SYDNEY INTERNATIONAL CONVENTION, EXHIBITION AND ENTERTAINMENT PRECINCT

DARLING HARBOUR LIVE – DARLING SQUARE – WESTERN PLOT - BUILDING W1

SERVICES INFRASTRUCTURE REPORT

FOR SSDA 12

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DARLING HARBOUR LIVE

SICEEP – DARLING HARBOUR LIVE – DARLING SQUARE - WESTERN PLOT - BUILDING W1

SERVICES INFRASTRUCTURE REPORT FOR SS DA 12

Sewer, Water, Gas, Telecommunications, Electrical & Rail Corridor Utilities

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CONTENTS

1 EXECUTIVE SUMMARY

Hyder Consulting have been engaged by Urbanest to provide a services infrastructure report to support a Stage 2 Development Application (referred to as SSDA 12), to be submitted in relation to the Western Plot –Building W1 in Darling Square precinct to be developed on part of the Darling Harbour area known as the Sydney International Convention, Exhibition & Entertainment Precinct (SICEEP).

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 have consulted utility providers for sewer, water, gas, electricity, communications and stormwater. It is understood from the findings of this consultation exercise that these utility providers are likely to be able to 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 broader scope of the SICEEP development is further refined.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) application number SSD 7113 that have been issued for this project. This report 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 (SSD) Development Application (DA) submitted to the Minister for Planning pursuant to Part 4 of the *Environmental Planning and* Assessment Act 1979 (EP&A Act).

The Application (referred to as SSDA 12) follows the approval of a staged SSD DA (SSDA 2) in December 2013. SSDA 2 sets out a Concept Proposal for a new mixed use residential neighbourhood at Haymarket referred to as "Darling Square", previously known as "The Haymarket". Darling Square forms part of the Sydney International Convention, Exhibition and Entertainment precinct (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".

More specifically this subsequent DA seeks approval for a residential building (student accommodation) within the Western development plot (Darling Drive) of Darling Square and associated public domain works. The DA has been prepared and structured to be consistent with the Concept Proposal DA.

3 OVERVIEW OF PROPOSED DEVELOPMENT

The proposal relates to a detailed ('Stage 2') DA for a residential building (student accommodation) in the Darling Drive Plot of Darling Square together with associated public domain works. The Darling Square Site is to be developed for a mix of residential and non-residential uses, including but not limited to residential buildings, commercial, retail, community and open space. The Darling Drive Plot is one of six development plots identified within the approved Concept Proposal.

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

- Demolition of existing site improvements;
- Associated tree removal and planting;
- Construction and use of one residential building within the Darling Drive Plot, to be used for student accommodation purposes;
- Public domain improvements, including provision of a new urban courtyard space between student accommodation buildings W1 and W2; and
- Extension 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 SICEEP.

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 Master 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.
- A vibrant and authentic new neighbourhood at the southern end of the precinct, now called 'Darling Square', including apartments, student accommodation, 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; and
- 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/Pyrmont and the City.

On 21 March 2013 a critical step in realising the NSW Government's vision for the SICEEP Project was made, with the lodgement of the first two SSD DAs with the (now) Department of Planning and Environment. The key components of these proposals are outlined below.

Public Private Partnership SSD DA (SSD 12_5752)

The Public-Private Partnership (PPP) SSD DA (SSDA 1) includes the core facilities of the SICEEP Project, comprising the new, integrated and world-class convention, exhibition and entertainment facilities along with ancillary commercial premises and public domain upgrades. SSDA1 was approved on 22 August 2013.

Concept Proposal (SSD 13_5878)

The Concept Proposal SSD DA (SSDA 2) establishes the vision and planning and development framework which will be the basis for the consent authority to assess detailed development proposals within the Darling Square Site. SSDA2 was approved on 5 December 2013. The Stage 1 Concept Proposal approved the following key components and development parameters:

- Indicative staging of demolition and development of future development plots;
- Land uses across the site including residential and non-residential uses;
- Street and laneway layouts and pedestrian routes;
- Open spaces and through-site links;
- Six separate development plots, development plot sizes and separation, building envelopes, building separation, building depths, building alignments, and benchmarks for natural ventilation and solar access provisions;
- A maximum total gross floor area (non-residential and residential GFA);
- Above ground car parking including public car parking;
- Residential car parking rates;
- Design Guidelines to guide future development and the public domain; and
- A remediation strategy.

In addition to the approval of SSDA2, the following approvals have been granted for various stages of the Darling Square site:

- Darling Drive (part) development plot (SSDA3) for the construction and use of a residential building/W2 (student accommodation) and the provision of associated public domain works approved on 7 May 2014;
- North-West development plot (SSDA4) for the construction and use of a mixed use commercial development and public car park building and associated public domain works approved on 7 May 2014; and

- South-West development plot (SSDA5) – construction and use of a mixed use residential development and associated public domain works approved on 21 May 2014.
- North-East development plot (SSDA7) – construction and use of a mixed use residential development and associated public domain works approved on 16 April 2014.

Approval was also granted on 15 June 2014 for SSDA6 which includes the construction and use of the International Convention Centre (ICC) Hotel and provision of public domain works.

This report has been prepared to support a detailed Stage 2 SSD DA for a residential building/W1 (student accommodation) and associated public domain works within Darling Square (SSDA 12), consistent with the Concept Proposal (SSDA 2).

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 (refer to Figure 1).

The Darling Square Site is:

- Located in the south of the SICEEP Site, within the northern portion of the suburb of Haymarket;
- Bounded by the Powerhouse Museum to the west, the Pier Street overpass and Little Pier Street to the north, Harbour Street to the east, and Hay Street to the south; and
- Irregular in shape and occupies an area of approximately 43,807m^2.

