NORTHROP

SITE SERVICING REPORT

Gran Central Granville

134-142 Parramatta Road, Granville NSW 2142

PREPARED FOR
Starryland NSW PTY Ltd
Suite 26.04, Level 26
25 Bligh Street
Sydney NSW 2000

Ref: SY191237-MDR01-[3]
Rev: 3
Date: 04.09.2020

Date	Revision	Issue	Prepared By	Approved By
21.10.2019	1	Issue for Review	S. Singh	G. Lukic / S. Parajuli
04.11.2019	2	Issued for DA	S. Singh	G. Lukic / S. Parajuli
04.09.2020	3	Issued for DA	S. Singh	G. Lukic / S. Parajuli

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Executive Summary

This Site Servicing Report outlines the proposed works for the Mixed use Development at 134-142 Parramatta Road, Granville, detailing information on the existing capacity and any augmentation required for the proposed development. The report also details record of consultation with relevant agencies.

This report outlines the existing infrastructure, detailing information on the existing capacity and any augmentation to the aforementioned services required for the proposed development. The report also details records of consultation with relevant agencies. The details within this report are preliminary and based on currently available information and correspondence undertaken at the time of writing.

This report is provided in response to the Development Application for the Mixed use Development at 134-142 Parramatta Road, Granville.

Table of Contents

1. Development Description

Client:	**Starryland NSW Pty Ltd**
Project Name:	**Gran Central**
Project Address:	**134-142 Parramatta Road, 26-38 Good Street & 59-61 Cowper Street, Granville**

The Residential Development 134-142 Parramatta Road, Granville proposes a significant expansion of the current services attainable on site. The proposed works are as follows:

1.1.1 Construction of New Buildings

- Construction of a multi-storey residential apartment building with 373 residential apartments.
- Basement with car parking spaces;
- Ground floor uses include retail, loading and garbage dock, commercial spaces;
- Levels 1, 2 & 3 include carparking spaces and residential units;
- Level 4 with communal space and residential units;
- Levels 5 to 24 with residential units.

1.1.2 Site & Infrastructure Preparation Works

- Removal of existing buildings;
- Excavation and Earthworks;
- Remediation Works.

2. Local Environmental Plan (LEP) Issues Addressed

This report addresses how the proposed project addresses the Parramatta LEP 2011 and outlines strategies relating to Utilities. These requirements are outlined below alongside where the response to each can be found within this report;

Item	Action to Address the Requirement	Report Location
Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure.	This Report details the existing hydraulic and electrical services infrastructure available to service the proposed development. This report also includes details regarding any augmentation / amplifications required to service the proposed development.	Section 4 & 5.

3. Site Description

3.1 The Site

The proposed site of works is located at 134-142 Parramatta Road, Granville. It is defined by the solid red outlined area of the site shown in Figure 1 below.

