Consultant Advice

From:	**Nicholas La Porta**	**Date:**	**10 Apr. 13**	**File No:**	S26324\007\00\21\ca130410s0016	**Pages:**	5
Project:	**Prince of Wales Hospital - Nelune Comprehensive Cancer Centre and Australian Advanced Treatment Centre**					**No:**	**G-003**[2.0]

	Attention	Company	Email
To:	Kate Raine	JBA Planning	kraine@jbaplanning.com.au
	Oliver Klein	JBA Planning	oklein@jbaplanning.com.au
cc:	Campbell Williams	Norman Disney & Young	c.williams@ndy.com
	Shayne Blazley	Norman Disney & Young	s.blazley@ndy.com
	Simon Ingegneri	Norman Disney & Young	s.ingegneri@ndy.com
	Karsten Bastien	Rice Daubney	kbastien@ricedaubney.com.au
	Roger Carthey	Thinc Health	rcarthey@thincprojects.com
	Matthew Von Bertouch	Thinc Health	mvonbertouch@thincprojects.com

Stage 2 DA Planning Submission - Statement on Infrastructure and Utilities Natural Gas, Communications, and Electrical Services

The following Statement outlines the existing natural gas, communications and electrical services infrastructure and utilities, and the augmentation requirements proposed to adequately support the proposed Stage 2 Development at the Prince of Wales Hospital Nelune Comprehensive Cancer Centre and Australian Advanced Treatment Centre.

NATURAL GAS

Existing Installation

There is an existing natural gas service on the Randwick Campus, which serves the domestic hot water heating and air conditioning heating requirements of the various existing hospitals, clinical departments, administration buildings and facilities.

The current rate of usage of the existing natural gas service vs capacity is not known, subsequently it was agreed during our design co-ordination meetings that a separate supply connection local to the NCCC & AATC site was the preferred option, considering the size of the proposed NCCC & AATC building, and the potential for other future buildings adjacent.

New Installation

A natural gas provision will be required to the NCCC & AATC Stage 1 and Stage 2 buildings to support the domestic hot water heating and air conditioning heating requirements. Natural gas to the NCCC & AATC development is proposed to be provided during the Stage 1 works from a new, separate supply connection to the site from authority gas infrastructure adjacent the corner of High Street and Avoca Street.

✍ *Refer to the Jemena Dial Before You Dig (DBYD) site plan dated 9 November 2011 marked-up with the NCCC & AATC site and potential natural gas supply connection points, below.*

