

RNSH

Royal North Shore Hospital and
Community Health Facility

Preferred Project Report

May 2009



InfraShore

urbis

Associate Director Tony Robb
Graphic Design Hayley Jokic
Support Staff Fiona Buchan
Job Code SA3268
Report Number Preferred Project Report
Date 20th May 2009

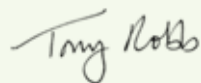
Statement of Validity

Preferred Project Report prepared by:

Names	Tony Robb Associate Director
Qualifications	Post Grad Diploma - Urban Planning (Westminster) BA (Hons) Urban Planning (Westminster)
Address	Urbis Pty Ltd Level 21 321 Kent Street Sydney NSW 2000
In respect of	Royal North Shore Hospital

Certification:

I certify that I have prepared the contents of the Preferred Project Report and to the best of our knowledge; the information contained in this report is neither false nor misleading.

Signature	
Name	Tony Robb
Date	20/05/2009

© URBIS 2009

This publication is subject to copyright. Except as permitted under the Copyright Act 1968, no part of it may in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) be reproduced, stored in a retrieval system or transmitted without prior written permission. Enquiries should be addressed to the publishers.

URBIS
Australia Asia Middle East
www.urbis.com.au

EXECUTIVE SUMMARY	5	4	STATUTORY PLANNING	27	5.9.4	Waste Management	43
1 INTRODUCTION	7	4.1	Concept Plan Approval	27	5.9.5	Excavation	43
1.1 Background	7	4.2	State Environmental Planning Policies	30	5.9.6	Vehicular and pedestrian access during construction	43
1.1.1 Concept Plan	7	4.2.1	SEPP (Major Projects) 2005	30	5.9.7	Public transport access during construction	43
1.1.2 Project Application	7	4.2.2	SEPP (Infrastructure) 2007	30	5.10 Operational Impacts	43	
1.1.3 DGRs	7	4.2.3	SEPP 55 – Remediation of Land	30	5.10.1	Waste management	43
1.2 The Proponent and the Consultant Team	9	4.3	Applicable local planning instruments, relevant legislation and policies	30	5.10.2	Storage of potentially hazardous materials	44
2 PLANNING CONTEXT AND SITE ANALYSIS	11	5	KEY ASSESSMENT REQUIREMENTS	31	5.10.3	Site Security	44
2.1 Strategic Planning Context	11	5.1	Urban Design, Height, Density, Bulk and scale	31	5.10.4	Emergency and evacuation procedures	44
2.2 The Site	11	5.1.1	Acute Hospital Building	31	5.10.5	Lighting	44
2.3 Site analysis	13	5.1.2	Community Health Facility	33	5.10.6	Signage	44
2.3.1 Topography	13	5.1.3	Multi-level car park	34	5.11 Ecological Sustainable Development	45	
2.3.2 Views and Outlooks	13	5.2	Crime Prevention Through Environmental Design (CPTED)	35	5.12 Development Staging and Impacts on Existing Uses	45	
2.3.3 Noise Sources	14	5.3	Amenity Impacts	36	5.13 Telecommunications	47	
2.3.4 Transport and Site Access	14	5.3.1	View analysis	36	5.14 Utilities and Services	47	
2.4 Geotechnical Conditions	14	5.3.2	Privacy	37	5.14.1	Sewer drainage	47
2.5 Local context analysis and surrounding development	15	5.3.3	Overshadowing	37	5.14.2	Potable cold water service	47
2.6 Existing Improvements	15	5.3.4	Visual Impacts	39	5.14.3	Natural gas system	47
2.6.1 The Public Hospital	15	5.3.5	Acoustic Impacts	40	5.14.4	Electrical	47
2.6.2 The Private Hospital	16	5.3.6	Noise from plant and equipment	40	5.15 Tree Removal	47	
2.6.3 The Public Hospital & Surrounding Campus	16	5.4	Heritage	40	5.16 Building Code of Australia	47	
2.7 Suitability of the site	16	5.5	Traffic and Transport	40	6 COMMUNITY CONSULTATION	49	
2.8 Justification for undertaking the Project	16	5.5.1	Traffic Generation	40	7 STATEMENT OF COMMITMENTS	51	
3 THE PROJECT	17	5.5.2	Car Parking	40	8 CONCLUSION	55	
3.1 The Vision	17	5.5.3	Measures to encourage public transport use	40			
3.1.1 Health and Research Precinct	17	5.5.4	Access and Service Vehicles	41			
3.2 Development for which approval is sought	17	5.5.5	Emergency Evacuation	41			
3.3 Description of the proposed development	18	5.6	Accessibility	42			
3.3.1 Acute Hospital Building	18	5.7	Drainage and Stormwater Management	42			
3.3.2 Community Health Facility	20	5.7.1	Stormwater Modelling and On-site Detention	42			
3.3.3 Multi-level car park	21	5.7.2	Stormwater Quality	42			
3.3.4 Refurbishment/alterations to the Douglas Building.	22	5.7.3	Other Civil Works	42			
3.3.5 Landscaping	22	5.8	Contamination Assessment	42			
3.3.6 New roads and paving associated with the Project	24	5.9	Construction Impacts	42			
3.3.7 Car Parking	25	5.9.1	Noise and Vibration	42			
3.3.8 Demolition	26	5.9.2	Soil and Erosion Control	43			
3.3.9 Drawings/Plans for which approval is sought	26	5.9.3	Stormwater Management	43			

FIGURES LIST

Figure 1: Extract NSW Metro strategy 2005

Figure 2 : Local Context – Existing Buildings, prepared by Cox Richardson

Figure 3: Local Context – Land Use & Land Ownership, prepared by Cox Richardson

Figure 4: Local Context - District Topography, prepared by Cox Richardson

Figure 5: Local Context - District Topography, prepared by Cox Richardson

Figure 6 : Local Context - Views and Vistas from Site, prepared by Cox Richardson

Figure 7: Local Context - Views in and around Site, prepared by Cox Richardson

Figure 8: Local Context - Existing Noise Sources, prepared by Cox Richardson

Figure 9: Local Context - Road Access, prepared by Cox Richardson

Figure 10: Local Context - Pedestrian Links, prepared by Cox Richardson

Figure 12 : prepared by Bligh Voller Neild

Figure 13: Artist Impression, prepared by Cox Richardson

Figure 14 : Western Elevation, prepared by Bligh Voller Neild

Figure 15 : Southern Elevation, prepared by Bligh Voller Neild

Figure 16 : Artist Impression of Main Foyer, prepared by Bligh Voller Neild

Figure 17: Artist impression Herbert Street Elevation, prepared by Cox Richardson

Figure 18 : Eastern & Southern Elevations, Community Health Services Building, prepared by Cox Richardson

Figure 19: Southern Elevation, prepared by Cox Richardson

Figure 20 : Top floor car park showing pedestrian links, prepared by Cox Richardson

Figure 21: Site landscaping plans (oculus)

Figure 22: Tenure Plan, prepared by Hyder Consulting

Figure 23: Carpark decanting during staged works, prepared by Hyder Consulting

Figure 24: Carpark post development, prepared by Hyder Consulting

Figure 25 - Demolition Plan, prepared by Cox Richardson

Figure 26: Extract of Height Control Plan, prepared by Cox Richardson

Figure 27: Extract of Height Control Plan, prepared by Cox Richardson

Figure 28 : Extract of Height Control Plan, prepared by Cox Richardson

Figure 29: Local Context - Views and Vistas from Site, prepared by Cox Richardson

Figure 31 : Shadow Diagram June 22, 3pm

Figure 34: Shadow Diagram June 22, 3pm 3D Model and Elevation

Figure 35: Shadow Diagram March 22, 9am

Figure 36: Shadow Diagram March 22, 12pm

Figure 37: Shadow Diagram March 22, 3pm

Figure 38: Photo Montage Herbert Street Elevation, prepared by Cox Richardson

Figure 39 - Pedestrian & Circulation Plan - pedestrian and cyclists

Figure 40 - Access & Circulation Plan - public transport and hospital vehicle circulation

Figure 41 : Stages 1 and 2, prepared by Hyder Consulting

Figure 42 : Stages 3 and 4, prepared by Hyder Consulting

APPENDICES LIST

Appendix A Architectural Drawings

Appendix B Landscape Drawings

Appendix C Survey and Survey Report, Prepared by Hard and Forester Consulting Surveyors

Appendix D Geotechnical Report, Prepared by Coffey

Appendix E Traffic Report, Prepared by Hyder Consulting

Appendix F Heritage Report, Prepared by Graham Brooks and Associates

Appendix G Height Control Plan, Prepared by Cox Richardson

Appendix H CPTED Report, Prepared by Urbis

Appendix I Shadow Diagrams, Prepared by C3 Interactive Pty Ltd

Appendix J Acoustic Assessment, Prepared by Arup

Appendix K Accessibility Report Prepared by Morris Goding Accessibility Consulting

Appendix L Stormwater and Civil Drawings, Prepared by Hyder Consulting

Appendix M Contamination report, Prepared by Coffey

Appendix N ESD (Environmentally Sustainable Design) Report, Prepared by Arup

Appendix O Telecommunications and Broadcasting Infrastructure Reports, Prepared by Kordia (formerly THL Australia) and THL Australia

Appendix P Heritage Tree Study, Prepared by Taylor Brammer Landscape Architects

Appendix Q BCA Report, Prepared by HENDRY Group Pty Ltd

Appendix R Consultation Report, Prepared by Urbis

EXECUTIVE SUMMARY

The proposed development is for the construction of a new Acute Hospital Building, Community Health Facility, multi-level car park and associated works on land known as the 'Royal North Shore Hospital Redevelopment' (RNSH) site.

This Preferred Project Report accompanies a Project Application, under Part 3A of the Environmental Planning and Assessment Act 1979. The Project has been declared a Major Project, and is identified as **MP 08_0172**.

The scope of the subject Project Application includes:

- Acute Hospital building.
- Community Health Facility.
- Multi-level car park for 576 vehicles.
- Refurbishment/alterations to the Douglas Building.
- Pedestrian bridge linking Hospital and Douglas Building.
- New roads associated with the development of the Hospital, Community Health Facility and car park.
- At grade parking and the temporary use of land for parking purposes during construction.
- Public Domain works including footpaths, lighting and street tree planting.
- Demolition of Buildings 1, 2, 10 and part 19 (demolition of all other buildings requiring demolition has already been approved).
- Landscaping.
- Civil works including storm water and drainage infrastructure, new roads and utilities.

The RNS Hospital redevelopment project, provides opportunity to enhance health services on site by:

- Locating acute clinical services in one building, with close links to rehabilitation services to improve accessibility, and enhance continuity between acute and rehabilitation services.
- Improving links between community and other health services on site.
- Providing consolidated research facilities and multidisciplinary educational facilities on site.
- Providing flexible building design to allow for future modification and expansion to meet changes in clinical practice.

The current proposal for the Hospital is to consolidate the clinical and ward facilities into a new facility east of Reserve Road. Of the existing hospital buildings, other than buildings warranting retention due to their heritage significance, only the relatively recent Douglas Building is proposed for retention.

The proposed health campus will form a new core health and research precinct, integrated with the Kolling Building, on the corner of Reserve Road and Westbourne Street, and the private hospital. The main entrance to the Acute Hospital is located on Reserve Road, in the centre of the health precinct.

The current Project Application retains the key buildings and functions as envisaged under the Concept Approval MP 06_0051 for the core health precinct, except that the Acute Hospital is moved further to the east, (allowing for the retention of Reserve Road), and the Community Health Building is moved further north to Precinct 6, (allowing for better connections with the Acute Hospital and consolidation of the core precinct). The proposal complies with respect to the earlier prescribed height limits and is consistent with MP 06_0051, in terms of the bulk and scale. It is considered that a superior design, town planning and operational outcome has been accomplished as a result of the variations incorporated within the subject Project Application.

Of the potential impacts likely to arise as a result of the proposed development, it is considered that those matters related to noise and vibration during the construction stages are of most significance. However, subject to the incorporation of relevant DECC Guidelines, the provisions of the Protection of the Environment and Operations Act and all relevant Australian Standards into a comprehensive (or stage specific) Construction Management Plan(s), such potential issues may be successfully mitigated.

No significant increase in traffic is expected as a result of the proposed development given the relatively marginal increase in on-site parking.

The proposed development will have significant public benefits, principally of course due to the construction of a world class hospital and community health facility on the campus, and also the rationalization of services on the site. The proposal will also stimulate employment generation both during construction, during operation and, of course, employment multiplier effects resulting from the operations of the campus, in the form of further uses such as medical research and like industries. Further public benefits include a health campus with greater levels of pedestrian and visitor amenity, improved clarity of wayfinding, landscaped open areas and the identification and retention of buildings and elements of heritage significance resulting in a positive heritage outcome for the site.

The subject Environmental Assessment is considered to satisfactorily address those heads of consideration as provided in the DGRs and subject to the implementation of the Commitments made in Section 7 of this report, it is envisaged that no unreasonable or significant adverse environmental impacts will be introduced as a result of the proposed development.

It is recommended that approval be granted.

1 INTRODUCTION

The proposed development is for the construction of a new Acute Hospital, Community Health Facility, multi-level car park and associated works on land known as the 'Royal North Shore Hospital Redevelopment' (RNSH) site.

This Preferred Project Report accompanies a Project Application under Part 3A of the Environmental Planning and Assessment Act 1979, (the Act).

The scope of the subject Project Application includes:

- Acute Hospital building.
- Community Health Facility.
- Multi-level car park for 576 vehicles.
- Refurbishment/alterations to the Douglas Building.
- Pedestrian bridge linking Hospital and Douglas Building.
- New roads associated with the development of the Hospital, Community Health Facility and car park.
- At grade parking and the temporary use of land for parking purposes during construction.
- Public Domain works including footpaths, lighting and street tree planting.
- Demolition of Buildings 1, 2, 10 and part 19 (demolition of all other buildings requiring demolition has already been approved).
- Landscaping.
- Civil works including storm water and drainage infrastructure, new roads and utilities.

This Report has been prepared to asses the above proposal in accordance with the assessment requirements provided by the Director General. Refer to Section 1.1.3

1.1 BACKGROUND

1.1.1 Concept Plan

A Concept Plan Approval was issued by the Minister for Planning on 9 February 2007, (Major Project Application No. 06_0051), which gave concept approval for the following hospital related components:

- Subdivision of the site into a hospital precinct and other development precincts.
- A maximum floor area of 178,370m² across the development precincts (maximum FSR are prescribed for each precinct)
- Minimum and maximum FSR for the various components of the proposal including residential, employment generating uses, nurses accommodation etc.
- The conceptual road design.
- Urban design, landscaping, open space and heritage concepts.
- Maximum heights.
- Car parking provision to be in accordance with Willoughby Council DCP.
- Improved servicing of the site.
- Staged re-opening of Westbourne Street to through traffic.

Project Application Approval was given for demolition works and site preparatory works to ground level.

On 31 January 2008, the Concept Plan and Project Application Approval was modified in so far as amendments to conditions related to agreements with public transport providers and with respect to the scheduling of a Traffic Management and Accessibility Plan (TMAP) (Conditions M9.1 and M10.1).

The Concept Plan and Project Application was further modified on 7 April 2008. The modification allowed for the erection temporary buildings and imposed relevant conditions.

1.1.2 Project Application

Further to the Concept Approval for the whole RNSH site, and along with it the identification of development precincts within the site, on 19 August 2008 a request was made to the Minister to declare the core medical precinct of the site a “Critical Infrastructure Project”, under Clause 6 of SEPP Major Projects 2005 (the SEPP), to permit the lodgement of a Project Application, under Part 3A of the Environmental Planning and Assessment Act 1979, (the Act).

The application was accompanied by a Preliminary Environmental Assessment, (PEA), for development within the core medical precinct and a request for any relevant Director-General's environmental assessment requirements.

On 30 September 2008, the Director-General Requirements, (DGRs), were issued by the NSW Department of Planning, under s.75F of the Act. The project has been declared a Major Project Application, (MP 08-0172).

1.1.3 DGRs

The following table provides the DGRs and a reference as to where they are addressed in the report:

Director-General Requirement	
Application No	MP 08_0172
Project	Major Project Application for demolition of the existing buildings and the erection of Acute Hospital and Community Health Facility and associated works, generally as described in the letter dated 28 August 2008 from the Chief Executive Health Infrastructure (NSW Health), and supporting Preliminary Environmental Assessment dated August 2008.
Site	Royal North Shore Hospital, St Leonards (Lot 21 & 22 DP 863329 and Lot 102 DP 1075748)
Proponent	NSW Health
CIV	\$700 million
Date of Issue	30 September 2008
Date of Expiry	If the environmental assessment is not exhibited within 2 years after this date, the applicant must consult further with the Director-General in relation to the preparation of the environmental assessment.

Issue	Director-General Requirement	Reference
General Requirements	The Environmental Assessment must include:	
	(1) An executive summary.	Page 5
	(2) A description of the proposal including:	
	▪ description of the site including cadastre and title details;	S.2 & APP C
	▪ a thorough site analysis and description of the existing environment;	S.2. & S.3
	▪ suitability of the site for the proposed development;	S.2.7
	▪ likely environmental impacts;	S.5
	▪ design, construction, operation, maintenance, rehabilitation and staging as applicable; and	S.3 & S.5
	▪ justification for undertaking the project, taking into consideration the environmental impacts of the proposal, the suitability of the site and whether or not the project is in the public interest.	S.2.8
	(3) A consideration of the following with any variations to be justified:	
	▪ any approved part 3A concept plan;	S.4.1
	▪ all relevant State Environmental Planning Policies; and	S.4.2
	▪ applicable local planning instruments and relevant legislation and policies.	S.4.3
	(4) A draft Statement of Commitments, outlining commitments to the proposal's management, provision of infrastructure, mitigation and monitoring measures with clear identification of who is responsible for these measures.	S.7
Key Assessment requirements	(5) A conclusion justifying the proposal, taking into consideration it's environmental and construction Impacts, mitigation measures to address these impacts, its cumulative impacts, suitability of the site and whether or not the project is in the public interest.	S.8
	(6) A signed statement on the validity of the Environmental Assessment, the qualifications of person(s) preparing the Assessment and that the information contained therein is neither false nor misleading.	Page 2
<i>Urban Form and Design</i>	The Environmental Assessment must address the following key issues:	
	Urban design, height, density, bulk and scale of the development and relation to surrounding development, landscape and topography;	
	▪ Site analysis and architectural plans;	S.2.3 & APP A
	▪ External materials and finishes, including a sample board;	S.5.1
	▪ Photomontages and view analysis;	S.5.3 & APP A
	▪ Details of proposed areas of landscaping and open space; and	S.3.3.5 & APP B
	▪ Measures to reduce visual impact of car parking structure including architectural treatments and opportunities for landscaping on the car park roof.	S.5.1.3

Issue	Director-General Requirement	Reference
<i>Amenity Impacts</i>	▪ Address the visual impact, privacy and overshadowing of the development on adjoining properties, with particular regard to any sensitive uses.	S.5.3
<i>Heritage</i>	▪ Existing heritage items should be identified, including significant heritage buildings, landscape elements, curtilages, setting and important views. Any impacts should be minimised and mitigated where appropriate. It is desirable that all significant historical components of RNSH be conserved and adaptively reused.	S.5.4 & APP G & P
<i>Traffic, Transport and Accessibility</i>	▪ Provide a traffic and transport study that addresses the following:	See S.5.5 APP F
	- Surrounding context and how the proposal fits within the overall hospital campus in terms of transport and traffic management;	
	- Measures to encourage mode shift to public transport and reduce reliance on on-site car parking;	
	- Identify existing public transport services in the site, together with other transport services offered by the hospital;	
	- Detail existing pedestrian and cycle movements within the vicinity of the subject site and determine the adequacy of the proposal to meet the likely future demand for increased pedestrian and cycle access. May include facilities for secure bicycle storage;	
	- Identify Travel Demand Management (TDM) measures that will optimise the opportunity provided by the project site's proximity to public transport;	
	▪ Demonstrate compliance with the RTA Guidelines for Traffic Generating Development.	APP F
	▪ Internal road and access arrangements including entry/drop off points, traffic management and hierarchy. The primary drop off area to the hospital and community health facility should be clearly identified and appropriate disability access provided in accordance with appropriate Disability Access Guidelines.	S.3.3.3, S5.5 APP F
	▪ Off street car parking provision and management of on-street parking.	APP F & S.5.5.2
	▪ Service delivery.	S.5.5.4
	▪ Proposed emergency evacuation and public access.	S.5.10.4, S5.5.6 & APP N
<i>Drainage, Stormwater and Groundwater Management</i>	▪ Identify drainage, stormwater and groundwater management issues, including on-site stormwater detention, water sensitive urban design measures and drainage infrastructure.	S.5.7 & APP M
<i>Geotechnical and Contamination</i>	▪ Geotechnical report assessing the suitability of the site for the structures with regard to slope stability, erosion hazard, proposed earthworks and retention methods.	APP E
	▪ Contamination report assessing the potential for contamination and the suitability of the site for proposed uses.	S.5.7 & APP L

Issue	Director-General Requirement	Reference
<i>Construction Impacts</i>	▪ Noise and vibration;	S.5.5.9
	▪ Soil and erosion control;	
	▪ Stormwater management;	
	▪ Waste management;	
	▪ Cut/fill and retaining structures;	
	▪ Traffic management; and	
	▪ Car parking for construction workers.	
<i>Operational Impacts</i>	▪ Address noise generated from plant and equipment;	S.5.3.6
	▪ Waste management including biomedical, infectious or toxic wastes, storage of any chemicals I hazardous materials;	S.5.10.1 & S.5.10.2
	▪ Site security;	S.5.10.3
	▪ Emergency and evacuation procedures;	S.5.10.4
	▪ Fire safety;	S.5.16 & APP Q
	▪ Lighting; and	S.5.10.5
	▪ Signage.	S.5.10.6
<i>Ecological Sustainable Development</i>	▪ Address proposed ESD measures including thermal massing, water sensitive urban design measures, energy efficiency, recycling and waste disposal.	S.5.11 & APP N
<i>Utilities and Services</i>	▪ Address capacity of utilities including water, sewer, stormwater, gas, power and telecommunications Infrastructure that will serve the project.	S.5.14
<i>Development Staging and Impacts on Existing Uses</i>	▪ The Environmental Assessment should include the proposed method of development staging and demonstrate that It is consistent with, and can accommodate, the future redevelopment of RNSH as well as operate independently.	S.5.12
	▪ Detailed plans and documentation should be submitted that articulates the status of existing buildings and how it is intended to relocate or displace existing uses temporary or otherwise, possible future expansion areas, vehicular car parking (location and numbers), access and delivery areas and proposed road closures.	S.5.9.6 & S5.12
<i>Telecommunications</i>	▪ The Environmental Assessment should identify and address any implications of the proposal on the use of the broadcast tower at 217A Pacific Highway, Artarmon and other telecommunications facilities in terms of the level of electromagnetic radiation environment, interference issues and existing microwave links.	S.5.13 & APP O

Issue	Director-General Requirement	Reference
Consultation Requirements	Provide written evidence of detailed and on-going consultation with the following parties Requirements during the preparation of the Environmental Assessment: ▪ Willoughby City Council ▪ NSW Roads and Traffic Authority ▪ NSW Ministry of Transport ▪ Railcorp Document all community consultation undertaken to date or discuss the proposed strategy for undertaking community consultation. This should include any contingencies for addressing any issues arising from the community consultation and an effective communications strategy.	S.6
Deemed refusal period	60 days (see Clause 8E of the Environmental Planning & Assessment Regulation)	
Landowner's Consent	The consent of the landowner is to be provided in accordance with s8F of the <i>Environmental Planning and Assessment Regulation 2000</i> .	
Documents to be submitted	Ten (10) hard copies of the EA with plans to be to scale and A3 in size Ten (10) copies of the Environmental Assessment and plans on CD-ROM (in PDF please ensure all files are less than 2Mb in size).	

This Environmental Assessment has been prepared with regard to MP 08_0172.

1.2 THE PROPONENT AND THE CONSULTANT TEAM

The proponent, Infrashore, consists of Thiess and ABN Amro.

The consultant team assisting the proponent includes the following key experts:

- Thiess – Development Management
- Cox Richardson – Architecture & Masterplanning
- Bligh Voller Neild – Architecture
- Urbis – Environmental Assessment, Statutory Planning, Community Consultation & CPTED Assessment
- Hyder – Infrastructure, Drainage, Civil Works, Traffic & Transport
- Graham Brooks and Associates – Heritage Conservation
- Taylor Brammer Landscape Architects – Heritage Landscape Assessment
- Oculus – Landscaping
- Arup – ESD, Acoustics & Noise
- Kordia – Telecommunications
- Morris Goding – Access
- Hendry Group - BCA
- Coffey - Contamination and Geotechnical



BlighVollerNeildArchitecture



O C U L U S



2 PLANNING CONTEXT AND SITE ANALYSIS

2.1 STRATEGIC PLANNING CONTEXT

The NSW Metropolitan Strategy and the Inner North Subregional Strategy clearly support the development of this critical infrastructure. The project will drive innovation and economic growth through investment and research in the medical and health sectors of the economy, thereby reinforcing the role of St. Leonard's in the 'Global Corridor' as a specialized medical centre with opportunities for further related employment. Refer to Figure 1 below.

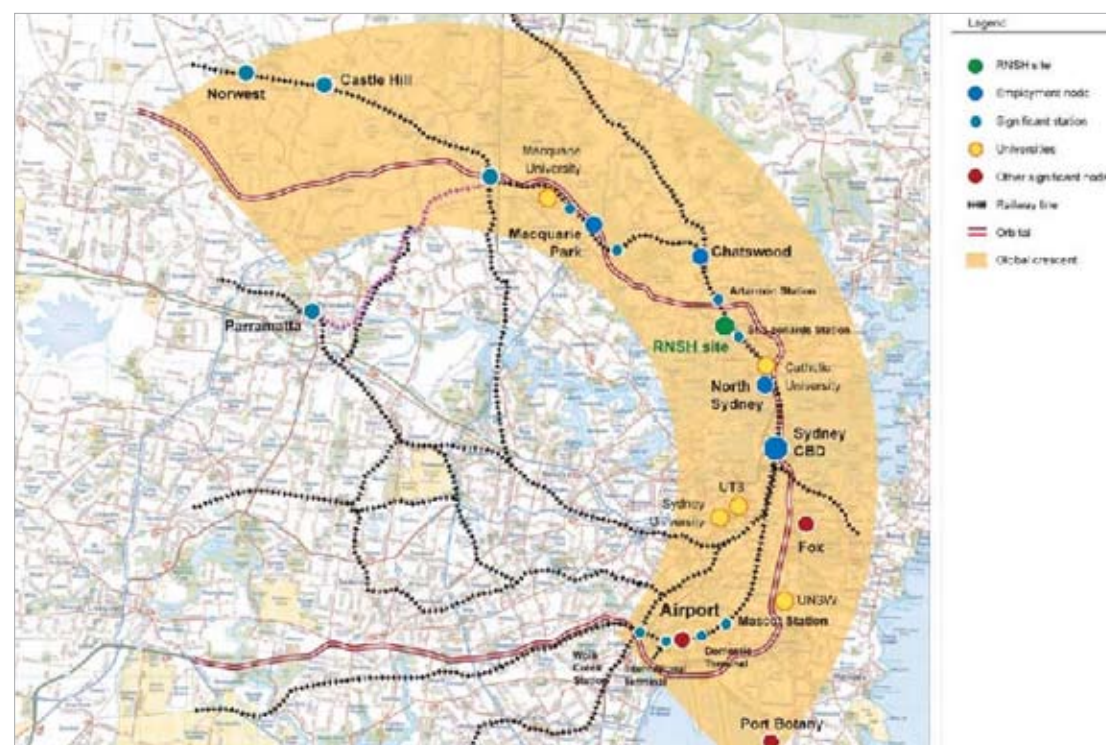


Figure 1: Extract NSW Metro strategy 2005

Between 2001 and 2031, The Metro Strategy targets growth from 25,166 to 33,000 jobs in St Leonards, requiring the creation of an additional 7,834 jobs. The specialist medical facilities of the RNSH is expected to be a significant driver of this growth.

