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2-20 Parramatta Rd, Columbia Precinct
Concept Plan Infrastructure Report

Report Number 610.10150-R2

13 July 2011

PD Mayoh Pty Ltd Architects
60 Strathallen Ave
Northbridge NSW 2063

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2-20 Parramatta Rd, Columbia Precinct

Concept Plan Infrastructure Report

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TABLE OF CONTENTS

1	INTRODUCTION.....	6
1.1	Site location.....	6
1.2	Proposed development description	7
2	SEWER	9
2.1	Existing and proposed infrastructure	9
2.2	Consultation	9
2.3	Staging	9
3	WATER	9
3.1	Existing and proposed infrastructure	9
3.2	Consultation	9
3.3	Staging	9
3.4	Stormwater.....	10
4	ELECTRICITY	10
4.1	Existing and proposed infrastructure	10
4.2	Consultation	10
4.3	Staging	11
5	GAS.....	11
5.1	Existing and proposed infrastructure	11
5.2	Consultation	11
6	COMMUNICATIONS.....	11
6.1	Existing and proposed infrastructure	11
6.2	Consultation	12
6.3	Staging	12
7	CONCLUSIONS	12
7.1	Sewer:	12
7.2	Water:.....	12

TABLE OF CONTENTS

7.3	Electricity.....	12
7.4	Gas:.....	12
7.5	Communications:	13
8	INFRASTRUCTURE UNDER PARRAMATTA RD	13
9	DISCLAIMER	20

FIGURES

Figure 1	Site location	7
Figure 2	Proposed Concept Plan	8
Figure 3	Gas - Jemena	14
Figure 4	Electricity – Energy Australia.....	15
Figure 5	Optus	15
Figure 6	Telstra.....	16
Figure 7	Telstra Mains	16
Figure 8	Sydney Water	17
Figure 9	Canada Bay council assets	19
Figure 10	Strathfield council assets.....	19

APPENDICES

Appendix A	Sydney Water Diagrams
Appendix B	Email Documentation

EXECUTIVE SUMMARY

Overall in the opinion of SLR Consulting the services surrounding the site are capable of supporting the development. Further investigation is required into the electricity supply which may need to be supplemented by a new sub-station, however further investigations are being made into renewable energy options to eliminate the need for this. The subject site is considered suitable for the proposed development in relation to existing services.

1 INTRODUCTION

SLR Consulting Pty Ltd (SLR) has been engaged by PD Mayoh to conduct an infrastructure study for the proposed development at 2-20 Parramatta Rd known as Columbia Precinct. This report looks at the existing infrastructure in and around the site which would be required to service the development.

The following infrastructure elements have been studied for this report

- Sewer
- Water
- Electricity
- Gas
- Communications

1.1 Site location

The proposed development site is bounded by Parramatta Road to the north and the railway line on the east through to the south of the site. The area surrounding the development site comprises:

- The Bakehouse Quarter heritage precinct along George Street to the north of Parramatta Road.
- Proposed Part 3A Major Project Application for a 13 storey hotel/function development between the Bakehouse Quarter and the Parramatta road (north to the site)
- A group of 6-storey to 12-storey residential flat buildings to the immediate west of the development site and to the east across the northern rail line
- Low-rise residential flat premises to the south and further west.