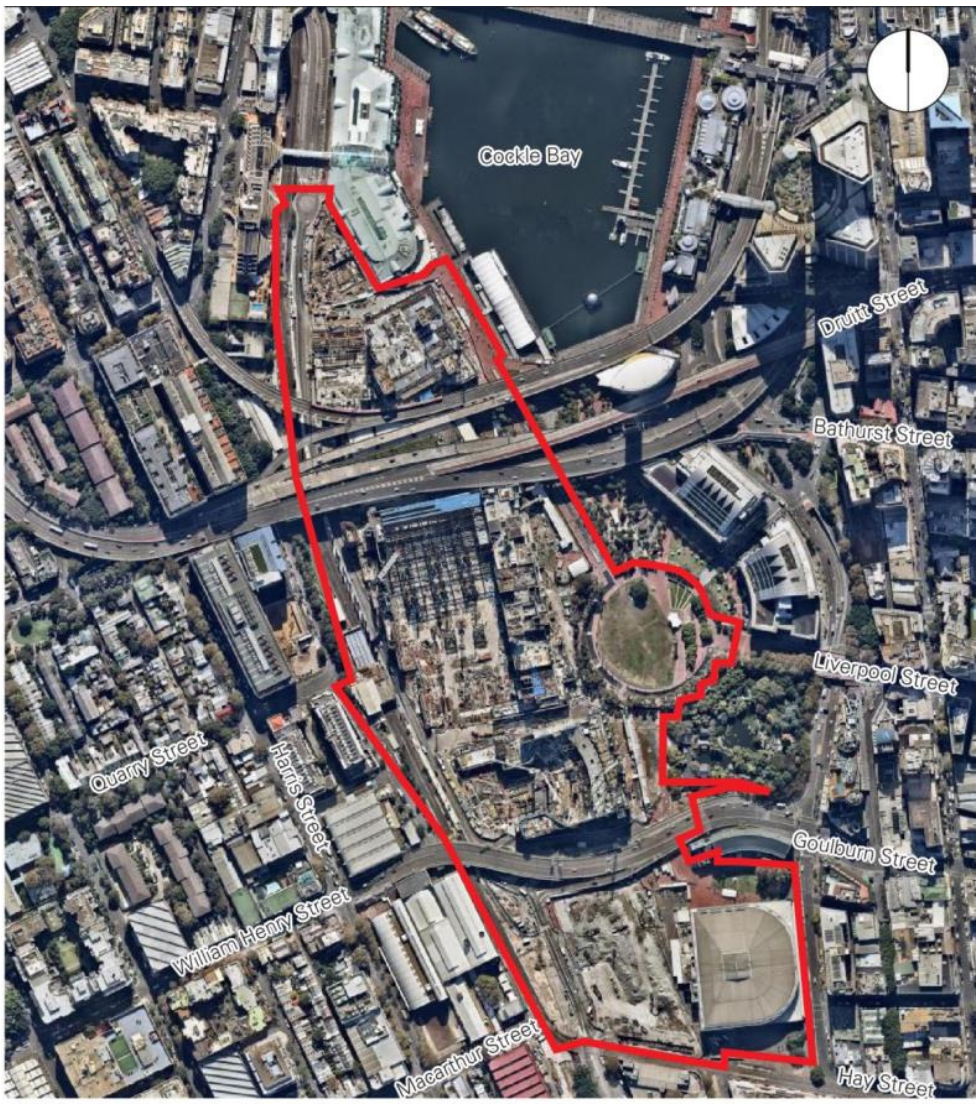


Figure 1: SICEEP site Location

The Concept Proposal DA provides for six (6) separate development plots across the Darling Square Site (refer to Figure 2):

1. North Plot;
2. North East Plot;
3. South East Plot;
4. South West Plot;
5. North West Plot; and
6. Western Plot (Darling Drive).

The Application Site area relates to the northern portion of the Western Plot and surrounds as detailed within the architectural and landscape plans submitted in support of the DA.

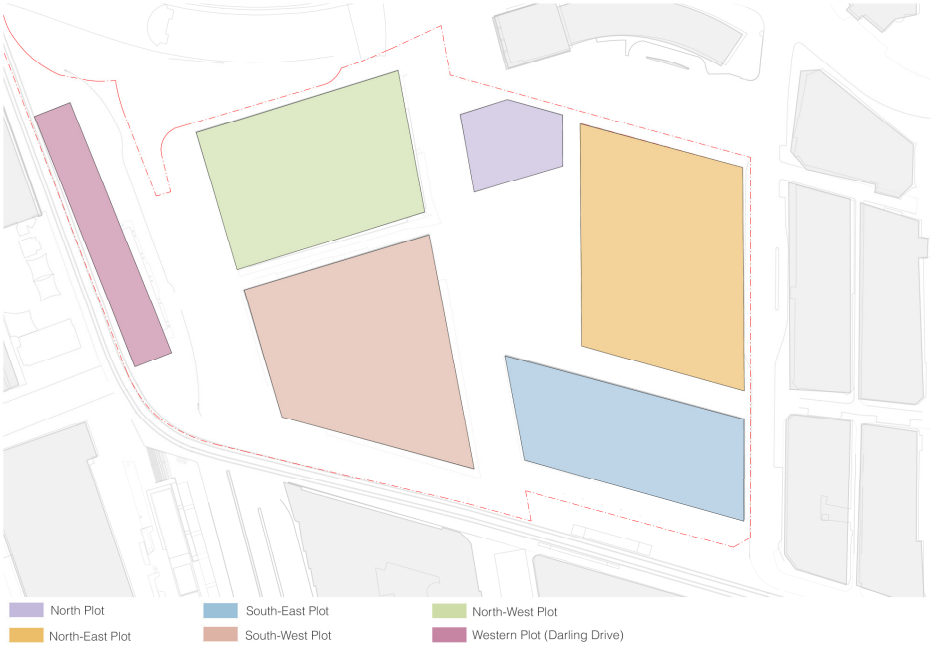


Figure 2 – Concept Proposal Development Plots

The Application Site area relates to the northern portion of the Western Plot and surrounds as detailed within the architectural and landscape plans submitted in support of the DA (see Figure 3 – Works Boundary for subject DA).

The Site area for this Stage 2 DA relates to the West Plot and surrounds as detailed within the architectural and landscape plans submitted in support of the DA (refer to Figure 3).

