Appendix U
Site Infrastructure Management Strategy

If a building becomes architecture, then it is art. Clearly, if a building is not functionally and technically in order, then it isn't architecture either – it's just a building.
Arne Jacobsen

Mechanical Engineering
Lighting Design
Sustainable Design
Electrical Engineering

Copenhagen
London
Sydney
Canberra
Hong Kong
New York

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BUILDING SERVICES

STEENSEN VARMING

Powerhouse Ultimo Renewal - Site Infrastructure Management Strategy Stage 1 SSDA Report (SSD-32927319)

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Document Revision and Status

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1.0 Introduction

This report has been prepared on behalf of the Department of Enterprise, Investment and Trade (Create NSW) to support a State Significant Development (SSD) Development Application (DA) for alterations and additions to Powerhouse Ultimo at 500 Harris Street, Ultimo.

The Powerhouse Ultimo Renewal is a transformative $480-$500 million investment by the NSW Government to establish a world-class museum that will significantly contribute to an important and developing part of Sydney. The renewal will see Powerhouse Ultimo deliver a programming focus on design and fashion, presenting exhibitions that showcase the Powerhouse Collection, international exclusive exhibitions and programs that support the design and fashion industries.

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2.0 Process

The Powerhouse Ultimo Renewal project is for the purposes of an 'information and education facility' with a capital investment value of more than $30 million, and such is classified as State Significant Development (SSD) pursuant to Section 13(1) of Schedule 1 of *State Environmental Planning Policy (Planning Systems) 2021.*

The delivery of the new Creative Industries Precinct for Powerhouse Ultimo will occur in stages, comprising the following:

- **Stage 1** – Concept DA establishing the planning, design, and assessment framework for the Powerhouse Ultimo Renewal Project including the indicative land uses, maximum building envelopes, general parameters for the future layout of the site, and strategies to guide the subsequent detailed design phases of the project including Urban Design Guidelines and Design Excellence Strategy.
- **Architectural Design Competition** – A competitive design process to critically analyse and provide design alternatives for the Powerhouse Ultimo Renewal project in accordance with the planning and development framework established for the site under the Concept DA. A winning design will be selected by a jury of experts and will inform the subsequent detailed design and assessment phase (Stage 2) of the project.
- **Stage 2** – A Detailed DA confirming the ultimate architectural design and operation of Powerhouse Ultimo and assessing any associated planning and environmental impacts. This Detailed DA will seek consent for the detailed design, construction and operation of the proposed development and follows the same planning assessment and determination process as the Concept DA (Stage 1).

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3.0 Site Description

Powerhouse Ultimo is situated upon the lands of the Gadigal people of the Eora Nation. It is located within the City of Sydney Local Government Area and its primary address is 500 Harris Street, Ultimo.

The site contains two heritage-listed buildings, being the 'Ultimo Power House' (c.1899-1905) and the 'Former Ultimo Post Office including interior' (c.1901), both of which are listed on the State Heritage Register under the Heritage Act 1997.

Other buildings within the site include the former tram shed (Harwood Building) and the 1988 museum building fronting Harris Street (Wran Building). A café building has been constructed immediately to the south of the Power House at the northern end of the Ultimo Goods Line. Located at the corner of Harris Street and Macarthur Street is a forecourt that acts as the main public entrance to the site, but provides limited activation and is disconnected from higher-quality urban spaces including the Ultimo Goods Line.

The primary focus of the Powerhouse Ultimo Renewal project is the museum to the north of Macarthur Street and bounded by Harris Street, Pier Street and the light rail corridor. However, some enabling and minor decoupling works will occur within the broader Powerhouse Ultimo precinct.

No substantive works or changes in use are proposed to the Harwood Building located between Macarthur Street and Mary Ann Street.

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4.0 Overview of Proposed Development

This Concept DA sets the vision for the renewal of Powerhouse Ultimo and the creation of the Powerhouse Creative Industries Precinct, with the detailed design, construction, and operation of the project to be sought at a separate and future stage (Stage 2).

Concept approval is sought for the following:

- A maximum building envelope for any new buildings and alterations and additions to existing buildings retained on the site.
- Use of the new spaces and built form as an 'information and education facility' including exhibition, education, and back of house spaces, and a range of related and ancillary uses to contribute to the operation of Powerhouse Ultimo.
- Endorsement of Urban Design Guidelines and a Design Excellence Strategy to guide the detailed design of the future building, internal spaces, and public domain areas that will be the subject of a competitive design process and a separate and future DA (Stage 2).
- An updated Draft Conservation Management Plan to ensure that future development occurs in a manner that is compatible with, and facilitates the conservation of, the heritage values of the site.
- General functional parameters for the future design, construction, and operation of buildings and uses on the site including the principles and strategies for the management of transport and access, flooding, sustainability, heritage and the like.

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5.0 Assessment Requirements

The Department of Planning and Environment (DPE) has issued Secretary's Environmental Assessment Requirements (SEARs) to the applicant for the preparation of an Environmental Impact Statement (EIS) for the proposed development. This report has been prepared having regard to the SEARs as follows:

Environmental Assessment Requirement	Where addressed in this report
15. Stormwater and Wastewater Where applicable, provide an Integrated Water Management Plan for the development that: ▪ Is prepared in consultation with council and any other relevant drainage or water authority. ▪ Details the proposed drainage design for the site including any on-site treatment, reuse and detention facilities, water quality management measures, and the nominated discharge points. ▪ Demonstrates compliance with council or other drainage or water authority requirements and avoids adverse impacts on any downstream properties, including during construction. Provide a stormwater concept plan prepared in consultation with, and compliant with the relevant standards of, the local council or other drainage or water authority.	The wastewater shall use existing infrastructure. Refer Section 10 and refer to the separate TTW Stormwater Report.