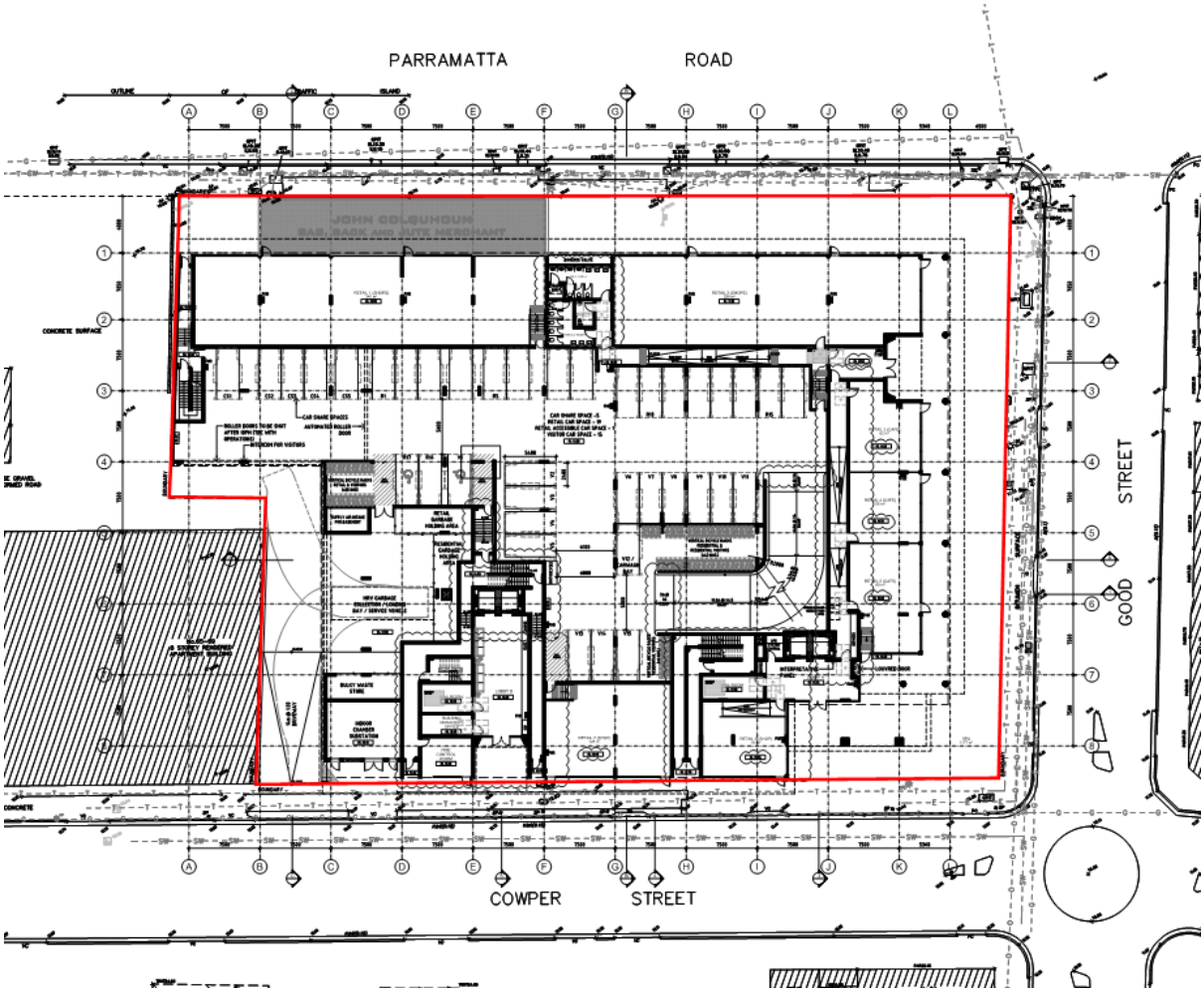


Figure 1: Proposed Site of Works

Northrop has performed desktop investigations regarding the existing site conditions, considering the context of the proposed multi-unit residential development.

Our assessment has been based on information provided by the relevant electrical and telecommunications utility authorities, and information provided by the project representatives including but not limited to:

- Dial Before You Dig Plans

4. Existing Utility Services

4.1 Low Voltage Infrastructure

The Energy Authority serving the site is Endeavour Energy.

Currently, the site is serviced by multiple power supplies via Endeavour Energy Street Network. Existing HV ring mains run along Parramatta Road and Cowper St.

