UTILITIES SEARS REPORT (SSD 6135)

Pemulway Development (Precinct 3)

LEVEL 3 SERVICES

JHA

CONSULTING ENGINEERS

DOCUMENT CONTROL SHEET

Title	**Utilities SEARS Report (SSD 8135)**
Project	PEMULWAY DEVELOPMENT (STAGE 3)
Description	Report for Utilities SEARS
Key Contact	Brenton Burrows

Prepared By

Company	JHA
Address	Level 23, 101 Miller Street, North Sydney NSW 2060
Phone	61-2-9437 1000
Email	@jhaengineers.com.au
Website	www.jhaservices.com
Author	Brenton Burrows
Checked	Brenton Burrows
Authorised	Jacob Theodorou

Revision History

Issued To	Revision and Date								
Belinda Dawes	**REV**	A							
	DATE	30/05/2017							
	REV								
	DATE								
	REV								
	DATE								

CONTENTS

1. EXECUTIVE SUMMARY

This report has been prepared by JHA to identify and summarise the proposed Utility infrastructure requirements, which will be incorporated into the design of the proposed new development at Pemulway, Precinct 3.

This report demonstrates compliance with the Secretary's Environmental Assessment Requirements (SEARS) which apply to the project and has been prepared to accompany a State Significant Development Application to the NSW Department of Planning and Environment. This report should be read in conjunction with the Architectural design drawings and other consultant design reports submitted as part of the application.

The report identifies how the principles of infrastructure management plans will be incorporated in the design and during the phases of the development.

2. INTRODUCTION

2.1 Project Description

The proposed new Pemulway, Precinct 3 site is bounded by Eveleigh St, Lawson St and the Rail Corridor, Pemulway.

JHA understand that a key component of this project will include consultation and liaising with the following Utility agencies:

- Ausgrid
- Telstra

This report will outline the infrastructure requirements for servicing the proposed development. The report will also outline any key design risks/items in terms of infrastructure relocations required for the development.

2.2 Secretary's Environmental Assessment Requirements (SEARS)

This report acknowledges the SEARS prepared by the Secretary which notes the following in Section 11 of the document:

16. Utilities

- In consultation with relevant agencies, address the existing capacity and requirements of the development for water, electricity, waste disposal telecommunications and gas.
- Details of any augmentation to services and utilities required to meet the demand generated by the proposed project
- Consider potential impacts on the integrity and safe operation of the adjoining rail corridor, including measures to mitigate these impacts

JHA was engaged for electrical and communication services for this project. As such, this report will only focus on electricity (Ausgrid) and telecommunications (Telstra).

The above Utility items of the SEARS requirements are addressed in sections three and four of this report respectively.

3. ELECTRICAL SERVICES

The electrical supply infrastructure will be incorporated into the design and construction phases of the development as follows:

3.1 Proposed Maximum Demand

Electrical calculations for the final development were undertaken and have yielded an electrical load requirement of approximately 1785 Amps, 3 phase. The existing electrical infrastructure to the site has been deemed insufficient to provide the required calculated electrical demand to the new development.

To provide the development with the required electrical capacity, new on-site chamber substations will be required.

3.2 Existing Infrastructure Capacity

The existing site is currently vacant and has no electricity connection. A local LV feeder is available from the nearby street. This LV feeder originates from an 11kV/415V distribution substation labelled S.4656, owned and maintained by Ausgrid. The LV feeder's name is CAROLINE EVELEIGH S4656:3

It has been determined that, the existing LV street feeder from the Ausgrid network is insufficient to supply the site with 1785 Amps, 3 phase. This has been confirmed by an application to Ausgrid for connection of the development.

3.3 Ausgrid Application

3.3.1 Construction Stage

The proposed on-site chamber substation will require co-ordination with overall site building works, including an electrical supply for construction equipment such as cranes, lifts and on-site amenities.

Review of the current Ausgrid GIS network indicates the existing kiosk substation S.4656 "Caroline Eveleigh" within the adjacent lot boundary provides supply to the low voltage distributor along Eveleigh Street. This distributor feeds approximately 82 customers in the area and likely has limited capacity.

