



SYDNEY INTERNATIONAL CONVENTION, EXHIBITION AND ENTERTAINMENT PRECINCT
THE HAYMARKET PRECINCT – PDA WORKS

SERVICES INFRASTRUCTURE REPORT

FOR SSDA2 5752-2012



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DARLING HARBOUR LIVE

SICEEP – THE HAYMARKET

SERVICES INFRASTRUCTURE REPORT FOR SS DA2

Sewer, Water, Gas, Telecommunications, Electrical & Stormwater

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Report No DN00339

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1 EXECUTIVE SUMMARY

Hyder Consulting has been engaged by Lend Lease to provide civil infrastructure advice to support a Stage 1 Development Application, to be submitted in relation to The Haymarket precinct to be developed on part 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, communications and stormwater. 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 (SSDA2 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 the establishment of building envelopes and design parameters for a new neighbourhood and a community hub (referred to as The Haymarket) as part of the Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP) project at Darling Harbour.

The project will develop The Haymarket into one of Sydney's most innovative residential and working districts. Through the delivery of the overall Project, Darling Harbour will also become home to Australia's largest convention and exhibition facilities, Sydney's largest red carpet entertainment venue, and a hotel complex of up to 900 rooms.

The SICEEP project importantly forms a critical element of the NSW Government's aspiration to "make NSW number one again".

3 OVERVIEW OF PROPOSED DEVELOPMENT

The proposal relates to a staged development application and seeks to establish concept plan details for The Haymarket, located within the southern part of the SICEEP site.

The Haymarket will include student housing, public car parking, a commercial office building, and four mixed use development blocks (retail/commercial/residential podium with residential towers above) centred around a new public square to be named Haymarket Square.

More specifically concept approval is sought for the following:

- Demolition of existing site improvements, including the existing Sydney Entertainment Centre (SEC), Entertainment Centre car park, and part of the pedestrian footbridge connected to the Entertainment car park and associated tree removal;
- North-west block – construction of a part public car park and part commercial/office building;
- North-east block – construction of a mixed use podium (comprising retail, commercial, above ground parking, and residential);
- South-east block - construction of a mixed use podium (comprising retail, commercial, above ground parking, and residential);
- South-west block - construction of a mixed use podium (comprising retail, commercial, above ground parking, and residential);
- North block – construction of a low rise mixed use building comprising retail, commercial and residential;
- Student housing – construction of two buildings providing for student accommodation;
- Public domain improvements including a new square, water features, new pedestrian streets and laneways, streetscape embellishments, and associated landscaping. (It is intended that a Stage 2 DA seeking approval for parts of the part of the public domain (The Boulevard and Haymarket Square) will be lodged with the first residential stage);

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 Darling Harbour. 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 Application Site area relates to The Haymarket 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 Lend Lease (Haymarket) Pty Ltd is proposing to submit a number of separate development applications for key elements of the overall Project.

This staged DA involves the establishment of building envelopes and design parameters for a new neighbourhood and a community hub (The Haymarket) within the southern part of the SICEEP site. Detailed DA's will accordingly follow seeking approval for specific aspects of The Haymarket in accordance with the approved staged DA.

Separate DA's will be lodged for the Public Private Partnership (PPP) component of the SICEEP project (comprising the convention centre, exhibition centre, entertainment facility and associated public domain upgrades) and Hotel complex.

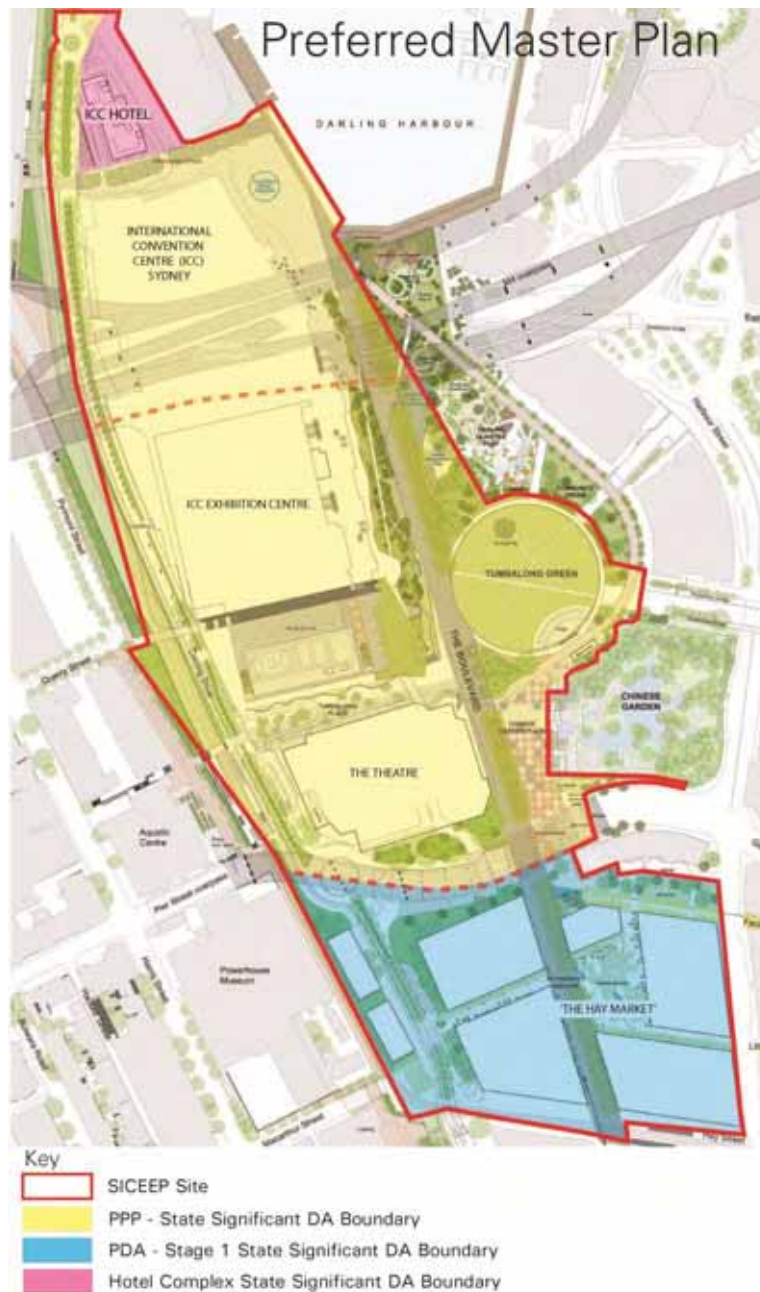


Figure 2: Preferred Masterplan

7 PURPOSE OF THIS REPORT

This report has been prepared to accompany the DA for The Haymarket 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 2 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.

For greater clarity, this report relates only to the portion of the site south of Pier Street where The Haymarket development is located (refer Figure 3). Separate reports cover the PPP and The Hotel complex components of the SICEEP development.

While preliminary development staging and sequencing information has formed the basis for 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.

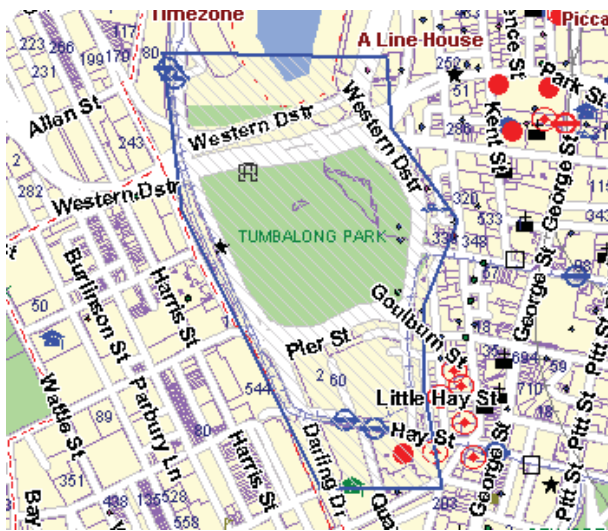


Figure 3: DBYD Enquiry Area (DBYD, 2011)

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 Ucomm
- 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 Haymarket. Other private utility providers (such as private telecommunications) will be addressed at the Stage 2 DA phase.

Chapters 8.1, 8.2, 8.4 and 8.5 of this report were prepared by Lend Lease and Chapter 8.3 was prepared by Hyder Consulting.

8 UTILITIES INFRASTRUCTURE

8.1 SEWER

8.1.1 SEWER SERVICE TO THE PRECINCT

The site is located in the Sydney Water Corporation (SWC) service area, and is located within the existing urban sewer collection network. Preliminary discussions with SWC indicate the mains in the location have adequate capacity to service the SICEEP precinct.

Sections of existing infrastructure will require demolition, and new reticulation pipework shall be installed to suit the new planning. The collection pipework shall be designed in accordance with WSA Sewerage Code of Australia Sydney Water Edition 1- Version 3.

The new sewer collection system and diversions shall be designed and constructed in accordance with SWC requirements which when completed will become SWC assets.

8.1.2 CONSULTATION

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.

The proposed student accommodation buildings in the west of The Haymarket site were identified as being located over an existing concrete encased sewer trunk main. The concrete encased main is a 1m carrier constructed in a tunnel, approximately 9m deep. At the point the tunnelled main passes under the proposed student accommodation building footprint, SWC work as executed drawings indicate that the tunnel is constructed in rock. The option of building over the sewer was discussed with SWC and it is expected that this will be addressed as part of their response to the sewer servicing feasibility application.

8.1.3 SEWER INFRASTRUCTURE

New infrastructure shall be provided to service the new buildings in The Haymarket site. There are sewer mains running north to south across the site and these are proposed to be capped off / abandoned as part of the works. Existing sewer mains are located in Hay Street on the Southern Boundary. New mains are proposed to be constructed from the Hay Street main and existing mains to the north of the site to service the new buildings.

8.1.4 REQUIRED WORKS

Refer to the sewer infrastructure concept plan in Appendix D for the indicative proposed new sewer reticulation, proposed relocations and mains to be made redundant.

Following SWC response to the feasibility application, it is proposed to liaise with SWC to develop an overarching servicing strategy for the SICEEP precinct, and formally submit the strategy for SWC agreement.

Subsequent to agreement for the overall precinct strategy, Section 73 applications will be made to SWC at the appropriate stages for each building development.

A building over sewer application will be required if SWC approve building over the existing sewer on the south west section of the site.

The required capital works relating to each stage of the project will then be undertaken and are expected to be executed as part of a major works contract with SWC, constructed in stages to suit the development program. Any capital works associated with the stages of the development will be in accordance with the relevant Section 73 Notice of Requirements from SWC.

8.1.5 SEWER INFRASTRUCTURE SERVICE

Preliminary discussions with SWC indicate the existing SWC sewer collection in the locality of the SICEEP development has the capacity to meet the demand of The Haymarket development. The mains can be extended and relocated as required to suit the intended usage on the site in accordance with SWC requirements.