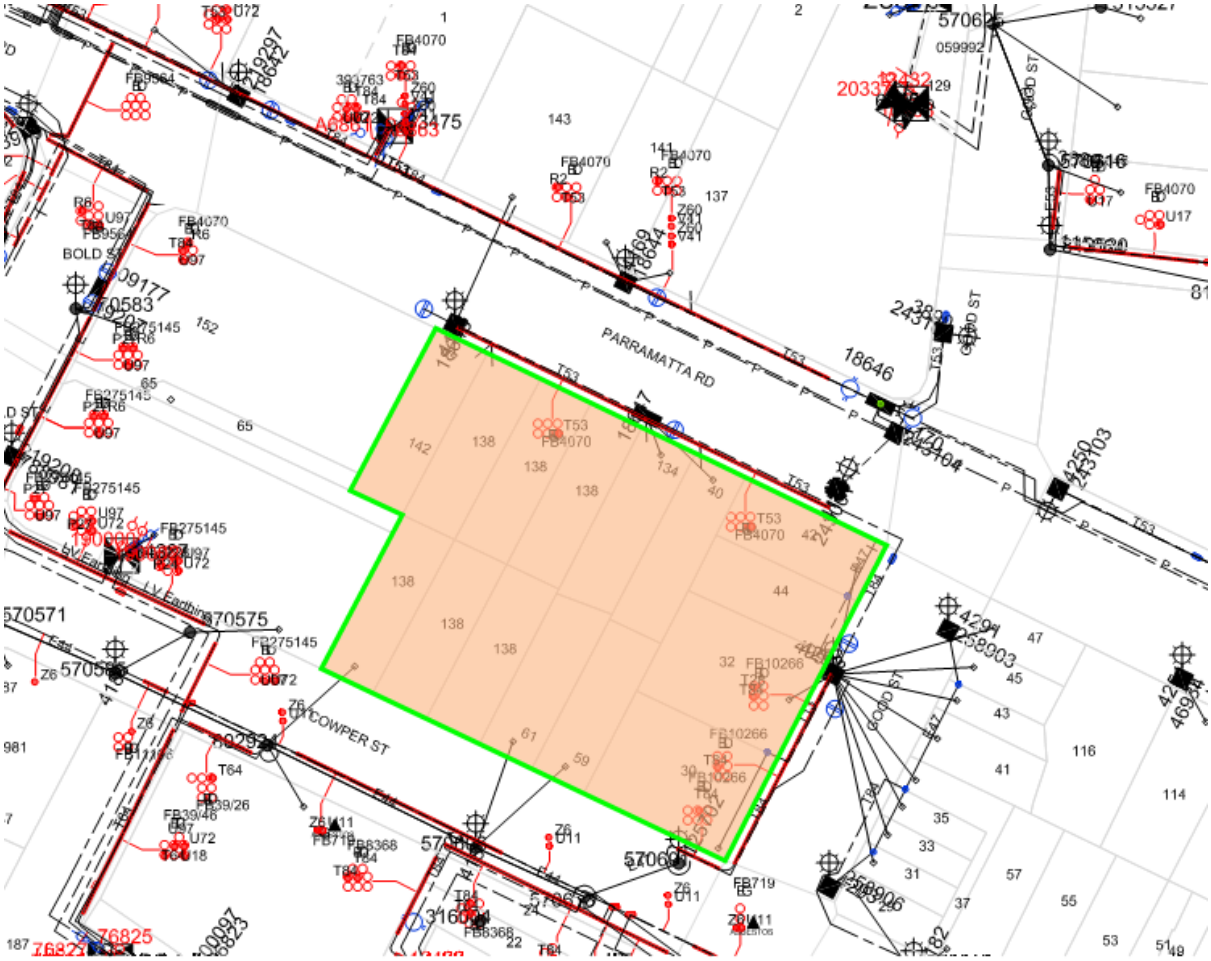


Figure 2 – S5059 Kiosk Substation and HV network

The existing low voltage infrastructure within the developed site will require to be decommissioned and removed.

4.2 Telecommunications

Following the review of the Dial Before You Dig (DBYD) plans, Existing utility telecommunications services have been identified in the immediate vicinity of the Development. Utility telecommunications cabling is installed in underground conduits on street verges, with regular access points through pits along Parramatta Road, Cowper Street and Good Street with underground services.

4.2.1 NBN

NBN services have already been rolled out in the vicinity of the developed area. Trenches for NBN services have already been installed along the site boundary along Parramatta Road, Cowper Street and Good Street.

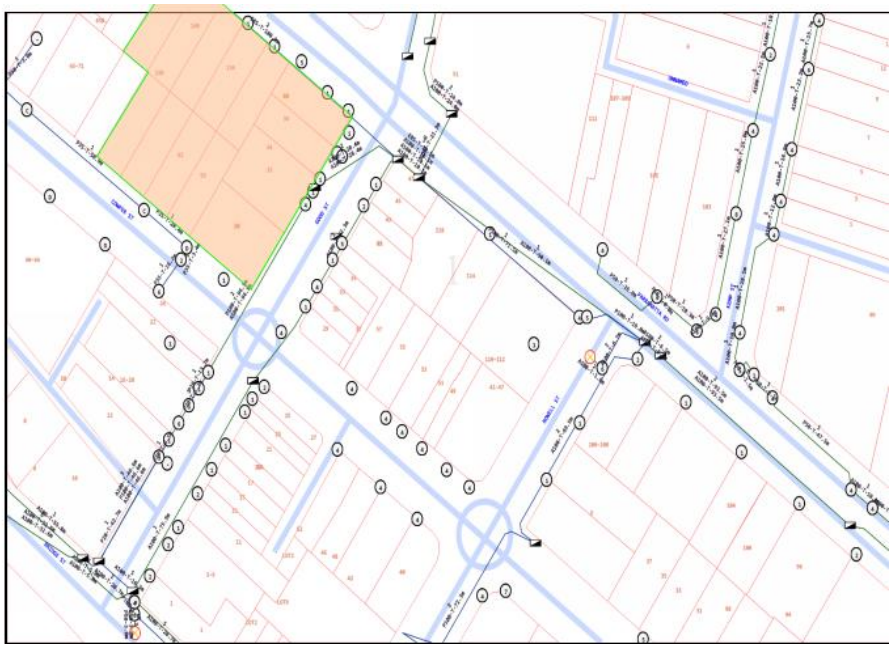


Figure 3: NBN Pit and Conduit Routes

4.3 Sewer Services

The existing sewer assets around the site are owned and operated by Sydney Water as follows:

- DN225 VC sewer main within the site falling towards Bold Street. (To the west).

Refer Appendix A for details.

4.4 Water Services

The existing potable water assets around the site are owned and operated by Sydney Water as follows:

- DN 375 DICL distribution main running on the Southern side of Parramatta Road.
- DN 100 CICL network main running on the Western side of Good Street.
- DN 100 CICL network main running on the Northern side of Cowper Street.

Refer Appendix A for details.

4.5 Natural Gas Services

The existing natural gas assets around the site are owned and operated by Jemena as follows:

- DN 75 7kPa Low pressure main running on Northern side of Cowper Street.
- DN 75 7kPa Low pressure main running on Western side of Good Street.
- DN 75 7kPa Low pressure main running on Southern side of Parramatta Road.

Refer Appendix B for details.

5. Proposed Infrastructure & Augmentation

5.1 Energy Authority Infrastructure

5.1.1 Load Assessment Calculations

Northrop has undertaken a preliminary assessment of the load requirements for the proposed development. Preliminary load assessment calculations according to Endeavour Energy ADMD and AS/NZS 3000:2018 Table C3 have indicated that a load in the order of 3809 Amps per phase (2639 kVA) would be anticipated for the new development.