Furthermore, kiosk substation S.4656 "Caroline Eveleigh" impacts future stages of the development (Precinct 2 – not covered in this SEARs). Due to this impact, it is proposed a new double mini chamber is built as early works on Precinct 2 before kiosk substation S.4656 "Caroline Eveleigh" is decommissioned. Existing street load would be transferred from S.4656 to the new mini chambers.

A 400A temporary builder's supply would then be taken from the new mini chambers to supply overall site building works. Should more than 400 Amps, 3 phase be required for construction power, alternative options should be sort and may include a new temporary kiosk substation on site, or generators to supplement the 400 Amps, 3 phase supply.

3.3.2 Permanent

A calculated electrical maximum demand of 1785 Amps, 3 phase has been determined as the required electrical demand for the development's permanent supply. This demand is above the capacity currently available from the existing Ausgrid low voltage network in the area.

To provide the required electrical supply for the final development, two new substations are proposed to be installed within the site's boundary. Consideration has been given to the use of space, limitations and impacts to proposed buildings to determine the most suitable substation installation.

Two single transformer, surface chamber substation has been deemed the most suitable installation for the site. This form of chamber substation has been chosen for its minimalistic footprint, its ability to be

constructed within a building envelope enabling buildings to be constructed directly adjacent (unlike a kiosk substation), and ease of connection and access.

Refer to Appendix A for a copy of the Ausgrid offer letter for the new chamber substations.

3.4 Staging

The following provides an indicative staging arrangement for the augmentation of the electrical services infrastructure to the site from demolition up to permanent final electrical supply.

1. Demolition/Site Prep Stage:- It is expected demolition works of the existing site will not require substantial electrical power to complete the works. The electrical supply to the site can be from the street or a portable generator during these works for any small electrical equipment or site sheds, as required. If a larger electrical supply is required at this stage of the works, the temporary construction connection can be instigated early for use.

2. Construction Stage:- The electrical services infrastructure will require augmentation at this stage of the works. The new temporary builder's supply of 400 Amp, 3 phase is to be installed. Construction works for the new chamber substation can begin for permanent power.

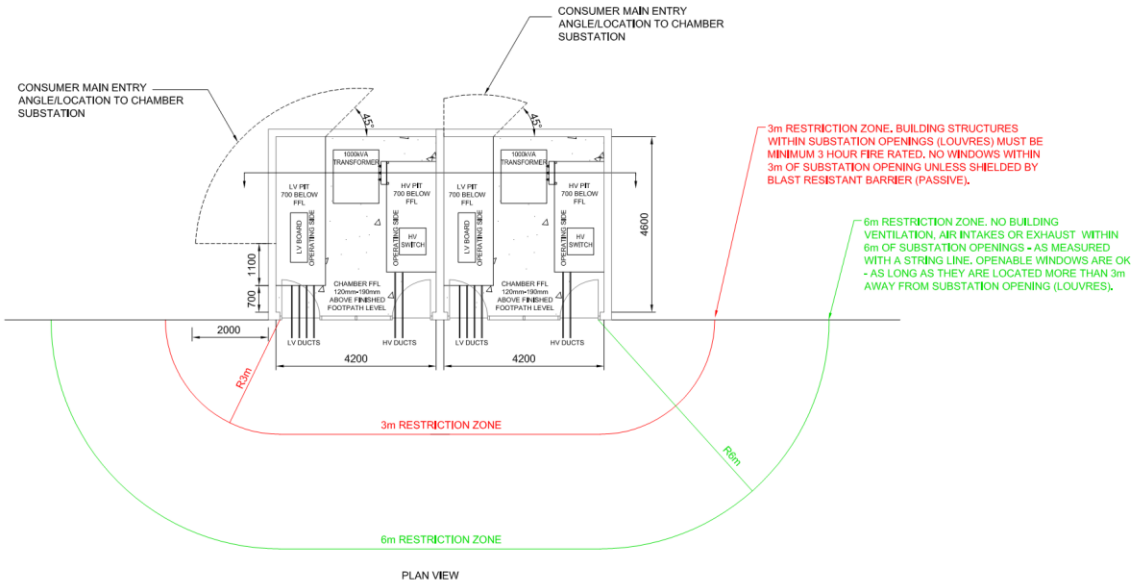
3. Completion Stage:- Upon completion and energisation of the new chamber substation, the temporary construction supply of 400 Amps is to be disconnected with the overall site to now be supplied completely from the new chamber substation.

