

CRI Australia for Cochlear



Cochlear

Global Headquarters

Site Infrastructure Services

Thursday, June 18, 2008

Report no: NS04010-INFRA-PA



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Cochlear Ryde Site Services Infrastructure

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Appendix 1

Proposed Site Services Connections





1 General

The proposed Cochlear Global Headquarters development at Ryde is part of the Macquarie University's Concept Plan Redevelopment

An option exists to build up to four (4) buildings over a four (4) stage period to cater for Cochlear's expanded operations.

This report deals with Stage 1 of the development with the infrastructure sized to cater for Stage 2.

Stage 1 of the Cochlear Project consists of a commercial office building of 6-7 storeys and approx. 23,000m² NLA and is proposed to be completed by 2010.

The building will be designed to be Grade "A" minimum (as defined by the Property Council of Australia's 2006 Design Specification for New Office Buildings)

The base building will be designed to be a 4 Star Green Star –Office Design V2 Rating (as defined by the Green Building of Australia) and 4 ½ Star ABGR (as defined by Australian Building Greenhouse Rating scheme methodology)

The site is considered to be a fully serviced site and wholly within the Macquarie University Campus with no access to public boundaries or utilities.

This report has been prepared with information provided by Macquarie University.

Hyder Consulting have provided all necessary building loads to enable Macquarie University to carry out Authority negotiations.

2 Hydraulic Infrastructure Services

The information available at present regarding the existing water, sewer and gas services in the vicinity of the proposed development is based on the surface survey available –plan Nr 30431DT/27-06-07 by Lockley Land Title Solutions.

Additional information about the existing hydraulic services infrastructure is currently surveyed: type of service, location, pipe size, pipe material, invert levels. Proposed loading and capacity of the proposed University Concept Plan services infrastructure will be required to determine availability and suitability for the proposed development.

It is assumed all new services infrastructure will be available for connection of the stage 1 building services for the new Cochlear Headquarters.

2.1 Sewer Drainage

A Sydney Water sewer main is crossing the north east corner of the site and should be available for connection of the proposed building subject to Sydney Water Corporation approval and in accordance with Macquarie University Concept Plan.

Sewer connections for stage 1 building will discharge to a sewer sideline connection to University sewer mains provided as per University Concept Plan at the north east corner boundary of the Cochlear site.

2.2 Water Services

Water services are required for potable water supply and for fire fighting purposes for the new development.

It is assumed that the existing University water main at the northern side of University Avenue will be available for connection as per University Concept plan at the boundary on the northern side of Cochlear site.

Water services for stage 1 building on Cochlear site will be connected to the existing University watermain subject to Sydney Water Corporation approval and in accordance with Macquarie University Concept Plan. The size, and available flow and pressure of the service are currently assessed for suitability for the new project.

New connections will be made for potable cold water, fire hydrant and fire sprinkler services.

The preliminary water requirements for the site are 100 dia. connection for potable water service, 150 dia connection for fire hydrant service and 150dia.connection for fire sprinkler service.



2.3 Gas Service

A new University gas main will be provided as per University Concept plan at the boundary on the northern side of Cochlear site

Gas services for stage 1 buildings on Cochlear site will be connected to the new University gas main subject to AGL/Alinta approval and in accordance with Macquarie University Concept Plan.

Macquarie University have preliminary confirmation from the gas Authority that the new proposed 160PE / 210 kPa gas main will have the capacity to cater for 16000 - 18000MJ/h gas load for the Cochlear Stage 1 building.

3 Electrical Infrastructure Services

3.1 Power

The Cochlear Global Headquarters development at Ryde will be provided with High Voltage (HV) underground cable reticulated around site to allow future interconnection of chamber substations serving the appropriate staged developments. Further investigation will be required to determine the requirement for extension of the adjacent HV cabling to within the site.

All High Voltage cabling will be installed underground within the site in accordance with Supply Authority's standard service allocation drawings.

A formal application has been lodged with Energy Australia by Wood & Grieve Engineers who are Macquarie University's base-building consultants.

