



SYDNEY INTERNATIONAL CONVENTION, EXHIBITION AND ENTERTAINMENT PRECINCT
BAYSIDE PRECINCT AND DARLING CENTRAL PRECINCT – PPP WORKS

SERVICES INFRASTRUCTURE REPORT

FOR SSDA1 5752-2012

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DARLING HARBOUR LIVE

SICEEP – PPP PRECINCT

SERVICES INFRASTRUCTURE REPORT FOR SS DA1

Sewer, Water, Gas, Telecommunications, Electrical

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1 EXECUTIVE SUMMARY

Hyder Consulting has been engaged by Lend Lease to provide civil infrastructure advice to support the Development Application, to be submitted in relation to the Private Public Partnership (PPP) redevelopment of the Darling Harbour area known as the Sydney International Convention, Exhibition & Entertainment Precinct (SICEEP).

Lend Lease are a part of the successful consortium, chosen by the NSW government, to undertake the redevelopment of the site. This consortium is known as Darling Harbour Live (DHL).

Following a desk top study of the existing services in the vicinity of the site undertaken during a Dial Before You Dig (DBYD) exercise, Hyder Consulting and Lend Lease have consulted utility providers for sewer, water, gas, electricity and communications. It is apparent from the findings of this consultation exercise that these utility providers can cater for the needs of the proposed development either through the utilisation of existing utility networks or through the local augmentation of existing networks.

This report has been prepared to address the Director-General Requirements (DGR's) that have been issued for this project and details the investigation of existing utilities in the vicinity of the development in the context of the proposed development scheme, the likely points of future connection to the utilities and the associated potential upgrades or augmentation works that may be required.

2 INTRODUCTION

This report supports a State Significant Development Application (SSDA1 5752-2012) submitted to the Minister for Planning and Infrastructure pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The Application seeks approval for construction of the Public Private Partnership (PPP) component of the Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP) project at Darling Harbour.

The SICEEP project will deliver Australia's global city with world class convention, exhibition and entertainment facilities that can compete effectively in the national and international events markets. The SICEEP project importantly forms a critical element of the NSW Government's aspiration to "make NSW number one again". The SICEEP project also involves the creation of a new neighbourhood and a community hub.

3 OVERVIEW OF PROPOSED DEVELOPMENT

The proposed development involves construction of the PPP component of the SICEEP project, comprising new, integrated and world-class convention, exhibition and entertainment facilities with associated retail and public domain upgrades.

The application more specifically seeks approval for the following development:

- Demolition of existing improvements on the site, including existing Sydney Convention Centre (part) and Sydney Exhibition Centre;
- Associated tree removal and replanting;
- Construction of a new, integrated and world-class Convention, Exhibition and Entertainment Centre;

- Public domain improvements, including:
 - reinvigorating and expanding Tumbalong Park;
 - provision (part) of a new active north-south pedestrian connection (known as the Boulevard);
 - provision of new east-west connections, including Harbourside Place and Tumbalong Place;
 - Provision of a pedestrian bridge link from Quarry Street;
 - Retention of the tidal cascade water feature;
 - Reconfiguration and upgrade of Darling Drive (part);
 - Provision of a new square adjoining the Chinese Garden;
 - Provision of a new open space 'event deck' (connected with the Exhibition Centre);
 - Integrated art, play zones, water play and recreation areas;
 - Provision of retail kiosks;
- Provision of ground level parking within the Exhibition and Entertainment Centre facilities;
- Ground and elevated loading docks (accessed off Darling Drive) for Convention, Exhibition and Entertainment Centre facilities;
- Two vehicle drop off points off Darling Drive;
- Provision of signage; and
- Extension and augmentation of physical infrastructure / utilities as required.

4 BACKGROUND

The existing convention, exhibition and entertainment centre facilities at Darling Harbour were constructed in the 1980s and have provided an excellent service for Sydney and NSW.

The facilities however have limitations in their ability to service the contemporary exhibition and convention industry which has led to a loss in the number of events being held in Sydney.

The NSW Government considers that a precinct-wide renewal and expansion is necessary and is accordingly committed to Sydney reclaiming its position on centre stage for hosting world-class events with the creation of the SICEEP project.

Following an extensive and rigorous Expressions of Interest and Request for Proposals process, Darling Harbour Live (formerly known as 'Destination Sydney' - a consortium comprising AEG Ogden, Lend Lease, Capella Capital and Spotless) was announced by the NSW Government in December 2012 as the preferred proponent to transform Darling Harbour and create the new SICEEP precinct.

Key features of the Darling Harbour Live Preferred Master Plan (refer to Figure 2) include:

- Delivering world-class convention, exhibition and entertainment facilities, including:
 - Up to 40,000m² exhibition space;
 - Over 8,000m² of meeting rooms space, across 40 rooms;

- Overall convention space capacity for more than 12,000 people;
- A ballroom capable of accommodating 2,000 people; and
- A premium, red-carpet entertainment facility with a capacity of 8,000 persons.
- Providing up to 900 hotel rooms in a hotel complex at the northern end of the Precinct.
- A vibrant and authentic new neighbourhood at the southern end of the precinct, called 'The Haymarket', home to an IQ Hub focused on the creative industries and high-tech businesses, apartments, student accommodation, shops, cafes and restaurants.
- Renewed and upgraded public domain, including an outdoor event space for up to 25,000 people at an expanded Tumbalong Park.
- Improved pedestrian connections linking to the proposed Ultimo Pedestrian Network drawing people between Central, Chinatown and Cockle Bay Wharf as well as east-west between Ultimo/Pymont and the City.

5 SITE DESCRIPTION

The SICEEP site is located within the Darling Harbour precinct. Darling Harbour is a 60 hectare waterfront precinct on the south-western edge of the Sydney Central Business District that provides a mix of functions including recreational, tourist, entertainment and business.

With an area of approximately 20 hectares, the SICEEP site is generally bound by the Light Rail Line to the west, Harbourside shopping centre and Cockle Bay to the north, Darling Quarter, the Chinese Garden and Harbour Street to the east, and Hay Street to the south.

The SICEEP site has been divided into three distinct redevelopment areas (from north to south) – Bayside, Darling Central and The Haymarket. The PPP Application Site area is located within Bayside and Darling Central as shown in Figure 1.



Figure 1: SICEEP site Location

6 PLANNING APPROVALS STRATEGY

In response to separate contractual agreements with the NSW Government and staging requirements, Darling Harbour Live (DHL) is proposing to submit a number of separate Development Applications (DA) for key elements of the overall project.

This DA involves the Public Private Partnership (PPP) component of the SICEEP project, comprising the convention centre, exhibition centre, entertainment facility, and associated public domain upgrades.

Development of The Haymarket is to be staged and accordingly a separate staged DA is to be lodged. Detailed DA's will follow seeking approval for specific aspects of The Haymarket. A separate DA will also be submitted for the Hotel Complex.

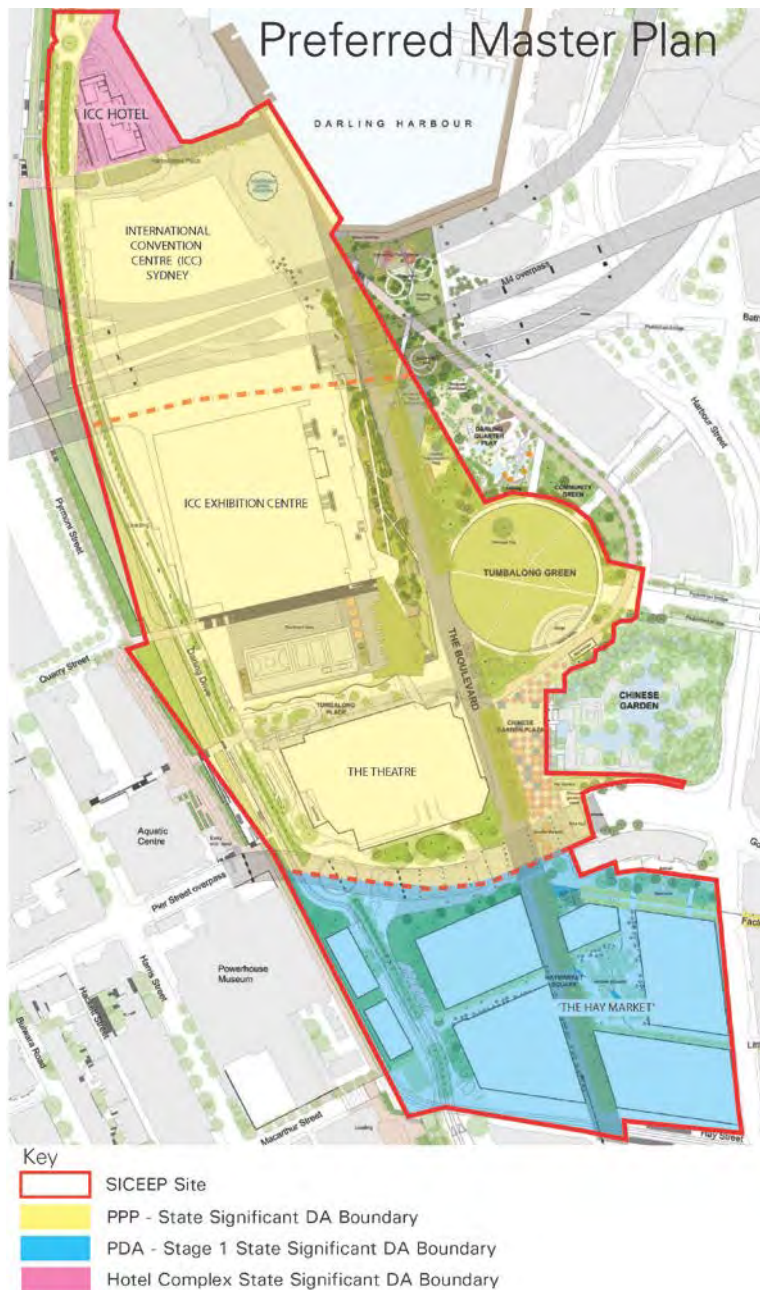


Figure 2: SICEEP Master Plan

7 PURPOSE OF THIS REPORT

This report supports a State Significant Development Application for the construction of the PPP component of the SICEEP project. It addresses the relevant requirements of the DGR's for the project, issued on the 21st of January 2013. Requirement 11: Utilities states:

- *“In consultation with relevant agencies, the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure shall be addressed; and*
- *Details of how infrastructure assets of various utility stakeholders will be protected during the demolition and construction phase of the project.”*

This report details the investigation of existing utilities in the vicinity of the development, the likely points of future connection to the utilities, associated potential upgrades or augmentation that may be required.

The basis for the investigation of the existing utilities in the vicinity of the site was a 'Dial Before You Dig' enquiry that was undertaken on 5th July 2011. Figure 3 depicts the area subject to the DBYD enquiry. This report does not consider any utility infrastructure outside the enquiry boundary and its' potential relationship to, or impact on the supply of utility services to the site.

The report does not discuss the separate utility supply to the PPP precinct and private development precincts, as the different development proponents are of less concern to the utility authorities. The utility authorities are more concerned with the cumulative impacts on the existing utility networks as a result of the whole of precinct development.

While preliminary development staging and sequencing information has formed the basis of consultation with utility providers to date, the final staging of utility works and the protection of assets is dependent on detailed construction staging and shall be developed at a later stage of the planning and design process.

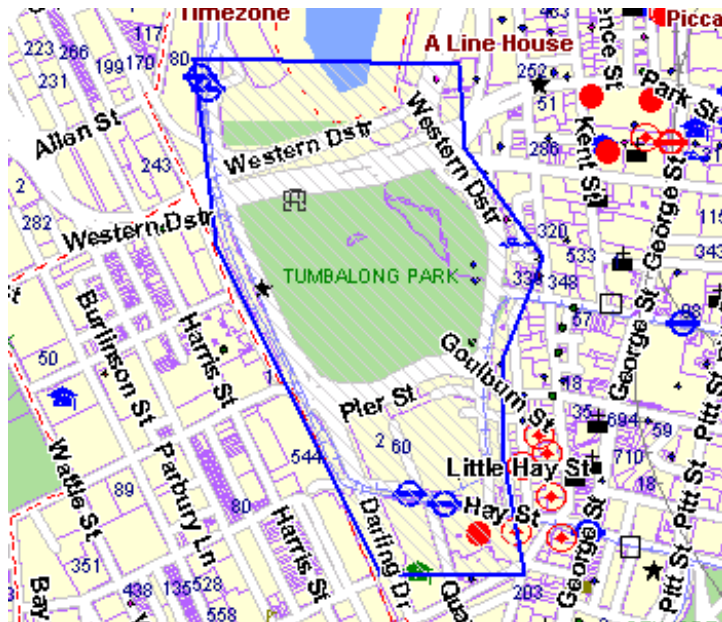


Figure 3: DBYD Enquiry Area (DBYD, 2011)

The following entities were identified as having an interest in the DBYD enquiry area:

- Roads and Maritime Services (RMS), (formerly RTA)
- Verizon Business
- RailCorp
- Visionstream
- AAPT / PowerTel
- PIPE Networks
- Ausgrid
- Telstra
- Optus and/or Uecomm
- Jemena
- Sydney Water
- AARNet Pty Ltd
- Primus Telecom

This report only details the investigations undertaken in relation to the services infrastructure belonging to Ausgrid, Telstra, NBNCo/Telstra, Jemena, Sydney Water and RailCorp as required to supply the SICEEP development.

Chapters 8.1, 8.2 and 8.3 of this report were prepared by Hyder Consulting and Chapter 8.4 & 8.5 prepared by AECOM.

8 EXISTING UTILITY SERVICES

8.1 SEWER

Public sanitary drainage infrastructure in the vicinity of the site is owned and operated by Sydney Water Corporation (SWC). All gravity sewer mains in the vicinity of the site drain to Sewerage Pumping Station No. 1 (SP0001), which is located to the immediate west of the site, at the corner of William Henry Street and Pyrmont Street in Ultimo. SP0001 is of historic, aesthetic and technical/research significance (SWC 2012) being one of the original sewerage pumping stations constructed to serve the city of Sydney in the late 19th century.

A 600mm rising (pressure) main runs from SP0001 directly to the east and through the site. The rising main is located immediately to the north of and parallel to Pier Street, as it bisects the site.

The Bayside Precinct drains to the existing sewer main within Darling Drive that drains to SP0001. Beginning as a 375mm main in the north precinct, it enlarges into a 750mm main in Darling Central Precinct for a short distance before becoming a 1.3m x 1.75m unlined rock channel. Direct connection of the Bayside Precinct can be made to the 375mm main.

Connection of the Darling Central Precinct can be made at an existing 300mm sideline that crosses Darling Drive and connects to the unlined rock channel. A 300mm inlet at an existing maintenance hole on the 300mm side line on the eastern side of Darling Drive is already provided for connection. This is located just to the north of Pier Street.

The Haymarket Precinct can connect to either the 750mm main in Hay St or the 300mm main in Lackey St, or a combination of the two. The Haymarket precinct is covered under a separate DA.

Subject to detailed design development and further consultation with the utility authorities, some existing mains may need to be augmented to enable supply to the development. Some existing sewers located within the SICEEP development precinct may also need to be relocated/protected in accordance with SWC's Building Over Sewer requirements.

Consultation with SWC has commenced regarding servicing the development with water supply infrastructure. A preliminary servicing strategy meeting was held with SWC on 10th January 2013.

A SWC e-Developer servicing feasibility application has been submitted to SWC. SWC have confirmed in principle the development can be serviced from their existing infrastructure and are preparing a formal response to the feasibility application describing their requirements for the collection system and the receiving sewer pumping station.

SWC developer charges and amplification costs cannot be advised until a formal application is made to SWC. This cannot occur until a more detailed development concept has been completed.

Correspondence from SWC has indicated that subject to commercial negotiation and confirmation of developer charges, SWC will be able to supply the site with the required sanitary water connections. Please refer to Appendix C of this Report for a copy of the correspondence received from SWC.

Appendix D of this Report contains a plan of the proposed indicative sanitary water connections and alterations within the whole of precinct development.

8.2 WATER

Potable water infrastructure in the vicinity of the site is owned and operated by SWC.

Supply to the Bayside Precinct is provided by the 250mm main in Darling Drive which is supplied from both the eastern and western ends. Connection can be made to this or the 200mm main to the east of the precinct in the convention centre forecourt. This main is fed from one end by the 250mm main in Darling Drive.

Supply to the Darling Central Precinct can be sourced from the 250mm and 300mm mains in Darling Drive. The existing domestic connections can be utilised for connection to this main.

Supply to the Haymarket Precinct is provided by the 375mm main, which is located to the north of Pier St, and which is a single feed from the city. Connection can also be made to the 200mm main located in Lackey Street, which is fed by the 375mm main. The Haymarket precinct is covered under a separate DA.

Sections of existing infrastructure will require demolition/capping off or relocation, and new reticulation pipework shall be installed to suit the new development scheme planning. The reticulation pipework shall be designed in accordance with Water Supply Code of Australia (WSA)– Sydney Water edition 2012, suitable for the water loading and fire requirements for the development.

Consultation with SWC has commenced regarding servicing the SICEEP development with water supply infrastructure.

An initial project familiarisation meeting was held with Bob Wickham from SWC at INSW offices on 20th December 2012. A second preliminary servicing strategy meeting was held with SWC on 10th January 2013.