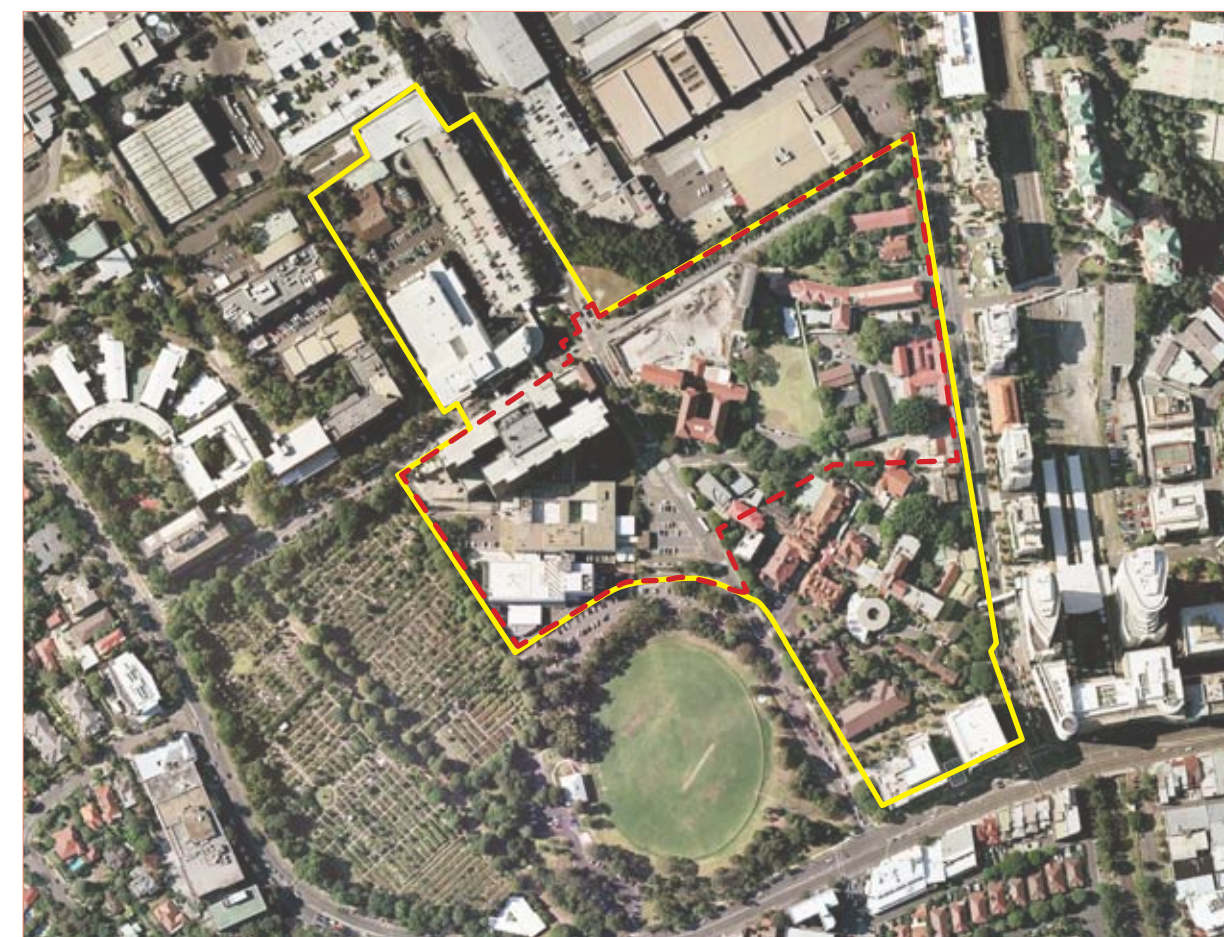
Opportunity exists on the RNS Hospital site to build on the site's strategic health, education and transport assets as a catalyst for employment and residential growth in line with the State Government's strategic plans for St Leonard's. Given the size of the campus, there is opportunity to provide employment for a significant portion of the anticipated 31% employment growth in St Leonards on the site. A large part of this employment potential will be in direct and indirect health-related services.

The site has convenient access to public transport, especially rail and bus routes on Pacific Highway. The redevelopment of the site in close proximity of St Leonards Railway Station will make a major contribution to the transit oriented development principles of the Metro Strategy.

2.2 THE SITE

The site has an area of approximately 13 hectares and is commonly known as the Royal North Shore Hospital site. It is owned by North Sydney Central Coast Area Health Service and is legally described as Lot 21 and 22 in DP 863329 and Lot 102 DP 1075748.

Refer to Survey and Title details at **Appendix C**.



— Royal North Shore Hospital Campus
- - - Subject Site

Figure 2 : Local Context – Existing Buildings, prepared by Urbis

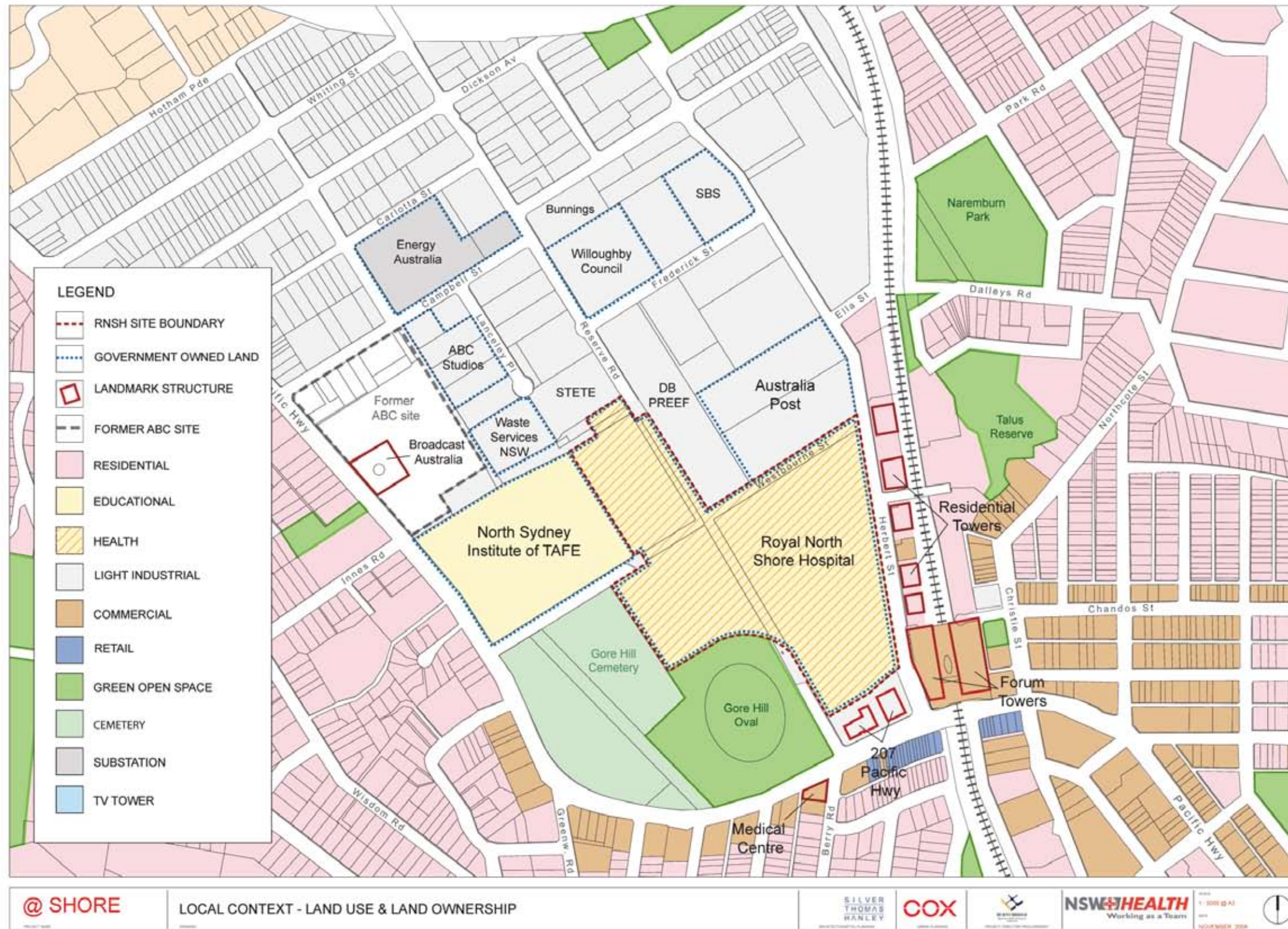


Figure 3: Local Context – Land Use & Land Ownership, prepared by Cox Richardson

2.3 SITE ANALYSIS

2.3.1 Topography

The site occupies a prominent ridge to the north of the Pacific Highway, and the main existing hospital building is a prominent landmark visible from many vantage points in the North Shore.

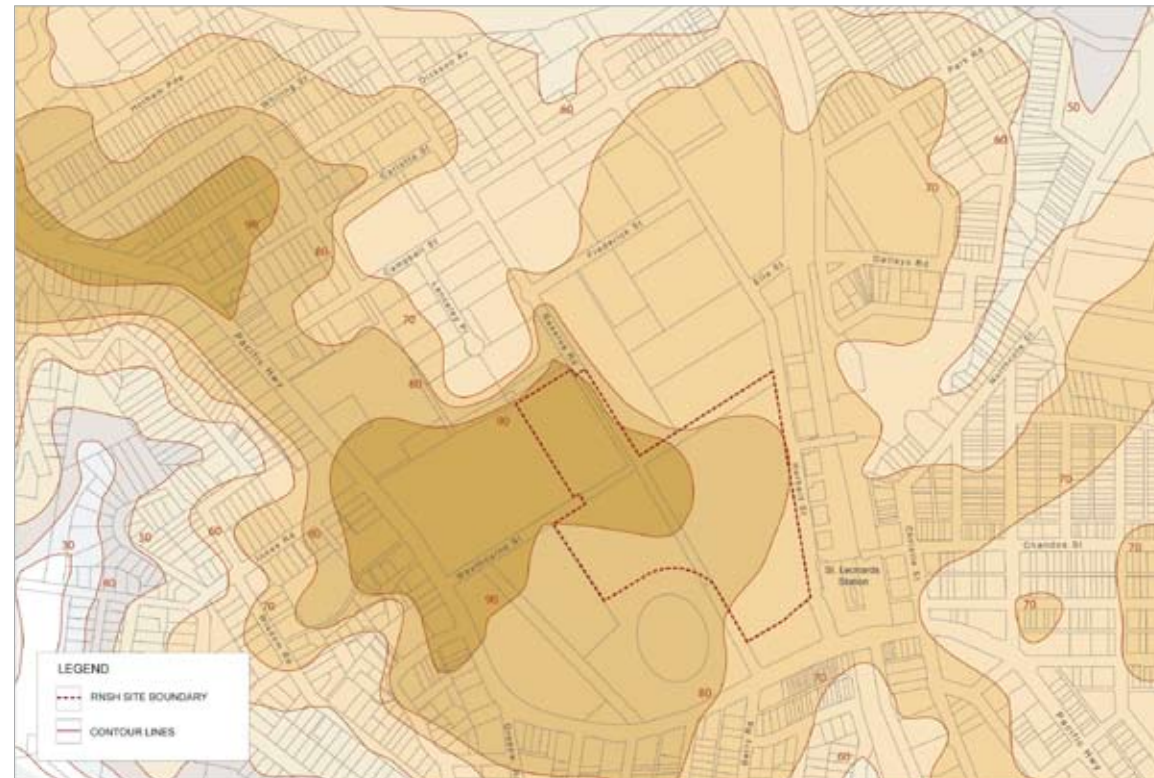


Figure 4: Local Context - District Topography, prepared by Cox Richardson

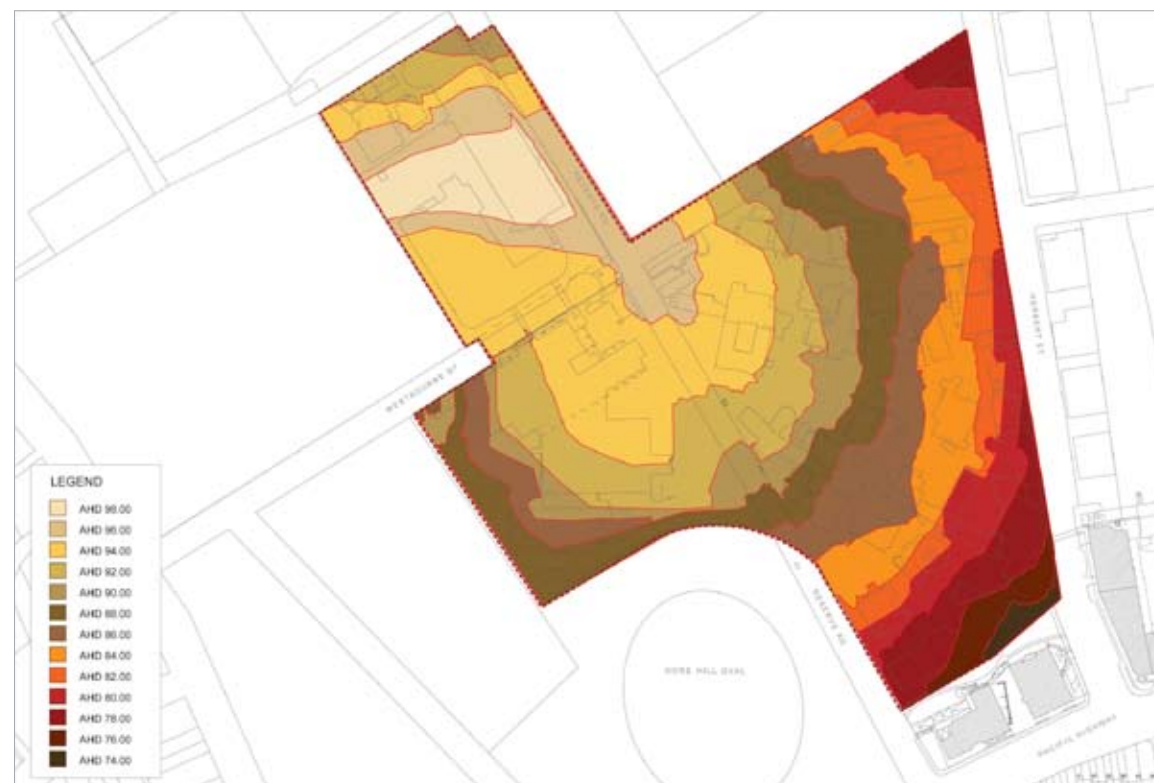


Figure 5: Local Context - District Topography, prepared by Cox Richardson

2.3.2 Views and Outlooks



Figure 6 : Local Context - Views and Vistas from Site, prepared by Cox Richardson



Figure 7: Local Context - Views in and around Site, prepared by Cox Richardson

Figure 10: Local Context - Pedestrian Links, prepared by Cox Richardson

2.5 LOCAL CONTEXT ANALYSIS AND SURROUNDING DEVELOPMENT

The site has excellent access to the Sydney CBD. It is located within immediate proximity of St Leonards Railway Station, and lies on several major bus routes. It is within easy walking distance of transportation networks, shops, employment, open space and residential properties. It has convenient access to both the Pacific Highway and the Orbital Motorway (including the Gore Hill Freeway).

The high ridge that underlies St Leonards is reflected in the built form making the skyline an interesting and distinctive feature in the broader landscape, with the railway station marked by the highly visible 'Forum' development.

RNS Hospital is surrounded by a wide variety of land uses, including St Leonards CBD and high density housing to the east; residential development to the south and east; special uses (North Sydney TAFE, Gore Hill Memorial Cemetery and former ABC site) to the west; Gore Hill Park to the immediate south west and the Artarmon industrial area to the north. The current built form provides impediments to public pedestrian and vehicular access through the site, notwithstanding that a number of strong desire lines exist across the site (e.g. from the TAFE to St Leonards Station), and along Reserve Road.

2.6 EXISTING IMPROVEMENTS

The RNS Hospital site is a complex site consisting of a wide range of building types, styles and sizes ranging from small Queen Anne style buildings to the multi storey Hospital Building 2.

Hospital facilities on the site comprise separate public and private hospitals, with the public facilities located to the south of Westbourne Avenue, and the private facilities to the north.

2.6.1 The Public Hospital

The existing Royal North Shore public hospital is both a local and a major Referral/Tertiary Hospital for an area that extends north of Sydney Harbour across the Hawkesbury River to the southern shore of Lake Macquarie and West to Wiseman's Ferry, having a population in excess of 1,110,600 people.

It is also a major teaching and research hospital, and provides state-wide services for burns and spinal injuries. It also has a major emergency department and plays a significant role in the provision of specialist services for the Sydney metropolitan area, particularly in surgical, paediatrics, maternity and community services.

The hospital comprises in excess of 50 buildings scattered across the site, including 7 demountable buildings. However the principal facilities are housed in Building No. 1, Building No. 2 and the Douglas Building.

The Douglas Building is a 6 storey, 9,483m² building housing:

- Emergency
- Maternity
- Burns unit
- Paediatrics
- Sleep health and research
- Biomedical engineering
- Administration

Building No 2, the existing main hospital building, is a 13-storey, 54,451m² building housing:

- Main entry
- Loading stores
- Mortuary
- Records
- Kitchen
- IT
- Staff accom/facilities
- Cafeteria
- Shops
- Ambulatory care, operating theatres, intensive care (ICU), aged care and inpatients
- Pathology, Anaesthetics, pain management, rehabilitation and endoscopy
- Cardiology, spinal, neurosurgery, respiratory, cardiothoracic, orthopaedics, haematology and oncology
- Preoperative/Pre-Admissions and General Surgery

Building No.1 is a 5-storey, 19,515m² building housing:

- Pharmacy, stores, staff facilities and administrative offices
- Emergency and Medical Imaging
- Ambulatory care clinics and some ambulatory care facilities
- Pathology and biomedical

The Kolling Building used for educational and research purposes was occupied in October 2008.

The following smaller buildings are scattered across the site with a total floor area of 52,612m²:

- Chapel
- Diabetic Service
- Drug and Alcohol Service
- Lanceley Cottage
- Vindin House
- Vindin House - South Wing
- Aged Care and Rehabilitation
- Professional Development Centre
- Welcome Laboratory
- Laundry
- Maintenance Offices
- Boiler House
- Maintenance/Facility Planning
- Clinical Teaching Block
- Norman Lock Lecture Theatre
- Kolling Institute
- Wallace Freeborn Institute
- Day Surgery Recovery
- Day Surgery
- Hydrotherapy Pool
- Physiotherapy
- Social Work
- RMO's Quarters
- ANSTO Body Protein
- Orthotics/Dietetics
- CJ Cummins Unit
- Block 4 - North Wing
- Block 4 - East Wing
- Radiotherapy
- Child Care
- BreastScreen Centre
- Gore Hill Research Laboratory
- UTS Clinical Studies
- Centenary Lecture Theatre
- Demountable -Institute for Magnetic Resonance Research

The incremental manner in which these various facilities have developed over some 100 years has resulted in a highly inefficient operational environment and many outdated and inefficient facilities.

2.6.2 The Private Hospital

The private hospital has a floor space of 20,013m² comprising 5 hospital floors and 3 basement car parking levels. It accommodates modern operating theatres, radiology, wards and medical suites. A development application has recently been approved by Willoughby Council for a 8,952m² extension to the facility.

2.6.3 The Public Hospital & Surrounding Campus



Public hospital and chapel



Douglas Building



Heritage Precinct



Heritage Precinct



Reserve Road (Hospital in background)



Existing Public Hospital



Pedestrian overpass Westbourne Street



Reserve Road

Figure 11: Site Photos

2.7 SUITABILITY OF THE SITE

The site is considered to be particularly suited to the proposed development for the following reasons:

- Consistency with:
 - NSW Metropolitan Strategy and the Draft Inner North Subregional Strategy; and,
 - Major Project Concept Plan Approval MP 06_0051.
- The proposed development is firmly within the public interest and has significant positive social, public and community health benefits;
- The proposed development will not introduce any significant adverse environmental impacts on surrounding neighbouring properties;
- The site has favourable geotechnical conditions at levels where bulk excavation is proposed, where expected cut materials are clay-type soils and shale as opposed to the underlying sandstone bedrock, which is significant in terms of the future management and mitigation of potential noise and vibration impacts;
- No significant contamination issues are known to exist and contingency remediation methodologies will be included in any Remediation Action Plan to address any likely unforeseen circumstances; and,
- The site is suited given that no overall intensification of the use is proposed but rather a rationalisation of uses and consolidation of functions which will not result in any untoward cumulative impacts.

2.8 JUSTIFICATION FOR UNDERTAKING THE PROJECT

Given the suitability of the site for the development, the lack of envisaged environmental impacts and the underlying need to modernise this key health facility, the undertaking of the Project is considered to be fully justified.

3 THE PROJECT

3.1 THE VISION

Contemporary service delivery modes are changing the way in which health services are provided and arranged. The ageing population will require services that are patient-centres and organised in a way that make services easy to access. Whilst inpatient beds will be an important part of the redeveloped facilities, most people will not receive treatment in a traditional inpatient unit, but will be cared for on a day-stay, ambulatory or outreach basis.

The RNS Hospital redevelopment project, provides opportunity to enhance health services on site by:

- Locating acute clinical services in one building, with close links to rehabilitation services to improve accessibility, and enhance continuity between acute and rehabilitation services.
- Improving links between community and other health services on site.
- Providing consolidated research facilities and multidisciplinary educational facilities on site.
- Providing flexible building design to allow for future modification and expansion to meet changes in clinical practice.

The current proposal for the Hospital is to consolidate the clinical and ward facilities into a new building east of Reserve Road. Of the existing hospital buildings only the relatively recent Douglas Building is proposed for retention.

The consolidated hospital will be clearly defined, bound by Reserve Road, Red Road, Westbourne Street and Eileen Street. It will create a state of the art facility, with no consequent compromise in the health care planning. All core hospital services will be located in one building allowing for the delivery of first class health services.

3.1.1 Health and Research Precinct

The final health campus configuration will include:

- the new Acute Hospital building.
- the Douglas building west of Reserve Road (140 metres from the main entrance).
- a new car park west of Reserve Road (60 metres from the main entrance of the new Acute Hospital with level access for people with ambulant impairment).
- a new Community Health building between the hospital and Herbert Street (200 metres from the main entrance).
- the North Shore Private hospital diagonally opposite on Westbourne Street (140 metres from main entrance).
- emergency and other support services are concentrated along the southern edge of the new Acute Hospital along Eileen Street.
- Chapel.
- Kolling Building.
- Multi-storey car park.

The core precinct layout allows for:

- provision of a multi-deck car park convenient to Royal North Shore Hospital with level and direct access for staff and visitors.
- demolition of buildings 1, 2, 10 and part 19.
- opportunity for the future expansion of the Hospital.
- opportunity for development sites for hospital support functions such as staff amenity (child care, gymnasium and retail), visitor amenity (car parking, and retail) and medical research, medical suites and accommodation.

3.2 DEVELOPMENT FOR WHICH APPROVAL IS SOUGHT

The subject Project Application consists of the following principal components (as illustrated in Figure 12):

- Acute Hospital building.
- Community Health Facility.
- Multi-level car park for 576 vehicles.
- Refurbishment/alterations to the Douglas Building.
- Pedestrian bridge linking Hospital and Douglas Building.
- New roads associated with the development of the Hospital, Community Health Facility and car park.
- At grade parking and the temporary use of land for parking purposes during construction.
- Public Domain works including footpaths, lighting and street tree planting.
- Demolition of Buildings 1, 2, 10 and part 19 (demolition of all other buildings requiring demolition has already been approved).
- Landscaping.
- Civil works including storm water and drainage infrastructure, new roads and utilities.
- Construction hours as follows:
 - Between 7:00 am and 6:00 pm, Mondays to Fridays inclusive.
 - Between 7:00 am and 4:00 pm, Saturdays.
 - No work on Sundays and public holidays.

Development approval under Part 3A of the Act will be sought under separate new and amended Project Applications for early works and the re-development of the remainder of the site.



Figure 12 : Site plan prepared by Bligh Voller Neild

3.3 DESCRIPTION OF THE PROPOSED DEVELOPMENT

The following section includes a detailed description of each of the key built form components of the Project, including sections 3.3.1 Acute Hospital Building, 3.3.2 Community Health Facility, 3.3.3 Multi-level car park, 3.3.4 Refurbishment/alterations to the Douglas Building, 3.3.5 Landscaping, 3.3.6 New roads and paving associated with the Project, 3.3.7 Car Parking and 3.3.8 Demolition.

Matters related to the operation of the site, construction and staging, and in the case of construction, how the development is to be managed to mitigate potential environmental impacts during that phase, are addressed below at Section 5 - Key Assessment Requirements.

3.3.1 Acute Hospital Building

As shown on the Site Plan at Figure 12, the new Acute Hospital building is to be located on land to the immediate east of the existing hospital building. The consolidated hospital building allows for the rationalisation of acute medical services on the campus.



Figure 13: Artist Impression, prepared by Cox Richardson

The building having an uppermost height of RL.126.35 comprises nine levels, (including one partial and one fully excavated level) and a Gross Floor Area of approximately 95,000sq.m. The form of the building responds to the topography of the site by following the natural slope of the site, as shown below at Figure 14.



Figure 14 : Western Elevation, prepared by Bligh Voller Neild

The design optimises changes in levels across the site to allow for separation of vehicular and pedestrian traffic. Vehicular traffic (transit pick-up, emergency drop off, and ambulance bays) is concentrated to the southern side of the building at Level 2, whilst the main pedestrian entry and arrival point is on the western side of the building at Level 3. The Acute Hospital includes a Mental Health Unit with a separate entry at the eastern side of the building.



Figure 15 : Southern Elevation, prepared by Bligh Voller Neild

The Acute Hospital building will generally include the following elements/functions:

- Level 1 (Basement):
 - Cancer Care Centre;
 - Radiation Oncology;
 - Main pharmacy;
 - Orthotics;
 - Biomedical engineering
 - Kitchen and linen services;
 - Engineering services;
 - Mortuary (with hearse entry off Red Road); and,
 - Staff amenities;
 - Loading dock and waste management area (ramp up to Eileen Street);
 - Cogeneration Plant (refer to **Appendix N**)
- Level 2 (Part excavated):
 - Medical imaging;
 - Mental Health Unit;
 - Emergency;
 - IT/records and admin;
 - Enclosed landscaped courtyards; and,
 - Vehicular service points (transit pick-up, emergency drop off, ambulance bays and Mental Health Unit pedestrian entry and vehicular drop off).
- Level 3:
 - Main entry and foyer;
 - Cafeteria;
 - Retail tenancies;
 - Nursing and patient services;
 - Mental Health Unit;
 - Acute Dialysis Unit;
 - Clinical consulting and administration offices; and,
 - Ambulatory Care Centre.
- Level 4:
 - Cardiology; and,
 - Operating Area.
- Level 5:
 - Pathology;
 - Staff amenities;
 - Sterilising services;
 - Links to Douglas Building and Research Building; and,
 - Hospital administration.

- Level 6:
 - In-patient rooms, ICU and HDU
- Level 7:
 - Inpatient therapies;
 - In-patient rooms; and,
 - Spinal Injuries Unit
- Level 8:
 - In-patient rooms;
 - Specialist wards;
 - Administration; and,
 - Laboratories.
- Level 9:
 - Administration; and,
 - Staff facilities/accommodation.

