

STRATEGY > DEFINITION > DELIVERY > TRANSITION

ENVIRONMENTAL IMPACT STATEMENT



**Hornsby Ku-Ring-Gai Hospital Campus Stage 2
Development State Significant Development Application
(SSD 7462)**
APP Corporation Pty Limited

01 November 2017

Statement of Validity

Prepared under Part 4, Division 4.1 of the Environmental Planning and Assessment Act, 1979 (as amended)

Environmental Impact Statement prepared by

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In respect of SSD 17_8647

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Site Description: Hornsby Ku-Ring-Gai Hospital Campus

Certificate

I certify that I have prepared the content of this Environmental Impact Statement and to the best of my knowledge:

- It is in accordance with the Environmental Planning and Assessment Act, 1979 and Environmental Planning and Assessment Regulation, 2000.
- It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.

Signature



Name Anthony Williams
Senior Planner

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Abbreviation	Full Description
AEC	Area of Environmental Concern
AHD	Australian Height Datum
APP	APP Corporation
AQIA	Air Quality Impact Assessment
BC Act 2016	Biodiversity Conservation Act 2016
Applicant	Health Infrastructure
CLM Act	<i>Contaminated Lands Management Act, 1997</i>
CNMP	Construction Noise Management Plan
CEMP	Construction Environmental Management Plan
DG	Dangerous Goods
DPE	Department of Planning and Environment
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act, 1999</i>
EP&A Act	<i>Environmental Planning and Assessment Act, 1979</i>
EPA Regs	<i>Environmental Planning and Assessment Regulation, 2000</i>
EPL	Environment Protection Licence
GHG	Greenhouse Gas
CLEP	Hornsby LEP 2013
INP	Industrial Noise Policy
ICNG	Interim Construction Noise Guideline, 2009
ISEPP	<i>State Environmental Planning Policy (Infrastructure) 2007</i>
LGA	Local Government Area
NIA	Noise and Vibration Impact Assessment
OEH	Office of Environment and Heritage
POEO Act	<i>Protection of the Environment Operations Act 1997</i>

Abbreviation	Full Description
POEO General Regs	<i>Protection of the Environment Operations (General) Regulation, 2009</i>
POEO Waste Regs	<i>Protection of the Environment Operations (Waste) Regulation, 2014.</i>
PCA	Principle Certifying Authority
RBL	Rating Background Level
RMS	Roads and Maritime Services
RNP	Road Noise Policy
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SEPP 33	<i>State Environmental Planning Policy 33 – Hazardous and Offensive Development</i>
SEPP 55	<i>State Environmental Planning Policy 55 – Remediation of Land</i>
SEPP State and Regional Development	<i>State Environmental Planning Policy (State and Regional Development) 2011</i>
SSD	State Significant Development
The Site	HKH Campus
TIA	Transport Impact Assessment
TSP	Total suspended particulates
VENM	Virgin excavated natural material
vpd	Vehicles per day
vph	Vehicles per hour

Executive Summary

Purpose of this Report

This Environmental Impact Statement (EIS) is submitted to the Department of Planning and Environment in support of a State Significant Development Application for the Stage 2 Development of the Hornsby Ku-Ring-Gai Hospital Campus Redevelopment.

This EIS has been prepared in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment Regulation 2000*, together with the Secretary's Environmental Assessment Requirements, issued for the project on 14 August 2017. In doing so, this report provides a comprehensive evaluation of the facility against the legislative and policy framework relevant to the site to determine the likely impacts of the project and provide mitigation measures where necessary.

Overview of the Project

This application seeks approval for a 5 storey building with basement level and roof top plant area comprising:

- A new main hospital entry point;
- Four new 28 bed Inpatient Units;
- New Intensive Care Unit with 12 beds;
- New ambulatory care areas;
- Extended Emergency Department including Transit Lounge;
- Increased capacity of the existing Psychiatric Emergency Care Centre from 4 to 6 beds;
- A new pharmacy;
- Two new 28 bed rehabilitation wards and treatment consultation space;
- A new Mortuary;
- Teaching, education and research facilities;
- Administration space for clinical and corporate support;
- Demolition Works
- Removal of trees and landscaped areas;
- End of trip facilities
- Car parking and drop off zones (on grade); and
- Soft landscaping.

The Site

The Hornsby Ku-Ring-Gai Hospital Campus (HKHC) is located within Hornsby Local Government Area, situated in the north-west of metropolitan Sydney, approximately 25 kilometres north of the Sydney CBD and 19 kilometres northeast of the Parramatta CBD.

The HKHC is located approximately 1km to the east of the Hornsby Town Centre, 1.5km east of Hornsby railway station, 1.8km north-east of Waitara station and 2km south-east of Asquith railway station. These stations are located on City Rail's North Shore line. The site has frontage to Palmerston Road, Derby Street, Burdett Street and Lowe Road and comprises the following allotments:

- Lot 2 DP 14774
- Lot 3 DP 14774
- Lot B DP 363790
- Lot 23 DP 814181
- Lot 2 DP 512434
- Lot 2 DP 217174
- Lot 12 DP 14774
- Lot 13 DP 14774
- Lot 1 DP 512432
- Lot 1 DP 232290
- Lot 189 DP 752053
- Lot 1 DP 134994
- Lot 188 DP 752053
- Lot A DP 329121
- Lot B DP 329121
- Lot 1 DP 580023
- Lot 2 DP 580023
- Lot 3 DP 580023

PLANNING CONTEXT

Section 4 of the EIS provides a comprehensive assessment of the proposal in the context of the applicable legislation and policy framework. The site is zoned SP2 Special Purpose Zone (Health Facilities) under the Hornsby Local Environmental Plan 2013. The proposal is permissible with consent and meets the zone objectives.

CONSULTATION

During the preparation of the EIS, and in response to the consultation requirements stipulated in the SEARs, key stakeholders were identified and subsequently consulted. Key stakeholders engaged were:

- The residential community through:

- community drop in sessions;
- social media; and
- project website with details of the proposal;
- Hornsby Shire Council (HSC);
- The Department of Planning and Environment (DPE);
- Sydney Water
- Transport for NSW (TfNSW); and
- Roads and Maritime Services (RMS).

The feedback from this exercise has informed the preparation of the EIS, findings and conclusions.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This EIS provides an assessment of the environmental impacts of the project in accordance with the SEARs and sets out the undertakings made by Health Infrastructure NSW to manage and minimise potential impacts arising from the development during construction and once operational.

CONCLUSION AND PROJECT JUSTIFICATION

The EIS addresses the SEARs, and the proposal provides for the significant extension and upgrade of key hospital services at the HKH Campus, a key component of the overarching masterplan adopted for the Campus. The potential impacts of the development are minor and are able to be managed during construction and once operational. Given the planning merits of the proposal presented in this EIS, the proposed development warrants approval by the Minister for Planning and Environment.

1. Introduction

This Environmental Impact Statement (EIS) is submitted to the Department of Planning and Environment (the Department) in support of an application for State Significant Development (SSD) for the Stage 2 redevelopment of the Hornsby Ku-Ring-Gai Hospital Campus (HKHC). The Department granted consent for Stage 1 in July 2013. These works were completed in 2015. The primary objective of the SSD application is to secure approval for the construction and operation of a new five (5) storey building and allow for integration with the balance of the HKH Campus, in particular the recently completed Stage 1 Campus Redevelopment, and approved Medical Imaging and Paediatric Building. The Stage 2 SSD application forms part of a comprehensive master plan adopted to facilitate the redevelopment of the HKHC.

State Environmental Planning Policy (State and Regional Development) 2011 (SEPP SRD) identifies development which is declared to be State Significant. Clause 14 of Schedule 1 of the policy provides that ‘hospitals, medical centres and health research facilities’ with a capital investment value (CIV) of \$30 million or more are identified as SSD and are considered to be of State significance. A CIV Statement has been prepared by quantity surveyors C2R (refer to **Appendix H**) confirms the CIV value of the project will be in order of \$184 730 000 ex GST.

The EIS has been prepared by APP Corporation on behalf of Health Infrastructure (the proponent) and is based on the schematic design adopted for the project, which is reflected in the architectural and servicing plans provided in support of the proposal. Other technical plans and reports are prepared to consider the predicted environmental impacts associated with the construction and subsequent operation of the Stage 2 SSD project. This includes cumulative impacts associated with the overall operation of the HKHC.

This Environmental Impact Statement (EIS) is submitted to the Department of Planning and Environment (the DPE) in support of a State Significant Development Application (SSD) to allow for the delivery of ‘Stage 2’ of the HKH Campus Master Plan.

This EIS describes the site, its environs, the proposed development and provides an assessment of the proposal against the terms of the Secretary’s Environmental Assessment Requirements (SEARs) dated 14 August 2017, and the relevant matters for consideration under the *Environmental Planning and Assessment Regulation 2000* (the Regulations) and *Environmental Planning and Assessment Act 1979* (the Act).

1.1 Report Structure

This report is structured as follows:

Section	Description
Section 1	Introduction, project team, background, development objectives and community consultation
Section 2	Site location, description, analysis of the site and its surrounds
Section 3	Project need, alternative sites considered, options
Section 4	Describes the proposed development
Section 5	Sets out the statutory planning and regulatory context relevant to the proposal and lists the relevant key development standards and controls Provides an assessment of the proposal against statutory and planning framework
Section 6	Provides an environmental assessment of the proposed development including measures to mitigate impacts.
Section 7	Conclusion

1.2 The Project

The HKH Stage 2 project is the second of a multi stage, ‘whole of campus’ redevelopment.

Stage 1 redevelopment works have been completed. Plans showing the extent of works and built form are attached at **Appendix D**.

Key elements of the project are summarised below:

1.2.1 Hornsby Ku-Ring-Gai Campus Master Plan

The HKH Campus has historically been developed in a piecemeal and ad-hoc basis over a number of decades. With the exception of the former residential dwellings along Burdett Street, there is no consistent development pattern within the HKH site. The buildings exhibit differing architectural styles, with a variable built form and scale. Moreover, connectivity and wayfinding is generally poor throughout the site.

In February 2010, the NSW Health Service prepared and adopted a campus wide Master Plan review which considered the site conditions and health services masterplan options for the HKH Campus. The report states:

It is acknowledged that, apart from the new emergency, maternity and paediatric building (HOPE) and the new mental health intensive care unit (MHICU), most of the facilities on the campus are old, fall short of current healthcare standards and produce poor functional relationships between services. Services are scattered across the campus with little integration (e.g. management, allied health, outpatient clinics, inpatients) with unprotected walkways in often poor conditions. There is no clear “front door” to the hospital and the site lacks a safe, weatherproof and effective patient and visitor pick up and drop off point.

This assessment demonstrates a clear need to establish a single, consolidated health services masterplan / concept design that will facilitate the co-ordinated, staged development of the HKH Campus. In February 2010, Design Inc. developed master planning options for the HKH Campus having regard to the hospital’s medical and service delivery requirements and urban design principles. Nettleton Tribe Architects, in conjunction with Health Infrastructure and the Northern Sydney Health District have developed the Stage 2 project generally in accordance with the health services zoning Master Planning Report.

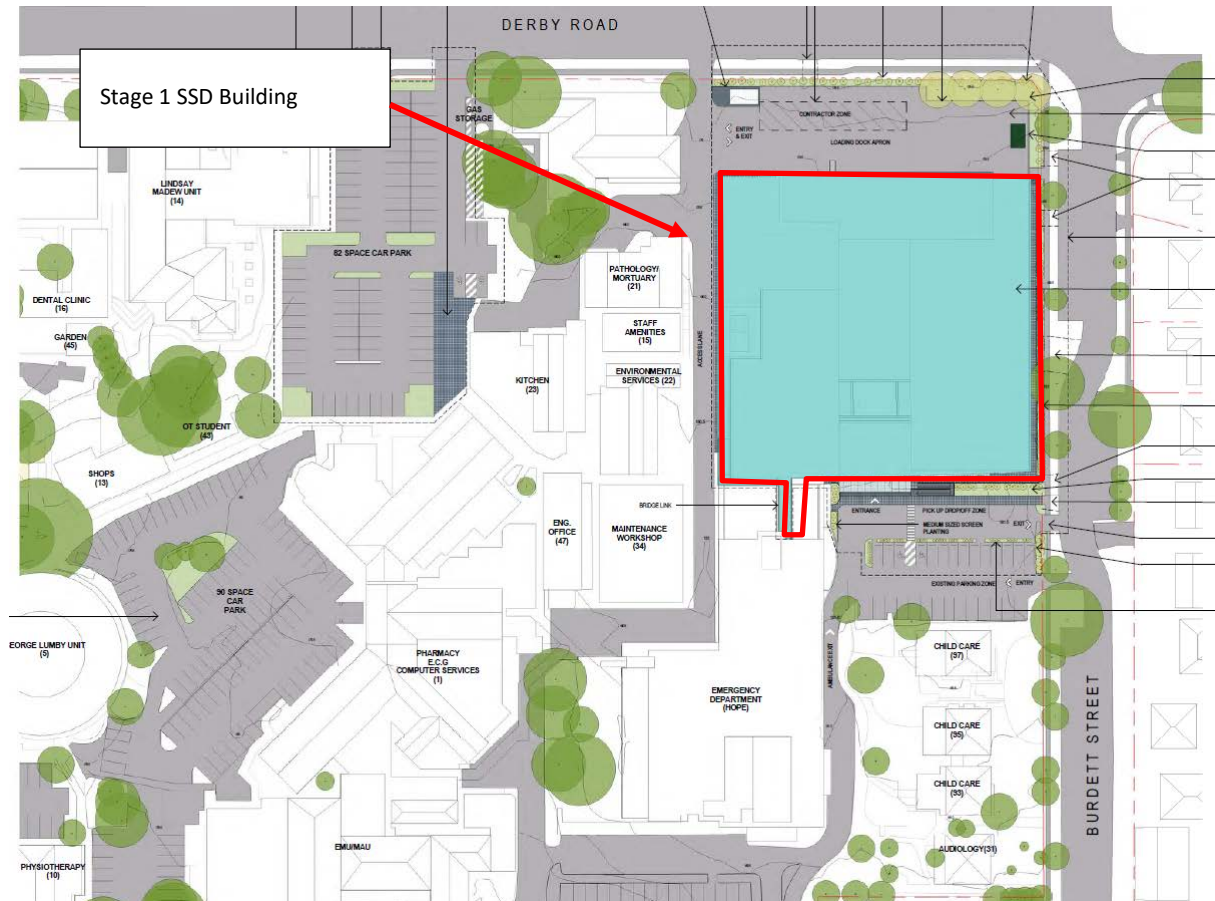
1.2.2 Stage 1 SSD Project

In 2013, the then Department of Planning and Infrastructure approved an initial stage (HKHR Stage 1) of an overall campus redevelopment. The HKHR Stage 1 project is complete, delivering the following services:

- Peri-operative Services including:
 - Pre-admission and clinical spaces;
 - 8 Theatres including endoscopy and fixed x-ray imaging capability;
 - Recovery spaces;
- Three x 28 bed inpatient units;
- Sterilising Services Department;
- Support services for linen, loading docks and stores
- Health Information Services (Medical Records)

As reflected in **Figure 1** the HKHR Stage 1 project was predominantly undertaken in the south eastern corner of the site.

Figure 1 – Stage 1 SSD Project Footprint



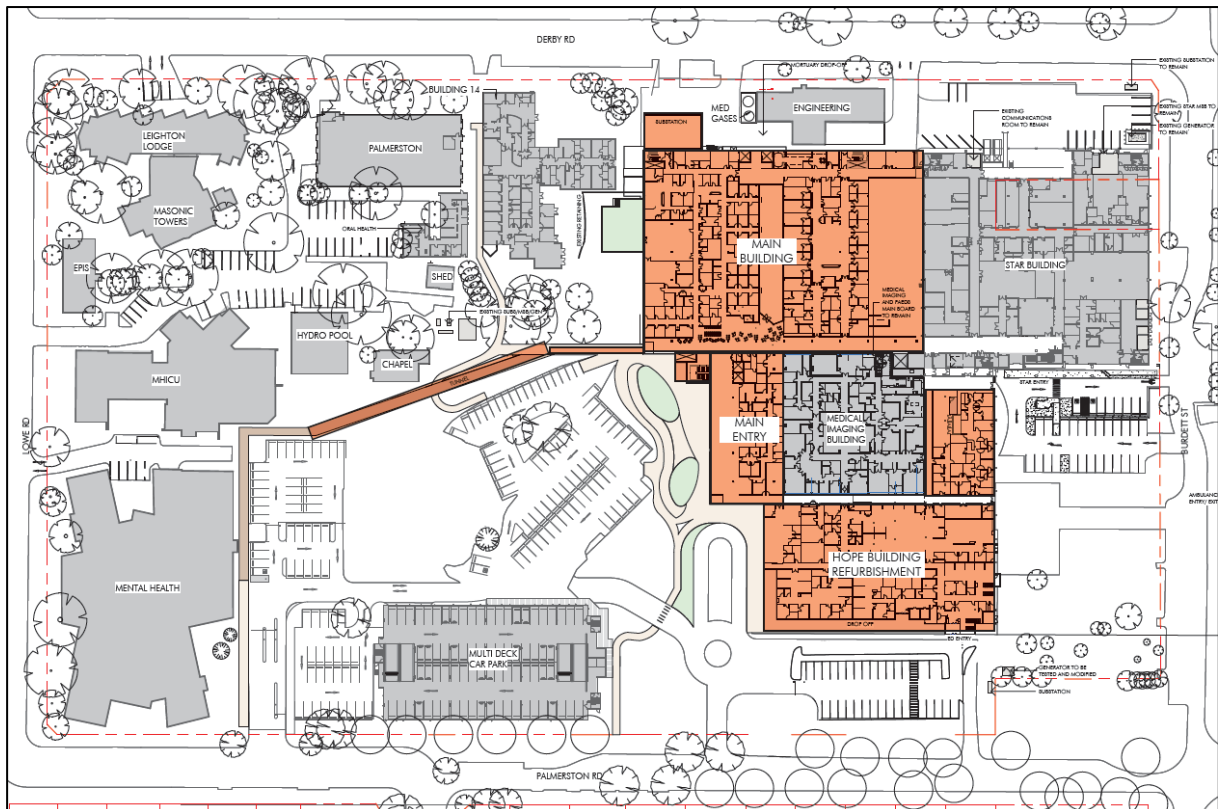
1.2.3 Stage 2 SSD Project

The HKHC Stage 2 SSD project is proposed to include:

- A new main hospital entry point;
- Four new 28 bed Inpatient Units;
- New Intensive Care Unit with 12 beds;
- Combined new and refurbished ambulatory care areas;
- Extended Emergency Department including Transit Lounge;
- Increased capacity of the existing Psychiatric Emergency Care Centre from 4 to 6 beds;
- A new pharmacy;
- Two new 28 bed rehabilitation wards and treatment consultation space;
- A new Mortuary;
- Teaching, education and research facilities;
- Administration space for clinical and corporate support;
- Demolition works;
- End of trip facilities;
- Car parking and drop off (on grade); and
- Soft landscaping.

As provided in **Figure 2**, the HKHC Stage 2 SSD project is proposed to be sited adjacent to the Stage 1 project to ensure improved functionality, efficiency and connectivity with the Stage 1 facilities.

Figure 2 – Stage 2 SSD Footprint



1.2.4 Works Approved under Part 5

The Stage 2 SSD project comprises the main works package for the Stage 2 HKH Campus Redevelopment. Works to be undertaken as ‘Development without Consent’ under Clause 58 of *State Environmental Planning Policy (Infrastructure) 2007* as part of a decant strategy and to deliver services and infrastructure upgrades deemed necessary to service the broader HKH Campus include:

- Alterations and Additions to the ROFE ward to provide temporary accommodation for physiotherapy services;
- Construction of a new Medical Imaging Building and Paediatrics Building;
- Alterations and Additions to Building 54 (Store Building) to allow for the use of this building for Engineering Services;
- The demolition of buildings 15, 21, 31, 34, 47, 93, 95 and 97;
- Extension of the sewer main in Derby Street;
- Installation of a communications ring main;
- Internal hydraulic, mechanical, sewer and fire services upgrades.

The early works packages have been identified as being essential to allow for the continuous provision of essential services offered across the broader HKH Campus.

The likely impacts of the early works have been assessed in the form of *Review of Environmental Factors* prepared in accordance with the provisions of Part 5 of the EP&A Act.

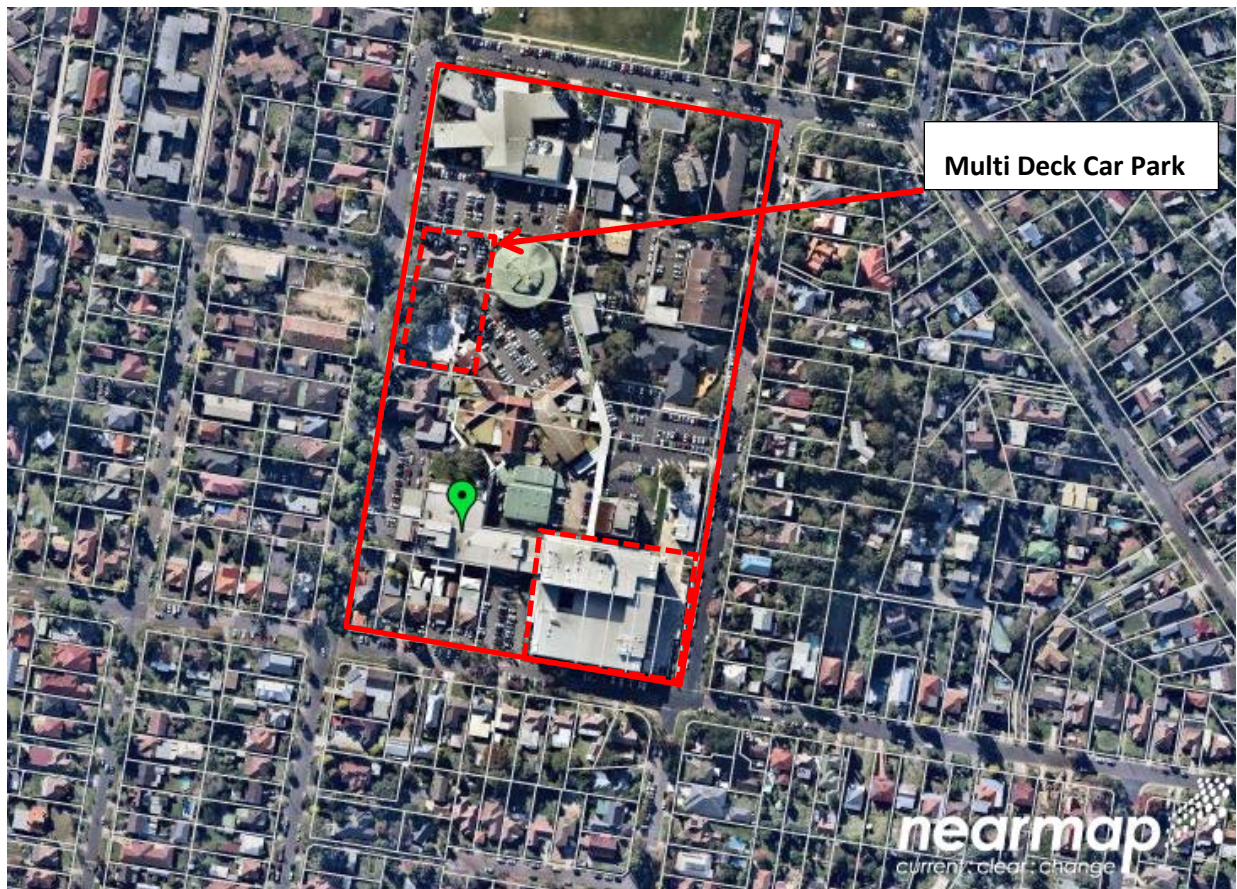
1.2.5 Multi Deck Car Park

In support of the broader campus redevelopment a development consent was granted under Part 4 of the EP&A Act by the Sydney North Planning Panel for a new multi deck car park. This approval allows for:

- Demolition of an existing one storey building fronting Palmerston Road currently housing the hospital fractures clinic;
- Construction of a 6 level car park containing 523 parking spaces and reconfiguring at-grade car parking on the campus in the area fronting Palmerston Road to provide a total of 731 parking spaces across the campus;
- Tree removal;
- Associated roadworks and landscaping;
- Services connections and relocations, including stormwater management works;
- Excavation;
- Lighting;
- Boom gates; and
- Signage

The location of the multi deck car park is illustrated in **Figure 3**. The multi deck car park will take 12 months to complete and is forecast to be complete by August 2018.

Figure 3 – Location of Multi – Deck Car Park



1.3 Alternatives Considered

Three options are available to Health Infrastructure NSW in responding to the identified need for the redevelopment of their facilities.

1.3.1 Option 1 - The Proposal

Option 1 involves undertaking the proposed redevelopment as outlined in this SSD DA (as described in Section 3.0). The proposal will facilitate the efficient construction of a high quality building on the site that responds to the strategic need identified above.

1.3.2 Option 2 - Do Nothing

Under the 'do nothing' scenario health services in the northern region of Sydney would be rendered inefficient and would not allow for the effective delivery of key services. Not undertaking the work would not be an appropriate outcome for a project of this nature, which will facilitate much-needed health infrastructure for the Northern Sydney region and further afield.

1.3.3 Option 3 – Alternative Designs

HI has explored a number of options for the location and layout of the new facility during the concept design phase.

A number of broad options were considered for the expansion of the campus. Out of the options tabled as part of the concept and schematic design assessment process, the proposed option was considered to be the most appropriate way of meeting the future needs of the community.

1.4 Response to Secretary's Environmental Assessment Requirements

In accordance with Section 89G of the EP&A Act, the Secretary of the Department of Planning and Environment issued requirements for the preparation of the EIS on 14 August 2017. A copy of the SEARs is accompanies the EIS at **Appendix A**.

The SEARs require that the EIS must include the documents listed in Schedule 1 of the *Environmental Planning and Assessment Regulation 2000* (the Regulation) and must meet the requirements of Schedule 2 of the Regulation, specifically the form specifications in Clause 6 and the content specifications in Clause 7. **Table 1** provides a summary of the individual matters listed in the SEARs and identifies where these requirements are addressed in this report and the accompanying technical studies.

Table 1 : Response to SEARs in EIS

SEARs	Requirement	EIS Reference	Technical Reference
General Requirements	The Environmental Impact Statement (EIS) must be prepared in accordance with, and meet the minimum requirements of clauses 6 and 7 of Schedule 2 the <i>Environmental Planning and Assessment Regulation 2000</i> (the Regulation).	Refer to EIS Certification (Page 2)	
	Where relevant, the assessment of the key issues below, and any other significant issues identified in the risk assessment, must include:		
	adequate baseline data;	Section 6	Appendix L – TAA Appendix Q – NIA Appendix S – Phase 1 Environmental Assessment
	consideration of potential cumulative impacts due to other development in the vicinity (completed, underway or proposed); and	Section 6	Appendix L – TAA Appendix Q - NIA
	measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risks to the environment.	Section 6.12 – Summary of Mitigation Measures	
	The EIS must be accompanied by a report from a qualified quantity surveyor providing:	Section 3.1 – Overview	Appendix H – QS Report
	a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Environmental Planning and Assessment Regulation 2000) of the proposal, including details of all assumptions and components from which the CIV calculation is derived;		
	an estimate of the jobs that will be created by the future development during the construction and operational phases of the development; and		
	certification that the information provided is accurate at the date of preparation.		

SEARs	Requirement	EIS Reference	Technical Reference
Key Issues	The EIS must address the following specific matters:		
	1. Statutory and Strategic Context – including:		
	Address the statutory provisions contained in all relevant environmental planning instruments, including:		
	<i>State Environmental Planning Policy (State & Regional Development) 2011;</i>	Section 5.3.7	
	<i>State Environmental Planning Policy (Infrastructure) 2007;</i>	Section 5.3.6	
	<i>State Environmental Planning Policy No.55 – Remediation of Land;</i>	Section 5.3.8	
	<i>State Environmental Planning Policy No. 64 – Advertising and Signage; and</i>	Section 5.3.9	
	<i>Hornsby Local Environmental Plan 2013.</i>	Section 5.3.11	
	<i>Permissibility</i>	Section 5.3.12	
	Detail the nature and extent of any prohibitions that apply to the development.		
	<i>Development Standards</i>	Section 5.3.13	
	Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards.		
	2. Policies		
	Address the relevant planning provisions, goals and strategic planning objectives in the following:		
	NSW State Priorities;	Section 5.3.1	
	A Plan for Growing Sydney;	Section 5.3.2	
	NSW Long Term Transport Master Plan 2012; Sydney's Cycling Future 2013		Appendix L -TAA
	Sydney's Walking Future 2013; Sydney's Bus Future 2013;		Appendix L - TAA
	Crime Prevention Through Environmental Design (CPTED) Principles; Healthy Urban Development Checklist, NSW Health;	Section 6.1.2	

SEARs	Requirement	EIS Reference	Technical Reference
	Greater Sydney Commission's Draft North District Plan;	Section 5.3.3	
	Hornsby Development Control Plan 2013.	Section 5.2	
	3. Built Form and Urban Design Address the height, density, bulk and scale, setbacks of the proposal in relation to the surrounding development, topography, streetscape and any public open spaces. Address design quality, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, materials, colours and Crime Prevention Through Environmental Design Principles. Detail how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.	Section 6.1	Appendix D – Architectural Plans
	4. Environmental Amenity Detail amenity impacts including solar access, acoustic impacts, visual privacy, view loss, overshadowing and wind impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated.	Section 6.1	Appendix D – Architectural Plans

SEARs	Requirement	EIS Reference	Technical Reference
	5. Transport and Accessibility	Section 6.2	Appendix L – TAA
	Include a transport and accessibility impact assessment, which details, but not limited to the following: accurate details of the current daily and peak hour vehicle, public transport, pedestrian and cycle movement and existing traffic and transport facilities provided on the road network located adjacent to the proposed development; an assessment of the operation of existing and future transport networks including the bus network and their ability to accommodate the forecast number of trips to and from the development; details of estimated total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and bicycle trips; the adequacy of public transport, pedestrian and bicycle networks and infrastructure to meet the likely future demand of the proposed development; the impact of the proposed development on existing and future transport infrastructure within the vicinity of the site. Including road network, bus services and pedestrian and bicycle networks, and identify measures to integrate the development with the transport network details of any upgrading or road improvement works required to accommodate the proposed development; details of travel demand management measures to minimise the impact on general traffic and bus operations and to encourage sustainable travel choices and details programs for implementation; the impact of trips generated by the development on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for upgrading or road improvement works, if required; the proposed active transport access arrangements and connections to public transport services; the proposed access arrangements, including car and bus pick-up/drop-off facilities, and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks, including pedestrian crossings and refuges and speed control devices and zones;	Section 6.11	Appendix M – PCTMP Appendix N – Green Travel Plan

SEARs	Requirement	EIS Reference	Technical Reference
	measures to maintain road and personal safety in line with CPTED principles; the proposed car and bicycle parking provision, including end-of-trip facilities, which must be taken into consideration of the availability of public transport and the requirements of Council's relevant parking codes and Australian Standards; proposed bicycle parking facilities in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance; details of the proposed number of car parking spaces and compliance with appropriate parking codes and justify the level of car parking provided on-site; details of emergency vehicle access arrangements; an assessment of road and pedestrian safety adjacent to the proposed development and the details of required road safety measures; service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times); in relation to construction traffic: ▪ assessment of cumulative impacts associated with other construction activities (if any); ▪ an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity, particularly the nearby medical and childcare facilities and ▪ school zone in the vicinity of Edgeworth David Avenue/Myra Street; ▪ details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process; ▪ details of anticipated peak hour and daily construction vehicle movements to and from the site; ▪ details of access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle; ▪ details of temporary cycling and pedestrian access during construction;		

SEARs	Requirement	EIS Reference	Technical Reference
	▪ details of proposed construction vehicle access and parking arrangements at all stages of construction; and ▪ traffic and transport impacts during construction, including cumulative impacts associated with other construction activities, and how these impacts will be mitigated for any associated traffic, pedestrian, cyclists, parking and public transport, including the preparation of a draft Construction Traffic Management Plan to demonstrate the proposed management of the impact (which must include vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures for all demolition/construction activities). Relevant Policies and Guidelines: • <i>Guide to Traffic Generating Developments (Roads and Maritime Services)</i> • <i>EIS Guidelines – Road and Related Facilities (DoPI) Cycling Aspects of Austroads Guides</i> • <i>NSW Planning Guidelines for Walking and Cycling</i> • <i>Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development</i> • <i>Standards Australia AS2890.3 (Bicycle Parking Facilities)</i>		
	6. Ecologically Sustainable Development (ESD) Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000) will be incorporated in the design and ongoing operation phases of the development. Demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry best practice. Include a description of the measures that would be implemented to minimise consumption of resources, water (including water sensitive urban design) and energy.	Section 6.3	
	7. Heritage Include a Heritage Impact Statement that addresses the significance of, and provides an assessment of the impact on the heritage significance of any heritage items on the site and in the vicinity, and/or conservation areas and/or potentially	Section 6.4	Appendix P

SEARs	Requirement	EIS Reference	Technical Reference
	archaeologically significant areas, in accordance with the guidelines in the NSW Heritage Manual.		
	8. Noise and Vibration Identify and provide a quantitative assessment of the main noise and vibration generating sources during construction and operation and outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. Relevant Policies and Guidelines: <i>NSW Industrial Noise Policy (EPA)</i> <i>Interim Construction Noise Guideline (DECC) Assessing Vibration: A Technical Guideline 2006</i> <i>Development Near Rail Corridors and Busy Roads – Interim Guideline</i> <i>(Department of Planning 2008)</i>	Section 6.5	Appendix Q – NVA
	9. Sediment, Erosion and Dust Controls Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. Relevant Policies and Guidelines: • <i>Managing Urban Stormwater – Soils & Construction Volume 1 2004 (Landcom)</i> • <i>Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)</i> • <i>Guidelines for development adjoining land and water managed by DECCW (OEH, 2013)</i>	Section 6.8	Appendix E – Civil Plans
	10. Contamination Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55 Relevant Policies and Guidelines: <i>Managing Land Contamination: Planning Guidelines - SEPP 55</i> <i>Remediation of Land (DUAP)</i>	Section 6.6	Appendix S – Phase 1 Investigations

SEARs	Requirement	EIS Reference	Technical Reference
	11. Utilities Prepare an Infrastructure Management Plan in consultation with relevant agencies, detailing information on the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure. Prepare an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non- potable water, and water sensitive urban design.	Section 2.3 Section 3.11	Appendix F – Servicing Plans Appendix J Integrated Servicing Strategy
	12. Contributions Address Council’s Section 94A Contribution Plan and/or details of any Voluntary Planning Agreement, which may be required to be amended because of the proposed development.	Section 5.3.14	
	13. Drainage Detail drainage associated with the proposal, including stormwater and drainage infrastructure. <i>Relevant Policies and Guidelines:</i> Guidelines for development adjoining land and water managed by DECCW (OEH, 2013)	Section 6.8	Appendix E – Civil Plans Appendix I – Integrated Water Management Plan
	14. Flooding Assess any flood risk on site (detailing the most recent flood studies for the project area) and consideration of any relevant provisions of the NSW Floodplain Development Manual (2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity.	Section 6.8	Appendix T – Section 149 Certificate Appendix I – Integrated Water Management Plan
	15. Waste Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.	Section 6.10	Appendix O - PCMP

SEARs	Requirement	EIS Reference	Technical Reference
	16. Construction Hours Identify proposed construction hours and provide details of the instances where it is expected that works will be required to be carried out outside the standard construction hours.	Section 6.5.1	Appendix Q - NIA
Plans and Documents	The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Environmental Planning and Assessment Regulation 2000. Provide these as part of the EIS rather than as separate documents.		
	Architectural drawings (dimensioned and including RLs);		Appendix D – Architectural Plans
	Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and boundaries;		Appendix C – Site Survey Plan
	Site Analysis Plan;		Appendix D
	Stormwater Concept Plan;		Appendix E
	Sediment and Erosion Control Plan;		Appendix E
	Shadow Diagrams		Appendix D
	View Analysis / Photomontages;		Appendix D
	Landscape Plan (identifying any trees to be removed and trees to be retained or transplanted);		Appendix G
	Preliminary Construction Management Plan, inclusive of a Preliminary Construction Traffic Management Plan detailing vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures;		Appendix M
	Geotechnical and Structural Report;		Appendix S
	Accessibility Report;		Appendix R – BCA Assessment
	Arborist Report;		Appendix K – Arborist Report
	Salinity Investigation Report (if required);		N/A

SEARs	Requirement	EIS Reference	Technical Reference
	Acid Sulphate Soils Management Plan (if required); and		Appendix S
	Schedule of materials and finishes.		Appendix D
Consultation	During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular, you must consult with: • Hornsby Shire Council; • Transport for NSW; and • Roads and Maritime Services. Consultation with TfNSW and RMS should commence as soon as practicable to agree the scope of investigation. The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	Section 4	Appendix J – Integrated Servicing Strategy Appendix L – TAA Appendix U – State Agency Consultation

2. Site Analysis

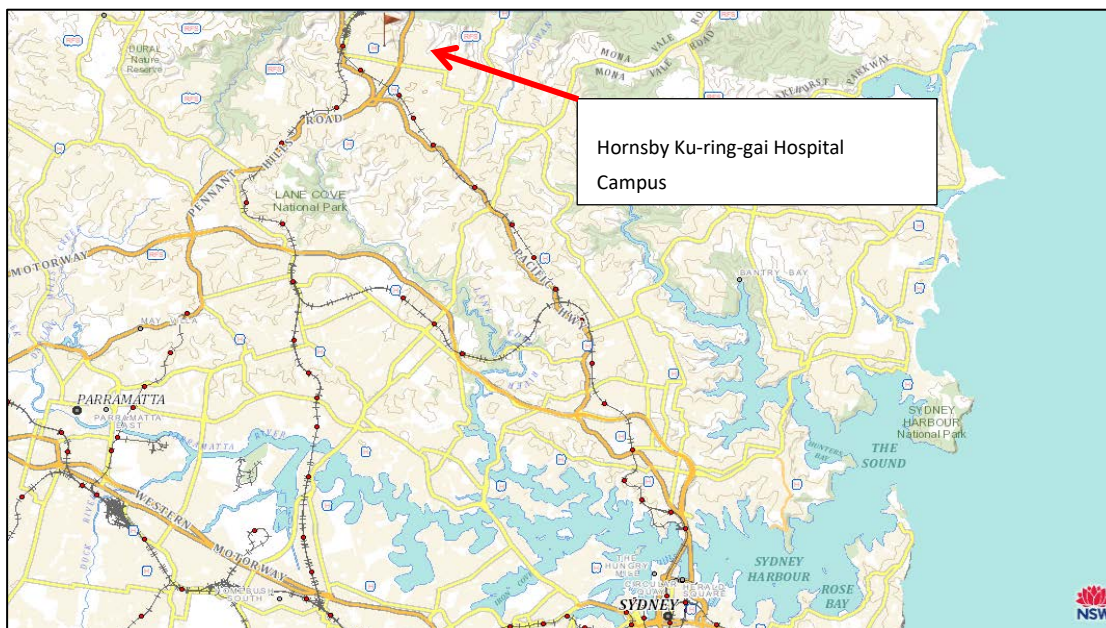
2.1 Site Location and Context

The HKH Campus is located within Hornsby Local Government Area, situated in the north-west of metropolitan Sydney, approximately 25 kilometres north of the Sydney CBD and 19 kilometres northeast of the Parramatta CBD. **Figure 4** illustrates the location of the HKH Campus in the context of region.