8.2 WATER

8.2.1 WATER SERVICE TO THE PRECINCT

The Haymarket is located in the SWC service area, and is located within the existing urban supply network. Preliminary discussions with SWC indicate the mains in the location have adequate capacity to service the SICEEP precinct.

Sections of existing infrastructure will require demolition/capping off, 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.

On completion, this new water service reticulation will become a SWC asset.

8.2.2 CONSULTATION

Consultation with SWC has commenced regarding servicing The Haymarket 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 attended by

Matthew Lewis	SWC
Bob Wickham	SWC
Ray Parsell	SWC
Greg Ives	Hyder
Chris McClelland	Hyder
Chris Rust	Lend Lease
Ron Meyer	Lend Lease

At the meeting the water servicing strategy was discussed. The existing infrastructure was reviewed, and a section of trunk water main on the western section of the south development 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.

8.2.3 WATER INFRASTRUCTURE

Existing SWC infrastructure is located in Harbour Street to the east of The Haymarket, in Hay Street to the south, Pier Street to the north and Hay Street to the south. Reticulation mains are located within the public walkway on the western side of the existing Sydney Entertainment Centre, linking with the mains in Pier Street and Hay Street. This system of mains shall be modified as required to suit the new development, with sections demolished and new mains located in the proposed new roadways and public domains.

A trunk main is located in the western portion of The Haymarket site and is located within the footprint of a new building proposed to provide student accommodation. This trunk main is proposed to be relocated to be within the proposed amended Darling Drive road reserve and adjacent to the student accommodation building.

The staging of the project requires the Sydney Entertainment Centre is kept operation until December 2016. Water infrastructure works will maintain service to the Entertainment Centre while construction is proceeding on the western section of the site.

8.2.4 WATER DEMANDS

Preliminary water supply load profiles have been prepared for the development and submitted to SWC for consideration as part of the feasibility study. Preliminary diversified water load estimates for The Haymarket development are:

Domestic Water Supply - 40 L/s peak flow

Precinct Fire Flow - 105 L/s

The current use of the land to be occupied by The Haymarket includes the Sydney Entertainment Centre, multistorey carparks, on grade carpark and roadways. The Sydney Entertainment Centre is to be relocated into the PPP precinct. The Haymarket development residential buildings, commercial building and retail areas will increase the demand on the existing infrastructure but preliminary discussions with SWC indicated the existing water main capacity servicing the locality will be sufficient.

8.2.5 REQUIRED WORKS

Refer to Appendix D for the location of the proposed new water reticulation, proposed relocations and mains to be made redundant.

Following SWC's response to the feasibility application when it is received, it is proposed to liaise with SWC to develop an overarching servicing strategy for the SICEEP precinct, and formally submit the strategy for SWC agreement.

Subsequent to agreement for the overall precinct strategy, Section 73 applications will be made to SWC at the appropriate stages for each building development.

The required capital works relating to each stage of the project will then be undertaken and are expected to be executed as part of a major works contract with SWC, constructed in stages to suit the development program. Any capital works associated with the stages of the development will be in accordance with the relevant Section 73 Notice of Requirements from SWC.

8.2.6 WATER INFRASTRUCTURE SERVICE

Preliminary discussions with SWC indicate the existing SWC water reticulation in the locality of the SICEEP development has the capacity to meet the demand of The Haymarket. The mains can be extended and relocated as required to suit the intended usage on the site in accordance with SWC requirements.

8.3 GAS

Gas infrastructure in the vicinity of the site is owned and operated by Jemena. A 100mm/250mm secondary main (1,050kPa) skirts the northern and eastern border of the site. A branch off this line currently supplies the Entertainment Centre. It is proposed that this branch will be extended into the site and reticulated to feed the Haymarket precinct.

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 and that the SICEEP development will be required to contribute towards these costs.

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 Haymarket development precinct.

8.4 TELECOMMUNICATIONS

8.4.1 TELECOMMUNICATIONS (FIXED)

Utility Responsible

NBN Co –Current in-principle approval as per their Early Certificate for the Redevelopment from NBN Co (refer Appendix C).

Utility Consultation and Agreements

A meeting was held to discuss the SICEEP development and telecommunications servicing with NBNCo. NBNCo are afforded right of first refusal for public telecommunications wired connectivity as required by the NBN Co and Telstra Binding Definitive Agreements.

Date of Meeting: 8th of January, 2013

Location: AECOM Office – 420 George St, Sydney

Attendees:

Brent Rollings	NBNCo
Frank Kranjc	NBNCo
Ron Meyer	Lend Lease PM&C
Greg Charalambous	AECOM
Alex McBurney	Lend Lease Design
Damien Treloar	Lend Lease Design
Greg Ives	Hyder
Heath Mallen	Hyder

Consultation Outcomes

- NBNCo indicated that they currently plan to provide services to the entire SICEEP precinct and the consortium is to proceed with the DA application on this basis.
- AECOM (on behalf of Lend Lease) submitted a package of SICEEP details to NBNCo, suitable for NBNCo to issue a high level “In-principle” statement of consent to supply the SICEEP development with telecommunications services.
- Separate formal applications are required to be submitted via the NBNCo website for The Bayside (ICC Hotels), The Haymarket and the Darling Central and The Bayside (PPP) areas.
- NBNCo confirmed that in-street services would be provided under their scope of works with the SICEEP consortium responsible for the reticulation infrastructure within each lot via pits and ducts.
- Any additional secondary (diverse) service provider entry point required for the PPP are not under the NBNCo servicing obligations.

Existing Arrangements

The Haymarket

The existing Haymarket Precinct currently contains Telstra, Optus and Verizon in-ground ducts containing a mixture of copper and fibre cabling. Other providers services may be identified as investigative works proceed and these will be suitably dealt with as required with in consultation with relevant providers

Pathways solely servicing the buildings which are nominated for demolition during this development are to be decommissioned and where practicable, cable in a reusable condition shall be pulled back and coiled at the site boundary.

This includes the following:

- Telstra cabling to the Sydney Entertainment Centre (SEC)
- Telstra cabling to the SEC Car park
- Optus cabling to the SEC
- Other providers services may be identified as investigative works proceed and these will, be suitably dealt with in consultation with relevant providers

Diversions are required for the following:

- Optus cabling and ducts along Darling Drive and Hay St through the site of the proposed Student Accommodation.
- Verizon cabling and ducts along Darling Drive and Hay St through the site of the proposed Student Accommodation.
- Requirements for diversions of other services providers may be identified as investigative works proceed and these will, be suitably dealt with in consultation with relevant providers.

Refer to the Appendix D for further details of proposed works.

Staging

Where diversion works are required, the proposed alternate pathway will be established prior to decommissioning the existing pathway in consultation with the relevant service provider. All required cut-overs shall be programmed at times to limit the disruption of service to existing subscribers.

Service Capacity

NBN Co. shall provide services as per the requirements of their Universal Service Obligation (USO) for the purpose of telephony to each building upon the site, terminating in the Telecommunications Entrance Room and, where applicable, will continue throughout the building to service each tenant. NBN Co. shall ensure that the infrastructure is capable of supporting 100Mbps (down-link) if a subscriber so chooses via their fibre-to-the-premises (FTTP) service.

Additional spare lead-in pathways shall be provided for dedicated tenant WAN/MAN services via point-to-point fibre links. Fibre-optic cabling shall be provided by the respective tenants. The quantity and locations shall be determined during tenant consultation with minimum provisions as per the requirements of the Property Council of Australia (PCA) Guide to Office Building Quality 2012.

8.4.2 TELECOMMUNICATIONS (WIRELESS)

Utility Responsible (The Haymarket and The Bayside (ICC Hotels))

- Telstra;
- Optus;

- Crown Castle (Vodafone Hutchinson site manager);
- Darling Harbour Convention and Exhibition Pty Ltd (DHCE); and
- Sydney Harbour Foreshore Authority (SHFA).

Utility Consultation and Agreements (where applicable)

Consultation has been undertaken with Telstra regarding existing wireless telecommunications arrangements as set out below

Telstra

Date of Meeting: 17th of December, 2012

Location: Infrastructure NSW Offices

Attendees:

Mark Verrender	INSW
Dave Allen	Telstra Tunnels
Kumar Rajaram	Telstra Capacity Planning
Simon Dam	Telstra Mobiles
Bob Coyne	Telstra Property
Heath Mallen	Hyder
Greg Ives	Hyder
Geoff Todd	AECOM
Greg Charalambous	AECOM
Alex McBurney	Lend Lease Design
Ron Meyer	Lend Lease PM&C

Telstra have indicated that they have a cellular base station located on one of the Convention Centre stair cores. This services the whole of Darling harbour precinct including The Haymarket (with provision for special event loadings) as well as road traffic on the Western Distributor. Telstra must relocate this before December 2013. At present Telstra have not identified an alternative location.

Tumbalong Park has a micro cell installed. This will need to be indicated by Telstra as being a simple process.

Telstra emphasised that the existing Convention Centre has a Distributed Antenna System (DA'S) installation that is currently operated by Telstra. This is now considered to be a building owner obligation to provide and Telstra will not provide a new system in the new building.

The termination and / or relocation of any Telstra wireless telecommunications is to be resolved between the licensee and the licensor.

Crown Castle (VHA)/Optus

Cellular Base Station and In-Building Coverage (IBC) Distributed Antenna System (DA'S) sites are located at the existing Sydney Entertainment Centre within The Haymarket. These are

believed to be managed by Crown Castle, who undertake the majority of site management for Vodafone Hutchinson Australia (VHA).

Melina Grin (SMC Coordinator – Crown Castle) has been consulted to establish Crown Castle requirements. We are currently awaiting feedback in regards to this.

The ACMA registered Site ID's are as follows:

- 202643; and
- 203474.

The importance of these sites has not been established and we are continuing to investigate this. It currently is assumed that a similar approach shall be taken for the Crown Castle sites as the Telstra sites (see above).

DHCE and SHFA Radio Sites

DHCE and SHFA operate 2-way radio base-stations across The Haymarket. These sites are proposed to be decommissioned. The future of these sites is currently being discussed with the relevant stakeholders.

Risks and Opportunities

Costs associated with the decommissioning and possible relocation of utility equipment, including DHCE and SHFA infrastructure has not been included in the current budget.

8.5 ELECTRICAL

8.5.1 ELECTRICAL SERVICE TO THE PRECINCT

The site is located in the Ausgrid service area with The Haymarket site being located on the boundary between the CBD Triplex HV Network (to the East) and the Urban Network to the West. Preliminary discussions with Ausgrid have resulted in Ausgrid preparing an indicative Feasibility Report outlining possible means to service the site including considerations associated with the SICEEP PPP project loads and the Bayside (ICC Hotels). To date, Ausgrid has not indicated a preferred methodology for the supply configuration and while initial proposals indicate the HV supplies will be provided at 11kV, Ausgrid has reserved their position in this regards to potentially require HV supplies to be taken at 33kV. Ausgrid has indicated that they have capacity to service the SICEEP precinct as outlined in their Feasibility Study document (refer Appendix C).