At the meetings the water servicing strategy was discussed. The existing infrastructure was reviewed, and a section of trunk water main on the western section of The Haymarket was identified as being required to be relocated to be clear of a proposed new building.

A SWC e-Developer servicing feasibility application has been submitted to SWC. SWC have confirmed in principle the development can be serviced from their existing infrastructure and are preparing a formal response to the feasibility application. Please refer to Appendix A of this Report for a copy of the consultation, and to Appendix B for a copy of the utility load demands.

Correspondence from SWC has indicated that subject to commercial negotiation and confirmation of developer charges, SWC will be able to supply the site with the required potable water connections. Please refer to Appendix C of this report for a copy of the correspondence received from SWC.

SWC developer charges and amplification costs cannot be advised until formal application is made to SWC. This cannot occur until a more detailed development concept has been completed.

Appendix D of this report contains a plan of the proposed indicative potable water connections and alterations within the whole of precinct development.

8.3 GAS

Gas infrastructure in the vicinity of the site is owned and operated by Jemena. A 150mm/250mm secondary main (1,050kPa) skirts the eastern border of the site. An existing connection off this main adjacent to Pier St, feeds the existing Entertainment Centre in the Haymarket Precinct.

It is understood that whilst there is an existing connection point available to the Bayside and Darling Central Precincts, it is not being utilised by existing facilities within these precincts which are supplied by bottled gas.

It is proposed that supply to all three precincts shall be sourced from the Secondary main which is reported to have the capacity to supply the expected demand from both the PPP and private developments.

Supply to The Haymarket Precinct will likely utilise the existing connections to the secondary main which presently supplies the entertainment centre. Internal reticulation will be via Jemena mains laid within utility easements that serve each individual allotment. The Haymarket precinct is covered under a separate DA.

Supply to the Bayside and Darling Central Precinct will likely be from the secondary main to the north of the Western Distributor where it is closest to the development site. Internal reticulation will be via a combination of private and Jemena mains protected by easements.

Jemena have indicated that whilst the infrastructure in the immediate vicinity of the site has the capacity to service the needs of the different developments across all three precincts, the gas supply to the city of Sydney in general is close to reaching the available capacity of the trunk mains that feed it.

Hyder Consulting undertook a consultation with Jemena at their offices on the 18th of January 2013, and presented a concept master plan of the SICEEP development, along with predicted future gas demands for the development. Please refer to Appendix B for a copy of the indicative utility load demands submitted to Jemena for assessment.

Subject to commercial negotiations regarding developer contributions towards increasing Jemena's capacity to supply gas to the city of Sydney, it is expected that Jemena will be able to supply the site based on the current development concepts. Please refer to Appendix C of this report for a copy of the correspondence received from Jemena.

Appendix D of this report contains a plan of the proposed indicative gas connections and alterations within the whole of precinct development.

8.4 TELECOMMUNICATIONS

Telecommunication services infrastructure in the vicinity of the site is owned and operated by Telstra, Optus, Nextgen, Pipe Networks and Verizon.

Telstra have existing copper telecommunications cable to the Convention, Exhibition and Entertainment Centre buildings. This existing infrastructure may be reconfigured and augmented to serve the site.

The development is also proposing some realignment along Darling Drive which may impact Telstra assets in this location. Hyder Consulting have discussed these proposed changes with Telstra and will be developing a plan to protect, redirect or remove the infrastructure in this area.

Hyder Consulting met with Telstra at their offices and presented a concept master plan of the SICEEP development. This consultation progressed further with correspondence from Hyder Consulting to Telstra on the 18th of December at Infrastructure NSW's offices. Telstra confirmed at this meeting they have capacity to support the site but due to recent changes in the Telecommunications Act, NBN Co have first right of refusal. Please refer to Appendix A of this report for a copy of the Hyder Consulting meeting.

Hyder Consulting and AECOM met with NBNC Co at AECOM offices on the 8th of January 2013 and presented the master plan. NBNC Co indicated that they would be interested in supporting the project and issued an Early Certificate determining that the development is within the NBN fibre footprint and subject to agreeing to their terms and conditions, NBNC Co has agreed to procure the installation of fibre infrastructure at the development. Please refer to Appendix C for a copy of the Early Certificate from NBNC Co.

8.5 ELECTRICAL

The existing Entertainment Centre on-site substation S5413 is a 3x1500kVA firm-rated triplex Ausgrid substation. Recent Ausgrid records indicate that the maximum demand for this substation was at 80% loading (3350 A/ph) in the summer of 2011. The site master planning does not permit the re-use of this existing HV/substation infrastructure.

The existing Exhibition Centre on-site substations S6337 and S6338 are 2x1500kVA and 3x1000kVA configuration respectively. The electrical maximum demand of the SICEEP facilities, and the substation locations does not align with the re-use of these “smaller” capacity substations.

The existing Convention Centre on-site substations S6335 and S6336 are both 3x1500kVA configuration. Development of the Convention Centre following the original construction meant the existing substations were “built over” resulting in safety and maintenance issues. Due to these issues Ausgrid cannot allow additional power to be supplied from these substations and therefore there is no scope for their re-use in the redevelopment.

To serve the PPP development, four new Ausgrid substations are proposed, all configured as enclosed chamber type within the new building structure. Preliminary meetings were held with Planning Engineers (Distribution and Major Projects) between April and May 2012. AECOM/Lend Lease submitted an application for a Feasibility Study from Ausgrid on 15th May 2012, with subsequent Maximum Demand information on 22.06.12 (refer Appendix C).

AECOM and Lend Lease re-opened negotiations and discussions with Ausgrid after the announcement of the preferred proponent. On January 15, 2013, representatives from AECOM, Lend Lease and INSW met with Ausgrid planners and engineers. On January 18, 2013, AECOM submitted an Application For Connection for the PPP component of the works to Lend Lease who formally submitted to Ausgrid with the Application for Connections for the PDA and Hotel components of the overall project.

Subsequent to the submission of the Application For Connection for the SICEEP precinct, correspondence was received from Ausgrid confirming the availability of electrical supply to the SICEEP precinct as well as a feasibility study that provides an indicative description of the works required to service the precinct (refer to Appendix C).

The following is an extract of Ausgrid's advice contained within their Feasibility Study (Appendix C):

"It is proposed that the four distribution substations associated with the SICEEP PPP development will be supplied via four existing 11kV feeders supplied from Darling Harbour 132/11 kV zone substation.

Due to the large size of the proposed substations, ranging from 3.0 to 3.6 MVA, minor feeder augmentation works will be required to consolidate existing capacity on the feeders.

Currently the feeders supplying the Darling Harbour area are capacity limited by a heavily congested egress from the Darling Harbour 132/11kV – 132/33kV substation. The close proximity of numerous 11/33 and 132kV cables may limit our ability to supply the required load on these existing 11kV feeders.

Prior to the completion of a detailed connection application a ratings investigation is required to determine the maximum capacity available from the 11kV network and identify if it is sufficient to meet the development requirements.

In the circumstance that the required capacity is not available, an alternative would be to re-route the 11kV feeders in question around the congested area into another Darling Harbour Zone Substation egress. This option is technically challenging given the geography and numerous other services in the area but is likely achievable. We estimate the scope of such works could involve several hundred metres of cable installation..."

9 CONCLUSION

Lend Lease (including Hyder Consulting, Lend Lease and AECOM) has consulted where possible with relevant authorities and utility providers regarding the proposed PPP development in the context of:

- Existing utilities and arrangements
- Forecast demand for utilities required by the proposed PPP development; and
- New infrastructure, augmentation and diversion works required to facilitate the proposed PPP development.

The consultation has confirmed that the SICEEP PPP development can be adequately serviced by utility providers, subject to further detailed investigation, scheme development and design development in consultation with the providers.

APPENDIX A

HYDER CONSULTING, AECOM, LEND LEASE & WSC CORRESPONDENCE

SUPPLEMENTARY



APPLICATION FOR CONNECTION

To be lodged with the Application for Connection. Refer to document ES1.

FAX

Tuggerah (02) 43998007

Email to
ea.datanorth@ausgrid.com.au

Free Call 1300 662089

(Not to be used for Muswellbrook)

Muswellbrook (02) 65429037

Email to
ea.datamuswellbrook@ausgrid.com.au

This form is required for:

- New electrical work over 20kW (Part A, B, C);
- Multiple living unit developments (more than 6 units) (Part A, B, C);
- For services greater than 100 Amps (Part A, B, C);
- CT metered installations. **NOTE: The installation WILL NOT be energised unless all the information required on the CT Metering form has been provided and processed (Clause 4.5 of ES1).** (Part A, B, C);
- Rural or outlying areas (Part A, B & C);
- New HV installations and those requiring more than 100kW or additional load (Part A, B, C, D);
- Work where the proposed equipment may cause excessive distortion, fluctuation or unbalance of voltage (Part A,B,C,D);
- All new and altered Solar Grid Connected generation installations (Part A, E)
- All other new and altered Grid Connected generation Installations (Part A, C, E)

Please complete this form in **BLOCK LETTERS**.

PART A INSTALLATION ADDRESS

Property Name

SICEEP – PPP (Sydney Intl Convention, Exhibition and Entertainment Precinct)

Floor	Unit	Street No.	RMB/Lot

Street	Suburb
Darling Drive	Darling Harbour

Cross Street	Existing Meter ID	Pole Pillar ID
Quarry Street		

PART B INSTALLATION LOAD DETAILS

Residential Portion

No living units:	N/A
No of bedrooms per unit:	N/A
Gas hot water (yes/no):	N/A
Lift(s) and start current:	N/A
Car park ventilation current rating:	N/A
Air conditioning (yes/no):	N/A
Air conditioning rating: N/A	

Commercial Portion

Total floor area with air/con:	Total 160,000m ²
Total office floor area without air/con:	m ²
Car park floor area:	m ²
Warehouse floor area:	m ²
Commercial areas for food handling (yes/no):	Yes

Industrial Portion

Number of factory units: N/A	
Total floor area of all factory units: N/A	m ²

Part D – Power Quality. Attach Power Quality Assessment form if any of the following are proposed:

Variable Speed Drives, switched-mode power supplies or other rectifiers > 75A per phase	X
Motors exceeding the limits set out in the Service and Installation Rules of NSW	X
Arc furnaces, welders or harmonic filters	<input type="checkbox"/>
Unbalanced loads (Phase-Phase connected or single phase > 75A)	X
Power Factor Correction capacitor banks	X
Other voltage distorting or fluctuating equipment > 75 per phase, or installation with a large deployment of computer servers or IT equipment	X
High Voltage Connections	<input type="checkbox"/>

PART C DIAGRAM

Refer to attached Site Plan

Indicative loads per substation:

- Sub 1: 3.6MVA, Surface Chamber
- Sub 2: 3.6MVA, Surface Chamber
- Sub 3: 3.2MVA, Surface Chamber
- Sub 4: 3.0MVA, Upper Level Chamber

Indicative Floor areas per building (not fully a/c):

- Convention 53,800sqm
- Exhibition 77,700sqm
- Entertainment 28,500sqm

Part E- Grid Connected Generation Systems. Full details of any Grid Connected Generation Systems (Refer to Section 8 of the Service & Installation Rules of NSW)

Make/Model:	TBC		
Inverter Details	TBC – in the order of 350KW PV Array		
Size of Inverter: (Nominal Rating)	kW		Is Inverter an Approved Type? (CEC) YES <input type="checkbox"/> NO <input type="checkbox"/> If No, Attach Certificate of Suitability
	1 <input type="checkbox"/>	3 <input type="checkbox"/>	
No. of Phases:			
No. of Inverters:			CEC Accredited Installer Number
Total kW's to be Connected (Single Phase)	kW's		Solar Panel Details
			Other Generator details (Wind etc.)
Note: The Metering Configuration must be Net Metering			Number _____ Total Rating _____ kW
The installation must be: -			Type _____ Total Rating _____ kW
a) Designed and installed by a CEC accredited person			
b) Comply with all CEC guidelines			

APPLICATION FOR CONNECTION



To be completed in BLOCK LETTERS by the electrical contractor or agent, on behalf of the customer.

A Site Establishment Fee as detailed in ES5 may apply to this installation. You will be notified if a Site Establishment Fee applies to this installation when your Job Number is issued. The Site Establishment Fee is charged when the Notification of Service Work is received.

Fax Sydney and Tuggerah (02) 4399 8007

Email to: ea.datanorth@ausgrid.com.au

Fax Local Call (Not to be used for Muswellbrook) 1300 662 089

Fax Muswellbrook (02) 6542 9037

Email to ea.datamuswellbrook@ausgrid.com.au

RETAILER **NMI**

INSTALLATION ADDRESS

Property Name
SICEEP – PPP (Sydney Intl Convention, Exhibition and Entertainment Precinct)

Floor **Unit** **Street** **Lot/RMB**

Street
Darling Drive

Nearest Cross Street
Quarry Street

Suburb Darling Harbour, NSW **Postcode** 2000

Pole/Pillar ID

Existing Meter ID

Office Use Only

Job Number

Site Establishment Fee to be applied

CUSTOMER AND POSTAL ADDRESS

First Name (or Company Name)
Destination Sydney c/- Lend Lease

Last Name

Floor **Unit** **Street No** 30 The Bond **PO Box** **Street** 30 Hickson Road

Street (cont) **Suburb** Millers Point, NSW **Postcode** 2000

Phone

Mobile

ELECTRICAL CONTRACTOR/AUTHORISED SERVICE PROVIDER

Electrical Contractor Name Scott Martin (AECOM) **Licence Number** Not Applicable **Contact Phone Number** 02 8021 2941

Authorised Service Provider Name Consulting Engineer **Licence Number** **Contact Phone Number** 0411 658 086

Email Address (Preferred Option of Returning Job Number) **Fax Number**

E/C or ASP Postal Address
L21, 420 George Street, Sydney NSW 2000

SERVICE, DEMAND AND LOAD DETAILS (please tick)

Connection Type New <input checked="" type="checkbox"/> Alteration <input type="checkbox"/> Upgrade <input checked="" type="checkbox"/> Separation <input type="checkbox"/> Amalgamation <input type="checkbox"/> Grid Connected Generation System <input type="checkbox"/>	Service Type Overhead <input type="checkbox"/> Underground <input checked="" type="checkbox"/> UGOH <input type="checkbox"/> Off Pole Transformer <input type="checkbox"/> Upgrade to TOU <input type="checkbox"/> Y	Service Size 100A <input type="checkbox"/> 200A <input type="checkbox"/> 400A <input type="checkbox"/> Other 4x3.5MVA	Number of Installations Single Installation <input type="checkbox"/> Multiple Installation <input checked="" type="checkbox"/> Number of House Services <input type="text"/> Number of Units <input type="text"/>	Premise Type Domestic Torrens <input type="checkbox"/> Strata <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Builders Service Perm <input type="checkbox"/> Special Small Service (Indicate type of SSS below) <input type="checkbox"/> Other	Supplementary AFC If the installation is one of the following types you must also complete and attach the Supplementary Application for Connection . New electrical work over 20kW <input checked="" type="checkbox"/> Services greater than 100 Amps <input checked="" type="checkbox"/> CT metered installations (CT Metering Form MUST be submitted) <input checked="" type="checkbox"/> New HV installations and those requiring more than 100 Amps of additional load <input type="checkbox"/> Multiple living unit developments (more than six units) <input type="checkbox"/> Installations located in rural or outlying areas <input type="checkbox"/> Work where the proposed equipment may cause excessive fluctuation of voltage (eg welders, x-ray machines) <input checked="" type="checkbox"/> Equipment > 75A per phase (Power Quality Form MUST be submitted) <input checked="" type="checkbox"/> Grid Connected Generation System <input checked="" type="checkbox"/>
--	--	--	--	---	--

Calculated Maximum Demand in Each Phase (Amps)

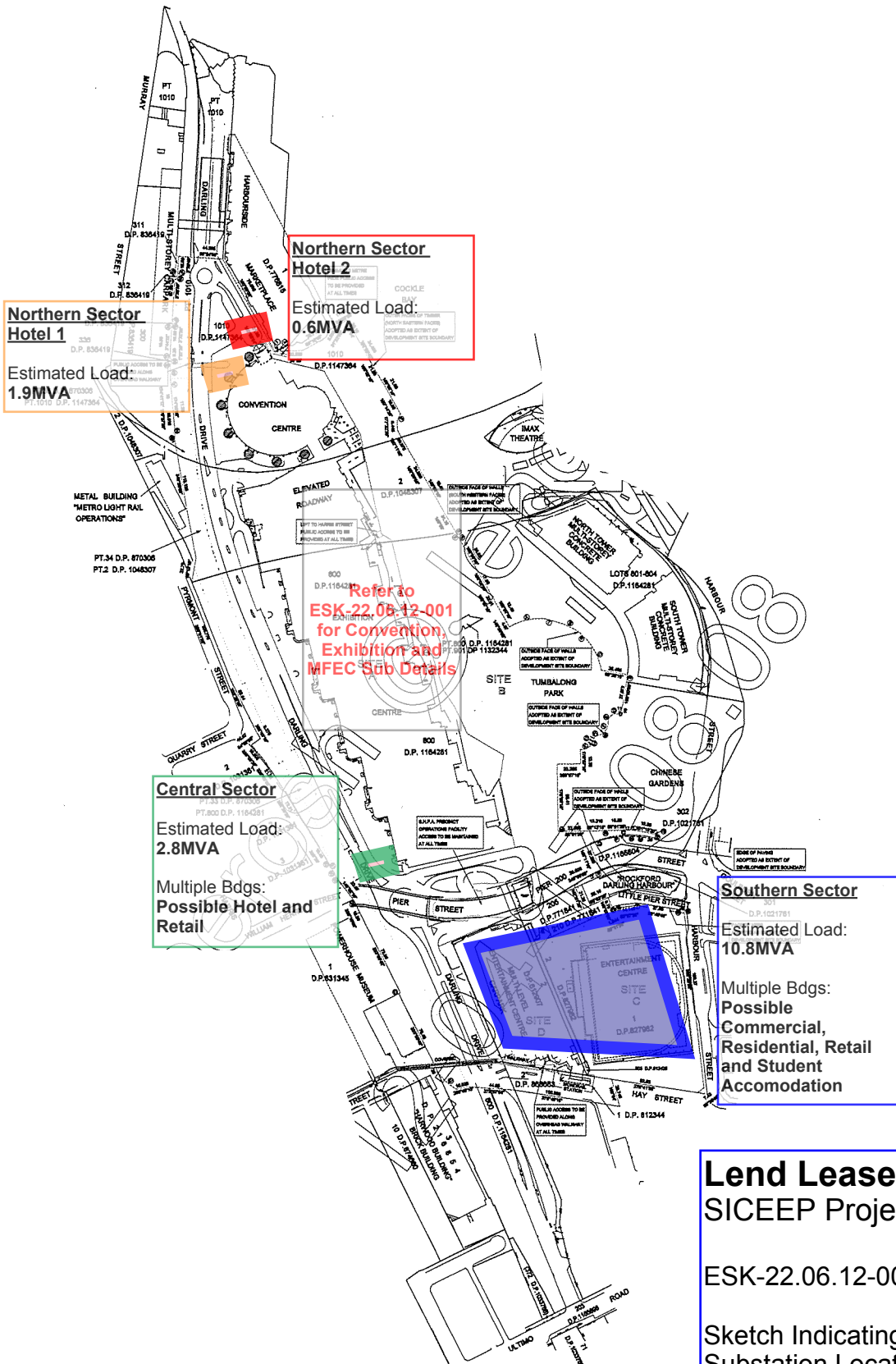
	A	B	C	Service Length
Proposed	18600	18600	18600	N/A
Existing	13100	13100	13100	N/A

Details of Job: Existing Convention, Exhibition and Entertainment Centres are being redeveloped. Existing Ausgrid assets will be decommissioned and removed. 4 off new 3x1500kVA chamber substations (subject to Ausgrid approval) will be installed.