3.5 Chamber Substation

The new on-site substation is to be a single transformer, surface chamber constructed into the new building envelope.

The proposed location for the new chamber substation has been carefully determined with the following considerations:

- Direct access to the chamber substation from public areas for Ausgrid required vehicle and personnel without the need to enter the site.
- Direct access to the existing Ausgrid high voltage and low voltage networks located within the Wattle Street footpath.
- Minimisation of site ground impact for Ausgrid easement zones.



Substation Spatial

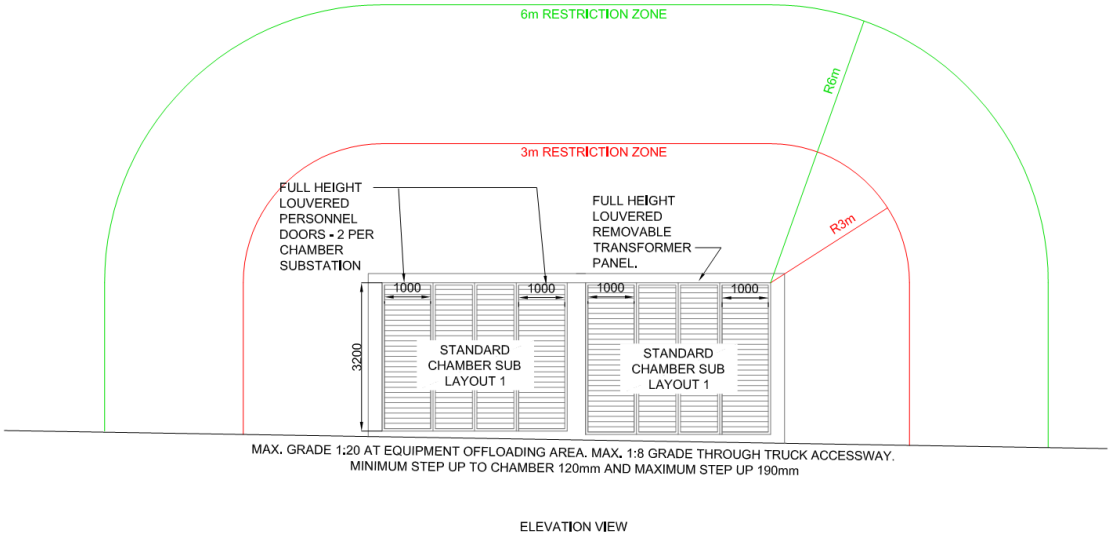
The overall internal dimensional footprint of the single surface chamber substation is 4.6m (length) x 4.2m (depth) x 3.2m (height), with access directly to the Eveleigh Street footpath. The double mini chamber selected will essentially be 2 times the above dimensions, with a 3 hr fire rated block work wall between.

The complete frontage of the substation shall comprise of a removable louvered panel and louvered personnel doors at either end, providing necessary ventilation for the substation.

The substations will contain oil filled high voltage transformers and, as such, in association with the open façade louvers, imposes restrictions to the surrounding building elements in direct vicinity.
The chamber substation structural elements shall be constructed to a FRL of not less than 180/180/180 and a minimum blast resistance of 2kPa.
With regard to building fire rating and protection in association with the chamber substation, Ausgrid imposes additional requirements to those currently in the BCA and Australian Standards including AS1668.2. These additional requirements are included as below:

- All exterior parts of buildings (including adjacent lots) within 3 meters in any direction from the substation louver openings that are not sheltered by a non-ignitable blast resisting barrier must have an FRL of not less than 180/180/180, and a minimum blast resistance of 2kPa;
- All building air intake and exhaust openings, natural ventilation openings including those on buildings on adjacent lots must be separated by no less than 6 meters in any direction from the substation louver openings. Note, Ausgrid does not regard openable windows, which provide natural ventilation to a sole occupancy unit only, as a building ventilation system opening.

The above exclusion zones are to be measured in a direct string line fashion from the substation louver openings as shown below.



Substation Elevation & Restriction Zones

3.6 Rail Corridor Impacts

The existing site is situated next to an existing rail corridor. The substation's proposed position is approximately 9m from the common boundary of the rail corridor.