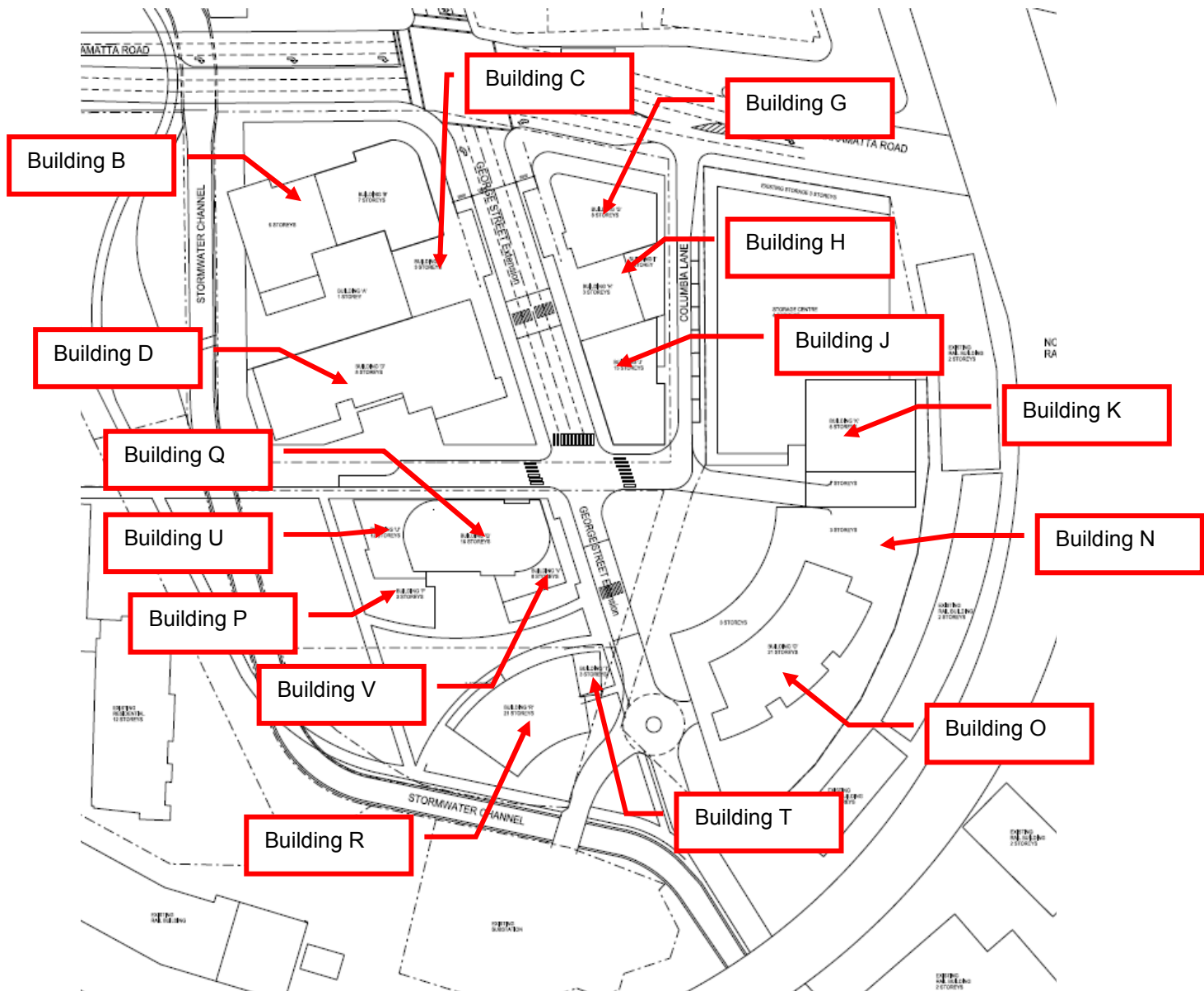
Figure 1 Site location



1.2 Proposed development description

The site proposal consists of a number of residential towers ranging from four to 21 storeys with space for commercial, community and retail premises on the lower levels. **Figure 2** shows the proposed development and surrounding buildings. It is proposed that there will be 600-700 residential dwellings on the site. The development will extend George Street through the site on the southern side of Parramatta Rd. There will also be parkland and recreation space developed around Powells Creek which runs through the site. The proposed development site is surrounded by medium rise residential and commercial buildings.

Figure 2 Proposed Concept Plan



2 SEWER

2.1 Existing and proposed infrastructure

Sewage removal for the site is provided by Sydney Water with sewerage infrastructure located under the eastern part of the site. Refer to Figure 8 and Appendix A for diagrams.

2.2 Consultation

Sydney Water was contacted on the 14th February who advised the purchase of sewer and service location diagrams. These diagrams give the locations of services. When asked whether the current sewer infrastructure was sufficient for the proposed development, Sydney Water explained that a water servicing coordinator will need to be engaged to check the adequacy of the current services.

2.3 Staging

All buildings in the proposed development need to be connected to the existing sewer infrastructure under the eastern part of the development along Columbia Lane. Sewer infrastructure comprising rising mains, gravity mains and sewer pump station will be required to connect the proposed development to the existing sewer infrastructure.

A water servicing coordinator has been engaged and a feasibility application was lodged to the coordinator on the 11/7/2011 to determine if augmentation is required. The section 73 certificate is currently being processed and the results will be provided upon receipt.

3 WATER

3.1 Existing and proposed infrastructure

Water for the site is supplied by Sydney Water. The Sydney Water services plan indicates there are two mains along Parramatta Rd (200 mm and 900 diameter pipe) and Columbia Lane (150 mm diameter pipe). Refer to Figure 8 and Appendix A for diagrams.

3.2 Consultation

Sydney water was contacted on the 14th February who advised the purchase of water and service location diagrams. These diagrams give the locations of services. When asked whether the current water supply was sufficient for the proposed development, Sydney Water explained that a water servicing coordinator will need to be engaged to check the adequacy of the current services. A section 73 feasibility assessment has been lodged and is currently being processed.

3.3 Staging

The first stage of the project will need to be connected to the mains-supplied water. The proponent will be required to construct all water mains within the site, although this can be staged. A section 73 feasibility assessment has been lodged by SLR Consulting in order to determine if augmentation is required. The application is currently being processed.

3.4 Stormwater

The existing site is primarily impermeable and stormwater is currently diverted west and south to Powells Creek. The site currently consists of 95% impermeable surfaces while the proposed site comprises 82% impermeable surfaces as stated in the Water Sensitive Urban Design report provided by SLR Consulting.

In accordance with the Strathfield Council Stormwater Management Code (1994) the proposed development / building work must not cause an adverse impact on adjoining or any other properties. This includes preserving surface flow paths and not increasing water levels. Site discharges will need to be restricted to pre-development discharges using On-site Stormwater Detention (OSD) storages for events up to and including the 100 year Average Recurrence Interval (ARI) event.

Other than for single residential dwelling projects OSD is required for all developments where the proposed increased paved and/or roofed areas (impermeable area) exceed 100m².

The proposed development incorporates a reduction in impermeable area when compared to the existing pre-development site; therefore no OSD is strictly deemed to be required. However OSD calculations have been undertaken assuming the pre-development site is 'greenfield' to provide a 'worst case' OSD storage volume depending on council requirements. For further information on stormwater please refer to the Water Sensitive Urban Design report compiled by SLR Consulting.

An option currently being investigated is a rain water and grey water detention system for reducing mains-supplied water demand. This is being considered for irrigation and toilet flushing in the proposed site. Further details of this system can be found in the ESD capability report prepared by SLR Consulting.

4 ELECTRICITY

4.1 Existing and proposed infrastructure

Electricity for this area is provided by Energy Australia. The nearest zone substations are located at Concord, Burwood and Strathfield, distribution lines near the site run along Parramatta Road and along Columbia Lane. Energy Australia has advised that they do not currently have capacity for the estimated load and that further study is needed to determine the infrastructure required.

Since this initial response refinements have been made to the estimated electrical load of the proposed development. Energy Australia has indicated via email that there is some capacity available for approximately 2000kVA but this requires checking with their planning group as long term planning for that area needs to be taken into account. A meeting has been requested with the planning group but this has not occurred yet.