Print Name **Scott Martin**.....Signature 

Date **18.01.13**.....

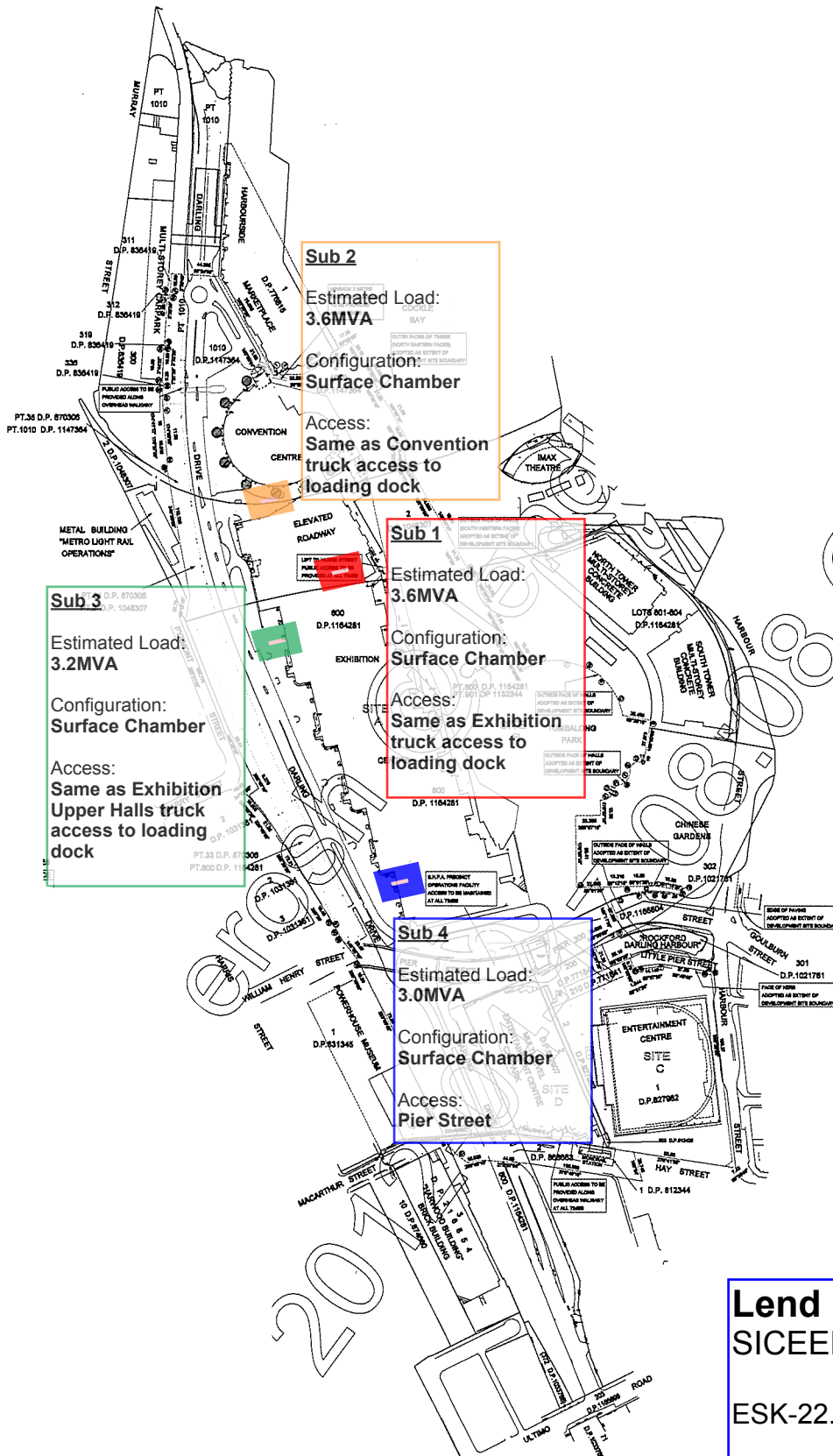
Issued July 2011 A.191



**Lend Lease/AECOM
SICEEP Project**

ESK-22.06.12-002

Sketch Indicating Proposed
Substation Locations and
Loads for Hotels and
Southern Sector of Precinct



**Lend Lease/AECOM
 SICEEP Project**
 ESK-22.06.12-001
 Sketch Indicating Proposed
 Substation Locations and
 Loads

Rygate & Company Pty Limited
 P.O. Box 100, Rygate & West
 Sydney, NSW 1585



Level 8, 89 York St, Sydney NSW 2000
 p +61 2 9282 8800 f +61 2 9282 8843
 e surveyors@rygate.com.au
 w rygate.com.au

REF: 76259 DATE: APRIL 2012

Todd, Geoff

From: Martin, Scott
Sent: Tuesday, 15 May 2012 12:49 PM
To: ddavis@ausgrid.com.au
Cc: Ferguson, Martin; Graeme.Atkinson2@lendlease.com
Subject: Sydney Convention Centre

Dane,

Further to our discussions and site survey earlier today, could you please provide a summary of fees/charges letter to enable Ausgrid to prepare a "Feasibility Study" for the proposed redevelopment of the Sydney Entertainment, Convention and Exhibition Centre.

The indicative preliminary load (for the combined Convention, Exhibition and Entertainment/Event Centre) is between 12-14MVA and we acknowledge the existing site/building arrangements are as follows:

- Existing Entertainment Centre – on site substation supplied from the City Triplex HV Network
- Existing Exhibition Centre – served by two on site substations (which appear to basement chambers) supplied off the suburban network from the Darling Harbour Zone sub
- Existing Convention Centre – served by two on site substations (which appear to basement chambers with significant access issues preventing connection of additional load) also supplied off the suburban network from the Darling Harbour Zone sub

We note that while not finalised, there is the intention to relocate the existing Entertainment Centre adjacent to the Exhibition/Convention Centres and also retain some parts of the existing Exhibition/Convention Centre structure (such as the carpark) and in doing so it gives us the opportunity to retain and/or upgrade existing substations subject to Ausgrid advice. To progress the ongoing power supply design and planning we would like the "Feasibility Study" to include the following options:

1. HV network limitations and realistic options based on the indicative 12-14MVA load.
2. Retain/upgrade the existing substations S.6335, S.6336, S.6337 and S.6338 presently located in the Exhibition and Convention Centres to ultimate capacity of 3x1500kVA and 5400Amps (approximately). This would require upgrade of access/egress of some/all of the substations and if possible we would like a summary of upgrade scope required from Ausgrid for each substation including any limitations on capacity/re-use etc.
3. Retain/upgrade the existing substations S.6337 and S.6338 presently located in the Exhibition and Convention Centres to ultimate capacity of 3x1500kVA and 5400Amps (approximately). Provide two new substations of ultimate capacity of 3x1500kVA and 5400Amps (approximately) within the new Convention Centre.
4. Provide four new substations of ultimate capacity of 3x1500kVA and 5400Amps (approximately) within the new Event/Exhibition/Convention Centre connected to the proposed 33kV network. Provide any limitations on 33kV infrastructure (such as that the works cannot be contestable and will need to be designed, built and maintained by Ausgrid if LV customer).

We would appreciate if the summary of charges letter could be issued as a matter of urgency so that we can organise payment of the fees and get Ausgrid started on the "Feasibility Study" as soon as possible. To this end, if you could provide an indicative timeframe for issue of the Study upon payment of fees (ie. 4-6 weeks following payment of fees), it would be most appreciated.

We would also request that we be invited to attend any site inspections undertaken by Ausgrid during the Feasibility Study, so that we can offer advice on access/ventilation/egress upgrades from a building/Architectural perspective.

If you have any questions or queries, please don't hesitate to contact Martin or myself.

Regards,

Scott Martin

AECOM

From: Heath Mallen [<mailto:Heath.Mallen@hyderconsulting.com>]
Sent: Tuesday, 22 May 2012 2:44 PM
To: WICKHAM, ROBERT
Cc: Ron Meyer (ron.meyer@lendlease.com); Greg Ives; daryl.forster@sydneywater.com.au
Subject: SICEEP redevelopment of Darling Harbour - Sewer and Water supply requirements

Good afternoon Robert,

As discussed at our meeting in your office on the 8th May, please see attached for the masterplan sewer and water supply requirements and connection locations. The site has been split into three sectors – North, Center and South with the relevant kL/day loads and supply locations provided for each of these sectors respectively.

As discussed, it would be appreciated if Sydney Water could review and provide feedback on the feasibility of connecting to the existing Sydney Water assets in the vicinity.

It would also be very much appreciated if you could provide any further information that may assist in understanding the capacity of existing infrastructure, amplification requirements, infrastructure costs and any other issues Sydney Water deem important.

Please note also that as discussed, we have not considered sewer mining, on site reuse or any other water reduction schemes in assessing the demands as shown.

It would assist us greatly if you could also confirm when we might be able to expect a response so that we can plan accordingly. Thankyou in advance for your assistance.

Regards,
Heath

Heath Mallen
Civil Engineer
MEEM, BE, DipEngPrac
Hyder Consulting Pty Ltd
Locked Bag 6503 North Sydney NSW 2060 Australia
Level 5, 141 Walker Street North Sydney NSW 2060 Australia
Direct +61 2 8907 9268 Fax +61 2 8907 9001
Mobile +61 438 266 333
Web: www.hyderconsulting.com

International advisory and design consultancy

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Any opinions or other information in this message that do not relate to the official business of the Company are neither given nor endorsed by it.

Our Ref: NA50613027_SICEEP
Contact: Sombath Lam

14 January 2012

Sydney Water
PO Box 399
PARRAMATTA NSW 2124

Dear Sir/Madam

**SYDNEY INTERNATIONAL CONVENTION, EXHIBITION AND ENTERTAINMENT
PRECINCT**

This letter has been prepared in support of the Feasibility Applications associated with the redevelopment of the Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP) and is provided to assist Sydney Water in determining the requirements for the respective sites within the development.

The redevelopment of SICEEP will be comprised of three separate and distinct areas:

- PDA North;
- PPP; and
- PDA South.

These sites are subject to separate contractual agreements entered by the proponents of the respective development areas.

The requirements for the sites will necessarily require a holistic view of the SICEEP development. However we request, due to the contractual requirements, that servicing requirements for water and sewer services for each site be formulated individually for each application.

For stormwater services, due to its site wide nature, we propose that the requirements be assessed for the entirety of the SICEEP under a single feasibility application.

We note due to project deadlines associated with the PPP, we request response to all applications by 15 February 2013.

A summary of the applications to be considered is presented on the following table:

Cardno (NSW/ACT) Pty Ltd
ABN 95 001 145 035

Level 9
The Forum
203 Pacific Highway
St. Leonards NSW 2065

P.O. Box 19
St Leonards NSW 1590
Australia

Phone: +61 2 9496 7700
Fax: +61 2 9439 5170

www.cardno.com.au

Table 1: Feasibility Applications

Case Number	Site	Proposed Development Description	Proponent
131520	PDA North	Hotel - Holiday Inn	Lend Lease Development Pty Ltd
		Hotel - Crowne Plaza	
131522	PPP	Convention Centre	Lend Lease Project Management & Construction (Australia) Pty Ltd
		Exhibition Centre	
		Public Domain	
		Theatre and Parking	
131523	PDA South	Student Accommodation North	Lend Lease Development Pty Ltd
		Student Accommodation South	
		Commercial Offices	
		Residential Tower	
131525	SICEEP	Stormwater drainage for entire site	Lend Lease Project Management & Construction (Australia) Pty Ltd

Should you require any additional information please do not hesitate to contact either David Williamson or Sombath Lam on 02 9496 7700.

Yours sincerely



Sombath Lam
 Civil Engineer
 For Cardno

Encl. CN131520 Application; CN1231522 Application; 131523 Application; CN131525 Application; SICEEP Master Plan; Preliminary Utility Demands and Sewer Discharge Figures.

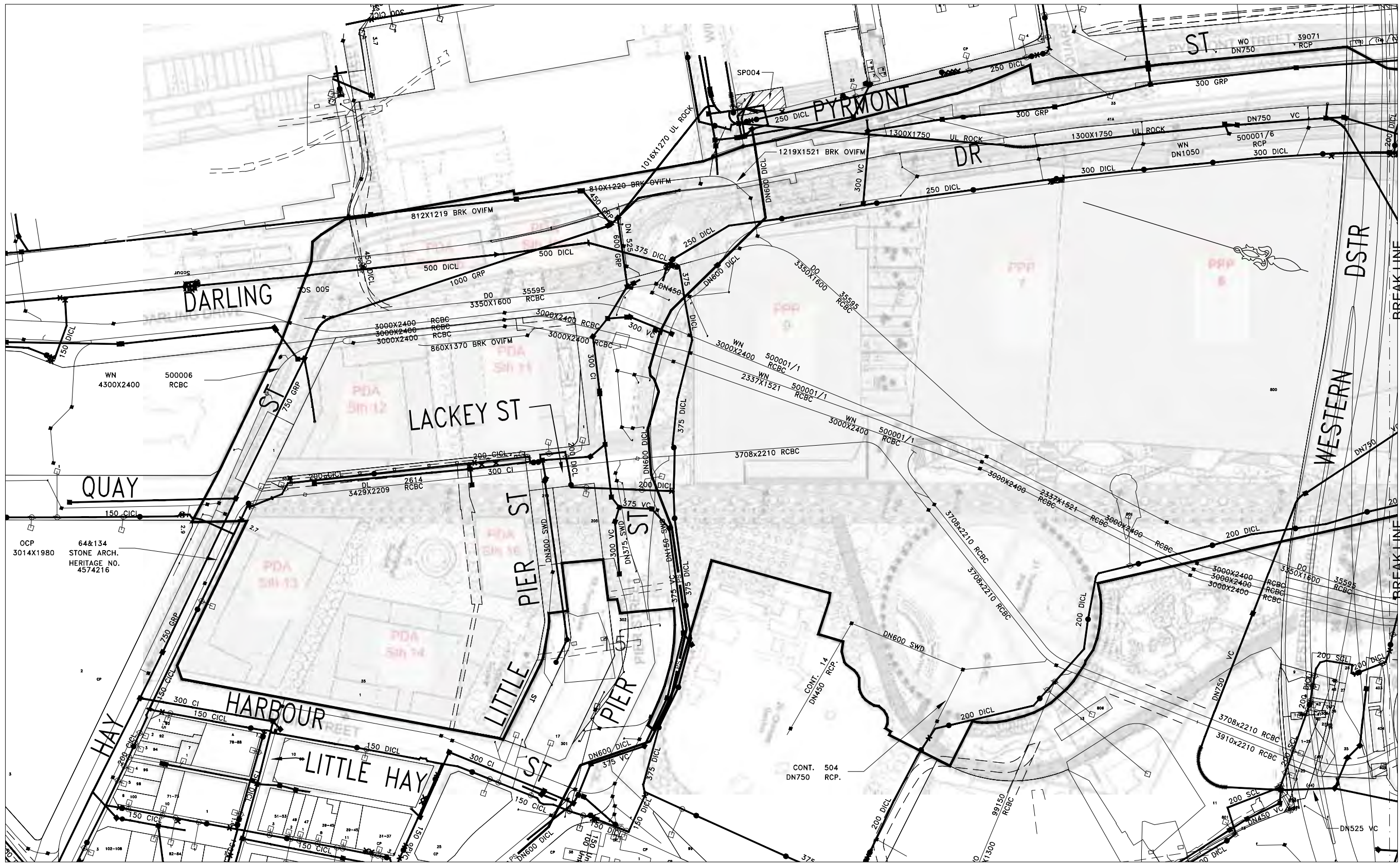


PLAN DRAWN DATE: 11/01/2013 VERSION: 1 SHEET 1 OF 1 SHEETS

EXISTING LOTS (Proposed Development of)		DEVELOPMENT TYPE	NUMBER OF PROPOSED LOTS / UNITS	U.B. DIRECTORY MAP 3, A6 (40th Edition)	Water Service Co-Ordinator:	
(1) LOT 800	D.P. 1164281	FEASIBILITY APPLICATION	Total Lots	TBC	CARDNO (NSW) Pty Ltd LEVEL 9, THE FORUM -203 PACIFIC HY, GORDON Ph: (02) 9496 7700 Fax: (02) 9499 3902	
(2)			Total Units	0		
(3)			MUNICIPALITY	CITY OF SYDNEY COUNCIL	SCALE	1:1000
(4)					SHEET	1 OF 1
(5)						eDeveloper Case No.
(6)						131522



