ETHOS URBAN

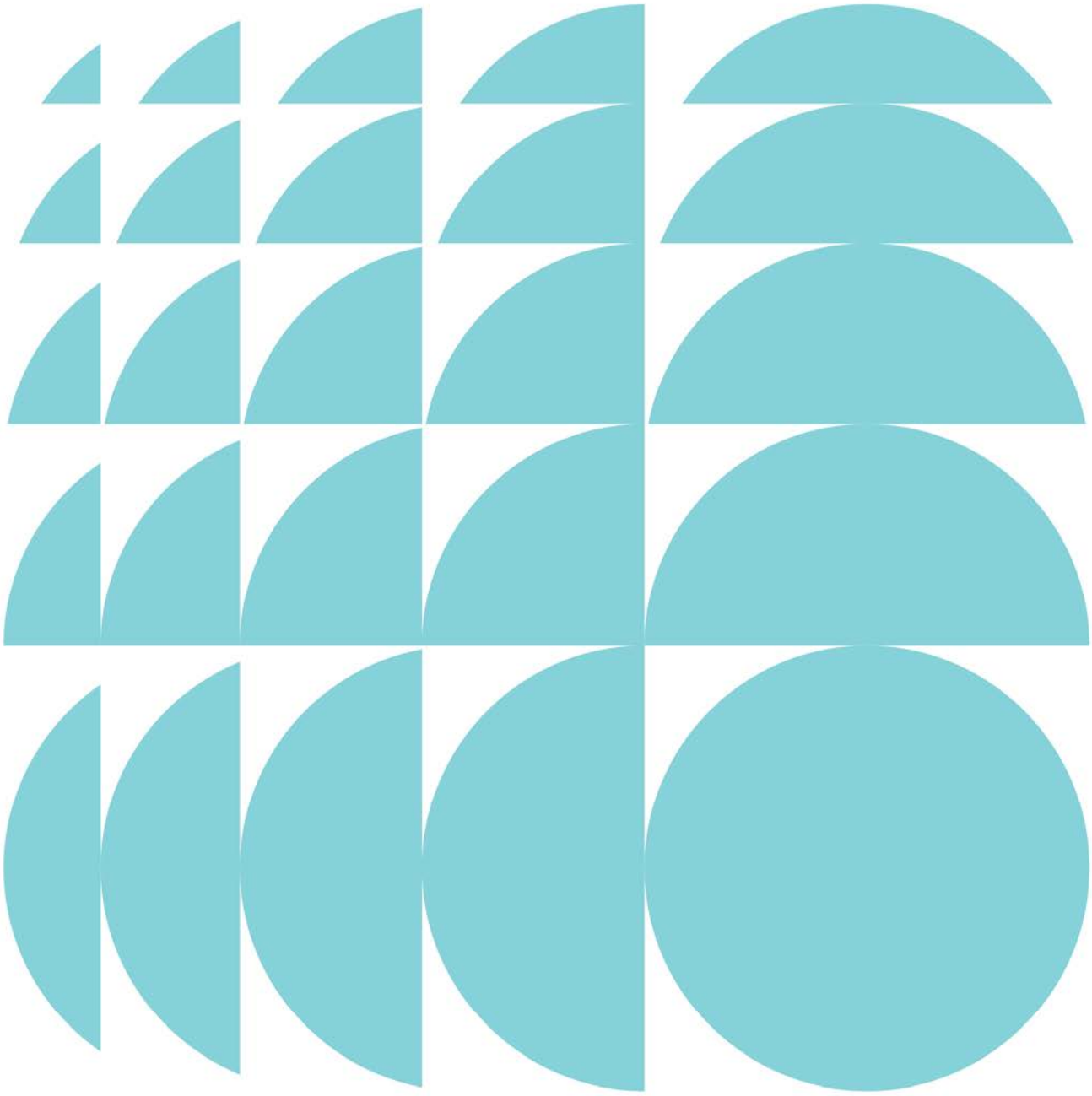
Environmental Impact Statement

John Hunter Health Campus, Lookout Road, New Lambton Heights
John Hunter Health and Innovation Precinct

Submitted to Department of Planning, Industry and Environment

On behalf of Health Infrastructure NSW

17 May 2021 | 2190777



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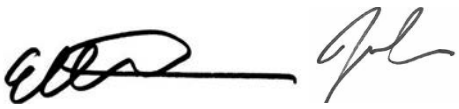

Ella Coleman and Chris McGillick 17 May 2021

This document has been reviewed by:

Gordon Kirkby 17 May 2021

VERSION NO.	DATE OF ISSUE	REVISION BY	APPROVED BY

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Statement of Validity

Development Application Details	
Applicant name	Health Administration Corporation
Applicant address	1 Reserve Road, St Leonards, NSW 2065
Land to be developed	John Hunter Health Campus, 38 Lookout Road, New Lambton Heights, NSW 2035
Proposed development	Construction and operation of a new Acute Services Building and refurbishment of certain existing hospital facilities as described in Section 3.0 of this Environmental Impact Statement
Prepared by	
Name	Chris McGillick
Qualifications	BPlan (Hons) PIA
Address	173 Sussex Street, Sydney, NSW 2000
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	Chris McGillick
Date	17/05/2021

Executive Summary

Purpose of this Report

This submission to the Department of Planning, Industry and Environment (the Department) comprises an Environmental Impact Statement (EIS) for a Development Application under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It relates to the construction and operation of a new multi storey Acute Services Building (ASB) and refurbishment works to certain elements of the existing John Hunter Health Campus (JHHC) as part of the John Hunter Health and Innovation Precinct (JHHIP).

Development for the purposes of a hospital with a capital investment value (CIV) of more than $30 million is identified in Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* as State Significant Development (SSD) for the purposes of the EP&A Act. A CIV Statement has been prepared by Altus Group confirms that the project has a CIV of more than $30 million (provided under a separate cover) and the proposal is therefore SSD.

A request for the issue of Secretary's Environmental Assessment Requirements (SEARs) was sought 14 January 2021. Accordingly, the SEARs were issued on 1 February 2021 (SSD-9551535). 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.

Background to the Development

The NSW Government provided pre-planning funds for a number of Hospital redevelopments across the state in the NSW Budget 2018/19, the JHHIP Project was one of these. In June 2019, the NSW Government announced a significant expansion of the John Hunter and John Hunter Children's Hospitals with the $780 million JHHIP project.

The JHHIP will deliver updated and enhanced facilities providing additional capacity to meet the demand of the Greater Newcastle, Hunter New England, and northern NSW Regions. The JHHIP will enable a more integrated service encouraging partnership with key health, education and research partners from within and beyond the immediate region.

Overview of the Project

The Development Application (DA) seeks approval for the following:

- Construction and operation of a new 7 storey Acute Services Building (plus 4 semi-basement levels) to provide:
  - an expanded and enhanced Emergency Department;
  - expanded and enhanced intensive care services - Adult, Paediatric and Neonatal;
  - expanded and enhanced Operating Theatres including Interventional Suites;
  - an expanded Clinical Sterilising Department;
  - Women's Services including Birthing Unit, Day Assessment Unit and Inpatient Units;
  - integrated flexible education and teaching spaces;
  - expanded support services;
  - associated retail spaces;
  - new rooftop helipad;
  - new semi-basement car parking;
- Refurbishment of existing buildings to provide:
  - additional Inpatient Units;
  - expanded support services;
- A new Hospital entry canopy and works to the existing drop off;
- Link bridge to the Hunter Medical Research Institute;

- Landscape works;
- Site preparation including bulk earthworks, tree removal, environmental clearing, cut and fill;
- Mines grouting remediation works;
- Construction of internal roads network and construction access roads and works to existing at-grade carparking;
- Connection to the future Newcastle Inner City Bypass; and
- Inground building services works and utility adjustments.

The Site

The JHHC (the site) is located in the western suburbs of metropolitan Newcastle, on Lookout Road, New Lambton Heights within the City of Newcastle Local Government Area (LGA), approximately 8km west of the Newcastle CBD. The site is legally described as Lot 1 DP1228246, Lot 2 DP1228246, Lot 202 DP1176551, Lot 11 DP826092, Lot 9 DP826092 and Lot 41 DP1176191.

Planning Context

Section 5.0 of the EIS considers all applicable legislation in detail. The proposal is consistent with the requirements of all relevant SEPPs. The site is zoned SP2 – Infrastructure (Health Services Facilities) under the *Newcastle Local Environmental 2012* (NLEP 2012). 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 (Health Infrastructure) to manage and minimise potential impacts arising from the development.

Consultation

Section 4.0 of the EIS details the consultation that has been undertaken with various project stakeholders including Newcastle Council, Government Architect NSW, Subsidence Advisory NSW, Transport for NSW, user groups and the public. The outcomes of the consultation process have been considered in the design of the project.

Conclusion and Justification

The EIS addresses the SEARs, and the proposal provides for the construction and operation of a new ASB, as well as the refurbishment and upgrade to the JHHC and health precinct more widely. The potential impacts of the development are acceptable and are able to be managed. Given the planning merits of the proposal, the proposed development warrants approval by the Minister for Planning and Public Spaces.

Having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development, the carrying out of the project is justified for the following reasons:

- The proposal will facilitate the development of a new state-of-the-art health facility which will further support and strengthen the services and facilities provided at the hospital for the benefit of the Hunter New England Local Health District.
- The proposal represents a significant investment in the Hunter region, which will deliver approximately 5,500 jobs (direct and indirect) during the construction phase and ongoing health services jobs and indirect jobs in the Newcastle and Hunter Region.
- The development will support a significant piece of social infrastructure, increasing the number of hospital beds and health workers to Newcastle, elevating JHHIP as a competitive destination for health services.
- The proposal will facilitate future health uses on the site and is entirely consistent with the NSW State Priorities, Greater Newcastle Metropolitan Plan and Hunter Regional Plan by providing increased and improved health facilities and precinct opportunities.
- The existing site allows for the provision of new health facilities that meet the special design requirements for future proposed uses without having significant adverse impacts on surrounding uses.

- The assessment of the proposal has demonstrated that the development will not result in any environmental impacts that cannot be appropriately managed and are consistent with the relevant planning controls for the site.
- The proposal incorporates significant new landscaped areas and tree planting and the biodiversity offset strategy will appropriately compensate for the unavoidable removal of biodiversity values.
- The proposal is consistent with the principles of ecologically sustainable development as defined by Schedule 2(7)(4) of the EP&A Regulation.

1.0 Introduction

This EIS is submitted to the DPIE pursuant to Part 4 of the EP&A Act in support of an application for the construction and operation of a new multi storey ASB and refurbishment works to certain existing facilities as part of the JHHIP.

Development for the purposes of a hospital with a CIV of more than $30 million is identified in Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* and is therefore declared to be SSD for the purposes of the EP&A Act. A CIV Statement has been prepared by Altus Group that confirms the project has a CIV of greater than $30 million and is provided under a separate cover.

This report has been prepared by Ethos Urban on behalf of Health Infrastructure NSW (Health Infrastructure), and is based on the Architectural Drawings provided by BVN Architecture (see **Appendix C**) and other supporting technical information appended to the report (see Table of Contents).

This EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act, Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), and the SEARs for the preparation of the EIS, which are included at **Appendix B.** This EIS should be read in conjunction with the supporting information and plans appended to and accompanying this report.

1.1 Overview of Proposed Development

This SSD application seeks approval for the following development:

- Construction and operation of a new 7 storey Acute Services Building (plus 4 semi-basement levels) to provide:
  - an expanded and enhanced Emergency Department;
  - expanded and enhanced intensive care services - Adult, Paediatric and Neonatal;
  - expanded and enhanced Operating Theatres including Interventional Suites;
  - an expanded Clinical Sterilising Department;
  - Women's Services including Birthing Unit, Day Assessment Unit and Inpatient Units;
  - integrated flexible education and teaching spaces;
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  - associated retail spaces;
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- Mines grouting remediation works;
- Construction of internal roads network and construction access roads and works to existing at-grade carparking;
- Connection to the future Newcastle Inner City Bypass; and
- Inground building services works and utility adjustments.

Figure 1 Artists impression of the proposed ASB (viewed from the west)

Source: BVN Architects

1.2 Background to the Development

The John Hunter Health Campus (collectively referred to herein as JHHC) consists of the John Hunter Hospital and John Hunter Children's Hospital and the Rankin Park Rehabilitation Unit. The John Hunter and John Hunter Children's Hospitals are major metropolitan hospitals and the principal tertiary referral and tertiary hospital for residents of the Hunter New England Local Health District (HNELHD) and Northern NSW and provides a range of clinical and non-clinical services including emergency, surgical, maternity, intensive care, renal and other health services for the Hunter Region.

Due to the large region that the John Hunter Hospital and Children's Hospital (herein referred to as JHH) provides services for, and the extensive range of services provided, they regularly operate at 98% occupancy, with the inpatient bed base, operating theatres and ED treatment spaces working beyond capacity. Therefore, the JHH is currently undergoing expansion to provide increased capacity and capability to meet expected population increases across the health region as part of JHHIP, which includes a $780 million investment in the existing JHHC.

The vision for the JHHIP is that it will continue to develop as a designated centre of excellence and tertiary referral centre for a range of services and innovation. The JHHIP will enable more integrated service delivery through collaboration with key health, education and research partners within a Precinct environment.

1.3 John Hunter Hospital Innovation Precinct Vision

The vision for the JHHIP is to enable the development of an integrated precinct that responds to the needs of the community by providing a coordinated, efficient and shared services. The intent is to provide for expanded and improved healthcare services with a focus on patient and staff well-being, community engagement and health promotion.
The world-class health, education and research services at the JHHIP will help to attract more well-paid knowledge-based jobs to the region, while facilitating and catalysing opportunities for partnering which support expansion of the knowledge capacity of the region.

Key objectives that have guided the considerations of the JHHIP include Service, Long term viability and Process (see **Figure 2**). These are explored in more detail by BVN at **Appendix H**.

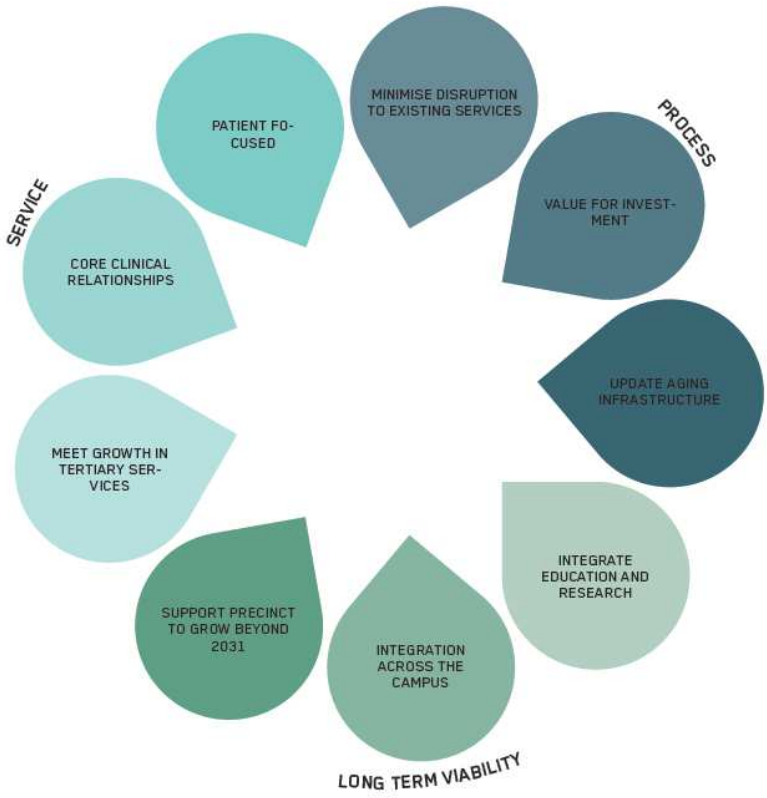

Figure 2 JHHIP Key objectives diagram

Source: BVN Architecture

1.3.1 Design Principles

As a basis for ongoing design decision making, a series of strategies that seek to achieve a clarity across the precinct were established by BVN Architects at project commencement. The principle concepts underpinning these strategies are generally related to access and connection and the design team have used these principles to guide planning, building form and ongoing development of the precinct scheme.

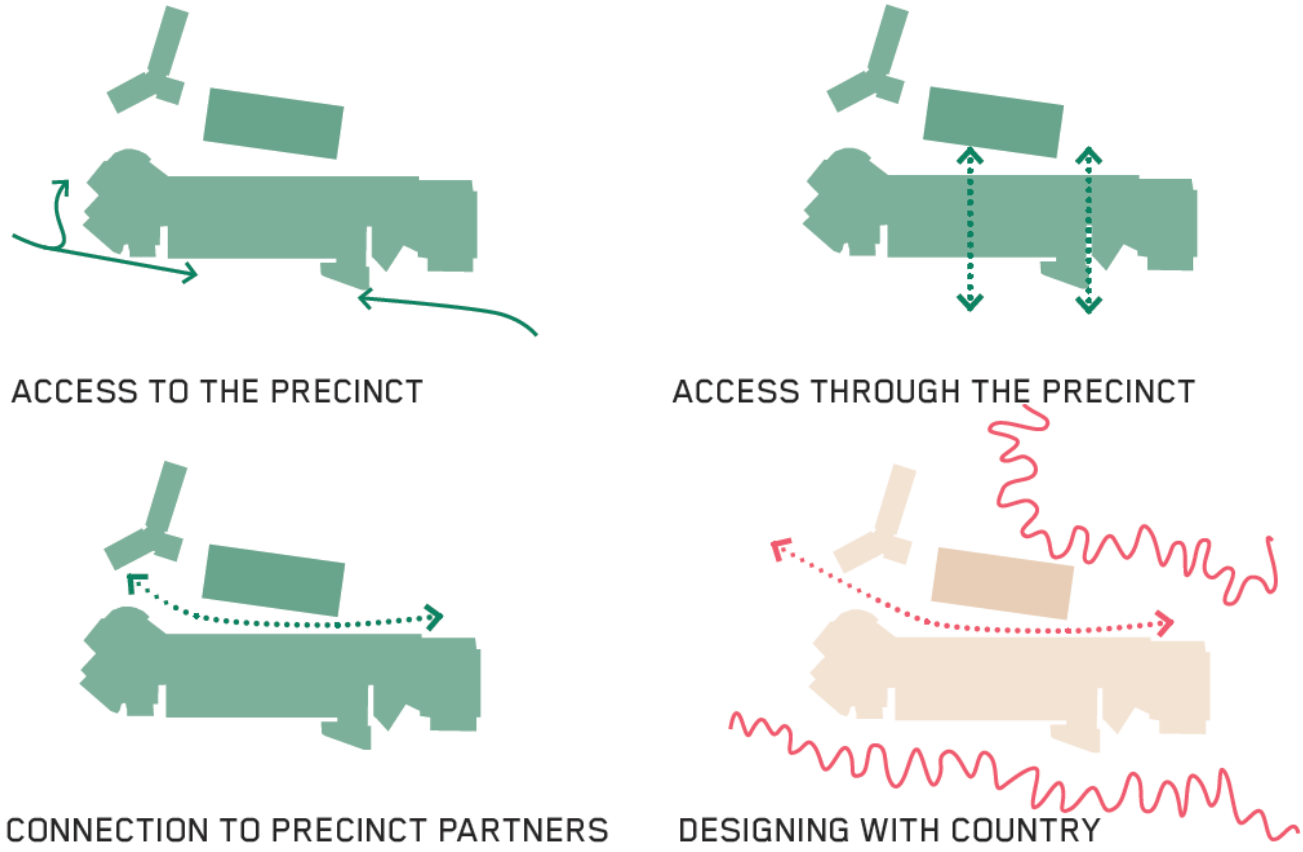

Figure 3 Design Principles

Source: BVN Architects

1.4 Objectives of the Development

The overall objective of the proposal is to develop a new acute services building (ASB) within the JHHIP and undertake refurbishment works to existing certain hospital buildings and facilities. It is intended that this development will in turn:

- Develop services around patient and staff needs.
- Meet current and future growth of acute services as the northern NSW tertiary referral hospital.
- Update and replace aged and poor infrastructure enabling the implementation of contemporary models of care.
- Create an integrated campus for clinical innovation, education and research.
- Support core clinical relationships.
- Provide an environment that enables contemporary patient focussed service delivery.
- Transform service delivery necessary to respond to future demands and evolving models of care.
- Enable and support precinct growth.
- Develop and support a master plan beyond 2031.
- Maximise value for investment.
- Minimise disruption and maintain business continuity.

- Provide culturally appropriate and contemporary services to the Aboriginal and Torres Strait Island population.

1.5 Suitability of the Site

The existing JHHC currently accommodates a public hospital, children's hospital and private hospital, as well as a number of ancillary services, such as the Hunter Medical Research Institute (HMRI). Therefore, the site is suitable for the development as it already accommodates a range of health services and the proposal will allow for the existing hospital to continue to operate with an increased capacity to service the Local Health District.

The aspirations of the Hunter Regional Plan 2036, and the Greater Newcastle Metropolitan Plan 2036 confirm the JHHIP as a priority strategic employment centre. The Plans identify:

- A health cluster centred around the existing John Hunter Hospital, providing tertiary level medical services, and a diverse range of complementary health services;
- The site can accommodate a medical research, innovation and education hub;
- Continued efficiencies and synergies between John Hunter Hospital and John Hunter Children's Hospital by co-locating adult and paediatric critical care, perioperative and interventional services;
- Expanded community health and well being services, as well as industry sustainability and innovation activities;
- A need to service Greater Newcastle's ageing population through improvements to aged care facilities, community-based health services and the introduction of private providers of care and wellness for older residents.

1.6 Analysis of Alternatives

Strategic need for the proposal

John Hunter Hospital currently has 796 inpatient beds and provides a range of tertiary services. For a number of years, the Hospital has experienced significant service and infrastructure pressure, which is driven by a growing demand for critical care, as well as the growing ageing population and Aboriginal population that relative to NSW, is older, more socioeconomically disadvantaged and has higher rates of complex chronic diseases. The pressure on services and infrastructure is expected to continue without supplementing the existing infrastructure.

Current activity at the Hospital regularly operates at 98% occupancy, with the inpatient bed base, operating theatres and ED treatment spaces regularly working beyond capacity. HNDELHD clinical service planning anticipates projected 2031 growth in demand in intensive care services by 49%, emergency department (ED) admissions by 39% and theatre and procedural activities 38% beyond current capacity. This demand cannot be supported through further service optimisation initiatives and investment is needed in order to deliver infrastructure that can address this level of demand as a Level 6 tertiary and referral hospital.

1.6.1 Alternative Options

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

Option 1 – Do Nothing

Under the 'do nothing' scenario, the existing infrastructure at JHHC and the local health district would need to continue to provide services to cater for the increasing health needs of the region. This would not adequately respond to population growth, changing health needs and the ageing population of the region and would potentially lead to a decline in health outcomes. Not undertaking the work would be an inappropriate outcome for a project of this nature, which will facilitate much needed health infrastructure in the region.

Option 2 – Alternative Designs

Health Infrastructure have explored a number of different options for managing the increased growth of health needs and resultant infrastructure response needed within JHHIP. Four design options were considered (see **Figure 4** - **Figure 7**) to respond to the siting of the proposed ASB in relation to the existing JHH and other ancillary buildings and car parking arrangements on the site.

Sites were assessed against key criteria which included enabling business continuity, opportunities for direct access to existing clinical services, integration into or use of existing and proposed infrastructure, opportunities for future expansion, and connectivity to and integration with precinct partners. Construction programming including site access, potential cost and buildability were also considered. Alongside these considerations was the underlying criteria that the proposed locations were consistent with precinct-wide design principles.

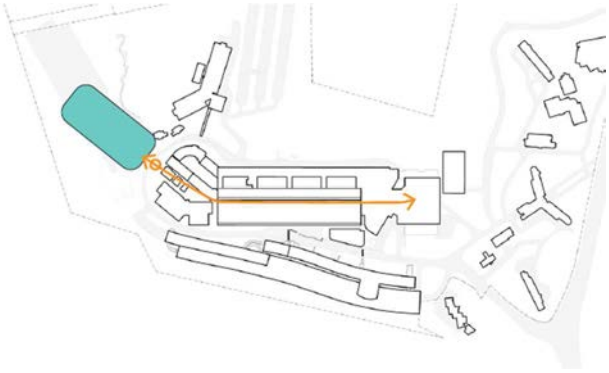

Figure 4 Western option

Source: BVN Architects

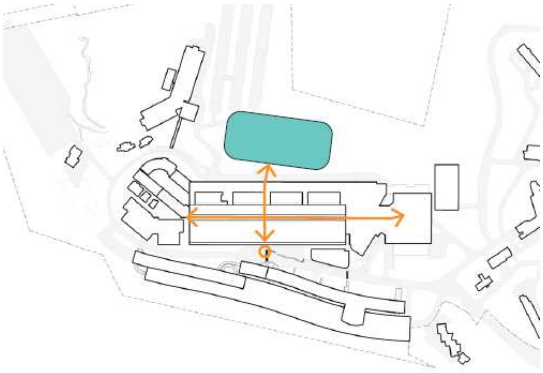

Figure 5 Northern option

Source: BVN Architects

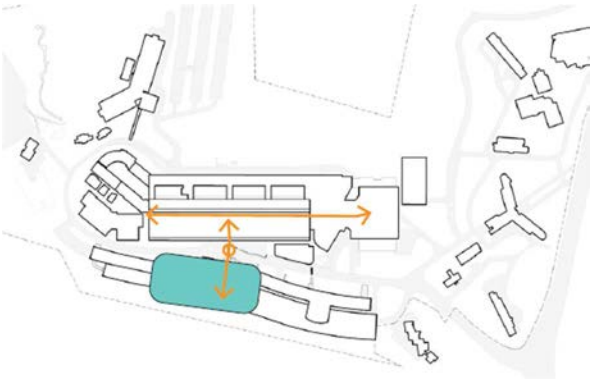

Figure 6 Southern option

Source: BVN Architects

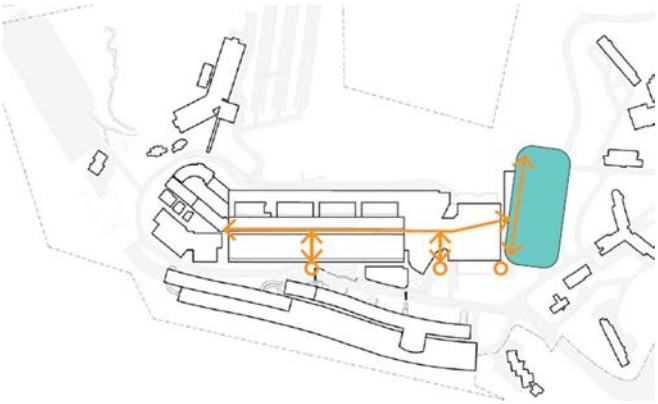

Figure 7 Eastern option

Source: BVN Architects

Option 3 – The Proposal

The proposed design involves undertaking the proposed redevelopment as outlined in this SSD application (as described in **Section 3.0**). The SSD responds to the precinct layout, as well as the objectives and is consistent with the established Design Principles (see **Section 1.3.1**). The proposal will facilitate the efficient construction of a high-quality design that responds to the strategic need identified above. Importantly, the proposal supports the growth and expansion of the JHHIP in line with NSW Health and NSW State Government budget allocation.

The northern siting of the proposal provides excellent proximity and direct access to existing clinical services. The design responds to existing topography and provides an opportunity for potential future expansion to the east. It utilises the existing road network, including the new Newcastle Inner City Bypass and reduces the impact on these roads and enables the public realm to tie together the existing and proposed hospital developments, as well as the ancillary research and health uses on the site. The proposed site arrangement is shown in **Figure 8**.

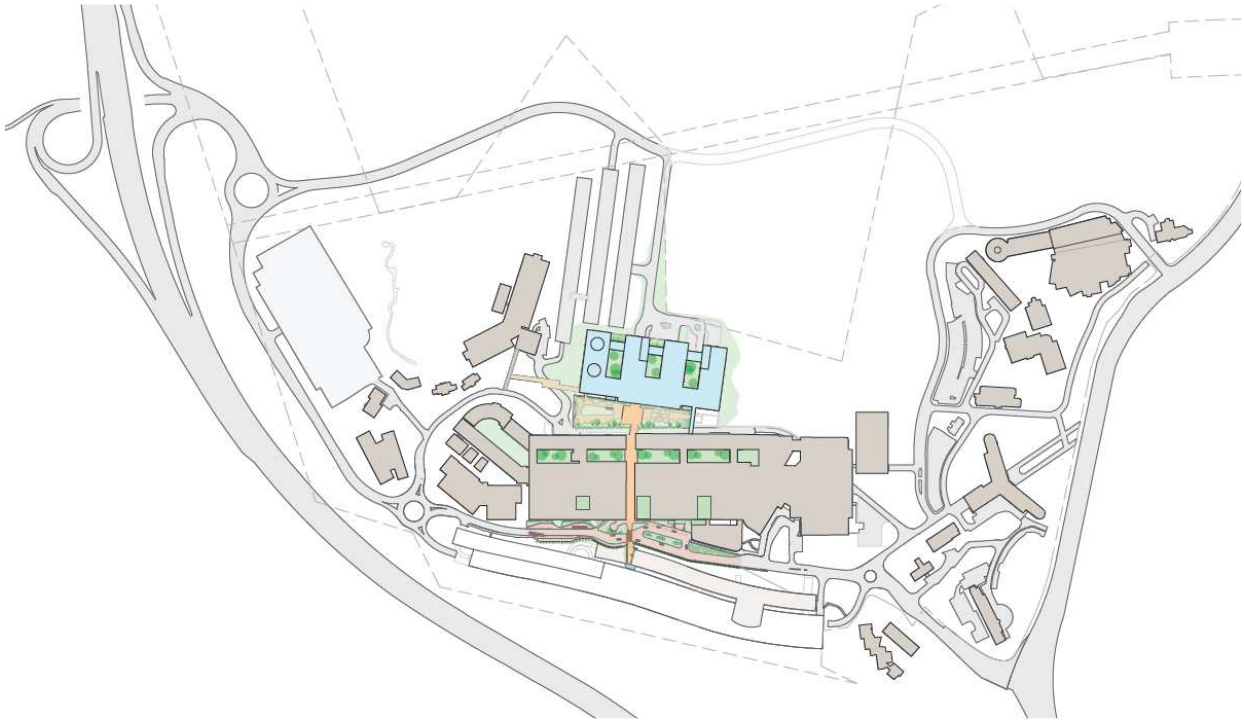

Figure 8 The proposed northern siting of the ASB

Source: BVN

1.6.2 Future Expansion

The proposal has regard to planning for future precinct expansion. The indicative future masterplan and expansion scenario is shown at **Figure 9** below. The future precinct vision includes three zones, including research and education, parallel providers and the hospital zone, creating the opportunity for an integrated precinct with ready access to and collaboration between the various functions across the precinct zones.