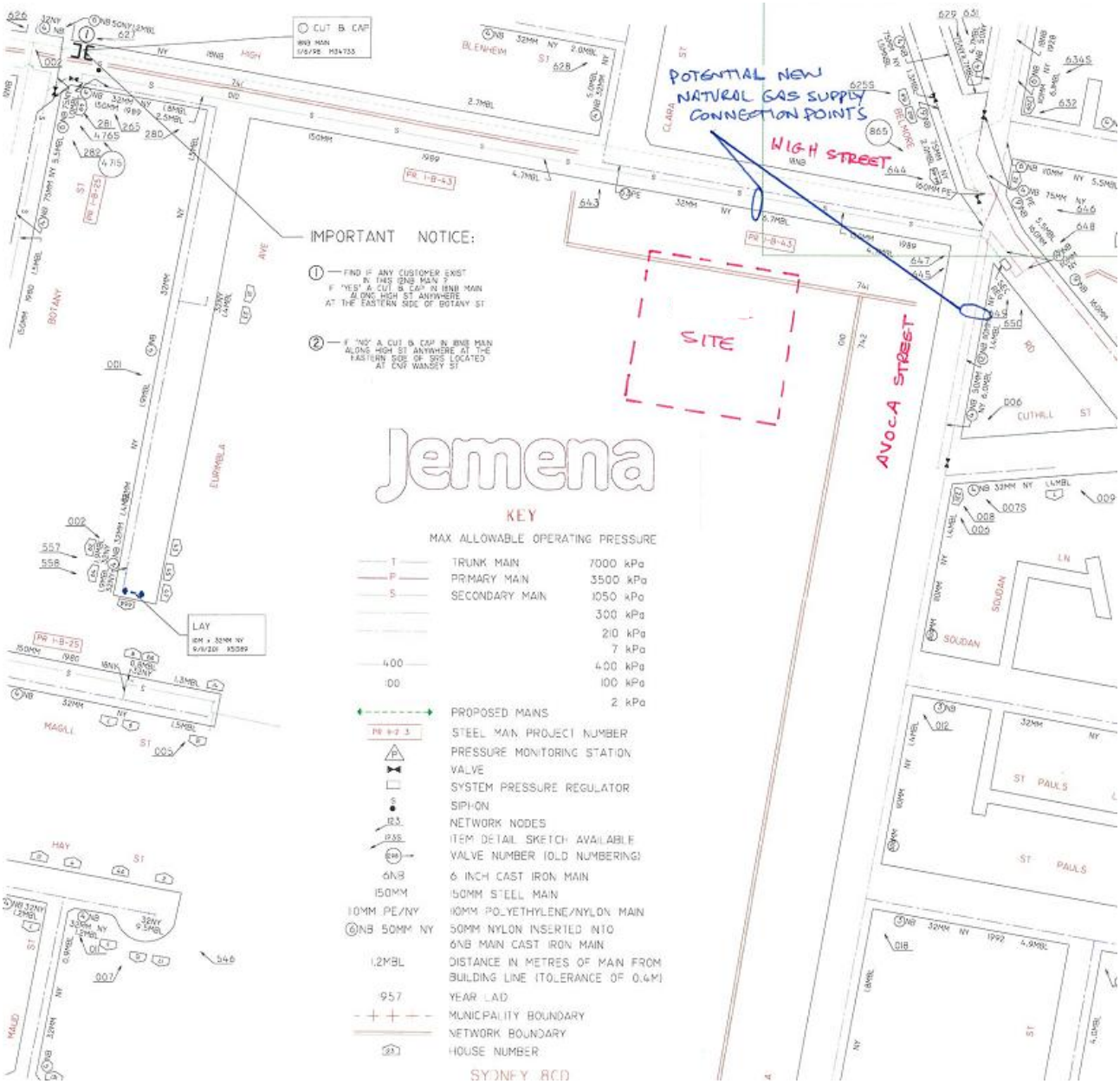

Figure 1: Jemena Dial Before You Dig (DBYD) site plan dated 9 November 2011 marked-up with the NCCC & AATC site and potential natural gas supply connection points

The proposed infrastructure is being designed to accommodate the calculated gas demand of the Stage 1 and Stage 2 buildings.

We have undertaken a preliminary load estimate of the required natural gas supply infrastructure, as follows:

- The NCCC & AATC based on a 10 storey building and its associated domestic hot water and air conditioning (heating) plant requirements – 6,600Mj, or 180m^3/hr.
- Typical domestic hot water and air conditioning (heating) plant requirements for a future 10 storey 10,000m^2 building developed locally to the NCCC & AATC – 6,000Mj, or 160m^3/hr.

The total preliminary natural gas load estimate for connection for the NCCC & AATC site is therefore 12,600Mj, or 340m^3/hr.

NDY has forwarded Jemena the above preliminary natural gas load estimates and proposed connection point, and discussed these aspects with Brad Gee and Stuart Mcintosh of Jemena at a meeting on 30 March 2012. A formal application for the new natural gas supply connection is in the process of being lodged with Jemena.

NDY has also had discussions and correspondence with Stuart Mcintosh of Jemena in relation to the location of the new gas meter for the NCCC & AATC site, which is proposed to be located within an internal Gas Meter Room within the mezzanine plant area of the Stage 1 building.

Upon submission of the formal application for a new natural gas supply connection to Jemena, formal clarification of the connection location and the layout and access provisions for the Gas Meter Room will be provided by Jemena, and load requirements will be finalised by NDY.

COMMUNICATION SERVICES

Network Connectivity

It is proposed that the network connectivity be provided to the Stage 1 and Stage 2 buildings via the existing network within the existing Prince of Wales Hospital, installed during the Stage 1 works.

ELECTRICAL SERVICES

Existing Installation

The following outlines the existing power supply arrangement from the electrical distribution authority, Ausgrid. Serving the POW hospital site are six existing substations as follows:

- S500
- S3351
- S5541
- S88
- S1087
- S134

The buildings provided below, including Building 3, are currently supplied by the existing surface chamber substation S500 located within Building 10:

- Building 3
- Building 5
- Building 6
- Building 7
- Building 8
- Building 9
- Building 11
- Building 12
- Building 15
- Security Building
- Helipad