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Environmental Assessment Requirement	Where addressed in this report
23. Infrastructure Requirements and Utilities In consultation with relevant service providers:	
▪ Assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site, including the Inner West Light Rail.	The following organisation's infrastructure has been investigated. AARNet Ausgrid Aussie Broadband City Of Sydney Fibersense FibreconX Nextgen NBN Optus Sydney Trains Central Sydney Water Telstra Transport for NSW Verizon Vocus The Inner West Light Rail is not envisaged to be impacted by the works. Refer to section 8.0
▪ Assess the impact on and detail any measures to protect Sydney Water stormwater assess which traverse the site	Refer to the separate TTW sStormwater Report. Also refer to the Sea Water Heat Rejection Section 9.0 in this report.
▪ Identify any infrastructure upgrades, including for the Inner West Light Rail, required on-site and off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained.	The substation will be replaced with new as per Section 6.0 of this report. New telecommunications services will be provided to the site in existing and new ducting as per Section 7.0 of this report.
▪ Provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated funded and delivered to facilitate the development	Some existing Infrastructure will be retained as included in the following sections of this report. The extent of new site infrastructure to the site is not onerous or extensive for a project of this scale. The procurement of the infrastructure shall be in accordance with the design, delivery and staging programme.

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6.0 Electrical Power Report

6.1 Existing Infrastructure

The following provides an outline of the existing electrical services infrastructure in the precinct and identifies any required alterations to serve the proposed development.

Details of the existing services through the 'dial before you dig' (DBYD) service, survey and discussions with the utility authorities Ausgrid indicate the existence of the following services serving or traversing the site:

Electricity Supply –

Ausgrid:

- 132kV High voltage cabling
- Distribution Substation
- 11 kV High voltage cabling
- Various low voltage supplies

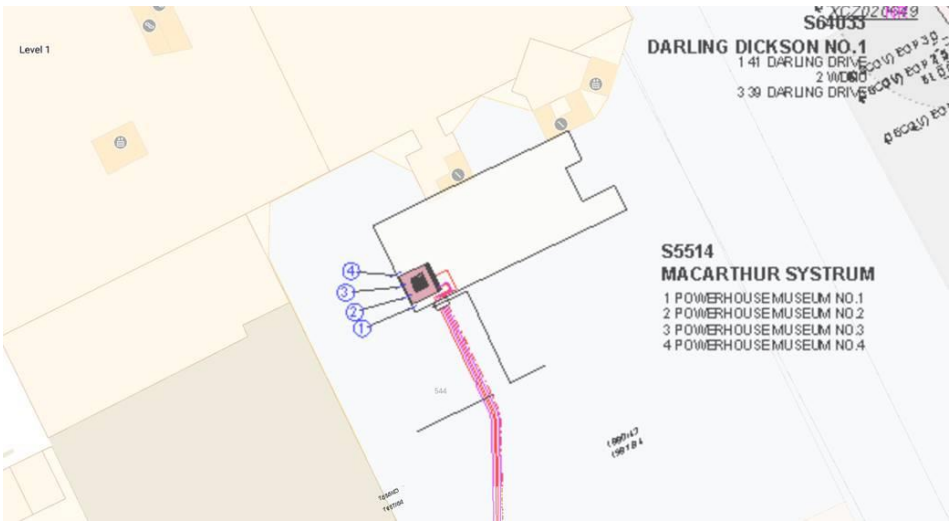

***Image**: Ausgrid Record Drawing*

Generally, the existing Ausgrid Drawings show the approximate location of the existing substation.

The existing substation is an old Basement substation with limited access. Modern substations have better access for maintenance staff and equipment.

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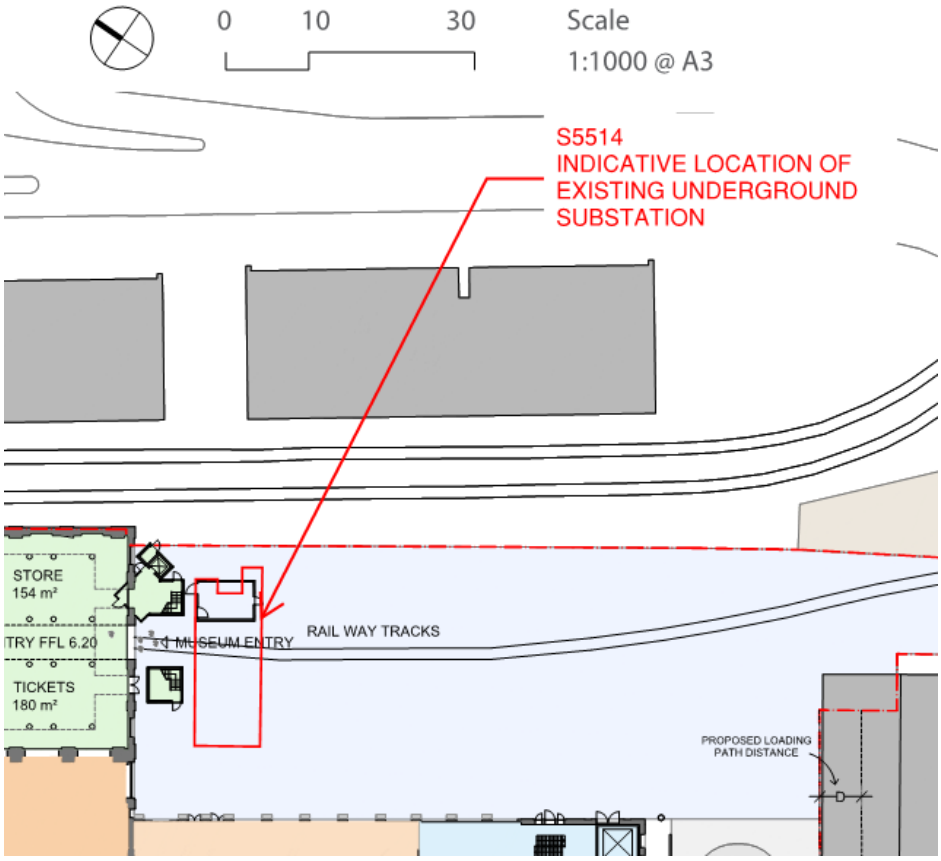
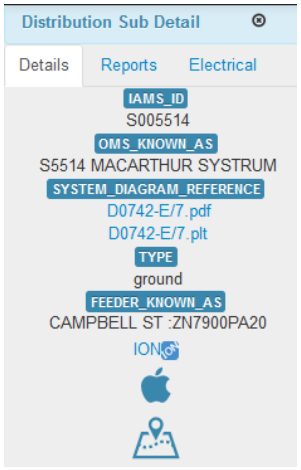


***Drawing** : Existing Substation Location*

S.5514 'MACARTHUR SYSTRUM' – has 4 x 3000A supplies to the powerhouse museum, the overall substation rating is 5500A, and demand is currently at 800A on the substation.



