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Royal Prince Alfred Hospital Redevelopment

Environmental Impact Statement

Prepared for
Health Infrastructure

Date
13 January 2023

Acknowledgement of Country

Architectus acknowledges the Australian Aboriginal and Torres Strait Islander peoples of this nation as the Traditional Custodians of the lands on which we live and work.

We pay our respects to Elders, past and present and emerging.

Architectus is committed to honouring Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to the land, waters, and seas and their rich contribution to society.

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13 January 2023

Revision history

Issue Reference	Issue Date	Issue Status
A	11 October 2022	First Draft to Client
B	19 October 2022	Test of Adequacy
C	8 November 2022	Formal Lodgment
D	13 January 2023	Final

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Prepared by Sydney Environmental Group

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Prepared by TSA Management

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Prepared by Blackett Maguire and Goldsmith

Statement of Veracity

Project Details	
Project Name	**Royal Prince Alfred Hospital Redevelopment**
Application Number	SSD-47662959
Address	12 Missenden Road, Camperdown NSW 2050
Application Details	
Applicant Name	Health Infrastructure
Applicant address	1 Reserve Road, St Leonards NSW 2065
Details of person by whom this EIS was prepared	
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Name and Professional Qualification	Jane Fielding, Senior Associate, Planning
Registration number	8134
Organisation registered with	Planning Institute of Australia
Declaration	

The undersign declares that this EIS:

- Has been prepared in accordance with *Environmental Planning and Assessment Regulation 2021*;
- Contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the EIS related;
- Does not contain information that is false or misleading;
- Addresses the Planning Secretary's environmental assessment requirements (SEARs) for the project;
- Identifies and addresses the relevant statutory requirements for the project, including any relevant matters for consideration in environmental planning instruments;
- Has been prepared having regard to the Department's *State Significant Development Guidelines – Preparing an Environmental Impact Statement*;
- Contains a simple and easy to understand summary of the project as a whole, having regard to the economic, environmental and social impacts of the project and the principles of ecologically sustainable development;
- Contains a consolidated description of the project in a single chapter of the EIS;
- Contains an accurate summary of the findings of any community engagement; and
- Contains an accurate summary of the detailed technical assessment of the impacts of the project as a whole.

Signature	
Date	13 January 2023

Executive Summary

The Site

The Royal Prince Alfred (RPA) Hospital campus is located in Sydney's inner west suburb of Camperdown, within the City of Sydney Local Government Area. The campus is situated between the University of Sydney to the east and the residential area of Camperdown to the west. A north-south arterial road (Missenden Road) divides the campus into two distinct portions, known as the East and West Campuses. The northern boundary of the campus is defined by the Queen Elizabeth II Rehabilitation Centre and the southern extent of the campus is defined by Carillon Avenue.

The works are proposed to both the East and West Campuses, as well as some off-site works occurring within the University of Sydney.

RPA Hospital is located on Gadigal Land, one of the twenty-nine clans of the great Eora Nation. The traditional custodians of the land in the Sydney Local Health District (SLHD) are the Gadigal, Wangal and Bediagal people of the Eora Nation.

The site comprises the following land titles:

East campus:

- Lot 1000 DP 1159799 (12 Missenden Road, Camperdown, 2050);

West campus:

- Lot 11 DP 809663 (114 Church Street, Camperdown, 2050); and
- Lot 101 DP 1179349 (68-81 Missenden Road, Camperdown 2050).

Off-site works are proposed on University of Sydney land, known as Lot 1 DP 1171804 (3 Parramatta Road, Camperdown, 2050) and Lot 1001 DP 1159799 (12A Missenden Road, Camperdown, 2050).

The focus of the development is the east campus which was the defined site area of a design competition carried out for the project. This is because of clinical expansion needs and research synergies within the east campus and adjacent University of Sydney. The east campus is highly constrained, encumbered by State and local heritage, trees and flooding, as detailed further below.

Background

In March 2019, the NSW Government announced a significant $750 million investment for the redevelopment and refurbishment of the RPA Hospital campus. The Project will include the development of clinical and non-clinical services infrastructure to expand, integrate, transform and optimise current capacity within the hospital to provide contemporary patient centred care, including expanded and enhanced facilities.

The last major redevelopment of RPA Hospital was undertaken from 1998 to 2004 projected to 2006 service needs. Since then, significant growth has been experienced in the volume and complexity of patients, requiring significant investment to address projected shortfalls in capacity and to update existing services to align with leading models of care.

The redevelopment of RPA Hospital has been the top priority for the Sydney Local Health District since 2017 through the Asset Strategic Planning process, to achieve NSW Health strategic direction to develop a future focused, adaptive, resilient and sustainable health system.

The Clinical Services Plan (2019) provides almost all areas of the RPA are severely space constrained, with a lack of clinical consultation, diagnosis, treatment, interview, storage, patient amenity and waiting areas. This is especially evident in acute services including ED, ICU, Neonatal Intensive Care Unit (NICU), Women's and Babies, Gastroenterology and Liver, Medical Imaging, Paediatrics, Cardiology and Theatres.

There is a shortage of single rooms for infection control, bariatric patients, spaces designed for patients with behavioural issues and isolation rooms to accommodate people affected by disasters and

pandemics. In this regard, there is an opportunity to improve current infrastructure at RPA Hospital to facilitate effective and efficient implementation of new models of care.

Proposed Development

The proposed development consists of an expansion to the RPA Hospital and associated improvements to the existing facility, as well as upgrades to the public realm. The East Campus has been selected to accommodate the majority of the built form additions and expansion that complement the existing highly valuable acute clinical assets on this Campus. Furthermore, the East Campus provides opportunities for synergies with the adjacent University of Sydney Campus and associated research institutions. The project will provide the Hospital with the opportunity to meet increased medical demand due to numerous factors including population growth and ageing population as well as providing additional medical services and an upgrade to the existing infrastructure.

The proposed development comprises:

- **Alterations and additions to the RPA Hospital East Campus, comprising:**
  - Eastern wing: A new fifteen (15) storey building with clinical space for Inpatient Units (IPU's), Medical Imaging, Delivery, Neonatal and Women's Health Services, and a helicopter landing site is proposed on the roof of this building;
  - Eastern extension: A three (3) storey extension to the east the existing clinical services building to accommodate new operating theatres and associated plant areas;
  - Northern expansion: A two (2) storey vertical expansion over RPA Building 89 accommodating a new Intensive Care Unit and connected with the Eastern Wing;
  - Internal refurbishment: Major internal refurbishment to existing services including Emergency Department and Imaging, circulation and support spaces;
  - Enhanced Northern Entry/ Arrival including improved pedestrian access and public amenity;
  - Reconfiguration of Emergency Department forecourt at the Missenden Road frontage for ambulance access and parking, and replacement of canopy to the Albert Pavilion;
  - Demolition of affected buildings, structures and trees;
  - Changes to internal road alignments and paving treatments;
  - Works within Missenden Road reserve including kerb realignment, addition of new "keep clear zone", and an additional four drop-off parking bays;
  - Landscaping works, including tree removal, tree pruning, and compensatory tree planting including off-site on University of Sydney land.
- **Ancillary works to the RPA Hospital West Campus, comprising:**
  - Temporary helicopter landing site above existing multi storey carpark;
  - Re-routing of existing services; and
  - Associated tree removal along Grose Street.

Strategic Context

The RPA Hospital site is located within Tech Central, a precinct that brings together the six neighbourhoods of Surry Hills, Haymarket Camperdown, Ultimo, South Eveleigh and Darlington-North Eveleigh. Tech Central was formally known as Camperdown-Ultimo Collaboration Area.

Tech Central is home to a diverse set of world class research, education, health and creative institutions, as well as residential, retail and recreational destinations.

These neighbourhoods are already home to some of Australia's most exciting start-ups and innovative institutions including RPA Hospital. The vision for Tech Central expands on this and describes the precinct as an "innovation ecosystem", with spaces created for researchers, innovators, start-ups and entrepreneurs to incubate, test and scale their ideas.

The redevelopment of the site contributes to this vision. It allows for specialized medical treatment to be provided in modern, world class facilities; allowing RPA Hospital to expand and reach its full potential.

The co-location of RPA Hospital and the University of Sydney has allowed for a strong history of education and research collaboration. The ongoing use of the RPA Hospital site as a health services facilities will not only provide a huge social benefit to the community, but also supports the vision of Tech Central to foster innovation.

Feasible Alternatives

RPA Hospital has been subject to extensive investigations and master planning exercises to determine the best direction for achieving clinical demands and CHERP aspirations in the precinct. These include:

- RPA Hospital Clinical Services Plan 2019;
- CHERP Precinct Plan (June 2020);
- CHERP RPA Campus Plan (June 2020);
- RPA Hospital Redevelopment Stage 1 Master Plan (September 2021).

There is a statutory requirement under Sydney Local Environmental Plan 2012 (SLEP 2012) for a competitive design process that achieves design excellence. A Design Excellence Strategy was prepared for the proposed development which defined the site area for the purposes of the design competition as the whole of the East Campus (**Appendix N**).

A bespoke invited architectural design competition was carried out with three (3) invited competitors. Three options for the proposed development were considered as a part of an Architectural Design Competition (Design Competition), which commenced 25 October 2021 and ended in March 2022. The purpose of the Design Competition was to select a design collaborator who presented the highest quality architectural, landscape and urban design proposal for the RPA Hospital Redevelopment.

The design schemes developed by the design competition entrants each offered varying built form options and degrees of heritage and other impacts. The winning scheme was found by the Design Jury of being capable of achieving design excellence.

Ultimately, Bates Smart was selected as the winning architectural team. In consideration of both urban and clinical responses, and the objectives of the Competition Brief, the Bates Smart scheme was deemed more realisable in comparison to the Architectus scheme and of a more appropriate scale and clinically advanced in comparison to Fitzpatrick + Partners' scheme. Bates Smart worked in conjunction with Jacobs to finalise the proposed design.

A design integrity panel (DIP) was established to assist in the ongoing achievement of design excellence and to ensure that design integrity is maintained. At the date of lodgment, the DIP had met on three occasions (on 29 July 2022, 9 August 2022 and 23 September 2022).

Temporary HLS

A temporary Helicopter Landing Site (HLS) is proposed to be located on the roof of the existing multi-storey carpark within the west campus of RPA Hospital. The existing HLS located in the east campus is situated unacceptably close to the construction zones for the proposed works, creating multiple hazards to helicopter flight and preventing continued and safe Helicopter Emergency Medical Service (HEMS) operations to that site.

The final location of the temporary HLS was determined following consideration of 3 (three) options:

- Option 1: The South-West vacant site on West campus;
- Option 2 (Preferred): The roof of the multi-deck carpark to the north of the South-West site;
- Option 3: St John's sports fields.

Option 2 was selected as the preferred option. Option 1 was noted by Avipro, the aviation consultant, as unviable as the two aircraft approach and departure paths greatly exceeded the desired maximum angle required for aviation safety requirements and required removal of vegetation. Option 3 was deemed unfeasible as it would result in longer patient transfer times, would be too disruptive to games play at St John's College and would possibly require the playing field to be closed altogether.

Justification for the selected temporary HLS location is provided in **Section 2.4** of the EIS.

Consultation

The proponent team has undertaken consultation with Government departments, agencies and stakeholders and the local community, as required by the SEARs. The issues discussed and raised during consultation have been addressed as part of the proposal. Consultation and outcomes have been addressed in detail at **Section 5** of the EIS.

Planning Framework and Assessment

The proposed development is classified as SSD on the basis that satisfies Section 14 of Schedule 1 of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP), being development for the purpose of alterations and additions to a hospital that has a Capital Investment Value (CIV) of over $30 million.

The upgrade and expansion of the RPA Hospital have been assessed against the SEARs issued for the project and the planning framework.

Statutory and Strategic Planning Context

The proposal has been assessed against relevant strategic policies and planning controls and is found to be generally consistent with these, as detailed within **Section 5** of this EIS. Additionally, the proposal satisfies the SEARs as demonstrated in this EIS.

Environmental Impacts

Built Form, Urban Design and Design Quality

- The proposed scheme was the winner in a competitive design process and is considered by the Design Integrity Panel to achieve design excellence as per the statutory requirements;
- The proposed built form is contextually appropriate in scale amongst the existing buildings at the RPA Hospital Campus and the heritage-listed buildings that form part of the broader University of Sydney Heritage Conservation Area.

Visual Impact

- Visual impact has been minimized through the scaling back of buildings on the approach to Missenden Road, the gentle curve of the East Wing and the tree succession plan to retain a visual buffer between the building and University Oval 1.

Heritage

- The RPA Hospital is important for its continuous use as a major Australian medical and surgical hospital since its opening in 1882. Critically, the proposed development allows for the ongoing and future use of the hospital;
- Within the Design Competition Brief, one of the key objectives forming the foundation of the Design Competition was, “The design concept is to be sympathetic to heritage items and vegetation that are located within and adjacent to the site, contributing to the character and quality of the Campus”.
- While there are direct adverse impacts on heritage through proposed demolition of heritage buildings and tree removal, this is necessary to realise the important clinical growth of the hospital. Various built form options have been explored through master planning and design competition processes, and the current proposal is the culmination of these extensive investigations and design exercises;
- The Pathology building and the Chapel are located 2m below the Probable Maximum Flood (PMF) level and as a result, their ongoing use is untenable in the context of the changing climate. They are also located in the only possible location for new buildings in the constrained north-eastern corner of the east campus without creating an overly scaled east tower with bulk and scale impacts to the site and surrounds;
- The direct adverse impacts to heritage buildings will be mitigated in part by the measures outlined in the Statement of Heritage Impact and the Preliminary Heritage Interpretation Framework, including but not limited to, landscaped elements, salvage and reuse of original fabric in the landscape, building fabric, and public art.
- The direct adverse impacts to the heritage significant Rear Gardens (including removal of significant trees) will be mitigated in part by a proposed replantation strategy (on and off-site tree planting) incorporated into the landscape plans/ report. The Rear Gardens will also be re-interpreted in the new Central Courtyard as a place of respite. Planting is inspired by the heritage significant Rear Gardens with a mix of exotic and native trees, as well as dense understory planting;

- The heritage impact to the Albert Pavilion associated with the ED drop off works is minor and acceptable to ensure the functional requirements of the ED are met,
- The design incorporates several commitments made to reflecting and respecting Country in the design and on the site, that were informed by consultation with Aboriginal stakeholders.

Landscape Amenity

- The current gardens / open space areas of the precinct are underutilized by staff, visitors and patients. The proposal would enhance amenity for staff, visitors and patients through embellishment of landscaping, and the creation of new spaces such as courtyards for congregation and respite.

Ecology

- Any potential impact of the proposal on threatened species or habitat is expected to be localized and will not have an overall impact on the bioregional persistence of these species;
- Camphor laurel trees are regarded as a “high threat exotic”. It is an invasive weed, and a high threat to natives. The Biodiversity Development Assessment Report (BDAR) refers the partial removal of Camphor laurels from the site and their replacement with native trees as a gain for biodiversity overall. The Replantation Strategy includes a greater mix of native tree species for the site, including endemic species for Connection with Country.

Traffic

- The proposed development will not result in any adverse traffic impacts on the surrounding road network, and parking demand associated with the proposed development can be accommodated;
- A Green Travel Plan is included within the proposed development to encourage mode shift from private vehicles.

Noise and Vibration

- The proposed works during construction are predicted to result in exceedance of the relevant noise management levels at most off-site assessment locations. Mitigation measures will be implemented during the works to minimize these impacts including respite breaks, and only low and moderately noisy works permitted to occur outside of standard construction hours for certain components of the development;
- It is acknowledged the operation of the temporary HLS will have a significant noise impact on adjoining residents, while reducing noise impacts for hospital staff and visitors compared to the existing HLS location. The facility will only be temporarily in operation and efforts will be made for flights to be maximized during daytime hours unless they are a genuine emergency.

Economic

- The proposed development is anticipated to create 1,400 jobs during the construction phase and approximately 900 additional full time employment staff during the operational phase.

Cumulative Impacts

- Some of the approved REF (Part 5) works on the RPA hospital site will occur in advance of construction of the SSD works. Any overlap will be minimal and construction will be coordinated;
- HI and Sydney University are working collaboratively to minimise associated construction impact to both campus and their neighbours from the Sydney Biomedical Accelerator.

Site Suitability

While demolition of heritage buildings and removal of significant trees is required to facilitate the proposed development, this is a consequence of it being a constrained site and the need to expand acute services from their current location and meet forecast clinical health care demand. The redevelopment of the site will uphold RPA Hospital’s critical role within the health services network.

Public Interest

- The core social impacts of the proposal as concluded in the Social Impact Assessment, are the delivery of expanded hospital services (positive), high quality of open space areas (positive), noise

associated with the temporary helipad (negative), parking shortages and removal of heritage items (negative). While the negative impacts of the proposal are acknowledged, the social benefits associated with the provision of health services are significant enough that the project will have an overall positive social impact on the community;

- The assessment of this proposed development has demonstrated that the proposed development will not generate environmental impacts that cannot be justified nor appropriately managed, and is consistent with the relevant planning controls for the site.

Assessment Summary

There are no known site conditions which would prevent the development including geotechnical conditions, contamination, flooding, biodiversity, Aboriginal cultural heritage, or other.

While there are environmental impacts relating to heritage, trees, and noise (construction and operation, particularly relating to temporary HLS), these are considered to be justified given the significant needs for the proposed expansion, the lack of feasible alternatives, and sufficiently ameliorated through the recommended mitigation measures and ongoing design development.

On balance, having considered site suitability, environmental impacts, and key benefits, the proposed development is in the public interest.

1. Introduction

1.1 Applicant's Details, Address and ABN

The Applicant's details for the project are as follows:

- Name: Health Infrastructure (HI);
- Address: 1 Reserve Road, St Leonards NSW 2065; and
- ABN: 89 600 377 397.

1.2 Site and Context

The works are proposed to both the East and West Campuses, as well as some off-site works occurring within the University of Sydney.

The site comprises the following land titles:

East campus:

- Lot 1000 DP 1159799 (12 Missenden Road, Camperdown, 2050).

West campus:

- Lot 11 DP 809663 (114 Church Street, Camperdown, 2050); and
- Lot 101 DP 1179349 (68-81 Missenden Road, Camperdown 2050).

Off-site works are proposed on University of Sydney land, known as Lot 1 DP 1171804 (3 Parramatta Road, Camperdown, 2050) and Lot 1001 DP 1159799 (12A Missenden Road, Camperdown, 2050).

The total site area of the lots affected on the RPA Hospital campus is approximately 84,652m^2.

The Royal Prince Alfred (RPA) Hospital campus is located in Sydney's inner west suburb of Camperdown, within the City of Sydney Local Government Area. The campus is situated between the University of Sydney to the east and the residential area of Camperdown to the west. A north-south arterial road (Missenden Road) divides the campus into two distinct portions, known as the East and West Campuses. The northern boundary of the hospital campus is defined by the Queen Elizabeth II Rehabilitation Centre and the southern extent of the campus is defined by Carillon Avenue.

RPA Hospital is located within the Sydney Local Health District (SLHD).

The East Campus comprises the main section of the hospital, including Gloucester House, the Administration Building, Albert Pavilion, Victoria Pavilion, Pathology and Laboratory services, Tissue Pathology and Diagnostic Oncology and Women and Babies services. The East Campus also contains Education and Research services including the Kerry Packer Education Centre (KPEC) and the Centenary Institute.

The West Campus comprises a range of specialist health facilities, including the Chris O'Brien Life House for cancer treatment, the Radiation Oncology Department, Institute of Rheumatology (IRO) and the Professor Marie Bashir Centre for mental health services. The West Campus also accommodates staff and patient car parking and various administrative buildings.

Immediately west of the site is the Queen Mary Building which services the University of Sydney by providing student accommodation. Further west of the site is Camperdown Park, as well as a mix of industrial, residential and commercial developments.

To the south, east and north of the east campus, are the grounds of the University of Sydney. To the south is the St Andrew's Oval and St Andrew's Residential College that provides student accommodation for the University of Sydney.

To the immediate east is the Susan Wakil Health Building. This building accommodates study spaces, one library, lecture theatres and other clinical teaching spaces for students and staff at the University of Sydney.

Adjacent to the Susan Wakil Health Building is the University Oval No. 1, which is located approximately 30m east of the east campus. Further east are various other academic buildings and residential colleges that form part of the University of Sydney Campus.

To the north is the Charles Perkins Centre, which is a multidisciplinary health research centre and St Johns Residential College, both also managed by the University of Sydney.

Refer to site and immediate context at **Figure 1** and the existing site plan at **Figure 2.**

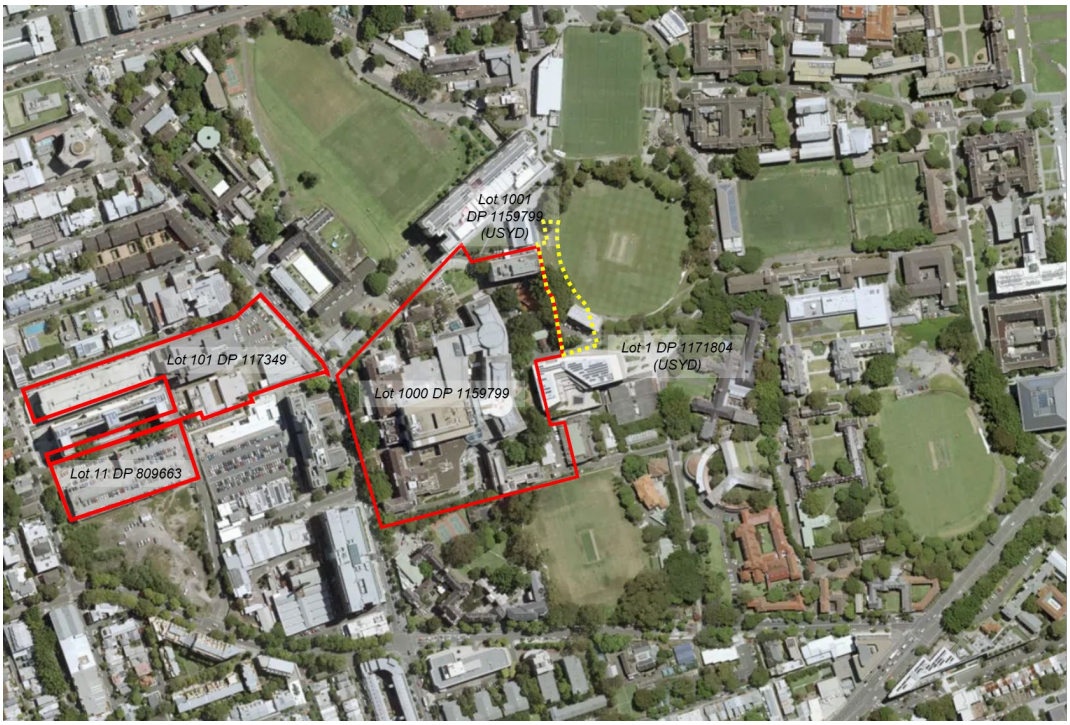


Figure 1 Site and immediate context.
Site boundary shown in red and off-site works zone shown in yellow.

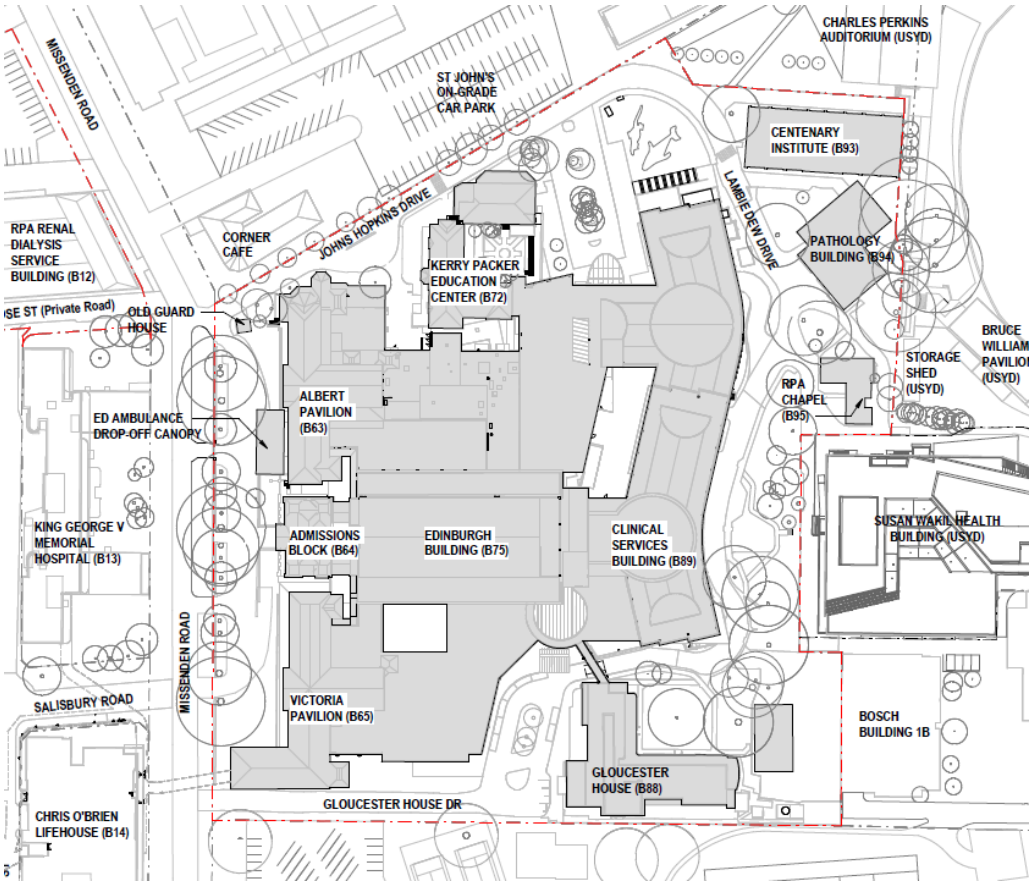


Figure 2 Existing Site Plan
Source: Bates Smart, Jacobs, and Neeson Murcutt + Neille

Refer to **Figure 3** to **Figure 12** below for site images of the east and west campus.

