Environmental Impact Statement

State Significant Development SSD7058

Blacktown Hospital, Blacktown

Blacktown Hospital Redevelopment Stage 2 - Main Building Works

Submitted to Department of Planning and Environment
On Behalf of Health Infrastructure NSW

July 2016 ■ 15320

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JBA operates under a Quality Management System that has been certified as complying with ISO 9001:2008. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

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Development Application Details	
Applicant name	Health Infrastructure NSW
Applicant address	Level 8, 77 Pacific Highway, North Sydney
Land to be developed	Lots 300, 301, 306, 308 DP15914, Lot 1 DP 128344, Lot 3 in DP71010 and Lot 1 in DP730307 known as 18 Blacktown Road, Blacktown.
Proposed development	This application seeks approval for the staged development of a new nine storey Acute Services Building and refurbishment of select area of existing hospital buildings as described in Section 3.0 of this Environmental Impact Statement.
Prepared by	
Name	Kate Tudehope
Qualifications	BPlan (Hons) MPIA
Address	Level 7, 77 Berry Street, North Sydney
In respect of	State Significant Development - Development Application
Certification	
	I certify that I have prepared the content of this EIS and to the best of my knowledge: it is in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*; all available information that is relevant to the environmental assessment of the development to which the statement relates; and the information contained in the statement is neither false nor misleading.
Signature	
Name	Kate Tudehope
Date	18/07/2016

Executive Summary

Purpose of this Report

This submission to the Department of Planning and Environment (the Department) comprises an Environmental Impact Statement (EIS) for a State Significant Development Application (DA) under Division 4.1 of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP& A Act). The Stage 2 application comprises a Staged DA under Section 83B of the EP&A Act. The Department granted consent for the concept envelope and early works in April 2016. This application seeks approval for the construction and operation of a new nine (9) storey Acute Services Building (ASB) and refurbishment of select areas of the existing hospital building.

Development for the purposes of hospitals, medical centres and health research facilities with a capital investment value of more than $30 million is State Significant Development (SSD) for the purposes of the EP&A Act. As the proposed development has a capital investment value of approximately $289 million, it is SSD.

A request for the issue of Secretary's Environmental Assessment Requirements (SEARs) was made on 12 May 2015. Accordingly, the SEARs were issued on 9 June 2015. This submission is in accordance with the Department's guidelines for SSD applications lodged under Part 4 of the EP&A Act, and addresses the issues raised in the SEARs.

Overview of the Project

This application seeks approval for the following development:

- Construction and operation of a new nine (9) storey (7 storey above ground) Acute Services Building containing:
  - An Emergency Department;
  - Operating Theatres;
  - Intensive Care Unit;
  - Birthing and Special Care Nursery;
  - Sterile Supply Department;
  - Paediatrics;
  - Women's Health;
  - Surgical and Medical Beds; and
  - An Ambulance bay.
- Extension of 'Hospital Street' and construction of a new public entry atrium;
- Construction of a bridge link to the multi-storey car park;
- Construction of bridge and tunnel connections to the existing hospital building and Stage 1 CSB;
- Refurbishment of select area of existing hospital facilities;
- Installation of building and campus identification signage;
- Site landscaping including construction of a new entry forecourt between the Stage 1 and Stage 2 buildings; and
- Associated building services.

No tree removal is proposed as part of this application.

The Site

The Blacktown Hospital campus is located approximately 1.2 km south-east of the Blacktown town centre and Blacktown Railway Station. The hospital is approximately 30 kilometres west of the Sydney CBD within the Blacktown LGA.

The site is located at 18 Blacktown Road, Blacktown and is legally described as Lots 300, 301, 306, 308 DP15914, Lot 1 DP 128344, Lot 3 in DP71010 and Lot 1 in DP730307.

Planning Context

Section 6.0 of the EIS considers all applicable legislation in detail. The proposal is consistent with the requirements of all relevant State Environmental Planning Policies. The site is zoned SP1 Special Activities (Health Facilities). The proposal is permissible with consent and meets the objectives of the subject zone.

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.

Conclusion and Justification

The EIS addresses the SEARs, and the proposal provides for the significant extension and upgrade of key hospital services at Blacktown Hospital, a major component of the Western Sydney Local Health District. The potential impacts of the development are minor and are able to be managed. Given the planning merits of the proposal, the proposed development warrants approval by the Minister for Planning and Environment.

1.0 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 staged development of a new Acute Services Building (ASB) at Blacktown Hospital under Section 83B of the EP&A Act. The Department granted consent for the concept envelope and early works in April 2016. This application seeks approval for the construction and operation of a new nine (9) storey ASB and refurbishment of select areas of the existing hospital buildings.

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 RLB (refer to **Appendix C**). The overall Stage 2 redevelopment has a total Capital Investment Value (CIV) of approximately $380 million, and the proposed works have a CIV of approximately $289.

The EIS has been prepared by JBA on behalf of Health Infrastructure NSW, the proponent, based on the Architectural Drawings provided by Jacobs Architects (see **Appendix A**), as well as other supporting technical information appended to the report (see Table of Contents).

This report describes the site, its environs, the proposed development, and provides an assessment of the proposal in accordance with the Secretary's Environmental Assessment Requirements (SEARs) issued for the proposal (see **Appendix B**).

1.1 The Proposal

Blacktown Hospital is part of the Western Sydney Local Health District (WSLHD). The principal catchment population for Blacktown Hospital is Blacktown Local Government Area (LGA) and residents of bordering LGAs including Parramatta, Holroyd, Hawkesbury, Penrith and Fairfield.

In March 2012 the NSW Premier, Minister for Western Sydney and the Minister for Health announced that the NSW Government would commit $300 million to the expansion of Blacktown and Mt Druitt Hospitals.

The expansion program at the Blacktown Hospital campus is being undertaken across several stages. Stage 1 involved the construction of the new Clinical Services Building (CSB), and was completed in May 2016. A separate Sub-acute Mental Health facility, a new multi-storey car park and refurbishment of the existing main hospital building have also been completed as part of Stage 1 (see **Section 1.2.2**).

The works associated with Stage 2 of the hospital's redevelopment are being delivered under several separate planning application as outlined below. **Figure 1** outlines the location of the Stage 1 and 2 works in relation to the broader campus.

1.1.1 Stage 2

The Stage 2 redevelopment includes the construction of a new nine (9) storey (seven (7) storeys above ground) ASB adjacent to the recently completed Stage 1 CSB. The built form comprises a 'U' shaped tower above a three (3) storey podium and contains:

- An Emergency Department;
- Operating Theatres;
- Intensive Care Unit;
- Birthing and Special Care Nursery;
- Surgical and Medical Beds; and
- An Ambulance bay.

Associated Stage 2 works include:

- Extension of 'Hospital Street' and construction of a new public entry atrium;
- Construction of a bridge link to the multi-storey car park;
- Construction of bridge and tunnel connections to the existing hospital building and Stage 1 CSB;
- Refurbishment of select area of existing hospital facilities;
- Installation of building and campus identification signage;
- Site landscaping including construction of a new entry forecourt between the Stage 1 and Stage 2 buildings; and
- Associated building services.

No tree removal is proposed as part of this application.

1.1.2 Stage 2 Concept Proposal and Construction Enabling Works Package

In April 2016, the Department approved the Stage 2 concept proposal and construction enabling works package. Approval was given for the envelope of the new ASB, with detailed consent for construction enabling works associated with the Stage 2 redevelopment, referred to herein as the Stage 2 Enabling Works Package. Consent was granted for:

- Concept approval for approximately 40,000m² GFA for a new 9-storey (7-storeys above ground) ASB to accommodate a new emergency department, operating theatres, intensive care unit, birthing and specialty care nursery and new surgical and medical beds;
- Removal of redundant car parks, roads, kerbs and signage within the excavation zone;
- Removal of all redundant services;
- Demolition of portions of the existing main entry, and reconfiguration of the entry to maintain public, staff and emergency vehicle access at all times;
- Establishment of a new patient drop off zone in the eastern half of the P7 car park;
- Removal of the temporary roadway to the north of Bungarribee House;
- Bulk earthworks and shoring preparation for the construction of the new Acute Services Building;
- Bulk excavation of approximately 33,800m³ of material to a maximum depth of 8m; and
- Subterranean tunnel connections to the existing main hospital building and the Clinical Services Building.

1.1.3 Separate Stage 2 Applications

In addition to the Stage 2 Enabling Works Package, a series of separate applications that support key elements of the Stage 2 program have been approved under, or are subject to, separate applications. These include:

- Construction of a new multi-storey car park adjacent to the existing multi-storey car park (subject to a development application to Council);
- Demolition, road and civil works including services diversions and deepening of the stormwater basin (approved under a REF);
- Relocation of the existing Sydney Trains 33kV electrical line (approved under a REF); and
- Construction of a new western forecourt including a new vehicle entry point to Panorama Parade and at-grade car park, noting that eight properties on Panorama Parade are currently being acquired to facilitate this (subject to a future REF).

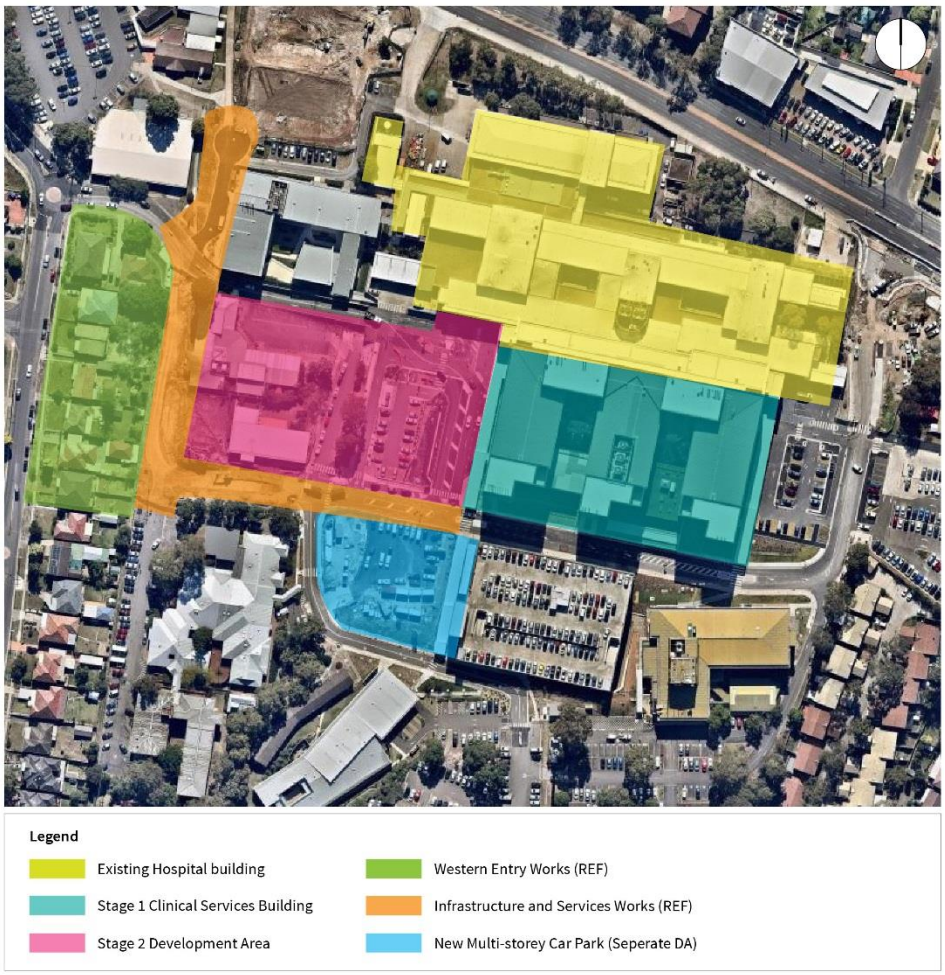

Figure 1 – Blacktown Hospital expansion program
Source: Nearmap and JBA

1.2 Objectives of the Project

The Blacktown and Mount Druitt Hospitals Stage 2 Expansion complements the major investment of the construction of the Stage 1 CSB.

The Blacktown and Mount Druitt Hospitals Expansion Stage 2 will further assist in the transformation of the Hospitals, and in particular of Blacktown Hospital into a major metropolitan Hospital for Western Sydney.

The Blacktown and Mount Druitt Hospitals Expansion Stage 2 has been developed in the context of the District wide health service plan which includes enhancement of selected services at Mount Druitt to create 'centres of excellence' for planned surgery, rehabilitation, paediatrics and a new purpose built renal dialysis unit to better serve the local population.

A Masterplan has been developed for the Blacktown campus. Key features of the Masterplan include:

- A new Acute Precinct located to the south of the existing hospital, at the centre of the site, comprising the nearly complete CSB to the east and the proposed ASB to the west;
- An east - west 'Hospital Street';
- A north - south pedestrian link connecting the hospital street to other precincts;
- Optimised re-use of the existing hospital for predominantly outpatient functions;
- A new multi-level carpark extension to the west of the Stage 1 multi-level carpark;
- Potential for education / research expansion above the existing stormwater retention basin;
- Provision for a parallel provider development zone to the north-west; and
- Capacity to relocate and expand Acute Metal Health, possibly in conjunction with other development.

The proposed development will assist in achieving the desired Masterplan outcome for the site.

1.3 Analysis of Alternatives

1.3.1 Strategic need for the Proposal

As discussed in **Section 1.1** Blacktown Hospital is expanding to ensure the hospital can continue to meet service delivery obligations for the rapidly growing health region. A comprehensive review of the scope of health services was previously undertaken, with the current option including Stage 1 and 2 selected as the most functional, efficient and cost effective approach to the expansion of the campus.

1.3.2 Alternative Options

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

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.