***Data** : Existing Substation S5514 data*

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***Image** : Detail of Existing 132kV HV power line below ground near site*

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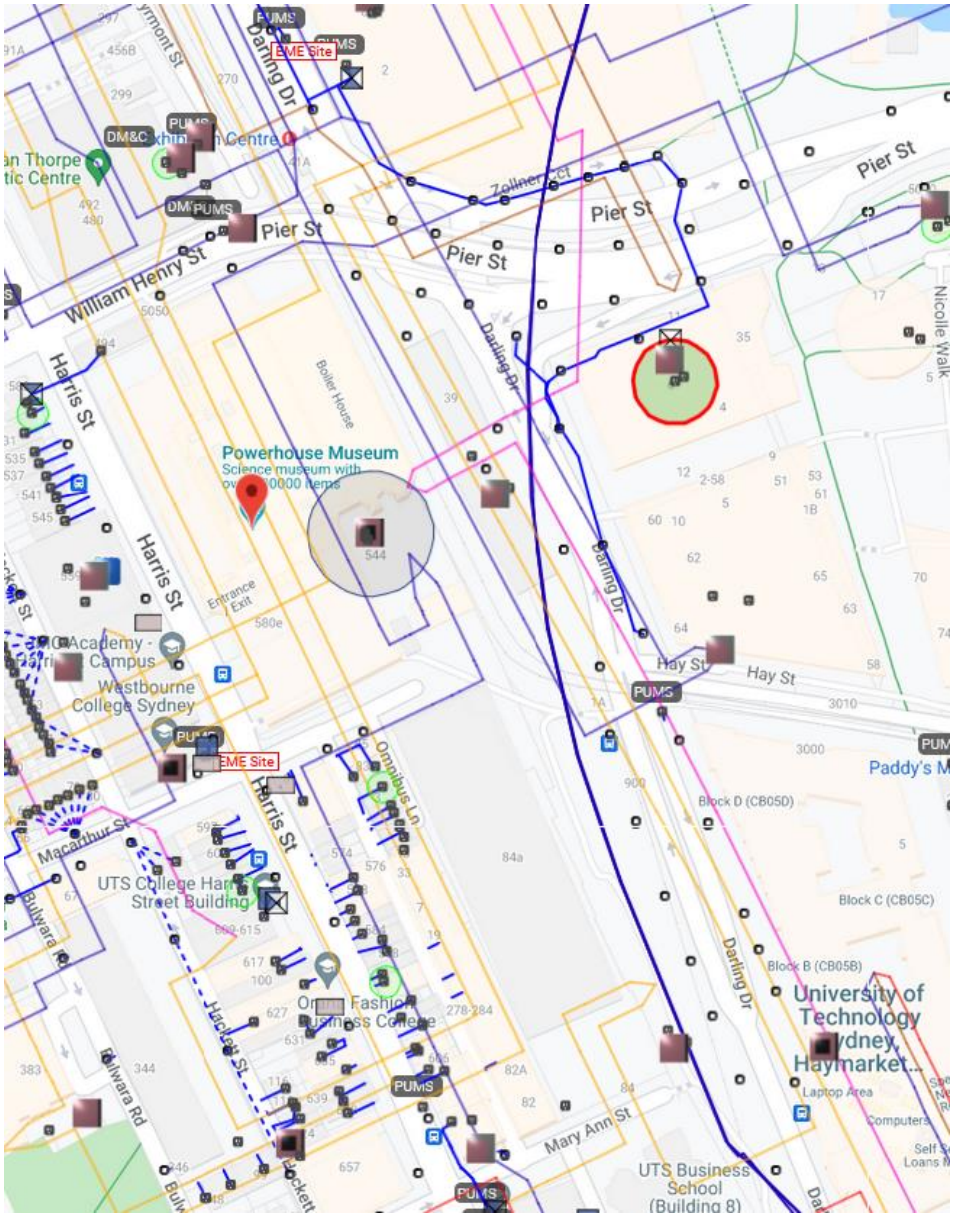

Image: *Technical Information Ausgrid Webgis*

6.2 Initial Design Assessment

Based on size of the development the initial detailed assessment has confirmed that a substation of similar size to the existing is required for the works. The final connection requirements will be based on the detailed Maximum Demand which will be completed in the next design stage.