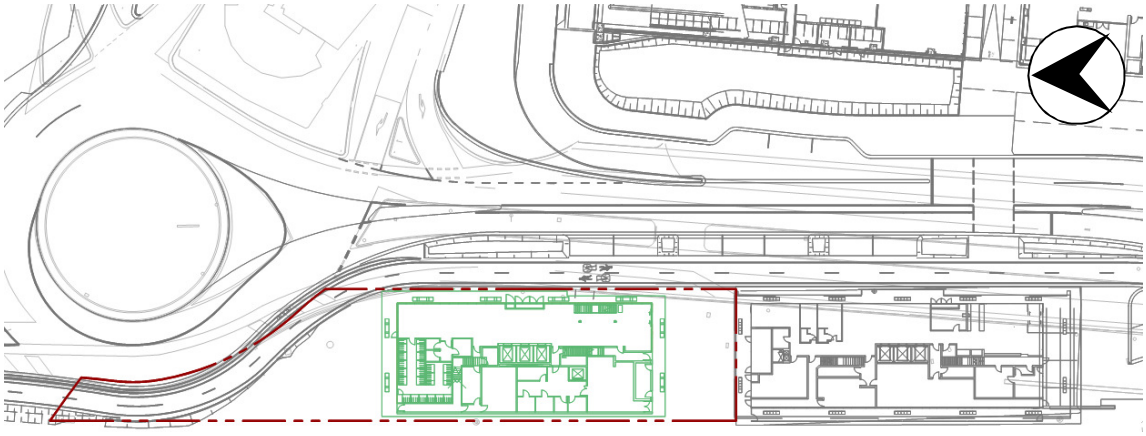


Figure 3 – Works Boundary for Subject DA

6 PURPOSE OF THIS REPORT

This report has been prepared to seek approval for a residential building (student accommodation) within the Western development plot (Darling Drive) of Darling Square and associated public domain works. It addresses the relevant requirements of the SEAR's for the project, issued on 20th July 2015. Requirement 9: Utilities states the EIS shall:

- *"identify the capacity of all existing utilities and augmentation requirements of the development for the provision of utilities, including staging of infrastructure; and*
- *Provide 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 10th June 2014. 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 on the western side of the existing Darling Drive where the Student Accommodation is proposed to be located. Separate reports cover the other components of the Darling Square development.

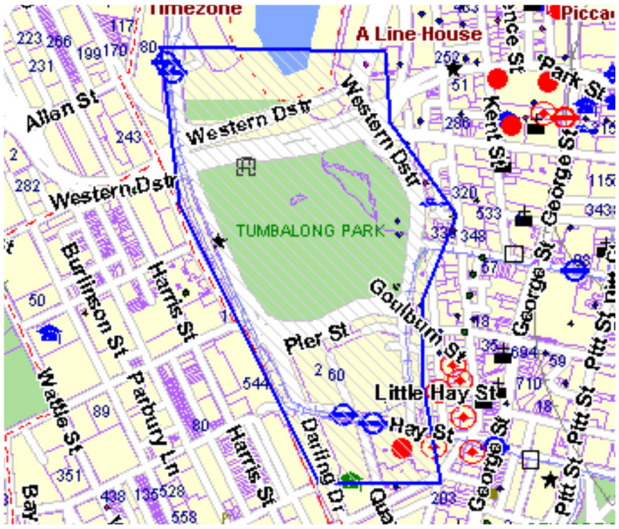


Figure 4: DBYD Enquiry Area (DBYD, 2014)

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
PIPE Networks	AAPT / PowerTel
Ausgrid	Telstra
Jemena	Optus and/or Uecomm
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 Student Accommodation.

7 UTILITIES INFRASTRUCTURE

Reference shall be made to the Services Infrastructure Report in Appendix B [Report No. DN00339, dated 12/03/2013, Rev 04] submitted in support of Darling Square Concept Proposal SSD DA (SSDA 2).

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

Since approval of the Stage 1 DA, consultation with the various utility authorities has progressed with detailed servicing strategies for many of the utilities now being completed and commissioned.

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.

7.1 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.

7.2 SEWER

7.2.1 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 have been demolished, and new reticulation pipework installed by Lend Lease. The collection pipework has been designed in accordance with WSA Sewerage Code of Australia Sydney Water Edition 1- Version 3.

The new sewer collection system and diversions have been designed and constructed in accordance with SWC requirements which when completed and will become SWC assets upon issue of Section 73 certificate.

The Student Accommodations area:-

W2 Building consists of 635 beds and W1 Building is proposed to consist of a total of 668 beds. This is a total of 1303 beds.

Total proposed sewer loading for W1 and W2 is 1303 EP (1 EP per bed).

The sewer constructed is DN225 and accepts 1600 EP, therefore providing sufficient spare capacity within this sewer.

7.2.2 EXISTING INFRASTRUCTURE

A DN1000 GRP sewer is located at a depth of between 6 and 8m and traverses the site in a south east to north west direction. The DN1000 sewer drains to a manhole to the north of the proposed building which is the confluence of a DN600 GRP draining from Pier Street to the east and a DN450 GRP draining from the western side of the light rail corridor.

The DN1000 main has the potential to be within the zone of influence of the foundations of the building and as such, it will need to be protected in accordance with Sydney Water's requirements covering building over or adjacent to sewers. Relocation of this main is not expected to be required however building foundations and piles shall be expected to terminate below the level of the sewer. Confirmation of this strategy has been confirmed by Sydney Water in their Feasibility Letter dated 18th March 2015 (case Number 144392)

7.2.3 PROVISION OF UTILITIES

A new DN225 sewer main has been laid to the east of the new building, adjacent and parallel to Darling Drive. This sewer will service the proposed new student accommodation and will drain to the north connecting to the existing manhole at the confluence of the existing DN100; DN450 and DN600 sewer mains to the north of the site. This concept is presently being developed in consultation with Sydney Water.

7.2.4 CONSULTATION

Consultation with SWC was previously undertaken as part of the SSDA and further development of the concept planning and detailed planning for the individual plot development applications (SSDA3, SSDA4, SSDA5 and SSDA7).

7.3 WATER

7.3.1 WATER SERVICE TO THE PRECINCT

Darling Square is located in the SWC service area, and is located within the existing urban supply network. Discussions with SWC indicate the mains in the location have adequate capacity to service the SICEEP precinct.

Sections of existing infrastructure have been demolished/capped off, and new reticulation pipework has been installed to suit the new development scheme planning. The reticulation pipework has been 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.

The new water service reticulation has been completed and is subject to final commissioning for issue of a Section 73 certificate.

7.3.2 DA ASSESSMENT

SICEEP WATER SUPPLY	WATER SUPPLY AVERAGE DAY kL/d	WATER SUPPLY PEAK DAY kL/d				
		Total Peak Day excl cooling water kL/d	Cooling Water kL/d	Total Peak Day kL/d	Peak Hour 8:15-9:15am kL/hr	PPP Peak Hour 1:30-2:30pm kL/hr
Total Student Accommodation	139	167	0	167	16	8

Water demand calculations for the precinct have been revised based on the latest proposed gross floor areas and total number of apartments. It is noted that while in some plots the total number of apartments has increased, the number of 1 bedroom apartments has also been increased. The overall water demand in the precinct has therefore been reduced slightly from the previously calculated demand. It is anticipated that, as the total demand has been reduced, the current proposed water servicing arrangements are likely to be confirmed to be suitable for the new proposed gross floor areas and demand.