Option 2 - Do Nothing

The proposal will reduce duplication of health services between the Mount Druitt and Blacktown campus. Under the 'do nothing' scenario health services in the western region would remain inefficient and would not allow key services to be delivered. Not undertaking the work would not be an appropriate outcome for a project of this nature, which will facilitate much-needed health infrastructure for Western Sydney and the broader region.

Option 3 – Alternative Designs

Health Infrastructure NSW has explored a number of options for the location and layout of the new facility during the concept design phase. Options for the expansion of the Blacktown campus were driven by implementation of the following framework design principles:

- Providing good hospital identity and clear wayfinding;
- Acknowledging existing site levels and identify platforms;
- Appropriately locating services on the site;
- Acknowledging surrounding residential areas;
- Identifying a long term strategy for circulation;
- Creating opportunity, renewal and buffer zones;
- Creating future proofing opportunities;
- Integrating ESD principles;
- Integrating community zones (cafes and meeting points); and
- Integrating green zones.

A number of broad options were considered for the expansion of the campus. The east – west development option was considered to be the most appropriate way of meeting the development principles outlined above.

1.4 Secretary's Requirements

In accordance with Section 89G of the EP&A Act, the Secretary of the Department of Planning and Environment issued the requirements for the preparation of the EIS on 9 June 2015. A copy of the SEARs is included at **Appendix B**.

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 – Location of SEAR's Requirements in the EIS

Secretary's Requirement	Location in Report	
General Requirements	**Report**	**Appendix**
The Environmental Impact Statements (EIS) must meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 the *Environmental Planning and Assessment Regulation 2000*. Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.	This report	-

Secretary's Requirement	Location in Report	
Where relevant, the assessment of the key issues below, and any other significant issues identified in the risk assessment, must include: ▪ adequate baseline data; ▪ consideration of potential cumulative impacts due to other development in the vicinity; and ▪ measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risks to the environment.		
The EIS must be accompanied by: ▪ a detailed CIV; and ▪ an estimate of the jobs that will be created by the future development during the construction and operational phases of the development.	Section 1.0 Section 3.11	Appendix C -
Key Issues	**Report**	**Appendix**
Statutory and Strategic Context		
State Environmental Planning Policy (State & Regional Development) 2011;	Section 5.1	-
State Environmental Planning Policy (Infrastructure) 2007;	Section 5.1	-
State Environmental Planning Policy No 33–Hazardous and Offensive Development;	Section 5.1	
State Environmental Planning Policy No 64–Advertising and Signage; and	Section 5.1.1	
Relevant Local Environmental Plan and any draft Local Environmental Plan.	Section 5.1.3	-
Permissibility ▪ Detail the nature and extent of any prohibitions that apply to the development.	Section 5.1	-
Contamination ▪ Demonstrate that the site is suitable for the proposed use in accordance with SEPP 55.	Section 5.1, 5.9	Appendix K
→*Relevant Policies and Guidelines:* ▪ Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP)	Section 5.1, 5.9	Appendix K
Policies and Guidelines		
Address the relevant planning provisions, goals and strategic planning objectives in the following: ▪ NSW 2021;	Section 5.1	-
▪ A Plan for Growing Sydney;	Section 5.1	-
▪ NSW Bike Plan;	Section 5.1	Appendix I
▪ Planning Guidelines for Walking and Cycling;	Section 5.1	Appendix I
▪ Integrating Land Use and Transport Policy Package; and	Section 5.1	Appendix I
▪ Healthy Urban Development Checklist, NSW Health	Section 5.1	Appendix I
Built Form and Urban Design		
Demonstrate compliance with the development parameters approved in the concept proposal.	Section 5.1.2	Appendix A
Address design quality, with specific consideration of the overall site layout, streetscape, axis, vistas and connectivity, open spaces and edges, landscaping, internal courtyards, primary elements, gateways, façade, rooftop, mechanical plant, massing, setbacks, building articulation, materials, choice of colours, including an assessment against the Crime Prevention Through Environmental Design Principles.	Section 3.3,5.2, 5.3	
Provide details demonstrating the relationship with the Construction Enabling Works.	1.1.2	
Amenity		
Detail amenity impacts including solar access, acoustic impacts, visual privacy, view loss, overshadowing, lighting impacts and wind impacts. A high level of environmental amenity for land uses immediately adjacent and the surrounding residential areas must be demonstrated.	Section 5.2	Appendix A

Secretary's Requirement	Location in Report	
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, construction and ongoing operation phases of the development.	Section 5.15	-
Demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry best practice.	Section 5.15	
Include a description of the measures that would be implemented to minimise consumption of resources, water (including water sensitive urban design) and energy.	Section 5.15	
Noise and Vibration		
Identify and provide a quantitative assessment of the main noise and vibration generating sources during Main Construction Works and operation, in particular the operations of any helicopter landing surface. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land.	Section 5.4	Appendix M
→*Relevant Policies and Guidelines:* ▪ NSW Industrial Noise Policy (EPA)	-	Appendix M
▪ Interim Construction Noise Guideline (DECC)	-	Appendix M
▪ Assessing Vibration: A Technical Guideline 2006	-	Appendix M
Transport and Accessibility		
The Traffic and Transport Assessment for the concept proposal should address, but is not limited to, the following: ▪ existing daily and peak hour vehicle movements, public transport services and parking arrangements on the road network located adjacent to the proposed development	Section 5.5	
▪ existing and proposed pedestrian and cycle movements within the vicinity of the site as well as the provision of bicycle parking and end of trip facilities (showers, change rooms, lockers etc.)	Section 5.5	
▪ estimated total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and cycle trips	Section 5.5	
▪ the adequacy of public transport to meet the likely future demand of the proposed development	Section 5.5	
▪ measures to promote travel choices that support the achievement of State targets, such as a location-specific sustainable travel plan	Section 3.8, 5.5	Appendix I
▪ daily and peak vehicle movements impact 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)	Section 3.8, 5.5	
Proposed access arrangements during operation, including emergency vehicle access; ▪ measures to improve pedestrian, cyclist and vehicle safety and to mitigate any traffic impacts identified on road, public transport, pedestrian and cycle networks; ▪ proposed car parking provisions for staff and visitors, including consideration of the availability of public transport and the requirements of the relevant parking codes and Australian Standards, and operational details for management of on-site car parking to ensure on-street parking congestion impacts are mitigated; and ▪ service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times)	Section 3.8	
Detail access arrangements at all stages of construction and measures to mitigate any associated pedestrian, cycleway or traffic impacts, including the displacement of visitor and patient car parking. Alternative off-site arrangements should be made for staff and construction workers.	Section 3.8	
→ *Relevant Policies and Guidelines:* ▪ Guide to traffic generating development (RMS)	-	

Secretary's Requirement	Location in Report	
▪ Planning guidelines for walking and cycling ▪ EIS Guidelines – road and related facilities (DP&I		
Drainage		
▪ Provide details of the drainage associated with the proposal, including stormwater, drainage infrastructure and OSD, which should be designed in consultation with Council and must avoid any adverse impacts on downstream properties.	Section 5.7	Appendix P
→ Relevant Policies and Guidelines: ▪ Engineering Guide for Development 2005 (Blacktown City Council)	-	Appendix P
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 5.6	Appendix O
Hazards		
Provide details of the proposed storage, use and management of any hazardous materials and measures to be implemented to manage hazards and risks associated with the storage.	Section 5.6.3	Appendix L
Plans and Documents		
The EIS's 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's rather than as separate documents.	This report	-
▪ Architectural drawings (dimensioned and including RLs);	-	Appendix A
▪ Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and boundaries;	-	Appendix D
▪ Site Analysis Plan;	-	Appendix A
▪ Pedestrian and Vehicle Circulation Plan, including signage details;	-	Appendix A
▪ Stormwater Concept Plan;	-	Appendix Q
▪ Sediment and Erosion Control Plan for each stage of construction works;	-	Appendix P
▪ Shadow Diagrams;	Section 5.2.1	Appendix A
▪ View Analysis / Photomontages;	Section 5.2.3	Appendix A
▪ Landscape Plan (identifying any trees to be removed and trees to be retained or transplanted, retaining walls and fences);	Section 3.6	Appendix A
▪ Preliminary Construction Management Plan, inclusive of a Preliminary Construction Traffic Management Plan that includes vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures during each stage of construction;	Section 5.14, 5.5	Appendix T
▪ Geotechnical and Structural Report;	Section 5.8, 5.12	Appendix S
▪ Arborist Report (if development includes tree removal);	-	-
▪ Acid Sulphate Soils Management Plan (if required); and	Section 5.9	Appendix K
▪ Schedule of External Materials and Finishes (where building works are proposed).	Section 3.3	Appendix A
Consultation		
During the preparation of the EIS's, 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 ▪ Blacktown City Council, ▪ Transport for NSW and	Section 4.0	Appendix J

Secretary's Requirement	Location in Report	
▪ Roads and Maritime Services. The EIS's 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		

2.0 Site Analysis

2.1 Site Location and Context

The Blacktown Hospital campus is located approximately 1.2 km south-east of the Blacktown town centre and Blacktown Railway Station. The hospital is approximately 30 kilometres west of the Sydney CBD within the Blacktown LGA. The site's locational context is shown at **Figure 2**.

The campus is approximately 13 hectares in area and has street frontages to Blacktown Road to the north and Marcel Crescent / Panorama Parade to the west.

An aerial photograph of the hospital campus is shown at **Figure 3**.

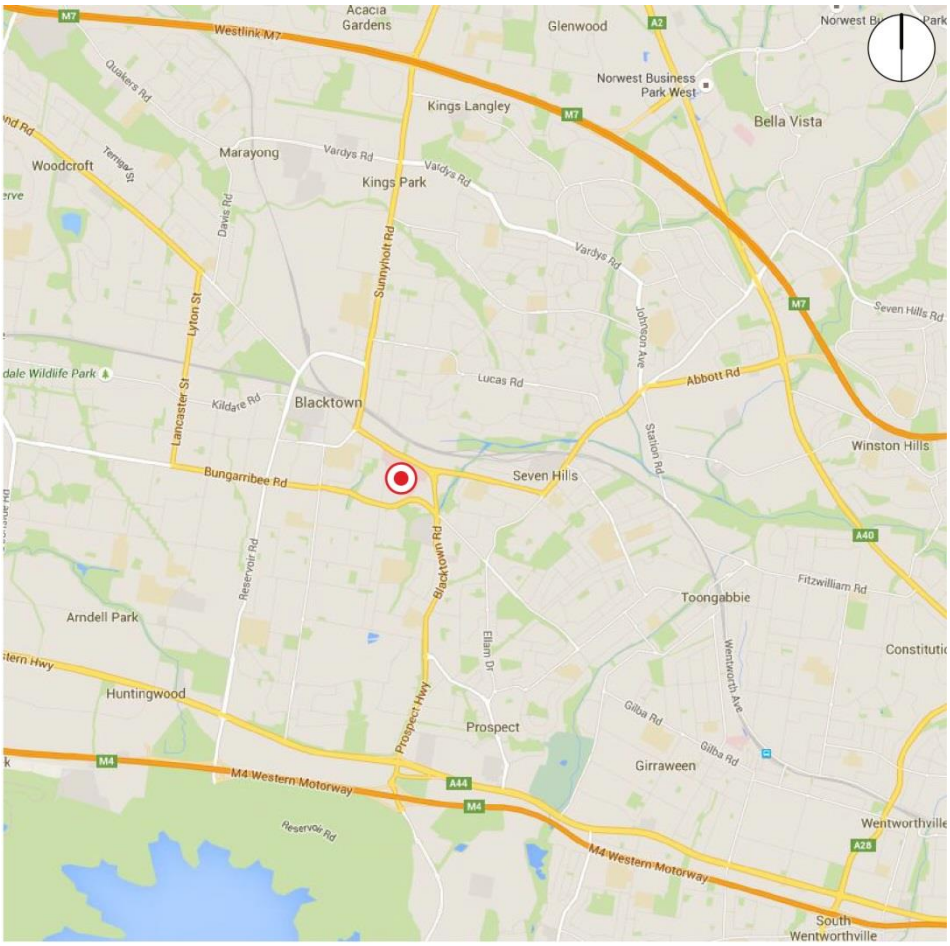

Figure 2 – Locational Context
Source: Google Maps and JBA

Figure 3 – Aerial photograph of Blacktown Hospital
Source: Nearmap and JBA

2.2 Land Ownership

The site is located at 18 Blacktown Road, Blacktown and is legally described as Lots 300, 301, 306, 308 DP15914, Lot 1 DP 128344, Lot 3 in DP71010 and Lot 1 in DP730307.

2.3 Site Description

2.3.1 Existing Development

The hospital campus was first developed in the 1960s, before being redeveloped and expanded in the 1990s. The main hospital functions are generally accommodated in the existing 4-storey main building located across the northern part of the campus (**Figure 4**). The recently completed 8-storey CSB is located immediately to the south of the main building (**Figure 5**). At-grade parking and an internal road system are located adjacent to the main hospital building and new CSB at the centre of the campus (**Figure 6**) with a 4-storey car park located further south (**Figure 7**). A number of at-grade car parks are located across the southern portion of the campus.

In addition to these two main buildings, a number of smaller low-rise buildings operating for a number of health related and ancillary uses are located around the periphery of the campus, including:

- Ambulance Centre;
- University of Western Sydney;
- Bungarribee House Psychiatric Unit;

- Melaleuca Mental Health Unit; and
- Administration Centre.

Photographs of the broader campus development are provided at **Figures 8 - 12**.

The site of the proposed ASB is currently occupied by the P7 car park, the Regional Renal Dialysis Centre and Oncology Unit, however approval has been granted for the removal of these structures, as well as bulk excavation works, under the separate planning approvals granted for the site (refer to **Sections 1.1.2** and **1.1.3**).