4.2 Consultation

A telephone conversation was initially held with Energy Australia representatives on the 24th January. From the development summary sent, emails were received on the 4th and 7th February recommending the engagement of an electrical consultant to accurately determine the electrical load and other requirements for the site. Further emails were sent on the 6th of June regarding the revised electrical loading and notification of the proposed planning meeting.

4.3 Staging

Energy Australia will require a firm application and the total electrical loading so they can commence research into possible outcomes. The site may be classed a Dedicated Large Customer and would therefore be liable for costs involved in providing the required infrastructure. They also require possible on-site locations where "kiosk" sub-stations could be placed

A renewable energy option such as combined power, heat and cooling (tri-generation) and Photovoltaic (PV) Solar Cells for the proposed development is considered viable economically. SLR Consulting recommend conducting a detailed study during the project application stage of the project to select, size, cost and conduct a payback analysis for the proposed Co-generation/Tri-generation and PV system for the site. The proposed renewable energy efficiency initiatives may help to eliminate the need for a new substation at the proposed site. For details of renewable energy investigations refer to the ESD capability report prepared by SLR consulting.

5 GAS

5.1 Existing and proposed infrastructure

Jemena has advised that there are medium and high pressure mains located in the footpath area adjacent to the development site and they don't anticipate any issues supplying gas to the proposed development as currently designed or with co/trigeneration units added.

5.2 Consultation

A telephone conversation was held with Jemena's Greg Knight on the 25th January 2011. Further to this SLR Consulting sent a summary of the development to Jemena who responded with an email confirming the availability of gas supply.

6 COMMUNICATIONS

6.1 Existing and proposed infrastructure

As of the 1st January 2011 all proposed developments must be registered at <http://www.nbnco.com.au/> where they are assessed to see if they qualify for the installation scheme. The qualification criteria can be found at NBN Co's website part of which is shown below:

"During the National Broadband Network roll-out, an estimated 1.9 million additional premises will be constructed across Australia. NBN Co will install fibre into new developments of 100 premises (dwellings/units) or more, released over a three year period, which have received Stage Five approval (relating to civil works) after 1 January 2011, within the NBN fibre footprint.

NBN Co is working with developers to deliver fibre broadband infrastructure into these New Developments. As you would have seen in the NBN Co Corporate Plan, NBN Co plans to connect approximately 250,000 premises in New Developments by June 2013.

Under an NBN Co Developer Agreement, NBN Co will cover the cost of fibre infrastructure in all newly approved developments and developers are responsible for designing and installing pit and pipe infrastructure to NBN Co specifications and standards and then transferring ownership of pit and pipe to NBN Co.

An initial study of these criteria shows that the proposed development is eligible.

6.2 Consultation

NBN Co was contacted on 31st January 2011 and the NBN Co website was also consulted. The following enquiry reference number was given for future correspondence regarding the site: 510994-26044651.

6.3 Staging

It is anticipated that there are no major telecommunications servicing constraints associated with the site. The Development must be registered with NBN Co. Information on servicing points close to the site can then be provided.

7 CONCLUSIONS

7.1 Sewer:

- Location is suitable for development, Section 73 certificate is currently being processed
- All buildings in the proposed development need to be connected to the existing sewer infrastructure under the eastern part of the development along Columbia Lane

7.2 Water:

- Location is suitable for development, Section 73 certificate is currently being processed
- Water mains will be supplied from the existing mains along Parramatta Road and Columbia Lane
- Further investigations will be made regarding stormwater reuse to reduce the demand for potable water

7.3 Electricity

- Initial response from Energy Australia indicates capacity not available based on the conservative energy consumption figures provided. Further investigations into renewable energy options will be made to eliminate the potential for a new sub-station on the site.
- Revised energy consumption figures have been sent, capacity will be checked by the planning team. Energy Australia also require on site locations where “kiosk” sub-stations could be placed.
- Investigations have been started into reducing the electrical loading with the use of a tri-generation unit.

7.4 Gas:

- No issues with location or supply.

7.5 Communications:

- No major telecommunications servicing constraints with the site.
- Development must be registered with NBN Co.

8 INFRASTRUCTURE UNDER PARRAMATTA RD

The Roads & Traffic Authority (RTA) has advised that Parramatta Road will have to be widened in the vicinity of the proposed development to accommodate the increase in traffic coming from the extension of George Street. Due to this the locations of infrastructure running under Parramatta Rd need to be known. The following figures show the locations of underground cables and pipes. Rail Corp advised that they may have assets in the area but did not give the exact location and will need to be contacted prior to any excavation.

 Indicates the site boundary

All figures show infrastructure running along Parramatta Rd. Those with pipes or cables crossing Parramatta Rd near the development are:

- Gas
- Electricity
- Sydney Water

Figures below are not to be considered exact and a hand pot-holing would be required to determine precise locations of underground infrastructure. Discussions would be required with each service provider to determine if infrastructure would require moving.