East Campus Site Images

Figure 3 Albert Pavillion (B63)
Source: Architectus

Figure 4 Location of the future Northern Entrance - The Women and Babies' Services (B89)
Source: Architectus

Figure 5 View of B89 from Lambie Dew Drive
Source: Architectus

Figure 6 View of the location for the proposed Eastern Wing from Sydney University Oval
Source: Architectus

Figure 7 RPA Chapel
Source: Architectus

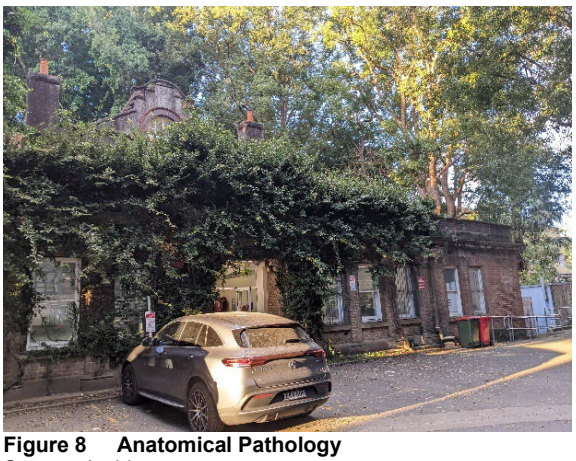


Figure 8 Anatomical Pathology
Source: Architectus

Figure 9 View of the Centenary Institute
Source: Architectus

Figure 10 Hospital Main Loading Dock, located at the rear of the main hospital building on Lambie Dew Drive
Source: Architectus

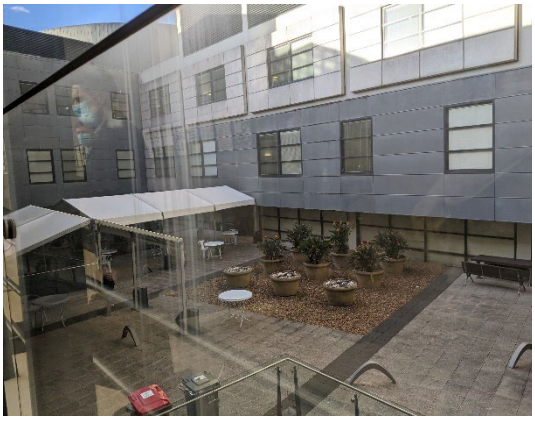


Figure 11 Existing staff break out area/ courtyard, future location of an internal atrium
Source: Architectus

Figure 12 Existing staff break out area/ courtyard, future location of an internal atrium
Source: Architectus

West Campus Site Images

Figure 13 View from Grose Street of the Multi-storey carpark
Source: TSA Management

Figure 14 View of the Queen Mary Building from the roof of the multi-storey car park (HLS site)
Source: TSA Management

Figure 15 View of the Queen Mary Building from the corner of Grose Street and Hospital Road
Source: TSA Management

Figure 16 View of the Queen Mary Building from Grose Street
Source: TSA Management

Table 1 Affected lots within the RPA Hospital site

Address	12 Missenden Road, Camperdown, 2050	114 Church Street, Camperdown, 2050	68-81 Missenden Road, Camperdown 2050
Location	RPA Hospital East Campus	RPA Hospital West Campus	RPA Hospital West Campus
Landowner	Health Administration Corporation	Health Administration Corporation	Health Administration Corporation
Area	43,400m^2	7,666m^2	18,400m^2
Legal description	Lot 1000 DP 1159799	Lot 11 DP 809663	Lot 101 DP 1179349

Table 2 Affected lots under 'Off Site Works'

Address	12A Missenden Road, Camperdown, 2050	3 Parramatta Road, Camperdown 2050
Location	University of Sydney Land	University of Sydney Land
Landowner	University of Sydney	University of Sydney
Legal description	Lot 1001 DP 1159799	Lot 1 DP 1171804

1.3 The Background of the Project

RPA Hospital is one of Australia's premier tertiary referral hospitals, recognised as a world leader in healthcare excellence and innovation. The foundation stone for the Prince Alfred Memorial Hospital was laid in April 1876 and since then, RPA Hospital has continued to deliver world-class care underpinned by excellence in research and education.

It was identified within the RPA Hospital Clinical Services Plan that almost all areas of RPA Hospital are severely space constrained. This was noted as particularly evident in acute services including ED, ICU, Neonatal Intensive Care Unit (NICU), Women's and Babies, Gastroenterology and Liver, Medical Imaging, Paediatrics, Cardiology and Theatres.

In March 2019, the NSW Government announced a significant expansion of the RPA Hospital valued at $750 million. The redevelopment will be for clinical and non-clinical services infrastructure to expand, integrate, transform and optimise current capacity at RPA Hospital to provide contemporary patient-centred care that is evidence-based including expanded and enhanced facilities.

The Project includes an expansion to the RPA Hospital and associated improvements to the existing facility, as well as upgrades to the public realm. The East Campus has been selected to accommodate built form additions and expansion that complement the existing highly valuable acute clinical assets on this Campus. Furthermore, the East Campus provides opportunities for synergies with the adjacent University of Sydney Campus and associated research institutions.

The Project has been developed over a number of years, with ongoing testing and analysis of how the clinical requirements and needs of RPA Hospital can be satisfied through the significant investment of Government funding.

Several development pathways were identified in response to clinical services planning projections and priorities, during the development of the campus wide master plan. An efficient solution will focus on growth rather than asset replacement. To retain significant existing assets, there was a focus on delivering increased acute clinical capacity on the East Campus while maintaining optimal functional relationships for the core critical services. This 'Acute on the East' approach is the basis of a reference scheme developed by Jacobs that informed the design competition brief.

A design competition commenced 25 October 2021 and ended in March 2022 with Bates Smart being selected as the winning architectural team. Since this time the Bates Smart team has been working alongside Neeson Murcutt + Neille and Jacobs to develop the scheme.

As the project developed, the requirement for ancillary works to support the site have been identified as a result the proposed works now span both the East Campus and the West Campus.

1.4 Description of the Project

The proposal seeks to expand the existing facilities of RPA Hospital to cater for the growing needs of the immediate area and Greater Sydney. The new facility will increase theatre capacity, improve efficiencies and access to services and enable implementation of new models of care and surgical clinical pathways. The project will provide the Hospital with the opportunity to meet increased clinical demand due to numerous factors including population growth and ageing population as well as providing additional medical services and an upgrade to the existing infrastructure. The scope of the proposed works the subject of this SSD application includes the following:

Alterations and additions to the RPA Hospital East Campus, comprising:

- Eastern wing: A new fifteen (15) storey building with clinical space for Inpatient Units (IPU's), Medical Imaging, Delivery, Neonatal and Women's Health Services, and a helicopter landing site is proposed on the roof of this building;
- Eastern extension: A three (3) storey extension to the east the existing clinical services building to accommodate new operating theatres and associated plant areas;
- Northern expansion: A two (2) storey vertical expansion over RPA Building 89 accommodating a new Intensive Care Unit and connected with the Eastern Wing;
- Internal refurbishment: Major internal refurbishment to existing services including Emergency Department and Imaging, circulation and support spaces;
- Enhanced Northern Entry/ Arrival including improved pedestrian access and public amenity;
- Reconfiguration of Emergency Department forecourt at the Missenden Road frontage for ambulance access and parking, and replacement of canopy to the Albert Pavilion;
- Demolition of affected buildings, structures and trees;
- Changes to internal road alignments and paving treatments;
- Works within Missenden Road reserve including kerb realignment, addition of new "keep clear zone", and an additional four drop-off parking bays;
- Landscaping works, including tree removal, tree pruning, and compensatory tree planting including off-site on University of Sydney land.

Ancillary works to the RPA Hospital West Campus, comprising:

- Temporary helicopter landing site above existing multi storey carpark;
- Re-routing of existing services; and
- Associated tree removal along Grose Street.

Refer to **Section 3** of this report for more information on the proposed development.

1.5 Relevant Application History

There are three relevant State Significant Development Applications (former Part 3A) approved at RPA Hospital, outlined in **Table 3** below.

Table 3 Relevant SSDA History

Relevant Application	Site	Description	Approval date
MP10_0036	Royal Prince Alfred Hospital - Cancer Facility (Chris O'Brien Lifehouse)	Development approval for the construction of the Chris O'Brien Lifehouse, located within the western campus of RPA Hospital in the Engineering Services Precinct. The development took place on the site of the previous Page Chest Pavilion and Brown Street Outpatients buildings on Missenden Road which were demolished in 2010, and included the construction of a new 42,000m2 facility for cancer screening, diagnosis, treatment and ongoing patient support services. Project construction was completed in 2013. The development provides 96 patient rooms and a comprehensive range of therapies and support services for patients and their families.	20/12/2010
MP10_0166	Royal Prince Alfred Hospital - NW Precinct (Professor Marie Bashir Centre)	Development approval for the construction of a new seven (7) storey (including plant) Mental Health Unit in the north of the West Campus of RPA Hospital, including the provision of basement car parking for 38 car spaces, associated landscaping works and the extension of services and utilities. Project construction	04/02/2013

Relevant Application	Site	Description	Approval date
		was completed in November 2014. The building, which is known as the Professor Marie Bashir Centre, provides 53 mental health beds and associated mental health services, supporting the operational and capacity needs of the RPA Hospital precinct.	
SSD-7542	RPA Hospital - Staff Carpark	Development approval for the construction of a new nine (9) storey staff car park in the west campus of RPA Hospital, comprising 996 car parking spaces and 10 accessible spaces, as well as signage and associated landscaping works.	06/04/2017

In addition to the three major projects described above, there have been several local development applications approved on the site for alterations and additions to existing buildings. These are summarized in **Table 4** below.

Table 4 Relevant DA History

Relevant Application	Description	Approval date
D/2008/1246	Two-storey extensions to the existing Royal Prince Alfred Hospital Radiation Oncology building located on the corner of Salisbury Road and New Hospital Road, associated internal alterations and site works.	03/11/08
D/2016/1853	Alterations and additions to cafe tenancy on level 4 including internal demolition, new cafe fit out and provisions for a 33sqm convenience store. Proposed hours of operation are from 6.00am to 5.00pm Mondays to Sundays. Proposed patron capacity is for 108 patrons.	01/05/17
D/2016/1852	Alterations and additions to existing cafe tenancy on level 5 and creation of new tenancy for a convenience store.	01/05/17
D/2016/1852/A	Section 96 (2) application for changes to layout of approved development for existing deli/cafe on level 5. Total area of deli will be reduced to 70sqm with 16 seats.	01/11/17
D/2017/1246	Use and fit-out of premises on level 5 as a pharmacy and convenience store. Hours of operation are between 8am and 8pm, 7 days per week.	15/01/18

Other works are being completed by Health Infrastructure on the site under separate planning approval pathway, and this is outlined in within cumulative impacts in **Section 6** of this report.

1.6 Site Restrictions / Covenants and Easements and Leasing Arrangements

As outlined above, the site is constrained by heritage items and heritage conservation area. The east campus is located within a heritage conservation area, whilst there are multiple items of state and local significance located within the site boundary. The project involves complete demolition of heritage items (the Pathology Building and Chapel) that form part of a State heritage listing under SLEP 2012, but are not on the State Heritage Register. These items cannot be feasibly retained in the proposal, however, are subject to a Preliminary Heritage Interpretation Framework outlined in the Architectural Design Report at **Appendix I**. Refer to **Section 6** of the EIS for further discussion of heritage impacts and mitigation measures.

Additionally, the site is burdened by covenants and easements for access and servicing, as summarised below:

Table 5 Site Covenants and Easements
Source: Section 88B Certificate

Lot and DP	Easements
East Campus	
Lot 1000 DP 1159799 12 Missenden Road, Camperdown	– A portion of the site is leased to the Centenary Institute through to 30 April 2027 with renewal option of 33 years; – Easement for services and right of carriageway 6.095 metre(s) wide – Right of carriageway 3 wide located to the rear of the RPA Hospital main building;

Lot and DP	Easements
	– Lease to Ausgrid (see aj71566) of Substations 1863, 4740 & 7327 together with right of way & easement for electricity purposes over another part of the land above described shown in plan with 2824279. expires: 31/7/2046.
West Campus	
Lot 11 DP 809663 114 Church Street, Camperdown	No Section 88B Certificate available for this site.
Lot 4 DP 880430 23-33 Carillon Avenue, Camperdown	No Section 88B Certificate available for this site.

Access must be maintained to the existing chamber substation adjacent to the north of the Clinical Services Building (Building 89). The Susan Wakil substation also has a right of carriageway for access by Ausgrid over the RPA Campus, with the potential to have the right of carriageway relocated if necessary, subject to approval by Ausgrid and the University of Sydney.

Deposited Plans and relevant Section 88B Certificates are found at **Appendix F**.

1.7 Project Team

The project team is set out below in **Table 6**.

Table 6 Project Team

Discipline	Consultant
Project Manager	TSA Management
Architect	Bates Smart, Neeson Murcutt Neille, & Jacobs Group
Landscape	Turf Design Studio
Connecting with Country	Balarinji Studio
Cost Manager	Genus Advisory
European Heritage	Heritage 21
Historical Archaeology	Biosis
Aboriginal Cultural Heritage	Biosis
Urban Planner	Architectus Australia Pty Ltd
Visual Impact	Architectus Australia Pty Ltd
Structural, Facade & Civil	Taylor Thomson Whitting (TTW) Pty Ltd
Hydraulic & Fire	Warren Smith & Partners, T/A Warren Smith Consulting Engineers (WSCE)
Mechanical & Medical Gases	Arup Pty Limited
Electrical, Security & ICT	Arup Pty Limited
Survey	RPS Australia East Pty Ltd
ESD	Climatewise Design
Flooding and Stormwater	TTW
Traffic	SCT Consulting Pty Ltd
BCA/DDA & Crown Certifier	Blackett Maguire & Goldsmith
Aviation	Avipro
Arboricultural	Martin Peacock Tree Care
Wind	Arup Pty Limited
Ecologist	Narla Environmental Pty Ltd
Geotechnical, Hazardous Materials and Contamination	Cardno (NSW/ACT) Pty Ltd
Social	Urbis Pty Ltd
Construction Advisor	Lendlease Building
Accessibility	Blackett Maguire & Goldsmith
Noise and Vibration	Arup
Design Competition Manager	Ethos Urban

1.8 Project Value

The proposed development has an estimated CIV of greater than $30 million, hence it qualifies as SSD.

2. Strategic Context

2.1 Justification for the Project

The proposal responds to the need for sufficient service infrastructure to meet increasing healthcare demands in the Sydney Local Health District (SLHD). Existing infrastructure at RPA Hospital is ageing and not fit-for-purpose, highlighting capacity issues, a lack of operational efficiency and subsequent undesirable economic and health outcomes.

Significant growth in the local population is predicted to 2036, demonstrating a need for improved infrastructure, facilities and services. By 2031, the NSW Ministry of Health predicts population increase resulting in the following changes in activity at RPA Hospital:

- 33% increase in adult day only admissions;
- 37% increase in acute adult overnight bed days;
- 3.5% decrease in overnight average length of stay;
- 41% increase in intensive care services;
- 42% increase in ED presentations;
- 69% increase in adult subacute overnight admissions;
- 34% increase in acute pediatric admissions; and
- 14% increase in acute maternity admissions.

In conjunction with experiencing rapid population growth, the demographic of the SLHD is ageing, densifying and diversifying. The population of people over the age of 65 is projected to grow at a faster rate of 79% between 2016 and 2036, highlighting the need to sustainably meet an increasing healthcare demand.

The proposed redevelopment will enable new models of care, improving efficiency and cost effectiveness supported by a motivated and sustainable workforce. A key focus will be the development of an integrated, well equipped hospital precinct which possesses the education and research facilities to support world class research, translation, innovation and education.

The redeveloped RPA Hospital will enable suitable service delivery to meet the projected increased demand for specialised prevention, early intervention and ambulatory and inpatient services to respond to increasing chronic health issues within SLHD, including higher levels of obesity, tobacco usage and infectious disease.

The upgrades will address existing workforce constraints and pressures which restrict the ability to ensure suitable service delivery at RPA Hospital. The existing RPA Hospital Campus suffers from a deficit of workspaces, staff facilities, office areas, spaces for education, research and innovation.

These key issues highlight the considerable need for contemporary and additional human resources operating within a modern, functional hospital environment that can adapt to emerging models of care, such as what can be provided through the proposed redevelopment of the site.

2.2 Regional and Local Land Use Planning Context

This EIS includes an assessment of the proposed development against the following strategic plans, policies, and guidelines, in accordance with the issued SEARs.

The proposed development has been assessed and found to be generally consistent with strategies, policies, priorities and strategic land use planning at State, local and precinct levels, as per **Table 7** and **Table 8** below.

Table 7 Regional Strategic Planning Policies

Regional Strategic Planning policy	Response
NSW State Priorities	NSW State Priorities are fourteen priorities unveiled by the NSW Premier, in a commitment to making a significant difference to enhance the quality of life. Relevant State priorities are: – Improving service levels in hospitals; – Improving outpatient and community care; – Greener public spaces; – Greening our city; – Government made easy; and – World class public service. The project will facilitate the implementation of new models of care focused on the needs of the patient and improving hospital services. The proposed development will improve service levels in hospitals, by facilitating the expansion of RPA Hospital with improved health services. Thus, the proposed development aligns with the NSW State Priorities, seeking to enhance the quality of life through quality health care and services in NSW.
The Greater Sydney Region Plan – A Metropolis of Three Cities (2018)	The Greater Sydney Region Plan – A Metropolis of Three Cities, was released by the Greater Sydney Commission in March 2018 and is the NSW Government's 40-year plan for the Sydney metropolitan area. The site is located within the Eastern City District, which centers around the Sydney CBD. The proposed development is consistent with the vision of the Greater Sydney Region Plan as the proposed scope of works will facilitate the refurbishment and expansion of The Royal Prince Alfred Hospital and reinforce the Sydney Local Health District as a significant employment and health services hub. The site will assist the Eastern City District, with the proposed development contributing to rebalancing opportunities across the Greater Sydney region and support a 30 – minute city, where the community are able to access world-class medical support within a reasonable timeframe. The plan aims to develop and implement land use and infrastructure plans for health and education precinct in order to be internationally competitive and more accurately described as innovation precincts. The Plan identifies the role of RPA Hospital as world class medical research and education facility. It states that there are significant productivity benefits from growing health and education clusters to innovation districts. Facilitating the attraction and development of innovation activities, enhances Greater Sydney's global competitiveness. The Plan also notes that by 2036, 21 per cent of all jobs in Greater Sydney are projected to be in the health and education sectors, up from 19 per cent in 2016. The proposed scope of works will facilitate the growth of health facilities in the Precinct and provide more jobs in the health sector, ultimately contributing to the economic productivity of the area.
Eastern City District Plan	As noted above A Metropolis of Three Cities identifies five Districts, of which the site is located within the Eastern City District Plan. The Plan is a 20-year vision that provides strategic guidance on the economic, social and environmental growth of the District. The Eastern City includes the following LGAs; Bayside, Burwood, Canada Bay, Sydney, Inner West, Randwick, Strathfield, Waverley and Woollahra. The District Plan identifies the need to become more innovative and globally competitive, focusing on knowledge intensive jobs. The proposal responds to several aspects of the vision for the District as summarised below: ***International competitive innovation, health and education precincts.*** The Plan contains Planning Priority E8 (Growing and investing in health and education precincts and the Innovation Corridor), which delivers on Objective 21 (Internationally competitive health, education, research and innovation precincts) of the Plan. The Camperdown–Ultimo Collaboration Area is part of the Innovation Corridor and is one of the largest and most comprehensive health and education precincts in Greater Sydney, containing the RPAH site, the University of Sydney, University of Technology Sydney, University of Notre Dame Sydney Campus, TAFE Ultimo, and medical research institutions. The Plan directs the Camperdown–Ultimo Collaboration Area to upgrade the public domain with place-making initiatives, improve transport, walking and cycling connections between key hubs, particularly in response to student and job growth.

Regional Strategic Planning policy	Response
	Knowledge-intensive jobs growth The Hospital and larger Sydney Local Health District provide a variety of jobs in the health and education sector. The expansion of the Hospital will provide an increase to these jobs in the locality. ***Stimulate the night-time economy*** Hospitals operate 24-hours a day and attract people from the greater Sydney area as well as staff and students from overseas. ***Aligning growth with infrastructure*** The Greater Sydney Region Plan identifies that Sydney's population is to grow from 4.7 million to 8 million by 2056. The Eastern District will be suspectable to major population growth, particularly evident through the ageing population. The proposed works will help provide jobs and services to the population, as well as providing health services to a growing population.
Future Transport Strategy 2056	Future Transport 2056 is a 40-year strategy, supported by plans for regional NSW and for Greater Sydney. The vision for Greater Sydney, where people can access the majority of jobs and services within 30 minutes, will require a sustained and staged investment program to protect corridors and then develop an integrated transport system that includes city-shaping, city-serving, centre-serving and strategic freight networks. The transport networks are proposed to expand to provide improved access to each metropolitan centre, including the safe and reliable movement of freight. These networks will be progressively developed through a range of infrastructure investments that will make key improvements to the city-shaping and road networks as well as upgrade local roads, walking and bicycle paths, as detailed in the Greater Sydney Services and Infrastructure Plan.
Greater Sydney Services and Infrastructure Plan	Building on the transport outcomes identified in Future Transport Strategy 2056, the Plan establishes the specific outcomes transport customers in Greater Sydney can expect and identifies the policy, service and infrastructure initiatives to achieve these. The plan defines the network required to achieve the service outcomes.
NSW State Infrastructure Strategy 2018-2038: Building Momentum	The State Infrastructure Strategy 2018-2038, released in February 2018 by Infrastructure NSW, is a 20-year strategy that outlines the NSW Government's major long-term infrastructure plans across all key sectors – transport, energy, water, health, education, justice, social housing, culture, sport and tourism. The Strategy notes the demand for healthcare will grow by over 50 per cent by 2036, highlighting that there is a need to expand and deliver more health infrastructure and services to support the State's medical needs. A strategic objective for health is included in the Strategy to 'Plan and deliver world-class health infrastructure that supports a 21st century health system and improved health outcomes for the people of NSW'. For the Eastern Harbour City, the SIS aims to improve access to international gateways, mass transit connections to the CBD (especially from the west and southeast), active transport, cultural infrastructure and provide more educational learning spaces. The SIS recognises that urban renewal will occur to the south and west of the city – in the Central to Eveleigh Precinct, just to the south of the RPA Hospital site– and The Bays Precinct. The proposed development aligns with the strategic objectives of the Strategy as the proposed scope of works will contribute to the redevelopment and expansion of the Royal Prince Alfred Hospital.
Sydney's Cycling Future 2013	The goal of Sydney's Cycling Future is to make cycling a safe, convenient and enjoyable transport option for short trips. Health Infrastructure is supportive of using active transport options to and from and the site. The site will provide options for bike parking locations for hospital staff and visitors.
Sydney's Walking Future 2013	The goal of Sydney's Walking Future is to encourage people to walk more, to make it more convenient, better connected and safer mode of transport. The proposal supports walking by providing multiple pedestrian access points to the site for hospital staff and visitors.
Sydney's Bus Future 2013	Sydney's Bus Future Strategy is the NSW Government's long-term plan to redesign the bus network to meet customer needs now and into the future. The site is serviced by several bus routes, with the nearest being the 412, stopping adjacent to the main entrance of the Hospital on Missenden Road. Approximately 500 metres north and south of the site several high frequency bus routes are available on Parramatta Road (11 routes) and King Street (9 routes).
Crime Prevention through Environmental Design Principles	The Architectural Design Statement provides a CPTED assessment of the proposal at **Appendix I.** The assessment considers the objectives and desired outcomes of the principles/ strategies employed by CPTED, including:

Regional Strategic Planning policy	Response
	Natural Surveillance – Main public routes through the hospital have a direct relationship to the external environment. This will aid natural surveillance over external spaces. Additionally, public spaces have been designed to create 'safe' spaces through clear sight lines, be well lit, provide for access control to define staff only areas and public access will be controlled to areas that are well supervised and entry points into the building to be limited. ***Lighting*** – Lighting will meet the minimum requirements under Australian standards. White lighting will be used for natural surveillance and direct lighting will be provided in all external environments and car park so that passive surveillance can occur. Additionally, CCTV and pedestrian accessways will be clearly marked. ***Access control*** – Street and plaza design is intended to maximise the benefits of pedestrian movement around the University and health and education precinct as well as reinforcing access points to the hospital. The Emergency Department drop-off is a critical 24-hour access point that will be actively monitored. An entry canopy and building markers will signify the driveway entry and low buffer planting at the corner will ensure clear line of site to the front door for arrivals by car. ***Territorial reinforcement*** – Along Lambie Dew Drive and around the Eastern Wing and East Campus, low underplanting will complement the mature trees and access roads, boundaries and roads will be clearly demarcated to support territorial reinforcement and clear separation of paths.
Better Placed: an integrated design policy for the built environment of NSW (GANSW,2017)	Better Placed is an integrated design policy for the built environment of NSW. It seeks to capture our collective aspiration and expectations for the places where we work, live and play. The proposal aligns with the objectives for good design stated in the Better Placed policy through the implementation of carefully considered design interventions in the following areas: – Placemaking; – Wayfinding; – Heritage Planning; and – Clinical Planning. Better Placed also introduces the Movement and Place Framework and sets out a better approach to aligning movement and place in the design, planning, construction and operation of NSW's overall transport network. The plan aims to facilitate and encourage sustainable transport modes including walking, cycling and public transport and minimising the space dedicated to vehicle movement.
Healthy Urban Development Checklist, NSW Health	The Healthy Urban Development Checklist prepared by NSW Health assess the built environment factors that impact on health as NSW undergoes significant population growth over the next 20-30 years. The Proposal promotes the themes of the Checklist, through a focus on transport and connectivity, quality employment, community safety and security, social infrastructure, social cohesion and connectivity, environment and health and environmental sustainability and climate change within the design strategy. The Proposal aims to improve the amenity and wellbeing of staff and visitors, through improved landscape (at **Appendix K** and **Appendix L**), architectural design (at **Appendix H** and **Appendix I**) and incorporated CPTED principles.
Draft Greener Places Design Guide	The Draft Greener Places Design Guide provides information on how to design, plan and implement green infrastructure in urban areas throughout NSW. Refer to **Section 3** and **Section 6** for further details.
Tech Central	Tech Central, formerly known as Camperdown-Ultimo Collaboration Area, is home to a diverse set of world class research, education, health and creative institutions, as well as residential, retail and recreational destinations. It stretches from north-east from Camperdown to Haymarket and south to Eveleigh. With the backing of major tech companies including Atlassian, world class universities (UTS, University of Sydney) and a leading hospital precinct (RPA Hospital campus), the NSW Government is committed to making Tech Central the biggest technology hub of its kind in Australia. The redevelopment of the site contributes to this vision. It allows for specialized medical treatment to be provided in modern, world class facilities; allowing RPA Hospital to expand and reach its full potential.
Camperdown Health,	The Camperdown-Ultimo Health and Education Precinct includes the Royal Prince Alfred Hospital, the University of Sydney and other tertiary institutions with health training, biomedical

Regional Strategic Planning policy	Response
Education and Research Precinct (CHERP)	and biosciences research institutions. The key objective of the CHERP is to build upon the existing health, education and research strengths of these stakeholders to create an area of international standing, with a diverse and engaging public realm. The redevelopment of the RPA Hospital is therefore critical to the progress and development of the CHERP.
Camperdown-Ultimo Place Strategy	The Greater Cities Commission's Camperdown-Ultimo Collaboration Place Strategy envisages an internationally competitive health, education, research and innovation area between Haymarket and Camperdown. In relation to RPA Hospital, the Strategy notes the following; – RPA Hospital is identified as a key asset that brings value-add opportunities through collaboration, research and innovation; – Future redevelopment and expansion of RPA Hospital will improve local health services and increase jobs; and – RPA Hospital will need to increase its capacity to serve the growing and ageing population in its catchment, including the new residents that will move to the area with renewal through the Parramatta Road Corridor Urban Transformation Strategy and around Eveleigh, The Bays Precinct, Green Square and Redfern-Waterloo.