Accordingly, this report assumes that the site has been cleared of all structures and vegetation, and that bulk excavation has been carried out.

Figure 4 – Main hospital building - viewed from Blacktown Road
Source: JBA

Figure 5 – New 8 storey CSB building
Source: JBA

Figure 6 – P7 car park (subject to removal as part of a Stage 2 Early Works Package)
Source: JBA

Figure 7 – New multi-storey car park building
Source: JBA

Figure 8 – Ambulance Centre
Source: JBA

Figure 9 – University of Western Sydney building
Source: JBA

Figure 10 – Bungarribee House Psychiatric Unit
Source: JBA

Figure 11 – Melaleuca Mental Health Unit
Source: JBA

Figure 12 – Recently refurbished Renal Centre
Source: JBA

2.3.2 Topography

The hospital site falls from a high point of RL72m in the south to RL55m in the north near Blacktown Road. At Blacktown Road the topography varies from a low point near Marcel Crescent in the west, of RL44m, to RL55m to the east. This gives a general height variation of approximately 22-28m across the hospital. A Survey Plan prepared by Cardno is provided at **Appendix D**.

2.3.3 Road Network, Vehicular Access and Parking

The main vehicular access point to the hospital campus is via Marcel Crescent at the intersection with Panorama Parade. An internal loop road runs from the main access point to a left in, left out access point at Blacktown Road in the east of the campus. A new crossover is to be constructed to Panorama Parade as part of REF works to improve traffic circulation. Service and delivery vehicles have direct access from Blacktown Road to the main hospital building.

Car parking is provided at a number of locations across the campus, including at-grade car parks and a multi-story parking facility. Additional on-street parking is available in the surrounding street system, with unrestricted parking in Marcel Crescent and Panorama Parade.

2.4 Surrounding Development

- **To the north** – on the northern side of Blacktown Road lies a mix of uses comprising multi-unit residential development (**Figure 13**), motor showroom and commercial development.
- **To the north-east** – the site adjoins two dwelling houses accessed from Lacey Place and one dwelling house accessed from Blacktown Road. Other properties in this area are residential.
- **To the east** – the site has an irregular boundary and adjoins a large townhouse development comprising 2-storey brick townhouses with 26 townhouses and associated garden spaces adjoining the common boundary with the site (**Figure 14**).
- **To the south** – the site adjoins land used by Uniting Care for seniors housing and church purposes including 2 and 3-storey aged care units with associated open spaces.

- **To the west** – the site adjoins the rear boundaries of a row of approximately 15 dwelling houses (or dual occupancies) fronting Panorama Parade (**Figure 15**. Eight of these properties are currently being acquired to facilitate the construction of a new hospital entry).
- **To the north-west** – adjacent to Marcel Crescent are residential uses and special uses including the Salvation Army.

Figure 13 – Residential Development on the northern side of Blacktown Road
Source: JBA

Figure 14 – Adjoining townhouse development to the east
Source: JBA

Figure 15 – Development on Panorama Parade to the west
Source: JBA

3.0 Description of the Development

This Section of the report provides a detailed description of the proposed development. Architectural Drawings are included at **Appendix A**.

3.1 Overview of Proposed Development

This application seeks approval for the following development:

- Construction and operation of a new nine (9) storey (7 storey above ground) Acute Services Building containing:
  - An Emergency Department;
  - Operating Theatres;
  - Intensive Care Unit;
  - Birthing and Special Care Nursery;
  - Sterile Supply Department;
  - Paediatrics;
  - Women's Health;
  - Surgical and Medical Beds; and
  - An Ambulance bay.
- Extension of 'Hospital Street' and construction of a new public entry atrium;
- Construction of a bridge link to the multi-storey car park;
- Construction of bridge and tunnel connections to the existing hospital building and Stage 1 CSB;
- Refurbishment of select area of existing hospital facilities;
- Installation of building and campus identification signage;
- Site landscaping including construction of a new entry forecourt between the Stage 1 and Stage 2 buildings; and
- Associated building services.

No tree removal is proposed as part of this application.

An artist's impression of the new ASB is shown at **Figure 16**.

Figure 16 – Artists impression of the new ASB as seen from the north-west
Source: Jacobs Architects

3.2 Development Principles

The planning and design principles adopted for the ASB are as follows. The building will:

- Achieve adjacency between key acute services;
- Create connections, facilitate interaction and keep wayfinding intuitive;
- Environmentally and socially sustainable;
- Maintain flexibility for future service enhancements; and
- Reinforce the vision of the hospital campus.

3.3 New Acute Services Building

The proposed ASB is located over nine (9) storeys, two (2) of which are below ground, and has a GFA of approximately 36,500m². The building includes a three (3) storey rectangular podium, with a 'U' shaped tower above comprising a northern and southern wing. As the floor area of each floor decreases progressively up the building, the void between the northern and southern wings enlarges, with a series of stepped roof terraces opening to the west. The terraces provide a conveniently located and protected outdoor spaces to support various clinical functions.

The building is articulated primarily through the creation of a solid masonry 'brick' tower at each corner of the building, with windowed facades between. These corner elements contain services risers, fire stairs and structure. Windows and glass fins on the façade between these corner towers are full floor-to-ceiling height wherever possible to maximise the proportions of the 'open' glazing to the 'closed' spandrel.

The bulk of the building is further articulated with a number of smaller linear forms, which will be clad with white composite aluminium with a timber veneer cladding to the underside. In addition, a number of smaller coloured glass 'interventions' provide articulation to the western façade of the building as the prominent public face of the hospital. The proposed building massing is shown at **Figure 17**.

Whilst not part of this application, the building has been designed to allow for vertical extension in the future should the demand arise.

A floor by floor summary of uses is provided at **Table 2**.

Table 2 – Floor by Floor summary of use

Floor	Use
Level 1	Plant and staff-only tunnel links to Stage 1 CSB and existing hospital
Level 2	Emergency Department, Ambulance Bay, public Emergency entrance and staff-only tunnel links to Stage 1 CSB and existing hospital
Level 3 (Ground Level)	Main Entrance, Operating Theatre Suite and atrium connecting CBS and existing hospital
Level 4	Central Sterilising Department and staff-only atrium bridge links to CBS and existing hospital
Level 5	Intensive Care Unit and atrium bridge link to CSB
Level 6	Birthing Unit and Special Care Nursery
Level 7	Inpatient Units
Level 8	Paediatric Inpatient Unit and Shell Inpatient Unit
Level 9	Plant

Figure 17 – Indicative building massing, as viewed from the north-west
Source: Jacobs Architects

Atrium, Entry Forecourt and Hospital Street

Central to the hospital's identity is the definition of the entrance to the campus and the creation of a focal point at the centre of activity. The Stage 2 works will continue the hospital street completed as part of Stage 1 by adding a new entry atrium and forecourt at the western end (between the Stage 1 and 2 buildings). The forecourt will also include a patient drop-off area.

A photomontage of the ASB as viewed from the new entry forecourt is shown at **Figure 18**. Artist's impressions of the proposed atrium and Hospital Street are provided at **Figure 19** and **20**.

Emergency Department Drop-off and Ambulance Bay

In addition to the patient drop-off at the main entry forecourt, a separate patient drop-off and ambulance bay is proposed at the western end of the new ASB for the Emergency Department at Level 2. The ambulance bay will accommodate six (6) ambulances. As part of Stage 1 development, a patient discharge and transport facility was constructed to accommodate 2 (two) ambulances.

Car Park Link Bridge

An extension to the existing multi-storey car park is proposed to the south of the ASB under a separate development application. In order to improve pedestrian access between the car park and ASB, this application incorporates a link bridge at Level 5, which will connect to the new car park.

External Materials and Finishes

Black aluminium cladding is the base of the new building, with white aluminium 'ribbons' tying the old and new buildings together.

To modulate the building, the proposal seeks to continue elements of the Stage 1 CSB that are popular with the Blacktown community, including use of coloured glass fins that project from the building to break up the façade. The fins are highly responsive to variations in natural light, casting coloured light and shadows back onto the façade. The coloured fins are intended to reflect the diversity of the Blacktown community.

The other predominant material is masonry brick, with brick 'snaps' (factory precast into concrete cladding panels) mirroring the Stage 1 building. Brick has been used as a reference to the surrounding housing and the former State Brickworks, providing an earthy contrast to the glass and aluminium.

Further details of materials and finishes are provided on the elevations at **Appendix A**.

Figure 18 – New entry forecourt and patient drop-off area (located between the Stage 1 and 2 buildings)
Source: Jacobs Architects

Figure 19 – View of the entry forecourt and Hospital Street extension
Source: Jacobs Architects

Figure 20 – Atrium Interior
Source: Jacobs Architects

3.4 Signage

Internally illuminated "Blacktown Hospital" building identification signs are proposed on the upper levels of the northern and western façades. The lettering will be 980mm high and 150mm deep, and feature solid aluminium return, painted the same colour as the building cladding material.

In addition, three (3) signs are proposed at the Panorama Parade entry to the campus. These signs will be 4,280mm tall and will contain way-finding information.

The signs have been designed to be clear and legible from the main public entrance to the campus, as well as when viewed from Blacktown Road.

Details of the proposed signs are provided at **Appendix A**. An assessment of the proposed signage against the provisions of *State Environmental Planning Policy No 64 – Advertising and Signage* (SEPP 64) is provided at **Section 5.1**.

3.5 Refurbishment Works

In addition to the works described above, the proposal includes a series of internal refurbishment works at Level 1 - 4 of the main hospital building (refer to Architectural Drawings at **Appendix A**). The works cover an area of approximately 4,700m^2, and include:

- Conversion of the existing Emergency Department into Ambulatory Care;
- Refurbishment of the existing medical imaging;
- Conversion of half of the existing Operating Suite into an Endoscopy Procedure Suite; and
- Any other works that are required to ensure the works are undertaken in a safe manner and staged to ensure minimal disruption to the Hospital / LHD.

To support the proposed refurbishments, all necessary services installations and upgrades will be carried out in accordance with the details provided in the services statements, as summarised below at **Section 3.7**.

3.6 Landscaping and Public Domain

Landscape Drawings have been prepared by Site Image and are included at **Appendix E**. The landscape scheme has five distinct elements, comprising:

- ASB Terraces – A series of west-facing landscaped spaces across Level 5, 6 and 7 between the northern and southern wings of the ASB. Each terrace is adjacent to a different clinical use, and has been designed to cater for the specific needs of those patients.
- Northern Terrace – The former Ambulance ramp provides a link between Panorama Parade and the new atrium. The current footpath will be resurfaced with the roadway becoming a series of small terraced gardens with turf, shrubs and groundcovers.
- Former Ambulance Bay – A central open lawn will make use of good solar access, with raised planters around the edge providing screening from surrounding buildings and providing seating opportunities.
- Level 2 Atrium – Indoor planting will be incorporated to provide a green centre to the atrium. Planters located on either side of the staircase will have a variety of species suited to the indoor conditions.
- Entry Forecourt / Drop Off Area – The entry forecourt has been designed as the central drop-off point to the main entry, providing a sense of arrival and continuity through to the main atrium. Landscaping of the entry forecourt will feature tree plantings, with bollards used to separate vehicles and pedestrians.

3.7 Services and Utilities

Comprehensive in-ground services and infrastructure upgrades were undertaken across the campus as part of the REF works. These works took the proposed development into consideration, and are capable of servicing the new building. Additional services required to support the ASB are outlined below.

3.7.1 Electrical Works

An Electrical, ICT and Security Report (refer to **Appendix F**) details the required electrical services works that will be carried out as part of the proposal.

A new substation, site main switch room and standby diesel generator room is to be constructed within the new multi-storey car park to the south of the ASB. The approval for the construction of these spaces is subject to a separate DA to Council. The fit-out of these spaces with mechanical services is sought as part of this application.

Key electrical works for the Stage 2 application include:

- One (1) new Endeavour Energy 1500kVA transformer substation located in the existing multi-storey car park;
- Two (2) new Endeavour Energy 1500kVA transformer substations located in Central Energy Plant (CEP) in the new multi-storey car park (subject to a separate application);
- Additional site LV main switchboard in the Stage 2 CEP main switch room in the existing multi-storey car park;

- Augmentation of the Endeavour Energy High voltage cabling to provide power requirements;
- A new site electrical main LV main switch room for the ASB;
- A new diesel generator located on ground floor of new multi-storey car park; and
- A new in-ground bulk fuel diesel storage tank with associated pumps and fill point located on ground floor of new multi-storey car park.

3.7.2 Information and Communication Technology (ICT)

The Electrical, ICT and Security Report prepared by Jacobs (refer to **Appendix F**) details the required ICT works that will be carried out throughout the site as part of the proposal. These include installation of:

- An ASB main switch room;
- Distribution board cupboards and risers throughout the ASB;
- A telecommunications carrier room;
- A campus distributor room;
- Building and floor distributor rooms;
- Interconnection of the ASB ICT / Communications infrastructure with the existing hospital building and Stage 1 CSB;
- Modification and additions to existing main switchboards for additional sub mains; and
- Reconfiguration of existing ICT / Communications cupboards for revised voice and data cabling.

3.7.3 Security

A number of new security services will be provided as part of the proposed works to support the hospital's operational security requirements. These works are detailed in the Electrical, ICT and Security Report prepared by Jacobs (refer to **Appendix F**) and include:

- Closed Circuit Television System (CCTV);
- Electronic Access Control Systems (EACS);
- Intrusion Detection System (IDS);
- Duress System (FDS); and
- Intercom system.

The proposed security systems will be designed and installed in accordance with the relevant Australian Standards, and will be fully integrated with the existing Stage 1 CSB.