EP 12 10 00 21 SP – 'Low Voltage Installations Earthing' stipulates a minimum distance of 2m between the rail corridor and any distribution earthing system.

As the substation and its associated earthing system situated further than 2m away, no adverse effects are expected due to the site's utility services. Any earth metallic object within 2m of the rail corridor are to be avoided or shall have insulated breaks (eg. metallic fences).

Furthermore, due to the large MEN earth network in the area and positioning of the substation and associated earth rods, it is expected that EPR levels will below allowable step and touch potentials outlined the ENA EG-1 – Substation Earthing.

4. COMMUNICATION SERVICES

The communication lead-in infrastructure will be incorporated into the design and construction phases of the development as follows:

4.1 Existing Infrastructure Capacity

The existing site is currently vacant and as such has no active telecommunication connection. Localised communication feeders are available from the nearby street (Eveleigh).

4.2 Lead-in Conduits

It is expected, communication services infrastructure lead-in conduits shall be provided to pits adjacent the site on Eveleigh St. From review of DBYD, no major telecommunication relocation appears to be required.

4.3 Application

4.3.1 Construction Stage

Not required

4.3.2 Permanent

Applications have been made to the relevant telecommunication authority. We are awaiting confirmation of their scope. A copy of this application is attached to this report as Appendix B.

4.4 Staging

Not required.

APPENDIX A – AUSGRID CORRESPONDENCE

Address all relevant correspondence to:

Ausgrid Contestability Section
Level 1, Building 4, 130 Joynton Avenue
Zetland NSW 2017

E: Contestability@ausgrid.com.au
F: 02 96639499

21.04.2017

JHA Consulting Engineers
Attention: Moshin Khan
Po Box 3
NORTH SYDNEY NSW 2059

Email: moshin.khan@jhaengineers.com.au

Reference Number: 1900073289

Dear Moshin

Electricity Network Connection Application at: 77-123 Eveleigh St, Redfern

We have received your Connection Application dated 12.04.2017, and assigned it reference number 1900073289.

We have made a preliminary assessment of your Connection Application and wish to advise the application is incomplete and we cannot proceed to a connection offer at this stage. To enable *Ausgrid* to further consider and process your request you will require a certified design and associated certification number, and you should include this on your application.

This letter provides guidance on how to obtain a certified design and associated certification number.

Scope of Network Alterations

Ausgrid's assessment has determined that the following works are likely to be required to connect your development.

- ☐ Installation of 2x Standard Chamber substations.

These works are classified as contestable, which means that you are required to fund the design and some or all of the construction works. If you have not already done so, you will need to engage and manage suitably qualified contractors, known as Accredited Service Providers (ASPs) to undertake the design and construction.

Once the works have been satisfactorily completed and electrified, the premises connection assets will be owned and maintained by *Ausgrid* as part of the electricity distribution network.

You or the person you represent must engage an ASP/3 to design the necessary network alterations. *Ausgrid* has classified the design information for connection as ***complex***. Therefore, for this connection, *Ausgrid* will need to prepare the Design Information – Site Specific Terms and Conditions. Your ASP/3 will then use this document to prepare and submit a design that is certifiable.

You will also need to enter into a Contract for Design Related Services with *Ausgrid* as outlined below. This Contract sets out the rights and obligations of *Ausgrid* and yourself with respect to certification of your ASP/3's design by *Ausgrid*.

Once the design has been certified by *Ausgrid*, your Connection Application will be complete and you may use the design certification number to request that your Connection Application proceed to a connection offer or expedited connection, provided you assure *Ausgrid* that the development has not materially changed since you submitted your original Connection Application.

Contract for Design Related Services

This letter is an offer to enter into a Contract for Design Related Services. It remains open for acceptance for 45 business days. A copy of the Contract for Design Related Services is available for your review on our website *http://www.Ausgrid.com.au* at the following link: http://www.ausgrid.com.au/Common/Industry/Accredited-service-providers/~/media/Files/Connections/Contracts/Design/Design%20Contract%20for%20Connection%20Assets%20ASP3.pdf.

No work will be undertaken by *Ausgrid* until a Design Contract is in place.

You are encouraged to contact ASP/3's and ASP/1's to understand the likely overall costs you will incur for design and construction before you accept and commit to the Contract for Design Related Services.

