



SYDNEY INTERNATIONAL CONVENTION, EXHIBITION AND ENTERTAINMENT PRECINCT
ICC HOTEL

SERVICES INFRASTRUCTURE REPORT

FOR SSDA 6

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DARLING HARBOUR LIVE

SICEEP ICC HOTEL

SERVICES INFRASTRUCTURE REPORT FOR SSDA 6

Sewer, Water, Gas, Telecommunications & Electrical Infrastructure

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Approver	M.Kurtz	
Report No	DN00352	
Date	09.08.2013	

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REVISIONS

Revision	Date	Description	Prepared By	Approved By
A	26/07/13	Draft Issue for review	HM / MK	
B	02/08/13	Final Issue	HM / MK	MK
C	08/08/13	Client comments added	MK	MK
D	09/08/13	Client comments and formatting	MK	MK
E	23/08/13	Final Issue	JH	MK



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1 EXECUTIVE SUMMARY

Hyder Consulting has been engaged by Lend Lease to provide civil infrastructure advice to support a Stage 2 Development Application, to be submitted in relation to the ICC Hotel 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. Consultation with the utility authorities is ongoing as the scope of the development is further refined.

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 (SSDA) 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 (referred to as SSDA6) seeks approval for construction of the International Convention Centre (ICC) Hotel component of the Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP) at Darling Harbour.

This SSDA follows SSDA1, which sought approval for the core convention, exhibition and entertainment facilities of the SICEEP Project; SSDA2, a staged application that sets out a Concept Proposal for a new mixed use neighbourhood at Darling Harbour known as 'The Haymarket'; and a number of detailed proposals (SSDA3, SSDA4, and SSDA5) for use of development plots within The Haymarket. SSDAs 1 and 2 were submitted to the Department of Planning and Infrastructure (DoPI) in March 2013, and the SSDAs 3-5 were submitted in May 2013.

The ICC Hotel forms part of the SICEEP Project, which will deliver Australia's global city with new world class convention, exhibition and entertainment facilities and support the NSW Government's goal to "make NSW number one again".

3 OVERVIEW OF PROPOSED DEVELOPMENT

The proposal relates to a SSDA for the ICC Hotel component of the SICEEP Project. The hotel is located at the northern end of the precinct and comprises a single building with up to 656 keys. The hotel is being developed by Lend Lease and is consistent with Darling Harbour Live's Preferred Precinct Plan.

More specifically, this SSDA seeks approval for the following components of the development:

- Demolition of existing site improvements;
- Associated tree removal and replanting;
- Construction and use of a single hotel tower providing for up to 656 keys and including guest facilities, restaurant and ballroom;
- Public domain improvements including integration with existing / proposed works; and
- Extension, realignment and augmentation of physical infrastructure / utilities as required.

4 BACKGROUND

The NSW Government considers that a precinct-wide renewal and expansion of the existing convention, exhibition and entertainment centre facilities at Darling Harbour is required, and is committed to Sydney reclaiming its position on centre stage for hosting world-class events with the creation of the Sydney International Convention, Exhibition and Entertainment Precinct.

Following an extensive and rigorous Expressions of Interest and Request for Proposals process, 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 SICEEP.

- Key features of the Preferred Precinct Plan 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 a hotel complex at the northern end of the precinct, immediately adjacent to the new International Convention Centre.
- A vibrant and authentic new neighbourhood at the southern end of the precinct, called 'The Haymarket', including apartments, student accommodation, community facilities, shops, cafes and restaurants.
- Renewed and upgraded public domain that has been increased by a hectare, including an outdoor event space for up to 27,000 people at an expanded Tumbalong Park.

- Improved pedestrian connections linking to the proposed Goods Line (formerly Ultimo Pedestrian Network) drawing people between Central, Chinatown and Cockle Bay Wharf as well as east-west between Ultimo/Pyrmont 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 redevelopment areas – Bayside, Darling Central and The Haymarket.

The ICC Hotel Site (refer to **Figure 1**):

- is located within the northern end of the Bayside precinct;
- is bound by Harbourside Shopping Centre to the north and east, the International Convention Centre to the south and Darling Drive to the west; and
- occupies an area of approximately 3,730m².

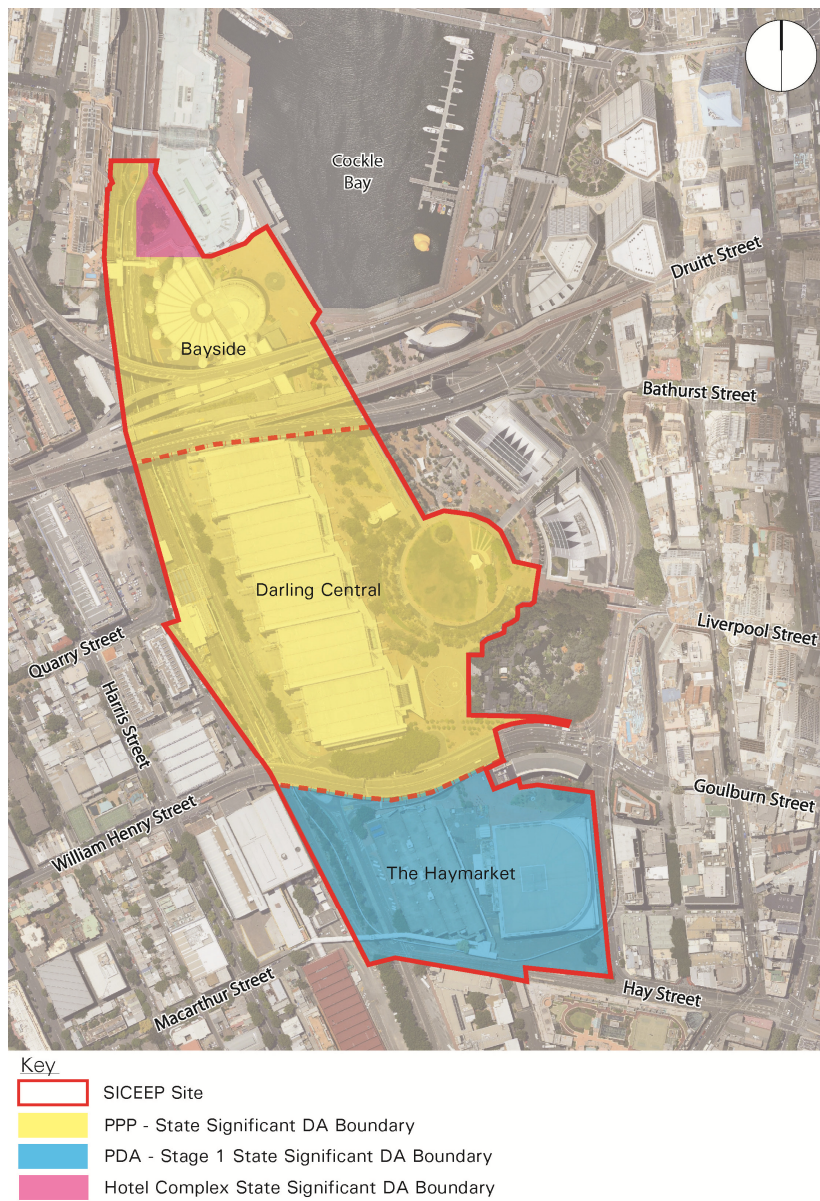


Figure 1 – Aerial Photograph of the SICEEP Site and Redevelopment Areas

The Site area for this Stage 2 DA relates to the proposed Hotel Complex and surrounds as detailed within the architectural and landscape plans submitted in support of the DA (refer to Figure 2).