3.7.4 Hydraulic Services

A Hydraulic Services Report has been prepared by Warren Smith & Partners and is provided at **Appendix G**. The report outlines the hydraulic services provided for the new ASB. The following hydraulic services are proposed:

- Sub-soil drainage (internal to the building);
- Stormwater drainage (internal to the building);
- Roof water drainage;
- Rainwater downpipes;

- Sewer drainage;
- Sanitary plumbing and drainage;
- Potable cold water service;
- Potable hot water services;
- Non-potable hot and cold water via localised potable water reduced pressure zone devices; and
- Natural gas service.

3.7.5 Mechanical Engineering

A Mechanical Engineering Report has been prepared by Steensen Varming and is provided at **Appendix H**. The report outlines the design proposal for mechanical, medical gases and the pneumatic air tube system for Stage 2, including the ASB and refurbishment works. The works include the integration of the chilled and condenser water system with the Stage 1 CSB and new CEP plant in the Stage 2 multi-storey car park. New cooling towers will also be located on the roof of the Stage 1 CSB.

The proposed mechanical and medical gas services will be designed to comply with the National Construction Code, the relevant Australian Standards and other relevant government standards and guidelines.

3.8 Car Parking and Access

Authorisation was granted for a series of road and access upgrades as part of the REF application. This application does not seek to undertake any works that will alter the amount of parking at the hospital, noting that existing parking on the ASB site was removed as part of the REF scope and the multi-storey car park extension is subject to a separate development application.

3.8.1 Car Parking

There are currently 1,254 parking spaces available across the campus. This includes approximately 632 at-grade car parking spaces, and the existing multi-storey car park which provides an additional 622 spaces.

An extension of the multi-storey car park is proposed under a separate approval to compliment the increased parking demand resulting from operation of the ASB. The new multi-storey car park will provide an additional 406 car spaces. The development application for the multi-storey car park is expected to be lodged with Blacktown Council in July 2016, with the new car park to be complete prior to the opening of the ASB.

In addition, a new at-grade car park is proposed to be delivered at the western entry area between Panorama Parade and the ASB. These works will be undertaken as 'Development without Consent' under *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP) and will provide 86 additional parking spaces. Works are expected to commence in September 2016 and be complete in February 2017. The car park will be used for a constructor compound during Stage 2 construction works and will open to coincide with the ASB opening.

Upon completion of Stage 2 the hospital campus will provide 1,746 vehicle parking spaces. An assessment of the proposed parking arrangements is provided at **Section 5.5**.

3.8.2 Vehicular Access

Campus-wise road upgrades and realignments have been undertaken as part of the REF works, with a second REF currently being prepared for an entry on Panorama Parade. This new crossover will serve as the primary vehicular access point to the hospital.

The current and future upgrades will ensure that the internal road network provides improved vehicular access arrangements with a loop that will utilise the existing internal road network connecting with Panorama Parade and Blacktown Road. Public buses enter the hospital at Panorama Parade and exit at Blacktown Road.

The ASB will provide a new ambulance bay at the western forecourt accessed from Marcel Crescent and Panorama Parade. The road upgrade works under the REF will enable the Ambulance bay to be serviced upon completion of the ASB. The existing ambulance station is not included as part of this proposal and will continue to operate as normal.

Service vehicles and deliveries will continue to utilise a dedicated service entry off Blacktown Road and the loading dock at the main hospital building.

3.8.3 Pedestrian Access

Pedestrian footpaths and access routes were upgraded as part of the REF works. These upgraded connections provide safe pedestrian linkages along the internal road and to the main car parking area. These connections will enable access to existing and new buildings within the hospital campus.

ARUP has undertaken an assessment of the parking and access arrangements in the Transport and Accessibility Study at **Appendix I** and **Section 5.5**.

3.9 Environmentally Sustainable Development

The ASB incorporates Environmentally Sustainable Development (ESD) strategies and principles as defined in clause 7(4) of Schedule 2 of the EP&A Regulations, where appropriate to the scope of the development.

The environmental performance of the ASB building has been assessed using the NSW Health's Engineering Services and Sustainable Development Guidelines (TS11) 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.

3.10 Hours of Construction

The following hours of construction are proposed, 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.

3.11 Development Staging and Job Generation

The development will be constructed within the environment of an operating hospital. Separate to this application Health Infrastructure NSW has undertaken an upgrade of the hospital's internal road network to enable improved transport circulation. The work includes relocation of utilities and services to clear land for future redevelopment by the hospital, as required.

While these works are separate to this application, the reconfigured road network and services and utilities diversions will ensure access to the hospital is maintained and services are protected, ensuring the ongoing operation of the hospital.

The Stage 2 Enabling Works Package approved excavation of the entire footprint of the ASB and hospital street extension. Works covered by this approval are expected to be completed to coincide with the approval for the construction of the ASB (expected to commence in February 2017).

The Stage 2 proposal will generate approximately 200 FTE jobs during the construction process. Approximately 485 operational jobs will be created at the completion of the new ASB.

4.0 Consultation

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

Agency Consultation

A meeting has been held with Council's Coordinator of Traffic Management. At this meeting, Council reiterated concerns about overflow car parking on nearby streets. Health Infrastructure NSW intends to provide adequate parking on the site to accommodate all staff and visitors as part of the Stage 2 development, however, it is acknowledged that the hospital is unable to stop staff and visitors who choose to avoid the on-site parking fees from parking on-street.

As documented in the Transport and Accessibility Study, ARUP has also undertaken consultation with Transport for NSW and RMS. RMS has been contacted regarding the extent of the traffic modelling, and Transport for NSW has been contacted to discuss the travel initiatives being proposed as part of the site travel plan and the public transport accessibility of the site. The outcomes of this consultation are reflected in ARUP's study.

Council Consultation

Health Infrastructure NSW has been engaged in ongoing consultation with Council regarding the Stage 2 redevelopment, and other works currently being carried out on the campus. A meeting has been arranged for 20 July 2016 to discuss the detailed design of the Stage 2 ASB with Council.

Community Consultation

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

- Project user group meetings;
- Consultation with the WSLHD Consumer Council;
- A project website which is regularly updated;
- Social media updates;
- Newspaper and media announcements; and
- Project fact sheets for public displays and exhibitions.

A communication and engagement statement has been prepared by Blacktown Hospital (**Appendix J**) which elaborates on the above engagement activities.

Further, the proposed development will be placed on public exhibition for a minimum of 30 days in accordance with Cause 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.

5.0 Environmental Assessment

This Section contains our assessment of the environmental effects of the proposed development as described in the preceding chapters of this report.

Under Section 79C(1) of the EP&A Act, in determining a development application the consent authority has to take into account a range of matters relevant to the development including the provisions of environmental planning instruments, impacts on the built and natural environment, the social and economic impacts of the development, the suitability of the site, and whether the public interest would be served by the development.

5.1 Compliance with Relevant Strategic and Statutory Plans and Policies

The following legislation, planning instruments and strategies are relevant to the proposed development and have been addressed:

- *Environmental Planning and Assessment Act 1979* (EP&A Act);
- *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation);
- *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 33–Hazardous and Offensive Development;*
- *State Environmental Planning Policy No 64–Advertising and Signage*
- *Blacktown Local Environmental Plan 2015* (BLEP 2015);
- Blacktown Development Control Plan 2015;
- NSW 2021;
- A Plan for Growing Sydney;
- NSW Bike Plan;
- Planning Guidelines for Walking and Cycling;
- Integrating Land Use and Transport Policy Package; and
- Healthy Urban Development Checklist, NSW Health.

The proposal's consistency with the relevant strategic and statutory plans and policies is outlined in **Table 3** below. Variations to, and non-compliances with, the key standards and guidelines highlighted in the table are discussed in detail in the following sections of this environmental assessment.

Table 3 – Summary of consistency with key strategic and statutory plans and policies

Instrument/Strategy	Comments
State Legislation	
EP&A Act	The proposed development is consistent with the objects of the EP&A Act, in particular: ▪ it promotes the social welfare of the community; ▪ it allows for the orderly and economic development of land; and ▪ it is development for public purposes and will facilitate the delivery of community services.

<table>
<tr><th>Instrument/Strategy</th><th>Comments</th></tr>
<tr><td></td><td>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.</td></tr>
<tr><td>EP&A Regulation</td><td>The EIS has addressed the specification criteria within Clause 6 of Schedule 1. Similarly, the EIS has addressed the principles of ecologically sustainable development (refer to Section 3.12).

Clause 7(1)(d)(v) of Schedule 2 is addressed below.

<table>
<tr><th>Act</th><th>Approval Required</th></tr>
<tr><td colspan="2">Legislation that does not apply to State Significant Development</td></tr>
<tr><td>Coastal Protection Act 1979</td><td>N/A</td></tr>
<tr><td>Fisheries Management Act 1994</td><td>N/A</td></tr>
<tr><td>Heritage Act 1977</td><td>N/A</td></tr>
<tr><td>National Parks and Wildlife Act 1974</td><td>N/A</td></tr>
<tr><td>Native Vegetation Act 2003</td><td>N/A</td></tr>
<tr><td>Rural Fires Act 1997</td><td>N/A</td></tr>
<tr><td>Water Management Act 2000</td><td>N/A</td></tr>
<tr><td colspan="2">Legislation that must be applied consistently</td></tr>
<tr><td>Fisheries Management Act 1994</td><td>No</td></tr>
<tr><td>Mine Subsidence Compensation Act 1961</td><td>No</td></tr>
<tr><td>Mining Act 1992</td><td>No</td></tr>
<tr><td>Petroleum (Onshore) Act 1991</td><td>No</td></tr>
<tr><td>Protection of the Environment Operations Act 1997</td><td>No</td></tr>
<tr><td>Roads Act 1993</td><td>No</td></tr>
<tr><td>Pipelines Act 1967</td><td>No</td></tr>
<tr><td>Protection of the Environment Operations Act 1997</td><td>No</td></tr>
</table></td></tr>
<tr><td>SRD SEPP</td><td>The aim of this policy is to identify development that is State Significant Development. Pursuant to the SEPP SRD a project will be a SSD if it falls into one of the classes of development listed in Schedule 1 of the SEPP. ‘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 overall Stage 2 development has a CIV of approximately $380 million and so qualifies as a State Significant Development, with the proposed works having a CIV of $289 million. A Quantity Surveyor’s certificate prepared by RLB confirming the total CIV of the proposal is included at Appendix C.</td></tr>
<tr><td>SEPP 55</td><td>SEPP 55 aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. The SEPP specifies when consent is required for remediation of contaminated land.
As detailed in Section 5.8 and Appendix K of this report, a Detailed Site Investigation has been undertaken by JBS&G Australia. The assessment confirms that the site is suitable for the proposed hospital use.</td></tr>
<tr><td>SEPP (Infrastructure)</td><td>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</td></tr>
</table>

Instrument/Strategy	Comments	
	117 beds, accordingly, referral to the RMS under the provisions of Schedule 3 of the SEPP is required.	
SEPP 33 (Hazardous and Offensive Development)	A Preliminary Hazard Assessment was undertaken by Coffey to assess potential risks associated with the proposed use. The report is included at **Appendix L** and concludes that 'there is a low risk associated with the consolidation of acute services'. Hazardous waste is further discussed at **Section 5.6.3.**	
SEPP 64 (Advertising and Signage)	The proposed signage is consistent with the objectives of SEPP 64 and satisfies the criteria specified in Schedule 1 of SEPP 64 as outlines at **Section 5.1.1**.	
Local Planning Instruments and Controls		
BLEP 2015	Land Use Table	The site is zoned SP1 Special Activities (Health Services Facility). The objectives of the zone are to provide special land uses to facilitate development for an intended special use. Under the LEP development for the purpose shown on the Land Zoning Map (i.e. health services facility) and any development that is ordinarily incidental or ancillary to that purpose, is permissible with consent. Accordingly, the proposed development is permissible.
	Clause 4.3 Height of Buildings	There is no maximum height control on the site.
	Clause 4.4 Floor Space Ratio	There is no maximum FSR on the site.
	Clause 5.10 Heritage Conservation	This clause sets out requirements in relation to heritage conservation, including the preparation of heritage impacts statements and conservation management plans. The site of the proposed development is not identified as a heritage item and is not located in a heritage conservation area.
	Clause 7.7 Design Excellence	Refer to Section **5.1.3**.
Blacktown DCP 2015	It is noted that despite the SEARs, development control plans are not a matter for consideration in the assessment of SSD DAs by virtue of Clause 11 of SEPP SRD, which states that *'Development control plans…do not apply to…State significant development'*. Notwithstanding this, an assessment of the proposed development against the relevant provisions of Blacktown DCP 2015 is provided at **Section 5.1.4**.	
Section 94 Contributions Plan	Refer to **Section 5.1.5**.	
Strategic Plans and Policies		
NSW 2021	NSW 2021 is a 10 year plan to rebuild the economy, return quality services, renovate infrastructure, strengthen our local environment and communities and restore accountability to Government. A section of the Plan is devoted to the delivery of Health services, and a key component of this is to rebuild hospitals and health infrastructure. This will help reduce hospital waiting times and help to establish a healthier community. The proposed development is evidently consistent with the goals of the State Plan.	
A Plan for Growing Sydney	One of the key actions from the Plan is to 'plan for expansion of health facilities to service Sydney's growing population'. It is further noted that the continued provision of world-class health services will require an expansion of health facilities such as hospitals and community health facilities. Blacktown is also identified as a Strategic Centre. Strategic Centres are identified as areas of intense, mixed economic and social activity that are built around the transport network and feature major public investment in services such as hospitals, education and sports facilities. A priority action for the Blacktown Strategic Centre is to support hospital-related land uses and infrastructure around the Blacktown Hospital.	