Table 8 Local Strategic Planning Policies

Local Strategic Planning Policy	Response
City Plan 2036: Local Strategic Planning Statement (LSPS)	Over the next 20 years, the LSPS aims to guide and maintain the high level of amenity, livability and quality within the Sydney City LGA. As the community grows and changes, RPA Hospital is a key piece of infrastructure in the LGA that can respond to the evolving needs and opportunities of the wider community. The upgrade of RPA Hospital is consistent with the following Planning Priorities: ***Planning Priority 2: Align development and growth with supporting infrastructure*** With Sydney's population forecasted to rise significantly, upgrading existing health infrastructure is vital to support and facilitate the health needs of the community. The expansion of RPA Hospital will in turn allow for the forecast population growth in the City of Sydney. ***Planning Priority 3: Supporting community wellbeing with social infrastructure*** The expansion of the RPA Hospital will deliver health infrastructure that will cater to the wellbeing and changing needs of the locality. Planning Priority 7: Growing a stronger, more competitive Central Sydney The expansion of the RPA Hospital will deliver health infrastructure that will cater to the wellbeing and changing needs of the locality.
Sustainable Sydney 2030: Community Strategic Plan 2017-2021	Council's Community Strategic Plan, Sustainable Sydney 2030, also sets out several Directions for Central Sydney, which the proposed development will contribute to. Each of the relevant Directions are supported by Objectives, including the following: – Direction 1: A globally competitive and innovative city: – Objective 1.3: The city economy is an integrated network of sectors, markets and high performing clusters; – Objective 1.5: The city enhances its global position and attractiveness as a destination for people, business and investment; – Direction 2: A leading environmental performer: – Objective 2.4: City residents, businesses, building owners, workers and visitors improve their environmental performance; – Direction 9: Sustainable development, renewal and design: – Objective 9.2: The City of Sydney leads by example to facilitate great places – Objective 9.4: Sydney plans for the long-term and the benefit of future generations; – Objective 9.5: The urban environment promotes health and wellbeing. The proposal will contribute to the Directions due to its location, proposed land use, and the approach taken to the development which seeks to achieve high quality design, sustainability, and strong integration with the public domain.

2.3 Site and Surrounding Context

RPA Hospital is the largest of five hospitals within the Sydney Local Health District. RPA Hospital is a specialist referral hospital providing an extensive range of services to more people in New South Wales than any other hospital and is considered a worldwide leader in healthcare excellence and innovation. The campus was initially established in 1882 and has played a key role in healthcare innovation and research in NSW.

RPA Hospital is largely developed with numerous buildings spread across the Hospital campus. Missenden Road is the central access spine of the RPAH campus which consists of a mix of low to medium scale older buildings and larger scale modern buildings that create a mixed streetscape character. There is a distinct shift in the character of the east campus (from Missenden Road) which presents as a heritage street frontage that has a consistent street wall / setback compared to the west campus on the other side of Missenden Road which has a more modern character of varied setbacks interspersed with open space areas and parking.

Existing buildings at the east campus are predominantly between three (3) and twelve (12) storeys in height. The eastern side also includes several mature tree species. The western campus consists of buildings between two (2) and ten (10) storeys in height as well as multiple car parks including the King George V and RPA Hospital Car parks. The west campus is also largely devoid of vegetation.

A campus map is at **Figure 17** below.

Figure 17 RPA Hospital Campus Map
Source: RPA Hospital

The RPA Hospital campus is surrounded by a variety of uses, including:

- To the immediate north of the east campus, the residential colleges of the University of Sydney campus including St John's College, St John's Oval and Sancta Sophia College. Beyond that, Parramatta Road runs east to west, connecting the Sydney CBD to Greater Western Sydney. The suburbs of Forest Lodge and Annandale are across Parramatta Road;
- To the immediate east lies the University of Sydney campus, including residential colleges, the University Oval and educational facilities. Beyond the University of Sydney, there is a recreational open space called Victoria Park and Pool as well as Broadway Shopping Centre;
- Beyond Carillon Avenue to the south, land uses mostly comprise low to medium density housing in the form of terraces. Further south, there are a variety of shops, restaurants and entertainment spaces that run along King Street; and
- To the west of the site is the Queen Mary Building, Camperdown Park, car parking stations and more low to medium density housing, mainly in the form of terraces interspersed with apartment buildings.

The surrounding development is illustrated in **Figure 18** below.

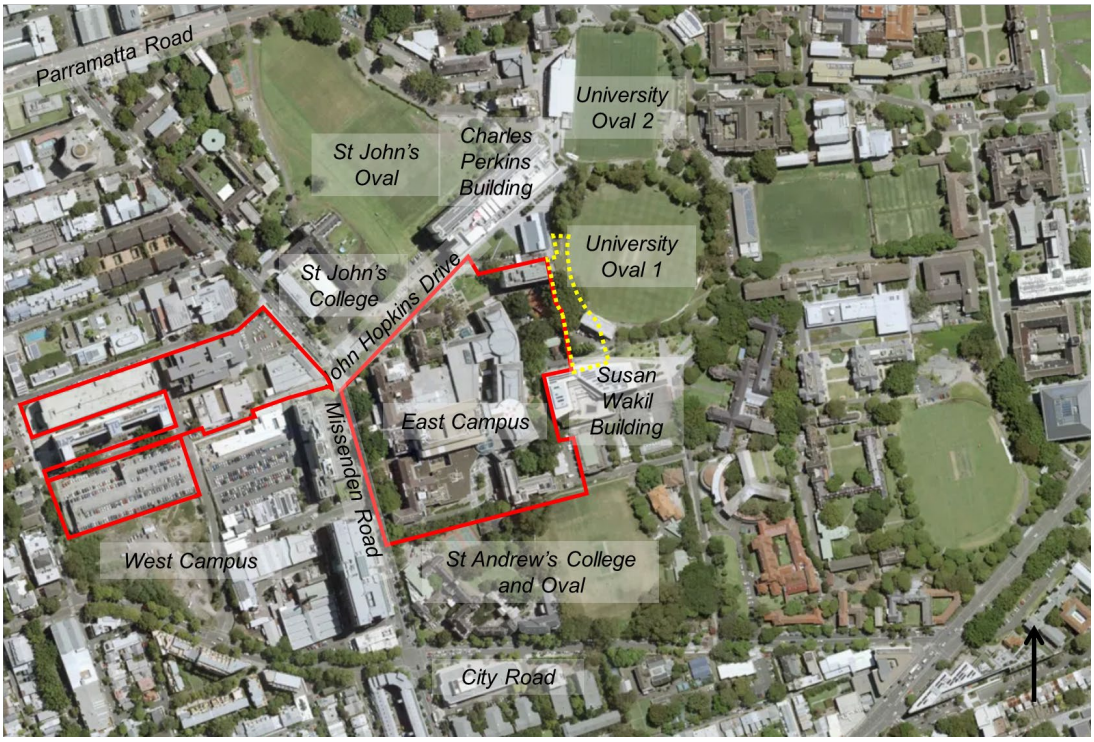


Figure 18 Site's Local Context
Site boundary shown in red and off-site works zone shown in yellow.

Topography

As noted in the Architectural Design Report at **Appendix I**, Missenden Road is situated along a gentle ridge with land falling away to the west and east. The highest part of the RPA Campus is RL36 at the Chris O'Brien Lifehouse Building. Within East Campus land falls somewhat uniformly from the Main Entry at Level 5 on Missenden Road towards the University of Sydney boundary where the land is relatively flat and low lying.

The eastern edge of the site was once Orphans Creek and is subject to flooding, with parts of the rear gardens now 2m below the Probable Maximum Flood (PMF) level. The Hospital's loading dock level is at Level 2 on the eastern side of Building 89, facing University of Sydney and sits just above the PMF.

A site survey plan is appended at **Appendix G**.

Vegetation and Ecology

The RPA Hospital campus is largely developed with buildings and associated hardstands amongst areas of primarily planted native and exotic canopy trees and gardens. The subject land did not contain

any evidence of threatened species. Furthermore, no threatened species were incidentally observed and there have been no historical records of threatened species within the subject site. There is however, potential that planted native vegetation may provide intermittent foraging habitat for threatened species such as *Glossopsitaa pusilla* (Little Lorikeet), *Lathamus discolour* (Swift Parrot) and *Pteropus poliocephalus* (Grey-headed Flying Fox).

There are a number of established trees along Missenden Road and Carillon Avenue that have been identified on the Council's Significant Tree Register. From a heritage perspective, numerous mature trees within the Rear Gardens and Missenden Road frontage were identified as being significant.

The site contains trees listing in the City of Sydney Significant Trees Register. The Listing is summarized in **Table 9**.

Table 9 Royal Prince Alfred Hospital - Missenden Road
Source: City of Sydney Significant Tree Register

Listing Name	Royal Prince Alfred Hospital – Missenden Road
Scheduled Significant Trees	9 Species: 8 Crows Ash; 8 Hills Weeping Fig; 1 Black Booyong; 1 Brush Box; 1 American Bull Bay Magnolia; 6 Camphor Laurel; 1 Jacaranda; 1 London Plane; 1 Deodar Cedar.
Significance Statement	*The planting schemes are typical of the late Victorian period with overlays dating from the Federation and Inter-War periods. The areas defined as the Missenden Road – Main Front Garden, University Boundary and The Rear Gardens are all scheduled in the State Heritage Register. The Hospital and grounds are also classified by the National Trust of Australia (NSW). Notably, the historic landscape character, planting palette and thematic styling is consistent with the approach taken throughout much of the University of Sydney campus. Although fragmented and alienated by recent development (including construction of E Block and covered walkways), these last vestiges of an important cultural landscape continue to illustrate the historic, social and scientific links between RPAH and the University of Sydney.*

Acid Sulfate Soils

The site is in a Class 5 Acid Sulfate Soils area.

Flooding

The site is located within the Johnstons Creek Catchment west of the Sydney CBD. The catchment is fully urbanised, with the upper area to the south and the lower area to the north. The catchment discharges to Rozelle Bay via a large open channel. The catchment is drained by a combination of Council stormwater pits and pipes which connect to Sydney Water's major trunk stormwater draining system.

Recent studies have confirmed the site is affected by flooding with an overland flow path running through the East Campus. The overland flow path runs north from Cadigal Lane through Lambie Dew Drive and then east to the University Oval.

It is anticipated that any new building would have an undercroft area that allows the overland flow path to be maintained as shown in **Figure 19** and **Figure 20** below.

Figure 19 1% AEP flood extents and depths
Source: Flooding and Stormwater Report, TTTW

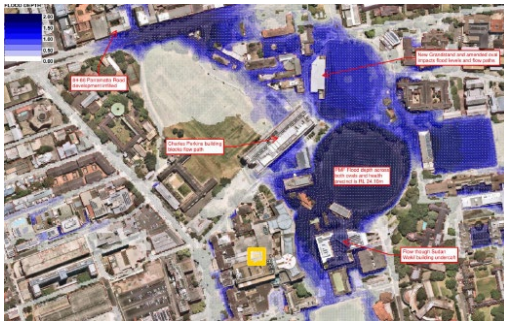


Figure 20 PMF extents and depths
Source: Flooding and Stormwater Report, TTTW

The PMF level for the East Campus is RL 24.10.

Refer to the Flood and Stormwater SSD Report at **Section 6** of this EIS.

Transport, Access and Car Parking

Main Arterial Roads

Detail on the main servicing roads is outlined in **Table 10**.

Table 10 Arterial Roads
Source: SCT Consulting

Main Arterial Road	Description
Missenden Road	Missenden Road provides the primary north-south link through the east and west campuses of RPA Hospital. The road presents traffic calming treatments such as single lanes and on-street parking in both directions, wide pedestrian footpaths and multiple zebra crossings.
Johns Hopkins Drive	Johns Hopkins Drive services the north of the main hospital building including mothers and babies, Kerry Packer Education Centre, the ambulance bay, and provides access through to Lambie Dew Drive to the east. Johns Hopkins Drive also forms a key east-west pedestrian route into the University of Sydney. This route is part of a strategy to strengthen east-west pedestrian connections from Camperdown Park to Victoria Park through the creation of
Lambie Dew Drive	Lambie Dew Drive is the eastern portion of the loop road to the rear of the main hospital building. Lambie Dew Drive is relatively narrow despite serving freight vehicles up to the size of Heavy Rigid Vehicles (HRVs). Due to bends in the road, traffic is sometimes restricted to one way movement when larger freight vehicles pass through.
Gloucester House Drive	Gloucester House Drive services Gloucester House and the south side of the main hospital building and joins Missenden Road to Lambie Dew Drive.

Active and Public Transport

Detail on active and public transport servicing the site is outlined in **Table 11** below.

Table 11 Active and Public Transport
Source: SCT Consulting

Transport	Description
Active Transport	
Cycleways	There are cycleways throughout and surrounding the site, transecting Missenden Road from the west to the east campus and connecting RPA Hospital and the University of Sydney campus to the rest of the Sydney.
Pedestrian	Pedestrian infrastructure is available but not complete around the hospital campus. Footpaths are provided on both sides along Missenden Road. The eastern campus loop has less pedestrian infrastructure, with footpaths on a single side only along Johns Hopkins Drive and Gloucester House Drive, and no connected footpaths on Lambie Dew Drive. Lambie Dew Drive is signposted as a shared zone that allows pedestrians to walk to and from the eastern exits of the main hospital building.
Public Transport	
Trains	– Newtown Station, approximately a 12-minute walk from the site;

Transport	Description
	– Macdonaldtown Station, approximately a 14-minute walk from the site; and – Central Station, approximately 32-minute walk from the site.
Buses	– Both bus routes 412 and Route 422 service the site along Missenden Road, each connecting the Sydney CBD to RPAH. – Additionally, there are several bus routes that travel along Parramatta Road, including, 413, 442, 438N, 440, 461N, 480, 483, connecting the site to numerous locations including Bondi Junction, Sydney CBD and Central Station.

Parking

As noted in the Transport and Accessibility Impact Statement at **Appendix AH**, there are a total of 2,595 off-street parking spaces located across the RPA Hospital campus. Off-street car parks around the hospital are all paid facilities and are mostly located on the west side of the hospital campus. This includes the multistorey staff car park and the multistorey secure car park on hospital road which are the largest off-street car parks available near the hospital. On-street parking is available along most surrounding streets; however, most of these have extensive time restrictions and prioritise residents.

Utility Services

The site is connected to all necessary services including water, gas, electricity, communications and sewage.

In addition to the description below, refer to the Hydraulic Services Utility Services Report at **Appendix AF** and Electrical, ICT and Mechanical Utility Services Report at **Appendix AG**.

Table 12 Location of Utility Services
Source: Various

Services	Location of Utility Services
Water	The eastern campus has access to two (2) Sydney Water utility mains that surround the site including one (1) x 250mm diameter service in Missenden Road and one (1) x 450mm diameter service in Western Avenue.
Sewer	There are currently two Sydney Water authority sewer mains that reticulate within the proposed redevelopment zones including a large 660mm x 990mm concrete oviform and a 300mm diameter service that extends from the oviform.
Natural Gas	The site has access to multiple Jemena natural gas mains.
Electricity	The RPA Hospital Campus is served by two (2) Ausgrid 11kV high voltage (HV) rings running underground via an easement from the St. Peters Substation, around the campus.
Communications	Multiple lead in cables originate from the Missenden Road, run underground in conduits to two Campus Distributors. The existing hospital campus is on the NBN, and a network is existing for the hospital campus.
Mechanical	There are no mechanical utility services present across RPA Hospital.

First Nations context

RPA Hospital is located on Gadigal Land, one of the twenty-nine clans of the great Eora Nation. The traditional custodians of the land in SLHD are the Gadigal, Wangal and Bediagal people of the Eora Nation.

An Aboriginal Cultural Heritage Assessment Report (ACHAR) was prepared by Biosis and is appended at **Appendix T**.

Within the report, Biosis concluded that the study area does not contain any recorded Aboriginal sites and has been assessed as having low archaeological potential due to disturbances in the study area. The proposed works will therefore not impact on any physical Aboriginal heritage values.

Refer to **Section 6** of this EIS for a further assessment of Aboriginal Cultural Heritage Impact.

European Heritage

As noted in the Statement of Heritage Impact (SOHI) at **Appendix Q**, the RPA Hospital, and its surrounding setting, has a rich heritage context and is associated with a number of statutory and non-statutory heritage listings. The site is listed as a State heritage item and is located within the University of Sydney Heritage Conservation Area, under Schedule 5 of the SLEP 2012. It also contains several items on the State Heritage Register and the NSW Health Section 170 Register. The site and several

of the buildings are also recognised on the National Trust Register. Additionally, the subject site is in the vicinity of several heritage items, Notably St John's College (Item 167) to the north, the University of Sydney (Item 01974) to the east and St Andrew's College (Item I46) to the south.

The Heritage Items located within the RPA Hospital site are outlined in **Table 15** below, and those in the vicinity of the site are in **Table 14** below.

Table 13 Heritage Items located within the RPA Hospital Campus
Source: Heritage 21

Item Name	Item Number	Address	Significance
Royal Prince Alfred Hospital group including buildings and their interiors, trees and grounds Note: Item 68 is split across Missenden Road.	I68	Missenden Road	Local
University of Sydney Conservation Area	C5	Camperdown	Local
Royal Prince Alfred Hospital – Victoria and Albert Pavilions	00829	Metropolitan	State Heritage Inventory
Royal Prince Alfred Hospital – Admission Block	00830	Metropolitan	State Heritage Inventory

Table 14 Heritage Items Near the Site
Source: Heritage 21

Item Name	Item Number	Address	Significance
St Andrew's College, University of Sydney including main building and interior, quadrangle and grounds	I46	19 Carillon Avenue	Local
St John's College, University of Sydney including main building and interior, quadrangle, gate lodge and interior, fence and gate and grounds	I67	8A Missenden Road	State
Shop and residence including interiors	I69	49 and 49A Missenden Road	Local
Alfred Hotel including interior	I70	51-55 Missenden Road	Local
JD Stewart Building, University of Sydney including interior	I73	Paramatta Road	Local
Former Newtown Public School group including buildings and their interiors, fencing and grounds	I968	50 Carillon Avenue	Local
Bligh and Camperdown Terrace	C38	Newtown	Local
O'Connell Town Estate	C43	Newtown	Local

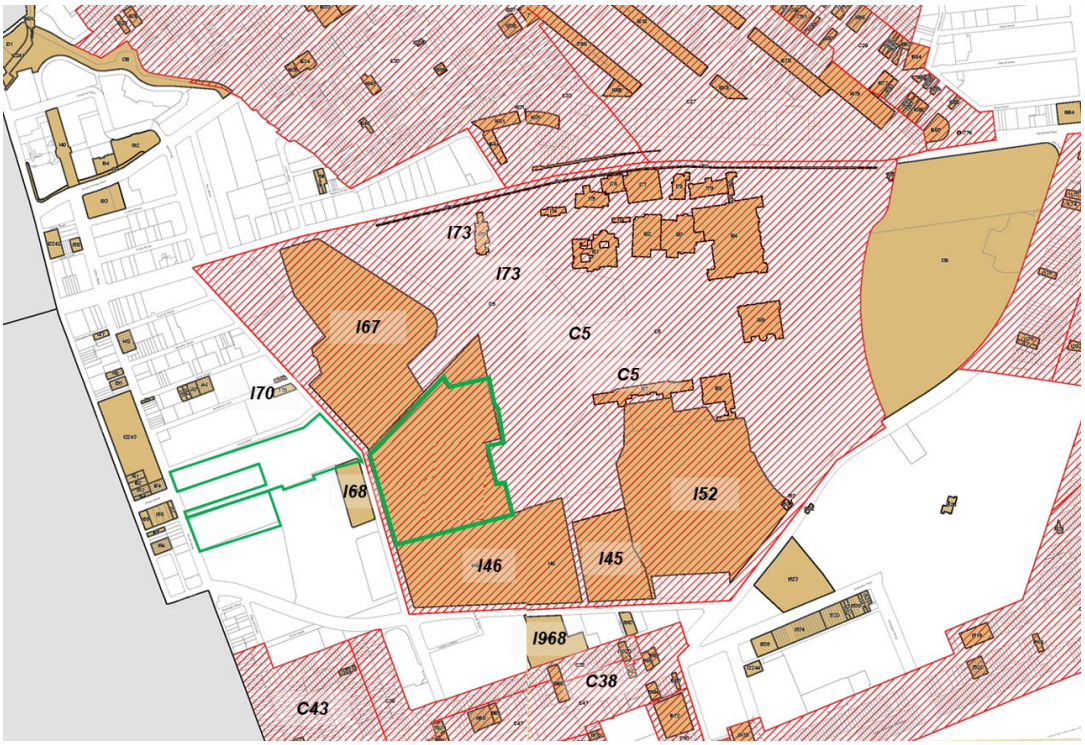


Figure 21 SLEP 2012 Heritage Map
The site is outlined in green. Heritage Conservation Areas are shown as red hatched and heritage items are shown in brown.
Source: Sheet HER_002- Sydney Local Environmental Plan 2012, with Architectus edits

Figure 22 State Heritage items mapping
Source: NSW State Heritage Register

Table 15 State Heritage Items Located within the Site
Source: Heritage 21

State Heritage Item	Description
Victoria and Albert Pavilions (B65 and B63)	The Albert and Victoria Pavilions were originally constructed in 1902 to commemorate the life and passing of Queen Victoria the year prior. The Pavilions, which were operational in 1904 and fully completed by 1905, are located at either side and to the rear of the Administration Building which fronts Missenden Road. The Pavilions act as central pillars within the hospital campus and have largely retained their external form and fabric which presents to Missenden Road, with modifications and additions largely concentrated on the rear and interiors of the buildings. The following is noted in the Statement of Significance available for the item on the State Heritage Registry: "The Victoria and Albert Pavilions form part of the Royal Prince Alfred Hospital Precinct which is of high historical and architectural significance. These substantial buildings have high streetscape value." And both Pavilions are considered of high significance for their value as: – An integral part of the early development of RPA Hospital; – A surviving element of the original, symmetrical, master plan for the hospital; – The surviving façades and roof form are finely detailed examples of Federation architecture; – Together with the Administrative Building and Victoria Pavilion, the group has an important landmark quality as one of the most imposing facades in Sydney; – The relationship of built form and landscaping to Missenden Road is very important to the streetscape; and – A major surviving work executed under the Government Architect Walter Liberty Vernon. The physical extent of the Victoria and Albert Pavilions heritage listing is shown in and below.
Admissions Block (B64)	The Admissions Block, or Administration Building (B64) is a State Heritage Item. Together with the Victoria and Albert Pavilions, the facades and roof form of the Admissions Block building are major surviving features of the original hospital. The following is noted in the Statement of Significance available for the item on the State Heritage Registry: "The Administration Block, both internally and externally, is an item of exceptional significance. It is a major surviving item of the original hospital; the historic core that has been in continuous use. The building is a fine example of the work of George Allan Mansfield, first president of the Institute of Architects. The three surviving facades and roof form are a finely detailed example of Victorian architecture. Together with the Victorian and Albert wings the group has an important landmark quality as one of the most imposing facades in Sydney. (Heritage Group, State Projects, NSW Dept. of Public Works & Services, 1997)." The heritage impact to this building is discussed in **Section 6.** The physical extent of the Admission Block heritage listing is shown in **Figure 22.**

2.4 Related Development

The City of Sydney Development Application Tracker and Department of Planning and Environment's Major Projects website do not identify any completed, underway or proposed developments in the immediate vicinity of the hospital site at the time of writing.

Other works are being completed by Health Infrastructure on the site under Part 5 of the EP&A Act. These works are permitted as "development without consent" under ISEPP. A summary of these works that are related to the subject application are provided below in **Table 16**.

Table 16 Summary of Approved Works under Review of Environmental Factors Packages

	Description of works	Date Approved	Determined by	Construction timeline
1	– Construction of a new Mortuary pick up location within existing Building 89 Level 1, including a new lift between Levels 1 and 2; and – Relocation of an existing roller shutter door on the eastern side of clinical services building to enable improved access control for hearse movement.	11 May 2022	Health Administration Corporation	April 2022 – October 2022
2	– Reconfiguration of Lambie Dew Drive Turning Bay; – Reconfiguration of Gloucester House Bridge and associated roadworks; – Gloucester House Road Hump Adjustment; – Removal of four (4) existing trees; and – Tree pruning of one (1) existing tree on St Andrew's College Site.	25 July 2022	Health Administration Corporation	October 2022 – Mid-2023
3	– Demolition of the existing plant room and rehab office to the south of the main Albert Pavilion building (building 63); – Installation of an external lift, lift lobby and access to building 63; – Molecular imaging expansion on levels 6 and 7 of building 89; – Molecular imaging modifications on level 6 and 7 of building 63; and – Installation of photovoltaic panels on level 8 roof.	N/A	Pending approval	TBC
4	– New internal fit out for the relocated Anatomical Pathology department within Building 12; – New external addition to Building 12; – Minor works to the external façade and roof including: new external egress stairs, downpipe, new entry door, new roller door, infill of an existing door and removal of some existing brickwork from to reinstate two windows to previous state (as they are currently blocked in); and – Installation of Photovoltaic (PV) cells on the roof of Building 12.	8 July 2022	Health Administration Corporation	October 2022 – Mid-2023

Refer to **Figure 23** below for the locations of REF works packages 1-4.

Figure 23 Location of works packages 1-4
Source: Architectus

Other relevant related development currently being undertaken in the vicinity of the site is outlined below.

As summarised in **Table 16** works occurring elsewhere in the site are expected to be completed by mid-2023. Given the subject proposal is expected to commence construction in October 2023, the cumulative impact associated with these works (due to overlapping of construction) is expected to be nil.

Sydney Biomedical Accelerator

The Sydney Biomedical Accelerator (SBA) is a co-funded partnership project between NSW Health, Sydney Local Health District and the University of Sydney which will be built adjacent to RPA Hospital next to St Andrews Oval. It comprises 36,000m^2 of building development. The SBA is set to open in 2026 and will allow for a multidisciplinary, integrated approach to the research to address some of the greatest global health challenges.

St John's College Private Hospital

The Rector and Fellows of St John's College intend to construct a private hospital on the existing site of the St John's College carpark, located at the corner of Missenden Road and John Hopkins Drive.

Request for SEARs were sought under a Scoping Report, for the development of the private hospital, which is anticipated to accommodate:

- *Circa 150 beds within the hospital component, including nine operating theatres;*
- *Key specialty services such as orthopaedics, urology, palliative care services, cardiology, psychiatry and general surgery;*
- *Medical and clinical suites for research and education including diagnostics and imaging and allied health (i.e., dietetics, physiotherapy and rehabilitation);*
- *Consulting rooms to accommodate life science companies;*
- *Shared research and development spaces; and*
- *Ancillary retail including food and beverage amenities and pharmacy.*

SEARs were issued on 18 November 2022 for Concept development application for the St John's College Private Hospital, including a concept proposal for a new private hospital building, carparking and landscaping works.

2.5 Feasible Alternatives

Architectural Scheme

RPA Hospital has been subject to extensive investigations and master planning exercises to determine the best direction for achieving clinical demands and CHERP aspirations in the precinct. These include:

- RPA Hospital Clinical Services Plan 2019;
- CHERP Precinct Plan (June 2020);
- CHERP RPA Campus Plan (June 2020);
- RPA Hospital Redevelopment Stage 1 Master Plan (September 2021).