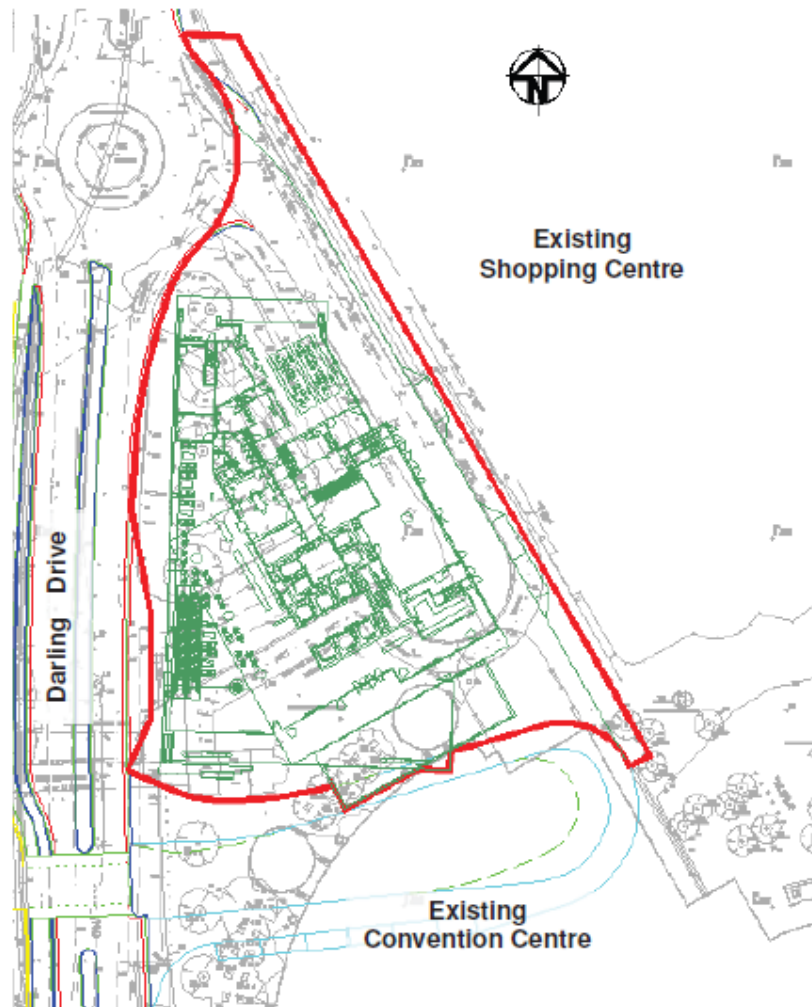


Figure 2: - Proposed ICC Hotel DA Works Boundary

6 PLANNING APPROVALS STRATEGY

The SICEEP Project will result in the lodgement of numerous SSDAs for the various components of the redevelopment project. SSDAs have already been lodged for the PPP component of the SICEEP Project (comprising the convention centre, exhibition centre, entertainment facility and ancillary commercial premises and associated public domain upgrades), the Stage 1 Concept Proposal for The Haymarket, and the Stage 2 detailed proposals for three of the development plots within The Haymarket. Future applications will be lodged for the remaining development plots within The Haymarket Site.

This Application relates to a SSDA6 for the ICC Hotel component of the SICEEP Project and is consistent with Darling Harbour Live's Preferred Precinct Plan.

7

PURPOSE OF THIS REPORT

This report has been prepared to accompany the Stage 2 DA for the ICC Hotel. It addresses the relevant requirements of the DGR's for the project, issued on the 21st of January 2013 and updated on 27th March 2013. A summary of the relevant DGRs is listed below

The Services Infrastructure report submitted with SSSA1 and provided as Appendix B to this report addresses the general requirements for the overall project relating to Services Infrastructure, as outlined in Section 11 of the DGRs.

Section 11 of the DGR's require the following

Purpose	Relevant Section in the Main Report (Appendix B)	Relevant Section in this Report	Comments
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	Section 8 of Appendix B	Section 8	Discussions and negotiations with relevant services infrastructure authorities has been undertaken and is ongoing.
Details of how infrastructure assets of various utility stakeholders will be protected during the demolition and construction phase of the project.”		Section 8.1	Construction methodology and process is described however will be the subject of continuous adjustment to suit staging, site conditions and authority requirements.

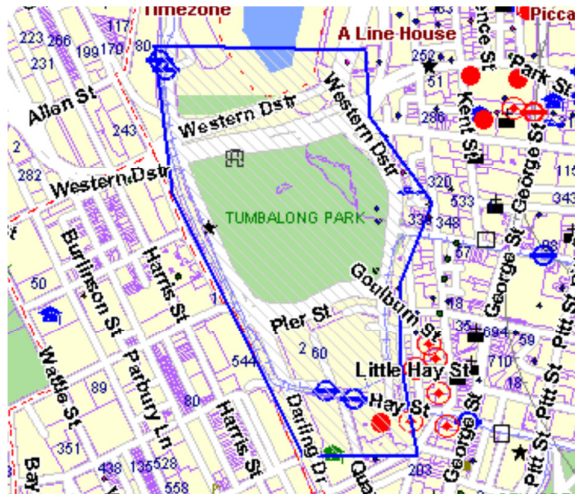
This report details the investigation of existing utilities in the vicinity of the development, the likely points of future connection to the utilities, associated potential upgrades or augmentation that may be required.

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 north of the existing Convention Centre and Western Distributor, east of Darling Drive and west of Harbourside shopping centre.

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 ICC Hotel.

Figure 2: 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)
- RailCorp
- PIPE Networks
- Ausgrid
- Jemena
- Sydney Water
- Verizon Business
- Visionstream
- AAPT / PowerTel
- Telstra
- Optus and/or Ucomm
- AARNet Pty Ltd
- Primus Telecom

8 UTILITIES INFRASTRUCTURE

Reference shall be made to the Services Infrastructure Report in Appendix B [Report No. DN00340, dated 18/03/2013, Rev [07] submitted in support of PPP Concept Proposal SSD DA (SSDA 1) as well as the Dial Before You Dig enquiry of the 5th of July 2011.

That report provides a description of the existing utilities servicing the precinct, the consultation undertaken with relevant utility authorities, the overall servicing concept for the ICC Hotel precinct and confirmation that the existing infrastructure in the vicinity of the site has capacity to supply the proposed development.

Since submission of the Stage 1 DA to the State, consultation with the various utility authorities has progressed with detailed servicing strategies for many of the utilities now being prepared. These servicing strategies and the appropriate authority approvals are not expected to be finalised until after the submission of the Stage 2 DA that this report is written in support of. It should be noted however that the original 900 room hotel concept has been amended and now only proposes to provide approximately 656 hotel rooms. This is a significant reduction and accordingly, the expected demand on utility infrastructure is lower than originally intended.

Reference should be made to Appendix A for the combined services plan which depicts existing utility infrastructure and that which is proposed to service the new development.

8.1 PROTECTION OF UTILITIES INFRASTRUCTURE

The following process will be followed to ensure existing utilities infrastructure is protected:

- A desk-top investigation of existing services will be undertaken using Dial Before You Dig information and site observations;
- Site survey will be undertaken to accurately locate existing infrastructure assets where practical;
- Site exploration works will be undertaken where considered necessary to more accurately locate existing infrastructure assets and test for unknown services;
- Consultation will be undertaken with utility providers to confirm location of services and to obtain all necessary consents to work in their vicinity;
- Utility technical and hazard requirements will be incorporated into the design and construction documentation;
- Safe work methods statements and inspection and test plans will be prepared by accredited contractors;
- Pre-start work checklists will be implemented and recorded;
- Workshops will be conducted with utility providers where diversion of, connection to or construction close to critical assets is required; and
- Field safety inspectors will be present during critical works as determined by each utility provider.

As design progresses or as new information becomes available, the above process will be adjusted or supplemented as required to ensure existing infrastructure assets are adequately protected.

8.2 SEWER

Existing Infrastructure

The Site drains to the existing sewer main within Darling Drive that drains to Sewer Pump Station SP0001 to the South. Beginning as a DN375 main adjacent to the Site and the Harbourside Shopping Centre, it increases to a DN750 main South of the Western Distributor for a short distance before becoming a 1.3m x 1.75m unlined rock channel. It is not expected that any existing Sydney Water sewerage assets in the vicinity of the site will be adversely impacted upon by the proposed ICC Hotel however all proposed works will be undertaken in accordance with Sydney Water's requirements for building over or adjacent to sewers.