An Accredited Level 3 Services Designer will need to be engaged by the client for the design of the Energy Australia substations once the Energy Australia's Design Information package is received.

It is expected that there will be limited supply from the existing high voltage network for the new development from the previously constructed electrical network in the University precinct.

Additional extensions of HV links to the existing adjacent system will also be investigated in conjunction with the Supply Authority to obtain additional redundancy into both the proposed and the existing systems for the development.

The table below summarises the Estimated Maximum Demand up to the Year 2012 - stages 1 and 2 based on the development plans for the site.

	Year	Areas (Sqm)	Estimated Maximum Demand (KVA)	Future Expansion-Proposed NLA (Sqm)	Future Maximum Demand Growth due to Expansion (KVA)	Estimated Total Demand (KVA)
Stage 1	2010	17527	1910	+4474	+474	2384
Stage 2	2012	19042	2082	+2960	+316	2398

3.2 Stage 1 - 2010 Area Take-up & Maximum Demand Forecast

In 2010, the Maximum Demand forecast on 22,000 Sqm NLA including the future growth space of 4,474 Sqm for the development is 2,384 KVA.

The power for Stage 1 will be provided via a Chamber type sub-station which will require an approximate area of 130 Sqm. This will need to be confirmed by Energy Australia. The final spatial requirements will need to be confirmed by the Level 3 Accredited Service Provider. The substation would be located on the ground floor of the building and require direct access to the street.

3.3 Stage 2 - 2012 Area Take-up & Maximum Demand Forecast

In 2012, the total area of the development will be 19,042 Sqm. The Maximum demand for the development will be approximately 2,082 KVA. The Future growth of the proposed NLA of the development will be 2,960 Sqm. This will increase the maximum demand to approximately 2,398KVA.

The power for stage 2 will be provided via the same Chamber type sub-station which will be installed as part of stage 1 works.

3.4 Street lighting

Street lighting within the Cochlear development at Ryde will run throughout the site along private roads.

Subject to the recommendations, the intersection with University Avenue may require upgrade to suit the new traffic arrangement. The lighting will be in accordance with the University, Energy Australia, local City Council and Australian Standard requirements.

Within the development the roadway lighting will generally be in accordance with the recommendations of AS 1158 "Road Lighting – Pedestrian Area (Category P)".

At the current planning stage, it is envisaged that Category P3 or P4, as determined from Table 1.1 of AS 1158.3.1 will be utilised for the roadway lighting within the development. Car parks will generally be to Category P11 and P12 (disabled spaces) recommendations of AS 1158.3.1 Table 1.5.



4 Communications Infrastructure Services

Telstra are obligated under their universal services to provide base telephony services to the development via their existing copper infrastructure. Online application for 'intent of development' has been lodged with Telstra.

Fibre optic lead-in cables from Telstra network will be provided depending on agreement with the carrier.