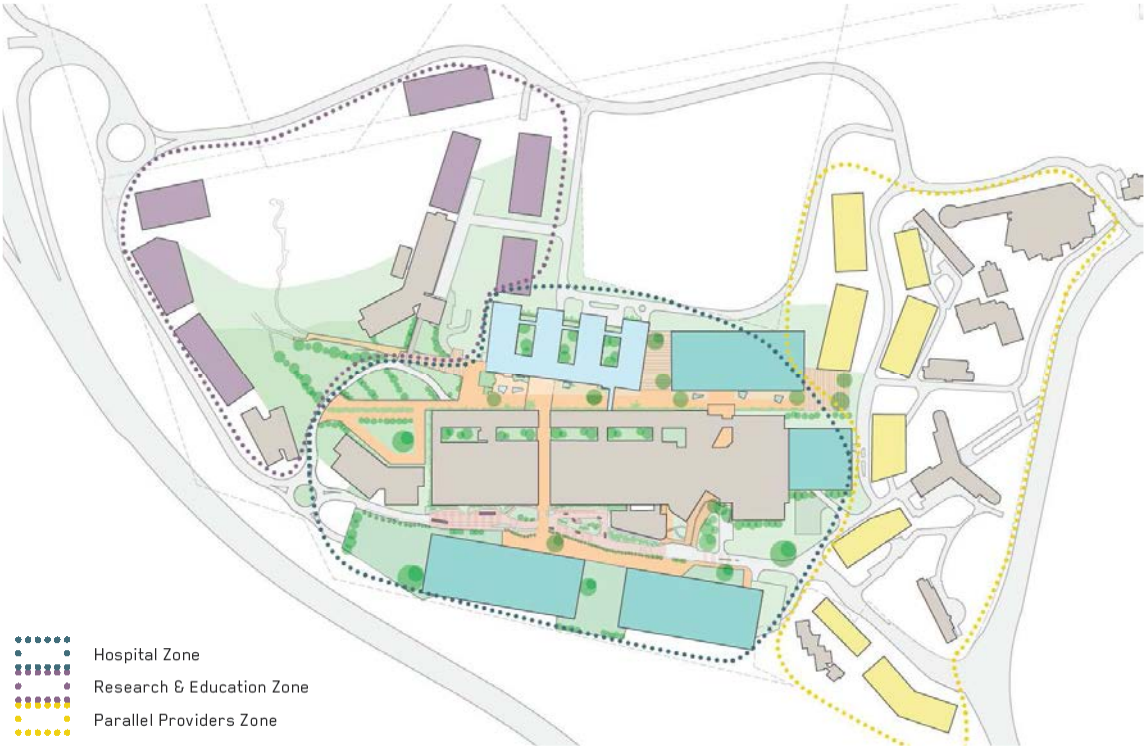

Figure 9 Future expansion vision

Source: BVN Architects

1.7 Secretary's Requirements

In accordance with section 4.39 of the EP&A Act, the Secretary of the Department of Planning, Industry and Environment issued the requirements for the preparation of the EIS on 1 February 2021 (SSD-9551535). A copy of the Secretary's Environmental Assessment Requirements (SEARs) is included at **Appendix B**.

Table 1 provides a detailed summary of the individual matters listed in the SEARs and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

Table 1 Secretary's Requirements

Requirement	Location in Environmental Assessment
General	
The Environmental Impact Statement (EIS) must address the *Environmental Planning and Assessment Act 1979* and meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 the Environmental Planning and Assessment Regulation 2000.	Environmental Impact Statement
Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.	Section 6.0
In addition, the EIS must include: • an executive summary	Executive Summary
• A complete description of the development, including: – The need for the development	Section 1.2, 1.6
– Justification for the development	Section 8.0
– Suitability of the site	Section 1.5
– alternatives considered	Section 1.6
– likely interactions between the development and existing, approved and proposed operations in the vicinity of the site	Section 3.0, Section 5.0
– a description of any proposed building works	Section 3.0
– a description of existing and proposed operations, including staff per shift and visitor numbers	Section 2.3, 2.4, 2.14, 3.0, 3.6
– site survey plan, showing existing levels, location and height of existing and adjacent structures / buildings and site boundaries	Appendix A
– a detailed constraints map identifying the key environmental and other land use constraints that have informed the final design of the development	Appendix H
– plans, elevations and sections of the proposed development	Appendix C
– cladding, window and floor details, including materials	Appendix C
– a site plan showing all infrastructure and facilities (including any infrastructure that would be required for the development, but the subject of a separate approvals process)	Appendix D, J, AA, BB
– plans and details of any building identification signs to be installed, including size, location and finishes	Appendix C, H
– any staging of the development	Section 3.19, Appendix H, P
– details of construction and decommissioning including timing	Section 3.17, 3.18, 3.19, 5.7, Appendix P
– an estimate of the jobs that would be created during the operational phases of the development and construction and along with details of the methodology to determine the figures provided.	Section 3.6
• a detailed assessment of the key issues identified below, and any other significant issues identified in the risk assessment, including:	Section 5.0 All Appendices.

Requirement	Location in Environmental Assessment	
– a description of the existing environment, using sufficient baseline data and methodology to establish baseline conditions		
– an assessment of the potential impacts of all stages of the development on all potentially impacted environments, sensitive receivers, stakeholders and future developments. The assessment must consider any relevant legislation, policies and guidelines	Section 5.0 All Appendices.	
– consideration of the cumulative impacts due to all other developments in the vicinity (completed, underway or proposed)	Section 5.25	
– identification of all proposed monitoring or required changes to existing monitoring programs	Section 7.0	
– measures to avoid, minimise and if necessary, offset predicted impacts, including detailed contingency plans for managing any significant risks to the environment and triggers for each action	Section 7.0	
– details of alternative measures considered.	Section 5.0	
• a consolidated summary of all the proposed environmental management and monitoring measures, identifying all commitments included in the EIS	Section 7.0	
• the reasons why the development should be approved and a detailed evaluation of the merits of the development, including consequences of not carrying out the development.	Section 1.6, Section 5.0, Section 8.0	
The EIS must be accompanied by a report from a qualified quantity surveyor providing a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived.	See CIV submitted under separate cover	
Key Issues	**Report / EIS**	**Technical Study**
The EIS must address the following specific matters:	-	-
1. Statutory and Strategic Context Address the statutory provisions contained in all relevant environmental planning instruments, including but not limited to:	-	-
• State Environmental Planning Policy (State and Regional Development) 2011	Section 5.1	
• State Environmental Planning Policy (Infrastructure) 2007	Section 5.1	
• State Environmental Planning Policy No 55 – Remediation of Land	Section 5.1	Appendix X
• State Environmental Planning Policy No 33 – Hazardous and Offensive Development	Section 5.1	Appendix Q
• State Environmental Planning Policy No 64 – Advertising and Signage	Section 5.1	
• State Environmental Planning Policy (Koala Habitat Protection) 2019	Section 5.1	Appendix L
• Draft State Environmental Planning Policy (Infrastructure) (Health Infrastructure Provisions)	Section 5.1	
• Draft State Environmental Planning Policy (Remediation of Land)	Section 5.1	Appendix X
• Draft State Environmental Planning Policy (Environment)	Section 5.1	
• Newcastle Local Environmental Plan 2012.	Section 5.1	
Permissibility address the permissibility of the development, including the nature and extent of any prohibitions	Section 5.1	
Development Standards Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards.	Section 5.1	

Requirement	Location in Environmental Assessment	
Provisions Adequately demonstrate and document in the EIS how each of the provisions in the listed instruments are addressed, including reference to necessary technical documents.	Section 5.1	
2. Policies Address the relevant planning provisions, goals and strategic planning objectives in the following:	-	-
• NSW State Priorities	Section 5.1	
• State Infrastructure Strategy 2018-2038 – Building the Momentum	Section 5.1	
• Future Transport Strategy 2056	Section 5.1	
• Crime Prevention Through Environmental Design (CPTED) Principles	Section 5.1, 5.4	Appendix H
• Better Placed: An integrated design policy for the built environment of NSW (GANSW 2017)	Section 5.1	Appendix H
• Healthy Urban Development Checklist (NSW Health, 2009)	Section 5.1	
• Draft Greener Places Design Guide (GANSW)	Section 5.1, Section 5.14	Appendix I
• Hunter Regional Plan 2036	Section 5.1	
• Greater Newcastle Metropolitan Plan 2036 (specifically the John Hunter Hospital Catalyst Area)	Section 5.1	
• Aboriginal Heritage Management Strategy 2018-2021	Section 5.1	
• Newcastle 2030 Community Strategic Plan	Section 5.1	
• Newcastle Local Strategic Planning Statement	Section 5.1	
3. Built Form and Urban Design Address:	-	-
• The height, density, bulk and scale, setbacks and interface of the proposed building envelope/s in relation to the surrounding development, topography, streetscape and any public open spaces	Section 3.0, 5.1, 5.2, 5.2.1, 5.2.2	Appendix H
• Design quality and built form, with specific consideration of the overall site layout, streetscape, open spaces, façade, rooftop, massing, setbacks, building articulation, site levels adjoining the public domain, materials and colours	Section 3.0, 5.1, 5.2, 5.3	
• Street level activation	-	Appendix H
• Canopy tree planting and landscaping as well as any public domain improvements that would contribute to the urban tree canopy	Section 3.5	Appendix I
• Permeability across the site and the campus	-	Appendix H
• How Crime Prevention through Environmental Design (CPTED) principles are to be integrated into development	Section 5.4	Appendix H
• How good environmental amenity would be provided, including access to natural daylight and ventilation, acoustic separation, access to landscape and outdoor spaces and future flexibility	Section 1.6.2, 3.12, 5.3, 5.3.1, 5.3.2, 5.3.3, 5.3.4	
• how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.	Section 3.11.3, 3.15, 5.6.5, 5.11,	Appendix G, H, O, T
Provide:		
• a detailed site and context analysis to justify the proposed site planning and design approach including massing options and preferred strategy for future development	Section 1.3, 1.5, 1.6	Appendix H

Requirement	Location in Environmental Assessment	
• a visual impact assessment that identifies any potential impacts on the surrounding built environment and landscape including views to and from the site and any adjoining heritage items.	Section 5.3.3	Appendix H
4. Tree Removal and Landscaping		
Provide:		
• an arboricultural impact assessment, prepared by a Level 5 (Australian Qualifications Framework) Arborist in accordance with the Australian Standard 4970 Protection of trees on development sites (AS 4970), which details the number, location and condition of trees to be removed and retained (where appropriate) and existing canopy coverage on-site	Section 3.5, 5.14	Appendix I, K
• a detailed site-wide landscape strategy, that: – details the proposed site planting, including location, number and species of plantings, heights of trees at maturity and proposed canopy coverage – considers impacts on utilities infrastructure – demonstrates how the proposed development would: – contribute to long term landscape setting in respect of the site and the streetscape – mitigate the urban heat island effect and ensure appropriate comfort levels on-site – contribute to objectives to increase urban tree canopy cover.	Section 3.5, 5.1, 5.14	Appendix I
• a detailed landscape plan prepared by a suitably qualified person		
Relevant Policies and Guidelines • Draft Greener Places Design Guide (GANSW)		
• Technical Guidelines for Urban Green Cover in NSW (Office of Environment and Heritage (OEH), 2015).		
5. Environmental Amenity Assess amenity impacts on the surrounding locality, including solar access, visual privacy, visual amenity, overshadowing, wind impacts and acoustic impacts. A high level of environmental amenity for any surrounding residential land uses must be demonstrated.	Section 5.3.1, 5.3.2, 5.3.3, 5.3.4, 5.6	
Provide:		
• shadow diagrams	Section 5.3.1	Appendix C
• a view analysis of the site from key vantage points and streetscape locations and public domain including photomontages or perspectives showing the proposed development.	Section 5.3.3	Appendix C
• an analysis of proposed lighting that identifies measures to reduce spill into the surrounding sensitive receivers	Section 5.3.5	Appendix C
• details of the nature and extent of intensification of use associated with the proposal, particularly in relation to any increase in staff and inpatient bed numbers and detail measures to manage and mitigate any impacts	Section 3.0, 3.2 3.6, Section 5.0	All appendices
• a wind impact assessment, including a wind tunnel study, prepared by a suitably qualified person that considers the impact of the proposed development having regard to the surrounding development and pedestrian amenity and comfort.	Section 5.4.3	Appendix M
6. Staging Assess impacts of staging where it is proposed and detail how construction works and operations would be managed to ensure public safety and amenity on and surrounding the site.	Section 3.19, 5.7	Appendix P
7. Transport and Accessibility Include a transport and accessibility impact assessment, which includes, but is not limited to the following:	Section 5.5	Appendix G, N
• analysis of the existing transport network, including:		

Requirement	Location in Environmental Assessment	
– road hierarchy		
– pedestrian, cycle and public transport infrastructure		
– details of current daily and peak hour vehicle movements based on traffic surveys and / or existing traffic studies relevant to the locality		
– existing performance levels of nearby intersections utilising appropriate traffic modelling methods (such as SIDRA network modelling).		
• details of the proposed development, including: – footpaths and cycleways		
– vehicular access arrangements, including for service and emergency vehicles and loading/unloading, including swept path analysis demonstrating the largest design vehicle entering and leaving the site and moving in each direction through intersections along the proposed transport routes		
– car parking, bicycle parking and end-of-trip facilities		
– drop-off / pick-up zone(s)/arrangements		
– pedestrian or road infrastructure improvements or safety measures		
– loading and service facilities.		
• analysis of the impacts due to the operation of the proposed development, including: – proposed modal split for all users of the development including vehicle, pedestrian, cyclist, public transport and other sustainable travel modes		
– estimated total daily and peak hour vehicle, public transport, freight, service vehicle, cyclist and pedestrian trip generation for staff and visitors		
– a clear explanation and justification of the: – assumed growth rate applied – volume and distribution of proposed trips to be generated – type and frequency of design vehicles accessing the site		
– details of performance of nearby intersections with the additional traffic generated by the development both at the commencement of operation and in a 10-year time period (using SIDRA network modelling or similar traffic model as required by TfNSW)		
– cumulative traffic impacts from any surrounding planned and approved development(s)		
– traffic and safety impacts on public transport, pedestrian and cyclists, including at the proposed access and drop off / drop off zone(s)		
– adequacy of existing / proposed pedestrian, bicycle and public transport infrastructure to accommodate the development and enable convenient and safe access to and from the site for all users		
– adequacy of car parking and bicycle parking provisions for staff and visitors when assessed against the relevant car / bicycle parking codes and standards		
– adequacy of the drop-off / pick-up zone(s), including any related queuing		
– adequacy and loading and servicing provisions to meet estimated daily and peak hour freight and servicing demand.		
• measures to ameliorate any adverse traffic and transport impacts due to the development based on the above analysis, including: – travel demand management strategies to encourage sustainable and active transport (such as a Green Travel Plan and / or specific Workplace Travel Plan)		
– infrastructure improvement, including details of timing and method of delivery		

Requirement	Location in Environmental Assessment	
– freight and servicing management measures to minimise transport network impacts (such as a preliminary Delivery and Servicing Management Plan).		
• a preliminary operational traffic and access management plan for the site, the drop-off / pick-up zone(s) and bus bay(s)		
• analysis of the impacts of the traffic generated during construction of the proposed development, including: – construction vehicle routes, types, volumes and swept path		
– construction program (duration and milestones)		
– on-site car parking and access arrangements for construction, emergency and construction worker vehicles		
– cumulative impacts associated with other construction activities in the locality		
– road safety at identified intersections near the site due to conflicts between construction vehicles and existing traffic, public transport, pedestrians and cyclists in the locality		
– measures to mitigate impacts, including to ensure the safety of pedestrian and cyclists during construction.		
• a preliminary Construction Traffic and Pedestrian Management Plan.		
8. Ecologically Sustainable Development Identify:		
• how ESD principles (as defined in clause 7(4) of Schedule 2 of the Regulation) would be incorporated in the design and ongoing operation phases of the development.	Section 5.24	Appendix U
• proposed measures to minimise consumption of resources, water (including water sensitive urban design) and energy	Section 3.14	Appendix U, AA, BB
• how the development would be designed to consider and reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction design measures, future proofing, use of sustainable and low-carbon materials, energy and water efficient design (including water sensitive urban design) and technology and use of renewable energy.	Section 5.24	Appendix U
Include:		
• an assessment against an accredited ESD rating system or an equivalent program of ESD performance. This should include a minimum rating scheme target level	Section 3.15, 5.12	Appendix J, U, AA, BB
• a statement regarding how the design of the development is responsive to the NARCliM projected impacts of climate change		
• an Integrated Water Management Plan detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design.		
Relevant Policies and Guidelines		
• NSW and ACT Government Regional Climate Modelling (NARCliM) climate change projections.		
9. Heritage		
Provide a Statement of Heritage Impact (SOHI) prepared by a suitably qualified heritage consultant in accordance with the guidelines in the NSW Heritage Manual (Heritage Office and DUAP, 1996) and Assessing Heritage Significance (OEH, 2015). The SOHI is to address the impacts of the proposal on the heritage significance of the site and adjacent areas and is to identify:	Section 5.9	Appendix R

Requirement	Location in Environmental Assessment	
• all heritage items (state and local) within the vicinity of the site including built heritage, landscapes and archaeology, detailed mapping of these items, and assessment of why the items and site(s) are of heritage significance		
• compliance with the relevant Conservation Management Plan		
• the impacts of the proposal on heritage item(s) including visual impacts		
• the attempts to avoid and/or mitigate the impact on the heritage significance or cultural heritage values of the site and the surrounding heritage items		
• justification for any changes to the heritage fabric or landscape elements including any options analysis impact on potential historical archaeology.		
10. Aboriginal Cultural Heritage Provide an Aboriginal Cultural Heritage Assessment Report (ACHAR) that:	Section 5.10	Appendix S
• identifies and describes the Aboriginal cultural heritage values that exist across the site		
• includes surface surveys and test excavations where necessary		
• has been prepared in accordance with the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH, 2010)		
• incorporates consultation with Aboriginal people in accordance with Aboriginal Cultural Heritage Consultation Requirements for Proponents (Department of Environment, Climate Change and Water, 2010)		
• documents the significance of cultural heritage values of Aboriginal people who have a cultural association with the land		
• identifies, assesses and documents all impacts on the Aboriginal cultural heritage values		
• demonstrates attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR and EIS must outline measures proposed to mitigate impacts.		
• Any objects recorded as part of the assessment must be documented and notified to the Environment, Energy and Science Group of the Department of Planning, Industry and Environment.		
11. Social Impacts Prepare a social impact assessment, which:	Section 5.26	Appendix Z
• identifies and analyses the potential social impacts of the development, from the points of view of the affected community/ies and other relevant stakeholders, i.e. how they expect to experience the project		
• considers how potential environmental changes in the locality may affect people's way of life; community; access to and use of infrastructure, services, and facilities; culture; health and wellbeing; surroundings; personal and property rights; decision-making systems; and fears and aspirations, as relevant and considering how different groups may be disproportionately affected		
• assesses the significance of positive, negative, and cumulative social impacts considering likelihood, extent, duration, severity/scale, sensitivity/importance, and level of concern/interest		
• includes mitigation measures for likely negative social impacts, and any proposed enhancement measures		
• details how social impacts will be adaptively monitored and managed over time.		
12. Biodiversity • Provide a Biodiversity Development Assessment Report (BDAR) that assesses the biodiversity impacts of the proposed development in accordance with the	Section 5.15	Appendix L

Requirement	Location in Environmental Assessment	
requirements of the Biodiversity Conservation Act 2016, Biodiversity Conservation Regulation 2017 and Biodiversity Assessment Method, except where a BDAR waiver has been issued in relation to the development or the development is located on biodiversity certified land		
• Where a BDAR is not required because a BDAR waiver has been issued in relation to the development, provide:		
– a copy of the BDAR waiver and demonstrate that the proposed development is consistent with that covered in BDAR waiver		
– an assessment of flora and fauna impacts where significant vegetation or flora and fauna values would be affected by the proposed development.		
13. Utilities In consultation with relevant service providers:	Section 3.15	Appendix D,J, AA, BB
• assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site		
• identify any infrastructure upgrades required off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained		
• provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated, funded and delivered to facilitate the development.		
14. Stormwater Drainage Provide	Section 5.12	Appendix J
• preliminary stormwater management strategy for the development that: – is prepared by a suitably qualified person in consultation with Council and any other relevant drainage authority – includes a preliminary design of the stormwater system, including on-site detention facilities, water quality measures and the nominated discharge point without impacting on downstream properties – demonstrates compliance with Council or other drainage authority requirements.		
• stormwater plans detailing the proposed methods of drainage without impacting on the downstream properties.		
Where drainage infrastructure works are required that would be handed over to Council, provide full hydraulic details and detailed plans and specifications of proposed works that have been prepared in consultation with Council and comply with Council's relevant standards.		
Relevant Policies and Guidelines Guidelines for developments adjoining land managed by the Office of Environment and Heritage (OEH, 2013).		
15. Flooding	Section 5.22	Appendix J
Identify any flood risk on-site in consultation with Council and having regard to the most recent flood studies for the project area and the potential effects of climate change, sea level rise and an increase in rainfall intensity		
Assess the impacts of the development, including any changes to flood risk on-site or off-site, site runoff during the one per cent Annual Exceedance Probability flood event and detail design solutions to mitigate flood risk where required.		
Relevant Policies and Guidelines NSW Floodplain Development Manual (DIPNR, 2005)		
16. Soil, Water and Air Provide:		
• an assessment of potential impacts on surface and groundwater (quality and quantity), soil, hydrology, related infrastructure, adjacent licensed water users,	5.18	Appendix J, P, X

Requirement	Location in Environmental Assessment	
riparian land groundwater dependent ecosystems and watercourse(s) where relevant and the measures to reduce and mitigate these impacts		
• details of existing and potential air quality and odour source impacts during both construction and operation identifying mitigation measures in line with relevant guidance/standards	Section 5.7	Appendix P
• details of measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles		
• identify an adequate and secure water supply for the life of the project (confirming it's an authorised and reliable supply and assessing the current market depth where water entitlement is required to be purchased)	-	Appendix BB
• provide a detailed and consolidated site water balance	-	Appendix X
• details of surface and groundwater monitoring activities and methodologies	-	Appendix X
• an assessment of salinity and acid sulphate soil impacts, including a salinity management and/or Acid Sulphate Soils management strategies, where relevant.	-	Appendix X
Relevant Policies and Guidelines • Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP, 1998)	Section 5.1, Section 5.19	Appendix X
• Sampling Design Guidelines (EPA, 1995)		
• Guidelines for Consultants Reporting on Contaminated Sites (OEH, 2011)		
• National Environment Protection (Assessment of Site Contamination) Measure (National Environment Protection Council, as amended 2013).		
18. Contributions Identify:	Section 5.28	-
• any Section 7.11/7.12 Contribution Plans, Voluntary Planning Agreements or Special Infrastructure Contribution Plans that affect land to which the application relates or the proposed development type		
• any contributions applicable to the proposed development under the identified plans and/or agreements. Justification is to be provided where it is considered that the proposed development is exempt from making a contribution		
• any actions required by a Voluntary Planning Agreement or draft Voluntary Planning Agreement affecting the site or amendments required to a Voluntary Planning Agreement affected by the proposed development.		
19. Bushfire Provide a bush fire assessment that details proposed bush fire protection measures and demonstrates compliance with Planning for Bush Fire Protection (NSW RFS, 2019).	Section 5.16	Appendix V
20. Hazard and Risk Provide:	Section 5.8	Appendix Q
• a preliminary risk screening regarding all dangerous goods and hazardous materials (class, quantity and location) associated with the development.		
• a Preliminary Hazard Analysis, if required where the development includes handling or storage of dangerous or hazardous materials.		
Relevant Policies and Guidelines		
• Applying SEPP 33		
• Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis' and Multi-level Risk Assessment.		
21. Mine Subsidence Provide:	Section 4.0, 5.1, 5.20	Appendix F, X

Requirement	Location in Environmental Assessment	
• details of how mine subsidence has been considered		
• modelling which considers the impact that grouting will have on the predicted subsidence impacts to the existing hospital, noting the importance of continued serviceability and operation		
22. Noise and Vibration Provide a noise and vibration impact assessment that:	Section 5.6	Appendix O
• includes a quantitative assessment of the main noise and vibration generating sources during demolition, site preparation, bulk excavation and construction		
• details the proposed construction hours and provide details of, and justification for, instances where it is expected that works would be carried out outside standard construction hours		
• includes a quantitative assessment of the main sources of operational noise, including consideration of any mechanical services (e.g. air conditioning plant) and aviation operations		
• outlines measures to minimise and mitigate the potential noise impacts on nearby sensitive receivers		
• considers sources of external noise intrusion and vibration in proximity to the site (including road and aviation operations) and identifies building performance requirements for the proposed development to achieve appropriate internal amenity standards		
• demonstrates that the assessment has been prepared in accordance with polices and guidelines relevant to the context of the site and the nature of the proposed development.		
Relevant Policies and Guidelines • NSW Noise Policy for Industry 2017 (NSW Environment Protection Authority (EPA)		
• Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009)		
• Assessing Vibration: A Technical Guideline 2006 (Department of Environment and Conservation, 2006)		
• Development Near Rail Corridors and Busy Roads - Interim Guideline (Department of Planning, 2008).		
23. Waste	Section 5.11	Appendix T, P
• Identify, quantify and classify the likely waste streams to be generated during construction and operation.		
• 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.		
• Provide a hazardous materials survey of existing aboveground buildings that are proposed to be demolished or altered.		
Relevant Policies and Guideines Waste Classification Guidelines (EPA, 2014)		
24. Aviation Provide a report prepared by a suitably qualified aviation expert:	Appendix 5.17	Appendix W
• identifying and assessing the potential impacts of the development on the aviation operations of any affected flight paths of an existing on shore Helicopter Landing Site (HLS) in accordance with the relevant sections of the National Airports Safeguarding Framework (NASF).		

Requirement	Location in Environmental Assessment	
• identify aviation operation and flight paths for any proposed on shore Helicopter Landing Site (HLS) in accordance with the relevant sections of the National Airports Safeguarding Framework (NASF).		
Relevant Policies and Guidelines National Airports Safeguarding Framework and associated guidelines		
Plans and Documents	**Report**	**Technical Study**
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents. Any plans and diagrams included in the EIS must include key dimensions, RLs, scale bar and north point.	-	-
In addition to the plans and documents required in the General Requirements and Key Issues sections above, the EIS must include the following:	-	-
• Section 10.7(2) and (5) Planning Certificates (previously Section 149(2) and (5) Planning Certificate)	-	Appendix DD
• Design report to demonstrate how design quality would be achieved in accordance with the above Key Issues including:	-	Appendix H
– architectural design statement	-	Appendix H
– diagrams, structure plan, illustrations and drawings to clarify the design intent of the proposal	-	Appendix C, H
– detailed site and context analysis	-	Appendix C, H
– analysis of options considered to justify the proposed site planning and design approach	-	Appendix H
– summary of feedback provided by GANSW and NSW State Design Review Panel (SDRP) and responses to this advice	-	Appendix H
– summary report of consultation with the community and response to any feedback provided.	-	Appendix F, H
• Geotechnical and Structural Report	-	Appendix X
• Sediment and Erosion Control Plan	-	Appendix D
Consultation		
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, relevant special interest groups, including local Aboriginal land councils and registered Aboriginal stakeholders and affected landowners. In particular, you must consult with: • the relevant Council • Government Architect NSW (through the NSW SDRP process) • Transport for NSW. Consultation should commence as soon as practicable to inform the scope of investigation and progression of the proposed development. The EIS must describe and evidence the consultation process and the issues raised and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	Section 4.0	Appendix F

2.0 Site Analysis

2.1 Site Location and Context

The JHHC is located on Lookout Road, New Lambton Heights within the City of Newcastle LGA, approximately eight kilometres west of the Newcastle CBD. The health campus is within a leafy suburb and borders the Blackbutt Nature Reserve land which is a large native bushland park maintained by the City of Newcastle.

The JHHC is located on Lookout Road (A37) which links the site with Jesmond and Lambton to the north and to Kotara and Charlestown to the south. The site is located to the east of the proposed Newcastle Inner City Bypass extension from Rankin Park to Jesmond (see **Section 0**). Bushland is located to the west, north and south of the site. Residential uses are located further beyond in the suburbs of Rankin Park, Jesmond, Lambton and New Lambton Heights.

The site's locational context is shown at **Figure 10**.

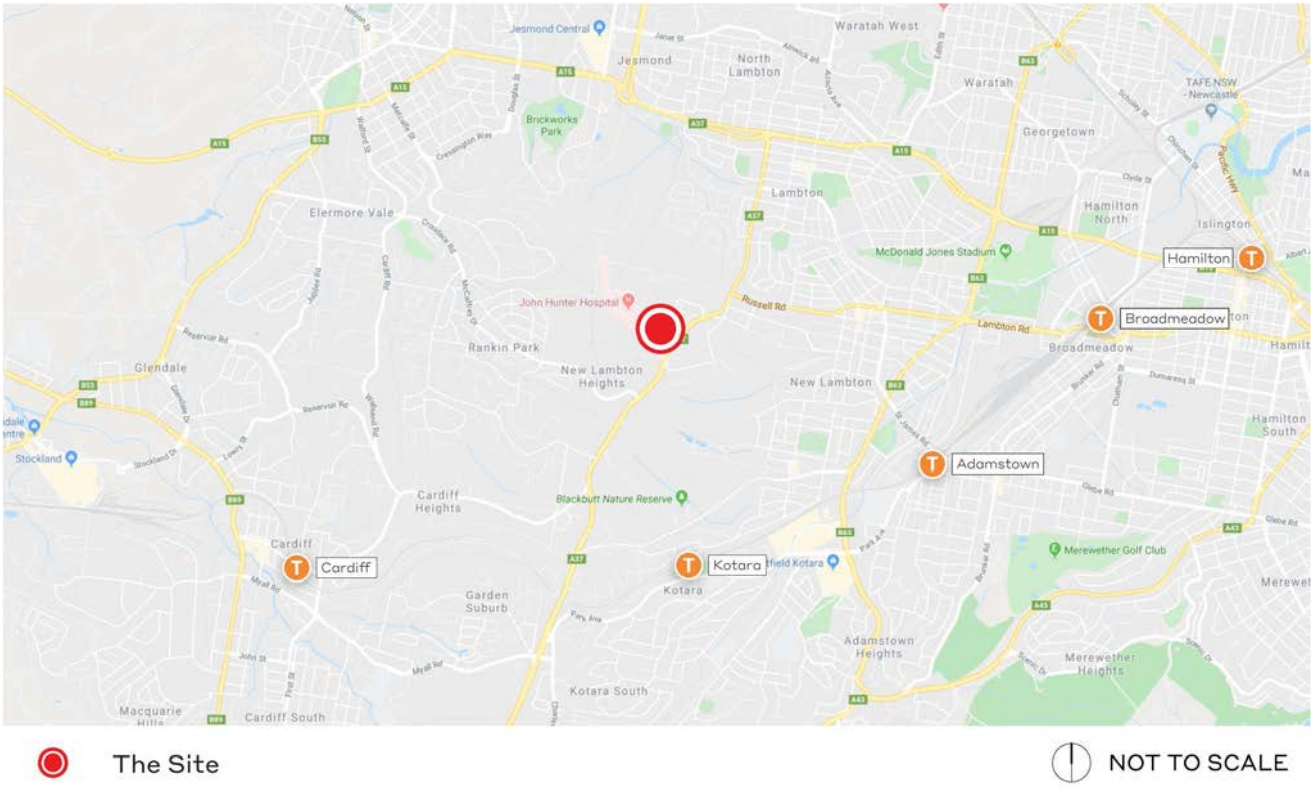

Figure 10 Locational context of the site

Source: Google Maps, Ethos Urban

2.2 Land Ownership

The legal description of the land the subject of this proposal is provided at **Table 2** below and identifies the relevant ownership of these lots.

The site is approximately 1,182,800m^2 in size and is irregularly shaped (see **Figure 12**). A survey plan is located at **Appendix A**.