Provision of Utilities

It is proposed that the ICC Hotel shall be serviced via a connection to the existing DN375 VC main in Darling Drive directly adjacent to the ICC Hotel and north of the Convention Centre and Western Distributor. This connection shall require the construction of a new manhole over the existing main. This strategy has been identified in Sydney Water feasibility letter dated 8th March 2013, case number 131520.

8.3 WATER

Existing Infrastructure

A DN200 DICL water main is located between the Site and the existing Harbourside Shopping Centre. The DN200 DICL main is currently located partially within the footprint of the ICC Hotel. It is proposed that this main will be extended and relocated to the north of the ICC Hotel. Existing branches from the DN200 DICL main appears to service the Harbourside Shopping Centre and also compromised by the location of the ICC Hotel and will need to be reconnected to the relocated DN200 DICL main when it is relocated. The new main and connections will be installed and tested prior to cut over to the new connections to ensure disruption to Harbourside is minimised.

An existing DN250 DICL main is located in and parallel to the footpath in Darling Drive. Given proposed road realignments to accommodate the ICC Hotel and wider SICEEP development, this DN250 DICL main is located within the footprint of the proposed ICC Hotel and will require relocation to a position between the ICC Hotel and realignment of Darling Drive.

Provision of Utilities

It is proposed that private water services will be taken off either the relocated DN200 DICL and / or the DN250 DICL water mains to supply potable water and fire requirements to the ICC Hotel. This concept has been identified in Sydney Water feasibility letter dated 8th March 2013, Case number 131520, and is presently being developed in consultation with Sydney Water.

8.4 GAS

Existing Infrastructure

There is a DN150 1050KPa secondary main located between the Site and the adjacent Harbourside Shopping Centre. It is understood that this main currently supplies natural gas via a regulator set located to the south east of the site to the existing Convention and Exhibition Centres. The proposed ICC Hotel development is not expected to have any adverse impact upon the infrastructure in the vicinity of the site.

Any works over or adjacent to the existing 1050kpa gas main (including diversion of other existing utilities) will be undertaken in accordance with Jemena requirements for crossing over or adjacent to secondary gas main.

Provision of Utilities

It is proposed that connection of the ICC Hotel will be made by way of regulator set and connection to the existing DN150 1050KPa main to the east of the site. Jemena have confirmed that this main has the physical capacity to supply gas to the ICC Hotel.

8.5 TELECOMMUNICATIONS

Existing Infrastructure

There is an in-ground bank of four (4) conduits carrying communications infrastructure operated by Telstra that is located within the footprint of the proposed ICC Hotel along the eastern alignment of Darling Drive. It is proposed that these conduits and associated infrastructure will be relocated to a location to the west of the ICC Hotel within the eastern alignment of the relocated Darling Drive.

Provision of Utilities

Prior to the submission of the Stage 1 DA, consultation with NBNC Co confirmed their intention to supply essential communications infrastructure to the entire SICEEP development precinct including the ICC Hotel (please refer to Appendix B).

There is no NBNC Co infrastructure in the vicinity of the site, however during consultation with NBNC Co they confirmed that they would deliver all lead-in infrastructure to the precinct. The delivery strategy is currently being developed with NBNC Co, however it is expected that NBNC Co infrastructure will supply the site from Darling Drive (lead-in from the south). Trenching of the NBNC Co infrastructure will incorporate the relocated Telstra infrastructure identified above.

8.6 ELECTRICAL

Existing Infrastructure

The site is located adjacent to existing Ausgrid Infrastructure, however as no permanent facilities are constructed on the site; no specific service provides connection to the site. There is existing HV infrastructure in-ground directly adjacent the site location and some minor LV (street lighting) located within the site boundary which will be made redundant as a result of the new development. However, in the event that live services are identified, they will be protected / relocated in accordance with Ausgrid requirements.

Provision of Utilities

Lend Lease has commenced negotiations for supply to the site with Ausgrid. These negotiations include network design/impact, identification of redundant services and potential relocations as well as site specific (substation) servicing arrangements. An 'Application For Connection' has been lodged with Ausgrid as the local supply authority for both the infrastructure works (masterplan) and the on-site development (substation). Letters of Offer have been received for both applications, associated fees paid and Lend Lease anticipate receipt of Design Information Packs (DIPs) shortly to facilitate the engagement of Level 3 (Design) ASPs.

The site is anticipated to have a maximum demand of 3.8MVA which will be serviced by a single surface chamber substation containing 3 x 1500kVA transformers, associated HV and LV switchgear. Connection of this substation is proposed via new in-ground pit and pipe infrastructure from the new substation to the adjacent existing 11kV network in Darling Drive.

8.7 STORMWATER, FLOODING AND WSUD

For discussion of all utilities associated with stormwater and flooding please refer to report No.DN00346 accompanying the development application which this report is submitted in support of.

The Flooding & Stormwater report (DN00346) provides details of the Sydney Water conduit systems, capacities and performances. Although not directly related to the assessment of stormwater drainage and flooding, we provide the following commentary to describe potential impacts of the proposed development on the existing stormwater systems:-

The ICC Hotel development includes the demolition of pavements, kerbs, and landscaping currently located over the Sydney Water culvert. We have been advised that, where the proposed ICC Hotel building crosses over the existing stormwater culvert, the building structure will be designed to ensure that building loads are not supported by the culvert and the culvert is not affected in terms of structural integrity and function. In addition, we have been advised that construction methodology will be developed to ensure excessive temporary construction loadings are not imposed on the existing culvert.

The existing DN1.5m reinforced concrete pipe that runs in north south direction through the ICC Hotel plot is proposed to be diverted to the eastern side of the of the ICC Hotel plot and located in the laneway between the Harbour Side and ICC Hotel.

Consultation with relevant authorities to secure approval for these works has commenced and is on-going.

9 CONCLUSION

Lend Lease (including Hyder Consulting) will continue to consult with and obtain the necessary approvals from the relevant authorities and utility providers regarding the proposed ICC Hotel development in the context of:

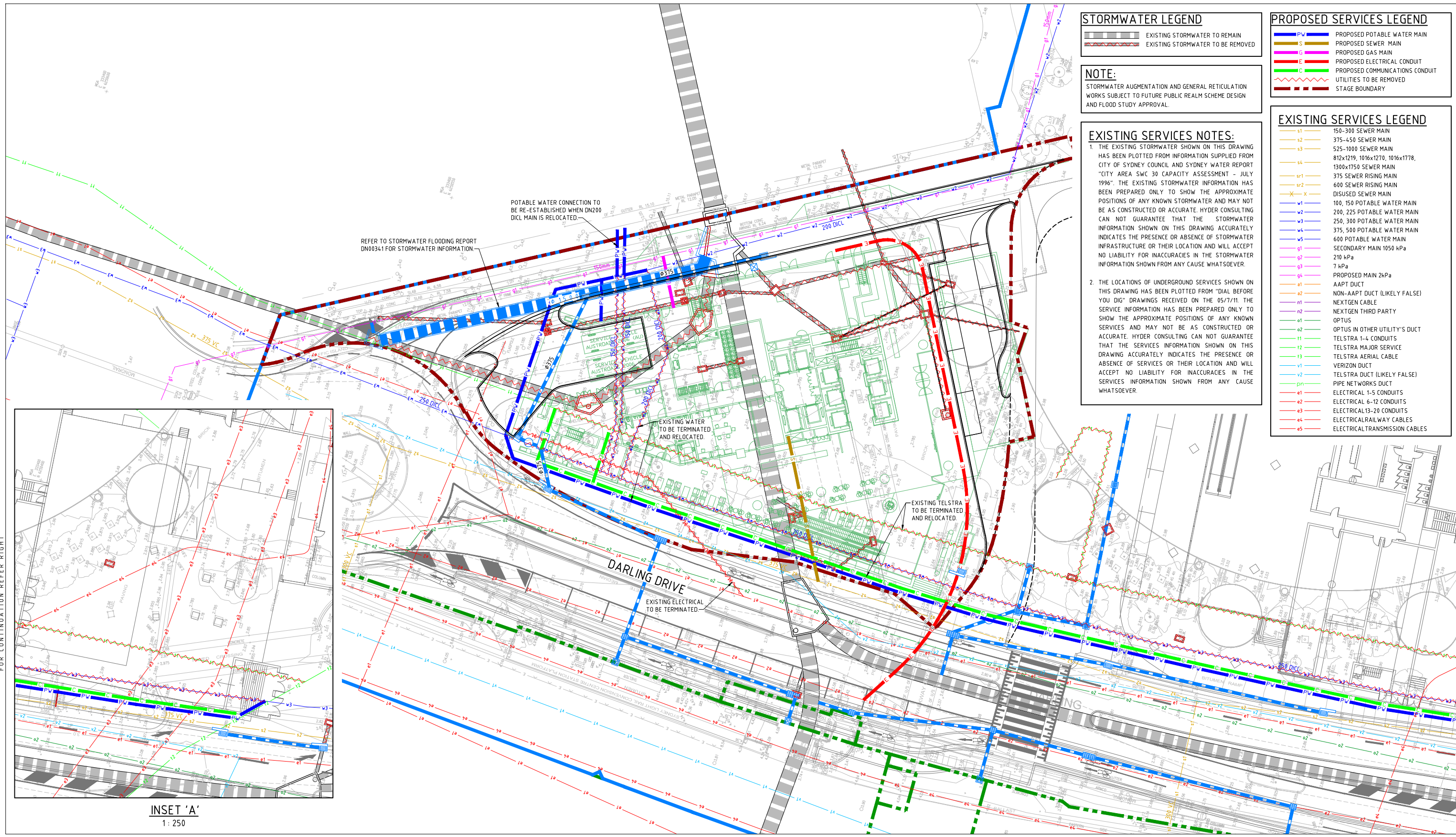
- Existing utilities and arrangements
- Forecast demand for utilities required by the proposed ICC Hotel development; and
- New infrastructure, augmentation and diversion works required to facilitate the proposed ICC Hotel development.