IMPORTANT: The contractual arrangements provide the framework for a design to be prepared by your ASP/3, and NOT by *Ausgrid*. *Ausgrid's* fees as outlined below are for the design related network services we provide during the design phase, and are IN ADDITION to the fees charged by your ASP/3 in preparing the design.

Acceptance Fees

The acceptance fees relating to the Contract for Design Related Services are payable upon acceptance. *Ausgrid* will invoice you once we receive your signed acceptance form. The Contract will not commence until you pay the invoiced fee.

These fees are an estimate for the *Ausgrid* services required. Further fees may apply for any additional services required and these will be quoted on each occasion. *Ausgrid's* published rates for our services are amended from time to time in our Connection Policy – Connection Charges publication, and in accordance with the Contract, *Ausgrid* reserves the right to charge the rates that are applicable at the time the service is provided.

Fees for *Ausgrid's* services are in addition to the design and construction costs charged by your ASP's, and some fees may not be refundable if the service has already been provided.

The Acceptance Fee will be calculated as follows (GST inclusive). These fees and rates are set by the Australian Energy Regulator:

Facilitation	$472.50

General

Standard *Ausgrid* documents mentioned in this letter, including those enclosed, are available on *Ausgrid's* website *www.ausgrid.com.au*. If you do not have access to the web and would like to read any of the documents mentioned in this letter they may be obtained by contacting the phone number below.

Should you require any further information please contact me on the phone number or email address detailed below.

What to do next

- ☐ Read the Contract for Design Related Services on our website. To accept our offer to enter into a Contract for Design Related Services,
  - Complete and sign the Acceptance of Offer in the space provided below and return it to *Ausgrid*. **Note that a tax invoice will be generated based on the details provided on the form.**
  - You will also need to pay *Ausgrid's* fees as detailed above. An invoice for the above total amount will be forwarded to you on acceptance of the contract.
- ☐ Engage the services of an ASP/3 to submit a design to *Ausgrid* for certification. Note that *Ausgrid* will not accept the design for certification until the Contract for Design Related Services is in place.

Yours sincerely,

David Tomlin
Team Leader – Sydney East & CBD Region
Contestable Connections
AUSGRID

Direct Telephone Number: 02 9663 9526
Mobile: 0407 278 470
Facsimile: 02 9663 9949
Email: dtomlin@ausgrid.com.au

Encl: Acceptance of Offer Form
Contestable Connection or Relocation flowchart

Ausgrid

Acceptance of Offer

Design Offer Expiry Date: **26.06.2017**

***Ausgrid* - MC Reference Number:** 1900073289
***Ausgrid* – AP/AE Reference Number:** 800159876
***Ausgrid* - Trim Reference Number:** B17/1955

Premises: 77-123 EVELEIGH ST, REDFERN

The Connection Applicant accepts the above *Ausgrid's* offer of a Contract for Design Related Services in relation to the design of connection assets at the above premises.

Please note that a tax invoice will be generated based on the details provided on this form. Changes to this information following invoice processing will result in additional charges.

Details of Person or Company to invoice for the payment of *Ausgrid* Fees and Charges.		
This is the party that will be billed and responsible for payment. If you are signing on behalf of a third party, we require their details for invoicing	DEICORP CONSTRUCTIONS N.S.W	print name of person or company
	55 138 180 337.	ABN
	LEVEL 3 161 REDFERN ST	postal address - line 1
	REDFERN N.S.W 2016	postal address – line 2
	GREG COLLRAN.	contact name
	(02) 8665 4100	contact phone number
	gcollran@deicorp.com.au	email address
		purchase order number

Signed by the Connection Applicant (as per application form details)

	signature
Moshin Khan	print name of signatory
Level 3 Engineer	print position of signatory
11/05/2017	date

Company: JHA Consulting Engineers

ABN: 48 612 666 172

Moshin.Khan@jhaengineers.com.au email address

contact phone: 02 9437 1000

APPENDIX B – TELSTRA CORRESPONDENCE

Print this page

AFR Information

AFR Number: 17412509
Date Created: 16:26:28 30/05/2017
Date Modified: 16:53:01 30/05/2017
AFR Type: Mixed Use Building(s)
Terms Agreed: Yes