Sections of existing infrastructure will require demolition, either due to planning and/or due to abandonment, and some diversions (where existing infrastructure clashes with the planned development) will be required. All new reticulation shall be installed to suit the new development planning scheme. The design and installation of the electrical infrastructure (new and/or augmented) will be undertaken by Level 3 and Level 1 and/or 2 Accredited Service Providers to the requirements of Ausgrid. On completion of the staged HV utility works by Lend Lease, it is envisaged that the HV electrical infrastructure will become assets of Ausgrid, in stages, commensurate with the development staging.

8.5.2 CONSULTATION

Lend Lease has commenced Consultation with Ausgrid regarding servicing the SICEEP developments with Electrical supply infrastructure. A preliminary servicing strategy meeting was

held with Ausgrid at their Zetland offices on 15th January 2013 and minutes of this meeting have been provided.

Date of Meeting:	15th January, 2012
Location:	Ausgrid Offices, Zetland
Attendees:	
Mark Verrender	Infrastructure NSW
Ashwin Prasad	Ausgrid
Peter Shori	Ausgrid
Adam Simitsiotis	Ausgrid
Karl Ghest	Ausgrid
Scott Martin	AECOM
Alex McBurney	Lend Lease Design
Cameron McKay	Lend Lease Design
Ron Meyer	Lend Lease PM&C

Discussions at this meeting included:

- Overview of the Projects and timelines and sequence of development staging
- Indicative Electrical Demand including basis of calculation
- Identification of existing infrastructure and easements requiring clarification by Ausgrid
- Methodology for progressing applications for connection
- Ausgrid processes and indicative timeframes for the preparation of Feasibility Study, Design Information Pack, Level 3 ASP Design and Approval, Level 1 / 2 ASP Pricing
- Potential to utilise kiosk style substations on the urban network
- Other aspects of HV supply to the proposed development in the context of the overall SICEEP scheme

8.5.3 EXISTING ELECTRICAL INFRASTRUCTURE

Existing Ausgrid HV infrastructure is located in Harbour Street to the east of The Haymarket site and forms part of the CBD Triplex Network. This infrastructure currently supplies the existing Sydney Entertainment Centre complex. To the west of The Haymarket site, the existing infrastructure forms part of the Urban HV Network. This infrastructure is not currently supplying services to the Haymarket site and some of this is routed directly adjacent the proposed development site for the Student Accommodation. Ausgrid's 132kV Cable Tunnel and a separate pit and conduit system (on Darling Drive) lie beneath the planned site for the proposed Student Accommodation.

8.5.4 MAXIMUM FORECAST DEMANDS

Preliminary maximum forecast demand calculations have been prepared for the SICEEP developments and submitted as part of the 'Application for Connection' process to Ausgrid and have informed Ausgrid's Feasibility Study. The preliminary maximum demands for The Haymarket is 9.5MVA

8.5.5 PROPOSED SUPPLY ARRANGEMENTS

Arising from the consultation of 15th January, 2012, and the subsequent Applications for Connection, Ausgrid have provided an indicative Feasibility Study for the supply of the site. Based on the Ausgrid Feasibility Study, the proposed supply arrangements are as follows:

The Haymarket: Eastern two development lots to be supplied from existing CBD Triplex HV Network via Harbour Street.

The Haymarket: Western and Northern development lots (including student accommodation) to be supplied from two new urban HV feeders from Camperdown Zone Substation.

The final configuration and demand splitting between The Haymarket and the balance of the SICEEP redevelopment is still to be determined and will be the subject of commercial negotiations between Ausgrid and Lend Lease.

8.5.6 PROPOSED WORKS

Refer to Appendix D for the indicative new proposed electrical reticulation, proposed relocations and demolition.

On receipt of the Design Information Packs from Ausgrid, Level 3 ASP(s) will be engaged by Lend Lease to undertake the detailed design and documentation of the required infrastructure for approval by Ausgrid.

On receipt of Ausgrid's approval of the Level 3 ASP designs, Level 1 / 2 ASPs may be invited to tender for the works associated with the installation/construction of the required HV assets and relevant diversions.

Based on consultation to date with Ausgrid, the following works are anticipated (as per the Ausgrid Feasibility Study):

- Demolition / removal of existing electrical assets (redundant/obsolete) located on the The Haymarket site. Existing HV in-ground infrastructure that is redundant will typically be left in ground.
- Provision of new pits and conduits to Harbour Street to supply HV services (Triplex) to the Eastern elements of The Haymarket site (4MVA).
- Relocation/Diversion of existing HV infrastructure (pits, conduits and vaults where required) currently within the proposed Student Accommodation site of The Haymarket development including diversion of the 132kV transmission cable located through the site. It is assumed that 'building over' the existing 132kV City West transmission cable tunnel located approximately 30m below ground level will be permissible. Lend Lease will prepare suitable engineering modelling as appropriate and required by Ausgrid to demonstrate that there will be no detrimental impacts to the existing tunnel infrastructure.
- Provision of new 11kV pit and conduit system from Camperdown Zone Substation to service Western elements of The Haymarket site (5.5MVA).
- Provision of 'on site' pit and conduit systems for the lead in HV electrical services to substations located within and/or adjacent the buildings forming The Haymarket development.

- Diversion of existing HV routes internal to the site to coordinate with the proposed development scheme (where existing services are required to remain in service)
- The retention of existing supply arrangements to existing customers such as the Rockford Hotel, SHFA maintenance and offices, Pump House and the like (if and where these services are routed via The Haymarket site).
- Provision of new temporary supplies for the purpose of construction works.
- Other electrical infrastructure works may be identified upon completion of site based investigative works upon taking possession of the site and further consultation with relevant authorities.

In addition, it is noted that RailCorp (identified as 'SRA' – State Rail Authority) retain existing active HV electrical infrastructure within The Haymarket in the vicinity of the existing entertainment centre car park. Arrangements will need to be made to divert this infrastructure in accordance with RailCorp requirements to accommodate the proposed development scheme. Lend Lease lodged a Developments and Rail Crossings Application form for External Third Parties with RailCorp on January 7, 2013 however at the time of writing of this report, the application was yet to receive any response from RailCorp.

8.5.7 PROPOSED RETENTION OF SYDNEY ENTERTAINMENT CENTRE UNTIL DEC 2016

Consideration has been given to the retention of the Sydney Entertainment Centre until Dec 2016 and there is nothing identified in any of the planning to date which suggests that this could not be achieved based on the proposed development staging.

8.5.8 CONCLUSION

On the basis of the above and receipt of Ausgrid's Feasibility Study, it is our opinion that there is nothing which prevents The Haymarket development site from being serviced with HV electrical services from the Ausgrid network.

8.6 RAIL CORRIDOR UTILITIES

The Haymarket development scheme proposes the creation of student accommodation lots in part, within land currently under the tenure of RailCorp commensurate with the existing light rail corridor west of Darling Drive.

It is proposed that existing rail infrastructure services that may exist within the rail corridor, but under the sites for the proposed student accommodation would be relocated to facilitate the proposed development. Such infrastructure could include electrical, signalling communications, drainage and the like.

To endeavour to consult with RailCorp to understand what infrastructure services and other utilities may exist within the rail corridor portion of the proposed student accommodation lots, Lend Lease lodged a **Developments and Rail Crossings Application form for External Third Parties** with RailCorp on January 7, 2013 however at the time of writing of this report, the application was yet to receive any response from RailCorp.

Upon a response from RailCorp, Lend Lease will make arrangements for suitable relocations of the required rail corridor related infrastructure to facilitate its proposed development scheme.

8.7 STORMWATER DRAINAGE

8.7.1 EXISTING STORMWATER DRAINAGE UTILITIES

The existing stormwater drainage infrastructure network within the site falls under the tenure of 3 different authorities being City of Sydney (CoS), the Sydney Harbour Foreshore Authority (SHFA) and Sydney Water Corporation (SWC).

Stormwater drainage within the precinct includes a combination of below ground local network and trunk drainage and above ground overland flow paths. Surface inlet pits within road ways, pedestrian thoroughfares and landscaped areas capture local surface flows and drain them into minor pipe networks that drain to major trunk stormwater culverts within the precinct. These culverts then discharge into Cockle Bay towards the northern end of the SICEEP development precinct. Overland flows that bypass the inlet structures to the underground drainage network flow overland through and around the site to discharge into Cockle Bay at approximately the same location at the trunk stormwater culverts.

8.7.2 SWC CONSULTATION

Consultation with SWC has commenced regarding the augmentation and connection of new stormwater drainage from the SICEEP development to the existing stormwater drainage utilities operated by SWC. Consultation has also canvassed the impact of the proposed development scheme upon SWC's assets more generally.

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 attended by

Matthew Lewis	SWC
Bob Wickham	SWC
Ray Parsell	SWC
Greg Ives	Hyder
Chris McClelland	Hyder
Chris Rust	Lend Lease
Ron Meyer	Lend Lease

A SWC e-Developer servicing feasibility application has been submitted to SWC and they are preparing a formal response.

Flooding

The existing SICEEP development site is currently inundated by flood waters in a range of storm events. The development proposal seeks to manage this flood impact, together with general stormwater management, through a combination of the following:

- Utilisation and retention of existing stormwater assets and networks where the proposed development scheme permits.
- Installation of new in-ground pit and pipe network to capture and convey stormwater runoff to existing trunk drainage utilities within the precinct,
- Augmentation/amplification of existing drainage utilities to manage the impact of the proposed development upon existing flooding conditions. This may be achieved through a combination of constructing new inlet structures into existing drainage utilities or the augmentation of existing drainage utilities, and
- Regrading of site surface levels to more efficiently manage and facilitate overland flood flows.

The aim of the above works proposed to be undertaken will be to improve existing drainage and flooding conditions where practicable and to avoid worsening existing drainage and flooding conditions.

8.7.3 WATER SENSITIVE URBAN DESIGN

At present there is minimal infrastructure in place within the precinct that is intended to manage the quality of stormwater runoff from the precinct. The majority of existing runoff within the precinct discharges directly into Cockle Bay in conjunction with untreated flows from upstream external catchments.

Where practicable, the SICEEP development proposes to implement principles of Water Sensitive Urban Design (WSUD) to treat stormwater runoff from the precinct through a combination of measures that may include rain water tanks, grass bio-swales, stormwater inlet-pit filters/inserts, gross pollutants traps and the like. The intention of these water sensitive urban design measures will be to reduce the suspended solids and nutrient loads that currently discharge into Cockle Bay via untreated stormwater runoff. The extent of WSUD initiatives will be subject to further consultation with relevant authorities.