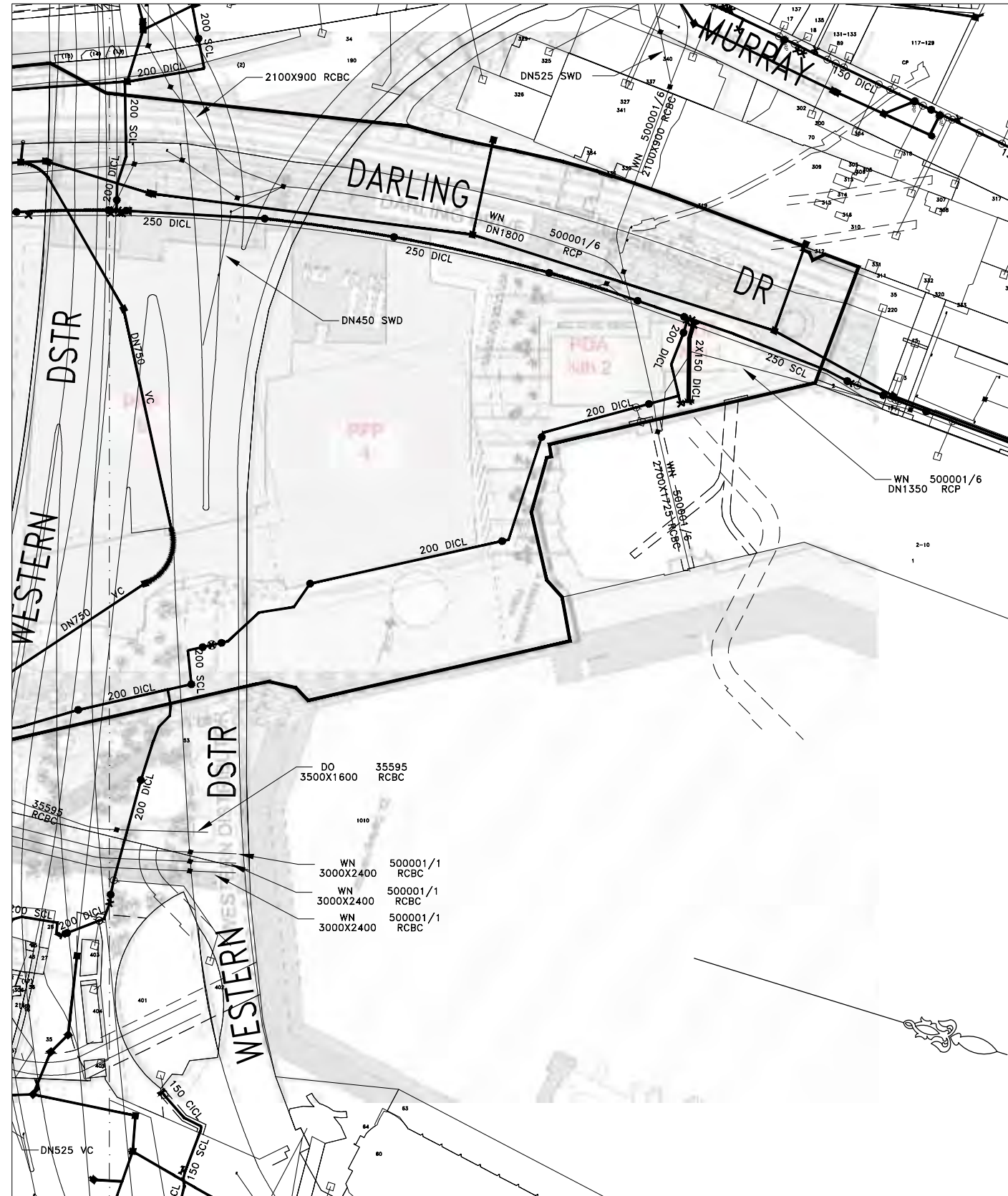
EXISTING LOTS (Proposed Development of)			DEVELOPMENT TYPE	NUMBER OF PROPOSED LOTS / UNITS		U.B. DIRECTORY MAP 3, A6 (40th Edition)	Water Service Co-Ordinator:
(1) LOT 800	D.P. 1164281	(7)	FEASIBILITY APPLICATION	Total Lots	TBC	SCALE 1:1000	CARDNO (NSW) Pty Ltd
(2)		(8)		Total Units	0		LEVEL 9, THE FORUM -203 PACIFIC HY, GORDON Ph: (02) 9496 7700 Fax: (02) 9499 3902
(3)		(9)					
(4)		(10)					
(5)		(11)					
		(12)	MUNICIPALITY CITY OF SYDNEY COUNCIL			SHEET 1 OF 1	eDeveloper Case No. 131523



BREAKLINE
REFER PAGE 2

BREAKLINE
REFER PAGE 2

EXISTING LOTS (Proposed Development of)		DEVELOPMENT TYPE	NUMBER OF PROPOSED LOTS / UNITS	U.B. DIRECTORY MAP 3, A6 (40th Edition)	Water Service Co-ordinator:
(1) LOT 800 D.P. 1164281	(7)	STORMWATER FEASIBILITY	Total Lots TBC	SCALE 1:1000	CARDNO (NSW) Pty Ltd
(2)	(8)		Total Units 0	SHEET 1 OF 2	LEVEL 9, THE FORUM -203 PACIFIC HY, GORDON Ph. (02) 9496 7700 Fax. (02) 9499 3902
(3)	(9)			MUNICIPALITY CITY OF SYDNEY COUNCIL	eDeveloper Case No. 131525
(4)	(10)				
(5)	(11)				
(6)	(12)				



EXISTING LOTS (Proposed Development of)		DEVELOPMENT TYPE	NUMBER OF PROPOSED LOTS / UNITS	U.B. DIRECTORY MAP 3, A6 (40th Edition)	Water Service Co-Ordinator:
(1) LOT 800	D.P. 1164281	STORMWATER FEASIBILITY	Total Lots	TBC	CARDNO (NSW) Pty Ltd LEVEL 9, THE FORUM -203 PACIFIC HY, GORDON Ph: (02) 9496 7700 Fax: (02) 9499 3902
(2)			Total Units	0	
(3)			MUNICIPALITY	CITY OF SYDNEY COUNCIL	SCALE 1:1000
(4)					SHEET 2 OF 2
(5)					eDeveloper Case No.
(6)					131525

APPENDIX B

FUTURE UTILITY LOAD DEMANDS

Street Address: Lot 800, DP 1164281, Darling Drive, Darling Harbour
Latitude: -33.875863
Longitude: 151.200114



CUMULATIVE HYDRAULIC DEMAND

Dated 9/01/2013

Sector	Building Number	Scope	Area / Size	GFA m ²	Apts	Commissioning Date	Potable water			Sewer			Gas		
							kl/ day MAX	kl/ day AVG	L/sec MAX	kl/day MAX	kl/day AVG	L/sec MAX	MJ/h MAX	GJ/year total	
PPP	9.1	Theatre	8,000 patrons	57,500		Sep-14									
PPP	4.1	Convention		73,000		Dec-14	1005	704	23.3	804	564	18.6	44,500	44,500	
PPP	6.1	Exhibition		55,000		Jan-15									
South PDA	10a	Residential apartments	West 1; 170 Apartments, 431 EP, (9,600m ²)	9,600	170	Jun-15	1090	742	69.6	881	598	56.1	49,069	47,524	
North PDA	1	Hotel Rooms - Holiday Inn	315 keys, 3-4 Star	20,300		Oct-15	1158	772	72.4	942	625	58.6	56,614	50,163	
South PDA	16	Retail	400m ² GFA	400		May-16	1161	773	72.5	945	626	58.7	56,852	50,443	
North PDA	2	Hotel Rooms - Crowne Plaza	600 keys, 5 star	38,700		May-16	1291	831	77.9	1062	678	63.6	71,237	55,474	
South PDA	10b	Residential apartments	West 2; 252 Apartments, 600 EP, (13,700m ²)	13,700	252	Jun-16	1413	885	83.0	1171	727	68.2	77,757	59,790	
South PDA	11	Commercial offices	North West 2; 15,000m ² GFA	15,000		Jun-16	1451	902	84.6	1205	742	69.6	81,933	61,140	
South PDA	12	Residential apartments	South West 1; 306 Apartments	27,600	306	Jun-16	1614	975	91.4	1352	808	75.7	90,690	66,936	
South PDA	12.1	Retail (sleeved)	1,739m ² GFA	1,700		Jun-16	1626	980	91.9	1363	812	76.2	91,701	68,126	
South PDA	12.3	Residential apartments	South West 2, 140 Apartments	12,700	140	Jan-17	1701	1013	95.0	1430	842	79.0	95,731	70,793	
South PDA	14	Residential apartments	North East 1; 58 Apartments	4,500	58	Jun-17	1728	1025	96.1	1454	853	80.0	97,158	71,738	
South PDA	14.4	Residential apartments	North East 3; 264 Apartments	24,100	264	Jan-18	1870	1089	102.1	1583	910	85.3	104,805	76,799	
South PDA	14.5	Retail (sleeved)	3,600m ² GFA	3,600		Jan-18	1895	1099	103.1	1605	920	86.2	106,947	79,319	
South PDA	14.2	Residential apartments	North East 2; 157 Apartments	10,700	157	Sep-18	1958	1128	105.7	1662	945	88.6	110,342	81,566	
South PDA	14.3	Residential apartments	North; 44 Apartments	3,000	44	May-19	1976	1135	106.4	1678	952	89.3	111,293	82,196	
South PDA	13	Residential apartments	South East 1; 234 Apartments	21,100	234	Jan-20	2101	1191	111.7	1790	1002	94.0	117,988	86,627	
South PDA	13.1	Retail (sleeved)	1,900m ² GFA	1,900		Jan-20	2114	1197	112.2	1802	1007	94.4	119,119	87,957	
South PDA	13.3	Residential apartments	South East 2; 157 Apartments	10,700	157	Jan-20	2177	1225	114.8	1859	1033	96.8	122,513	90,204	

APPENDIX C

UTILITY CORRESPONDENCE



11kV FEASIBILITY STUDY

SYDNEY INTERNATIONAL CONVENTION EXHIBITION AND ENTERTAINMENT PRECINCT

This feasibility study has been conducted to allow for SICEEP representatives to undertake indicative cost analysis for the development proposal.

The following data was used to form the basis of the power supply investigation.

Attachment 1: Development proposal – Lend lease 21st Jan 2013

Attachment 2: Map of Proposed Substations & Application for connection

This feasibility study does not investigate the anticipated service relocations that will be required as part of the development.

Summary of development application

The study is based on three separate development areas, each with individual load and staging requirements, anticipated augmentation works to facilitate connection are based on these individual requirements.

Application 1: SICEEP PPP

Required load 13.4 MVA, across 4 distribution substations, with an anticipated operational date of 4th Quarter 2016.

Application 2: ‘The Haymarket’ PDA

Required load 9.5 MVA, across five distribution substations, with an anticipated operational date between 2017-20.

Application 3: ‘ICC Hotels’ PDA

Required load 4.8 MVA, across two distribution substations, with an anticipated operational date of 4th quarter 2016.

Application 1 SICEEP PPP

It is proposed that the four distribution substations associated with the SICEEP PPP development will be supplied via four existing 11kV feeders supplied from Darling Harbour 132/11 kV zone substation.

Due to the large size of the proposed substations, ranging from 3.0 to 3.6 MVA, minor feeder augmentation works will be required to consolidate existing capacity on the feeders.

Currently the feeders supplying the Darling Harbour area are capacity limited by a heavily congested egress from the Darling Harbour 132/11kV – 132/33kV substation. The close proximity of numerous 11/33 and 132kV cables may limit our ability to supply the required load on these existing 11kV feeders.

Prior to the completion of a detailed connection application a ratings investigation is required to determine the maximum capacity available from the 11kV network and identify if it is sufficient to meet the development requirements.

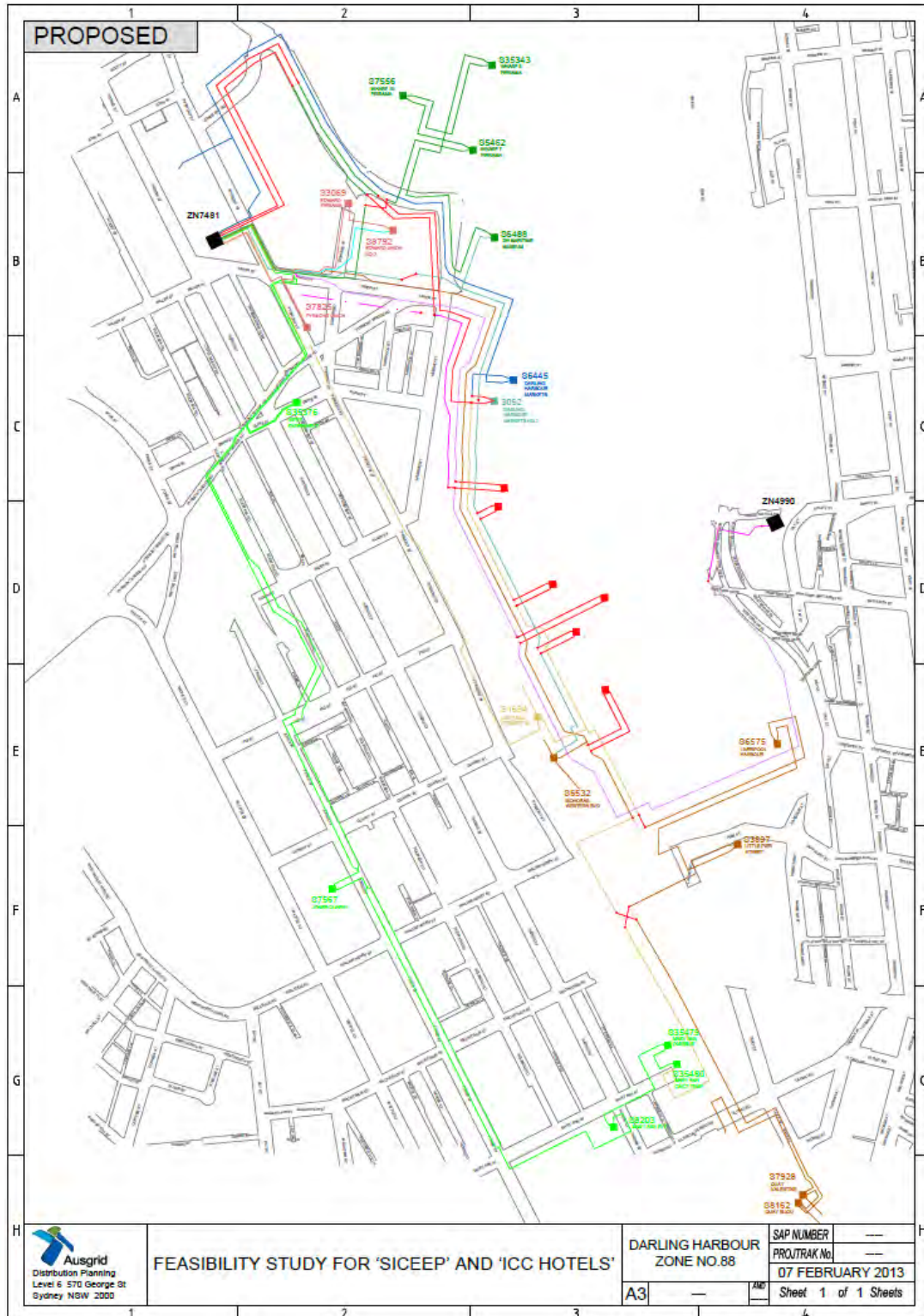
In the circumstance that the required capacity is not available, an alternative would be to re-route the 11kV feeders in question around the congested area into another Darling Harbour Zone Substation egress. This option is technically challenging given the geography and numerous other services in the area but is likely achievable. We estimate the scope of such works could involve several hundred metres of cable installation, see attached map.