6.3 Authority and Utility Consultation

The following Authorities and Utility organisations have been consulted

- Ausgrid

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Ausgrid

Preliminary Enquiry Reference Code : 0037623

Preliminary Enquiry

LOCATION

Retailer
Erm Power
NMI
NCCCZ00062
Meter Number
015683, 015667, 018020, 105699
Property Name
Powerhouse Museum
Property Type
Other (Museum)
Land Title Type
Torrens
Street Number/RMB
500
Location Address
Harris Street, Ultimo, 2007
Land Zoning
Urban

APPLICANT

Applicant Type
Other On Behalf Of A Retail Customer Or Real Estate Developer
Full Name
Mr Richard Hopkins
Email Address
richard.hopkins@steensenvarming.com
ABN/ACN
50001189037
Company Name
Steensen Varming
Street Number/RMB
9
Nearest Cross Street
Hunter Street
Applicant Address
Castlereagh Street Sydney 2000
Phone Number
0299672200

CUSTOMER

Customer Type
Retail Customer
Full Name
Mr The Manager Museum Of Applied Arts And Sciences
Phone Number
0299672200

-
-

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ENQUIRY

Type
I Have Some Other Connection Related Enquiry That Requires A Written Response From Ausgrid.
Your Question
Please Provide - Documentation To Confirm Condition And Capacity Of Hv And Lv Supplies To And Around The Site, Including Ausgrid Assets S5514 , S5683, S35479. - Guidance To Clearance And Access For The Above Ground Component Of S5514, And Impact On Any Development Building Works.
Supporting documents

File name	Ausgrid filename reference	Size
6maps_LandTitle_PowerHouseMuseum.pdf	SupportingAttachmentFilePath_1	1.722 MB
Ausgrid GIS information.pdf	SupportingAttachmentFilePath_2	11.668 MB
Billing Meter 1.jpg	SupportingAttachmentFilePath_3	3.589 MB
Billing Meter 2.jpg	SupportingAttachmentFilePath_4	1.858 MB
Billing Meter 3.jpg	SupportingAttachmentFilePath_5	2.536 MB
Billing Meter 4.jpg	SupportingAttachmentFilePath_6	2.388 MB
DBYD.pdf	SupportingAttachmentFilePath_7	1.391 MB
NMI Marking.jpg	SupportingAttachmentFilePath_8	2.58 MB
SubMeter - Cafe.jpg	SupportingAttachmentFilePath_9	2.313 MB
SubMeters- Courtyard.jpg	SupportingAttachmentFilePath_10	1.745 MB
IMG_4572.JPG	SupportingAttachmentFilePath_11	3.64 MB
IMG_4573.JPG	SupportingAttachmentFilePath_12	3.622 MB

6.4 Proposed Infrastructure and Augmentation

Based on the initial assessment and similar past works and projects, a 3 x 1500kVA transformer substation has determined as being adequate for the development.

This will provide at maximum capacity of 5500amps.

At this stage the new substation will replace the existing substation which has limited access and old equipment.

The new substation shall be positioned in a new location to satisfy the Ausgrid Network Standards and the Powerhouse's functional requirements.

7.0 Electrical Communications Report

7.1 Existing Infrastructure

The following provides an outline of the existing telecommunications services infrastructure in the precinct and identifies any required alterations to serve the proposed development.

Details of the existing services through the 'dial before you dig' (DBYD) service, survey and discussions with the utility authorities NBN other telecommunications firms indicate the existence of the following services serving or traversing the site: The utility communications cabling is generally installed in underground conduits on street verges with regular access points through pits.

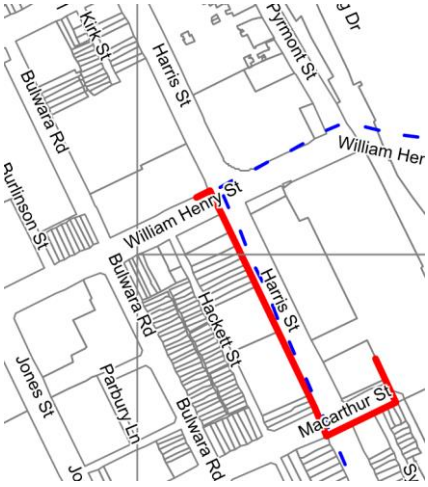
Communications Services –

Optus, Telstra, Pipe Networks, Dark Fibre (Private):

- Various fibre, broadband and mobile services

Most carriers have significant telecommunications infrastructure located below the roads highways that surround the Powerhouse Museum and Harwood Building. The largest of which comprises Optus services that emanate from their data centre located directly opposite the Powerhouse Museum on Harris Street.

The telecommunications lead-in cabling for the Powerhouse Museum and Harwood building reticulates from Macarthur Street into the main security monitoring space. It is understood that an AARNet carrier service is utilised by the Powerhouse Museum site.



***AARNet** incoming service reticulation route (ref: Dial Before You Dig)*

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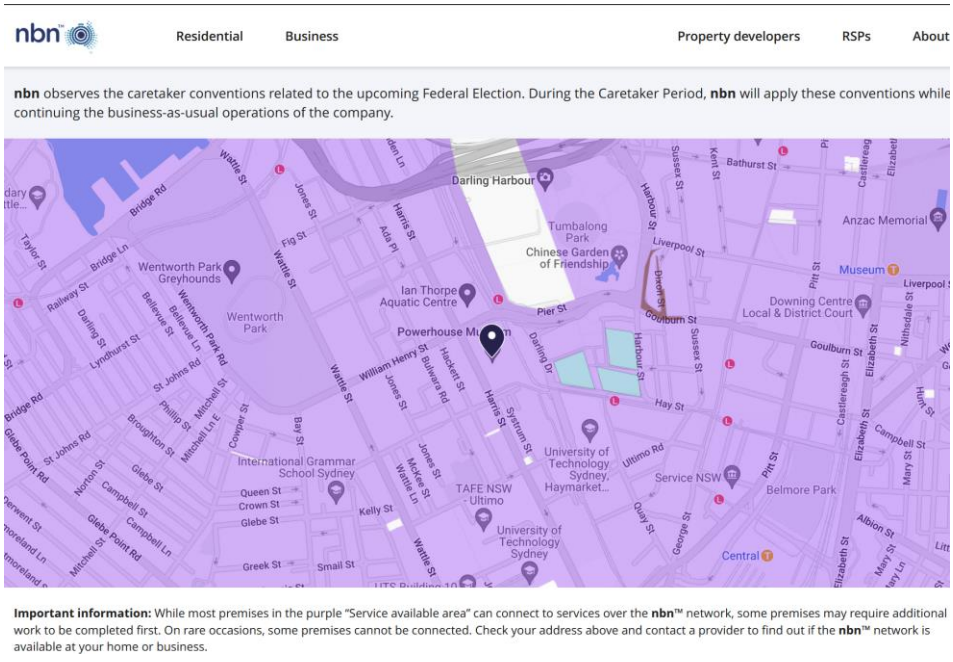
There is also a dedicated fibre link between the Powerhouse Museum and Harwood Building systems and the Powerhouse facility at Castle Hill provided via AARNet.