7.3.3 EXISTING INFRASTRUCTURE

A DN500 DICL water main was located within the footprint of the proposed student accommodation plot. This main runs within the existing Darling Drive road reserve and is a

significant trunk main supplying the local area. In accordance with Sydney Water's requirements, this main has been relocated to the east of the proposed building and positioned within the carriageway of the realigned Darling Drive. The shut down and cut over of this main has been undertaken as per Sydney Water's requirements to ensure that any potential for service disruption to other users was minimised and carefully managed.

7.3.4 PROVISION OF UTILITIES

There were no reticulation mains in the immediate vicinity of the proposed student accommodation. Works have recently been completed to lay a DN200 PVC reticulation main taken off the relocated DN500 DICL trunk main to supply potable water and fire requirements to the student accommodation plot. The DN200 PVC reticulation main runs parallel to the trunk main and within the shared path between Darling Drive and the student accommodation.

7.3.5 CONSULTATION

Consultation with SWC was previously undertaken as part of the Concept Proposal SSDA and further development of the concept planning and detailed planning for the individual plot development applications (SSDA3, SSDA4, SSDA5 and SSDA7).

7.4 GAS

Gas infrastructure in the vicinity of the site is owned and operated by Jemena.

Jemena had previously indicated during the SSDA2 assessment 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 was 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.

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. Ongoing consultation shall be undertaken to confirm.

7.4.1 EXISTING INFRASTRUCTURE

There are no gas mains immediately in the vicinity of the proposed student accommodation building. The nearest main is a DN100mm 1050kPa secondary main in Little Pier Street. This main currently supplies natural gas via a regulator set to the existing Entertainment Centre, the Pump House and the Sydney Harbour Foreshore Authority compound beneath the Pier Street overpass.

7.4.2 PROVISION OF UTILITIES

It is proposed to extend a gas main from the regulator set in Little Pier Street to the site via the Boulevard through the Darling Square precinct and then along the proposed Theatre Lane. The main will then cross Darling Drive where it will terminate in the verge adjacent to the proposed building. The site shall be provided with a 7kPa supply to the boundary (by others).

7.5 TELECOMMUNICATIONS

7.5.1 EXISTING INFRASTRUCTURE

A range of communications infrastructure is located within the vicinity of the proposed student accommodation building, however much of it is not expected to be impacted upon by the proposed construction. There are however, two utility authorities expected to be impacted by the proposed building as follows:

Optus

An existing Optus cable conduit has been relocated from within the proposed footprint of the building close to the eastern edge and adjacent to Darling Drive, to the verge between the proposed building and Darling Drive.

Verizon

An existing Verizon cable conduit has been relocated from within the proposed footprint of the building close to the western edge and adjacent to the light rail corridor to the verge adjacent to Darling Drive or within the light rail corridor.

7.5.2 PROVISION OF UTILITIES

Prior to the submission of the Concept Proposal SSDA, consultation with NBNCo confirmed their intention to supply essential communications infrastructure to the entire SICEEP development precinct including the student accommodation.

There is no NBNCo infrastructure in the vicinity of the site, however during consultation with NBNCo they confirmed that they would deliver all lead-in infrastructure to the precinct. The delivery strategy is currently being developed with NBNCo.

Further consultation with NBN Co will be required, and will be undertaken as part of the detailed design for supply of services to the precinct and each plot.

Telecommunication services are known to be available to serve the plot however determination as to which provider is yet to be confirmed.

7.6 ELECTRICAL

7.6.1 EXISTING INFRASTRUCTURE

There are a number of high voltage transmission and distribution assets in the immediate vicinity of the site that will need to be managed in accordance with the requirements of Ausgrid.

There are two separate HV transmission routes located within the footprint of the proposed student accommodation building.

1. City West Cable Tunnel: Located at approximately RL -20m AHD, this tunnel is bored in solid bedrock at significant depth and is considered to be ‘maintenance free’. Whilst it is located beneath the footprint of the proposed student accommodation building, preliminary structural analysis (by others) has found that the foundation design for the proposed structure will terminate at a shallow depth that will not impact upon the transmission tunnel. Detailed design of the building foundations will be undertaken in accordance with Ausgrid requirements. Refer to the report accompanying SS DA3 by Pells Sullivan Meynink (PSM1986-019L, 23/04/2013) and their subsequent

Infrastructure Impact Assessment Repot (PSM2796-002R dated September 2015) for further information on the impact of the proposed student accommodation tower on adjacent infrastructure. Ausgrid have also confirmed that they have no objection to the proposal (Refer to Ausgrid Letter dated 10th February 2014 (Appendix C)

2. Darling Drive Transmission Conduit: Located at shallow depth between Darling Drive and the light rail corridor, this transmission cable has now been relocated out of the footprint of the proposed building

Additional distribution cables are located within the immediate vicinity of the site, however it is not expected that these cables will be impacted upon directly by the proposed student accommodation. Work in the vicinity of these cables will be carried out in accordance with Ausgrid requirements.

7.6.2 PROVISION OF UTILITIES

Ausgrid had previously provided an indicative feasibility study for the Darling Square precinct which confirmed that the subject site will be supplied from two new HV feeders from the Camperdown Zone Substation. Formal application for these new HV feeders was submitted during April 2013 and on receipt of the Design Information Packs from Ausgrid, a Level 3 ASP engaged to undertake the detailed design and documentation of the required infrastructure for approval by Ausgrid.

Current expectation is that the new underground HV supply will enter the Darling Square precinct from the north along the eastern side of Darling Drive and then distributed to a substation location within the subject site.

Reference should be made to the Urbanest SICEEP Electrical Services Stage 1 &2 Maximum demand assessment + Permanent Power Supply Option studyEN-N15_66 (dated May 2015) (Appendix C) wherein it is estimated that the electrical loading of the Western Plot - Building W1 will be in the order of 670.2 Amps/Phase.

The report indicates three possible options for the site however two options are recommended for further testing in the design development phase of the project.

Option 2 - One Substation installed in Stage 1 with 2 x 800Amp direct distributors to each building main switch board (Stage 1 & 2 respectively);

Option 3 - One Substation installed in Stage 1 with 1 x 1,500Amp consumer main to Stage 1 main switch board. Stage 1 main switch board then provides a 800Amp supply to Stage 2 main switch board.