Figure 3 Gas - Jemena

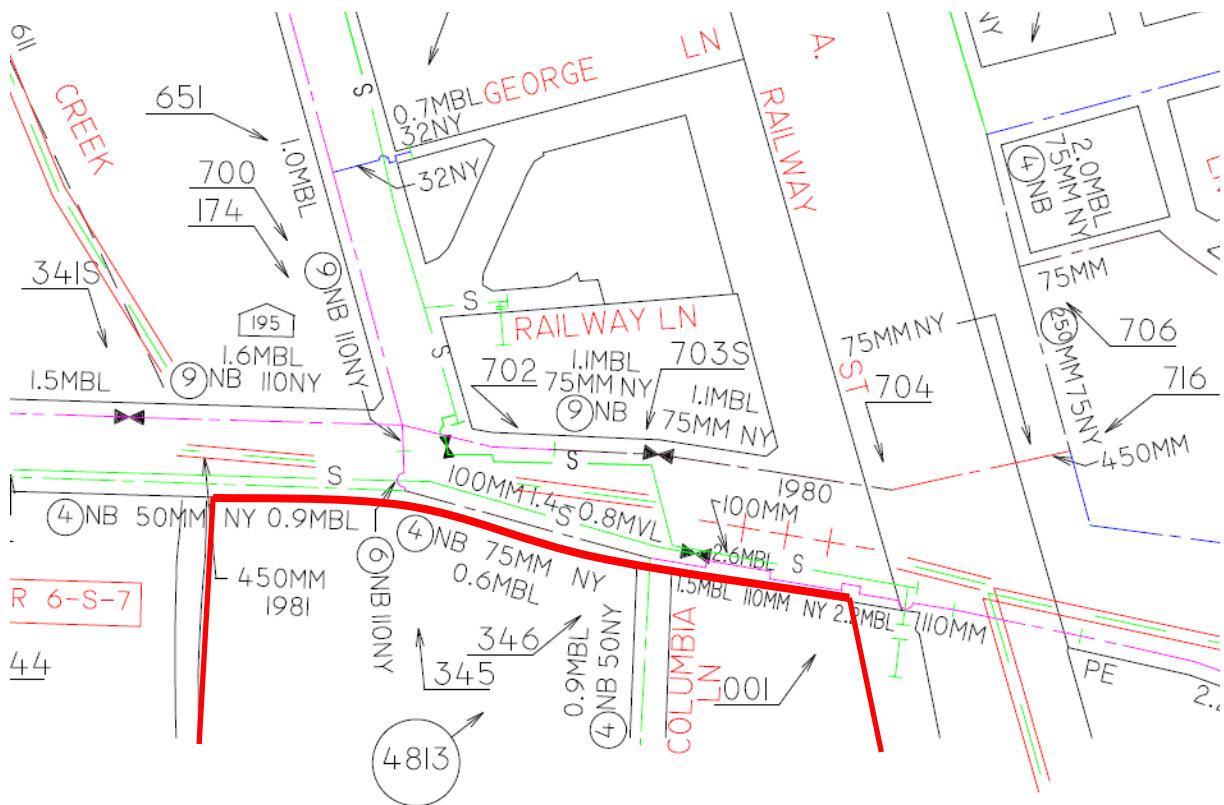


Figure 4 Electricity – Energy Australia

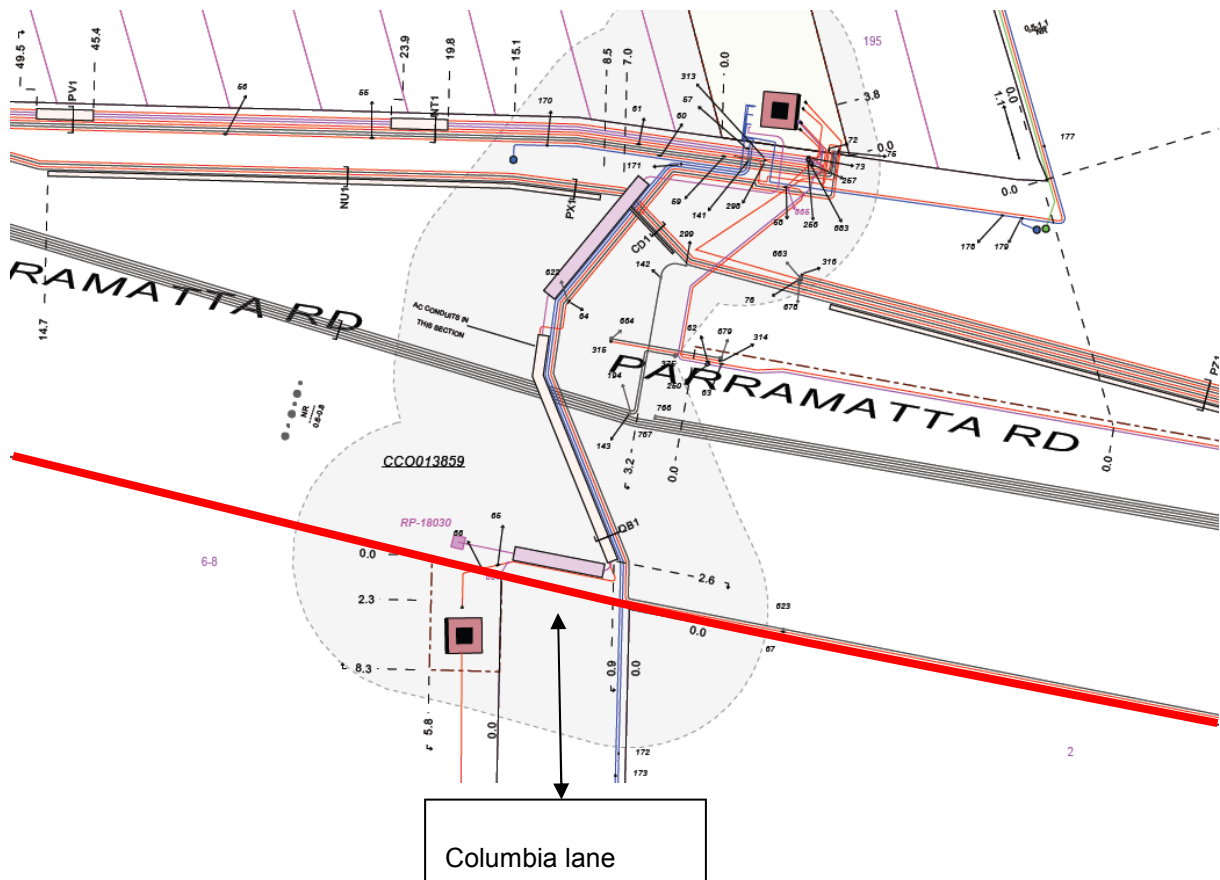
