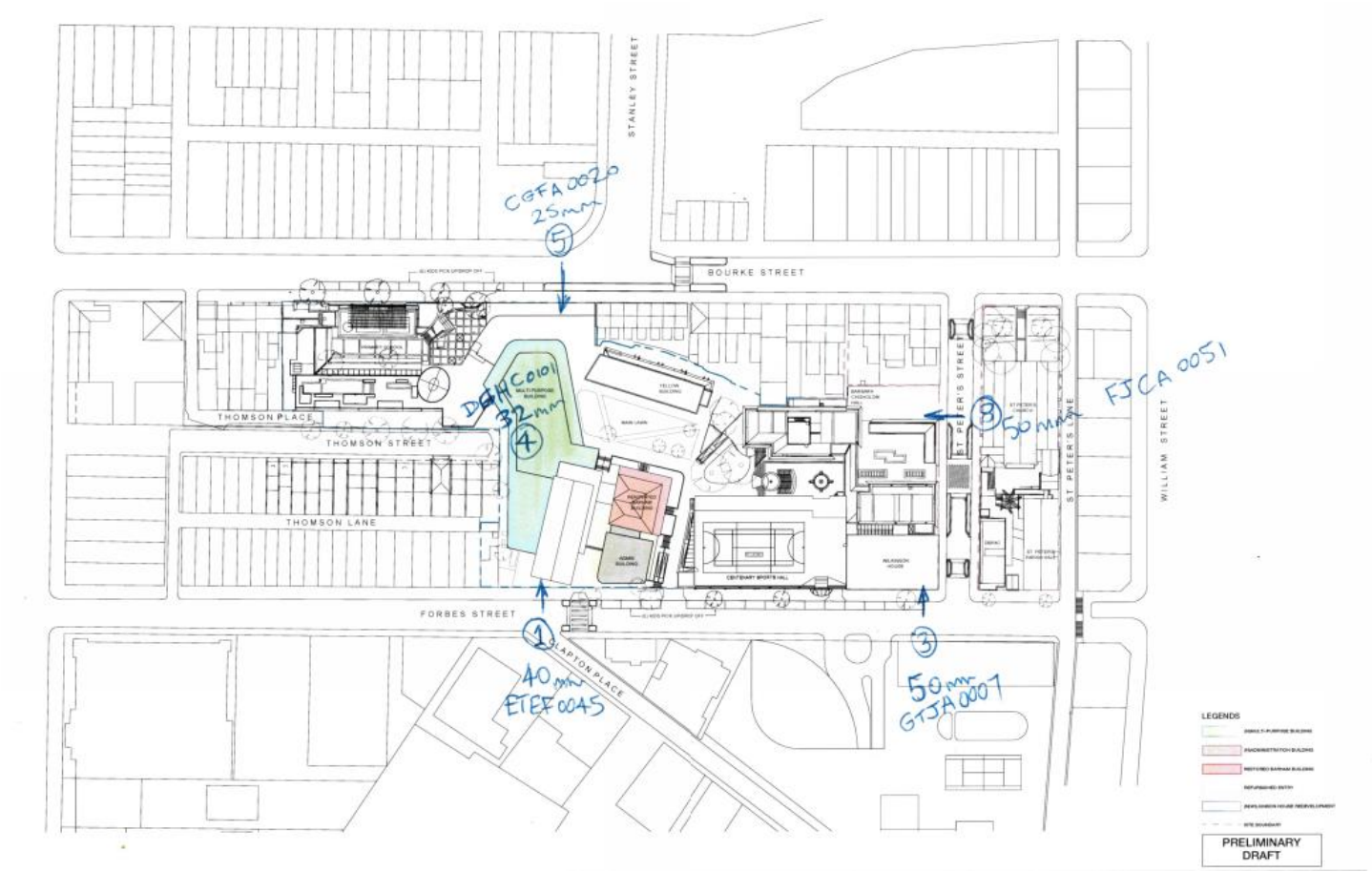
No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return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