Applicant Details

Applicant Role: Consulting Engineer
Do you have the authority to sign documents on behalf of the Developer?: No
First Name: Bien
Last Name: Ebonia
Company: JHA Consulting Engineers
Preferred Contact Number: 94731000
Alternative Contact Number:
Postal Address: PO Box 3, North Sydney, NSW 2059
Postcode: 2059
Email: bien.ebonia@jhaengineers.com.au

Developer Details

First Name: Greg
Last Name: Coban
Company Name & ACN & ABN: 47 090 799 885
Preferred Contact Number: 0418234076
Alternative Contact Number:
Postal Address: Level 3, 161 Redfern St
Postcode: 2160
Email: gcolbran@deicorp.com.au

Contractor Details

First Name:
Last Name:
Company:
Preferred Contact Number:
Alternative Contact Number:
Postal Address:
Postcode:
Email:

Service Coordinator Details

First Name:
Last Name:
Company:
Preferred Contact Number:
Alternative Contact Number:
Postal Address:
Postcode:
Email:

Development Details – Mixed Use Building(s)

Development Name: Pemulwuy Precinct 3
Stage number or Name: Pemulwuy Precinct 3
Development Address: 77-123 Eveleigh St
Development Suburb or Locality: Redfern
State: NSW
Postcode: 2016
Latitude: -33.891049
Longitude: 151.199015
Building Approval No:
Crown Allotment/Registered Plan no:
Development Details - Existing Lots: N/A
Development Details - Lots being created: NA
Total floor area for this stage (m2): 0
Number of Residential Dwellings for this stage: 353
Number of Commercial Tenancies for this stage: 1

Number of buildings for this stage:	1
Is this development to be fed via an MDF/Building or Campus Distributor?:	Yes
Future Number of Residential Dwellings to be developed (excluding this stage):	0
Future Number of Commercial Tenancies to be developed (excluding this stage):	0
Dominant Intended Development Use:	Retail - Residential
Estimated number of services required for this stage:	
Civil Works Start Date:	30/05/2018
Communication Trench Open Date:	30/05/2017
Estimated date of first occupancy or required date for building services (fire, lifts, security alarms):	01/05/2018

Development Attachments

Document #1:	Precinct 3 Pemulwuy, Redfern - Floor Plan.pdf

Additional Information

Notes:	Start dates are tentative and will be confirmed at a later date.

Print this page

Greg Houston Plumbing Pty Ltd
ABN 58 001 896 662
9 Hargraves Place
Wetherill Park NSW 2164
Ph: 02 9756 1623
Fx: 02 9725 5439

To whom it may concern,

Please be advised Greg Houston Plumbing have been engaged as the water servicing coordinators by the client Deicorp for the Pemulway precinct (50 Eveleigh Street, Redfern). We are currently in the process of satisfying the Water and Sewer requirements.

The application was submitted into Sydney water on 25th May 2017 and is currently with Sydney water to review and issue the NOR (Notice of requirements).

Please do not hesitate myself if you require any further information.

Regards,

James O'Donnell
Project Manager

6 June 2017

Jemena Limited
ABN 95 052 167 405

Level 9-15
99 Walker St
North Sydney NSW 2060
PO Box 1220
North Sydney NSW 2060
T +61 2 9867 7000
F +61 2 9867 7010
www.jemena.com.au

Neil Lowry & Assoc. P/L
Suite 3.09, Level 3, 7-9 Gibbons Street
Redfern NSW 2016
Attn. N. Lowry

Dear Neil

RE: PROPOSED DEVELOPMENT OF
Precinct 3 Eveleigh St Redfern

Natural Gas is available adjacent to the above subdivision and could be extended to supply any proposed development at this site depending upon its commercial viability.

Caution should be exercised when carrying out any road works that may expose the Natural Gas mains existing in this location. Contact Dial B4 you Dig, ph 1100 to confirm their location.

We appreciate the opportunity to be involved in the forward planning of this development and would like to pursue the potential for the connection to the natural gas network. A formal offer will be made once gas load, connection location and hydraulic considerations are provided to Jemena.

Thank you for your inquiry. If further information or assistance is required, please do not hesitate to contact me on 0402 060 151.

Yours faithfully,

Neale Hilton

Neale Hilton
Network Development Manager