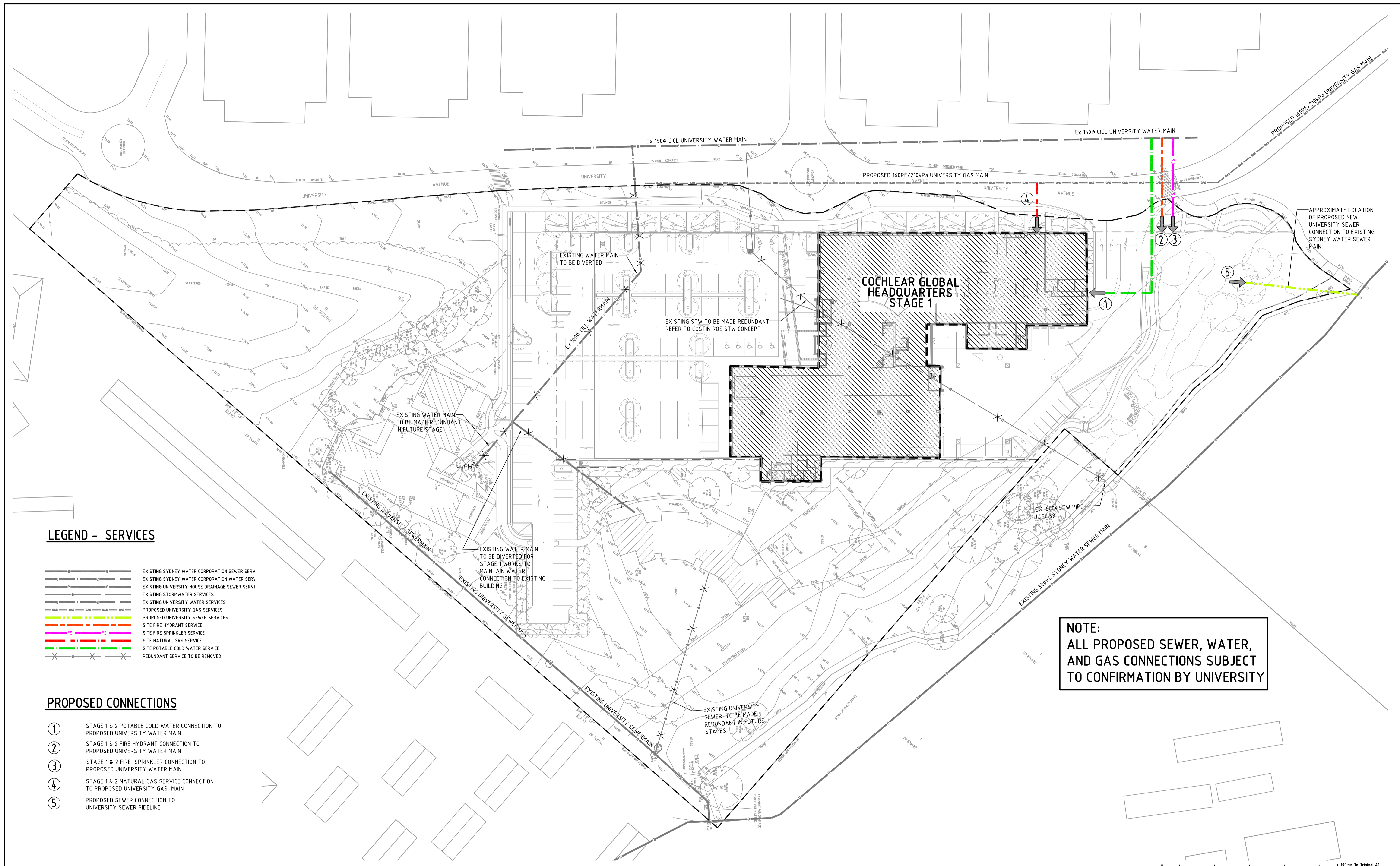
There is the potential that Fibre Optic cables located at Waterloo Road could be extended to the site.

We assumed that other than the potential fibre network, which will require additional works by Telstra, Major Communications Infrastructure should not be required by the developer.



Appendix 1

Proposed Site Services Connections



LEGEND - SERVICES

- EXISTING SYDNEY WATER CORPORATION SEWER SERV
- EXISTING SYDNEY WATER CORPORATION WATER SERV
- EXISTING UNIVERSITY HOUSE DRAINAGE SEWER SERV
- EXISTING STORMWATER SERVICES
- EXISTING UNIVERSITY WATER SERVICES
- PROPOSED UNIVERSITY GAS SERVICES
- PROPOSED UNIVERSITY SEWER SERVICES
- SITE FIRE HYDRANT SERVICE
- SITE FIRE SPRINKLER SERVICE
- SITE NATURAL GAS SERVICE
- SITE POTABLE COLD WATER SERVICE
- REDUNDANT SERVICE TO BE REMOVED

PROPOSED CONNECTIONS

- ① STAGE 1 & 2 POTABLE COLD WATER CONNECTION TO PROPOSED UNIVERSITY WATER MAIN
- ② STAGE 1 & 2 FIRE HYDRANT CONNECTION TO PROPOSED UNIVERSITY WATER MAIN
- ③ STAGE 1 & 2 FIRE SPRINKLER CONNECTION TO PROPOSED UNIVERSITY WATER MAIN
- ④ STAGE 1 & 2 NATURAL GAS SERVICE CONNECTION TO PROPOSED UNIVERSITY GAS MAIN
- ⑤ PROPOSED SEWER CONNECTION TO UNIVERSITY SEWER SIDELINE