The Acute Hospital is to operate on a 24 hour/ seven days a week basis.



Figure 16 : Artist Impression of Main Foyer, prepared by Bligh Voller Neild

3.3.2 Community Health Facility

The proposed Community Health Facility is a seven storey building with one excavated basement level. The building has its principal address to Herbert Street, within Precinct 6. The vehicular drop off point, pedestrian access and vehicular access to the basement are all from Herbert Street. An ambulance drop off is also provided at the rear of the building on Red Road.

The proposed building has an uppermost height of RL113.0 and a Gross Floor Area of approximately 13,150sq.m.

The facade treatments of composite aluminium panels, polycarbonate and metal sheeting, brick and block-work, as well as the central section with full height glazing result in robust, contemporary building which draws from architectural sources from within the site, including the research facility to the north and the older components of the site within Precinct 3 and the existing hospital building itself. Refer to Figure 17.



Figure 17: Photo Montage Herbert Street Elevation, prepared by Cox Richardson

The “L-shaped” building has internal floor layouts to meet the needs of users, clients and visitors. The configuration of the building into two wings, one along the Herbert Street frontage, the other addressing Eileen Street to the northeast boundary of the precinct, provides flexible floor space on each level.

The building is accessed internally by two public lifts located in the main reception and corresponding reception areas on each level. This core access point is an easy way finding mechanism for users given the glazed facade treatment and articulation of this section of the building. Glazing is also used at entry points and to street front uses such as the retail café and meeting rooms.

As shown on the elevations in Figure 18, the building is finished at two different levels, with the Herbert Street wing being approximately 6m lower than the highest point of the Blue Road wing.

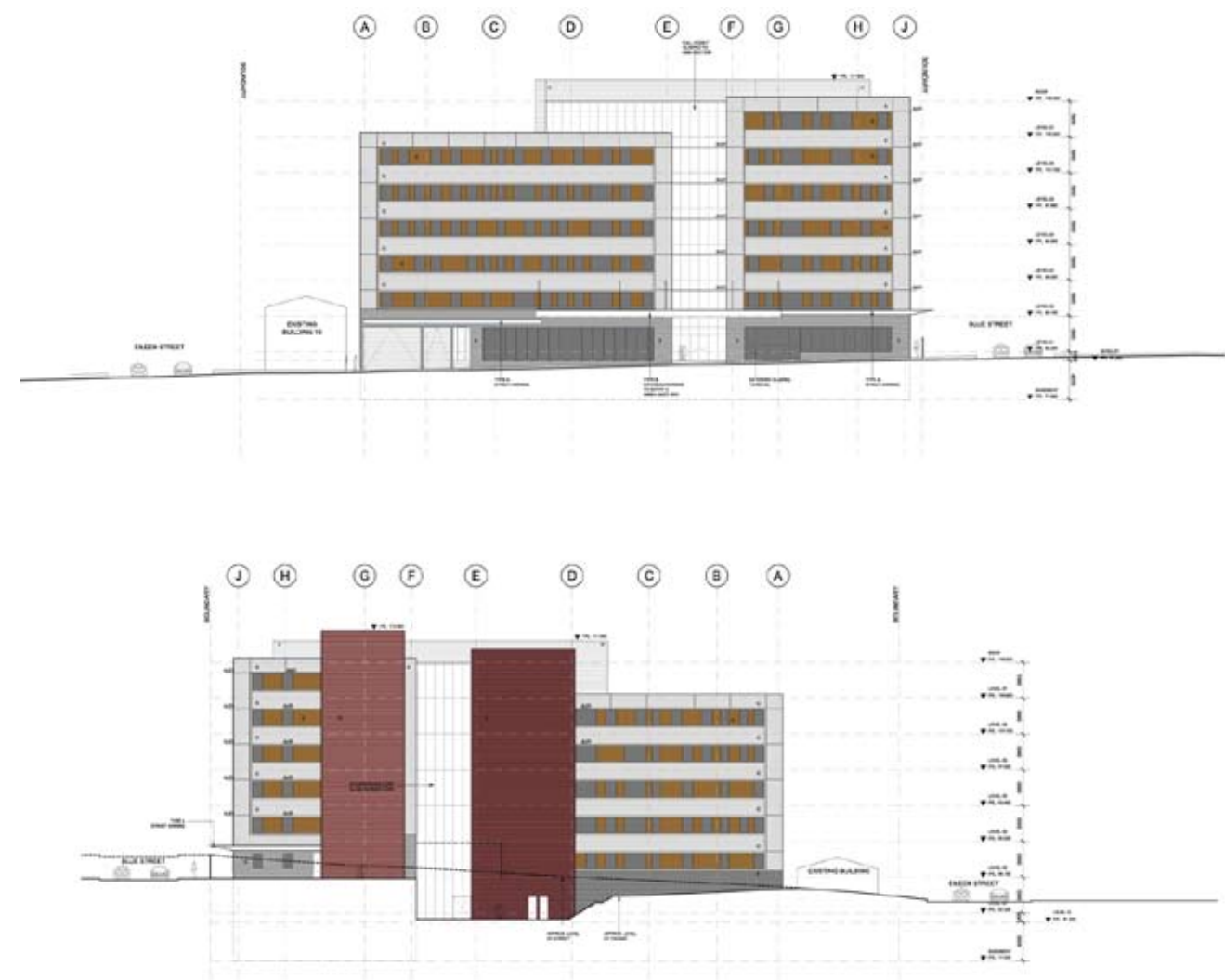


Figure 18 : Eastern & Western Elevations, Community Health Services Building, prepared by Cox Richardson

The Community Health Facility includes the following elements/functions:

- Basement:
 - 30 visitor car spaces (1 disabled, 1 designed for pram access);
 - Loading dock;
 - Public lift and goods lift; and,
 - Waste management and plant rooms.
- Ground floor:
 - Main entry and reception;
 - Cafe;
 - Aboriginal Health;
 - Group and meeting rooms;
 - Administration;
 - Children's play area; and,
 - Staff area.
- Level 2:
 - Drug and Alcohol Services;
 - Community Mental Health (with separate entry);
 - Partially covered courtyard; and,
 - Ambulance drop off;
- Level 3:
 - Renal Services
- Level 4:
 - Children and Family Services
- Level 5:
 - Aged care and rehabilitation
- Level 6:
 - Breast Screening;
 - Dental; and,
 - Translation services.
- Level 7:
 - Sexual Health;
 - Sexual Assault;
 - Health Programmes; and,
 - Roof over part Herbert Street wing
- Level 8:
 - Air handling units and associated plant

The Community Health Facility is to operate on a 24 hour/ seven days a week basis.

3.3.3 Multi-level car park

The car park will have a capacity of some 576 spaces over a total of seven levels and will incorporate a pedestrian bridge providing direct access to the new hospital and the Douglas Building. The car park has an uppermost height of RL106.35.

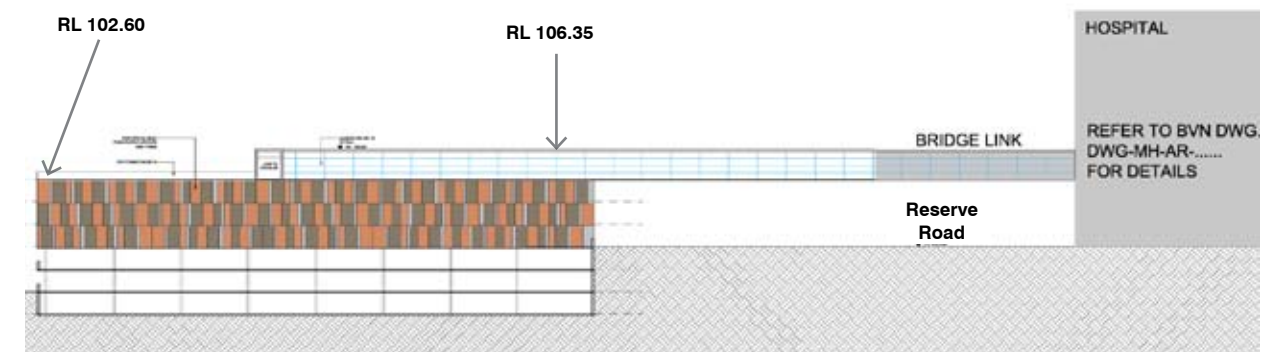


Figure 19: Southern Elevation, prepared by Cox Richardson

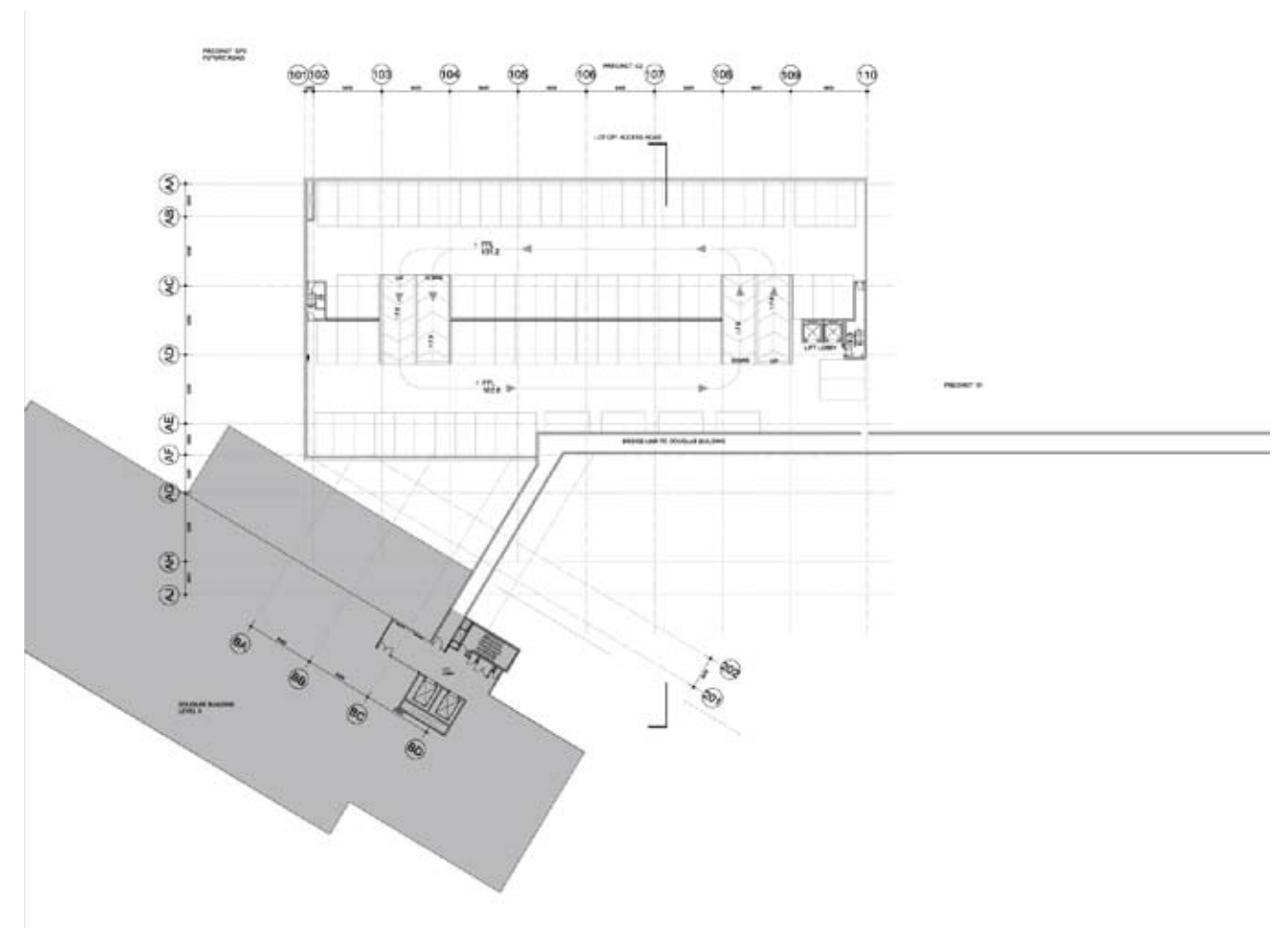


Figure 20 : Top floor car park showing pedestrian links, prepared by Cox Richardson

The new multi-level car park is intended primarily to provide Hospital staff and visitor parking. It has direct, immediate access for visitors traveling north-bound up Reserve Road from the Pacific Highway. Secondary entry and exit points will be provided on the western side of the new multi-level car park enabling management of peak traffic loads and a continuous circulation loop for vehicular traffic around the site, should either major car park be fully occupied at any time.

The building further comprises:

- separate lift access and associated disabled parking at each level;
- parking facilities and amenities for cyclists; and,
- an allowance for 70 Community Health staff pool cars.

On the completion of decanting from Building 1 into the new Acute Hospital, it is proposed to demolish the existing main hospital building and construct the new car park on the site. In doing so the car park has been designed to reuse the existing basement space resulting from the demolition.

The car park will be constructed while the demolition of building 2 is still underway with a four-metre clear zone between the northern edge of the car park and the southern edge of the demolition zone.

Visitors arriving from the north along Reserve Road may either enter the existing multi-deck car park, or they may continue in a loop around the campus to arrive at the new multi-level car park via the collector road as shown in Figure 22. The car park creates a clear and unambiguous line of travel between the retained Douglas Building and the new Acute Hospital at two levels:

- at ground level, to allow unrestricted public access between each of these facilities; and,
- from an service provision point of view, to maintain clinical relationships between respective functions in each building.

As described in further detail later in this report, it is proposed to temporarily use other areas within the site for at-grade parking until the hospital is demolished and the new car park is constructed.

3.3.4 Refurbishment/alterations to the Douglas Building.

The Project also includes alterations to the existing Douglas Building. The proposed works are concentrated on the Ground level of the building (Level 2) and will result in improved medical as well as visitor facilities, in the form of a café and retail outlet. The key function of this refurbished level of the building will be related to maternal-foetal medicine.

3.3.5 Landscaping

Landscape Architects OCULUS have prepared a landscaping and open space design strategy for the core area of the health campus to accompany this Project Application. Refer to **Appendix B**.



Figure 21: Site landscaping plans (oculus), prepared by OCULUS

The design philosophy and proposed landscaping are described by OCULUS as follows:

Introduction

The landscape design plays a key role in binding together the master plan for the Royal North Shore Hospital Campus, integrating the existing heritage buildings and plantings with the new buildings and open spaces.

It aims to incorporate the existing ‘layers’ of planting which have developed over time with the various stages of building development. The Tree Heritage Study prepared by Taylor Brammer identifies six main groups of significant existing vegetation on the site:

- *A partial avenue of Phoenix canariensis (Canary Island Date Palm) along the boundary between the ‘UTS Precinct’ and the ‘Old Hospital precinct’ in the southern part of the site.*
- *The trees and palms that make up the landscape curtilage to Building 31.*
- *A large and established Ficus macrocarpa var. ‘hillii’ (Hills Weeping Fig) to the southeast of the entrance of Building 10, and to a lesser extent the Cinnamomum camphor (Camphor Laurel) in the same location.*
- *The remaining vegetation of the former avenue planting to Reserve Road.*
- *The lines of Lophostomen confertus (Brushbox) to Reserve Road and Westbourne Street.*
- *The groups of Syncarpia glomulifera (Turpentine) trees immediately northeast of Buildings 28 and 29.*

The key principles of the landscape master plan are:

- *To ensure that the significant existing vegetation associated with the heritage of the RNSH is retained wherever possible and integrated with the design of the public domain.*
- *To ensure safe physical links to the new hospital building and key facilities. This is achieved via the pathway system and visual connections to the Douglas Building; the Community Health Building; the Commercial / Retail precincts and the neighbouring suburbs and facilities.*
- *To design a number of inter-related public and private open spaces based on best practice urban design principles using hard and soft landscape that contribute visual interest, shade, human scale and amenity.*
- *To design the series of courtyards, balconies and gardens associated with the new hospital building to meet a range of design objectives specific to the requirement of each associated user group. These provide outdoor, safe, healthy and therapeutic environments for patients, visitors and staff.*
- *To select plant species based on:*
 - *the existing ornamental and indigenous species to ensure the character of the existing and surrounding landscape is protected and enhanced*
 - *directing and framing views, providing privacy, reducing glare and reflection*

- *adaptability to site conditions and provision of shade*
- *visual amenity*
- *low maintenance, growth management and low watering requirements*
- *To design the hard landscape to provide continuity across the site and to meet the specific requirements of each space.*
- *To design / select street furniture that is coordinated across the site, meets the varied requirements of users, and is robust and easily maintained.*

Reserve Road/ Entry

The main entry to the site creates a campus feel through the use of hard and soft landscape rectangular banding which creates a legible sense of identity and structure for the entire site.

The new hospital and the Commercial / Retail precinct flank either side of Reserve Road to form a vibrant urban environment of outdoor dining and recreational areas for patients, staff and visitors to occupy and enjoy. Pedestrian use of this space is reinforced by reducing vehicular traffic along this main spine road making it easily accessible for pedestrians to transverse to and from the new hospital and commercial buildings.

Easement Spine

The hard and soft landscape rectangular banding expands over the Reserve Road easement. Removable concrete pavers and planting will allow services below to be easily accessed without compromising the landscape design. The design of the spine also comprises of a paving graphic that extends from the new hospital entry atrium. This graphic is formed through a mapping of desire lines and destination nodes, providing pedestrians with a direct path of access. This paving graphic and the rectangular banding provides safe pedestrian permeability along the spine and defines the café, retail and recreational spaces spatially.

Both the entry point and spine road reflect our commitment to designing strong Water Sensitive Urban Design through the use of water wise, drought-tolerant planting and the permeable kerbing which directs storm water runoff water from the roads into the planter beds.

Adjacent to the main easement spine is The Chapel, a permeable desired access line to the main hospital and future developments. This access line meets provides access for all and creates smaller more informal, retreat-like grassed and shaded areas alongside the existing chapel.

Level 1: Cancer courtyard – on natural ground

The design focuses on creating private intimate spaces, through planted screening and informal seating. The space is divided into private gathering points for patients and visitors to interact in an external tranquil environment. The design patterning creates a strong visual outlook for the levels above and also improves privacy.

Level 1: Mental health courtyards - on natural ground

This space has been designed according to the NSW Health facility guidelines on Mental Health Courtyards to ensure they are safe and secure places for patients and staff. The design intent for these adjoining courtyards is to create an informal seating arrangement for patients and to provide ample space for circulation and exercise. The space is made visually appealing for patients through the use of native grasses and climbers, providing a healthy sense of growth and colour. Privacy is provided along Westbourne Road via a screen wall that has been perforated to create a visually stimulating image. The screen wall will allow penetration of sunlight and natural ventilation.

Level 2: Secure courtyard – on natural ground

This space has been designed with a clear emphasis on safety for both patients and staff while also providing a pleasant retreat. Like the mental health courtyards this design creates enough space for circulation and exercise and allows for a central gathering space with fixed seating. The design of this space includes a laminated opaque glass screen wall with a printed image of tree trunks. This screen wall will provide privacy for the patients and allow air and light to circulate into the space. A grove of trees planted adjacent to this glass screen wall will cast tree shadows into the space creating an interesting changing environment throughout the day.

Level 2: Waiting courtyard one – on structure

This courtyard will be used as a retreat for both visitors and staff. A central sculptured mound planter creates a natural barrier between the new hospital private examination rooms and the public transit area. A large green canopy of climbers creates an enclosure of filtered light from within and a sculptural delight to view from surrounding rooms within the building. Seating is provided under this ‘green roof’ taking advantage of the shade and shelter provided.

Level 2: Waiting courtyard two – on structure

This space is designed to cater for three different uses, namely a café space, public seating and two private secure courtyards. A large green screen wall creates privacy for the secure courtyard in conjunction with the sculptural planter that defines the outdoor café space and acts as an informal seating wall. A vibrant use of planting also creates a habitable space that encourages visitors to use this space.

Level 6: ICU balcony – on structure

This balcony has been designed to provide the unique opportunity to allow patients who are restricted to beds access to the outdoor landscape. This design focuses on the patient’s view (looking up) creating a green canopy. The steel cable canopy structure will provide the space with soft filtered light and green foliage that will change and grow throughout the seasons. The courtyard is designed with a strong sense of patterning to create an interesting view from surrounding rooms within the building. The intent of this balcony is to create an external protected environment for patients and visitors to retreat and interact.

Lightwell

A green wall is proposed for this narrow space to treat the blank wall which is visible from the rooms opposite. Continuous rows of planters would be provided up the wall with a series of vertical steel cables running in front to support the climbers and maintenance walkways accessed by ladders behind. A variety of shade-tolerant climbing plant species would be used to provide interest.

The Community Health Centre

The design aims to create a multipurpose space catering for staff, clients, visitors and children. The planting within this site reinforces the design theme and identity of rectangular banding that is across the Hospital campus. The strong use of timber banding creates a private and shaded exterior space for a mental health courtyard as well as forming a sculptural timber structure for planting to grow over the staircase. At the base of the terraces the design includes an informal custom designed children's play ground. The heritage significant Fig and Camphor Laurel trees located in the southwest part of the site are retained.

The design for this centre includes an outdoor café design on the Herbert Street side that controls movement and permeability to encourage a useable exterior space. Raised planters with steel cables for vines and integral benches on the inside are provided to define the outdoor seating area. The vibrant blue flowering street tree, Jacaranda mimosifolia (Jacaranda), surrounds this site and extends up along Red Road to the Mental Health component of the new hospital to reinforce the connection to the rest of the Hospital campus. A staircase running along Eileen Street and Red Road ensures the Community Health Building is connected to the Main Hospital precinct.

Tree Protection

A tree protection specification will be included in all construction and demolition contracts. This specification will be based on Natspec's Tree Protection specification and will be tailored to the site by a suitable qualified and experienced arborist.

3.3.6 New roads and paving associated with the Project

The proposed site plan below shows new roads associated with the Project, including:

- Red Road.
- Blue Road.
- Eileen Street.
- West Side Road
- the partial re-opening of Westbourne Street.

The Concept Plan Approval, (MP06_0051), includes a Commitment to dedicate parts of these road reserves to Willoughby City Council.



Figure 22: Road Hierarchy, prepared by Hyder Consulting

A plan containing proposed new paving associated with the project is provided within the Civil Works drawing at **Appendix L**.

3.3.7 Car Parking

As well as the parking incorporated in the Community Health Building and the new multi-level car park, consent is sought for temporary parking arrangements throughout the construction period.

The figures below demonstrate how on-site parking will be designated during construction and during operation of the development.



Figure 23: Carpark decanting during staged works, prepared by Hyder Consulting

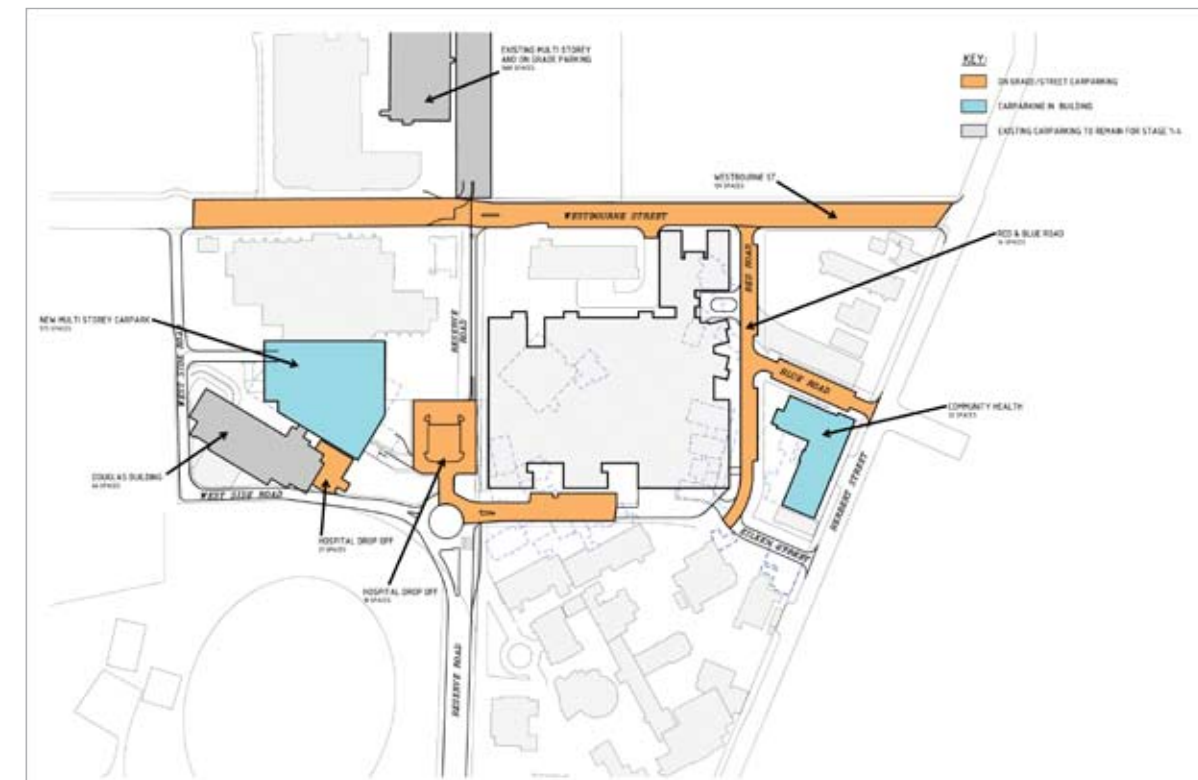


Figure 24: Carpark post development, prepared by Hyder Consulting

With reference to the Staging Plans provided at Section 5.13 below, the following table outlines the proposed temporary car parking arrangements:

Stage	Parking
1	Stage 1 site will be cleared. Temporary parking to be provided along approximately half the length of Westbourne Street (East). A new temporary staff parking area will be provided close to the intersection of Herbert Street and Westbourne Street (East).
1 and 2	The temporary parking along Westbourne Street (East) will be relocated to the Western portion of the Street to facilitate the staged reconstruction of Westbourne Street.
2	Staff and disabled parking spaces next to the existing hospital will be re-located to Westbourne Street and Reserve Road (North)
3 and 4	Disabled parking close to the existing hospital will be re-located to new Hospital
On completion	The temporary staff car park will be removed as will the parking available around the Oval. These losses will be addressed by the provision of the new multi-level car park.

It is proposed that 69 disabled spaces, 38 short term spaces and 16 emergency reserved spaces be made available throughout the construction process.

The proposed development will result in 2550 (existing 2197) on-site parking spaces.

The merits of the proposed parking strategy are discussed below at Section 5.5.2.

3.3.8 Demolition

As indicated at Figure 25, the demolition of all buildings required to accommodate the proposed development has been granted under MP06_0051, except for:

- Buildings 1 and 2;
- Building 10, (which will be removed during the clearance of Precinct 7 for temporary parking and the construction of Red Road); and,
- Part of Building 19.

Approval is therefore sought for the demolition of these buildings, the merit of which, in terms of buildings 10 & 19, are discussed at **Appendix F** Heritage Report.

The demolition of Buildings 1 & 2 is considered to be justified for the following reasons:

- Concept Approval has been granted for a new building on the existing footprints of these structures
- To minimise security issues with respect to the buildings being vacant
- Remove potential fire hazards; and
- To allow for the potential future expansion of the core uses.

Refer to Section 5.12 below for discussion related to the proposed staging and phasing of the development.