Table 2 Site description and ownership

Development Lot	Zone	Ownership
Lot 1 DP1228246	SP2 Health Services Facility	NSW Health Administration Corporation Leased to HMRI
Lot 2 DP1228246	SP2 Health Services Facility	NSW Health Administration Corporation
Lot 202 DP1176551	E3 Environmental Management	NSW Health Administration Corporation Leased to Newcastle City Council
Lot 11 DP826092	E3 Environmental Management SP2 Classified Road	The State of NSW
Lot 9 DP826092	E3 Environmental Management	TfNSW (RMS)
Lot 41 DP1176191	SP2 Health Services Facility SP2 Classified Road	NSW Health Administration Corporation

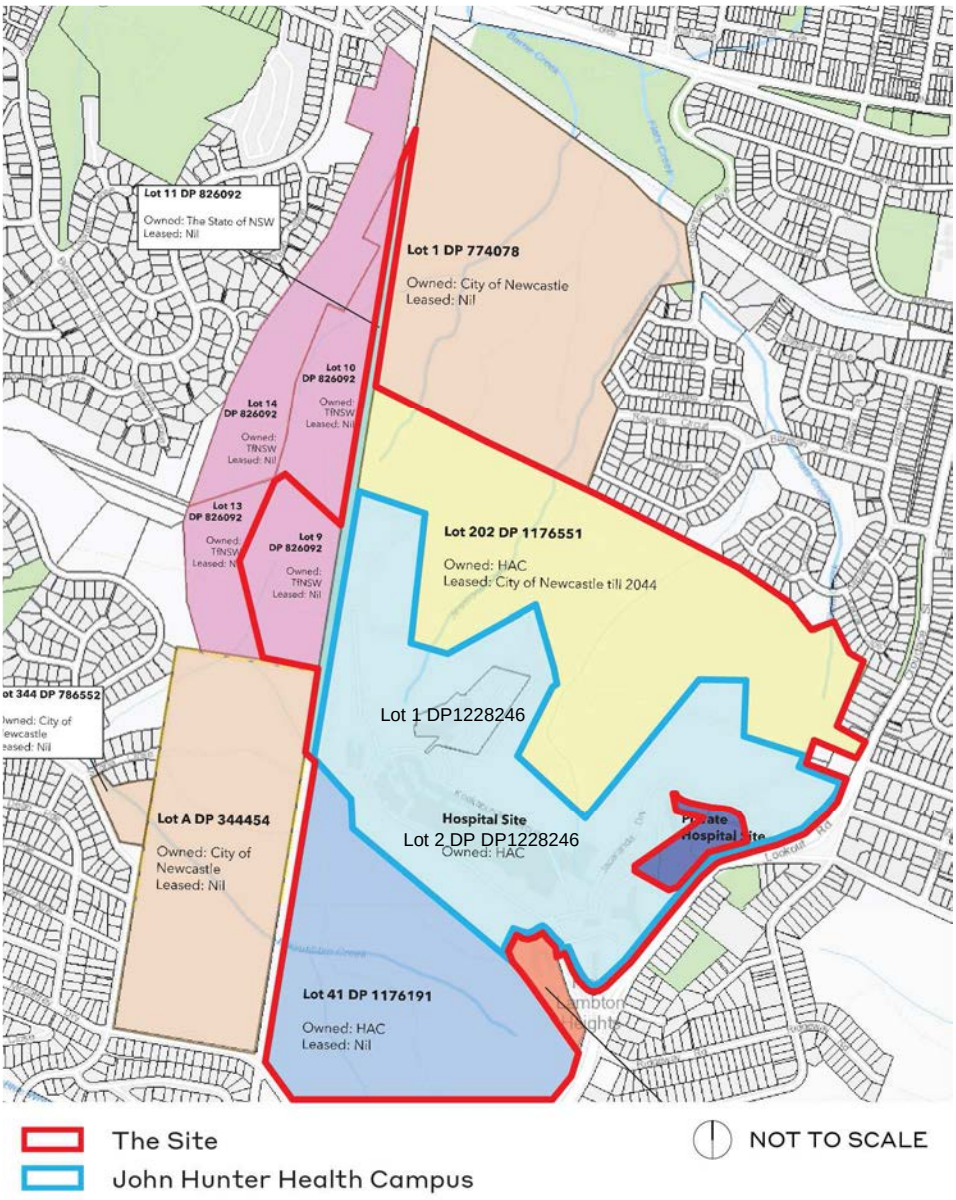

Figure 11 Development and lot and land ownership details

Source: Health Infrastructure NSW

2.3 John Hunter Health Campus

JHHC comprises the John Hunter Hospital (JHH) and John Hunter Children's Hospital, Royal Newcastle Centre, the Rankin Park Rehabilitation Unit and the Nexus Unit (Children and Adolescent Mental Health Unit) (see **Figure 12** below).

JHHC is a Level 6 Principal Referral Hospital, providing the clinical hub for medical, surgical, child and maternity services within the HNELHD and across northern NSW through established referral networks. Other services at the campus are the HMRI, Newcastle Private Hospital and the HNELHD Headquarters.

The existing buildings that sit within the campus have largely been delivered over the past 30 years. The main JHH building opened in 1991 and has over the years undergone extensions and additions which defines the current profile of the campus.

The campus is owned by the NSW Health Administration Corporation (see **Table 2**). Works will occur within the JHHC and on adjoining land. An aerial photograph of the JHHC is shown at **Figure 12**.

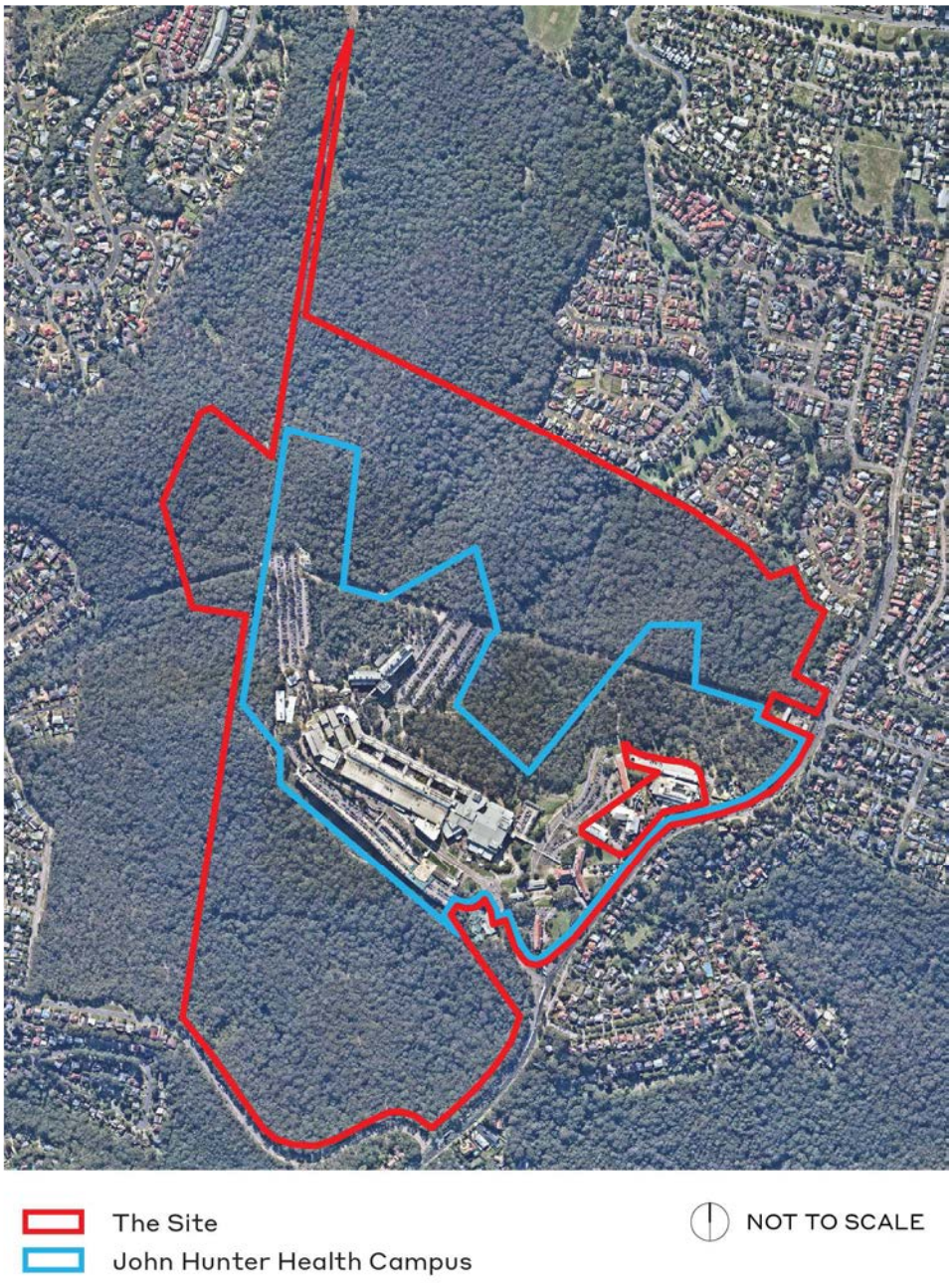

Figure 12 Aerial overview of the site and JHHC

Source: Nearmap, Ethos Urban

2.4 Existing Development

The JHHC is composed of a series of buildings linked by bridges, pathways and minor roads. The main John Hunter Hospital Building is located in the centre of the site, with the Nexus Unit connected to this main building to the west and the Royal Newcastle Centre adjacent to the east. A multi-level carpark is located to the south of the main Hospital building, whilst a range of at grade parking is provided to the north and east.

These central buildings are surrounded by an internal road network, landscape works and pedestrianised spaces that provide access to and between each building. A series of smaller buildings are located in the east, along Lookout Road including the Newcastle Private Hospital, Rankin Park, Croudace House, Ronald McDonald House and a number of car parks.

A general arrangement plan of the existing development on the site is shown at **Figure 13** and photos of the existing development are shown at **Figure 14** to **Figure 21**.

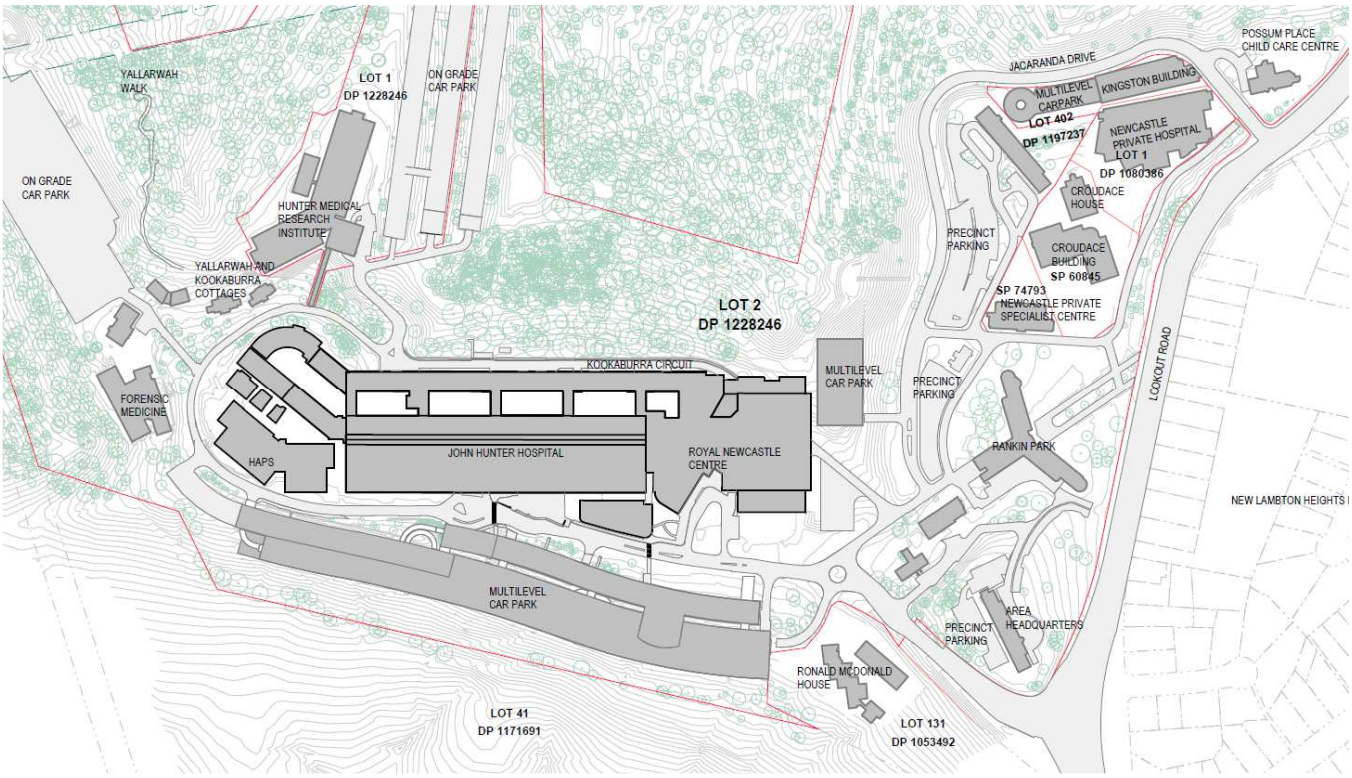

Figure 13 General arrangement of the current development on the site.

Source: BVN

Figure 14 Main entrance of the JHH

Figure 15 Ambulance parking bay of JHH

Figure 16 Kookaburra Circuit

Figure 17 HMRI Building, in the northwest of JHHC

Figure 18 North-east of Kookaburra Circuit

Figure 19 North-east of Kookaburra Circuit

Figure 20 At-grade carparking, northeast of JHHC

Figure 21 At-grade carparking, northeast of JHHC

Source: Ethos Urban

2.5 Topography

The topography of the site is dominated by a broad east-west trending ridge, on which the existing hospital development is concentrated. The site of the proposed acute services building is situated on the north facing flank of the ridge with slopes of approximately 10° down to the north. A survey is provided at **Appendix A**.

2.6 Vegetation

The site is within the Sydney Basin Bioregion, which extends from north of Batemans Bay to Nelson Bay, and West to Mudgee. The site encompasses patches of the Jesmond Bushland Reserve. Remnant bushland in Jesmond Bushland Reserve provides a movement corridor for fauna to nearby Reserves including Blackbutt Nature Reserve to the southeast which comprises over 180 ha of native bushland. Vegetation in this area is characterised by open forest and woodland and is currently used for recreational activities such as cycling and bushwalking.

There is formal landscaping on the site, located in limited patches at several locations around the main building entrances. A number of exotic trees, low lying gardens and lawn areas are also located on the site in more informal landscaped areas.

2.7 Heritage

The JHHC contains the following items of local heritage significance under NLEP 2012 that are located in the eastern part of the campus and are not in proximity of the proposed works. A map identifying their location is shown below.

- I356 – Rankin Park Hospital – Local
- I357 – Remnant garden – Croudace House – Local
- I358 – Croudace House - Local.

Rankin Park Hospital - Rankin Park Hospital is listed for its significant role the hospital has played in the development of health care facilities in the Hunter Region historically, and its ongoing role in this field. The buildings are also of unusual architectural style in a prominent location. The curtilage of this listing extends well outside of the footprint of the building of significance, though no justification for this is provided in the relevant listing under NLEP 2012.

Croudace House - Croudace House is not located on the development site but is in immediate proximity of the development. It is significant for its association with Thomas Croudace, who served as Mayor of Lambton Council three times and was instrumental in forming Lambton Park and the School of Arts. The house is also evidence of early use of larger buildings for health care services during the 20th century.

Remnant Garden – Croudace House - As above, this heritage item is not located within the development site, but it is in immediate proximity of the development. It involves many remnant older trees and shrubs as part of Croudace and early hospital landscape. Plants include Australian Red Cedar, Brazilian Peppercorn Tree, Bunya Pine and Tuckeroos. This garden is of historical, aesthetic, social and horticultural value within the Newcastle area.

2.8 Bushfire

The JHHC site is located within a bushfire prone land zone. The predominant hazardous vegetation identified surrounding the site is consistent with a forest vegetation classification, specifically the Hunter Macleay Dry Sclerophyll Forest. This Category 1 Bush Fire Prone Vegetation surrounds the site. Existing Asset Protection Zones separate the existing site infrastructure from the significant bushfire hazard, particularly from the highest risk aspects to the west and north of the site leading from the forest vegetation. An assessment of Bushfire is provided at **Section 0**.

2.9 Geotechnical

The site is within the Gosford-Cooranbong Coastal Slopes Mitchell landscape, which comprises hills and sandstone plateau outliers of Triassic Narrabeen sandstones, with extensive rock outcrop and low cliffs along ridge margins. The soil landscape is characterised mostly by the Killingworth soil of undulating to rolling hills and low hills on the Newcastle Coal Measures of the Awaba Hills region.

The site is undermined by abandoned coal mine workings of the Lambton Colliery in the Borehole Seam. Workings were by bord and pillar method and the proposed development area of the acute services building lies over worked bord and pillar workings at a depth to seam of about 80-100m. The land is within a declared Mine Subsidence District.

The subsurface strata below the site of the acute services building comprises a shallow depth of residual soil over variable strength rock comprising sandstone, pebbly sandstone and conglomerate. The Victoria Tunnel coal seam was encountered at depths between zero and 14 metres below the surface.

The regional groundwater level lies at a level below depth of over 70 metres below ground surface.

2.10 Acid Sulfate Soils

Acid sulfate screening tests were undertaken, and the results indicate a low potential for acid sulfate soil rock drainage.

2.11 Contamination

The site has historically comprised bushland with no formal use up until the construction of the John Hunter Hospital in the mid-1980s. Detailed site assessment has confirmed that there are no indications of contamination or anthropogenic waste (including asbestos or other hazardous materials). No contamination was identified in excess of human health or ecological criteria.

2.12 Flooding

The site is located on a regional high point and therefore is not affected by large scale regional flooding. Multiple drainage gullies are located within the site which currently convey runoff from large storm events to their associated discharge locations. These gullies are indicated as ‘very low flood risk’ as per Council’s flood mapping. Therefore, the site is only affected by localised flooding from site runoff.

2.13 Helipad

There is an existing helicopter landing pad located on the roof of the multi-level car parking facility to the south of the JHH building.

2.14 Road Network, Accessibility and Parking

The hospital campus is bound by Kookaburra Circuit, which provides access to Lookout Road (A37). Kookaburra Circuit connects to Lookout Road from the south, and then provides a vehicular route around the boundary of the hospital campus and provides access to Lookout Road to the north of the hospital precinct. Jacaranda Drive provides vehicular access to the north-eastern portion of the precinct, linking to both Lookout Road to the east and Kookaburra Circuit to the south.

Figure 22 Local road network

Source: GTA Consultants

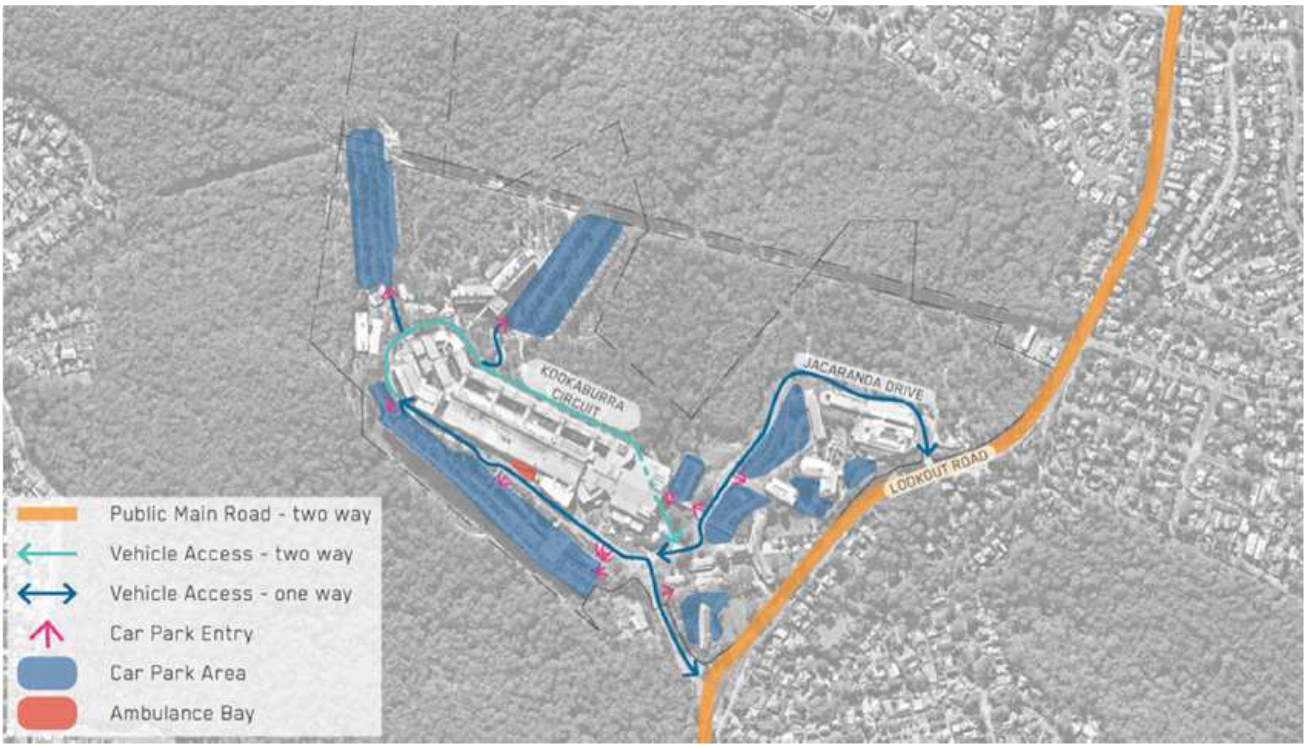

Figure 23 Existing Access Arrangements

Source: BVN Architects

There are currently several staff and visitor car parks across the campus with a total of 3,494 car spaces distributed as outlined in **Table 3**.

Table 3 Existing car parking on site

Location	Staff, Fleet, Other	Public	Total
Car Park 1, 2,3	1,154	640	1794
Forensic Science	15	0	15
Car Park 4	577	0	577
Car Park 5	146	0	146
Kookaburra Circuit	108	0	108
Car Park 6	21	324	345
HNELHD Transport Vehicle Compound	20	0	20
Car Park 7	69	0	69
Car Park 8	107	0	107
Car Park 9	32	23	55
Child Care Centre	17	0	17
Car Park 10 A, B	175	16	191
Ronald McDonald House	20	0	20
Loading Dock	11	0	11
Pathology North	19	0	19
Total	2,491	1,003	3,494

2.15 Public Transport

There is currently one bus stop provided at the main entrance to the hospital on Kookaburra Circuit, which is serviced by four bus routes, as follows:

- Route 11 – Charlestown to Newcastle via Jesmond
- Route 13 – Glendale to Newcastle via Cardiff & John Hunter Hospital
- Route 26 – Wallsend to Newcastle West via Kotara & Newcastle Interchange
- Route 42 – Wallsend to John Hunter Hospital

2.16 Surrounding Development

The hospital campus is located in the western suburbs of Newcastle, west of the Newcastle CBD. The site is surrounded by the following development.

- To the north is a large expanse of bushland. This bushland is approximately 150ha in size. Further to the north are the suburbs of Jesmond and Lambton, which are characterised by low density residential housing.
- To the east of the site is Lookout Road, which runs north-south from North Lambton to Hillsborough. Adjacent to Lookout Road is the suburb of New Lambton, characterised by low density residential housing. Further east of this is Adamstown and the train line, which provides services through Newcastle as well as south to Sydney and north-west towards Maitland.
- To the west of the site is the extension of the Blackbutt Nature Reserve. Further west are the residential suburbs of Rankin Park and Elermore Vale.
- To the south of the site is the Blackbutt Nature Reserve. Beyond this are the suburbs of New Lambton Heights, Cardiff Heights and Garden Suburb, as well as the heavy rail train line.

Figure 24 Bushland to the north of JHH

Figure 25 Residential suburb of New Lambton Heights to the east

Figure 26 Bushland to the west of the site

Figure 27 Intersection of Lookout Drive and Kookaburra Circuit to the south

2.17 Newcastle Inner City Bypass

The NSW Government is constructing a 3.4km bypass between Rankin Park and Jesmond directly adjacent the JHHC site (see **Figure 28**). This section of the bypass is the final section (of 5 sections), first started in the 1980s to provide an orbital road linking Newcastle's radial road network, connecting the Pacific Highway at Bennetts Green and the Pacific Highway at Sandgate.

As part of the bypass, a new interchange access to the JHHC will be available in both directions, improving access to the north of the campus.

The proposed bypass aims to improve the performance of the existing travel route between Rankin Park and Jesmond with the objective to meet future traffic demand, reduce travel times and improve road safety. These traffic improvements will ensure connectivity to the JHHC. This final section of the bypass is due for completion prior to the delivery of ASB development.

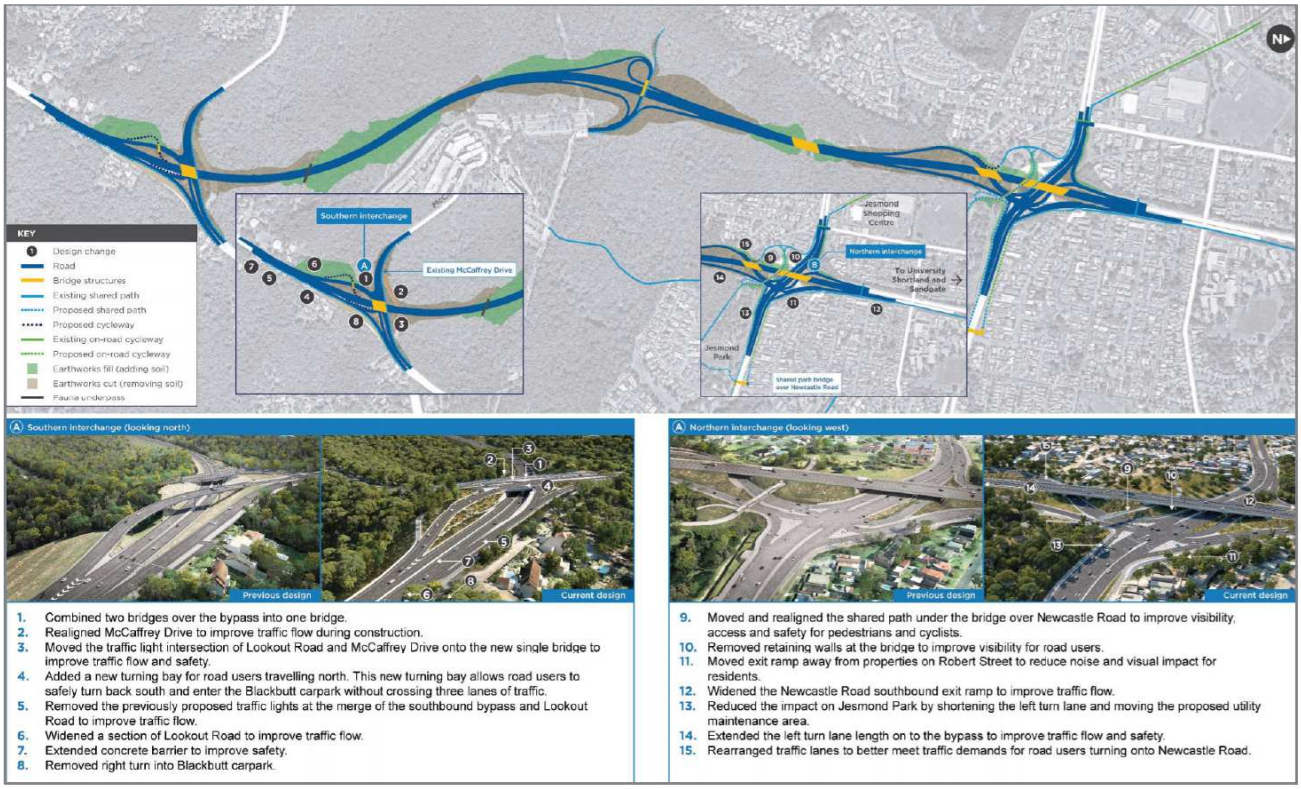

Figure 28 Newcastle Inner City Bypass (Rankin Park to Jesmond)

Source: TfNSW Newcastle Inner City Bypass – Project Update (July 2020)

3.0 Description of the Development

This chapter of the report provides a detailed description of the proposed development. Architectural drawings are included at **Appendix C**.

The SSD Application seeks approval for the following development:

- Construction and operation of a new 7 storey Acute Services Building (plus 4 semi-basement levels) to provide:
  - an expanded and enhanced Emergency Department;
  - expanded and enhanced intensive care services - Adult, Paediatric and Neonatal;
  - expanded and enhanced Operating Theatres including Interventional Suites;
  - an expanded Clinical Sterilising Department;
  - Women's Services including Birthing Unit, Day Assessment Unit and Inpatient Units;
  - integrated flexible education and teaching spaces;
  - expanded support services;
  - associated retail spaces;
  - new rooftop helipad;
  - new semi-basement car parking;
- Refurbishment of existing buildings to provide:
  - additional Inpatient Units;
  - expanded support services;
- A new Hospital entry canopy and works to the existing drop off;
- Link bridge to the Hunter Medical Research Institute;
- Landscape works;
- Site preparation including bulk earthworks, tree removal, environmental clearing, cut and fill;
- Mines grouting remediation works;
- Construction of internal roads network and construction access roads and works to existing at-grade carparking;
- Connection to the future Newcastle Inner City Bypass; and
- Inground building services works and utility adjustments.

A photomontage of the proposed development is shown at **Figure 29** and **Figure 30**.

Figure 29 Artist impression of the proposed new main entry and canopy (viewed from the east)

Source: BVN Architects

Figure 30 Artists impression of the new ASB (viewed from the north)

Source: BVN Architects

3.1 Design Principles

The planning and design principles adopted for the proposed development of the site are as follows:

- **Access to the precinct** – maximise the additional access granted by the construction of the Newcastle Inner City Bypass, which will enable greater access to and across the site, and alleviate some of the existing congestion.
- **Access through the precinct** – separate pedestrian flows from vehicular flows will provide more clarity and integration to users, as well as improved access and limited interruptions for emergency travel.
- **Connection to precinct partners** – improve connectivity between the various users and services provided on the site, to allow for an integrated model where overlap offers the greatest opportunity for cross precinct connectivity.
- **Designing with Country** – maximise the site's location embedded within natural bushland to provide connection and integration of Country through access to views, provision of landscaped courtyards, clearly established public paths to travel and reference to the environment through colours and built articulation. The large Indigenous population served by the existing hospital presents further opportunities to reflect on the local Aboriginal heritage and teachings, and the integration of this into the development.

3.2 Numerical Overview

The key numeric development information is summarised in **Table 4**.

Table 4 Key development information

Component	Proposal
Site area	1,182,800m^2
Gross Floor Area of the ASB	59,000m^2
Maximum Height	53.1m
Storeys	7 storeys (plus 4 semi-basement levels)
Staff	See **Section 3.6**.
Car spaces	894
Bicycle Parking Spaces	Staff – 24 Visitor - 24
End of Trip facilities	6 showers
Loading dock spaces	No change – utilising existing JHH facilities

3.3 Demolition

The proposal includes demolition of existing structures to facilitate the proposal, including the following:

- Minor building elements to the existing entry and roof top of JHH.
- Minor road elements to the south of the existing entry to JHH, and associated kerbs.
- Adjustments to the multi-deck carpark to the southwest of the existing JHH.
- Elements of the on-grade car parking in the north-western portion of the site.
- Minor building elements to the existing entry and roof top of JHH, and existing ward link which requires widening.
- JHH Façade, both North and South to accommodate new Inpatient Unit's and links

A demolition plan is provided at **Appendix C**.

3.4 Site Preparation

Earthworks are required for the construction of both the new building and new access roads. Preliminary design modelling estimates that the volume of fill required to construct the proposed road network is approximately 146,000m^3 including 113,000m^3 for the road network and building pads for the initial phase of the development, and

33,500m^3 for the north road phase of the development. The amount of cut and fill required for the site is shown at **Figure 31**.