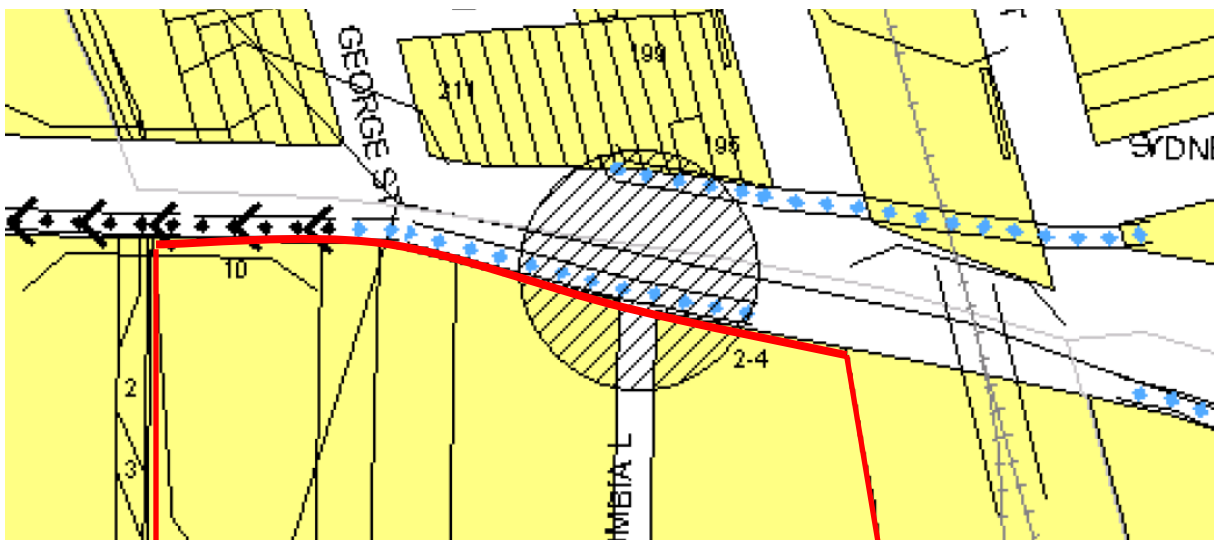
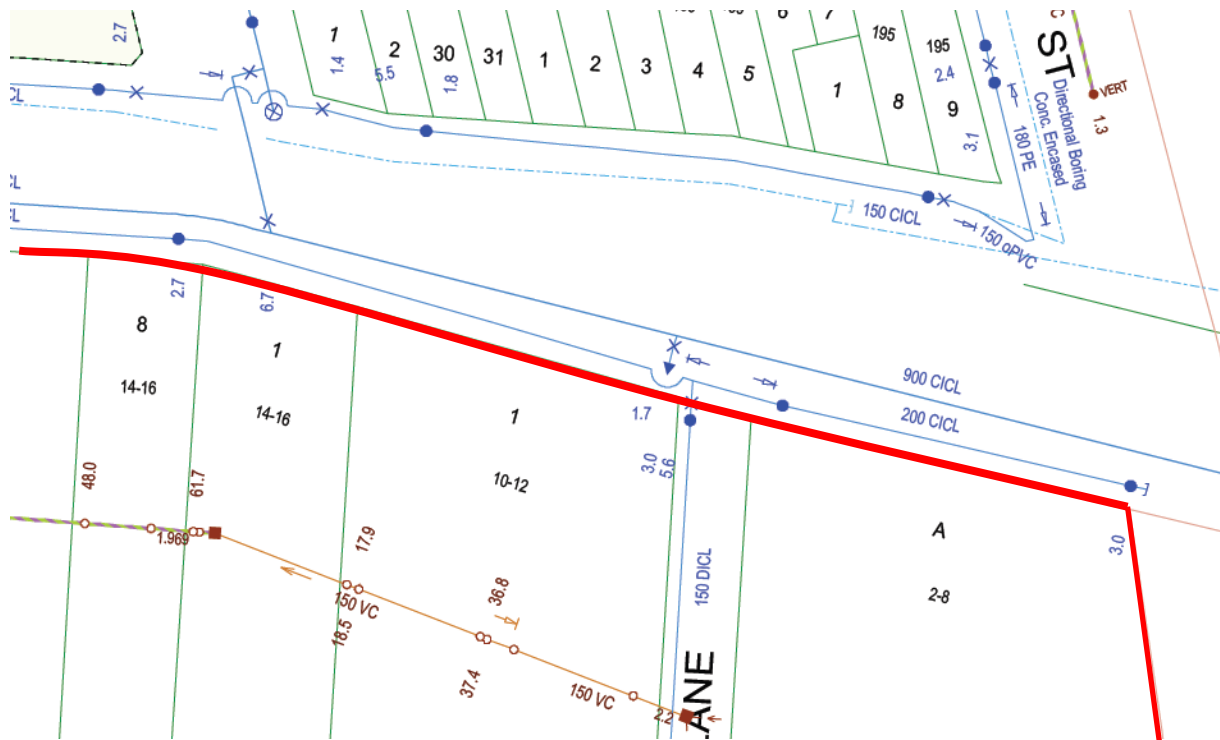


Figure 5 Optus



Telstra also has optic fibre running parallel to Parramatta Road.