The expected maximum demand for the mixed development requires a chamber substation consisting of two off 1500 kVA transformers. Electrical supply throughout the development is proposed to be a direct from these transformers.

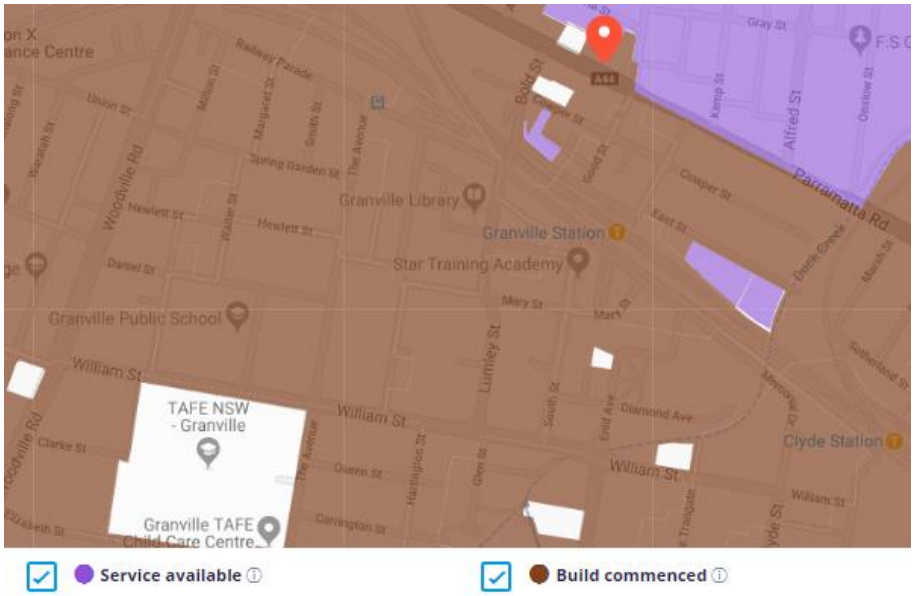
Endeavour Energy has assessed the proposed method of supply submitted by Northrop and approved the requirement of 2 X 1500kVA transformers. Refer to Appendix C for Endeavour Energy Design Brief.

5.2 Communications Infrastructure

The Federal Government's Telecommunications Infrastructure in New Developments (TIND) policy defines nbn™ as the infrastructure provider of last resort for developments in nbn™'s denoted service area.

NBN services have already been rolled out in the vicinity of the developed area. Trenches for NBN services have already been installed along the site boundary along Parramatta Road, Cowper Street and Good Street.

The site is hence serviceable with new nbn services for each apartment unit without requiring nbn to run new backhaul fibre.



5.3 Sewer Services

The local area is serviced by a Sydney Water sewer main infrastructure located inside the boundary line from the western side of the site in 134-142 Parramatta Road, Granville. See Appendix A.

The existing sewer line is to be disused from the existing sewer manhole outside the site. A sewer main is proposed to service the new site and to connect to the existing sewer manhole

Northrop will submit a section 73 application once DA has been obtained for the proposed development.

The scope of the work is to gravitate the entire site to the proposed extended sewer main. If gravity cannot be achieved a pump out unit would be introduced for portion of site if gravity system is not achievable.

Internal sanitary drainage within the site will be a combination of DN150 & DN225 sewer pipe connecting into the proposed Sydney Water sewer main. All works will be in accordance with Sydney Water and AS3500 standards.

5.4 Water Services

The cold-water service will be designed in accordance with the NCC, AS3500.1, and Sydney Water requirements.

The existing DN375 Sydney Water main located within Parramatta Road will be connected into to supply the proposed residential development. A section 73 application will confirm if connection into the existing 375mm water main is acceptable.

A pressure and flow statement has been issued by Sydney Water. However due to the development height fire tanks and pumps will be implemented to meet with required BCA and Australian standards.

5.5 Gas Services

The existing Jemena natural gas mains in the area is a low-pressure system. From our initial consultation with Jemena we have been informed there isn't sufficient supply for the proposed development. As an alternative it is proposed to install an in-ground LPG storage tank to supply gas for central hot water plants, cook tops and retail tenancy.

5.6 Proposed Fire Protection Services

5.6.1 Fire Hydrants & Fire Sprinkles

A new fire hydrant and fire sprinkler system shall be designed for the proposed development in accordance with the requirements of the BCA and AS2419.1 & AS2118.1. For the proposed development of this nature a fire tank with pumps will be designed for simultaneously flowing fire system. The hydrant and sprinkler system will be a combined system. The fire system will make connection into the DN375 water main from Parramatta Road.

5.6.2 Fire Hose Reels

Fire hose reels to be installed to all basement levels and common areas on ground floor. Under the current BCA, fire hose reels are not required for the residential component of the project.