As provided in **Figure 5** the HKH Campus is located approximately 1km to the east of the Hornsby Town Centre, 1.5km east of Hornsby railway station, 1.8km north-east of Waitara station and 2km south-east of Asquith railway station. These stations are located on City Rail's North Shore line, whilst Hornsby railway station also acts as an interchange with other rail lines Northern Rail Line and Central Coast / Newcastle Line and the local bus network.

Hornsby Town Centre is identified as a 'Strategic Centre' in the recently released *Plan for Growing Sydney* and contains a diverse mix of residential, business and industrial development and open spaces.

Figure 4: Locality Map



As documented in *A Plan for Growing Sydney*, The NSW Government is planning for population growth of over 1.6 million per annum across the Sydney Metropolitan Region for the period 2016 to

2036. The impact of this growth on local health care services and hospitals such as HKH is compounded by the growth in the older population and associated increase in patient acuity and complexity.

The needs of a changing and growing population will have a significant impact on the future demand for primary health/ health education services, chronic disease management, acute/ sub-acute care and aged care services.

The proposed works will be carried on the campus of the Hornsby Ku-ring-gai Hospital, located on Palmerston Road, Hornsby, New South Wales. The hospital campus is located within the suburb of Hornsby. Palmerston Road connects directly with Edgeworth David Road, which connects to the Pacific Highway at Hornsby Town Centre and Railway Station some 1,500m to the west. Approximately 500m to the east is the alignment of the M1 Pacific Motorway. **Figure 6** shows the HKH Campus in the context of the immediate surrounds.

The broader Hospital Precinct is a long established campus. The campus is located within a built-up residential area which also has commercial uses fronting the subject site. It is serviced by local residential roadways. Rather than there being a single identified main entry, there are several entry points from all road frontages.

The HKH Campus provides a comprehensive range of services to the local catchment. It has been identified that the HKH Campus is in need of redevelopment due to the combined impacts of aged infrastructure which in many instances has:

- reached the end of its useful economic life;
- is no longer compliant with current guidelines or community expectations; or
- no longer supports the delivery of contemporary, efficient health services.

The historic development of the HKH Campus has been piecemeal, with small and medium scale alterations and additions over a period of 70 years. The HKH Campus functions as a teaching hospital, playing an important role in training future clinicians. Consequently, the facilities need to be capable of supporting the delivery of high quality contemporary care in order to attract senior staff and those who are training in order to maintain its vital role as a teaching facility, whilst also meeting the needs of the community.

The HKHR Stage 2 SSD project is proposed to be sited adjacent to the Stage 1 project to ensure improved functionality, efficiency and connectivity with the Stage 1 facilities. The Stage 2 SSD project will connect with the replacement medical imaging building to be approved under a separate REF.

Figure 5 shows the location of the campus in the context of its surrounds, including key infrastructure such as the Hornsby Rail Station and M1 motorway, while **Figure 6** shows the site in the context of its immediate surrounds, including subdivision pattern and road hierarchy.

Figure 5: Aerial locality view of Hornsby Ku-Ring-Gai Hospital Campus and Surrounds



Figure 6: Aerial View of the Site



2.2 Land Ownership

The HKH site is owned by the Northern Sydney Local Health District. The site is regular in shape and covers an area of approximately 6.4 hectares. The Hospital Site is comprised of 18 individual lots, and is legally described as follows:

- Lot 2 DP 14774
- Lot 3 DP 14774
- Lot B DP 363790
- Lot 23 DP 814181
- Lot 2 DP 512434
- Lot 2 DP 217174
- Lot 12 DP 14774
- Lot 13 DP 14774
- Lot 1 DP 512432
- Lot 1 DP 232290
- Lot 189 DP 752053
- Lot 1 DP 134994
- Lot 188 DP 752053
- Lot A DP 329121
- Lot B DP 329121
- Lot 1 DP 580023
- Lot 2 DP 580023
- Lot 3 DP 580023

The Stage 2 SSD project will affect much of the central part of the campus.

Figure 8 – Wayfinding Plan



2.4 Road Network, Access and Parking

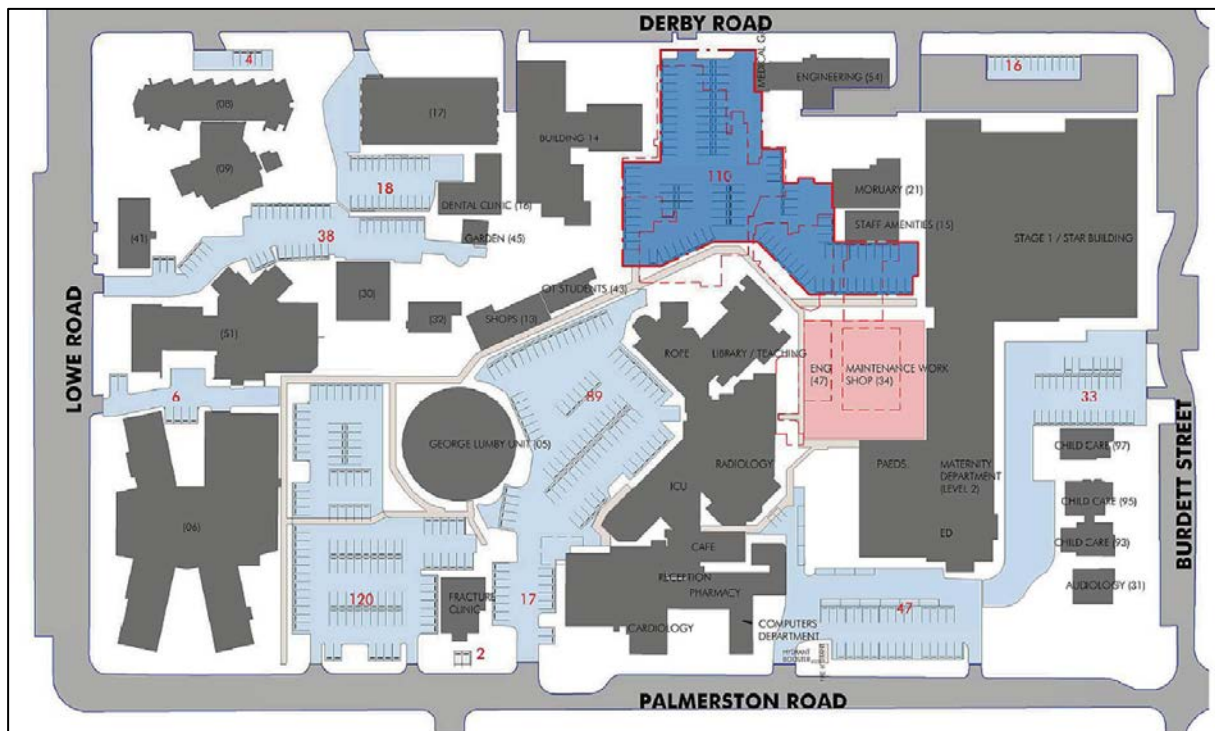
Palmerston Road and Burdett Street are the major approach routes to the HKH site. Burdett Street provides the main approach route from the Hornsby Town Centre to the west, and both Palmerston Road and Burdett Street provide indirect access to the Pacific Highway to the south and west. Visitors to the HKH are directed by wayfinding signage on Edgeworth David Avenue and the Pacific Highway.

There are a number of vehicular and pedestrian access points to the HKH Campus as well as a number of small on-site and surrounding car parks. The Transport and Accessibility Assessment prepared by TTW at **Appendix E** illustrates the location of car parking in further detail. In total, there are 506 car parking spaces across the HKH Campus, with a further 472 spaces located around the HKH's immediate perimeter. An inventory of spaces is provided in the TTW Transport and Accessibility Assessment (**Appendix L**) while **Figure 9** details the location of existing parking spaces and documents the spaces available in each carpark. The TTW inventory shows that on site car parking comprises:

- 423 standard line marked spaces;
- 19 accessible spaces;
- 44 informal spaces;
- 9 special use spaces for fleet, engineering, police and environmental service vehicles; and
- 12 special use 'informal' spaces.

It should be noted that the inventory does not include the approved 523 space multi storey car park.

Figure 9 – Existing Off Street Parking



The below summarises the location and primary function of the key points of entry to the HKH Campus.

2.4.1 Burdett Street

Various specialist medical facilities and child care centres along Burdett Street provide direct pedestrian access to the HKH. Vehicular access is provided from Burdett Street to two (2) car parks as well as some car parking spaces within the front setbacks of some of the specialist medical facilities.

2.4.2 Palmerston Road

There are a number of pedestrian and vehicular access points along Palmerston Road. This includes an emergency ambulance vehicle access point located at the south-western corner of the HKH site that provides direct access to the HOPE Building. There are also pedestrian and vehicular access points from the following locations:

- Gate 1, leading to a car park adjacent to the HOPE Building;
- Gate 2, leading to a car park (via a boom gate) to the north of Building 10; and

- Gate 3, leading to car parks adjacent to Building 6 and the north of Building 10.

2.4.3 Lowe Road

There are a number of pedestrian and vehicular access points located along Lowe Road, and providing access to on-site car parking in the northern portion of the site. Pedestrian and vehicular access is provided from the following locations:

- Gate 4, leading to a car park between Buildings 6 and 51;
- Gate 4a, leading to parking spaces near Buildings 51 and 30; and
- Gate 5, leading to a single parking space adjacent to Building 9.

2.4.4 Derby Road

Pedestrian and vehicular access from Derby Road is provided from the following locations:

- Gate 6, leading to Buildings 16 and 17,
- Gate 6a, leading to Building 14,
- Gate 7, leading to Building 4; and
- Gate 8, leading to a car park to the north of Building 12 and 19.

Off street parking spaces are also provided to the east of Building 8.

2.5 Public Transport

Hornsby is well served by public transport, including railway links to the Sydney CBD and further north to the Central Coast, Newcastle and Lower Hunter regions. The HKH site is located, 1.5km east of Hornsby railway station, 1.8km north-east of Waitara railway station and 2km south-east of Asquith railway station. These stations are located on City Rail's North Shore line. The site is also served by public bus services travelling between Hornsby Station, Gordon, and Macquarie University.

Figure 10 shows the HKH Campus and its proximity to the rail network, bus routes, bus stops and walking routes connecting the site with public transport infrastructure.

Figure 10 – Public Transport Infrastructure



2.6 Environmental Characteristics

The key environmental characteristics of the HKH campus are as follows.

2.6.1 Topography

Most of the HKH site is relatively flat, however it begins to slope steeply from the midway points of Derby and Lowe Roads (approximately RL 178 and RL176 respectively) to the north-eastern corner of the site (approximately RL 167). A survey plan is provided at **Appendix C** which illustrates the slope and direction of fall across the campus.

2.6.2 Heritage

Collingridge House (Building 32) is a heritage item listed under the Hornsby Local Environmental Plan 2013. In addition, Palmerston Road is aligned by significant street trees which are collectively listed as a heritage item under the same instrument. The land affected by the local heritage listing is detailed in **Section 5.3.7.1** of this EIS.

The EJE Heritage Impact Assessment (**Appendix P**) also identifies other buildings and improvements within the HKH Campus as having heritage values, some of which have low to marginal heritage significance which will require removal to facilitate the Stage 2 SSD project.

As documented in the Heritage Impact Assessment there are no items of State heritage significance within or in the vicinity of the HKH Campus.

2.6.3 Stormwater

The 'Bull Ring' car park found to the north of the Rofe Ward, has a small on-site stormwater detention (OSD) tank located on the east side of the Lumby Building. Located within the front carpark of the HOPE building is a 20m³ detention/reuse tank. TTW advise (**Appendix I**) that the water is used for irrigation of landscaped areas situated on the north side of the HOPE building.

The 110 space carpark located off Derby Road and adjacent to building 54, 21, and 15 has stormwater pits and pipes which connect to the OSD tank in the STAR loading dock. Part of this carpark drains to Derby Road without detention. It should be noted that this car park will be removed to make way for the Stage 2 SSD building works.

2.6.4 Contamination, Soil and Geotechnical Conditions

The site is underlain by Ashfield Shale overlaying Hawkesbury Sandstone within the Wianamatta Group. Ashfield Shale generally comprises black to dark-grey shale and laminate. Hawkesbury

Sandstone generally comprises medium to coarse-grained quartz sandstone, with minor shale and laminate lenses.

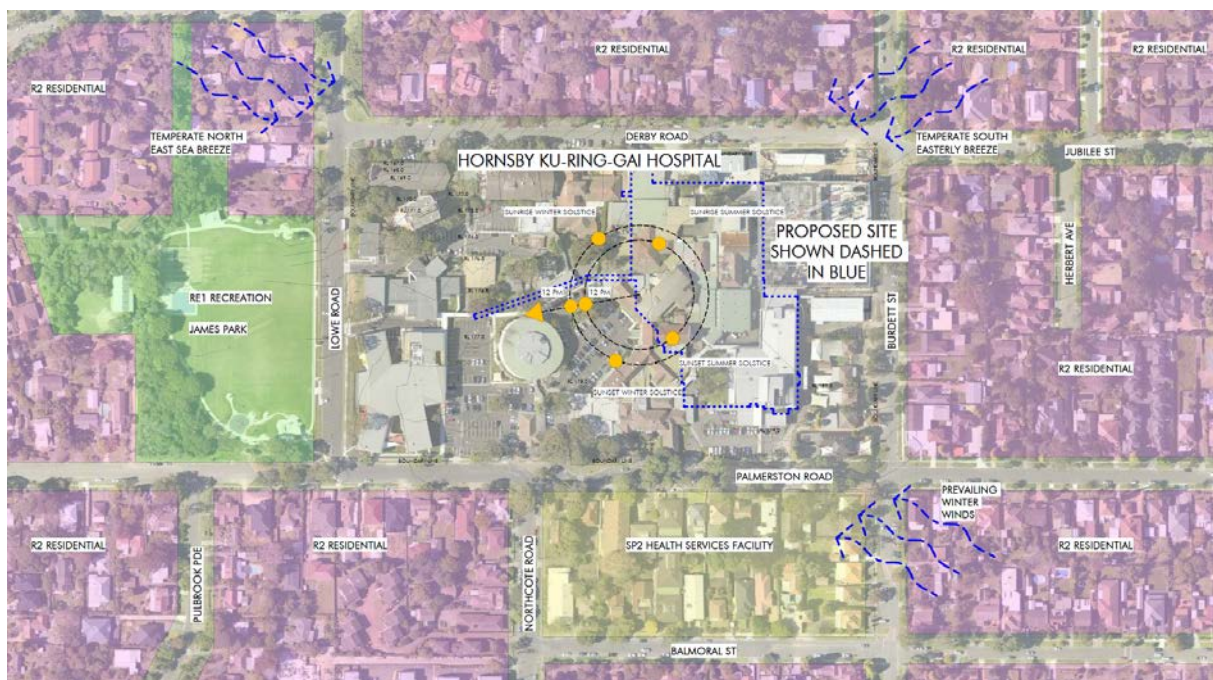
The Douglas Partners Preliminary Contamination Assessment provided at **Appendix S**, identifies the presence of contaminated material within the site and identifies potential contamination sources based on previous site investigations. The investigations find that known contamination within the site is not expected to impact on the future use of the Campus. Section 5 of this EIS considers the findings of these investigations in the context of the legislation and policy framework governing the management of contaminated land in NSW.

2.7 Surrounding Land Uses and Environmental Characteristics

2.7.1 Surrounding Land Uses

The HKH site is predominantly surrounded by low-density residential development, child care facilities, and specialist medical facilities, many of which are former residential dwellings. **Figure 11** provides an overview of the land uses found within the curtilage of the Stage 2 development footprint.

Figure 11 – Analysis of Site and Immediate Surrounds



To the north of the HKH site on Lowe Road is James Park (Figure 9). To the east and south along Derby Road and Burdett Street respectively, are low-density single and two-storey residential dwellings on the south side of Burdett Street are low density dwelling houses (Figures 12, 13 and 15). There is a two-storey child care centre on the corner of Burdett Street and Palmerston Road (Figure 12) that does not form part of the HKH Campus.

To the west of the HKH Campus on Palmerston Road are a number of single and two storey specialist medical consulting facilities which are accommodated in former residential dwellings. There are also a number of dwelling-houses on the northern end of Palmerston Road (Figure 14). Palmerston Road is aligned by significant street trees which are collectively listed as a heritage item under the Hornsby Local Environmental Plan 2013 (Figure 33). None of these buildings appear to obtain direct views over the HKH site.

On-street parking in the vicinity of the HKH site is limited. According to the Traffic and Parking Report prepared by TTW (Appendix L), 300 on street parking spaces are available on the four bordering streets that form the perimeter of the HKH site.

Figure 12 – James Park



Figure 13 – Burdett Street (Southern Side)



Figure 14 Burdett Street (Southern Side)



Figure 15 Child Care Centre – Corner of Burdett Street and Palmerston Road

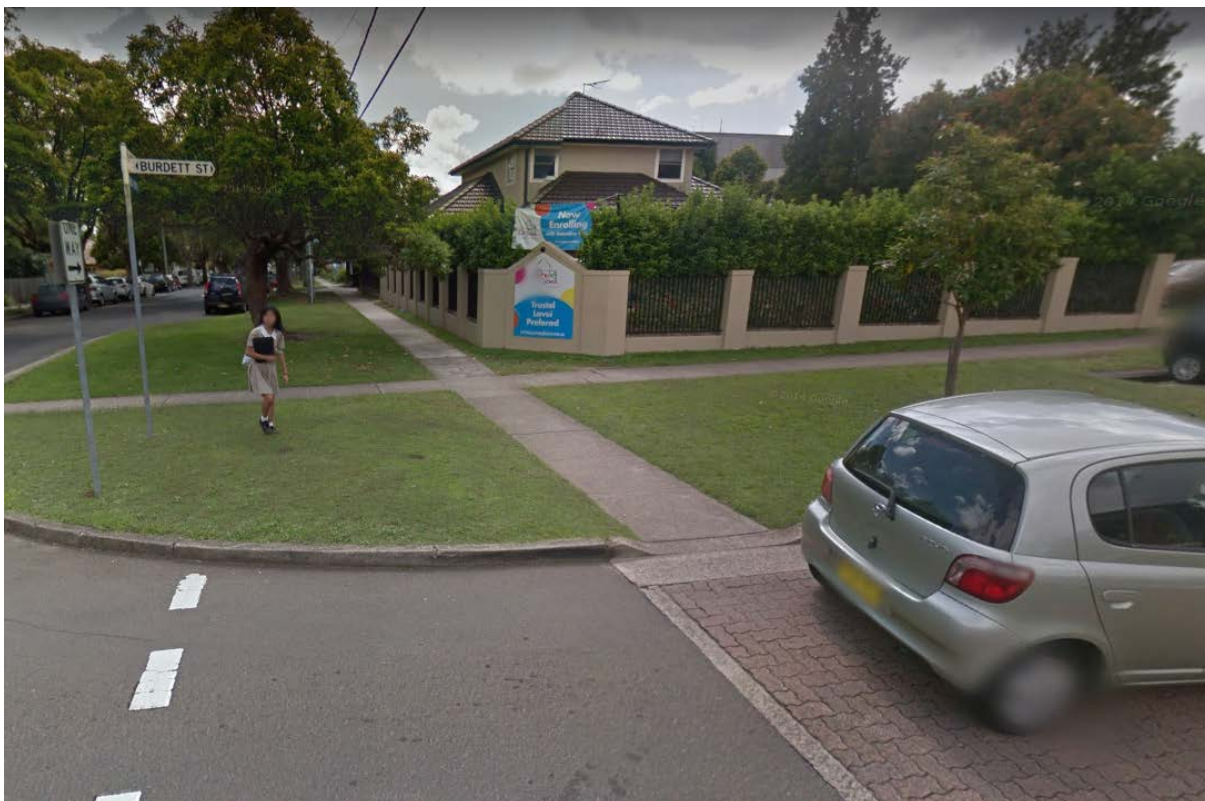
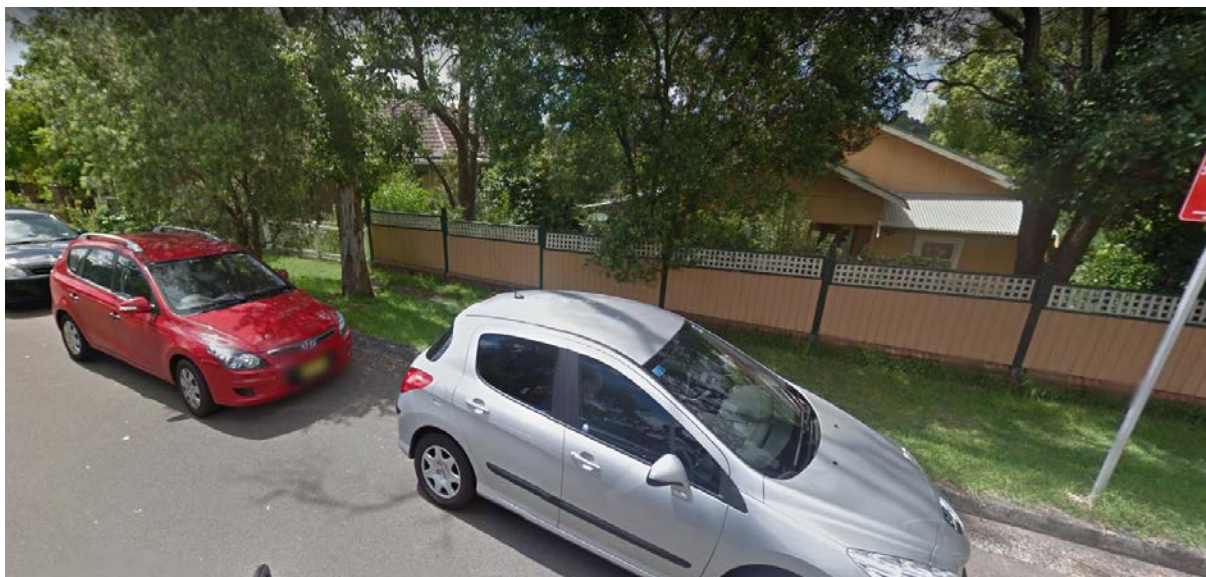


Figure 16 – Dwelling Houses at Northern End of Palmerston Road



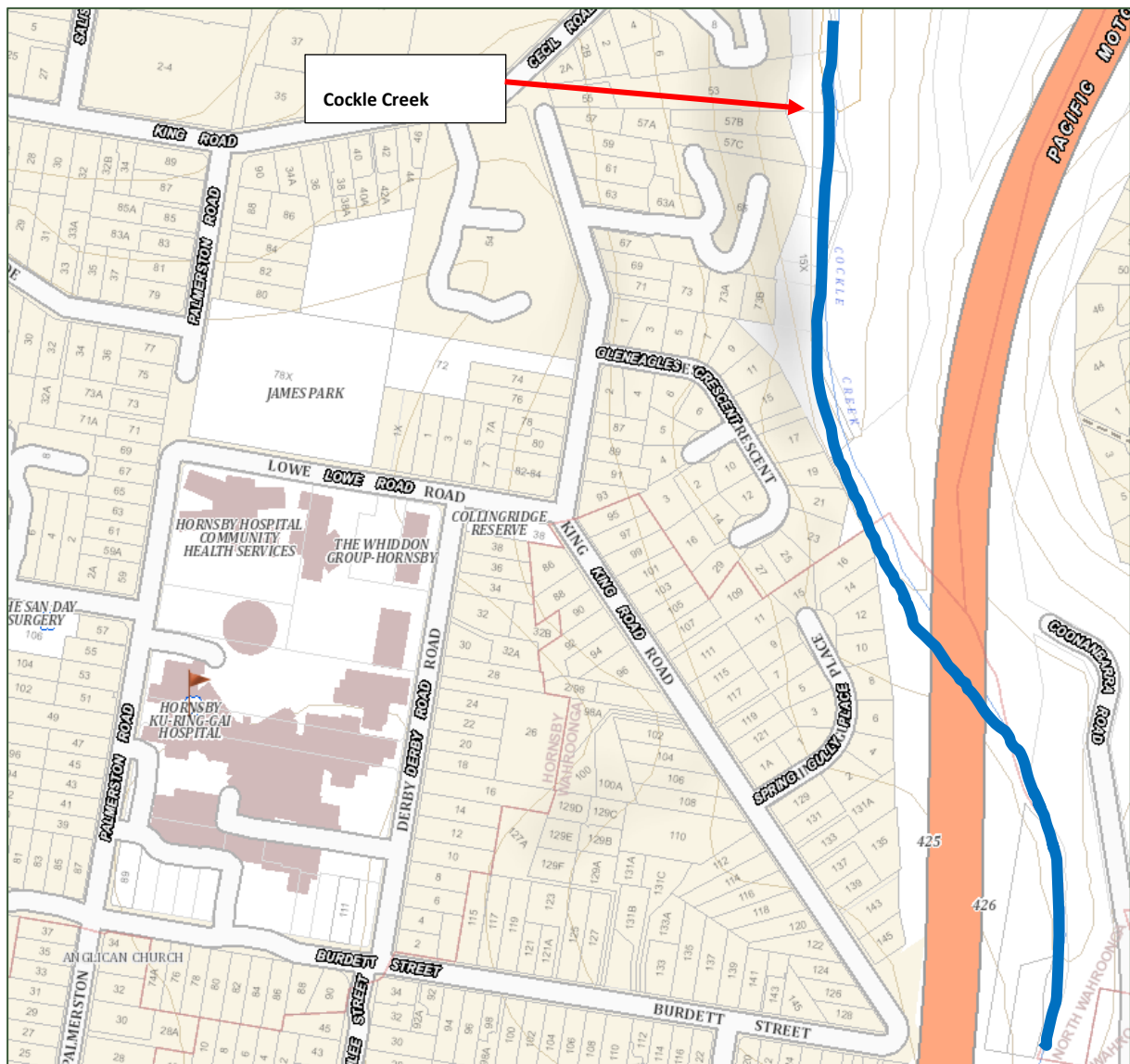
Figure 17 Detached Dwelling Houses on Derby Road



2.7.2 Environmental Characteristics

As the site is situated in and surrounded by a primarily urban environment, there are no environmental features such as water courses, wetlands, or defined habitat corridors in the immediate vicinity of the site. The nearest water course to the site is Cockle Creek, found approximately 0.5 kilometres to the east, adjacent to the Pacific Motorway. Douglas Partners (**Appendix S**) state that the site falls in gradient towards Cockle Creek. Douglas Partners also anticipate that any groundwater underlying the site will flow in a north easterly direction towards Cockle Creek. **Figure 18** illustrates the location of Cockle Creek relative to the HKH Campus.

Figure 18 Proximity to Receiving Waterway



The Douglas Partners investigations (**Appendix S**) reviews the NSW Acid Sulphate Soils Map and states that the site does not appear to be in an area of potential acid sulphate soils.

A review of the Section 149 Certificate indicates that the site is not bushfire prone. The Section 149 Certificate accompanies the EIS at **Appendix T**.

3. Proposed Development

3.1 Overview

This chapter of the report provides a detailed description of the proposed development. Architectural Plans and Design Statement of the new building are provided at Appendix D.

The development of the preferred option for the Stage 2 SSD project is based on the requirements of the Clinical Services Plan, the clinical services priority list and the functional relationship diagrams in conjunction with the preliminary functional design brief. On completion, the SSD project will result in the employment of an additional 169 staff (FTE) (source *HKH Workforce Plan February 2017*)

Figure 19 illustrates the location of the key elements of the Stage 2 SSD project, whilst **Figure 20** shows the development footprint for the Stage 2 Building works (shaded in orange) in the context of the broader campus.