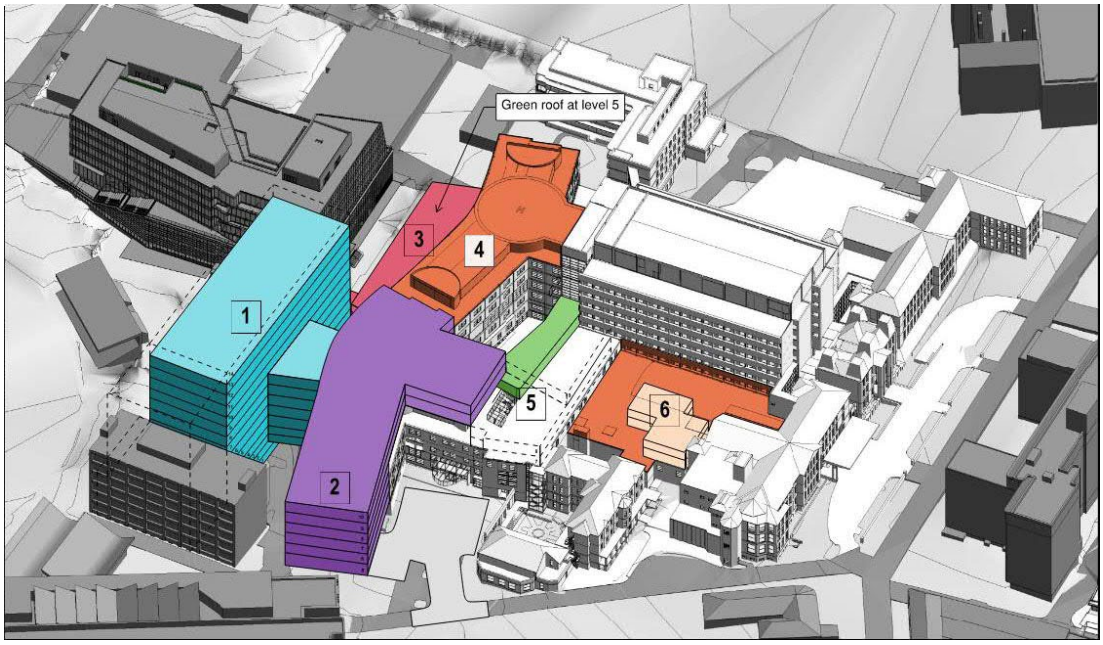


Figure 24 Aerial View from the Northwest
Source: RPA Master Plan Report, 2021, Jacobs

There is a statutory requirement under Sydney Local Environmental Plan 2012 (SLEP 2012) for a competitive design process that achieves design excellence. A Design Excellence Strategy was prepared for the proposed development which defined the site area for the purposes of the design competition as the whole of the East Campus (**Appendix N**).

The Design Competition Brief prepared by Ethos Urban, provides the following rationale for defining the east campus as the site for the purpose of the design competition:

> *The RPA Campus is divided by Missenden Road into the East Campus and West Campus. Potential for growth has been identified in the CSP on both the East Campus and West Campus, with the East Campus providing better opportunities for adaptive reuse, integration and expansion of the existing acute services. The current location of acute services on the East Campus, adjacent to the University of Sydney enhances future translational and research opportunities, hence the focus of the Design Competition being on the East Campus. The East Campus is also being pursued due to RPAs developed clinical streamlining model that integrates inpatient and ambulatory care.*

A bespoke invited architectural design competition was carried out with three (3) invited competitors. Three options for the proposed development were considered as a part of an Architectural Design Competition (Design Competition), which commenced 25 October 2021 and ended in March 2022. The purpose of the Design Competition was to select a design collaborator who presented the highest quality architectural, landscape and urban design proposal for the RPA Hospital Redevelopment.

The design schemes developed by the design competition entrants each offered varying built form options and degrees of heritage and other impacts. The winning scheme was found by the Design Jury of being capable of achieving design excellence.

Ultimately, Bates Smart was selected as the winning architectural team. In consideration of both urban and clinical responses, and the objectives of the Competition Brief, the Bates Smart scheme was deemed more realisable in comparison to the Architectus scheme and of a more appropriate scale and clinically advanced in comparison to Fitzpatrick + Partners' scheme. Bates Smart worked in conjunction with Jacobs to finalise the proposed design.

A design integrity panel (DIP) was established to assist in the ongoing achievement of design excellence and to ensure that design integrity is maintained, pursuant to the criteria under Clause 6.21C of SLEP 2012 for Design Excellence. This is to ensure that the consent authority can be satisfied of design excellence being achieved by the proposed development.

Three (3) Australian architectural practices were selected to participate in the competition. A summary of each submission is provided at **Table 17** below.

Table 17 Design Competition Responses
Source: Ethos Urban on behalf of the Design Jury

Architectural Practice	Summary
Architectus	The Architectus scheme proposed refurbishment of existing clinical space and the construction of new structures, with the concept driven by the introduction of several key elements including: – Crown: The Crown Building was proposed as a circular form reaching seven storeys in height, to the north of Building 89. The building accommodated women's services including a new entry for delivery/birthing suite, new maternity In-Patient Unit (IPU) on the upper levels, and women's ambulatory care. – Longhouse: The 'Longhouse' comprised a two storey addition to Building 89 at Levels 9 and 10. The Longhouse incorporated a crested silhouette to relate to the new Crown and Wing buildings and the existing heritage buildings. This addition would house Intensive Care Unit (ICU) space over two levels. – Wing Building: The Wing Building was proposed as an 11 storey new building, sited adjacent to the eastern boundary of the RPA Hospital Campus. The 'wings' provided larger floor plates for ICU on Levels 9 and 10. The Wing building accommodated Neonatal Intensive Care Unit (NICU) and Delivery expansion and IPU. The Architectus scheme delivered 846 beds, which exceeded the Clinical Services Plan (CSP) target to 2026 by 56 beds.
Bates Smart	The Bates Smart scheme sought to deliver improved wayfinding, heritage retention, enhanced landscape character, and deliver a health-promoting campus. Refurbished internal spaces and new building additions were proposed to deliver on the clinical requirements of the Brief. The concept focused on the following key elements including: – Forest Spine: The Forest Spine was a multi-storey landscaped atrium, to serve as the key mechanism to improve wayfinding connections from the northern entry to southern entries and allowed for high levels of natural daylight throughout the building. – The Eastern Wing: The Eastern Wing proposed as an 11 storey courtyard building, adopting an 'L'-shape and incorporating women's health ambulatory care, neonatal and delivery expansion, radiology expansion, maternity IPU, and general IPU. The geometry of the built form was driven by the retention of the heritage Pathology Building by building the tower structure over the existing building, retention of significant trees in the rear gardens, and an attempt to soften the built form edge to the University of Sydney campus. Bates Smart's proposal aligned closely to the Reference Scheme accommodation schedule, and delivered 805 beds, exceeding the 2026 target by 15 beds.
Fitzpatrick + Partners	The Fitzpatrick + Partners scheme aimed to achieve clinical efficiency through consolidation of new floor space in a tower form (the Northern Wing), allowing for the retention of the existing heritage buildings and rear gardens. – Northern Wing: Proposed a 14 storey tower to the north of Building 89, containing two primary wings connected through a support services link and core. Additionally, the following were proposed as future expansion scope: – The Green Walk: Was proposed as a north-south green spine to provide clarity of circulation through the existing hospital buildings. The spine utilised existing and new courtyards to create a series of internal landscaped spaces and anchor the main Level 5 public spaces of the existing hospital buildings.

	– Missenden Road reconfiguration: The Missenden Road frontage was sought to be enhanced through a staged reduction in vehicle access. A design intent of limiting vehicular access within the hospital forecourt was proposed and the design sought to strengthen the landscaped setting to reinforce the heritage and civic values of the Missenden Road frontage. – New park and connected green space: The future demolition of the Centenary Institute Building was leveraged by Fitzpatrick + Partners to create significant open space adjacent the retained Mortuary and RPA Chapel buildings and rear gardens. The Fitzpatrick + Partners scheme delivered 787 beds, which was a shortfall of the CSP target to 2026 by 3 beds.

Feedback from the Design Jury

Feedback from the Design Jury was provided, and a second round of the competition was conducted, after each competitor adjusted their designs. Ultimately, Bates Smart was selected as the winning architectural team:

> *In consideration of both urban and clinical responses, and the objectives of the Competition Brief, the Bates Smart scheme was deemed more realisable in comparison to the Architectus scheme and of a more appropriate scale and clinically advanced in comparison to Fitzpatrick + Partners' scheme.*

The Design Jury identified elements of the scheme which were key features in its selection of Bates Smart, including:

- *The urban approach to the navigation through the buildings of the hospital campus, including the responsiveness of the scheme to the existing heritage buildings and landscape, place and wayfinding needs.*
- *The delivery of a new public space in the form of the Forest Spine which introduces an intuitive wayfinding opportunity through the existing Campus, acting as a strong and unifying device. The overall wayfinding strategy was a key benefit of the scheme which allows north-south and east-west connections through the existing buildings across numerous level changes.*
- *The location and approach to the Eastern Wing which has a gentle bend that maximises views, seeks to retain significant trees where viable and accommodates clinical operations.*
- *The contextually appropriate scale of new built form amongst the existing buildings at the RPA Hospital Campus, particularly the heritage-listed buildings that form part of the broader University of Sydney HCA, as identified in Schedule 5 of the Sydney LEP 2012.*
- *The quality of façade design and materiality of the Eastern Wing, Northern Extension and the Forest Spine, all directly responding to their immediate context.*
- *The sense of openness achieved in the Northern Place which presents as an obvious secondary entrance into the Hospital.*
- *The alignment of open space and respite areas with clinical activities across the site.*

The Design Jury identified a range of areas that require ongoing refinement during the design development phase of the project to assist in the achievement of design excellence. These matters are outlined below:

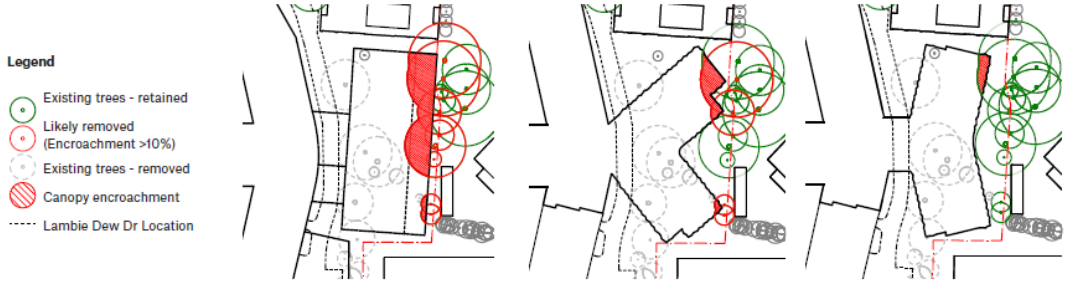
- *The approach to the partial retention of the heritage-listed Pathology Building is not supported as it compromises the heritage items and setting. Consideration is to be given to interpretation of these heritage items in a different manner.*
- *Further investigation and technical review are required to rationalise the Forest Spine (to align with the project budget) while maintaining the intuitive wayfinding benefits of this design move.*
- *A reduction in planned area is required to meet both the clinical planning requirements and ensure the project budget is achieved.*
- *The Missenden Road forecourt must not be extended or re-graded as this will impact the heritage significance of this frontage and impact daylight penetration to the existing hospital buildings.*
- *The proposed Southern Place design is not supported as these works are considered unnecessary and not significant in their contribution to place.*

- *Consideration of a reduction in scale of the northern entry form to achieve a suitable scale adjacent Nurses Courtyard*
- *Visual privacy conflicts between the Eastern Wing and the Clinical Services Building must be carefully considered and resolved in the detailed planning of the Eastern Wing.*
- *The medical/surgical bed shortfall of 20 beds must be delivered, noting this shortfall arose due to proposed public and staff corridors impacting existing beds through to the Eastern Wing.*
- *Ongoing improvements should occur to the amenity provided to clinical areas, such as the further refinement of the ICU and NICU layouts to promote natural daylight.*
- *Broadly, ongoing refinement is required to achieve the clinical requirements, flows and functional relationships to the best ability of the design and constraints of the budget while maintaining the core principles of the design.*

Design Options Developed in Response to Trees

The proposed redevelopment site at the eastern edge of the east campus requires the removal of a number of mature trees. Different building forms were explored for the East Wing building footprint including a rectangular form, L-shaped form and bent /curved form. Consideration was also given to impacts to servicing and the alignment of Lambie Dew Drive. Of the three options, the curved form provided the potential to conserve the greatest number of trees. The bent form was also preferred as it responded to the curved form of University Oval 1. Following initial assessment, a point-cloud survey of the trees revealed the mature fig tree canopies were significantly larger than their estimated Tree Protection Zones (TPZ) and would be significantly impacted by any building footprint. This was confirmed by on-site inspection and assessment by the project arborist.

Based on the arborist assessment of tree health and lifespan, a succession planting strategy is proposed to ensure substantial tree canopy could be maintained to provide visual amenity and long-term landscape quality to both the university and the hospital.



Initial Testing of Options	1. Rectangular Form	2. L-Shaped Form	3. Bent Form
* Based on estimated Tree Canopy Zone and Structural Root Zone	Significant loss of amenity and canopy, with building footprint impacting all boundary trees	Moderate loss of amenity and canopy, with building footprint likely requiring removal of 4 trees in North-East Corner	Minimal impact, with minor encroachment on 2 tree canopies and all boundary trees retained*
1. *Estimated Canopy Encroachment Zone*	✗ 65 m² (Upper levels) 473 m² (Lower Levels)	— 149 m²	✓ 25 m²
2. *Retention of Mature Boundary Trees*	✗ 8 boundary trees likely to be removed	— 4 boundary trees likely to be removed	✓ 0 boundary trees likely to be removed*
3. *Maintaining Lift continuity and Lambie Dew Drive*	✓ Continuous lift fully building and Lambie Dew Drive retained	— Transfer lift required OR Lambie Dew Drive impacted	✓ Continuous lift fully building and Lambie Dew Drive retained

Figure 25 Options for the East Wing building footprint
Source: Bates Smart

Temporary Helipad (HLS) Locations

Due to the risk of aviation safety issues during the construction of the East Tower with crane towers and proximity to construction workers and loose objects, there is a requirement for the Helicopter Landing Site (HLS) to be relocated during the construction works. Whilst deciding on the final location of temporary HLS, a number of factors were considered including aviation safety, patient safety, and patient transfer times.

Three options were considered including:

1) a vacant site in the south west of the west campus;
2) the multideck car park to the North of South-West site (proposed location); and

3) the St John's sports fields on the University of Sydney campus.

South-West Site

The South West site had the advantage of fast patient transfer times, however the two aircraft approach and departure paths greatly exceeded the desired maximum angle required for aviation safety requirements. It would have also involved clearing of vegetation and did not have existing services infrastructure, and would have incurred longer construction times.

St John's Sports Field

The St Johns sports field had the advantage of having an existing agreement with St John's as a back-up landing site, however the patient transfer times were longer, would potentially require disruption to play with unscheduled departures/landings and associated management, and would require an upgrade to the sports field.

Multi Deck Carpark

The multideck car park was highlighted as the preferred location based on it providing two approach and departure paths within acceptable aviation safety tolerances, efficient patient transfer routes to reduce transfer times, existing infrastructure and services allowing a reduced construction period and minimal disturbance to flora and fauna.

Consultation

All three options were considered by NSW Ambulance, Toll Group, Sydney Local Health District, and Health Infrastructure in relation to patient care and the multideck car park was the preferred option based on the efficient patient transfer times.

Separately external consultation has included development and distribution of fact sheets and FAQs to the public, the publishing of newsletter articles, web updates and project emails, door knocks and community pop ups including 7 individual briefings to key non-health stakeholders and 4 individual briefings to key health stakeholders. Individual briefings were offered to key stakeholders including University of Sydney, St Andrew College, Sancta Sophia College and St Johns College, with St Johns College taking up the offer. Separately a pre-SSDA briefing was held with University of Sydney with the temporary helicopter landing site included amongst other topics. No comments were received in relation to the relocation.

Construction Timeframe and Duration

The temporary HLS is expected to be constructed between May and November 2023, with the operation of the HLS expected to run from December 2023 until Q3 2026. Based on current data it is expected the temporary helicopter landing site would be used 9-10 times per month and mostly during the day. In relation to the construction works it is expected that construction equipment will include concrete pumps, mobile cranes, small excavators, delivery trucks and hand held equipment.

Justification

RPA is a principal referral hospital and provides tertiary and quaternary referral and district acute services to the local District residents, as well as to other metropolitan residents, rural, interstate and overseas patients. A number of our services have 50-80% of their patients coming from outside the SLHD area. RPA provides numerous specialty services to its local inner west catchment, other metropolitan residents, rural, interstate and overseas patients, which result in inflows from other LHDs, rural, interstate, private hospitals and overseas patients. RPA is also networked with other districts for specialist services that results from inflows from other LHDs. RPA provides a wide range of highly complex tertiary and quaternary services including the Australian Liver Transplant service, Kidney Transplantation, Haematology, Cardiovascular and Cardiothoracic Services, Neurosciences and Neuro-interventional radiology, PET-CT and PET Radiochemistry with an on-site cyclotron, Genomics, Cancer Care, Complex Surgery, Intensive Care, Respiratory Care, Neonatal Care, Maternity and Gynaecology. Indeed, RPA has had a statewide role as the major site in NSW for trialing, within a robust research framework, novel, complex and highly specialised services.

It is a requirement for a temporary HLS to be provided during the construction works to support and maintain the provision of these services whilst the permanent HLS is unable to be used.

Flights will be prioritized during daytime hours when this is possible (i.e. for regional transfers. Nighttime emergencies will still need to occur at nighttime).

2.6 Consequences of Not Carrying out the Development

The consequences of not carrying out the development is a reiteration of the project justification, referred at **Section 2.1** above, including that:

- RPA Hospital will not possess the sufficient service infrastructure to meet increasing healthcare and capacity demands within the SLHD caused by population growth;
- A lack of suitable facilities will limit the operational efficiency of RPA hospital and lead to undesirable social, economic and health outcomes such as inefficiencies in care integration and coordination;
- Staff shortages and dissatisfaction will continue to increase due to a continued deficit of workspaces, staff facilities, office areas, and spaces for education, research and innovation; and
- RPA Hospital will not be able to meet the projected increase in demand for specialised prevention, early intervention and ambulatory and inpatient services to respond to a projected increase in chronic health issues within SLHD, with higher levels of obesity, tobacco usage and infectious disease than state averages.
- RPA provides a critical tertiary / quaternary range of services which are integral to the resilience of the NSW Health system, providing referral services and critical care network capacity to support local and statewide care. Inability to expand RPA to meet the growing demands across the state will affect both local and state communities and place increased pressure on other services.
- Temporary HLS – the consequence of the temporary HLS not going ahead would be that the hospital would not be able to admit/discharge airborne patients for emergency and specialised treatment at the hospital over the three-year period of main works construction. Not having a helipad on the site would diminish the role RPA Hospital plays within the critical care network.

3. Project Description

3.1 Project Overview

In March 2019, the NSW Government announced a significant $750 million investment for the redevelopment and refurbishment of the RPA Hospital campus. The Project will include the development of clinical and non-clinical services infrastructure to expand, integrate, transform and optimize current capacity within the hospital to provide contemporary patient centered care, including expanded and enhanced facilities.

The last major redevelopment of RPA Hospital was undertaken from 1998 to 2004 projected to 2006 service needs. Since then, significant growth has been experienced in the volume and complexity of patients, requiring significant investment to address projected shortfalls in capacity and to update existing services to align with leading models of care.

The redevelopment of RPA Hospital has been the top priority for the Sydney Local Health District since 2017 through the Asset Strategic Planning process, to achieve NSW Health strategic direction to develop a future focused, adaptive, resilient and sustainable health system.

3.2 Project Description

The proposal seeks to expand the existing surgical and medical facilities of RPA Hospital to maintain and enhance RPA's broad clinical, research and education capabilities, and meet the future needs of the immediate area and Greater Sydney. The new facility will increase theatre capacity, improve efficiencies and access to services and enable implementation of new models of care and surgical clinical pathways. The project will provide the Hospital with the opportunity to meet increased surgical demand due to numerous factors including population growth and ageing population as well as providing additional medical services and an upgrade to the existing infrastructure.

The application seeks development consent for alterations and additions to the existing RPA Hospital campus, including:

Alterations and additions to the RPA Hospital East Campus, comprising:

- Eastern wing: A new fifteen (15) storey building with clinical space for Inpatient Units (IPU's), Medical Imaging, Delivery, Neonatal and Women's Health Services, and a helicopter landing site is proposed on the roof of this building;
- Eastern extension: A three (3) storey extension to the east the existing clinical services building to accommodate new operating theatres and associated plant areas;
- Northern expansion: A two (2) storey vertical expansion over RPA Building 89 accommodating a new Intensive Care Unit and connected with the Eastern Wing;
- Internal refurbishment: Major internal refurbishment to existing services including Emergency Department and Imaging, circulation and support spaces;
- Enhanced Northern Entry/ Arrival including improved pedestrian access and public amenity;
- Reconfiguration of Emergency Department forecourt at the Missenden Road frontage for ambulance access and parking, and replacement of canopy to the Albert Pavilion;
- Demolition of affected buildings, structures and trees;
- Changes to internal road alignments and paving treatments;
- Works within Missenden Road reserve including kerb realignment, addition of new "keep clear zone", and an additional four drop-off parking bays;
- Landscaping works, including tree removal, tree pruning, and compensatory tree planting including off-site on University of Sydney land.

Ancillary works to the RPA Hospital West Campus, comprising:

- Temporary helicopter landing site above existing multi storey carpark;
- Re-routing of existing services; and
- Associated tree removal along Grose Street.