Consultation to date has confirmed that the ICC Hotel can be adequately serviced by utility providers, subject to further detailed investigation, scheme development and design development in consultation with the providers.

APPENDIX A

COMBINED SERVICES PLAN

SYDNEY INTERNATIONAL CONVENTION, EXHIBITION AND ENTERTAINMENT PRECINCT
FOR CONTINUATION REFER RIGHT



STORMWATER LEGEND

- EXISTING STORMWATER TO REMAIN
- EXISTING STORMWATER TO BE REMOVED

NOTE:
STORMWATER AUGMENTATION AND GENERAL RETICULATION WORKS SUBJECT TO FUTURE PUBLIC REALM SCHEME DESIGN AND FLOOD STUDY APPROVAL.

PROPOSED SERVICES LEGEND

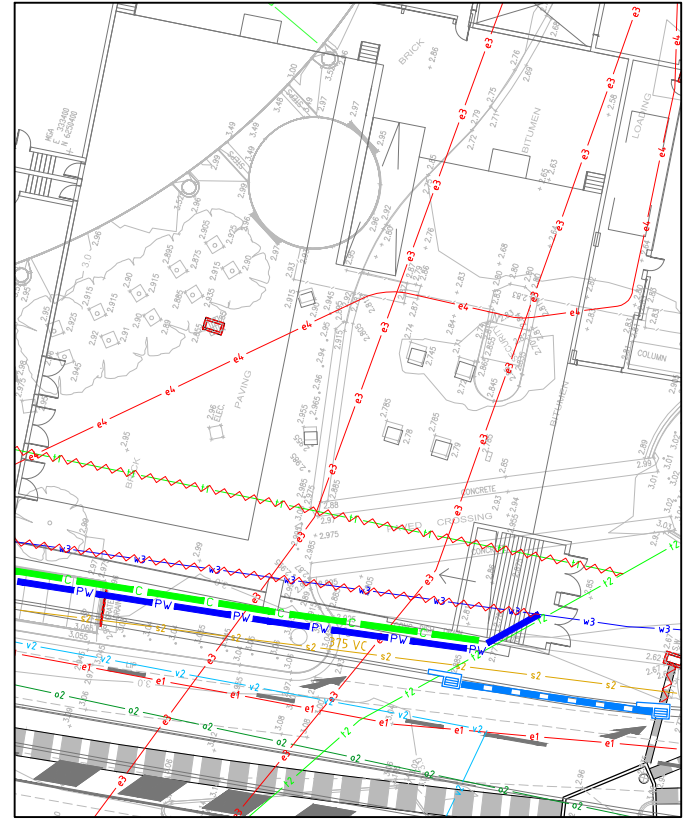
- PW - PROPOSED POTABLE WATER MAIN
- S - PROPOSED SEWER MAIN
- G - PROPOSED GAS MAIN
- E - PROPOSED ELECTRICAL CONDUIT
- C - PROPOSED COMMUNICATIONS CONDUIT
- UTILITIES TO BE REMOVED
- STAGE BOUNDARY

EXISTING SERVICES NOTES:

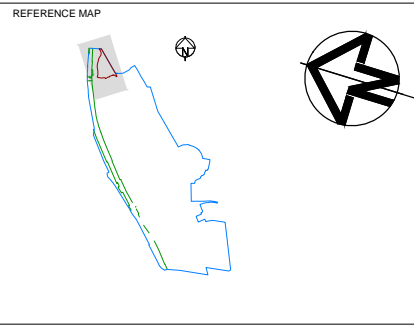
- THE EXISTING STORMWATER SHOWN ON THIS DRAWING HAS BEEN PLOTTED FROM INFORMATION SUPPLIED FROM CITY OF SYDNEY COUNCIL AND SYDNEY WATER REPORT "CITY AREA SWC 30 CAPACITY ASSESSMENT - JULY 1996". THE EXISTING STORMWATER INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN STORMWATER AND MAY NOT BE AS CONSTRUCTED OR ACCURATE. HYDER CONSULTING CAN NOT GUARANTEE THAT THE STORMWATER INFORMATION SHOWN ON THIS DRAWING ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF STORMWATER INFRASTRUCTURE OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE STORMWATER INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.
- THE LOCATIONS OF UNDERGROUND SERVICES SHOWN ON THIS DRAWING HAS BEEN PLOTTED FROM "DIAL BEFORE YOU DIG" DRAWINGS RECEIVED ON THE 05/7/11. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE. HYDER CONSULTING CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THIS DRAWING ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.

EXISTING SERVICES LEGEND

- s1 - 150-300 SEWER MAIN
- s2 - 375-450 SEWER MAIN
- s3 - 525-1000 SEWER MAIN
- s4 - 812x1219, 1016x1270, 1016x1778, 1300x1750 SEWER MAIN
- sr1 - 375 SEWER RISING MAIN
- sr2 - 600 SEWER RISING MAIN
- X - X - DISUSED SEWER MAIN
- w1 - 100, 150 POTABLE WATER MAIN
- w2 - 200, 225 POTABLE WATER MAIN
- w3 - 250, 300 POTABLE WATER MAIN
- w4 - 375, 500 POTABLE WATER MAIN
- w5 - 600 POTABLE WATER MAIN
- g1 - SECONDARY MAIN 1050 kPa
- g2 - 210 kPa
- g3 - 7 kPa
- g4 - PROPOSED MAIN 2kPa
- aapt - AAPT DUCT
- naapt - NON-AAPT DUCT (LIKELY FALSE)
- nextgen - NEXTGEN CABLE
- thirdparty - NEXTGEN THIRD PARTY
- optus - OPTUS
- optus2 - OPTUS IN OTHER UTILITY'S DUCT
- t1 - TELSTRA 1-4 CONDUITS
- t2 - TELSTRA MAJOR SERVICE
- t3 - TELSTRA AERIAL CABLE
- v1 - VERIZON DUCT
- v2 - TELSTRA DUCT (LIKELY FALSE)
- pn - PIPE NETWORKS DUCT
- e1 - ELECTRICAL 1-5 CONDUITS
- e2 - ELECTRICAL 6-12 CONDUITS
- e3 - ELECTRICAL 13-20 CONDUITS
- e4 - ELECTRICAL RAILWAY CABLES
- e5 - ELECTRICAL TRANSMISSION CABLES



DARLING HARBOUR LIVE



NOTES:

- DO NOT SCALE FROM DRAWINGS. WORK TO WRITTEN DIMENSIONS ONLY.
- ALL DIMENSIONS IN METRES UNLESS NOTED OTHERWISE.
- ALL COORDINATES TO MGA. ALL LEVELS TO AHD.
- ALL DIMENSIONS, COORDINATES AND LEVELS TO BE VERIFIED ON SITE BEFORE PROCEEDING WITH WORK. HYDER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES.
- THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL RELEVANT CONTRACTS, SPECIFICATIONS AND DRAWINGS.