3.3.9 Drawings/Plans for which approval is sought

Drawings, detailing the proposed development for which approval is sought, are provided as follows:

- Appendix A** – Architectural;
- Appendix B** – Landscaping;
- Appendix E** – Traffic Report (New roads);
- Appendix L** – Stormwater Drainage, Erosion and Sediment Control Plan, Paving, Road Design and Bulk Excavation Plan; and,

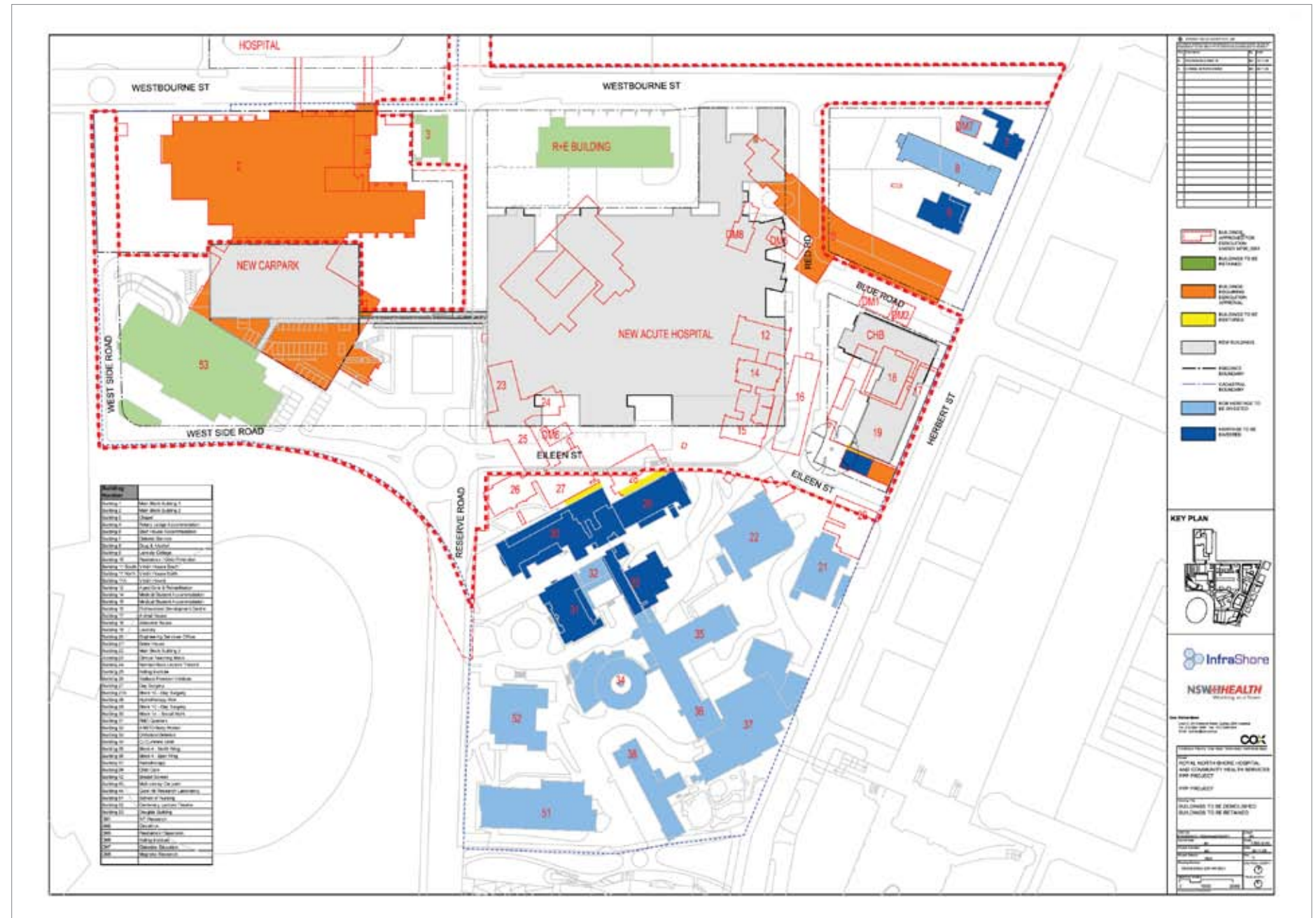


Figure 25 - Demolition Plan, prepared by Cox Richardson

4 STATUTORY PLANNING

The following section addresses those matters of statutory planning relevance. The DGRs related to this General Assessment element require that any variation to the instruments or approvals be justified.

4.1 CONCEPT PLAN APPROVAL

The Terms of Approval issued under the Concept Approval, specifically condition M5, requires that all future applications for development are generally consistent with the Terms of Approval, which further require that the development be generally in accordance with approved plans and documents, (condition M2).

In this regard, whilst the proposed development includes some variations to the approved concept plan, it is considered that the works which are the subject of this application are generally consistent with that approval.

The table below includes those relevant Terms of Approval, made with respect to the Concept Approval and how such matters are to be addressed under the subject Project Application. Those requirements excluded from the table relate to land and/or works outside the parameters of the subject Project Application and development site.

Relevant Terms, Conditions and Commitments	Comments
M1 - Terms of Approval	
M1.1 Concept approval is given for: - Maximum height of building envelopes specified within Figures 28: Illustrative Master Plan, prepared by Cox Richardson, with the Preferred Project Report. - Staged re-opening of Westbourne Street to through vehicular traffic.	- All proposed buildings comply in this respect. Refer to Sections 5.1.1, 5.1.2, 5.1.3 and Appendix G, with respect to the maximum height of buildings. - The subject PA seeks to partially re-open Westbourne Street.
M2 - Approved Plans and Documentation	
M2.1 The development shall be generally in accordance with the following plans and documentation: (a) Royal North Shore Hospital Campus Redevelopment Concept Plan (including accompanying appendices) prepared by Urbis JHD for Burnsbridge Services on behalf of NSW Health dated July 2006. (b) Amended Concept Plan and Preferred Project Report (including supporting documentation) prepared by Urbis JHD for Burns bridge Services on behalf of NSW Health dated November 2006. (c) Statement of Commitments prepared by Urbis JHD for Burns bridge Services on behalf of NSW Health dated November 2006.	Refer to discussion below with respect to consistency between Concept Approval and Project Application. Commitments made in the Concept Approval related to this PA are addressed below in this table.

Relevant Terms, Conditions and Commitments	Comments
M5 – Future Applications	
M5.1 All applications for development on the subject site are to be generally consistent with the terms of this approval. M5.2 Pursuant to section 75P(1)(a) of the Environmental Planning and Assessment Act 1979 the following environmental assessment requirement applies to any subsequent applications (excluding temporary structures and fixtures - such as the operation of cranes) made under either Part 3A or Part 4 of the Environmental Planning Assessment Act 1979: (a) Where relevant and necessary, an assessment of the proposed development (buildings and/or structures) with particular attention to the implications it may have on existing and anticipated future: - Lines of sight of the microwave link's but only development located within Precinct 2 and where it exceeds RL 112; - Electromagnetic radiation (EMR) impacts upon human health and safety (including employees on-site, residents, construction workers etc); - Impacts of electromagnetic interference (EMI) upon electrical equipment and goods, particularly medical equipment and household goods; and Note: The objective should be to design buildings (through choice of materials and earthing) in an attempt to reasonably minimise EMI impacts as best as possible. iv. Mitigation of any potential ghosting and multi-path impacts to signals.	Refer to discussion below with respect to consistency between Concept Approval and Project Application. No adverse impacts are anticipated in these respects. Refer to Section 5.15 and Appendix O
M8 - Setbacks, Streetscape and Building Separation	
M8.1 A setback of at least 4 metres from the site boundary must be provided within those precincts adjacent to Herbert Street (i.e. Precincts 4, 5 and 6).	A setback of 4m is proposed in relation to the eastern building line of the Community Health Building and the eastern site boundary.
M8.3 Any subsequent applications for development within Precincts 4, 5, 6 and 7 should achieve the following urban design outcomes and principles: - Effective transition between public and private space. - Activation of the ground level streetscape. - Articulation and modulation of building facades. - Increased building separation in proportion to building height. - Creation of secondary upper level setbacks. - Minimisation of overshadowing into the streetscape. - Provision of street landscape character (including tree planting). - Any other matters required by the Director-General. (DG)	The urban design outcomes for the Community Health Building, now located in Precinct 6, are fully addressed at Section 5.1.2. Matters related specifically to overshadowing are addressed at Section 5.4.3.

Relevant Terms, Conditions and Commitments	Comments
M9 – Public Transport Provision	
M9.1a Any application for health related development shall detail arrangements to facilitate public transport use	Refer to Section 5.5.3 and Appendix E .
M10.1 Transport Management and Accessibility Plan (TMAP)	
M10.1 A detailed transport, traffic and accessibility study shall be submitted to and approved by the Director General prior to or concurrent with the lodgement of any project application for development of the acute hospital and/or community health building. The study shall contained sufficient detail to allow it to be used as part of the TMAP for the site.	Refer to Section 5.6 and Appendix E .
M12 – Heritage & Conservation	
M12.1 A Conservation Management Plan's) (CMP) shall be submitted to and approved by the Director-General, in consultation with NSW Heritage Office, prior to or concurrent with the lodgement of any application for development within Precinct 3 and submitted with any application for development within that precinct.	Refer to Section 5.4, Chapter 7 – Draft Statement of Commitments and Appendix F .
M12.2 The CMP's shall address, as a minimum, the following matters: (a) The historic development of the precinct, its constituent buildings and landscape elements. (b) Actions and strategies to mitigate impacts and protection of built and landscape heritage items. (c) Moveable heritage. (d) Principles and policies for future built development and landscaping (including palette of plant species). (e) Possible conflicts between footpaths, road works and other infrastructure works. (f) Effects on potential aboriginal and non-aboriginal archaeological items. (g) Any other matters requested by the Director-General. (DG)	
M12.3 Site Interpretation Prior to or concurrent with the lodgement of any subsequent application for development on the subject site, an Interpretation Strategy and/or Plan for the subject site should be produced by an experienced heritage practitioner to provide detailed information about the ways in which the heritage significance of the site can be interpreted. M12.4 Historic kerb and guttering should be identified and where its removal is unavoidable it should be retained for use in appropriate locations elsewhere on the site.	A preliminary Site Interpretation Plan may be prepared to inform the overall Interpretation Plan. Refer to Chapter 7 - Draft Statement of Commitments
M12.5 All subsequent applications for development shall be accompanied by a landscaping plan which identifies significant landscaping features and provides for their future management and maintenance.	Refer to Appendix F
M12.6 Appropriate planting should be provided to buffer proposed development from adjacent sites where necessary and appropriate (e.g. Gore Hill Memorial Cemetery).	Refer to Appendix P for Heritage Tree Study
	Refer to Section 3.3.5 and Appendix B .

Relevant Terms, Conditions and Commitments	Comments
M14 – Re-opening of Westbourne Street	
M14.3 The extent to which Westbourne Street shall be permitted to reopen will require detailed plans and documentation to be submitted to and approved by the Director-General.	Refer to Section 5.6 and Appendix E .
M14.4 The submitted plans and documentation will need to demonstrate where appropriate: (a) Vehicular traffic movements will not have a detrimental impact upon the existing local road network and will not cause unacceptable congestion at key intersections. (b) The reopening of Westbourne Street will not create a quicker or more desirable vehicular traffic route between the Pacific Highway/ Westbourne Street and the Westbourne Street/ Herbert Street intersections. (c) Justification for timing of each reopening stage as referred to above in the context of implementation of the concept plan. (d) Any other matters required by the Director- General.	
Concept Approval Statement Of Commitments	
Operation An Operational Environmental Management Plan will be prepared. The plan will address, but will not be limited to, the following matters: (a) Protection of flora and fauna and minimisation of anti-social behavior. (b) Visitor safety. (c) Site security. (d) Noise management. (e) Traffic and deliveries. (f) Storage of materials. (g) Emergency and evacuation procedures. (h) Fire safety. (i) Waste management and ESD initiatives. (j) Lighting. (k) signage. Timing: To be submitted prior to the opening of the hospital to the public.	An Operational Management Plan shall be prepared prior to the occupation of the subject buildings. Refer to Section 5.10 and Chapter 7 – Draft Statement of Commitments.
TRAFFIC AND TRANSPORT The design and construction of roads, car parking / loading facilities and other traffic devices and infrastructure will be designed and constructed in accordance with relevant Australian Standards and/or the requirements of Willoughby Council. All transport, traffic and access proposals will be consistent with the strategic transport policy objectives contained in the Metropolitan Strategy, where relevant.	Refer to Chapter 7 – Draft Statement of Commitments.

Relevant Terms, Conditions and Commitments	Comments
ACCESS AND MOVEMENT Access and Safety protocols will be included in an Access and Safety plan which will be prepared to maintain access and use of the site during the redevelopment of the hospital site to ensure the safety of staff, visitors and patients. The design of facilities will permit effective, appropriate and safe use by all people, including those with disabilities and will be in accordance with. (a) NSW Health Facility Guidelines, including Part B - Design for Access, Mobility, OH&S and Security. (b) DDS32 Improved Access for Health Care Facilities. (c) AS 1428. (d) The Building Code of Australia. Timing: To be documented in relevant project applications.	It is proposed that matters related to site access during construction will be addressed in a Construction Management Plan, to be prepared prior to the commencement of works. Refer to Chapter 7 – Draft Statement of Commitments.
TRANSPORT MANAGEMENT A Hospital specific 'Workplace Travel Agreement' will detail specific transport management measures to be implemented in association with redevelopment of the Hospital. Timing. To be submitted to the Director General for approval prior to project approval for the Hospital	Refer to Chapter 7 – Draft Statement of Commitments.
VEGETATION The proponent will seek to retain as many trees as possible within the site, and all trees on the site that are to be retained will be suitably protected by way of tree guards, barriers or other measures as necessary are to be provided to protect root system, trunk and branches, during construction and demolition. Stockpiling or storage or mixing of materials, washing of equipment, vehicle parking, disposal of liquids, machinery repairs and refuelling, disposal of building materials such as cement slurry, siting of offices or sheds will not occur within the protective fencing of the trees. Any branch or root pruning required will be carried out by a qualified arborist. Where mature trees are removed, consideration will be given to replacement with mature specimens where feasible. Timing: Landscape Plans will accompany all project Applications, as relevant.	A comprehensive landscaping plan for the development site accompanies the PA. Refer to Section 3.3.5, Appendix B and Chapter 7 – Draft Statement of Commitments.

Consistency with Approved Concept Design

The proposed development enhances the functional and aesthetic properties of the existing campus and its relationship with its surrounds and public domain. The proposed scheme is considered to be generally consistent with the Concept Approval for the following reasons:

- The uses and functions envisaged for the core health precinct do not change
- The development continues to conform with those design principles embedded in the concept approval
- The street grid connections running east-west and north-south are retained, with an additional north-south connection along Reserve Road; Red Road is east of the concept plan and Eileen Street is broken at Red Road by a change of level;
- The built-form townscape principles, streetscapes, public domain solar access controls and view corridors are retained and enhanced with the retention of Reserve Road.
- The proposed finished levels of the buildings remain within the prescribed height limits;
- Whilst the Community Health Building is located approximately 100m further north than anticipated under the Concept Approval, the proposed location will:
 - allow for better connectivity to the hospital;
 - reduce construction impacts by the consolidation of the construction site;
 - allow for the retention of the chimney in Precinct 5, (considered to be of heritage significance);
 - allow for the location of noise sensitive uses within the facility to be located further away from Eileen Street
 - that the principle of providing a consolidated community health facility in proximity to public transport, (as opposed to being spread across the North Shore Region), has been accomplished.

The proposed variations between the Concept Approval and the Project Application are fully supported. A superior design, town planning and operational outcome has been accomplished as a result of the variations incorporated within the subject Project Application.

4.2 STATE ENVIRONMENTAL PLANNING POLICIES

4.2.1 SEPP (Major Projects) 2005

The site is identified under Schedule 5 of the SEPP as being a “*Critical Infrastructure Project*”.

In the case of a *critical infrastructure project*, Section 75R of the Act excludes, with respect to the project, all environmental planning instruments (other than SEPPs that specifically relate to the project).

The relevant SEPP in this case is SEPP (Major Projects) 2005, which includes the following site-specific planning provisions under Schedule 5:

“**Royal North Shore Hospital redevelopment site**”

(1) *In this clause:*

RNSH redevelopment site means the land comprising the following:

(a) *lots 21 and 22, DP 863329,*

(b) *lot 102, DP 1075748.*

(2) *Development for the purposes of redeveloping the RNSH redevelopment site, including development for any of the following purposes:*

(a) *refurbishing or replacing the main hospital buildings and emergency service facilities,*

(b) *commercial premises along Herbert Street providing community health and primary care services and research and education facilities,*

(c) *other commercial uses (including for research and technology purposes),*

(d) *vehicular and pedestrian access to and from, and within, the site (including direct pedestrian access to St Leonards Station),*

(e) *accommodation for people receiving acute medical or other health-related services,*

(f) *retail and residential uses.”*

In light of Section 75R of the Act, the above site-specific controls replace the provisions of Willoughby LEP 1995.

The site of the proposed development is within Lot 21 and 22 in DP 863329 and Lot 102 DP 1075748. The proposed development includes a new acute (or main) hospital building, a community health facility, and other associated development ancillary to these purposes, such as roads, car parks, open space and public domain works. These works are listed above and therefore the proposal is permissible and otherwise consistent with the relevant provisions of the SEPP.

4.2.2 SEPP (Infrastructure) 2007

SEPP (Infrastructure) 2007 includes two parts of relevance to this application:

- Division 10 - Health Services Facilities; and,
- Division 17 - Traffic Generating Development.

Division 10 allows for specific hospital related development to be carried out under certain parameters. However, s.10 of SEPP (Major Projects) 2005 provides the following:

10 *Exclusion of certain exempt or complying development*

(c) *... the particular development is not carried out as part of or in conjunction with other development that is a project to which Part 3A applies*

The exempt development provisions under SEPP (Infrastructure) 2007 are therefore not available to the proponents of this project.

The proposed hospital, having more than 200 beds would attract a referral to the RTA under this Policy.

4.2.3 SEPP 55 – Remediation of Land

Under this SEPP, prior to the issue of consent, the consent authority needs to be satisfied that the site is suited to its intended purpose in terms of any potential soil or ground water contamination.

The issue of potential ground contamination is discussed below with respect to the Key Assessment Requirements. In summary, subject to the implementation of a Remediation Action Plan, to address localised contamination and weathered asbestos, the site is considered to be suited to its intended purpose in this respect.

4.3 APPLICABLE LOCAL PLANNING INSTRUMENTS, RELEVANT LEGISLATION AND POLICIES

The principal statutory mechanisms with which this Project Application is being administered is Part 3A of the Environmental Planning and Assessment Act 1979 and SEPP (Major Projects) 2005. As discussed above the provisions of Willoughby LEP 1995 do not apply.

Other relevant legislation and policies are considered in the context of the appended specialist reports.

5 KEY ASESSMENT REQUIREMENTS

5.1 URBAN DESIGN, HEIGHT, DENSITY, BULK AND SCALE

5.1.1 Acute Hospital Building

Urban Design Response

The following extracts, provided by Infrashore and BVN, relate to the key architectural and urban design drivers for the development of the new hospital:

THE RIGHT DESIGN RESPONSE	<i>“The people of New South Wales and the citizens of Sydney take great pride in the Royal North Shore as an institution that has attained a world class reputation for research, clinical excellence and committed education. They also cherish it for being a hospital which goes that extra mile in compassionate patient care.</i> <i>The Royal North Shore Hospital should be represented by an architecture which quietly confirms its status and represents the ethos of the hospital as an institution with a culture of caring.</i> <i>The new hospital will make a significant contribution through both its siting and its architectural form and appearance to the urban environment and the surrounding community:</i> RESERVE ROAD – URBAN SPINE <i>The building is sited to provide an engaging and urban link through the site through maintaining and accentuating the Reserve Road axis – The creation of this strong pedestrian spine that links St Leonard’s station, the heritage precinct, the hospital entrance, the new forecourt to the Research Building, the chapel, the private hospital and the TAFE will allow a vital permeability through the site for pedestrians, residents, visitors and workers and enable the creation of a dynamic urban precinct</i> CREATION OF A CAMPUS <i>The building’s main circulation spine and entrance is structured to enable the creation of a clinical campus from east to west that engages the Douglas building at its western extremity and the new Research and Education building and Ramseys private hospital to the north.</i> ENTRANCE AT THE HEART OF THE CAMPUS <i>The hospital entrance is located at the centre of the pedestrian spine – a clear and visible entrance that takes visitors and staff to the ‘heart’ of the hospital, and to the centre of the campus. This significant location provides integration of the site from north and south, captures the variety of directions of visitor and staff approach and defines an exciting and dynamic centre for the site which will be enlivened by additional commercial and retail opportunities.</i> <i>The entrance to the hospital will be an engaging and welcoming urban space that is embedded in the communal environment of the precinct.</i> INTEGRATING THE LANDSCAPE <i>The building is sited to engage with the landscape of Gore Hill Oval and the Heritage precinct, and draw the landscape up and into the building’s entry. Landscaping blends the park into the hospital campus and its immediate surrounds. The landscape is transformed as it passes up Reserve Road and through the building’s entry, moving from the grassland of Gore Hill Oval, through the campus entry and flowing into the building, before continuing through and up Reserve Road and creating a rich urban precinct to the north.</i> Orientation <i>The positive impact of access to daylight for both staff and patients is clearly acknowledged as influencing healing, reducing stress and anxiety, promoting a sense of well-being and increasing effectiveness.</i> <i>Access to daylight has provided a key design driver, structuring the major planning of the building footprint. The building’s form is bisected by the Atrium – the main circulation spine which drives daylight deep into the building, flooding the entrance and circulation spaces with natural light. Courtyards are cut into the building from the north and south and all patient rooms, major departmental waiting areas and staff workplaces have access to an external outlook.</i>
---------------------------	--

THE RIGHT DESIGN RESPONSE

APPEARANCE AND MASSING

Massing of the building has been carefully considered to consciously break down the scale of the building’s presence to the south, with the predominant height to the north, as it responds to its southern parkland setting.

The location of the wards to the south of the building allow both a dynamic articulation of the building and views to the south across the harbour enabling the building elements to be treated as series of elegant extrusions reaching out to the park and the heritage precinct.

The building is designed as two distinct forms that rest either side of a main daylight circulation spine and courtyard gardens are sliced into both these forms to provide green spaces and natural light deep inside the building.

LEGIBILITY AND CONNECTION

The building’s form and internal arrangement will not only be legible to public view but the building will relate outwards to the life of St Leonard’s itself – and contribute a sense of expansiveness and connection, rather than enclosure and containment.

PROUD AND DEFINABLE

The building stands proud and definable to the south – creating a strong civic presence from its most prominent view across the oval from Pacific Hwy. Its presence is legible, its approach is clear and its entrance is welcoming.

CONTEXTUAL RESPONSE

The height and form of the building responds to the environment that it is located alongside – with its southern form lower in scale and playful in articulation, the northern side higher and nestled into the more urban context that the research building presents and the western side civic and inviting with its vertical glass sunblades that draw the visitor along Reserve Road and into the hospital entrance. These translucent glass blades set up a vertical rhythm across the façade, they will catch the light in different ways throughout the day and provide a beguiling entrance this significant building.

Our design makes use of the unique opportunity to site a building in what is both a parkland setting and, what will be, a vital urban campus and it will engage the public spaces it creates.

This fine new building will represent RNSH as a proud and successful institution of international standing with a history and future of excellence which is grounded in the community which its serves.

A COMMUNITY BUILDING

This significant facility creates both internal and external community ‘places’. It is sited to enable a vital urban environment to develop around its entrance precinct, and creates a sun filled northern plaza that links the chapel, the new R&E building, Ramsey’s private hospital and the TAFE and the single entrance into the hospital’s Atrium connects everyone who works in the hospital everyday.

The atrium connects the building and the people and provides options for staff and patients to use space for their different needs, whether it be work, social, respite or play. The atrium provides ‘bump’ spaces – part social, part circulation – which are always present in successful buildings. It provides multiple opportunities for chance encounter and is conducive in creating a “one team” culture within the diverse functions of the hospital.

SEPARATION OF ENTRIES

The various significant entrances to the hospital are clearly separated and identified. The Emergency entrance is located on the hospital’s southern boundary, clearly visible on the major approach to the hospital and is distinct and easily identifiable and the Mental Health Unit is given its own discrete and dignified entrance and identity to the north, off Westbourne Street. The service and loading docks use the natural cross fall of the site to advantage, and are accessed off Red Rd from the east, and the car park entry is clear and visible from the main entry approach with a separate exit off Cemetery Rd.

FUTURE EXPANSION AND FLEXIBILITY

Both the masterplan and the building design itself allow for adaptability, flexibility and expansion. From flexible and adaptable large span floor plates clear of services, to ‘soft’ expansion spaces allocated alongside major departments, to a structural system enabling ease of vertical expansion through to short and long term major horizontal expansion.

The design’s inherent flexibility anticipates the certainty that models of care will change and new technologies and treatment methods will impact on its use of space.

CLARITY OF WAYFINDING

The site planning, the form of the building and the clarity of the public spaces and internal planning will enable patients and their families to navigate confidently through the new hospital. All the patient journeys through the main public and clinical spaces of the hospital pass through the main central space which is lit by sunlight, enables a clear and constant reference point for cognitive wayfinding, reduces anxiety and confusion, and creates an enjoyable journey for patients, visitors and staff alike.

The new hospital is designed to be functionally compact and efficient with a focus on an ease and clarity of wayfinding for public, patients and staff and for minimising travel distances horizontally and vertically for both staff and patients to allow effective delivery of services.

A clear circulation spine runs through the east-west axis of the building. The journeys to and between all major departments are made along this spine, around which is created a single public space – the Atrium – which is naturally lit and from which you can see the sky and the sun.

CLARITY OF WAYFINDING – PUBLIC / OUTPATIENTS

The site planning, the form of the building and the clarity of the public spaces and internal planning will enable patients and their families to navigate confidently through the new hospital.

All the patient journeys through the main public and clinical spaces of the hospital pass through the main central space which is lit by sunlight, enables a clear and constant reference point for cognitive wayfinding, reduces anxiety and confusion, and creates an enjoyable journey for patients, visitors and staff alike.

THE 'HIGH STREET'

The creation of three distinct public lift pods distributed along the east-west circulation spine enable all the 'horizontal' travel by the public to occur on Level 3, the main entry, in a public, sun filled space, animated with activity and movement. It becomes the hospital's high street.

The public are clearly directed at the entry to lift pod A B or C.

Once this journey to a lift pod is made, and the visitor reaches their floor destination, the departmental entries are located to coincide with these lift pods.

The departmental entries are located to coincide with their lift pods so that the public or outpatients have immediate view of an entrance/waiting area.

No major departmental waiting area/reception is further than 8.5m from a lift lobby.

COLOUR

The clarity and directness of the wayfinding system is enhanced and enlivened by the use of colour. Having a coherent visual strategy is essential to avoid confusing vulnerable and easily disoriented patients. In addition a well balanced and attractive environment is of major importance to patients' health and well being and to staff and user enjoyment.

We have developed a clear and tangible approach that takes more than just signage into account, and exploits the building design and internal finishes to both help users find their way, and to create a warm environment of joy and delight.

The lift pods have each been allocated a colour to assist in immediate cognitive recognition of the circulation system. The colour is in the form of dramatic coloured signage that runs vertically up the full height of the lift shaft, and is also used in a 'portal', or gateway that emanates from the lift lobbies and slices into the atrium space. The use of colour will not only assist users in finding their way, but will help them to remember their route next time.

The colour also extends to the exterior of the building in a series of coloured panels. This will enable an immediate legibility of the wayfinding structure from outside to in, and presents the Royal North Shore as a building that is contributing in a positive and joyful way to the urban environment and surrounding community".