9 CONCLUSION

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

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

The consultation has confirmed that The Haymarket 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

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 ESH 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) 43998007
Email to: sa.paranorth@ausgrid.com.au
Fax Local Call (Not to be used for Muswellbrook) 1300 662 089
Fax Muswellbrook (02) 65428 037
Email to: sa.calamuswellbrook@ausgrid.com.au

RETAILER										NMI									

INSTALLATION ADDRESS

Property Name
The Haymarket PDA

Floor Unit Street Lot/RM/E

Street
Darling Drive

Nearest Cross Street
Hay Street

Suburb Postcode
Darling Harbour, NSW 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)
Lend Lease

Last Name

Floor Unit Street No PO Box Street
30 Hickson Road

Street (cont) Suburb Postcode
Millers Point, NSW 2000

Phone

Mobile

ELECTRICAL CONTRACTOR/AUTHORISED SERVICE PROVIDER

Electrical Contractor Name Licence Number
T.B.C.

Authorised Service Provider Name Licence Number

Email Address (Preferred Option of Returning Job Number)

E/C or ASP Postal Address

Contact Phone Number

Contact Phone Number

Fax Number

SERVICE, DEMAND AND LOAD DETAILS (please tick)

Connection Type	Service Type	Service Size	Number of Installations	Premise Type	Supplementary A/C
New ☒ Alteration ☐ Upgrade ☐ Separator ☐ Re-energisation ☐ GFI ☐ Summation ☐ Generation System ☐	Overhead ☐ Underground ☒ UGDP ☐ On Pole Transformer ☐ Upgrade to TCU ☒	100A ☐ 200A ☐ 400A ☐ Other: 13770A/ph	Single Installation ☐ Multiple Installation ☒ Number of House Services ☐ Number of Units ☐	Commercial ☐ Towns ☐ State ☐ Commercial ☒ Builders Service Firm ☐ Special Small Service (And date type of SRB below) ☐ Other:	If this installation is one of the following types you must also complete and attach the Supplementary Application for Connection. New electrical work over 200kW ☒ Services greater than 100 Amps ☒ CT metered installations (CT Metering Form MUST be submitted) ☒ New HV installations and those requiring more than 100 Amps of additional load ☐ Multiphase and development (more than 500 Watts) ☐ Installations connected to and/or supplying areas ☐ Work where the proposed equipment may cause excessive fluctuation of voltage (eg welders, x-ray machines) ☐ Equipment > 75A per phase (Power Quality Form MUST be submitted) ☒ Add Connected Generation ☐

Calculated Maximum Demand in Each Phase (Amps)

A B C

Proposed 13770 13770 13770 Service Length

Existing NIL NIL NIL Existing Service Rating

Details of Job: Mixed use development of five (5) commercial, retail, residential and carpark facilities and two (2) student accommodation buildings as a Private Development Application with Infrastructure NSW.

Print Name Cameron McKay Signature Date 21/01/2013

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

'The Haymarket' PDA

Floor Unit Street No. RMB/Lot

Street Suburb
Darling Drive Darling Harbour

Cross Street Existing Meter ID Pole Pillar ID
Hay Street

PART B INSTALLATION LOAD DETAILS

Residential Portion

No living units: 1782
No of bedrooms per unit: Various
Gas hot water (yes/no): Yes
Lift(s) and start current: TBC
Car park ventilation current rating: TBC
Air conditioning (yes/no): Yes
Air conditioning rating: TBC

Commercial Portion

Total floor area with air/con: 22696m²
Total office floor area without air/con: 0m²
Car park floor area: 16509m²
Warehouse floor area: 0m²
Commercial areas for food handling (yes/no): Yes – in retail areas

Industrial Portion

Number of factory units: N/A
Total floor area of all factory units: N/A m²

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	
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

PART C DIAGRAM

Refer to attached site plan.

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:			
Inverter Details			
Size of Inverter: (Nominal Rating)	kW		Is Inverter an Approved Type? (CEC)
No. of Phases:	1	3	YES NO If No, Attach Certificate of Suitability
No. of Inverters:			CEC Accredited Installer Number
Total kW's to be Connected (Single Phase)	kW's		Solar Panel Details
Note: The Metering Configuration must be Net Metering			Other Generator details (Wind etc.)
The installation must be: -			
a) Designed and installed by a CEC accredited person			

High Voltage Connections

b) Comply with all CEC guidelines

Part F - Additional Comments



21 January 2013

Mr Ashwin Prasad
Manager, Contestability Sydney South & East
Distribution Operations & Reliability
Building 1A, 33-45 Judd Street
Oatley NSW 2223
Australia
aprasad@ausgrid.com.au

Dear Ashwin,

Re: Application for Connection – Sydney International Convention Exhibition Entertainment Precinct, 'The Haymarket' and 'ICC Hotels'

Further to our meeting of 15 January 2013, we now write to formally make applications for connections associated with the Sydney International Convention Exhibition and Entertainment Precinct (SICEEP) developments. Below we outline the developments including associated ownerships and anticipated contractual arrangements for each of the developments.

Introduction

On 11 December 2012 "Destination Sydney", now known as 'Darling Harbour Live', (a consortium comprising Lend Lease, Capella Capital, AEG Ogden and Spotless) was announced as the preferred proponent for the delivery of the Public-Private-Partnership (PPP) redevelopment of the SICEEP by the government of New South Wales. In addition, Lend Lease was announced as the preferred proponent for the delivery of the two Project Development Application (PDA) elements known as 'The Haymarket' and 'ICC Hotels'. It is a requirement of the developments that the DA applications be made commencing 28 February 2013 with the last of the Detailed DA Applications being made in April 2013. A plan of the 'proposed masterplan' is attached for your reference including an indicative area schedule.

Overview

The various parties involved including their roles are identified below:

The Government of New South Wales (The State) – Ultimately 'The Client' of the PPP component. As the project is a 'State Significant Project', the Government of New South Wales, via the Director General, is the 'approving authority' in terms of the Part 4 application.

Infrastructure New South Wales (INSW) – An independent statutory agency assisting the NSW Government in identifying and prioritizing the delivery of critical public infrastructure for NSW. INSW is managing the delivery of the SICEEP redevelopment.

Sydney Harbour Foreshore Authority (SHFA) – The local authority of the land on which the development is taking place.

Darling Harbour Live – A Consortium comprising Lend Lease, Capella Capital, AEG Ogden and Spotless and currently the preferred proponent of the PPP element of development.

Lend Lease Development: - The preferred proponent of the two (2) PDA elements of the development.

Lend Lease Project Management & Construction – A subsidiary of Lend Lease Corporation responsible for the project management, design and construction of selected Lend Lease projects.

Lend Lease, Design – An internal department within Lend Lease Project Management and Construction responsible for the engineering services and architectural design elements (including design risk identification and authority liaison). Lend Lease Design is currently engaged to provide electrical engineering consulting services to the PDA elements of the project.

AECOM Australia – A subsidiary of AECOM (a New York Stock Exchange listed company) currently engaged to provide electrical engineering consulting services to the PPP element of the development.

Hyder Consulting – A London Stock Exchange listed company engaged to provide civil engineering services to both the PPP and PDA elements of the development.

SICEEP

The SICEEP development is located on the site of the existing Sydney Convention and Exhibition Centre site (including the public realm area of Tumbalong Park). The development consists of the establishment of a new, larger Convention Centre (on the site of the current Convention Centre to the North of the development site), a new, larger Exhibition Centre (on the northern end of the current Exhibition Centre Site) and a new 8,000 seat 'Theatre' (Entertainment Centre) (on the southern end of the current Exhibition Centre Site). The planned demolition of the existing facilities is such that the existing carpark / basement structure will remain with new construction occurring on the existing structure provided.

This site will be owned and returned to the State of New South Wales on completion of the development as per the PPP arrangements with 'Darling Harbour Live' operating the venue for 25 years

Existing Demand

This site is currently served by five surface chamber substations (4 on the Convention and Exhibition Centre site and one triplex substation on the Entertainment Centre site) currently being serviced by HV feeders on the Ausgrid network. The existing design capacities of these substations total in the order of 17.4MVA. Our enquiries indicate that the operating maximum demand is in the order of 7MVA for the Exhibition/Convention Centre substations and 2.4MVA for the Entertainment Centre triplex substation, totaling 9.4MVA for the site.

New Demand

The new development proposes the establishment of 5 new surface chamber substations (four of which are to be located along Darling Drive) with an anticipated maximum demand of 13.4MVA. Taking into account the demand on the existing site, the development will result in an increase in load of 6.4MVA.

'The Haymarket'

This site is bounded by Pier Street (overpass, to the North), Harbour Street (to the East), Hay Street / Light Rail Line (to the South) and the realigned Darling Drive (to the West), is a mixed use development comprising five towers incorporating accommodation, commercial, retail and associated carparking facilities (this site currently housed the Sydney Entertainment Centre and associated carparking facilities). In addition, two student accommodation buildings to the west (between the realigned Darling Drive and the Light Rail Corridor in space currently occupied by the soon to be removed Monorail) are to be developed. The site is currently served by a Triplex substation (in the Entertainment Centre) which will be decommissioned when the existing Entertainment Centre is demolished

The anticipated maximum demand on completion of these elements in the order of 9.5MVA, including approximately 1.7MVA of load associated with the two student accommodation buildings.

This site will be developed and owned by Lend Lease, and may be subject to future subdivision (post DA) and on-sale.

'ICC Hotels'

This site is located to the west of the existing Harbourside development, to the north of the existing Convention Centre and to the east of the light rail corridor. This site is currently planned to host two hotels delivering 915 keys. The land is currently undeveloped (landscape and roadway) and therefore there is no existing electrical load.

The anticipated maximum demand is in the order of 4.8MVA.

This site will be developed and owned by Lend Lease and may be subject to future subdivision (post DA) and on-sale.

Load Summary

In summary, the additional loads for the site are as follows:

Area	Estimated Load (MVA)
SICEEP PPP	13.4MVA
Haymarket PDA	9.5MVA
ICC Hotels PDA	4.8MVA
Subtotal	27.7MVA
Existing Site Load	(9.4MVA)
TOTAL ADDITIONAL LOAD	18.3MVA

Temporary Supplies / Construction Power

Although it is very early in the construction planning stages, it is currently envisaged to obtain construction power / temporary supplies as follows:

SICEEP: By utilising the existing substations currently serving the existing Exhibition Centre until the new, permanent substations are constructed and energised at which time Temporary Supplies / Construction power will be sourced from the new substations until completion of the project.

'The Haymarket': Due to the anticipated staging of this project and the consideration being given to maintaining operation of the existing Sydney Entertainment Centre until the establishment of the new Entertainment Centre/Theatre within SICEEP, we anticipate obtaining Temporary Supplies / Construction Power from the existing substation serving the existing Sydney Entertainment Centre until new substations are established in the initial stages of 'The Haymarket' development (anticipated to be to the west of the existing Sydney Entertainment Centre).

'ICC Hotels': The ICC Hotel site is a particularly constrained site to the north of the existing Convention Centre and west of the 'Harbourside' development. To obtain construction power / temporary supplies to this site we anticipate either:

- a) Sourcing supply from the substation(s) located within the 'Harbourside' development (subject to Ausgrid confirmation of available spare capacity), or
- b) Establishment of site temporary kiosk substation to service the site.