Instrument/Strategy	Comments
	The proposed development will enhance the provision of health services infrastructure in the locality, thereby supporting the actions of A Plan for Growing Sydney.
NSW Bike Plan	The NSW Bike plan recognises a growth of people riding a bike in NSW, with many finding it an affordable, practical and healthy option for everyday personal travel. The plan aims to build investments and initiatives to encourage cycling in NSW. The proposal will reinforce these principles with the hospital expansion work to include bicycle facilities for hospital staff and visitors including storage facilities, lockers, showers and change rooms. This is consistent with the NSW Bike Plan, in that it will encourage residents, hospital staff and visitors to choose an active travel method.
Planning Guidelines for Walking and Cycling	The Planning Guidelines for Walking and Cycling aim to improve walking and cycling in strategic planning and development assessment. The guidelines encourage the preparation of Transport Management and Accessibility Plans (TMAPs) as part of the master planning and development approvals process for larger developments. TMAPs promote a mode shift away from motor vehicle use toward walking, cycling and use of public transport. The guidelines provide the following design principles for bicycle parking facilities: ▪ Open and attractive facilities in easily supervised places that feel safe and non-threatening, with good passive surveillance to deter acts of vandalism and theft ▪ As close as possible to building entrances (preferably within 25m) ▪ Relates to the travel requirements of the user (eg. Lockers for commuters and racks for short term use) The Stage 2 development will support the Guidelines by providing new end of trip facilities as part of the proposed multi-storey car park extension (subject to a separate application).
Integrating Land Use and Transport Policy Package	The Integrated Land Use and Transport Package provides guidance to local councils in implementing the objective of 'promoting attractive and convenient places to live and work.' This Package emphasises the need for urban structures, building forms, land use location, development designs, subdivisions and street layouts to achieve sustainable transport objectives. Key concepts including convenience, information, proximity, destination choice, directness and security. The hospital redevelopment proposal has been designed with consideration to the key concepts outlined in the Integrated Land Use and Transport Package.
Healthy Urban Development Checklist, NSW Health	The proposal will enable the construction of a new hospital building, and the refurbishment of the existing main hospital building. The proposed development will provide improved functionality and capability whilst improving efficiency. The proposal is considered to be consistent with the intent of the Healthy Urban Development Checklist by providing a new development that is well connected to existing and future public transport, contributes to social infrastructure in the locality and region, and facilitates cycling and pedestrian accessibility.

5.1.1 State Environmental Planning Policy 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 proposed signs are considered to fall under the definition of building identification signage. This is because the signs indicate the building name, and do not include any advertising relating to a third party who does not carry out business on the premises.

The proposed signage is consistent with the objectives of SEPP 64 and satisfies the criteria specified in Schedule 1 of SEPP 64 as follows:

Clause 3 states the aims and objectives of SEPP 64 which are:

(a) to ensure that signage (including advertising):

i. is compatible with the desired amenity and visual character of an area, and
ii. provides effective communication in suitable locations, and
iii. is of high quality design and finish, and

(b) to regulate signage (but not content) under Part 4 of the Act, and
(c) to provide time-limited consents for the display of certain advertisements.
(d) to regulate the display of advertisements in transport corridors, and
(e) to ensure that public benefits may be derived from advertising in and adjacent to transport corridors.

The proposal is consistent with the above aims and objectives, in that it will:

- Feature a distinct and high quality design;
- Effectively communicate to the public the location and use of the building at the future primary public entrance;
- Positively contribute to the streetscape and ensure minimal visual disruption by integrating to the building design; and
- Make use of high quality materials and finishes.

Schedule 1 of SEPP 64 contains a range of assessment criteria. The way in which the proposed development meets the assessment criteria is set out in **Table 4**.

Table 4 – SEPP 64 Assessment

Schedule 1 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 proposed development is compatible with the desired character of the Blacktown Health precinct.	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.	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, open space areas, waterways, rural landscapes or residential areas?	The proposed signage is consistent with the increasingly urban nature of the central Hospital campus precinct. The location is not part of any heritage area or environmentally sensitive location.	Y
Views and vistas		
Does the proposal obscure or compromise important views?	The proposed signage is integrated with the existing buildings and therefore will not result in any obstruction of views, and the location and content of signage will not otherwise compromise important views within the precinct.	Y
Does the proposal dominate the skyline and reduce the quality of vistas?	The proposed signage is appropriate to the scale of the building and intended use as a building identification sign.	Y
Does the proposal respect the viewing rights of other advertisers?	The proposed signage does not impact upon the viewing rights of other advertisers.	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 with the setting of the core facilities within an established health 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

Schedule 1 Assessment Criteria	Comments	Compliance
Does the proposal screen unsightliness?	The proposed signage is integrated with the architecture of the existing buildings and will enhance an otherwise blank wall.	Y
Does the proposal protrude above buildings, structures or tree canopies in the area or locality?	The proposed signage does not protrude above the building.	Y
Does the proposal require ongoing vegetation management?	The proposed signage will not require ongoing vegetation management.	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
Does the proposal show innovation and imagination in its relationship to the site or building, or both?	The proposed signage has been fully integrated with the building architecture.	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?		Y
Would illumination detract from the amenity of any residence or other form of accommodation?	The location and orientation of signage is such that it will not impact on nearby residential receivers.	Y
Can the intensity of the illumination be adjusted, if necessary?	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
Is the illumination subject to a curfew?		Y
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.	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

5.1.2 Consistency with Concept Proposal

In accordance with Section 83D of the EP&A Act, the determination of any development application in respect of a site that is subject to a Stage 1 DA 'cannot be inconsistent' with the original consent.

The proposed development has been designed to be consistent with the approved Concept Proposal. The proposed development's consistency with key development parameters of the approval are demonstrated in **Table 5**.

Table 5 – Consistency with Concept Approval

Component	Concept Proposal	Proposed Development	Generally Consistent
Land Use	Hospital	Hospital	✓
Height	9 storeys / RL89.30	9 storeys / RL92.00*	✓
GFA	40,000m^2	36,500m^2	✓

*a flue projects above this height to RL 95.00

While the proposal remains generally consistent with the envelope approved under the Stage 1 DA, the proposal seeks to build on the established design framework, and some minor refinements are proposed to improve the internal and external amenity of the building, and to addresses the main entrance to the hospital at Marcel Crescent / Panorama Parade. The principal refinements to the design are summarised as follows:

- Introduction of a link bridge at Level 5 to connect to the multi-storey carpark extension, and the associated walkway cantilevered from the east façade of the ASB;
- Removal of the link bridge to the Stage 1 CSB above the proposed Atrium / Hospital Street extension;
- Relocation of the Level 9 roof top plantroom to the southern wing (rather than the northern wing) to achieve desired clinical adjacencies in the event of future vertical expansion; and
- An increase in the area of the Level 9 roof top plant enclosure to accommodate actual plant requirements and facilitate construction of any future vertical expansion.

5.1.3 Blacktown Local Environmental Plan 2015

The site is zoned SP1 Special Activities (Health Services Facility) under *Blacktown Local Environmental Plan 2015* (the LEP). The objectives of the zone are to provide special land uses to facilitate development for an intended special use. Development that is for the purpose identified on the LEP Land Zoning Map, or any development that is ordinarily incidental or ancillary to development for that purpose, is permitted with consent. A hospital is a sub category of health services facility and is therefore permissible under the zoning. The proposed ancillary works, including signage, are incidental to the hospital development and are also permissible with consent.

The LEP contains no development standards applicable to the proposed development.

Design Excellence

Clause 7.7 of the LEP requires development on the site to exhibit design excellence that contributes to the natural, cultural, visual and built character values of Blacktown. A Design Statement has been prepared by Jacobs Architects (**Appendix A**) in support of the proposal. The statement outlines the approach undertaken to ensure the design of the proposal achieves the highest standard of architectural and urban design.

In accordance with Clause 7.7 of the LEP, the proposal exhibits design excellence, in that the building:

- Is of a high standard of architectural design, with materials, detailing and articulation that are appropriate to the building type and location. The materials and the treatment of the podium and tower will contribute towards enhancing the character of the hospital campus and reaffirming the prominence of the Blacktown Health Precinct.

- The podium is provided at a scale consistent with the surrounding built form and in keeping with the hospital expansion program. In particular, the building responds to the recently completed Stage 1 CSB. The materiality of the building will continue to build a distinct transformative identity for the hospital and enhance its relationship with the community.
- Offers a modern solution with hints of the character of the local landscape and diverse community through careful use of colour. The façade expression is a direct response to the diversity of the community.
- Has a form and external appearance that will significantly improve the quality and amenity of the public domain by:
  - Creating a series of unique landscaped spaces across Levels 5, 6 and 7 of the ASB;
  - Converting and landscaping the former Ambulance ramp with small terrace gardens, shrubs and turf providing increased seating opportunities;
  - Providing a central open lawn, raised planter beds and seating adjacent to the Ambulance bay; and
  - Landscaping of the entry forecourt with feature tree planting.
- Does not detrimentally impact on identified view corridors. The proposal enhances the western hospital campus and provides a new high quality building which enhances the setting of surrounding buildings.
- Provides a built form that will contribute to the interest and vibrancy of the health precinct, in particular when viewed from Blacktown Road and the main public entrance off Panorama Parade.
- Has an appropriate bulk and form that is generally in accordance with the approved concept envelope.
- Is capable of addressing potential environmental impacts, such as sustainable design, overshadowing, visual and acoustic privacy and noise.

The proposal achieves design excellence, particularly in regard to its materiality, design expression, and its significant contribution to the landscape setting of the hospital. As such, it is considered that the proposed scheme exhibits design excellence.

5.1.4 Blacktown Development Control Plan 2015

As outlined in **Table 3** above, DCPs are not a relevant matter for consideration in the assessment of a SSD DA. Further, in recognition of their unique requirements and needs, there are no DCP provisions applying to hospital developments in the Blacktown LGA, or generic controls around signage.

However, Blacktown DCP 2015 does provide general guidelines for development as outlined in **Table 6** below.

Table 6 – Relevant Provisions of Blacktown DCP 2015

Issue	Comment
4.3 Tree Preservation	No tree removal is proposed as part of this SSD application.
4.5 Pollution Control	Mitigation measures are proposed to control the quality of stormwater runoff during construction.
4.6 Noise Reduction	The acoustic impacts of the proposal are assessed at **Appendix M** and **Section 5.4**.
6 Car Parking	Requirements for access and parking are addressed in the traffic report at **Appendix I** and **Section 5.5**.
7. Services	Investigations into utility services requirements for the development have been undertaken and all services are available and capable of meeting the requirements of the development.

Issue	Comment
8.1 Solar Access	The solar access impacts of the proposal are addressed in **Section 5.2.1**.
3. Waste Management	Waste management will be in accordance with State Government Policy as outlined in **Section 5.6**.

5.1.5 Development Contributions

The hospital site is located within Blacktown Council's Contributions Plan No. 03 – Open Space in Established Residential Areas. The purpose of the contributions plan is to provide for open space and recreational facilities resulting from new residential development, and therefore increased residential populations, in established residential areas of the City of Blacktown. Clause 1.7 of the plan states:

> *'this plan applies to all… development that includes the intensification of use of a site involving expansion of area occupied by a development and/or the addition of population.*

The contributions plan applies to development that will increase population and therefore is not applicable to the proposed hospital development. No other contributions plan is applicable to the site. Furthermore, no voluntary planning agreement is proposed.

The development proposes significant public benefit through the provision of improved hospital services to the sub-region. The development is a Crown development providing an essential community service and consequently should not be levied developer contributions.

The development will meet all reasonable costs of upgrading services to meet the needs of the development including improved road access and intersection costs.

5.2 Environmental Amenity

Consideration was given to the amenity impacts of the proposed development as part of the Stage 2 Enabling Works Package. As the building is generally consistent with the approved building envelope, the assessment remains largely unchanged.

We note that the eight properties immediately to the west of the hospital campus on Panorama Parade are currently being acquired to facilitate construction of the new hospital entry, and so any impacts on residential receivers are now reduced.

5.2.1 Solar Access and Overshadowing

Shadow Diagrams that illustrate the extent of overshadowing caused by the proposal have been provided by Jacobs Architects (**Appendix A**). 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 21**, **22** and **23** below.

The proposal has been designed having regard to protecting mid-winter solar access to adjoining residential properties on Panorama Parade. 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.