Figure 19 – SSD Project – Key Elements

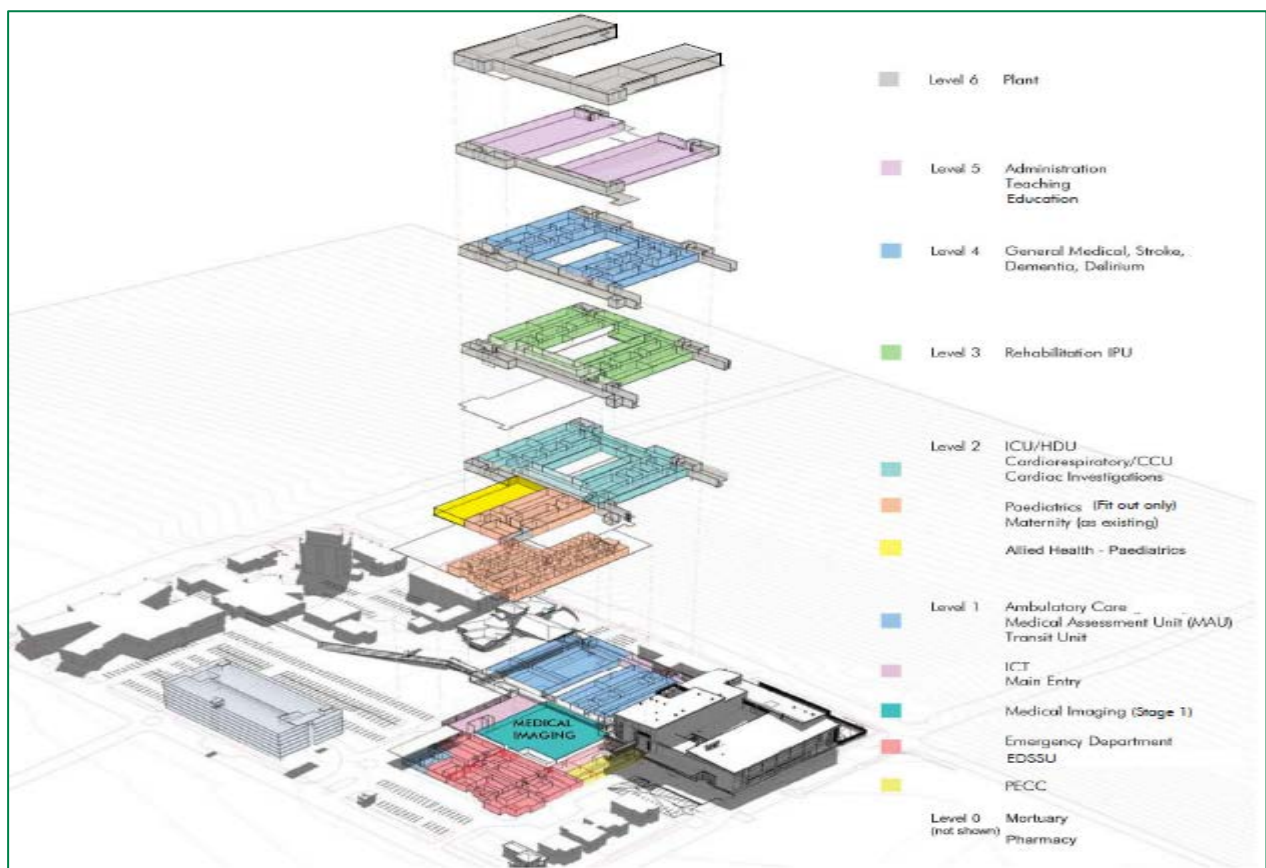
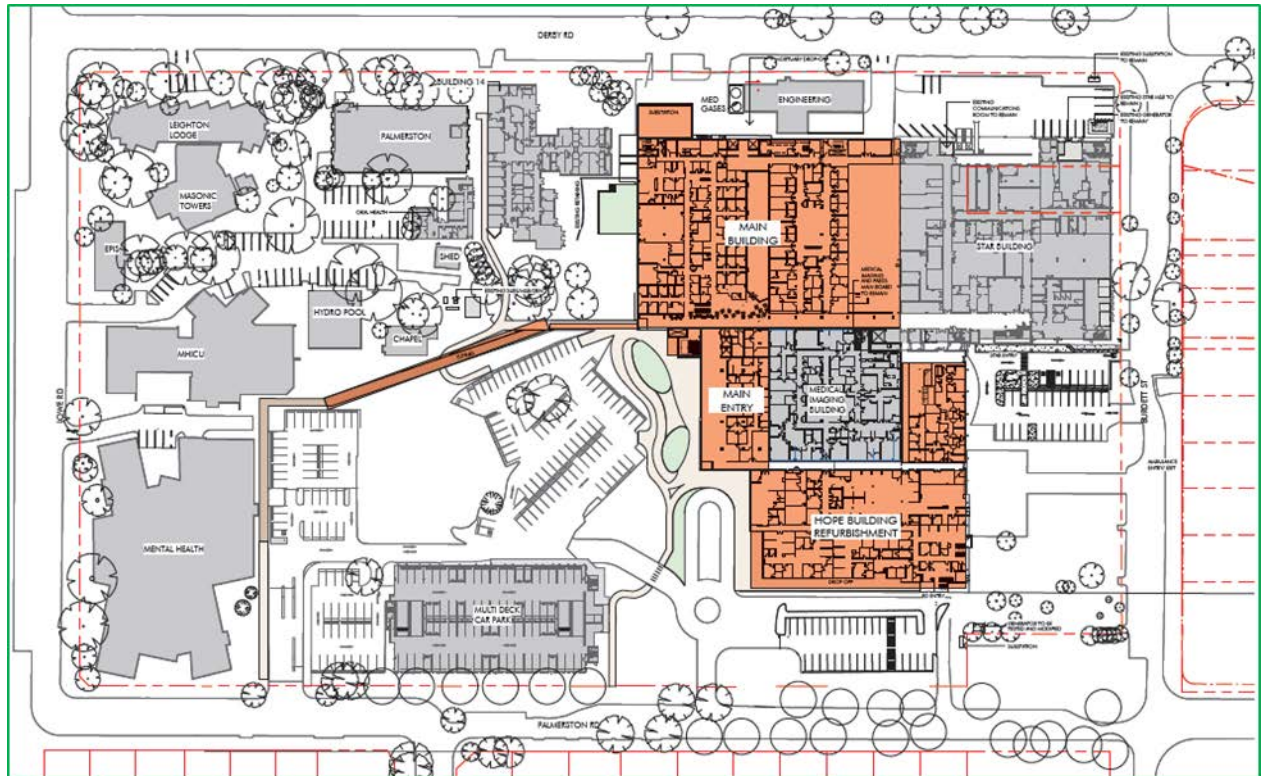


Figure 20 – Proposed SSD Building Footprint

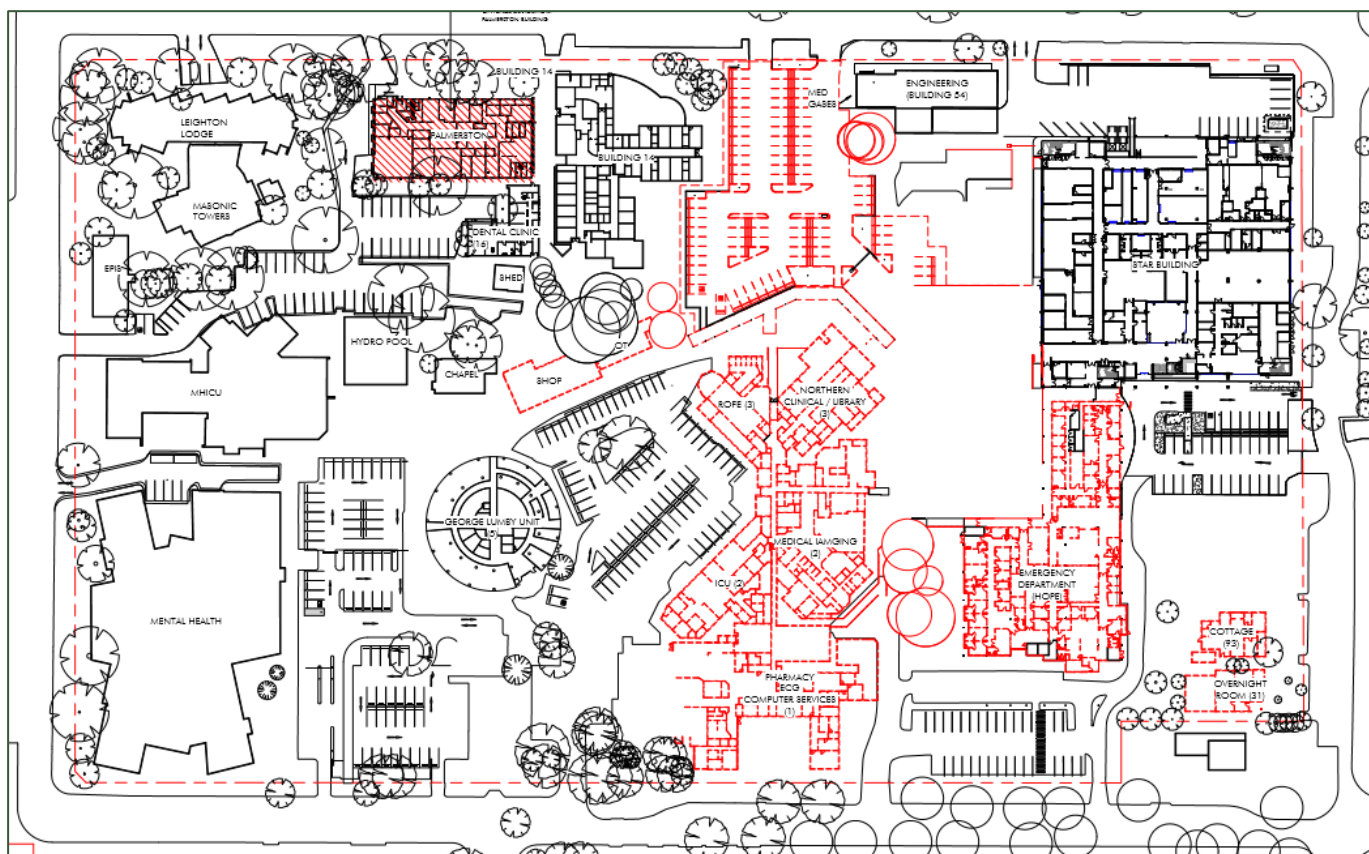


3.2 Demolition Works

The extent of demolition works to be undertaken is reflected in **Figure 21**. This will include the demolition of:

- Building 1 (Pharmacy);
- Building 2 (Radiology and Intensive Care Unit);
- Building 3 (Library and Rofe Ward);
- Derby Street Car Park (110 Spaces)
- Building 13 and 43 (Shop and Florist)

Figure 21 – Demolition Plan

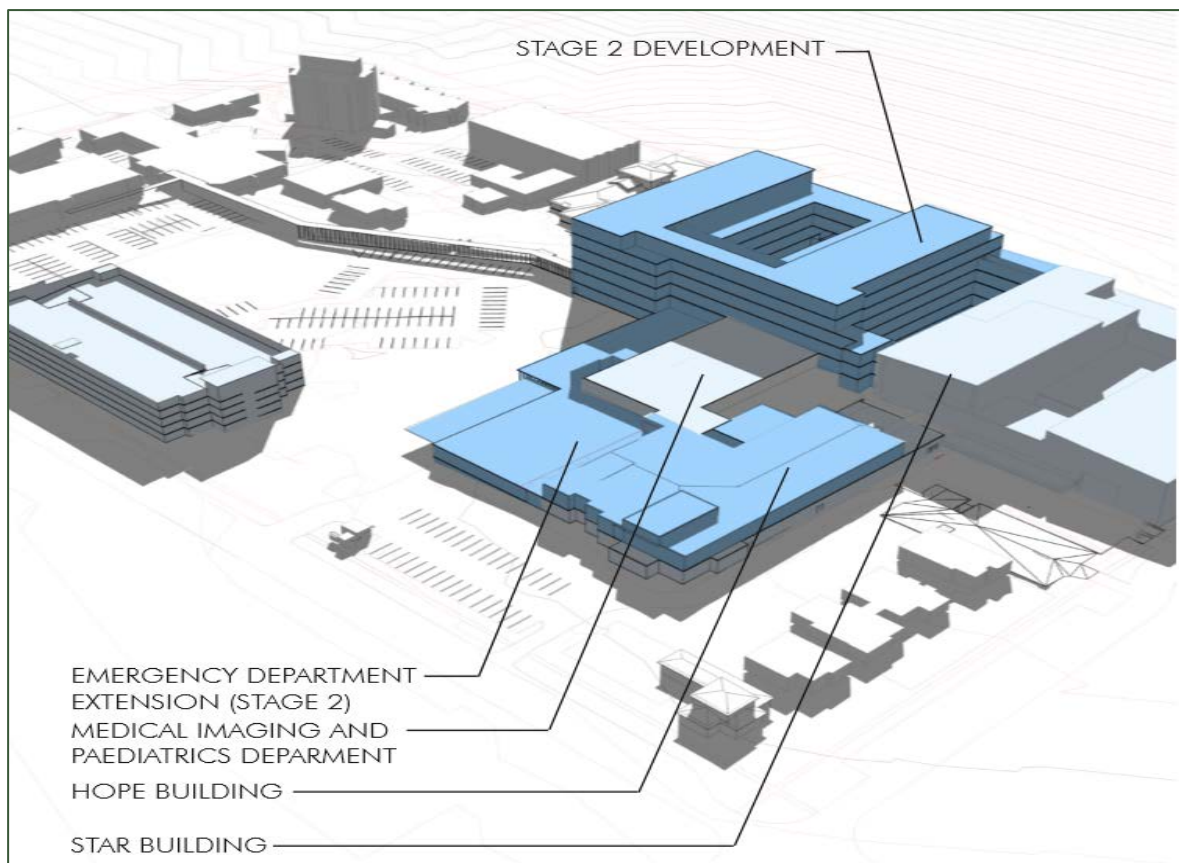


3.3 Stage 2 Building

The Stage 2 Development occupies 3 buildings being a Main Building comprising five storeys, a basement level, roof top plant level, the Main Entry and the Emergency Department (HOPE Building).

As reflected in Figure 20, the Stage 2 Main Building is positioned to integrate with existing hospital facilities on site, in particular the Star Building (Stage 1 SSD) to the south and the Medical Imaging Building (Approved under Part 5) to the west. These departments will be linked internally by the main internal corridor.

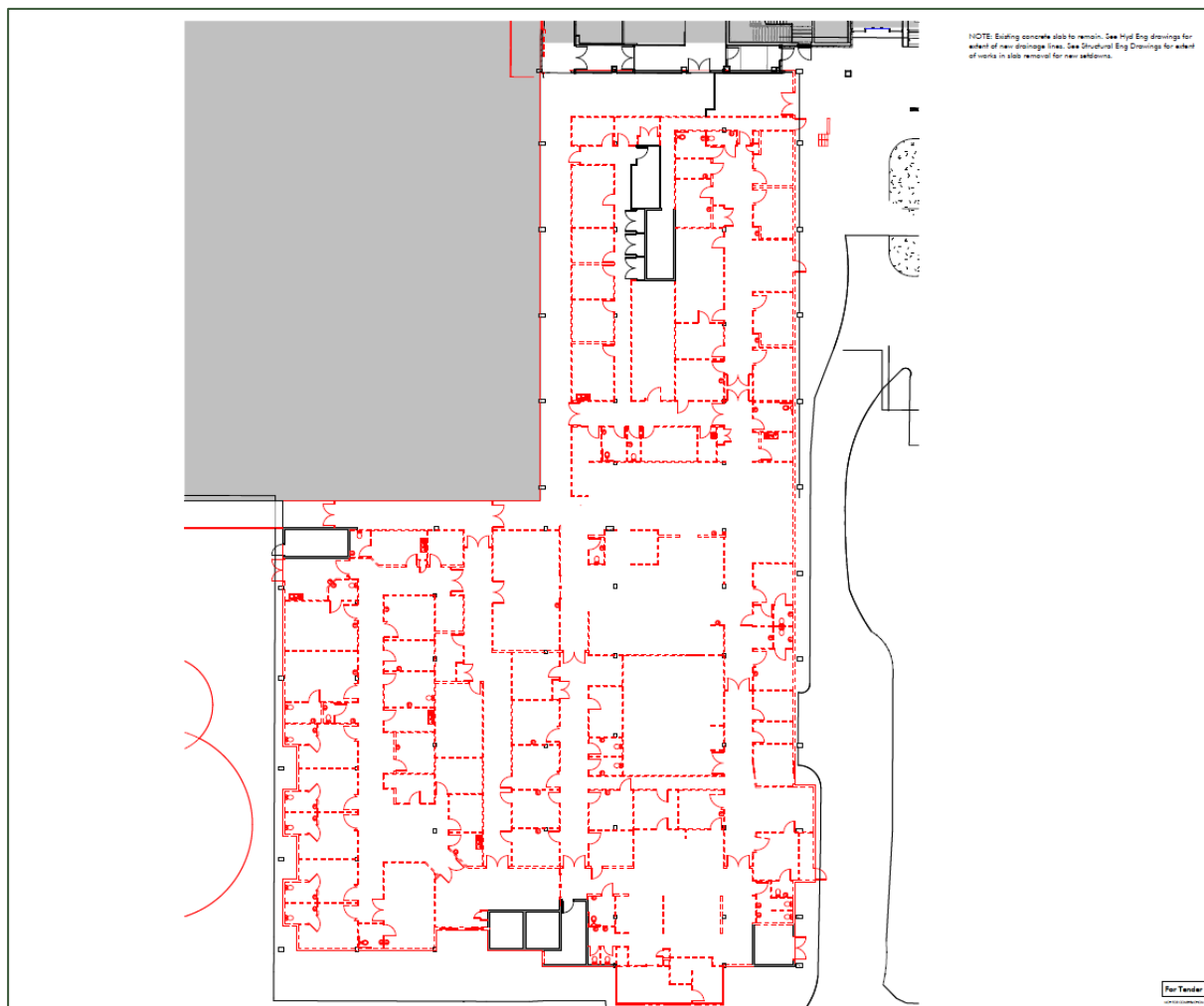
Figure 22 – Stage 2 Massing Concept



Works within the Emergency Department will see the HOPE Building Level 1 refurbished and extended to the north of the existing building. Also included in Stage 2 is a Main Entry building that will serve to complete the Stage 2 works by linking the HOPE Building, Medical Imaging Building and the newly proposed Stage 2 Main Building.

The extent of refurbishment works in the Emergency Department is shown in red in **Figure 23**.

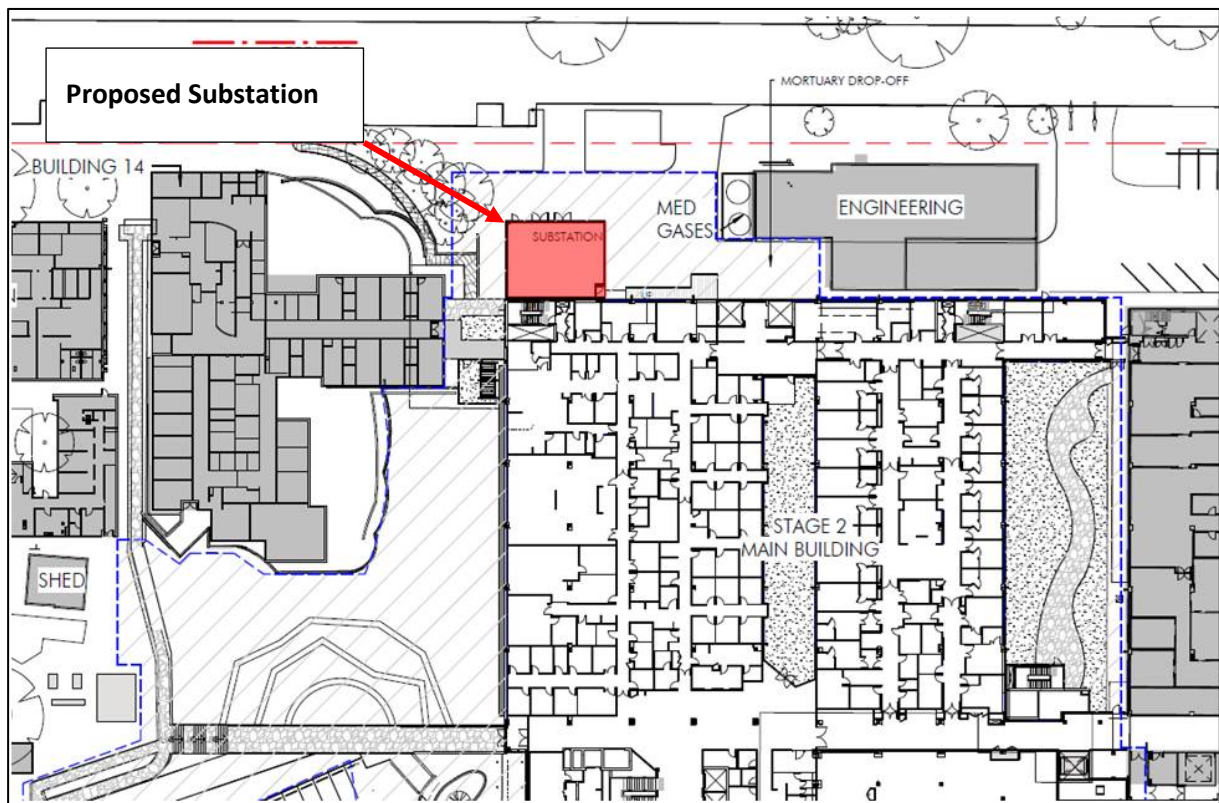
Figure 23 – Refurbishment works – Emergency Department



A new substation will be located along the Derby Rd frontage. The backup generator will be located within the basement level (Level 0).

The location of the new substation is detailed in **Figure 24**

Figure 24 – Location of Substation



A service tunnel will serve to link departments from the northern end of the campus with the Stage 2 development. The location of the services tunnel is show in **Figure 25** while a typical section is depicted in **Figure 26**. This sectional plan shows that the topside of the tunnel will also serve as a walkway for visitors and staff.

Figure 25 Location of Services Tunnel

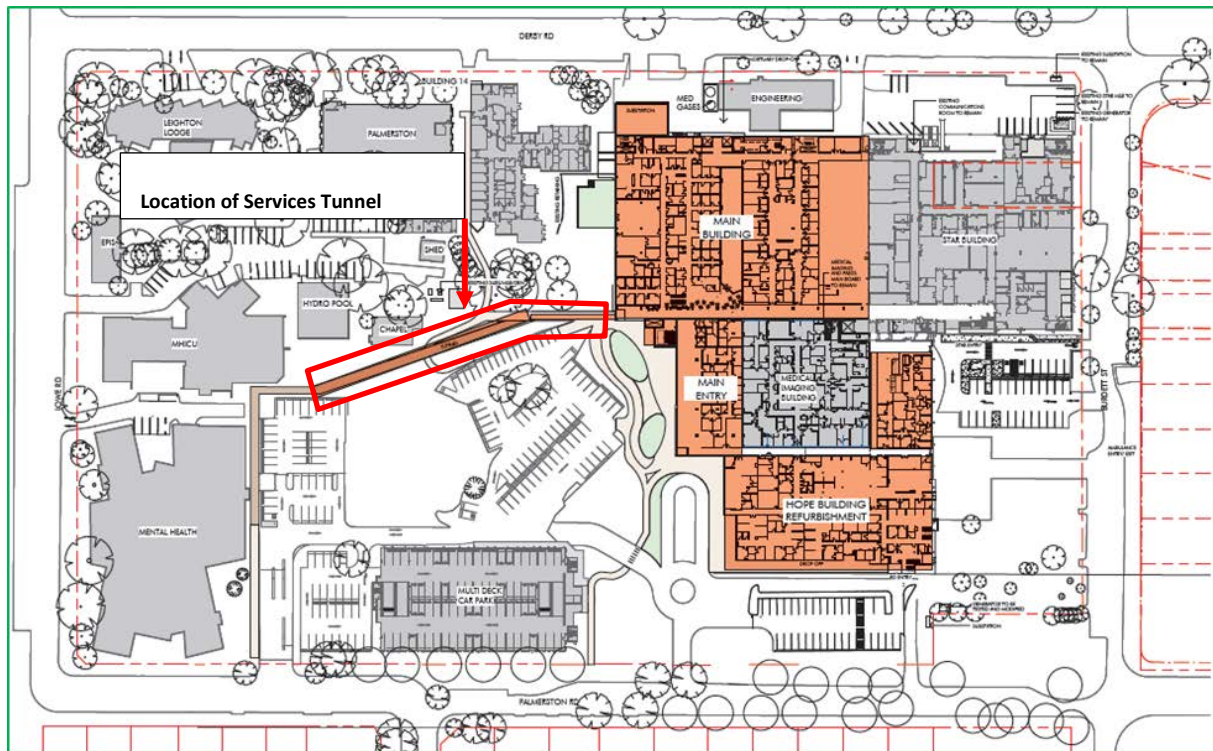
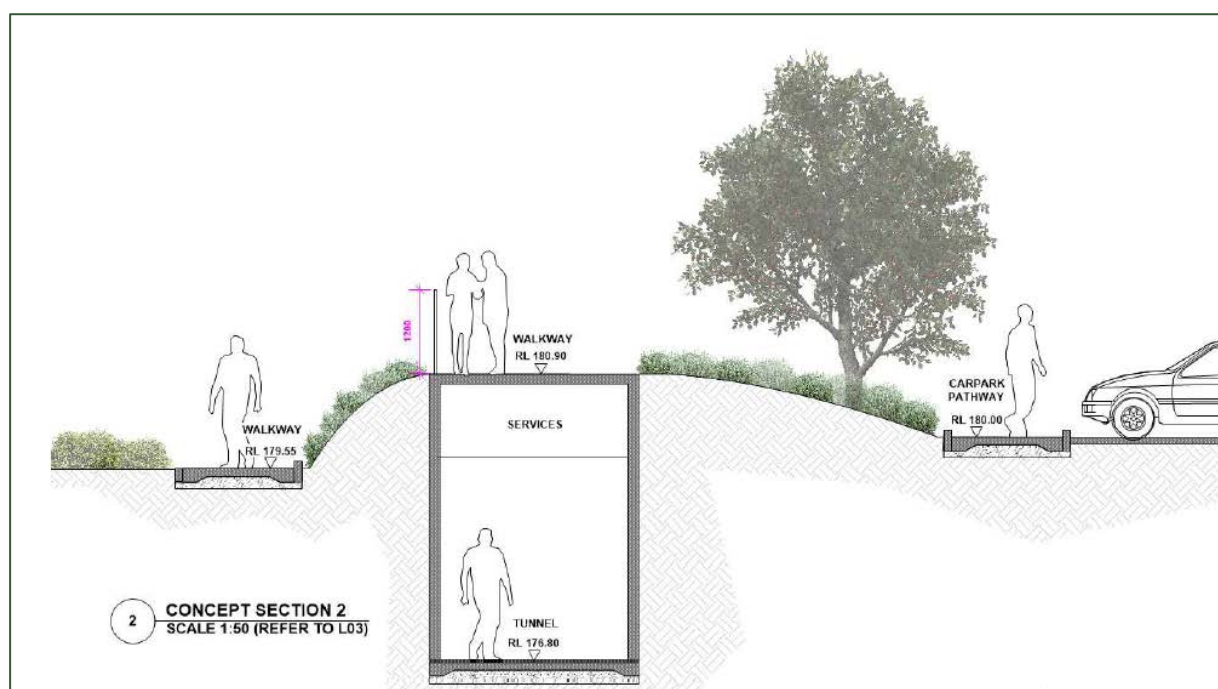


Figure 26 Services Tunnel Typical Section



The below provides a summary of the key functions of the buildings associated with the Stage 2 SSD project.

3.3.1 Emergency Department Extension and Psychiatric Emergency Care Centre

Key elements of the emergency department (ED) extension found on **Level 1** include:

- Triage at the reception to the ED;
- Ambulatory Treatment Area adjacent to triage and associated waiting area and treatment room;
- Three resuscitation bays for adult and paediatric use;
- 16 adult acute bays and two negative pressure isolation treatment bays;
- Separate paediatric treatment bays;
- ED short stay unit;
- Staff amenities comprising: meeting, change rooms and staff room have been integrated within the Emergency department to provide staff support without leaving the department.

The Psychiatric Emergency Care Centre (PECC) has been retained in its current location (Level 1 – Hope Building) and expanded. A safe assessment room has been provided in ED to assist with the management of psychiatric patients.

Existing ED offices adjacent to the PECC will be refurbished to reflect the new ED layout.

3.3.2 Intensive Care Unit

The Intensive Care Unit (ICU) is found on **Level 2** and will comprise twelve single bed treatment bays are designed to be flexible and ‘acuity adaptable’ to allow use either as a high dependency or an intensive care bed. Two of the beds are contained in negative pressure isolation rooms and a dirty utility room is provided adjacent to the anterooms for infection control.

The staff base and clean utility storage areas are centrally located and allow direct line-of-sight observation of the treatment bays.

3.3.3 Medical Inpatient Units

Inpatient units have been designed as paired 28 bed ‘racetrack’ units sharing common services and circulation. Where appropriate In-patient units (IPU) have been further subdivided into two discrete 14 bed pods to suit the clinical specialty. Patient rooms typically have the ensuites located on the inboard corridor side to allow maximum natural daylight and views through the external windows.

In each IPU, two special rooms have been upgraded with larger areas and ceiling track hoists to permit their use by bariatric patients. Cardiology services comprise inpatient Cardio-respiratory and Coronary Care units collocated with the Cardiac Investigation Unit and the Intensive Care Unit which are described as follows:

3.3.3.1 Coronary Care Unit

The coronary care unit is a discrete 6 bed unit in the Cardio-respiratory IPU and has been located at the eastern end of the IPU to allow ready access to the ICU.

3.3.3.2 Cardiac Investigations Unit

The Cardiac Investigation Unit has been collocated with Cardiology and the Intensive Care Unit to facilitate inpatient investigations and adjacent to the main public lifts for ready access by outpatients. The unit has been laid out to streamline the investigation and recovery process.

3.3.4 Rehabilitation

The two rehabilitation IPUs differ from the standard IPUs by having dining and recreational facilities and are found on **Level 3**, as befits their mainly ambulatory patients and they also share Physiotherapy, Occupational Therapy and staff facilities.

3.3.5 Pharmacy

The Pharmacy (**Level 0**) is proposed as a, self-contained, highly automated facility centrally located within the hospital campus, linked via pneumatic tube stations to clinical units across the campus and enabled by automated pharmaceutical dispensing systems

The Pharmacy counter, waiting area and interview rooms, will be visible from the Main Entry Lobby and from within the open plan Pharmacy. The Pharmacy counter will provide all outpatient services for the HKH Campus.

Direct access from the Pharmacy to the loading dock will be available and a secure goods receiving area will coordinate all deliveries to the Pharmacy.

The Pharmacy, whilst secure and self-contained, is an open plan facility with the staff offices, workstations, and dispensing work areas located for maximum external visual access and the provision of integrated staff amenities.

3.3.6 Mortuary

A mortuary with capacity for 9 bodies is proposed on **Level 0**.

The Mortuary will store bodies in individual refrigerated units consisting of two triples and a single body fridge, a double bariatric body fridge and a cold cot. There is provision for future expansion if required.

The location of the Viewing Room was dictated by available access to daylight and external view/access to courtyard as required by the user group.

3.3.7 General Medical, Stroke and Dementia

Level 4 will be utilised for general medical suites, stroke and dementia units.

3.3.8 Administration, Teaching and Education

Level 5 is dedicated to staff and training, recognising the function of the HKH Campus as a teaching hospital.

3.3.9 Plant

Level 6 is dedicated to plant required for the operation of the Stage 2 building.

3.4 Architectural Intent

The architecture responds to the already established themes of the STAR building (SSD Stage 1).

In designing the Stage 2 SSD buildings, lead design consultants Nettleton Tribe Architects recognised the importance of ensuring that the hospital stages look connected and unified, as they belong together and offer the community one hospital service.

Nettleton Tribe offer the following design statement which is provided in response to the site context, identified opportunities and constraints and project brief.

The main entry of the hospital is formed in a 1 to 2 storey element. It addresses the main street entry point and also opens up to the northern portion of the site. This building element serves to connect people into the main circulation elements of the hospital. The entry and drop off canopies offer protection and a human scale. This entry canopy also serves an important public connecting pathway to the Main Building from the main entry and the ED entry, as there is no public internal connection inside the hospital.

The materials and themes established on the STAR building will be responded to. Stage 2 is substantially higher again and the building mass and form addresses this change in scale. The elevations reflect the stratification of both material textures and colour.

The terracotta material is in response to the residential setting, particularly the roof tiles.

The Stage 2 building on Derby Road maintains the already established 22m setback from the STAR building. This continues a back of house service zone at the rear of the hospital in which loading and maintenance continue to function. It also provides a separation from the building form and residential properties located on the other side of Derby Road.

The building mass is stepped from the north to the south across the site, with the STAR building stepping to the lowest point on the southern boundary.

In elevation, the building has been treated in a horizontally layered manner in order to convert its mass to a more humanistic scale that is more in context with the adjacent urban condition. The terracotta screen floats above the heavy, dark brick base ...

The proposal takes advantage of the exposed northern faces that will provide access to natural light to a multitude of patient areas... The winter solstice is the most extreme case and will be used to establish the furthest extent of the shadows cast.

The western side of the site faces onto the medical precinct that has a number of private, specialised medical facilities including imaging suites, surgeries and dental clinics. This allows for easy cross flow of out-patients both to and from the hospital.

3.5 Façade Concept Treatment

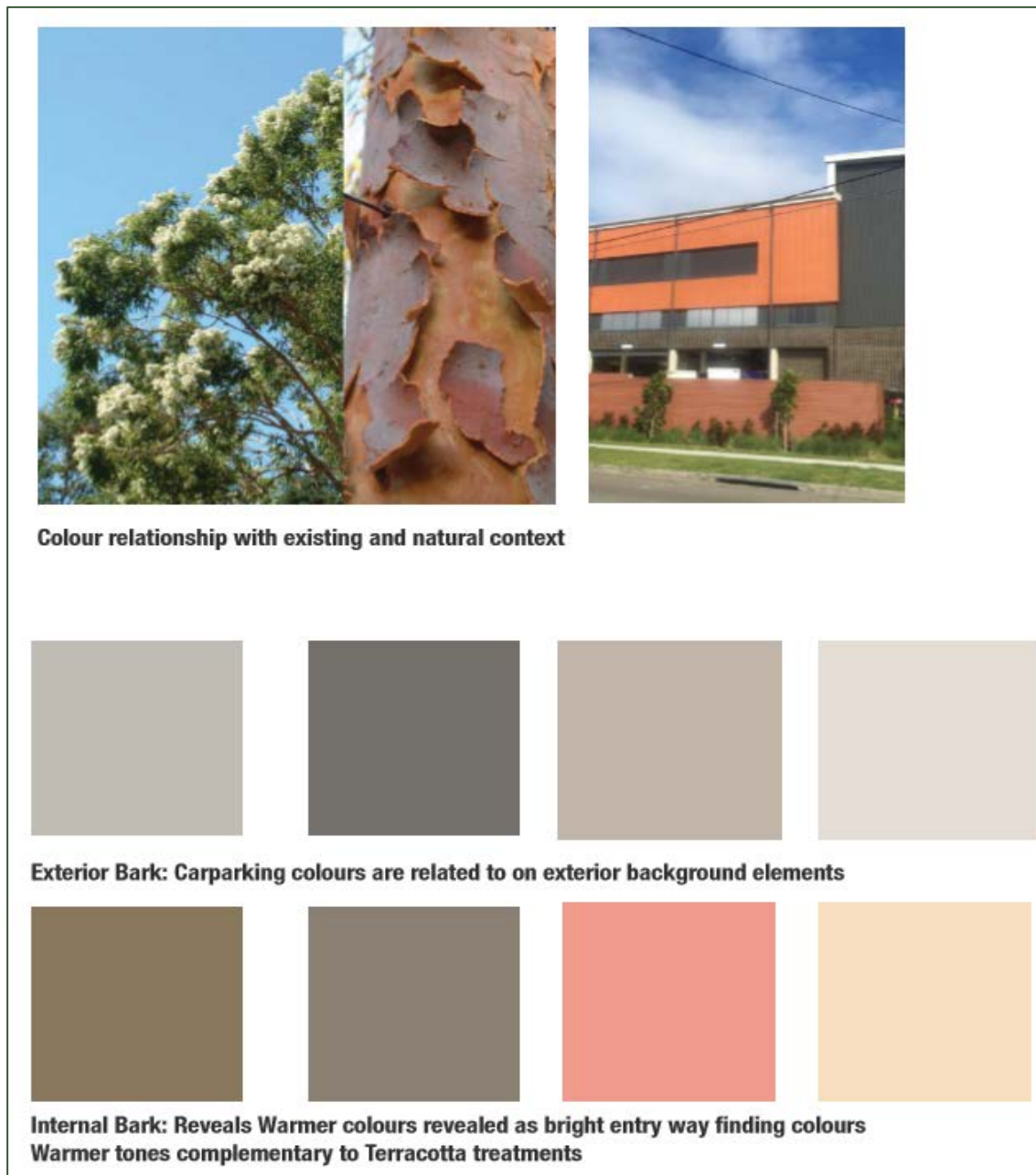
The Stage 2 materials selected have been determined in relationship with the site and natural surrounding context.