Figure 8 Sydney Water



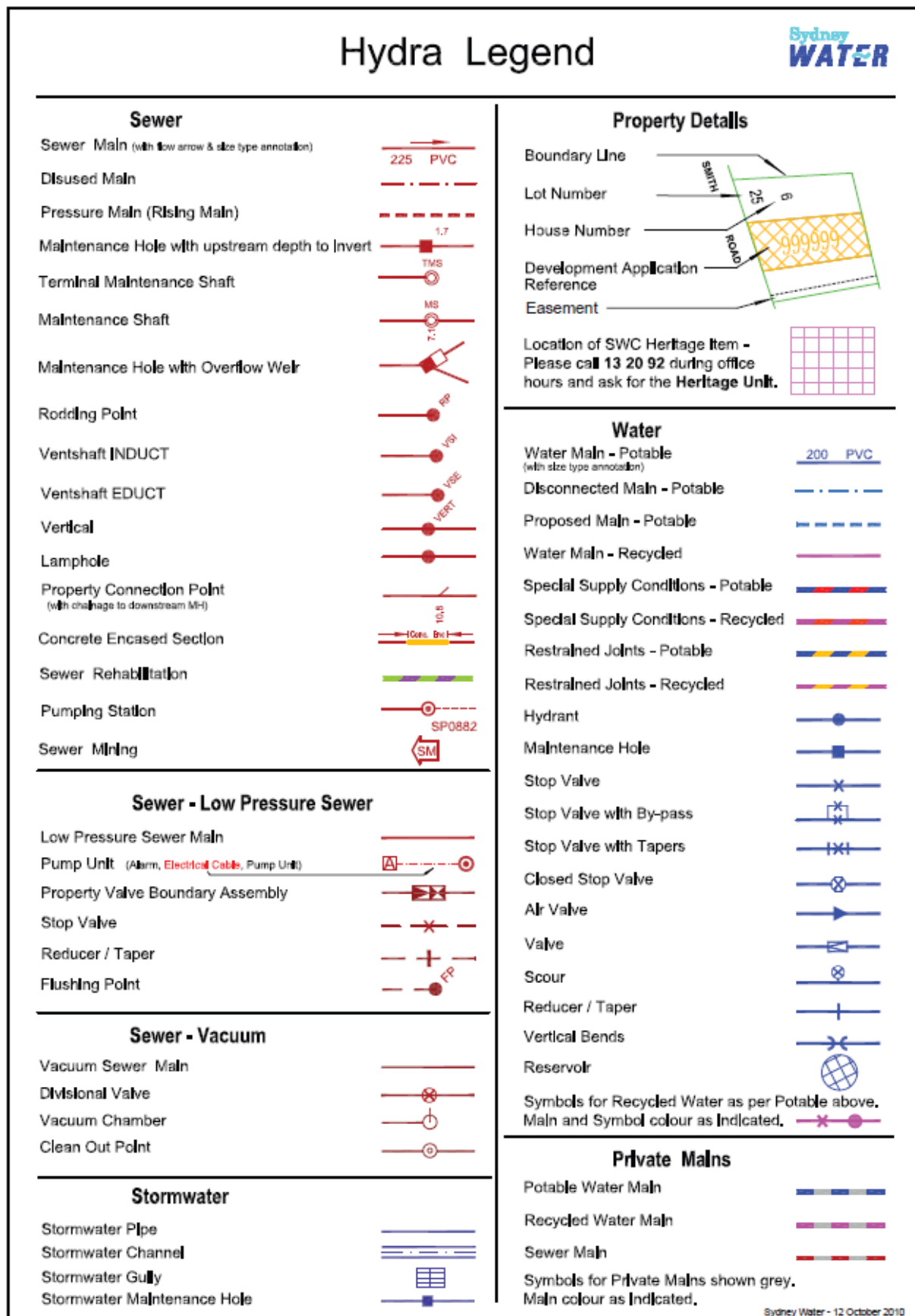
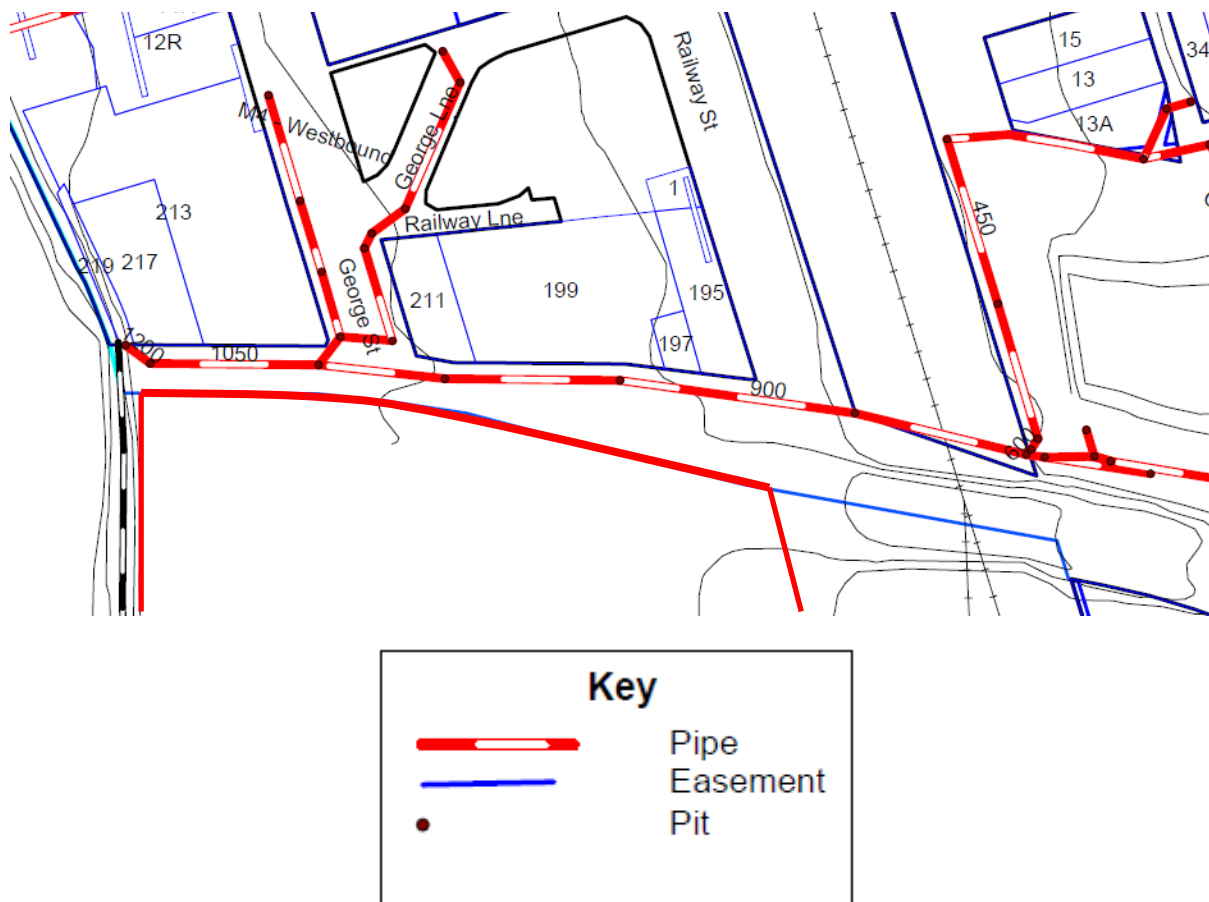
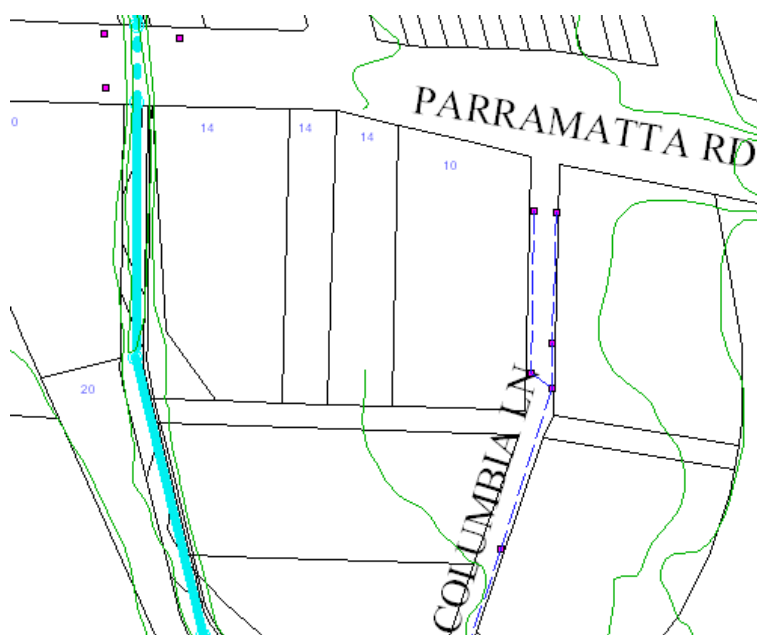