Formal application for site temporary supplies will be made in due course however your initial feedback and advice regarding supply availability on the basis of the above assumptions/proposals would be appreciated.

Applications for Connection

Due to the contractual and anticipated ownership arrangements we intend to make multiple applications for connection initially as follows (and attached):

Application 1 of 3: 'SICEEP PPP'

Application 2 of 3: 'The Haymarket' PDA

Application 3 of 3: 'ICC Hotels' PDA

We trust the above is of assistance and look forward to your ongoing assistance and cooperation in delivering these significant developments to the State of New South Wales.

Should you wish to discuss any specific detail further, please do not hesitate to contact Cameron McKay on 0427 370 324 or myself on 0411 028 055.

Yours Sincerely,



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Alex McBurney
National Engineering Manager, Design

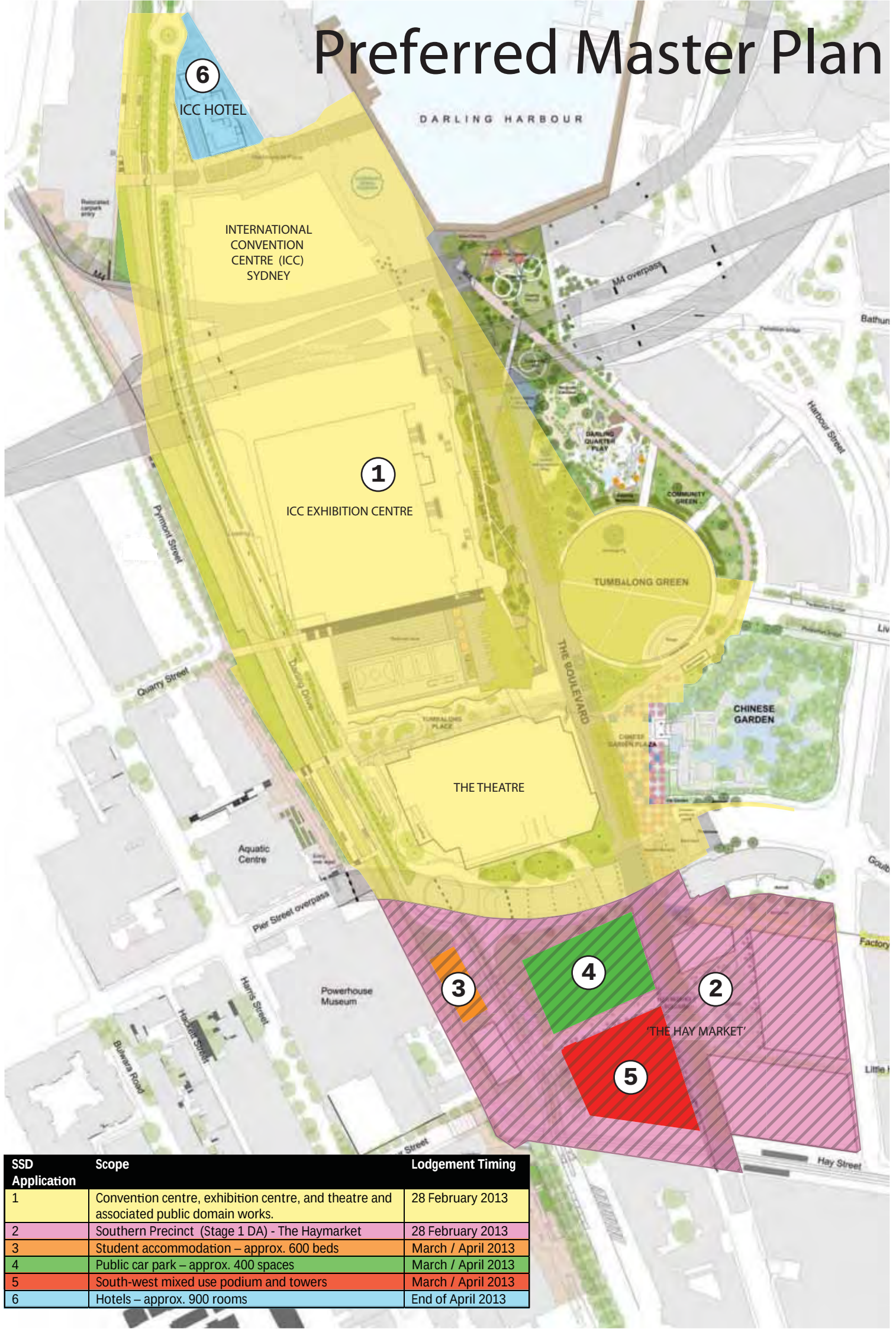
Cc: Ron Meyer, Lend Lease PM&C
Warwick Bowyer, Lend Lease, Development

SCHEDULE OF LAND PARCELS

1	LOT 1 DP827982	CF1027982	SHFA
1a	LOT 1 DP827982 (STRATUM)	CF1027982	SHFA
1b	LOT 2 DP827982 (STRATUM)	CF2027982	SHFA
2	LOT 2 DP812807	CF20612807	SHFA
3	LOT 1 DP812344	CF10612344	SHFA
4	LOT 2 DP808863	CF20808863	SHFA
5	LOT 1 DP808863	CF10808863	COUNCIL OF THE CITY OF SYDNEY
6	HARBOUR ST	PUBLIC ROAD	COUNCIL OF THE CITY OF SYDNEY
7	LOT 205 DP771841	CF210771841	SHFA
8	LOT 1 DP 612807	CF10612807	SHFA
9	LOT 201 DP1165904	CF2011165904	SHFA
10	LOT 200 DP1165904	CF2001165904	SHFA
11	LOT 803 DP812423	CF5030812423	SHFA
12	LOT 800 DP1184281	CF8001184281	SHFA
13	LOT 800 DP1184281 (STRATUM)	CF8001184281	RAIL CORPORATION NSW
13a	LOT 33 DP870306 (STRATUM)	CF33070306	SHFA
13b	LOT 800 DP1164281 (STRATUM)	CF8001164281	SHFA
13c	LOT 801 DP1132344 (STRATUM)	CF8011132344	SHFA
14	LOT 2 DP1048307	CF21048307	SHFA
14a	LOT 2 DP1048307 (STRATUM)	CF21048307	RAIL CORPORATION NSW
14b	LOT 34 DP870306 (STRATUM)	CF34070306	SHFA
15	LOT 1010 DP1147384	CF10101147384	SHFA
15a	LOT 1010 DP1147384 (STRATUM)	CF10101147384	RAIL CORPORATION NSW
15b	LOT 35 DP870306 (STRATUM)	CF35070306	SHFA
15c	LOT 1010 DP1147384 (STRATUM)	CF10101147384	RAIL CORPORATION NSW
15d	LOT 311 DP838419 (STRATUM)	CF311038419	SHFA
15e	LOT 35 DP870306 (STRATUM)	CF35070306	RAIL CORPORATION NSW
15f	LOT 312 DP838419 (STRATUM)	CF312038419	SHFA
15g	LOT 1010 DP1147384 (STRATUM)	CF10101147384	SHFA
15h	LOT 35 DP870306 (STRATUM)	CF35070306	RAIL CORPORATION NSW
15i	LOT 311 DP838419 (STRATUM)	CF311038419	SHFA
15j	LOT 1010 DP1147384 (STRATUM)	CF10101147384	RAIL CORPORATION NSW
15k	LOT 35 DP870306 (STRATUM)	CF35070306	SHFA
15l	LOT 311 DP838419 (STRATUM)	CF311038419	RAIL CORPORATION NSW



Preferred Master Plan



SSD Application	Scope	Lodgement Timing
1	Convention centre, exhibition centre, and theatre and associated public domain works.	28 February 2013
2	Southern Precinct (Stage 1 DA) - The Haymarket	28 February 2013
3	Student accommodation – approx. 600 beds	March / April 2013
4	Public car park – approx. 400 spaces	March / April 2013
5	South-west mixed use podium and towers	March / April 2013
6	Hotels – approx. 900 rooms	End of April 2013

Sector	Building	Scope	Area / Size	GFA	Apts	Commssioning
	Number			m2		Date
	FIRE FIGHTING					
North PDA	CONV	Existing Convention Centre	DEMOLITION (DECOMMISSIONING)			Dec-2013
	1	Hotel - Holiday Inn				
	1.1	Hotel Rooms	315 keys, 3-4 Star	20,336	315	Jun-2016
	2	Hotel - Crowne Plaza				
	2.1	Hotel Rooms	600 keys, 5 star	38,734	600	Jun-2016
PPP	EXHIB	Existing Exhibition Centre	DEMOLITION (DECOMMISSIONING)			Dec-2013
	4	Convention Bayside				
	4.1	Convention	X,XXX delegates			Dec-2014
	5	Convention Parkside				
	5.1	Convention	X,XXX delegates			Dec-2014
	6	Exhibition				
	6.1	Exhibition	XX,000m ²			Jan-2015
	6.2	Car parking	738 parking spots			Jan-2015
	8	Public Realm (boulevard, Tumbalong etc.)				
	8.1	Public Domain	X,XXXm ²			Jul-2015
	9	Theatre + parking				
South PDA	9.1	Theatre	8,000 patrons			Sep-2014
	9.2	Car parking	88 parking spots			Dec-2015
	SEC CP	Exist Ent' Centre car park	DEMOLITION (DECOMMISSIONING)			Dec-2013
	SEC	Existing Entertainment Centre	DEMOLITION (DECOMMISSIONING)			Dec-2015
	10a	Student Accommodation North				
	10a.1	Residential apartments	West 1; 170 Apartments, 431 EP, (9,605m ²)	9,605	170	Sep-2015
	10b	Student Accommodation South				
	10b.1	Residential apartments	West 2; 252 Apartments, 600 EP, (13,693m ²)	13,693	252	Sep-2016
	11	Commercial Offices	<i>North West</i>			
	11.1	Commercial offices	North West 2; 15,001m ² GFA	15,001		Jun-2016
	11.2	Retail (sleeved)				
	11.3	Car parking	46 parking spots			
	12	Residential Tower	<i>South West</i>			
	12.1	Residential apartments	South West 1; 306 Apartments	27,642	306	Jun-2016
	12.2	Retail (sleeved)	1,739m ² GFA	1739		Jun-2016
	12.3	Car parking	223 parking spots			
	12.4	Residential apartments	South West 2, 140 Apartments	12,672	140	Jan-2017
	12.5	Car parking	102 parking spots			
	13	Residential Tower	<i>South East</i>			
	13.1	Residential apartments	South East 1; 234 Apartments	21133	234	Jan-2020
	13.2	Retail (sleeved)	1,921m ² GFA	1921		Jan-2020
	13.3	Car parking	171 parking spots			
	13.4	Residential apartments	South East 2; 157 Apartments	10685	157	Jan-2020
	13.5	Car parking	115 parking spots			
	14	Residential Tower	<i>North East</i>			
	14.1	Residential apartments	North East 1; 58 Apartments	4540	58	Jun-2017
	14.2	Car parking	42 parking spots			
	14.3	Residential apartments	North East 2; 157 Apartments	10685	157	Sep-2018
	14.4	Car parking	115 parking spots			
	14.5	Residential apartments	North East 3; 264 Apartments	24102	264	Jan-2018
	14.6	Retail (sleeved)	3,613m ² GFA	3631		Jan-2018
	14.7	Car parking	193 parking spots			
	16	Retail & Creative Industries				
	14.1	Retail	398m ² GFA	398		May-2016
	14.2	Creative Industries				
	14.3	Car parking	400 parking spots			
	14.4	Residential apartments	North; 44 Apartments	2976	44	May-2019
	14.5	Car parking	32 parking spots			
TOTAL UTILITY LOAD				Commercial	15,001	-
				Residential	114,435	1,360
				Student Accomodation	23,298	422
				Retail	7,689	-
				Hotel	59,070	915