As reflected in **Figure 27**, Stage 1 primary materials such as terracotta, brick work and glass are carried through to Stage 2 facades to create a visually linked development. Materials are articulated in similar proportions to Stage 1.

The tones selected for the multi storey car park are informed by a subtle examination of the Angophora's trees external bark, has been re-interpreted on the Stage 2 development facade so there is a visual back drop link with the car parking design.

Warmer panelled tones on Stage 2 Elements are used as distinctive entry way finding markers seen from a distance. These warmer inviting colours have been derived from the underlying Angophora tree trunk and are complementary to the warm tones of the terracotta.

Figure 27 – Façade Palette



As reflected in **Figure 28**, the main entry canopy concept is based on extending the main entry roof to create an integrated porte cochere over the entry road to provide a distinctive structural solutions that clearly signify entry. It is proposed to clad the entry soffit in sustainable timber or use sustainable timber structural elements to create a friendly natural environment.

The use of timber will seek to connect the built form with landscaped areas adjacent to the retail area. Landscaped areas will predominantly utilise native plant species and spatially will provide a quiet place for visitors or patients to relax. While the final landscape treatments have not yet been resolved, sculptured elements and integrated outdoor furniture will form part of the design. This is reflected in concept in **Figure 28**. It is recognised that the lion figurehead sculptures, which have been identified as having heritage values will feature.

Figure 28 Main Entry Concept



In keeping with the promotion of social interaction, culture and education it is proposed that the main entry communication stair, lift and void facade incorporate an interpretive transparent art element that links to all levels of the hospital. Final details of the interpretive transparent art element would be resolved during the detailed design and construction phase. This is provided in concept in **Figure 29**.

Figure 29 – Interpretive Art Element



The emergency entry will be refurbished and take its material cues from the main entry so there is a material, colour, artistic and visual connection to the main entry design. Existing structures will be reused but reclad upgrading the appearance whilst preserving the main elements that patients and staff are familiar with. This will assist in providing continuity and wayfinding within the HKH Campus.

The refurbished emergency entry is illustrated in **Figure 30**.

Figure 30 Refurbished Emergency Entry



A detailed schedule of materials and finishes accompanies the EIS and is found at **Appendix D**.

3.6 Building Height and Scale

The finished floor level (FFL) of Level 1 (RL+181.00) is arrived at to align with the FFL of the HOPE and STAR Buildings to which it abuts and connects to.

The Stage 2 Main Building is a five storey building with basement level and rooftop plant level. A plant room is also located above the Medical imaging and Paediatrics inpatient ward on level 3, adding mass to the centre landlocked portion of the development. The overall height of the Stage 2 development is proposed at 26.5m above the existing ground level with the roof level of the plant at an RL of 207.300. The top of the Masonic tower found at the northern end of the HKH Campus has an estimated RL of 199.250, which is 8.05m below the highest point of the Stage 2 development.

Nettleton Tribe make the following response with respect to the scale of the Stage 2 development in the context of the site and surrounds.

The scale of the Stage 2 building steps up from Stage 1 in an established benchmark whereby the Stage 1 building is reduced in height to the southern boundary along Burdett Street. Stage 1 was designed this way in height and scale to reduce the overshadowing of the properties to the south across Burdett Street. Stage 2 sits higher but does not contribute to any further overshadowing to the Burdett Street properties.

The alignment on Derby Road is a continuation of the Stage 1 building setback. The Stage 2 building has a higher built form. The design has maintained a strong building base with a continuation of the brick material. The terracotta faced material provides a similar horizontal banding as the adjacent Stage 1 building. The mass of the Stage 2 building has been reduced at the top plantroom area by a series of steps and the introduction of courtyards.

The relationship of the proposed Stage 2 Building with the existing 'Stage 1' STAR building can be seen in **Figures 31 - 33**

Figure 31 – ELEVATION CONCEPT PALMERSTON ROAD



Figure 32 – ELEVATION CONCEPT NORTH



Figure 33 – ELEVATION CONCEPT – DERBY STREET



3.7 Access and Parking

3.7.1 Access

3.7.1.1 Private Vehicle Access

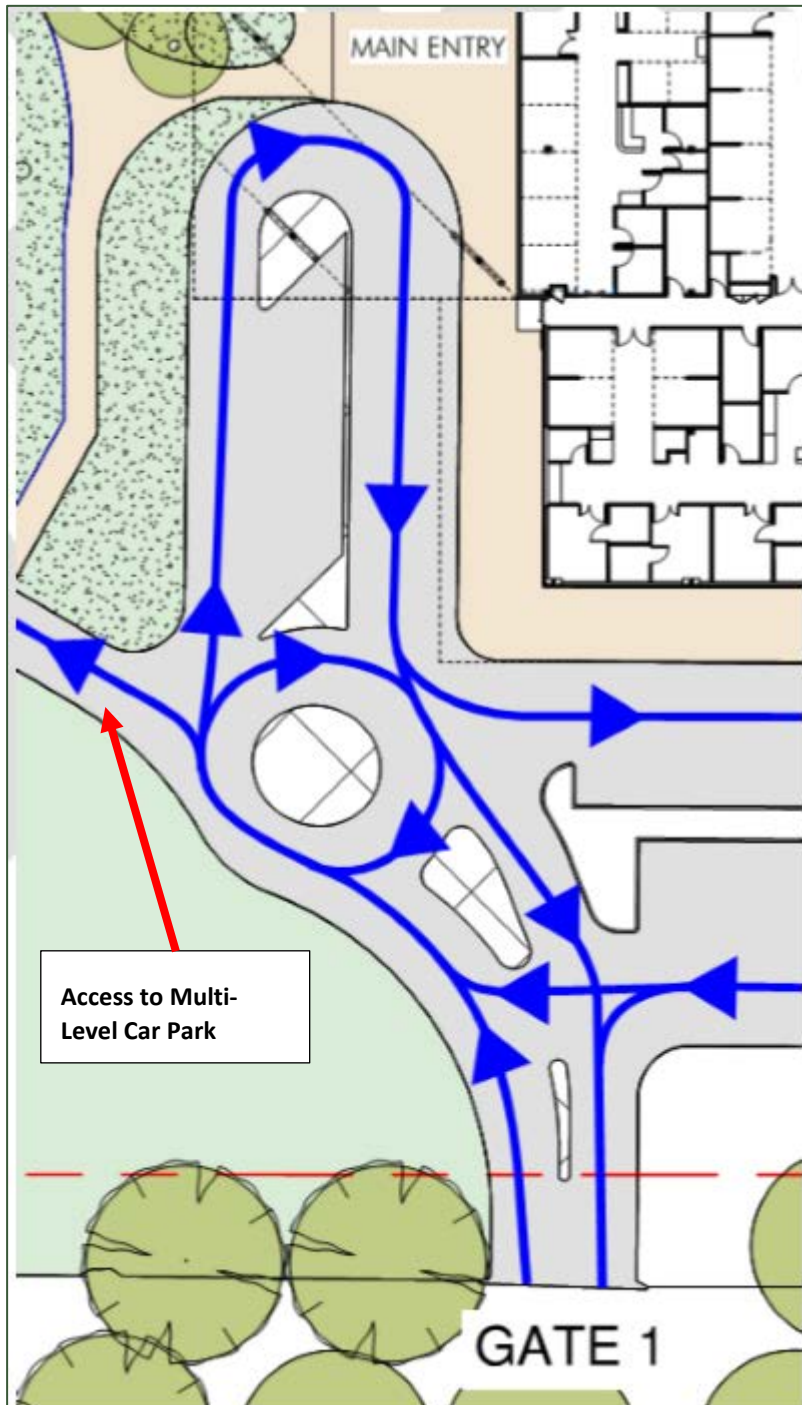
The existing vehicle access point at Gate 1 will be modified and relocated further north along Palmerston Road. As shown in **Figure 34**, an internal roundabout is to be constructed to facilitate circulation movements to the drop off facility; the multi-storey carpark and the on grade parking area located outside the emergency department.

All other access points will remain consistent with the current operation excluding those access points that will be affected by the proposed multi-storey carpark.

As part of the proposed development a new drop off and pick up facility will be located outside the new main entrance that will involve modifying and relocating the existing Gate 1 entry.

The drop off facility provides a circular loop (**Figure 34**) and is designed to accommodate four vehicles parked parallel to the Stage 2 building entry. No parking is designed to be located on the curved portion of the loop or entry of the loop to prevent possible congestion due to vehicle parking movements.

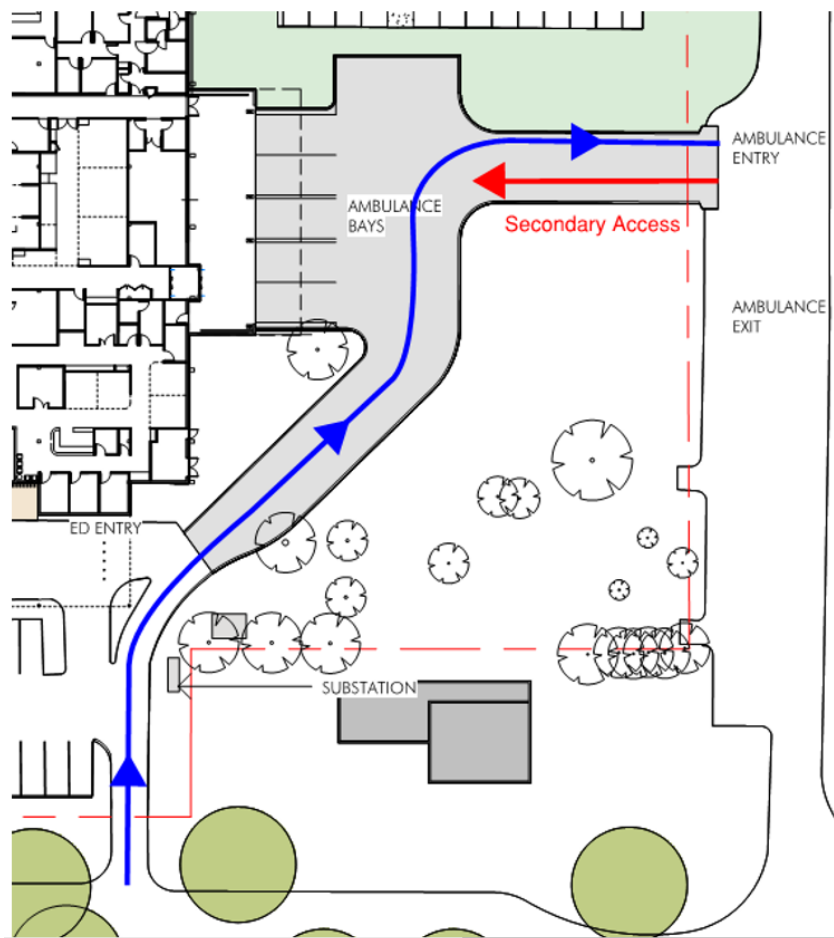
Figure 34 – Internal Circulation and Drop Off Facility



3.7.1.2 Ambulance Access

To increase ambulance drop off efficiency, an alternate ambulance egress driveway is proposed to be located along Burdett Street. This will increase the efficiency of ambulance movements, allowing for separation of these vehicles from private vehicle traffic. **Figure 35** details the proposed arrangements for the internal circulation of ambulance vehicles. The primary ambulance entry will remain as the existing entry at Palmerston Road where patients will be dropped off adjacent to the emergency department. Five (5) ambulance bays are proposed to be located adjacent to the drop off facility. To park, ambulances will undertake a two point turn and reverse into the ambulance bay located perpendicular to the Hospital entry. This arrangement will allow for efficient egress from the site in a forward direction to the existing driveway crossing at Burdett Street.

Figure 35 – Emergency Vehicle Circulation



3.7.1.3 Service Access

The existing loading facility installed as part of Stage 1 of the Redevelopment will remain as the main loading area for the Hospital post completion of the Stage 2 SSD Project. There are no new loading docks proposed as the Stage 1 loading dock was designed to cater for the demands post construction of Stage 2.

Since the design of the Stage 1 loading dock, the scope of the Stage 2 Redevelopment has not changed to the extent that further service vehicles would be required.

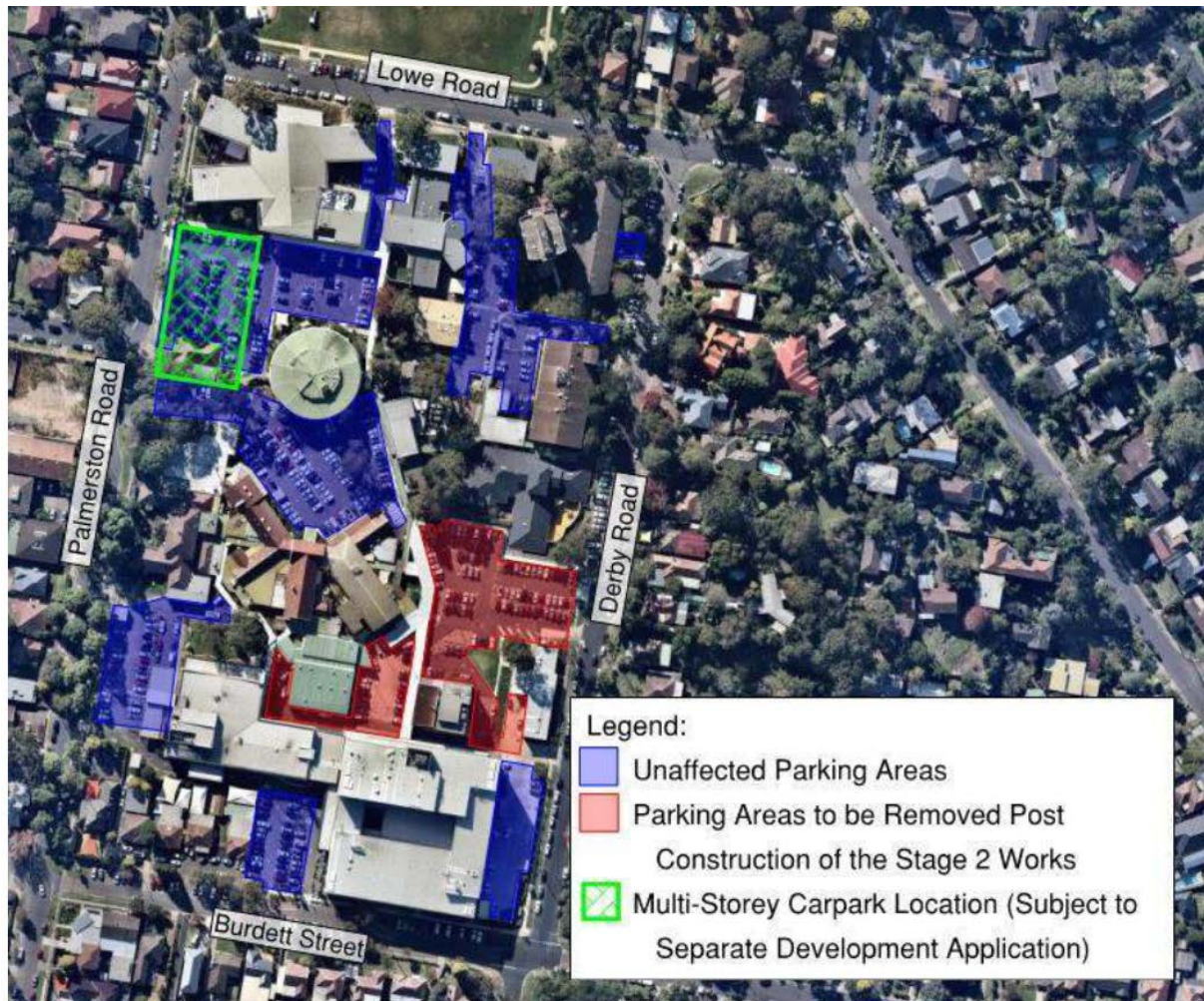
3.7.1.4 Construction Access

A Preliminary Construction Traffic Management Plan (CTMP) (**Appendix O**) has been prepared for the project and has been provided as part of the response to SEARs. It is anticipated that site access will predominantly occur via Derby Road. The proposed arrival and departure routes have been chosen to avoid, where possible, high pedestrian activity at the nearby medical centre and childcare facilities located along Palmerston Road. The route also avoids the school zone located adjacent to Waitara Public School. Further discussion of these routes has been included within the Preliminary CTMP.

3.7.2 Car Parking

Construction for the approved multi storey car park has commenced and will be completed prior to the completion of the Stage 2 SSD project. Upon completion of the multi-storey carpark and Stage 2 works, the Hospital Campus will contain 731 total off street parking spaces including up to 23 accessible spaces. This represents a net increase of 225 parking spaces from the existing figure of 506 spaces. It should be noted that of the 506 available spaces, 83 have been constructed as temporary parking to mitigate the short term loss of spaces associated with the construction of the multi storey car park. **Figure 36** details the location of car parking spaces on campus which will be available for staff, patients and visitors.

Figure 36 – Available Off Street Parking (Post Development)



3.9 Signage

Signage works are limited to the refurbishment of the Emergency Signage associated with Emergency drop off facility. Nominal directional signage will be provided across the campus to assist with wayfinding across the campus.

The refurbished Emergency Services Signage has been designed to be clear and legible from the main public entrance to the campus. **Figures 38** and **39** provide a before and after comparison of the ED signage.

Figure 38 Existing Emergency Signage



Figure 39 Refurbished Emergency Signage



Details of the proposed wayfinding signage is provided at **Appendix D**, inclusive of a plan detailing the location of all wayfinding signage across the campus. Indicative wayfinding signage is provided in **Figure 40** and is generally consistent with wayfinding signage adopted within metropolitan hospital campuses. Freestanding pylon signage situated within the campus will be internally illuminated to assist with wayfinding at night. Where possible, freestanding signage will be incorporated into landscaped areas.

Figure 40 – Existing Wayfinding Signage



An assessment of the proposed signage against the provisions of State Environmental Planning Policy No 64 – Advertising and Signage (SEPP 64) is provided in Section 5.

3.10 Water Cycle Management

The general arrangements for stormwater management (**Appendix E**) propose for all roof stormwater to be collected in roof gutters and downpipes and conveyed to the in-ground pipe system. Surface stormwater would be collected in pits. The in-ground stormwater would be

connected to water quality controls and the Onsite Stormwater Detention (OSD) tanks. In total, the Stage 2 SSD project will generate demand for approximately 419m³ OSD positioned across three sub catchments to meet pre development flow rates.

Whilst Water Sensitive Urban Design methods have been considered to allow for water reuse across the site and pollutant removal, such infrastructure has been identified as inappropriate due to the health risks associated with standing water within a hospital environment. Consequently mechanical (in lieu of natural removal) pollutant removal devices will be incorporated to remove gross pollutants, suspended solids, reduce nutrient runoff including nitrogen and phosphorous.

The stormwater management plans provided at **Appendix E** propose a series of pollution control devices to remove contamination from stormwater runoff to the required level prior to discharge. The proposed devices include litter screens in all pits, detention tank trash screen and an end of line treatment device to remove nitrogen & phosphorus contaminants prior to discharge to Council's stormwater system. The concept plan has been designed to meet the pollutant removal rates specified in the Hornsby DCP 2013. This plan should be read in conjunction with the Integrated Water Management Plan provided at **Appendix I**.

3.11 Services and Utilities

Comprehensive in-ground services and infrastructure upgrades were undertaken across the campus as part of the Stage 1 SSD project and previous Part 5 approvals. The scope of works took into account the proposed Stage 2 SSD project and are capable of servicing the new building. The following provides an overview of service provision for the Stage 2 SSD, noting the proposed arrangements including any additional requirements.

3.11.1 Electrical and Lighting

A new 2 x 1500kVA chamber substation will be provided to service the new load of stage 2 project. Standby power will be provided through the 500kVA generator which serves the Star Building (Stage 1 SSD).

Lighting shall be provided to all relevant internal and external spaces in accordance with health guidelines and security standards. The selection of light fixtures and controls shall be consolidated to match existing where possible or approved equal for maintenance and functional reasons.

3.11.2 Information and Communication Technology

An existing Campus Distributor and PABX is provided in the Star Building, which provides copper and fibre connections to existing services throughout the site, including the Hope Building, buildings to

the north and the future multi-level carpark. The new Stage 2 building will accommodate a new Campus Distributor.

Nurse Call systems for the project will match current Austco installation in the STAR building or approved equal. The existing Austco/Acetek system in the STAR building is currently fully utilised without capacity for additional devices.

3.11.3 Security

Electronic security systems are an integral part of health services buildings as they assist in securing, monitoring and protecting building assets, visitors and staff during a security event. The systems currently installed in the STAR building will be extended to serve the Stage 2 SSD building and will be designed and installed to comply with the HKH Campus security guidelines.

3.11.4 Hydraulic Services

General

The Integrated Servicing Strategy (**Appendix J**) finds that the Stage 2 SSD building and the renovation of the Emergency Department can be supported by the existing site services. Relocation of some existing services will be required but these are expected to be of limited impact on the operation of the hospital.

The new building will have new services that are supplied or connected directly from the existing internal mains with the exception of the sewer main, which will generally support the facility. A new Sydney Water sewer main is proposed improve services across the HKH Campus and will accommodate the Stage 2 SSD building. The sewer main will be constructed as part of an early works package approved under Part 5 of the EP & A Act and is programmed to be completed prior to the completion of the Stage 2 SSD building.

Sanitary Plumbing and Drainage

The Stage 2 SSD building will connect to the new Sydney Water sewer main. The refurbished Emergency Department will retain the existing connection to the existing drainage system within the hospital site. Trade waste provisions will be provided for the retail area and connected to the existing internal drainage network.

Domestic Cold Water

The hospital is supplied from two water mains. It is proposed that this configuration remains. The Stage 2 SSD building will connect to point a provided as part of the Stage 1 (Star Building) development.

Domestic Hot Water

A new packaged modular gas fired hot water plant will be located within the rooftop plant room of the Stage 2 SSD building with flues extended to atmosphere. Hot water reticulation will be via a “loop” to enable easier control and maintenance. Temperature control will be provided by monitored thermostatic mixing valves.

Natural Gas Services

The majority of the existing site is serviced by a single main connection located in Palmerston Ave. The new building will connect to the provisional point provided as part of the Stage 1 (Star Building) development. The gas will be provided for the hot water and mechanical plant on level 6 and the retail area on level 1. The infrastructure (pipework) has adequate capacity, when the final loads are available the capacity of the meter set will need to be determined with the supply authority.

Fire Hydrant System

The existing booster assembly will be used for the new building and the system extended from the provisional point provided as part of the Stage 1 development. The fire hydrant system in the new works will be as per the requirements of the current code.

Fire Sprinkler System

The Stage 2 SSD building will be fully sprinkler protected in accordance with AS2118.1-1999. It is proposed to also sprinkler protect the lower level of the Hope Building. New pumps and alarm valves will be provided on Level 0. The booster assembly for the building will be the existing booster assembly located on Palmerston Road. The fire sprinkler supply will be extended from the Stage 1 Building.

3.12 Environmentally Sustainable Development

The Stage 2 SSD project incorporates Environmentally Sustainable Development (ESD) strategies and principles as defined in clause 7(4) of Schedule 2 of the EP&A Regulations, into the scope of the development.

The environmental performance of the SSD Stage 2 project has been assessed using the NSW Health Guideline (published 26/08/2016) and Section J - Energy Efficiency of the Building Code of Australia 2010.

In particular, the proposal will achieve ESD principles on an integrated design process with the intention of delivering:

- Lower operating costs for energy, water, waste and maintenance;
- Improved indoor environmental quality;
- Extended life through inherent flexibility and ‘future-proofing’; and
- Electrical services with efficient lighting, lighting control and energy metering.

In addition a Green Travel Plan is proposed to be implemented once operational. The Green Travel Plan, which accompanies the EIS at **Appendix N**, aims to reduce the environmental impact of travel to and from the development and includes measures to encourage and provide support for walking, cycling, public transport and car sharing, while reducing dependence on private vehicles and parking.

3.13 Tree Removal and Retention

Established landscaped areas containing mature trees will be disturbed as a result of demolition and building works. In some instances the removal of trees will be required. An assessment of the Stage 2 SSD development footprint by consulting arborist Moore Trees (**Appendix K**) has identified trees which will be removed as a result of the works and those which can be retained and consequently require protection during construction. The tree protection plan, prepared by Moore Trees details the location of trees to be removed and those to be protected and is provided in **Figure 41**.

It is noted that the plan does not require the removal of trees on Palmerston Road, and specifically denotes protection measures for the street trees adjacent to the Palmerston Road Driveway Crossing.

Figure 41 – Tree Protection Plan



3.14 Construction Phasing, Hours and Employment

The following hours of construction are proposed. These are consistent with other recent approvals on the site:

- Monday to Friday: 7:00am – 6:00pm.
- Saturdays: 7:00am – 5:00pm.
- Sundays and Public Holidays: No work.

Over the duration of the construction program, the project will generate 590 jobs related to construction (FTE).

As outlined in the Preliminary Construction Management Plan (PCMP) provided at **Appendix O**, works will be completed in stages by the Contractor with the final sequencing and construction agreed between the Contractor and the Principal to maintain existing Hospital Services and due to the sites physical constraints. The work program will be undertaken in a sequential manner generally consistent with the below list, with efficiencies brought to the construction by the Contractor.

- Demolition of nominated buildings and areas on site, including site preparation for the main works;
- Provisions for temporary access and walkways in accordance with Staging Plan or as otherwise agreed.
- Demolition of nominated buildings and areas on site now occupying the new Stage 2 main building.
- Early handover of Medical Imaging for fitout and Early Handover for occupation of Medical Imaging during the construction of the main works for the Stage 2 Redevelopment.
- Completion of Stage 2 Main Building including early Occupation, to enable decanting of existing buildings required for demolition prior to Main Entry construction
- ED/PECC new build and refurbishment maintaining services as per Staging Plan or as otherwise agreed.
- Decanting of facilities around site into the new building
- Completion of Main entry
- Final demolition/removal from site of facilities left vacant following occupation of new build.
- Civil and landscaping works complete and tunnel walkway from Stage 2 to north of the site established

4. Consultation

In accordance with the SEARs, consultation has been undertaken with Hornsby Shire Council, Transport for NSW and Roads and Maritime Services (RMS). No significant issues were raised during the course of this consultation.

4.1 Agency Consultation

HI has sought to consult with Transport for NSW (TfNSW) and the RMS in preparing the EIS.

4.1.1 Transport For NSW

Letter advice (copy provided at **Appendix U**) was submitted to TfNSW on 13 September 2017 noting that that feedback provided by TfNSW in responding to the SEARs would be taken into account.

TfNSW responded on 20 September 2017 and expressed that TfNSW has no further comment in regard to the SEARs and welcomes further consultation should it be required in the course of preparing the EIS.

4.1.2 Roads and Maritime Service

Letter advice (**Appendix U**) was submitted to RMS on 13 September 2017 advising that the EIS would be prepared to address 'Item 5 – Traffic and Transportation' of the SEARs.

RMS replied by way of email to TTW on 19 September 2017 recommending that the following signalised intersections are modelled:

- Sherbrook Road & Edgeworth David Avenue;
- Sherbrook Road & Burdett Street;
- Edgeworth David Avenue & Palmerston Road with Edgeworth David Avenue and Myra Street (as a linked intersection)

Out of the three intersections nominated by RMS the Transport and Accessibility Assessment (TAA) (**Appendix L**) elects to model the Edgeworth David Avenue & Palmerston Road with Edgeworth David Avenue and Myra Street only. TTW provide justification for not including the two additional intersections citing only a minimal predicted increase in vehicle volumes at these intersections.

4.1.3 Utility Service Providers

The Integrated Servicing Plan (**Appendix J**) has been prepared to take into account any preliminary servicing advice made available by the relevant utility service providers. Evidence of such consultation is appended to this plan.

4.2 Council Consultation

HI has been engaged in ongoing consultation with Council regarding the Stage 2 redevelopment, key components of the early works packages and the Multi-deck Car Park. Following receipt of the SEARs a meeting with Council was held on 25 August 2017. The key items raised in this meeting were:

- Recognition of Collingridge House;
- Ensuring appropriate intersections are modelled as part of the traffic impact assessment;
- Realising the opportunity to improve amenity within the site through appropriate landscaping through the centre of the Campus.

HI and Council agreed to continue consultation in a collaborative manner throughout the works program for the SSD project in addition to consultation associated with the construction of the Multi-level car park and early works packages.

Additional consultation has also taken place with Council in the preparation of the Traffic Assessment Study and Integrated Services Plan. Any feedback provided by Council has been documented in these reports and taken into account.

4.3 Community Consultation

Health Infrastructure has undertaken ongoing consultation and engagement with the local community regarding the Stage 2 SSD project. The community consultation and engagement strategy has comprised:

- Project user group meetings
- Consultation with HKH Consumer Council
- Project information clearly described on both Health Infrastructure and Northern Sydney Local Health District Websites
- Social Media updates through Health Infrastructure and Northern Sydney Local Health District's social media channels
- Newspaper and media announcements; and
- Project fact sheets for public displays and exhibitions

Feedback received through these methods has been taken into account in the development of design documentation through initial concepts and schematic design.

In August 2017 Health Infrastructure held two Community Information sessions at the Hornsby Kuring-gai Hospital providing an opportunity for the community to seek further information about the project.

Session 1, held on Wednesday 16 August 2017 was attended by 10 members of the community while Session 2, held on Saturday 18 August 2017 saw 5 attendees.

The community members who attended were generally positive in their support for the proposed Stage 2 redevelopment with the majority of comments focussing on:

- Traffic flow, access and public transport connectivity during periods of construction and beyond
- Re-planting of trees removed during construction
- Impacts on local residential parking and
- Support for the clinical services and overall project

4.4 Further Consultation

The proposed development will be placed on public exhibition for a minimum of 30 days in accordance with Clause 83 of the Regulation. During the public exhibition period Council, State agencies and the public will have an opportunity to make submissions on the project.

In addition Health Infrastructure and its project team remains committed to engaging with the community and other key stakeholders for the duration of the construction program.

5. Statutory and Planning Framework

5.1 Relevant Legislation, Plans and Policies

Pursuant to Section 79C (1)(a) of the EP&A Act, the following legislation, strategies, policies, planning instruments and development controls have been taken into consideration:

- Environmental Planning and Assessment Act 1979 (EP&A Act);
- Environmental Planning and Assessment Regulation 2000 (EP&A Regulation);
- Biodiversity Conservation Act 2016;
- Biodiversity Conservation (Savings and Transitional) Regulation 2017;
- State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP);
- State Environmental Planning Policy (Infrastructure) 2007 (SEPP Infrastructure);
- State Environmental Planning Policy 55 – Remediation (SEPP 55);
- State Environmental Planning Policy No 64–Advertising and Signage;
- State Environmental Planning Policy (Vegetation in Non – Rural Areas) 2017;
- Hornsby Local Environmental Plan 2013 (HLEP 2013);
- NSW Long Term Transport Master Plan 2012;
- Crime Prevention Through Environmental Design (CPTED) Principles;
- A Plan for Growing Sydney;
- NSW State Priorities;
- Sydney’s Cycling Future 2013;
- Sydney’s Walking Future 2013;
- Sydney’s Bus Future 2013;
- Greater Sydney Commission’s Draft North District Plan; and
- Hornsby Development Control Plan 2013; and
- Healthy Urban Development Checklist, NSW Health.

5.2 Key Legislation

5.2.1 Environmental Planning and Assessment Act 1979

The EP&A Act and the EP&A Regulation provide the statutory framework for planning approval and environmental assessment in NSW. Implementation of the EP&A Act is the responsibility of the Minister for Planning, statutory authorities and local councils.

The proposed development is consistent with the objects of the EP&A Act, as it is found to:

- promote the social welfare of the community;
- allow for the orderly and economic development of land; and

- be development for public purposes and will facilitate the delivery of community services.

Part 4 of the EP&A Act makes provision for 'development' that requires development consent from the relevant consent authority. Division 4.1 of Part 4 makes provision for SSD where the Minister for Planning (or delegate) is the consent authority.

The proposed development is consistent with Division 4.1 of the EP&A Act, particularly for the following reasons:

- the development promotes medical services and stimulates social welfare of the community; and
- the development has been evaluated and assessed against the relevant heads of consideration under Section 79C and found to be an appropriate development.

5.2.1.1 State significant development approval process

Section 89C (2) of the EP&A Act states that:

A State environmental planning policy may declare any development, or any class or description of development, to be State significant development.

Under clause 8 of the State and Regional Development SEPP, development is declared to be State Significant Development for the purposes of the EP&A Act if, among other provisions, the development is specified in Schedule 1 or 2 of SEPP State and Regional Development. Clause 14 of Schedule 1 of the State and Regional Development SEPP relates to Hospitals, medical centres and health research facilities and makes provision for

Development that has a capital investment value of more than \$30 million for any of the following purposes:

- (a) hospitals,*
- (b) medical centres,*
- (c) health, medical or related research facilities (which may also be associated with the facilities or research activities of a NSW local health district board, a University or an independent medical research institute).*

As provided in the CIV report (**Appendix H**) the SSD project will have a CIV of \$184,730,000 (ex GST) and therefore constitutes State Significant Development pursuant to Section 89C(2) of the EP&A Act.

Under section 89D of the EP&A Act, the NSW Minister for Planning or his delegate is the consent authority for SSD.

5.2.1.2 Matters for consideration

When assessing a DA for SSD, the consent authority (i.e. Minister for Planning or delegate) is required to take into consideration the matters outlined in section 79C of the EP&A Act:

In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:

- (a) the provisions of:*
 - (i) any environmental planning instrument, and*
 - (ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved), and*
 - (iii) any development control plan, and*
 - (iiia) any planning agreement that has been entered into under section 93F, or any draft planning agreement that a developer has offered to enter into under section 93F, and*
 - (iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph), and*
 - (v) any coastal zone management plan (within the meaning of the Coastal Protection Act 1979),*
that apply to the land to which the development application relates,
- (b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,*
- (c) the suitability of the site for the development,*
- (d) any submissions made in accordance with this Act or the regulations, and*
- (e) the public interest.*

Despite the above, clause 11 of the State and Regional Development SEPP states that development control plans (DCPs) do not apply to SSD.