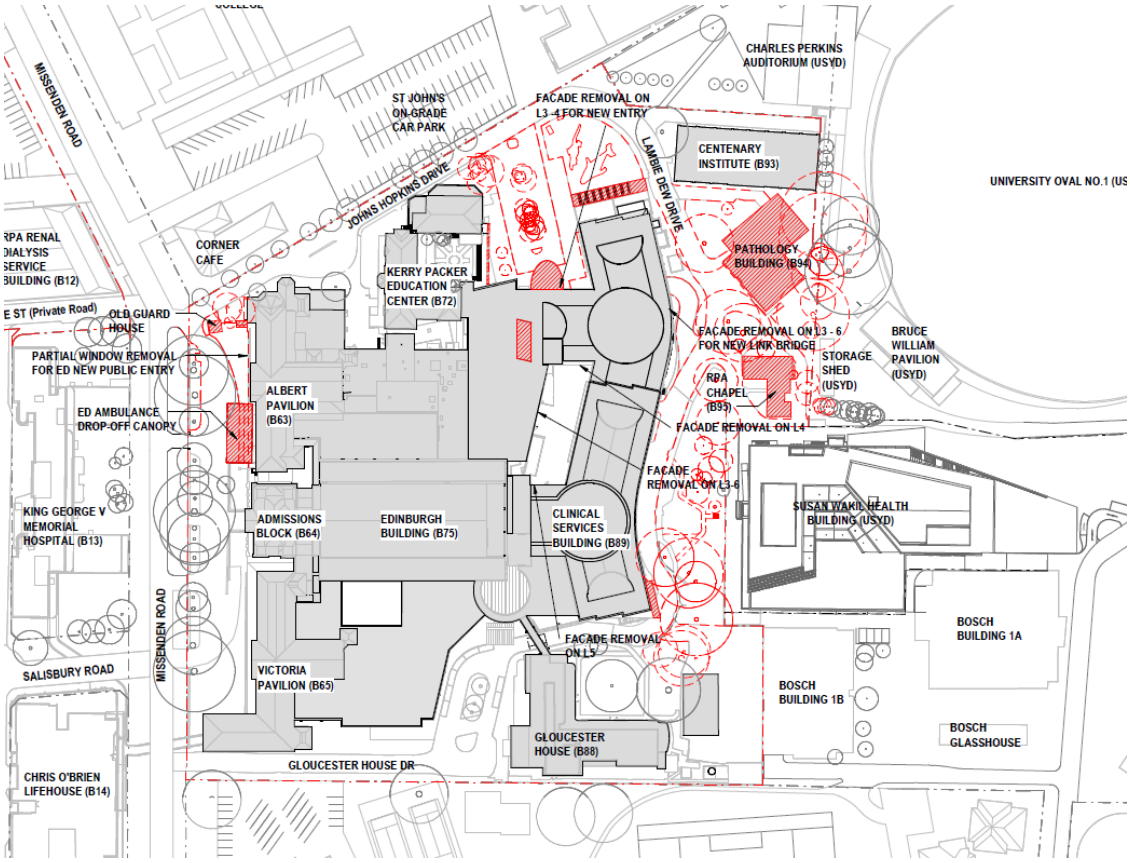


Figure 26 Proposed Demolition Plan – East Campus
Source: Bates Smart

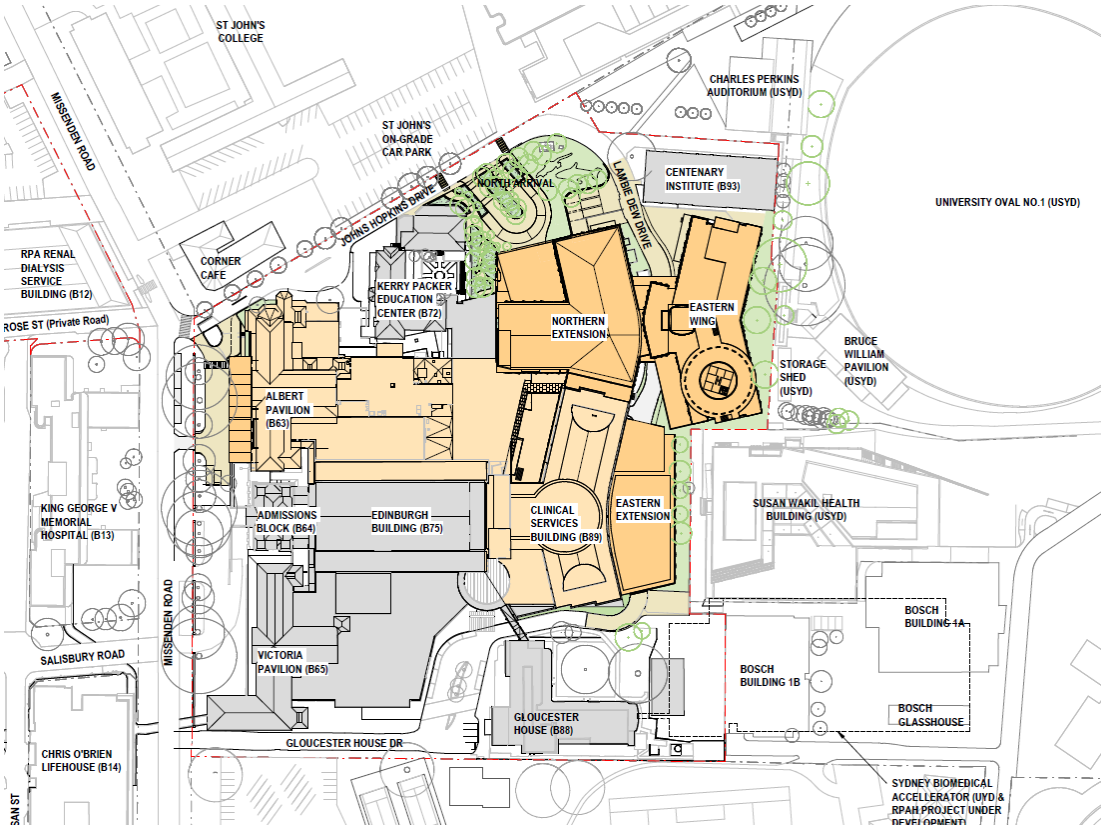


Figure 27 Proposed Site Layout – East Campus
Source: Bates Smart

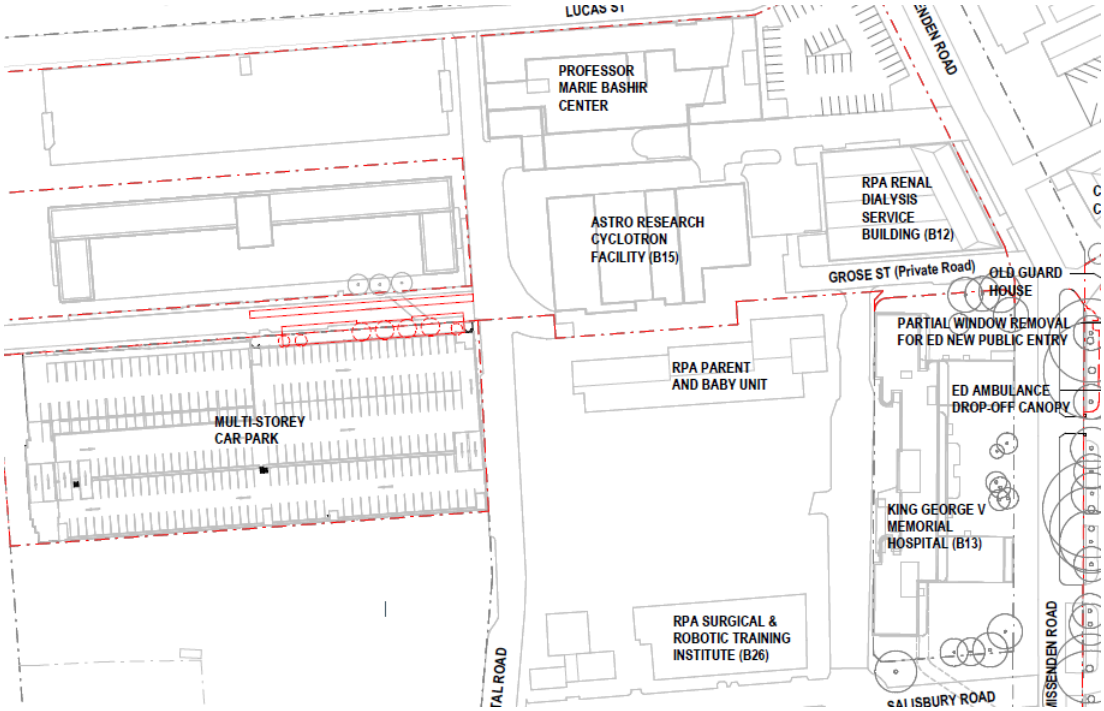


Figure 28 Demolition Plan - West Campus
Source: Bates Smart

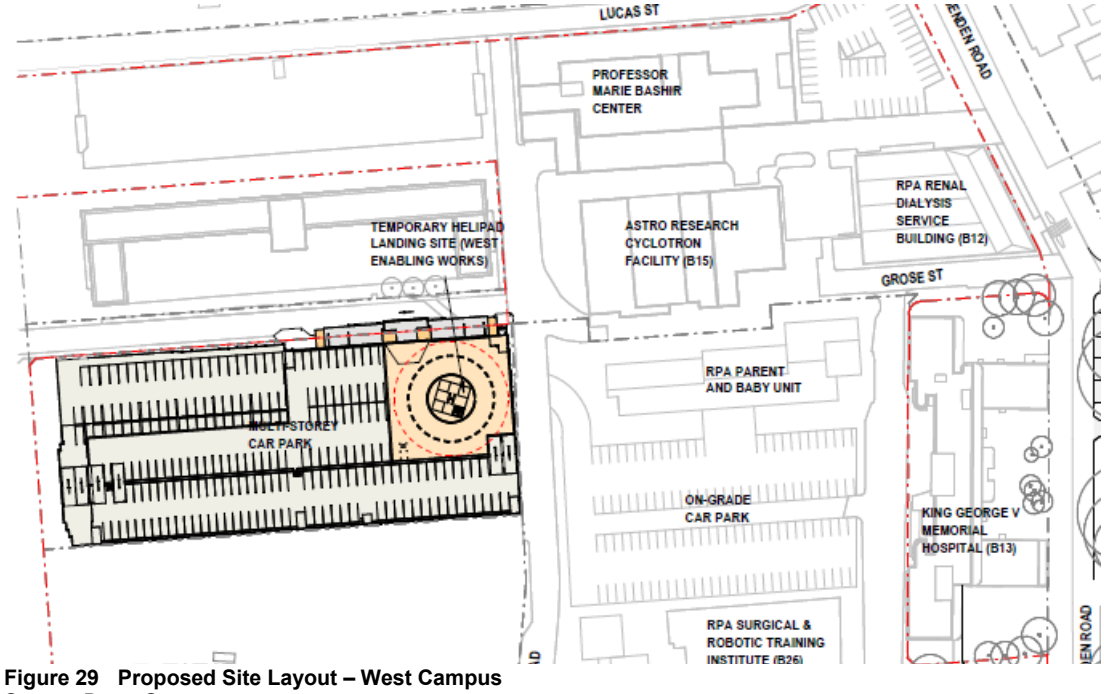


Figure 29 Proposed Site Layout – West Campus
Source: Bates Smart

3.3 Project Objectives

The core project objectives have been aligned to NSW State Health Outcomes and are described below.

Table 18 Project Objectives

NSW State Health Outcomes	Project Objectives
1. People receive high-quality, safe care in our hospitals.	– Provide excellent patient safety and quality of care. – Provide contemporary, patient and family centred facilities. – Build on alliances with our neighbours, industry and the community to create an innovation precinct. – Create a great place to work (improving staff experiences, staff amenity, wellbeing, functional spaces that allow working in teams, training and research).
2. People can access care in out of hospital settings to manage their health and wellbeing.	– Use technology wisely to enhance what we do.
3. People receive timely emergency care.	– Provide capacity to meet projected demand.
4. Keeping people healthy through prevention and health promotion.	– Enhance functional relationships (functionally efficient, minimise travel distances, more open space, less corridors). – Ensure flexibility and futureproofing
5. Our people and systems are continuously improving to deliver the best health outcomes and experiences.	– Support new and enhanced world's best practice models of care for efficiency, sustainability and integration of services. – Continued integration of health, research and education as an active innovation ecosystem. – Enhanced environmental sustainability of capital assets. – Ensure economic and stage-able development (best use of funding, do it once – reduce redo's, focus on development where most appropriate, delivering high priority services earlier, minimising disruption during construction).

3.4 East Campus – Design Concept

As noted by Bates Smart in their Architectural Design Report, the RPA Hospital site is a complex and sprawling campus which requires a series of carefully considered interventions; each working hard to provide multiple benefits for placemaking, wayfinding, heritage and clinical planning. The design concept is built around five key projects, being:

- Northern Arrival:
- Eastern Wing:
- Eastern Extension:
- Central Courtyard; and Missenden Road Forecourt (Emergency Department Drop-off).

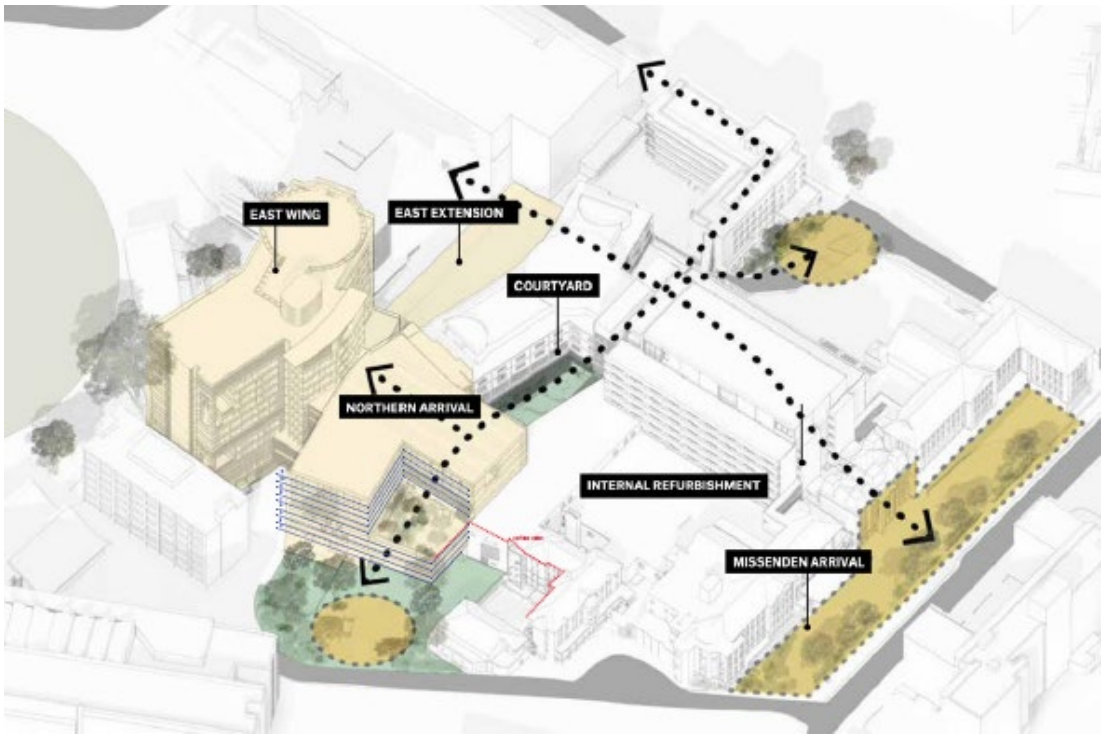


Figure 30 Design Strategy
Source: Architectural Design Report, prepared by Bates Smart, Jacobs and Neeson Murcutt + Neille

Table 19 Design Strategy Components
Source: Bates Smart

Component	Description
Northern Arrival  **Figure 31 Northern Arrival / Entrance, as view from Johns Hopkins Drive.** Source: Bates Smart.	The Northern Arrival incorporates the following aspects: – A public domain area in the form of a new entrance plaza and drop off area; – A double-height entrance lobby; – A future open space / terrace located on Level 6; – A two storey rooftop expansion to provide increased clinical space in a large and flexible footprint. The purpose of the double height entrance lobby is to improve connection between the northern arrival plaza and the primary hospital circulation which are currently grade separated. The lobby connects the plaza up to the public lifts and public corridors through to Eastern Wing and Central Courtyard. The lobby provides views to public landscape, an existing facade with creepers and the historical Nurse's Courtyard. A safer and more pedestrian friendly pick up / drop off plaza is established to replace the existing Women's and Babies Unit drop off plaza and supports long-term precinct goals of a circulation spine along Johns Hopkins Drive. Patient transport vehicles are redirected to the side of the plaza at the lower level. Pedestrian connections are established with Johns Hopkins Drive, Charles Perkins Building and the Centenary Building. A two storey rooftop expansion to provide increased clinical space in a large and flexible footprint. Lastly a space is provided for a rooftop terrace on Level 6, looking down over the plaza. It is not expected that this terrace would have immediate use but has been included in the scheme for future use, to accommodate future refurbishment of some Level 6 clinical areas.

Component	Description
	Refer to Figure 31 which shows the view of the Northern Arrival lobby from Johns Hopkins Drive.
East Wing  **Figure 32 East Wing as viewed from University Oval 1** Source: Bates Smart	The Eastern Wing is the most prominent aspect of the architectural scheme and includes a broad and flexible range of clinical operations. It is positioned to provide a direct expansion to the core acute functions of the hospital, including contiguous floor plates at the lower podium level, and flexible inpatient units in the tower volume. The form of the building bends slightly, in responding to the curved form of University Oval 1. The subtle bend in the building's form reduces the impact to significant trees and visual impacts. On the western façade the building reinforces the horizontal layering of the historical hospital buildings, stepped down the site along Johns Hopkins Drive. The rooftop of the East Wing incorporates a Helicopter Landing Site (HLS) for air ambulance operations.
Eastern Extension  **Figure 33 View of the East extension from Johns Hopkins Drive** Source: Bates Smart	The eastern extension expands the footprint of Building 89, forming part of the acute services building podium. This aspect of the scheme expands in three storeys in height, and adds operating theatre capacity on Level 3, with an expanded covered loading dock below and rooftop plant above. At the top level of the eastern extension (Level 5), future proofing is to take place. The plant zone has a continuous screen of louvres with a horizontal datum aligned with the existing Building 89 podium. This area of the design includes deep planted zones for landscaping along its eastern and southern edges, where the extension interfaces with the Susan Wakil building.
Central Courtyard	The Central Courtyard expands and refurbishes an existing staff breakdown area and glass well / atrium within the main hospital building. It sits at the centre of a pedestrian spine that connects the Northern Entry to the Southern Entry though the RPA Hospital main hospital building. The courtyard is designed to provide an intuitive pedestrian link through the hospital, with through views of internal and external landscape. There is a two-level grade change between the Northern Entrance (Level 3) and the Sothern Entrance (Level 5). The Central Courtyard lies at the centre of these two entrances and at Level 4, provides a spatial connection between the two, as well as a place for respite for staff and visitors of the hospital.

Component	Description
 **Figure 34 Level 5 - Courtyard Balcony, looking North** Source: Bates Smart	
Missenden Road forecourt/ ED drop off  **Figure 35 Emergency Department drop-off area** Source: Bates Smart	The existing ED drop off area on Missenden Road is proposed to be expanded to provide: – 4 emergency vehicle drop-off bays (refurbishment of existing spaces) – 2 new emergency vehicle bays without unloading – 1 accessible drop-off bay for public access to ED. The works also incorporate a dedicated emergency vehicle entry driveway, a new public ED entrance (replacing existing public entry), a new lightweight canopy and a dedicated public entry and shared exit. The awning / canopy replaces an existing awning however is elongated to cover both the existing and proposed emergency vehicles bays. The canopy is lightweight in its materiality and respond to existing rhythms, portions and openings of existing elements of the Albert Pavilion. The proposed ED configuration will have a separated ambulance entrance from Missenden Road, while public ED access will be via a new driveway on Johns Hopkins Drive. Pedestrians will be provided with a dedicated walkway and prioritised crossing which is a significant improvement from the existing arrangement. Approval will be sought under Section 138 of the Roads Act 1993 for changes to access and drop off on Missenden Road as it is a local public road.
Future clinical space	The proposal includes areas for future clinical space at the following locations: – East Wing Level 2; – East Wing Level 13; – East Wing Level 14; – East Extension Level 3. The fit out of these spaces will be sought by HI in the future and under a separate planning pathway.
West Campus – Ancillary works	As noted previously the redevelopment of the hospital was always intended to occur in the East Campus due to operational synergies associated with colocation of clinical and acute services of which the majority are located in the RPA main hospital building in the East Campus. Notwithstanding, the proposal does include ancillary works with the west campus, that are necessary to support the construction and operation of the augmented hospital.

Component	Description
	Temporary Helicopter Landing Site The existing HLS servicing the hospital is located on the roof of Building 89. This HLS will not be operational during construction works due to construction cranes making it too dangerous for use. An alternative HLS is required to allow for air ambulance operations to occur during construction. Several options were considered for the location of the temporary HLS and these were discussed in Section 2.4 (Feasible Alternatives). The proposed location of the temporary HLS on the roof of an existing multi storey car park was the best among the feasible options explored. As per above, Ambulance lifts and upgrades to roads and pedestrian crossings are proposed to support the temporary HLS. The temporary HLS will be de-commissioned when construction works are complete. It is noted, that for the temporary HLS, the existing car park slab has insufficient capacity to support the loading of a helicopter and will therefore be strengthened using steel beams on the underside of the slab, which will be removed upon completion of the main works and reinstated for car park use. New lifts are to be constructed to the north of the car park, providing access between the HLS and ambulance bays at road level. These lift shafts and lobbies will be constructed in reinforced concrete and will remain as permanent additions to the car park after use as a temporary HLS.

3.5 Defining Principles

The schemes presented in the Design Competition, which was ultimately won by Bates Smart, required competitors to consider several clinical and placemaking and design objectives, calling for a design solution that would balance the need to provide essential clinical services with a desire to achieve design excellence and deliver a great place.

The Clinical Design Objectives and the Place Making and Design Objectives have been extracted from the Design Competition Brief and are provided below.

Clinical Design Objectives

- Clinical design should draw on evidence-based solutions to support positive patient outcomes and optimise safety, capital and operational efficiency.
- The design must facilitate direct access to natural light and external views, with patient areas having precedence over staff areas.
- The design must facilitate future flexibility to accommodate future growth in services.
- The design concept should provide clear and concise public, patient and staff circulation pathways that minimise / eliminate any cross over of pathways.
- The design must provide for critical care flows to have urgent access to the most specialised and technical areas of RPA, including the Emergency Department (ED), Intensive Care Unit (ICU), Cardiac Close Observation Unit (CCOU), Operating Theatres, Radiology and Helipad.
- Many services have key external functional relationships to other services such as Operating Theatres to Delivery Suite, etc. These […] may be achieved through horizontal or vertical connections.
- [address where feasible] the growth requirements for the above services […] to achieve their 2026 projected requirement.
- A key requirement for RPA Hospital is to achieve as many additional medical & surgical beds as possible.
- The design concept must position Emergency Department in a location that enables ambulances and people arriving by foot or car to arrive at the department from Missenden Road.
- The AusHFGs form the basis of the Functional Briefing and Reference Scheme scheduling assumptions.

Place Making and Design Objectives

- Develop a design concept and site planning outcome that is contextually relevant and accommodates the clinical requirements of the Brief. The design concept should embody and implement the principles of the CHERP.
- Provide a cohesive, interesting and architecturally distinctive addition to the East Campus that blends the built and natural environments and is reflective of the civic nature of RPA Hospital as one of Australia's oldest and most important hospitals.
- Deliver strong civic gestures and architecture befitting of the rich and storied history of the RPA Hospital Campus which has evolved over more than a century as a public institution.
- Promote a technically advanced, responsive and adaptive approach to new buildings and additions which future proof the ongoing performance of the RPA Hospital to match rapidly evolving health and research sectors.
- Ensure open spaces and the public realm, as well as the interior public spaces, are the primary motivators and organisers of the buildings, forms and departments within the East Campus, balancing the delivery of clinical requirements […]
- Protect amenity within the public realm by ensuring future development will not result in adverse wind and daylight impacts.
- The design concept is to be sympathetic to heritage items and vegetation that are located within and adjacent to the site, contributing to the character and quality of the Campus.
- Any demolition of heritage items and tree removal must demonstrate a net benefit gain in an urban design sense and creation of place, balancing the clinical requirements with the responsibility to deliver a long-lasting public project.
- Promote synergies between RPA Hospital and neighbouring health research and education institutions.
- Create a legible and intuitive environment with clear reference points that integrate open spaces and courtyards seamlessly into the East Campus, utilising the potential of these spaces as orientating devices that provide natural light and visual relief.
- Accommodate the future conversion of Missenden Road into the 'Vehicle Calmed Heart' of the precinct, as envisaged by the CHERP.
- Ensure vehicle access does not dominate the public realm, particularly on Johns Hopkins Drive, Lambie Dew Drive and Gloucester House Drive, which should be utilised to integrate the hospital with the University of Sydney campus.
- Design initiatives in the built form, wayfinding and landscape design are to be explored to reduce lifecycle costs.
- Integrate Crime Prevention Through Environmental Design (CPTED) principles into the design concept.
- Provide for ample equal access opportunities throughout the site.

3.6 Numerical Overview

The key numerical information for the proposed development is summarised in **Table 20** below.

Table 20 Numerical Overview of Proposed Development
Source: Various

Component	Existing	Proposal
Hospital site area	43, 400 m^2	43, 400 m^2
Gross floor area (GFA) (New Build)	-	31, 058 m^2
Gross floor area (GFA) (Refurbished)	-	8, 349 m^2
Maximum Building Height		
Eastern Wing	-	82.58 RL
Northern Arrival	-	60.500 RL
Eastern Expansion	-	37.08RL
Temporary HLS	-	43.020 RL
Lift Overrun for Permanent HLS	-	91.280 RL
Permanent HLS	-	86.350 RL
Storeys		
Eastern Wing	-	16
Northern Arrival	-	3
Eastern Expansion	-	4
Tree canopy cover (site only)		
Site coverage (%)	15.4%	10.9%
Coverage (m^2)	6,776m^2	4,799 m^2
Tree canopy cover (including University of Sydney off-site works area)		
Site coverage (%)	17.2%	13.4%
Coverage (m^2)	8,111m^2	6,317m^2
Employment		
Jobs - construction	-	1,400
Jobs – operation	3,589	4,489

3.7 Façade and Materials

Building façades are materials reference the craft and materiality of the Mansfield Brothers original brick and sandstone buildings and create a contemporary interpretation in horizontal banded terracotta. This approach creates a calm and coherent language that provides a respectful backdrop to the heritage context and facilitates all the various functions of the hospital.

The new buildings are proposed in shades of yellow and green in response to their surrounding contexts – the Northern Arrival area is two-tone sandstone terracotta cladding yellow in responding to adjacent heritage building. The East Wing also adopts the same horizontal expression as the Northern Arrival but in a glazed green terracotta that recalls the various shades of green from the adjacent tree canopy. Through the evolution of the design a broad range of tonalities were explored including some more reddish tones. For more detail on the rationale and evolution of the materiality, refer to the Architectural Design Report at **Appendix I**.

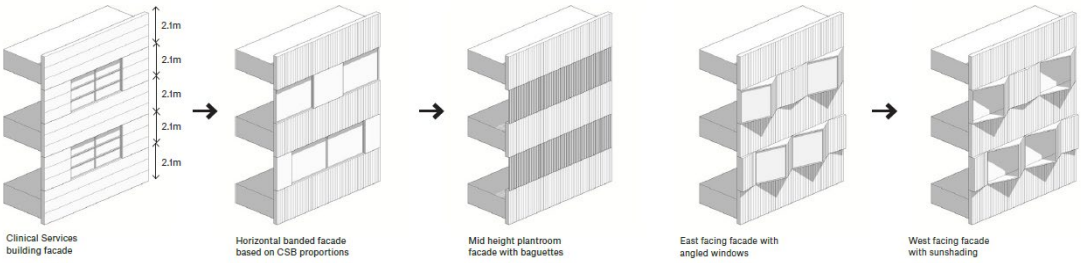


Figure 36 Facade Vertical Articulation and Window Treatments
Source: Bates Smart

Figure 37 Materiality Colour Swatch
Source: Bates Smart

3.8 Signage

Wayfinding Signage

The proposal includes three (3) wayfinding signage pylons, to direct pedestrians and vehicles, at the following locations:

- Upgraded Public Northern Arrival Drop-off and Entrance;
- Proposed Public Emergency Department Drop-off;
- Upgraded Ambulance Drop-off.

Additionally, signage is proposed that is integrated within the ED drop off canopy. Refer to Section 3.7 of the Architectural Design Report.

Building Identification Signage

It is anticipated that proposed signage zones will be developed for building identification signage and plans will be provided following the public exhibition period. Assessment of the proposed signage will take place at the response to submissions stage.

3.9 Connecting with Country Framework

A Connecting with Country Framework has already been prepared by Balarinji and is appended to the Architectural Design Report at **Appendix I**.

The Framework introduces design themes and statements of commitment relating to how Country can be reflected and respected in the proposed design. Some of the design recommendations include:

- Having an adaptable space that can be used for a range of ceremonies
- Maintaining sight lines and ensure passive surveillance around the site to promote a feeling of safety and encourage wandering
- Create socially inclusive spaces that integrate nature, art, historical photographs and stories that connect with Country.
- Integrate native flora into the development both inside and out Integrate water features and/or representations of water to acknowledge the significant role water plays in healing.
- Integrate artwork Integrate artworks and educational features that tell the stories of Gadigal Country, the history of the area and the different cultural groups from around Australia.

For full detail on the recommendations and commitments made to Connecting with Country, refer to **Appendix J**.

3.10 Trees and Landscaping

Trees

An Arboricultural Impact Assessment has been prepared by Martin Peacock Tree Care and is appended at **Appendix Y**. A Landscape Report has been prepared by Turf Design Studio and is provided at **Appendix L**. These reports provide information on the significance, removal and replantation of trees on the RPA Hospital Campus and off-site at the University of Sydney campus.

The subject site has a layered cultural history, with mature trees and planting areas within the areas of Missenden Road, University Boundary and the Rear Gardens. Most notable are the mature trees along Missenden Road, and the Rear Gardens with a mix of exotic and native trees and dense subtropical planting. The areas of landscape significance are identified within the plan below (**Figure 38**).

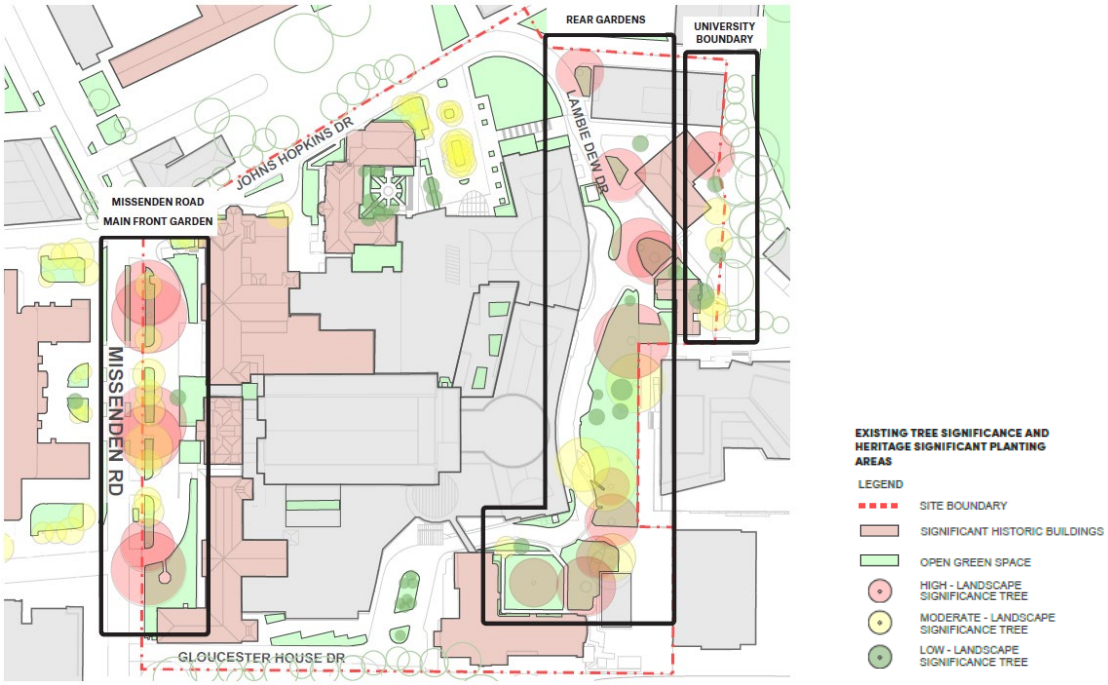


Figure 38 Existing tree significance and heritage significant planting areas
Source: Landscape Report

Tree Removal

There is a total of seventy-one (71) trees to be removed for the project, comprising of fifty-five (55) trees in the east campus, seven (7) in the west campus, and nine (9) trees in University of Sydney land.