Internally, a fibre network is distributed from the Main Communications space to communications racks located throughout each of the three buildings, which then serve final outlets.

7.2 Initial Design Assessment

The site located on Harris St Ultimo has several telecommunications carriers within close proximity. The site is also within the NBN serviceable area as per indicated below in the diagram.



7.3 Authority and Utility Consultation

Formal applications for lead-in connections and modifications will be made in the future design stage.

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7.4 Proposed Infrastructure and Augmentation

A new Building Distributor room will be established in the development with new lead-in cable services.

New cable connections from the relevant telecommunication service providers including the NBN will reticulate underground to the building in existing and modified infrastructure.

Modifications are required to existing cabling infrastructure. This includes some works on telecommunications services in Harris St. Further detail will be determined as part of the Stage 2 SSDA.

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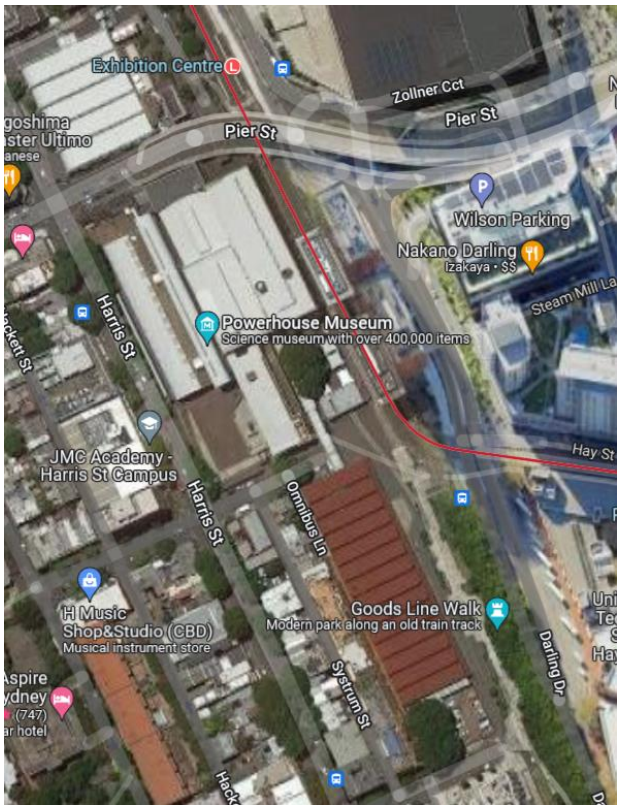
8.0 Inner West Light Rail Report

8.1 Existing Infrastructure



Light Rail: *Red line indicate light rail nearby.*

There is no apparent impact on the existing Inner West Light Rail which is located adjacent to the existing Powerhouse Museum.

8.2 Proposed Infrastructure and Augmentation

No changes or impact on the Inner West Light Rail is warranted. The new development may require Cathodic Protection and earthing studies which will be addressed in the future design phase.

All works and access where required shall be in accordance with the requirements of the Roads and Maritime Services (RMS) and Transport for NSW.

9.0 Sea Water Heat Rejection System

9.1 Existing Infrastructure

The seawater intake tunnels are located in Darling Harbour in close proximity to the Harbourside Shopping Centre as shown in Image 1 below. The existing seawater tunnels were completed by about 1928 and was an integral component of the operating system of the former Ultimo Power House (now the Powerhouse Museum).

***Image 1**: : Indicative route of the existing Seawater Tunnel*

It is noted that the seawater intakes considered in this report were a later addition to the Ultimo Power House, and the original intake pipes/conduits had been completed 1899, though along a different alignment and is abandoned. Locations of the conduits of those constructed in 1899 and mid-1920s are shown in image 2 below.

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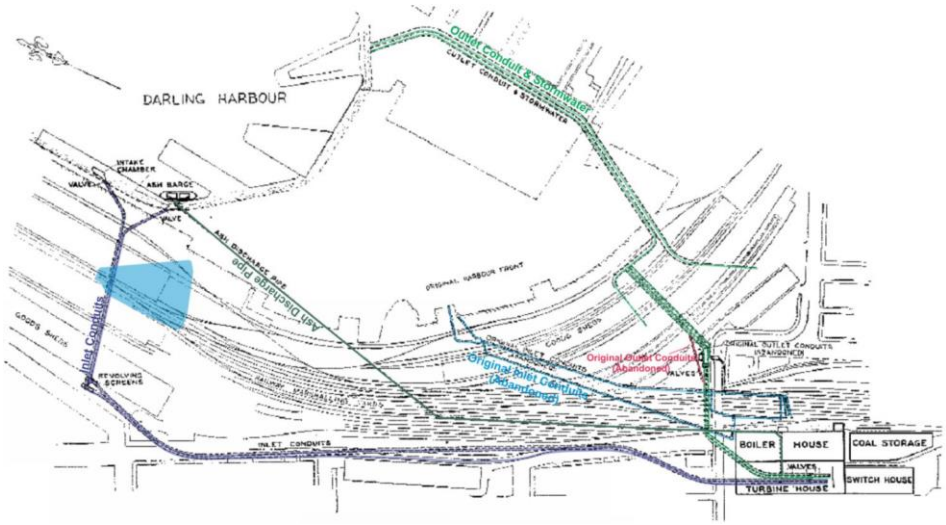

***Image 2**: Plan showing the shoreline in relation to circulating water tunnels and conduits inlet and outlet used in 1899 and those constructed in the mid-1920s.*

Details in Image 3 below show reord of the infrstructure dated in 1982.