7.7 RAIL CORRIDOR UTILITIES

The Western Plot - Building W1 development scheme implemented the creation of lots in part, within land previously under the tenure of RailCorp commensurate with the existing light rail corridor west of Darling Drive.

Existing rail infrastructure services located within the rail corridor, but under the sites for the proposed student accommodation, have been relocated to facilitate the proposed development. Such infrastructure include electrical, signalling communications and drainage and stanchions.

These arrangements were made in consultation with RailCorp.

7.8 STORMWATER, FLOODING AND WSUD

For discussion of all utilities associated with stormwater and flooding, please refer to report No.DN00404 accompanying the Development Application which this report is submitted in support of SSDA12.

8 CONCLUSION

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

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

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

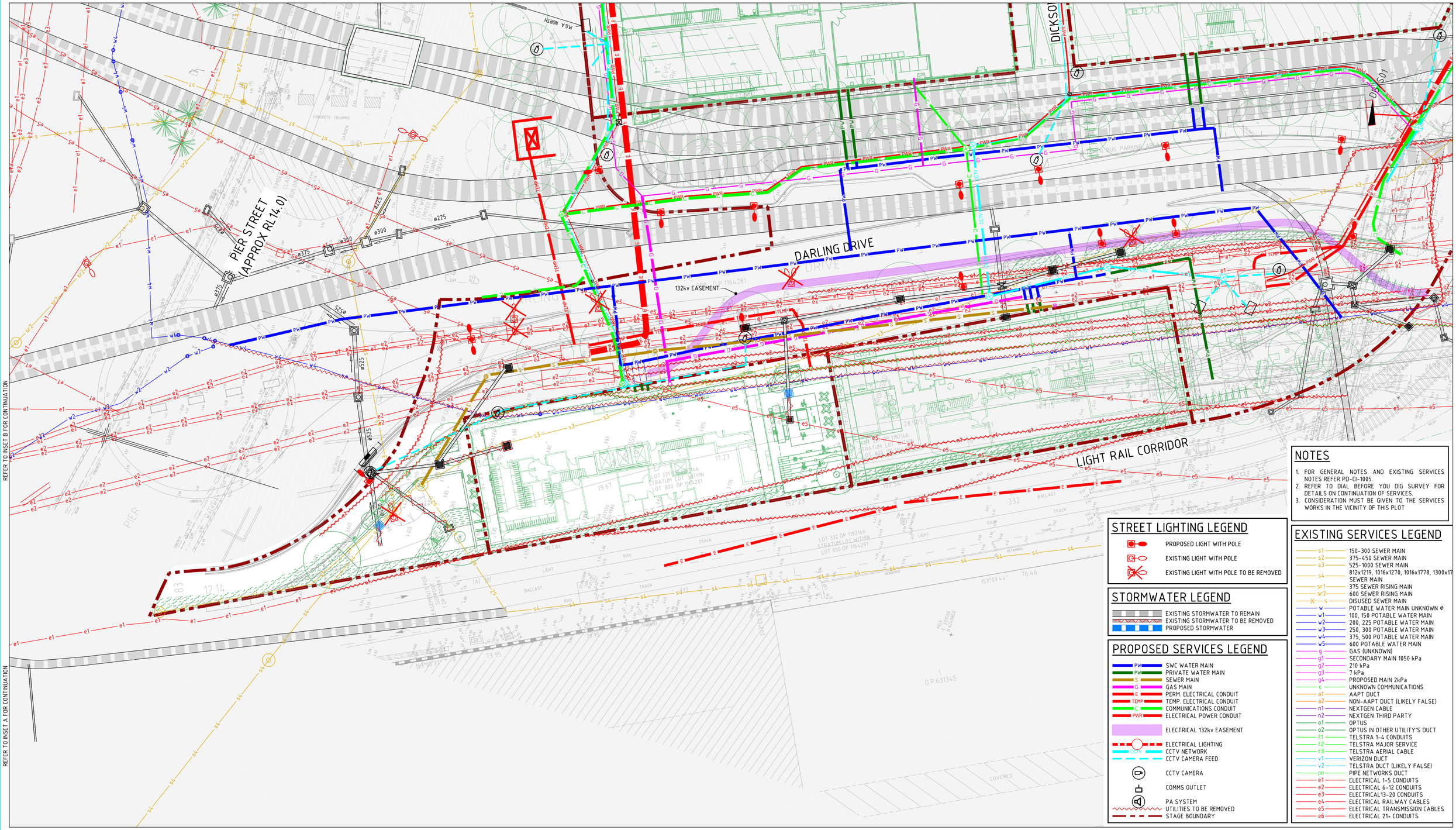
APPENDIX A

COMBINED SERVICES PLAN

SYDNEY INTERNATIONAL CONVENTION, EXHIBITION AND ENTERTAINMENT PRECINCT

REFER TO INSET B FOR CONTINUATION

REFER TO INSET A FOR CONTINUATION



NOTES

1. FOR GENERAL NOTES AND EXISTING SERVICES NOTES REFER PD-CI-1005.
2. REFER TO DIAL BEFORE YOU DIG SURVEY FOR DETAILS ON CONTINUATION OF SERVICES.
3. CONSIDERATION MUST BE GIVEN TO THE SERVICES WORKS IN THE VICINITY OF THIS PLOT

STREET LIGHTING LEGEND

- PROPOSED LIGHT WITH POLE
- EXISTING LIGHT WITH POLE
- EXISTING LIGHT WITH POLE TO BE REMOVED

STORMWATER LEGEND

- EXISTING STORMWATER TO REMAIN
- EXISTING STORMWATER TO BE REMOVED
- PROPOSED STORMWATER

PROPOSED SERVICES LEGEND

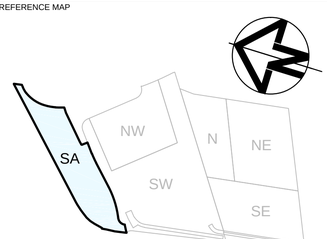
- PW — SWC WATER MAIN
- PW — PRIVATE WATER MAIN
- S — SEWER MAIN
- G — GAS MAIN
- E — PERM. ELECTRICAL CONDUIT
- TEMP — TEMP. ELECTRICAL CONDUIT
- C — COMMUNICATIONS CONDUIT
- PWR — ELECTRICAL POWER CONDUIT
- ELECTRICAL 132kv EASEMENT
- ELECTRICAL LIGHTING
- CCTV — CCTV NETWORK
- CCTV CAMERA FEED
- CCTV CAMERA
- COMMS OUTLET
- PA SYSTEM
- UTILITIES TO BE REMOVED
- STAGE BOUNDARY