ACCUMULATIVE

Dated 8/01/2013

Sector	Building	Scope	Area / Size	GFA	Apts	Commissioning
	Number			m2		Date
PPP	9.1	Theatre	8,000 patrons			Sep-14
PPP	4.1	Convention	X,XXX delegates			Dec-14
PPP	5.1	Convention	X,XXX delegates			Dec-14
PPP	6.1	Exhibition	XX,000m2			Jan-15
South PDA	10a	Residential apartments	West 1; 170 Apartments, 431 EP, (9,605m ²)	9,605	170	Jun-15
North PDA	1	Hotel Rooms - Holiday Inn	315 keys, 3-4 Star	20,336		Oct-15
South PDA	16	Retail	398m ² GFA	398		May-16
North PDA	2	Hotel Rooms - Crowne Plaza	600 keys, 5 star	38,734		May-16
South PDA	10b	Residential apartments	West 2; 252 Apartments, 600 EP, (13,693m ²)	13,693	252	Jun-16
South PDA	11	Commercial offices	North West 2; 15,001m ² GFA	15,001		Jun-16
South PDA	12	Residential apartments	South West 1; 306 Apartments	27,642	306	Jun-16
South PDA	12.1	Retail (sleeved)	1,739m ² GFA	1739		Jun-16
South PDA	12.3	Residential apartments	South West 2; 140 Apartments	12,672	140	Jan-17
South PDA	14	Residential apartments	North East 1; 58 Apartments	4540	58	Jun-17
South PDA	14.4	Residential apartments	North East 3; 264 Apartments	24102	264	Jan-18
South PDA	14.5	Retail (sleeved)	3,613m ² GFA	3631		Jan-18
South PDA	14.2	Residential apartments	North East 2; 157 Apartments	10685	157	Sep-18
South PDA	14.3	Residential apartments	North; 44 Apartments	2976	44	May-19
South PDA	13	Residential apartments	South East 1; 234 Apartments	21133	234	Jan-20
South PDA	13.1	Retail (sleeved)	1,921m ² GFA	1921		Jan-20
South PDA	13.3	Residential apartments	South East 2; 157 Apartments	10685	157	Jan-20

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
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International advisory and design consultancy

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Reference: NA50613027 SICEEP
Contact: Sombath Lam

14 January 2012

Sydney Water
P.O. 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.



A1

E. ISTN. L. TS (Proposed Development of)		DEVELOPMENT TYPE		N. MBE. F.P. P. SED. L. TS. INTS.		J. D. ECT.		WATER SERVICE CO. REFERENCE	
UL T 8000 D.P. 1164281		FEASIBILITY APPLICATION		TBC		MAP 3 A6 (40p Edgway)		CA DN (NSW) P.V. LID	
				TOTAL LOTS		SCALE 1:1000		LEE ELB, THE F. M. 203 PACIFIC H. D. N.	
				TOTAL RBS		SHEET 1 F 1		Ph. (02) 9498 7700 Fax. (02) 9498 3402	
								Developer Case No. 131520	



PPP NORTH 4
PPP NORTH 5
PPP NORTH 6

PPP NORTH 9
PPP NORTH 7

E. ISTN. L. TS (Proposed Development of)		DEVELOPMENT TYPE		N. MBE. F.P. P. SED. L. TS. INTS		J. D. ECT		WATER SERVICE CO. - REVIEW	
UL T 8000 D.P. 1164281		FEASIBILITY APPLICATION		TBC		MAP 2, A6 (40% Ectop)		CA DN (NSW) P.V. LID	
01		TOTAL LOTS		0		SCALE		LE. EL. 9. THE F. M. 203 PACIFIC H. D. N.	
02		TOTAL RBS		0		SHEET		Ph. (02) 9498 7700 Fax. (02) 9498 3802	
03		CIT. F.S. DNE. C. NCIL		1		1		Developer Case No.	
04								131522	



E. ISTN. L. TS (Proposed Development of)		DEVELOPMENT TYPE		N. MBE. F.P. P. SEDL. TS. INTS		MAP 2. A6 (40% Edition)		Water Services Co. reference:	
UL T 800 D.P. 1164281		FEASIBILITY APPLICATION		TBC		SCALE 1:1000		CA DN (NSW) Pty Ltd	
		M. INC/PAUT		TOTAL LOTS		SHEET 1 OF 1		LE ELB, THE F. M. 203 PACIFIC H. D. N.	
		CIT. F.S. DNE. C. NCIL		TOTAL PHS				Ph. (02) 9498 7700 Fax. (02) 9498 3902	
				0					

[illegible]

APPENDIX B

FUTURE UTILITY LOAD DEMANDS



SICEEP Development Staging - Hydraulic Infrastructure

Dated 9/01/2013

Sector	Building	Scope	Area / Size	PRELIM GFA (+/- 100m2)	PRELIM 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
	FIRE FIGHTING								105.0 L/s					
North PDA	CONV	Existing Convention Centre	DEMOLITION (DECOMMISSIONING)			Dec-2013								
	1	Hotel - Holiday Inn												
	1.1	Hotel Rooms	315 keys, 3-4 Star	20,300	315	Jun-2016	68 kl/day	30 kl/day	3.6 L/s	61 kl/day	27 kl/day	3 kls	7,546 MJ/hour	2,639 GJ/year
	2	Hotel - Crowne Plaza												
	2.1	Hotel Rooms	600 keys, 5 star	38,700	600	Jun-2016	130 kl/day	58 kl/day	6.8 L/s	117 kl/day	52 kl/day	6 kls	14,385 MJ/hour	5,031 GJ/year
	EXHIB	Existing Exhibition Centre	DEMOLITION (DECOMMISSIONING)			Dec-2013								
PPP	4	Convention Centre												
	4.1	Convention		73,000		Dec-2014								
	6	Exhibition												
	6.1	Exhibition				Jan-2015								
	6.2	Car parking	738 parking spots	55,500		Jan-2015								
	8	Public Realm (boulevard, Tumbalong etc.)												
	8.1	Public Domain		76,500		Jul-2015								
	9	Theatre + parking												
	9.1	Theatre	8,000 patrons	57,500		Sep-2014								
	9.2	Car parking	88 parking spots			Dec-2015								
							1,005 kl/day	704 kl/day	23.3 L/s	804 kl/day	564 kl/day	19 kls	44,500 MJ/hour	44,500 GJ/year

CUMULATIVE HYDRAULIC DEMAND

Dated 9/01/2013

Sector	Building	Scope	Area / Size	GFA	Apts	Commissioning	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 ³)	9,600	170	Jun-15	1090	742	69.6	881	598	56.1	49,069	47,524
South 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 ³)	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.

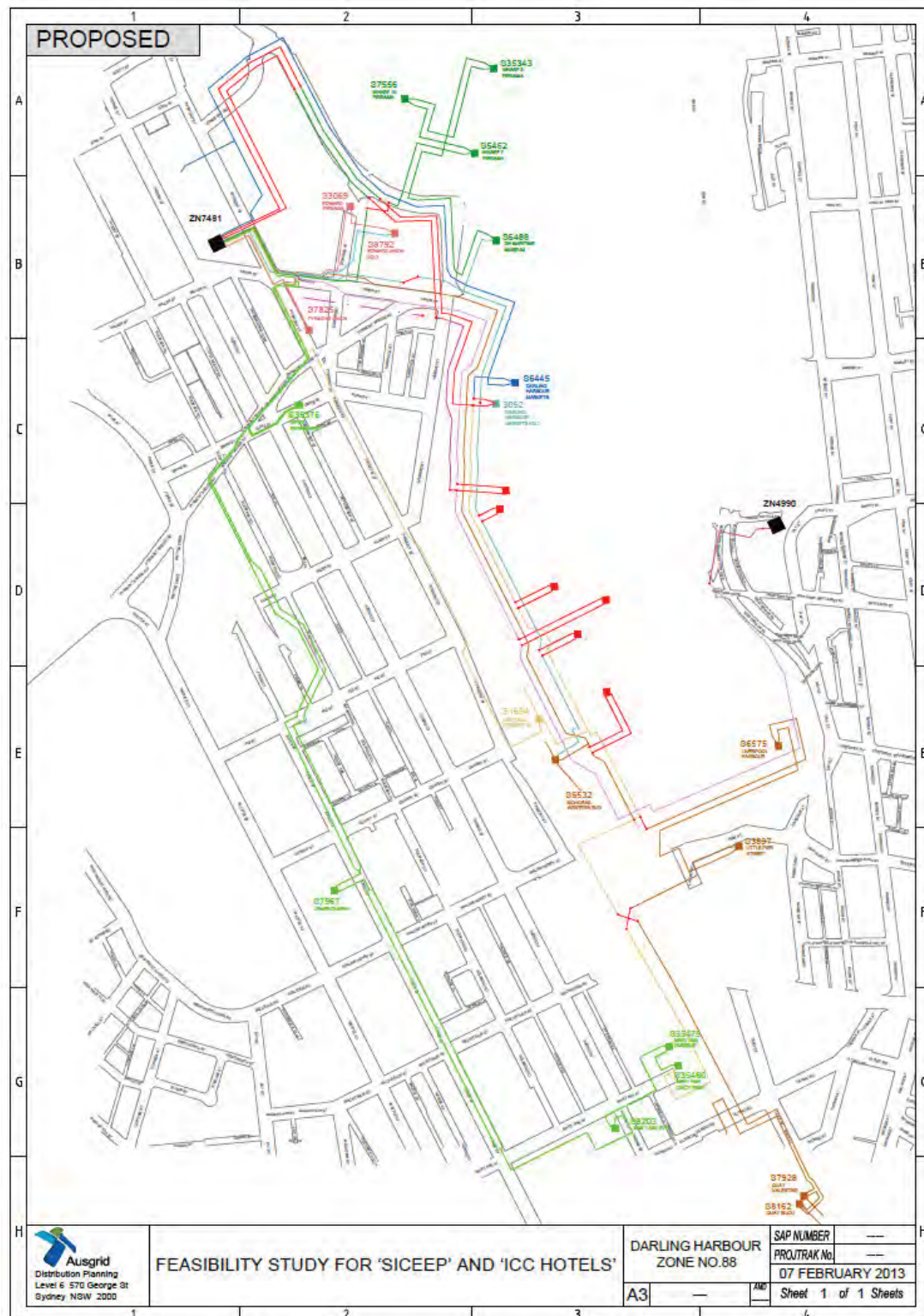
In the circumstance that the required capacity is not available, an alternative would be to re-route the 11kV feeders in question around the congested area into another Darling Harbour Zone Substation egress. This option is technically challenging given the geography and numerous other services in the 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.