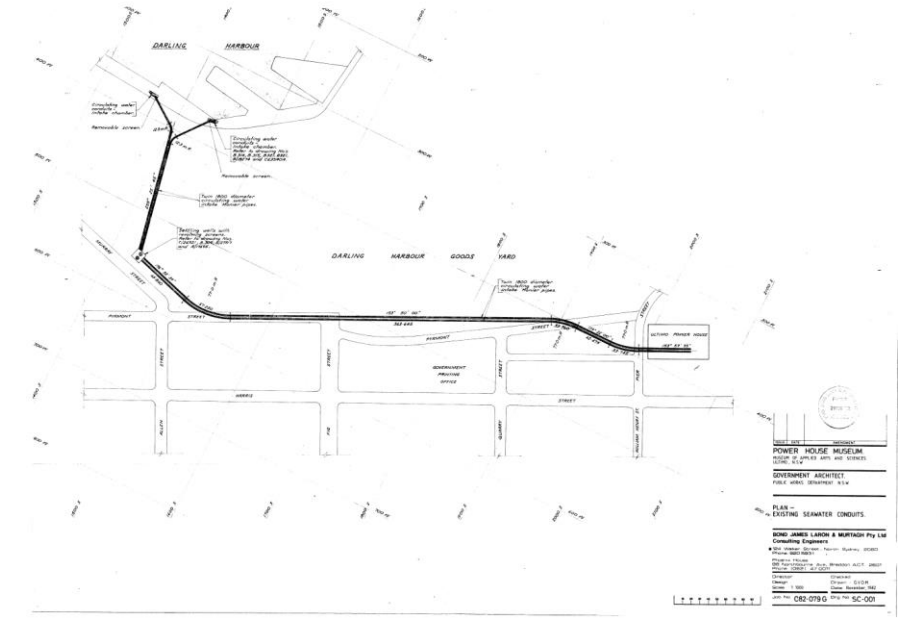

***Image 3**: Plan showing existing seawater conduits, dating from 1982.*

9.2 Proposed Infrastructure and Augmentation

No changes to the existing pipeline route are envisaged. The existing infrastructure will be retained.

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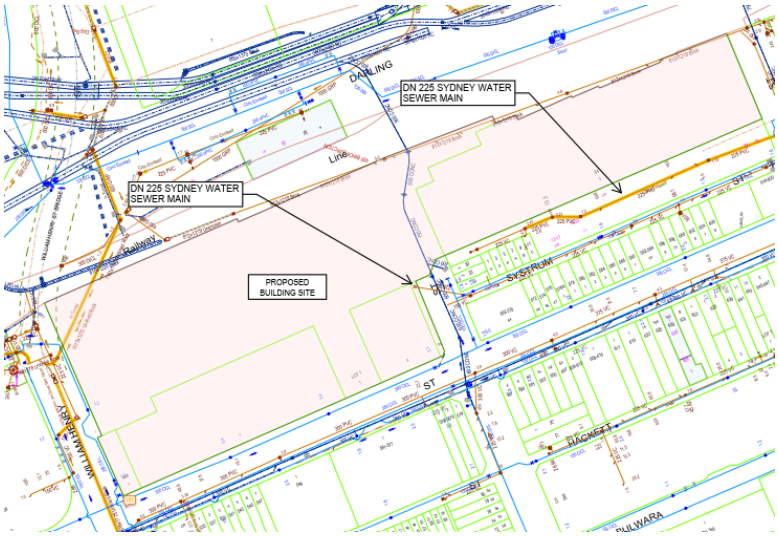
10.0 Sewer Report

10.1 Existing Infrastructure

The site has access to two (2) Sydney Water sewer mains. These connections are located as follows:

- 225mm vitrified clay sewer main in MacArthur Street and,
- 225mm PVC sewer main in Omnibus Lane.



10.2 Initial Design Assessment

To express the results in a total daily sewer discharge, an estimate of the average daily sewer discharge in terms of L/Day has been made by adopting information derived by the NSW Water Directorate.

Where the standard equivalent tenement figures suggest that a 60% water to sewer discharge factor is appropriate. Refer to table below for this calculation.

Sewer discharge calculation

Based on planned development size the following is confirmed.

Total Units	Average Sewer Discharge 60% of L/ unit/day	Total Average Daily Sewer Discharge (kL)
Office and Café / Fast Food	60% of 79,210	47.5

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10.3 Authority and Utility Consultation

Details of the Authority and Utility consultation will be provided as part of the Stage 2 SSDA.

10.4 Proposed Infrastructure and Augmentation

Utilisation of the existing sewer connections will be determined by the Section 73 application to Sydney Water as part of the Stage 2 SSDA.

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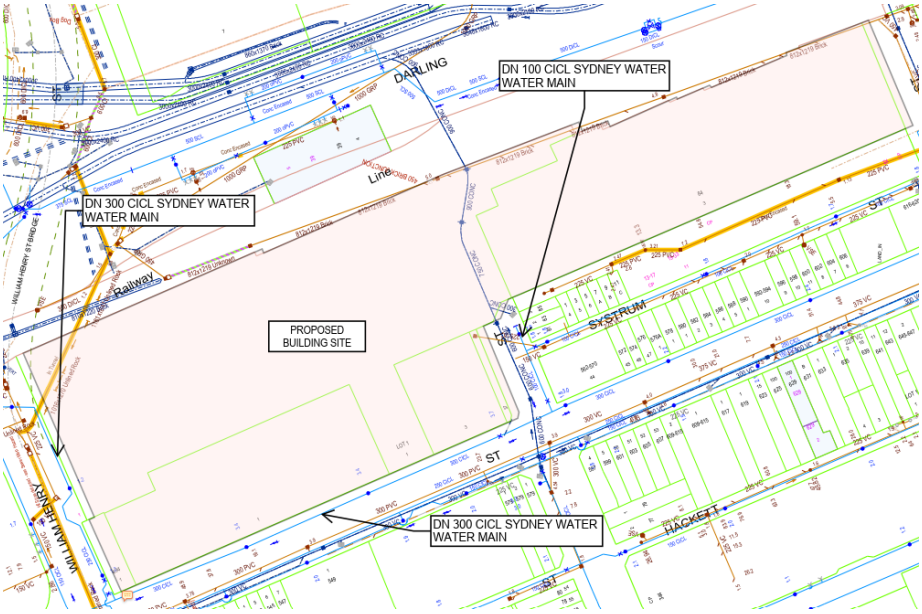
11.0 Water Supply Report

11.1 Existing Infrastructure

The site has access to:

- 300mm diameter Sydney Water water main in Harris Street.
- 100mm diameter Sydney Water water main in MacArthur Street.
- 250mm diameter Sydney Water water main in William Henry Street.