5.2.1.3 Approvals not required or which cannot be refused

Under section 89J of the EP&A Act, the following authorisations are not required for SSD:

- (a) the concurrence under Part 3 of the Coastal Protection Act 1979 of the Minister administering that Part of that Act,
- (b) a permit under section 201, 205 or 219 of the Fisheries Management Act 1994,
- (c) an approval under Part 4, or an excavation permit under section 139, of the Heritage Act 1977,
- (d) an Aboriginal heritage impact permit under section 90 of the National Parks and Wildlife Act 1974,
- (e) an authorisation referred to in section 12 of the Native Vegetation Act 2003 (or under any Act repealed by that Act) to clear native vegetation or State protected land,
- (f) a bush fire safety authority under section 100B of the Rural Fires Act 1997,
- (g) a water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the Water Management Act 2000.

Further, under section 89K of the Act, the following authorisations (**Table 2**) cannot be refused and are to be substantially consistent with a development consent issued for SSD:

Table 2 – Legislation that must be applied consistently

Legislation that must be applied consistently	Approval Required
(a) an aquaculture permit under section 144 of the <u>Fisheries Management Act 1994</u> ,	No
(b) an approval under section 15 of the <u>Mine Subsidence Compensation Act 1961</u> ,	No
(c) a mining lease under the <u>Mining Act 1992</u> ,	No
(d) a production lease under the <u>Petroleum (Onshore) Act 1991</u> ,	No
(e) an environment protection licence under Chapter 3 of the <u>Protection of the Environment Operations Act 1997</u> (for any of the purposes referred to in section 43 of that Act),	No
(f) a consent under section 138 of the <u>Roads Act 1993</u> ,	No
(g) a licence under the <u>Pipelines Act 1967</u> .	No

5.2.2 Other Relevant NSW State Legislation

Table 3 details other legislation that has been considered in the preparation of the EIS and describes the relevance to the proposal:

Table 3: NSW State Legislations

Legislation	Relevance to the Site / Development
Contaminated Lands Management Act, 1997	The site is not listed on the Contaminated Lands Register, maintained by the EPA.
Heritage Act, 1977	No items of state heritage significance have been identified within the locality.
Roads Act 1993	The RMS, TfNSW and Council have been consulted during the preparation of the EIS. The advice provided has been prepared with regard given to the Roads Act 1993 and considered in the preparation of the EIS (refer to Section 4 – Consultation, Section 6 and supporting Transport and Accessibility Study (Appendix L))
Biodiversity Conservation Act 2016	The <i>Biodiversity Conservation Act 2016</i> came into effect on 25 August 2017. Part 7 of the <i>Biodiversity Conservation Act 2016</i> (BC Act) provides a framework for the assessment and approval of development under the EP&A Act. Clause 7.9 provides for the assessment of State Significant Development and requires that: <i>Any such application is to be accompanied by a biodiversity development assessment report unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values.</i> This requirement is limited by <i>Schedule 9 Savings, transitional and other provisions</i> and the <i>Biodiversity Conservation (Savings and Transitional) Regulation 2017</i>. Clause 28 (1) of the Regulation states that: <i>The former planning provisions continue to apply (and Part 7 of the new Act does not apply) to the determination of a pending or interim planning application.</i> A pending or interim planning application (SSD) is defined in Clause 27. pending or interim planning application means any of the following: (b) <i>an application for planning approval (or for the modification of a planning approval) made within 18 months after the commencement of the new Act if an environmental impact statement is to be submitted in connection with the application and the Secretary of the Department of Planning and Environment issued, before the commencement of the new Act, environmental assessment requirements for the preparation of the statement,</i>

Legislation	Relevance to the Site / Development
	In the case of the subject application, the SEARs were issued on 14 August 2017. Thus the Biodiversity Conservation Act 2016 does not apply to the project with respect to the assessment of the proposal, and the environmental assessment requirements (Section 5A of the EP&A Act) and the <i>Threatened Species Conservation Act 1995</i> would apply and is considered below.
Threatened Species Conservation Act 1995*	The development will not damage critical or other habitat and the removal of vegetation is limited to isolated trees in landscaped areas. The proposal therefore is not likely to have a significant effect on threatened species, populations, or ecological communities or their habitats.

****applies as a result of Biodiversity Conservation (Savings and Transitional) Regulation 2017***

5.3 Planning Instruments and Strategies

5.3.1 NSW State Priorities

Improving service levels in hospitals has been set as one of twelve priorities set by the Premier of NSW (www.nsw.gov.au/improving-nsw/premiers-priorities/). The specific objective is to provide timely access to care in emergency departments, with 81% of patients to proceed through emergency departments within four hours by 2019.

The Stage 2 SSD project will assist in meeting this objective through providing a state of the art Emergency Department (as described in Section 3.3.1) which will be better integrated with other health services offered on the Campus and the changing needs of the community

5.3.2 A Plan for Growing Sydney

A Plan for Growing Sydney (the Plan) identifies a number of centres and corridors across metropolitan Sydney within which urban renewal will result in additional demand for health services in strategic centres. Hornsby is identified in the plan as a Strategic Centre. The Plan seeks to provide sustained growth for Sydney, improve its productivity and competitiveness, and foster higher living standards across the metropolitan region.

As documented in *A Plan for Growing Sydney*, The NSW Government is planning for population growth of over 1.6 million per annum across the Sydney Metropolitan Region for the period 2016 to 2036. The Impact of this growth on local health care services and hospitals such as HKH is compounded by the growth in the older population and associated increase in patient acuity and complexity.

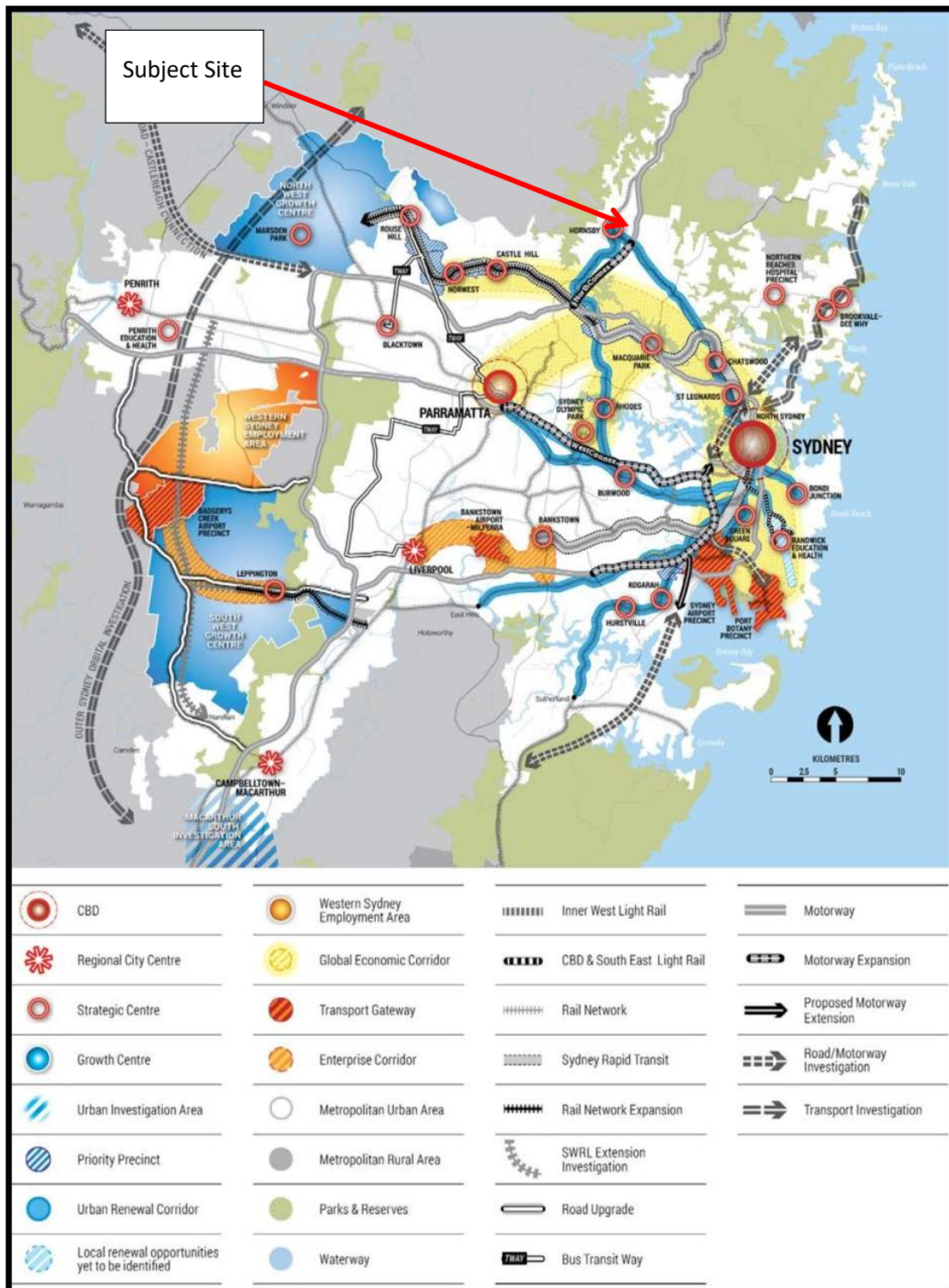


Figure 42 A Plan for Growing Sydney

Specifically, Action 1.10.3 plans for the expansion of health facilities to service Sydney's growing population and states that:

Continued provision of world-class health services will require an expansion of health facilities such as hospitals and community health facilities. It will also involve ensuring health care providers can respond to population growth and changes in the State's demography such as more births and more older people. Lifestyles, the built environment and socio-economic factors will also have implications for future health service needs.

The delivery of the Stage 2 HKH redevelopment aligns with this action through expanding the capabilities and capacity of the campus whilst responding to demographic changes and socio-economic factors across the catchment serviced by the facility.

5.3.3 Draft North District Plan

The Draft North District Plan sets out aspirations and proposals for Greater Sydney's North District, which includes the local government area of Hornsby and the HKH Campus.

The Draft North District Plan was exhibited in October 2017 and includes specific priorities to encourage a health built environment (Priority N4). Stemming from this is an acknowledgement within the Plan of the role and function that local health services such as the Northern Sydney Local Health District offer to the community.

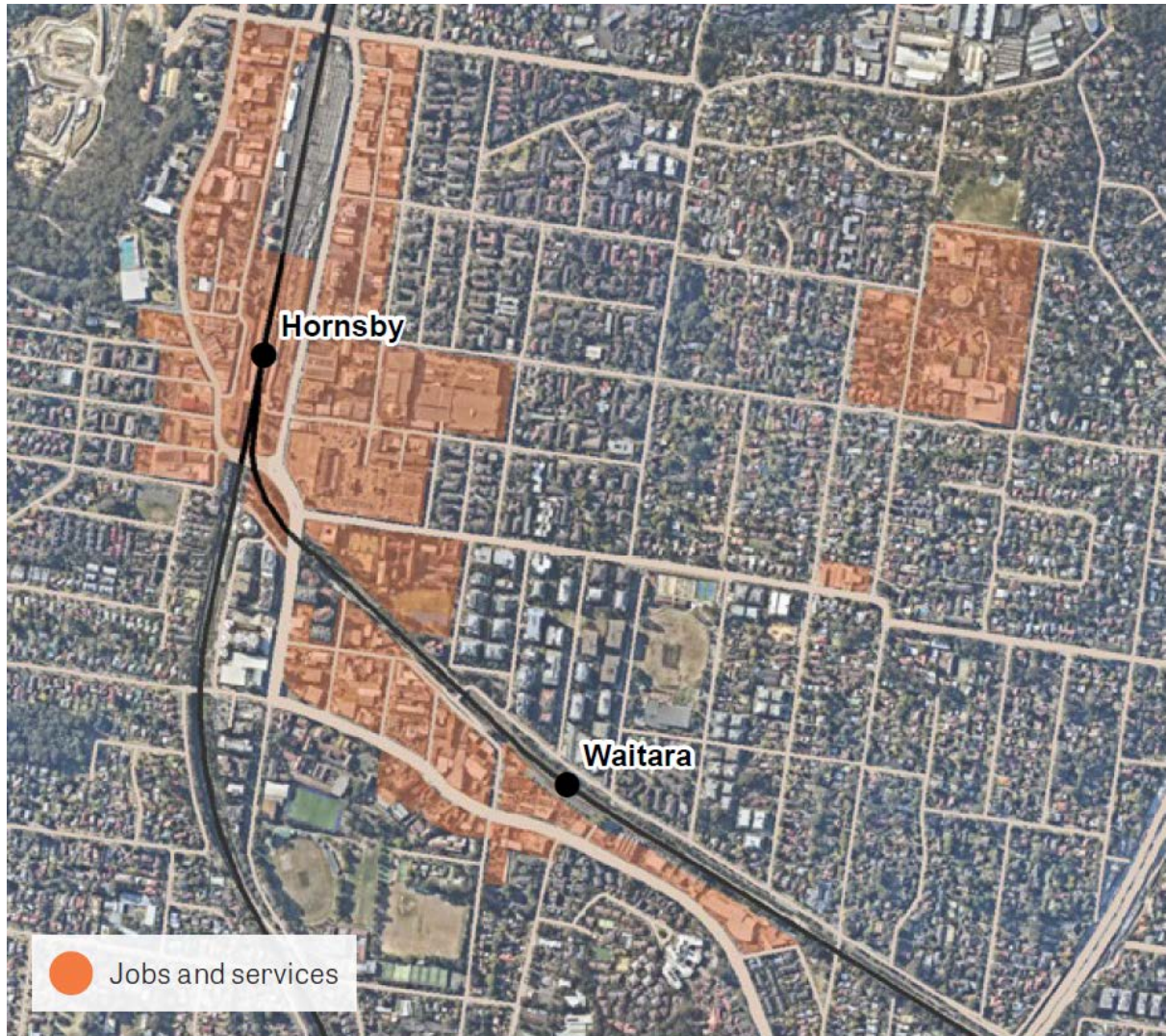
Specific 'actions' provided in the Draft North District Plan include:

- **Action 8** - Deliver social infrastructure to reflect the needs of the community now and in the future; and
- **Action 9** - Optimise the use of available public land for social infrastructure.

The Draft North District Plan places the responsibility to address these actions on Councils, other planning authorities and state agencies. In this instance the redevelopment of the HKH Campus is being led by Health Infrastructure with input from Council and the Department of Planning and Environment to ensure the proposal is consistent with the statutory planning framework, the desired future character of the locality and the long term needs of the community.

The delivery of the Stage 2 HKH redevelopment will reinforce these priorities and actions through expanding the capabilities of the campus, which will in turn support other health related land uses in the vicinity of the Hospital. **Figure 43** shows the HKH Campus in the context of Hornsby's role as a strategic centre for employment and services.

Figure 43 Draft North District Plan – Hornsby



It is anticipated that these priorities will be retained in the final District Plan and the HKH Campus will remain consistent with the adopted plan.

5.3.4 NSW State Plan

NSW 2021 is the current State Plan for NSW. With respect to Health Services, the plan identifies the goal as being to *“restore confidence in the public health system by rebuilding hospitals and health infrastructure, re-engaging medical practitioners, and giving communities and health care providers a strong and direct voice in improved patient care”*.

The key goal with respect to health infrastructure delivery is to provide world class clinical services with timely access and effective infrastructure. Within this there are several major goals and actions to implement the targets. These targets are:

- Reduce hospital waiting times
- Improved transfer of patients from emergency departments to wards
- Reduce unplanned readmissions
- Decrease healthcare associated bloodstream infections
- Ensure all publically provided health services meet national patient safety and quality standards
- Increase patient satisfaction

This project contributes to meeting the goals and targets by building on the investment made for Stage 1 to deliver Stage 2 as an integral component in the redevelopment of the HKH Campus.

5.3.5 Draft Greater Sydney Region Plan 2017

The Draft Greater Sydney Region Plan 2017 (GSRP) builds on 'A Plan for Growing Sydney' and applies to the Greater Sydney Region, which includes the Hornsby LGA and the HKH Campus. At the time of writing, the Draft GSRP had been released for consultation. The Draft GSRP seeks to set a 40 year vision, to 2056, and establish a 20 year plan to manage economic, social and environmental matters. Once adopted, the Draft GSRP will also seek to:

- Inform district and local plans and the assessment of planning proposals;
- Provide guidance for the planning and delivery of infrastructure;
- Inform the private sector of the vision and the infrastructure investments required to manage growth.

Under the Draft GSRP, Hornsby retains its status as a 'strategic centre' under a similar hierarchy to that adopted in 'A Plan for Growing Sydney'. Importantly, the draft GSRP also recognises population growth is coupled with major demographic changes and states that such changes *'will affect the types and distribution of services and infrastructure required in neighbourhoods and cities, which will be supported by a smaller working population.'*

The Draft GSRP notes the importance of integrated planning for health services and the need for ease of access to a comprehensive health system noting the importance of colocation of services and ease of access for patients, visitors and staff. Strategy 6.1 and 6.2 set the framework for the provision of integrated health services under the Draft GSRP. Specifically, these strategies seek to:

- Deliver social infrastructure to reflect the needs of the community now and in the future; and
- Optimise the use of available public land for social infrastructure.

The proposed Stage 2 SSD project is part of an overarching masterplan adopted for the HKH Campus which seeks to meet the current and future needs of the community and will also allow for a more efficient use of the HKH Campus to deliver an integrated health service. In this way, the proposal will be capable of servicing a growing population and the predicted demographic changes within the catchment. In this way, the proposal is thought to be consistent with the Draft GSRP.

5.3.6 Healthy Urban Development Checklist

The Healthy Urban Development Checklist seeks to reconnect or strengthen the links between urban planning and health through ensuring that urban development process, in particular strategic planning is cognisant of the impact that poor planning may have on the health of a community with links established between built form and levels of physical activity, obesity, mental health and social and environmental inequality. It has particular value in guiding strategic planning policies.

Chapter 14 of the checklist provides specific guidance for social infrastructure projects recognising that social infrastructure has a key role to play in “meeting basic community needs” and states that it is fundamental that:

Social infrastructure is viewed strategically as a key part of creating vibrant and sustainable communities. Social infrastructure can make an important contribution as a focal point for community activity, gathering and interaction.

It is evident that in the key planning strategies relevant to the proposal including *A Plan for Growing Sydney* and the *Draft North District Plan* which recognise and seek to priorities social infrastructure including health services facilities such as the HKH Campus. This proposal has been considered in the context of these strategies and is consistent with the underlying objectives with respect to the delivery of appropriate health services facilities. In this way the Stage 2 SSD project is thought to be consistent with the Healthy Urban Development Checklist.

5.3.7 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) commenced on 1 January 2008 and contains specific planning provisions and development controls for a range of infrastructure works or facilities. The Infrastructure SEPP aims to facilitate the effective delivery of infrastructure across the State.

The aim of this SEPP is to facilitate the effective delivery of infrastructure across the State, including providing for consultation with relevant public authorities about certain development during the assessment process.

The relevant matter for consideration under the Infrastructure SEPP is the referral requirements for Traffic Generating Development (Schedule 3). Hospital developments with 100 or more beds are required to be referred to Roads and Maritime Services (RMS). The proposal will result in an additional 99 beds, accordingly, referral to the RMS under the provisions of Schedule 3 of the SEPP is not required. Notwithstanding the shortfall of one (1) bed to trigger referral under the Infrastructure SEPP, RMS have been consulted in the preparation of the EIS and will be requested to review the EIS once placed on exhibition. The outcome of consultation with RMS undertaken in the preparation of the EIS is described in Section 4 of this EIS and is taken into account Section 6 when assessing the likely impacts on the road network.

5.3.8 State Environmental Planning Policy (State and Regional Development) 2011

The aim of the State and Regional Development SEPP is to identify development that is considered to be State Significant Development (SSD), State Significant Infrastructure or Critical State Significant Infrastructure. Under clause 8 of the State and Regional Development SEPP, development is declared to be State Significant Development for the purposes of the EP&A Act if, among other provisions, the development is specified in Schedule 1 or 2 of SEPP State and Regional Development. Clause 14 of Schedule 1 of the State and Regional Development SEPP relates to *'Hospitals, medical centres and health research facilities'* with a capital investment value (CIV) of \$30 million or more are identified as SSD and are considered to be development of State significance.

The Stage 2 SSD development has a CIV of approximately \$184,730,000 and thus qualifies as a State Significant Development. A Quantity Surveyor's certificate prepared by C2R Consulting confirming the total CIV of the proposal is included at **Appendix H**.

5.3.9 State Environmental Planning Policy No. 55 – Remediation of Land

SEPP 55 requires that a consent authority must not consent to the development of any land unless it has considered whether the land is contaminated. This means that the consent authority must routinely consider whether land is suitable for a proposed use in terms of the risk from contamination.

Managing Land Contamination: Planning Guidelines SEPP 55–Remediation of Land provides a decision-making framework to assist authorities carrying out planning functions under the *EP&A Act 1979* and guidance for proponents pursuing a rezoning, development consent or modification under the Act. In the case of the subject application, the planning authority is compelled under Clause 7 to consider whether the land is suitable, or can and will be made suitable.

As detailed in **Section 6.32** and **Appendix S** of this report, a Detailed Site Investigation has been undertaken by Douglas Partners in 2014. Supplementary advice has been provided by Douglas Partners (May 2017) which confirms the validity of the 2014 investigations against the current guidelines. Subject to the outcome of further investigations to be undertaken concurrent with the demolition of structures and earthworks, the assessment confirms that the site is suitable for the proposed hospital use.

Specifically, the investigations detected slight elevations of contaminants TPH and PHA, however note that all results were within the applicable site assessment criteria (NEPM 2013) and thus would not require remediation. The report notes one exception, being the presence of chrysotile asbestos fibres in the subsurface profile of Borehole 114. While Douglas Partners note that the volume of fibres were detected below the limit of reporting, the presence of asbestos within the subsurface soils presents a contamination risk. As detailed in **Section 6.6**, Douglas Partners recommend further investigations to

determine the likely extent of contaminated soils. Where remediation works are required these must be undertaken in accordance with SEPP 55.

Clause 8 of SEPP 55 provides the circumstances under which remediation work is permitted under SEPP 55. Work carried out as Category 1 Remediation Work requires development consent, while work carried as Category 2 Remediation Work does not require development consent.

Clause 9 of SEPP 55 describes Category 1 Remediation Work. As provided in **Table 4** below, any remediation associated with asbestos material found in Borehole 114 would not be Category 1 remediation works.

Table 4 – Clause 9 Assessment

Clause 9 of SEPP 55	Compliance	Comment
For the purposes of this Policy, a category 1 remediation work is a remediation work (not being a work to which clause 14 (b) applies) that is:	-	
(a) designated development, or	No	The development will not meet the threshold to trigger of Clause 15(c)(iii) of Schedule 3 of the EP&A Regulations, ie will not “disturb more than an aggregate area of 3 hectares of contaminated soil”.
(b) carried out or to be carried out on land declared to be a critical habitat, or	No	The Section 149 Certificate (Appendix T) confirms that the land is not critical habitat.
(c) likely to have a significant effect on a critical habitat or a threatened species, population or ecological community, or	No	As provided in Section 5.2.2 the proposal will not have a significant effect on a critical habitat or a threatened species, population or ecological community.
(d) development for which another State environmental planning policy or a regional environmental plan requires development consent, or	No	There is not another State Environmental Planning Policy (SEPP) or a regional environmental plan that requires development consent for the proposed work.
(e) carried out or to be carried out in an area or zone to which any classifications to the following effect apply	-	-

Clause 9 of SEPP 55	Compliance	Comment
under an environmental planning instrument:		
(i) coastal protection,	No	The development will not be carried out in an area or zone subject to a coastal protection classification under the SEPP No 71 – Coastal Protection (as land is not in the coastal zone) or Hornsby LEP 2013 or other environmental planning instrument. Furthermore, the Section 149 Planning Certificate (Appendix T) applying to the site states that “The land is not affected by Section 38 or 39 of the Coastal Protection Act 1979.”
(ii) conservation or heritage conservation,	No	Remediation work will not be carried out in an area or zone classified for conservation or heritage conservation under the Hornsby LEP 2013 or any other environmental planning instrument. Lot 3, DP 580023, contains Collingridge House, which is a listed heritage item under the Hornsby LEP 2013, while as detailed in the Douglas Partners Report (Appendix S), Bore Hole 114, is situated on Lot 1, DP134944. As such any remediation work required with respect to the chrysotile asbestos fibres found within Bore Hole 114, will not be carried out on land the subject of the local heritage listing.
(iii) habitat area, habitat protection area, habitat or wildlife corridor,	No	The development will not be carried out in an area or zone that is a habitat area, habitat protection area, habitat or wildlife corridor classification under the Hornsby LEP 2013, or other environmental planning instrument.
(iv) environment protection,	No	The development will not be carried out in an area or zone subject to environment protection classification under the Hornsby LEP 2013, or other environmental planning instrument.
(v) escarpment, escarpment protection or escarpment preservation,	No	The development will not be carried out in an area or zone subject to escarpment, escarpment protection or escarpment preservation classification under the Hornsby LEP 2013, or other environmental planning instrument.
(vi) floodway,	No	The development will not be carried out in an area or zone subject to a floodway classification under the Hornsby LEP 2013, or other environmental planning instrument.
(vii) littoral rainforest,	No	The development will not be carried out in an area or zone subject to a classification of littoral rainforest under the SEPP No. 26 – Littoral Rainforests, Hornsby LEP 2013, or other environmental planning instrument.
(viii) nature reserve,	No	The development will not be carried out in an area or zone subject to a classification of nature reserve under the Hornsby LEP 2013, or other environmental planning instrument.

Clause 9 of SEPP 55	Compliance	Comment
(ix) scenic area or scenic protection,	No	The development will not be carried out in an area or zone subject to a scenic area or scenic protection classification under the Hornsby LEP 2013, or other environmental planning instrument.
(x) wetland, or	No	The development will not be carried out in an area or zone subject to a classification of wetland under SEPP No. 14 – Coastal Wetlands, Hornsby LEP, or other environmental planning instrument.
(f) carried out or to be carried out on any land in a manner that does not comply with a policy made under the contaminated land planning guidelines by the council for any local government area in which the land is situated (or if the land is within the unincorporated area, the Western Lands Commissioner).	No	Section 1C.3.4 of the Hornsby DCP 2013 prescribes that: • <i>Developments applications should prepare and submit a preliminary contamination assessment in accordance with SEPP 55 Remediation of Land where land is suspected to be contaminated, and:</i> ○ <i>The application proposes a change of use to a sensitive land use such as residential, educational, recreational, child care purposes, or for the purposes of a hospital land, or</i> ○ <i>Work is proposed that may disturb contaminated land (for example, earthworks at a petrol station).</i> • <i>Where a preliminary assessment identifies that a contaminant is present on the site, a detailed investigation of the site should also be prepared and lodged with the development application.</i> • <i>A remedial action plan, validation report and a site audit statement may also be required to be completed.</i> In this way, the Hornsby DCP 2013 is taken to be a contaminated land planning guideline adopted by the Council. In providing the Douglas Partners assessment at Appendix S, the proposal is not inconsistent with the adopted guideline.

As provided in **Table 4** any such remediation of contaminated soils associated with Borehole 114 would not be undertaken as Category 1 Remediation Work and would therefore be undertaken as Category 2 Remediation work and would not require development consent.

5.3.10 State Environmental Planning Policy No. 64 (Advertising and Signage)

SEPP 64 applies to all signage that, under an Environmental Planning Instrument, can be displayed with or without development consent and is visible from any public place or public reserve.

For the purposes of this assessment under SEPP 64, the majority of signage proposed is of a size which can be constructed as *exempt development* as provided for in Clause 76(2) of the EP&A Act and as referred to in Clause 20 and Schedule 1 of the ISEPP. The emergency building signage is to be refurbished, however its appearance and size will remain unchanged. Pylon signs are proposed within the campus which have an area of 4.2m² and thus exceed the maximum thresholds prescribed in the ISEPP of 3.5m². Consequently this signage requires assessment against the relevant criteria contained in SEPP 64.

Schedule 1 of SEPP 64 contains assessment criteria which applies to advertising and directional signage. The proposed wayfinding signage meets the relevant assessment criteria as provided in **Table 5**.

Table 5 – SEPP 64 Assessment

SEPP 64 Assessment Criteria	Comments	Compliance
Character of the area		
Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?	The proposal is compatible with the existing and desired future character of the site as a Hospital	Y
Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	The proposed development is generally consistent with the nature and siting of the building as a public building providing health services. Accordingly, the type is clear and legible in communicating the use of the building for the public. Furthermore it is consistent with existing directional signage found within the HKH Campus	Y
Special Areas		
Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas,	The design and scale of the signage is such that it will not erode the amenity of visual quality of any environmentally sensitive	Y

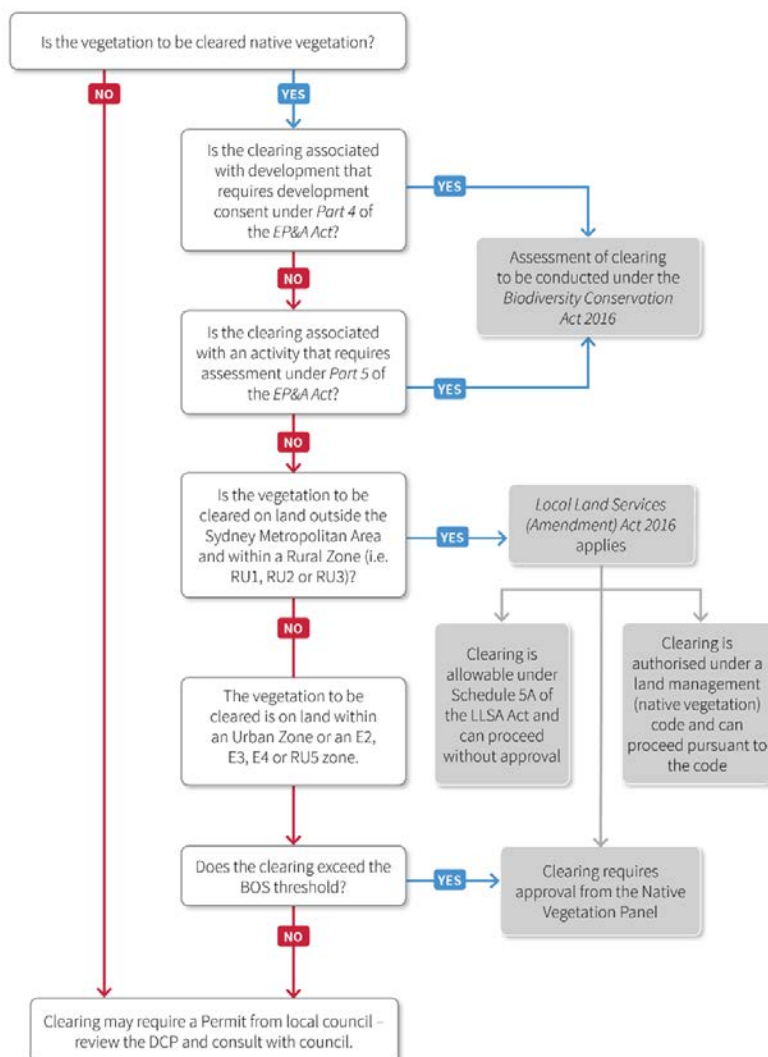
SEPP 64 Assessment Criteria	Comments	Compliance
open space areas, waterways, rural landscapes or residential areas?	areas or heritage areas, including trees on Palmerston Road.	
Views and Vistas		
Does the proposal obscure or compromise important views?	The proposed signage is integrated with the proposed built form and landscaped treatments and thus will not result in any obstruction of views,	Y
Does the proposal dominate the skyline and reduce the quality of vistas?	The scale of the signage is such that it will not protrude into the skyline.	Y
Does the proposal respect the viewing rights of other advertisers?	The proposed signage will not impact upon other advertisers or existing advertising structures.	Y
Streetscape, setting or landscape		
Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?	The scale, proportion and form of the proposed signage is consistent and within the setting of an established health services precinct.	Y
Does the proposal reduce clutter by rationalising and simplifying existing advertising?	The proposed signage contributes to the visual interest of the streetscape by contributing to the identification and recognition of the Hospital.	Y
Does the proposal screen unsightliness?	The proposed signage is integrated with the architecture of the existing buildings and proposed buildings, however does not serve as a screen.	Y
Does the proposal protrude above buildings, structures or tree canopies in the area or locality?	The proposed signage does not protrude above the existing or buildings.	Y
Does the proposal require ongoing vegetation management?	The proposed signage will not require ongoing vegetation management above and beyond routine maintenance.	Y
Site and Building		
Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located?	The proposed signage has been designed to be fully compatible with the existing buildings and is compatible with the architecture of the building.	Y
Does the proposal respect important features of the site or building, or both?	The proposed signage has been located in the most architecturally appropriate locations to assist in place identification and wayfinding.	Y

SEPP 64 Assessment Criteria	Comments	Compliance
Does the proposal show innovation and imagination in its relationship to the site or building, or both?	The proposed signage will form part of an integrated network of signage across the campus.	Y
Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?	No safety devices, platforms, lighting devices or logos are incorporated as an integral part of the signage.	Y
Illumination		
Would illumination result in unacceptable glare?	Illumination of signage will not result in unacceptable glare, and the location of the proposed signage which is elevated above the height of nearby roads.	Y
Would illumination affect safety for pedestrians, vehicles or aircraft?	The location and orientation of signage is such that it will not impact on nearby residential receivers or patients within the campus.	Y
Would illumination detract from the amenity of any residence or other form of accommodation?	The signage will not have adjustable lighting. Due to the 24-hour nature of the use, it is anticipated that the signage will be illuminated throughout the night. However, due to the separation between the proposed development and residential receivers to the west and north, it is not anticipated that the development will have any adverse lighting impacts.	Y
Can the intensity of the illumination be adjusted, if necessary?		
Is the illumination subject to a curfew?		
Safety		
Would the proposal reduce the safety for any public road?	The proposed signage has been located in order to avoid any impacts on public roads, and views to building signage will generally be presented to the primary public entrance and pathways throughout the Campus.	Y
Would the proposal reduce the safety for pedestrians or bicyclists?	The proposed signage will be located above ground level and will not distract from essential sight lines for pedestrian and cyclists.	Y
Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?	The proposed signage will be integrated with the existing buildings and will not obscure sight lines from public area.	Y

5.3.11 State Environmental Planning Policy (Vegetation in Non Rural Areas) 2017

State Environmental Planning Policy (Vegetation in Non Rural Areas) 2017 (The Vegetation SEPP) applies to development involving the clearing vegetation on land in urban areas and on land in environmental zones. Where development consent is not required for clearing, the Vegetation SEPP requires that clearing that is above the Biodiversity Offset Scheme (BOS) threshold be approved by the Native Vegetation Panel. For clearing that is below the BOS threshold, the SEPP enables councils to regulate clearing of native vegetation (and any non-native vegetation identified in a DCP) through a permit system. The flow chart provided in **Figure 44** illustrates the approval pathways for clearing vegetation in urban and other non – rural areas and is relevant to the HKH Campus, which is situated in an urban area.