Height

An indicative Height Control Plan has been prepared by Cox Richardson, to illustrate the height limits imposed by the adoption of the Illustrative Master Plan, as included in the Preferred Project Report for the Concept Plan. The plan below provides an extract of the Plan as relevant to the hospital site. A full size copy of the Plan is provided at **Appendix G.**

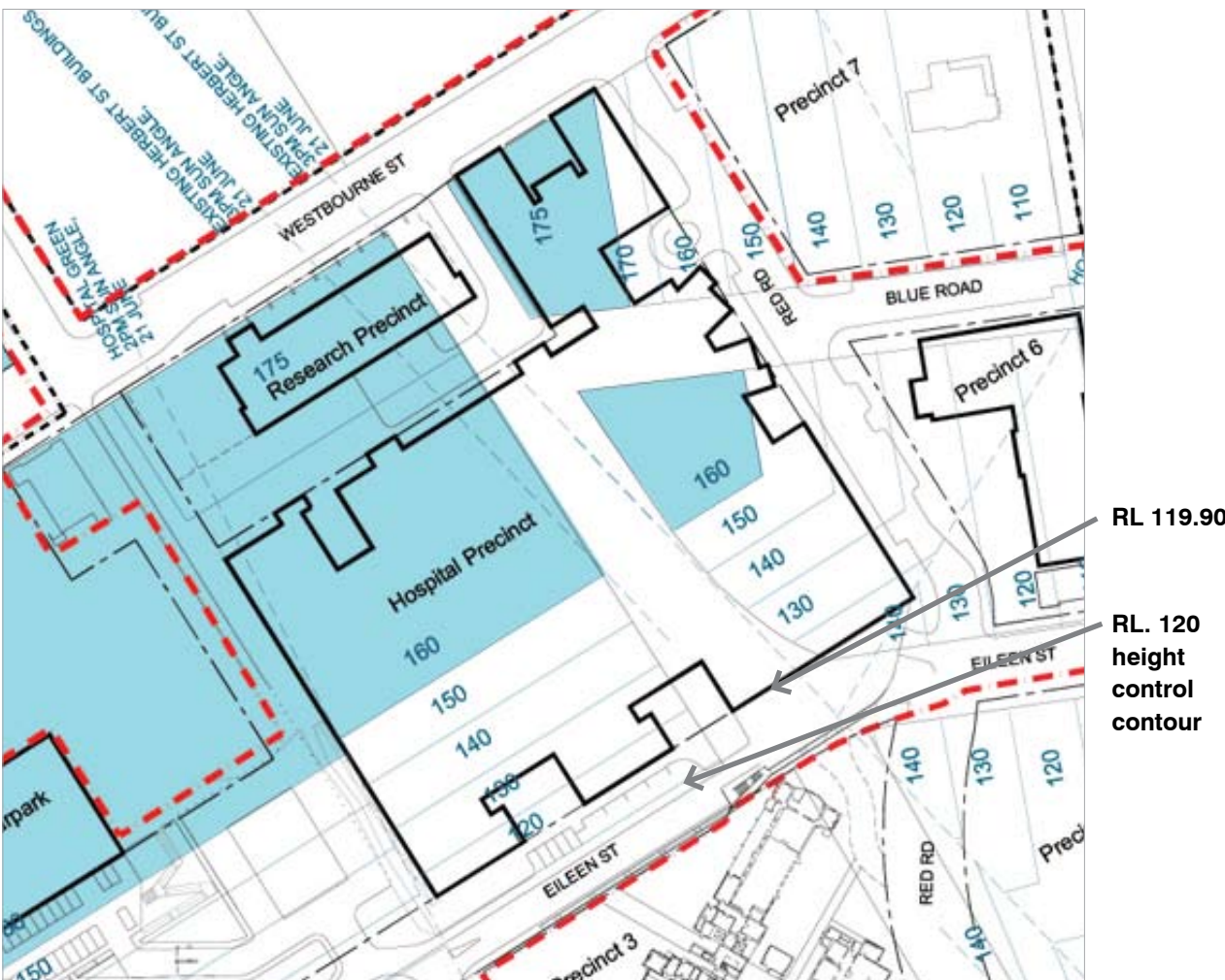


Figure 26: Extract of Height Control Plan, prepared by Cox Richardson

As shown above, the maximum height limits for development within the Hospital Precinct range between RL.120 and RL.175.

The proposed development, having an uppermost height of RL 126.35 complies in this respect, as the RL.120 height control contour follows the southern side of Eileen Street. The height of the building at its southern elevation is RL119.9.

Density and Scale

The density and scale of the building is consistent with that envisaged under MP 06_0051. The height of the building sits comfortably within the prescribed envelope, and as will be further discussed below, will not introduce any significant adverse impacts such as overshadowing, loss of views or privacy impacts.

5.1.2 Community Health Facility

Urban Design Response

The designers of the building, Cox Richardson, have provided the following description with respect to how the building responds to its urban context:

“This building provides for a large diverse mix of community health services and client groups. When complete, it will offer one of the largest Community Health facilities in the state and in fact the nation.

It will be a prominent facility with multiple direct street address points and achieve a major part of relating the Main Hospital building to a reconnected neighborhood fabric. The new and reinstated streets encircling the building will support pedestrian and private vehicle access adjacent to the building. Its major address point on Herbert Street will be prominent and signify a re-engagement of the Hospital with the broader community. It will also contribute to a new urban form for the Hospital, becoming a more urban form surrounded by major new and revitalised open spaces and new publicly accessible streets. The previous institutional campus will evolve into a new street form in which public visitation and thoroughfare is encouraged.

The Community Health Services building will:

- Provide clear entry points for all users (staff and visitors alike)
- Allow effective clinical and management efficiencies with discreet and secure separation of entries and internal functions where required;
- Provide the initial impression of the hospital campus to clients and visitors arriving from Herbert Street.

The building engages the precinct in which it is located in a number of ways:

- It encloses a publicly-accessible open space which opens to Red Road and the Heritage precinct;
- It provides a frontage to Herbert Street for the majority of the precinct’s length with visible activities including the main entry, meeting and conference rooms, and indoor / outdoor café space.
- It provides entry points on three road frontages;
- It allows for an integrated extension to the south of the precinct in future.
- The building also engages a conserved portion of Building 19 on the southern boundary of the precinct, fronting Eileen Street.

The building will achieve a strong presence along each frontage:

- Herbert Street, as the initial presence of the hospital community encountered on arrival from St Leonard’s Station;
- Facing Blue Road to the north, with optimum daylight gain to occupied patient and visitor treatment areas;
- Red Road entry to Community Mental Health with a clear and welcoming street presence in its own right.

Key urban design outcomes are identified and addressed as follows:

URBAN DESIGN OUTCOME	RESPONSE
Effective transition between public and private space	<i>This is achieved by creating a clear façade alignment compliant with the required 4m setback from the current boundary</i>
Activation of the ground level streetscape	<i>The main entry to this building is provided on Herbert Street, as the busiest and most visible approach to the precinct I which the building is sited. This provides a direct pedestrian route from St Leonard’s station to the facility.</i> <i>In addition, vehicle entry to the building is located along the same frontage at the far end of the building, to minimise traffic introduced in to the hospital campus</i>
Articulation and modulation of building façades	<i>Each major façade is expressed with metal framing elements wrapping the fenestration to achieve a consistent expression, also compatible with the facade detailing of the main acute hospital.</i>
Increasing building separation in proportion to building height	<i>The building extends to a maximum of seven stories and is articulated at the upper levels with faced setbacks to reduce the perceived aggregate volume</i>
Creation of secondary upper level setbacks	<i>The building form has been developed as two rectilinear masses joined via a more transparent glazed link at the entry zone.</i> <i>The upper floors also reduce in total floor area.</i>
Provision of street landscape character	<i>The new 4m Herbert Street setback is augmented with extensive landscape planting between each of the major entries.</i> <i>Additional landscaping to the perimeter of the cafe external seating area complements this landscape.</i> <i>To the northern façade a more robust paving zone is provided to manage the security and safety requirements of the Opioid Treatment facility which has its entry and exit on this frontage. A low wall aligned with the boundary mediates between level entry doors and the steeply rising street grade.</i> <i>The southern side of the precinct includes the most substantial planting and landscape, complementing the retained Ficus Hilli specimen, the largest on the site.</i> <i>In the northwest corner a hard paved zone provides occasional emergency vehicle access to the Mental Health unit at Level 2</i>
Clarity of planning for visitors and enable staff to operate with security and efficiency in the building	<i>Provision of the enlarged multiple-height entry lobby achieves a welcoming, open invitation to the building;</i> <i>Extensive glazing on two opposite sides provides ample daylight and signifies the core circulation sequence to the building</i>

URBAN DESIGN OUTCOME	RESPONSE
	Each floor typically contains patient and visitor spaces to the northeastern wing, so that on arrival from the public lists at each level the reception for each department is visible directly in front of visitors. Generous daylight in to this space from side windows illuminates the reception and waiting spaces on each floor. Where a few levels contain functions visited by the public in the southern wing, these each have reception or access from the public lift lobby in the centre of the building. Security between portions of the building is generally achieved at each level so that fire and life safety is achieved simultaneously with staff security, at the northern face of the link section, behind the typical reception location. This minimises the intrusion of additional compartments within the planning. It will also support flexibility of future re-planning when this is needed in future. Ease of orientation has been emphasised through the provision of a generous entry lobby which offers visibility to multiple floors, interprets the arrival sequence and offers wayfinding, security through: A prominent main reception which offers visibility, support and potentially intercepts problematic cases should these arise. The entry achieves security through control of access to other floors and departments; passive surveillance of all arriving visitors; co-location of compatible uses including Separates basement vehicular access from lift access to the upper floors, so that all visitors may be met and directed to appropriate facilities within the building. This planning also minimises the risk of unintended interaction between differing visitor groups The main entry to this building is provided on Herbert Street, as the busiest and most visible approach to the precinct in which the building is sited. This provides a direct pedestrian route from St Leonard's station to the facility.
Glazing (Amenity)	Clarity of glass selection has been a prime objective of the facade, along with achieving the technical requirements of the brief. The glazing types have been selected to balance both solar and acoustic performance and light transmission. The building enjoys good views in most directions, particularly to the northeast and the west, and a maximum of rooms which can enjoy this sunlight have been located along the perimeter. Extensive glazing is provided to the link section on the northeastern and northwestern façades; this will create more open, day lit spaces to the entry and waiting areas on each floor. Horizontal aluminum louvre shading to these and other windows on the same facades mitigates glare and direct sunlight
Glazing (Adaptability)	The future open planned office environments which will be subject to change and re-planning over the life of the building. For this reason, the typical glazing configuration is proposed as modular strip glazing, able to accommodate changes in room layouts in future.
Sustainable Design	The building exemplifies the values of "long life, loose fit and low energy" in so far as it: - Minimises vertical travel to the widest group of occupants by pacing least visited units at the upper levels; - Optimises ground level access to maximum number of functions; - Encourages pedestrian activity and supports public transport access from rail or bus; - The plan form is not tailored to a highly specific singular use but rather creates flexible spaces which can accommodate a broad range of uses; - Utilizes simple façade material selected for durability and continued appearance quality throughout their lifetime; and - Internal lining materials which have been selected for durability and ease of maintenance, ensuring a high maintained standard of finish

Height

The uppermost height of the building is RL113.0. The building is finished at two different levels, with the Herbert Street wing being approximately 7.4m lower than the highest point of the Blue Road wing.

The maximum height for development within Precinct 6, as prescribed under the Concept Approval, and as demonstrated in the extract from the Height Control Plan below, ranges between RL140 at the north west side of the Precinct down to RL110. The highest point of the building, being the uppermost point of the roof-top plant, is located at the north-west portion of the site and therefore complies fully in this respect.

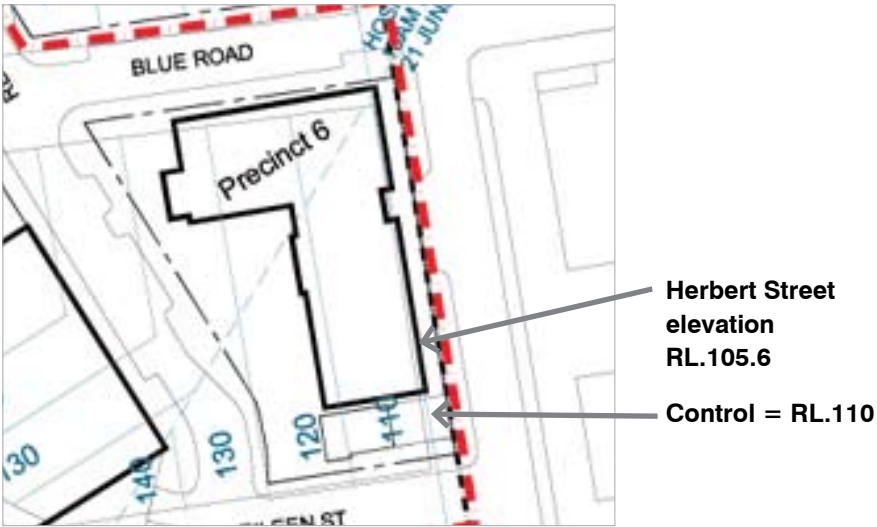


Figure 27: Extract of Height Control Plan, prepared by Cox Richardson

Density and Scale

The density and scale of the building is consistent to that envisaged under MP06_0051 except importantly, with respect to location. However, the height of the building sits comfortably within the prescribed envelope, and as will be further discussed below, will not introduce any significant adverse or unacceptable impacts such as overshadowing, loss of views or privacy impacts.

5.1.3 Multi-level car park

The higher level is expressed as a glazed, visually lightweight bridge for public and clinical access between the buildings and will be fully integrated with the design of each of the buildings it connects.

The car park uses the site topography and the basement void left as a legacy of Building 1 when removed, to achieve the required number of spaces within a low-rise form which favours the amenity and outlook of adjacent buildings. In this manner it will rise only three storeys above ground, sufficient to support the clinical link at level 5 whilst remaining a low-rise structure.

A limited number of spaces will be provided on grade in front of the rectangular floor plates of the building. This area will be interspersed with trees and landscape planting, to maintain a continuity of landscaped open space facing the Oval and the principal south-facing address of the campus.

Vehicle circulation within the car park is configured as a simple, unidirectional loop system, with alternating split-level floor plates, so that traffic conflict is minimised and wayfinding direction is not demanded to support smooth traffic flow. A pay-on-foot ticketing system is envisaged to further reduce queuing times in peak periods.

Visual Impacts

In order to mitigate any potential visual impacts, the designers of the building have responded by the architectural treatment of the facades and by partially locating the building in the foot print of the existing hospital building.

The proposed facade treatments and the design of the multi-level carpark are considered to result in a satisfactory urban design outcome in terms of bulk and scale, and the mitigation of any potential visual impacts. The provision of landscaping on the structure is not considered necessary.

Façade expression

An architectural façade has been applied to parts of the south and east elevations to address the visually prominent elements. Further expression comes in the form of an over-head, pedestrian bridge, of light-weight glazed construction, and linkages to the hospital and Douglas Building.

Externally, the southern and western facades are clad with alternating coloured panels of perforated metal which reflect the fenestration patterns of the new Acute Hospital and Community Health building façades. A distinct colour scheme will complement the colour palette of the neighbouring health buildings.

The car park is essentially split into the northern rectangular section which is seven levels in height and provides the bulk of the car parking space. The southern wedge-shaped section is only two levels in height and has been designed to take up most of the excavation left by the demolition of Building 1. This two-level area has been designed to meld into the Reserve Rd landscape and limit the visual bulk of the car park.

Height

As shown below on the extract from the Height Control Map, the maximum height for development on land where the building is proposed is RL.160.

The proposed development having an uppermost height of RL.106.35 complies in this respect

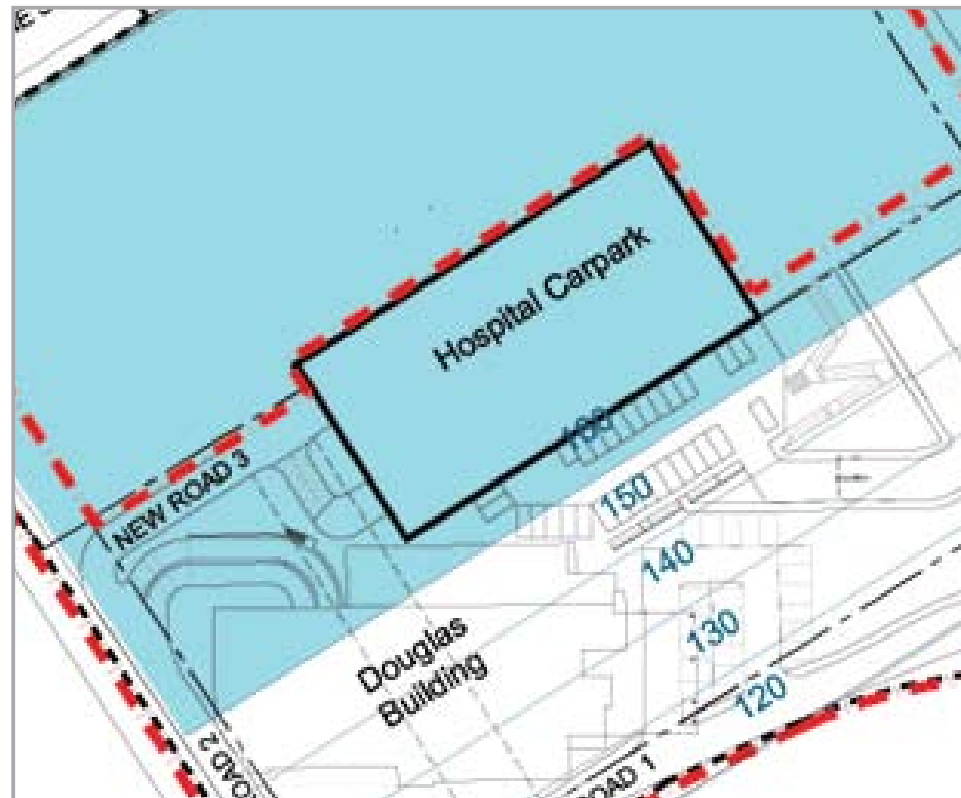


Figure 28 : Extract of Height Control Plan, prepared by Cox Richardson

Density and Scale

The density and scale of the building is consistent to that envisaged under MP06_0051. The height of the building sits comfortably within the prescribed envelope, and as will be further discussed below, will not introduce any significant adverse impacts such as overshadowing, loss of views or privacy impacts.

5.2 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

A CPTED Assessment has been prepared by Urbis. Refer to **Appendix H**.

The following provides a summary of the findings of this assessment:

Crime Data & Research

There are no current concerns in relation to levels of crime and safety that would impact significantly on the proposed redevelopment.

Consideration has been given to trends in crime rates of selected offences from 2003 to 2007 for the Lane Cove, North Sydney and Willoughby Local Government Areas (LGAs).

With the exception of malicious damage in the Willoughby LGA, crime trends across the Lane Cove, North Sydney and Willoughby LGAs have been either stable or reduced over the 2003-2007 period.

While there is no publicly available information regarding crime on the RNSH grounds, a July 2008 Bureau of Crime, Statistics and Research (BOCSAR) bulletin reported that between 1996 to 2006 police-recorded a 50% increase of assaults on NSW hospital premises from 214 in 1996 to 322 in 2006. A significant majority of victims were hospital health-care workers.

Design Issues

Overall, the proposed building and landscape design is considered to be robust and congruent with CPTED principles.

The design assessment has considered:

- External design
- Internal design
- Landscape design.

The assessment identified a number of CPTED issues under the following broad characteristics of the proposed design:

- Courtyards and children play areas
- Loading bays and emergency vehicle areas
- Car park amenities
- Building access points.

Broadly, proposed mitigation measures include:

- After hours management measures such as consideration of adequate levels of lighting, CCTV and security patrols at key locations such as building access points, courtyards, loading bays, basements and car park amenities.
- Use of robust materials in finishes to minimise the impact of malicious damage
- Use of clear signage in relation to pedestrian access clearly marking staff only areas
- Installation of clear and prominent signage reminding users not to leave valuables in their cars

- Restricting access to car park amenities after hours.

Consideration has also been given to the management of additional issues during the construction works. This includes consideration of:

- Management of vacant premises
- Pedestrian and user safety
- Signage and emergency vehicles (NSW Police & NSW Fire Brigades).

It is proposed that these recommendations be translated into Project Commitments.

5.3 AMENITY IMPACTS

5.3.1 View analysis

The plans below indicate important views from, and within, the site. On comparison with the proposed building footprints it is evident that no significant views or outlooks are compromised as a result of this Project.



Figure 29: Local Context - Views and Vistas from Site, prepared by Cox Richardson



Figure 30: Local Context - Views in and around Site, prepared by Cox Richardson

5.3.2 Privacy

The greatest potential for such impacts exists between the eastern elevation of the Community Health Building and the residential flat building on the opposite side of Herbert Street. The distance between the main eastern building line of the proposed building and the nearest apartment is approximately 30m.

Given the physical separation of the two structures and the incorporation of horizontal aluminum louvers to the eastern facade, no significant adverse impacts related to overlooking or the loss of privacy are envisaged as a result of the proposed development.

The proposed louvre system will improve levels of internal amenity for the occupants of the new building by providing shading and mitigating glare and direct sunlight

5.3.3 Overshadowing

To assess the impact of the proposed development, shadow modelling has been carried out by C3D Interactive Pty Ltd. A full set of shadow diagrams are provided at **Appendix I**.

Key considerations with respect to overshadowing and solar access with respect to this project include:

1. Solar access to open space; and,
2. Potential overshadowing to residential uses on the eastern side of Herbert Street.

These matters are addressed as follows:

Solar Access to Open Space

The shadow diagram below indicates the expected shadows, existing and proposed, during the winter solstice at 3pm. In the context of this site this is the period where shadows are longest across the site.

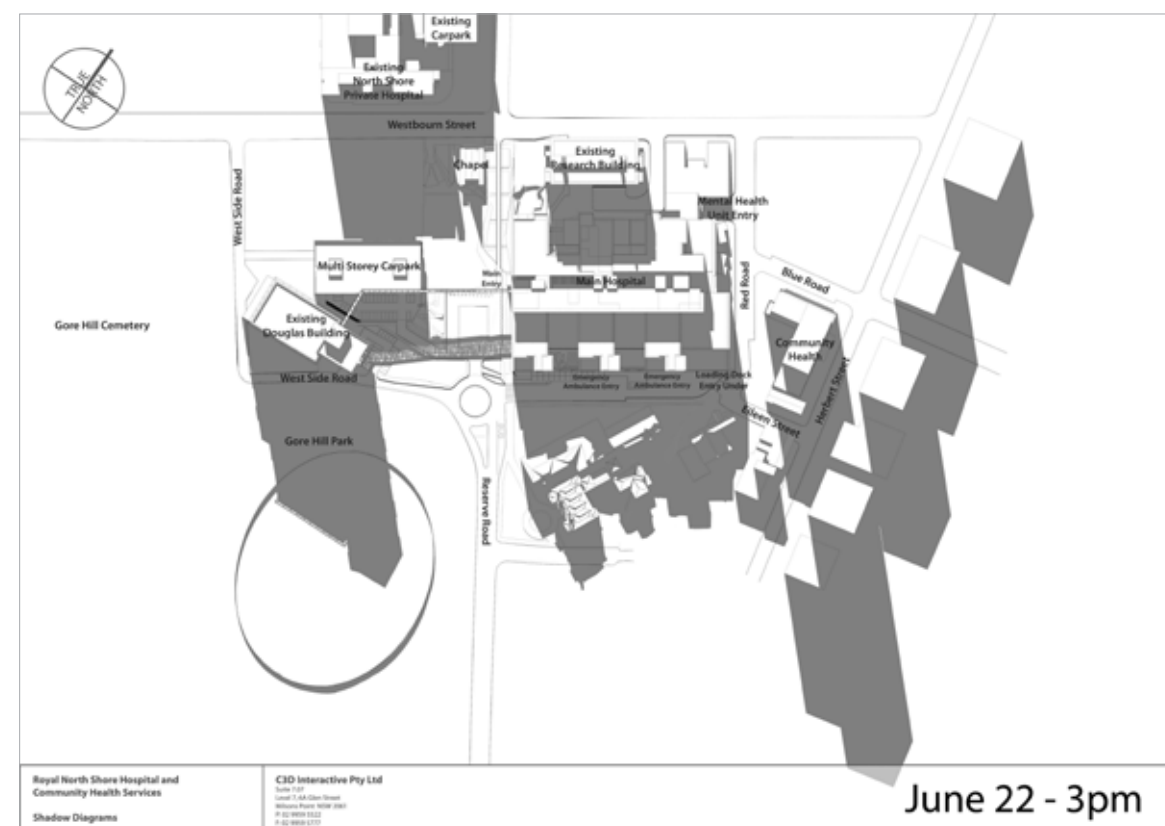


Figure 31 : Shadow Diagram June 22, 3pm

It is noted that Gore Hill Park is already partially overshadowed by the existing Douglas Building at this time. No further such impacts will be introduced as a result of the proposed development. Other areas of open space include gardens and open areas within the heritage precinct. As shown above, the proposed hospital and the existing heritage buildings render most of this area in shadow at this time. However, as can be seen from the further plans below, these areas are free of shadow in the morning and at Noon.