EXISTING SERVICES LEGEND

- s1 — 150-300 SEWER MAIN
- s2 — 375-450 SEWER MAIN
- s3 — 525-1000 SEWER MAIN
- s4 — 812x1219, 1016x1270, 1016x1778, 1300x1778 SEWER MAIN
- sr1 — 375 SEWER RISING MAIN
- sr2 — 600 SEWER RISING MAIN
- s — DISUSED SEWER MAIN
- w — POTABLE WATER MAIN UNKNOWN Φ
- 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
- g — GAS (UNKNOWN)
- g1 — SECONDARY MAIN 1050 kPa
- g2 — 210 kPa
- g3 — 7 kPa
- g4 — PROPOSED MAIN 2kPa
- c — UNKNOWN COMMUNICATIONS
- a1 — AAPT DUCT
- a2 — NON-AAPT DUCT (LIKELY FALSE)
- n1 — NEXTGEN CABLE
- n2 — NEXTGEN THIRD PARTY
- o1 — OPTUS
- o2 — 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 — ELECTRICAL13-20 CONDUITS
- e4 — ELECTRICAL RAILWAY CABLES
- e5 — ELECTRICAL TRANSMISSION CABLES
- e6 — ELECTRICAL 21+ CONDUITS

DARLING HARBOUR LIVE

REFERENCE MAP



NOTES:

1. DO NOT SCALE FROM DRAWINGS. USE WRITTEN DIMENSIONS ONLY.
2. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. ALL COORDINATES TO MGA. ALL LEVELS TO AHD.
4. ALL DIMENSIONS, COORDINATES AND LEVELS TO BE VERIFIED ON SITE BEFORE PROCEEDING WITH WORK. HYDER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES.
5. THIS DRAWING MUST BE READ IN CONJUNCTION WITH ALL RELEVANT CONTRACTS, SPECIFICATIONS AND DRAWINGS.
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REV	DESCRIPTION	DATE
04	ISSUE FOR DEVELOPMENT APPLICATION	11/09/15
03	ISSUE FOR DEVELOPMENT APPLICATION	04/09/15
02	ISSUE FOR DEVELOPMENT APPLICATION	01/09/15
01	DRAFT ISSUE	19/08/15

CLIENT

urbanest student accommodation

URBANEST STUDENT ACCOMMODATION
SUITE 102, LEVEL 1, AUSTRALIA SQUARE,
PLAZA BUILDING, 95 PITT ST
SYDNEY, NSW 2000

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Hyder

PROJECT

SICEEP - DARLING HARBOUR LIVE
DARLING SQUARE
WESTERN PLOT BUILDING W1

DRAWING TITLE

COMBINED SERVICES PLAN
(ROBERT BIRD GROUP)

STATUS

DA APPROVAL

SCALE @ A1	DRAWN	DESIGNED	REVIEWED	APPROVED
1 : 250	JW	JW	MAK	-

PROJECT NUMBER	DRAWING NUMBER	REV
AA004399	PD-CI-1902	04

Date Plotted: 11 Sep 2015 - 04:56PM File Name: F:\AA004399\E-CAD\C-Civil\D-Final\B-PDA\I-W1 Building {PD-CI-1001 - PD-CI-1999}\PD-CI-1902-CombinedServicesPlan-RBG.dwg

Original Sheet Size A1 - 841 x 594mm

APPENDIX B

SERVICES INFRASTRUCTURE REPORT SUBMITTED IN SUPPORT OF THE HAYMARKET STAGE 1 DA (SSDA 2)

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

Author	H.Mallen	
Checker	M.Kefford	
Approver	M.Kurtz	

Report No DN00339

Date FINAL 12/03/2013 [04]

CONTENTS

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/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 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.

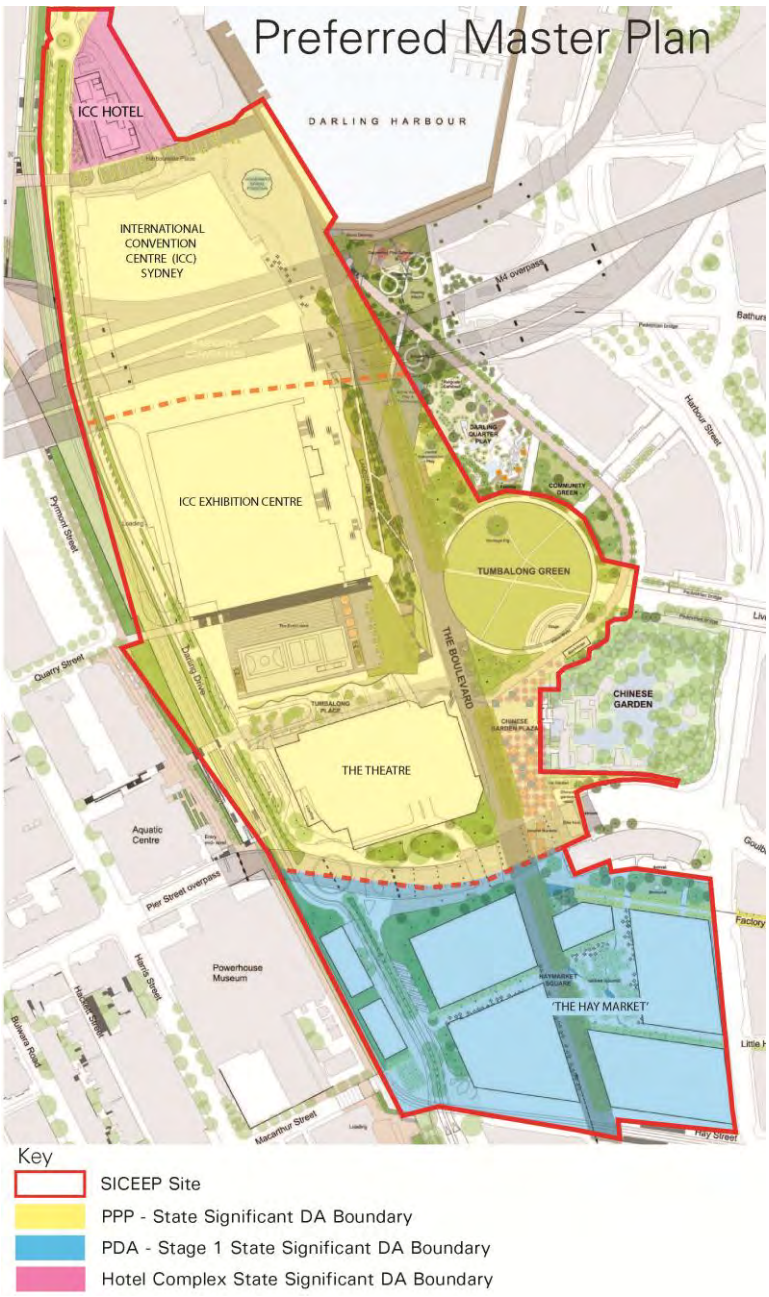


Figure 2: Preferred Masterplan

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.