11.2 Initial Design Assessment

The assumption taken in determining the average daily potable water demands for the proposed development were taken from the Sydney Water table, "Average Daily Water Use by Property Type" and is presented in the tables below.

Where possible, potable water usage will be reduced using low flow taps and sanitary fixtures, typically using the following flow rates:

- Shower = 9.0L/m
- Basin = 7.7L/m
- Sink = 7.7L/m

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Average Daily Water Demand

Based on planned development size the following is confirmed.

Total Units	Average Sewer Discharge 60% of L/ unit/day	Total Average Daily Sewer Discharge (kL)
Office and Café / Fast Food	60% of 79,210	47.5

Average Daily Water Demand Calculation

Based on planned development size the following is confirmed.

Total Units	Average Demand (L/ Unit/Day)	Total Average Daily Water Demand (kL)
Community Centre / Library	43,049 x 1.84	79.210

Schedule 1 - Sydney Water Table

"Average Daily Water Use by Property Type"

Development Type	Development Sub-Type	Key Metric	Metric Unit	Average Demand (L/Metric Unit / Day)
Residential	Single Lot Torrens	Dwelling	Each dwelling	623.00
	Flats Torrens	Net Floor Area	Square Meter	2.36
	High Rise Units	Net Floor Area	Square Meter	3.34
	Single Lot Community	Dwelling	Each dwelling	623.00
Mixed	Residential / Commercial	Combined Floor Area	Each dwelling / Square Meter	Use separate rates for each component
	Commercial / Industrial	Combined Floor Area	Square Meter	Use separate rates for each component
Commercial	Aged Accom - Self Care	Net Floor Area	Square Meter	2.50
	Aged Accom - Hostel	Bed	Each bed	271.00
	Aged Accom - Full Care	Bed	Each bed	271.00
	Childcare	Net Floor Area	Square Meter	3.60
	Hotel / motel / serviced apartments	Room	Each room	359.94
	Office	Net Floor Area	Square Meter	2.27
	Shopping Centre	Net Floor Area	Square Meter	3.00
	Laundry / Dry Cleaner	Net Floor Area	Square Meter	10.50
	Café / Fast Food / Butcher / Deli	Net Floor Area	Square Meter	2.48

	Retail Units	Net Floor Area	Square Meter	2.48
	Medical / Veterinary	Net Floor Area	Square Meter	2.48
	Mechanical Repair	Net Floor Area	Square Meter	2.48
	Car / Boat Sales	Net Floor Area	Square Meter	2.48
	Car Wash	Net Floor Area	Square Meter	9.40
	Club	Net Floor Area	Square Meter	3.77
Industrial	Heavy Process		As required	
	Chemical Manufacturing		As required	
	Printing Manufacturing		As required	
	Beverage Manufacturing		As required	
	Light Factory Unit	Developed floor area	Square Meter	2.82
	Warehousing	Developed floor area	Square Meter	2.82
	Transport / Bus Depot	Site area	Square Meter	0.91

11.3 Authority and Utility Consultation

Details of the Authority and Utility consultation will be provided as part of the Stage 2 SSDA.

11.4 Proposed Infrastructure and Augmentation

Utilisation of the existing water mains will be determined by the application to Sydney Water as part of the Stage 2 SSDA.

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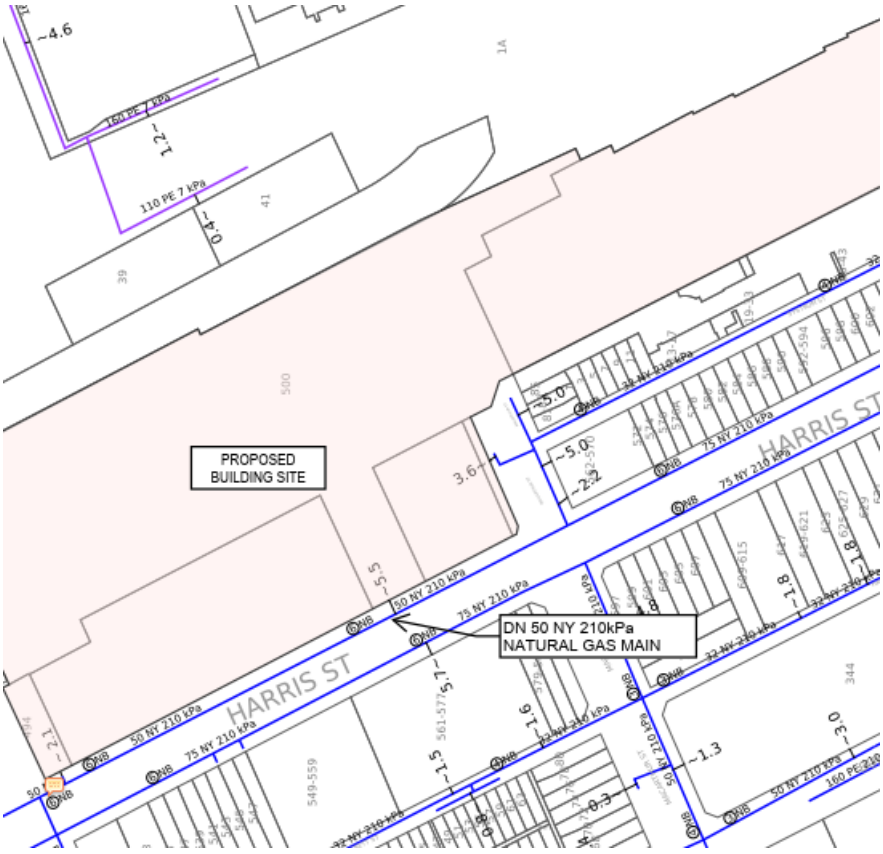
12.0 Natural Gas Report

12.1 Existing Infrastructure

The site is currently serviced by one (1) Jemena natural gas main which is a medium pressure 210kPa 50mm diameter nylon gas main located in Harris Street and Macarthur Street.