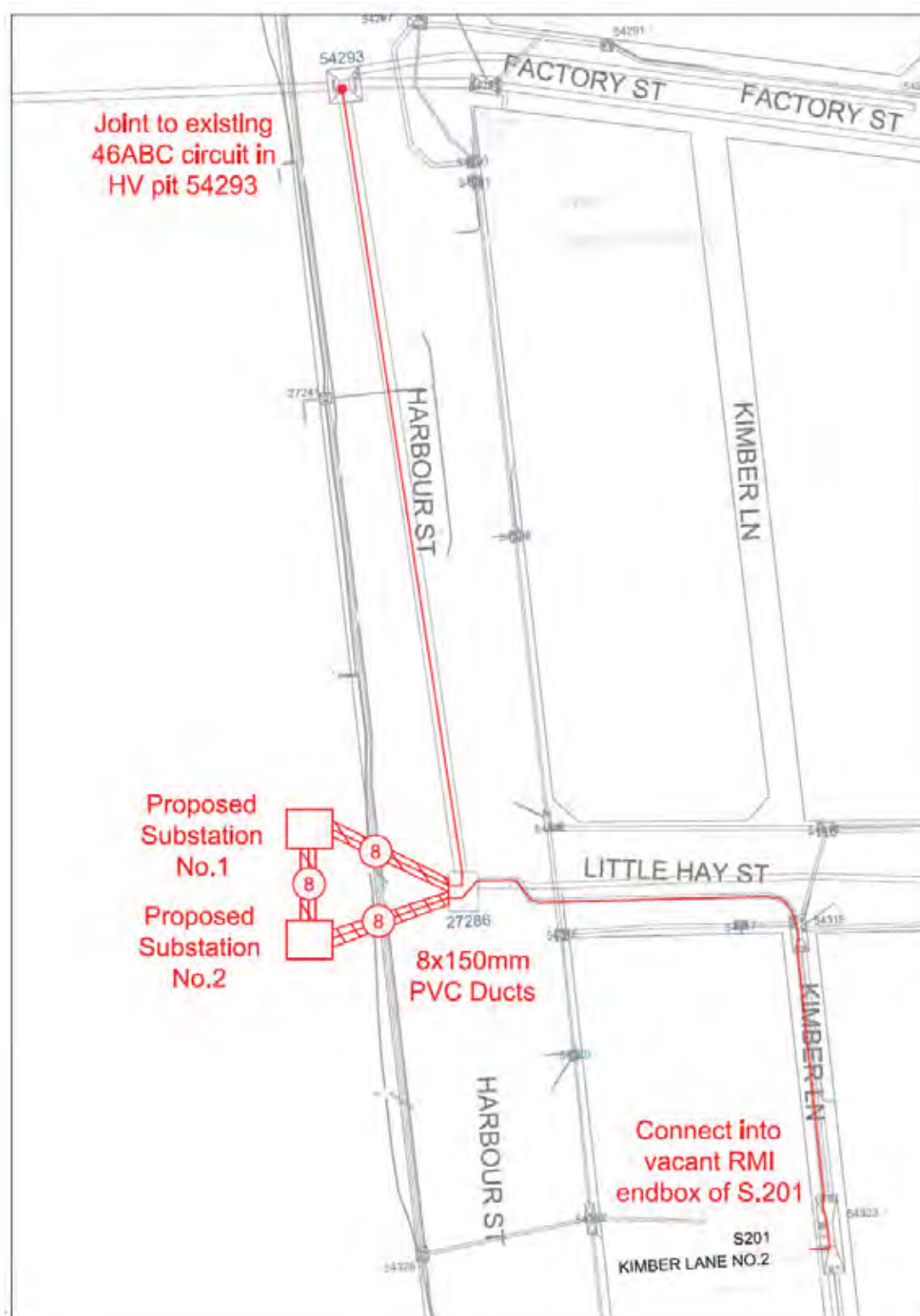
The northern portion of the site, 5.5 MVA across three distribution substations, would require significant network development works to accommodate. With virtually all of the existing 11kV capacity in the area already allocated to the Application 1 & 3 development areas, additional 11kV capacity must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

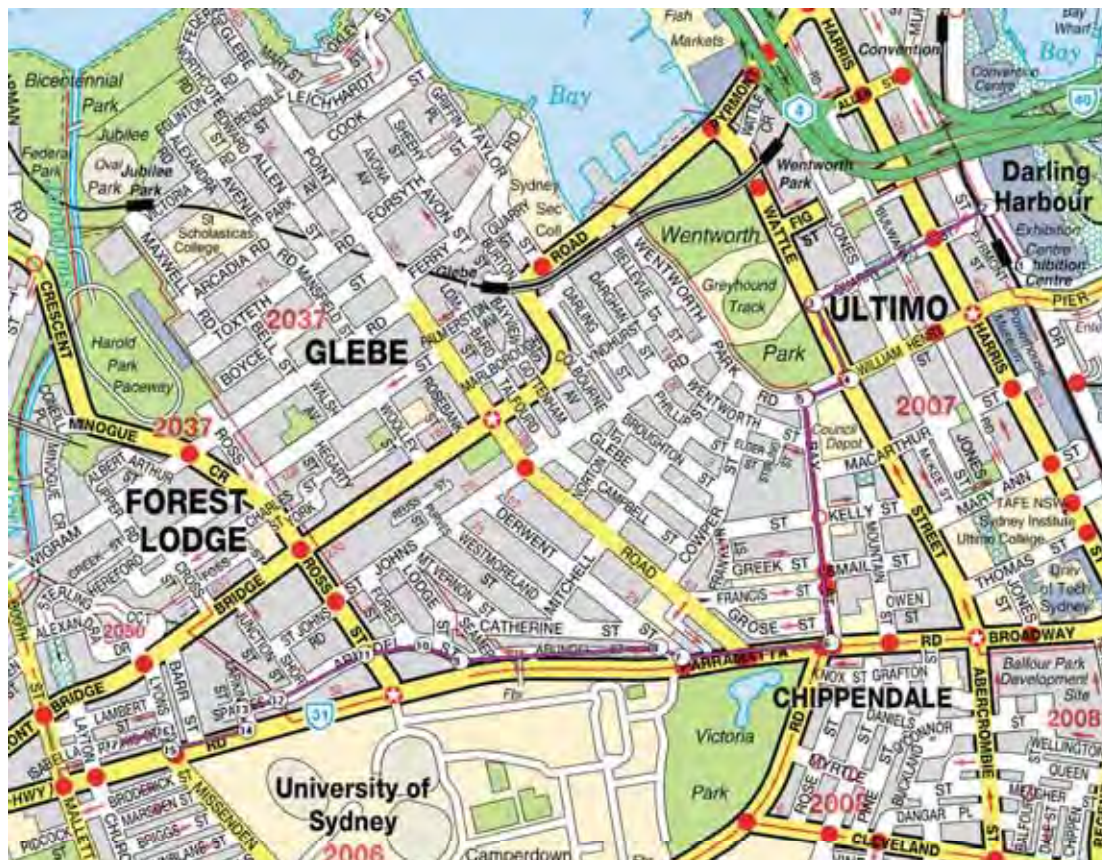
An alternative, more cost effective method of supply may be 33kV distribution from Pyrmont, however there are uncertainties associated with the feasibility of this option. See section below detailing investigation works associated with a 33kV solution.

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 Pyrmont 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 dark 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

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		
		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:	☐ Visa ☐ 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 black ink, appearing to read "Dane Davis".

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

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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.

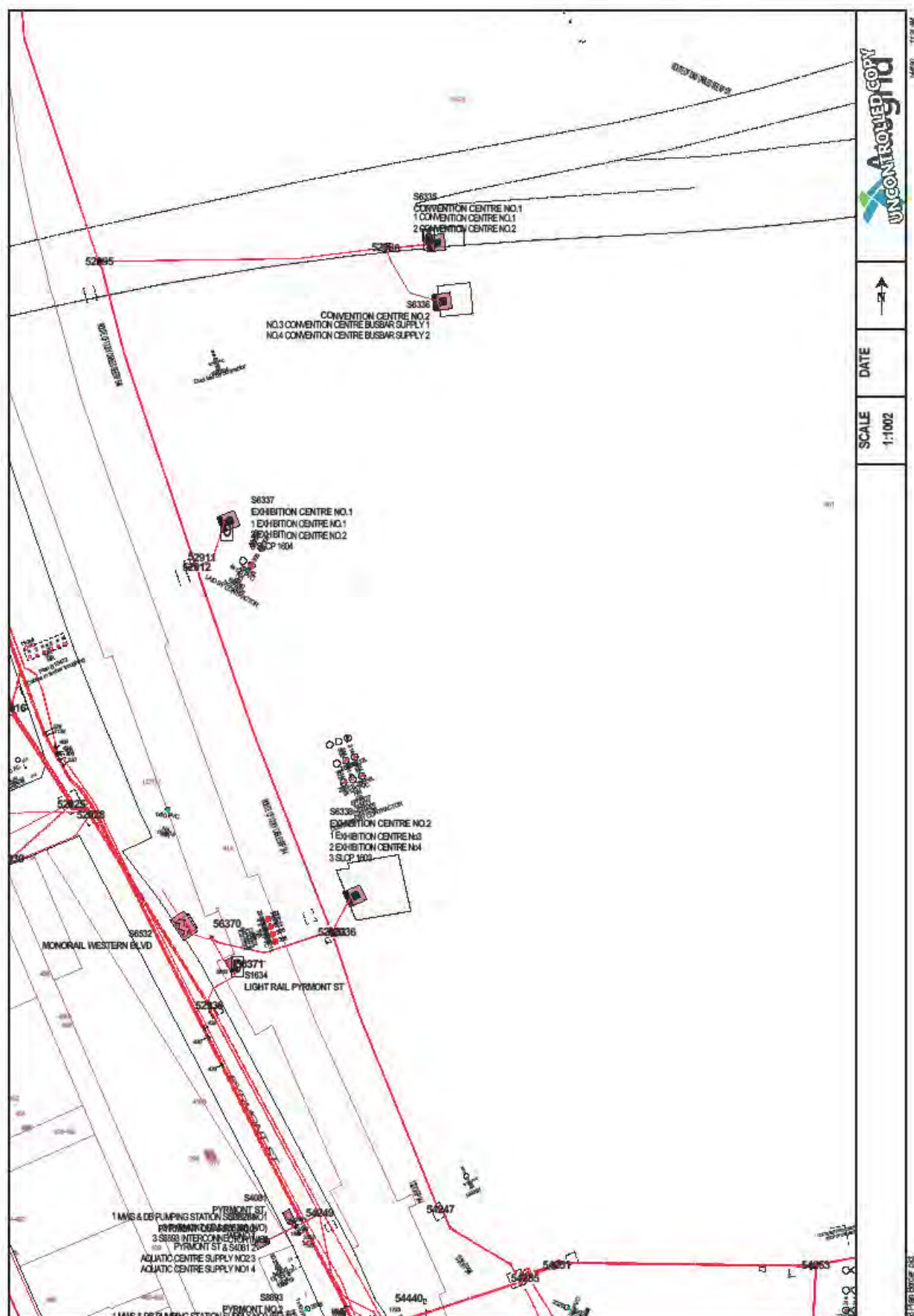
To progress to the next stage, Ausgrid will require the submission of a formal Application for Connection. The appropriate forms are available in our ES1-Customer Connection Information document on Ausgrids' website.