The 55 trees to be removed within the East Campus are associated with their direct conflict with the proposed development footprint, as well as the need to retain emergency vehicle access clearances and provide stormwater infrastructure to service the hospital. The trees being removed within the West Campus are all Low value trees and are within the footprint of the ambulance lift works for the temporary helipad.

The 9 trees to be removed within the University of Sydney site are located along the western edge on the University Oval. Similar to the east campus, some of these are affected by a major encroachment of stormwater infrastructure that is situated in the RPA site but requires trenches within the structural root zone of some trees along the RPA Hospital - University of Sydney site boundary but within University of Sydney land. Other trees being removed on University of Sydney land are recommended for removal to establish an enduring vegetated buffer along the University Oval by removing trees that have a small useful life expectancy and replacing with new mature trees. Refer to **Table 21** for more detail on trees proposed to be removed.

In addition, three (3) trees on University of Sydney land are proposed for pruning, specifically crown lift for road clearance.

Table 21 Trees to Be Removed, Value and Rationale
Source: Martin Peacock Tree Care & TSA Management

Tree #, or Group # (Trees in group)	Species	Value	Reason for removal
East Campus			
17	Syagrus romanzoffianum (Cocos Palm	Low	Affected by roadworks associated with the ED drop off area near Johns Hopkins Drive
18	Lophostemon confertus (Brush Box)	Moderate	
19	Magnolia grandiflora (Bull Bay Magnolia)	Moderate	
G22 (7)	Corymbia maculata/citriodora (Spotted Gum)	Low	With the footprint of the Northern Arrival paved area
G23 (3)	Corymbia citriodora (Lemon Scented Gum)	Low	
G24 (10)	Corymbia citriodora (Lemon Scented Gum)	Low	
G25 (2)	Pyrus sp. (Ornamental Pear)	Low	
31	Cinnamomum camphora (Camphor Laurel)	High	Stormwater Infrastructure – Sydney Water advised that the stormwater line running under the proposed East Building must be diverted around the footprint of the building. Therefore the only viable route is along the University of Sydney boundary alignment. The trenching will affect the root zones of these trees.
32	Livistonia australis (Cabbage Tree Palm)	Low	
33	Plumeria acutifolia (Frangipani)	Low	
34	Cinnamomum camphora (Camphor Laurel)	Moderate	
35	Celtis sinensis (Chinese Nettle Tree)	Low	Affected by the East Wing building footprint
36	Acmena smithii 'Minor' (Dwarf Lilly Pilly)	Low	
37	Cinnamomum camphora (Camphor Laurel)	High	
38	Persea americana (Avocado)	Low	
39	Cinnamomum camphora (Camphor Laurel)	High	
40	Cinnamomum camphora (Camphor Laurel)	High	
41	Ficus microcarpa var. 'Hillii' (Hills Weeping Fig)	High	
42	Jacaranda mimosifolia (Jacaranda)	High	
43	Melia azedarach (White Cedar)	Low	Affected by the East Extension building footprint
44	Magnolia grandiflora (Bull Bay Magnolia)	Low	
45	Camellia sasanqua (Camellia)	Low	
46	Camellia sasanqua (Camellia)	Low	
47	Jacaranda mimosifolia (Jacaranda)	Moderate	
48	Jacaranda mimosifolia (Jacaranda)	Moderate	
50	Platanus x acerifolia (London Plane Tree)	High	Level changes in Lambie Dew Drive to retain fire and emergency access clearance – there is a Fire Rescue NSW requirement to maintain a 4.5 m clearance for fire appliances. The construction of the East Extension will require the lowering of Lambie Dew Drive at the southern end in order to maintain this clearance. The subsequent excavation affects the Structural Root Zone, affecting health and stability of these trees and will necessitate their removal.
51	Corymbia citriodora (Lemon Scented Gum)	Moderate	
52	Cinnamomum camphora (Camphor Laurel)	High	
53	Cedrus sp. (Cedar species)	High	

Tree #, or Group # (Trees in group)	Species	Value	Reason for removal
118	vistonia australis (Cabbage Tree Palm)	Low	Affected by the East Wing building footprint
128	Camellia japonica (Japanese Camelia)	Low	Level changes in Lambie Dew Drive to retain fire and emergency access clearance – refer note above.
129	Polyscias elegans (Celery Wood)	Low	
130	Melia azedarach (White Cedar)	Low	Affected by the East Extension building footprint
131	Melia azedarach (White Cedar)	Low	
591	Cinnamomum camphora (Camphor Laurel)	High	
West Campus			
G2000 (7)	Populus simonii (Simon Poplar)	Low	Within the footprint of the ambulance lift area for the temporary helipad
The University of Sydney			
126	Polyscias elegans (Celery Wood)	Low	Tree Succession Strategy – the Tree Succession Strategy which forms part of the landscape proposal includes the installation of nine (9) advanced size new trees of various species around the Oval edge. The proposed removal of trees within the University will provide the additional space and solar access required for the establishment and development of the new trees, which will provide screening of the proposed East Wing Building. The installation of healthy new trees will ensure the canopy cover and amenity around the Oval edge is maintained over the long term as Trees 590, 597 and 598 are late mature specimens with a relatively short ULE.
585	Cupressus sp. (Cypress species)	Moderate	Stormwater Infrastructure – refer note above.
586	Cupressus sp. (Cypress species)	Moderate	
587	Cupressus sp. (Cypress species)	Moderate	
588	Cinnamomum camphora (Camphor Laurel)	Moderate	Tree Succession Strategy – refer note above.
593	Ficus microcarpa var. Hillii (Hills Fig)	Moderate	
594	Cinnamomum camphora (Camphor Laurel)	Low	
595	Ficus microcarpa var. Hillii (Hills Fig)	High	Affected by the East Wing building footprint (crown conflict)
596	Ficus microcarpa var. Hillii (Hills Fig)	High	Within the East Wing building footprint (crown conflict) and affected by a serious fungal pathogen (Armillaria) that risks affecting adjoining trees.

Table 22 Summary of Tree Value and Status
Source: Arboricultural Impact Assessment, prepared by Martin Peacock Tree Care

		Retention Value			Total
		Low	Medium	High	
Existing	East Campus	40	11	27	78
	West Campus	7	-	3	10
	University of Sydney	2	9	6	17
	Sub-total	49	19	28	**105**

		Retention Value			Total
		Low	Medium	High	
Retain	East Campus	2	4	18	24
	West Campus	-	-	3	3
	University of Sydney	-	4	3	7
	Sub-total	2	8	24	**34**
Remove	East Campus	39	6	10	55
	West Campus	7	-	-	7
	University of Sydney	2	5	3	9
	Sub-total	48	11	12	**71**
Plant	East Campus	-	-	-	79
	West Campus	-	-	-	-
	University of Sydney	-	-	-	9
	Sub-total	-	-	-	**88**

Trees proposed to be removed on the RPA Hospital campus are shown in red and trees to be removed on the University of Sydney campus are shown in yellow in **Figure 39**.

Section 6 of this report provides further assessment of tree removal and replanting.

The four (4) Camphor laurel (*Cinnamomum camphora*) tree species to be removed are regarded as High retention status under the Preliminary Arboricultural Impact Assessment and are listed on the City of Sydney's Significant Tree Register. These tree species however are regarded as invasive weeds in many parts of NSW. The BDAR at **Appendix X** refers to them as a High Threat Exotic, and a high threat to natives. It refers that their removal and replacement with native trees is a gain for biodiversity.

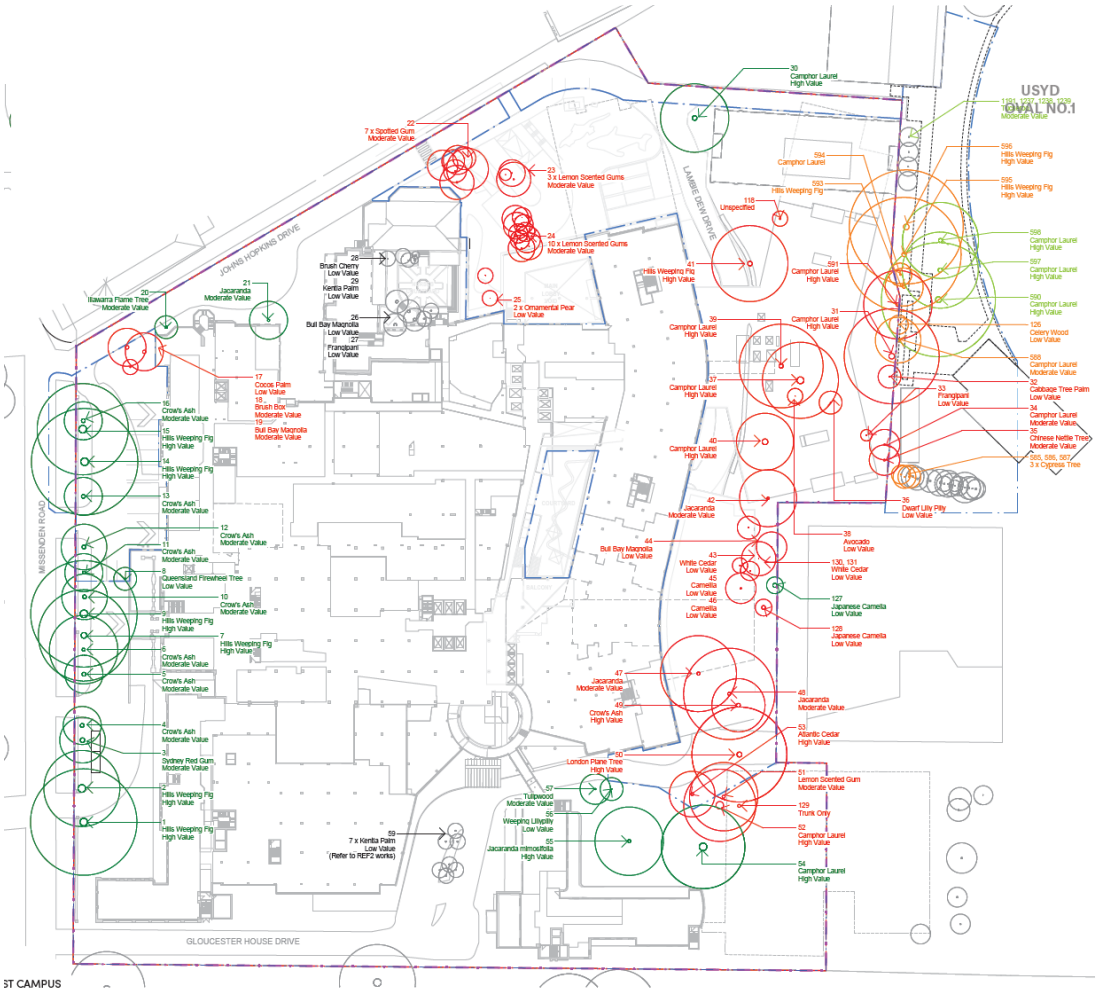


Figure 39 Tree Removal Plan
Source: Landscape Plans, Turf Design Studio

Tree Replanting

The planting strategy has been thoughtfully considered to respect heritage and replace significant trees, whilst creating a sense of place, supporting biodiversity and Connecting with Country.

A succession strategy is proposed to replace removed trees along the eastern boundary to ensure the retention of canopy and the legacy of large trees around the University oval.

A total of eighty-eight (88) trees are proposed to be planted.

The 88 trees being planted includes:

- 79 trees to be replaced on the RPA Hospital campus; and
- 9 trees to be replaced within the University of Sydney campus.

Section 6 of this report provides further assessment on trees. In addition, refer to the Arboricultural Impact Assessment at **Appendix Y**.

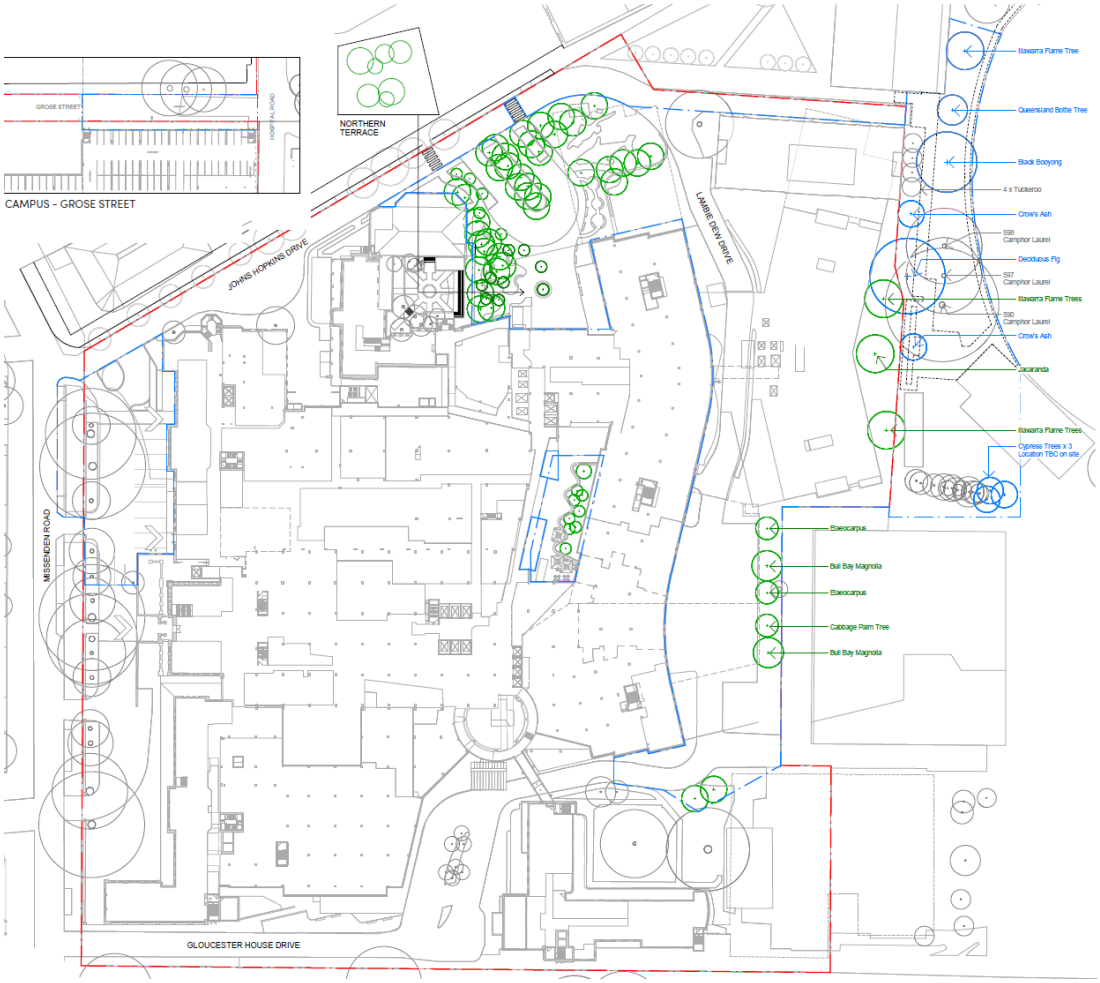


Figure 40 Tree Replacement Plan
Source: Landscape Plans, Turf Design Studio

Tree Canopy Cover

Tree canopy cover (existing and proposed) is detailed at **Figure 41** and **Figure 42**, and **Table 23** below.

Figure 41 Existing Tree Canopy Cover
Source: Landscape Report, Turf Design Studio

Figure 42 Proposed Tree Canopy Cover
Source: Landscape Report, Turf Design Studio

Table 23 Tree Canopy Cover – Retained & Proposed
Source: Landscape Design Report, Turf Design Studio

	Site Area	Tree Canopy Cover			
		Existing	Retained	Proposed	Total
East Campus	43,115 m^2	6,448 m^2 (15.0%)	2,865 m^2 (6.6%)	1,741 m^2 (4.0%)	4,606 m^2 (10.6%)
Grose St West Campus	868 m^2	328 m^2 (37.8%)	193 m^2 (22.2%)	0sqm (0%)	193 m^2 (22.2%)
University of Sydney (extent of work)	3,133sqm	1,335 m^2 (42.6%)	1,081 m^2 (34.5%)	437 m^2 (13.9%)	1,518 m^2 (48.5%)
Total	47,116m^2	18,111 m^2 (17.2%)	-	-	6,317 m^2 (13.4%)

Landscape Masterplan

The Landscape Vision for the site is for *"a series of places that feel welcoming, connect with Country, honour heritage, create easy wayfinding, and promote moments of delight and respite to facilitate healing".*

The Landscape Masterplan includes three landscaped areas at the edges of the buildings being the Northern Arrival, the Eastern Garden and the Northern Terrace, as well as several landscape areas and terraces interspaced through the buildings. The Level 4 Central Courtyard is the centrepiece of the north south link through the main hospital building and incorporates a Sunken Garden on Level 3.

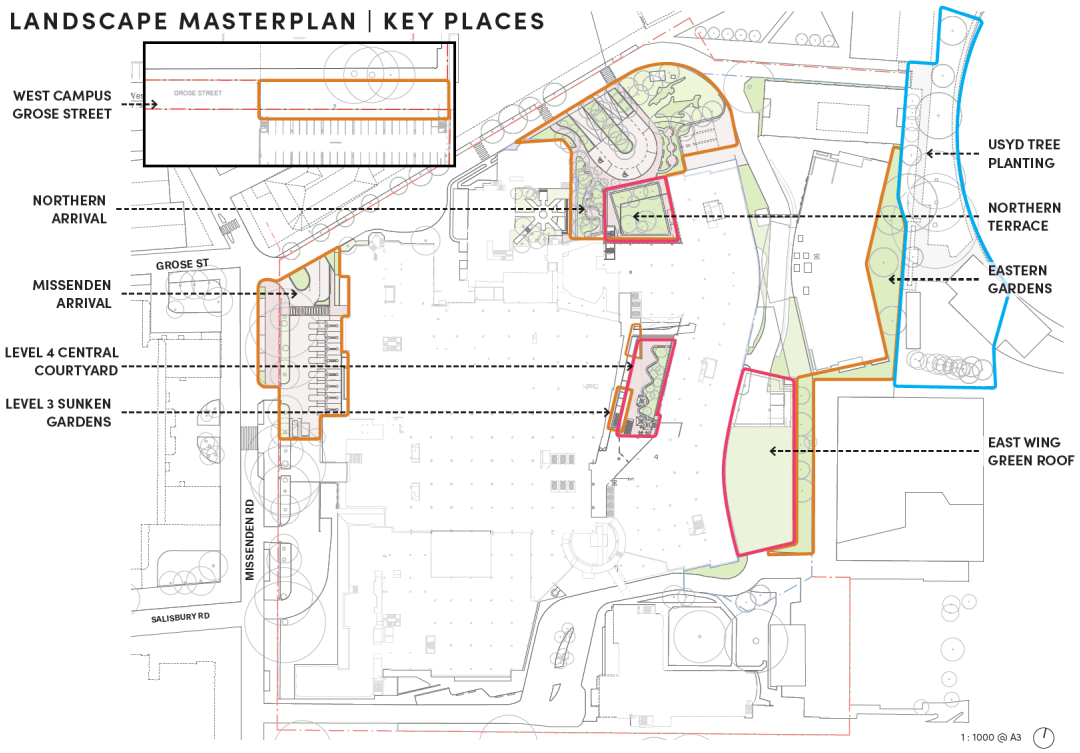
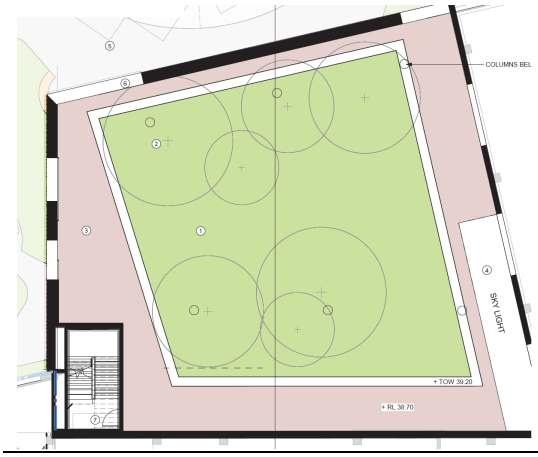
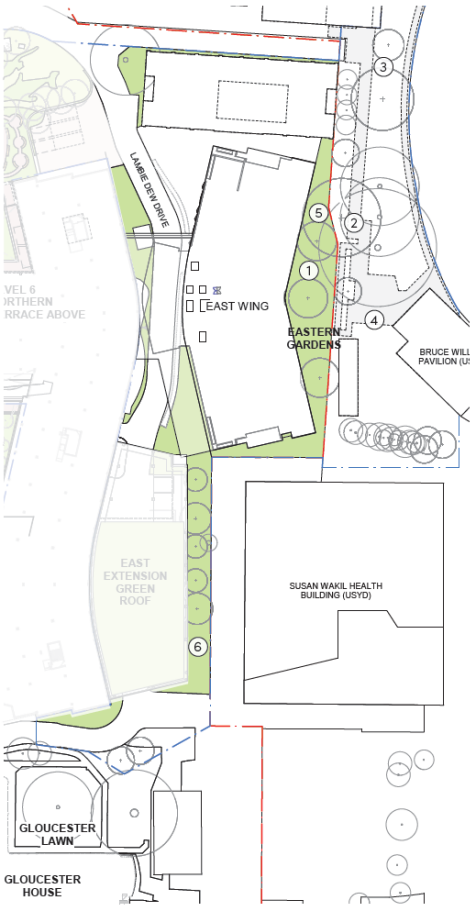


Figure 43 Proposed Landscape Masterplan
Source: Landscape Report, Turf Design Studio

Table 24 below provides a detailed overview of the proposed landscaping within the proposed redevelopment.

Table 24 Proposed Landscape Planting Locations and Works
Source: Landscape Report, Turf Design Studio

Aspect	Area Description and Planting Palette
Northern Arrival - Indigenous Garden and Nurses Courtyard 	The Northern entry landscape is proposed to provide a generous forecourt, including informal respite spaces and planting that extends from the outside and into the new lobby. There is an emphasis on Connecting with Country within the proposed design, which creates a smooth transition from outside to within the hospital. The Indigenous Garden contains significant planting in the shapes of a Southern Right Whale and Goanna - totems of the Gadigal and Wangal people respectively. They will be shifted slightly north within the same area to align to the new space, in consultation with relevant Indigenous groups. Multiple existing tree species are proposed to be retained, including one *Corymbia maculata* (Spotted Gum), three *Corymbia citriodora* (Lemon Scented Gum) and *Livistona australis* (Cabbage Tree Palm) which line the main pedestrian route from Johns Hopkins Drive to the Northern entry. Other existing Spotted Gums and Lemon Scented Gums are proposed for removal to achieve the new drop off and forecourt design. The language of native gum trees in this area is maintained through the planting of a stand of gum trees within the central median, and a forest of Angophora Costata (Sydney Red Gum) and Lemon Scented Gums above new planting and respite areas. Existing tree species within the Nurses Courtyard are also set to be retained within the proposed redevelopment.

Aspect	Area Description and Planting Palette
Northern Terrace 	The Northern Terrace adjoins the Northern Arrival area. The landscape character proposed here celebrates species from the critically endangered Eastern Suburbs Banksia Scrub ecological community; re-connecting with County and lost landscapes in the Sydney Basin Bioregion and contributing valuable habitat for native wildlife. The proposed planting typology provides visual amenity and a connection with nature for patients, staff and visitors overlooking the space.
Eastern Gardens / Rear Gardens 	A variety of trees are proposed for planting in the Eastern Gardens of similar species to the existing Rear Gardens including *Magnolia Grandiflora* (Bull Bay Magnolia), *Livistona australis* (Cabbage Tree Palm), *Jacaranda mimosifolia* (Jacaranda) and Cedar species. The Eastern Wing frames a central feature Jacaranda tree, with an Illawarra Flame Tree either side. The combination of red and purple blooms in later spring provides a striking view against the green Eastern Wing façade. This area provides a dense understorey planting and buffer between the hospital and University of Sydney.
Central Courtyard (Level 4)	The Level 4 Courtyard is a verdant place providing respite and connection with nature for staff and visitors to the hospital, whilst also acting as a key wayfinding node within the hospital. A generous raised planter filled with trees and greenery extends the length of the space with an integrated weaving bench seat. Umbrellas provide additional shade at the sunny southern end, whilst loose furniture provides a variety of places to sit. Planting is inspired by the heritage significant Rear Gardens with a mix of exotic and native trees, as well

Aspect	Area Description and Planting Palette
	as dense understorey planting. Species have been selected to suit the microclimate and growing conditions of the courtyard planter, and the understorey is kept low to allow light into adjacent windows. Endemic species Connect with Country in this varied mix.
Sunken Gardens 	The sunken gardens on Level 3 is to be partly, used by hospital staff and visitors (the northern garden) and partly by staff only (the southern garden). The Gardens include a mixture of landscaping and finishes, including: – Mix of shade tolerant planting in low planter with lightweight soil; – Climbing plants to rear of planter trained to grow up the rear wall to the Level 4 Courtyard above; – Paved perimeter area for maintenance access; – Planters along the rear wall with climbing plants; – Paved open area for staff access; – Feature pot plants; and – Loose furniture. Two voids and an open bar balustrade on Level 4 above provide sunlight and visual access to the sunken gardens on Level 3 below.

3.11 Traffic, Transport and Parking

A Transport and Accessibility Impact Assessment has been prepared by SCT for the proposed development at **Appendix AH**.

According to the Clinical Services Plan for 2031, the hospital is expected to see growth in staffing, patient volume, visitors and logistics activity. This will result in changes to vehicle access, traffic movements, parking supply, pedestrian access and right of way to facilitate the proposed development. The key traffic/transport elements of the proposal are summarised below.

1. **Emergency Department Vehicle Access and Ambulance Parking Reconfiguration to Missenden Road**: Proposed upgrade of the ED drop off area will provide additional capacity for growing demand as well as increasing the safety for all user groups. The current ambulance exit will have its direction reversed, so that ambulances will enter the drop off area at this location, where-as a new entryway will provide a separate access for the public. Pedestrians will now also get their own footpath and marked crossing.
2. **Northern Entrance pick up / drop off (replacing the existing Women's and Babies pick up drop off**): the renovated entry will have a new accessible pedestrian walkway on the west side, a flatter plaza area under the entry canopy, and a new footpath across the driveway where none currently exists. Parking layouts are modified to provide 3 regular parking spaces and 2 accessible parking spaces, resulting in an overall loss of two parking spaces.
3. **Main loading dock**: the loading dock is expanded to accommodate 7 additional courier vehicles spaces: 3 for 99th percentile (B99) vehicles and 4 for small rigid vehicles (SRVs).
4. **Lambie Dew Drive Realignment**: Lambie Dew Drive is realigned and straightened to accommodate the footprint of the new East Wing. In addition, the realignment of Lambie Dew Drive will also increase the maneuvering space at the loading docks for MRVs and HRVs.
5. **Temporary HLS, west campus**: The ambulance bays servicing the temporary HLS necessitate two-way traffic flow on a portion of Grose Street, a private road belonging to RPA. This will allow ambulances to enter and exit the bays from Hospital Road, the shortest route between the temporary HLS and the ED entrance. This will be a change to Grose Street which is currently a one-way movement westbound, from Hospital Road to Church Street. This change is associated with a loss of 9 on-street fleet parking spaces. 195 staff and visitor car parking spaces are temporarily lost due to this change.
6. **Parking Provision:** No additional car parking facilities are being proposed as part of this development. The realignment of Lambie Dew Drive will decommission the 12 spaces in the access restricted carpark on level 2 of B89. The expected off-street parking supply once the redevelopment is operational is 2,616.
7. **End of trip facilities:** end of trip facilities including bicycle parking, showers and lockers are to be provided as part of the proposed development. The proposed arrangement and location of facilities is still being developed however the intent would be to provide an additional 200 bicycle parking spaces (total 280 across RPA Hospital post development) consistent with the 7% mode share target for cycling.
8. **Works within Missenden Road (Council local road reserve):** works are proposed within the road reserve including addition of "keep clear" line marking, minor kerb realignment and four additional kerbside parking bays for public drop-off.