NOTE:
ALL PROPOSED SEWER, WATER, AND GAS CONNECTIONS SUBJECT TO CONFIRMATION BY UNIVERSITY

NOTE: THIS DRAWING IS DIAGRAMMATIC ONLY & HAS BEEN PREPARED FOR THE PURPOSE OF INDICATING THE DESIGN INTENT & SHOULD NOT BE INTERPRETED AS BEING DEFINITIVE. ALL DIMENSIONS SHOULD BE CHECKED ON SITE. DO NOT SCALE OFF THESE DRAWINGS. DRAWINGS TO BE READ IN CONJUNCTION WITH THE ASSOCIATED NOTES & SPECIFICATIONS. DRAWINGS TO BE READ IN CONJUNCTION WITH ALL OTHER SERVICES, ARCHITECTURAL & STRUCTURAL DRAWINGS & THEIR ASSOCIATED SPECIFICATIONS. CO-ORDINATE & CHECK THE LOCATION OF ALL NEW & EXISTING SERVICES & STRUCTURE. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE CURRENT RELEVANT CODES & STANDARDS. POSITION & LEVELS OF AUTHORITIES MAINS &/OR EXISTING SERVICES SHALL BE CHECKED PRIOR TO COMMENCING WORK. THESE DESIGNS, DRAWINGS & SPECIFICATIONS ARE COPYRIGHTED & MUST NOT BE ALTERED, REPRODUCED OR COPIED WHOLLY OR IN ANY PART WITHOUT THE WRITTEN PERMISSION OF HYDER CONSULTING PTY LTD. ALL RIGHTS RESERVED.