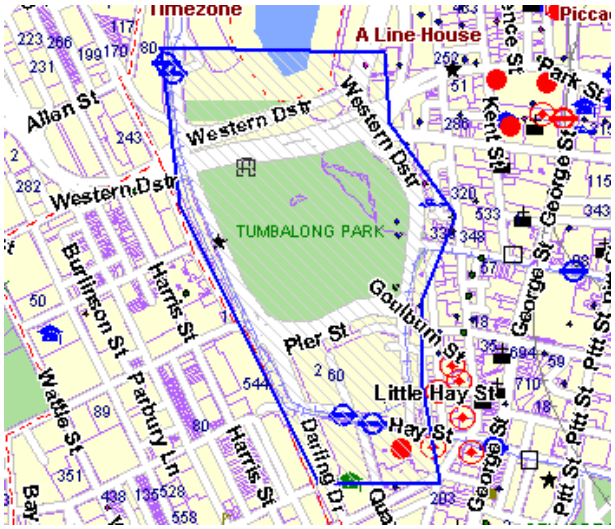


Figure 3: DBYD Enquiry Area (DBYD, 2011)

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 Uecomm
- Jemena
- Sydney Water
- AARNet Pty Ltd
- Primus Telecom

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

Ausgrid

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) 43998007

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

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

Fax Muswellbrook (02) 65429 037

Email to ea.datamuswellbrook@ausgrid.com.au

RETAILER **NMI**

INSTALLATION ADDRESS

Property Name 'The Haymarket' PDA

Pole/Pillar ID

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

Existing Meter ID

Street Darling Drive

Office Use Only

Job Number

Nearest Cross Street Hay Street

Suburb Darling Harbour, NSW **Postcode** 2000

Site Establishment Fee to be applied

CUSTOMER AND POSTAL ADDRESS

First Name (or Company Name) Lend Lease

Phone

Last Name

Mobile

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

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

ELECTRICAL CONTRACTOR/AUTHORISED SERVICE PROVIDER

Electrical Contractor Name T.B.C. **Licence Number** **Contact Phone Number**

Authorised Service Provider Name **Licence Number** **Contact Phone Number**

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

E/C or ASP Postal Address

SERVICE, DEMAND AND LOAD DETAILS (please tick)

Connection Type		Service Type		Service Size		Number of Installations		Premise Type		Supplementary AFC	
New	X	Overhead		100A		Single Installation		Domestic		If the installation is one of the following types you must also complete and attach the **Supplementary Application for Connection.**	
Alteration		Underground	X	200A		Multiple Installation	X	Torrens / Strata		New electrical work over 20kW	X
Upgrade		UGOH		400A				Commercial	X	Services greater than 100 Amps	X
Separation		Off Pole Transformer		Other..... A 13770A/ph		Number of House Services		Builders Service Perm		CT metered installations (CT Metering Form MUST be submitted)	X
Amalgamation		Upgrade to TOU	Y			Number of Units		Special Small Service (Indicate type of SSS below)		New HV installations and those requiring more than 100 Amps of additional load	
Grid Connected Generation System								Other.....		Multiple living unit developments (more than six units)	
										Installations located in rural or outlying 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)	X
										Grid Connected Generation System	

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.u
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
Darling Drive

Suburb
Darling Harbour

Cross Street
Hay Street

Existing Meter ID | **Pole Pillar ID**

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:	22696m^2
Total office floor area without air/con:	0m^2
Car park floor area:	16509m^2
Warehouse floor area:	0m^2
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 m^2

PART C DIAGRAM

Refer to attached site plan.

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 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) YES	
No. of Phases:	1	3	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 Number _____ Total Rating _____kW	Other Generator details (Wind etc.) Type_____ Total Rating _____kW

Note: The Metering Configuration must be Net Metering

The installation must be: -

a) Designed and installed by a CEC accredited person

Lend Lease

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 e 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 in 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:

Lend Lease

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.