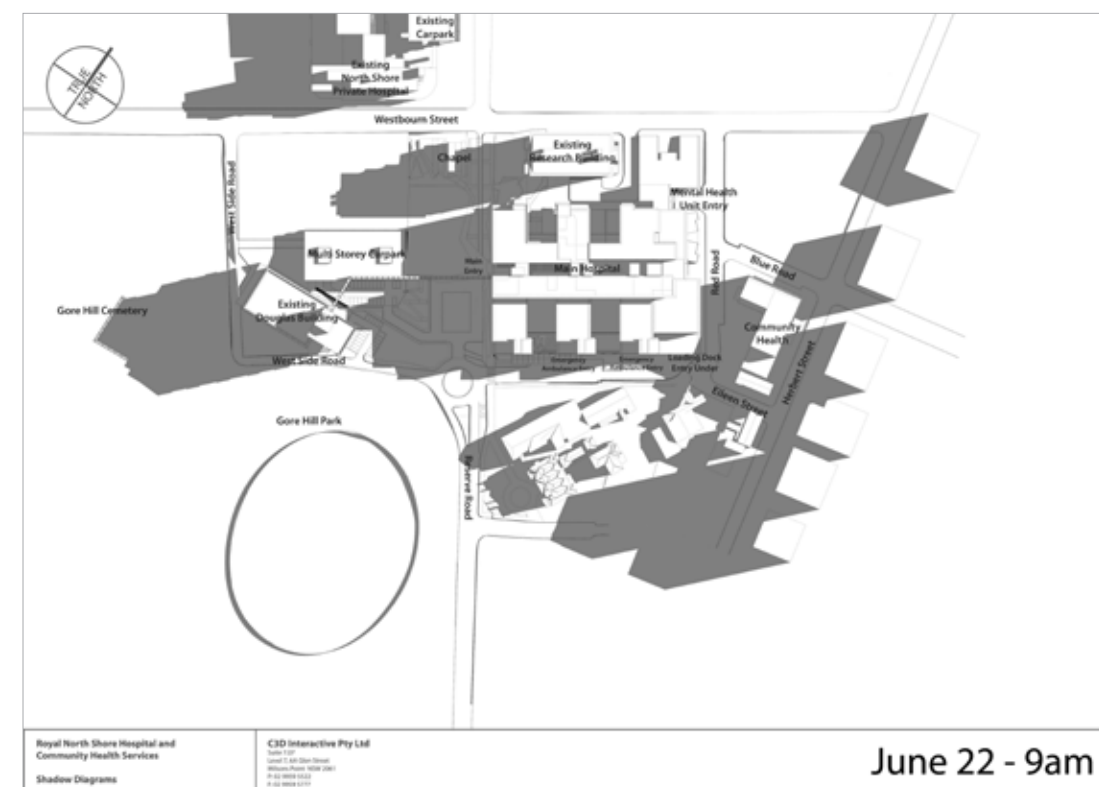


Figure 32 : Shadow Diagram June 22, 9am



Figure 33: Shadow Diagram June 22, 12pm

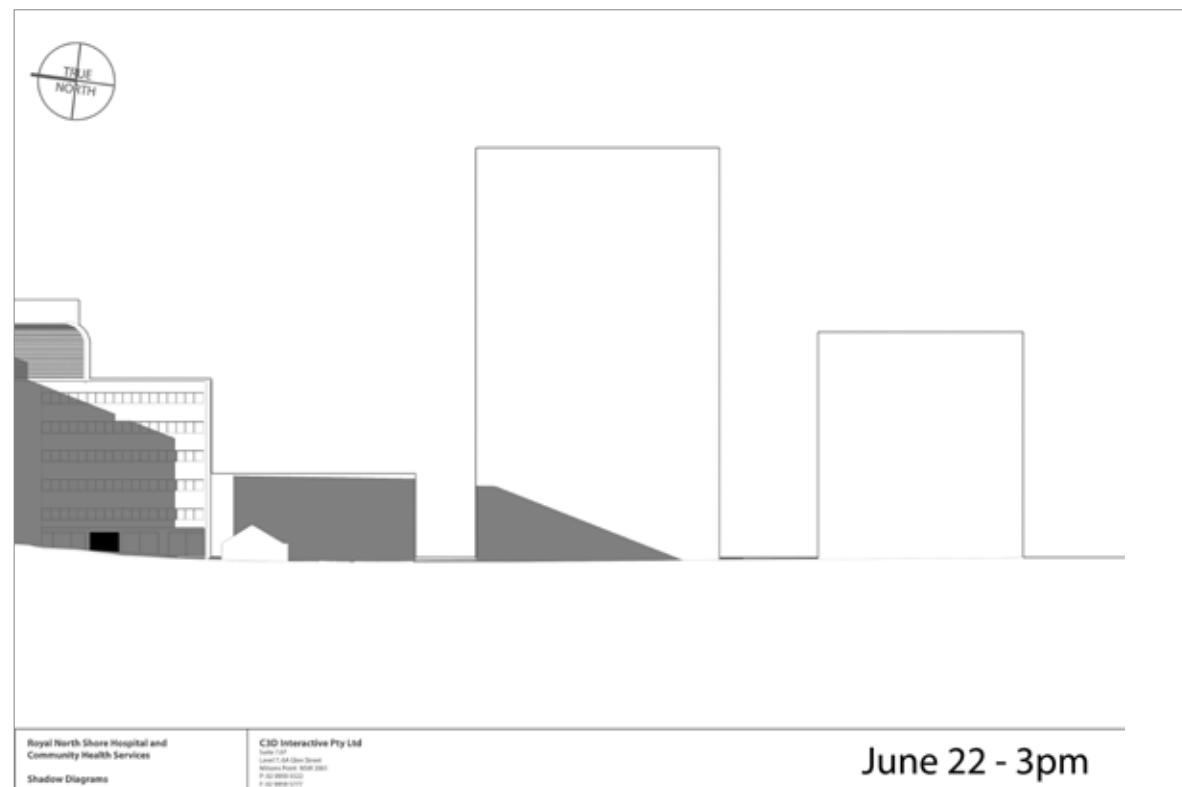


Figure 34: Shadow Diagram June 22, 3pm 3D Model and Elevation

Overshadowing on surrounding uses

As is evident at Figure 31, the potential exists for overshadowing to the residential units on the opposite side of Herbert Street from the proposed Community Health Facility later in the afternoon at mid-winter.

To demonstrate the actual impact on these residential buildings, further modelling was carried out to ascertain how far the shadows extend up the buildings. These further drawings are provided at Figure 34.

Whilst it is accepted that some overshadowing will be introduced to the western elevation of these building, it is clear that the extent of the shadowing is not significant and it should be made clear that this is worst case scenario.

During the equinoxes, such shadows will be non-existent on the residential properties.

Overshadowing has been minimised by:

- Finishing the street wall height of the proposed Community Health Facility at approximately 5m below the permitted height limit for the site;
- Increasing building separation in proportion to height;
- The provision of a 4m setback along Herbert Street; and,
- Allowing the building to follow the natural topography of the site.

Overall, the proposal is considered to be satisfactory in terms of shadow impacts.

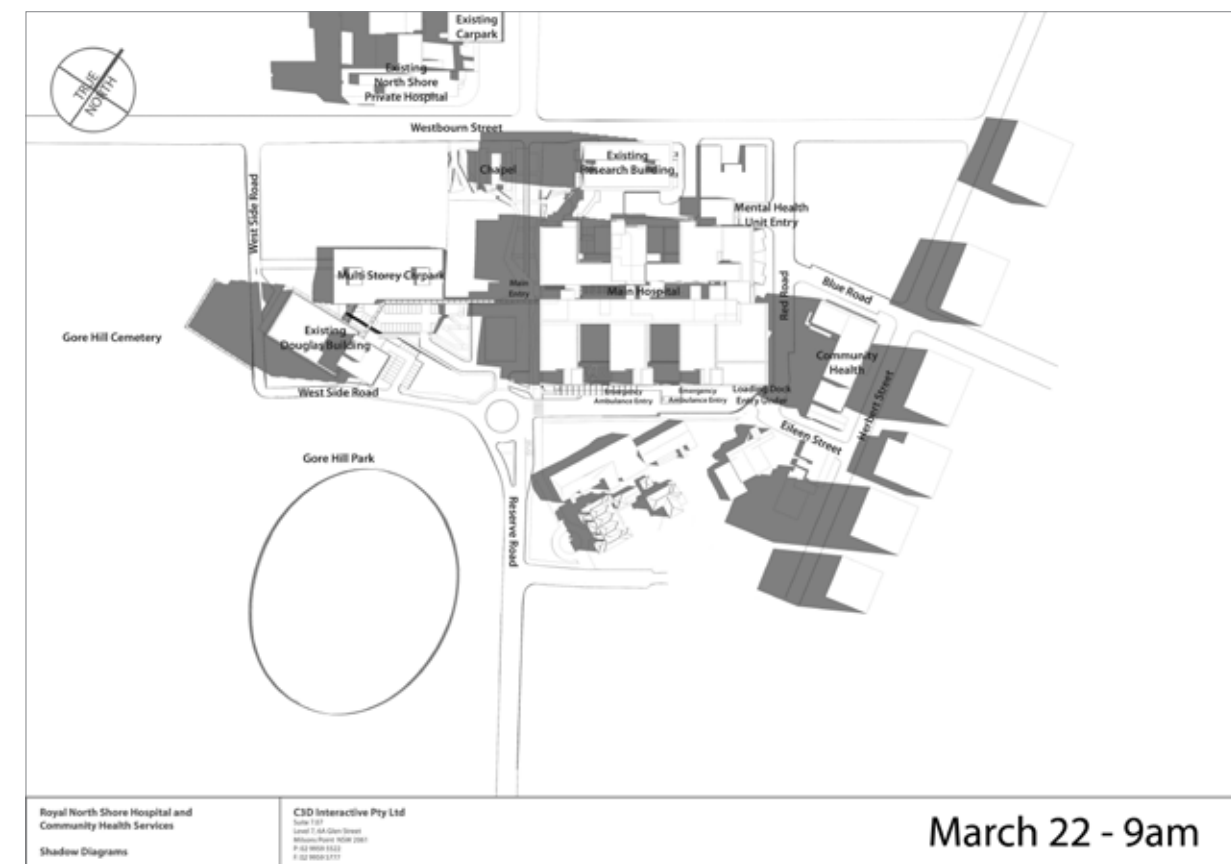


Figure 35: Shadow Diagram March 22, 9am

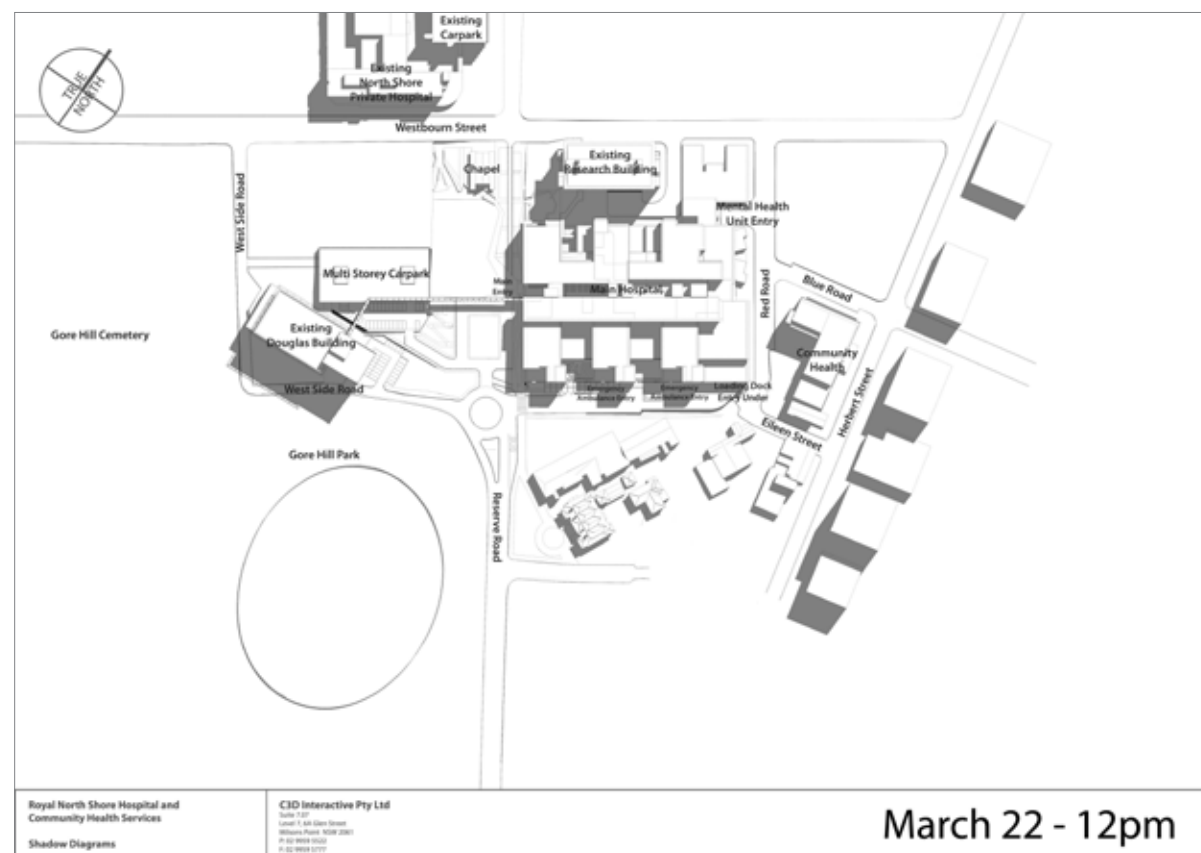


Figure 36: Shadow Diagram March 22, 12pm

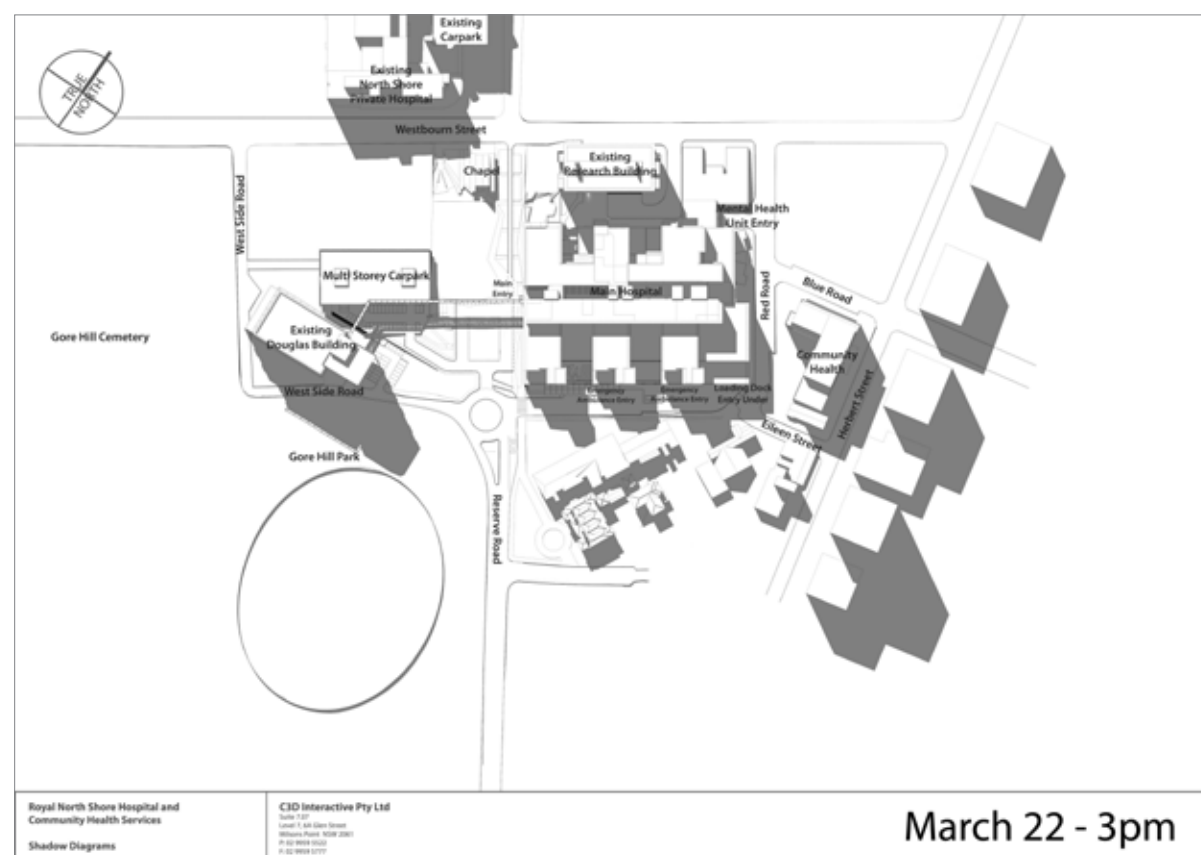


Figure 37: Shadow Diagram March 22, 3pm

5.3.4 Visual Impacts

The existing hospital building, private hospital, Douglas Building and the Kolling Building are all prominent features of the existing urban streetscape, particularly given their location along a natural ridge running east-west across the site, across the northern portion of the development site.

The new hospital will continue to be an iconic element in the urban environment but will be a significant improvement in terms of the potential impacts it may introduce. The quality design and considered selection of façade treatments will be a positive outcome for the site, particularly when compared to the lifeless, imposing nature of the current hospital building.

Any potential visual impacts related to the new multi-level car park are discussed in detail above, however in summary, any such impacts are considered to have been satisfactorily addressed by the proposed well articulated façade expression and the siting of the excavated part of the building in the footprint of the existing hospital basement.

The Community Health Facility is located with its principal frontage facing Herbert Street with residential apartment buildings located on the opposite side of the Street. Whilst there are considered to be no unreasonable environmental impacts, such as overshadowing and the loss of privacy, expected with regard to the residential uses opposite, it is also important to consider any potential visual impacts and the quality of the outlook of these residents.

The visual impact of the proposed Community Health building has been minimised by setting back upper levels, the selection of high quality materials and a well modulated, articulated facades. The overall visual environment along Herbert Street is considered to improve as a result of the proposed development given the removal of dilapidated buildings and their replacement with a contemporary structure, which better relates to the street through activation along the ground floor. Refer to the photomontage below illustrating the Herbert Street presentation of the building.



Figure 38: Photo Montage Herbert Street Elevation, prepared by Cox Richardson

Overall, no adverse visual impacts are envisaged as a result of the proposed development, on the contrary, the new master planned precinct, including the removal of defunct structures and the construction of new facilities will result in an improved visual environment.

5.3.5 Acoustic Impacts

Road traffic using the Pacific Highway generates high levels of noise. Noise associated with the Hospital operations includes vehicles entering and existing site, plant, ambulances travelling along the Pacific Highway and helicopter movements. The nature of noise impact is not anticipated to change markedly in the context of the proposal.

An Acoustic Statement of Commitments has been prepared by ARUP Acoustics and is attached at **Appendix J**. The report suggests that the main source of noise impact will be related to construction impacts and recommends relevant criteria to which such potential impacts may be managed and mitigated.

5.3.6 Noise from plant and equipment

No such impacts are expected on surrounding uses. Any required plant will be subject to the DECC Industrial Noise Policy.

5.4 HERITAGE

The hospital use commenced on this site in 1903, replacing an earlier cottage hospital located on a site in Crows Nest. Over the subsequent decades the hospital site grew through acquisition of adjacent lands with buildings and landscaping added in virtually every decade.

No structures/elements on the site have been formally listed as having state or local heritage significance, although the site retains the group of four (4) original hospital buildings erected on the site in 1903, including the RMOs Building and adjacent wards. These, and the two former cottages in the northeast corner of the site, are of greatest significance with later buildings mostly of moderate to low heritage significance.

Some of the landscape areas and trees have heritage value, in particular, those around the early buildings and lining Reserve Road. The latter is an historic alignment that pre-dated the hospital. The part of Eileen Street adjacent to Reserve Road is also an historic alignment. There are also several areas of mature trees on the eastern side of Reserve Road and avenue planting to the southern part of the site. Refer to **Appendix P** for Tree Heritage Study.

Graham Brooks and Associates have prepared a Heritage Report to accompany this Project Application. Refer to **Appendix F**.

Since no development is proposed within the Heritage Precinct under this Project, the Heritage Report, as supplemented by the TB Report, is limited to the following relevant criteria:

- Identification of heritage structures, landscape items, curtilages and kerb and gutter
- Heritage Impact Statements for Buildings 10 and 19 as approval was not granted for their demolition under MP06_00051.
- Recommendations as to how best to mitigate potential impacts and promote the conservation and re-use of those buildings to be retained.

A series of recommendations have been made in the Heritage Report related to archival recordings and conservation and the like. It is proposed that these form part of the Draft Statement of Commitments.

In summary, the Report concludes that Building 10 is of low significance and may be demolished, particularly given the public interest benefits of the proposed works and that there are better quality and more significant buildings on-site that may be retained and adaptively re-used. Whilst Building 19, (the Mortuary), has been identified as having heritage significance, the proposal to demolish the intrusive eastern addition to the building is acceptable.

The retention and adaptive re-use of a number of significant buildings is considered to be a positive heritage outcome for the site.

5.5 TRAFFIC AND TRANSPORT

5.5.1 Traffic Generation

With respect to Traffic Generation, the Traffic and Transport Report, provided at **Appendix E**, is prepared with respect to the RTA Guidelines for Traffic Generating Development and on the basis of determining future traffic rates by considering the difference between existing and proposed levels on on-site parking.

Given that the resultant development will only include a marginal increase in on-site parking, (proposed 2550 /existing 2197), there will be no significant changes to traffic generation.

5.5.2 Car Parking

The completed development will result in 2550 on-site parking spaces. This represents an increase of 353 on-site parking spaces. Whilst the proposed parking level is below that envisaged under the guidance contained in Willoughby Council DCP, the level of parking proposed is considered to be satisfactory given the availability of alternative methods of transport and the underlying objective to increase the modal split to public transport. Seventy-one (71) disabled parking are to be incorporated into the campus on completion, (including 23 spaces in the existing multi-level car park).

The Traffic and Transport concludes that the arrangement of car parking across the development site will have no adverse impacts on vehicular circulation and junction performance.

During construction, it is proposed to provide temporary parking areas and facilities to coincide with the proposed staging of the works. Throughout this phase it is proposed that 69 disabled spaces, 38 short terms spaces and 16 emergency reserved spaces will be provided. The proposed arrangements for car parking during construction, described in detail at Section 3.3.7, are considered to adequately cater for demand during this period.

5.5.3 Measures to encourage public transport use

The Traffic and Transport Report, explores a number of initiatives to encourage a mode shift to public transport. Such initiatives include the retention/improvement of existing measures including clear and safe pedestrian links, cycling routes and amenities and free public transport arrangements.

Ultimately however, to comprehensively address this issue and to successfully encourage a shift to public transport use, it is recommended that a Workplace Travel Plan be prepared and submitted for approval prior to the occupation of the hospital, which will allow for the consideration of detailed information such as staff numbers, shift changeover times, and the like. It is recommended that the Plan be reviewed 1 year post-occupancy.

The Workplace Travel Plan will be informed by a Travel Demand Management Assessment.

5.5.4 Access and Service Vehicles

New roads associated with the proposed development are detailed at Section 3.3.6 above.

The plan below illustrates expected circulation routes. Service vehicles will access the Acute Hospital and Community Health Facility at lower ground floor levels and will be dislocated from primary pedestrian routes and main entrances. The proposed access and servicing arrangements are considered to be satisfactory.

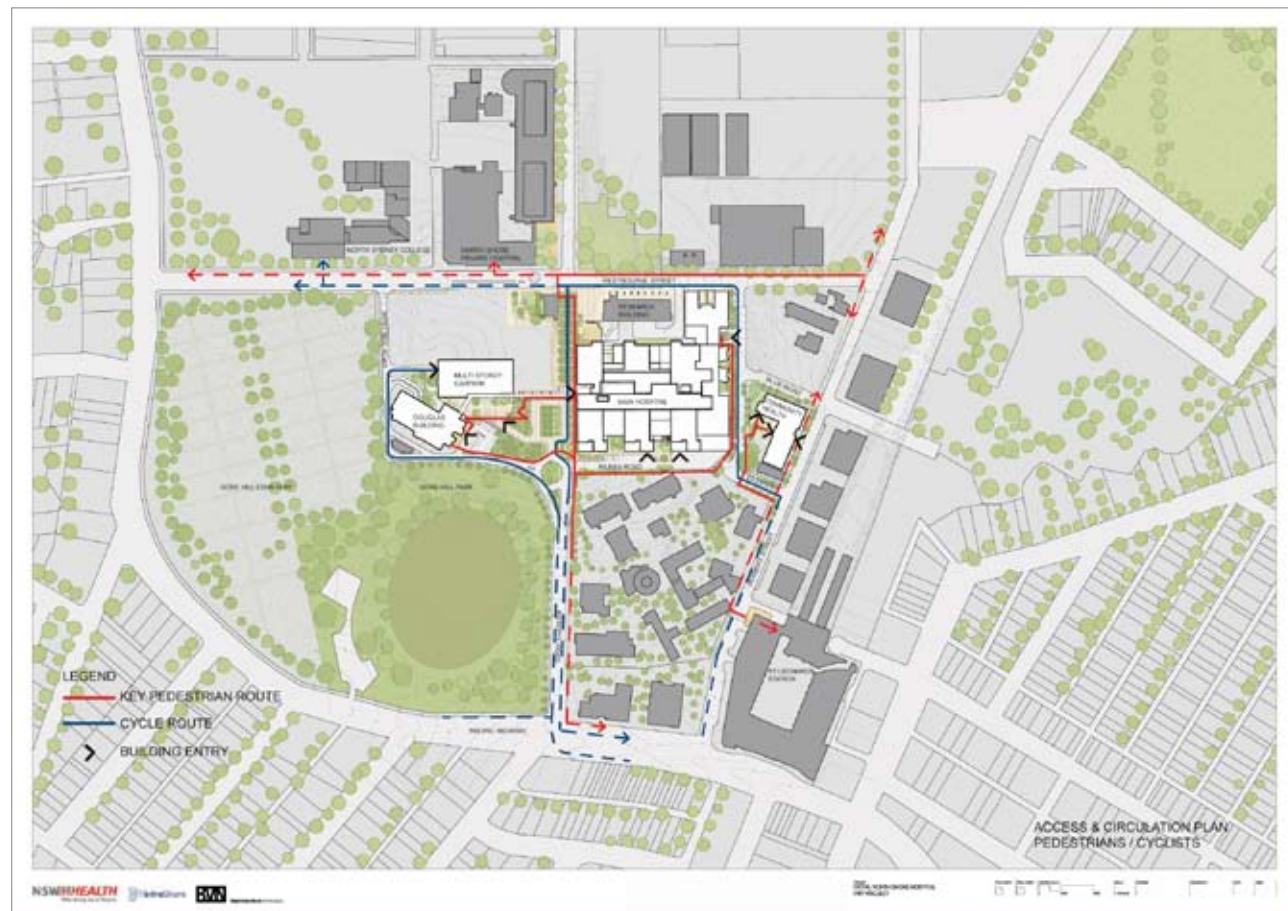


Figure 39 - Pedestrian & Circulation Plan - pedestrian and cyclists

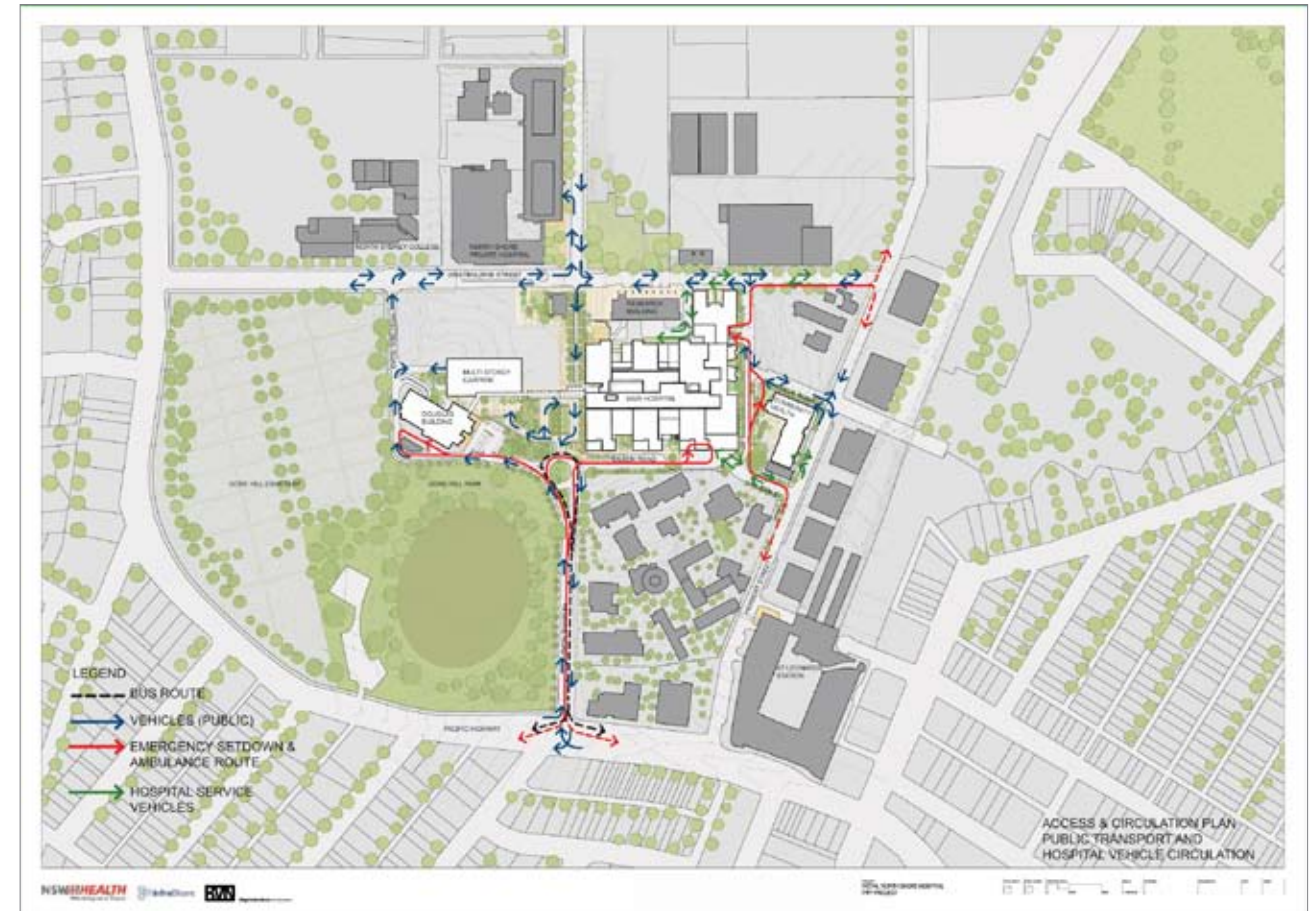


Figure 40 - Access & Circulation Plan - public transport and hospital vehicle circulation

Future cycle routes and linkages to pedestrian routes proposed outside the site will be developed in consultation with Willoughby City Council, once more is know in this respect.