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 A – Existing Feeder Location



DA Required for European's Volume 4 - Project Brief • DA CP: 001

Sub 2
Estimated Load:
3.6MVA
Configuration:
Surface Chamber
Access:
Same as Convention
truck access to
loading dock

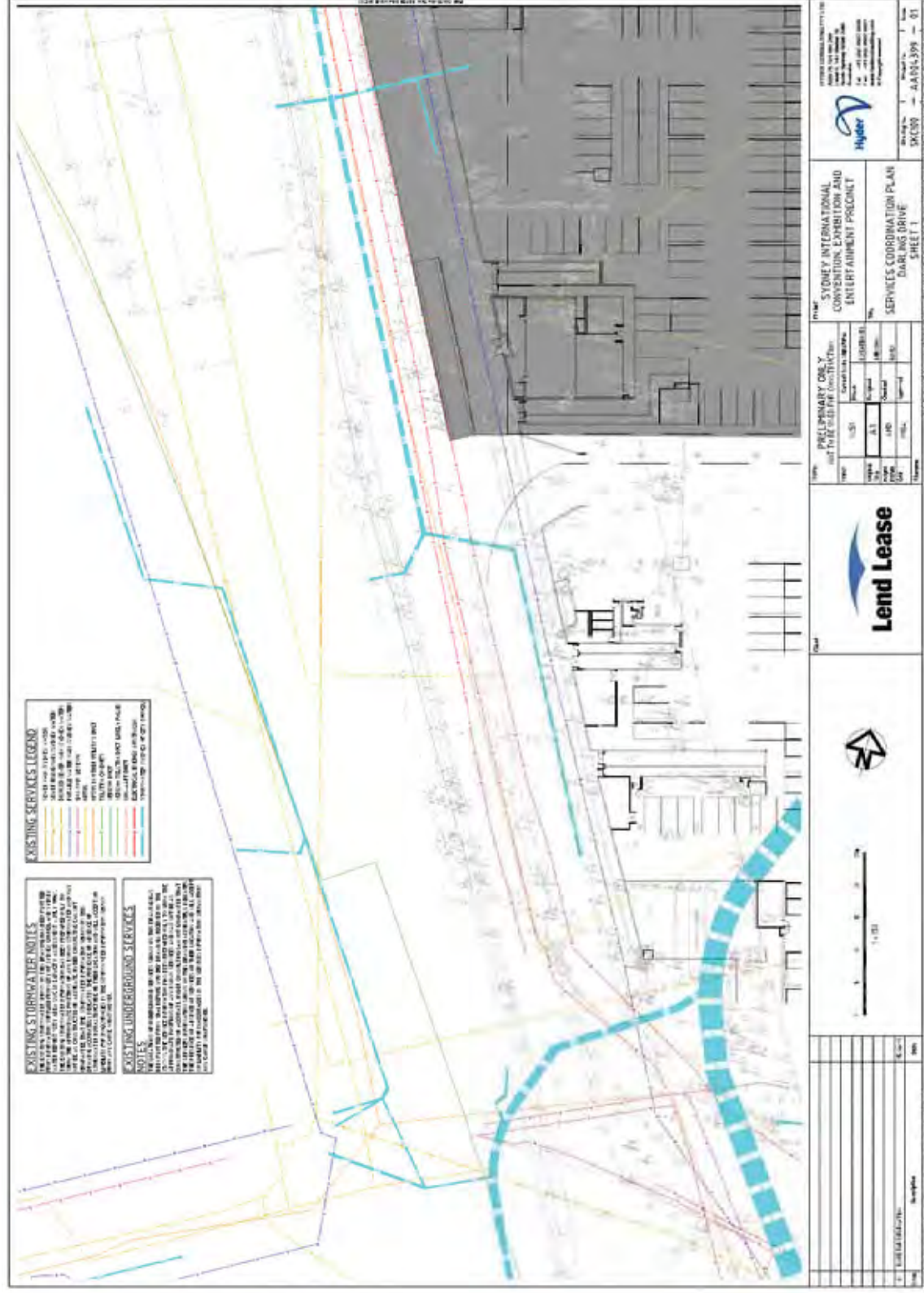
Sub 1
Estimated Load:
3.6MVA
Configuration:
Surface Chamber
Access:
Same as Exhibition
truck access to
loading dock

Sub 3
Estimated Load:
3.2MVA
Configuration:
Surface Chamber
Access:
Same as Exhibition
Upper Halls truck
access to loading
dock

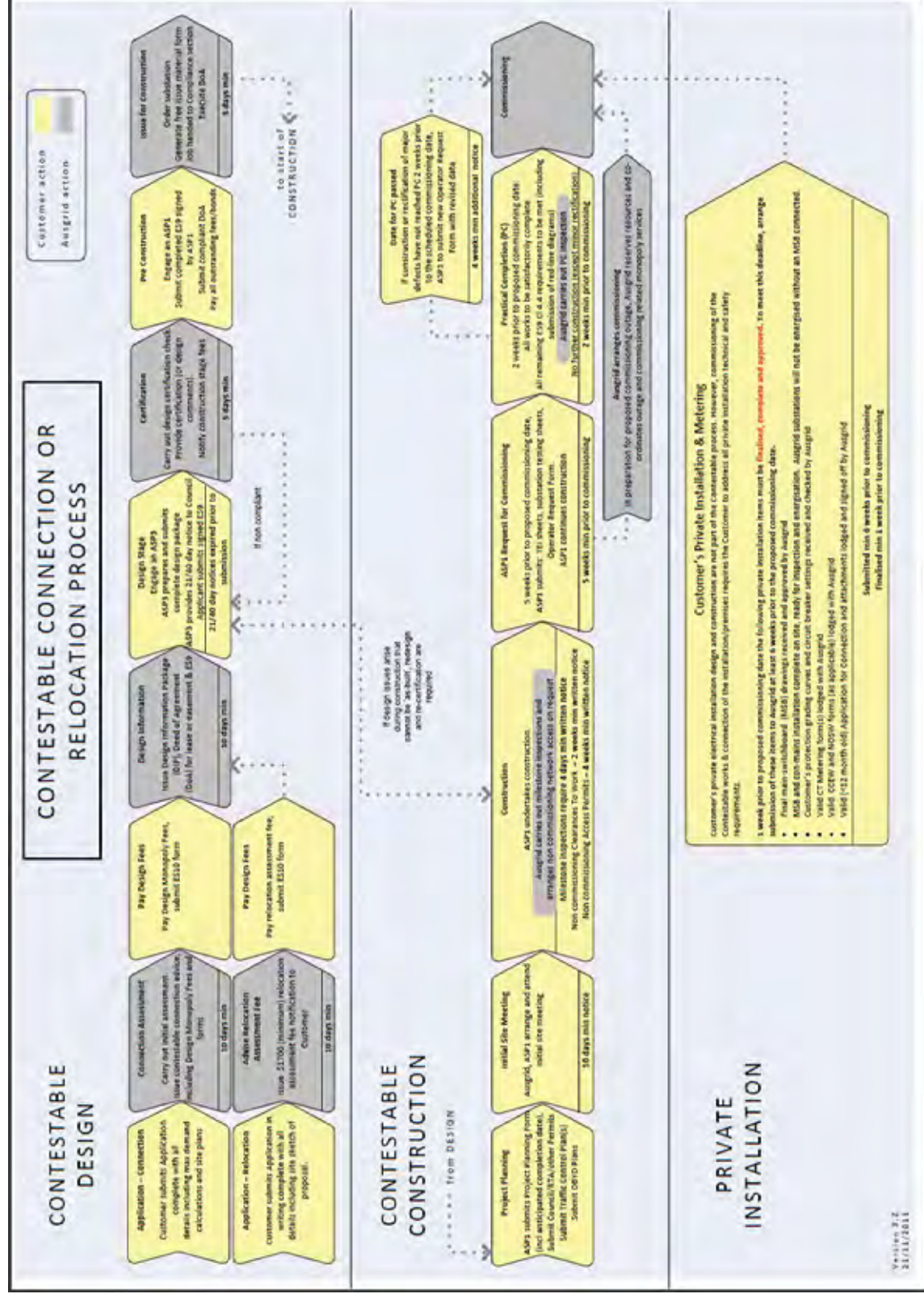
Sub 4
Estimated Load:
3.0MVA
Configuration:
Surface Chamber
Access:
Pier Street

Legend:
Substation Location
Substation Load
Access Road
Loading Dock
Convention Center
Exhibition Center
Entertainment Center
Site C
Site D
Site E
Site F
Site G
Site H
Site I
Site J
Site K
Site L
Site M
Site N
Site O
Site P
Site Q
Site R
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Appendix C – Site Plans provided for relocation



Appendix D – Contestable Connection Or Relocation Process Flow Chart



Friday 11 January 2013

Gregg Charalambous
AECOM
Gregg.Charalambous@aecom.com

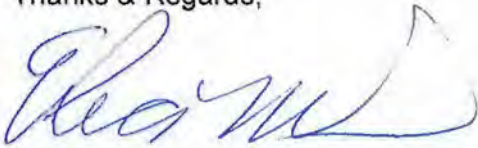
Dear Mr Charalambous,

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, Fax: 02 9455 1673,

Street Address: Level 20, 111 Pacific Highway North Sydney NSW 2060

Heath Mallen

From: C . C sydney@ate.co.au
Sent: Tue 01 3
To: eat alle
Cc: F S
Subject: S C ede elo e to a li a bou Se e a d ate su ly e ui e e ts

Categories: ed

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
Hyder Consulting Pty Ltd
Locked Mail Bag 961 St Leonards NSW 1585 Australia
Tel: 02 9091 3333
Mobile: 0409 380 200



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 PLAN



SERVICES LEGEND
PROPOSED SERVICES

[illegible]

PROPOSED SERVICES

NOTE:

STORMWATER LEGEND

[illegible]