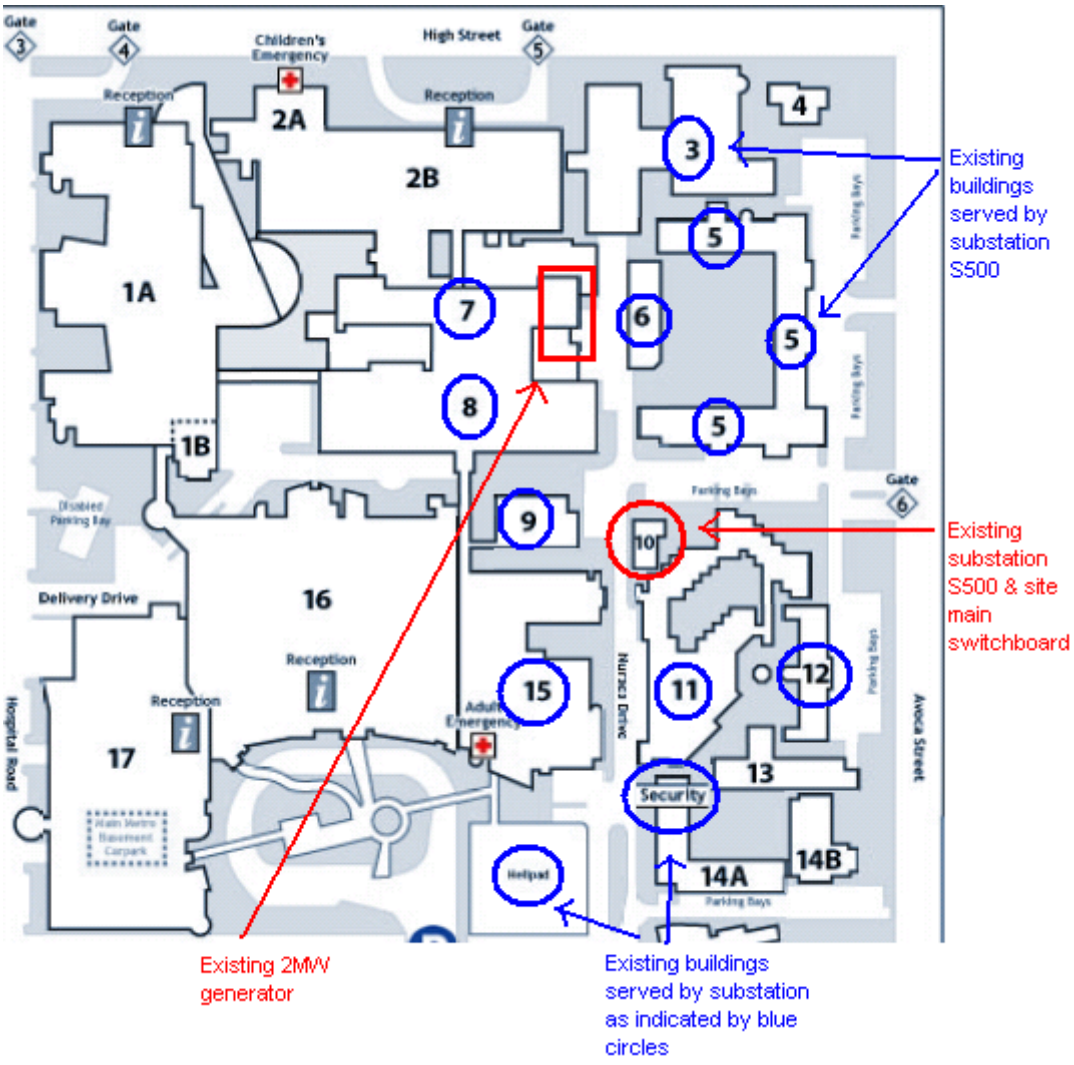

Figure 3: Site Plan showing Substation S500 and existing associated building loads

New Installation

A number of electrical supply options for the Stage 1 and Stage 2 buildings were proposed for consideration by the design team, and two new 1000kVA kiosk substations located near Gate 6 was deemed most suitable to serve the NCCC & AATC, installed during the Stage 1 works. The kiosk substation location has been proposed to Ausgrid for preliminary review.

To maintain supplies to critical and essential services within the NCCC & AATC during electrical outages caused by substation shutdowns and failures, new, prime-rated, diesel generators are proposed to be installed in the roof plant space of the Stage 2 building.

Ausgrid has requested confirmation that non-firm rated supplies are acceptable for the NCCC & AATC. Upon acceptance of the configuration, Ausgrid will proceed with providing a Design Information Package, incorporating the new kiosk substation and HV cable works, for the Level 3 Accredited Service Provider to commence the Level 3 design.

Ausgrid has now received the acceptance of the non-firm rated supply and are in the process of producing the design information package.

Level 3 design is the design of the supply authority owned network that can only be undertaken by an Accredited Service Provider.

Final kiosk substation location to be reviewed and acceptance confirmed by Ausgrid and Health Infrastructure.

We trust that the above Statement is suitable for your immediate purposes.

For and on behalf of

NORMAN DISNEY & YOUNG

Nicholas La Porta
Senior Mechanical Engineer
n.laporta @ndy.com