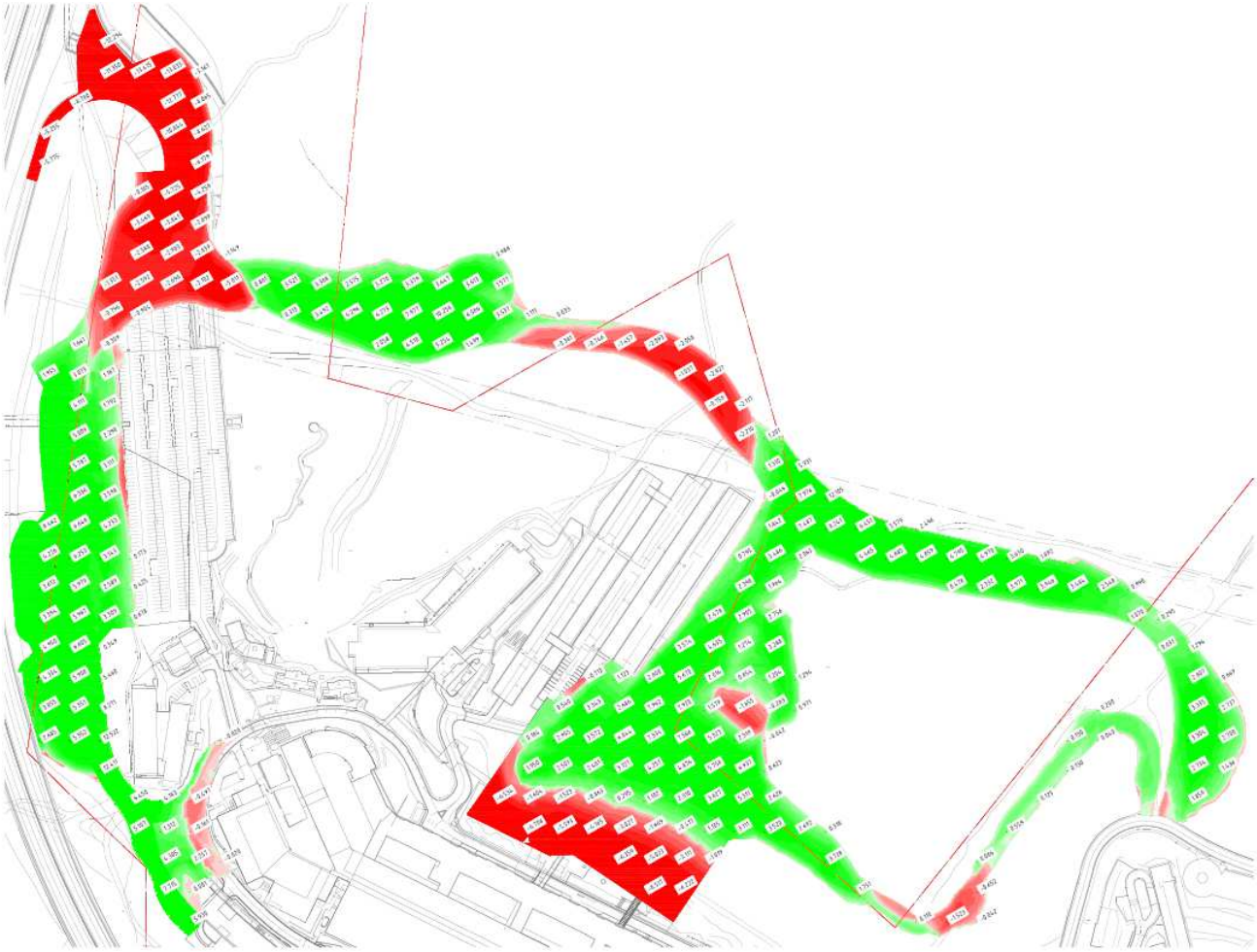

Figure 31 Cut and fill plan for the site (green showing fill, red showing excavation required)

Source: Northrop

3.5 Tree Removal, Tree Planting and Tree Canopy

To accommodate the proposal and associated bushfire protection zones, tree removal will be required as discussed further at **Section 5.14** and **Section 5.15**. The development proposes the creation of significant additional new landscaped areas (see **Section 3.12**) with up to 252 trees proposed to be planted across the site. Overall, the JHHIP project will achieve a tree canopy of 69.89ha or 58% of the project site.

3.6 New Acute Services Building

Beds and Treatment Spaces

The total increase of overnight beds and treatment spaces is approximately 18%.

Operating Hours

The hospital and acute services building will operate 24 hours a day, seven days a week.

Staff (Operational Jobs) and Visitor Details

Staff details are provided as follows:

- Total existing Full Time Equivalent– 3900 (incl. HNELHD, HealthShare & Pathology. Excl. Newcastle Private and HMRI).

- Proportion of staff present on weekdays – 75%
- Proportion of staff present morning shift – 50%
- Proportion of staff present afternoon shift – 30%
- Proportion of staff present night shift – 20%

Future staff projections are unknown but have been based on a growth forecast, including:

- No increase until 2027; and
- 7.5% increase by 2036.

In summary approximately 210 operational jobs are expected to be created although this will be refined through detailed workforce planning.

Visitor Details are provided at **Table 5**.

Table 5 Visitor (Public) details

	2018/2019	2026/2027	2031/2032
Emergency Department presentations	81,000	89,364	95,773
Outpatient service events	358,675	418,282	461,818

Source: GTA Consultants

Shift Change

Shift change generally occurs at 1:30pm.

Building Height and Massing

The new Acute Services Building (ASB) is located over seven storeys, situated to the north of the existing John Hunter Hospital building. The ASB will be fully integrated with the existing hospital campus and adjacent clinical buildings. The ASB will have a maximum height of RL124.1 (53.1m when measured from ground level).

The ASB will comprise of four articulated 'fingers' which are separated by recessed courtyards in between. These fingers will break up the overall mass, as well as provide natural light to the building.

Bridges to and from other buildings around the site will also connect to this southern spine, including from the HMRI to the west and John Hunter Hospital to the south.

The built form elements of the new ASB are shown in the massing and building articulation diagrams prepared by BVN at **Figure 32** below.

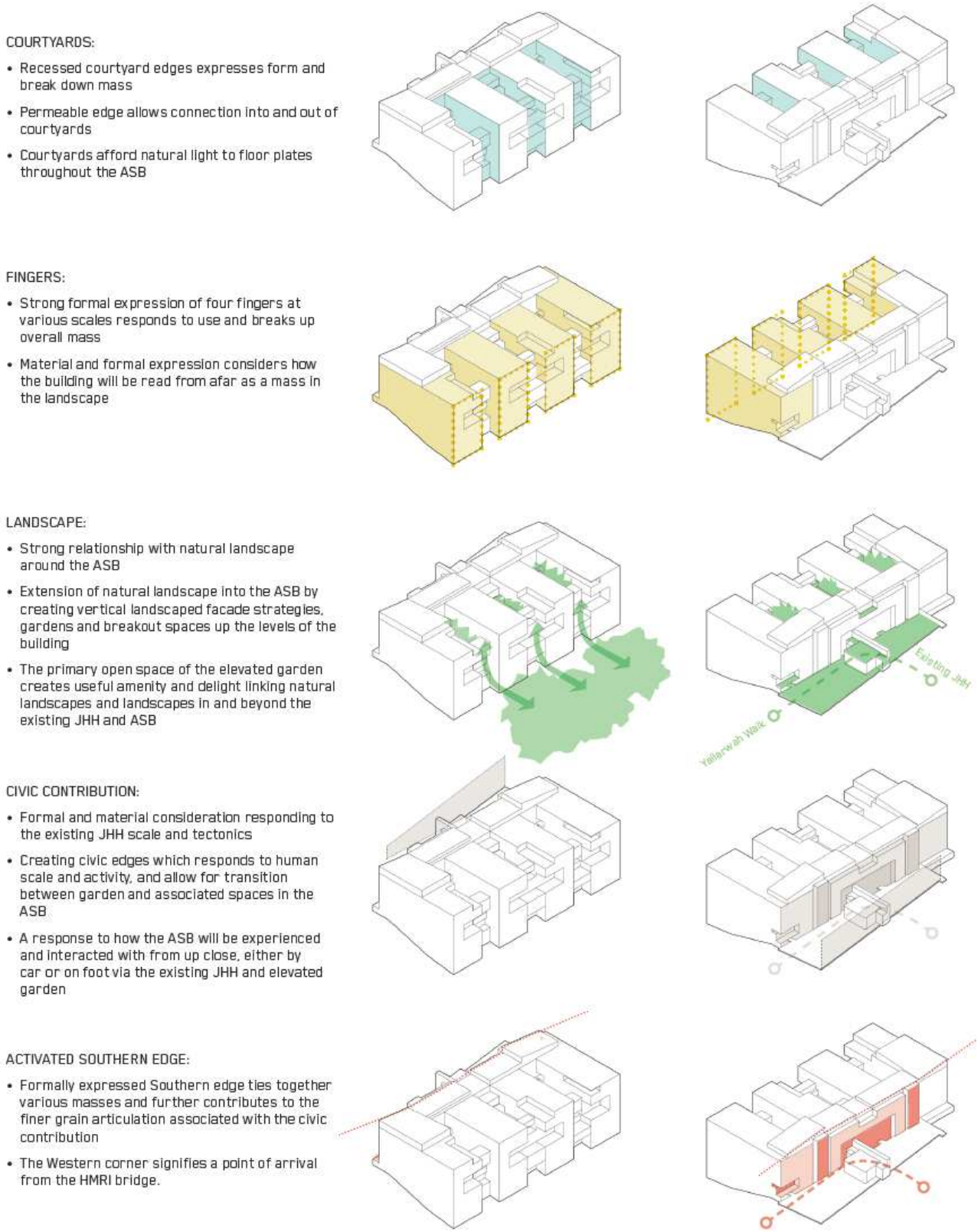

Figure 32 Massing and building articulation diagram

Source: BVN

The ASB building has been designed to respond to the clinical functionality and needs of the precinct. In order to increase precinct connectivity across the existing campus, the proposed ASB will locate services requiring immediate access between JHH and the ASB on levels 0-3 to enable direct horizontal connectivity with all floors of the existing JHH building. The relationship between the two buildings is shown at **Figure 33**.

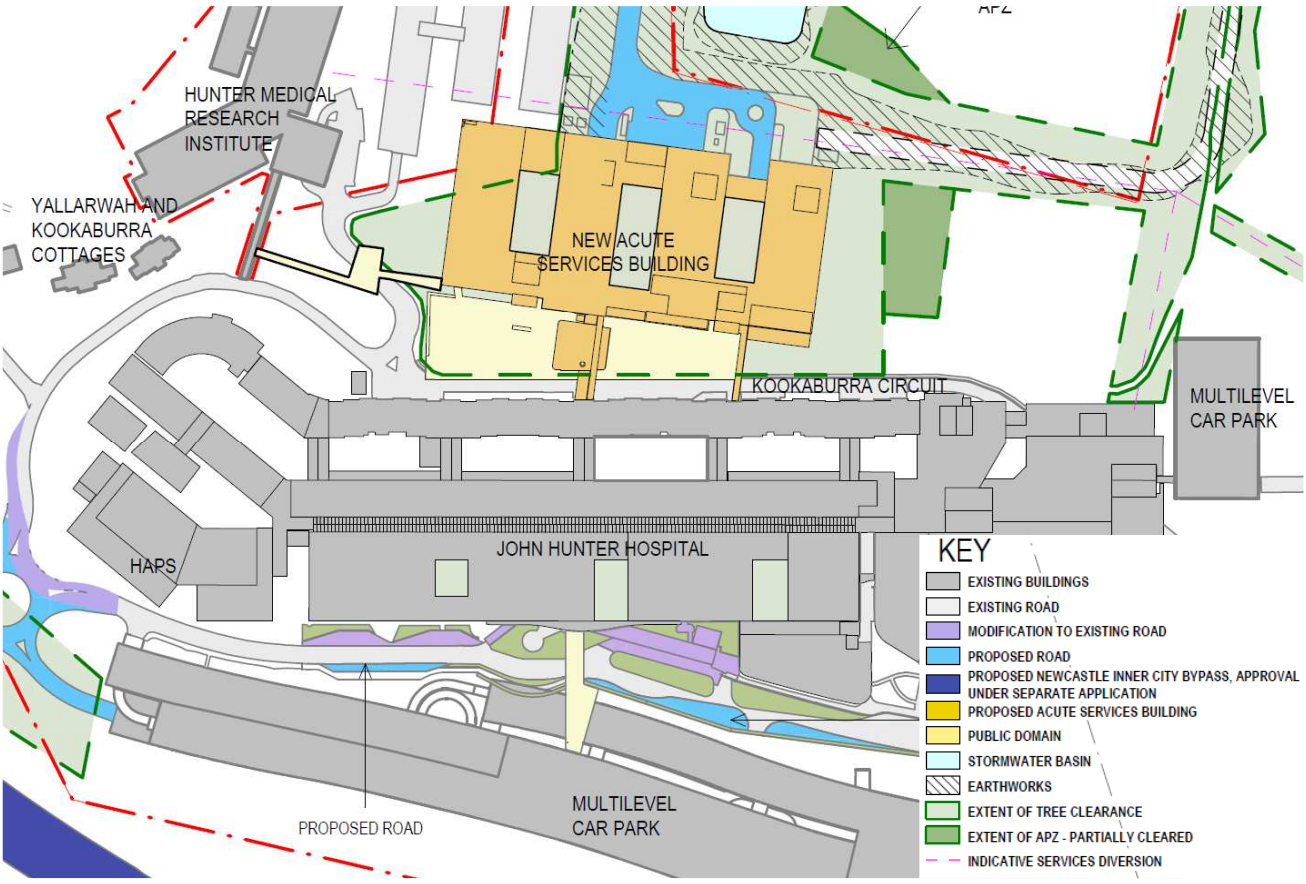

Figure 33 ASB and existing John Hunter Hospital site plan

Source: BVN

Southern Entry Canopy and Drop Off

The existing southern entrance to the JHH will remain the main entrance to both the JHH and ASB. A new canopy above the entrance will be constructed, which will provide a covered walkway to the existing car parking to the south. New landscaping and seating will also be incorporated at this entrance.

Both bus stops and short-term vehicle bays are provided to meet the needs of public transport and private vehicle arrivals. This drop-off area also has direct access to the car parking to the south, with a covered walkway and signage improving navigability. The design of the revised entrance to JHH and southern canopy is shown at **Figure 34.**

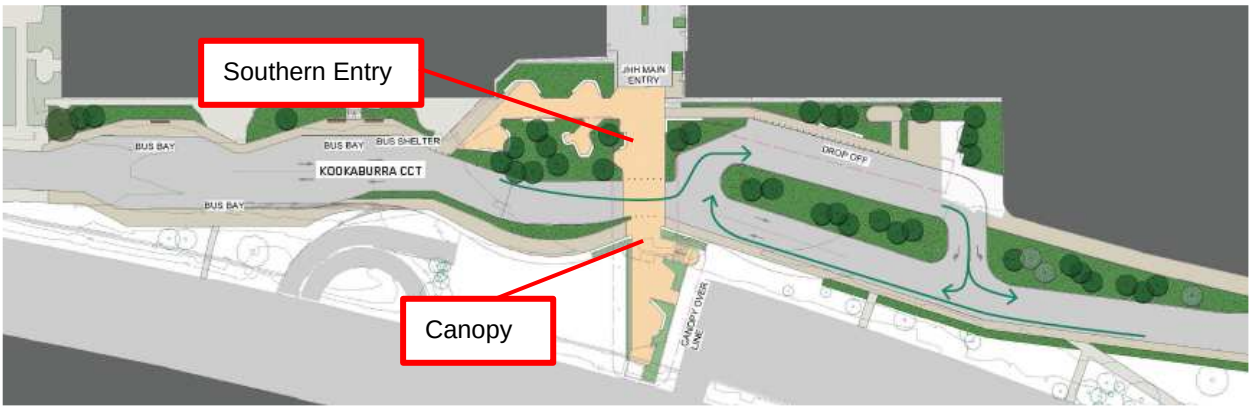

Figure 34 Main entry drop off and southern canopy

Source: BVN

ASB Emergency Drop Off

Emergency entry will be from Level 0 on the south side of the ASB. Nine ambulance bays are provided in the eastern portion of the emergency department parking area. The emergency parking arrangement is shown at **Figure 35**. This entrance will allow a separate space for public vehicles, such as cars and taxis.

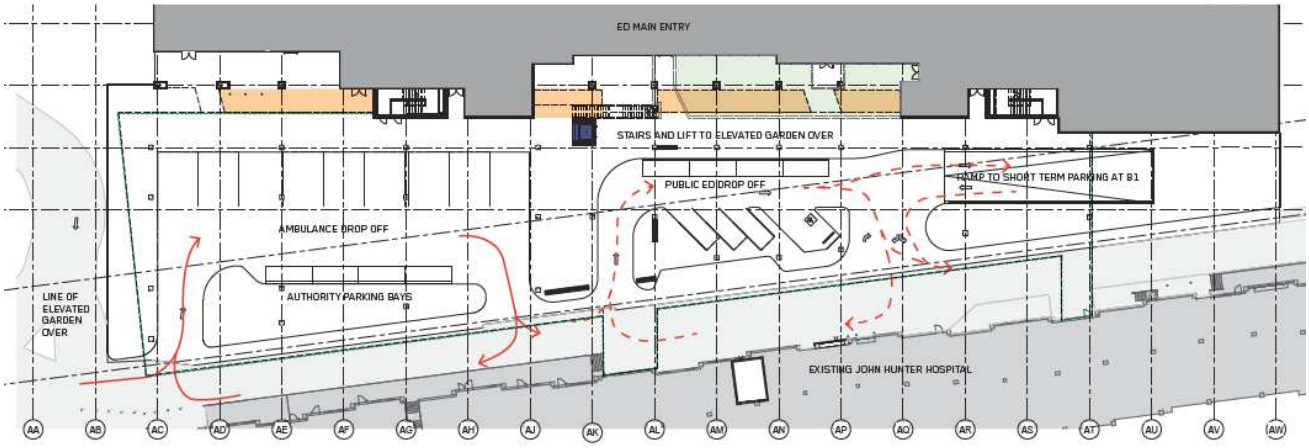

Figure 35 ASB Emergency Department drop off

Source: BVN Architects

Helipad

It is proposed that an additional helipad be constructed on the western portion of the roof of the new ASB, which will become the main helipad servicing the JHHIP. This location was chosen due to sufficient amount of rooftop space available, prevailing winds and existing flight path arrangements. Further, the site was chosen to be close to clinical services (ED and ICU). In the circumstances that it is required, the existing helipad on the southern carpark can operate in conjunction with the proposed new helipad. The proposed helipad arrangement on the ASB rooftop is shown at **Figure 36**.

Figure 36 Proposed helipad arrangement (level 7)

Source: BVN Architects

Retail

A small amount of retail space is to be provided on Level 1 of the ASB and Level 2 of the JHH. This retail will be ancillary to the hospital use, such as a florist, pharmacy or kiosk-type food and drink premises that will cater to the needs of the hospital and its users.

3.7 HMRI Bridge

A pedestrian bridge linking the ASB building to the HMRI building is proposed on level 1 of the ASB. The bridge is approximately 30 metres in length and will provide access from the ASB to the HMRI building for pedestrians, improving inter-precinct collaboration.

3.8 Refurbishment Works to John Hunter Hospital

Refurbishment works are proposed to existing facilities of the JHHC. Key refurbishment works include:

- Addition of an entry canopy at the JHH entry.
- Internal refurbishment of non-clinical support rooms, such as support services, retail, administration and pharmacy, as well as clinical rooms such as inpatient units.
- Upgrade to drop off and pick-up facilities at JHH entry.
- Creation of new courtyards within the existing JHH building envelope.
- Refurbishment of Mortuary internal cool room.
- External facade works related to vehicular access.

Internal refurbishment works will re-purpose spaces in line with the hospital's clinical, services and administrational needs. Areas to be refurbished are identified within the Architectural Plans at **Appendix C**.

3.9 Materials and Finishes

BVN Architects have selected a range of materials and finishes that reflect the existing hospital campus, surrounding bushland and connection with country. The base palette has been chosen to reflect the rich geology of the landscape, and utilises the colours of sandstone, tuff and claystone to inform the selection of coloured metal façade, which is also sympathetic to the lighter tones of the existing bricks of John Hunter Hospital.

The contrasting highlights of the ASB utilise the surrounding bushland to contrast the lightness of the base building materials and are proposed to be utilised to signal spaces of significance within the building. These will be balanced with dark oranges, browns and reds to complement the base palette, informed by the colours and textures of the surrounding landscape. The inspiration for the colour palette is shown at **Figure 37**.

Figure 37 The landscape and surrounding topography has informed the materials and finishes palette.

Source: BVN

The façade of the ASB utilises two key material 'skins', including a main outer skin, with articulated cut outs revealing a second skin beneath. A standing-seam metal façade type in a matte finish will be utilised for the main skin, to avoid reflectivity. The cut outs will comprise of smooth metal cladding, creating interest and breaking up the bulk and scale of the building. The façade articulation and use of materials is shown indicatively at **Figure 38**..

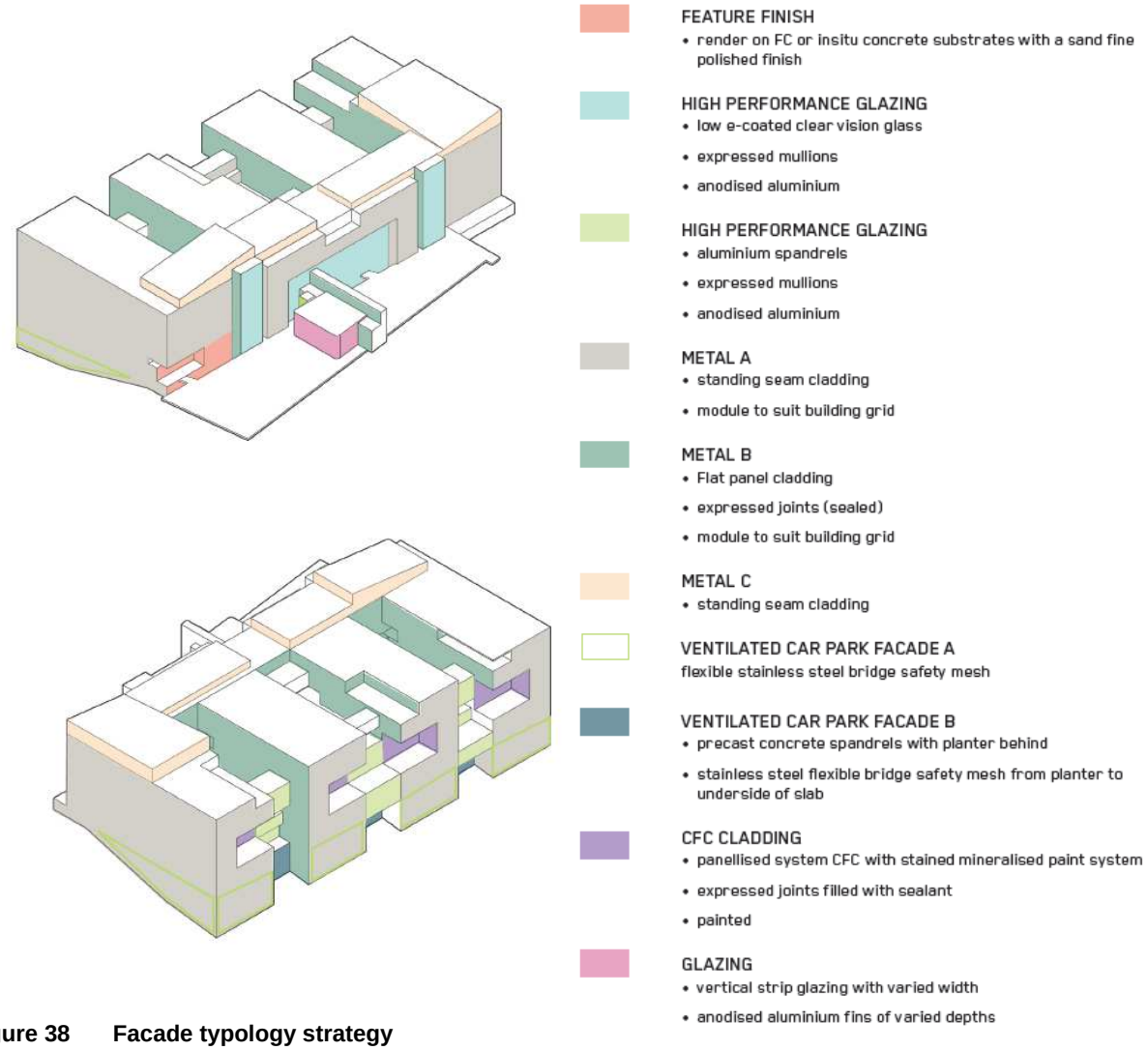

Figure 38 Facade typology strategy

Source: BVN

3.10 Signage

Approval for building signage zones is proposed in three locations:

- Both sides of the southern entry canopy; and
- To the edge of the slab of the elevated garden facing Kookaburra Circuit west.

This future signage will reflect the character of the precinct and the existing and ongoing use of the site. The signage will be of high quality and will indicate the use of the buildings or location of the emergency department. The signage zone dimensions are provided at **Table 6** below.

Table 6 Signage dimensions

Signage	Dimension
John Hunter Canopy Signage zone (x2)	20 metres in length by 0.7 metres in height
Emergency Sign zone	16 metres in length by 1.1 metres in height

3.11 Car Parking and Access

3.11.1 Vehicle Access

This application seeks approval for improvements to the vehicle access arrangements, including:

- A new road connection to the Newcastle Inner City Bypass;
- A new northern road;
- Two roundabouts within the JHHC;
- New access arrangements for emergency vehicles, public visitors, and staff; and
- Amendments to drop off arrangements at the main entrance of the JHH.

The new northern road will be delivered in two stages and will provide vehicle circulation around the JHHC (see discussion below and **Section 3.19**).

The main public entry for both JHH and the ASB will be via the existing entrance to JHH to the south of the building from Kookaburra Circuit. This entrance will also have several short-term parking spaces for pick-up/drop off arrangements. Once passengers have been dropped off, drivers can continue on to the multi-level carpark to the south or other public parking on-site.

A new-multilevel car park is proposed below the ASB. Two car park accesses (separated for inbound and outbound) are proposed along the northern access road, intended to be primarily used by staff, visitors familiar with the site and service vehicles. One car park access is proposed along Kookaburra Circuit, intended to be primarily used by the public who have dropped off at the Emergency Department.

Emergency vehicles will access the emergency department on the southern side of the ASB. This drop-off area will operate in a clockwise direction, where vehicles can enter from Kookaburra Circuit and either drop off parallel adjacent to the entrance or in designated angle parking spaces. Once the drop off has occurred, vehicles can either exit back onto Kookaburra Circuit or proceed to the semi-basement car park ramp to access parking suitable for entering the ASB.

No changes are proposed to the loading and servicing arrangements currently utilised on site. This is discussed further at **Section 3.11.3**, **Section 5.5.9** and **Appendix G**.

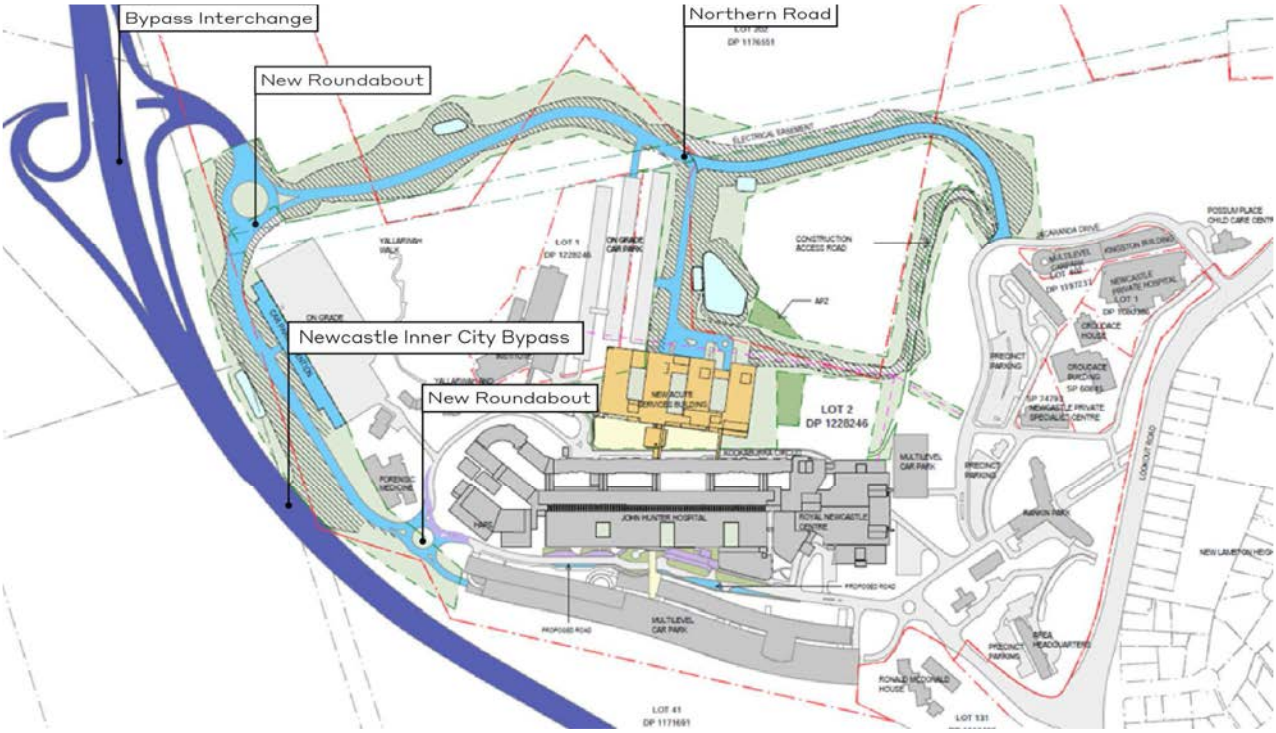

Figure 39 Proposed new road network

Source: BVN Architects

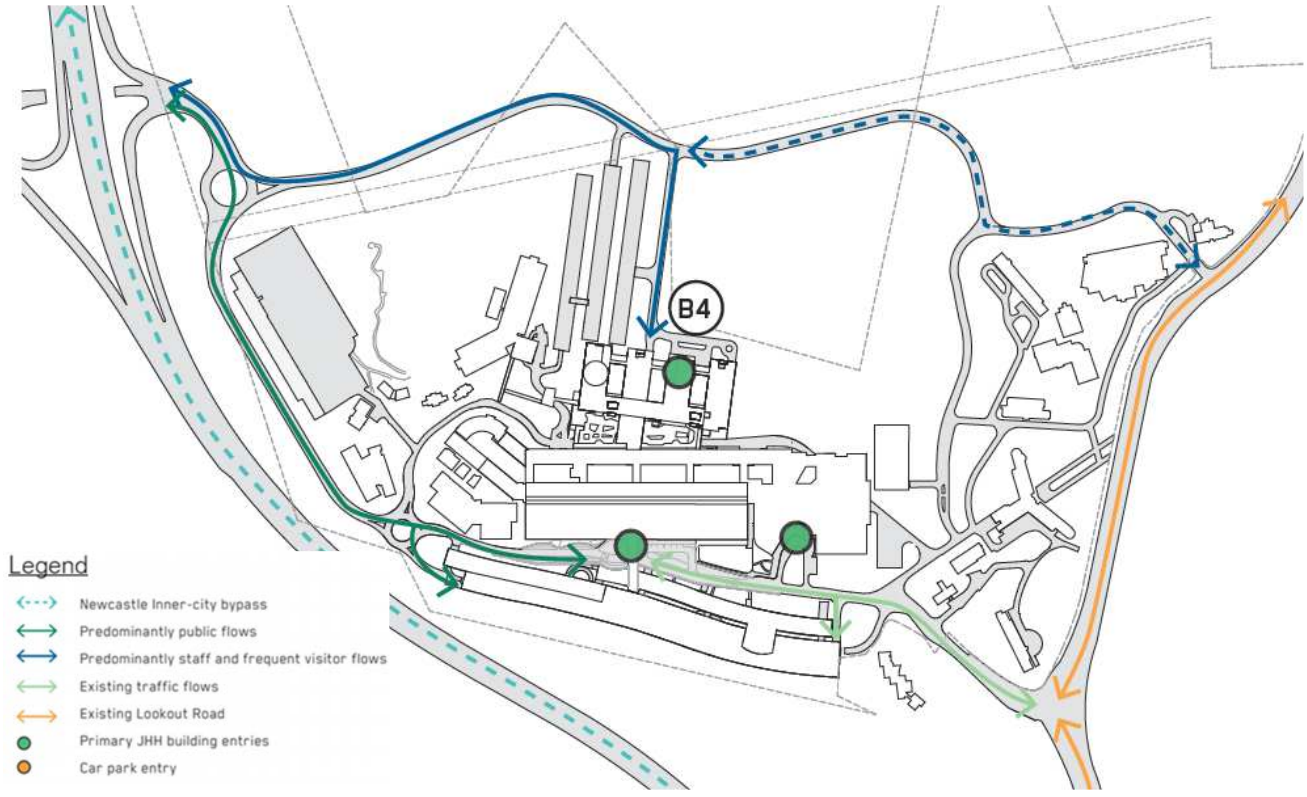

Figure 40 Vehicle access arrangements

Source: BVN Architects

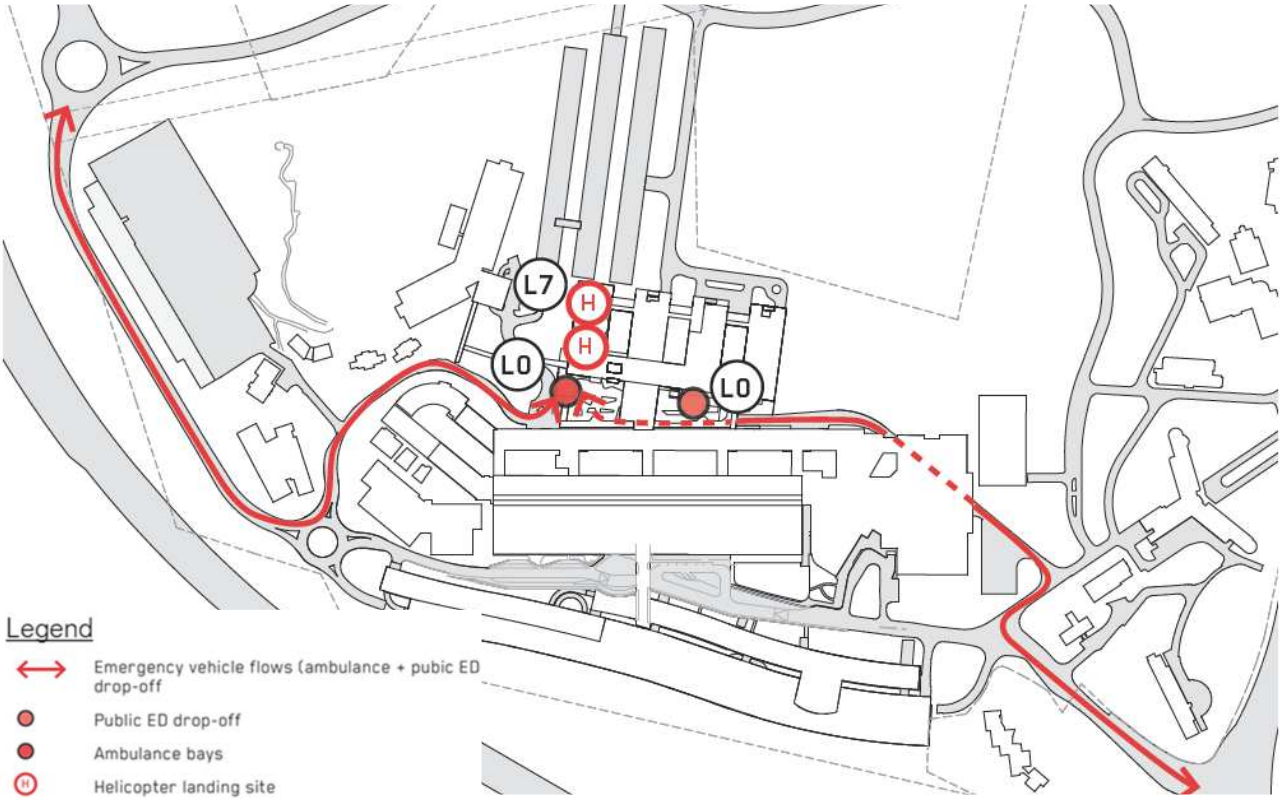

Figure 41 Emergency vehicle access arrangements

Source: BVN Architects

Northern Road

The new northern road will be delivered in two stages, as shown in **Figure 42**. The completed northern road will provide access from Jacaranda Drive in the east to the Newcastle Inner City Bypass once complete. It is proposed to deliver this road in two phases, including the main, western portion of the road delivered as part of the main works, and the second, 'eastern' phase of the road delivered as part of the second phase.