Figure 9 Canada Bay council assets



Pipes shown here are stormwater pipes.

Figure 10 Strathfield council assets



The Strathfield council assets shown above are a stormwater pit on the west side of Powells Creeks. The council has advised that any drainage assets in Parramatta will have to be checked onsite.

9 DISCLAIMER

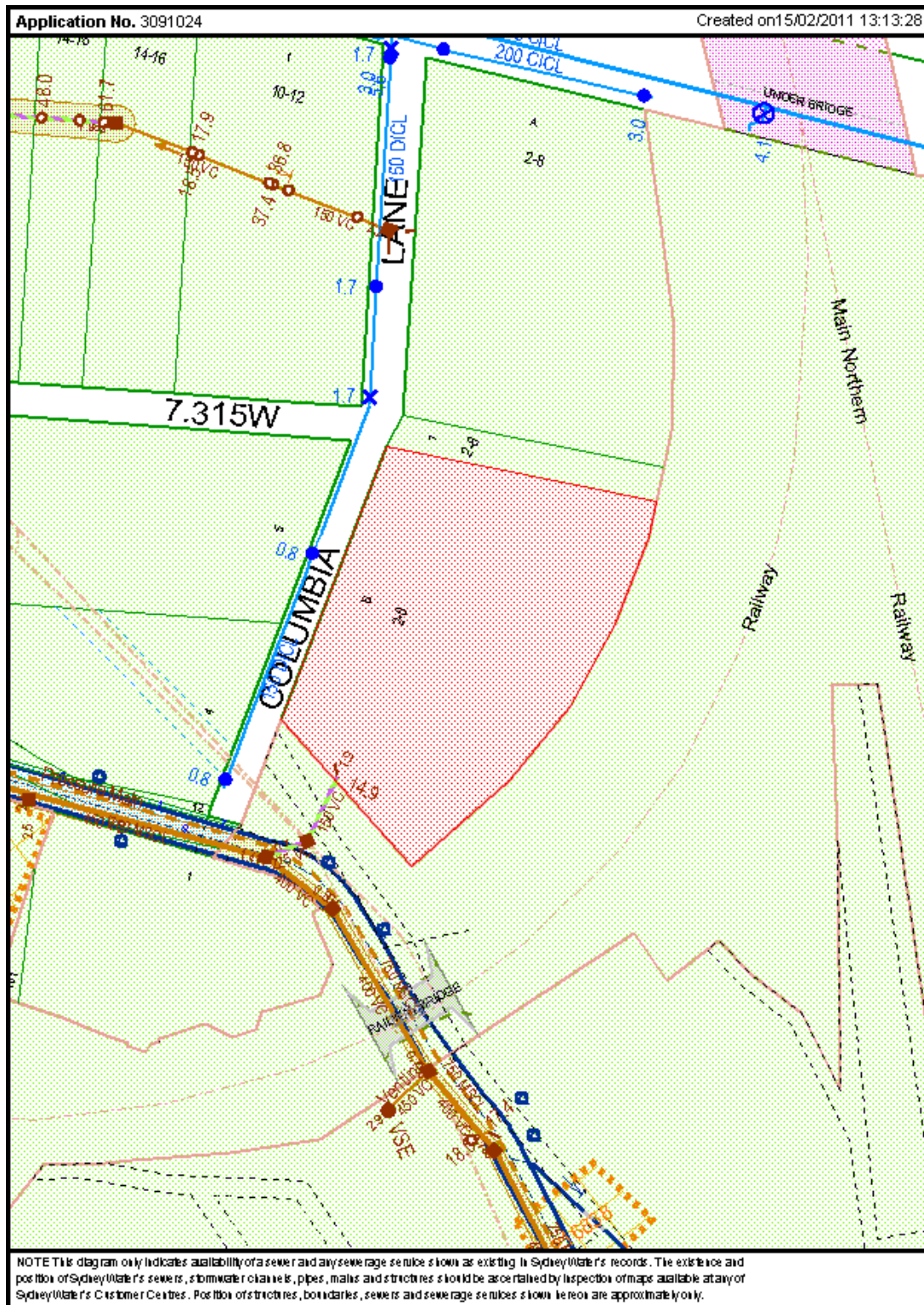
This report has been prepared by SLR Consulting Australia Pty Ltd with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of PD Mayoh Pty Ltd Architects, David Lhuede Pty Ltd, Kennards Self Storage and Hai Phong Properties Pty. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR Consulting.