END

6.4 sewerage services diagram



6.5 meter locations



6.6 jemena gas network

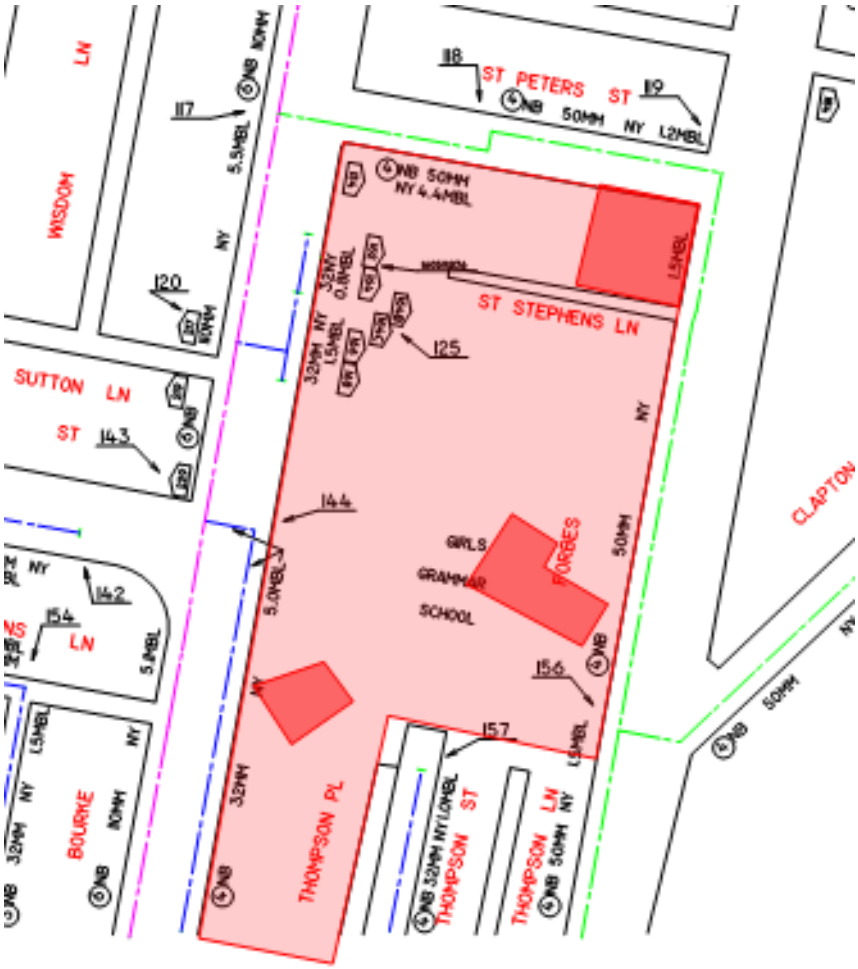


Figure 4 – JEMENA (Gas network) underground services map of the site

6.7 Ausgrid network

Figure 5 – Existing overhead electrical supply

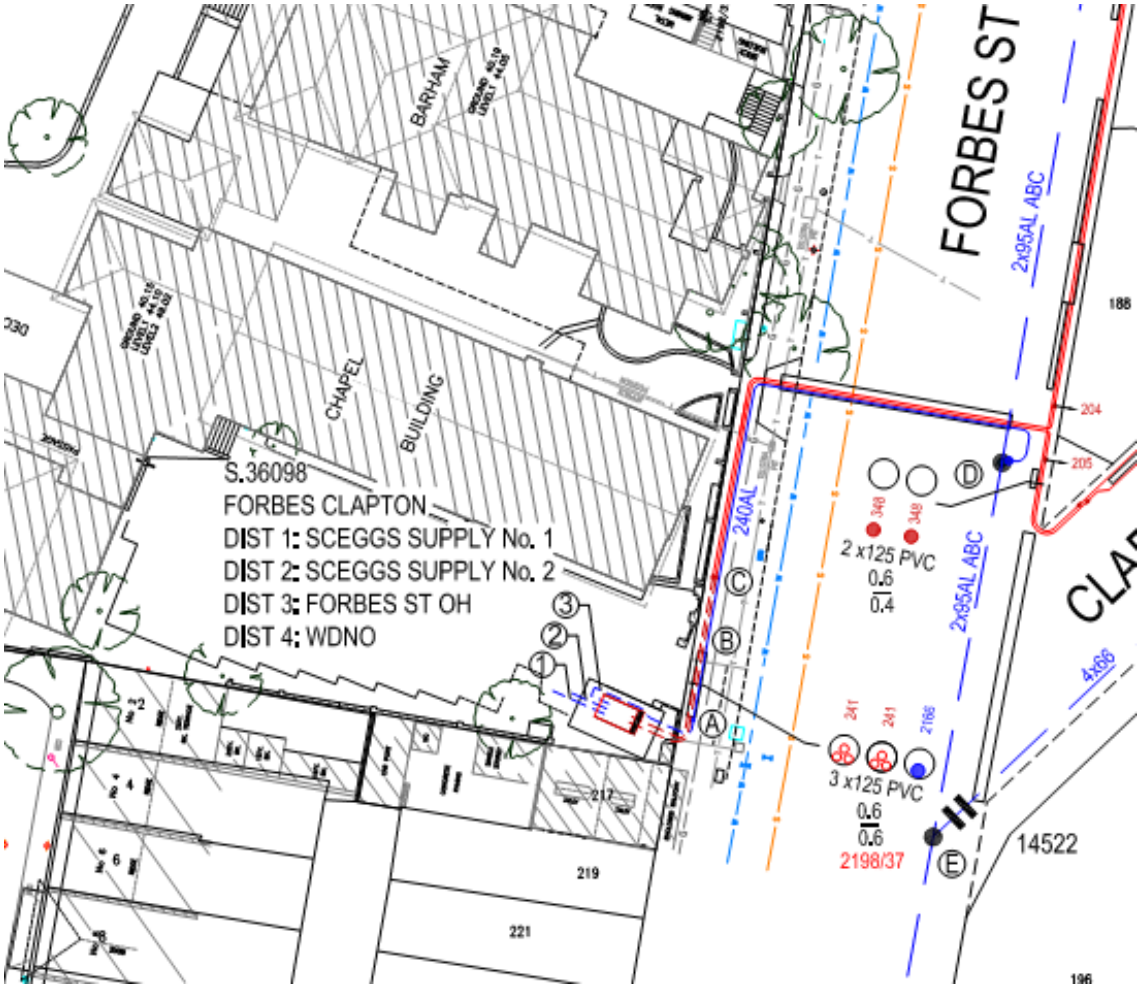


Figure 6 – Completed substation arrangement on Forbes Street

SCEGGS Darlinghurst
Wilkinson House
Building Services Return Brief