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REV	DESCRIPTION	DATE
06	ISSUE FOR DEVELOPMENT APPLICATION	09/08/2013
05	ISSUE FOR INFORMATION	01/08/2013
04	ISSUE FOR INFORMATION	26/07/2013
03	ELECT AND COMMS AMENDED (PER PROJ WEB COR 1453)	18/07/2013
02	STORMWATER ADDED	18/07/2013
01	ISSUE FOR REVIEW	17/07/2013

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PROJECT
SICEP
DARLING HARBOUR
ICC HOTEL

DRAWING TITLE
COMBINED SERVICES PLAN

STATUS
DEVELOPMENT APPLICATION

SCALE @ A1	DRAWN	DESIGNED	REVIEWED	APPROVED
1: 250	JJB	-	-	-
PROJECT NUMBER	DRAWING NUMBER	REV		
AA004399	HO-CI-0701	06		

APPENDIX B

SERVICES INFRASTRUCTURE REPORT SUBMITTED IN SUPPORT OF THE PPP CONCEPT PROPOSAL SSD DA (SSDA 1)



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

SERVICES INFRASTRUCTURE REPORT

FOR SSDA1 5752-2012

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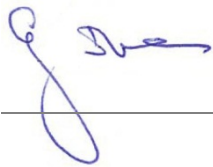


DARLING HARBOUR LIVE

SICEEP – PPP PRECINCT

SERVICES INFRASTRUCTURE REPORT FOR SS DA1

Sewer, Water, Gas, Telecommunications, Electrical

Author	H.Mallen	
Checker	M.Kefford	
Approver	G.Ives	
Report No	DN00340	
Date	FINAL 18/03/2013 [07]	

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

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

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

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

2 INTRODUCTION

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

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

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

3 OVERVIEW OF PROPOSED DEVELOPMENT

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

The application more specifically seeks approval for the following development:

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

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

4 BACKGROUND

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

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

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

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

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

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

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

5 SITE DESCRIPTION

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

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

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



Figure 1: SICEEP site Location

6 PLANNING APPROVALS STRATEGY

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

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

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

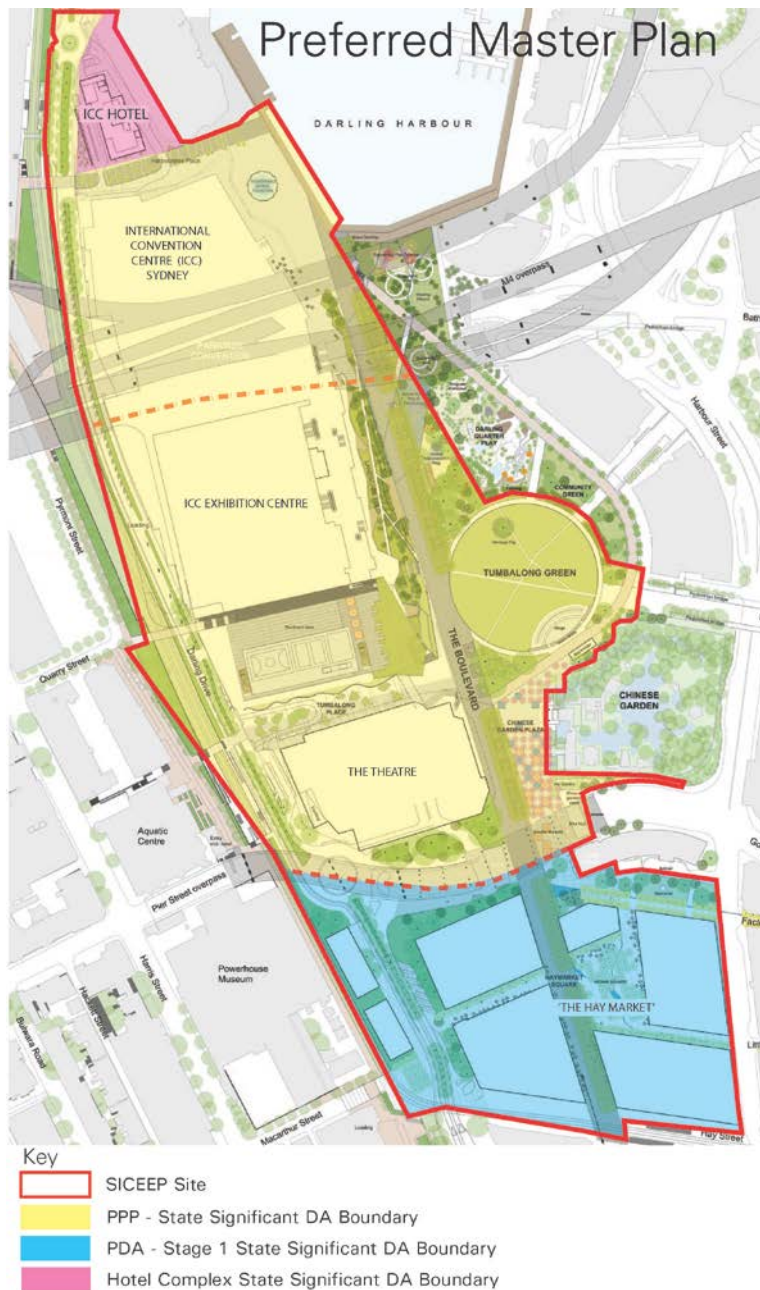


Figure 2: SICEEP Master Plan

7 PURPOSE OF THIS REPORT

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

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

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

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

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

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

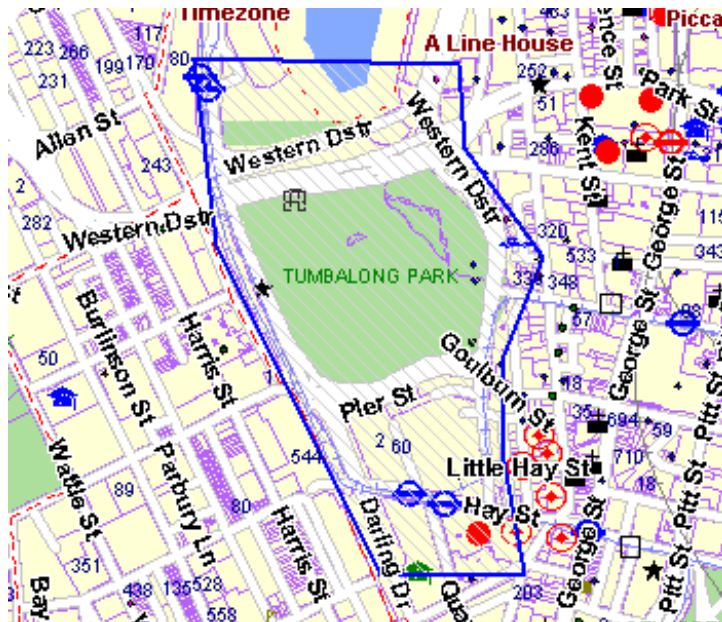


Figure 3: DBYD Enquiry Area (DBYD, 2011)

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

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

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

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

8 EXISTING UTILITY SERVICES

8.1 SEWER

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

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

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

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

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

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

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

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

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

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

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

8.2 WATER

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

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

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

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

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

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

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

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

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

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

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

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

8.3 GAS

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

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

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

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

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

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

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

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

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

8.4 TELECOMMUNICATIONS

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

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

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

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

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

8.5 ELECTRICAL

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

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

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

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

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

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

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

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

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

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

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

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

9 CONCLUSION

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

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

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

APPENDIX A

HYDER CONSULTING, AECOM, LEND LEASE & WSC CORRESPONDENCE

SUPPLEMENTARY



APPLICATION FOR CONNECTION

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

FAX

Tuggerah (02) 43998007

Email to
ea.datanorth@ausgrid.com.au

Free Call 1300 662089

(Not to be used for Muswellbrook)