It is proposed to deliver this road as a second phase to enable the future growth and traffic flows on the site as the precinct continues to develop. There is an immediate need to connect to the Bypass and the delivery of the bypass includes construction of an interchange at the northern boundary of the Campus, providing the opportunity to provide a connection to the new road network around the site to improve traffic circulation to and from the new ASB.

The eastern Northern Road (Phase 2) will further integrate the Campus with the surrounding road network and will further improve traffic operation by reducing the demand on the ring road. The Phase 2 road is also required to enable greater access opportunities and will facilitate further growth and capacity for health uses within the Campus into the future. Accordingly, the proposal will facilitate future health uses on the site and is entirely consistent with the NSW State Priorities, Greater Newcastle Metropolitan Plan and Hunter Regional Plan by providing opportunities for future precinct activation and increased and improved health facilities.

This is discussed further in **Section 5.5.10**.

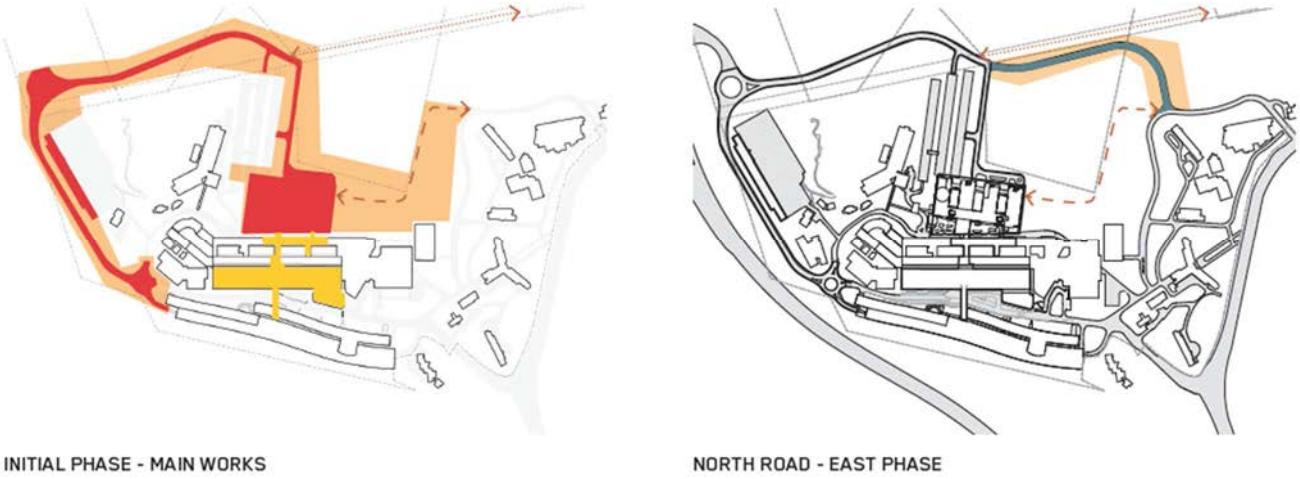

Figure 42 Phases of the northern road delivery

Source: BVN

3.11.2 Car Parking

894 new car parking spaces are proposed to be accommodated on site, across the various existing and proposed car parks on the JHHC campus. These are outlined in **Table 7** below.

Table 7 Changes to overall car parking supply.

Description	Location	Parking Supply Changes
Loss	Car Park 5 (HMRI)	-15
	Kookaburra Circuit	-68
	Car Park 4	-66
	Car Park 1	-43
Gain	Car Park 3	+70
	Car Park 4	+130
	ASB	+886
Total net change		+894

The delivery and amount of parking needed to service the site is discussed further in **Section 5.5.1**. In total, 4,843 parking spaces will be available across the campus.

3.11.3 Loading Facilities

The hospital is currently supported by a loading dock on Kookaburra Circuit near its intersection with Jacaranda Drive. The loading dock is able to accommodate five vehicles including articulated vehicles within formal loading bays, with further capacity for at least six additional B99 service vehicles to park to the north of the formal loading bays. A review of the potential loading requirements undertaken in March 2021 confirmed that the existing loading dock was capable of meeting the uplift in loading requirement demands of the proposal, and therefore, no additional loading arrangements are proposed.

3.11.4 Pedestrian Access

Activation of the public domain between the existing campus and proposed ASB has been incorporated into the design, including an expansive concourse over Kookaburra Circuit, connecting level 01 of the new ASB to the lower level of John Hunter Hospital, as well as the implementation of a central north-south pedestrian link between level 02 of the ASB and the main hospital entrance on the southern side of the existing hospital building. The central link will provide an efficient, legible cross campus pedestrian connection between the ASB and facilities near the main entrance, including car parking and bus stops.

3.12 Landscaping and Public Domain

Landscape drawings have been prepared by Urbis and are included at **Appendix E**. The landscape design has been informed by the following principles:

- **Place** – celebrate the surrounding native bushland and allow it to inform the landscape design.
- **Connected** – provide green spaces throughout the precinct that help to define the hierarchy of public domain, courtyards and enhance the connectivity of open spaces.
- **Accessible and inclusive** – allow for all spaces to be accessible by staff, visitors and patients, and ensure that all spaces are adaptable and agile.
- **Sustainable** – integration of infrastructure in the built environment and ensure that spaces are multifunctional and flexible.
- **Healing** – emphasise the connection with nature and natural materials, with semi-private areas for respite, community access and engagement.
- **Amenity** – provide adequate open space for staff, visitors and patients, as well as places for children's play.

The landscape plan has been designed to incorporate the indoor-outdoor connections to link the hospital buildings together, as well as integrate the campus within the wider landscape. The key landscape zones are outlined below.

JHH Arrival Forecourt - At the main entrance to the John Hunter Hospital is a spacious forecourt with greenery and bushland planting, visitor short term parking, pedestrian crossing and drop off facilities. A walkway canopy connects the hospital entrance with the existing carpark and new lift. The area adjacent to the main entrance is an intimate waiting area with a range of gathering and seating opportunities.

Elevated Garden - The elevated garden will be located on level 1 of the ASB, between JHH and the ASB. This space will sit above the emergency department entrance on level 0 of the ASB. The elevated garden will create a safe and peaceful environment that brings a familiar 'garden' feel and scale which introduces as much greenery as possible to allow for both individuals and small groups to gather.

ASB Courtyards – Three courtyard spaces are provided between the 'fingers' of the ASB. These courtyards will provide valuable visual amenity for adjacent wards and small spaces for rest and retreat. A mix of small trees and shrubs will respond to the solar access provided in the courtyards.

JHH Courtyards Refurbishment - Within the footprint of the existing JHH building three new courtyards are proposed as part of the refurbishment works that increase the amenity and usability of the internal space.

3.13 Lighting Strategy

All lighting will be designed and documented in accordance with AS/NZ standards 1680 and 4282-1997 Control of the obtrusive effects of outdoor lighting.

3.14 Environmentally Sustainable Development

The proposal is seeking approval from the Planning Secretary for an alternative certification process.

The project is targeting an equivalent 5 Star Green Star rating utilising the Green Building Council of Australia's (GBCA) Design and As-built rating tool (DAB) version 1.3. A 5 Star Green Star rating is considered 'Australian excellence' level. The ASB will be designed to 5 Star Green Star equivalent benchmark utilising the Green Building Council of Australia's (BCA's) Design and As-built rating tool (DAB) version 1.3. A 5 Star Green Star rating is considered 'Australian excellence' level. The project aspires to a 5 Star Green Star Rating or agreed alternative methodology for ESD outcomes.. In particular, the following initiatives will be incorporated in the proposed development:

- A building design that is responsive to the local climate and includes passive design measures to provide high quality indoor environments that to support the function of the building as a place to heal people. This translated into spaces that are thermally comfortable, have adequate access to fresh air and natural light, maximise the visual connection to the outdoor landscape, are acoustically adequate and where the presence of indoor air pollutants is minimised.

- Façade optimisation to ensure the project meets the energy efficiency requirements of NCC 2019 Section J while allowing high levels of daylight penetration, visual connection to nature and adequate glare management.
- Measures to reduce potable water consumption including water efficient fixtures and fittings and favouring drought tolerant vegetation in landscaped areas.
- Measures to reduce energy consumption including energy efficient building systems and controls adequately commissioned and tuned. Key energy saving measures include an automated building management system LED lighting and energy efficient mechanical systems.
- Provisions for the installation of a PV system supporting the HNELHD net zero carbon strategy.
- Adequate provisions to enable waste stream separation and reduction of waste sent to landfill.

unless otherwise agreed by the Planning Secretary, the Applicant must demonstrate that ESD is being achieved by either: (a) registering for a minimum 4 star Green Star rating with the Green Building Council Australia and submit evidence of registration to the Certifier; or (b) seeking approval from the Planning Secretary for an alternative certification process.

3.15 Infrastructure and Services

3.15.1 Electricity

Ausgrid has confirmed the existing high voltage network has capacity to accommodate the power requirements of the proposed ASB and that no additional off-site infrastructure works are required to connect the ASB load to the Ausgrid network.

3.15.2 Communication Infrastructure

The JHHC has an existing telecommunication lead-in route accommodating telecommunications services from a variety of carriers. These lead in services support communication infrastructure provision for the proposal.

3.15.3 Sewerage

The proposal will connect to the existing 225mm Diameter Hunter Water Corporation sewer connections at the northwest side of the Hunter Medical Research Institute. This sewer main size is deemed adequate and Hunter Water has confirmed the utilities can support for the new loads expected from the proposal.

3.15.4 Water

The proposal will connect to the existing 500mm Hunter Water Corporation water main connections at the eastern part of the Kookaburra Circuit is located within the John Hunter Health Campus. This water main size is adequate and Hunter Water has confirmed the utilities can support the new loads expected from the proposal.

3.15.5 Fire Services

The existing 500mm Hunter Water Corporation water main at the eastern part of the Kookaburra Circuit is located within the John Hunter Health Campus. It is proposed to reuse an existing fire services water connection to the Hunter Water Corporation Main to respond to any fire services needed.

3.15.6 Natural Gas

The existing 100mm 1050kPa steel Jemena gas main at the northern side of the existing JHH site is within the campus. It is proposed to reuse the existing natural gas connection which has been confirmed as adequate to support the requirements of the proposal.

3.16 Construction Job Creation

A high-level assessment of the economic impact of the John Hunter Health and Innovation Precinct Project has been conducted using the Australian Urban Research Infrastructure Network's Economic Impact Analysis Tool which estimates 1,613 construction jobs (calculated as follows: CIV x 9 / number of years construction). This will be reviewed again following the engagement on the Principal Contractor and will continue to be monitored throughout the project.

3.17 Construction

Hours

The proposed general hours of construction are as follows:

- Monday-Friday: 6:00am-6:00pm
- Saturday: 7:00am-5:00pm
- Sundays and public holidays: No works

In order to minimise disruption to the community, the above extended hours are proposed for normal construction activities. The works are critical public infrastructure being delivered to provide essential health services to the local Newcastle, HNELHD and Northern NSW communities. Extended construction hours are needed in order to:

- Reduce the length of the project to meet the critical project delivery timeframes driven by:
  - The need to provide clinical services to meet the significant forecast population growth, ageing population and Socio-economic status of residents within the JHHIP's tertiary catchment;
  - The need to replace current infrastructure to provide contemporary patient centred models of care in the delivery of Level 6 tertiary services; and
  - Significant increased demand for acute, sub-acute and ambulatory health services.
- Allow construction vehicles to avoid peak road network times and shift changeover times to reduce the impact on the surrounding road network; and
- Minimise the impact on hospital operations during core business hours such as planned surgery and outpatient clinics.

This is discussed further at **Section 5.6**.

3.18 Temporary Construction Road

A temporary construction road is proposed to be included to provide access from Jacaranda Drive to the site of the ASB, as shown outlined in red in **Figure 43**. The majority of construction access to the ASB and surrounds will be via this dedicated service route constructed on an existing fire track. This is intended to minimise the construction traffic on the surrounding internal hospital road network to allow JHHC to continue to operate normally during construction. This road will only operate during construction and will revert to a fire trail following the completion of the proposed works. See further discussion at **Section 5.5.14**.

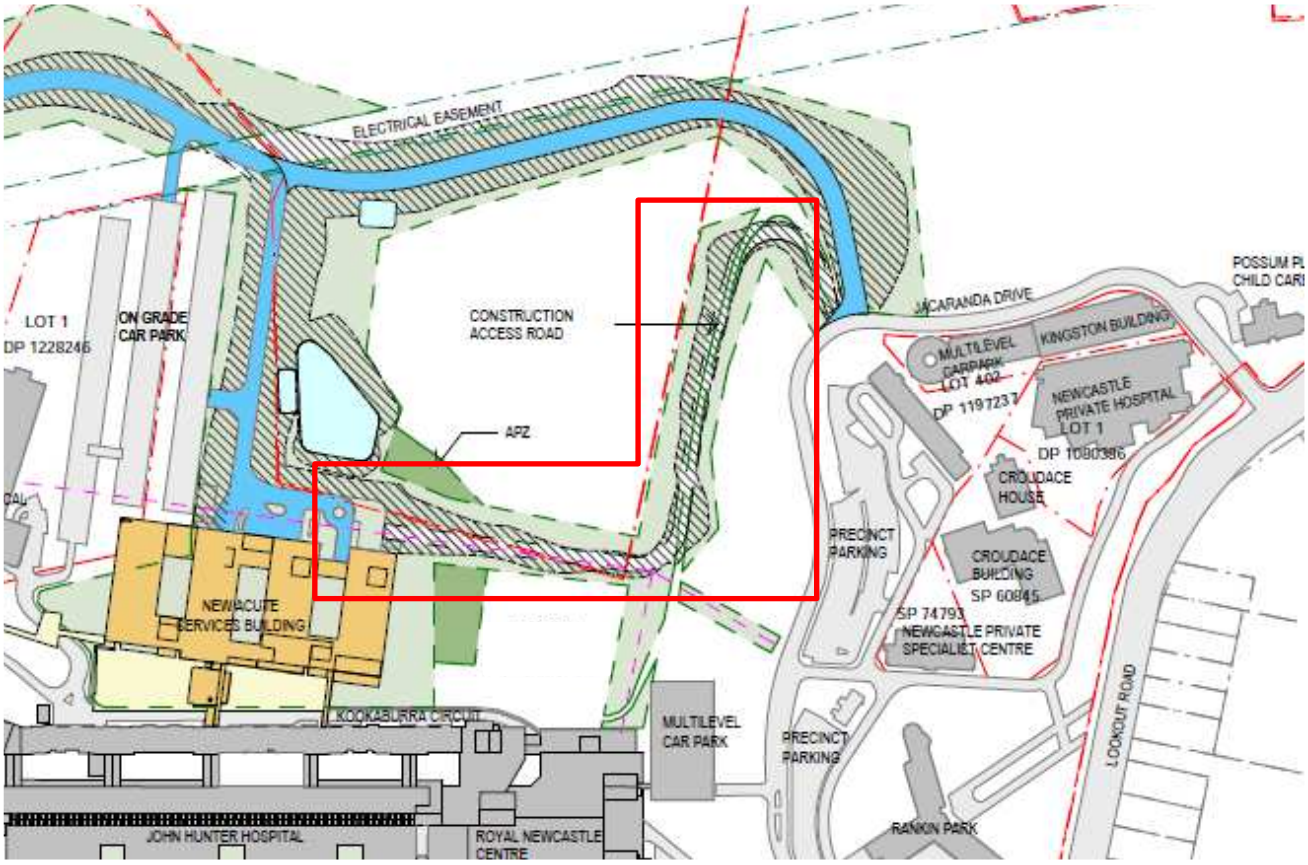

Figure 43 Proposed temporary construction road

Source: BVN Architects

3.19 Construction Staging

The proposal will be constructed in phases (stages), as outlined at **Table 8** below. A staging plan will be submitted to the Department in accordance with typical conditions of consent.

Table 8 Construction Staging

Phase	Scope of Work	Target Timing
Phase 1A - Enabling Works	• Construction access roads; • Services diversion / reticulation; • Civil infrastructure works, including but not limited to: – Site Clearing; – Bulk Earthworks; and – Detention and Sedimentation Basins & controls. • Mine Seam Injection; and • Shoring.	Commence Q4 2021 Completion Q3 2022
Phase 1B - Main Works	• Construction of new Acute Services Building including new link connections with the existing John Hunter Hospital; • Refurbishment of existing facility; • Civil infrastructure works, including but not limited to; – Construction of Internal road network; and; – Works to existing at-grade car parking. • Landscape works; • New Hospital Entry canopy; and • Link bridge to the HMRI.	Commence Q4 2022 Completion Q3 2026
Phase 2 - Eastern Extension of Northern Road	This is separated into another stage in order for it to be constructed at a later date	2025

4.0 Consultation

In accordance with the SEARs issued for this project, consultation was undertaken with relevant public authorities, the community and Council.

A summary of the consultation undertaken to-date with Council, the community and relevant agencies is provided below and is outlined at **Appendix F**. Several consultants have undertaken additional consultation with relevant parties during the preparation of their reports.

NSW Government Architect

Representatives from Health Infrastructure and BVN Architects met with the Office of the Government Architect NSW on 16 February 2020, 23 September 2020 and 10 March 2021 to review the design of the proposed development in line with 'Better Placed – An integrated design policy for the built environment of NSW 2017'. The next meeting with the Government Architect is 5 May 2021. The meeting minutes and detailed response to the recommendations is provided at **Appendix H**.

Newcastle City Council

Health Infrastructure and its project team has had ongoing consultation with the City of Newcastle Council throughout the design development of the project, including project briefings, meetings to discuss use of land currently leased to Council, traffic impacts and coordination of JJHIP and the TfNSW Bypass. Council has provided broad support for the project and Health Infrastructure will continue to engage with Council throughout the remainder of the project.

Transport for NSW

Health Infrastructure has worked closely with TfNSW to ensure proactive coordination between the Bypass project and JHHIP project, including establishment of governance to ensure collaboration between the two agencies and are coordinating their respective construction program. GTA has consulted with TfNSW in preparing the traffic and parking assessment and TfNSW has confirmed that it has no comments regarding the traffic modelling for the JHHIP.

Subsidence Advisory NSW

Health Infrastructure has consulted with Subsidence NSW as a key partner to ensure the design response for the site's existing mine subsidence is appropriately addressed. Details of site investigations and the proposed mitigation strategy were presented on 23 September 2019 with broad support. The resolved mine grouting strategy and peer review of documentation was provided on 13 April 2021 and Subsidence NSW provided broad support for the strategy. Ongoing consultation will be undertaken throughout the project.

Indigenous Consultation

Consultation activities with local Aboriginal stakeholders throughout the design development phase of the project included:

- NAIDOC Week Yarn Up – JHH and JHCH Aboriginal Staff - Information session and Q&A;
- Information and Engagement Session – HNELHD Board sub-committee for Aboriginal Health;
- Design meeting – Connection to Country – Aboriginal stakeholders; and
- Design meeting - Aboriginal Stakeholders.

In addition, consultation with Aboriginal parties regarding the proposal was undertaken in accordance with the requirements of the Aboriginal heritage consultation requirements for proponents and is detailed in the Aboriginal Cultural Heritage Assessment Report at **Appendix S**.

Consultation raised the concern for stronger involvement of the Aboriginal people in the design and planning process. Health Infrastructure is committed to the following as part of the planning and design:

- Aboriginal community is engaged and consulted;
- Aboriginal community members in Project User Groups;

- Aboriginal community members in Stakeholder Consultative Committee;
- Acknowledgement of and tribute to traditional owners;
- Creation of designated culturally appropriate and welcoming spaces within the facility;
- Project is a standing agenda item on the Closing the Gap Committee and Aboriginal Health Committee Board;
- Employment opportunities and engagement with Aboriginal businesses are maximised during the project; and
- Ongoing collaboration with JHH Management and HNELHD Aboriginal Health Unit to deliver engagement.

See **Appendix F** and **Appendix S** for further details.

Community Consultation

Health Infrastructure has undertaken ongoing consultation and engagement with community stakeholders during the design development phase of the project. Engagement and consultation activities include:

- Project website;
- Project newsletter;
- Social media updates;
- Surveys;
- Community Information and Engagement Sessions, including
  - Emotional Design Brief – Community, consumer, patient and staff consultation and engagement
  - Community Information and Engagement Session – Presentation at Property Council of Australia Lunch with Q&A and Audience Ideas Card
  - Information and Engagement Session – HNELHD Youth Health and Wellbeing Council – Community, consumer and stakeholder representatives;
  - Emotional Design Brief – Community, consumer, patient and staff consultation and engagement;
  - Monthly meetings – Property Council of Australia (Hunter Chapter)
  - On site stakeholder briefing – Possum Place
  - HNELHD Family Advisory Council – Community, consumer and stakeholder representatives
  - HNELHD Youth Health and Wellbeing Council – Community, consumer and stakeholder representatives
  - Community Information and Engagement Session – Hunter Business Chamber
  - Community Information and Engagement Session – GHD Technical and Innovation Conference
  - Community Information and Engagement Session – HMRI Open Day
  - Community Information and Engagement Session – Newcastle City Farmer's Markets
  - Social Impact Assessment and Community Engagement Survey
  - Community and Staff Information and Engagement Session – monthly – JHHIP Comms Hub
  - Community and Staff Information and Engagement Session – monthly – JHHIP Comms Hub

These sessions are intended to provide project updates and news on the redevelopment as well as providing avenues to receive ongoing information. A summary of issues and responses from stakeholder engagement, including comment on changes made to the project following consultation, is detailed at **Appendix F**.

Key Issue	Response
Car parking	The traffic consultant has undertaken a demand study which indicated the need for additional parking as a result of the construction of the ASB. Basement parking will be provided in the ASB and through site-wide assessment of requirements.
Traffic congestion	Accommodated the construction of a north road in the design, to utilise the Newcastle City Bypass connection and allow a split of traffic flows to improve precinct access.

Key Issue	Response
Disabled access carparking close to the Emergency Department	Disabled parking is provided at Main Entrance and Emergency Entrance.
Cyclist facilities	End of trip facilities are incorporated into basement of ASB. Connections to existing cycle routes clarified.
Vegetation clearing and impact to wildlife	Incorporation of extensive landscaped green spaces within the elevated courtyard and gardens. Contribution to NSW Biodiversity Conservation Trust in offset scheme. Careful selection of species of plants to ensure alignment with Connection to Country.
How emergency vehicles can pass other vehicles to get to the Emergency Department	Dedicated emergency vehicle travel lane included in the design of internal roads.
Parking for Community Transport vehicles	Areas identified for community transport vehicles to lay over and drop off consumers.
Drop of zone to support patients	Expansion of proposed drop-off zone to include additional spaces and covered connection to main entrance.

The proposed development will be placed on public exhibition in accordance with the *Environmental Planning and Assessment Regulation 2000*. 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 of the report assesses and responds to the environmental impacts of the proposed SSDA. It addresses the matters for consideration set out in the SEARs (see **Section 1.5**). The Mitigation Measures at **Section 7.0** complement the findings of this section.

5.1 Relevant EPIs, Policies and Guidelines

The relevant strategies, environmental planning instruments, policies and guidelines as set out in the SEARs are addressed in **Table 9**.

Table 9 Summary of consistency with relevant Strategies, EPIs, Policies and Guidelines

Instrument/Strategy	Comments
Strategic Plans	
NSW State Priorities	The NSW State Priorities are twelve high-level priorities for the State, being: • Creating jobs. • Delivering infrastructure. • Driving public sector diversity. • Improving education results. • Improving government services. • Improving service levels for hospitals. • Keeping our environment clean. • Making houses more affordable. • Protecting our kids. • Reducing domestic violence reoffending. • Reducing youth homelessness. • Tackling childhood obesity. The proposal seeks to redevelop an existing hospital to improve service levels for health. The proposal will therefore meet a number of the key NSW priorities, whilst also creating jobs and delivering infrastructure in the Hunter Region.
State Infrastructure Strategy 2018 – 2038 Building the Momentum	The proposal is consistent with the State Infrastructure Strategy by: • Delivering hospital infrastructure to respond to existing capacity constraints and expected population growth; and • Providing state of the art facilities to create greater efficiencies and improved operation. Importantly, the proposal forms part of a coordinated investment in the growth of the JHHIP to support population growth and change.
Greater Newcastle Metropolitan Plan 2036	The Greater Newcastle Metropolitan Plan (the Plan) is the overarching strategic plan that seeks to shape future development for the Newcastle metropolitan area to 2036. This document aims to transition Newcastle out of its traditional industrial heritage and into a service, creative and knowledge driven city. JHHC, along with East Maitland, are identified as the primary health precincts in the Greater Newcastle Metropolitan Area. JHH is intended to serve the Newcastle Metro Core and forms part of the New Lambton Medical Precinct incorporating the JHH and the Hunter Medical Research Institute. The Plan indicates that the JHH will form part of the health cluster providing tertiary level medical services, and a diverse range of complementary health services. Strategy 4 of the Plan is to *"Grow health precincts and connect the health network"* to support an ageing population in particular. Hunter New England Health aims to: • facilitate the development of allied health, education, training, hotels, aged care services and research facilities at the John Hunter and East Maitland health precincts, strategic centres, and other major health precincts; • respond to public transport and road network improvements, and manage parking; and • locate all new major health facilities in strategic centres, existing major health precincts or in locations that have a high level of public transport connectivity such as railway stations. This DA is consistent with the Strategy in that it will: • Provide a new and improved service offering on an existing hospital campus that will increase capacity, improve waiting times and allow for greater integration of services; • Create greater efficiencies by incorporating state of the art facilities and equipment; • Create employment opportunities in the short to long term; and

Instrument/Strategy	Comments
	• Strengthen the local economy in terms of attracting new potential businesses to the health precinct. Importantly, JHHIP is identified as Newcastle's busiest health precinct within the plan, which symbolises the importance and necessity for development that can support projected population growth and associated health needs in the wider area.
Hunter Regional Plan 2036	The Hunter Regional Plan (Hunter Plan) covers the greater Hunter area from Merriwa to the west, Scone and Taree in the north and Morriset to the south. Newcastle is the primary urban agglomeration in this area. The Hunter Plan comprises of four main goals, being to provide the leading regional economy in Australia, a biodiversity-rich natural environment, thriving communities and greater housing choice and jobs. JHH is identified as a strategic centre and employment cluster in the Hunter region. The proposal is consistent with the Hunter Plan's goal of expanding the regional economy in strengthening a strategic centre and Direction 23 of the Hunter Plan in that it promotes the growth of the JHH Strategic Centre and supports economic and future population growth in the region.
Newcastle 2030 Community Strategic Plan	Newcastle 2030 is Newcastle City Council's Community Strategic Plan. It is based on a set of principles that guide delivery of the vision for Newcastle and aligns with the Government's strategic policy directions. The proposal, in providing new health infrastructure associated with the existing JHH and the creation of a health and innovation precinct, provides equitable access to health and promotes a healthy, smart and innovative community.
Newcastle Employment Lands Strategy 2019	Within this document, JHHIP is identified as a key health precinct. This strategy focuses on intensifying the medical research, education and ancillary health uses within the precinct. The proposal, in increasing the hospital's capacity and providing opportunity for additional ancillary uses, will ensure continued employment growth in the health sector and create opportunities for business within health-related supply chains.
Newcastle Local Strategic Planning Statement	The Newcastle Local Strategic Planning Statement (LSPS) was prepared to guide Council's land use planning for the next 20 years, implements priorities from Council adopted strategies and gives effect to State Government strategic directions for the LGA. The John Hunter Health and Innovation Precinct is recognised as a Catalyst Area in the Greater Newcastle Metropolitan Plan 2036, with the LSPS identifying the $780 million expansion of the JHH and associated growth in jobs and health services. The proposal is consistent with Planning Priorities 8 and 13 relating to planning for growth in Catalyst Areas, to which the site is identified as such, and growth in key health and education sectors. The proposal, by providing a new acute services building and new access roads from the Newcastle Bypass, supports the continued growth and demand in health services in the Hunter region in growing the capacity of the existing health precinct.
Future Transport Strategy 2056 (and supporting documents)	The Future Transport Strategy 2056 sets the 40-year vision, directions and outcomes framework for customer mobility in NSW, which will guide future transport investment over the long term. The supporting plans provide further detail on customer outcomes or place-based planning documents to guide the Strategy's implementation. The proposal includes improvements to the internal road system of the hospital that will incorporate adequate accessibility to reduce vehicular congestion at critical areas with the incorporation of a new north western entry to the site from the proposed Newcastle Bypass. These changes will facilitate and encourage safe, convenient access for all.
Healthy Urban Development Checklist	The Healthy Urban Development Checklist has been prepared by NSW Health to assist professionals in the industry in providing advice on urban development and to ensure that considerations are made with regard to health effects of urban development on policies and proposals and how they can be improved to provide better health outcomes. The proposed development will provide a state-of-the-art facility that allows for an improved urban design outcome by means of new, modern hospital facilities and built form as well as new pedestrian and vehicular circulation throughout the site in conjunction with the new north western access point.
Newcastle Aboriginal Heritage Management Strategy 2018-2021	This strategy seeks to enhance the Newcastle community's knowledge of and regard for Aboriginal cultural heritage items and places and invest in the care and promotion of Newcastle's Aboriginal heritage places. The protection of Aboriginal Heritage is discussed at **Section 5.10** and **Appendix S**.
Draft Greener Places Design Guide	The draft Greener Places Design Guide has been prepared by the GANSW to guide the design, planning and delivery of green infrastructure across NSW. The aim is to create healthier and more liveable cities and towns by improving community access to recreation and exercise, walking and cycling connections and the resilience of urban areas. The proposed development directly aligns with the aims of the draft Greener Places Design Guide through the introduction of new green space, parks and recreation areas, and extensive tree planting

Instrument/Strategy	Comments	
	throughout the hospital campus to create a healthier urban environment. It also aims to establish improved vehicular, pedestrian and cycling connections to and from the hospital campus.	
	Guiding principle 1 – Connectivity	The proposed development seeks to provide safe and comfortable connections through the site by offering new open spaces with passive surveillance and activated uses. The provision of shared paths along the new roads, as well as equitable access and pedestrian focused design supports the connectivity of the site.
	Guiding principle 2 – Participation	The provision of new open spaces allows for the ability to hold events that encourage varied programming and use of open space.
	Guiding principle 3 - Integration	The site's location within significant bushland has been incorporated into the landscape design, including native planting, opportunity for water sensitive urban design, bioretention basins and endemic tree species.
	Guiding principle 4 – Multi-functionality	The proposed open spaces allow for varied uses, including use by individuals and small groups, as well as larger events and passive recreation. These open spaces will also provide visual amenity from within the hospital.
Crime Prevention through Environmental Design (CPTED) Principles	Refer to **Section 5.4**.	
Better Placed NSW 2017	The Better Placed Policy includes seven key objectives in the design of the built environment prepared by the Government Architect. A review of the proposal's consistency with the principles of Better Placed is provided below.	
	Objective 1. Better Fit – contextual, local and of its place	The proposed development responds to the surrounding context and its prominent location within the JHHC. It provides a new hospital building at an appropriate scale, responding to the existing built form and its local context surrounded by the main JHH building to the south and research precinct to the west. The new ASB has been designed to provide direct access to existing clinical services within the JHH building, utilise the natural topography of the site and assists with establishing the future western entry to the site
	Objective 2. Better Performance – sustainable, adaptable and durable	Health Infrastructure has taken a responsible approach to ensuring the principles of ESD are incorporated into the proposal, ensuring effective and environmentally responsive ESD initiatives including: • The proposed development will be required to deliver a 10% improvement on National Construction Code (NCC) for energy efficiency in building fabric and building services / systems through JV3 modelling; • The project has been benchmarked with a 5-star Green Star – Design & As Built v1.3 rating to ensure that best practice in sustainable design is achieved and demonstrated; and • Propose strategies in response to the CSIRO projected impacts of climate change. Further discussion is provided in **Section 5.24**.
	Objective 3. Better for Community – inclusive, connected and diverse	The proposed development incorporates accessible access to cater to the varying needs of the public who will use the facilities. The site will have pedestrian paths that connect to the surrounding streetscape allowing access by public transport to ensure suitable access arrangements for all members of the community. The hospital will offer improved services and capacity to support the needs of the district. It is proposed that the ASB connect to the main JHH building on more than one level, providing for improved connectivity within the health precinct. The accessibility of the proposal is discussed further at **Section 5.23**.
	Objective 4. Better for People – safe, comfortable and liveable	The proposed development has sought to balance the operational needs of the hospital while providing a fit for purpose building that incorporates high quality design features to make patients and staff feel comfortable. The proposed development will also include secured open space and outdoor seating areas, to enhance passive surveillance to public and private areas. The CPTED principles are discussed in **Section 5.4**.
	Objective 5. Better Working – functional, efficient and fit for purpose	The proposed development seeks to integrate and link in with the existing hospital campus and main JHH building to provide a facility that will improve the operational efficiency and meet the health care needs of the growing population.