No traffic interventions are required given intersection modelling demonstrates that nearby intersections are expected to perform at an adequate Level of Service (LoS) post-development and during peak periods. This is unsurprising as the increase in vehicle traffic as a result of the redevelopment is relatively small and is distributed through the network.

3.12 Construction Duration, Staging and Hours

Construction Duration

The indicative duration for the proposed construction works will be approximately 4.5 years.

Construction Staging

The overall project will be constructed in sequential stages. The stages are defined in **Table** 25 below.

Table 25 Construction Staging
Source: Preliminary Construction Management Plan

Stage	Construction Works	Timing
Package 1	– Construction of the new East Wing; – Vertical extension; – Construction of the temporary HLS (West campus)	October 2023 – October 2026 (3 years)

Stage	Construction Works	Timing
	– Internal building works including new lift installations and construction of a linkway at Level 07; and – Associated demolition, tree removal and service diversions.	
Package 2	– Eastern extension civil and piling, structural and façade; and – Loading dock road lowering and associated service relocations.	November 2023 – February 2026 (2 years 4 months)
Package 3	– Eastern extension connections into the existing and internal fitout; – Relocation of existing departments; – Internal refurbishments (including recovery/ perioperative unit, emergency department, ambulance entry, radiology rooms, and cardiac cath labs (warm shell); and – Site wide landscaping.	November 2026 – July 2028 (1 year 9 months)

Construction Hours

The Noise and Vibration Impact Assessment has been prepared by Arup and is appended at **Appendix U**. It proposes a slight extension to the standard construction hours under Interim Construction Noise Guidelines (ICNG) to align with construction hours on Saturdays of the City of Sydney (Category 1 hours). Construction hours are summarized in **Table 26** below.

Table 26 Proposed Construction Hours
Source: Noise and Vibration Impact Assessment, Arup

Day	Proposed Construction Activities
Monday to Friday	7am to 6pm
Saturday	8am – 1pm
Saturday	1pm - 7pm – Excluding “high” impact noise works (demolition, excavation and piling) – Excluding Temporary HLS.
Sunday and Public Holiday	No work

Out-of-hours Refurbishment Works

The proposal would seek to conduct out-of-hours fit-out and refurbishment works, as long as the works are being conducted indoors, with base building works completed and no openings in the façade near where the works are being conducted.

4. Statutory Context

4.1 Power to Grant Approval

Section 4.36 of the Environmental Planning & Assessment Act 1979 (EP&A Act) provides that the Minister, or a State Environmental Planning Policy may declare development to be SSD.

Section 2.6 of the State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP) provides development is declared SSD for the purposes of the EP&A Act if the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and the development is specified in Schedule 1 or 2 of that SEPP.

Schedule 1, Section 14 of the Planning Systems SEPP specifies development with a CIV of more than $30 million for the purposes of a hospital.

As the proposed development involves alterations and additions to the existing RPA Hospital, and has a CIV of more than $30 million, hence it qualifies for SSD.

4.2 Permissibility

The site is zoned SP2 Infrastructure for the purpose of “Health Services Facilities” under the Sydney LEP 2012. Permissible land uses with development consent in the zone includes the purpose shown on the Land Zoning Map. Therefore, Health Services Facilities are permitted with consent in this zone under the Sydney LEP 2012. Refer to **Figure 44** for zoning map below.

The proposed development is also facilitated as development with consent for the purpose of health services facilities under Section 2.60(1) of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP).

Tree removal, tree pruning and tree planting are proposed as off-site works on University of Sydney land which is zoned SP2 Infrastructure for the purpose of Educational Establishment. These works are for the purpose of health services facility, and are permissible development in the zone under Section 2.60(1) of the Transport and Infrastructure SEPP. The off-site tree planting works could be facilitated as development with consent under Section 3.46(1) of the Transport and Infrastructure SEPP.

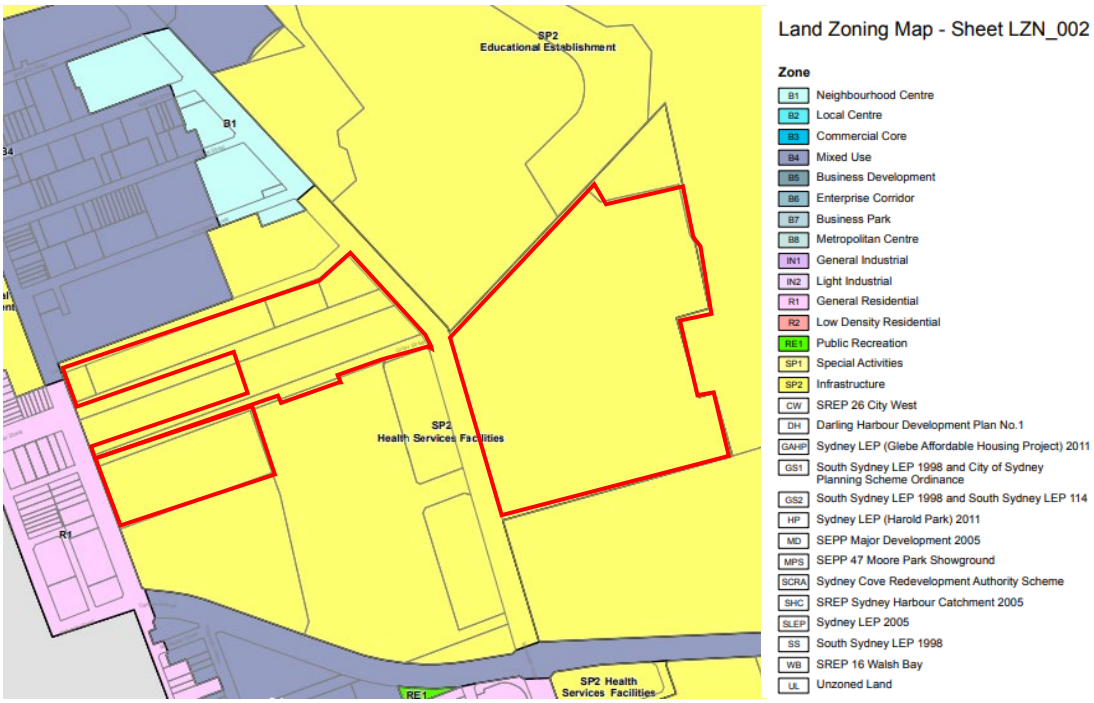


Figure 44 Land Zoning Map
The site is outlined in red.
Source: Sydney LEP 2012 – Land Zoning Map Sheet, LZN_002 with Architectus edits

4.3 Other Approvals

This section identifies any other approvals that are required to carry out the project, comprising:

- Consistent approvals: approvals that cannot be refused if the project is approved and must be substantially consistent with the approval;
- EPBC Act approval, and whether the bilateral agreement applies;
- Other approvals: approvals that are not expressly integrated into the SSD assessment under the EP&A Act;
- Approvals that would have been required if the project was not an SSD project.

Table 27 Other Approvals Required for Project

Statutory Reference	Relevance	Section in EIS
Consistent approvals		
Consent under section 138 of the Roads Act 1993 (s. 4.42(1)(f) of EP&A Act)	Changes to access and drop off on Missenden Road will require approval under Section 138 of the Roads Act 1993 as it is a public road. These works are associated with the upgrades to the ED pick up / drop off area.	Appendix B – Section 2.5
EPBC Act approval & bilateral agreements		
None – EPBC Act approval is not required and no bilateral agreements apply	-	-
Other approvals *(approvals that are not expressly integrated into the SSD assessment under the EP&A Act)*		
(Commonwealth) Airports Act 1996 (Sections 182 & 183) & (Commonwealth) Airports (Protection of Airspace) Regulations 1996 - Regulation 7)	As the RPA Redevelopment is located within controlled airspace and there is "prescribed airspace" as defined in the Airports (Protection of Airspace) Regulations 1996 above the site, controlled activity approvals will be required from relevant Commonwealth aviation/airspace authorities. The RPA Redevelopment, its HLS, and the cranes used to construct it will enter "prescribed airspace", namely the Obstacle Limitation Surface (OLS) or the Procedures for Air Navigation Services Operations Surface for the Sydney (Kingsford-Smith) Airport. Approvals need to be made through Sydney Airport Corporation Limited (SACL).	Appendix B – Sections 2.2 & 2.3
Approvals that would be required if not SSD project		
An approval under Part 4, or an excavation permit under section 139, of the Heritage Act 1977 (s. 4.41(1)(c) of EP&A Act	Alterations and additions are proposed to heritage items listed on the State Heritage Register.	Appendix B – Section 2.4
Designated Development (Schedule 3 of Part 2 of EP&A Regulations)	N/A – none of the development/activity types for Designated Development are relevant to the proposed development should the development not be SSD.	-

4.4 Pre-Conditions to Exercising the Power to Grant Approval

This section identifies any pre-conditions to exercising the power to grant approval for the project. These will include mandatory conditions that must be satisfied before the consent authority may grant approval.

Table 28 Pre-Conditions to Exercising the Power to Grant Approval

Statutory Reference	Pre-condition	Relevance	Section in EIS
State Environmental Planning Policy (Resilience and Hazards)			
Section 4.6(1)(b)	A consent authority must be satisfied that the land is suitable in its contaminated state - or will be suitable, after remediation - for the purpose for which the development is proposed to be carried out.	Parts of the project land are contaminated, and the land requires remediation before it is used for the project.	Appendix B – Section 2.9
Section 4.10(1)	The consent authority must not refuse development consent for a category 1 remediation work unless the authority is satisfied that there would be a more	Remediation is required and as the land is encumbered by heritage conservation area, it will be a Category 1 remediation work. The	Appendix B – Section 2.9

Statutory Reference	Pre-condition	Relevance	Section in EIS
	significant risk of harm to human health or some other aspect of the environment from the carrying out of the work than there would be from the use of the land concerned (in the absence of the work) for any purpose for which it may lawfully be used.	consent authority will need to be satisfied that there would not be a more significant risk of harm to human health or some other aspect of the environment than if the work did not occur.	
Sydney LEP 2012			
Clause 6.21D(1)	Development consent must not be granted unless a competitive design process has been held in relation to the proposed development in respect of a building that will have: – a height above ground level (existing) greater than 25 metres on land outside of Central Sydney; – development having a capital investment value of more than $100,000,000; – development in respect of which a development control plan is required to be prepared under clause 7.20.	The proposed maximum building height is over 25m, the CIV of the project is over $100 million and a DCP is required to be prepared under Clause 7.20. A competitive design process has been carried for the proposed development.	Appendix B – Section 2.11
Clause 7.16	If a development application is received and the consent authority is satisfied that the proposed development will penetrate the Limitation or Operations Surface of Sydney (Kingsford-Smith) Airport, the consent authority must not grant development consent for the development, if the relevant Commonwealth body advises that the development will penetrate the Limitation or Operations Surface and should not be constructed.	The RPA Redevelopment, its HLS, and the cranes used to construct it will enter “prescribed airspace”, namely the Obstacle Limitation Surface (OLS) or the Procedures for Air Navigation Services Operations Surface for the Sydney (Kingsford-Smith) Airport. Approvals need to be made through Sydney Airport Corporation Limited (SACL).	Appendix B – Section 2.11
Clause 7.20	Development consent must not be granted for development for a new building or development that increases the gross floor area of an existing building, on land if the site area for the development is more than 5,000 square metres or if the development will result in a building with a height greater than 25 metres above ground level (existing), unless a development control plan that provides for the matters in subclause (4) has been prepared for the land.	The proposed development includes new buildings on a site area greater than 5,000sqm and with a building height over 25m. However, a site-specific DCP has not been prepared for the land for the proposed development because a waiver was sought from the Minister for Planning and Homes and subsequently the waiver was granted.	Appendix B – Section 2.11

4.5 Landowner’s Consent

Landowner’s consent is not required given the Applicant (HI) is a public authority, pursuant to Section 23 of the EP&A Regulation. However, the applicant must give notice of the application to the owner of the land before the application is made, or by publishing, no later than 14 days after the application is made.

Written notice of the proposed development was provided to the University of Sydney and the City of Sydney Council prior to formal lodgement of the SSD application in accordance with Section 23 of the EP&A Regulation.

4.6 Mandatory Matters for Consideration

This section identifies the matters that the consent authority is required to consider in deciding whether to grant approval.

Table 29 Mandatory Matters for Consideration by Consent Authority

Statutory Reference	Mandatory Consideration	Section in EIS
Consideration under the Act and Regulation		
Section 1.3	Relevant objects of the Act – to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources, – to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment, – to promote the orderly and economic use and development of land, – to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats, – (to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage), – to promote good design and amenity of the built environment, – to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,	Appendix B – Section 2.1
Section 4.15	Relevant environmental planning instruments – State Environmental Planning Policy (Planning Systems) 2021 – State Environmental Planning Policy (Transport and Infrastructure) 2021 – State Environmental Planning Policy (Resilience and Hazards) 2021 – State Environmental Planning Policy (Biodiversity and Conservation) 2021 – State Environmental Planning Policy (Industry and Employment) 2021 – Sydney LEP 2012 Relevant proposed environmental planning instruments – None Relevant planning agreement or draft planning agreement – None Development control plans – Sydney DCP 2012 The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality – the suitability of the site for the development – the public interest	Appendix B – Section 2
Mandatory relevant considerations under EPIs		
Resilience and Hazards SEPP - section 3.7	Departmental guidelines: – Applying SEPP 33 (identify relevant requirements) – HIPAP No.3 – Risk Assessment (identify relevant requirements) – HIPAP No.12 – Hazards – related Conditions of Consent	Appendix B – Section 2.9
Sydney LEP 2012	– Objectives and land uses for IN1 zone – Clause 6.21C Design Excellence	Appendix B – Section 2.11

Statutory Reference	Mandatory Consideration	Section in EIS
	– Clause 5.10(4) & (5) Heritage conservation – Clause 5.21 Flood planning	
Considerations under other legislation		
Biodiversity Conservation Act 2016 – section 7.14	The likely impact of the proposed development on biodiversity values as assessed in the biodiversity development assessment report. The Minister for Planning may (but is not required to) further consider under that Act the likely impact of the proposed development on biodiversity values.	Appendix B – Section 2.6
Development Control Plans (DCPs)		
Sydney DCP 2012	Section 3.3 Design Excellence	Appendix B – Section 2.12

5. Community Engagement

5.1 Engagement Overview

An Engagement Report was prepared by Health Infrastructure and is appended at **Appendix V** Additionally, a summary of community engagement is provided at **Appendix E**.

Community and stakeholder input were recognised as essential aspects of the planning and design of the RPA Hospital redevelopment, with a strong focus on engagement with staff, clinicians, consumers, community members and partnered organisations.

Consultation with key stakeholders was also identified as being critical to informing and developing specific planning and design elements, playing a significant role in planning as the redevelopment progresses.

RPA Hospital is located on Gadigal Land, one of the 29 clans of the great EORA Nation. The traditional custodians of the land in SLHD are the Gadigal, Wangal and Bediagal people of the Eora Nation. The Integrated Project Team was committed to reflecting Aboriginal culture and heritage in all phases of planning, design and delivery of the RPA Redevelopment. Approximately 1.1 per cent of the population identify as being of Aboriginal and Torres Strait Islander heritage; however it is understood that this number is not indicative of the strength of the local indigenous community as many community members come from rural areas and continue to identify with their rural communities.

The stakeholders engaged during the development of the project were broad ranging, and included staff of the broader SLHD, RPA Hospital staff and visitors, NSW Health, RPA Hospital's medical and research partners, consumer groups, tertiary institutions such as UTS, University of Sydney, UNSW and the University of Notre Dame, State government agencies, utility providers, surrounding landowners, First Nations groups, groups representing people and disabilities and the Aboriginal and Culturally and linguistically diverse (CALD), the local community, the media and elected officials.

In response to feedback received in consultation sessions, changes were made to the scheme including: development of a Preliminary Heritage Interpretation Framework, a wayfinding strategy that considered the needs of people with disability, impairments of CALD, inclusion of improved storage spaces, private rooms, additional meeting rooms, staff amenities including end of trip facilities, accessible parking in the Northern Arrival area, additional public drop off parking at the ED drop off point, green spaces, solar access and maximizing views and the inclusion of a clinical bridge connecting the Emergency Department and new East Wing.

A Community Engagement Report outlining engagement objectives, key stakeholders and engagement actions (including ongoing engagement) is at **Appendix E** to this EIS.

6. Assessment of Impacts

6.1 Built Form, Urban Design and Design Quality

The proposal was the winning scheme in a bespoke invited design competition in which three design consortia participated. The competition was won by Bates Smart, in collaboration with Neeson Murcutt + Neille, Turf Design Studio, Cox Inall Ridgeway, and Atelier10.

The Design Competition was conducted in accordance with the Draft Government Architect's Design Excellence Competition Guidelines, City of Sydney Competitive Design Policy and the endorsed Design Excellence Strategy.

The scheme developed by Bates Smart was considered by the Design Jury in their Design Competition Report at **Appendix O** as capable of achieving design excellence. The Jury concluded in their report:

> *The Jury consider that the selected scheme by Bates Smart demonstrates a superior response to the design, clinical, and planning objectives of the Competition Brief, and subject to the resolution of the matters outlined in this report, the scheme is capable of achieving design excellence as per the statutory requirements.*
>
> *The Jury identified a range of matters that require resolution during the design development phase of the project to ensure the design continues to respond to all technical aspects of the Competition Brief (including the project budget), maintains the key design intent and principles, and ensures the scheme is capable of achieving design excellence.*
>
> *The Jury will have an ongoing review role as a Design Integrity Panel (DIP), and will be reconvened at key milestones to provide input/direction to the project design in relation to the achievement of design excellence. Advice on achieving a balance between clinical and non-clinical design objectives will be a core function of the DIP, post competition.*

The DIP, (who comprised the design jury presiding over the design competition) was convened to review the design. At the date of lodgment, the DIP had met on three occasions (on 29 July 2022, 9 August 2022 and 23 September 2022). Refer to the Design Integrity Process Summary Report at **Appendix P**. This report finds that the DIP agrees the proposed development achieves design excellence.

The design competition brief, and subsequent design competition process/decision, placed equal value on urban and clinical responses in the design of the project. Further, the design jury also recognized the constrained nature of the site.

There is no height of buildings, Floor Space Ratio (FSR) or setback controls applying to the site and therefore the bulk and scale of the proposed buildings are to be considered on their merits including the proposed buildings represent a high quality design and place outcome.

The proposed built form has been considered in its context, the latter which differs greatly in character and scale ranging from modern and heritage buildings, and including larger research, health and education uses in the immediate vicinity and a low to medium density residential area beyond.

The proposed built form, public domain and landscaping, and its relationship to the adjacent University of Sydney campus is proportionate and sensitive to prevailing heritage values. In the Design Jury's decision on the design competition, some of the noted element of the scheme which informed their selection of Bates Smart as the winner were, "The contextually appropriate scale of new built form amongst the existing buildings at the RPA Hospital Campus, particularly the heritage-listed buildings that form part of the broader University of Sydney HCA, as identified in Schedule 5 of the Sydney LEP 2012.", as well as "the responsiveness of the scheme to the existing heritage buildings and landscape, place and wayfinding needs".

In response to clinical service planning and a desire to maximise efficiencies, the redevelopment focusses on growth rather than asset replacement. To retain significant existing assets, the Masterplan focused on delivering increased acute clinical capacity on the East Campus while maintaining optimal functional relationships for the core critical services. This 'Acute on the East' approach is the basis for the proposed development.

The existing development on the RPA Hospital site is greater in scale on the East Campus than the West Campus, particularly towards the middle and the rear of the main hospital building. In the centre of the main building, Building 75 is approximately 12-storeys high, while to the rear of the east campus, on Lambie Dew Drive, Building 89 has a maximum height of approximately 11-storeys (RL 70.170). Towards the front of the East Campus (on Missenden Road) building heights step down to approximately 6-7 storeys.

The envelope of the proposal is similar in that the bulk is concentrated to the rear of the East Campus, and steps down in bulk and scale towards state heritage buildings on Missenden Road. In doing so it retains the existing appearance of those buildings from the streetscape on Missenden Road.

The East Wing is the larger of the proposed building and includes 17-storeys and a maximum RL of 91.280 (including lift overrun and helipad) or 86.380 RL to the roof line. The East extension is 11-storeys and has a maximum height of 60.5 RL which is effectively the same as the height of the Susan Wakil Building (University of Sydney) which is RL 60.88. The existing Clinical Services Building (Building 89) sits between these two heights at 14-storeys.

In summarizing, the height of the proposed buildings (ranging RL 60.5 to RL 91.280) are derived from the following intentions:

- A desire to step down built from on the approach to Missenden Road;
- To establish a contextual relationship with the scale and height, and required clinical service connectivity of the existing main RPA hospital building with its height at RL 70.170;
- The need to maximize on clinical capacity to accommodate a growing population within the Sydney Local Health District; and
- The prevailing heights within RPA Hospital and the University of Sydney, which vary greatly and tend to concentrate bulk away from significant heritage building.

The proposed bulk and scale of the buildings is considered to provide a good balance between clinical drivers and the desire to create a great place and maintain important aspects of local character including heritage and landscape.

Response to Heritage

Connection with country and response to heritage have been central throughout the design of the proposed development. The proposed scheme's response to heritage has evolved as a result of the design competition, ongoing design development and via design integrity processes. A Preliminary Heritage Interpretation Framework has been prepared and is appended at **Appendix R**. There will be future responses to heritage via a more developed heritage interpretation strategy that reflects/ integrates connection with country and European heritage values of the site and context.

The Design Jury's response to the respective schemes developed by competition entrants in terms of approach to heritage issues, is detailed at **Table 30** below. Note the Design Jury included heritage architecture expert, Alan Croker, of Design 5.

Table 30 Design Jury – Heritage Response
Source: Architectural Design Competition Report

Chronology & Entrant	Design Jury – Heritage Response - Extracts
Round 1	
Architectus	Heritage listed buildings on the Competition Site, including the Tissue Pathology and Diagnostic Oncology Building, the RPA Chapel and the Rear Gardens were proposed for demolition to accommodate the Wing Building. Architectus proposed the reinterpretation of both the Pathology and Chapel buildings in the courtyard landscaping through reuse of salvaged materials.
Bates Smart	Retention of the heritage Pathology Building by building the tower structure over the existing building, retention of significant trees in the rear gardens; Chapel and rear gardens were to be demolished; however Jury was not convinced of the proposed solution which encased the heritage item and disrupted its setting, diminishing the benefits of retention.
Fitzpatrick & Partners	Allowed for the retention of the existing heritage buildings and rear gardens. Notwithstanding these benefits, the bulk and scale of the tower was concerning to the

Chronology & Entrant	Design Jury – Heritage Response - Extracts
	Jury, particularly the heritage interface of the tower to the west of the Nurses Courtyard, and the broader heritage setting of the Campus.
Round 2 – Matters for Consideration*: Matters the Design Jury requested Entrants to Address in Round 2*	
Architectus	None directly relevant to heritage.
Bates Smart	The design intent of retaining a heritage item, retaining a significant tree and shaping the building to achieve an optimum outlook was understood as driving factors to the resultant 'L' shape of the built form. However, the proposed central location of the core in the IPU 'L' footprint creates clinical planning and operational challenges. Further consideration of the core design and location to enable a more efficient control and access point into the IPU, and to maximise the flexibility of the space in the centre of the IPU is requested. It was noted that the approach to the retention of the heritage item may be reviewed as part of this process.
Fitzpatrick & Partners	The proposition of consolidating the required accommodation into a new northern tower which allows the retention of the heritage buildings and heritage gardens at the rear of the Campus was understood as a defining concept. However, there were concerns about the scale, particularly in relation to the heritage interface at the west, inefficiencies in planning of the IPU floors and some key clinical planning and clinical flow items.
Round 2	
Architectus	None directly relevant to heritage.
Bates Smart	The effort to sensitively design the Eastern Wing and resolve the heritage solution was understood by the Jury, however, the heritage retention of the portico of the Pathology Building was not supported by the Jury and was identified as an element required further amendment. The Jury noted efforts to sensitively interpret the Pathology Building will need to be considered as the design develops.
Fitzpatrick & Partners	The Jury highly commended the retention strategy of the heritage buildings and the rear gardens, ensuring these features were conserved and the passive recreational opportunities of the rear gardens and open space were retained for staff, visitors and patients. The Jury commended Fitzpatrick + Partners for the Northern Wing's revised interface with the heritage to the west through the provision of a terraced tower form. This design feature mitigated to an extent the bulk and scale of development when viewed from the Nurses Courtyard, which was noted as an improvement to the original submission. Based on the Jury's overall assessment, the reasons for non-selection were defined as follows: – While a positive strategy for heritage retention of buildings and gardens, the scale of the Northern Wing would have adverse impacts on the amenity of surrounding external spaces, in particular overshadowing.
Jury Decision	
Bates Smart	The Jury identified elements of the scheme which were key features in its selection of Bates Smart, including: – The urban approach to the navigation through the buildings of the hospital campus, including the responsiveness of the scheme to the existing heritage buildings and landscape, place and wayfinding needs. – The location and approach to the Eastern Wing which has a gentle bend that maximises views, seeks to retain significant trees where viable and accommodates clinical operations. – The contextually appropriate scale of new built form amongst the existing buildings at the RPA Hospital Campus, particularly the heritage-listed buildings that form part of the broader University of Sydney HCA, as identified in Schedule 5 of the Sydney LEP 2012.
Further Refinements to the Selected Scheme	
Bates Smart	The approach to the partial retention of the heritage-listed Pathology Building is not supported as it compromises the heritage items and setting. Consideration is to be given to interpretation of these heritage items in a different manner. The Missenden Road forecourt must not be extended or re-graded as this will impact the heritage significance of this frontage and impact daylight penetration to the existing hospital buildings.

The Fitzpatrick & Partners scheme proposed full retention of the Anatomical Pathology building and the Chapel and Morgue. However, to achieve this as well as the required clinical floorspace, the bulk and scale of the new buildings was substantial. The scale of the Northern Wing would have adverse impacts on the amenity of surrounding external spaces, in particular overshadowing and heritage interface issues to the west. By contrast, the scale and built form of the Bates Smart scheme provided a greater design outcome overall, in demolishing the Chapel and Morgue and cantilevering over the Anatomical Pathology

On balance the interpretation of the Anatomical Pathology Building and Chapel and Morgue was preferred over their retention.

Design Integrity Panel

The Bates Smart led design team, in consultation with Heritage21, considered multiple options for the interpretation of the Pathology Building based on recommendations from the Design Integrity Panel (DIP) including:

- Integrate into the building façade, in three possible locations. This involved utilising the original portico as part of new building fabric. Due to the single-storey nature of the building, it is likely to be overwhelmed by the new development.
- Integrated into landscape setting, in three possible locations – rebuild part of the original portico.
- Interpretation through material reuse and public art, in two possible locations – utilise some of the original building materials.