Muswellbrook (02) 65429037

Email to
ea.datamuswellbrook@ausgrid.com.au

This form is required for:

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

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

PART A INSTALLATION ADDRESS

Property Name

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

Floor	Unit	Street No.	RMB/Lot

Street	Suburb
Darling Drive	Darling Harbour

Cross Street	Existing Meter ID	Pole Pillar ID
Quarry Street		

PART B INSTALLATION LOAD DETAILS

Residential Portion

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

Commercial Portion

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

Industrial Portion

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

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

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

PART C DIAGRAM

Refer to attached Site Plan

Indicative loads per substation:

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

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

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

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

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

APPLICATION FOR CONNECTION



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

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

Fax Sydney and Tuggerah (02) 4399 8007

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

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

Fax Muswellbrook (02) 6542 9037

Email to ea.datamuswellbrook@ausgrid.com.au

RETAILER **NMI**

INSTALLATION ADDRESS

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

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

Street
Darling Drive

Nearest Cross Street
Quarry Street

Suburb Darling Harbour, NSW **Postcode** 2000

Pole/Pillar ID

Existing Meter ID

Office Use Only

Job Number

Site Establishment Fee to be applied

CUSTOMER AND POSTAL ADDRESS

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

Last Name

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

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

Phone

Mobile

ELECTRICAL CONTRACTOR/AUTHORISED SERVICE PROVIDER

Electrical Contractor Name
Scott Martin (AECOM)

Licence Number
Not Applicable

Contact Phone Number
02 8021 2941

Authorised Service Provider Name
Consulting Engineer

Licence Number

Contact Phone Number
0411 658 086

Email Address (Preferred Option of Returning Job Number)

Fax Number

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

SERVICE, DEMAND AND LOAD DETAILS (please tick)

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

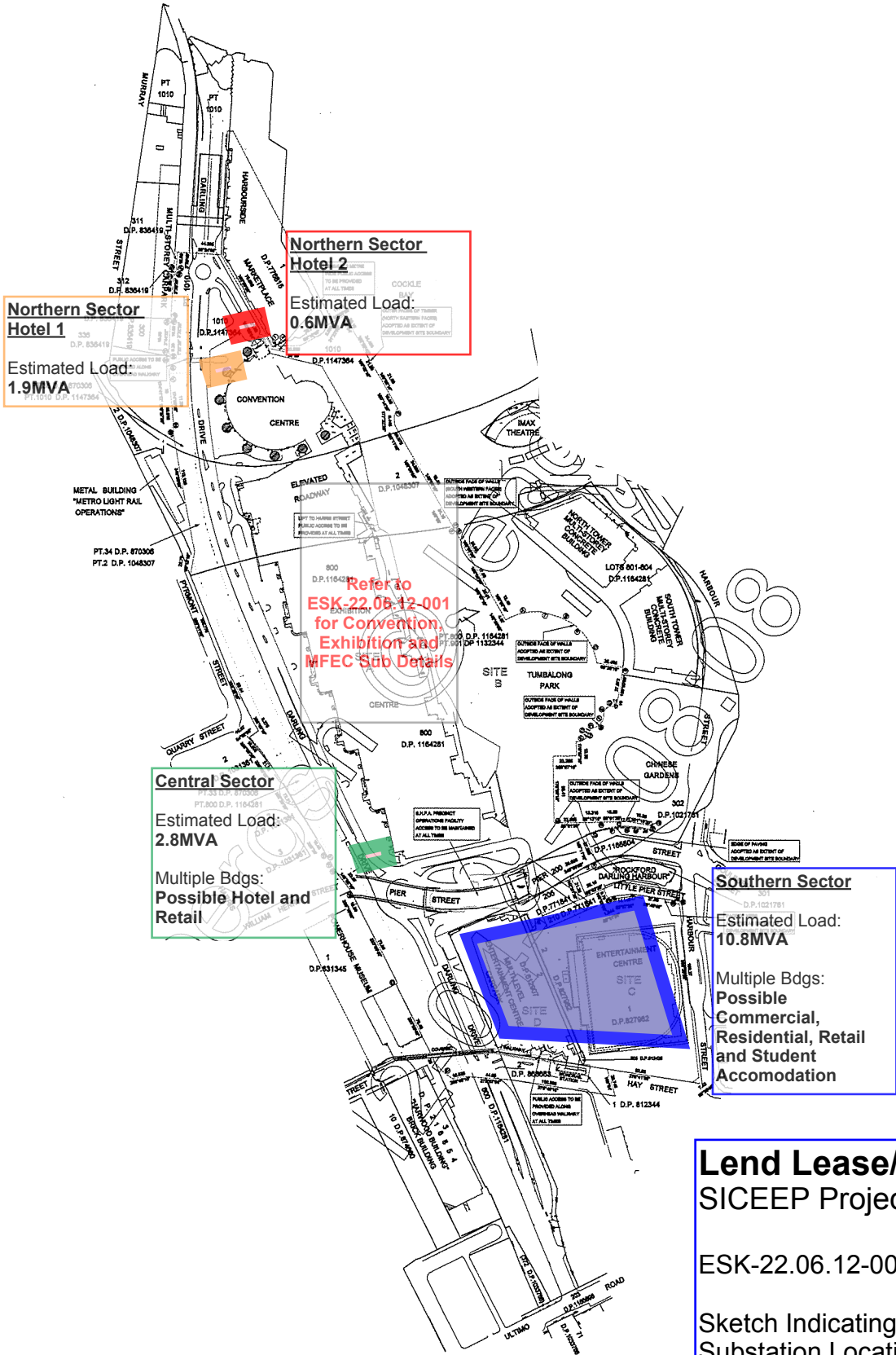
	A	B	C	Service Length
Proposed	18600	18600	18600	N/A
Existing	13100	13100	13100	N/A

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

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

Date **18.01.13**.....