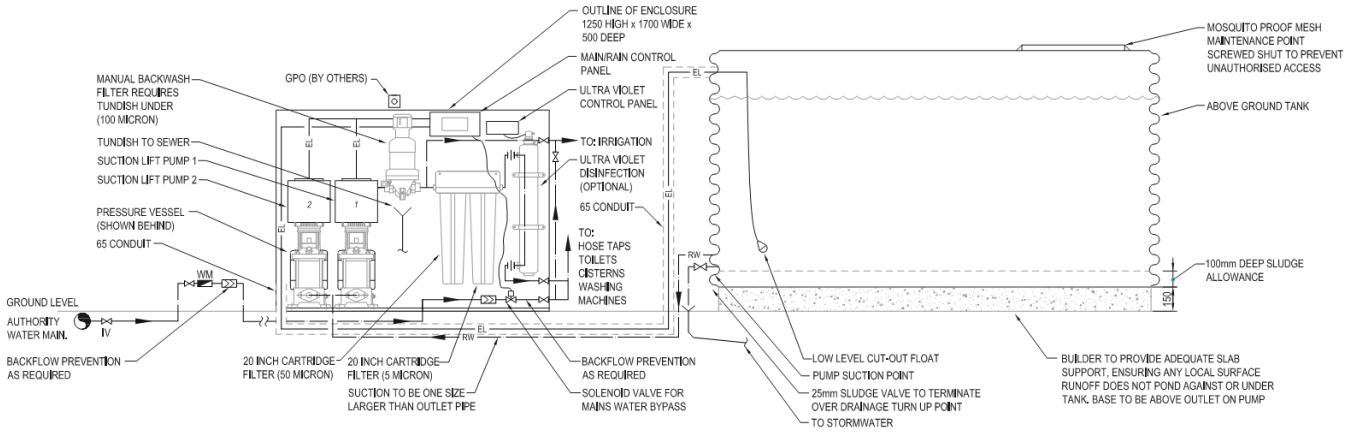
All fire hose reels are to be located in a readily accessible position within 4 metres of a required exit, and along the normal paths of travel to an exit where additional coverage is required.

The fire hose reel system shall make connection to the cold water service via a double check valve backflow prevention device.

6. Integrated Water Management Plan

This section details the proposed alternative water supply proposed to be used within the Residential Development at 134-142 Parramatta Road, Granville.

A rainwater tank will be installed below ground in close proximity to the OSD system. The intent is to collect the majority of the roof areas. Collection of water will be through the roof stormwater system. A rainwater pumpset and filtration system will be provided adjacent to the rainwater tank to supply water from the tank to irrigation and other rainwater reuse points. Final sizing and system configuration is pending detailed design.



Typical Rainwater Reuse System

7. Conclusion

This Site Servicing Report outlining the proposed Utility Infrastructure servicing the proposed development will be suitable for addressing the requirement of Item 6.5 of the Auburn LEP 2010.

The project, located at 134-142 Parramatta Road, Granville, can be adequately serviced by power, telecommunications, water and sewer services, while natural gas supply has supply issue for the area.

It has been identified that the local low-voltage electrical infrastructure is insufficient to support the proposed buildings, requiring a chamber substation with 2 x 1500kVA transformers to be installed to service the site. Preliminary correspondence from Endeavour Energy indicates that this will not require significant HV works, due to the volume of development around the Granville area.