Figure 44 Vegetation SEPP pathways (source: SEPP (Vegetation) Explanation of Intended Effect)



It is evident from the flow chart provided in **Figure 44** that assessment would be required under the BC Act. As detailed in Section 5.2.2, the BC Act does not apply to this project. As such no further assessment is required.

5.3.12 Hornsby Local Environmental Plan, 2013

The Hornsby Local Environmental Plan (LEP) 2013 applies to the subject site and includes a land use table with zone objectives, principle development standards and miscellaneous provisions to guide development across the Hornsby LGA.

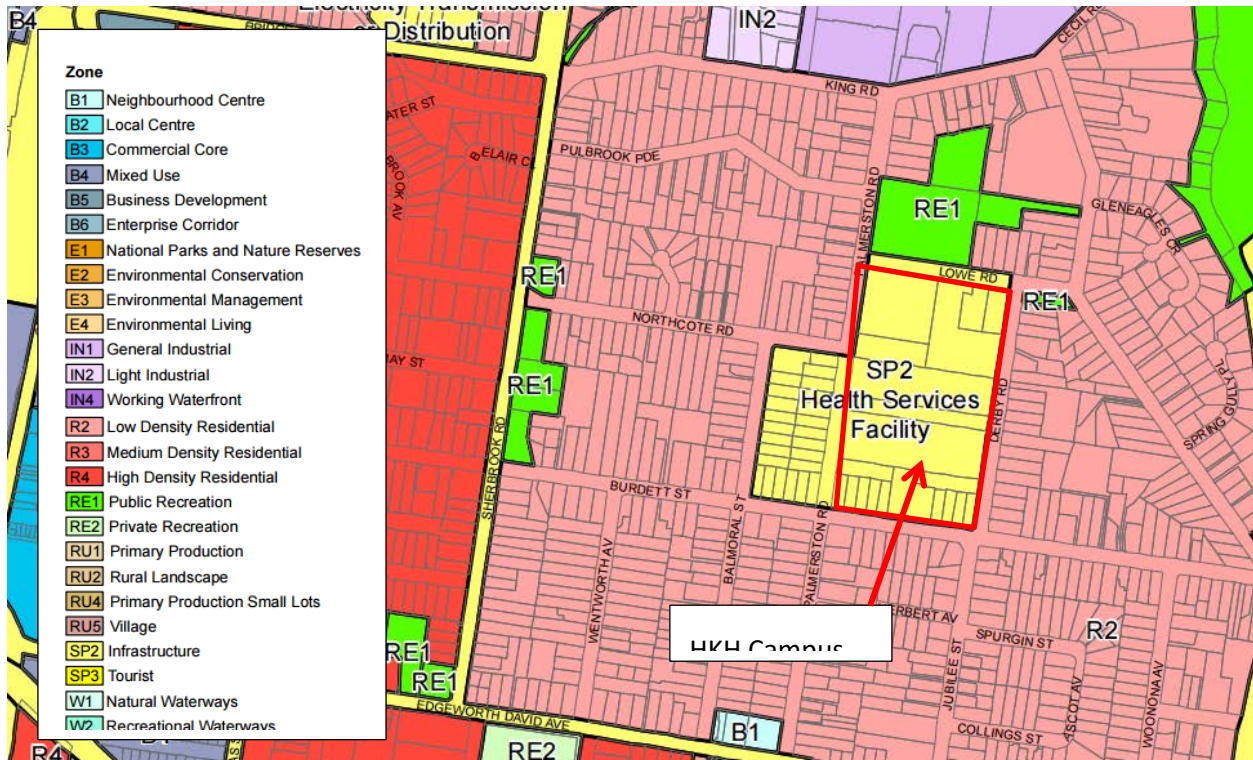
5.3.13 Zoning and Permissibility

The Hornsby Local Environmental Plan (LEP) 2013 applies to the subject site and includes a land use table with zone objectives, principle development standards and miscellaneous provisions to guide development across the Hornsby LGA.

The HKH campus is zoned SP2 Infrastructure – Health Services Facility under the Hornsby LEP 2013. The objectives of the zone are:

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

Figure 45: Land Use Zoning Map



Health Services Facilities, and any development that is ordinarily incidental or ancillary development to Health Services Facilities are permitted with consent in the zone.

The definition of Health Services Facilities is provided in the dictionary appended to the LEP and is replicated below:

health services facility means a building or place used to provide medical or other services relating to the maintenance or improvement of the health, or the restoration to health, of persons or the prevention of disease in or treatment of injury to persons, and includes any of the following:

- (a) a medical centre,
- (b) community health service facilities,
- (c) health consulting rooms,
- (d) patient transport facilities, including helipads and ambulance facilities,

(e) hospital.

The existing use and proposed development is most appropriately characterised as a hospital, which is also defined in the LEP, and is therefore permitted with consent.

5.3.14 Principal Development Standards

Consideration was given to the development standards relevant to the proposal including:

5.3.14.1 Height of Buildings

Clause 4.3 of the HELP 2013 seeks to permit a height of buildings that is appropriate for the site constraints, development potential and infrastructure capacity of the locality. The height of a building is not to exceed the maximum height shown on the applicable Height of Buildings Map (Figure 46).

Figure 46 – Height of Buildings Map

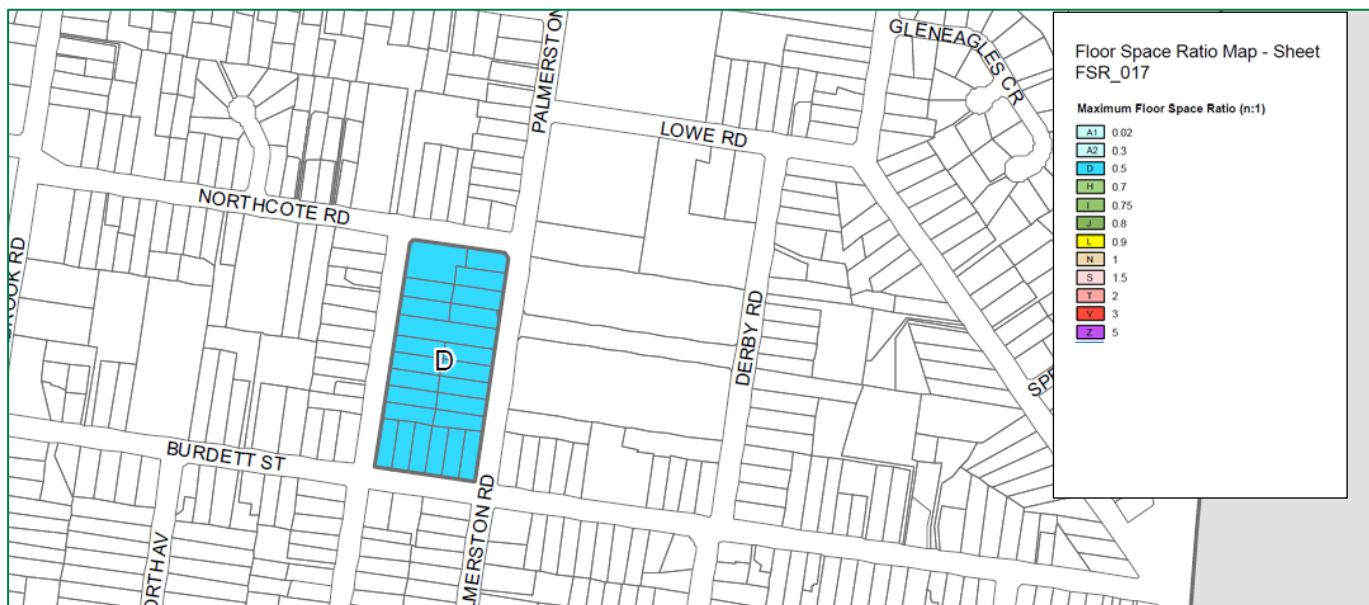


As shown in **Figure 46**, no maximum height is prescribed with respect to the subject site.

5.3.14.2 Floor Space Ratio

Clause 4.4 of the HLEP 2013 seeks to permit development of a bulk and scale that is appropriate for the site constraints, development potential and infrastructure capacity of the locality. The maximum floor space ratio (FSR) for a building is not to exceed the maximum FSR shown on the applicable FSR Map (Figure 47).

Figure 47 Floor Space Ratio Map



As shown in Figure 47 no maximum FSR is prescribed with respect to the subject site.

5.3.14.3 Other Provisions

The following provisions are relevant in the assessment of the SSD project

Clause 6.8 – Design Excellence

Clause 6.8 of the Hornsby LEP 2013 applies to development involving the erection of a new building or alterations to an existing building which will result in a building with a height of more than 29.6 metres. Clause 6.8 requires that development consent must not be granted to development to which this clause applies unless the consent authority considers that the development exhibits design excellence.

Clause 6.8(4) provides detailed criteria for determining whether the proposal exhibits design excellence in terms of architectural and urban design. While the application of Clause 6.8 to the site is limited by Clause 5.12(1) of the Hornsby LEP 2013, which has the effect of turning off any

provisions which restrict or enable the restriction of development that is permitted to be carried out with development consent under State Environmental Planning Policy (Infrastructure) 2007, the concept design seeks to provide a high quality built form consistent with the criteria prescribed in Clause 6.8.4 of the Hornsby LEP 2013. This is detailed in **Table 6** below:

Table 6 – Design Excellence Criteria

Clause 6.8 Criteria	Considered	Comment
In considering whether the development exhibits design excellence, the consent authority must have regard to the following matters:	-	-
(a) whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved,	Yes	Section 3.5 of the EIS documents the proposed façade treatment including the rationale behind the selection of preferred building materials. This shows that the design and preferred materials and finishes are appropriate to the building type and locality.
(b) whether the form and external appearance of the development will improve the quality and amenity of the public domain,	Yes	The Stage 2 SSD building will allow for the HKH Campus to function in a more efficient manner. In doing so, it will see the removal of several buildings which in unison present a disjointed campus. The Stage 2 building will provide a uniform design response consistent with the approved and constructed Stage 1 development while opening up the central part of the campus to open space improvements. In this way, the development will improve the quality and amenity of the public domain.
(c) whether the development detrimentally impacts on view corridors,	Yes	Section 6.1.5 provides an assessment of potential view loss and finds any impacts will be minimal.
(d) whether the development achieves transit-oriented design principles, including the need to ensure direct, efficient and safe pedestrian and cycle access to nearby transit nodes,	Yes	Section 6.2 considers the available routes to nearby transit nodes at Hornsby and Waitara and finds these routes to be appropriate to service the future needs of the HKH Campus.
(f) how the development addresses the following matters:	-	-
(i) the suitability of the land for development,	Yes	The proposal is consistent with the objectives of the SP2 Infrastructure – Health Services Facility zone. Furthermore, no environmental constraints have been identified which would preclude or unreasonably curtail the proposal.

Clause 6.8 Criteria	Considered	Comment
(ii) existing and proposed uses and use mix,	Yes	The proposal is consistent with the established use and desired future character of the site.
(iii) heritage issues and streetscape constraints,	Yes	Section 6.4 documents how the proposal responds to identified items of heritage significance.
(iv) the relationship of the development with other development (existing or proposed) on the same site or on neighbouring sites in terms of separation, setbacks, amenity and urban form,	Yes	As provided in 6.1, the proposal responds appropriately to established and proposed built form within the site and takes into account the existing and desired future character of the immediate surrounds.
(v) bulk, massing and modulation of buildings,	Yes	Section 6.1.1 considers the height bulk and scale of the proposal, and finds that the proposal provides a considered and appropriate response.
(vii) environmental impacts and factors such as sustainable design, overshadowing and solar access, visual and acoustic privacy, noise, wind, reflectivity, water and energy efficiency and water sensitive urban design,	Yes	Section 6 considers the overall environmental impacts associated with the proposal and specifically addresses matters such as: - Ecologically Sustainable Development (ESD); - Visual Impact; - Overshadowing; - Acoustic Impacts; - Water Cycle Management.
(viii) the achievement of the principles of ecologically sustainable development,	Yes	Section 6.3 details how the proposal has taken into account and were appropriate the principles of ESD.
(ix) pedestrian, cycle, vehicular and service access and circulation requirements,	Yes	The suitability of site access arrangements has been considered in Section 6.2 of the EIS.
(x) the impact on, and any proposed improvements to, the public domain,	Yes	While improvements proposed to the public domain (e.g. outside the HKH Campus) are limited to driveway crossings, these will have minimal impacts.
(xi) achieving appropriate interfaces at ground level between the development and the public domain,	Yes	As a hospital campus, the design responds in a manner which seeks to provide a legible and cohesive interface between the proposed built form and the public domain. This is reflected in the Stage 2 SSD design as described in Section 6.1.
(xii) integration of landscape design, including the configuration and design of communal access and communal recreation areas, to incorporate exemplary and	Yes	The landscape concept described in Section 3.8 seeks to offer an improved experience to staff, patients and visitors to the Campus. The landscape concept offers an improved use of space, which will meet the current and future needs of the Campus.

Clause 6.8 Criteria	Considered	Comment
innovative treatments and to promote an effective social atmosphere.		

Clause 5.10 Heritage

The objectives of Clause 5.10 are to:

- to conserve the environmental heritage of Hornsby,
- to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,
- to conserve archaeological sites,
- to conserve Aboriginal objects and Aboriginal places of heritage significance.

The site contains one building listed as a Heritage Item of Local significance in Hornsby Local Environmental Plan 2013, Schedule 5 Part 1. The item is described as Item 529 – “Collingridge House (excluding grounds)”. The local heritage item is found on Lot 3 DP580023. The site is not within a heritage conservation area. The land affected by the Heritage Item is shown in **Figure 48**.

Figure 48 Site Containing Collingridge House (529)



Figure 49 Collingridge House



Figure 50 Heritage Listed Trees – Palmerston Road



The site is in proximity to further Heritage Items of Local Significance including:

- Local Item 528 - Street Trees found in the Palmerston Road Road Reserve;
- Local Item 828 – House found at 26 Pulbrook Parade Hornsby; and
- Local Item 781 – House found at 33 Palmerston Road Waitara.

As described in Section 3 of this EIS, the proposal seeks to retain Collingridge House and retain and protect the street trees found in Palmerston Road.

The impact of the Stage 2 SSD project on heritage including items listed under the HELP 2013 is considered in Section 6.7 and the EJE Heritage Impact Assessment provided at **Appendix P**.

5.3.15 Hornsby Section 94 Contributions Plan 2014 - 2024

The relevant contributions plan for the site is the Hornsby Shire Council Section 94 Development Contributions Plan 2014 - 2024. Section 2.7 of the plan allows for exemptions to be considered for certain forms of development such as social housing and schools constructed under the Building the

Education Revolution program as provided under a prevailing direction of the Minister for Planning and Environment.

Whilst no specific direction applies to hospitals, the proposed development will provide a public benefit by delivering an important public health service, and is necessary for the critical upgrade of the HKH Campus. As such an exemption is appropriate on the following grounds:

- The levying of contributions on projects for health purposes to local services will not have any direct nexus to the development; and
- The payment of contributions to facilities elsewhere would consume resources which should be devoted to the HKH's core infrastructure upgrading and social benefits that would result in such a development.

This is found to be consistent with Planning Circular No. D6 (21 September 1995) states that:

"Crown activities providing a public service or facility lead to significant benefits for the public in terms of essential community services and employment opportunities...these activities are not likely to require the provision of public services and amenities in the same way as developments undertaken with a commercial objective"

Although Circular D6 was introduced in 1995, it is relevant to note that recent interpretations by planning authorities in respect to this Circular and other Departmental Guidelines have considered crown development including hospitals and tertiary education establishments and have not sought to impose the Section 94 Levy.

DPE is therefore encouraged to waive the provisions of the Hornsby Contributions Plan.

5.3.16 Summary of Approvals and Licenses

Table 7 contains a summary of the licences, approvals and permits that are likely to be required for the project.

Table 7: Summary of Authority Approvals

Legislation	Authorisation	Consent or Approval Authority
EP & A Act 1979	Development Consent	Minister for Planning or delegate
	Crown Building Certificate required prior to the commencement of building works	Crown Certifying Authority
Sydney Water Act 1994	Section 73 Compliance Certificate	Sydney Water

6. Environmental and Planning Assessment

This section provides an assessment of the potential environmental impacts associated with the proposed development against the terms of the SEARs and the matters for consideration, set out in clauses 6 and 7 of Schedule 2 of the Regulations, and section 79C(1) of the Act,

The key environmental and planning matters associated with the proposed development are as follows:

- Built Form and Urban Design;
- Environmental Amenities;
- Transport and Accessibility;
- Ecologically Sustainable Development;
- Heritage;
- Noise and Vibration;
- Contamination;
- Hazardous Materials;
- Sediment, Erosion and Dust Control;
- Drainage;
- Flooding;
- Waste Management;
- Construction Management and Construction Traffic Management;

6.1 Built Form and Urban Design

The architecture (**Appendix D**) responds to the already established themes of the STAR building (SSD Stage 1).

In designing the Stage 2 SSD buildings, lead design consultants Nettleton Tribe Architects recognised the importance of ensuring that the hospital stages look connected and unified, as they belong together and offer the community one hospital service. This is achieved without providing a homogenous or uniform response or attempt to mimic the existing built form or architectural character of the surrounding residential area.

Nettleton Tribe offer the following design statement which is provided in response to the site context, identified opportunities and constraints and the project brief.

The main entry of the hospital is formed in a 1 to 2 storey element. It addresses the main street entry point and also opens up to the northern portion of the site. This building element serves to connect people into the main circulation elements of the hospital. The entry and drop off canopies offer protection and a human scale. This entry canopy also serves an important public connecting pathway to the Main Building from the main entry and the ED entry, as there is no public internal connection inside the hospital.

The materials and themes established on the STAR building will be responded to. Stage 2 is substantially higher again and the building mass and form addresses this change in scale. The elevations reflect the stratification of both material textures and colour.

The terracotta material is in response to the residential setting, particularly the roof tiles.

The Stage 2 building on Derby Road maintains the already established 22m setback from the STAR building. This continues a back of house service zone at the rear of the hospital in which loading and maintenance continue to function. It also provides a separation from the building form and residential properties located on the other side of Derby Road.

The building mass is stepped from the north to the south across the site, with the STAR building stepping to the lowest point on the southern boundary.

In elevation, the building has been treated in a horizontally layered manner in order to convert its mass to a more humanistic scale that is more in context with the adjacent urban condition. The terracotta screen floats above the heavy, dark brick base ...

The proposal takes advantage of the exposed northern faces that will provide access to natural light to a multitude of patient areas... The winter solstice is the most extreme case and will be used to establish the furthest extent of the shadows cast.

The western side of the site faces onto the medical precinct that has a number of private, specialised medical facilities including imaging suites, surgeries and dental clinics. This allows for easy cross flow of out-patients both to and from the hospital.

The Stage 2 materials selected have been determined in relationship with the site and natural surrounding context.

Stage 1 primary materials such as terracotta, brick work and glass are carried through to Stage 2 facades to create a visually linked development. Materials are articulated in similar proportions to Stage 1.

The tones selected for the multi storey car park are informed by a subtle examination of the Angophora's trees external bark, has been re-interpreted on the Stage 2 development facade so there is a visual back drop link with the car parking design.

Warmer panelled tones on Stage 2 Elements are used as distinctive entry way finding markers seen from a distance. These warmer inviting colours have been derived from the underlying Angophora tree trunk and are complementary to the warm tones of the terracotta.

6.1.1 Height, Bulk and Scale

While the HELP 2013 does not impose a maximum height limit or floor space ratio to guide appropriate built form, the proposal seeks to provide a building height and built form which responds appropriately to its surrounds. Fundamentally this is achieved through progressively increasing heights away from the property boundaries. This is most evident along the Derby Road and Burdett Road frontages where residential dwelling houses are found adjacent to the HKH Campus. This is reflected in **Figures 51 to 53** and the perspective renders shown in **Figures 54 and 55**.

Figure 51 – Height Plane from Burdett Street



Figure 52 Height Plane from Derby St and Palmerston Road



Figure 53 Height Plane from Burdett Street



Figure 54 – Perspective 01

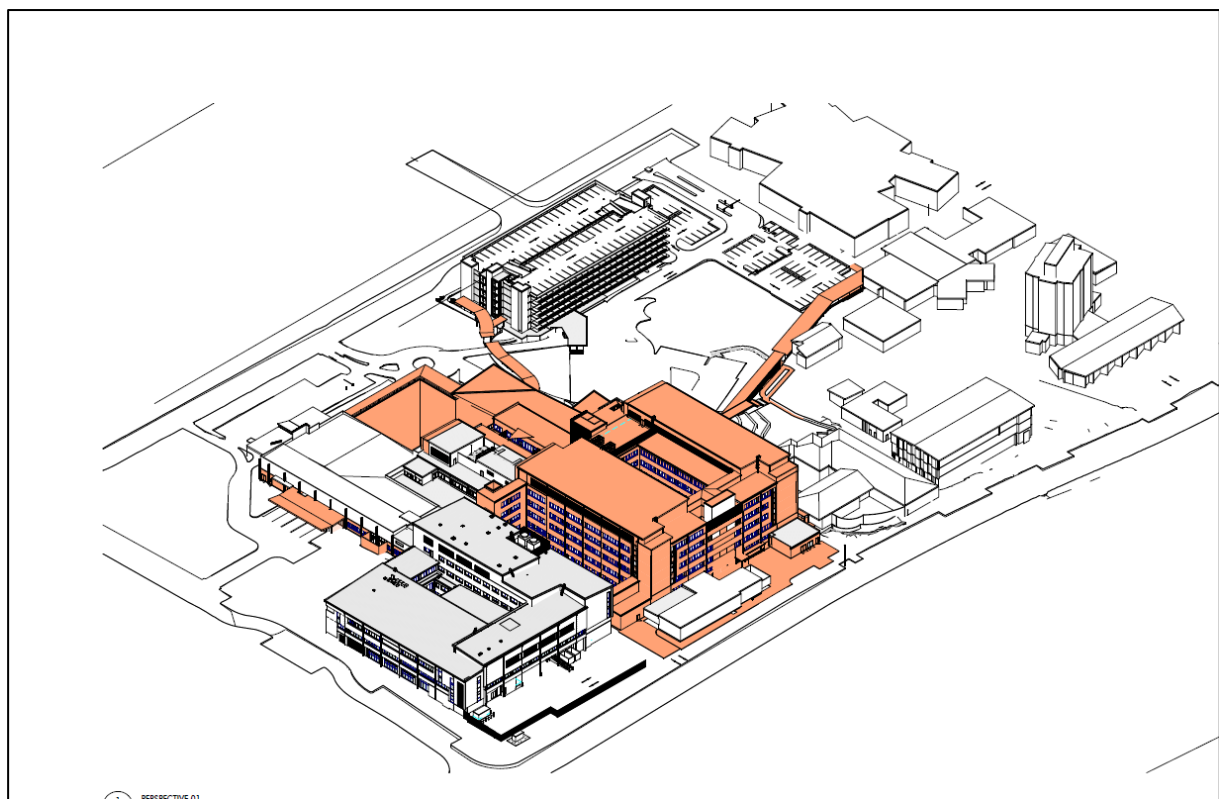
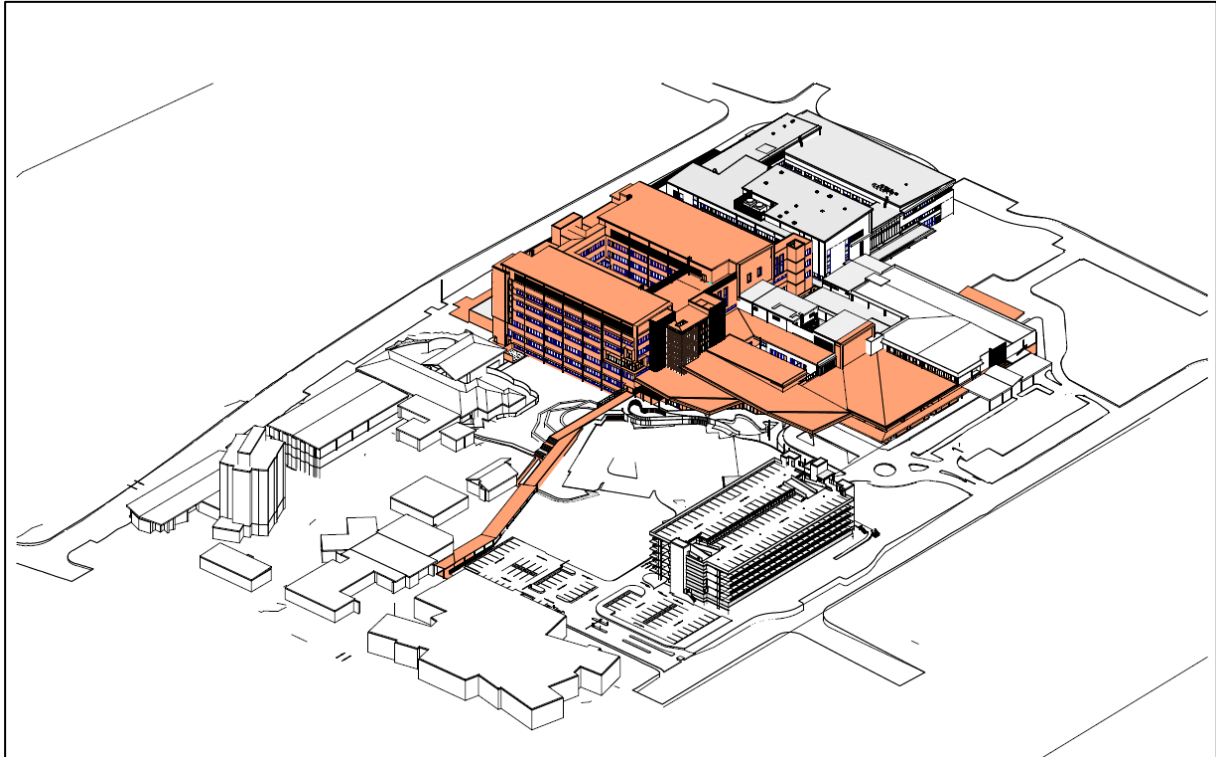


Figure 55 – Perspective 02



The finished floor level (FFL) of Level 1 (RL+181.00) has been designed at to align with the FFL of the HOPE and STAR Buildings to which it abuts and connects to.

Nettleton Tribe make the following response with respect to the scale of the Stage 2 development in the context of the site and surrounds.

The scale of the Stage 2 building steps up from Stage 1 in an established benchmark whereby the Stage 1 building is reduced in height to the southern boundary along Burdett Street. Stage 1 was designed this way in height and scale to reduce the overshadowing of the properties to the south across Burdett Street. Stage 2 sits higher but does not contribute to any further overshadowing to the Burdett Street properties.

The alignment on Derby Road is a continuation of the Stage 1 building setback. The Stage 2 building has a higher built form. The design has maintained a strong building base with a continuation of the brick material. The terracotta faced material provides a similar horizontal banding as the adjacent Stage 1 building. The mass of the Stage 2 building has been reduced at the top plantroom area by a series of steps and the introduction of courtyards.

The height of the development increases progressively away from Derby Road and Burdett Street so as to minimise visual impacts and over shadowing. In the context of the surrounds, the proposal is not substantially taller than other buildings found elsewhere in the Campus, and thus will not be of a height and scale which is unfamiliar to the occupants of nearby dwellings or commercial premises. Furthermore, through adopting similar finishes and materials to the Stage 1 building, will allow the proposal to integrate comfortably with the remainder of HKH Campus.

In summary the proposal is thought to provide an appropriate response with respect to height, bulk and scale and will not unreasonably affect the amenity of building occupants in the curtilage of the HKH Campus.

6.1.2 Crime Prevention through Environmental Design

The development seeks to implement the principles of Crime Prevention through Environmental Design (CPTED), as identified in the Department of Planning's guideline titled Crime Prevention and the Assessment of Development Applications (2001) as follows:

6.1.2.1 Principle 1 – Natural Surveillance

As noted in Crime Prevention and the Assessment of Development Applications, good surveillance means that people can see what others are doing. People feel safe in public areas when they can easily see and interact with others. Would-be offenders are often deterred from committing crime in areas with high levels of surveillance. In accordance with this principle, the development provides scope for active and passive surveillance across the Campus.

The development has been designed to provide passive surveillance over public areas, through the introduction of glazing and appropriate lighting to provide surveillance opportunities over the public domain and main hospital entry. This is embodied in **Figure 56**.

Figure 56 – Surveillance Opportunities



This will promote the reality and / or perception that the open spaces are under casual surveillance during both the day and night. This acts as a way of creating the perception of risk in the minds of

potential perpetrators. The well-lit nature of the hospital environment will also enhance passive surveillance, with the Hospital Street providing continuous activation throughout the site.

In addition, a number of strategies can be adopted to further improve the safety and security of the development including:

- Incorporating appropriate directional and wayfinding signage to reinforce the building's main entrance and car parking areas and public transport;
- Utilise strategically placed capable guardians, such as reception staff and ED staff, to provide natural surveillance to the building entries; and
- Utilise trees with a high canopy that provide good shade for pedestrians, complemented with low groundcover landscaping to ensure good visibility and permeability for pedestrians.

6.1.2.2 Principle 2 – Access Control

Access controls use physical and symbolic barriers to attract, channel or restrict the movement of pedestrians. As noted in *Crime Prevention and the Assessment of Development Applications* guide, effective access controls make it clear where people are permitted to go or not go, and consequently reduces the opportunity for and likelihood of potential offenders reaching people and or damaging property.

The general public will be free to enter the site during the day. The design responds through ensuring all of the publically accessible entry points and staff entry points into the buildings are located in areas which will be subject to high user traffic, as well as surveillance from passing pedestrians and motorists. This will ensure that people entering and exiting the building can be clearly seen from public spaces and adjoining buildings, and monitored through surveillance if necessary.

In addition, a number of strategies can be adopted to further improve the safety and security of the development. These include

- Use symbolic barriers, such as coloured or different paving materials to clearly define the publicly accessible areas and routes in and around the building; and
- Ensure all access points to the building are appropriately controlled by key / code locks (where necessary) in conjunction with the level of security to be provided to staff and patients.

6.1.2.3 Principle 3 – Territorial Reinforcement

Territorial reinforcement refers to the clear identification of public spaces, and the creation of a sense of community ownership over such spaces. As noted in the *Crime Prevention and the Assessment of Development Applications* guideline people feel comfortable in, and are more likely to visit, places which feel owned and cared for. Well used places also reduce opportunities for crime and increase risk to criminals.

Landscaping, fencing and signage around the campus will differentiate public and private spaces.

In addition, a number of strategies can be adopted to further improve the safety and security of the development.

These include:

- After hours campus management measures such as regular security patrols; and
- Ensure building entrances are either locked or well monitored after hours to increase the territorial reinforcement of the building.

6.1.2.4 Principle 4 – Space Management

Space management refers to providing attractive, well maintained and well used spaces. As noted in the *Crime Prevention and the Assessment of Development Applications* guideline, space management strategies include site cleanliness, rapid repair of vandalism and graffiti and the removal of damaged physical elements.

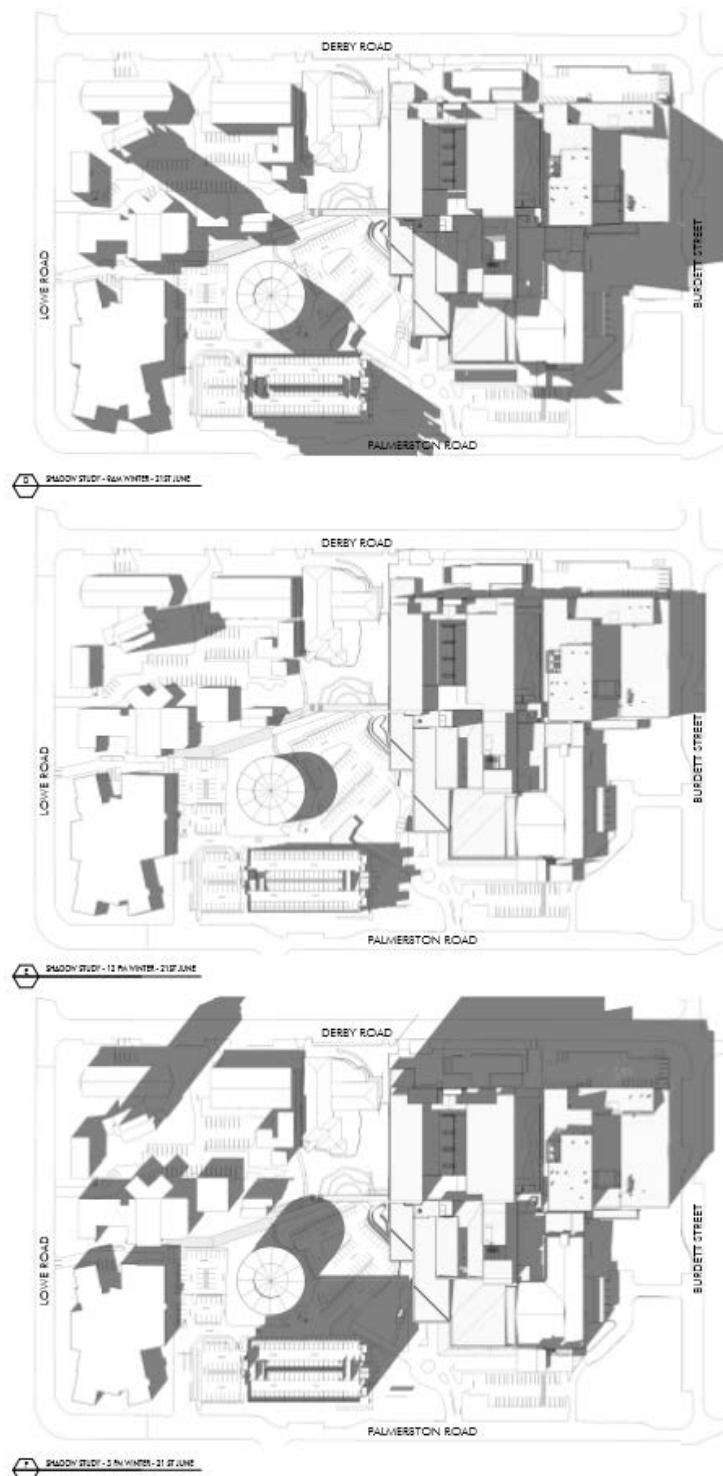
As documented in the schedule of materials and finishes (**Appendix D**) durable and high-quality materials are proposed which will ensure that minimal maintenance is required for the proposed development. The use of durable façade treatments will also discourage graffiti or vandalism of the building facades. The HKH Campus is supported by a dedicated maintenance team who ensure that it does not become degraded and will ensure that vandalism of the property is promptly removed as a deterrence.