Access and drop off points are all clearly indicated on the architectural drawings provide at **Appendix A**, (Ref DWG-MH-AR-101 and DWG-MH-AR-102). Future signage and road marking will further delineate these elements.

All entries and drop-off areas are capable of meeting all relevant standards with respect to pedestrian access.

5.5.5 Emergency Evacuation

Issues related to emergency evacuation are discussed below at Sections 5.10.4.

The proposed development is considered to be satisfactory in terms of traffic and transport, particularly given that the assessment has been conducted on the basis of the whole campus and the heads of consideration of a future TMAP for the whole site. No significant increase in traffic generation is expected and adequate on-site parking is provided.

5.6 ACCESSIBILITY

A preliminary assessment of the proposal has been undertaken by Morris Goding Accessibility Consulting, a copy of which is provided at **Appendix K**.

With respect to the current development drawings, the following observations are noted in the report:

"Appropriate accessible continuous paths of travel throughout main hospital levels 1-9 can be achieved. The public, visitor, staff and patient circulation areas, passenger lifts and lift lobbies areas are appropriate for wheelchair users. The entries to particular departments within the building appear to be suitable at this stage.

Appropriate accessible continuous paths of travel throughout 2 levels of the mental health unit and basement car park level can be achieved. The public, visitor, staff and patient circulation areas, passenger lifts and lift lobbies area are appropriate for wheelchair users.

Appropriate accessible continuous paths of travel throughout community health building levels 1-7 and basement car park level can be achieved. The public, visitor, staff and patient circulation areas, passenger lifts and lift lobbies are appropriate for wheelchair users. The entries to particular departments within the building appear to be suitable at this stage.

The developed design of these building will provide a consistent accessible environment through detailed design and planning of integrated accessible network of paths of travel. This will include the provision of appropriate continuous accessible paths of travel, circulation areas, signage, lighting, seating, handrails, stairs, ramps, lifts, accessible toilet facilities, accessible services and amenities, accessible car parking, accessible pedestrian and transport linkages."

The Report concludes that the proposed development is capable of satisfying all relevant legislation and policy in this respect. It is proposed that a commitment is made to comply with the DDA, the BCA, Draft DDA premises Standards, NSW Health Facility Guidelines and the relevant Australian Standards.

5.7 DRAINAGE AND STORMWATER MANAGEMENT

The concept for the proposed stormwater drainage system has been prepared on the basis that flows leaving the site at critical points at present, will be no greater as a result of the proposed development.

The design complies with the following guidelines:

- Australian Rainfall and Runoff 2000 (ARR);
- NSW Floodplan Management Manual 2001;
- Willoughby City Council Development Control Plan 2006;
- Willoughby City Council Engineering Guidelines D5 Stormwater Drainage Design 1999;
- Willoughby City Council Technical Standards:
 - No. 1 On-site Detention 2005;
 - No. 2 Rainwater Tanks 2005;
 - No. 4 Sediment and Erosion Control 2004;
 - No.5 Water Quality 2004

5.7.1 Stormwater Modelling and On-site Detention

For the purposes of stormwater modelling and the assessment of detention requirements, the development site has been divided into four catchment areas.

The proposed drainage system has been designed to accommodate a 1 in 20 year flood event, with any occurrences up to the 1 in 100 year event managed by overland flows in accordance with Council Policy.

Whilst three of the four catchments do not increase discharge rates and do not necessitate detention, catchment area C, as identified in the attached Stormwater Report (Refer to **Appendix L**), may be subject to potential increased discharges and hence the proposal includes the provision of On-site Detention.

Subject to the provision of appropriate detention systems, the proposed development will not increase the potential for flooding on neighbouring properties.

5.7.2 Stormwater Quality

The treatment of stormwater discharge is a key component of the overall drainage concept. WSUD measures will be further developed during further detailed design processes.

5.7.3 Other Civil Works

As well as incorporating stormwater drainage design details, the comprehensive Stormwater and Drainage Assessment, prepared by Hyder, also includes details of proposed works with respect to:

- New road design;
- Proposed pavement treatments;
- Bulk excavations; and,
- Erosion and sediment control.

The details provided in these drawings are considered to be adequate for current assessment purposes, the merits of which appear satisfactory, but which will be the subject of further detailed design, assessment and certification prior to the commencement of works.

5.8 CONTAMINATION ASSESSMENT

A draft Stage 2 Environmental Site Assessment has been carried out by Coffey Environments. A copy of the Report, (excluding testing data given the volume of material), has been provided at **Appendix M**. All relevant former studies and testing data may be made available on request.

The report identifies traces of asbestos in the sub soil around parts of the site as well as localised areas of contamination, which may be remediated. The Report also makes recommendations to inform the Remediation Action Plan (RAP), including how to address potential contaminants not yet detected, such as localised waste material mixed within imported fill and asbestos pipes which may have been used during the early construction of the site. As a contingency to address undetected contaminants and to properly manage asbestos, a specific asbestos management plan will be included in any RAP.

Any soil requiring off-site disposal will be classified in accordance with NSW DEC (2004) Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes.

It is proposed that a hazardous materials assessment be prepared for the development site prior to the commencement of demolition. The assessment should take place prior to demolition to ensure any hazardous material are appropriately identified and managed. Demolition should be carried out in a controlled manner to mitigate the spread of potential contaminants and remediation should then follow. Further contamination assessments will be carried out on the footprint of buildings to be demolished and where pathways and roads are to be removed. No significant issues have been identified with respect to groundwater contamination.

There is no evidence to suggest that subject to appropriate remediation and waste soil management that the current soil conditions should have any adverse implications with respect to the current Project

The draft Stage 2 Environmental Site Assessment concludes that, based on investigations undertaken to date, the site is suited to its intended purpose in terms of soil and groundwater contamination, subject to the aforementioned matters being further investigated and managed.

5.9 CONSTRUCTION IMPACTS

Potential construction impacts such as noise and vibration, waste management, cut/fill retaining structures, access during construction, construction vehicle management and parking for construction workers will all be comprehensively addressed in a Construction Management Plan to be prepared prior to the commencement of works. Subject to any peculiarities of each stage, a Construction Management Plan may be prepared for each development stage/site.

The preparation of such a plan(s) later in the planning process, as opposed to forming part of the Project Application, is considered to be of significant public benefit as all matters related to potential construction impacts raised during the exhibition of the Project may be accordingly addressed. More detailed management provisions may also be incorporated once the design has further progressed.

All potential construction related matters may be appropriately managed and mitigated to minimise any potential environmental impacts through adherence to statutory and industry standards as described below.

5.9.1 Noise and Vibration

Environmental control procedures will be developed, implemented and monitored to mitigate all potential noise and vibration generated from construction activities in accordance with DECC Draft Construction Noise Guidelines (2008) and the DECC Assessing Vibration Guide.

All demolition work shall comply with AS2601: 2001 – The Demolition of Structures.

5.9.2 Soil and Erosion Control

The proposed location and means of erosion and sediment control systems shall be in accordance with the Erosion and Sediment Control Plan prepared by Hyder, as provided at **Appendix L**. The Plan has been prepared in accordance with Managing Urban Stormwater, Soil and Construction 4th Edition March 2004.

The control of sediment and mitigation of erosion impacts will be detailed in the Construction Management Plan.

5.9.3 Stormwater Management

Environmental control procedures will be developed, implemented and monitored to ensure water runoff from the construction site does not contaminate stormwater discharge as per the requirements of the Protection of the Environment Act 1997.

5.9.4 Waste Management

Environmental control procedures will be developed, implemented and monitored to control the generation of, removal from site and reporting of waste. Management and operational criteria for waste management shall be prepared in accordance with Waste Avoidance and Resource Recovery Act 2001. Recycling and waste recovery will be monitored by waste management contractors who will report on what is being recycled and what is sent to land fill.

It is anticipated that approximately 80% of materials will be recycled.

5.9.5 Excavation

All work, including demolition, excavation and building shall comply with AS2436: 1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites.

A proposed Bulk Excavation Plan has been prepared by Hyder and is provided within the Stormwater and Civil Drawings at **Appendix L**.

The Geotechnical Report, as provided at **Appendix D**, includes observations with respect to subterranean rock, soil and groundwater conditions and provides recommendations with respect to loading ratios for unsupported cuts, vertical excavations in rock, retaining walls and foundations which will inform excavation practises.

As discussed earlier the site conditions, from top down generally include soil, shale, then sandstone. Of significance, in terms of potential impacts introduced during excavation activities, no penetration is expected in the denser sandstone bedrock, making the achievement of relevant noise and vibration criteria more straight forward.

Again, all construction activities shall comply with DECC Draft Construction Noise Guidelines (2008) and the DECC Assessing Vibration Guide.

5.9.6 Vehicular and pedestrian access during construction

All Construction traffic will have a single point of entry to the development site. The entry off Eileen Street is accessed off Herbert Street and will have a traffic controller checking the booking in of delivery vehicles and assisting with the smooth running and orderly flow of traffic into the site.

The impact of construction traffic will be mitigated by staggering deliveries to the site.

This strategy takes the bulk of vehicles along Herbert Street and away from roads associated with the existing hospital, (Reserve Road from Eileen Street), the exit is well away from the current hospital and has vehicles leaving the operational hospital precinct via a direct and manageable route. A traffic controller will assist in the safe exiting of vehicles from the site at the Red Road and Eileen Street exits.

The construction traffic entering in from Herbert St will be co-ordinated in a manner that will not congest the traffic on Herbert St. The volume of construction traffic will be controlled to enter the site on pre-planned arrangements with the principle contractor. Construction traffic will be staggered throughout the day to ensure that congestion is not encountered within the site and outside the site on surrounding streets. Construction traffic entering and exiting the site will be controlled by traffic controllers on either side of the Herbert St.

It is proposed that a comprehensive Construction Traffic Management Plan be prepared for approval prior to the commencement of works.

Subject to all construction vehicles meeting relevant noise criteria, the proposed means of construction traffic access and egress appears to be satisfactory.

5.9.7 Public transport access during construction

There have been no significant changes or proposed changes to the existing bus routes for the Lower North Shore area. Changes in timetables for the buses that serve the Hospital have been negligible to those previously outlined.

Discussions held with the STA suggest that there are no significant improvements planned at present.

At present, buses enter the hospital from the Pacific Highway via Reserve Road (S). They travel north then run along Reserve Road until they reach a mini roundabout at which point they undertake a U-turn and travel south for around 40m where passengers join or leave the service.

For the majority of the construction period, the current access arrangements for public buses will continue. Only in the period, May 2011 to December 2011 will buses need to follow another route as the turning area on Reserve Road will be absorbed into the construction site. During this period, buses could drive along Westbourne Street (W) where it is expected they will set down and pick up passengers adjacent to the private hospital. They will then turn left and travel up Reserve Road (N) turn right at Frederick Street and then travel along Herbert Street to rejoin the Pacific Highway.

Upon completion of the scheme, buses will take a similar route as present. They will leave the Pacific Highway, travel north along Reserve Road (S) and travel to the new larger roundabout where they will undertake a u-turn and travel for around 40m before stopping at the new bus stop to set down / pick up passengers. Passengers leaving the bus will then have a direct walking route to the new hospital entrance by means of a footpath and zebra crossing.

Summary

The proposed practises and standards referred to above will be formalised in a Construction Management Plan and once approved, will be included in the Development and Construction Contractors Construction Management Plan.

5.10 OPERATIONAL IMPACTS

5.10.1 Waste management

During construction of the new hospital there will be no changes to the way waste is currently treated at the existing hospital. The construction of the new hospital does not interfere with the existing waste handling procedures. All waste streams will be dealt with in the current manner where waste is transported through the existing built environment by hospital employed waste staff. The waste is taken to the existing loading dock areas where it is placed in its storage area or specialist storage receptacles and transported off site by the current waste contractors who have a contract with NSW Health.

Waste Attendants will move medical and contaminated waste in yellow bins to the designated pick up area within the existing loading dock. This service will be delivered according to the existing operations schedule. After hours requests for this task will be allocated to trained Support Service Attendants staff.

At point of pickup each yellow medical bin will be fitted with a black plastic snap tie. The snap ties will be supplied by the waste supervisor to the waste attendants who will carry out these duties. The supervisor will ensure staff have adequate stocks of snap ties to secure this waste.

All medical waste will be handled with due care and will be transported to the existing secure medical waste storage room by the dock.

Sharps containers will be collected as per the agreed schedule. The tops of the sharps containers will be checked by waste attendants to ensure they are closed firmly. The collection of sharps containers will be manually recorded. Sharps containers will be taken to the medical waste room. Sharps containers will be placed in the nearest yellow waste bin for disposal.

EPA documentation for the external waste collection service is in place currently with the contracted waste provider and these procedures will stay in place for the construction period without change.

The following commitment is made with respect to operational waste management for the proposed buildings.

Waste Management Plan

A fully detailed Waste Management Plan will be submitted prior to occupation of the hospital and community healthy facility. These plans will document waste management practices that comply with all relevant legislation relating to waste and resource recovery, environmental protection, and occupational health and safety, including:

- NSW Government Waste Reduction and Purchasing Policy,
- NSW DOH Infection Control Policy (02/45)
- NSW DOH Waste Management Guidelines for Health Care Facilities, Aug. 1998.
- ISO 14001:1996,
- ISO 9001:2000 and
- Relevant Council and EPA requirements.

5.10.2 Storage of potentially hazardous materials

No chemicals or detergents will be brought onto site without the prior approval of NSW Health. ISS, the facility manager with respect to operational aspects, (Thiess Services, being responsible for asset management), will supply detailed information on all chemical cleaning products that are to be considered for use in the form of a Material Safety Data Sheet (MSDS). The facility manager, ISS, will also ensure that all rules, regulations and codes of practice in relation to the use and handling of hazardous substances are strictly adhered to. ISS will not have a bulk store of chemicals on site. If any hazardous materials are on site they will be stored in accordance with the relevant Australian standard for storage of Hazardous materials.

5.10.3 Site Security

A security manager will be present during the normal operating hours of the Hospital. The security manager will be responsible for all security services provided to the health facilities and promoting security awareness across the Hospital. The Thiess security contractor will liaise with the hospital security manager or representative on a daily basis and during night patrols.

ISS holds a Master Security License for NSW and has mobile patrols constantly on the road within the general North Shore area. If an incident occurs on site where extra security personnel are required on short notice these mobile patrols will be called on as well as the local police.

5.10.4 Emergency and evacuation procedures

Matters related to emergency and evacuation procedures will form part of the overall Disaster, Fire and Emergency Management Plan which will be developed, to account for the new development, in accordance with the following Australian standards;

- Australian Standard AS 4083 – 1997 “Emergency Response for Healthcare Facilities”
- Australian Standard AS 4485.1 – 1997 “ Security for Health Care Facilities”
- Australian Standard AS 3745 – 2002 “Emergency control organisation and procedures for buildings, structures and workplaces”
- Australian Standard AS 4083 – 1997 “Planning for Emergencies – Health Care Facilities”
- Australian Standard AS 2293 – 2005 “Emergency escape lighting and exit signs for buildings System design, installation and operation”

The following existing hospital policies and procedures are also relevant:

1. Hospital Policy Manual, “Occupational Health, Safety and Welfare Policy, Responsibilities and Consultative process”
2. Hospital Policy Manual, “ Non-Medical Emergency and Evacuation”
3. Hospital Policy Manual, “ Blood and Body Fluid Exposure”.
4. Hospital Policy Manual, Incident Notification ”
5. Hospital Policy Manual, “Protective Clothing and Equipment”
6. Hospital Policy Manual, “Safe Work Practices”
7. Hospital Policy Manual, “Critical Incident Stress Management”
8. Policy manual “ Disturbed Patients – Chemical Restraint”
9. Patient Aggression Procedure
10. Restraint Standards Procedure
11. Booklet; Background information on aggression in hospitals
12. Protocol; Chemical Restraint Medication Management Protocol

The Plan will describe the procedures to take place in response to a disaster or major emergency that cannot be dealt with by normal operational processes and procedures. The aim to maintain acceptable levels of business functions and services across the hospital at all times. Role descriptions and responsibilities for key personal are defined and communicated as part of the induction procedures.

An emergency control centre, which is included in the proposed Acute Hospital, will be staffed by the emergency coordinator, manager of corporate services, director of nursing and other staff as necessary.

Evacuation procedures are incorporated into the induction procedures. Evacuation plans will be displayed, updated as required and maintained at key locations in all areas of the building.

It is proposed that the Disaster, Fire and Emergency Management Plan be finalised and submitted for approval prior to the commencement of works as emergency evacuation procedures will need to be addressed during the construction process.

5.10.5 Lighting

The integrity of the lighting systems as installed will be inspected and maintained to its original design parameters. All lighting will comply with AS1518 with respect to lighting design for roads and public spaces and AS4282 on “The Control of the Obtrusive Effects of Outdoor Lighting”

5.10.6 Signage

It is proposed that a comprehensive signage strategy be prepared for the site. A key component of any future strategy will be the promotion of clear wayfinding, ease of access to services and building identification. Signage will augment design mechanisms, such as colour referencing façade treatments, to achieve these ends.

5.11 ECOLOGICAL SUSTAINABLE DEVELOPMENT

An assessment has been prepared Arup and Partners, to consider the Ecological Sustainability of the proposed development. Refer to **Appendix N**.

In terms of the overall design and the on-going operations of the buildings, the following is provided by the authors of the Report:

“The design of the new Royal North Shore Acute Hospital block and the Community Health Building will respond to the latest ESD standards and guidelines and address the following design principles:

- *To achieve leadership in sustainable hospital design and set international benchmarks for indoor environmental quality, greenhouse gas reduction and water conservation;*
- *To achieve an innovative and ecologically sustainable development, which will provide healthy clinical care areas, workplace and laboratory environments and reduce the ecological impact and operating costs of the development;*
- *To maximise the advantages of the urban site and aspect ensuring access to natural daylight, external views and garden access for all occupants; and,*
- *To embed sustainability objectives (environmental, social and economic) into the design at the outset of the project and then measured, tracked and improved throughout the project life to meet NSW Health’s stated requirements.*

The implementation of these principles are done through the use of the Green Building Council of Australia’s Green Star (GBCA) Health Care Tool. The aspiration is to achieve a 4 star Green Star facility.”

Other design responses and initiatives to promote ecological sustainability include:

- Optimal orientation of Community Health Building to receive favourable solar access;
- Horizontal shading devices on both the Acute Hospital and the Community Health Building;
- Compliance with Part J of BCA, in particular the use of selected façade treatments to maximise thermal performance;
- The limited width of the Community Health Building maximises the penetration of natural daylight into the building. The Acute Hospital has been designed to locate enclosed rooms to the centre of the building footprint, allowing consulting rooms and open treatment areas to receive natural light;
- A water strategy will be devised to revolve around the capture and re-use of rainwater. Two-hundred, 200cb.m of additional water storage has been set aside in the OSD system for re-use purposes;
- All fittings and fixtures in the buildings will have a minimum rating of 4 stars WELS (Water Efficiency Labelling and Standards) except for shower heads due to availability;
- The hot water circulation system will be insulated with high-performance foam to minimise heat escape. The hot water generation plant will include a connection to the cogeneration plant reclaim hot water system;
- Energy efficiency is optimised by:
 - the careful consideration of the building envelope in terms of limiting solar gain and energy loss including orientation and the provision of energy efficient glazing and shading devices;
 - an air-conditioning system that may be closed off to particular areas of the building;
 - the use of high efficiency central plant components;
 - the use of gas powered plant for base heating and power in the Acute Hospital. The use of the 4mW cogeneration plant is expected to reduce carbon emissions by up to 2,000 tonnes per annum;
 - energy monitoring and metering capabilities.

It is recommended that a 2 year post completion operational and commissioning plan with respect to energy efficiency, be implemented with quarterly reviews.

5.12 DEVELOPMENT STAGING AND IMPACTS ON EXISTING USES

The figures below outline the broad phases of staging the construction work. Construction will begin on completion of the already approved early works and site preparatory works. Construction of the new Acute Hospital and Community Health Facility will commence on the eastern portion of the site.

Once all services and functions have been decanted from the existing hospital to the new building, the existing hospital will be demolished and the multi-level car park built in part of its footprint.

A summary of development staging and phasing is as follows:

Stage	Proposed works
1	Construction of Community Health Services Building
2	Construction of new Acute Hospital
3	Refurbishment of Level 2 Douglas Building
4	Construction of multi-level car park, link to Douglas Building and demolition of Building 1 and 2.

The phasing of works within the above stages is proposed as follows:

Phase	Activity
1	Pre-construction planning
2	Design Management
3	Demolition
4	Site establishment
5	Construction
6	Completion Activities
7	Approvals
8	Commissioning and decanting activities

In terms of the impact of the development on existing uses, it is proposed to ensure the continuity of function and the availability of services on the site, an objective to which the proponent is committed to. All medicinal and clinical functions of the site, and the range of services available within, (with the exception of the hydrotherapy pool, which will be re-located off-site), will be retained during construction.

The Emergency Department, the Imaging Department and Women's and Children's facilities will remain in their current locations during construction.



Figure 41 : Stages 1 and 2, prepared by Hyder Consulting



Figure 42 : Stages 3 and 4, prepared by Hyder Consulting

5.13 TELECOMMUNICATIONS

An assessment with respect to the possible implications for existing microwave links, broadcasting signals and electromagnetic radiation (EMR) impacts has been carried out by THL Australia, dated 2006, with regard to the earlier Concept Plan approval. A supplementary assessment has been prepared by Kordia, (formerly THL Australia), which takes into account the variations in design proposed under the current application. Both reports are provided at **Appendix O**.

The THL Report makes the following key observations, as relevant to this application:

- The potential exposure to the public of EMR will be reduced as a result of the proposed development, and that due to the low levels of exposure, it is anticipated that there will be no risk to crane operators during construction.
- The microwave link that is closest to the proposed development traverses the site at the northern portion of the development precinct, north of Westbourne Street). As no development is proposed in this area, no impacts are expected.

However, the report further acknowledges that the use of a construction crane on or near the existing multi-storey car park would need to consider the microwave link.

The Kordia Report concludes:

"In consideration of the generally slightly lower building heights of the new development proposal by Thiess at the Royal North Shore Hospital Development site, Kordia recommends that the existing THL report is still valid, and any conclusions and recommendations stated in that report are still current.

More specifically:

- *Risk of loss of line of sight microwave link's are expected to be similar (or slightly reduced) to those indicated in the THL report;*
- *the EMR impacts upon human health and safety are expected to be similar (or slightly reduced on rooftops) to those indicated in the THL report;*
- *Impacts on EMI upon electrical equipment and goods are expected to be similar to those indicated in the THL report;*
- *Potential Ghosting and multi-path impacts are expected to be similar (or slightly reduced) to those indicated in the THL report."*

The proposed development is not expected to have any significant adverse impact on surrounding telecommunication devices and broadcasting infrastructure nor in terms of the potential adverse impacts related to EMR.

5.14 UTILITIES AND SERVICES

5.14.1 Sewer drainage

There are currently several existing sewer drainage systems draining into the Sydney Water sewerage system, from the existing hospital.

Investigations conducted by Sydney Water indicate that the new Acute Hospital can be connected to either of the 225 mm sewer mains currently in the existing hospital site.

Generally:

- inground sewer drainage will gravitate where possible throughout the healthcare campus to convey waste from each proposed fixture point
- the sewer drainage system servicing the existing hospital will be maintained at all times
- all existing sewer drainage pipes that become redundant will be capped off to Sydney Water requirements

The Community Health Building sewer will flow into the existing 225mm sewer in Herbert Street.

Trade Waste Pre Treatment

A grease arrestor will be provided on level 1 to service the new kitchen. The size will be determined during the design development.

Plaster traps and other pre-treatment devices will be provided throughout the Healthcare campus where required.

5.14.2 Potable cold water service

Sydney Water has indicated that the existing 100 mm cold water mains in Westbourne and Herbert Streets are to be amplified to 200 mm and connection for the new Acute Hospital Building is to be taken from the mains extension in Westbourne Road.

It is proposed to install the new incoming potable cold water and fire fighting services from the main along Red Road to the south west corner of the building.

Connection for the fire and domestic water supply for the Community Health Building will be drawn from a 200mm water main in Herbert Street.

Incoming fire fighting systems will be connected to the amplified 200mm Sydney Water water main in Westbourne Street and extended along Red Road to the Fire Brigade booster valve and pump room.

5.14.3 Natural gas system

There is an existing Alinta high pressure secondary 1050 kPa natural gas main in Reserve Road with associated gas metering. Alinta has advised that this connection has the capacity to supply the new Acute Hospital and therefore InfraShore has allowed new connections to suit its plant layout with relocation of the gas meter set in close proximity to the co-generation plant at level 1.

Meters, first and second stage regulators, gas valves, filters, gas leak detectors and automatic shut off valves will be installed as required.

5.14.4 Electrical

The proposed Energy Australia customer substation will supply the new Acute Hospital via 11 kV diverse underground cabling reticulation routes down Reserve Road and n+1 feeder cables that will meet the required current and future power demand. The new Acute Hospital will house 11 kV/415 V substations.

RNSH will be metered as a high voltage (HV) customer. The 11 kV/415 V substations will be located within the new Acute Hospital along the Reserve Road. Substations will include two ring main units, two dry-type transformers and a low voltage (LV) switchboard with interlocking bus-tie.

A cogeneration plant consisting of two gas-fired reciprocating engines will be located on level 1. The cogeneration plant is expected to run on a continuous basis to meet the base-load electrical and thermal energy requirements of the new Acute Hospital. Additional electrical energy demand for the new Acute Hospital will be met by purchasing electricity from the grid. Additional thermal demand of the new Acute Hospital will be met by the package boiler installed as part of the cogeneration facility. The cogeneration facility will also include two diesel generators to provide emergency standby power in the event of failure of the cogeneration plant and grid supply of electricity. It may also be possible to use the diesel generators for peak load lopping.

The Community Health Building will be serviced from a local pad mounted substation located on the western side of the building. The pad mounted substations will have power sourced from Herbert Street.

5.15 TREE REMOVAL

An application, made under Section 75W of the Environmental Planning and Assessment Act 1979, has been lodged to modify the Concept Approval with respect to tree removal.

5.16 BUILDING CODE OF AUSTRALIA

A BCA Assessment for both the Acute Hospital Building and Community Health Facility has been prepared by Hendry Group (NSW) Pty Ltd. These reports are provided at **Appendix Q**.

The preliminary assessments have identified departures from the deemed-to-satisfy provisions of the Code and as such engineered alternative solutions will be required to meet the performance requirements. It is intended that such detailed engineering matters be addressed prior to Construction Certification.

6 COMMUNITY CONSULTATION

A Community Consultation exercise has been carried out as required by the DGRs. The Community Consultation Report has been prepared by Urbis, independent of the Environmental Assessment.

The scope of the consultation exercise has, however, been extended to that outlined in the DGRs to include North Sydney Council, given the proximity of the development site to St Leonards Centre and given that many North Sydney residents rely on the services, particularly community related services, available on the campus.

Stakeholder interviews were conducted with:

- North Sydney Council
- Willoughby Council.