Due to Darling Harbour 132/11kV zone substation been capacity constrained there are a number of prerequisite projects that need to be completed prior to the connection of the proposed development. The completion of Camperdown Zone 33/11kV substation (4th quarter 2013) and a 15 MVA load transfer from Darling Harbour to Camperdown (Approx completion 4th quarter 2014) are required to free up capacity at Darling Harbour Zone Substation. Although the risk is low that these projects would not be completed in the required timeframe, mitigation could be provided by potentially operating Darling Harbour Zone non firm for period of peak load until such time as the load relief projects are completed.

A summary of the anticipated scope of works are as follows.

1. 1000 meters of cable installation (6 x 150mm conduit bank – TSB Bedding) to redirect capacity constrained 11kV assets in the vicinity of Darling Harbour Zone Substation.
2. Approximately \$100,000 joints and connection works associated with consolidation of existing 11kV assets.
3. Potential pre decommissioning works required to facilitate the decommissioning of the existing substations on site. The existing network comprises pilot protected teed off transformers at circuit breaker equipped substations.
4. Cable installation and connection works associated with the connection of the proposed substations onto the existing Darling Harbour feeders.

Geo-schematic 1; proposed augmentation works (in RED) for Application 1 SICEEP



Application 2 ‘The Haymarket’ PDA

The proposed development site currently houses the Exhibition Centre which is supplied from Ausgrid’s City Triplex network. It is proposed that the southern portion of the site, fed from two distribution substations located on Harbour St, remain connected to the triplex network. This 4 MVA of load can not be supplied from the existing feeder alone and will require approximately 200 meters of pit and duct installation to facilitate the connection to two city Triplex circuits. Included in this are associated jointing costs. Ausgrid’s estimate for construction would be around \$500,000.

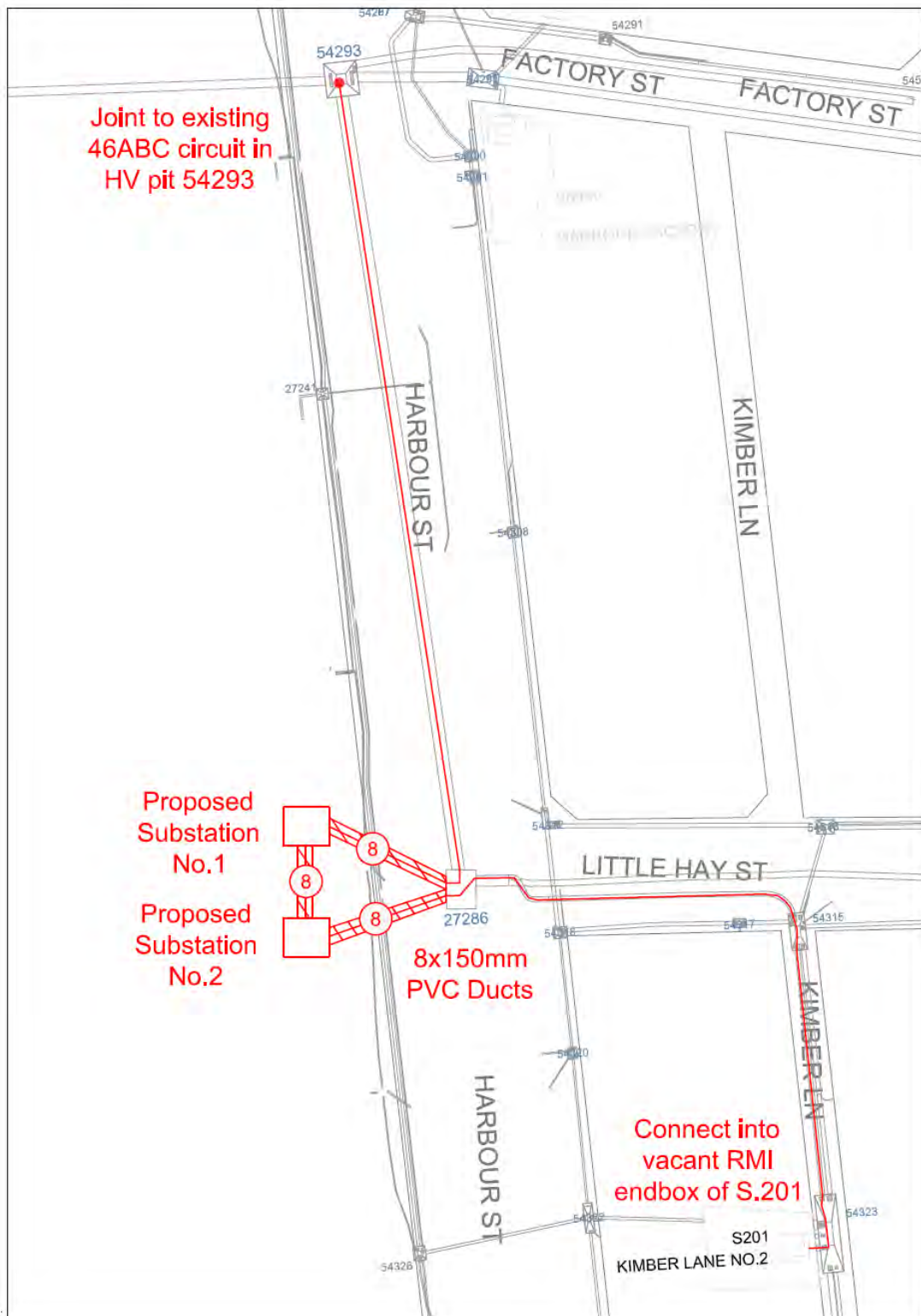
The northern portion of the site, 5.5 MVA across three distribution substations, would require significant network development works to accommodate. With virtually all of the existing 11kV capacity in the area already allocated to the Application 1 & 3 development areas, additional 11kV capacity must be installed into the area.

It is likely that two new 11kV feeders will need to be run from the development site to Camperdown Zone Substation or two feeders run to Darling Harbour Zone Substation with an accompanying load transfer to free up capacity at Darling Harbour.

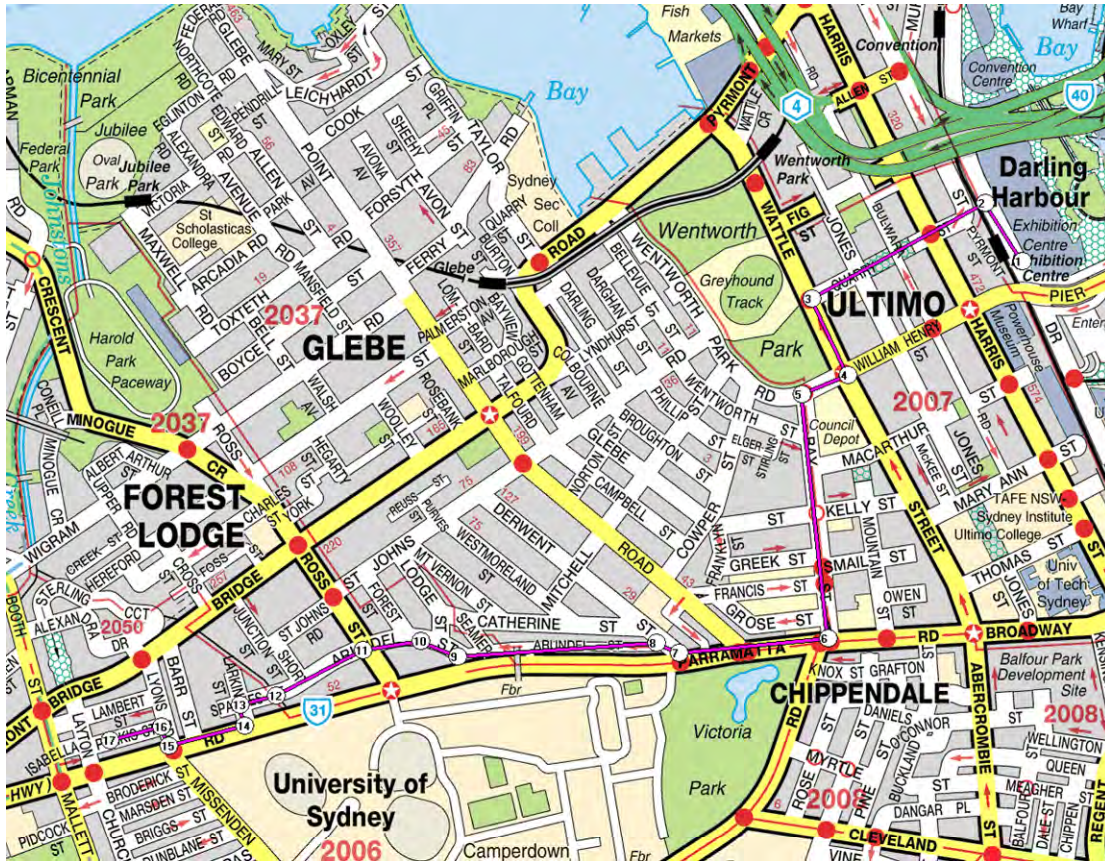
An alternative, more cost effective method of supply may be 33kV distribution from Pymont, how ever there are uncertainties associated with the feasibility of this option. See section below detailing investigation works associated with a 33kV solution.

For the purposes of cost estimation it would be prudent to assume that two new feeders would be required from the development site to Camperdown Zone Substation (approximately 3.2 km route). Given the long lead time until anticipated commissioning it is likely that the network will vary significantly from its current configuration and limitations and alternative options may be possible.

Geo-schematic 2; proposed augmentation works (in RED) for Application 2 ‘The Haymarket’ PDA (southern precinct – 4MVA)



Geo-schematic 3; proposed augmentation works for Application 2 ‘The Haymarket’ PDA (northern precinct – 5.5MVA, route length ~ 3.2km)



Application 3 ‘ICC Hotels’ PDA

To be build and commissioned in conjunction with Application 1, the ICC Hotels PDA requires very little augmentation works to facilitate connection.

The network augmentation works associated with Application 1 SICEEP result in sufficient network capacity to supply to two proposed distribution substation (4.7 MVA)

If Application 1 did not proceed, then augmentation works to supply this site would be required. The scope of such works would be minor network rearrangement to make use of existing capacity in the 11kV network.

See Application 1 details for connection proposal.

Summary

Whilst 11kV feeder solutions for Application 1 and 3 are technically possible and relatively economic the Darling Harbour and Camperdown Zone capacity constraints would need to be resolved prior to implementation.

It is possible that alternative methods of supply, such as 33kV distribution from Pymont or Surry Hills STS and potential triplex supplies from City Zone Substations, would be more economic to Ausgrid and the development proponents.

Application 2 will require significant augmentation works to supply the development site, unless synergies can be formed through the potential use of methods of supply such as 33kV distribution.

As such a detailed feasibility study to resolve the Zone capacity constraints and investigate alternative supply methods needs to be carried out prior to an offer to connect can be made.

Author

Karl Ghest – Senior Planner, East / Inner West

Technical contributors

David Barker – Distribution Planner, Darling Harbour area

Abbas Reslan – Distribution Planner, City

Brad Eagle – Sub-transmission Planning Sydney



20/4/12

AECOM
Attention: Scott Martin
Po Box Q410, QVB PO
Sydney, NSW 1230

Address all relevant correspondence to:
Ausgrid Contestability Section
33-45 Judd Street
Oatley NSW 2223

F: 02 95855797
E: Contestability@ausgrid.com.au

Email: Scott.Martin@aecom.com

Project Number: SC03910

Dear Scott,

Electricity Network Connection at: Sydney Entertainment Centre - Feasibility Study

Further to your application dated 15/5/12 and the meeting held onsite, the determination requested is to assess the availability of an electricity connection for the Sydney Convention Centre. The power supply requested is in the order of 12-14MVA.

The fee to carry out this feasibility study is \$3,942.40, including GST. This fee covers the feasibility study only, some of which includes assessing supply options, site investigation, contingency study, preparing reports and seeking internal approvals. This investigation will contribute to the production of a Design Information, however additional fees may be required. These fees will be determined following confirmation from you regarding progress of the project.

Ausgrid will require a minimum of 4 weeks to complete the feasibility study, once the additional information requested below has been provided to Ausgrid's satisfaction.

What to Do Next

To advance the arrangements you need to

- Pay the fees and charges detailed on the enclosed *Summary of Charges* and return the form with your payment.

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

Yours sincerely,

A handwritten signature in blue ink that reads "Dane Davis".

Dane Davis
Contestability Project Coordinator
Ausgrid

Direct Telephone Number: 02 9585 5923

Facsimile: 02 9585 5797

Email: ddavis@ausgrid.com.au

Summary of Charges

Ausgrid Reference: **SC03910** Date Issued: 21/05/2012 Last Date for Acceptance: 20/07/2012
 Project Description: Sydney Convention Centre - Feasibility Study
 Project Address: Sydney Convention Centre, Darling Harbour

Ausgrid Contact: Dane Davis
 Telephone: 02 95855923 Email: ddavis@ausgrid.com.au
 Fax: 02 95855797 Mailing Address: Building 1A, 33-45 Judd St Oatley NSW 2223

PAYMENT NOTIFICATION				
ITEM	DETAILS	FEE / QUOTATION		
		GST Exclusive	GST	GST Inclusive
1	∞ Design Information fee	\$3,200.00	\$320.00	\$3,520.00
2				
3				
4				
5				
6				
7				
8	∞ Administration fee	\$384.00	\$38.40	\$422.40
9				
10				
11				
12				
13				
14				
TOTALS		\$3,584.00	\$358.40	\$3,942.40

THE FOLLOWING PAYER DETAILS MUST BE COMPLETED FOR AUSGRID TO PROCESS THE ABOVE PAYMENT	
Payer Name:	_____
Payer Address:	_____ _____ _____
ABN: (if applicable):	_____
Contact Name:	_____ Contact Number: _____

METHOD OF PAYMENT	
Tax Invoice:	The Payer detailed above requests that a Tax Invoice be issued for immediate payment by the Payer
Signature:	_____ Date: _____
Cheque:	Make cheque payable to Ausgrid and forward to the Ausgrid representative for the project.
Credit Card:	
Card Holder Name:	_____
Card Number:	_____
Card Type:	<input type="checkbox"/> Visa <input type="checkbox"/> Mastercard Expiry: _____
Signature:	_____ Date: _____
Debit an Ausgrid Account:	may be an ASP's Ausgrid Operations Account or Customer's Account
Account Name:	_____
Electricity Account No:	_____
Signature:	_____ Date: _____

THIS SECTION IS FOR SECURITY DEPOSITS & WARRANTY BONDS ONLY		
1		\$0.00
2		\$0.00
SECURITY DEPOSIT & WARRANTY BOND - METHOD OF PAYMENT		
A Security Deposit and/or Warranty Bond is a separate payment to any Payment Notification detailed above.		
Ausgrid will only accept a Security Deposit and /or Warranty Bond payment in the form of a Cheque or Bank Guarantee		
Cheque: make cheque payable to Ausgrid		
Bank Guarantee: present an unconditional Financial Institution prepared document that is in favour of Ausgrid		



Address all relevant correspondence to:
Ausgrid Contestability Section
33-45 Judd Street
Oatley NSW 2223

F: 02 95855797
E: Contestability@ausgrid.com.au

4/7/12

Lend Lease
Attention: Graeme Atkinson
30 The Bond, 30 Hickson Road
Millers Point Nsw 2000

Email: Graeme.Atkinson2@lendlease.com

Project Number: SC03910

Dear Graeme,

Electricity Network Connection at: Darling Harbour Convention Centre - Feasibility Study

Further to your application, Ausgrid has completed the feasibility study in regards to the supply arrangements for the Darling Harbour Convention Centre. This study has addressed the supply options requested by you to supply the ultimate load required by the site based on your maximum demand calculations supplied to Ausgrid on 5/06/12.

As advised at the application stage of this study, this study does not constitute a Design Information package, this will be prepared under a separate contestable project. It is Lend Lease's responsibility to submit a new application for connection form for the project when supply is required and to engage the services of an ASP 3 designer and ASP 1 Constructor. It should be noted that additional fees will be required for this design information package. These fees will be determined upon receipt of the application.

This study includes Ausgrid's preliminary response to each of the supply options requested, an extract from Ausgrid's records indicating the location of our existing feeders and a copy of the site plan provided with the application.

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

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Dane Davis", is written over a light blue circular stamp.

Dane Davis
Contestability Project Coordinator
Ausgrid

Direct Telephone Number: 02 9585 5923

Facsimile: 02 9585 5797

Email: ddavis@ausgrid.com.au



Project Number: SC03910
Darling Harbour Convention Centre
Feasibility Study

Feasibility Study
Date: 4/7/12



Darling Harbour Precinct - Feasibility Study

23 April 2012

Contents

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	APPENDIX C – SITE PLANS PROVIDED FOR RELOCATION.....	1
	APPENDIX D – CONTESTABLE CONNECTION OR RELOCATION PROCESS FLOW CHART.....	1

1 INTRODUCTION

The Feasibility Study outlines the preliminary supply arrangements for the site.

The advice provided is based on loads and information currently available and is subject to change, depending on the timing of a formal submission.