6.1.3 Solar Access and Overshadowing

Shadow Diagrams that illustrate the extent of overshadowing caused by the proposal have been provided by Nettleton Tribe Architects (**Appendix D**). The diagrams show the period of greatest impact of overshadowing throughout the year, being the winter solstice. The diagrams demonstrate the shadow impacts at 9am, 12pm and 3pm and are provided at **Figure 57** below.

The diagrams indicate that the proposal will enable all adjacent residential buildings to maintain a minimum of 3 hours of sunlight between 12pm and 3pm at mid-winter, with the majority of shadowing falling within the hospital campus or adjacent road reserve.

Figure 57 – Stage 2 Shadow Diagrams



Whilst it is noted that the Stage 2 SSD building will provide shading to internal courtyards, this impact has been considered in the landscape concept and reflected in the landscape design statement, which with respect to overshadowing from built form, notes that:

Overall the majority of the planting is native with use of exotic plants for entry areas and courtyards as accents best suited for the solar access and amenity of the space. The use of native canopy trees planted in areas away from the built form has been proposed so the trees can grow to maturity. Shade loving plants are used in areas such as courtyards and southern sides of buildings to best suit the growing conditions.

Outside of the internal courtyards, there are landscaped areas which will receive full sun and will be available to staff, visitors and patients.

It is evident that the proposal responds appropriately to overshadowing both internally and on external residential and commercial premises adjacent to the Campus.

6.1.4 Visual Privacy

Whilst there is still potential for overlooking from the upper levels of the future inpatient units this is largely mitigated by the distance between the proposed building and the residential receivers. Furthermore, the building height means that occupants will generally look out over the dwellings, rather than directly at the properties. Finally, the building has been orientated so that rooms face north and south, with limited opportunities to overlook dwellings to the east.

6.1.5 View Loss

Residential areas in close proximity to the development footprint on Burdett Road (South) and Derby Street (East) are generally at the same level as the hospital or as a result of the topography, are at a lower level. Views over the hospital site are limited by boundary features such as fences and vegetation. Whilst the new building will be visible from the surrounding area, district views are not currently available and will not be impacted to any significant extent.

6.2 Transport and Accessibility

Traffic and parking impacts associated with the delivery of the multi-level car park, approved by the Northern Planning Panel in August 2017 took into account the forecast car parking demand and traffic generation from HKH Campus over the short and medium term. The traffic and parking impacts associated with the proposal are generally consistent with the previous assessment provided for the multi-level car park proposal.

Notwithstanding, a Transport and Accessibility Study (TAA) has been prepared by TTW and is included at **Appendix L**. The Study also includes details around construction traffic movements and management measures. The report considers the existing surrounding road network arrangements and conditions, and provides an assessment of the traffic and parking impacts associated with the HKH Campus cumulatively, however gives specific regard to the Stage 2 SSD project. The study also contemplates the availability of, connectivity to and patronage of public transport networks, whilst also documenting cyclist and pedestrian movements surrounding the campus. While the Study recognises other modes of transport, it adopts a conservative approach with respect to private motor vehicle use acknowledging this as the preferred and predominant mode of transport to access the HKH Campus. The Transport and Accessibility Study is supported by a Green Travel Plan which provides tangible targets and recommendations to reduce the predominance of private motor vehicle.

An overview of the key elements of the Study are provided below.

6.2.1 Operational Traffic

Traffic surveys from the site have been used to calculate trip generation rates for the HKH Campus. Modelling for hospital traffic demand has been undertaken based on estimated daily staff, patient and visitor activity on the campus following completion of the Stage 2 SSD project.

The model has calculated specific trip generation rates to estimate future traffic generation from the proposed development in both the AM and PM peak periods. The proposed development (assuming completion by 2022) is predicted to generate the following daily and peak hour traffic movements:

- Daily Trips (2022) = 3742
- Peak hour trips (2022) = 1135

6.2.1.1 Intersection and Road Network Performance

Based on these trip generation rates and a trip distribution analysis using existing access patterns, all intersections assessed will continue to perform at a similar Level of Service as they did before the start of the Stage 2 works.

The selection of the intersections assessed was determined in consultation with Hornsby Shire Council. Through this consultation process TTW were advised that no further intersection modelling would need to be conducted for the site to satisfy Council. Additional intersection modelling requested by RMS has not been undertaken, and that decision is justified in the TAA (**Appendix L**).

The intersections modelled are shown in **Figure 58**

Figure 58 – Modelled Intersections



As provided in the TAA the degree of saturation and average delay increases slightly for all intersections when compared to the current operating scenario, the analysis shows that there is sufficient capacity in the road network and the Stage 2 SSD project will not result in an unacceptable impact or technical failure of the surrounding road network in terms of capacity or delays. It is noted that the intersection of Sherbrook Road and Northcote Road is operating at capacity in the PM peak post development. This modelling has been reviewed and adjusted based on consultation with Hornsby Shire Council. Council has confirmed that all intersections are considered to operate at a manageable and acceptable level of service post development.

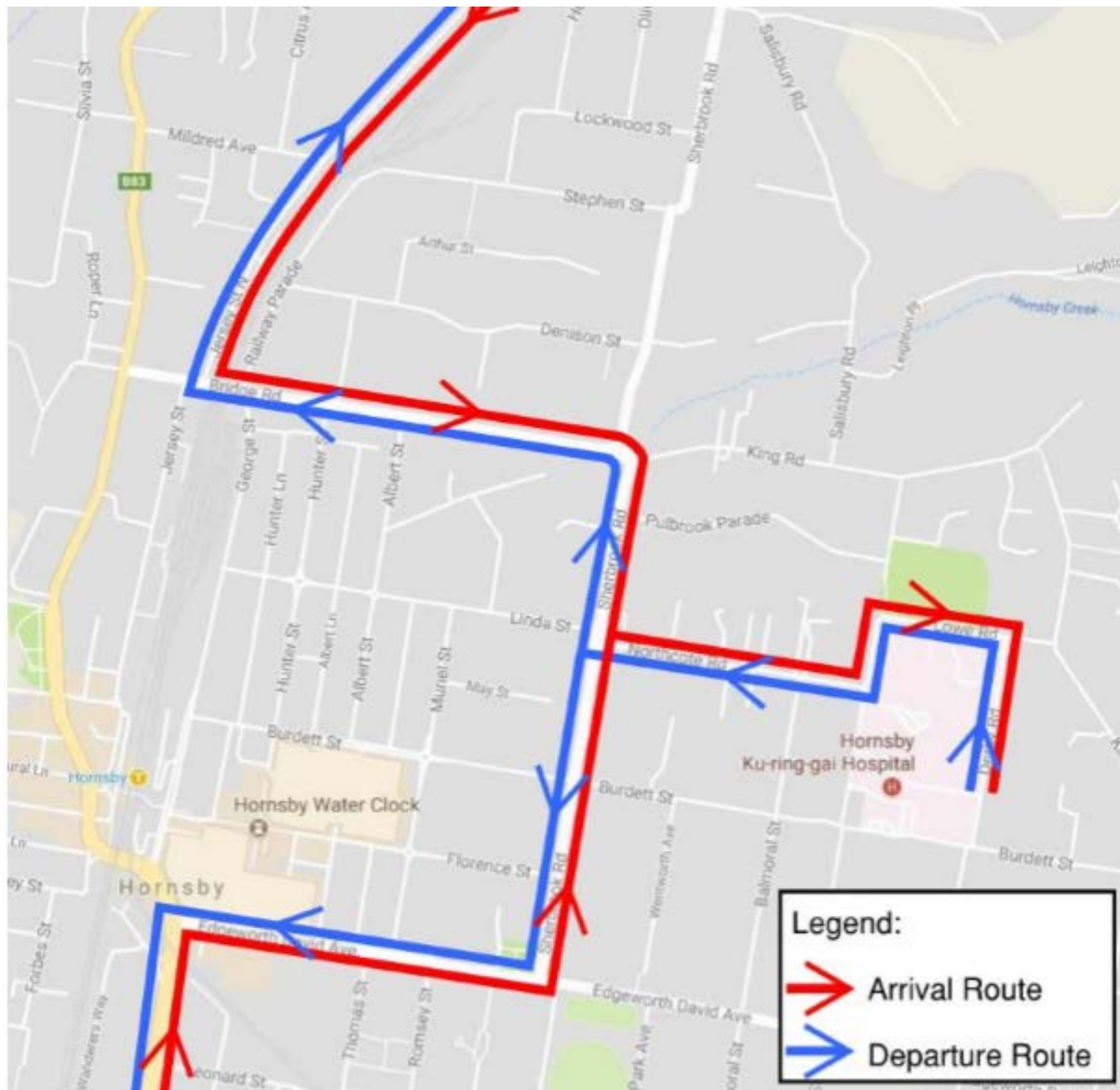
The network model of Edgeworth David Avenue, Myra Street and Palmerston Road indicates that pre and post development the network is operating unsatisfactorily. Given this intersection is already performing poorly, the function and operation of this major route in the road system falls under the responsibility of state and local authorities. TTW note that this intersection is also largely used by locals and through traffic, and thus vehicle movements associated with the HKH Campus only account for a small percentage of vehicles travelling through this linked intersection.

While the operation of the expanded HKH Campus will result in an incremental increase in local traffic movements, the TAA does not recommend upgrades to any intersections to public roadways, road widening or other improvements to the road network.

6.2.1.2 Construction Traffic and Parking Impacts

A Preliminary Construction Traffic Management Plan (PCTMP) has been prepared by TTW and accompanies the EIS at **Appendix O**. In addition to nominating access points and preferred routes (**Figure 59**), the plan considers the likely impacts of construction works on local traffic and parking. The impact assessment takes into account that the HKH Campus will remain operational for the duration of construction. The key considerations and impacts are provided as follows:

Figure 59 Indicative Construction Traffic Routes



6.2.1.3 Traffic Flows

Traffic impacts from the construction works are expected to be limited to the truck routes detailed in the PCTMP. The final routes will be determined by the appointed head contractor in preparing the Final CTMP having regard to the road conditions at the time of construction. TTW note that the presence of additional truck movements is likely to result in minor impacts to these routes, however are not expected to cause delays on local roads, or create flow-on impacts to other streets.

Local traffic patterns during construction are expected to remain consistent with the existing conditions.

All deliveries and construction works are likely to take place on site, with no requirement for works zones in the road reserve, lane closures or other traffic impacts. Traffic will flow as per the existing scenario, with all lanes generally operating at full capacity. Traffic impacts from the construction works are expected to be limited to the volume of construction vehicles only. The number of daily vehicles is expected to be minimal in comparison to the total volumes of daily traffic on local roads. It is unlikely that there will be changes to local public transport routes and services as a result of this construction. Access to all adjoining properties can be maintained throughout the works.

6.2.1.4 Parking Impacts

As the works will likely use existing site access driveways, it is not anticipated that on street parking will be lost as a result of the works. There may be an increase in local parking congestion during construction as a result of construction workers accessing the site.

Site employees will be encouraged to make use of carpooling options and nearby public transport facilities as part of being inducted into the site to minimise the impact of construction employee vehicles. During the site induction these employees will be instructed not to park within off street facilities at the Hospital and will be advised of the public transport options.

As the HKH Campus is well serviced by public transport, it is expected that this will be a realistic option for many construction workers.

6.2.1.5 Traffic Safety

As all construction works and operations will be contained within the site, TTW do not predict that the safety of passing traffic adjacent to the site to be compromised. Manoeuvring and merging of heavy vehicles exiting the site can be managed carefully through signage and traffic controls to ensure that traffic safety is maintained. As the traffic volumes in the immediate vicinity of the site have been found to be low it is expected that vehicles exiting the site will be able to use suitable gaps in traffic without taking unnecessary risks.

6.2.1.6 Cumulative Local Impacts

Two nearby State Significant Developments (SSD) or Infrastructure (SSI) that would impact the construction of the site including works occurring at the Hornsby Quarry (SSI 7066) and the proposed redevelopment at Waitara Public School (SSD 8574).

Upon review of the Hornsby Quarry development, it is likely that construction vehicles will overlap construction routes at Jersey Street North, Pacific Highway and Bridge Road. Once construction phasing has been determined further investigation on the cumulative impact of this development should be investigated, noting that these works are expected to occur over a near three year period up to late 2018.

The development at Waitara Public School has not currently provided a response to their Secretary's Environmental Assessment Requirements and therefore the construction phasing and routes are unknown.

It is noted that an approval was issued by DPE for redevelopment of the existing single storey SAN Day Surgery at 1A Northcote Road in January 2011. The construction timing and routes of these developments are unknown at this time.

Once the construction phasing has been finalised and during the preparation of the finalised Construction Traffic Management Plan, a review of any development applications near to the site would be conducted to determine if any other local developments may have an impact.

6.2.1.7 Emergency Services

Emergency access to the Hospital will be maintained during the works. Emergency services access to all local properties will be retained, with no road closures or major lane changes expected.

6.2.1.8 Final CTMP

While the CTMP will be updated by the appointed contractor, it is expected that the detail and findings provided in the TTW PCTMP will be embodied in the final CTMP. In addition to those matters considered in the PCTMP, the Final CTMP include, but is not limited to, the following:

- Details on the construction staging and the length of each stage;
- Expected vehicle volumes during each stage of works;
- Expected number of workers during each construction stage;
- Site establishment plan showing vehicle entry and exit points and any areas for manoeuvring; and
- Provision for the development and approval traffic control plans.

6.2.2 Operational Parking

6.2.2.1 Off Street Parking

The fundamental objective of the Multi Storey carpark project (approved August 2017) is to increase the availability of spaces on campus to satisfy additional demand generated from the HKH Redevelopment (the Master Plan) while reducing demand for on street parking.

It is expected that post completion of the multi-storey carpark and the Stage 2 works there will be 731 total spaces within the Hospital comprising 523 spaces within the multi deck car park and the balance provided across the Campus. The size of this carpark was informed by a parking demand study conducted by TTW in August 2015 as part of the business case for the Stage 2 redevelopment and June 2016 as part of the business case for the multi-storey carpark. As part of these studies a parking occupancy survey was conducted of the on-site parking. It was found that parking within the Hospital was on average 83% full throughout the day. Peak demand occurred at approximately 1:30pm with 91% of spaces being used.

It is expected that post completion of the multi-storey carpark, the peak off street parking demand will remain at a high level. Notwithstanding this, the HKH at there will be a net improvement in available off street parking as a result of the construction of the multi deck car park. As detailed in **Section 6.2.2.3** of the EIS and in the TAA (**Appendix L**), the additional demand generated by the Stage 2 SSD development is less than the net increase delivered through the construction of the multi deck car park. .

6.2.2.2 On Street Parking

A parking survey was conducted by TTW in February 2016 that indicated that on street parking was operating at 90% capacity or above from 8:30am to 3:10pm, with a peak at 1:30pm of 96% capacity. . The parking survey identified 472 on street spaces within the study area.

The construction of the multi-storey carpark will result in the removal of two access points from Palmerton Road. Through consolidation of these driveways, an additional three parallel on street parking spaces will become available along Palmerston Road.

6.2.2.3 Parking Demand and Impact

Hornsby Shire Council's Development Control Plan (DCP) does not stipulate car parking rates for Hospitals, stating that a Car Parking Demand Study should be conducted to determine parking requirements. TTW completed a parking study for the Hospital in June 2016 to fulfil this requirement.

The study employed a direct demand approach to assess parking demands for various scenarios and population numbers for the Hospital as a whole. The car parking demand was separated into staff, visitors and outpatients and based on their rate of private vehicle usage and average duration of stay. Parking demand estimates were projected for the years of 2022 and 2027. These projections included the expected demand post construction of the Stage 2 Redevelopment in 2022. The results of the study are shown in **Table 7**.

Table 7 – Projected Parking Demand

Category	2016 Spaces	2022 Spaces
Staff Parking	752	990
Public (Outpatients and Visitors) Parking	194	235
Service and Special Use Vehicles Parking	80	85
Total	1026	1310

Upon completion of the multi-storey carpark and Stage 2 works, the Hospital Campus will contain 731 off street parking spaces. The construction of the 523 space multi-storey carpark will reduce the requirement for on street parking as the net increase of 349 spaces (excluding the temporary car park off Derby Road and other spaces lost as a result of the SSD project) will cater for the increase in demand of 284 spaces predicted by TTW, as detailed in **Table 7**.

While on-street parking will remain available to capture overflow during peak periods, any additional demand generated by the Stage 2 SSD project can be met through the provision of the multi-level car park. In this regard the Stage 2 SSD project will not place additional burden or demand for on street parking.

The majority of the surrounding catchment (400m from the Campus) is a low density residential environment (consistent with the objectives of the R2 Low Density Residential Zone) with the majority of dwelling houses containing garages. Based on Council's adopted car parking requirements (HDCP 2013), any new infill residential development will be required to maintain appropriate levels of off street parking. As such under the current and future operating conditions the majority of on street parking within walking distance of the Hospital is utilised by those travelling to the Hospital and associated medical precinct. It is noted in the TAA that time limited parking is found in the immediate vicinity of the HKH Campus. This measure has the effect of encouraging staff and visitors to utilise off street parking within the campus or importantly utilise other modes of transport which serve, or are found in close proximity to the HKH Campus.

Having regard to cumulative impacts, it is noted that approval was provided in 2011 for an upgrade of the Sydney Adventist Hospital located adjacent to the Hospital on the corner of Palmerston Road

and Northcote Road. Review of documentation related to this development states that sufficient parking will be provided on site in accordance with Hornsby Shire Council's DCP.

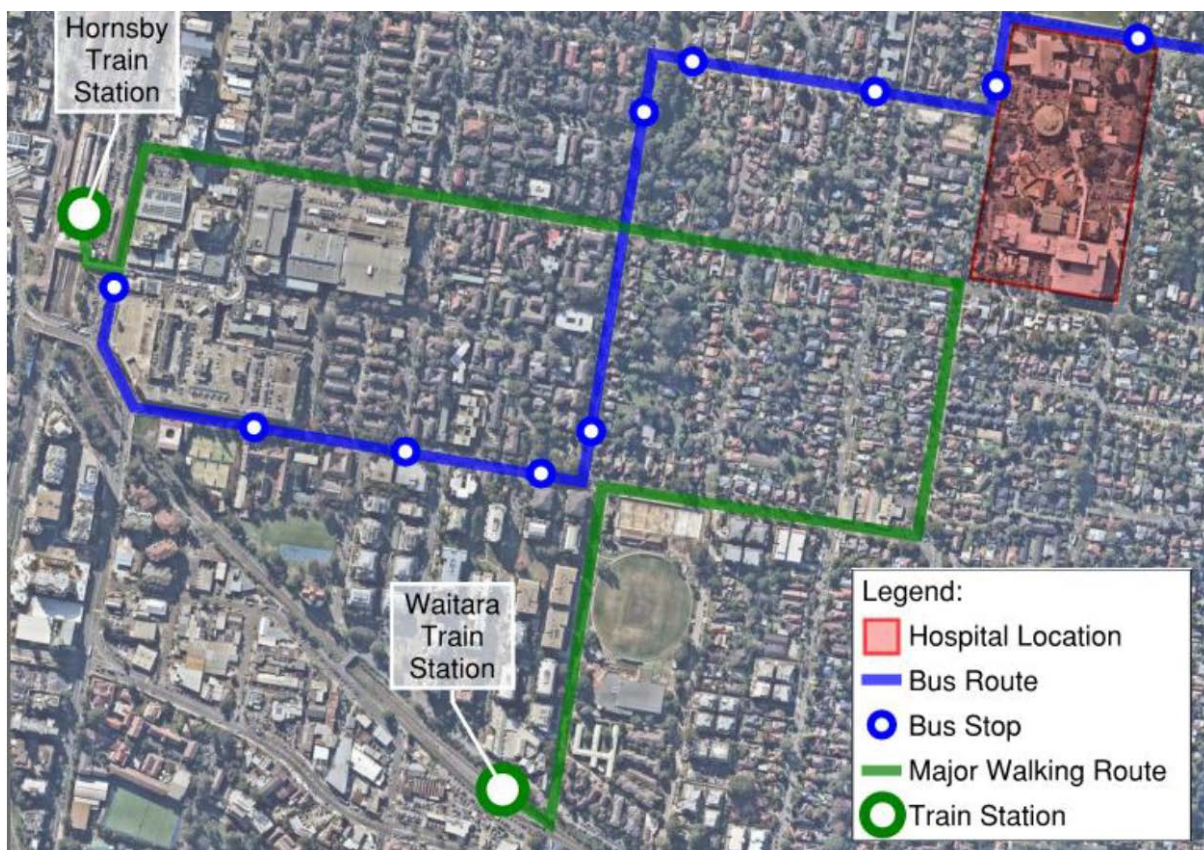
As such it is reasonable for the HKH Campus to remain reliant on available on street parking and it is not anticipated that further on street parking demand will be generated on completion of the Stage 2 SSD project.

Notwithstanding the findings of the TTW TAA, a Green Travel Plan (**Appendix N**) will be implemented to increase use / patronage of other modes of transport such as walking, cycling and public transport to the Campus. Effective implementation of the Green Travel Plan will reduce reliance on car parking on or in the vicinity of the campus.

6.2.3 Public Transport

The TAA includes an assessment of the impact of the proposal on public transport including the expected additional demand on bus and train services. This assessment determines that there is sufficient capacity to accommodate the additional trips generated by the SSD project. Whilst an audit of the capacity of existing train services was not conducted the increase in trips as a result of the SSD project is considered to be minor. Consequently TTW anticipate that these additional transport trips can be accommodated for within the current train network. **Figure 60** shows the location of the public transport services, routes and major walking routes which benefit the HKH Campus.

Figure 60 – Public Transport Routes

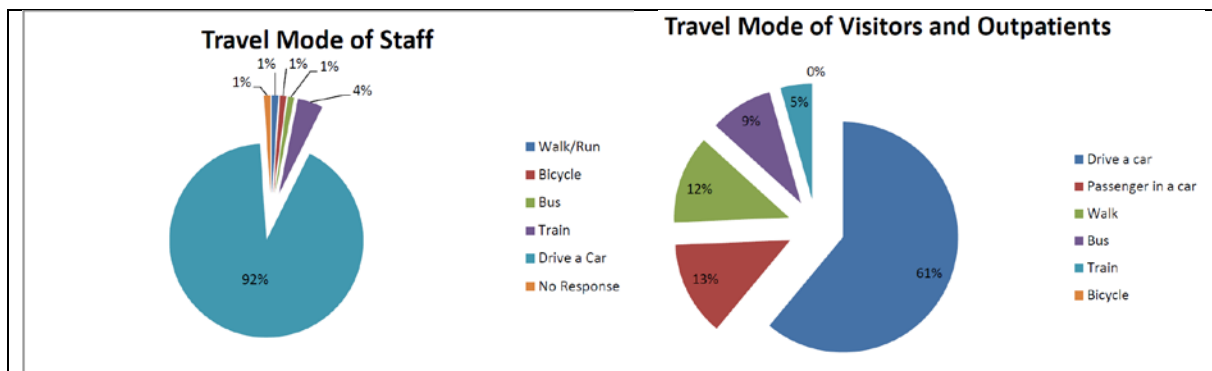


The proximity of the site to trunk rail, and local bus services will increase the likelihood of staff and visitors using public transport and reducing demand on car parking on or within the vicinity of the HKH Campus.

6.2.4 Green Travel Plan

It is proposed that a Green Travel Plan will be implemented on completion of the Stage 2 SSD project to improve the use of alternate modes of transport. Data collected in the preparation of the Green Travel Plan indicates a strong reliance on private motor vehicles as the preferred mode of transport for staff and visitors. This is reflected in **Figure 61**.

Figure 61 – Modes of Travel – Staff and Visitors



The Green Travel Plan sets the following targets for staff and visitors and outpatients at the HKH Campus.

Table 8 – Mode Share Targets for Staff

Travel Mode	Existing	Target	Change
Walk / Run	1%	2%	+1%
Bicycle	1%	2%	+1%
Bus	1%	4%	+3%
Train	4%	7%	+3%
Drive a Car	92%	85%	-7%
No Response	1%	N/A	N/A

Table 9 – Mode Share Targets for Visitors

Travel Mode	Existing	Target	Change
Drive a Car	61%	55%	-6%
Passenger in a Car	13%	15%	+2%
Walk	12%	12%	0%
Bus	9%	11%	+2%
Train	5%	7%	+2%

Travel Mode	Existing	Target	Change
Bicycle	0%	0%	0%

Note that cycling and walking mode share rates for visitors have not been increased due to the constraints of those travelling to the Hospital.

TTW recommend the following measures to assist in meeting the proposed targets and reducing reliance on motor vehicles:

- A Transport Access Guide (TAG) be prepared to notify staff, visitors and outpatients about the sustainable travel modes available to them. This TAG should include a map showing public transport routes and safe walking/cycling routes. This information should be provided to new staff members and made available for visitors and outpatients at the Hospital.
- Carpooling could be encouraged by providing parking spaces on site that are restricted to staff who have committed to carpooling. Potential carpooling pairs could be connected by grouping staff members who live within the same area.
- Provision of more wayfinding signage between Hornsby and Waitara Stations to encourage pedestrian travel to the Hospital.
- A dedicated car share space could be provided on the Hospital site to allow for staff members who are required to take trips during the day.

These measures can be introduced on completion of the Stage 2 SSD works. It is noted that the incorporation of 'end of trip' facilities for staff as part of the Stage 2 SSD project will improve the take-up rates of alternate modes of transport.

6.2.5 Emergency Services

The existing ambulance egress requires ambulances to manoeuvre within an on grade parking area located to the west of the STAR building. To increase ambulance drop off efficiency, an additional ambulance egress driveway is proposed to be located along Burdett Street. This will increase the efficiency of ambulance movements, allowing for separation of these vehicles from private vehicle traffic. This measure will also reduce the likelihood of collision with private vehicles.

Turning circle path checks have been completed for the proposed ambulance drop off facility and are appended to the TAA.

6.2.6 Loading Facilities

The existing loading facility installed as part of Stage 1 of the Redevelopment will remain as the main loading area for the Hospital post completion of Stage 2. There are no new loading docks proposed as the Stage 1 loading dock was designed to cater for the demands post construction of Stage 2.

Since the design of the Stage 1 loading dock, the scope of the Stage 2 Redevelopment has not significantly increased such that further service vehicles would be required. Subsequently, the loading dock has sufficient capacity to service the proposed Stage 2 works.

6.3 Ecologically Sustainable Development

The environmental performance of the development has been assessed by using the Health Infrastructure Engineering Service Guidelines, Clause 7(4) of Schedule 2 of the EP&A Regulations, Environmental Performance Guide for buildings and Section J of the Building Code of Australia.

With consideration to the scope of Stage 2, the fundamental ESD features considered in the proposal include:

- Energy – Conservation and on-site generation;
- Materials – Reuse, recycle and possess low embodied energy; and
- Waste minimisation – during construction and operation, waste management strategies will be implemented to reduce the amount of waste going to landfill.

6.4 Heritage

A heritage assessment of the HKH Campus and Heritage Impact Statement addressing the Stage 2 SSD scope of works has been undertaken by EJE Heritage. The heritage assessment places the site within an historical context, and examines the physical condition and context of the current building. With the history and physical condition and context of the building understood, a heritage assessment of the site has been completed using the NSW Heritage Branch guidelines encompassing the Australia ICOMOS Burra Charter 2013 heritage values:

- historical significance;
- aesthetic significance;
- scientific significance; and
- social significance.

The Statement of Heritage Impact that follows examines the proposed works, identifying any impacts which the proposal might have on the significance of the heritage items, and any measures which should be taken to mitigate any negative impacts, if these are in fact identified.

As documented in Section 2 of the EIS and **Appendix P**, the site contains one building listed as a heritage item of local significance under the Hornsby LEP 2013, that being Item 529, Collingridge House (excluding grounds). EJE note that:

“...the listing in the Hornsby LEP 2013 deliberately excludes the grounds as the listing for the Hornsby Hospital item recorded in the Office of Environment and Heritage “Heritage Inventory” makes scant mention of “Collingridge House” and extensive description of the richly landscaped grounds.”

In undertaking an analysis of the individual buildings found on site, EJE relied on the plan provided at **Figure 62**.

Figure 62 – Building Numbers and Buildings with Heritage Significance.



The analysis of the site identifies the below buildings / improvements as having heritage significance:

Building 32 – Collingridge House

Collingridge House is an item of local significance primarily because of its associations with its first owner, George Collingridge. Collingridge is a formidable local identity exerting broad influence across the definition, description and development of the district of Hornsby. His published works and other services have far wider reaching influences, earning him awards and honours nationally and internationally. Collingridge's most significant publications were written and published while he was living at Collingridge House at Hornsby. Building 32 also bears some significance due to its technics, aesthetics and rarity due to it being a stone built cottage of the federation style, completed before the actual date of federation. Overall it is worthy of a high level of significance at a local level.

Building 5: The George Lumby Unit Building

The George Lumby Unit Building is also named after a significant local identity and bears high level of local historic significance due to that association. George Lumby's contributions to the wellbeing and development of the Hornsby district and in particular the Hospital are highly influential. His appearance in the Ginger Meggs comics via which elements of Hornsby were broadcast to other parts of the continent also lends significance to this association. The building itself is significant aesthetically, technically, and representatively due to its design and its substantially intact condition. Building 5 is also considered to have a high level of significance at a local level.

Building 6: Former Maternity Unit

The former Maternity Unit and prior to that the 'British Centre' were it still existing would also be worthy of a high level of significance on a local level due to its historical, social and rarity value. The remaining concrete lion sculptures which first flanked the 'British Centre' then the Maternity Unit retain local significance on a high level due to those same criteria.

Building 2 / 3:

Is significant historically and socially as the original purpose built hospital building upon the site, its long awaited and campaigned for inception achieved through extensive community action. It is also significant for its many associations with significant figures within the Hornsby community including S.A. Storey and George Lumby. Alterations and Additions which commenced very early in the history of the building due to fire damage soon after its construction have all combined to confuse and detract from the overall significance of the building. Overall, Building 2 / 3 demonstrates little significance at a local level which preclude it from being worthy of protection.

Building 1:

Appears to be constructed soon after building 2 / 3 and in a similar Inter-War Georgian Revival style. It bears significance aesthetically for its facade detailing, matching bus shelter and the landmark qualities of its presentation to Palmerston Road. It does not demonstrate significance under any other criterion however and overall demonstrates little significance at a local level.

The Site and Grounds

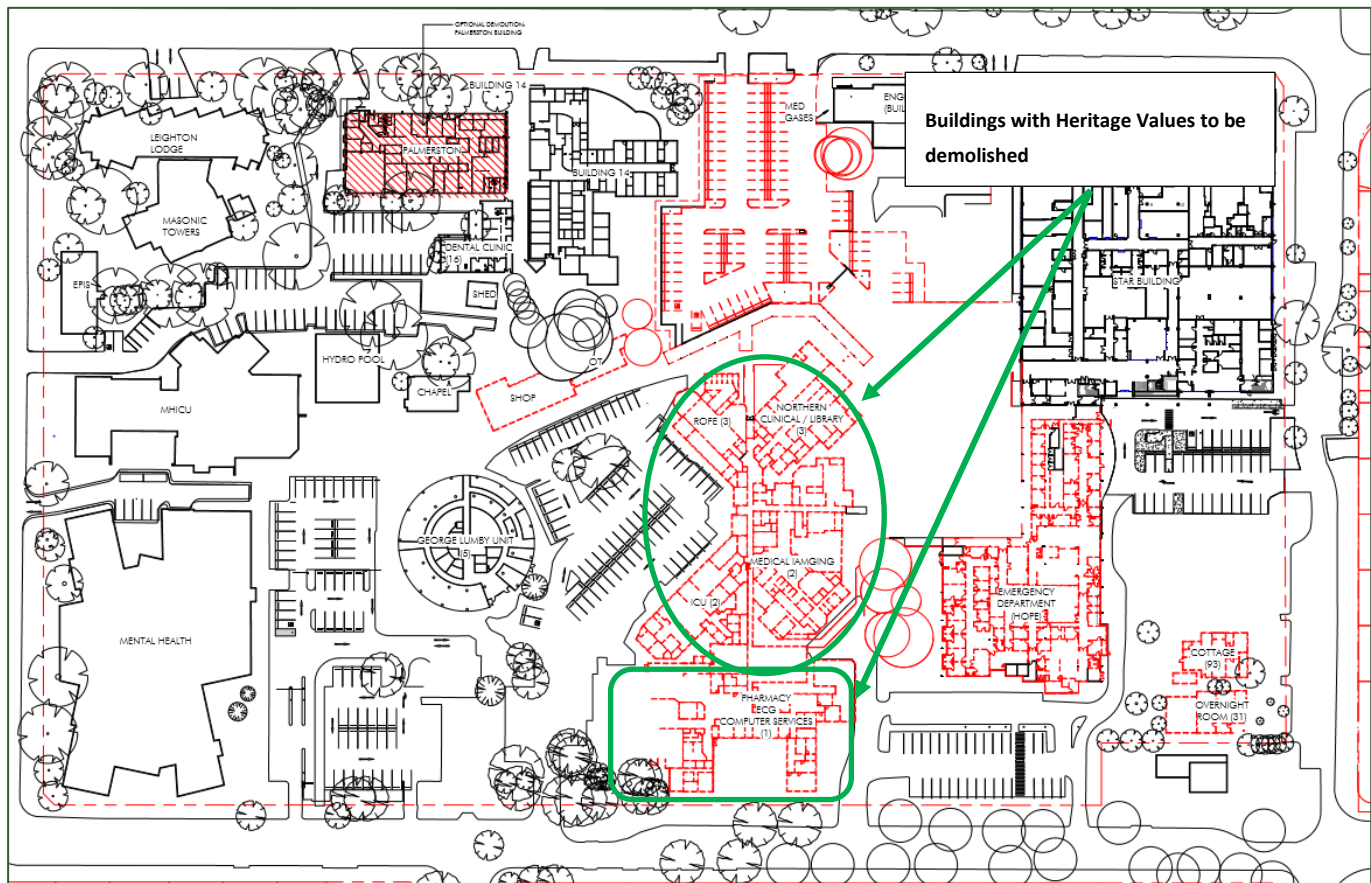
The Hornsby Ku-ring-gai Hospital Site and Grounds are expressly discounted in the Hornsby Local Environmental Plan 2013, Schedule 5 Part 1, however the listing within the State Heritage Inventory deals almost exclusively with the site and grounds. They are significant historically by associations with previous owners including George Collingridge. They are of most significance for research purposes as they can demonstrate and chart the development of Health Care methods as well as popular expressions of style in architecture and landscape design as each part of the hospital has developed across the span of the last eighty plus years. Whilst alterations may challenge interpretation of elements of fabric, there is enough written and visual historical evidence available to establish a clear understanding of the gradual development of the site and grounds. Overall, the site and grounds demonstrate at least a moderate level of significance at a local level.