Issued July 2011 A.191



**Lend Lease/AECOM
SICEEP Project**

ESK-22.06.12-002

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

Rygata & Company Pty Limited
P.O. Rygata & Weat

ASN: 61 001 204 897

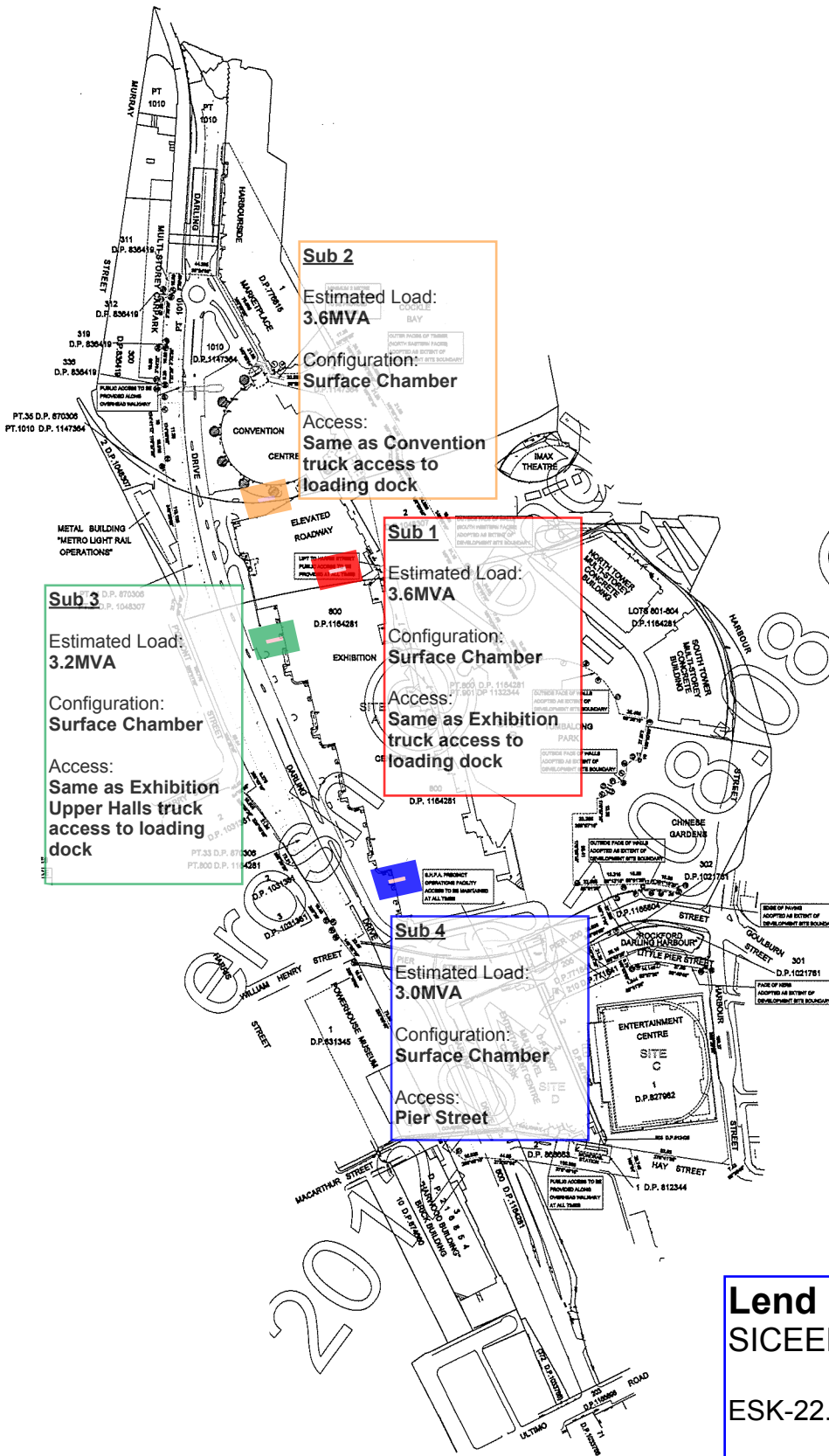
a Level 6, 89 York St, Sydney NSW 2000

p +61 2 9282 8500 f +61 2 9282 6843

e surveyors@rygata.com.au

w rygata.com.au





**Lend Lease/AECOM
 SICEEP Project**

ESK-22.06.12-001

Sketch Indicating Proposed
 Substation Locations and
 Loads

Todd, Geoff

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

Dane,

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

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

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

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

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

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

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

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

Regards,

Scott Martin

AECOM

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

Good afternoon Robert,

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

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

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

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

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

Regards,
Heath

Heath Mallen
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MEEM, BE, DipEngPrac
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International advisory and design consultancy

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Our Ref: NA50613027_SICEEP
Contact: Sombath Lam

14 January 2012

Sydney Water
PO Box 399
PARRAMATTA NSW 2124

Dear Sir/Madam

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

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

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

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

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

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

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

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

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

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

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

P.O. Box 19
St Leonards NSW 1590
Australia

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

www.cardno.com.au

Table 1: Feasibility Applications

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

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

Yours sincerely



Sombath Lam
 Civil Engineer
 For Cardno

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



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

EXISTING LOTS (Proposed Development of)		DEVELOPMENT TYPE	NUMBER OF PROPOSED LOTS / UNITS	U.B. DIRECTORY MAP 3, A6 (40th Edition)	Water Service Co-Ordinator:	
(1) LOT 800	D.P. 1164281	FEASIBILITY APPLICATION	Total Lots	TBC	CARDNO (NSW) Pty Ltd LEVEL 9, THE FORUM -203 PACIFIC HY, GORDON Ph: (02) 9496 7700 Fax: (02) 9499 3902	
(2)			Total Units	0		
(3)			MUNICIPALITY	CITY OF SYDNEY COUNCIL	SHEET 1 OF 1	eDeveloper Case No. 131520
(4)						
(5)						
(6)						



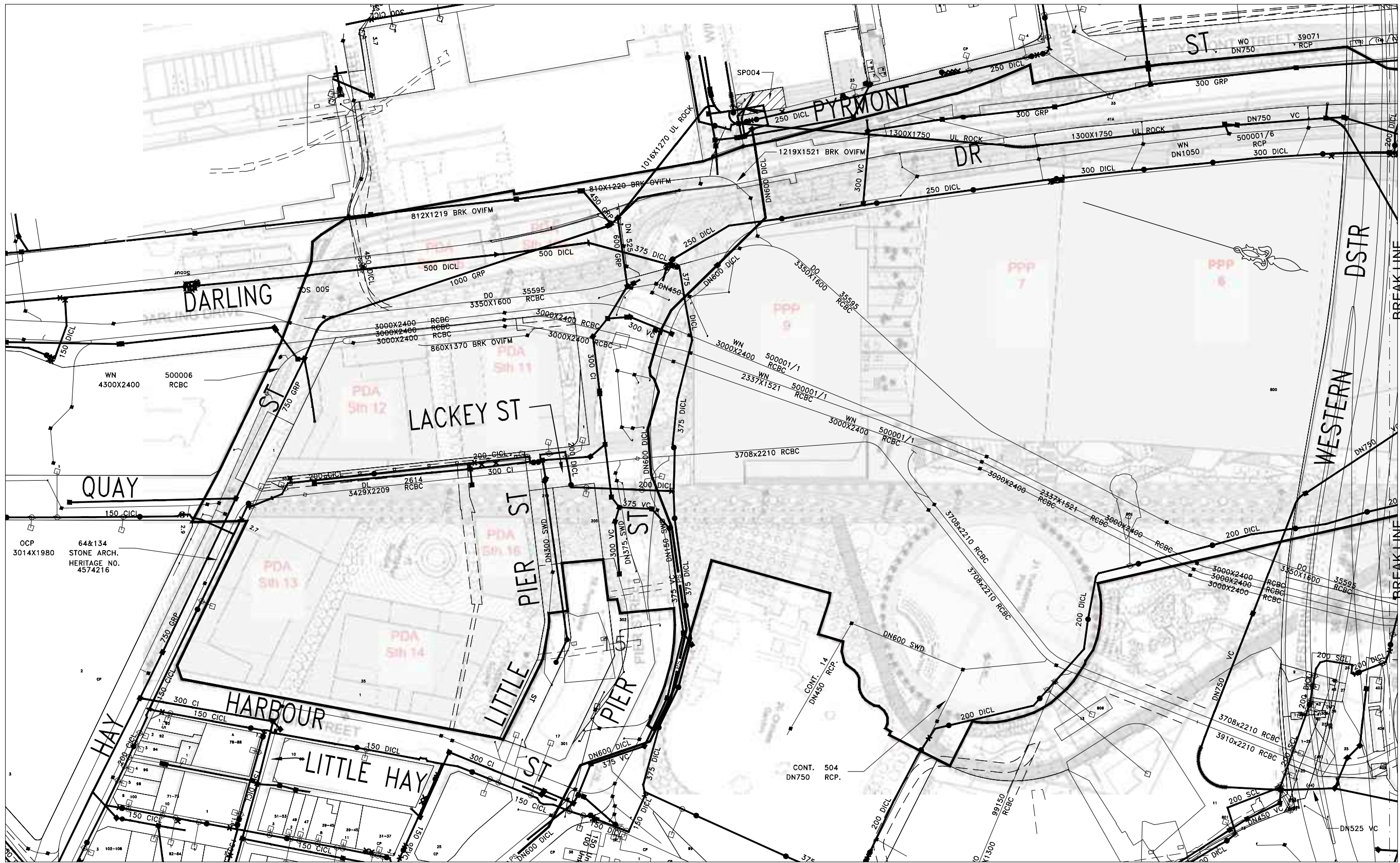
PLAN DRAWN DATE: 11/01/2013 VERSION: 1 SHEET 1 OF 1 SHEETS