Key issues raised by North Sydney Council staff in relation to the Acute Hospital facility include: the design of the Community Health Facility; ensuring access for clients (in particular mental health clients) during construction; the effect of construction noise upon certain clients; ensuring early advice for outreach services about changes in routine, access or temporary relocations of services or facilities during construction; ensuring adequate signage; clarification of the status of the needle exchange program during this process; and the need for particular attention to aged care and disability access during construction.

Key issues raised by Willoughby Council staff in relation to the Acute Hospital facility include: the likely social impact on the Hospital of re-opening Westbourne Street; parking restrictions in the multi-storey car park for essential workers and patients; the location and presentation of the Community Health Services Building (as a 'user-friendly' building); the potential for a provision of an accessible community meeting room and potential impacts during construction.

While the MoT, RTA and STA declined to be interviewed, they did provide earlier submissions to the Department of Planning. Railcorp was contacted for an interview a number of times, but their nominated representative did not respond.

The issues contained in these submissions were previously addressed.

A newsletter containing information with respect to the proposed development was distributed on 13 October 2008 in the vicinity of the development site.

The circulation of the newsletter was as follows:

- 686 to neighboring residents;
- 395 to neighboring businesses;
- (300) 100 each to Royal North Shore Hospital, Royal North Shore Private Hospital and Northern Sydney TAFE Collage
- A mailed copy to Gore Hill Memorial Cemetery Trust.

As at 27 October 2008, no responses to the newsletter had been received by telephone, mail or email.

The Consultation Report makes reference to those submissions which were submitted by stakeholders in response to the notification of the Preliminary Environmental Assessment. The purpose of these submissions was to assist the Director General in the preparation of the DGRs and therefore the matters raised within them are not directly addressed as such, but rather the relevant matters for assessment as set out in the DGRs are.

All issues raised by key stakeholders that may not already be addressed in the Project Application will be comprehensively addressed in the next stage of consultation, which includes development of a Communications Plan and a process of consultation in relation to the Public Exhibition phase Major Project Assessment. In particular, issues relating to the Acute Hospital and Community Health facility will be addressed. The issues previously raised in submissions or interviews relating to the development site will not be dealt with.

The aim of engaging stakeholders is for the purpose of informing and enabling risk management in relation to the planned development; and to achieve genuine insights into stakeholder and community issues.

The Community engagement process will be in accordance with the guidelines as outlined by the Department of Planning for major project community consultation.

As a result it is proposed that a stakeholder analysis be undertaken, which would then inform the Public Exhibition process. Thus, the proposed methodology includes:

1. Preparation of Communications Plan

The Communications Plan will identify all key stakeholders; identify relevant communications messages/materials and propose consultation techniques appropriate to the stakeholders and the process, according to an agreed timetable.

2. Stakeholder identification strategy

The DGRs identified a limited number of stakeholders to be consulted during the preparation of the Environmental Assessment accompanying the Major Project Assessment Application. These included:

- Willoughby City Council
- NSW Roads and Traffic Authority
- Ministry of Transport
- Railcorp.

At the time, it was indicated that consultation with a broader range of stakeholders would be desirable. A meeting was held with North Sydney Council officers and a newsletter was distributed to surrounding residents and landowners

Hence, it is suggested that, for this process, a more detailed stakeholder identification be undertaken. The stakeholders identified above would be included, and the range of stakeholders could be expanded to include (but not be limited to):

- Relevant Councils
- NSW Department of Environment and Climate Change
- State Rail Authority
- State Transit Authority
- Sydney Water
- Energy Australia
- Community organisations affected by the Hospital redevelopment
- Hospital staff (to be addressed by Communications Team at Royal North Shore Hospital)
- Hospital patients, patient representatives and visitors (to be addressed by Communications Team at Royal North Shore Hospital)
- surrounding residents and land owners.

The Public Exhibition process is seen as being open and deliberative but conducted in a way that is controlled, practical and effectively manages community and stakeholder expectations.

Particular care would be taken to ensure all communities are fully engaged and are not given an unrealistic view of what they can and cannot influence through the Public Exhibition process. It is essential that they are given feedback on the information that is currently known.

The relevant consultation activities for the Public Exhibition process will include the following:

Newsletters

Newsletters are a useful means of outlining project activities to various stakeholders, principally local residents and local landowners. The attachment of a tear-off section to the newsletters and access to a 1800 phone number is also suggested, as a mechanism which is often useful for the reader who, not desiring greater involvement, can nevertheless indicate interest and issues of concern around the project.

Reporting

It is noted that the Department of Planning has made changes to the Major Assessment Projects component of its website, allowing for submissions to be made online and for the collated submissions, together with agency submissions to be provided back to the proponent to summarise and address any issues arising. A summary of responses will be provided. In addition, all other feedback from activities undertaken as part of the Public Exhibition process will be collated and presented in a draft report of outcomes for consideration by Infrashore and forming part of the documentation for the Department of Planning.

7 STATEMENT OF COMMITMENTS

The following Statement of Commitments is offered to ensure that the proposed development will adequately mitigate any potential adverse environmental impacts during both the construction and operational stages of the development.

The proponent is responsible for the implementation and achievement of any Commitments made as part of this Project Application. The timing for the completion and/or implementation of these Commitments are as outlined below.

GENERAL COMMITMENTS

SC1 BCA

All building work shall accord with the provisions of the BCA.

SC2 Lighting

All lighting will comply with AS1518 with respect to lighting design for roads and public spaces and AS4282 on “The Control of the Obtrusive Effects of Outdoor Lighting”

SC3 Car parking and loading bays

All car parking spaces and service bays shall be designed to comply with AS2890.

SC4 Other Approvals

Any proposal for the erection of a structure of the public road reserve will be the subject of an application to Council under s.138 of the Roads Act 1993.

SC5 Reflectivity

The materials and external finishes of external façades and roofs of the buildings shall be selected to minimise any potential reflectivity impacts caused through reflectivity.

SC6 RTA Costs

All works and signposting are to be of no cost to the RTA.

PRIOR TO THE COMMENCEMENT OF WORKS

SC7 Comprehensive Construction Management Plan

Prior to the commencement of works a Comprehensive Construction Management Plan (CCMP) will be prepared for the development site as a whole, or if considered to be beneficial, for each particular stage dependant on any specific stage peculiarities.

The CCMP will combine all relevant operational and management construction-related methodologies and will be divided into three parts:

- General Construction Management – mitigation of potential environmental impacts, excavation;
- Traffic and Pedestrian Management – vehicular access for both private users, public buses, emergency vehicles, pedestrian access and safety;
- Construction Waste Management – treatment of waste, recycling.

The following criteria and/or objectives will be incorporated in the CCMP in order to satisfactorily address any potential impacts likely to arise during this period:

General Construction Management

- All work, including demolition, excavation and building work shall comply with Australian Standard AS2436: 1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites and DECC Draft Construction Noise Guidelines (2008)
- All mitigation measures to address the impacts associated with noise and vibration from construction activities shall be in accordance with the Acoustic Statement of Commitments, prepared by ArupAcoustics, 23 October 2008.
 - Where practicable, the vibration resulting from construction and operation will not exceed the evaluation criteria presented in Environmental Noise Management – Assessing Vibration: A Technical Guideline (Dec, 2006).
 - Any specific management techniques to be adopted, such as site signs, with respect to the removal of asbestos.
 - Description of specific mitigation treatments, management methods and procedures that will be implemented to control noise and vibration during construction;
 - Review the visual impact of any noise mitigation measures proposed as part of the development to assess the adequacy and potential additional architectural treatments required in the hospital locality.
 - Contingency plans to be implemented in the event of non-compliances and/or noise complaints.
 - Machinery and equipment will be selected and well maintained to assist in minimising noise levels.
 - Mobile plant such as excavators and other diesel operated machinery will be fitted with mufflers and other silencing equipment as far as practical.
 - All entry and departure of heavy vehicles to and from the site would be restricted to the nominated construction hours.
 - Noisy activities would occur in as short a time space as possible with minimum delays.
 - Noise and vibration monitoring, reporting and response procedures.
- All excavation work, including the treatment of unsupported cuts, vertical excavations in rock, retaining walls and foundations shall be constructed in accordance with those relevant recommendations provided in the Supplementary Geotechnical Investigation, prepared by Coffey Geotechnics, dated 23 September 2008.
 - Adequate measures shall be taken to prevent dust from affecting the amenity of the surrounding area during the works. In particular, the following measures must be adopted:
 - Physical barriers shall be erected at right angles to the prevailing wind direction or shall be placed; around or over dust sources to prevent wind or activity from generating dust emissions,
 - Earthworks and scheduling activities shall be managed to coincide with the next stage of development to minimise the amount of time the site is left cut or exposed,

- All materials shall be stored or stockpiled at the best locations,
- The surface should be dampened slightly to prevent dust from becoming airborne but should not be wet to the extent that run-off occurs,
- All vehicles carrying spoil or rubble to or from the site shall at all times be covered to prevent the escape of dust or other material.
- All equipment wheels shall be washed before exiting the site
- Construction methodology and equipment will be selected to meet DECC requirements.
- Erosion and Sediment Control will be implemented in accordance with the Erosion and Sedimentation Plan, contained Appendix L of the Project Application, and in accordance with Managing Urban Stormwater, Soil and Contamination 4th Edition March 2004.
 - At the completion of construction and stabilisation of the landsurface all stormwater control devices will be removed.
- A Tree Protection Plan/Zone will be devised for all trees that are being retained within the site, (refer to SC27 for proposed means of tree protection).
- Pedestrian and user safety including the management of vacant premises during construction.
- Appropriate OH&S procedures and protective equipment would be in place during construction and operation.
- A “1 800” number will be available during construction for members of the public to phone and lodge any complaints they may have in relation to the construction activity.

Traffic Management

A Traffic Management Plan will be prepared to minimise construction traffic impacts on the surrounding road network and disruptions from works within road reserves, as far as practicable, and ensure road safety is not compromised, including:

1. Maintaining access along Westbourne Street and liaising with emergency services to ensure emergency response plans are not compromised;
2. Provision of adequate spoil stockpiling capacity for spoil reuse where practicable to limit truck impacts;
3. Informing the local community and road users on changed conditions prior to work commencing and spoil transportation;
4. Arrangements for parking (onsite where practicable) and safe access to work areas from the adjacent road network;
5. Traffic control in accordance with RTA Traffic Control at Work Sites and AS 1742.3 1996, Traffic Control Devices for Works on Roads;
6. Initiatives to promote the use of public transport by construction workers;
7. Backfill trenches with cold-mix bitumen and provide funding for Council to complete the remediation of roads and footpaths after backfilling is completed;
8. Signage for emergency vehicles (NSW Police & NSW Fire Brigades), as well as other signage required throughout the construction phases. All necessary statutory approvals will be sought for the erection of signs.

Environmental Management

All waste disposal and storage will occur in accordance with the Protection of Environment Operations Act and Regulations and the EPA Environmental Guideline: Assessment, Classification and Management of Liquid and Non-liquid Wastes (1995).

All wastes generated by the project shall be beneficially reused, recycled or directed to a waste facility lawfully permitted to accept the materials.

All wastes would be securely stored to minimise the risk of pollutants escaping.

SC 8 Stormwater

Stormwater drainage infrastructure shall be designed on the basis that flows leaving the site at critical points as a result of the proposed development will be no greater than those flow rates prior to the commencement of the Project.

To achieve such ends, on-site detention will be provided within the building footprint of the hospital to limit flows to no greater than existing in accordance with Council standards. Stormwater harvesting will be implemented to minimise adverse environmental impacts caused by increased stormwater runoff by reducing the total volume of runoff being discharged.

Detailed Stormwater Drainage and Infrastructure Plan, generally in accordance with the Stormwater Management Report and accompanying plans, prepared by Hyder, dated October 2008, except for the following amendments:

- The proposed construction of the underground stormwater drainage along Reserve Road South (Line C) into Council's existing pipe shall be extended to the southern property boundary of the site and be connected into Council's 1050mm diameter pipe.
- The proposed construction of the underground stormwater drainage along Herbert Street (Lines D and E) shall be in accordance with Willoughby Council's specifications (AUSPEC) and standards.

Such plans shall be prepared in consultation with Willoughby City Council and Sydney Water and shall be submitted for the approval of the Director General.

The main contractor shall lodge a security deposit in the sum of \$80,000 (GST exempt) against possible damage to Council assets during the course of development.

Inspections during the construction of public drainage works shall be carried out by a competent professional engineer.

A suitably qualified and experienced consulting engineer (generally CP Eng. Qualification) must certify on Council's standard certification form that the as constructed OSD and stormwater harvesting systems complies with Council's relevant policies and specifications.

SC 9 Dilapidation Surveys

Design measures and management procedures will be developed for implementation during construction to prevent or suitably mitigate, damage to properties, structures and infrastructure (such as from vibration). This will include a process, prior to commencement, for conducting property inspections, and dilapidation surveys, if required, on all structures (including public infrastructure) at risk of impact during construction and formulation of measures to rectify property damage caused by construction at no cost to the owner.

SC 10 Community Consultation

A Stakeholder Identification and Engagement Strategy will be undertaken, to encompass Local Governments; community service providers; local institutions; business and residents and hospital users affected by the proposed development, for the purposes of more extensive consultation, input and feedback about the proposed development, impacts and issues, during construction.

A Communication Plan will be developed, to address consultation and communication needs at various stages in the development process, (drawing upon the above Stakeholder Strategy).

SC 11 Heritage

An archival recording of Building 10 will be carried out in accordance with NSW Heritage Office Guidelines by a suitably qualified person(s), prior to its demolition.

The use of the former Mortuary Building and Building 10 will be recognised in the site-wide Heritage Interpretation Plan.

The use of the former Mortuary Building and Building 10 will be recognised in the site-wide Heritage Interpretation Plan.

A Conservation Works Schedule, and On-going Maintenance Schedule, shall be prepared for the former Mortuary to accompany any future application to adaptively re-use the building.

A preliminary Site Interpretation Strategy shall be prepared with respect to buildings 10 & 19, to inform the overall campus-wide strategy.

SC 12 ESD

Both the Community Health Facility and Acute Hospital Building are to have a 4 star Green Star Rating under the pilot Green Building Council of Australia's Green Star (GBCA) Health Care Tool.

Prior to the construction of the hospital and community health buildings an ESD Strategy will be prepared outlining measures to be incorporated into the building designs to achieve the desired rating.

The Strategy will include, but may not be necessarily limited to the following matters:

- Façade treatments and thermal performance;
- The siting of rooms which are either to be occupied or in active use, to maximise solar access;
- Stormwater harvesting and re-use;

- Water efficient fixtures and fittings;
- Insulation;
- Air-conditioning management;
- Efficiency of central plant; and,
- Energy monitoring.

SC 13 Utilities

Prior to the commencement of work to utility services, the proponent will negotiate and attain approval (if required) with the utility authorities in relation to the location and/or adjustment of the services affected by the construction works.

SC 14 Contamination

Prior to the commencement of works a Hazardous Materials Survey shall be prepared and implemented.

The scope of any Remediation Action Plan (RAP) shall be informed by the Phase 2 Contamination Assessment Report, prepared by Coffey, dated 16 March 2007 and shall include, but not be necessarily limited to:

- methodologies for the treatment of localised areas of contamination; and,
- contingencies to deal with unforeseen circumstances, such as bulk waste contained in fill material and asbestos pipes.

The RAP shall be accompanied by a statement from a site auditor accredited by the Environmental Protection Authority.

All soil requiring off-site removal will be classified in accordance with the NSW DECC (2004) Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes.

All identified hazardous materials shall be removed from buildings prior to demolition.

All remediation, in accordance with the RAP, shall be carried out prior to the commencement of construction of the approved buildings.

It is acknowledged that any new information which comes to light, during demolition, remediation, or preparatory site works which has the potential to alter previous conclusions about site contamination must be immediately notified to the Department of Planning and DECC where relevant.

SC 15 Access and Mobility

Prior to the commencement of works, an Access and Mobility Assessment of the detailed design of the buildings will be prepared. The Assessment will demonstrate how the proposed development satisfies the following statutory and regulatory guidelines to ensure effective appropriate and safe use by all people including those with a disability:

- a. Federal Disability Discrimination Act;
- b. BCA;
- c. NSW Health Facility Guidelines;
- d. DDS32; and,
- e. AS1428.1, AS1428.2, AS1428.4, AS1735.12 and AS 2890.1. as applicable

SC 16 Mechanical Ventilation

Mechanical ventilation shall be designed in accordance with:

1. BCA
2. AS1668.1-1998 – Mechanical Ventilation and Air Conditioning of Buildings
3. AS1668.2-1998 – Mechanical Ventilation and Air Conditioning of Buildings
4. Public Health Act 1991
5. Public Health (Microbial Control) Regulation 2000
6. AS3666.1 – 2002 – Air Handling and Water Systems in Buildings
7. AS3666.2 – 2002 – Air Handling and Water Systems in Buildings
8. AS3666.3 – 2002 – Air Handling and Water Systems in Buildings

SC 17 Copies of Approved Plans

A copy of the approved and certified plans, specifications and documents incorporating conditions of approval and certification shall be kept on the site at all times and shall be readily available for perusal by any officer of the Council or the Department.

SC 18 Site Notice

A site notice shall be prominently displayed at the boundaries of the site for the purposes of informing the public of project details including, but not limited to the details of the Proponent, Builder and Structural Engineer. The site notices are to satisfy the following requirements:

1. Minimum dimensions of the notice are to measure 841mm x 594mm (A1) with any text on the notice to be a minimum of 30 point type size;
2. The notice is to be durable and weatherproof and is to be displayed throughout the works period;
3. The approved hours of work, the name of the site/ project manager, the responsible managing company (if any), its address and 24 hour contact phone number for any inquiries, including works/ noise complaint are to be displayed on the site notice; and

The notice is to be mounted at eye level on the perimeter hoardings/ fencing and is to state that unauthorised entry to the site is not permitted.

SC 19 Landscaping Plans

Prior to the commencement of works, the submitted landscaping plans, prepared by Oculus, shall be amended as follows:

1. The proposed *Jacaranda Mimosifolia* trees located along the western side of Herbert Street are to be replaced with *Syncarpia Glomulifera* at 7m intervals, except directly in front of the proposed awning at the main entry to the Community Health Building.

DURING CONSTRUCTION

SC 20 Construction Hours

The hours of works, including the delivery of materials to and from the site, are as follows:

- (a) Between 7:00 am and 6:00 pm, Mondays to Fridays inclusive;
- (b) Between 7:00 am and 4:00 pm, Saturdays;
- (c) No work on Sundays and public holidays.

Variations to these hours may be undertaken on written application to the Director General.

In the case of instances where extended work hours are required due to:

- the delivery of materials required outside these hours by the Police or other authorities; or,
- an emergency to avoid the loss of life, damage to property and/or to prevent environmental harm;

The applicant shall notify, as appropriate Willoughby City Council and the NSW Department of Planning as to the nature and duration of the extended hour works. In such instances no approval, as such, is required.

SC 21 Sanitary Facilities

Temporary site toilet facilities shall be provided.

SC 22 Demolition

The demolition work shall comply with the provisions of Australian Standard AS2601: 2001 The Demolition of Structures. The work plans required by AS2601: 2001 shall be accompanied by a written statement from a suitably qualified person that the proposals contained in the work plan comply with the safety requirements of the Standard.

SC 23 Parking

Throughout the construction period, parking numbers, (including accessible spaces), will generally be retained at existing levels.

SC 24 Site Audit

A detailed Site Audit Summary Report, Site Audit Statement and Validation Report will be prepared. The site audit must be prepared in accordance with the Contaminated Land Management Act 1997 completed by a site auditor accredited by the Environmental Protection Authority to issue site audit The site audit must verify that the land is suitable for the proposed uses.

SC 25 Continuity of Function

The medicinal and clinical functions of the site, and the range of services available within, (with the exception of the hydrotherapy pool, which will be re-located off-site), will be retained during construction.

SC 26 Protection of Trees

Trees shall be protected in accordance with the Arboricultural Assessment, prepared by Urban Tree Management, dated 17 October 2008.

SC27 Monitoring during earthworks

If during the course of construction/excavation works, unexpected archaeological relics are discovered, all works likely to affects the relic(s) will cease immediately and the relevant State agency will be notified.

PRIOR TO OCCUPATION

SC28 Subdivision and land affectations

A draft Plan of Subdivision, indicating all proposed easements, accompanied by a report which addresses the means by which existing easements are to be addressed, shall be prepared and submitted to the Director General for approval.

SC29 Workplace Travel Plan

A Workplace Travel Plan shall be prepared and shall consider those initiatives included in the Traffic and Transport Report, prepared by Hyder, dated November 2008.

The Plan shall be informed by a Travel Demand Management assessment and shall be reviewed to further increase public transport use 1 year post occupation of the hospital.

SC 30 Public Infrastructure Restoration

All damaged footpath, nature strip, kerb and gutter or other public infrastructure arising as a direct result of the proposed development shall be replaced or rectified as appropriate, in accordance with Council specifications at no cost of Council.

SC 31 Underground Utility Services

The proponent shall install underground electrical and other utility services in accordance with Energy Australia and other utility company specifications along the full frontage of the development site where it fronts Herbert Street, Reserve Road and Westbourne Street.

SC 32 Operational Management Plan

An Operational Management Plan will be prepared prior to the opening of the hospital to the public. The plan will address, but will not be limited to, the following matters:

- Measures to ensure protection of heritage buildings and assets.
- Protection of flora and fauna.
- Minimisation of anti-social behaviour.
- Visitor safety.
- Site security.
- Noise management.
- Transport, Traffic and pedestrian management.

SC33 Disaster, Fire and Emergency Management Plan

To complement the Operational Management Plan, a Disaster, Fire and Emergency Management Plan shall be prepared in accordance with:

- Australian Standard AS 4083 – 1997 “Emergency Response for Healthcare Facilities”
- Australian Standard AS 4485.1 – 1997 “ Security for Health Care Facilities”
- Australian Standard AS 3745 – 2002 “Emergency control organisation and procedures for buildings, structures and workplaces”
- Australian Standard AS 4083 – 1997 “Planning for Emergencies – Health Care Facilities”
- Australian Standard AS 2293 – 2005 “Emergency escape lighting and exit signs for buildings System design, installation and operation”

SC34 Crime Prevention through Environmental Design (CPTED)

Prior to the occupation of the hospital or the community health facility the proponent shall demonstrate, to the satisfaction of the Director General, how the following initiatives have been successfully incorporated into the development:

- (a) After hours management measures such as consideration of adequate levels of lighting, CCTV and security patrols at key locations such as building access points, courtyards, loading bays, basements and car park amenities.
- (b) Use of robust materials in finishes to minimise the impact of malicious damage
- (c) Use of clear signage in relation to pedestrian access clearly marking staff only areas
- (d) Installation of clear and prominent signage reminding users not to leave valuables in their cars
- (e) Restricting access to car park amenities after hours.

SC 35 Waste Management Plan

A fully detailed Waste Management Plan will be submitted prior to occupation of the hospital and community healthy facility. These plans will document waste management practices that comply with all relevant legislation relating to waste and resource recovery, environmental protection, and occupational health and safety, including:

- NSW Government Waste Reduction and Purchasing Policy,
- NSW DOH Infection Control Policy (02/45)
- NSW DOH Waste Management Guidelines for Health Care Facilities, Aug. 1998.
- ISO 14001:1996,
- ISO 9001:2000 and

Relevant Council and EPA requirements.

SC36 Substation Design

Any substations under the control of Energy Australia required as a result of the proposed development will be designed in accordance with Energy Australia requirements.

SC37 Splay Corners

At the intersections of Eileen Street, Blue Road and Westbourne Street with Herbert Street clear sight distances shall be provided in accordance with AS2890.1(2004).

SC38 Public Road signs and markings

On completion of the pavement works on public roads, all misplaced/damaged regulatory signs, road fixtures and markings must be replaced.

SC39 Footpath Kerb and Gutter

Prior to the staged completion of the buildings, the following works shall be completed in accordance with Willoughby Council's standards and specifications (SD15, Brick Paving Code and AUSPEC):

- New kerb and gutter on the western side of Herbert Street between Blue Road and Eileen Street, to include kerb returns, and pram ramps;
- New full width footpath in approved paving bricks along the Western side of Herbert Street between Blue Road and Eileen Street;
- Pavement reconstruction (Pavement type 4) of Reserve Road south of the round-a-bout to the southern site boundary
- The existing pavement on the south side of Westbourne Street, between Westside Road and Reserve Road shall be milled and repaved to a minimum depth of 100mm.

SC40 Signage - Strategy and Approvals

A Signage Strategy for land pertaining to the Project shall be prepared and submitted to the Director-General for approval prior to the occupation of the hospital and community health facility.

The Strategy will include a wayfinding rationale and will inform the design and location of signs across the campus.

On adoption of the Signage Strategy details of all signage will be provided to the Director General prior to the occupation of the hospital and community health facility, for approval.

DURING OCCUPATION

SC41 Noise

In order to mitigate and best manage potential impacts acoustic impacts associated with traffic, mechanical plant, helicopter noise and the like, the following criteria will be met:

- Internal Design Criteria:
 - Background noise levels – AS2107;
 - Reverberation – AS2107;
 - Building Envelope – Environmental Criteria for Road Traffic Noise (NSW EPA);
- Helicopter Noise:
 - Air Services Australia Principles and Procedures Guide;
- Fly Neighbourly Guide
- Mechanical Plant Noise – NSW DECC Industrial Noise Policy
- Traffic Noise (On-site) - NSW DECC Industrial Noise Policy
- Traffic Noise (Off-site) - Environmental Criteria for Road Traffic Noise (NSW EPA)

- Sleep disturbance - Environmental Criteria for Road Traffic Noise (NSW EPA and World Health Organisation Guidelines).
- Fixed Emergency Equipment – EPA Environmental Noise Control Manual

SC 42 Plant

All cooling towers and water heating systems shall be operated and maintained in accordance with AS3666: 2000, the Public Health Act 1991 and Public Health (Microbial Control) Regulation 2000.

SC 43 OSD and Water Harvesting

The stormwater collection/harvesting and on site detention systems shall be maintained accordingly to meet their design intent.

8 CONCLUSION

The proposal includes the timely redevelopment of one of Sydney's major hospitals and features the consolidation of all existing health services on site into a world-class facility on a well planned and beautified hospital campus.

The proposal, in its ultimate form, is the culmination of extensive design and consultation processes with many key experts and stakeholders.

The environmental assessment includes an analysis of all matters requested in the DGRs and finds the proposal to be of minimal environmental impact and of significant public benefit.

Public benefits include:

- the provision of a new, world-class hospital and community health facility on a master planned campus;
- the rationalization of services on the site and the improved level of client service these facilities will deliver;
- stimulation of employment generation both during construction, and operation as well as the employment multiplier effects resulting from the operations of the campus. in the form of further uses such as medical research and like industries;
- greater levels of pedestrian and visitor amenity; improved clarity of wayfinding and new landscaped open areas; and,
- identification and retention of buildings and elements of heritage significance resulting in a positive heritage outcome for the site.

The proposed development is considered to fully satisfy the Director General Requirements and, on that basis, the Minister's approval is sought.

Sydney

Level 21, 321 Kent Street
Sydney, NSW 2000
Tel: +612 8233 9900
Fax: +612 8233 9966

Australia • Asia • Middle East
www.urbis.com.au
info@urbis.com.au

Melbourne

Level 12, 120 Collins Street
Melbourne, VIC 3000
Tel: +613 8663 4888
Fax: +613 8663 4999

Perth

Ground Floor, 53 Ord Street
West Perth, WA 6005
Tel: +618 9346 0500
Fax: +618 9321 7790

Brisbane

Level 12, 120 Edward Street
Brisbane, QLD 4000
Tel: +617 3007 3800
Fax: +617 3007 3811

Dubai

Level 4, Attareen Building,
Saaha Offices, Old Town Island
Downtown Burj Dubai, UAE
Tel: +971 4 4200212
Fax: +971 4 4200209