2 OBJECTIVES

The objectives of this Design Information are:

To allow the determination of any network augmentation works required to supply the development.

To provide the customer with a concept plan of the required electrical network to base each contestable project on.

3 SITE SPECIFIC REQUIREMENTS

3.1 Ausgrid Contact Details

Ausgrid Contact	Dane Davis
Postal Address	Building 1A, 33-45 Judd Street, Oatley NSW 2223 AUSTRALIA
Telephone No	02 9585 5923
Facsimile No	02 9585 5797
Email Address	ddavis@ausgrid.com.au

3.2 Loads

Based on the loads submitted on 22/6/12.

A total of 13.4MVA will be required.

Loadings for each point of supply (including details of loads for each building) – Loads are broken up into requirements of each individual LV substation;

- LV Substation 1 = 3.6 MVA
- LV Substation 2 = 3.6 MVA
- LV Substation 3 = 3.2 MVA
- LV Substation 4 = 3.0 MVA

3.3 Supply Proposal & Network Augmentation Work

The following options are your proposed supply arrangements for the development site, Ausgrid's response as to the feasibility of each option and any augmentation works required.

- If the Centre can be supplied from the existing 11kV system

The proposed substations can be connected to the existing 11kV network supplying the existing substations. These feeders are currently installed along the western edge of the Darling Harbour Precinct. However based on the loads supplied it will be necessary to carry out some augmentation works. This would involve installing an additional feeder from the convention centre site to the corner of Lyons Rd and Parramatta Rd. Where possible existing ducts will be made available for use (Depending on your construction timing and the construction of other Ausgrid projects this may apply to the majority of the route). These Augmentation works would be funded and constructed as a standard contestable project and may be completed as a separate project or incorporated into one of the substation projects.

- Obtaining a 33kV supply off the Barangaroo supply.
- Obtaining a 33kV supply from the Pyrmont Zone Sub-station

Ausgrid does not currently have any formal policy for expansion of the 33kV distribution system. A decision on this arrangement would not be able to be made until a formal application for supply is made.

The 11kV option will require a contestable project(s), consisting of a design by an Accredited ASP3 and construction to be carried out by an Accredited ASP1. Please see Appendix D for a flowchart of the contestable process.

These could be staged to suit construction requirements.

All design and construction works must comply with Ausgrid's network standards.

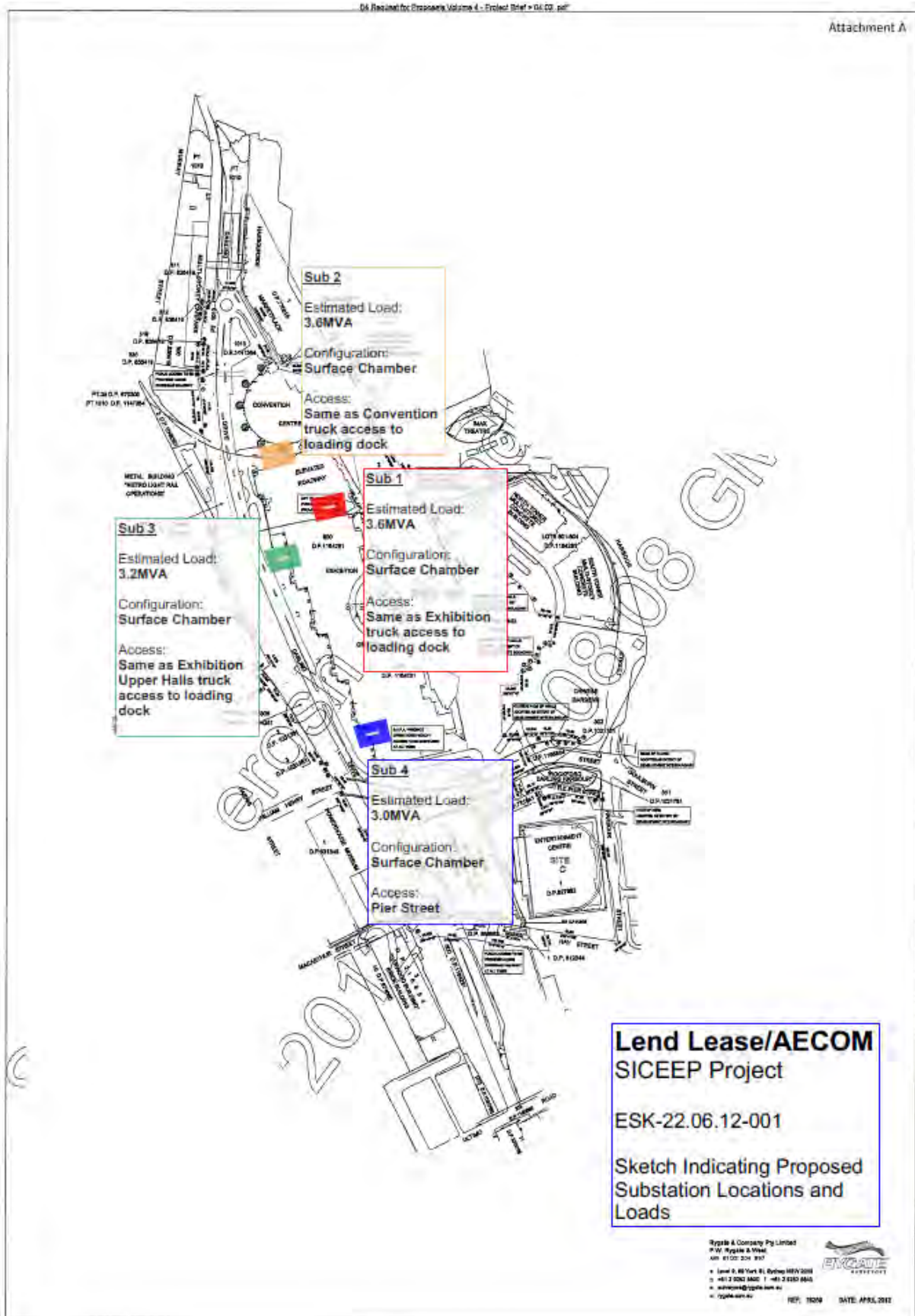
To progress to the next stage, Ausgrid will require the submission of a formal Application for Connection. The appropriate forms are available in our ES1-Customer Connection Information document on Ausgrids' website.

The 33kV option would be handled by our Major Connections group.

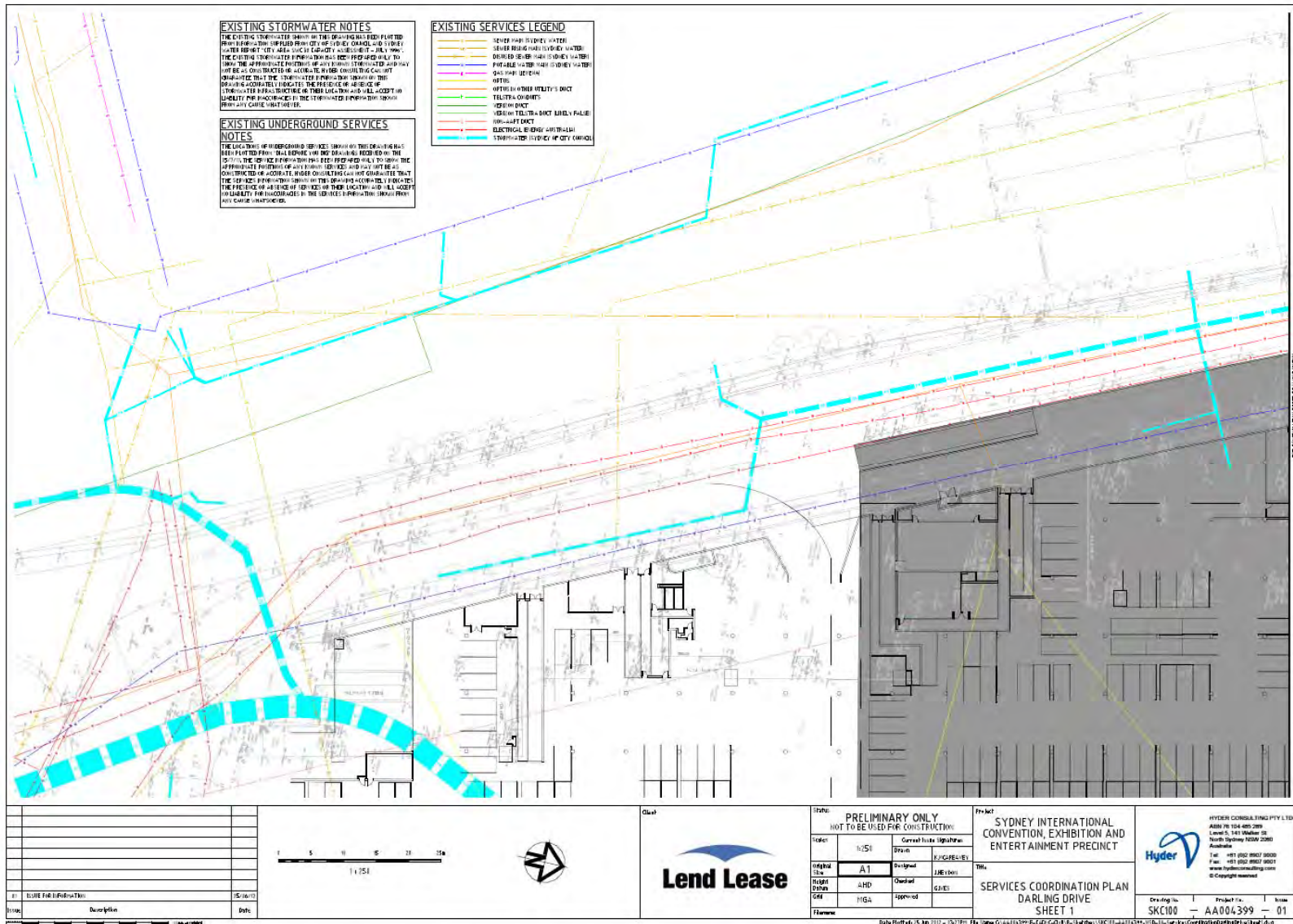
3.4 Relocation Works

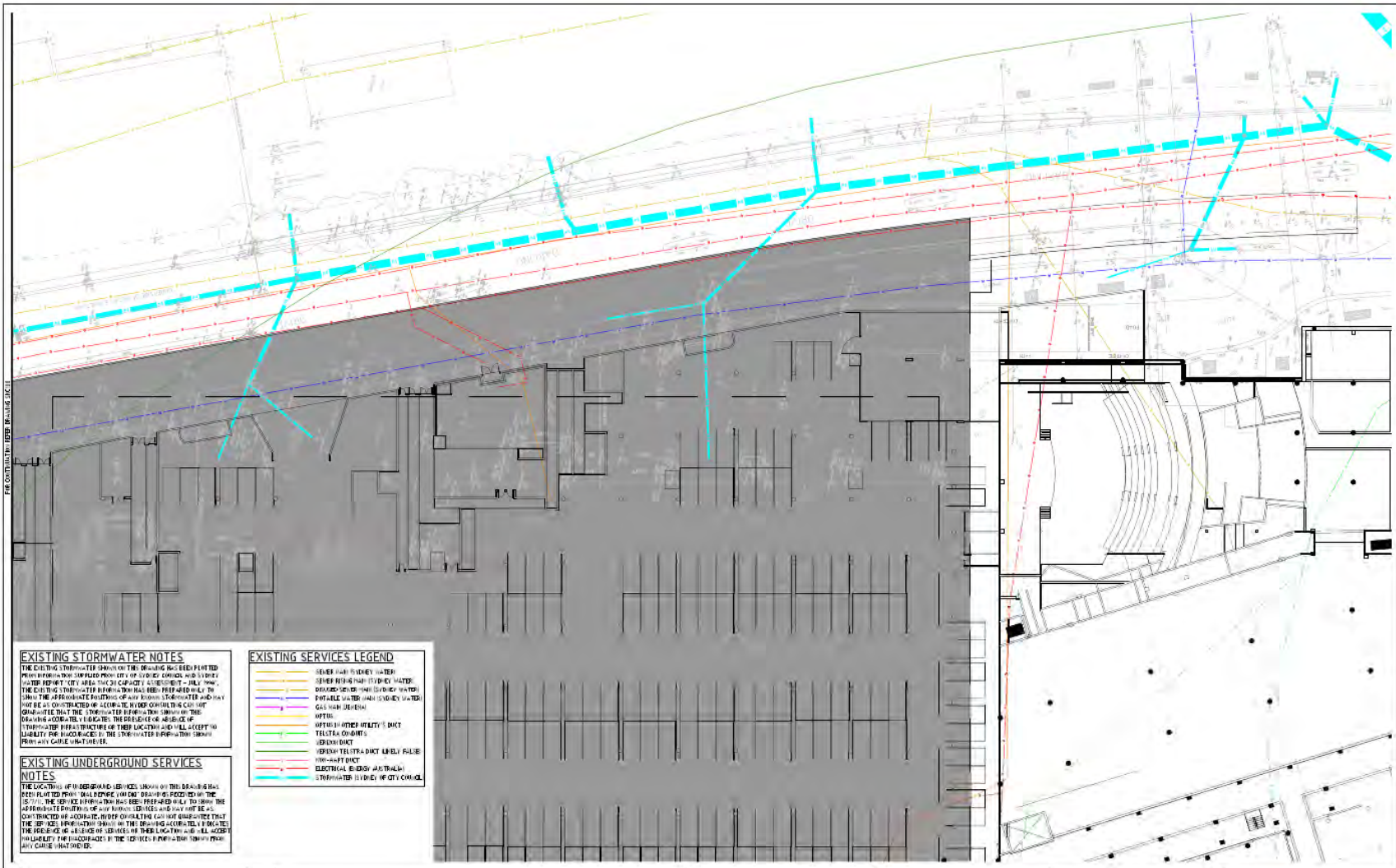
As per your email 3/7/12 regarding the existing assets along Darling Dr, our records indicate that the affected assets are the existing streetlights and associated cabling. These assets can be relocated via the standard contestable process. This may be completed as a separate project or incorporated into one of the substation projects.

Appendix B – Site Plan provided with application



Appendix C – Site Plans provided for relocation





EXISTING STORMWATER NOTES
 THE EXISTING STORMWATER SHOWN ON THIS DRAWING HAS BEEN PLACED FROM INFORMATION OBTAINED FROM CITY OF SYDNEY CONDUIT AND SURVEY WATER REPORT CITY AREA THAT CAPACITY AUGUST 2017 - JULY 2018. THE EXISTING STORMWATER INFORMATION HAS BEEN PREPARED AND TO SHOW THE APPROXIMATE POSITIONS OF ALL KNOWN STORMWATER AND MAY NOT BE AN EXHAUSTIVE LISTING OF ALL KNOWN STORMWATER. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL STORMWATER PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL ACCEPT NO LIABILITY FOR DAMAGE TO THE STORMWATER INFRASTRUCTURE FROM ANY CAUSE WHATSOEVER.

EXISTING UNDERGROUND SERVICES NOTES
 THE LOCATION OF UNDERGROUND SERVICES SHOWN ON THIS DRAWING HAS BEEN PLACED FROM ALL KNOWN AVAILABLE RECORDS BY THE CITY OF SYDNEY. THE SERVICES INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ALL KNOWN SERVICES AND MAY NOT BE AN EXHAUSTIVE LISTING OF ALL KNOWN SERVICES. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL SERVICES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL ACCEPT NO LIABILITY FOR DAMAGE TO THE SERVICES INFRASTRUCTURE FROM ANY CAUSE WHATSOEVER.

EXISTING SERVICES LEGEND

Orange line	SEWER (RAW) (SYDNEY WATER)
Yellow line	SEWER (RAW) (NON-SYDNEY WATER)
Red line	DRINKING WATER (NON-SYDNEY WATER)
Blue line	POTABLE WATER (RAW) (SYDNEY WATER)
Purple line	GAS (RAW) (GENERAL)
Green line	WATER
Light Green line	WATER (OTHER UTILITY'S DUCT)
Dark Green line	TELECOM DUCTS
Light Blue line	SEWER DUCT
Dark Blue line	SEWER (TELECOM DUCT) (RAW) (SYDNEY WATER)
Light Purple line	WATER (RAW) (SYDNEY WATER)
Dark Purple line	ELECTRICAL (5-20KV AIRTRIAL)
Red dashed line	STORMWATER (DRAINAGE) (CITY CONTROL)

NO.	REVISION	DATE
1	ISSUE FOR INFORMATION	25/06/17

Scale: 1 : 250

PRELIMINARY ONLY NOT TO BE USED FOR CONSTRUCTION	
Author: J.S.	Checked: J.S.
Original Date: AT	Design: J.S.
Revised Date: JHD	Checked: G.J.S.
Client: HGA	Approved: G.J.S.
Drawn: J.S.	