<table>
<tr><th>Instrument/Strategy</th><th colspan="2">Comments</th></tr>
<tr><td></td><td>Objective 6. Better Value – creating and adding value</td><td>The proposed development will cater for the increased health demands of the community, whilst meeting the NSW Government's budget for the works. The proposed development will cater for the increased health demands of the community, whilst meeting the NSW Government's budget for the works.</td></tr>
<tr><td></td><td>Objective 7. Better Look and Feel – engaging, inviting and attractive</td><td>These design principles have informed the proposed development and are illustrated in the Design Statement prepared by BVN and included at Appendix H. A discussion of the principles guiding this development is also provided at Section 3.1.</td></tr>
<tr><td colspan="3">State Legislation</td></tr>
<tr><td>EP&A Act</td><td colspan="2">The proposed development is consistent with the objects of the EP&A Act for the following reasons:
It allows for the orderly economic development of the land for a public use and provides improved health care infrastructure that is able to implement contemporary models of care;
It allows for additional employment opportunities throughout the construction and operation phases;
It will facilitate ecologically sustainable development;
It achieves a high-quality design outcome that will benefit patients, staff and visitors; and
It is a development for public purposes and will facilitate the delivery of community spaces.
The proposed development is consistent with Division 4.7 of the EP&A Act, particularly for the following reasons:
the development has been declared to have state significance;
the development is not prohibited by an environmental planning instrument; and
the development has been evaluated and assessed against the relevant heads of consideration under section 4.15(1).</td></tr>
<tr><td>EP&A Regulations</td><td colspan="2">The EIS has addressed the specification criteria within clause 6 and clause 7 of Schedule 2 of the EP&A Regulation. Similarly, the EIS has addressed the principles of ecologically sustainable development through the precautionary principle (and other considerations), which assesses the threats of any serious or irreversible environmental damage (see Section 6.0).

As required by clause 4.42, the following additional approvals will be required in order to permit the proposed development to occur.

<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>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>Rural Fires Act 1997</td><td>N/A</td></tr>
<tr><td>Water Management Act 2000</td><td>N/A</td></tr>
<tr><td>Division 8 of Part 6 of the Heritage Act 1977</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>Yes</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>
</table></td></tr>
<tr><td>Mine Subsidence Compensation Act 1961</td><td colspan="2">The site is within a declared Mine Subsidence District under section 20 of the Coal Mine Subsidence Compensation Act 2017. Development in a Mine Subsidence District requires approval from Subsidence Advisory NSW.</td></tr>
<tr><td>Biodiversity Conservation Act</td><td colspan="2">An assessment of biodiversity impacts is provided at Section 5.15. A Biodiversity Development Application Report is provided at Appendix L.</td></tr>
</table>

Instrument/Strategy	Comments
SEPP (Infrastructure)	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. Schedule 3 of the SEPP states the threshold for traffic generating development that is to be referred to RMS (now TfNSW). This threshold is 100 or more beds for sites with access to a classified road, or 200 or more beds for sites with access to any road. The proposed will support more than 200 inpatient beds and the proposed development will require referral to RMS.
SEPP (State and Regional Development)	The aim of this policy is to identify development that is SSD. Pursuant to the SEPP SRD a project will be 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 CIV of $30 million or more are identified as SSD and are considered to be development of State significance. The proposed development has a CIV of greater than $30 million and so qualifies as SSD. A CIV Statement has been prepared by Altus Group and is included under a separate cover.
SEPP 19 (Bushland in Urban Areas)	SEPP 19 does not apply to Newcastle LGA.
SEPP 33 Hazardous Development	A SEPP 33 Analysis has been undertaken by Pinnacle Risk Management and is included at **Appendix Q**. Hazards and risks are further discussed at **Section 5.7**.
SEPP (Koala Protection) 2020	The SEPP does not apply as the site is not within a RU1 Primary Production, RU2 Rural Landscape or RU3 Forestry zone or equivalent zone.
SEPP (Koala Protection) 2021	This SEPP applies to on the City of Newcastle LGA as listed in Schedule 1 of the policy. The development footprint does not represent core koala habitat as the koala was not recorded in the Development Footprint and koalas have not been recorded nearby (within 2.5 kilometres in the Central Coast Koala Management Area) within the last 18 years. No further provisions of the Koala SEPP apply. See detailed assessment at **Appendix L**.
SEPP 55 (Remediation of Land)	RCA have completed a contamination assessment, which is provided at **Appendix X**. The report concludes that the site is suitable for the proposed use, and no contamination was identified in excess of human health or ecological criteria. Contamination is discussed further at **Section 5.19**.
SEPP 64 (Advertising and Signage)	This application seeks approval for three building signage zones only (see **Section 3.10**).
Draft SEPP (Remediation of Land)	An ongoing review of SEPPs by the Department has resulted in the proposed repeal of SEPP 55, retaining some of its elements and adding new provisions to establish a modern approach to the management of contaminated land. In addition to the provisions addressed in SEPP 55 above, new provisions will be added to the new SEPP to: • Require all remediation work that is to be carried out with development consent to be reviewed and certified by a certified contaminated land consultant. • Categorise remediation work based on the scale, risk and complexity of the work. • Require environmental management plans relating to post-remediation management of sites or ongoing operation, maintenance and management of on-site remediation measures (such as a containment cell) to be provided to Council. The Contamination Assessment provided at **Appendix X** confirms the site can be made suitable for the proposed development.
Draft SEPP (Environment)	The site is not identified as being subject to the provisions for waterways, catchments, world heritage and urban bushland under the draft Environment SEPP.

Local Planning Instruments and Controls		
Newcastle Local Environmental Plan 2012	Clause 2.1 – Zone	The site is zoned: • SP2 – Infrastructure – Health Services Facility; and • E3 Environmental Management. The development of a hospital and ancillary services or works are permissible within the SP2 zone with consent. Roads are permitted with consent in the E3 zone.
	Objectives of the SP2 Zone	The proposal is consistent with the SP2 zone objectives as: • It provides health infrastructure that is a specific use supposed by the Zone. • The proposed development is compatible with the existing John Hunter Health Precinct, being an acute health services building.

Instrument/Strategy	Comments	
		• It does not prevent the use of the land for provision of further infrastructure as required. The proposal is consistent with the E3 zone objectives as: • Extensive environmental assessment has been carried out (see **Section 5.0**) that confirms the development will not have an adverse impact on the environmental qualities of the land.
	Clause 4.3 – Height of Buildings	There is no mapped maximum building height under the LEP for the site.
	Clause 4.4 – Floor Space Ratio	There is no mapped floor space ratio under the LEP for the site.
	Clause 5.10 – Heritage Conservation	The site is listed as a heritage item. This is discussed further at **Section 5.9** and **Appendix R**.
	Clause 6.1 – Acid Sulfate Soils	The site is identified as having Class 5 Acid Sulfate Soils. There are no works proposed within 500m of adjacent class acid sulfate soils, and the proposed works will not result in the lowering of the water table. Therefore, the proposal complies with this clause.
	Clause 6.2 Earthworks	Earthworks are proposed as part of this application, as discussed in **Section 3.3**. The proposed works meet the objectives of this clause. Further, the works will: • Not disrupt any existing drainage patterns or soil stability. • Result in high quality fill or soil being excavated. • Not disturb any relics. • Not impact any water catchment or drinking water source.
	Part 7 – Additional Local Provisions – Newcastle City Centre	The site is not located in the Newcastle City Centre, and therefore this section of the LEP does not apply.
Newcastle Development Control Plan 2009. (Newcastle DCP)	It is noted that development control plans are not a matter for consideration in the assessment of SSDAs by virtue of Clause 11 of SEPP SRD, which states that 'Development Control plans… do not apply to… State significant development'. Notwithstanding this, the Newcastle DCP provides guidance for development. This guidance has been considered by the relevant consultants, where relevant (for example stormwater engineering requirements).	

5.2 Built Form and Urban Design

5.2.1 Bulk, Scale and Urban Design

The proposed built form and massing is as a result of extensive design analysis undertaken by BVN Architects, aimed at achieving an optimum urban design outcome for the existing hospital campus and its local context.

The proposed building is 7 storeys in height, with four finger elements that are connected via a southern spine which connects with the existing JHH. These finger elements allow for the scale of the building to be significantly broken down and articulated, in order to respond to the surrounding topography and other built form on the site, which is largely limited to three to four storeys. The proposed articulation significantly reduces the bulk of the building, whilst also offering amenity to the existing buildings and the ASB itself.

The layout and design of the ASB has been informed by clinical functionality, with the three interfacing levels of the existing JHH and the proposed ASB offering link connections between the two buildings. The proposed ASB locates services requiring immediate access between the two buildings on level 0-3 to enable direct horizontal connectivity. In order to further reduce the perceived bulk and scale of the ASB, levels 4-7 are setback on the northern façade.

5.2.2 Setbacks

The proposed development is located in the centre of the JHHC which is set significantly distant from surrounding development. The following setbacks have been incorporated:

- 590 metres to the north (to nearest building)

- 25-45 metres to the existing JHH building to the south
- 285 metres to Rankin Park to the east
- 45 metres to HMRI to the west.

The proposed ASB is located a significant distance from any surrounding sensitive receivers off site, with the nearest residential property approximately 350 metres to the south-east of the location of the ASB. Bushland is located to the north, south and west of the site, with the nearest sensitive receiver approximately 500 metres to the north, 800 metres to the west and a kilometre to the south. As a result, the ASB is significantly setback from surrounding residential properties and will have no significant impact on these residents.

In order to retain Kookaburra Circuit to the north, which will facilitate direct and discreet vehicular access to the ED, the ASB is located north of the roadway. Based on this, a minimum of 25m was established to the existing JHH. Setbacks to other buildings within the JHHC have been considered to ensure that the amenity of the ASB and other existing buildings on the site is protected, such as light penetration and access to site lines. Furthermore, setbacks to research and education to the west has been considered to ensure future development within research and education can be accommodated.

5.3 Environmental Amenity

5.3.1 Solar Access and Overshadowing

Shadow diagrams are included at **Appendix H** illustrating the extent of overshadowing generated by the proposed development. The diagrams show the greatest impact of overshadowing throughout the year, being the winter solstice on June 21 at 9am, 12pm and 3pm.

The shadow diagrams show that the proposed development will result in overshadowing to the JHH building, courtyards within the JHH building and publicly accessible open space to the east of the proposed ASB. The largest impact on the JHH will occur on the early morning period (9am), with some shadows on the western end of the northern façade of the JHH extending into the afternoon periods. Some overshadowing of the internal courtyards of the JHH also occurs during the 9am period, however the shadow resultant from the ASB moves later in the day.

The ASB elevated garden to the east of the proposed building link bridge is overshadowed during the winter solstice. However, the western portion receives solar from midday onwards, and therefore, there are parts of the elevated garden that users can utilise to receive solar access or shade as desired, throughout the day.

Within the hospital campus, the diagrams show there is additional overshadowing to the publicly accessible open space to the east of the ASB, particularly from midday onwards. There is no planned open space or landscaped area for pedestrian use in this area, and therefore, the overshadowing to this eastern section will not have any significant impact on solar access.

Notwithstanding the additional overshadowing that results from the ASB, particularly for the existing JHH, the design and orientation of the ASB has ensured that the existing and new open space landscaped areas will enjoy sunlight in either the morning or afternoon, ensuring that the proposed development will provide a variety of new open spaces to patients, staff and visitors. The overshadowing impacts of the proposed ASB is shown in **Figure 44** below.

Figure 44 Shadow Diagrams

Source: BVN Architects

5.3.2 Visual Privacy

The proposed development is located within a historic and well-established health and research precinct within the context of New Lambton Heights in metropolitan Newcastle. The new ASB is located wholly within the existing hospital campus and has been designed to provide appropriate setbacks to the boundary and surrounding development context.

The nearest residential dwellings are located approximately 350 metres to the east, and therefore, there is unlikely to be any impacts on visual privacy for these dwellings.

5.3.3 View Impacts

The ASB is 7 storeys in height and will be visible from the surrounding locality to varying degrees depending on the vantage point. The ASB does not sit within any identified view corridors.

Photomontages of the proposal have been prepared by BVN Architects and are shown at **Figure 45** – **Figure 48** and at **Appendix H**.

Figure 45 View impact from the south looking north towards the proposal

Figure 46 View impacts from the east looking west towards the proposal

Figure 47 View from the Rankin Park precinct looking south-east

Figure 48 View from the north looking south towards John Hunter Hospital

Source: BVN Architects

A series of massing studies have been undertaken from key public vantage points outside the JHHC and vantage points within the JHHC to understand the built form visibility. These vantage points were selected as being representative of public views outside the JHHC and representative private views within the JHHC.

The ASB is in the centre of the JHHC and accordingly is set back significantly from surrounding development, which ensures the ASB is not visually intrusive. Using appropriate façade design and materials, as well as the surrounding topography, the proposed ASB is incorporated into the surrounding landscape and urban geography. The ASB will be part of distant public views however the degree of visibility is minor and any view impacts and change to views are not significant. Whilst the proposal will change the view of the hospital, the changes proposed are considered consistent with the evolution of the existing hospital campus and surrounding context.

5.3.4 Wind Impacts

A Pedestrian Microclimate CFD Study has been prepared by Windtech and is included at **Appendix M**. The Assessment has assessed the local wind conditions at outdoor areas within and around the site. The results of the assessment indicate that the precinct is relatively exposed to the three prevailing winds regularly identified in the Newcastle Region, being west-northwest, north-east, and south. The assessment identified that a number of minor design modifications and treatments should be incorporated into the design to improve a suitable environment for intended activities surrounding the ASB. These design measures are able to be incorporated into the detailed design of the proposal and form a mitigation measures at **Section 7.0**.

5.3.5 Lighting Impacts

Due to the 24-hour nature of the hospital use, lighting will be required throughout the night. The primary sources of light spill from the building will come building entrances and areas of higher glazing. Due to the location of the new entrances, as well as the lack of sensitive receivers surrounding the site, 24-hour illumination of the hospital will not have an impact on surrounding receivers.

5.4 Crime Prevention through Environmental Design

The development implements the principles of Crime Prevention through Environmental Design (CPTED), as identified in the Department's guidelines titled *Crime Prevention and the Assessment of Development Applications 2001* are discussed below and in the Design Report at **Appendix H**.

Principle 1 – Natural Surveillance

Good surveillance means that people can see what others are doing. People feel safe in public spaces when they can easily see and interact with others. Would-be offenders are often deferred from committing crimes in areas with high level of surveillance. The development provides adequate natural surveillance in accordance with this principle.

The development has been designed to incorporate natural surveillance through the incorporation of design features that maximise visibility of people using public spaces. This will promote the reality and/or perception that open spaces are under casual surveillance during both the day and night. The well-lit nature of the hospital environment will also enhance passive and surveillance and provide continuous activation throughout the site.

The following principles and strategies will be adopted to enhance natural surveillance:

- The precinct will leverage the established key spaces to create active hubs for movement and people.
- Activity will be promoted across various times of the day to ensure activated and safe spaces.
- The approach to vehicular interface will offer spaces that are predominately pedestrianised.
- Clear sight lines will be established through the precinct and between key spaces.
- Blind spots will be avoided.
- Visibility to and from internal and external spaces will be offered for passive surveillance.
- Lighting will be considered for both comfort and safety.

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 victim people and damage property.

The development has been designed to incorporate natural barriers such as roadways and landscape, electronic and physical barriers through the use of the following:

- Limiting the number of public entries into the hospital and securing these after hours.
- Provision of CCTV monitoring of public areas to the hospital linked back to a security monitored point.
- Provision 24 hour security station at the Emergency Department that can respond to other parts of the hospital during occasions of duress.
- Providing electronic access points of entry and intercoms.
- Providing access control to clinical departments after hours.
- Providing 24-hour access control to engineering service areas and other sensitive sections of the hospital.

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.

Through the definition of space, territorial reinforcement provides social regulation. The proposed development has been designed with the integration of the following principles:

- Establishing a hierarchy of public and private spaces.
- Utilising informal devices such as landscaping and avoid more formal devices like high fencing and cautionary signage to define spaces.
- Design features will be considered, including art work and landscaping.
- Clearly defining spaces into public and back of house through physical barriers or appropriate directional means.
- Not mixing public, patient and back of house activity in the same space and therefore causing confusion in the diverse users of the spaces,
- Clearly identifying control points to clinical areas.
- Ensuring that circulation patterns are unambiguous and do not create confusion in offering too many options for travel.
- Reinforcing public areas by introducing amenities such as seating to attract desired users of the space and therefore deter undesirable activity.
- Clearly defining zones for public lifts and non-public (clinical) lifts to allow staff secure movement without the need to cross non-secure public zones.

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.

To achieve effective place management and maintenance, the proposed development will incorporate the following:

- Designing external spaces with robust finishes that require minimal maintenance.

- Ensuring clear observation lines to open areas tat would be of high risk to the public such as loading docks and staff parking zones.
- Restricting access to sensitive areas such as goods lifts.

5.5 Traffic, Access and Parking

A Transport Impact Assessment has been prepared by GTA Consultants and is included at **Appendix G**. The assessment includes details around traffic movements, car parking and access arrangements. Further, the report outlines the existing surrounding road network arrangements and conditions and provides an assessment of the traffic and parking impacts associated with the proposed development.

5.5.1 Operational Parking

A Parking Demand Study Report was prepared by GTA in August 2020, to understand the current and projected parking requirements of the JHHIP. The parking demand study identified that the proposed JHHIP should provide for an additional 754 parking spaces on site (comprising 517 staff spaces, 203 public spaces and 36 ancillary, service or other spaces) to satisfy demand to 2031/32.

The proposal will provide an uplift of 894 spaces across the site meeting demand requirements while also delivering additional parking supply to the JHHC. These will be provided via a combination of basement and at-grade car parking spaces. A summary of car parking lost and gained across the site is provided in **Table 10**.

Table 10 Car Parking Changes

Description	Location	Parking Supply Changes
Loss	Car Park 5	-15
	Kookaburra Circuit	-68
	Car Park 4	-66
	Car Park 1	-43
Gain	Car Park 3	+70
	Car Park 4	+130
	ASB	+886
Total net change		+894

5.5.2 Operational Traffic Impact

Transport for NSW is extending the Newcastle Inner City Bypass between Rankin Park and Jesmond, for a length of 3.4 kilometres. The proposed bypass will improve performance of the existing travel route with the objective to meet future traffic demand, reduce travel times and improve road safety. The bypass aims to provide relief for the existing route of Lookout Road, Croudace Street and Newcastle Road, with projected traffic on Lookout Road expected to reduce from 52,000 vehicles to 31,900 vehicles. It is also anticipated that the proposed bypass is expected to reduce travel times by up to 73% northbound and 79% southbound on Lookout Road.

As discussed in the Traffic Impact Assessment at **Appendix G**, the intersections of Lookout Road/Kookaburra Circuit and Lookout Road/Russell Road are already at capacity. As such, the road network cannot accommodate increased traffic demand generated by the JHHIP prior to the bypass opening. The proposal assumes the bypass will be constructed prior to the JHHIP opening.

Traffic modelling for the project has adopted the Roads and Maritime recommend ASDS (average staff per day shift) in lieu of staff Full Time Equivalent (FTE) as staff FTE does not provide an indication of the number of staff to be on site during a weekday shift and resultant number of staff likely to be traveling to/ from the hospital during peak periods. ASDS has been estimated based on HNELHD clinical planning data which indicate that up to 3,432 staff are on site during a weekday shift.

Traffic generation has been estimated based on the HNELHD clinical planning data which details an increase of approximately 156 beds to a total of 923 beds in 2031/32. Future staff projections have also been based on the growth in FTE staff as per HNELHD forecasting. Current projections indicate no increase to staff numbers until 2027 and a 7.5 per cent increase by 2036. As such, an ASDS of 3,432 in 2026 and 3,689 in 2036 has been adopted for the assessment. A summary of the trip generation estimates for the JHHIP based on the RMS traffic generation rates is provided in **Table 11**.

Table 11 Traffic Generation Estimates

Method	Year of opening (2026)		10-year horizon (2036)	
	AM	PM	AM	PM
	Morning Vehicle Trips	Peak Vehicle Trips	Morning Vehicle Trips	Peak Vehicle Trips
Guide 2002 (based on indicative number of beds and staff)	81	119	97	199
Guide 2002 (based on indicative number of beds only)	99	180	99	180

Intersection Performance

The additional traffic generated by the proposed redevelopment of the hospital has been modelled in SIDRA. **Table 12** and **Table 13** below presents the proposed operational performance of key intersections relating to the site at opening (2026) and 10-year horizon (2036) respectively. With the inclusion of the Newcastle Bypass, the intersections related to the proposed development will operate satisfactorily in the AM and PM peak periods.

Table 12 Existing and Post Development Operating Conditions – 2026

Intersection	Peak	Degree of Saturation		Average Delay		Queue (m)		Level of Service	
		Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
Lookout Road/Kookaburra Circuit (signalised)	AM	0.70	0.70	21	22	155	155	B	B
	PM	0.60	0.61	16	17	84	92	B	B
Lookout Road/Jacaranda Drive (signalised)	AM	0.93	0.96	11	11	73	80	A	A
	PM	0.52	0.55	9	8	45	43	A	A
Lookout Road/Russell Road/Croudace Street (signalised)	AM	0.84	0.86	24	25	126	135	B	B
	PM	0.77	0.78	29	28	128	129	C	B
Roundabout 1	AM	0.13	0.16	11	11	2	3	A	A
	PM	0.5	0.06	11	11	1	1	A	A
Roundabout 2	AM	0.27	0.03	7	7	0	1	A	A
	PM	0.27	0.04	6	6	0	1	A	A
Roundabout 3	AM	0.02	0.08	9	9	1	1	A	A
	PM	0.11	0.21	7	7	1	3	A	A

Table 13 Existing and Post Development Operating Conditions – 2036

Intersection	Peak	Degree of Saturation		Average Delay		Queue (m)		Level of Service	
		Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
Lookout Road/Kookaburra Circuit (signalised)	AM	0.76	0.78	22	22	182	182	B	B
	PM	0.64	0.66	15	17	98	102	B	B
Lookout Road/Jacaranda Drive (signalised)	AM	0.93	0.96	11	11	73	80	A	A
	PM	0.57	0.57	9	9	57	54	A	A
Lookout Road/Russell Road/Croudace Street (signalised)	AM	0.94	0.98	34	37	204	215	C	C
	PM	0.87	0.88	34	35	161	168	C	C
Roundabout 1	AM	0.13	0.16	11	11	2	3	A	A
	PM	0.05	0.06	11	11	1	1	A	A
Roundabout 2	AM	0.03	0.03	7	7	1	0	A	A
	PM	0.03	0.04	6	6	0	1	A	A
Roundabout 3	AM	0.02	0.07	9	10	1	1	A	A
	PM	0.11	0.19	7	7	1	3	A	A

Table 12 above indicates that the JHHIP is expected to have a minor impact to road network performance, with a maximum increase of delays of up to one second. Key intersections within the precinct are expected to operate well with spare capacity in both peak periods. **Table 13** shows that in the further 10-year growth scenario to 2036, the JHHIP is expected to have a similar minor impact to road network performance, with increase of delays up to three seconds. Key intersections within the precinct are expected to continue to operate well.

5.5.3 Newcastle Bypass Opening

Department of Infrastructure identifies the Newcastle Inner City Bypass (Rankin Park to Jesmond) project is expected to finish mid-2025. This is prior to the anticipated date for completing the JHHIP ASB project. Whilst no delay is anticipated to the opening of the bypass, a contingency mitigation to operate as an interim solution in the event the Bypass is not opened prior to completion of the ASB would be as follows:

> *Should the Newcastle Inner City Bypass not be open prior to the opening of the ASB there is to be no uplift in the clinical capacity of the JHHC (from the operational benchmark of 2025) until the bypass is open and connected to the JHHC.*

This will mitigate risk of any additional traffic impact on the road network until the bypass is operational (See Section 7.0 Mitigation Measures).

5.5.4 Northern Road Justification

As discussed at **Section 3.11.1**, a new northern road, delivered across two phases, is proposed to connect Jacaranda Drive and the Newcastle Inner City Bypass.

The primary need for the northern Road is to enable access from the Newcastle Inner-City Bypass directly to the JJHC. The inclusion of a bypass to the JHHC forms a critical assumption and design feature of the Bypass (being delivered by Transport for NSW) to respond to a strategic need for direct access to the Hospital. The existing local road network in New Lambton Heights is currently at capacity which has ongoing impact on the ability of the JHHC to perform its critical care functions and limits the ability for the Hospital to grow to service community needs. The connection to the Bypass will enable greater accessibility to the Health Campus and reduce operational impacts on the local traffic network. It will also enable for an increase in capacity at the JHHC which is identified as a key strategy in the Greater Newcastle Metropolitan Plan 2036 “Grow health precincts and connect the health network”.

Construction of the Newcastle Inner City Bypass and JHHIP interchange will change the way vehicles access the site, and integration of the new road network will be an important element for the traffic circulation both to the new ASB and around the greater precinct. As such, the site wide road network considers the precinct vision that includes delivery of new primary western and northern access roads to improve traffic circulation around the site
The northern Road will also provide greater separation of traffic user flows and will free up the constrained ring road, which currently funnels all staff and public users around the Campus and past key locations, such as the main entry. The northern Road will enable the separation of staff and public to enable the Campus to functionally operate and to allow the ground plane experience to better reflect the needs of users.

The alignment of the Northern road has been carefully considered by the design team, including Northrop Civil Engineers to ensure the most appropriate design outcome in consideration of:

- Safety;
- Sightlines,
- Australian Standard for road construction;
- Minimising environmental and biodiversity impacts;
- Topography;
- Geotechnical considerations;
- Separation of vehicles users;
- Access to vehicle generation and/destinations (car park, health services etc) within the Campus; and
- Improvement to traffic operation across the campus.

A major design constraint for the site is the steep topography, which changes dramatically depending on the designated road alignment. As such the following design criteria have been considered in the design development:

- Sightlines – Due to the drastic changes in topography, small radius bends in the road alignment restrict sight lines such that compliance with Austroads cannot be achieved. This issue is particularly important on the approach to the proposed new ASB driveway where a relative straight approach is important to ensure oncoming vehicles have sufficient time to observe any queued vehicles at the intersection and yield accordingly. As such, a straighter road with softer large radius bends was deemed most appropriate from a road compliance and safety perspective.
- Road Gradients – Existing surface gradients across the precinct vary up to 25%, which is too steep to support low speed vehicular movements around the precinct. A maximum longitudinal gradient of 10% has been nominated for design purposes, with maximum 5% grades for queuing areas.
- ASB Access requirements – As discussed above, the Bypass will provide a new connection to the ASB, and the road network is required to connect to the interchange in order to improve traffic flows. Notwithstanding, it is estimated 40% of vehicles access the site following construction will do so from Lookout Road. As such, connection of the North Road to Kookaburra Circuit to the east is also a critical element for the precinct in order to minimise congestion on Kookaburra Circuit.

Several options were tested for the road, and the option which best addressed the above considerations was selected. The project has been very cognisant of the need to minimise impacts to the local environment as much as possible and in this regard the design has been refined to reduce batters along the alignment to reduce tree clearing as much as possible. The proposal incorporates significant new landscaped areas, tree planting and the biodiversity offset strategy will appropriately compensate for the unavoidable removal of biodiversity values.

Phase 2 of this road is required as there is a need to improve traffic circulation for the Health Campus holistically. There is an immediate need to connect to the Bypass and the delivery of the bypass includes construction of an interchange at the northern boundary of the Campus, providing the opportunity to provide a connection to the new road network around the site to improve traffic circulation to and from the new ASB.