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



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

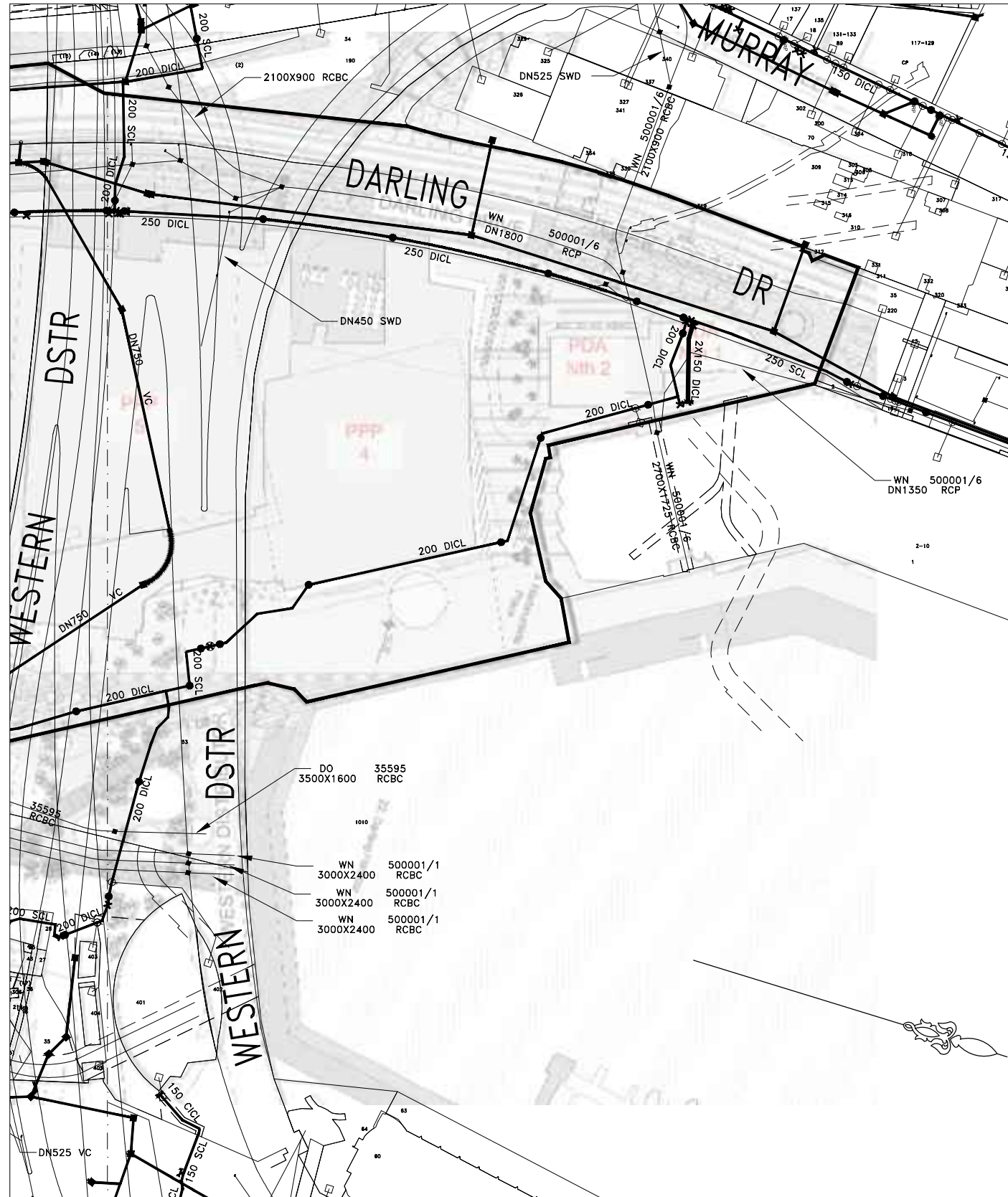
EXISTING LOTS (Proposed Development of)		DEVELOPMENT TYPE	NUMBER OF PROPOSED LOTS / UNITS	U.B. DIRECTORY MAP 3, A6 (40th Edition)	Water Service Co-Ordinator:
(1) LOT 800	D.P. 1164281	FEASIBILITY APPLICATION	Total Lots	1:1000	CARDNO (NSW) Pty Ltd LEVEL 9, THE FORUM -203 PACIFIC HY, GORDON Ph: (02) 9496 7700 Fax: (02) 9499 3902
(2)			Total Units		
(3)					
(4)					
(5)					
(6)					
		MUNICIPALITY	CITY OF SYDNEY COUNCIL		eDeveloper Case No. 131523



BREAKLINE REFER PAGE 2

BREAKLINE REFER PAGE 2

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



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

APPENDIX B

FUTURE UTILITY LOAD DEMANDS

CUMULATIVE HYDRAULIC DEMAND

Dated 9/01/2013

Sector	Building Number	Scope	Area / Size	GFA m2	Apts	Commissioning Date	Potable water			Sewer			Gas		
							kl/ day MAX	kl/ day AVG	L/sec MAX	kl/day MAX	kl/day AVG	L/sec MAX	MJ/h MAX	GJ/year total	
PPP	9.1	Theatre	8,000 patrons	57,500		Sep-14									
PPP	4.1	Convention		73,000		Dec-14	1005	704	23.3	804	564	18.6	44,500	44,500	
PPP	6.1	Exhibition		55,000		Jan-15									
South PDA	10a	Residential apartments	West 1; 170 Apartments, 431 EP, (9,600m ²)	9,600	170	Jun-15	1090	742	69.6	881	598	56.1	49,069	47,524	
North PDA	1	Hotel Rooms - Holiday Inn	315 keys, 3-4 Star	20,300		Oct-15	1158	772	72.4	942	625	58.6	56,614	50,163	
South PDA	16	Retail	400m ² GFA	400		May-16	1161	773	72.5	945	626	58.7	56,852	50,443	
North PDA	2	Hotel Rooms - Crowne Plaza	600 keys, 5 star	38,700		May-16	1291	831	77.9	1062	678	63.6	71,237	55,474	
South PDA	10b	Residential apartments	West 2; 252 Apartments, 600 EP, (13,700m ²)	13,700	252	Jun-16	1413	885	83.0	1171	727	68.2	77,757	59,790	
South PDA	11	Commercial offices	North West 2; 15,000m ² GFA	15,000		Jun-16	1451	902	84.6	1205	742	69.6	81,933	61,140	
South PDA	12	Residential apartments	South West 1; 306 Apartments	27,600	306	Jun-16	1614	975	91.4	1352	808	75.7	90,690	66,936	
South PDA	12.1	Retail (sleeved)	1,739m ² GFA	1,700		Jun-16	1626	980	91.9	1363	812	76.2	91,701	68,126	
South PDA	12.3	Residential apartments	South West 2, 140 Apartments	12,700	140	Jan-17	1701	1013	95.0	1430	842	79.0	95,731	70,793	
South PDA	14	Residential apartments	North East 1; 58 Apartments	4,500	58	Jun-17	1728	1025	96.1	1454	853	80.0	97,158	71,738	
South PDA	14.4	Residential apartments	North East 3; 264 Apartments	24,100	264	Jan-18	1870	1089	102.1	1583	910	85.3	104,805	76,799	
South PDA	14.5	Retail (sleeved)	3,600m ² GFA	3,600		Jan-18	1895	1099	103.1	1605	920	86.2	106,947	79,319	
South PDA	14.2	Residential apartments	North East 2; 157 Apartments	10,700	157	Sep-18	1958	1128	105.7	1662	945	88.6	110,342	81,566	
South PDA	14.3	Residential apartments	North; 44 Apartments	3,000	44	May-19	1976	1135	106.4	1678	952	89.3	111,293	82,196	
South PDA	13	Residential apartments	South East 1; 234 Apartments	21,100	234	Jan-20	2101	1191	111.7	1790	1002	94.0	117,988	86,627	
South PDA	13.1	Retail (sleeved)	1,900m ² GFA	1,900		Jan-20	2114	1197	112.2	1802	1007	94.4	119,119	87,957	
South PDA	13.3	Residential apartments	South East 2; 157 Apartments	10,700	157	Jan-20	2177	1225	114.8	1859	1033	96.8	122,513	90,204	

APPENDIX C

UTILITY CORRESPONDENCE