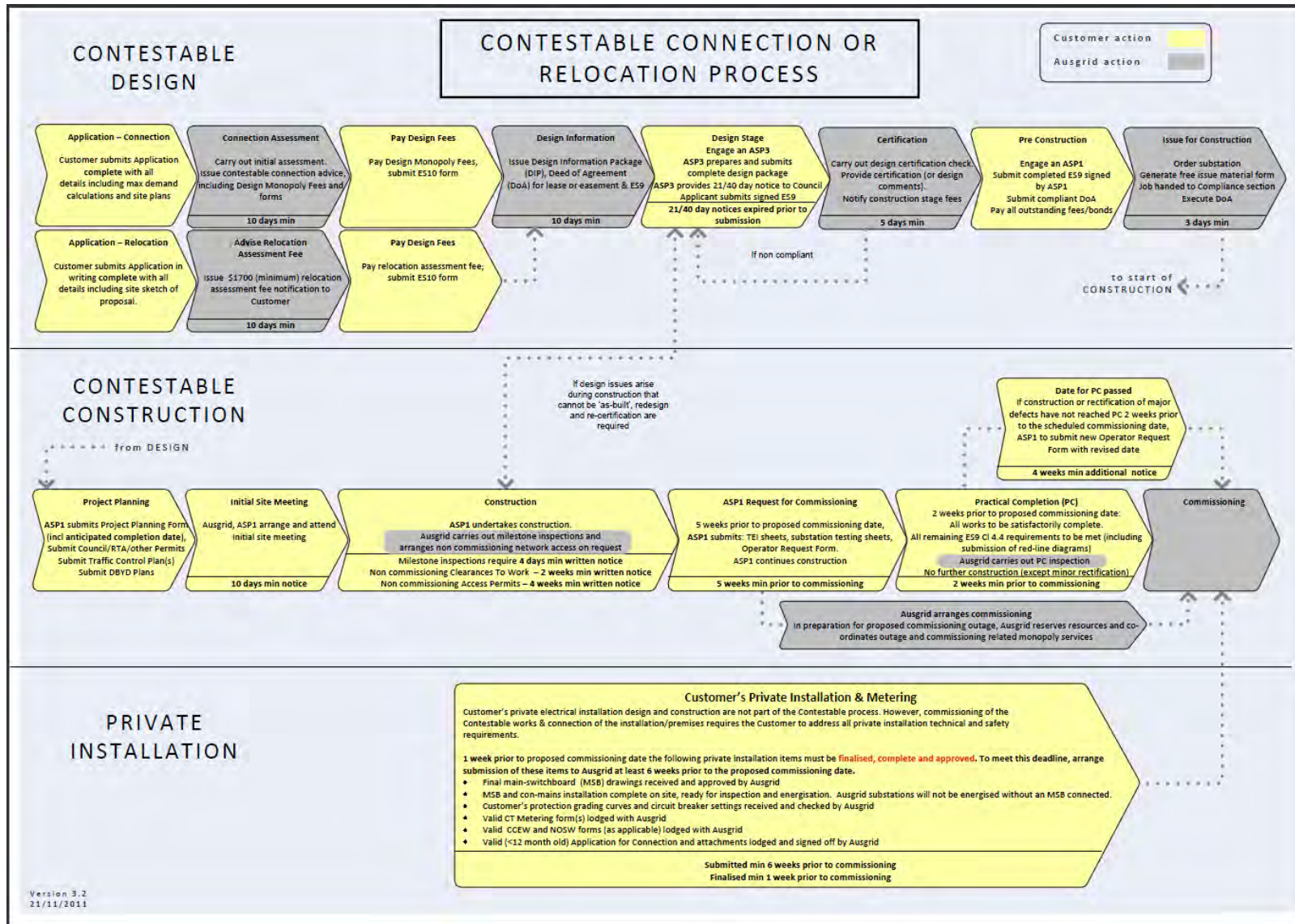
Project: SYDNEY INTERNATIONAL CONVENTION, EXHIBITION AND ENTERTAINMENT PRECINCT

Title: SERVICES COORDINATION PLAN DARLING DRIVE SHEET 2

HYDER CONSULTING PTY LTD
 ABN 16 154 485 289
 Level 11, 145 Darling St
 North Sydney NSW 2060
 Australia
 Tel: +61 (0)2 9550 8000
 Fax: +61 (0)2 9550 8001
 www.hyderconsulting.com.au
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Drawing No: SKC101 Product No: A4004399 Issue: 01

Appendix D – Contestable Connection Or Relocation Process Flow Chart



Friday 11 January 2013

Gregg Charalambous
AECOM
Gregg.Charalambous@aecom.com

Dear Mr Charalambous,

You have contacted NBN Co in relation to the possible installation of fibre infrastructure at **Redevelopment of Darling Harbour Project**.

NBN Co has determined that your new development is within the NBN fibre footprint.

Once **AECOM** has submitted a formal application and we have concluded an agreement on NBN Co's terms and conditions (including in relation to the construction of pit and pipe infrastructure at the development), then provided you comply with the terms and conditions of that agreement, NBN Co will agree to procure the installation of fibre infrastructure at the development.

Thanks & Regards,



Erica Kearnes
Contracts Administrator – New Developments
NBN Co Limited

Joe Heydon

From: Philip Glasscock <Philip.Glasscock@jemena.com.au>
Sent: 18 January 2013 4:47 PM
To: Heath Mallen
Cc: Greg Ives
Subject: RE: Gas requirements for SICEEP Development, Darling harbour

Hi Heath,

In relation to the concept masterplan and schedule of gas demands prepared by the Destination Sydney Consortium and submitted for assessment to Jemena on 10/01/2013, Jemena can confirm that the infrastructure will have the capacity to supply natural gas to the future development as described by Destination Sydney, subject to the following conditions:

- Jemena's understanding is the gas demand figures as provided are preliminary only and are potentially subject to future amendment by Destination Sydney. The loads as they stand seem a little high in hourly rates compared to annual loads. Jemena reserves the right to alter their position if this occurs.
- The preliminary designs for customer pipework shown by Hyderconsulting in a meeting 18 Jan 2013 appear to address all of Jemena's local main requirements.
- The gas demand figures as provided are preliminary only and are potentially subject to future amendment by Destination Sydney. Jemena reserves the right to alter their position if this occurs.
- Augmentation of Jemena's network feeding the Sydney CBD will be required going forward. Timing of these works is dependent on forecast demand. Jemena reserves the right to levy development contributions in conjunction with any agreement to supply natural gas to the SICEEP development .
- Jemena cannot advise the scale of developer contributions that will be required until such time as a formal application is made. Jemena understands that this application will not be made until development approval has been obtained by Destination Sydney.
- The boundary regulator in Little Pier Street will need to be reviewed if the customers downstream are still required and if any works are required to maintain supply

Regards,

Philip Glasscock
Transportation Sales Manager
Commercial Operations
Jemena

[Phone: 02 9455 1590](tel:0294551590), [Fax: 02 9455 1673](tel:0294551673)

[Street Address: Level 20, 111 Pacific Highway North Sydney NSW 2060](#)

Heath Mallen

From: WICKHAM, ROBERT <ROBERT.WICKHAM@sydneywater.com.au>
Sent: 7 June 2012 4:36 PM
To: Heath Mallen
Cc: FOSTER, DARRYL
Subject: RE: SICEEP redevelopment of Darling Harbour - Sewer and Water supply requirements

Categories: Red

Hello

To provide a general answer to your request and advised flows

Convention area

- o The water supply is off the 250 mm main along Darling Drive
- o The 200 mm located in the forecourt is off the same system
- o The 250 mm water main has a supply from both sides: the 200 mm main has a single feed
- o Connection to the water or reuse of the existing domestic connections for the advised flows would not pose any significant issues
- o Purchase of a Statement of Available Pressures and Flows through QuickCheck might be prudent to investigate the network ability to react to the use of the fire services
- o The available wastewater main is the 375 mm along Darling Drive that drains to the very large sewage pumping station SP0001
- o A 300 mm inlet in the maintenance hole adjacent to the building is provided for connection
- o The advised flows would not pose significant issues

Exhibition Area

- o The water supply is off the 300mm / 250 mm main along Darling Drive
- o The 300 mm / 250 mm water main has a supply from both sides
- o Connection to the water or reuse of the existing domestic connections for the advised flows would not pose any significant issues
- o Purchase of a Statement of Available Pressures and Flows through QuickCheck might be prudent to investigate the network ability to react to the use of the fire services
- o The available wastewater main is the 300 mm sideline across along Darling Drive (southern end of the area) that drains to the very large sewage pumping station SP0001
- o A 300 mm inlet in the maintenance hole is provided for connection
- o The advised flows would not pose significant issues

The southern area

- The water supply is of the 375 mm main adjacent to Pier St. This is a single feed main from the CBD
- The main available for use is the 200 mm main in Lackey St that links to the 150 mm main in Hay St
- Considering the scope of advised flows, amplification of 120 m of the 150 mm back to a 200 mm main in Hay St may be required
- Purchase of a Statement of Available Pressures and Flows through QuickCheck might be prudent to investigate the network ability to react to the use of the fire services
- Connection to the water or reuse of the existing domestic connections in Lackey St for the advised flows would not pose any significant issues once the amp main is done
- For the advised wastewater flows, the available mains that drain to SP0001
 - o the 750 mm wastewater main in Hay St would be suitable or
 - o the 300 mm main in Lackey St if amplified to 375 mm

Unfortunately costs cannot be advised

thank you for your inquiry

Robert Wickham
Principal Planner

Asset Services
Urban Growth
Ph 88493531
Mob 0409380200

From: Heath Mallen [mailto:Heath.Mallen@hyderconsulting.com]
Sent: Tuesday, 22 May 2012 2:44 PM
To: WICKHAM, ROBERT
Cc: Ron Meyer (ron.meyer@lendlease.com); Greg Ives; daryl.forster@sydneywater.com.au
Subject: SICEEP redevelopment of Darling Harbour - Sewer and Water supply requirements

Good afternoon Robert,

As discussed at our meeting in your office on the 8th May, please see attached for the masterplan sewer and water supply requirements and connection locations. The site has been split into three sectors – North, Center and South with the relevant kL/day loads and supply locations provided for each of these sectors respectively.

As discussed, It would be appreciated if Sydney Water could review and provide feedback on the feasibility of connecting to the existing Sydney Water assets in the vicinity.

It would also be very much appreciated if you could provide any further information that may assist in understanding the capacity of existing infrastructure, amplification requirements, infrastructure costs and any other issues Sydney Water deem important.

Please note also that as discussed, we have not considered sewer mining, on site reuse or any other water reduction schemes in assessing the demands as shown.

It would assist us greatly if you could also confirm when we might be able to expect a response so that we can plan accordingly. Thankyou in advance for your assistance.

Regards,
Heath

Heath Mallen
Civil Engineer
MEEM, BE, DipEngPrac
Hyder Consulting Pty Ltd
Locked Bag 6503 North Sydney NSW 2060 Australia
Level 5, 141 Walker Street North Sydney NSW 2060 Australia
Direct +61 2 8907 9268 Fax +61 2 8907 9001
Mobile +61 438 266 333

Case Numbers: 131520/131522/131523/131525

13 February 2013

LEND LEASE PROJECT MANAGEMENT & CONS.
c/- CARDNO FORBES RIGBY PTY LTD

INTERIM ADVICE LETTER

Developer: LEND LEASE PROJECT MANAGEMENT & CONS.
Your reference: 50613027-131525
Development: DARLING HARBOUR, Sydney
Development Description: Demolition of existing buildings and construction of a new Convention Centre, Exhibition Centre, Theatre and public area. Removal of existing buildings and construction of Student Accommodation, residential towers, commercial office, retail centre and construction of 2 hotel buildings
Your application date: 25 January 2013

Dear Applicant

We confirm that Darling Harbour Live (DHL), the Consortium selected to redevelop the Sydney International Convention Exhibition and Entertainment Precinct (SICEEP) has consulted with Sydney Water and that we have been given the opportunity to review and comment on the proposed **draft concept plan** for the development.

DHL have consulted Sydney Water with reference to existing system capacity and anticipated impact in Sydney Water's existing infrastructure.

Sydney Water confirm that DHL has lodged four (4) applications through their WSC in relation to the proposed works associated with SICEEP. Sydney Water is in the process of reviewing these applications and preparing our advice.

Sydney Water confirms that, based on the hydraulic information provided by the WSC, the development can be serviced through extensions of water and sewer infrastructure including possible amplifications of the water and sewer infrastructure.

The developments impact on Sydney Water's stormwater assets cannot be quantified at the time of the application due to insufficient details on the impact on that system and assets.

The specific impact on our water, sewer and stormwater assets cannot be assessed until the refinement of location, scope and impact on our assets can be reviewed.

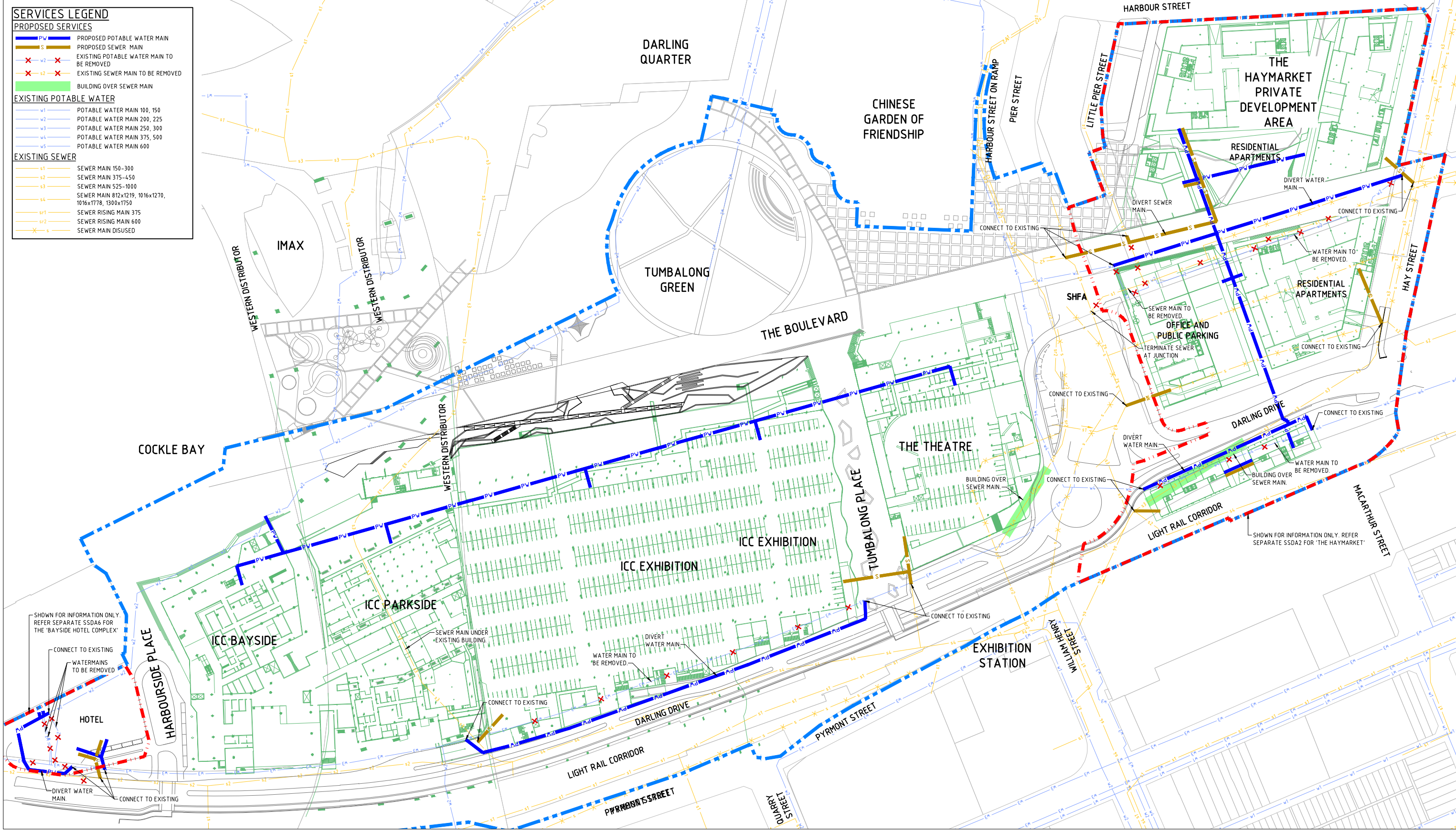
The impact on Sydney Water's stormwater assets could not be made with the provided information. This will need to be assessed.

Once formal development approval has been obtained you will be required to submit new applications for specific requirements in relation to the obtained approval.. Our formal response to these future applications will outline our specific requirements and the activities required of DHL in delivering these services to the subject sites to meet Sydney Water's approval.

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

APPENDIX D

PROPOSED CONCEPT UTILITY PLANS



DARLING HARBOUR LIVE

REFERENCE MAP



NOTES:

- DO NOT SCALE FROM DRAWINGS. WORK TO WRITTEN DIMENSIONS ONLY.
- ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
- ALL COORDINATES TO MGA. ALL LEVELS TO AHD.
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- PRECINCT BOUNDARIES ARE INDICATIVE ONLY AND ARE SUBJECT TO CHANGE.