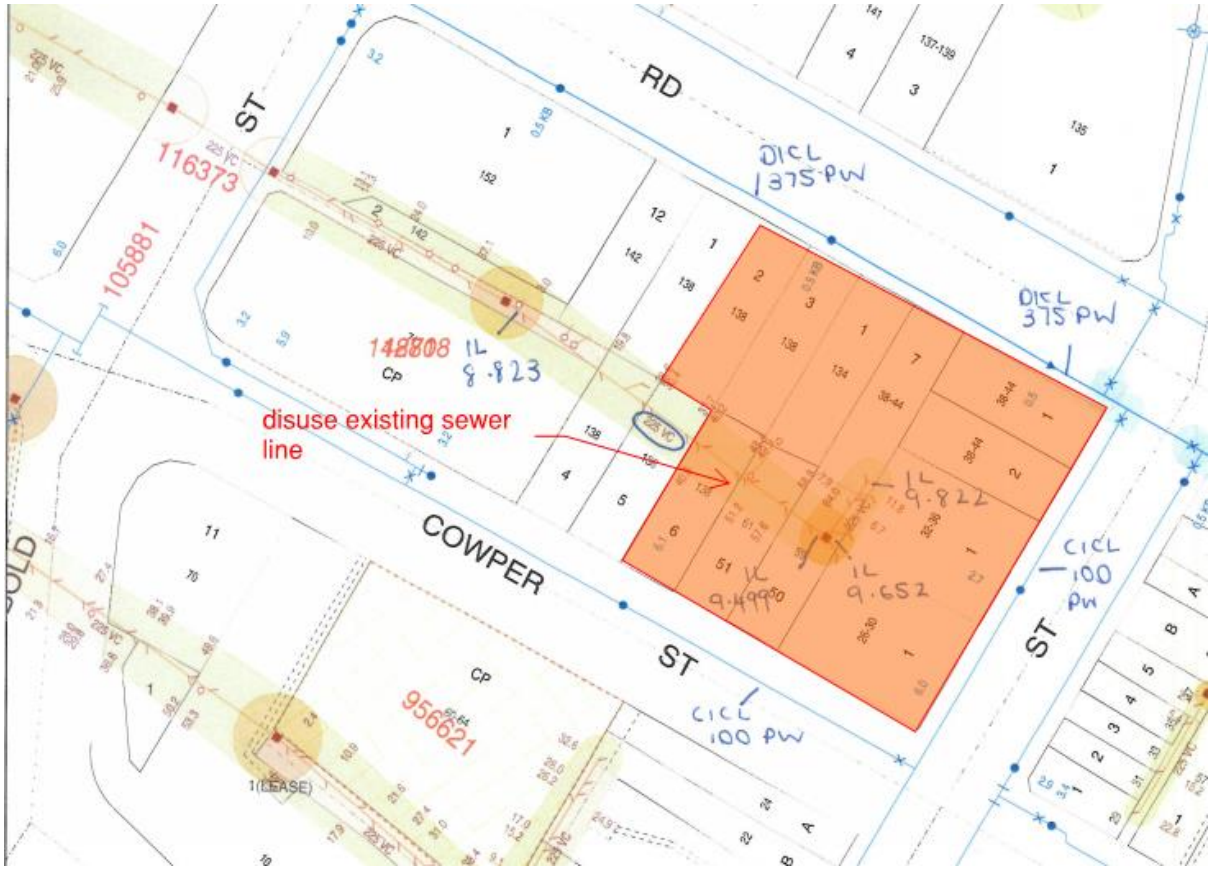
Installation of new communications infrastructure (nbn™) will be required to service the site.

Sydney Water existing watermain with Parramatta Road will be utilized to serve the subject site. Final assessment will be subject to Sydney Water section 73 application, once DA has been launched.

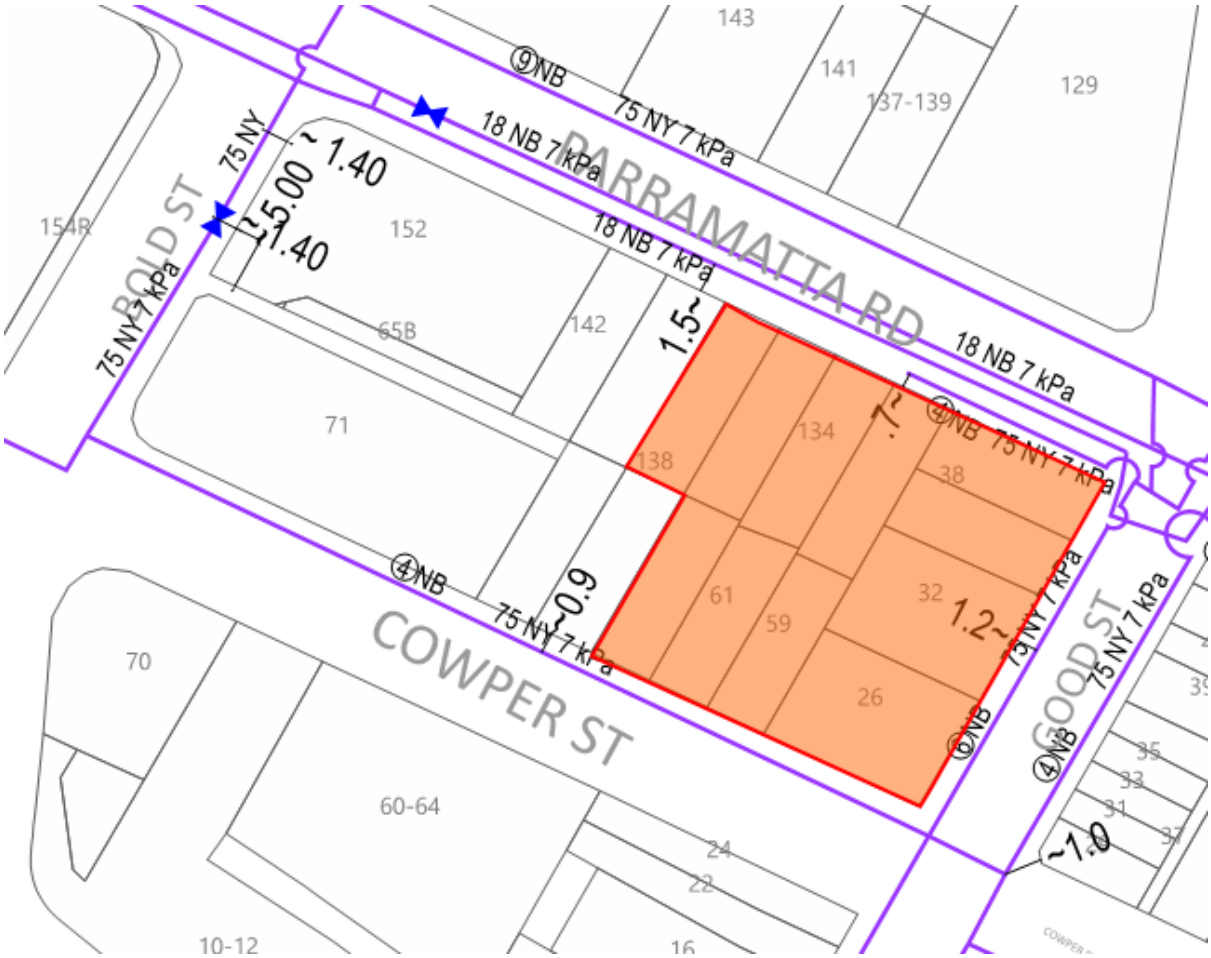
Existing Sewer main will be removed where it crosses the site. The main will be cut back along the western boundary. The existing 225mm main shall be satisfactory to service the proposed development, subject to section 73 application and assessment.