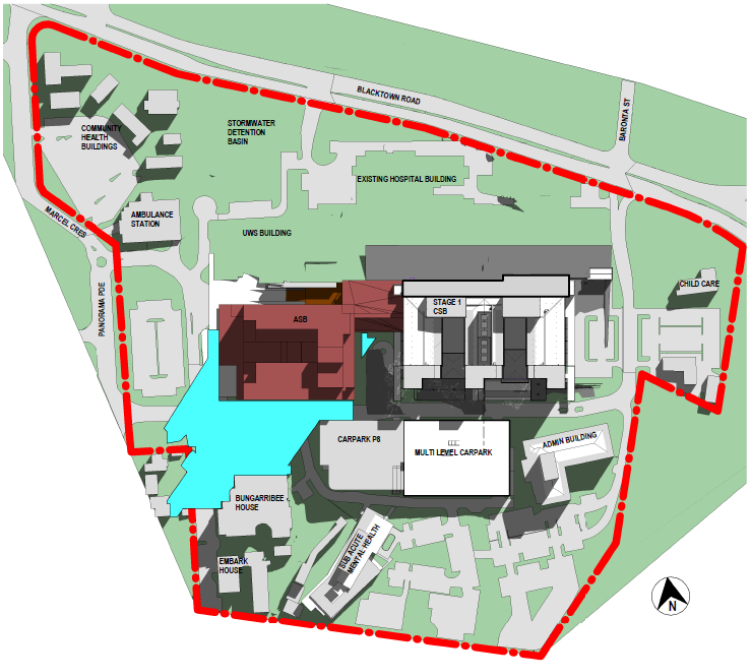

Figure 21 – Shadow Diagram – Winter Solstice 9am
Source: Jacobs Architects

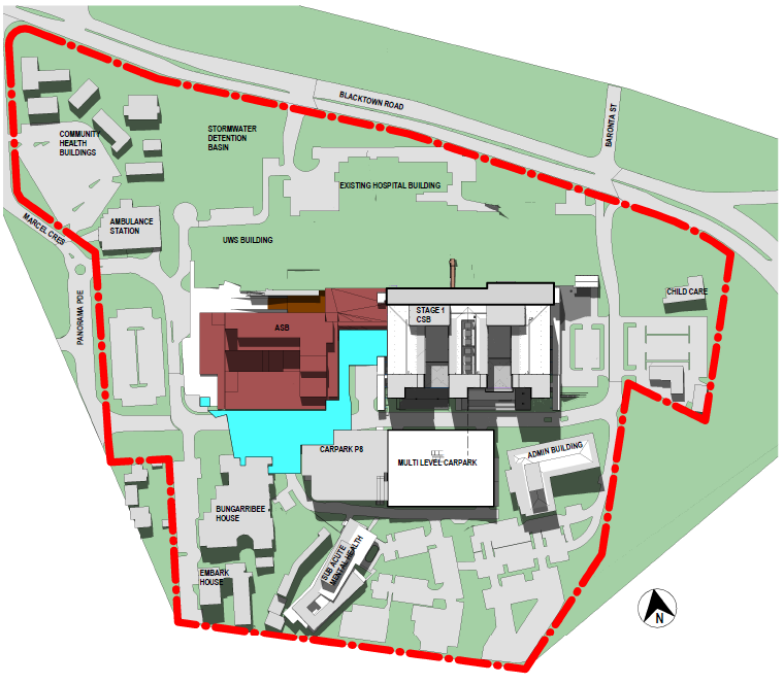

Figure 22 – Shadow Diagram – Winter Solstice 12pm
Source: Jacobs Architects

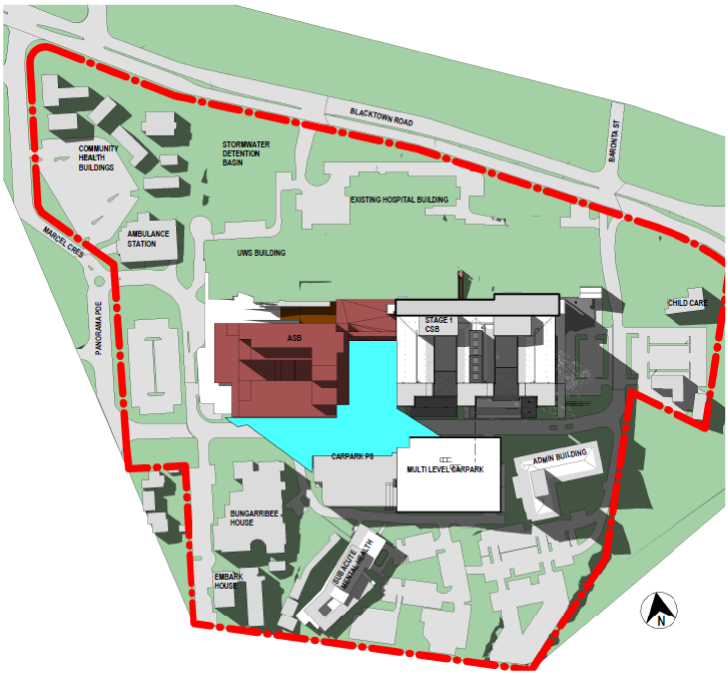

Figure 23 – Shadow Diagram – Winter Solstice 3pm
Source: Jacobs Architects

5.2.2 Visual Privacy

The acquisition of the eight properties on Panorama Parade (see **Figure 24**) will largely mitigate any visual privacy impacts, with the nearest residential receivers now located approximately 100m to the south-west of the proposed ASB, on the opposite side of Bungarribee House.

Whilst there is still potential for overlooking from the upper levels of the future inpatient units, the building height means that occupants will generally look out over the dwellings, rather than directly at the properties. Further, the building has been orientated so that rooms face north and south, with limited opportunities to overlook dwellings to the south-west.

Figure 24 – Panorama Parade properties acquired (street address labelled)
Source: Nearmap and JBA

5.2.3 View Impacts

Consideration has been given to the impact of the proposed development on existing views towards the site from the surrounding area.

Photomontages of the proposal have been prepared by Jacobs Architects and are shown at **Figures 25 - 28** and at **Appendix A**. The photomontages have been prepared to illustrate the view impacts of the proposal from various viewpoints surrounding the site.

Due to the topography of the site, there will be limited visual impacts from the south. The high point of the hospital site is located in the southern part of the campus at RL72. The land to the south generally falls away from this high point. As a result, there are limited district views from the seniors housing development located to the south of the hospital site with views restricted by existing hospital buildings and perimeter landscaping which is to be retained. Further, the proposed buildings are located some 170 metres from the southern boundary.

Impacts on district views from the north, east and west are considered to be minimal. Residential areas adjoining the site to the east and west are generally at the same level as the hospital or 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.

The view analysis shows that the new ASB will be visible from surrounding viewpoints. The frontage to Blacktown Road is the primary frontage for the hospital precinct. The new ASB will sit behind the existing community health and UWS buildings, which in combination with the open space fronting Blacktown Road, provide a transition in built form.

The new ASB incorporates articulation and façade detailing which is in keeping with the modern architectural character of the Stage 1 CSB, and will assist in reducing the perceived scale and visual prominent of the building.

Figure 25 – Existing and proposed view looking east from the junction of Blacktown Road and Hereward Hwy
Source: Jacobs Architects

Figure 26 – Existing and proposed view from the northern side of Blacktown Road.
Source: Jacobs Architects

Figure 27 – Existing and proposed view looking east from the roundabout at Panorama Parade and Craiglea Street
Source: Jacobs Architects

Figure 28 – Existing (top) and proposed (bottom) view looking south east from the corner of Griffiths Street and Blacktown Road
Source: Jacobs Architects

5.2.4 Lighting Impacts

Due to the 24-hour nature of the hospital use, lighting will be required throughout the night. The primary source of light spill from the building will come from the glass atrium at the east of the proposed building. Due to the location of the atrium (surrounded by the existing main hospital building, CSB and ASB, as well as the topography of the site to the south) 24-hour illumination of the atrium would not have an impact on surrounding residential development.

Two illuminated building identification signs are proposed on the building's northern and western façades. 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.

5.2.5 Wind Impacts

A Pedestrian Wind Environment Statement has been prepared by Windtech for the proposed development and is provided at **Appendix N**. This wind assessment has determined the potential impact of the proposal on various outdoor areas within and around the building and the interaction of wind conditions with the proposed built form.

Strong winds are expected to the northern, southern, eastern and south-eastern corners of the proposed building. The assessment confirms that tolerable wind conditions can be achieved with the inclusion of the following recommended treatments:

- Ground level impermeable canopy along the western aspect;
- Full-height impermeable screen along the northern perimeter of the colonnade access way;
- Planting of densely foliating trees along the boundary of the emergency department car park, eastern forecourt area and north-western and south-eastern corners of the proposal;
- Screens around the western boundary of the Ambulance bay; and
- Inclusion of 1.5m high impermeable screens along the perimeter edge of the Link Bridge between the ASB and the multi-level carpark to the south.

These recommendations have been incorporated into the Landscape Plans prepared by Site Image at **Appendix E**.

5.3 Crime Prevention Through Environmental Design

The development implements 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:

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 surveillance.

The development has been designed to provide passive surveillance over public areas, through the introduction of glazing to provide surveillance opportunities over the public domain and main hospital entry. 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:

- Appropriate signage should reinforce the building's main entrance;
- Utilise strategically placed capable guardians, such as reception 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 for pedestrians.

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, effective access controls make it clear where people are permitted to go or not go, and makes it difficult for potential offenders to reach and victimise people and damage property.

The general public will be free to enter the site during the day. However, all of the 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 if necessary.

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

- 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.

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 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.

Boundary fencing and landscaping 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. Including:

- Continue after hours 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.

Principle 4 – Space Management

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

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 continued maintenance of the building will ensure that it does not become degraded and will ensure that vandalism of the property is strongly discouraged.

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

- Ensure graffiti is rapidly removed and all public spaces are kept clean and tidy; and
- Use robust materials and graffiti resistant surfaces where possible to mitigate against potential malicious damage.

5.4 Noise and Vibration

A Construction and Operational Noise and Vibration Impact Assessment has been prepared by Acoustic Logic (See **Appendix M**). 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 are identified in Figure 1 of the Assessment. These include receivers situated around the perimeter of the hospital campus.

The existing acoustic environment has been determined using a combination of long-term and short-term noise monitoring. 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 (refer to Section 5 and 6 of the Noise and Vibration Impacts Assessment) and mitigation measures to minimise any impacts from noise and vibration.

It should be noted that the hospital does not propose a helicopter landing pad as part of the proposal.

5.4.1 Construction Impacts

The construction program has yet to be fully established as the proposal is still at the planning phase of the development. A detailed program and methodology for the works has yet to be developed, and so the indicative assessment of noise emissions is based on typical construction activities. It is noted that the demolition and excavation works, which are typically the noisiest part of the construction process, have been assessed under the Stage 2 Enabling Works Package application.

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.

Tables 7 and **8** outline the indicative noise levels for residential receivers and for the hospital. The results indicate that noise generated by the proposed construction works may exceed the EPA acoustic criteria at times, with higher noise levels expected to be generated when working closer to the properties near

the campus' western boundary. The predicted results are based on there not being any shielding between the loudest activities and residents and present the worst case scenario.

Table 7 – Indicative Residential Noise Assessment

Location	Time of Day	Measured Background Levels - dB(A)L90	Noise effected Level Background + 10dB(A)Leq(15min)	Indicative Noise Levels Predicted dB(A)
Panorama Parade	Recommended standard hours: ▪ Monday to Friday 7am to 6pm ▪ Saturday 8am to 1pm ▪ No work on Sundays or public holidays	42	52	55-65

Table 8 – Indicative Hospital Noise Assessment

Time of Day	Space	Noise Emission Goal dB(A)Leq(15min)	Indicative Noise Levels Predicted dB(A)
When in Use	Hospital Wards and Operating Theatres	45 (internal noise level)	65-70
	Offices	70 (external – most affected point of premises)	65-70

The assessment has made a number of recommendations to mitigate acoustic impacts. If adopted, these measures can manage noise impacts to prevent adverse impacts on residential receivers. The mitigation measures will be finalised prior to the issue of the 109 Certificate, and include:

- During preparation of the construction program (CC stage), consult with Blacktown Hospital to determine what areas of the hospital are particularly noise sensitive, and at what time (ward rooms, operating theatres etc).
- On completion of the construction program, acoustic review of proposed construction activities and plant/methods should be undertaken to identify work items likely to exceed EPA guidelines.
- For those noise intensive activities, the analysis should identify where on the construction site are the areas likely to result in high noise levels. This will then assist in determining the likely time period for which high noise levels will occur at nearby properties.
- Identify feasible acoustic controls or management techniques (use of screens, scheduling of noisy works, notification of adjoining land users, respite periods) when excessive levels may occur.
- For activities where acoustic controls and management techniques still cannot guarantee compliant noise levels, implement a notification process whereby nearby development is made aware of the time and duration of noise intensive construction processes.

Construction Vibration

With respect to vibration, excavation and earth retention works are the primary vibration generating activities. These activities have been addressed as part of the Stage 2 Enabling Works Package. Acoustic Logic concludes that surrounding residential and hospital receivers are unlikely to experience any adverse vibration impacts as a result of the proposal. However, if excavation of rock or installation of driven piles in close proximity to the façade of the hospital buildings is required, the following measures are recommended to minimise vibration impacts:

- Consultation with the hospital and Blacktown Council will occur prior to works to determine if there is any particular vibration sensitive equipment on site to determine appropriate vibration criteria;
- Where practicable, any excavation in rock will be done using rock saws and not pneumatic hammers;
- If piling is required, use of augured piling should be used rather than impact piling; and
- For the initial stages of excavation and piling, vibration monitoring within areas of the hospital housing sensitive equipment should be conducted to ensure excessive levels of vibration are not achieved. Any monitoring system should allow for rapid feedback to the contractor (for example, SMS notification) in the event that excessive levels are reached.

5.4.2 Operational Impacts

At this early stage the selection of plant for the proposal has not been finalised and accordingly detailed acoustic design assessment cannot be undertaken. However, an indicative assessment of primary plant items has been undertaken.

In general, plant will be acoustically treated to prevent noise emissions from adversely impacting the surrounding properties. This may include selecting the quietest plant practicable, or treating the plant with enclosures, barriers, duct lining and silencers as required to comply with noise criteria.

The main operational noise sources associated with the development are considered to be:

- Cooling towers;
- Air handling plant (air handling units, supply/exhaust/outside air fans);
- Emergency generators; and
- Chillers.

An assessment of mechanical plant noise has been undertaken by Acoustic Logic and relevant mitigation measures have been provided for consideration in the selection of plant equipment and their location. In summary:

- All cooling towers are to have variable speed drives, to allow for reduced fan speed during periods of low load. Typically, a fan speed of no more than 50% would be expected at night time.
- Acoustic screening around the cooling towers will likely to be required to all four sides (using fc sheet or similar) or acoustic louvres. At a minimum, the screen/louvre would need to be 500mm higher than the top of the tower. Alternatively, acoustic attenuators will be required to the tower intake and discharge.
- Emergency power back-up generator is to be installed on a concrete plinth. Plinth is to be isolated from the structural slab by two layers of 10mm thick Vibramat (from Acoustic Supplies) or equal. There should be not rigid connection between plinth and structural slab.
- Generator should be isolated from the plinth using 50mm static deflection spring vibration isolators.
- Air handling units do not typically require extensive acoustic treatment to ensure compliant noise emissions at nearby properties.
- Major fans (typically with a sound power over 90(A)- such as kitchen exhaust, major toilet exhaust and major relief air fans) will require acoustic treatment if

located externally. This treatment would include internal lining to any external ductwork. Potentially acoustic treatment of fan casing will also be required. Review of all external fans (including fans ducted to external locations) must be conducted once selected to ensure compliant noise emissions to external areas.