The below information was received from Jemena's dial before you dig application.



12.2 Initial Design Assessment

The extent and need for natural gas will be confirmed in the future design phase as part of the Stage 2 SSDA.

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12.3 Authority and Utility Consultation

Details of the Authority and Utility consultation will be provided as part of the Stage 2 SSDA.

12.4 Proposed Infrastructure and Augmentation

A Jemena application will be made to determine connection capabilities once the final selection of equipment has been made.

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13.0 Mitigation Measures

Based on the findings and recommendations of this report, the following measures are suggested to mitigate the identified impacts of the proposed works.

1. Mitigation Measure	2. Indicative Timing
An infrastructure delivery and staging plan, including more detail on of how infrastructure requirements would be co-ordinated funded and delivered to facilitate the development. Note, no physical works are included in the stage 1 SSDA. To be addressed in stage 2	*At the detailed Stage 2 SSDA stage*

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Appendix – Site Services Drawing

Attached is the existing site services drawing.

SITE PLAN

NOTE:
1. SERVICES DATA SOURCED FROM SITE SURVEY DATED 30/05/19, DRAWING PROVIDED BY LTS LOCKLEY REGISTERED SURVEYORS, REFERENCE NUMBER 50686 001DT REV 2; INFORMATION PROVIDED TO STEENSEN VARMING BY MUSUEM REPRESENTATIVES DURING SITE OBSERVATIONS 2017-2020; DIAL BEFORE YOU DIG DATA OBTAINED 2020.
2. NOTIFICATION MUST BE PROVIDED TO THE RELEVANT AUTHORITIES PRIOR AND DURING COMMENCEMENT OF ANY EXCAVATION WORKS. REFER TO DIAL BEFORE YOU DIG DETAILS

- ELECTRICITY U/G
- ELECTRICITY O/H
- COMMUNICATIONS
- GAS
- SEWER
- STORMWATER
- WATER

INDICATIVE LOCATION OF AUSGRID SUBSTATION (ASSET # S35288 - PYRMONT QUARRY NO.2). REFER TO AUSGRID DBYD DATA

INDICATIVE LOCATION OF AUSGRID SUBSTATION (ASSET # S4081 - PYRMONT ST. 1 MWS & DB PUMPING STATION SUPPLY NO2). REFER TO AUSGRID DBYD DATA

AUSGRID SUBSTATION (ASSET # S8893 - PYRMONT NO.2, 1 MWS & DB PUMPING STATION SUPPLY NO2). REFER TO AUSGRID DBYD DATA

MAJOR POWER DUCT WAY
HIGH VOLTAGE TRANSMISSION LINES
(REFER TO AUSGRID DBYD DATA)

SEA WATER HEAT REJECTION PIPES LOCATION TBC

INDICATIVE AUSGRID HIGH VOLTAGE FEEDER POWER SUPPLY (REFER TO AUSGRID DBYD DATA)

PREVIOUS LOCATION OF DECOMMISSIONED SUBSTATION AUSGRID ASSET # S5683 O/S MACARTHUR OMNIBUS NO.1 & 2 (REFER TO AUSGRID DBYD DATA)

SUBSTATION AUSGRID ASSET # S35479 MARY ANN OMNIBUS WDNO.1, CABLE TUNNEL SUPPLY NO.3 2, THE GOODS LINE MSB 3. (REFER TO AUSGRID DBYD DATA)

STORMWATER EASEMENT

SUBSTATION AUSGRID ASSET # S5514 POWERHOUSE MUSEUM NO.1,2,3&4 (REFER TO AUSGRID DBYD DATA)

INDICATIVE LOCATION OF UNDERGROUND ELECTRICAL SUBMAINS AND MECHANICAL SERVICES TO HARWOOD BUILDING

NBN CO CONDUIT
PIPE NETWORKS PIT AND DUCT

AARNET FIBRE OPTIC ASSETS
TELSTRA CABLE ASSETS

AAPT/POWERTEL PIT AND DUCT

UNDEGROUND SERVICES ALONG HARRIS STREET (ELECTRICAL, COMMUNICATIONS, GAS, WATER).

REFER TO DIAL BEFORE YOU DIG DATA

UNDEGROUND SERVICES ALONG MACARTHUR STREET (ELECTRICAL, COMMUNICATIONS, GAS, WATER).

REFER TO DIAL BEFORE YOU DIG DATA

PRELIMINARY ISSUE

AMENDMENTS

REV	DESCRIPTION	DATE
00	PRELIMINARY	27/4/2022

NOTES

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London
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STEENSEN VARMING

PROJECT
ULTIMO CREATIVE INDUSTRIES PROJECT - POWERHOUSE
494-500 HARRIS STREET, ULTIMO NSW 2007

DRAWING TITLE
MECHANICAL, ELECTRICAL, PLUMBING SERVICES
SITE PLAN OVERALL

0 25m 50m

A1

CREATED	DRAWN	DESIGNED	CHECKED	APPROVED	SCALE
APRIL'27	MH	**	MH	**	NTS

NORTHPOINT	PROJECT No.	DRAWING No.	REVISION
	177090	B01	00

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