Low pressure gas main is only available in the area, and Jemena have confirmed no capacity in existing mains. As an alternate on site LPG storage tank will be installed to supply gas for the site.

Appendix A – Sydney Water Diagram



Appendix B – Jemena Diagram



Appendix C – Endeavour Energy Design Brief

2 September 2020

Endeavour Energy Ref: UML9335 – 2019/01482/001
Customer Ref:

Northrop Engineers Pty Ltd
Level 2 No 3 Horwood Place
PARRAMATTA ACT 2150

Attention:

Dear Sir/Madam

UML9335 – LOT 1,3,1-6, DP 721626,1075357, Connection of Load Application: 134-142 Parramatta Road, GRANVILLE

Your Proposed Method of Supply has been assessed, and Endeavour Energy has determined the method of supply requirements as outlined in the enclosed Design Brief. Please use this Design Brief in preparation of the design package which you will submit for certification.

The design must comply with all the conditions specified in this document, the Terms and Conditions of Endeavour Energy's Model Standing Offer for a Standard Connection Service and all relevant Endeavour Energy standards and instructions.

This Design Brief is valid for three (3) months from the date of issue.

A final Determination of Funding and a Payment Advice for Ancillary Network Services Fees applicable to this phase of the project are attached.

Property tenure is required for this project.

The applicable bond for this project is:

Property Tenure Bond	*$20000.00*

A Payment Advice for the total bond required is attached. This Payment Advice along with the agreement to enter (Form FPJ 5013), signed by the owner, must be returned with the evidence of payment of the Property Tenure Bond.

Should you have any enquiries regarding your application please contact the undersigned.

Yours faithfully,

Romeo Cedino
Contestable Works Engineer
Ph: 9853 7845
Email: cwtech@endeavourenergy.com.au

2 September 2020

Endeavour Energy Ref: UML9335 – 2019/01482/001
Customer Ref:

Design Brief

Method Of Supply Requirement:
Development Details & Applicant's Assessed Load:
This project is for connection of load for a 374 Units located in Lot No. 1-3 & 1-6 DP No. 721626 & 1075357 respectively, 134-142 Parramatta Road GRANVILLE. The developments proposed revised total load is 3809.4 Amps (2639 kVA) three phase as per submitted revised application and maximum demand calculation.

Designers proposed method of supply:
Proposed HV works include:

1. Install 1 x new Indoor Substation (2 x 1500kVA Transformers) with 8DJH – RTR HV switchgears within the development site
2. Disconnect existing HV cable from existing Indoor Sub 34287 to PM Sub 6294.
3. Install 1 x new HV straight through joint (STJ)
4. Run a new 240 AL 3C XLPE cable between new HV STJ and New Indoor Sub.
5. Run a new 240 AL 3C XLPE cable between the two new Indoor Sub transformers.
6. Run a new 240 AL 3C XLPE cable between new Indoor Sub and existing Indoor Sub 34287.

Proposed LV works include:

1. Install 1 x new Indoor Substation (2 x 1500kVA Transformers) with 2500CB + Cat 2 LV Switchgear within the development site.
2. Run a new 240 AL 4C XLPE cable between the two new Indoor Sub transformers
3. Run a new 240 AL 4C XLPE cable from new Indoor Sub to existing pole 570585.

Endeavour Energy conditions of supply:
Capacity Planners' HV MOS:

1. Establish new Indoor sub with 2x 1500kVA transformers and 2 Fdr RMU. ***Note:*** *The proposed 2x 1500 kVA Transformers has been accepted by the Capacity Planner*
2. Loop new sub into cable between subs 6294 and 34287.
3. Use 11kV 240sqmm 3C Cu XLPE cable.
4. Provide Type 26 ducts along entire Cowper St frontage.
5. Provide mandatory spare ducts as per standards only in other areas aside from Cowper St.