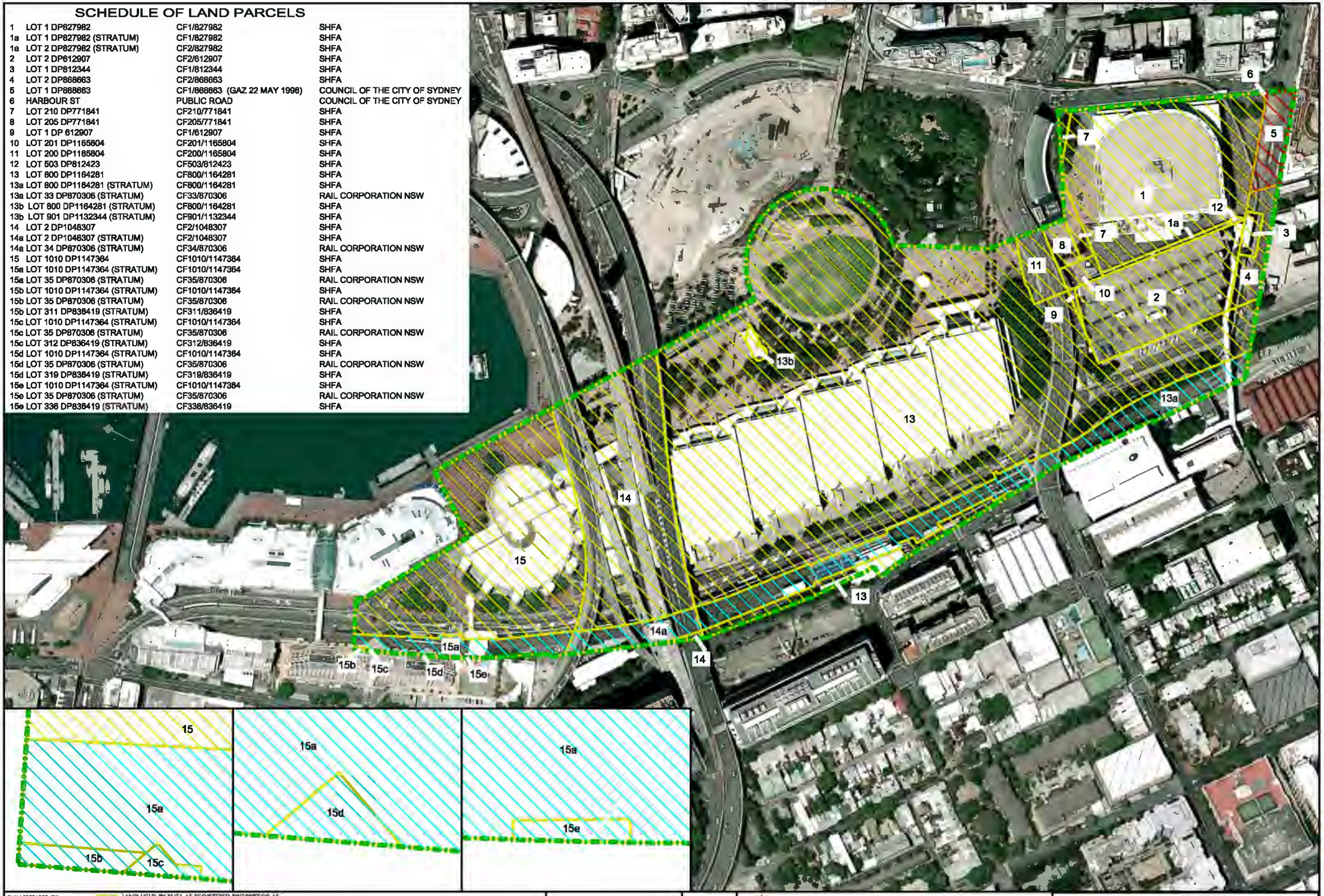
Yours Sincerely,

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	CF1/827982	SHFA
1a	LOT 1 DP827982 (STRATUM)	CF1/827982	SHFA
1a	LOT 2 DP827982 (STRATUM)	CF2/827982	SHFA
2	LOT 2 DP612907	CF2/612907	SHFA
3	LOT 1 DP812344	CF1/812344	SHFA
4	LOT 2 DP868663	CF2/868663	SHFA
5	LOT 1 DP868663	CF1/868663 (GAZ 22 MAY 1996)	COUNCIL OF THE CITY OF SYDNEY
6	HARBOUR ST	PUBLIC ROAD	COUNCIL OF THE CITY OF SYDNEY
7	LOT 210 DP771841	CF210/771841	SHFA
8	LOT 205 DP771841	CF205/771841	SHFA
9	LOT 1 DP 612907	CF1/612907	SHFA
10	LOT 201 DP1165804	CF201/1165804	SHFA
11	LOT 200 DP1165804	CF200/1165804	SHFA
12	LOT 503 DP812423	CF503/812423	SHFA
13	LOT 800 DP1164281	CF800/1164281	SHFA
13a	LOT 800 DP1164281 (STRATUM)	CF800/1164281	SHFA
13a	LOT 33 DP870306 (STRATUM)	CF33/870306	RAIL CORPORATION NSW
13b	LOT 800 DP1164281 (STRATUM)	CF800/1164281	SHFA
13b	LOT 901 DP1132344 (STRATUM)	CF901/1132344	SHFA
14	LOT 2 DP1048307	CF2/1048307	SHFA
14a	LOT 2 DP1048307 (STRATUM)	CF2/1048307	SHFA
14a	LOT 34 DP870306 (STRATUM)	CF34/870306	RAIL CORPORATION NSW
15	LOT 1010 DP1147364	CF1010/1147364	SHFA
15a	LOT 1010 DP1147364 (STRATUM)	CF1010/1147364	SHFA
15a	LOT 35 DP870306 (STRATUM)	CF35/870306	RAIL CORPORATION NSW
15b	LOT 1010 DP1147364 (STRATUM)	CF1010/1147364	SHFA
15b	LOT 35 DP870306 (STRATUM)	CF35/870306	RAIL CORPORATION NSW
15b	LOT 311 DP836419 (STRATUM)	CF311/836419	SHFA
15c	LOT 1010 DP1147364 (STRATUM)	CF1010/1147364	SHFA
15c	LOT 35 DP870306 (STRATUM)	CF35/870306	RAIL CORPORATION NSW
15c	LOT 312 DP836419 (STRATUM)	CF312/836419	SHFA
15d	LOT 1010 DP1147364 (STRATUM)	CF1010/1147364	SHFA
15d	LOT 35 DP870306 (STRATUM)	CF35/870306	RAIL CORPORATION NSW
15d	LOT 319 DP836419 (STRATUM)	CF319/836419	SHFA
15e	LOT 1010 DP1147364 (STRATUM)	CF1010/1147364	SHFA
15e	LOT 35 DP870306 (STRATUM)	CF35/870306	RAIL CORPORATION NSW
15e	LOT 336 DP836419 (STRATUM)	CF336/836419	SHFA



PLAN PREPARED BY:
GEOSPATIAL MANAGEMENT SERVICES
76/23 NARABANG WAY
BELROSE NSW 2085
PH 94501221

LAND HELD BY SHFA AS REGISTERED PROPRIETOR AS AT 14 DECEMBER 2011

LAND HELD BY SHFA EXCLUDING THE STRATUM LOT HELD BY RAIL CORPORATION NSW

LAND HELD BY THE COUNCIL OF THE CITY OF SYDNEY

SYDNEY INTERNATIONALCONVENTION, EXHIBITION AND ENTERTAINMENT PRECINCT BOUNDARY

0 10 20 40 60 80 100
SCALE

NORTH

NSW GOVERNMENT Planning & Infrastructure
Sydney Harbour Foreshore Authority

SYDNEY HARBOUR FORESHORE AUTHORITY
PLAN SHOWING LAND OWNERSHIP WITHIN THE SYDNEY INTERNATIONAL CONVENTION, EXHIBITION AND ENTERTAINMENT PRECINCT BOUNDARY