0 20 40 60 80 100m
1 : 1000

REV	DESCRIPTION	DATE
A	ISSUE FOR DEVELOPMENT APPLICATION	14/03/2013

CLIENT
Lend Lease
 PROJECT MANAGEMENT & CONSTRUCTION
 LEVEL 4, THE BOND, 30 HICKSON RD
 MILLERS POINT, NSW 2000

CONSULTANTS
AECOM
 MECHANICAL / ELECTRICAL / FIRE SERVICES
 LEVEL 21, 420 GEORGE ST, SYDNEY
 NSW 2000

STRUCTURAL SERVICES
 LEVEL 5, 9 CASTLEREAGH ST, SYDNEY
 NSW 2000
 Robert Bird Group

HASSELL + POPULOUS
 ARCHITECT
 LEVEL 2, 88 CUMBERLAND STREET,
 SYDNEY NSW 2000

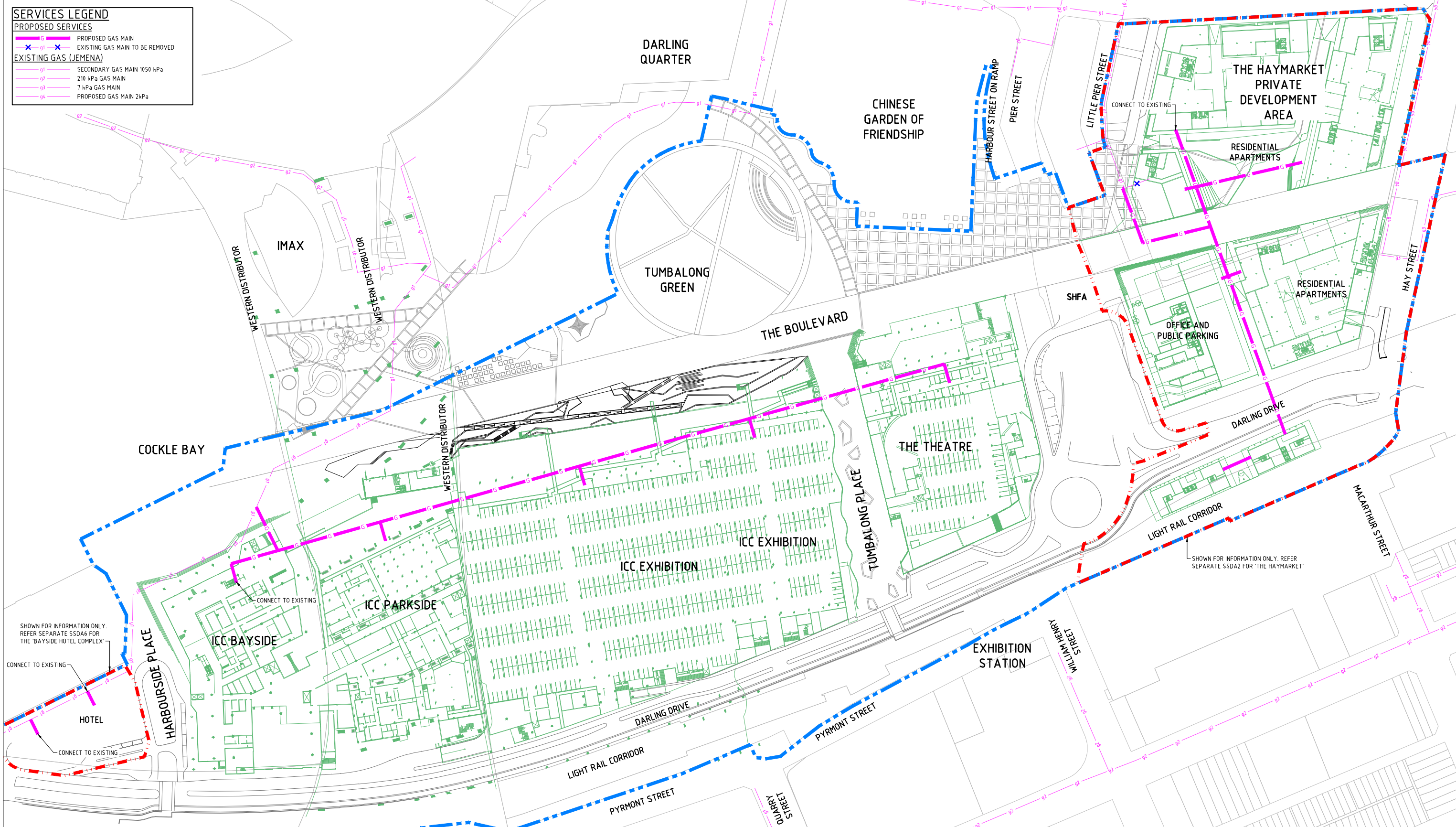
CIVIL / TRAFFIC / FACADES
HYDER CONSULTING PTY LTD
 ABN 76 104 485 289
 LEVEL 5, 141 WALKER ST,
 NORTH SYDNEY NSW 2060
 AUSTRALIA
 Tel: +61 (0)2 8907 9000
 Fax: +61 (0)2 8907 9001
 www.hyderconsulting.com
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PROJECT
 SICEEP
 DARLING HARBOUR
 PRIVATE PUBLIC PARTNERSHIP (PPP)

DRAWING TITLE
 SERVICE STRATEGY PLAN
 CONCEPT SEWER AND WATER

STATUS
 DEVELOPMENT APPLICATION

SCALE @ A1	DRAWN	DESIGNED	REVIEWED	APPROVED
1 : 1000	JJB	HM	JH	GI
PROJECT NUMBER	DRAWING NUMBER	REV		
AA004399	PP-CI-0851	A		



SERVICES LEGEND

PROPOSED SERVICES

- G PROPOSED GAS MAIN
- - - X EXISTING GAS MAIN TO BE REMOVED

EXISTING GAS (JEMENA)

- g1 SECONDARY GAS MAIN 1050 kPa
- g2 210 kPa GAS MAIN
- g3 7 kPa GAS MAIN
- g4 PROPOSED GAS MAIN 2kPa

DARLING HARBOUR LIVE

REFERENCE MAP



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0 20 40 60 80 100m

1 : 1000

REV	DESCRIPTION	DATE
A	ISSUE FOR DEVELOPMENT APPLICATION	14/03/2013

CLIENT

Lend Lease
PROJECT MANAGEMENT & CONSTRUCTION
LEVEL 4, THE BOND, 30 HICKSON RD
MILLERS POINT, NSW 2000

CONSULTANTS

AECOM
MECHANICAL / ELECTRICAL / FIRE SERVICES
LEVEL 21, 420 GEORGE ST, SYDNEY
NSW 2000

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NSW 2000

HASSELL + POPULOUS
ARCHITECT
LEVEL 2, 88 CUMBERLAND STREET,
SYDNEY NSW 2000

CIVIL / TRAFFIC / FACADES

Hyder
HYDER CONSULTING PTY LTD
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AUSTRALIA

Tel: +61 (0)2 8907 9000
Fax: +61 (0)2 8907 9001
www.hyderconsulting.com
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PROJECT

**SICEEP
DARLING HARBOUR
PRIVATE PUBLIC PARTNERSHIP (PPP)**

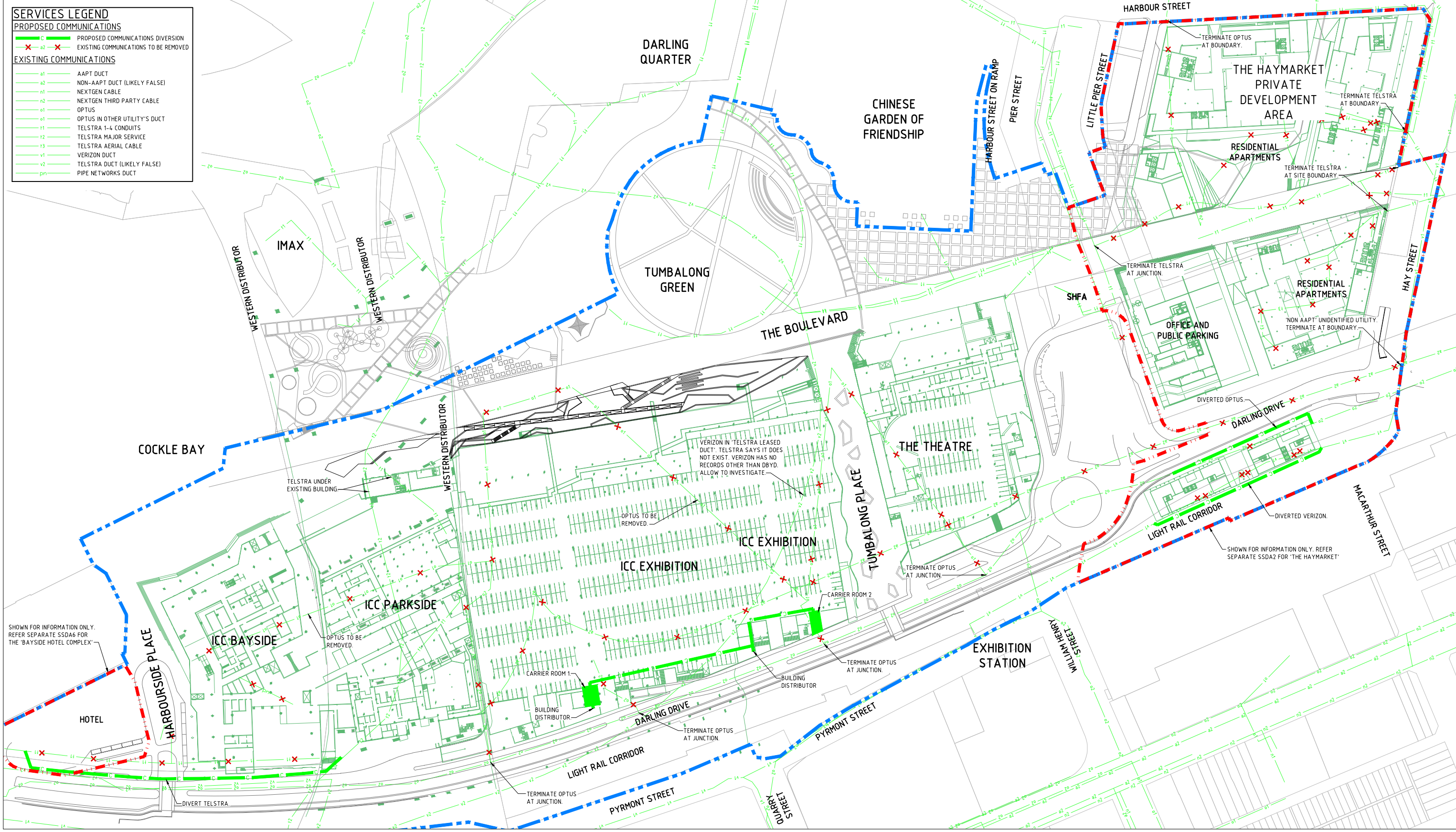
DRAWING TITLE

**SERVICE STRATEGY PLAN
CONCEPT NATURAL GAS**

STATUS

DEVELOPMENT APPLICATION

SCALE @ A1	DRAWN	DESIGNED	REVIEWED	APPROVED
1 : 1000	JJB	HM	JH	GI
PROJECT NUMBER	DRAWING NUMBER			REV
AA004399	PP-CI-0852			A



DARLING HARBOUR LIVE

REFERENCE MAP

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1 : 1000

REV	DESCRIPTION	DATE
A	ISSUE FOR DEVELOPMENT APPLICATION	14/03/2013

CLIENT

Lend Lease

PROJECT MANAGEMENT & CONSTRUCTION
LEVEL 4, THE BOND, 30 HICKSON RD
MILLERS POINT, NSW 2000

CONSULTANTS

AECOM MECHANICAL / ELECTRICAL / FIRE SERVICES
LEVEL 21, 420 GEORGE ST, SYDNEY
NSW 2000

Robert Bird Group STRUCTURAL SERVICES
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NSW 2000

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SYDNEY NSW 2000

CIVIL / TRAFFIC / FACADES

HYDER CONSULTING PTY LTD
ABN 76 104 485 289
LEVEL 5, 141 WALKER ST,
NORTH SYDNEY NSW 2060
AUSTRALIA

Tel: +61 (0)2 8907 9000
Fax: +61 (0)2 8907 9001
www.hyderconsulting.com
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PROJECT

SICEEP
DARLING HARBOUR
PRIVATE PUBLIC PARTNERSHIP (PPP)

DRAWING TITLE

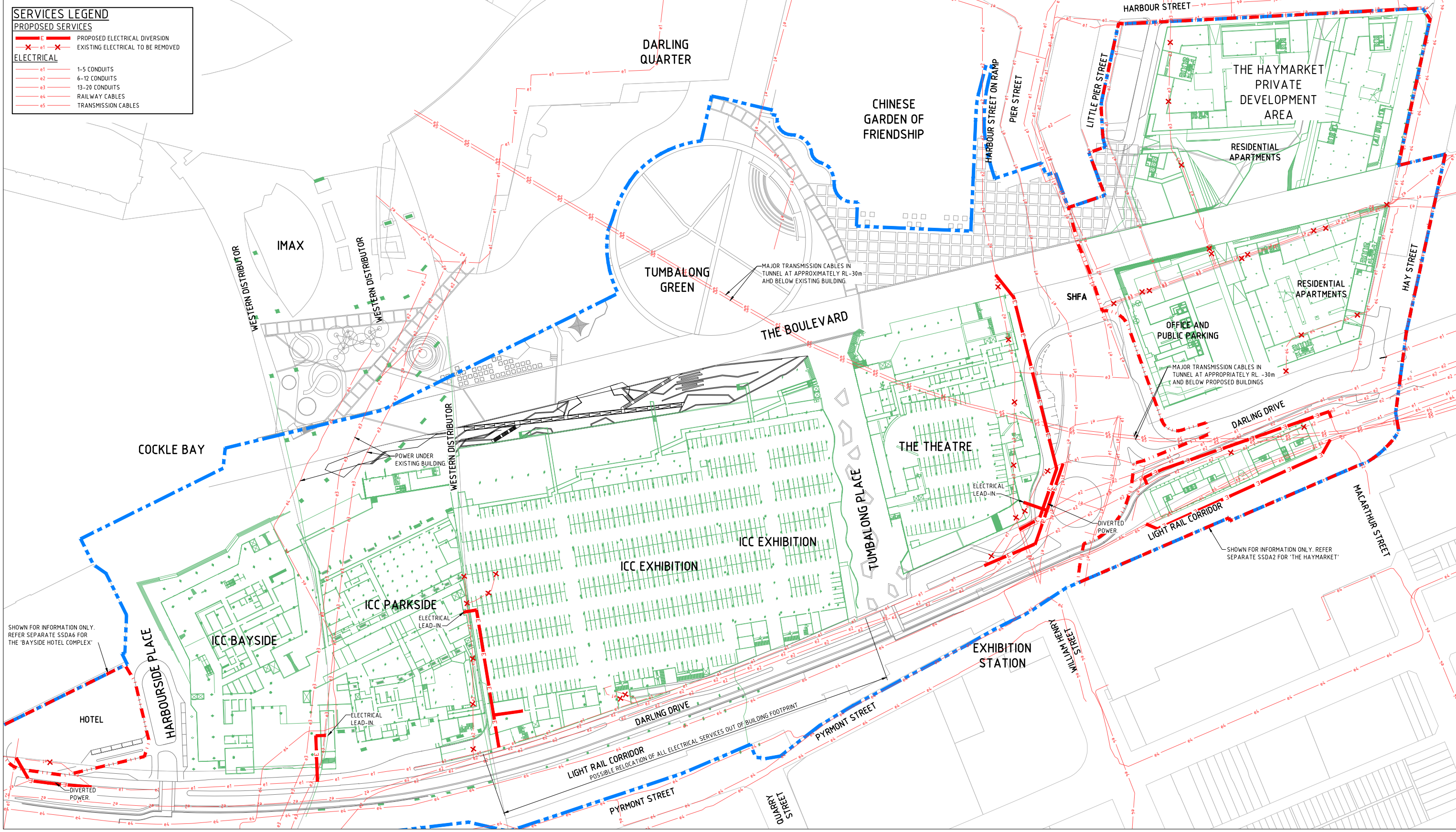
SERVICE STRATEGY PLAN
CONCEPT COMMUNICATIONS

STATUS

DEVELOPMENT APPLICATION

SCALE @ A1	DRAWN	DESIGNED	REVIEWED	APPROVED
1 : 1000	JJB	HM	JH	GI
PROJECT NUMBER	DRAWING NUMBER	REV		
AA004399	PP-CI-0853	A		

Original Sheet Size A1 - 841 x 594mm



DARLING HARBOUR LIVE

REFERENCE MAP



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- ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
- ALL COORDINATES TO MGA. ALL LEVELS TO AHD.
- ALL DIMENSIONS, COORDINATES AND LEVELS TO BE VERIFIED ON SITE BEFORE PROCEEDING WITH WORK. HYDER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES.
- THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL RELEVANT CONTRACTS, SPECIFICATIONS AND DRAWINGS.
- PRECINCT BOUNDARIES ARE INDICATIVE ONLY AND ARE SUBJECT TO CHANGE.

0 20 40 60 80 100m

1 : 1000

REV	DESCRIPTION	DATE
A	ISSUE FOR DEVELOPMENT APPLICATION	14/03/2013

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PROJECT
 SICEEP
 DARLING HARBOUR
 PRIVATE PUBLIC PARTNERSHIP (PPP)



DRAWING TITLE
 SERVICE STRATEGY PLAN
 CONCEPT ELECTRICAL

STATUS
 DEVELOPMENT APPLICATION

SCALE @ A1	DRAWN	DESIGNED	REVIEWED	APPROVED
1 : 1000	JJB	HM	JH	GI
PROJECT NUMBER	DRAWING NUMBER	REV		
AA004399	PP-CI-0854	A		