The eastern Northern Road (Phase 2) will further integrate the Campus with the surrounding road network and will further improve traffic operation by reducing the demand on the ring road. The Phase 2 road is also required to enable greater access opportunities and will facilitate further growth and capacity for health uses within the Campus into the future. Accordingly, the proposal will facilitate future health uses on the site and is entirely consistent with

the NSW State Priorities, Greater Newcastle Metropolitan Plan and Hunter Regional Plan by providing opportunities for future precinct activation and increased and improved health facilities.

Further discussion of the provision of the northern road is provided at **Appendix G** and **Appendix J**.

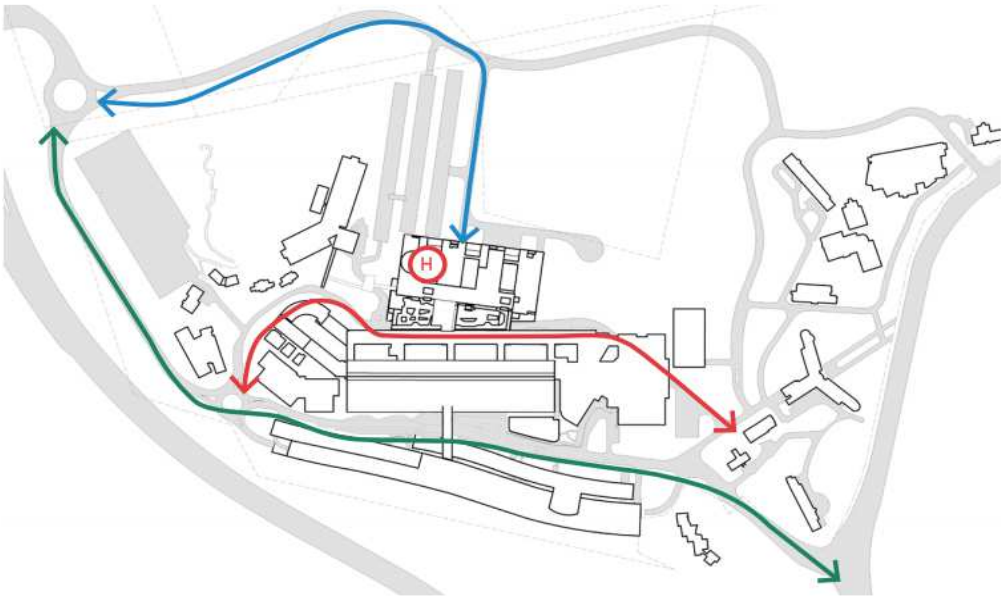

Figure 49 Primary access routes

Source: GTA Consulting

5.5.5 Accessible Parking

Based on the 886 additional parking spaces that are to be provided within the ASB, between nine and 18 accessible parking spaces will be required to be provided, dependant on the split between non-outpatient and outpatient areas, due to the BCA requirements. The JHHIP development proposes to provide 16 accessible spaces, which will provide for a mix of outpatient and non-outpatient areas.

5.5.6 Motorcycle Parking

The Newcastle DCP seeks an equivalent of 10% of the car parking spaces provided be provided for motorcycle parking, however, currently only 1% of parking supply is provided for motorcycle parking. The existing motorcycle parking spaces experience moderate to high demand at present, and therefore GTA suggest that an equivalent rate of 5% of parking spaces be provided for motorcycle parking.

Based on the approximately 900 spaces proposed, a minimum of 90 motorcycle parking spaces are recommended to be provided. The ASB car park proposes to provide 122 motorcycle spaces, which equates to 13% of proposed parking supply.

5.5.7 Bicycle Parking and End of Trip Facilities

The Newcastle DCP requires one bicycle parking space is provided for every 10 staff or visitors that are associated with the site. It is anticipated that an additional 240 staff and 240 visitors are expected to visit the site on average, and therefore, 24 staff and 24 visitor bicycle parking spaces are proposed. The following end of trip facilities are proposed in the ASB basement:

- 24 secure bicycle spaces.
- Six showers.
- 24 bicycle lockers.

In addition to this, 24 bicycle spaces in the form of bicycle racks will be available adjacent to the pick-up and drop-off area of the main southern entrance.

5.5.8 Emergency Services

The new ASB will provide a total of nine ambulance parking bays, which are to be designed in accordance with the relevant Ambulance Specifications. Four car parking spaces will also be provided within this area, which are designated for authorised vehicles only.

Adjacent to the ambulance parking will be a drop off and pick up area for the Emergency Department, with a total of eight spaces, including one accessible space provided.

5.5.9 Loading Facilities

The current hospital is supported by a loading dock on Kookaburra Circuit near its intersection with Jacaranda Drive. The current loading dock is able to accommodate five vehicles, with further capacity for at least six service vehicles to park to the north of the formal loading bays.

No additional loading bays will be provided as part of this application, with the logistics study confirming that the current hospital dock has sufficient capacity to accommodate any increase in servicing requirements associated with the proposed works.

5.5.10 Vehicular Access

This proposal seeks to improve the existing road network, including modifying or providing roads internally that respond to the delivery of the ASB, as well as the Newcastle Bypass. The proposed works are shown at **Section 3.11**. The existing Kookaburra Circuit would connect to the new western road through a new roundabout.

Another new roundabout is also proposed to the north-west of the site to provide a connection to the bypass interchange and the new northern road, which provides connection to the northern side of the ASB building and the main access for the proposed ASB car park. The eastern portion of the northern access road will connect to Jacaranda Drive. This will ultimately provide alternate access between the ASB and Lookout Road.

It is proposed that the site will be accessed from both the Newcastle Bypass and Lookout Road, dependent on the direction from which visitors or staff are entering the site. there are three main routes on the site, separating staff, emergency and public access, in order to reduce the opportunity for any conflicts.

5.5.11 Pedestrian Access

The proposal seeks to provide pedestrian access via existing footpaths on either side of Kookaburra Circuit, as well as new pedestrian routes through and around the ASB. New public domain works, including a new concourse over Kookaburra Circuit, connecting level 01 of the new ASB to level 01 of JHH will improve the pedestrian experience, making access and walking across the site clearer. Further to this, a north-south pedestrian route from the main JHH entrance to the ASB will provide a clear, legible pedestrian connection from the ASB to the facilities in JHH, and the ancillary services on Kookaburra Circuit, such as car parking and bus stops.

5.5.12 Public Transport

JHHC is currently serviced by one bus stop at the main hospital entrance at the southern side of the building along Kookaburra Circuit. To accommodate growth in demand and to improve public transport connections, an additional bus bay is incorporated into the design to allow for services in both directions. The design can accommodate up to two buses each direction and provides flexibility for potential bus services to enter and continue through the site or services to continue to turn around and depart the site from the direction they arrived.

The new bus zones provide the ability to accommodate up to four 12.5 metre buses providing sufficient capacity to accommodate required pick-up and drop-off activities generated by the JHHIP for both public buses and community bus services. Swept path analysis has been undertaken for the proposed roundabout and the existing roundabout on Kookaburra Circuit to accommodate a u-turning bus.

5.5.13 Green Travel Plan

A Green Travel Plan (GTP) has been prepared by GTA Consultants and is included at **Appendix N**. The GTP provides various measures with the aim to promote sustainable transportation. The GTP will be finalised in

consultation with hospital user groups and through a Travel Plan Coordinator. The following measures and initiatives to encourage more sustainable modes have been established in **Appendix N**, as follows:

- Appoint a Travel Plan Coordinator (TPC) to ensure the successful implementation and monitoring of the GTP. This should be coordinated in an integrated format for the entire JHHIP. The TPC would manage and review the GTP on an ongoing basis.
- Conduct annual or biennial travel surveys to establish travel patterns in the area and assess success of the GTP. This is to be managed by the appointed TPC. Allow surveys to incorporate suggestions from employees to improve green travel arrangements.
- Promote bicycle facilities within the JHHIP by providing staff tours on day of opening as well as staff inductions for new staff.
- Promote local bicycle facilities within the surrounds of the JHHIP, as well as shops and bike maintenance courses run by a number of bike shops.
- Provide a system to allow staff to identify those that reside near them which in turn can be used to organise car-pools between staff. Where possible, arrange shift plans accordingly.
- An active system that encourages and facilitates walking, cycling and public transport travel would be beneficial. Sharing available information is a viable option to encourage.

5.5.14 Construction Traffic

A Construction Traffic Management Plan has been prepared by GTA Consulting and is provided at **Appendix G**. It is expected that on a typical day, a total of 15-20 heavy vehicles could access the site, with peak activity potentially increasing to 120 heavy vehicles per day. These movements would be spread across the day in order to dissipate the impact.

Light vehicle traffic generation would be largely generated by construction worker traffic movements to and from the site. The number of construction workers vehicles is currently unknown. Notwithstanding, limited parking will be provided on-site, with workers to be encouraged to use public transport to access the site. As such, light vehicle traffic generation associated with construction workers will be minor. Further to this, any construction worker traffic movements will generally be outside of peak periods and disruption during peak periods will be avoided.

In order to manage the impact of construction traffic on the operation of the existing hospital, alternate site access arrangements are proposed, as shown in **Figure 50**. The existing fire trail located on the northern edge of Jacaranda Drive near car park 9 is proposed to be upgraded to provide a dedicated construction vehicle access road to/ from the northern aspect of the works site. Construction vehicles will use the Lookout Road/ Jacaranda Drive intersection to access the dedicated construction access road to minimise the length of time vehicles travel on the hospital road network. Due to existing geometric constraints, vehicles cannot turn left into Jacaranda Drive from Lookout Road. Therefore, all heavy vehicles would be instructed to arrive from the north.

The construction program for the JHHIP is indicatively expected to take 6 years for Phase 1A and 1B to be completed. The ring road is current at capacity servicing the operational needs of the Campus and cannot accommodate sustained construction traffic and accordingly an alternative solution is required to enable the construction program to be carried out, while also allowing the live Hospital operational environment to continue without interruption. The proposed temporary construction road is proposed on the same location as the existing (part cleared) fire trail to reduce environmental impacts, while enabling a viable construction access.

Additionally, it is not feasible for the construction access to be located along the proposed Northern Road alignment as access to the ASB will be disrupted during road construction. Postponing access to the ASB until the completion of North Road Construction in order to avoid installing the construction access will result in significant time delays to the ASB delivery which cannot be accommodated.

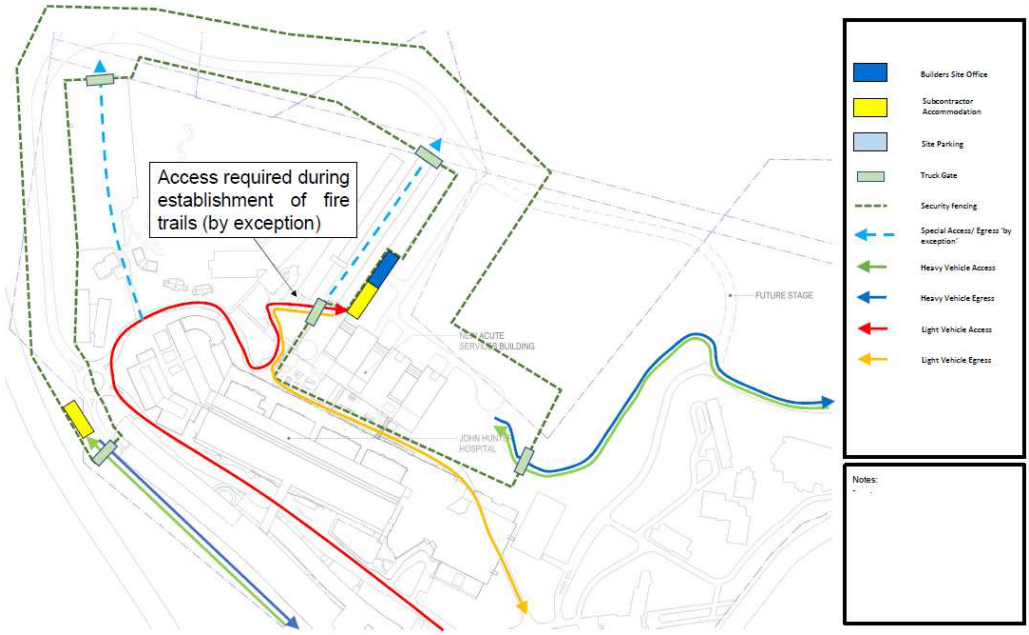

Figure 50 Proposed construction traffic access

Source: GTA Consulting

5.5.15 Construction Parking

The anticipated number of construction workers is currently unknown. Given the site's proximity to public transport services, workers will be encouraged to use public transport to access the site where practical. During site induction, workers will be informed of the existing bus network servicing the site. Appropriate arrangements will be made for any equipment/ tool storage and drop-off requirements. Notwithstanding, a small amount of parking may be available on site, this will be limited to the construction compound. Construction workers will not be allowed to park within the JHHC, associated road network or on surrounding streets. Construction worker arrivals and departures will be minimised during peak hours. Health Infrastructure will work with the contractor to explore further initiatives such as park and ride shuttle bus services and encourage car-pooling.

Any construction worker arrivals and departures by vehicle would be outside of road network peak hours and as such is unlikely to impact the surrounding road network.

5.6 Noise and Vibration

An Acoustic Assessment has been prepared by Acoustic Studio, which is provided at **Appendix O**. The report includes an assessment of the potential noise and vibration impacts during the redevelopment and construction of the new ASB and the proposed operation of the building. The surrounding land uses, potential sensitive receivers and the site monitoring locations are shown in **Figure 51** below.

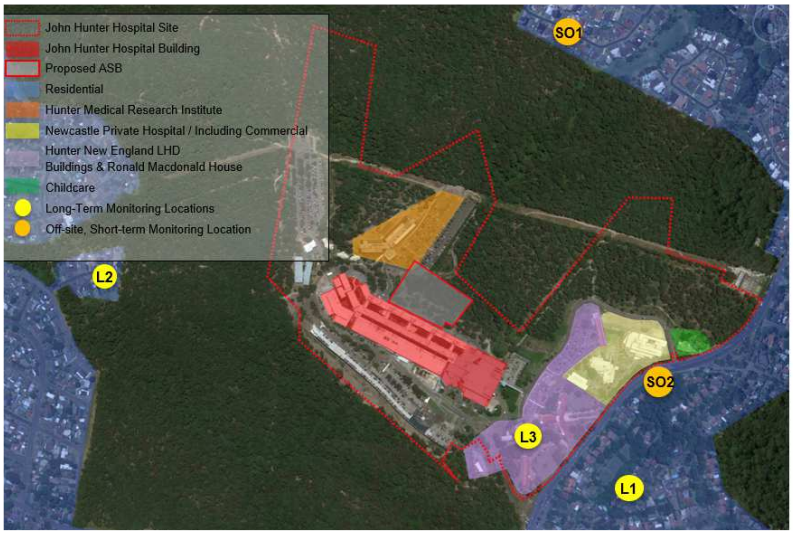

Figure 51 Sensitive receivers and noise monitoring locations

Source: Acoustic Studio

5.6.1 Construction Hours

The proposed construction hours for the project are as follows and includes required extended construction hours outside the Interim Construction Noise Guideline (ICNG) standard hours. The proposed hours are:

- Monday-Friday: 6:00am-6:00pm
- Saturday: 7:00am-5:00pm
- Sundays and public holidays: No works

The above construction hours include extended hours outside recommended standard hours including:

- Monday – Friday - 6:00am to 7:00am (Outside Recommended Standard Hours)
- Saturday - 7:00am to 8:00am (Outside Recommended Standard Hours)
- Saturday - 1:00pm to 5:00pm (Outside Recommended Standard Hours)

In order to minimise disruption to the community, the above extended hours are proposed for normal construction activities. The works are critical public infrastructure being delivered to provide essential health services to the local Newcastle, HNELHD and Northern NSW communities. Extended construction hours are needed in order to:

- Reduce the length of the project to meet the critical project delivery timeframes driven by:
  - The need to provide clinical services to meet the significant forecast population growth, ageing population and Socio-economic status of residents within the JHHIP's tertiary catchment;
  - The need to replace current infrastructure to provide contemporary patient centred models of care in the delivery of Level 6 tertiary services; and
  - Significant increased demand for acute, sub-acute and ambulatory health services.
- Allow construction vehicles to avoid peak road network times and shift changeover times to reduce the impact on the surrounding road network; and
- Minimise the impact on hospital operations during core business hours such as planned surgery and outpatient clinics.

Having regard to the above, it is considered that the proposed hours of work are a "reasonable" variation or departure from the "recommended standard hours". The basis for this conclusion is to be found in:

- the definition of "reasonable" in the ICNG having regard to the nature and purpose of the proposed development.

- the analysis of the source/type of construction work noise likely to be generated by the ASB.
- the proposed construction management and recommended mitigation measures.

5.6.2 Construction Noise Impacts

The key noise sources for the activities occurring during construction works are likely to be:

- Heavy vehicles (e.g., delivery trucks, dump trucks, concrete mixer trucks etc.)
- Site machinery (e.g., excavator, forklift, concrete pump etc.)
- Hand held tools (e.g. drill, jackhammer, chainsaw etc.)

The acoustic assessment notes that construction work noise impacts will be greatest for on campus receivers, including the existing JHH and Hunter Medical Research Institute. Due to the proximity of these receivers, construction noise is generally expected to be above Noise Management Levels.

Construction noise impacts for residential receivers are the highest to the west and north. The worst-case scenario for these receivers are up to 21dB above Noise Management Levels, however these levels are consistent with the pre-existing ambient noise levels at these locations. Further attenuation can be expected from absorption across the adjacent bushland. Therefore, noise impact is not expected to be significant, especially considering these noise levels are significantly below the 75dB Highly Noise Affected Levels outlined in the Interim Construction Noise Guideline.

Generally, for all other receivers, the noise generated from the construction noise from individual equipment is below the Highly Noise Affected Level and generally able to meet the NMLs achieve the relevant criteria when further away from the perimeter boundary. Implementation of all reasonable and feasible mitigation measures for all works will ensure that any adverse noise impacts to surrounding residential, commercial and recreational receivers are minimised when NMLs cannot be met due to safety or space constraints.

As discussed in **Appendix O,** appropriate amelioration methods and recommendations are to be adopted during the construction phase, which are outlined below.

5.6.3 Construction Vibration Impacts

The proposed activities that have the potential to produce significant ground vibration include demolition work and excavation works. Construction vibration has been assessed based on the following standards:

- German Standard DIN 4150-3 Structural Vibration: Effects of Vibration on Structures; and
- EPA “Assessing Vibration: A technical guideline”; and
- ASHRAE Handbook 2007.

Some human perception and minor cosmetic impacts to surrounding structures are expected and these impacts must be reviewed as the construction methodology is developed, particularly in relation to the impacts on the existing JHHC.

The vibration impacts are expected to be variable in nature and the acoustic report will be updated and reviewed once the construction methodology is finalised. Acoustic Studio has provided appropriate mitigation measures to ameliorate vibration impacts on surrounding receivers, as outlined below.

5.6.4 Construction Mitigation Measures

The assessment has made a number of recommendations to mitigate acoustic and vibration impacts. These measures can manage noise impacts to prevent any adverse impacts on residential receivers, including:

- Schedule noisy activities to less sensitive times of the day for each nominated receiver (i.e. daytime hours).
- Including Respite Periods where activities are found to exceed the 75 dB(A) Highly Affected Noise Level at receivers, such as 3 hours on 1 hour off.

- Consider implementing equipment-specific temporary screening for noisy equipment, or other noise control measures recommended in Appendix E of AS2436.
- For large work areas, solid screening or hoarding as part of the worksite perimeters would be beneficial.
- Locate specific activities such as carpentry areas (use of circular saws etc) to internal spaces or where shielding is provided by existing structures or temporary screening.
- Managing the arrival of trucks and heavy vehicles on site at any given time (through scheduling deliveries at different times).
- Unnecessary idling of vehicles and equipment is to be avoided.
- Traffic routes are to be prepared to minimise the noise impact on the community.
- When loading and unloading trucks, adopt best practice noise management strategies.
- A detailed Construction Noise and Vibration Management Plan will be prepared following the ongoing development of the construction methodology to manage these noise and vibration impacts.

These recommendations have been adopted and form part of the mitigation measures at **Section 7.0.**

5.6.5 Operational Noise Impacts

Acoustic Studio have identified that the mechanical plant, noise from traffic and the operation of the emergency helicopter will be the primary source of operational noise.

The mechanical plant and equipment associated with the operation of the development is to be controlled to ensure external noise emissions are not intrusive and do not impact on the amenity of the surrounding sensitive receivers. As is typical for this stage of the design development, final plant selections have not been made, and therefore a detailed assessment has not been carried out. Notwithstanding, acoustic assessment will be undertaken once the detailed design of the plant has been completed. A preliminary review of the plant finds that it is able to comply with relevant controls, with a number of design strategies incorporated to reduce acoustic impact where appropriate.

In relation to operational traffic, general traffic increase along Lookout Road, Kookaburra Circuit and Jacaranda Drive as a result of the new ASB are unlikely to have any adverse noise impacts on receivers surrounding the site. In addition to this, the assessment has determined that the traffic noise generation relating to the proposed ambulance bays, emergency department pick up/drop off and the ASB carpark will be below the relevant operational noise emissions criteria.

5.7 Construction Management

A preliminary Construction Management Plan (CMP) has been prepared by TSA and is provided at **Appendix P**. This CMP details the construction works and the interface with existing operations, as well as the proposed staging details and management of public safety and amenity.

The CMP outlines staging details for the development, as outlined at **Section 3.19**, which has been designed to reduce the impacts on the existing operational hospital services and road network. The CMP also identifies appropriate measures to reduce impacts on noise and vibration, and dust, erosion and sedimentation. The management of construction to reduce amenity and environmental impacts for the public is discussed further at **Appendix P**. The CMP will be finalised by the Principal Contractor appointed to the project.

5.8 Hazards and Risks

A Preliminary Risk Screening regarding all dangerous goods and hazardous materials on site and relating to the development has been undertaken by Pinnacle Risk Management and is provided at **Appendix Q**. This screening identifies the following:

- The Dangerous Goods transported to and stored on site are within the threshold quantities listed in SEPP 33; or
- The existing oxygen storage is already approved, will not be modified as part of the project, poses only local credible hazardous events only and poses no cumulative off-site harm or risks with the other Dangerous Good Class 5.1 material (nitrous oxide); and

- There are no other known hazardous materials associated with the project that would deem the hospital to be a potentially hazardous facility, e.g., combustible dust.

Therefore, based on this assessment, there is no need for a Preliminary Hazard Analysis to be prepared for the proposed works.

5.9 Heritage

A Statement of Heritage Impact has been prepared by Umwelt and is provided at **Appendix R**. The subject site is located partially within a locally listed heritage item, being the Rankin Park Hospital. Two locally listed heritage items, being 'Croudace House' and 'Remnant Garden – Croudace House' are located in the immediate vicinity, but outside the ASB site.

The Statement of Heritage Impact confirms that the proposed JHHIP will not result in any physical impacts to any buildings or elements of identified heritage significance. There is significant visual difference between the heritage items and the contemporary parts of the site, and the works will occur outside of the area of identified heritage significance. The new ASB will be constructed in association with the existing JHH building, which was constructed in the late 1980s, and has no identified heritage significance. The majority of the ASB will be constructed on vacant land to the north of the JHH building.

It is noted that the setting of the buildings/elements of significance has already been compromised by more recent development, including the JHH Building, Newcastle Private Hospital and the HMRI building. The presence of these buildings has already significantly reduced the integrity of the views to and from the elements of significance. Because of this, the proposed ASB, whilst being visible within views from the elements of significance, will not result in any greater adverse visual impacts than existing development already has.

The Statement of Heritage Impact also assessed the potential of any historical archaeology being located on the site. There is no historical evidence that the areas of proposed works were subject to development in the past. Further to this, the topography of the site would have made it unfavourable for development occupation in the past. Therefore, based on this, the historical archaeological potential of the site is assessed as low.

In the unlikely event that intact remains are unexpectedly discovered during works, work must cease, an appropriately qualified archaeologist consulted with. If appropriate, the Heritage Council should be notified in accordance with section 146 of the *Heritage Act*.

5.10 Aboriginal Cultural Heritage

An Aboriginal Cultural Heritage Assessment Report (ACHAR) has been prepared by Umwelt and is included at **Appendix S** in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH [now DPIE] 2011), the *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (OEH [now DPIE] 2010) and the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW [now DPIE] 2010).

A search of the Aboriginal Heritage Information Management System (AHIMS) database was conducted on 5 May 2020, which identified a total of 88 sites within a 10km x 10km search area. Of the 75 valid sites identified, the majority of them comprised of stone artefacts, with the remainder being grinding rooves, shell artefacts modified trees and potential archaeological deposits. Four of these artefacts were identified within 500 metres of the site.

An archaeological survey was undertaken by Umwelt and several representatives from relevant Aboriginal parties on 31 August 2020. This survey identified that much of the project area has been subject to previous disturbance through hospital construction and associated infrastructure or tracks. Overall, the project area did not display landforms or features that would have been attractive to Aboriginal people, nor were there any culturally modified trees identified. It is considered unlikely that Aboriginal objects or sites would be present within the project area in detectible quantities. The area was assessed as having low archaeological potential.

It is noted that no responses were received during notification of the ACHAR.

Based on the above, the following management recommendations have been identified by Umwelt:

- The proposed works may proceed without a requirement to undertake further archaeological investigation.

- That employees and contractors are aware that it is an offence under Section 86 of the NPW Act to harm or desecrate an Aboriginal object unless that harm or desecration is the subject of an AHIP or approved management plan.
- In the unlikely event that an Aboriginal object is exposed during works, all works in the vicinity of the object should cease and advice should be sought from an archaeologist and the registered Aboriginal parties in regard to management of the object(s).
- In the unlikely the event that suspected human skeletal material be identified within the Project Area, all works should cease immediately and the NSW Police Department, NSW Heritage, DPC and the registered Aboriginal parties should be contacted so that appropriate management strategies can be identified.

5.11 Waste Management

5.11.1 Construction Waste Management

A Construction and Operation Waste Management Plan (WMP) (**Appendix T**) has been prepared to assess the volumes and management of waste during the construction phase in accordance with the *Protection of the Environment Operations Act 1997* and the NSW EPA *Waste Classification Guidelines, Part 1: Classifying Waste.*

The plan details the type, volume and disposal methods for all waste material during the construction phase. The WMP details the responsibilities of the principal contractor to lawfully dispose of waste and ensure that reports on the management and capacity of facilities to receive waste are recorded Records will be kept of all waste and recyclables generated and either used on the site or transported off-site during the demolition and site preparation. Further discussion is provided at **Appendix T**.

5.11.2 Operational Waste Management

As outlined in the WMP, waste generated by the ASB will be managed in accordance with the existing Environmental and Waste Management Plan (EWMP) in place for existing John Hunter facilities in accordance with HNELHD waste management policies.

The JHHC has a dedicated loading dock at the JHH and ASB waste will be transferred to the existing waste storage area within the JHH, which has sufficient capacity to accommodate the growth in waste requirements. This is discussed further at **Appendix T**.

5.12 Water Cycle Management

5.12.1 Stormwater

A Civil Engineering report has been prepared by Northrop and is included at **Appendix J**. A number of stormwater drainage elements are being proposed as part of the project, including drainage diversions, relocation of the existing basin associated with the Hunter Medical Research Institute, a new onsite detention and water quality improvement facilities.

Stormwater detention has been provided across the site to limit the post development event stormwater discharge from the site to that of the pre-development scenario for all storm events up to the 1 % AEP. Site storage for the has been designed using DRAINS to meet pre to post discharge and to satisfy Council's DCP stormwater requirements. To meet these requirements, the following stormwater provisions have been proposed:

- Three onsite detention (OSD) basins across the site to detain development peak flows for the various catchments found on site:
  - OSD Basin 1: 1,980m^3.
  - OSD Basin 2: 156m^3.
  - OSD Basin 3: 143m^3.

As per Newcastle Council's DCP, stormwater pollutant removal efficiency targets are as follows:

- Total Suspended Solids: 85%

- Total Phosphorus: 65%
- Total Nitrogen: 45%
- Gross Pollutants: 90%

The average results expected from the four basins on site in relation to pollutant reduction is shown in **Table 14**.

Table 14 MUSIC Modelling Results

Pollutant	Basin 1 & 4 Outlet Percentage Reduction	Basin 2 Outlet Percentage Reduction	Basin 3 Outlet Percentage Reduction
Total Suspended Solids	89.5%	86.1%	86.8%
Total Phosphorous	65.8%	73.9%	75.2%
Total Nitrogen	61%	50.3%	52%
Gross Pollutants	100%	100%	100%

Based on the above table, it is clear that the proposed stormwater strategy will either achieve or exceed the stormwater pollutants reduction target of the Newcastle DCP.

5.12.2 Water Sensitive Urban Design

A review of Water Sensitive Urban Design (WSUD) has been undertaken by EMF Griffiths in the Ecologically Sustainable Development Report (**Appendix U**). It is proposed that WSUD will be implemented across the site through the use of passive irrigation and water quality treatment. Passive irrigation will direct runoff from roofs or hard standing to soft landscaped areas. This will both reduce the potable water demand for irrigation and reduce the volume of water leaving the site. WSUD will also be utilised in the water quality treatment with the inclusion of biofiltration treatment as per the MUSIC modelling above. All WSUD proposals are subject to detailed design and coordination.

5.12.3 Water and Wastewater Management

As outlined in the Integrated Water Management Plan as part of the Ecologically Sustainable Development Report at **Appendix U**, in order to recue the demand on local water and wastewater infrastructure, the design of the proposed development will consider the following potable water demand reduction strategies, where possible:

- Provision of low flow taps and sanitary fixtures.
- Provision of water meters to monitor water demands and leaks.
- Provision of a rainwater harvesting system to provide storage capacity and enable rainwater reuse.
- Install a water efficient irrigation system that is sub-soil drink irrigated with moisture sensor overrides.

5.13 Sediment and Erosion Control

Northrop has identified a number of erosion and sediment control measures at **Appendix J**. These will be put in place during construction to ensure that stormwater runoff will be collected and diverted around the site with sediments removed prior to discharge to the existing stormwater system. The proposed controls include:

- Installation of sediment protection filters on all new and existing stormwater inlet pits.
- All stormwater devices in the designated route of vehicular access shall be protected from damage. All damage to stormwater devises during works shall be repaired or replaced immediately.
- Sediment and erosion control measures shall be installed prior to the commencement of construction and regularly maintained.
- Installation of a ‘rumble strip’ at all vehicle exit points to reduce the likelihood of sediment being trafficked offsite.

All sediment and erosion controls and measures have been prepared in accordance with Council’s DCP and Managing Urban Stormwater: Soils and Construction (Landcom, 2004). These controls and plans should be updated prior to construction commencing to ensure the plan suits the proposed construction methodology. The plan should then be continually reviewed and updated as required throughout the construction period.

5.14 Tree Removal and Tree Canopy

An Arboricultural Impact Assessment has been prepared by ArborSafe (**Appendix K**). The report addresses the trees located directly within the footprint of the building and the associated asset protection zone of the building. An assessment of biodiversity more broadly across the site has been carried and is provided at **Section 5.15** below.

Existing trees on the site are proposed to be retained where possible, however to accommodate the proposal and to ensure a suitable bushfire asset protection zone (APZ) for the new facilities, the removal of 765 trees is required. Of these trees, 29 are of high retention value, 201 are of moderate retention value, 420 are of low retention value and 115 have no retention value. Many of the trees impacted by the direct footprint are smaller, younger trees, which hold a low retention rating.

A bushfire asset protection zone (APZ) is also required for the proposed ASB. Where possible, trees within the APZ are to be retained and will require ongoing protection during construction to ensure they remain viable following the completion of works. The APZ will be selectively cleared to achieve a 15% maximum canopy coverage with consultation between the Bushfire Consultant, Ecologist and Arborist regarding suitable trees to retain prior to commencement of tree removal. 48 trees are proposed to be retained within the APZ.

Notwithstanding, the proposal has a significant landscaping strategy that will include the creation of additional new landscaped areas with up to 252 trees proposed to be planted. Overall, the JHHIP project will achieve a tree canopy of 69.89 ha and 58%, ensuring the design has appropriately offset the required tree removal. This is in addition to the biodiversity offset strategy to compensated for the unavoidable removal of biodiversity values (see discussion on Biodiversity at **Section 5.15** below).