- Chillers should be located in plant rooms without any external ventilation opening / louvre.
- Light weight cladding to plant room walls and ceiling will potentially require intern al plasterboard sheeting to ensure noise breakout through wall / roof are compliant with INP requirements. Final plant room building shell design to be conducted following final chiller section and plant room location.

The recommendations contained in Acoustic Logic's Assessment have been included in the Mitigation Measures at **Section 7.0** of this report.

5.5 Traffic, Access and Parking

Traffic and parking impacts associated with the ASB were considered in detailed as part of the Stage 2 Enabling Works Package. As outlined below, the traffic and parking impacts associated with the proposal are generally consistent with the previous assessment.

A Transport and Accessibility Study has been prepared by ARUP and is included at **Appendix I**. The Study also includes details around construction traffic movements and management measures. The report outlines the existing surrounding road network arrangements and conditions, and provides an assessment of the traffic and parking impacts associated with the ASB.

As detailed in **Section 1.1.3**, authorisation was given for a range of campus-wide upgrades, including road realignment works to improve traffic movements, as part of a previous REF application. Separate applications are currently being prepared for the multi-storey car park extension and Panorama Parade entry upgrades.

5.5.1 Operational Traffic

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

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 is predicted to generate the following peak hour traffic movements:

- AM Peak trip generation = 764 trips; and
- PM Peak trip generation = 659 trips.

Intersection 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 road network performance has been measured against three parameters, being:

- Level of Service (LOS)
- Degree of Saturation (DOS)

- Average Vehicle Delay (AVD)

The results of the modelling against these three parameters are shown in **Table 9**.

Table 9 – Intersection Modelling Results

Peak	Intersection	Existing Scenario			Fully Operational (2027)		
		LOS	DOS	AVD (Sec)	LOS	DOS	AVD (Sec)
AM	Blacktown Road and Marcel Crescent	B	0.64	19	B	0.68	21
	Griffith Street and Blacktown Road	C	0.30	42	C	0.30	42
	Wall Park Avenue and Blacktown Road	C	0.88	29	C	0.92	33
	Blacktown Road, Bungaribee Road and Leabons Lane	D	0.97	54	E	1.02	62
	Panorama Parade / Marcel Crescent and hospital Access Road	A	0.32	10	A	0.26	10
	Bungarribee Road and Panorama Parade	C	0.58	29	C	0.65	29
PM	Blacktown Road and Marcel Crescent	B	0.64	20	B	0.70	23
	Griffith Street and Blacktown Road	F	0.60	76	F	0.74	111
	Wall Park Avenue and Blacktown Road	B	0.79	24	B	0.80	24
	Blacktown Road, Bungaribee Road and Leabons Lane	D	0.91	44	D	0.96	49
	Panorama Parade / Marcel Crescent and hospital Access Road	A	0.26	10	A	0.50	11
	Bungarribee Road and Panorama Parade	B	0.50	24	C	0.62	29

The analysis shows that with the exception of Blacktown Road, Bungaribee Road and Leabons Lane intersection and the Bungarribee Road and Panorama Parade intersection, the LOS for each intersection will remain unchanged when the ASB is fully operational.

The modelling indicates that the Blacktown Road, Bungaribee Road and Leabons Lane intersection will reduce from LOS D to E in the AM peak, with the intersection to operate at capacity. The Bungarribee Road and Panorama Parade intersection will reduce from LOS B to C in the PM peak, which is considered a satisfactory performance.

ARUP recommend RMS monitor the operation of the intersection in the coming years to determine if local upgrades or improvements to the wider network are required.

The degree of saturation and average delay increases slightly for all intersections, however the analysis shows that the proposed works will not have an overall adverse impact on the surrounding road network in terms of capacity or delays.

5.5.2 Construction Traffic

Construction traffic will be limited to State roads, with access to the hospital to be via the signalised intersection of Marcel Crescent and Blacktown Road. Trucks will access the site on Blacktown Road for the M4 and Wall Park Avenue and Sunnyholt Road for the M2 / M7. Construction vehicles will use Marcel Crescent and the internal road network to access the construction site. Once at the site, all vehicle manoeuvring will occur within the site compound.

It is expected that the works will generate an average of 15 traffic movements in the peak hour during the morning and afternoon peak periods of the construction phase. The increase is considered negligible in comparison to the existing hospital traffic generation where the morning peak generates 313 vehicle movements and the evening peak, 377 vehicle movements.

The assessment makes a number of recommendations, and provides management measures to minimise impacts on traffic movements, and to promote pedestrian and cyclist safety. These measures include:

- Establishing a 'Driver Code of Conduct' to manage driver conduct around deliveries, vehicle entry / exit movements, and pedestrian prioritisation;
- Preparing a detailed Construction Traffic Management Plan and traffic control plans prior to the commencement of work;
- Implementing strategies to reduce the overall demand for parking at the hospital during the construction phase;
- Implementing measures to ensure pedestrian and cyclists can pass the worksite safely; and
- Undertaking public consultation to advise residents and workers of traffic-related impacts associated with the proposed development.

The recommendations contained in ARUP's Study have been included in the Mitigation Measures at **Section 7.0** of this report.

5.5.3 Operational Parking

As detailed at **Section 3.8.1**, there are currently 1,254 parking spaces available across the campus. This includes approximately 632 at-grade car parking spaces, and the existing multi-storey car park which provides an additional 622 spaces.

An extension of the multi-storey car park is proposed under a separate application to compliment the increased parking requirements resulting from operation of the ASB. The new multi-storey car park will provide an additional 406 car spaces. The development application for the multi-storey car park is expected to be lodged with Blacktown Council in July 2016 with the new car park to be complete prior to the opening of the ASB.
In addition, a new at-grade car park is proposed to be delivered at the western entry area between Panorama Parade and the ASB. These works will be undertaken as 'Development without Consent' under SEPP Infrastructure and will provide an additional 86 car park spaces.

Works are expected to commence in September 2016 and be complete in February 2017. The car park will be used for a constructor compound during Stage 2 construction works and will open to coincide with the ASB opening.

The total parking demand following completion of the ASB is expected to equate to 1,780 spaces. As shown in **Figure 29**, upon completion of Stage 2 the hospital campus will provide 1,754 vehicle parking spaces which is considered sufficient to service parking requirements.

The multi-storey car park is designed to be capable of providing additional levels if required in the future. The addition of two more levels of car parking (across both the existing and proposed multi-storey car park) can provide approximately 450 additional spaces should it be required. The future extension of the car park could provide approximately 2,200 spaces on campus. The need for additional on-site parking would be determined in accordance with future hospital growth and does not form part of this development.

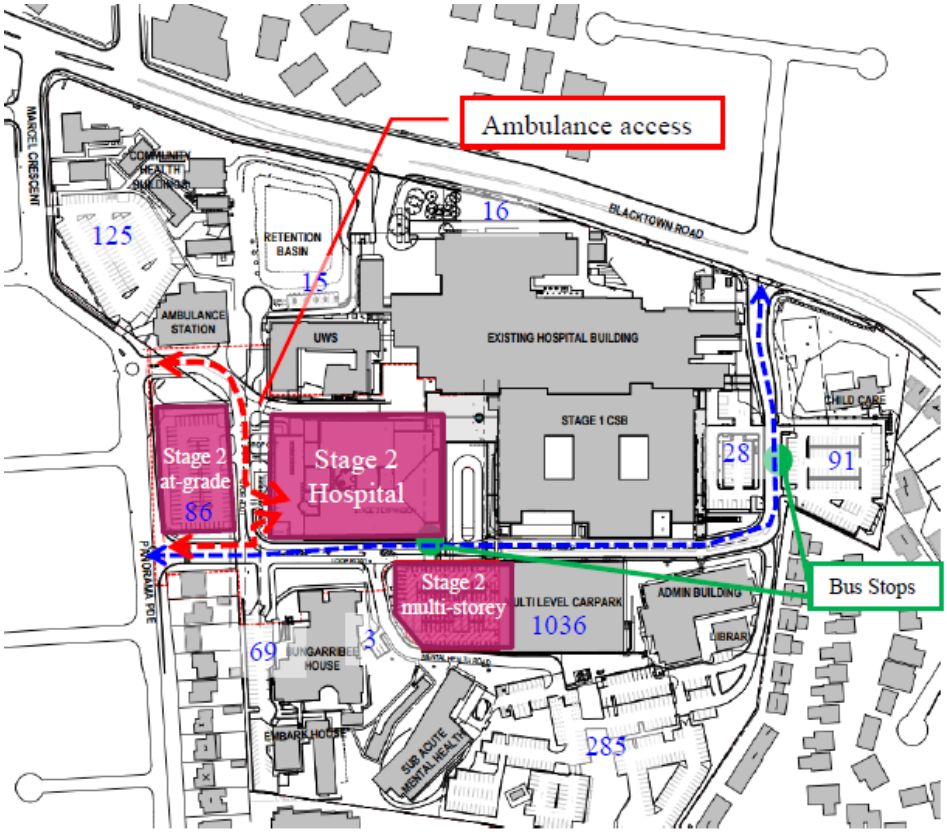

Figure 29 – Parking arrangements at the completion of Stage 2, including the potential multi-deck car park expansion
Source: Arup

5.5.4 Construction Parking

The Stage 2 Works are expected to generate approximately 200 workers on the site. Of this total, it is expected that a significant number will travel to the site by public transport outside the morning and afternoon peak periods. Regardless of this, there are 220 dedicated parking spaces available for Stage 2 construction workers at the Blacktown Bowling Club, which will provide sufficient parking capacity to support the estimated demand for construction parking.

The Blacktown Bowling Club is located within easy walking distance of the site, approximately 250m to the west at Lismore Street, Blacktown.

A license agreement has been executed between Seven Hills – Toongabbie RSL Club Ltd and the Health Administration Corporation for these spaces to be available exclusively for construction workers. Construction worker inductions and briefings will reiterate the need to park in the designated car park rather than use on-street car parking.

5.5.5 Pedestrian Access

There are two pedestrian routes for public access to the hospital, being via Marcel Crescent to the west and Blacktown Road to the east. Staff can also access the hospital via the lower level adjacent to the loading dock from Blacktown Road.

The footpath on the southern side of Blacktown Road has been upgraded to a shared cycle / pedestrian path that allows cyclists to connect with the hospital via Marcel Crescent and the eastern hospital access point via Blacktown Road. A number of internal links and pedestrians access paths are proposed as part of the Stage 2 development to improve circulation around the campus.

5.5.6 Bicycle Parking

Bicycle facilities and end of trip facilities are proposed as part of the new multi-storey car park extension (proposed under a separate application). The proposed facilities are to be centrally located on the ground floor of the car park building within easy access to the hospital.

5.5.7 Emergency Services

Campus wide works, including road realignments, have been carried out under a separate REF. These works will ensure ongoing access for emergency services vehicles during the Stage 2 works.

All construction works and vehicle movements during the Stage 2 will be confined to the proposed development site. As such, no additional provisions for emergency service vehicles are required on the surrounding road network.

The existing ambulance station is not included as part of this proposal and will continue to operate as normal.

5.5.8 Loading Facilities

The existing main hospital building has a loading dock on its northern side, accessed from its own dedicated driveway off Blacktown Road. The loading dock will continue to be the central loading point for the entire campus. The dock is separate to the hospital's internal road network, and is not affected by the proposed works.

There are a number of smaller facilities located around the campus that are occasionally accessed by smaller delivery vehicles. The campus wide road realignments will ensure that the campus' internal road network continues to function during the Stage 2.

5.5.9 Workplace Travel Plan

A draft Workplace Travel Plan (WTP) has been prepared by ARUP (**Appendix I**) consistent with the requirements of the Concept Plan approval. The WTP aims to provide measures which positively influence transport demand and promote sustainable means of transport. Measures include:

- Providing information to staff during induction;
- Encourage carpooling;
- Renting residential car spaces;
- Promoting cycling as a transport mode;
- Marketing and promotion of WTP measures; and
- Forming a travel plan group.

It should be noted that the WTP is currently in draft form, and it is intended to be further developed in collaboration with the WSLHD. Initial steps will include an updated assessment of travel mode split to the site, establishing a Travel Plan Group, and finalising the WTP for presentation to the WSLHD executive.

5.6 Waste Management

A Waste Management Plan (WMP) has been prepared by Coffey (**Appendix O**). The plan provides an assessment of potential waste impacts of the construction and operation of the new ASB. The WMP identifies the potential types and volumes of waste that are expected to be generated in the construction and

operational phase of the proposed development, and suggests systems to be implemented to appropriately manage this waste.

Key waste management principles to be implemented during construction and operation include:

- Avoid generation of waste or reduce the volume produced;
- Encouragement of waste reuse and recycling;
- Carefully plan storage, segregation and handling of waste; and
- Dispose of unrecyclable waste in accordance with NSW EPA Waste Classification requirements.

5.6.1 Construction Waste Management

The WMP identifies likely waste streams including the possible volume of each stream during construction of Stage 2. Generally, waste will be segregated on site and transported to a recycling facility. Waste that cannot be recycled would be transported to an appropriately licences facility for disposal.
A detailed construction waste management plan will be developed by the future site contractor as part of the CEMP for the ASB. The contractor would target 80% of waste generated during construction to be recycled.