The Institution

The Hornsby Ku-ring-gai Hospital as an institution demonstrates great social significance due to its associations with the people who worked there, were born there, were treated there and those who died there. This community of people are not exclusively from the local area but came from, and have necessarily spread, far and wide. The significance of the Hornsby Ku-ring-gai Hospital as an institution demonstrates a high level of significance at a local level. This significance is difficult to apply to an individual building at the hospital, but would come in to play particularly if the Hospital were to consider moving to another site.

The scope of works for the SSD Stage 2 project requires the demolition of buildings identified as having heritage values and also proposes works in close proximity to Collingridge House, including excavation works for the pedestrian tunnel and landscaping. The works also includes the relocation of the lion sculptures within the Campus. The extent of demolition works, highlighting the buildings with heritage values to be demolished is illustrated in **Figure 63**.

Figure 63 – Demolition of Items with Heritage Values



The heritage impact assessment makes the following recommendations to minimise disturbance and / or enhance the interpretation of the heritage significance of the identified item or area:

Table 10 – Heritage Recommendations

Heritage Recommendation	SSD Proposal Response
Place Lions in a prominent position symmetrically opposed. Traditionally the Lions flanked the entrance of the British Centre when it was in Hyde Park and similarly the Maternity Ward when the building was relocated to the Hornsby Hospital Site. A position flanking an entrance to a building or space would be an appropriate reuse of the Lions. Signage to explain the origins and significance of the Lions would also be considered appropriate to aid in the interpretation of their significance.	The Lions are proposed to be retained on site and placed symmetrically adjacent to the entry to the Stage 2 Building. This is reflected in the below image:

Heritage Recommendation

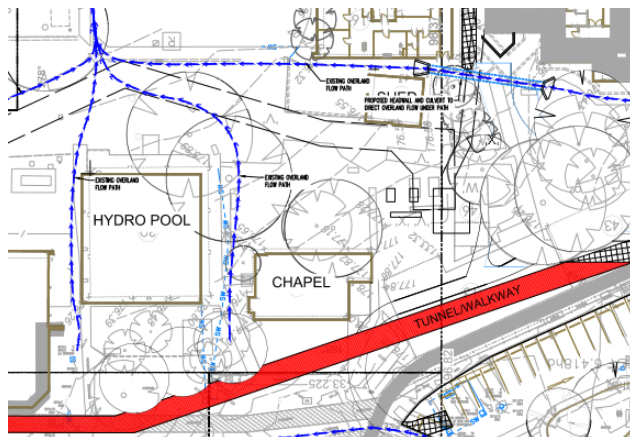
SSD Proposal Response



The orientation of the lions would be symmetrically opposed as depicted above.

Care to be taken in excavation of Tunnel link. Engineering design must be undertaken to ensure the stone built foundations of Collingridge House are not compromised. Excavation of the tunnel link also has the potential to uncover archaeological items of Aboriginal or European origin, potentially attributable to George Collingridge. It is recommended that should a relic be found, that the appropriate action under the Heritage Act.

The proposed tunnel will involve excavation works in close proximity to Collingridge House (Chapel). This is detailed in the below figure.



To mitigate potential impacts the following commitments are made:

- Prior to the release of a Section 109R Certificate or commencement of excavation works in the vicinity of Collingridge House investigations will be undertaken to protect the foundations of the structure;
- The final CMP will incorporate protocols to ensure any relics or artefacts found are handled in accordance with the requirements of the Heritage Act 1977 and / or the National Parks and Wildlife Act 1974.

Long term impacts to the heritage values of Collingridge House are not expected as a result of the Stage 2 SSD works.

Heritage Recommendation

Gather plaques, stones, & memorials to a history interpretation area with photos etc. A history display already exists within the public space of Building 1 and an enlarged historic photo also embellishes the foyer of Building 5. Many of the buildings around the site have plaques attached commemorating their openings and naming significant contributors to the creation of the buildings. Other buildings have foundation stones for similar purposes. Opening ceremonies and events have been photographed and reported in the news media. It is recommended to institute a new history display within the new building where it is possible to display items from demolished buildings together with photographs in order to preserve the historic connections with those buildings and the people involved. An archive for those items too bulky to display (e.g. foundation stones) is recommended so that the original pieces are not lost.

SSD Proposal Response

- At the commencement of demolition plaques, stones, memorials and historic displays are to be retained.
- Photographic record of the buildings and memorials is to be obtained prior to the commencement of demolition works.
- A suitable location for a new history display is to be provided on campus. The proposed location is to be nominated on detailed design plans prior to the release of a Crown Development Certificate issued under Section 109R of the EP&A Act.;
- A suitable archive is to be created for those items too bulky to be kept on display.

Retain 1940s gateposts and stone borders along boundary. Retain significant trees and planting such as rose gardens as appropriate. The landscaping of the site, which expressly excluded within the Hornsby LEP 2013 listing forms the substance of the listing in the State Heritage Inventory. The landscaping and grounds form the basis of both the 'Statement of Significance' and the 'Physical Description' of the Hornsby Hospital Item details. Many aspects of the landscaping are identified in the listing including the Boundary fence and gateposts along Palmerston Road and mature trees and planting within the grounds. It is recommended to retain and conserve as many of these identified items as possible in order to conserve the historic and aesthetic links to the Heritage Item.

Where practicable, 1940s gate posts and associated stone borders at Gate 2 and Gate 1 will be retained.



The proposed landscaping (**Appendix G**) responds to the established landscaping theme through embellishment of landscaped areas, use of sympathetic species such as *Livistona australis* (Cabbage Tree Palm) and *Tristaniaopsis laurina* (watergum) and the retention of perimeter and street trees.

Heritage Recommendation	SSD Proposal Response
The existing central car park within the hospital grounds has been set out to relate to the alignment of building 2/3 – the original hospital building. There is potential to incorporate an interpretive element such as a path, low wall or garden bed to trace the line of the northern wall of Building 2/3 including its central entrance within the scheme of the proposal. This interpretive element would contribute to the ongoing understanding of the development of the Hornsby Ku - Ring-Gai Hospital.	Whilst the landscape concept plan does not incorporate any such interpretive element, there is scope to incorporate such measures in the final design. The mitigation measures summarised in Section 6.12 require that the recommendations of the EJE Heritage Impact Assessment are accommodated in the detailed design. This commitment would provide opportunity to recognise the heritage values of Buildings 2 and 3.

In concluding the Heritage Impact Assessment states that:

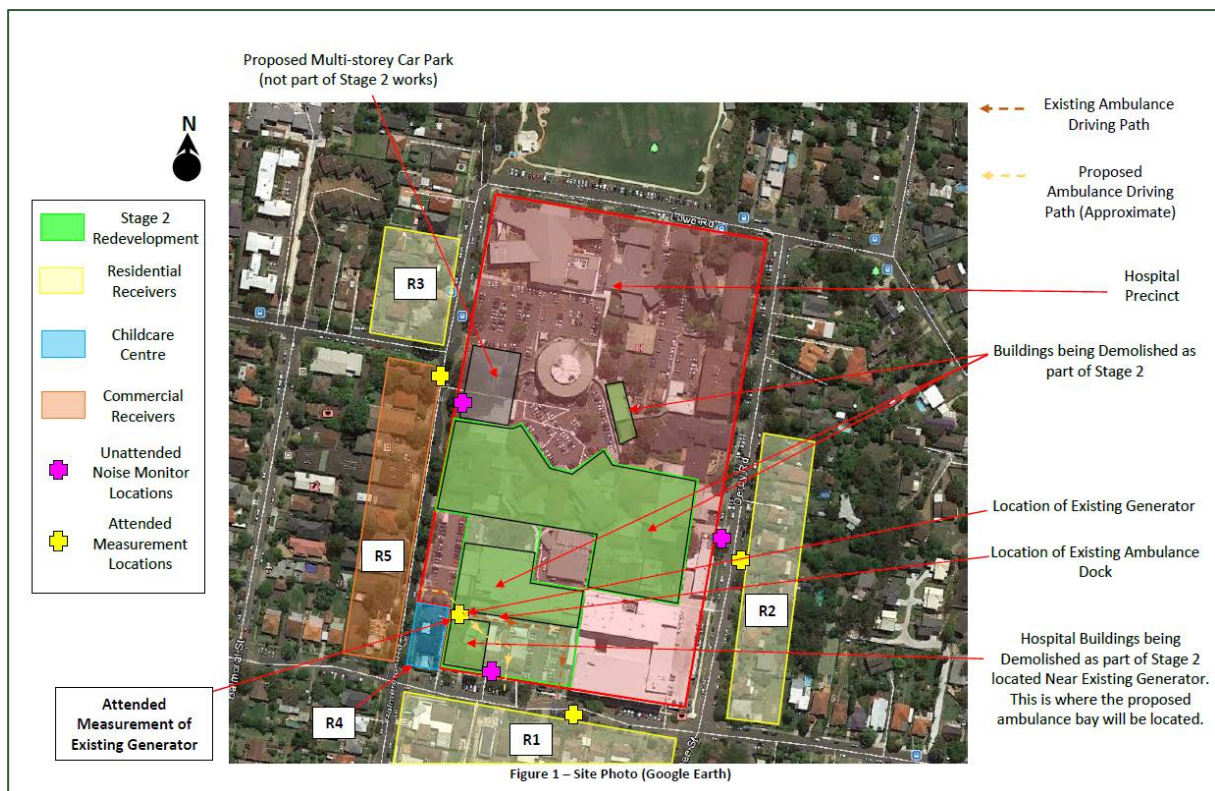
“The physical evidence of the most significant of these contributions are recommended in this Heritage Assessment Report as to be retained or conserved. Many items were identified as having little significance, or had been altered in such a way that their significance had been eroded to a little levels. The demolition of these items was concurred in this report.”

Buildings 1, 2 and 3, are proposed to be demolished under the Stage 2 SSD Scope. These buildings have been found to have little heritage significance. The demolition of these buildings is consistent with the findings of the Heritage Impact Statement. The recommendations to mitigate impacts on those items to be retained has been embodied in the design of the Stage 2 SSD project and can be carried through the construction phase of the project.

6.5 Noise and Vibration

A Construction and Operational Noise and Vibration Impact Assessment (NVIA) has been prepared by Acoustic Logic and accompanies the EIS at **Appendix Q**. The report has identified the potential acoustic and vibration impacts of the development upon the closest receivers and also noise intrusion upon the development. The closest potentially affected receivers identified in the NVIA are identified in Figure 42. These include receivers situated around the perimeter of the hospital campus.

Figure 64 – Location of Sensitive Receivers and Noise Monitoring Locations



The existing acoustic environment has been determined using a combination of attended and unattended noise monitoring undertaken at key locations in accordance with the monitoring requirements contained in the *NSW Industrial Noise Policy*. Based on the background and ambient noise monitoring carried out at the nearest affected residential locations, Acoustic Logic has developed a set of project specific noise criteria and mitigation measures to minimise any impacts from noise and vibration arising from construction activities and operations.

The measured ambient and background noise levels are presented in the **Table 10** below and have been based on the attended and unattended measurements.

Table 11 – Measured Ambient and Background Noise Levels

Location	Measured Rating Background Noise Level dB(A)L90(period)			Measured Rating Background Noise Level dB(A)Leq(period)		
	Daytime (7am – 6pm)	Evening (6pm – 10pm)	Night (10pm – 7am)	Daytime (7am – 6pm)	Evening (6pm – 10pm)	Night (10pm – 7am)
Monitor 1 – Along Burdett Street	44	44	37	54	52	49
Monitor 2 – Along Derby Street	42	43	41	54	51	51
Monitor 3 – Along Palmerston Road	43	42	39	55	49	47

6.5.1 Construction Impacts

6.5.1.1 Construction Noise

Based on noise emissions from standard construction equipment, dozers with bucket, saws or hammers would be the loudest activities during the construction phase. The EPA Interim Construction Noise Guideline recommends a noise level of 10dB(A) above the background for residential receivers and 5dB(A) for work outside of standard construction hours.

Table 12 outline the indicative noise levels for receivers (residential, commercial and child care).

Table 12 – Construction Noise Emission Goals

Location	"Noise Affected" Level - dB(A) _{Leq(15min)}	"Highly Noise Affected" Level - dB(A) _{Leq(15min)}
Residences to the south along Burdett Street (R1)	54 (Normal Construction Hours) 49 (Outside Normal Hours - 6pm-10pm) 42 (Outside Normal Hours - 10pm-7am)	75
Residences to the east along Derby Street (R2)	52 (Normal Construction Hours) 48 (Outside Normal Hours - 6pm-10pm) 46 (Outside Normal Hours - 10pm-7am)	75
Residences to the north-west along Palmerston Road (R3)	53 (Normal Construction Hours) 47 (Outside Normal Hours - 6pm-10pm) 44 (Outside Normal Hours - 10pm-7am)	75
Childcare Centre Outdoor Play Areas (R4)	65 (based on management level for Active Recreation Areas of ICGN)	N/A
Commercial Receivers (R5)	70	N/A

Based on an initial analysis of the proposed scope of works the NVIA predicts some exceedance of the EPA 'Noise Affected' target levels may occur during demolition and excavation phases and during the erection of the structure. It is not expected that exceedances will occur for extended periods.

Once construction of the building shell is complete, noise from hand tools will be relatively low, as the new building façade will provide considerable noise attenuation and are not predicted to exceed

EPA recommended levels. Vehicle noise and crane noise will create the greatest possibility of noise disturbance during this phase.

The NVIA makes the following recommendations to mitigate noise during the construction phase:

- Careful planning/scheduling of noisy works, particularly when located near the property boundaries.
- Location of static plant (concrete pumps, cranes) as far as practicable away from the boundaries is recommended.
- Use of augured rather than driven or vibratory piling should be considered if feasible.
- Locate cranes as close to the middle of the site as practicable.
- Letter box drops or similar to advise residents on activities with the potential to result in noise levels reaching the “Highly Noise Affected” noise level. Leaflet should advise of the likely duration of the activity.

The NVIA recommends that the following considerations are embodied in the construction management adopted for the project:

- *On completion of the construction program, an acoustic review of proposed construction activities and plant/methods/selections should be undertaken to identify the extent and duration of potential exceedances of EPA construction noise management levels;*
- *Community consultation to inform adjacent property owners of potential noise sensitive activities;*
- *Identify feasible acoustic controls or management techniques (for example, selection of plant, use of screens around static plant, scheduling of noisy works, notification of adjoining land users, respite periods) when exceedance of management noise levels may occur;*
- *For activities where acoustic controls and management techniques still cannot guarantee compliant noise levels, implement a notification process whereby nearby residences are made aware of the time and duration of noise intensive construction processes; and*
- *Implementation of a noise monitoring program during construction to provide feedback to the Builder to ascertain whether construction noise goals are being exceeded and determine additional management strategies.*

Through adoption of the above, the NVIA predicts that noise impacts on nearby residences can be suitably managed to prevent unreasonable impact for the duration of the construction program. The Preliminary Construction Management Plan (CMP) embodies these recommendations.

These will ultimately form part of the final CMP prepared by the appointed contractor. The final suite of mitigation measures will be documented prior to the issue of the 109R Certificate and implemented for the duration of the construction program.

6.5.1.2 Construction Vibration

The NVIA identifies that Excavation and earth retention works (piling) are the primary vibration generating activities likely to occur during construction. Having regard to the distance between the site and the nearest residential buildings (R1-R3) and the commercial buildings (R5), it is unlikely that construction vibration will exceed EPA guidelines at these receivers.

The childcare centre (R4) (see **Figure 64**) is in close proximity to the proposed development and associated construction footprint.

In order to manage/minimise vibration impacts on the childcare centre the NVIA recommends:

- That attended vibration measurements are conducted at the commencement of the excavation stages to ensure that vibration impacts on this receivers are compliant with construction vibration criteria contained in the NVIA; and
- Consultation with hospital users be undertaken to identify any highly vibration sensitive spaces in close proximity to the excavation area. An SMS notification system to protect highly vibration sensitive spaces such as operating theatres or laboratories is recommended.

These measures will be considered in the preparation of the final CMP prepared by the appointed contractor. The final suite of mitigation measures will be documented prior to the issue of the 109R Certificate, and implemented for the duration of the construction program.

6.5.2 Operational Impacts

Operational noise sources with the potential to impact on the amenity of surrounding sensitive land include:

- Vehicular noise on site from the new ambulance bay.
- Noise from the existing generator towards to the south-western boundary of the site.
- Patron noise from the café.
- Noise from any new external mechanical plant and equipment.
- Road traffic noise.

The NVIA provides an assessment with respect to the identified noise sources associated with the operation of the Stage 2 SSD project and provides the following conclusions and recommendations to ensure compliance with EPA noise emission guidelines:

Existing Generator

- Install a solid, imperforate (i.e. no holes) screen around the south, east and western sides of the generator;
- The screen is to extend a minimum 500mm above the top of the generator and is to be located no more than 1.2 metres from the generator;

- Suitable materials for the screen include 6mm fibre cement, lapped and capped timber or Colorbond metal.

It is noted that appropriate screening to the existing generator was undertaken as part of the Stage 1 approval. At the completion of Stage 2 works an assessment will be made to ensure that the screening has not been compromised as a result of the construction works.

Mechanical Plant

Detailed acoustic review of all external plant items should be undertaken following equipment selection and duct layout design. Initial analysis indicates that with acoustic treatment, all plant items will be capable of meeting noise emission requirements. However this is likely to require:

- Noise screening (using either a dedicated noise screen or the building shell) for roof top cooling towers.
- An acoustic enclosure for any externally located back-up generator.
- Acoustic treatment to fan casing and lining of external ducting for major external fans.
- Plant room wall/roof construction for any plant room housing chiller plant.
- Detailed acoustic review of external louvres for any plant rooms to determine whether acoustic louvres/attenuators are required.

Cafe

Noise emissions from proposed café are compliant with the acoustic criteria nominated in the NVIA. No specific mitigation measures are required with respect to the café.

Ambulance Bays

The NVIA concludes that noise from ambulances manoeuvring within the proposed ambulance bay will comply with the noise emission requirements and does not recommend any specific mitigation measures.

Notwithstanding the above, the report notes that ambulance sirens are only used in emergencies and are not subject to the noise emission requirements of the INP. Sirens to ambulances are not typically used within the site as ambulances will have their own dedicated access road to the ambulance bay and are not predicted run into conflict with other vehicles.

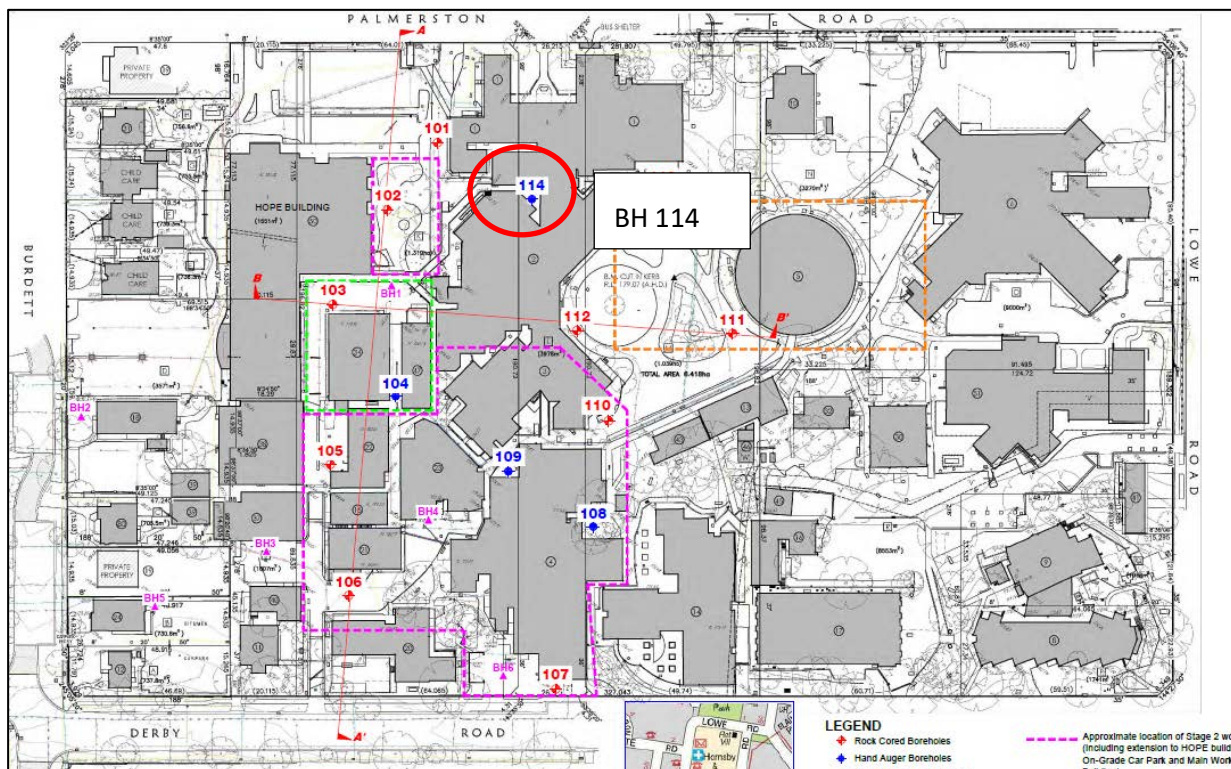
6.6 Contamination and Hazardous Materials

The Douglas Partners Preliminary Contamination Investigation (**Appendix S**), prepared in 2014 provides an assessment of the site with regards to:

- SEPP 55 – Remediation of Land
- The Contaminated Lands Management Act 1997 (CLM Act);
- Relevant EPA Guidelines including *Guidelines for Consultants Reporting on Contaminated Sites* (August 2011);
- *National Environment Protection (Assessment of Site Contamination) Measure 1999* (the 'NEPM'); and
- Previous investigations undertaken for the site.

The investigations confirm that the site is suitable for the proposed use. Notwithstanding this, sub surface investigations identified imported filling, the use and storage of oils and other fuel related products and the use of hazardous building materials as potential sources of contamination. Analysis of samples from a limited number of boreholes found low levels of leachable contamination at the site, however found asbestos fibres (below laboratory reporting limits) within one borehole (BH114). The location of BH114 can be seen in **Figure 65**.

Figure 65 – Borehole Location



The development footprint will see demolition, civil and construction works in the vicinity of BH114. Douglas Partners recommend further investigations in order to determine the lateral and vertical extent of asbestos contamination and the subsequent remediation action required in line with the proposed works to be undertaken in the affected area.

Douglas Partners also recommend that further investigations should be undertaken following demolition of the current buildings on site. This would also allow increased accessibility to subsurface soils to ascertain the area impacted by asbestos at BH114. Any such remediation works undertaken in the vicinity of BH114 would, as considered in **Section 5.3.9**, be Category 2 remediation work, and thus would not require development consent.

In addition, validation of the soils (and occupational hygienist clearance) following demolition is recommended given the potential to introduce contaminants (including asbestos) to surficial soils during this process.

Douglas Partners also recommend that any buildings proposed for demolition and/or refurbishment should be subject to a pre-demolition hazardous building materials assessment by a qualified occupational hygienist.

To mitigate risks associated with the removal of soils the following measures will be undertaken:

- Classification and validation of soils prior to removal from site;
- Adoption of protocols within the CEMP for working with potentially contaminated materials;
- Disposal of any such materials to an appropriately licensed facility.

To mitigate risks associated with the demolition or refurbishment of buildings, a pre-demolition hazardous building materials assessment by a qualified occupational hygienist shall be undertaken or, where already available, submitted to the certifying authority prior to demolition works commencing

The above recommendations have been adopted as part of the mitigation measures for the project found at **Section 6.12**.

6.7 BCA Compliance

A BCA Compliance Capability Statement prepared by Blackett, Maguire and Goldsmith is provided at **Appendix R**. The report confirms that the proposed development is capable of satisfying the requirements of the BCA and other relevant standards.

The detailed design documentation will require review to ensure compliance. This will be undertaken prior to the release of a certificate issued under Section 109R of the EP&A Act.

6.8 Water Cycle Management

6.8.1 Stormwater and Water Sensitive Urban Design

The stormwater management plans provided at **Appendix E** propose a series of pollution control devices to remove contamination from stormwater runoff to the required level prior to discharge. The proposed devices include litter screens in all pits, detention tank trash screen and an end of line treatment device to remove nitrogen & phosphorus contaminants prior to discharge to Council's stormwater system. The concept plan has been designed to meet the pollutant removal rates specified in the Hornsby DCP 2013. Detailed modelling which quantifies the removal of pollutants at the required rates is provided at **Appendix I**.

Three underground stormwater detention tanks are provided to serve three catchments across the site. Cumulatively the capacity of the tanks amounts to 376m³. Details modelling of the stormwater management system has been undertaken to determine the appropriateness of the pipe sizes, pits and size of the on-site detention tanks. This assessment has determined that the development will

not result in an increase in pre-development (SSD Stage 2) flows from the site. Detailed modelling is provided at **Appendix I**.

Whilst Water Sensitive Urban Design methods have been considered to allow for water reuse across the site and pollutant removal, such infrastructure has been identified as inappropriate due to the health risks associated with standing water within a hospital environment. Consequently mechanical (in lieu of natural removal) pollutant removal devices will be incorporated to remove gross pollutants, suspended solids, reduce nutrient runoff including nitrogen and phosphorous. This is reflected in the stormwater management plans.

Subject to detailed design, the proposed stormwater management plans will appropriately mitigate impacts associated with runoff from hardstand areas on the HKH Campus.

6.8.2 Flooding

A review of Council's Section 149 Certificate indicates that the site is not affected by flooding. Flood mapping adopted under the Hornsby LEP 2013 does not show the site to be flood affected. No specific investigations into flooding have been undertaken.

6.9 Acid Sulphate Soils

A review of Acid Sulphate Soils mapping adopted under the Hornsby LEP 2013 does not show the site to be affected by Acid Sulphate Soils.

6.10 Waste Management

Operational waste generated by the Stage 2 SSD project will be managed in accordance with the Northern Sydney Local Health District's Environmental Management Plan (EMP) and will comply with NSW Health's Waste management guidelines for *Health Care Facilities Policy Directive 132* updated January 2005.

The EMP provides guidance on the following with regard to waste management:

- Waste stream definitions;
- Labelling and containment;
- Handling and storage;
- Waste collection; and
- Waste management strategies.

Waste streams predicted to be generated during operation include:

- Clinical Waste
- Cytotoxic Waste
- Pharmaceutical Waste
- Chemical Waste

- Recyclable Products
- Organic Products
- Liquid Waste
- General Waste

Provision for the removal of such wastes from the site was considered as part of the Stage 1 proposal and factored in the predicted increase in waste generation from the Stage 2 SSD project. The proponent will further quantify and classify these likely waste streams prior to the Stage 2 building becoming operational. Measures to manage, reuse, recycle and safely dispose of waste generated by the Stage 2 building will be implemented in accordance to the methodologies identified in the above plan and policy. The proposal will result in an increase in waste generated from the facility, however will not introduce any waste streams that are not already managed on site.

6.11 Construction Management and Construction Traffic Management

A Preliminary Construction Management Plan (PCMP) has been prepared by APP Corporation and accompanies the EIS at **Appendix O**. The PCMP outlines site management principles and measures to mitigate impacts during the construction period. These measures include:

- All works will be undertaken in accordance with the relevant legislative requirements;
- Construction phasing will be developed to ensure continued hospital operations and safe public and staff access;
- Noise will not exceed EPA's Interim Construction Noise Guidelines and Australian Standards including, AS:2436;
- Dust control measures will be put in place, including spraying of water at the source of origin, to prevent airborne dust particles;
- All plant and machinery will be serviced regularly and checked for exhaust emissions and catalytic converters;
- Proper care and protection of trees will be carried out in accordance with AS:4970-2009;
- Measures to control soil erosion during construction will be employed in accordance with accepted principles described in Managing Urban Stormwater: Soils and Construction;
- Construction traffic and activities will be separated from the public;
- Waste material will be recycled and reused where possible;
- Dangerous goods will be stored in a lockable compound with sufficient ventilation in accordance with relevant codes of practice and standards; and
- Disconnection of services will be undertaken with full cooperation, development with approval and input with relevant hospital and authority stakeholders.

The measures contained in the PCMP will form the basis of a final CMP. This document will be prepared by the appointed head contractor and submitted to the Crown certifying authority for approval prior to the release of a certificate pursuant to Section 109R of the EP&A Act.

6.12 Summary of Mitigation Measures

The mitigation measures proposed to be implemented to ensure any impacts arising from the construction and, operation of the resource recovery facility are minimised are summarised in **Table 13** below.

Table 13 Summary of proposed management and mitigation measures

Issue	Proposed Mitigation Measure
Contamination	Detailed design is to incorporate the recommendations of the Phase 1 Contamination Assessment (prepared by Douglas Partners (2014).
Hazardous Materials	- Detailed design is to include the findings of hazardous materials assessment report for all buildings to be demolished. - The final CMP is to include measures to manage the handling and disposal of such materials as recommended in the hazardous materials assessment report
Heritage	- Work will be carried out in accordance with the recommendations of the Heritage Impact Statement prepared by EJE (October 2017). - Archival records of buildings to be demolished is to be undertaken prior to demolition works commencing. - If Aboriginal objects were to be identified during development of the subject land, works must stop and a suitably qualified archaeologist notified immediately to assess the finds. Management of any finds must be undertaken in accordance with the provisions of the National Parks and Wildlife Act 1974 and applicable OEH guidelines. - The finds must be reported to OEH and further approvals may be necessary prior to the recommendation of works. - If items of archaeological potential are identified during development of the subject land, works must stop and a suitably qualified archaeologist notified immediately to assess the finds. The management of any artefacts identified must be in accordance with the provisions of the Heritage Act 1977 and applicable guidelines.
BCA and Accessibility	- The recommendations of the BCA compliance statement are to be incorporated into the detailed design. An updated statement demonstrating compliance with the technical provisions of the State's building laws is to be provided to the certifying authority prior to the release of a Section 109R Certificate for building works. - An accessibility assessment of the detailed design plans confirming compliance with the BCA, relevant Australian Standards and Disability and Discrimination Act 1992 is to be submitted to the certifying authority prior to the release of a Section 109R Certificate
Noise and Vibration	Construction noise and vibration measures will be implemented in accordance with the recommendations of Acoustic Logic (October 2017). Such measures will be implemented into the final CMP prior to the release of a Section 109R Certificate. This shall include a review of screens of existing plant and equipment to ensure integrity has not been compromised as a result of the proposal.

Issue	Proposed Mitigation Measure
	The recommendations of the Acoustic Report prepared by Acoustic Logic relating to mechanical services noise will be addressed in the detailed design and adopted to ensure compliance with the relevant noise criteria. Verification is to be provided prior to the occupation of the development.
Construction Impacts	- A Construction Environmental Management Plan (CEMP) will be prepared by the appointed contractor prior to the commencement of works. The CEMP will establish site management principles generally in accordance with the Preliminary Construction Management Plan prepared by APP dated Draft - The CEMP shall also take into account the Construction Traffic Management Plan, hazardous materials assessment report, and Heritage Impact Assessment with respect to the removal of plaques and archiving.
Tree Protection	- Trees identified for protection in the Consulting Arborists Report (October 2017) shall be protected in accordance with <i>AS 4970 - 2009 Protection of trees on development sites</i> - Trunk protection shall be provided to Street Trees nominated on the Tree Protection Plan for the duration of the construction program.
Construction and Operational Traffic	- Construction and operational traffic shall be managed in accordance with the recommendations of the Transport Assessment Study prepared by TTW (October 2017). - The recommendations of the Green Travel Plan shall be implemented at the completion of building works associated with the Stage 2 SSD project.

7. Conclusion

This EIS has been prepared to consider the environmental, social and economic impacts of the proposed HKH Campus Stage SSD works. The EIS has addressed the issues outlined in the SEARs and satisfies Schedule 2 of the EP&A Regulation with regards to consideration of relevant environmental planning instruments, built form, social and environmental impacts including traffic, noise, construction impacts and water cycle management.

It is considered that the project warrants approval for the following reasons:

- The proposal will facilitate the development of a new and modern health facility which will further support and strengthen the services and facilities provided at the hospital for the benefit of the community.
- The proposal will assist in achieving the intended objectives for the site under the HKH Campus Masterplan.
- The assessment of this proposal has demonstrated that the development will not generate any environmental impacts that cannot be appropriately managed, and is consistent with the relevant planning controls for the site.
- The proposal is consistent with the principles of ecological sustainable development as defined by Schedule 2(7)(4) of the EP&A Regulation 2000.
- The area and shape of the site allows for the provision of new health facilities that meet the special design requirements for the future proposed uses, whilst not resulting in any significant adverse impacts on surrounding uses.
- The proposal will not result in any adverse traffic or parking impacts, with adequate parking provided off the campus in a dedicated parking facility to accommodate construction worker parking.

Given the planning merits described above, and significant public benefits proposed, it is requested that the Minister or his delegate approve the application.

Appendices

Appendix A. Secretary's Environmental Assessment Requirements

Appendix B. Owners Consent



Appendices

Appendix C. Topographical Survey Plan

Appendix D. Architectural Package

Appendices

Appendix E. Civil and Stormwater Concept Plans

Appendix F. Servicing Plans

Appendices

Appendix G. Landscape Concept Plans

Appendix H. Capital Investment Value Report

Appendices

Appendix I. Integrated Water Management Plan

Appendix J. Integrated Servicing Strategy

Appendices

Appendix K. Arborist Assessment and Tree Protection Plan

Appendix L. Transport and Accessibility Assessment

Appendices

Appendix M. Preliminary Construction Traffic Management Plan

Appendix N. Green Travel Plan

Appendices

Appendix O. Preliminary Construction Management Plan

Appendix P. Heritage Impact Assessment

Appendices

Appendix Q. Noise and Vibration Assessment

Appendix R. BCA Compliance Report

Appendices

Appendix S. Phase 1 Contamination Assessment

Appendix T. Section 149 Certificate

Appendices

Appendix U. State Agency Consultation



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