Tree protection and management recommendations are provided in this Arborist Report, including recommendations relating to:

- General tree protection measures and tree protection fencing.
- Bushfire APZ planning.
- Service trench alignment and trenching works.
- Tree pruning and vegetation management.

These recommendations form mitigation measures that are included at **Section 7.0**.

5.15 Biodiversity

A Biodiversity Development Assessment Report (BDAR) has been prepared by Umwelt and is included at **Appendix L**. The BDAR has been prepared in accordance with the Biodiversity Assessment Method (BAM) and includes an identification of the potential impacts of the proposed development on biodiversity within the subject site.

Umwelt identifies that within the 33 hectare study area, three key plant community types are present, being:

- 1592 Spotted Gum - Red Ironbark - Grey Gum shrub - grass open forest of the Lower Hunter – in moderate to good condition.
- 1619 Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands – in moderate to good condition.
- 1627 Smooth-barked Apple - Turpentine - Sydney Peppermint heathy woodland on sandstone ranges of the Central Coast – in moderate to good condition.

One threatened ecological community (TEC) was recorded within the study area, being the Lower Hunter Spotted Gum Ironbark Forest in the Sydney Basin and NSW North Coast Bioregions, which is an endangered ecological community.

No threatened fauna species-credit species were recorded.

The proposal has sought, as far as practicable, to avoid and minimise potential impacts on the ecological values throughout the planning process. This included several changes to the Northern Access Road to reduce cut/fill

requirements and biodiversity impacts associated with large batters. In addition, the design applies acceptable solutions of Planning for Bushfire Protection 2019 to minimize disturbances associated with APZs.

Where possible, the Project has restricted the development footprint to previously disturbed areas including existing fire trails and easements. This includes lead in services/services connections utilising least disruptive methodologies (sewer drainage) and utilising targeted services 'zones' that align within disturbed areas such as roads.

As discussed in the BDAR, following the application of avoidance and minimisation measures the proposed development will require removal of 7.2ha of plant community types, including 2.4 ha of habitat for black-eyed Susan and 7.2 ha of habitat for squirrel gliders.

Health Infrastructure is committed to the design and implementation of a comprehensive biodiversity mitigation strategy to mitigate the unavoidable impacts. The following specific mitigation measures are proposed:

- salvage of biodiversity features, including habitat resources (e.g. hollow logs, tree hollows, fallen timber and rocks/boulders);
- a pre-clearing procedure will be implemented to minimise the potential for impacts on native fauna species (focusing on threatened species) as a result of the clearing of hollow-bearing trees. The preclearing procedure is designed to minimise impacts to hollow-dependent and ground-dwelling fauna;
- weed management;
- fencing and access control;
- bushfire management;
- erosion and sedimentation control; and
- workforce education and training.

The ecosystem and species credit generated is outlined in **Table 15** below. Credit requirements have been separated by project staging and it is intended to satisfy credit requirements at the relevant construction stage. A mitigation measure reflecting this is provided at **Section 7.0**.

The table below includes the staging outlined in **Section 3.19.**

Table 15 Ecosystem and species credits

Name	Credit Class	Credits Generated
Phase 1a + 1b		
PCT 1592 – Spotted Gum – Red Ironbark – Grey Gum shrub – grass open forest of the Lower Hunter	Any PCT in the Lower Hunter Spotted Gum Ironbark Forest in the Sydney Basin and NSW North Coast Bioregions EEC in the Wyong IBRA subregion:	69
PCT 1619 – Smooth-barked Apple – Red Bloodwood - Brown Stringybark – Hairpin Banksia heathy open forest of coastal lowlands	Sydney Coastal Dry Sclerophyll Forests - < 50% cleared group	47
PCT 1627 – Smooth-barked Apple - Turpentine - Sydney Peppermint heathy woodland on sandstone ranges of the Central Coast	Sydney Coastal Dry Sclerophyll Forests - < 50% cleared group	18
Black-eyed Susan *Tetratheca juncea*	N/A	59
Squirrel glider *Petaurus norfolcensis*	N/A	159
Phase 2		
PCT 1627 – Smooth-barked Apple - Turpentine - Sydney Peppermint heathy woodland on sandstone ranges of the Central Coast	Sydney Coastal Dry Sclerophyll Forests - < 50% cleared group	27
Squirrel glider *Petaurus norfolcensis*	N/A	35

Northern and construction road impacts

The alignment of the northern road has been carefully considered by the design team to minimise environmental and biodiversity impacts. The project has been very cognisant of the need to minimise impacts to the local environment as much as possible and in this regard the design has been refined to reduce batters along the alignment to reduce tree clearing as much as possible. The proposal incorporates significant new landscaped areas, tree planting and the biodiversity offset strategy will appropriately compensate for the unavoidable removal of biodiversity values.

5.16 Bushfire

A Bushfire Assessment Report has been prepared by Bushfire Planning Australia and is included at **Appendix V**. The existing approved use of the hospital on the site is considered a Special Fire Protection Purpose (SFPP) under *Planning for Bushfire Protection 2019*. This report finds that the site has a high potential intensity bushfire hazard located to the north of the proposed development. Furthermore, all land within 100m of the identified bushfire hazard is considered to be subject to potential bushfire attack, predominantly from airborne embers.

Accordingly, a series of appropriate bushfire protection measures have been designed to support the proposal. Several of the key recommendations outlined in the Bushfire Report are as follows:

- All buildings to be used for a Special Fire Protection Purpose (SFPP) or associated uses are located to ensure they will not be exposed to radiant heat levels greater than 10kW/m2
- An Asset Protection Zone (APZs) between 50m and 71m is to be provided for all buildings (administration, staff facilities and amenities). The APZs shall be managed in perpetuity as follows:
  - Tree canopy cover shall be less than 15% at maturity;
  - Trees at maturity shall not touch or overhang buildings;
  - Lower limbs shall be removed up to a height of 4m above the ground;
  - Tree canopies shall be separated by 2m to 5m;
  - Shrubs should not form more than 10% ground cover;
  - Shrubs shall not be located under trees;
  - Grass/ ground covers shall be kept mown and be no more than 100mm in height; and
  - Leaves and debris shall be removed regularly.
- The APZ needs to be established before any buildings are occupied. Surface fuel needs to be maintained frequently (< monthly) and an inspection of all trees within the APZ shall be carried out in August and April (pre and post bushfire season) to ensure vegetation remains in accordance with the requirements for APZs.
- An updated Bushfire Survival Plan and Emergency Management Plan shall be prepared in accordance with the RFS Guide to development a Bush Fire Emergency Management and Evacuation Plan.

Bushfire Planning Australia confirm the proposal can comply with the requirements of Planning for Bushfire Protection 2019. Appropriate mitigation measures are provided at **Section 7.0**.

5.17 Aviation

An Aviation Report has been prepared by AviPro and is provided at **Appendix W**. The existing JHH includes a helipad for emergency helicopter services, which is located to the south of the JHH.

This application proposes helipad facilities to the rooftop of the ASB, which is an improved outcome due to the dilution and dispersion of noise due to the greater elevation. The proposed rooftop layout is suitable for accommodating a heliport, in relation to lift access and historical prevailing winds. The heliport will result in a small amount of overflight of populated areas, which is unavoidable in such a facility in a large provincial city with surrounding residential areas. However, this has been minimised as much as possible.

The construction and operation of the ASB will have no impact on the Newcastle/Williamtown Aerodrome OLS and will have no impact on any aviation communications, navigation or surveillance infrastructure. AviPro confirm that aviation safety will not be compromised by the proposal.

5.18 Geotechnical

A Geotechnical, Investigation has been undertaken by RCA Australia and is provided at **Appendix X**. The report identifies that the ground conditions of the site comprises a shallow depth of residual soil over variable strength rock comprising sandstone, pebbly sandstone, and conglomerate. The Victoria Tunnel (VT) coal seam was encountered at depths of between 0 and 14 metres below the surface in the area of the proposed acute services building and will lie within the proposed excavation zone for the structure. The coal seam and adjacent strata are typically highly weathered and of low depths. The Shepherds Hill Formation lies beneath the VT coal seam and is typically between 7 and 10m thick comprising medium to high strength tuff, siltstone and sandstone and is considered to be suitable for the support of the proposed structure on concrete piers.

The regional ground water level lies at a level below RL 0m, or approximately at depths of over 70 metres below ground surface. Minor seepage from the coal seams was observed at higher levels and allowances for seepage into excavations is to be allowed for in the construction program.

Acid sulfate screening tests indicate low potential for acid sulfate rock drainage. RCA confirm there is no need for an acid sulfate management plan.

Based on the results of the geotechnical investigation, the report provides advice on the civil and structural design of the building. Further discussion is provided at **Appendix X**.

5.19 Contamination

Consistent with the framework presented by the SEPP 55 (and the draft Remediation of Land SEPP) a preliminary site (contamination) assessment was undertaken for the development by RCA Australia, which is provided at **Appendix X**. This assessment identified that the existing health campus was bushland with no formal use up until the construction of the JHH in the 1980s. The location of the ASB is currently bushland, and based on desktop review, potential contamination has been identified to be limited to historical filling activities, inappropriate waste disposal and use of asbestos containing materials.

A further detailed site assessment identified that there are no indications of contamination or anthropogenic waste (including asbestos containing materials). RCA conclude that contamination is unlikely and the site is suitable for the proposed use. Remediation is not required and a Remediation Action Plan is not required.

5.20 Mine Subsidence

The site is undermined by abandoned coal mine workings of the Lambton Colliery in the Borehole Seam, and therefore an assessment of mine subsidence has been undertaken by RCA Australia (**Appendix X**) in consultation with Subsidence Advisory NSW. From this assessment, the following was concluded:

- The first worked mine conditions beneath the site are characterised by a broad panel of partially crushed pillars. It is not clear what event or mechanism would lead to further subsidence or whether this would lead to complete pillar crush and convergence. Potential future subsidence is estimated to range from about 0.1m to 0.45m.
- It is considered that a significant number of additional boreholes would be required over the site and the angle of draw to ascertain if less conservative subsidence predictions could be achieved. Alternatively, grouting of the rubble at a reasonable grid spacing of 20m would allow a “Safe, Serviceable and Repairable (SSR)” outcome.

RCA conclude that SSR subsidence conditions can be achieved by undertaking strategic grouting of the partially collapsed workings at the site. Grouting will be undertaken in accordance with the recommendations of RCA and a preliminary grouting works specification has been prepared. This is discussed further at **Appendix X**.

5.21 Structural

A Structural Statement has been prepared by Northrop and is included at **Appendix J**. The Statement assesses the building foundations likely to encountered across the site in relation to the geotechnical conditions. The Statement confirms that the structural design will be in accordance with the latest revision of all relevant Australian Design Standards, the Building Code of Australia and other statutory requirements.

5.22 Flooding

An assessment of the flood impacts on site has been undertaken by Northrop at **Appendix J**. In general, the site is located on a regional high point and therefore is not affected by large scale regional flooding. Multiple drainage gullies are located within the site which currently convey runoff form large storm events to their associated discharge locations. These are indicated as very low flood risk as per Council's mapping.

Given the site is seen to be only affected by localised flooding (i.e. site runoff) the drainage measures being implemented as part of the development, i.e. onsite detention, stormwater diversions and new drainage infrastructure will appropriately manage localised flood risk appropriately.

5.23 Access

Blackett Maguire and Goldsmith (**Appendix Y**) confirm the proposal complies with the Disability (Access to Premises – Buildings) Standards 2010.

5.24 Ecologically Sustainable Development

The proposal is seeking approval from the Planning Secretary for an alternative certification process. The following condition is anticipated for the proposal (as included as a recommended mitigation measure at Section 7.0):

> *Unless otherwise agreed by the Planning Secretary, the Applicant must demonstrate that ESD is being achieved by either: (a) registering for a minimum 5 star Green Star rating with the Green Building Council Australia and submit evidence of registration to the Certifier; or (b) seeking approval from the Planning Secretary for an alternative certification process.*

The proposal is targeting an equivalent 5 Star Green Star rating utilising the Green Building Council of Australia's (GBCA) Design and As-built rating tool (DAB) version 1.3. A 5 Star Green Star rating is considered 'Australian excellence' level. The ASB will be designed to 5 Star Green Star equivalent benchmark utilising the Green Building Council of Australia's (BCA's) Design and As-built rating tool (DAB) version 1.3. A 5 Star Green Star rating is considered 'Australian excellence' level. The project aspires to a 5 Star Green Star Rating or agreed alternative methodology for ESD outcomes.

The environmental performance of the development has been assessed by using clause 7(4) of Schedule 2 of the EP&A Regulations and the EIS is accompanied an Ecologically Sustainable Development Report prepared by EMF Griffiths (**Appendix U**). The key ESD initiatives included in the project are:

- A building design that is responsive to the local climate and includes passive design measures to provide high quality indoor environments that to support the function of the building as a place to heal people. This translated into spaces that are thermally comfortable, have adequate access to fresh air and natural light, maximise the visual connection to the outdoor landscape, are acoustically adequate and where the presence of indoor air pollutants is minimised.
- Façade optimisation to ensure the project meets the energy efficiency requirements of NCC 2019 Section J while allowing high levels of daylight penetration, visual connection to nature and adequate glare management.
- Measures to reduce potable water consumption including water efficient fixtures and fittings, recycled water and rainwater collection and reuse for cooling towers and irrigation, and favouring drought tolerant vegetation in landscaped areas.
- Measures to reduce energy consumption including energy efficient building systems and controls adequately commissioned and tuned. Key energy saving measures include an automated building management system LED lighting and energy efficient mechanical systems.
- Provisions for the installation of a PV system.
- Adequate provisions to enable waste stream separation and reduction of waste sent to landfill.

Furthermore, the proposed development is consistent with the four accepted principles of ESD. The Regulation lists four principles of ecologically sustainable development to be considered in assessing a project. They are:

- The precautionary principle;
- Intergenerational equity;

- Conservation of biological diversity and ecological integrity; and
- Improved valuation and pricing of environmental resources.

An analysis of these principles follows.

Precautionary Principle

The precautionary principle is utilised when uncertainty exists about potential environmental impacts. It provides that if there are threats of serious or irreversible environmental change, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. The precautionary principle requires careful evaluation of potential environmental impacts in order to avoid, wherever practicable, serious or irreversible damage to the environment.

This EIS has not identified any serious threat of irreversible damage to the environment and therefore the precautionary principle is not relevant to the proposal.

Intergenerational Equity

Inter-generational equity is concerned with ensuring that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. The proposal has been designed to benefit both the existing and future generations by:

- Ensuring the health, diversity and productivity of the environment are maintained through the implementation of passive and active design measures that reduce operational energy and water use from the project.
- Reducing energy, water and waste to ensure that the health, diversity, and productivity of the environment is maintained for the benefit of future generations, including:
  - Energy consumption will be designed to achieve compliance to the National Construction Code NCC 2019 Section J requirements.
  - The reduction in water use will be established through high WELS rated water fixtures and fittings, and provision of a rainwater capture and reuse system.
  - Waste generated during the construction phase will be separated in multiple streams to enable recycling and reuse with a consequent reduction in the amount of waste sent to landfill.

Conservation of biological diversity and ecological integrity

The principle of biological diversity upholds that the conservation of biological diversity and ecological integrity should be a fundamental consideration.

The proposed development being in previously developed land alleviates much of the biological diversity concern for the development. During the design phase an Environmental Management Plan (EMP) will be developed to ensure that construction works do not adversely affect the biological diversity and ecological integrity of the site, including for example, measures to protect existing trees to be retained. The EMP will be monitored via an Environmental Management System (EMS) to ensure adherence by all contractors and mitigate any risks to the environment. A climate change adaptation plan will be prepared to help future proof the development to withstand the effects of climate change.

Improved valuation, pricing and incentive mechanisms

The principles of improved valuation and pricing of environmental resources requires consideration of all environmental resources which may be affected by a proposal, including air, water, land and living things. Mitigation measures for avoiding, reusing, recycling and managing waste during construction and operation would be implemented to ensure resources are used responsibly in the first instance.

The valuation of the project's assets and services consider environmental factors through the implementation of various ESD initiatives. Environmental aspects are key criteria in the design and selection of building systems and materials. Materials will be selected based on a life cycle assessment which considers the cradle-to-grave environmental impact of materials. Mechanical, lighting and vertical transportation systems are being designed for low energy consumption and their components will be selected considering whole-of-life costs.

5.25 Cumulative Development Impact

The Newcastle Inner City Bypass is the most significant development application in the immediate vicinity of the site. This development (SSI 6888) was approved in 2019 for the construction of a section of the Newcastle Inner City Bypass about 3.4 kilometres in length between Rankin Park and Jesmond, including a full interchange providing access between the JHHC and the bypass. The relationship between the existing JHHC and the proposed bypass is shown at **Figure 28**.

The bypass would provide two lanes in each direction, as well as three interchanges, including one to the JHHC. The project includes upgrades to connecting roads, pedestrian and cycling facilities, noise barriers as required and permanent operational water quality treatment. The bypass passes the site to the south, and involves the connection of the site via a bypass ramp that will connect to the internal road network of JHHC, as outlined in **Section 2.17**. It is anticipated that this bypass will significantly decrease traffic and travel time for vehicles, including allowing vehicles to skip up to 11 sets of traffic lights, reducing travel times by up to 80% in morning and afternoon peaks. It is anticipated that construction will begin late 2021.

Potential interactions between the proposed JHHIP works and the Newcastle Inner City Bypass include:

- Traffic and transport – increased construction and operational traffic movements and construction zones.
- Noise and vibrations – emission from construction equipment.

Construction will commence in late 2021 however it is not anticipated that there will be adverse cumulative impacts because:

- The two projects are in relative isolation to each other with the exception of the interface at the Hospital interchange;
- Health Infrastructure and TfNSW have established governance to ensure collaboration between the two agencies and are coordinating their respective construction program to ensure appropriate phasing of works to integrate the projects;
- Project access sites are in separate locations and the road network includes arterial roads with capacity for traffic volumes, ensuring that cumulative impact by construction traffic is minimised; and
- The relatively isolated construction sites and significant separation to sensitive users ensures that cumulative noise impacts can be appropriately managed through implementation of typical construction management measures.

There are no other major developments proposed or approved in the vicinity of the site of the JHHIP works.

5.26 Social Impact Assessment

The Hunter Research Foundation Centre (HRFC) at the University of Newcastle has prepared a Social Impact Assessment in accordance with the *NSW Government Draft Social Impact Assessment Guideline (2020)* (**Appendix Z**). The methodology followed a good practice approach with reference to the NSW guidelines series for Community and Stakeholder Engagement as a core element2. The approach included:

- The development of a baseline measure of the five capitals (natural, financial, human, social and manufactured capital);
- Desk top review of the technical studies developed by various consultants as part of the Environmental Impact Assessment for the project;
- An online survey of residents and staff members; and
- Interviews with selected survey respondents.

Overall, survey respondents perceived that the development at the JHHIP is expected to deliver significant positive outcomes for the local and regional community and staff in terms of upgraded facilities, increased capacity, improved service, improved traffic flow, improved working conditions and employment opportunities. The majority of impacts once the site is fully operational were perceived by stakeholders to have a significantly positive impact.

The HRFC conclude the summary of potential impacts as follows:

- Once the project has been delivered, potential impacts are strongly positive.
- Most of the potential negative impacts will occur during the construction phase.

The SIA found that no mitigation measures are required for the operational phase.

The SIA identifies various mitigation measures for the construction phase that are based on good practice and are detailed in the relevant technical studies for the EIS. The construction mitigation measures are identified in Table 2of the SIA at **Appendix Z**. These mitigations are reflected within the consultant reports and are identified where relevant in the Mitigation Measures at **Section 7.0**.

5.27 Public Benefit

In general, investment in major projects can only be justified if the benefits of doing so exceed the costs. Such an assessment must consider all costs and benefits, and not simply those that can be easily quantified. As a result, the EP&A Act specifies that such a justification must be made having regard to biophysical, economic and social considerations and the principles of ecologically sustainable development.

This means that the decision on whether a project can proceed or not needs to be made in the full knowledge of its effects, both positive and negative, whether those impacts can be quantified or not. The proposal involves the development of a new ASB and significant investment in upgrading the infrastructure of the JHHC. The assessment must therefore focus on the identification and appraisal of the effects of the proposed development, particularly given the demand for upgraded health services within the broader region.

Social Impact

The social impacts and benefits associated with the proposed development include:

- A development that will provide a significant piece of social infrastructure increasing the number of hospital beds. The design and capacity increase of the redevelopment is anticipated to have positive impacts on the overall health outcomes of the region.
- Improve access to an extensive range of health services and facilities for people in Newcastle and the Hunter Region.
- Provides equitable access across the hospital, improving accessibility for those less abled.
- Provide additional social benefits for the region in terms of providing adequate employment in the area.
- John Hunter Hospital is a major health facility in the Newcastle and Hunter Region. To not invest in the development would exacerbate the service offering and capacity constraints of the existing health infrastructure in the region and require patients to continue to travel significant distances to receive adequate healthcare.

A Social Impact Assessment is provided at **Appendix Z**.

Economic Impact

The economic impacts and benefits of the proposed development include:

- The proposed development is anticipated to create additional employment in consultancy, construction and operation.
- Will be a stimulus to economic investment by delivering a key anchor development that will encourage and attract additional allied businesses and uses to the John Hunter Innovation Precinct.
- The proposal will capitalise on the economic investment of the Newcastle Inner City Bypass.

Biophysical Impact

The environmental impact assessment of the development has demonstrated that:

- The development will generate limited environmental impacts, due to the existing hospital campus which is already present on the site.
- The development will not have significant impacts on any threatened flora or fauna species.

- The risks associated with the development are capable of being appropriately mitigated through the mitigation measures outlined in **Section 7.0**.

5.28 Development Contributions

The relevant contributions plan is the *Section 7.12 Newcastle Local Infrastructure Contributions Plan 2019 (Updated December 2020)* (Newcastle LICP). The purpose of the plan is to enable Council to require a contribution towards the provision, extension or augmentation of public amenities and services that will or are likely to be required as a consequence of development within the LGA.

Under Section 7 of the Newcastle LICP, Council also does not impose a Section 7.12 levy on the and application by or on behalf of a NSW government or government department to enable development defined as an 'Infrastructure Facility' under the *State Environmental Planning Policy (Infrastructure) 2007.* Clause 5 of the ISEPP defines infrastructure facility as development that is the subject of development controls under Part 3 of the ISEPP.

Hospitals are identified as a health service facility under Part 3, Clause 56 of the ISEPP and Clause 57(1) states that development of a health services facilities is permitted with consent on land in a prescribed zone. The proposal is for a health services facility on land zoned SP2 – Infrastructure – Health Services Facility which is prescribed under Clause 56 of the ISEPP, and therefore the proposed hospital development is exempt from development contributions.

Further, the following planning policies support the best practice of exempting community infrastructure from paying contributions:

Circular D6 – Crown Development Application and Conditions of Consent
Exemption from contributions is supported by Planning Circular (Circular D6) relating to Crown Development Applications issued by the then Department of Urban Affairs and Planning. Circular D6 sets out the circumstances in which it is appropriate for a consent authority to seek the approval of the applicant or the Minister to impose conditions of consent. Circular D6 notes that where a consent authority intends to levy contributions on Crown Development, they must be justified, and consideration should be given to the Crown's role in providing a community service, the cost of which is accountable to all taxpayers in the State.

The currency of Circular D6 is confirmed in the Draft Development Contributions Practice Note – July 2005, which states "the current limitation on imposition of levies on Crown Developments as outlined in Circulate D6…remain in force." Health Infrastructure is a Government agency which relies on government grants to provide new facilities for the local community.

The levying of a development contribution would divert a portion of these public funds, which have been specifically provided to fund a hospital redevelopment, to local services without any direct nexus to the impact of those services.

The inherent public character of the proposed development contrasts with a strictly commercial development where a full levy might be considered reasonable. The nature of the development means that the infrastructure which Council typically seeks to levy for will largely be provided by the hospital for use by the staff and public.

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 new ASB 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 52 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 52 Risk Assessment Matrix

				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						
Traffic and Parking	C/O	• Increase in construction traffic on local roads. • Increase in traffic and parking on local roads during operation	• A preliminary Construction Traffic Management Plan has been prepared detailing measures to minimise any adverse impacts arising from construction traffic. • Additional parking demand generated by the development will be accommodated in the new ASB basement car park, as well as the extended car parking spaces available in the existing car parks.	C = 3 O = 1	C = 2 O = 1	C = 3 (low) O = 2 (low)
Visual and Built Form	O	• Visual impact of the development when viewed from the public domain.	• Measures have been incorporated to reduce the visual impact of the development when viewed from nearby residential development and the public domain.	O = 2	O = 2	O = 4 (low/medium)
Noise and Vibrations	C / O	• Increase in noise and vibration levels during construction • Increase in noise levels during operations	• The proposed development will implement a Construction Noise and Vibration Management Plan which details specific measures to ameliorate any potential noise or vibration impacts to surrounding sensitive receivers. It is noted that there are not many surrounding residential or other sensitive receivers. • Given that the site currently operates as a hospital, any potential noise impacts are considered to be manageable in the context of the overall development.	C = 2 O = 1	C = 1 O = 1	C = 4 (low/medium) O = 2 (low)
Tree removal and biodiversity impact	C	• Significant impact on existing trees and vegetation to accommodate the construction of the ASB.	• Implementation of appropriate tree protection zones around trees which are to be retained, to ensure the ongoing protection of vegetation on site during construction. This includes protecting trees of good quality or trees of biodiversity importance.	C = 3	C = 2	C = 5 (low/medium)

7.0 Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 16** below. These measures have been derived from the previous assessment in **Section 5.0** and those detailed in appended consultants' reports.

Table 16 Mitigation Measures

Mitigation Measures
Construction Hours Construction may only be carried out between the following hours: • Monday-Friday: 6:00am-6:00pm • Saturday: 7:00am-5:00pm • Sundays and public holidays: No works
Transport and Accessibility Construction traffic will be managed with the incorporation of the following mitigation measures: • Ensure heavy vehicle movements take place outside peak periods • Ensure construction workers access the site before the weekday morning traffic network peak and leave after the afternoon traffic network peak period • Consider utilising a shuttlebus for staff and service users to minimise traffic and parking impacts • A traffic management plan would be developed by the contractor and incorporated into the Construction Environmental Management Plan (CEMP). • Construction and delivery vehicles entering or leaving the JHHIP site compound would use arterial roads wherever possible. Vehicle deliveries would be restricted to nominated times within the approved Construction Traffic Management Plan (CTMP). • Should the Newcastle Inner City Bypass not be open prior to the opening of the ASB there is to be no uplift in the clinical capacity of the JHHC (from the operational benchmark of 2025) until the bypass is open and connected to the JHHC.
Noise and Vibration The construction and operation of the proposal will be in accordance with the Noise and Vibration Assessment prepared by Acoustic Studio, as follows: • Schedule noisy activities to less sensitive times of the day for each nominated receiver (i.e. daytime hours). • Including Respite Periods where activities are found to exceed the 75 dB(A) Highly Affected Noise Level at receivers, such as 3 hours on and 1 hour off. • Carry out vibration surveys on each key vibration-generating activity. • Mechanical plant - Noise controls will be incorporated within the design any other plant located outdoors in accordance with the recommendations of the Noise and Vibration Assessment prepared by Acoustic Studio.
Aboriginal Heritage The following mitigation and management measures are proposed by Umwelt in the ACHAR at **Appendix S**. • Ensure employees and contractors are aware that it is an offence under Section 86 of the NPW Act to harm or desecrate an Aboriginal object unless that harm or desecration is the subject of an AHIP or approved management plan. • In the unlikely event that an Aboriginal object is exposed during works, all works in the vicinity of the object should cease and advice should be sought from an archaeologist and the registered Aboriginal parties in regard to management of the object(s). • In the unlikely the event that suspected human skeletal material be identified within the Project Area, all works should cease immediately and the NSW Police Department, NSW Heritage, DPC and the registered Aboriginal parties should be contacted so that appropriate management strategies can be identified.
Heritage • In the unlikely event that intact remains are unexpectedly discovered during works, work must cease, an appropriately qualified archaeologist consulted with. If appropriate, the Heritage Council should be notified in accordance with section 146 of the Heritage Act.
Waste • A detailed Construction Waste Management Plan (CWMP) shall be prepared by the Contractor. This is to include accurate estimates of waste quantities to ensure appropriate onsite waste management in accordance with the waste management hierarchy. • Operational waste is to be in accordance with NSW Health waste management practices and policies.
Stormwater

Mitigation Measures

- The proposal will be designed in accordance with the Civil Report dated March 2021 and Civil Drawings prepared by Northrop and dated March 2021.

Tree Removal

The mitigation measures outlined in the Aboricultural Impact Assessment tree protection specification prepared by Arborsafe dated 19 April 2021 are to be followed.

- The main tree protection fencing should be based on the site perimeter fence and on excluding the retained trees from the construction zone. Individual fencing may be required in certain instances.
- In the event excavation is required within the TPZs of retained trees, arborist involvement will be required to ensure works are undertaken in accordance with the Australian Standard AS 4970–2009: Protection of Trees on Development Sites.
- Excavation/trenching required within the TPZs of retained trees to facilitate service installation should be undertaken using sensitive construction methods such as under boring, manual excavation, hydro-vac or air spade, light machinery with spotter and ground protection.
- Reduction pruning should focus on the removal of smaller diameter branches where feasible and remove no greater than 10% of the total crown. Branches no greater than 50mm diameter are to be removed unless specifically approved by the project arborist

Biodiversity

- The project will be required to satisfy Biodiversity Offset credits in accordance with the project staging outlined in the BDAR prepared by Umwelt dated March 2021. Phase 1 will require 354 credits and Phase 2 will require 62 credits to be satisfied.

Mine Subsidence

- Mine subsidence works are to be in accordance with the preliminary grouting works specification and recommendation of Subsidence Australia as set out by RCA Australia dated 8 April 2021.

ESD

- Unless otherwise agreed by the Planning Secretary, the Applicant must demonstrate that ESD is being achieved by either: (a) registering for a minimum 5 star Green Star rating with the Green Building Council Australia and submit evidence of registration to the Certifier; or (b) seeking approval from the Planning Secretary for an alternative certification process.

Aviation

- Standard obstacle/obstruction lighting to the crane(s) will provide an adequate additional level of safety and assure ongoing, existing HLS operations during construction.

Wind

- Incorporate the design measures identified by Windtech in accordance with the Pedestrian Microclimate CFD Study dated April 2021.

8.0 Conclusion and Justification

The Environmental Impact Statement (EIS) has been prepared to consider the environmental, social and economic impacts of the proposed development of the new multistorey Acute Services Building and refurbishment works to certain existing buildings and facilities at John Hunter Hospital. 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 planning instruments, built form, social and environmental impact including traffic, noise, construction impacts, biodiversity and stormwater.

Having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development, the carrying out of the project is justified for the following reasons:

- The proposal will facilitate the development of a new state-of-the-art health facility which will further support and strengthen the services and facilities provided at the hospital for the benefit of the Hunter New England Local Health District.
- The proposal represents a significant investment in the Hunter region, which will deliver approximately 5,500 jobs (direct and indirect) during the construction phase and ongoing health services jobs and indirect jobs in the Newcastle and Hunter Region.
- The development will support a significant piece of social infrastructure, increasing the number of hospital beds and health workers to Newcastle, elevating JHHIP as a competitive destination for health services.
- The proposal will facilitate future health uses on the site and is entirely consistent with the NSW State Priorities, Greater Newcastle Metropolitan Plan and Hunter Regional Plan by providing opportunities for future precinct activation and increased and improved health facilities.
- The existing site allows for the provision of new health facilities that meet the special design requirements for future proposed uses without having significant adverse impacts on surrounding uses.
- The assessment of the proposal has demonstrated that the development will not result in any environmental impacts that cannot be appropriately managed and consistent with the relevant planning controls for the site.
- The proposal incorporates significant new landscaped areas and tree planting and the biodiversity offset strategy will appropriately compensated for the unavoidable removal of biodiversity values.
- The proposal is consistent with the principles of ecologically sustainable development as defined by Schedule 2(7)(4) of the EP&A Regulation.

Given the merits described above it is requested that the application be approved.