Issue	Description	Drwn	Ckd	Appd	Date
A	ISSUE FOR P.A.	AC	GW	GW	18.06.08

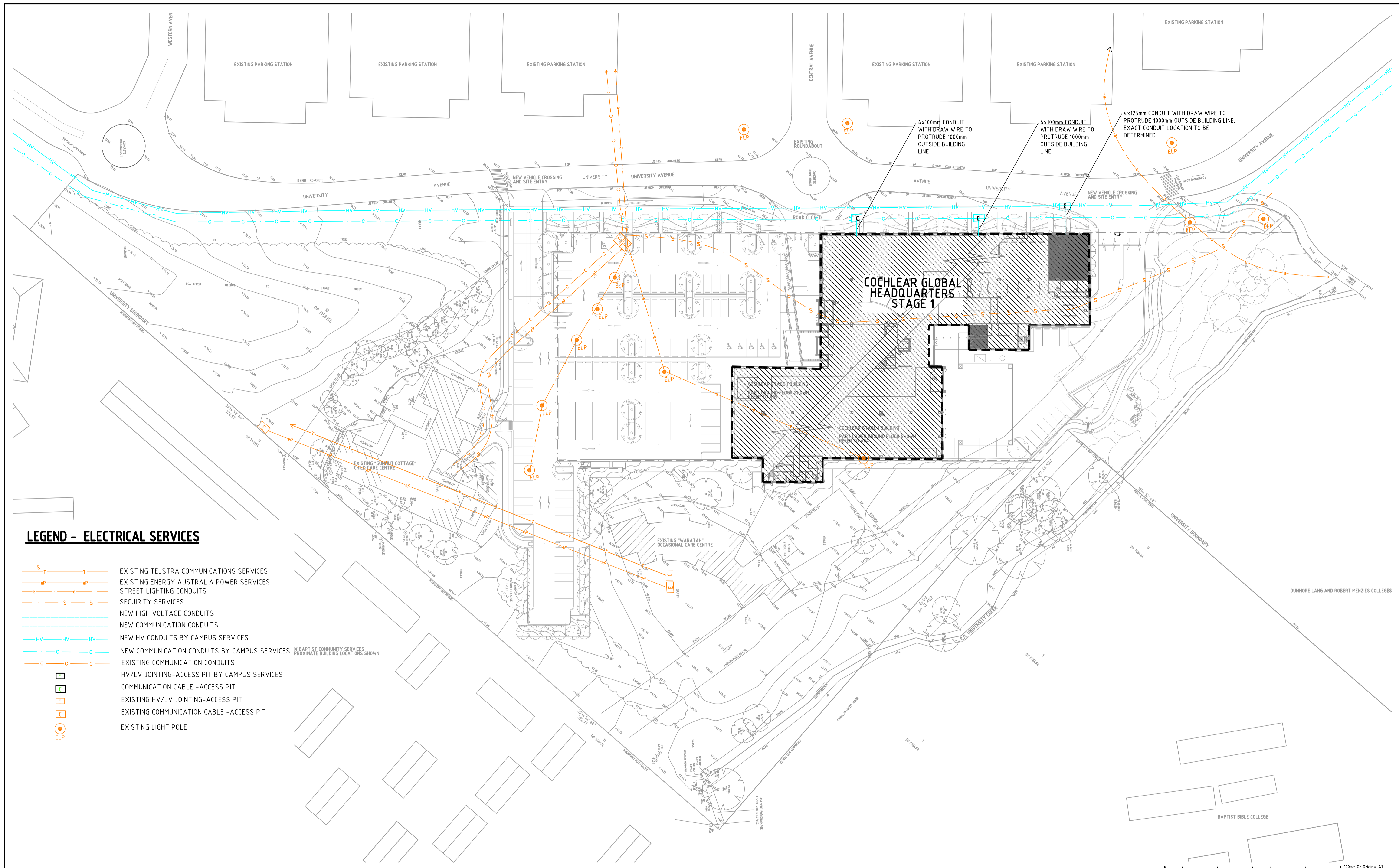
Status	PRELIMINARY ISSUE NOT TO BE USED FOR CONSTRUCTION
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Client	COCHLEAR 14 MARS ROAD LANE COVE NSW 2066
Scale (A1)	1:500
Datum	A.H.D.
Drawn	A.C.
Designed	A.C.

Project	COCHLEAR GLOBAL HEADQUARTERS STAGE 1 AT MACQUARIE PARK
Title	HYDRAULIC SERVICES STAGE 1 - CONCEPT SITE PLAN

Project Code	NS04010
Drawing No.	SKH-01
Issue	A

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LEGEND - ELECTRICAL SERVICES

- EXISTING TELSTRA COMMUNICATIONS SERVICES
- EXISTING ENERGY AUSTRALIA POWER SERVICES
- STREET LIGHTING CONDUITS
- SECURITY SERVICES
- NEW HIGH VOLTAGE CONDUITS
- NEW COMMUNICATION CONDUITS
- NEW HV CONDUITS BY CAMPUS SERVICES
- NEW COMMUNICATION CONDUITS BY CAMPUS SERVICES
- EXISTING COMMUNICATION CONDUITS
- HV/LV JOINTING-ACCESS PIT BY CAMPUS SERVICES
- COMMUNICATION CABLE -ACCESS PIT
- EXISTING HV/LV JOINTING-ACCESS PIT
- EXISTING COMMUNICATION CABLE -ACCESS PIT
- EXISTING LIGHT POLE

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A	ISSUE FOR P.A.	VS	GW	CB	18.06.08
Issue	Description	Drwn	Ckd	Appd	Date

Status	PRELIMINARY ISSUE NOT TO BE USED FOR CONSTRUCTION
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Client	COCHLEAR 14 MARS ROAD LANE COVE NSW 2066
Scale (A1)	SITE PLAN
Drawn	V.S.
Designed	C.B.
Datum	A.H.D.

Project	COCHLEAR GLOBAL HEADQUARTERS STAGE 1 AT MACQUARIE PARK
Title	ELECTRICAL SERVICES STAGE 1 - CONCEPT SITE PLAN

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Project Code	NS04010
Drawing No.	SKE-01
Issue	A