SLR Consulting disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

Appendix A

Water mains diagram



Appendix B

Gas:



25/01/2011

SLR Consulting Australia Pty Ltd
PO Box 176
Lane Cove NSW
1595

Att: Mr. Peter Hayman

Dear Sir:

RE: PROPOSED DEVELOPMENT OF 2-20 PARRAMATTA ROAD HOMEBUSH.

Natural Gas is available in the vicinity to supply this development.

Our mains are installed in the allocated space within the footpath area adjacent to the proposed development.

Caution should be exercised when carrying out any road works that may expose the Natural Gas mains existing at this location. For excavation security you should call 1100 before commencement of any earth works to verify Utility locations.

To arrange a connection offer for the site please contact Neale Hilton on 0402 060 151 once the development has been approved and final configurations are known.

Thank you for your inquiry. If further information or assistance is required, please do not hesitate to contact me on 0402 060 241.

Yours faithfully,

Greg Knight

Greg Knight
Network Development Manager

For & on behalf of Neale Hilton

Electricity:

From: Stephen G Alfred [SAlfred@energy.com.au]
Sent: Friday, 4 February 2011 4:41 PM
To: Peter Hayman
Cc: Jonathon Simpson; John Menegus
Subject: Re: FW: electricity infrastructure for proposed development at 2-20 Parramatta Rd
Attachments: Development Summary.docx

Peter

I have received your email and have done some preliminary calculations. The total load required exceeds 200 Amps on the HV. This load is not available immediately on our HV Network.

To give you more information, we will need a firm application from you to commence research into the possible outcomes. You may be classed as a Dedicated Large Customer and as such will be liable for the costs involved in providing the required infrastructure. This project will then pass onto our Contestability Section who will then give you further advice as to the processes involved.

Kind regards,

Stephen G Alfred

EnergyAustralia

Distribution Operations and Reliability

Planning and Supply Negotiations

Sydney South

33-45 Judd Street, Oatley NSW 2223

☎ (02) 9585 5641 📠 (02) 9585 5670

E-mail : salfred@energy.com.au

From: Stephen G Alfred [SAlfred@energy.com.au]
Sent: Monday, 7 February 2011 10:12 AM
To: Peter Hayman
Subject: RE: FW: electricity infrastructure for proposed development at 2-20 Parramatta Rd

Hi Peter

With such a large load my guess would be that new feeders would have to be brought into the area. At present the nearest zone substations are, Concord, Burwood and Strathfield. The area will have to be replanned from both the High and Low Voltage Distribution depending on the Maximum Demand calculated and advised by the Electrical Consultants.

There are too many variables to even make a guess at the Distribution Infrastructure at this stage. Your best bet is to engage an electrical consultant to prepare some sort of preliminary ground work concerning the electrical loading.

Please feel free to consult with me on any general information concerning the project.

Kind regards,

Stephen G Alfred

EnergyAustralia

Distribution Operations and Reliability

Planning and Supply Negotiations

Sydney South

33-45 Judd Street, Oatley NSW 2223

☎ (02) 9585 5641 📠 (02) 9585 5670

E-mail : salfred@energy.com.au

From: Stephen G Alfred [SAlfred@ausgrid.com.au]
Sent: Thursday, 19 May 2011 11:24 AM
To: Peter Hayman
Subject: RE: FW: electricity infrastructure for proposed development at 2-20 Parramatta Rd

Peter

When you have confirmed the Total Electrical Loading of this project, could you please send a copy to me and I will forward it to our Network Planners. I know at present that is some capacity for about 2000kVA. I have to confirm this as we have to look at the long term planning globally for the zone.

In the meantime also you can offer some sites for the establishment of Kiosk substations.

Regards,

Stephen G Alfred | Engineering Officer - Planning | Planning & Supply Negotiations | AUSGRID

Level 1, BLDG 1, 33-45 Judd Street Oatley NSW 2223 AUSTRALIA

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