Others

- Substation design and construction to comply with MDI0028 & MCI0006

requirements.

- The HV Swgr should be RLR, not RTR as the Transformer is now 1500 kVA
- Please note that the 2500 Amps CB shall be derated 1590 Amps. Therefore, LV Swgr should be 3200 Amps (derated to 2380 Amps) + CAT 2 Fuse strip. This is to allow the new total load of 3809.4 or 1904.7 for each 3200 Amps LV CB.
- Low Voltage cable must be 240 sq mm 4C AL XLPE
- Earthing to meet the requirement of EDI 100.
- HV and LV reticulation should be in accordance with MCI0006 and MDI0028.
- Reinstate all customer services that maybe impacted by the network reconfiguration as required.
- Create easement and other restrictive covenant in accordance with MDI0044.
- The Indoor Substation must comply to but not limited to the following: Section 7.5 of MCI0006 & Section 6.4 of MDI0028.
- Indoor substation must use either dry-type transformers or less combustible insulating (K-class) oil/natural ester oil. Refer to Clause 6.4.2 of MDI0028. Bund walls are required for liquid filled Transformers, refer to Clause 7.5.22 of MCI0006.
- Cost difference between the normal oil filled transformer and the K-Class oil or dry type transformer shall be funded by the developer. It must be written in the 'Customer Funded Contestable Works' table in the Funding Arrangement for Scope of Works table.
- Provide approved Council DA and architectural plan for the development to check the structural requirements of the Indoor Substation.

The scope of works shall be undertaken in accordance with all Endeavour Energy relevant policies, regulations and network standards.

All service works shall comply with the NSW Service and Installation Rules.

Determination of Funding

Endeavour Energy Supplied Materials:

NIL

Endeavour Energy Funded and Constructed:

NIL

Endeavour Energy Funded and Customer (ASP L1) Constructed – Reimbursement Paid by Endeavour Energy:

Capital contribution:

- 2x 1500 kVA Transformer only (normal oil filled)
- Spare ducts as required by the Planner in excess of the requirement of MDI0028 and MCI0026.

Reimbursements to be paid to Endeavour Energy by Customer:

Usage of any Endeavour Energy spare ducts.

Customer Funded Non-Contestable Works:

Network switching, substation commissioning, contract inspection

Customer Funded Contestable Works:

Cost difference between the normal oil filled transformer and the K-Class oil or dry type transformer and all other works required.

PAYMENT ADVICE/PRO FORMA TAX INVOICE

ANCILLARY NETWORK SERVICES FEES

ABN 11 247 365 823

Applicant: Starryland NSW
Address: Level 26, 25 Bligh Street
SYDNEY NSW 2000

Project Address: 134-142 Parramatta Road
GRANVILLE ACT

(Your Ref:)

Fees and Charges quoted in this letter are valid for 3 months Endeavour Energy reserves the right to amend the fees and charges at any time subject to any regulatory approval.

The required AER Monopoly fees and charges consist of:-

Standard Connection Offer Fee	26-08-2019	$266.18
Design Information Fee	26-08-2019	$3549.26
Design Certification Fee	26-08-2019	$3549.26
Administration Fee	26-08-2019	$352.07
Total		$7716.77

Total Amount Due: $ 7716.77 GST inclusive

Please follow the payment instructions below to avoid unnecessary delay in processing your payment.

Endeavour Energy's preferred method of payment is EFT.
BSB: 012-003 Account Number: 8376 89858

Please quote our reference UML9335 in the EFT transaction reference field
Please email a copy of the remittance to remittances@endeavourenergy.com.au

Payment made by cheque will also be accepted.
Credit Cards will not be accepted
Cheque to be made payable to ENDEAVOUR ENERGY

Please attach the cheque with this form and post to:
PO Box 811, SEVEN HILLS NSW 1730

Your Tax Invoice will be forwarded to you upon the receipt of your payment.

PAYMENT ADVICE/PRO FORMA INVOICE

BOND

ABN 11 247 365 823

Applicant (Name) Starryland NSW
Address: Level 26, 25 Bligh Street
SYDNEY NSW 2000

Project Reference: **UML9335**
Project Address: Lot 1,3,1-6, DP 721626,1075357, 134-142 Parramatta Road
GRANVILLE

PROPERTY TENURE BOND

This Payment Advice is valid for 3 months. Endeavour Energy reserves the right to amend the fees and charges at any time.

Payment Required:-

Property Tenure Bond	*$20000.00*

Total Amount Due: $20000.00 GST exempt

To avoid unnecessary delay in processing your payment, please attach the unconditional bank guarantee or cheque to this form and post to:
PO Box 811, Seven Hills NSW 1730

Please note: Endeavour Energy's preferred method of bond payment is by bank guarantee in favour of Endeavour Energy Network Operator Partnership ABN 11 247 365 823.

Payment may also be made by cheque payable to ENDEAVOUR ENERGY

EFT & Credit Cards will not be accepted for bond payments.