5.6.2 Operational Waste

The WMP identifies likely waste streams including potential volumes of each stream during operation of the ASB. It is noted that the ASB would not introduce any waste that is not already managed by the existing hospital operations. The WMP identifies management measures and disposal destinations for each waste stream. The WMP would be implemented in accordance with the Western Sydney Local Health District Management Policy Manual and NSW Health's Waste Management Guidelines for Health Care Facilities Policy Directive 132 updated January 2005.

5.6.3 Hazardous Waste

A Preliminary Hazard Assessment has been prepared by Coffey (**Appendix L**). The assessment evaluates the hazards associated with the handling, storage and disposal of hazardous material during operation of the ASB. Hazardous waste generated by the hospital may include clinical, cyotoxic, pharmaceutical, radioactive, chemical, organic, liquid and general waste streams.

The likely waste generated by the services performed at the ASB are primarily related to clinical and pharmaceutical wastes. Management measures for these are summarised below:

- Clinical waste is disposed of in yellow hazardous waste receptacles marked with a biohazard symbol. These are collected by staff trained in hazardous waste handling and placed in a large yellow hazardous waste bin and transported to the existing waste management area in the main hospital building docks on Level 1;
- Cytotoxic waste is disposed of in purple hazardous waste receptacles and is collected, stored and disposed of the same manner as clinical waste;
- Hazardous waste bins are stored in a locked waste disposal collection room at the loading dock in the main hospital while awaiting collection by the contractor;
- Clinical waste associated with body parts are stored in a refrigerated area within the waste management compound; and

- The clinical waste contractor collects bins from the secure waste storage area once a day, six days a week.

The Preliminary Hazard Assessment provides a hazard risk analysis, including measures to mitigate potential risks from the handling and exposure to hazards. The Assessment concludes that the proposal presents a low risk, subject to hazards being appropriately managed. The existing hospital operates under strict compliance with NSW Health Guidelines that are audited annually. These guidelines would apply and be adhered to for the operation of the new ASB.

The recommendations contained in Coffey's Assessment have been included in the Mitigation Measures at **Section 7.0** of this report

5.7 Water Cycle Management

5.7.1 Stormwater

New and upgraded stormwater infrastructure facilities have been provided across the hospital site as part of the REF works. The stormwater management for the site is described in the Integrated Water Management Report prepared by Robert Bird Group (refer to **Appendix P**). The report confirms that the stormwater system is capable of accommodating the proposed development.

The Stage 2 Enabling Works Package addressed the upgrading of the stormwater network to the 1% (1 in 100 year) storm event. The stormwater system will divert around the ASB to the on-site detention basin north of the UWS Building. The basin is being upgraded as part of the enabling works to increase capacity by 2,800m³ to suit the expanded catchment, including the new ASB. As a result of the enabling works there is no further amplification required by this application.

Further, the Integrated Water Management Report indicates that the stormwater system has been design to meet the requirements of the following standards and guidelines:

- Australian Rainfall and Runoff – A Guide to Flood Estimation, Volumes 1 and 2 (1987);
- SA/NZS 3500.3.2 National Plumbing and Drainage Part 3.2: Stormwater Drainage – Acceptable Solutions;
- On-Site Stormwater Detention Handbook (Fourth Edition, December 2005) – Upper Parramatta River Catchment Trust;
- Managing Urban Stormwater – Soils and Construction Volume 1 (4th Edition March 2004) – NSW Department of Housing;
- Blacktown City Council Engineering Guidelines for Development – 2015; and
- Blacktown City Council Development Control Plan 2015 Part R Water Sensitive Urban Design and Integrated Water Cycle Management.

5.7.2 Flooding

Robert Bird Group has investigated the potential flood impacts. Due to its elevation, the hospital site is not within a flood affected zone. This has been confirmed with reference to Council's flood maps, a copy of which is included in **Appendix P**. Consequently the site is not impacted by flooding and the development will have no impact on flooding.

Internally, road and car park levels and grades have been set to ensure no localised flooding of the existing and new buildings, and to prevent any adverse impacts on adjoining properties.

5.7.3 Water Sensitive Urban Design

Water Sensitive Urban Design (WSUD) measures will be provided in accordance with Blacktown City Council Development Control Plan 2015 Part R Water Sensitive Urban Design and Integrated Water Cycle Management. Water quality control will be achieved through the bioretention basin currently under construction as part of the enabling works.

WSUD strategies are further discussed in the Integrated Water Management Report at **Appendix P**.

5.7.4 Water and Wastewater Management

In order to reduce the demand on local water and wastewater infrastructure, the design of the ASB will consider the following potable water demand reduction strategies, where possible:

- Selection of water efficient fixtures with appropriate WELS ratings;
- Installation of pulse water meters for all major uses of water and data collection and water leak detection; and
- Selection of drought tolerant landscape elements for low irrigation.

5.8 Contamination and Groundwater

Whilst excavation forms part of the Stage 2 Enabling Works Package, a Detailed Site Investigation was undertaken by JBS&G Australia (**Appendix K**) for the proposed development. In addition to the previous site investigations completed as part of the preliminary site investigations in 2014, JBS&G advanced boreholes in 22 locations across the site area. Natural materials underlying fill material were found to comprise clays typical of a weathered shale profile overlying shale bedrock. No groundwater was encountered.

Testing of soil samples found all heavy materials (TRH/BTEX, PAH's, OCP's, electric conductivity and foreign materials) were found to have concentrations below the relevant criteria.

The assessment confirms the site is suitable for the proposed hospital use.

5.9 Acid Sulfate Soils

Environmental Investigation Services have confirmed that the site is not located in an Acid Sulfate Soils risk area.

5.10 Aboriginal Heritage

RPS has reviewed the proposed ASB against the recommendations of the original Aboriginal Heritage Assessment that was undertaken in 2012 to support the Stage 1 development (refer to **Appendix Q**).

The original assessment considered the entire Blacktown hospital campus. The assessment found that the Blacktown campus has been extensively modified in the past. As a result, any Aboriginal material that may have been present has likely been removed or destroyed as part of the construction of the hospital facilities and subsequent works.

Accordingly, the assessment concluded that combined with the absence of sites identified during the archaeological survey and discussions with the representatives of the Aboriginal community, there were no archaeological constraints in relation to the proposed Stage 1 works.

The proposed Stage 2 works has been reviewed by RPS, who have confirmed that the original findings of the 2012 assessment remain unchanged. OEH has also confirmed that no further investigation is required for Stage 2.

5.11 Building Code 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.

5.12 Structural Adequacy

A Structural Design Statement has been prepared by Robert Bird Group (**Appendix S**) to provide structural advice for the proposal. Structural design associated with the proposal will be conducted in accordance with the current revision of all relevant Australian standards including:

- AS/NZS 1170.0 Structural Design Actions Part 0: General Principles 2002;
- AS/NZS 1170.1 Structural Design Actions Part 1: Permanent, Imposed and Other Actions 2002;
- AS/NZS 1170.2 Structural Design Actions Part 2: Wind Actions 2002;
- AS 1170.4 Structural Design Actions Part 3: Earthquake Loads 2007;
- AS 2159 Piling – Design and Installation 2009;
- AS 2670.1 Evaluation of human body exposure to whole body vibration 2001;
- AS 3600 Concrete Structures 2009;
- AS 3700 Masonry Structures 2001; and
- AS 4100 Steel Structures 1998.

5.13 Erosion and Sediment Control

An Erosion and Sediment Control Plan has been prepared by Robert Bird Group and is included at **Appendix P**. The plan outlines the management processes to be put in place to maintain the quality of stormwater discharge during construction.

Surface water management measures will be in accordance with Landcom guidelines – Managing Urban Stormwater Runoff: Soils and Construction ("Blue Book") and Blacktown City Council's DCP.

5.14 Construction Management

An Outline Construction Management Plan (CMP) has been prepared by PwC (**Appendix T**). The CMP 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.

5.15 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. The initiatives and targets relate to the following aspects of the proposed development:

- Energy efficient electrical services;
- Mechanical services;
- Hydraulic services;
- Improved indoor environmental quality;
- Extended life through inherent flexibility and 'future-proofing' ;
- Electrical services with efficient lighting, lighting control and energy metering.
- Structural design; and
- Initiatives during construction and operation.

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.

Furthermore, the proposed development is consistent with the five accepted principles of ESD as described below.

Precautionary Principle

If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

The proposal is supported by environmental studies and technical reports which conclude that there are no environmental constraints that preclude the

development of the site in accordance with the proposal, subject to appropriate management in future planning, design, construction and operational stages.

It is considered that through adherence to the Mitigation Measures outlined in **Section 7.0** the proposal will not result in serious impact to the environment.

Integration Principle

The integration principle holds that decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations. The design of the building has been developed to integrate the short and long term effects of economic, environmental and social considerations for the hospital.

Intergenerational Equity

The principle of inter-generational equity holds that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

The proposal has been development to directly benefit current and future generations in that it contributes to the acute health services of the community without causing significant impact to the environment.

Biological Diversity

Under the biodiversity principle, the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.

The development site does not contain any threatened or vulnerable species, populations, communities or significant habitats. Construction and ongoing operations of the facility will be managed in accordance with the Mitigation Measures, ensuring no significant indirect impacts on the surrounding environment.

Valuation and Pricing of Environmental Resources

Under this principle, improved valuation, pricing and incentive mechanisms and environmental factors should be included in the valuation of assets and services. The cost of infrastructure and measures to ensure an appropriate level of environmental performance on the site has been incorporated into the cost of development. In addition, the level of waste will be appropriately managed during the construction of the development. These measures have been incorporated into the cost of development.

6.0 Environmental Risk Assessment

The Environmental Risk Assessment (ERA) establishes a residual risk by reviewing the significance of environmental impacts and the ability to manage those impacts. The ERA for the development has been adapted from Australian Standard AS4369.1999 Risk Management and Environmental Risk Tools.

In accordance with the SEARs, the ERA addresses the following significant risk issues:

- The adequacy of baseline data;
- The potential cumulative impacts arising from other developments in the vicinity of the Site; and
- Measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Figure 30 indicates the significance of environmental impacts and assigns a value between 1 and 10 based on:

- The receiving environment;
- The level of understanding of the type and extent of impacts; and
- The likely community response to the environmental consequence of the project;

The manageability of environmental impact is assigned a value between 1 and 5 based on:

- The complexity of mitigation measures;
- The known level of performance of the safeguards proposed; and
- The opportunity for adaptive management.

The sum of the values assigned provides an indicative ranking of potential residual impacts after the mitigation measures are implemented.

Significance of impact	Manageability of impact				
	5 Complex	4 Substantial	3 Elementary	2 Standard	1 Simple
1 – Low	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)	2 (Low)
2 – Minor	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)
3 – Moderate	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)
4 – High	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)
5 – Extreme	10 (High)	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)

Figure 30 – Risk Assessment Matrix

Table 10 – Environmental Risk Assessment

Item	Phase	Potential Environmental Impact	Proposed Mitigation Measures and / or Comment	Significance of Impact	Manageability of Impact	Residual Impact
Key: C - Construction O - Operation						
Noise and Vibration	C + O	▪ Increase in noise and vibration levels during construction activities ▪ Increase in noise levels during the operation of the school facility	▪ Implementation of Construction Noise and Vibration Measures which considers the construction methodology and details specific mitigation measures in accordance with the DECCW Interim Construction Noise Guideline. ▪ Appropriate mitigation measures to be implemented to ensure vibration levels will not compromise human comfort or result in building damage. ▪ Appropriate sound minimisation measures to be incorporated within the plant and mechanical areas.	C = 3 O = 1	C = 2 O = 2	C = 5 (low/medium) O = 3 (low)
Traffic and Parking	C + O	▪ Increase in construction traffic on local roads ▪ Increase in traffic and parking on local roads during operation	▪ A Construction Traffic Management Plan has been prepared detailing measures to minimise any adverse impacts arising from construction traffic. ▪ Additional parking demand generated by the proposed development will be accommodated within the existing and proposed (under separate applications) on-site parking areas. The existing road network has capacity to support any increase in traffic associated with the proposed development.	C = 3 O = 2	C = 2 O = 1	C = 5 (low/medium) O = 3 (low)
Visual and Built Form	O	▪ Visual impact of the development when viewed from the public domain. ▪ Visual impact of the development when viewed from development to the north.	▪ Measures have been incorporated to reduce the visual impact of the development when viewed from Blacktown Road.	O = 2	O = 2	O = 4 (low/medium)
Air and Water Quality	C	▪ Potential for reduced air and water quality during construction	▪ A detailed Construction Environmental Management Plan will be developed once a contractor has been appointed to implement measures to ensure that air and water quality are maintained.	C = 2	C = 2	C = 4 (low/medium)

7.0 Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 11** below. These measures have been derived from the previous assessment in **Section 5.0** and those detailed in appended consultants' reports.

Table 11 – Mitigation Measures

Stormwater The proposal will be in accordance with the recommendations of the Integrated Water Management Pan prepared by Robert Bird Group dated June 2016
Noise and Vibration Noise and Vibration will be in accordance with the recommendations of the Acoustic Assessment prepared by Acoustic Logic dated June 2016
Traffic and Access During Construction and Operation Construction and operational traffic will be in accordance with the recommendations of the Transport and Accessibility Study prepared by ARUP and dated June 2016
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 outline Construction Management Plan prepared by PwC dated June 2016.
Waste Waste will be in accordance with the recommendations of the Waste Management Plan prepared by Coffey dated June 2016
Hazardous Waste Hazardous Waste will be managed in accordance with the Preliminary Hazards Assessment prepared by Coffey dated June 2016

8.0 Conclusion

This EIS has been prepared to consider the environmental, social and economic impacts of the proposed Blacktown Hospital Stage 2 ASB works. The EIS has addressed the issues outlined in the SEARs (**Appendix B**) and accords with 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 stormwater.

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 Blacktown hospital 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 her delegate approve the application.