These recommendations are incorporated into the Preliminary Heritage Interpretation Framework.

Design Development of Subject Scheme – Heritage Features

The design as it stands has deeply considered the heritage context of the site and this is evident in the proposed design. The influence of heritage extends right through from broader considerations such as siting of buildings, right down to the most minute details such as internal wall finishes and flooring materiality.

Design interventions in direct response to the heritage context include:

- The siting of the buildings, which deliberately layers smaller building scales towards the heritage buildings on Missenden Road so as to minimize visual impact and overshadowing to these highly valued heritage buildings;
- The western façade of the East Wing reinforces the horizontal layering of historical hospital buildings, stepped down the site along Johns Hopkins Drive;
- Building volume responds directly to heritage scale, continuing existing parapet lines around the Nurses Courtyard;
- Fritted glass (glazing with a dot print) and perforated light green screen with the Central Courtyard draw inspiration from Gloucester House;
- Building façades and materials reference the craft and materiality of the Mansfield Brothers original brick and sandstone buildings and create a contemporary interpretation in horizontal banded terracotta;
- The level 6 Terrace and skylight recall the heritage context through the use of yellow battens and ceiling which provides a provide a visual connection to the Nurses' Courtyard. The yellow battens are intended to emulate the yellow columns within the Administration Building Entry, where yellow battens and ceiling provide a visual connection;
- The ED drop off canopy seeks to maintain views of the heritage signage on the Albert Pavilion and respond to the existing rhythm of windows and forms along the facade. The location of the columns was determined by window spacing and building volume on this façade;
- The materiality of the ED drop off is chosen to be lightweight in respect to the Albert Pavilion.

A Preliminary Heritage Interpretation Framework has been developed by Heritage 21 and this is discussed at **Section 6.2** below. This includes specific design interventions to be adopted to interpret

the heritage richness of the site. Some of these will be reflected during design development in the post DA approval planning phase.

For further discussion on built form, scale and relationship of the building to context, refer to the Architectural Design Report at **Appendix I**.

6.2 Environmental Heritage

A Statement of Heritage Impact (SOHI) has been prepared by Heritage 21 and is appended at **Appendix Q**. It has been prepared to consider the impact on RPA Hospital heritage items and the heritage items and Conservation Areas in the immediate vicinity of the works, including The University of Sydney, University Colleges and Victoria Park.

Refer to **Section 2.3** of this report for all details of the heritage listings within and surrounding the site.

The heritage impacts of the proposal to various site elements are summarised in the following table as per the SOHI:

Table 31 Summary of Heritage Impact – Proposed Elements
Source: Statement of Heritage Impact, Heritage 21

Proposed Element of the Proposal	Assessment of Heritage Impact
Proposed Demolition of the Tissue Pathology and Diagnostic Oncology Building (Building 94)	The Tissue Pathology and Diagnostic Oncology Building (Building 94) has been assessed as having high significance. The footprint of the East Wing is in direct conflict with Building 94. Heritage 21 advised during the design process that the wholesale demolition of a heritage building of high significance in the context of the subject site, would be highly undesirable. During the concept design phase, the design team explored options for mitigating this loss. It was noted by Heritage21 that the significance of the building is tied to the primary façade, its setting within the broader hospital campus, and the form of the building. Given the building has been substantially modified over time to the extent that the interiors no longer display any significant building fabric, with the exception of the original layout of the front three rooms. The exterior, although subject to modifications and additions over time, still is largely intact. During the design competition, the competition brief requested competitors to design options that minimise impact on the heritage significance of the site and retain heritage items. Heritage 21 encouraged submissions that considered the full retention of Building 94. The winning scheme presented by Bates Smart retained the Pathology Building in situ, incorporating this building as a showcase entry space at the ground plane. While the Chapel and Morgue and Rear Gardens were to be demolished, the retention of the Pathology Building was highlighted in the scheme as a balanced heritage approach. Subsequent to this the Competition Jury expressed concerned with the clinical planning outcome in the East Wing, namely the location of the support and vertical transportation connections in the centre of the built form and the impact this would have on the clinical operations of the new building. The Jury commended the intent of retention of the Pathology Building however was not convinced of the proposed solution which encased the heritage item and disrupted its setting, diminishing the benefits of retention, in particular noting that its value was tied partly to its setting within the campus. As such, options for relocation of the building or partial relocation were considered. This option was later discounted as the setting and curtilage of the item in its existing location is a pivotal component of its significance, as such the relocation or partial relocation would be inappropriate and set as a poor precedent for heritage management. In summary the loss of Building 94 results in a significant loss of heritage value to the subject site, especially in considering that physical evidence from the early stages of the RPA Hospital's development is already limited. The implementation of the interpretation

	strategy as well as other recommended mitigation measures including archival recording and salvaging of significant fabric is critical to ensure that the building, and early history of the RPA Hospital, can be continued to be enjoyed.
Proposed demolition of the RPA Chapel (Building 95)	The Chapel has been assessed as possessing moderate heritage significance. Similarly, to the assessment above, Heritage 21 acknowledges that the wholesale demolition of a heritage building would be an undesirable outcome of the redevelopment. During the design competition, Heritage 21 encouraged submissions that considered the full retention of Building 95. The Fitzpatrick & Partners scheme sought to retain Building 95 but was discounted on the basis of other issues including poor heritage interface. The Chapel is not considered to possess the same degree of heritage significance as the Tissue and Oncology Building (Building 94) and other buildings within the eastern campus.
Proposed tree removal at the rear gardens (Precinct 4) and compensatory tree planting	The mature trees contribute to the general setting of the eastern portion of the site and are linked to the historical development of the RPA Hospital. It was noted by the arborist, that many of the remaining trees have a limited remaining lifespan. In order to mitigate the impact of this tree removal, a compensatory tree planting strategy was recommended by Heritage21. The proposed replantation strategy aims to preserve the landscaped setting and focusses on creating a vegetated buffer along the eastern boundary of the site, adjacent to the University Oval No. 1. The proposed replanting strategy primarily incorporates native species (Crows Ash and Deciduous Fig), which are suitable options, noting that form c. 1970s new plantings were predominantly native, as opposed to introduced. Heritage21 and the design team discussed the feasibility or 'like for like' species replacement however it was determined that not all the existing species would be suitable for replanting. As such, Heritage21 recommended the incorporation of a few more unusual specimen trees that pay homage to the early, somewhat experimental design approach. The large-scale removal of mature trees from this area would result in a loss of heritage value to the subject site. It would ultimately fragment the Rear Gardens precinct. Heritage21 acknowledges that whilst a replantation strategy would not prevent the loss of this heritage, it would assist in mitigating this impact. Heritage21 believes the replantation strategy would capture and reinterpret the intention of this heritage perspective.
Proposed East Wing	As a new contemporary structure on the subject site, Heritage21 notes that the addition would alter the general setting of the rear portion of the site. It is noted that the Eastern wing would be of a substantial scale, bulk and verticality comparatively to the surrounding architectural landscape. However, Heritage 21 notes that whilst this has the potential to overwhelm or dwarf surrounding heritage items, it has been strategically placed at the rear of the site, adjacent to buildings of little significance. Due to its generous setback from Missenden Road, it is off the opinion of Heritage 21 that the siting of the building is acceptable, and the visual impact would be minimised. However, this proposed building is located adjacent to the University of Sydney Heritage Item (Item No: 01974) – which is located on the NSW State Heritage Register. Heritage21 notes that the proposed building would aim to blend more cohesively into the landscape and align with the general character and heritage context of the area.
Proposed East Expansion	As a new contemporary structure on the subject site, Heritage 21 notes that the addition would alter the general setting of the rear portion of the site. Heritage 21 has provided advice during the design development period that the proposed extension must be designed in materiality, form, bulk and scale to respect the heritage significance of significant elements in the vicinity, and the general setting of the

	RPA Hospital. Detail on the heritage influence on the chosen materiality and facades is provided in Section 6.1 of this EIS.
Proposed Northern expansion to the Clinical Services Building (Building 89)	Building 89 is a contemporary structure on the subject site, Heritage 21 notes that the addition would alter the general setting of the rear portion of the site. Heritage21 has provided advice during the design development period that the proposed extension must be designed in materiality, form, bulk and scale to respect the heritage significance of significant elements in the vicinity, and the general setting of the RPA Hospital. Detail on the heritage influence on the chosen materiality and facades is provided in Section 6.1 of this EIS.
Proposed enhanced northern arrival, involving landscaping works to Johns Hopkins Drive (Precinct 2) and the Quadrangle (Precinct 6)	The proposed landscaping to Johns Hopkins Drive (Precinct 2) would have a positive impact to the general area. The proposed works to 'The Quadrangle" would have a neutral impact to the precinct. The removal of the brick masonry arched wall to the east of the courtyard. Heritage21 notes that the works is acceptable from a heritage perspective – particularly the removal of the masonry wall.
Proposed emergency department upgrade to the Albert Pavilion (Building 63)	The proposed upgrade to the Emergency Department involves alterations and additions to the Albert Pavilion (Building 63). The inclusion of a new public entrance involves the removal of significant fabric to accommodate a new opening in the primary façade. Whilst not ideal, the design has proposed the opening to an area which would not remove any key or unique architectural features although it does disrupt the presentation of the façade. It is the view of Heritage21 that the heritage impact is minor and acceptable to ensure the functional requirements of the emergency department are met.
Proposed landscaping works to Missenden Road – Main front garden (Precinct 1)	The proposed upgrade to the Emergency Department involves alterations and additions to the Missenden Road – Main Front Garden (Precinct 1). The proposed works to this area are minor. There would be no alterations or modification to the sandstone masonry boundary fence, nor the mature trees which line the western boundary of the eastern campus.
Proposed internal refurbishment	The internal refurbishment works are predominantly focused to buildings of little significance within the RPA Hospital eastern campus – including the Clinical Services Building (Building 89) and Edinburgh Building (Building 75). The proposed internal works create a north-south pedestrian spine to increase the accessibility and openness of the eastern precinct of the hospital. From a heritage perspective, this would create a connection between the two historical precincts adjacent to the RPA Hospital: St Andrew's College to the south and St John's College to the north. This is considered a positive aspect of the design. Internal works are also proposed within Albert Pavilion (Building 63). The interiors of this building have already been substantiality altered. Consideration should be given to retain original masonry internal walls and any remnant fabric of significance. Detailed plans for this area of refurbishment are still being developed and will be subject to further heritage assessment by Heritage21 in the future.
Proposed ancillary works to the western campus	These proposed works would not impact any heritage building or result in the loss or modification of any heritage fabric. As such, these works would not have any impact to the heritage value of the subject site.

Relationship to the University of Sydney

The site is a core part of the University of Sydney Heritage Conservation Area (HCA). While RPA Hospital contains contributory, neutral and detracting elements, the subject site is considered overall as a contributory item within the HCA.

RPA Hospital was established at a time when the University of Sydney was exploring options for the establishment of a School of Medicine. It was agreed on this basis that the farmland located adjacent to the University would be the most suitable site for the hospital. This is a historic relationship which has endured through to the present day and is reflected in the heritage values of the two sites and the emphasis placed on the need to retain and enhance historical connections and views between them.

It is the view of Heritage 21 that the proposed development respects the surrounding heritage items, notably St John's College, St Andrew's College and the University of Sydney. The design has aimed to increase connectivity between these places.

The importance of the retention of views of the University, St John's College, the college grounds and Oval from hospital buildings, as well as retention of views of St John's College and the Oval from Johns Hopkins Drive, are reflected in the *Royal Prince Alfred Hospital Conservation Management Plan 1997.*

The view lines and visual connection of the RPA Hospital within the surrounding heritage context has been a focal point of the design development. The proposed development aims to take full advantage of the already established visual relationships. The Northern Arrival aims to encourage further engagement with St John's College and users of the East Wing would enjoy enriched view lines for the hospital to the University of Sydney in the east. The proposed internal works create a connection between the two historical precincts adjacent to the RPA Hospital, being St Andrew's College to the south and St John's College to the north. This is considered a positive aspect of the design from a heritage perspective.

In relation to views from Johns Hopkins Drive, the landscaping proposed aims to soften this area without obscuring views to St John's College.

The Visual Impact Assessment prepared by Architectus at **Appendix M** included consideration of two heritage views, selected by Heritage21. These were views looking south from St John's Oval and views at the entrance to St John's College. The visual impact to these views from the works were deemed to be Low and Low/Moderate respectively. In addition to this, views along the Wilkinson Axis, which provides a 500-metres continuous and uninterrupted view corridor from the eastern edge of Victoria Park to the University was examined. This axis was established by Leslie Wilkinson in the University's 1920 masterplan and has been uninterrupted by new development since. The proposed development is not visible from the Wilkinson Axis.

In summary, the proposal has been developed with its relationship to surrounding heritage as a core consideration. The proposal respects surrounding heritage items, including University of Sydney and aims to retain important views and enhance existing connections between the two places.

Preliminary Heritage Interpretation Framework

The design competition and subsequent design integrity panel process has considered many options for retention, removal and/or interpretation of the old pathology building, chapel and rear gardens. All three items have heritage value but all are located in the overland flow path of Orphans Creek. At up to 2m below the probable maximum flood level, and in the context of increasing climate change, the heritage buildings are untenable for ongoing use in their current location.

As one of the measures to partly mitigate the impact, a Preliminary Heritage Interpretation Framework has been developed by Heritage21 in association with Bates Smart and Balarinji, which includes interpretation of the following items:

- The Pathology Building is proposed to be recorded and demolished with element of the building fabric such as pediment and brickworks interpreted and recycled in the eastern gardens in close proximity to original building;
- The Chapel will be recorded and demolished, with the stained-glass windows retained for future use. It is intended that initially, one or two of the stained-glass panels with less religious iconography will be relocated to the multi-faith space within the operating hospital;
- The Rear Gardens are to be reimagined within the proposed new north/south planted corridor within the public areas of the hospital in the northern arrival and central courtyard. In this central and publicly accessible location, the rear gardens are to be interpreted through signage, imagery and selected plantings;

- Connection with Country opportunities, building on consultation for development of the Connection with Country Strategy prepared by Balarinji that is appended at **Appendix J**.

Concluding Comments on Heritage by Architectus

In conclusion, while there are direct adverse impacts to heritage items with the proposed demolition of heritage buildings and removal of significant trees/garden setting, these impacts must be balanced against the significant clinical need for the development, the other positives of the development, the lack of feasible alternatives for the proposed development, and proposed mitigating factors.

The extensive clinical planning analysis, site investigations, master planning, and subsequent design competition process, led the scheme towards the proposed building footprint. The service needs of the SLHD and requirement for growth in acute services, expanding from its existing location, define the need for expansion in the constrained east campus. The positives of the proposed development include the incorporation of internal and external spaces that promote healing, the design excellence of the architectural scheme, and unified landscape design with quality landscape embellishments with re-interpretation of cultural plantings in proposed species selection. There will be other interpretation opportunities in the landscape and building fabric to mitigate in part the impacts on heritage.

6.3 Aboriginal Cultural Heritage

Aboriginal Cultural Heritage Report

An Aboriginal Cultural Heritage Assessment Report (ACHAR) was prepared by Biosis and is appended at **Appendix T**.

Background research confirms that the study area is underlain by the Ashfield Shale formation with a gradual westward sloping topography. Although there are currently limited natural water sources remaining in the vicinity of the study area, Blackwattle Creek previously made up the surrounding area prior to being reclaimed in the 1800s. This swampland would have provided significant plant and animal resources for Aboriginal people occupying the land.

Biosis noted that the presence of the Blacktown soil landscape and the former Blackwattle Creek could indicate subsurface archaeological potential, however it is likely that the study area has been too disturbed by previous development to contain intact archaeological deposits.

In addition to a review of historical records, Biosis contacted members of the Aboriginal community and Registered Aboriginal Parties (RAPs) to provide them with an overview of the proposal and seek their feedback and knowledge of the site.

During an archaeological field investigation on 20 September 2021, areas containing the proposed works were noted to have been disturbed by the construction of several buildings, roads and footpaths, carparks, landscaping, and associated subsurface infrastructure. During the archaeological field investigation several comments were made and are noted below:

- That the cultural gardens (adjacent to the Women and Babies hospital building) as well as existing landscaped areas are to be replaced by the Project in the future if impacted by the proposed development. Designated land should be put aside for the cultural gardens as well as more green space. This should be either the same amount of land as the existing cultural gardens or more if possible;
- A smoking ceremony to be provided by Metropolitan LALC prior to ground disturbing works;
- Metropolitan LALC to be present during ground disturbing works for monitoring.

The proposed development does replace the cultural gardens at their current location. The Metropolitan LALC will be invited to complete a smoking ceremony prior to ground disturbing works and will be present during works for monitoring.

Biosis concluded that the study area does not contain any recorded Aboriginal sites and has been assessed as having low archaeological potential due to disturbances in the study area. The proposed works will therefore not impact on any known physical Aboriginal heritage values.

Biosis provided several recommendations to be implemented prior to commencement of works and during works, including:

- Continued consultation with Metropolitan Land Aboriginal Land Council (LALC): The Metropolitan LALC have requested that a smoking ceremony is completed prior to ground disturbing works and that a cultural sites officer is present during ground disturbing works;
- Continued consultation with a registered Aboriginal stakeholders: It is recommended that the proponent provides a copy of this report to the Aboriginal stakeholders and considers all comments received;
- Interpretation Plan: It is recommended that a cultural interpretation plan be implemented for the project. This may be incorporated into the Art and Design section of this project;
- Heritage induction: Heritage inductions for all site workers and contractors should be undertaken in order to prevent any unintentional harm to Aboriginal sites located within the study area and its surrounds;
- Discovery of unanticipated Aboriginal objects: Should any unanticipated Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist;
- Discovery of anticipated historical relics: Relics cannot be disturbed except with a permit or exception notification. Should unanticipated relics be discovered during the course of the project, work in the vicinity must cease and an archaeologist contacted to make a preliminary assessment of the find;
- Discovery of human remains: If any suspected human remains are discovered during any activity you must:
    - Immediately cease all work at that location and not further move or disturb the remains;
    - Notify of the NSW Police and Heritage NSW Environmental Line; and
    - Not recommence work at that location unless authorized in writing by Heritage NSW.

Refer to the ACHAR at **Appendix T**.

First Nations Heritage Interpretation

As noted in Section 3.9, a Connecting with Country Framework has been prepared for the proposed development by Balarinji. As noted in the Preliminary Heritage Interpretation Framework, a co-design process between the local Aboriginal community and Balarinji, Bates Smart and Turf Studio is ongoing. This co-design process will take the form of the upcoming Body of Story Workshops to capture the narrative of the site and build upon the knowledge documented in the Connecting with Country Framework. This will be followed by Body of Art Workshops where locally connected community endorsed Aboriginal artists will interpret the narrative developed by the community in the Body of Story Workshops.

6.4 Visual Impact

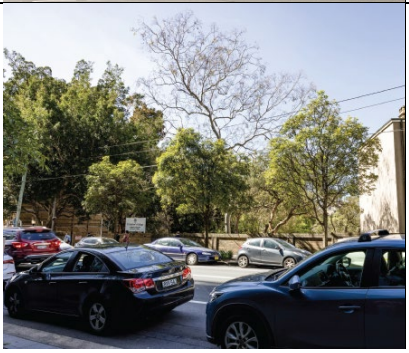
A Visual Impact Assessment (VIA) has been prepared by Architectus and is appended at **Appendix M**.

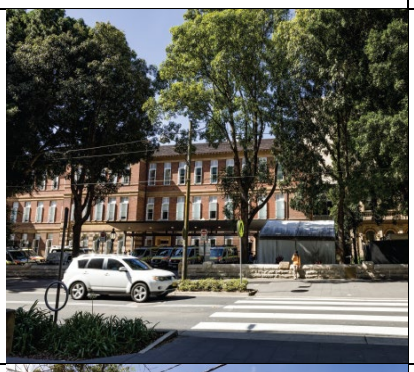
The views considered in the report include:

- Nine (9) public domain views (chosen from an initial longlist of 31 public domain views);
- Ten (10) publicly accessible views from private land (chosen from an initial list of 15); and
- Two (2) heritage views (chosen by Heritage21 from an initial list of 4).

Refer to the view and corresponding assessment for view analysis of the above viewpoints.

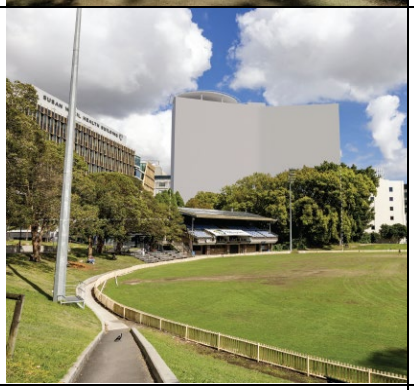
Table 32 Visual Impact Assessment
Source: Visual Impact Assessment, Architectus

View Location	Existing View	Proposed View	Importance of view	View change	Overall Significance of Visual Impact
Public open space views					
V1 – O'Dea Reserve Barbeque Area			Moderate	Negligible	Negligible
V2 – O'Dea Reserve dog park			Moderate	Negligible	Negligible
Public domain views					
V3 – Intersection of Carillon Avenue and Missenden Road			High	Negligible	Negligible
V4 – Missenden Road			High	Negligible	Negligible

View Location	Existing View	Proposed View	Importance of view	View change	Overall Significance of Visual Impact
V5 – Missenden Road			High	Negligible	Negligible
V6 – Corner of Missenden Road and Johns Hopkins Drive			Moderate/ High	Low	Low
V7 – View from bus stop on Missenden Road			Moderate/High	Low	Low
V8 – Corner Grose Street and Church Street			Low	Negligible	Negligible

View Location	Existing View	Proposed View	Importance of view	View change	Overall Significance of Visual Impact
V9 – Corunna Road			Low/Moderate	Negligible	Negligible
Publicly accessible views from private land – University of Sydney					
V10 - The Wilkinson Axis			High	Negligible	Negligible
V11 – Quadrangle, southern entrance			Low/Moderate	Low/Moderate	Low
V12 – Manning Road/ Fisher Road Pocket Park			Moderate	Moderate/ High	Moderate

View Location	Existing View	Proposed View	Importance of view	View change	Overall Significance of Visual Impact
V13 – Western Avenue pedestrian crossing			Moderate	Moderate/ High	Moderate
V14 - Western Avenue entry to University of Sydney			Moderate	Moderate	Low/Moderate
V15 – Charles Perkins through site link			Moderate	Moderate	Low/Moderate
V16 – University Oval No.1			Moderate/ High	Moderate	Moderate

View Location	Existing View	Proposed View	Importance of view	View change	Overall Significance of Visual Impact
V17 – University Oval No. 1			Moderate/ High	Moderate	Moderate
V18 – University Oval No.1			Moderate/ High	Moderate	Moderate
V19 – University Oval No. 1			Moderate/ High	Moderate	Moderate
Private/heritage views					
V20 – Entry to St John's			Moderate	Moderate	Low/Moderate

View Location	Existing View	Proposed View	Importance of view	View change	Overall Significance of Visual Impact
V21 – Historic View Line			Low/Moderate	Moderate	Low/Moderate

As can be seen from **Table 32**, the proposed development is imperceptible (view change: negligible) from eight (8) of the 21 views.

The proposal's most significant assessed impacts are 'moderate' impacts to views from the following locations:

- Views around University Oval 1 (views 16-19): In these views the proposal will be prominent, however the focus of the existing view is the oval and surrounding vegetation, which is retained, with the proposal forming part of a broader composition of buildings which sit as a backdrop to the oval;
- The pocket park along Fischer Road, within the university campus (view 12) and pedestrian crossing at University Oval 2 (view 13): In these views the proposal will be prominent from location with a high number of passing viewers. The proposal obstructs an area of sky and while it changes the composition of the view it does not obstruct elements of importance including the ovals and greenery. The view impact for these views is mitigated by retention of trees and inclusion of new trees and vegetation.

Other areas assessed to receive a low/moderate to low impact are within the publicly accessible spaces within the University of Sydney, along Missenden Road and views taken from private land. These views include, 6, 7, 11, 14, 15, 19, 20 and 21.

The proposal does not impact on the highly significant views along the Wilkinson Axis entering the University of Sydney from Victoria Park.

In discussion on the reasonableness of the visual impact of the proposal, Architectus noted that any proposal of this size would inevitably have a visual impact. The location for proposed built form is the result of extensive master planning and a design competition process, and in direct response to clinical needs and synergies. Strategies have been adopted so as to assist in minimizing the visual impact of the proposal such as the scaling back of buildings on the approach to Missenden Road, the gentle curve of the East Wing and the tree succession plan to retain a visual buffer between the building and University Oval 1.

From a planning perspective, the visual impact seems reasonable in balancing the reasons noted above and in acknowledgement that the proposed redevelopment of the RPA Hospital will provide critical and specialized health services to the population of the Sydney Local Health District and beyond.

Refer to the VIA at **Appendix M** for further assessment.

6.5 Trees and Landscaping

Section 3.10 above provides an overview of tree status (existing, retain, remove, and total) and the rationale for tree removal. An Arboricultural Impact Assessment was prepared by Martin Peacock (**Appendix Y**) and Landscape Plans and Landscape Report have been prepared by Turf Design Studio (**Appendix K** and **Appendix L** respectively).

Tree Removal

In summary, 71 trees are being removed from the extent of works area being within the East campus, Grose Street (West campus), and within the University of Sydney landscape works area. An additional 88 trees are proposed to be planted.

The 55 trees to be removed within the East Campus are associated with their direct conflict with the proposed development footprint, as well as the need to retain emergency vehicle access clearances and provide stormwater infrastructure to service the hospital. The trees being removed within the West Campus are all Low value trees and are within the footprint of the ambulance lift works for the temporary helipad.

The 9 trees to be removed within the University of Sydney site are located along the western edge on the University Oval. Similar to the east campus three of these are affected by a major encroachment of stormwater infrastructure that is situated in the RPA site but requires trenches within the structural root zone of some trees along the RPA Hospital - University of Sydney site border but within University of Sydney. Four trees are recommended for removal to establish an enduring vegetated buffer along the University Oval, by removing trees that have a short useful life expectancy (ULE) and replacing with advanced size new. Tree 596 is affected by a serious fungal pathogen (Armillaria) which is causing white rot of woody tissues in the root system and lower trunk of infected trees. Armillaria predominately spreads through the soil and is likely to infect adjacent trees, with some species being more susceptible than others. The useful life expectancy of Tree 596 is likely to be towards the lower end of the 5–15-year range. On this basis its removal is recommended to protect adjoining trees and due to its short useful life expectancy.

Refer to **Table 21** for more detail on trees proposed to be removed.

In addition, three (3) trees on University of Sydney land are proposed for pruning, specifically crown lift for road clearance.

Landscape Masterplan

The proposed landscape masterplan for the project is discussed at Section 3.10 above. The existing landscaped areas of the site suffer from an uncoordinated landscape design approach. The proposed landscape design seeks to significantly improve the setting for buildings and their functionality for amenity and respite for patients, visitors and staff, and promote different experiences. The Central Courtyard and Eastern Gardens seek to pay homage to the historical Rear Gardens, through proposed planting and interpretation.

Those significant trees being removed from the Rear Gardens will be partly compensated with new tree planting of similar species towards the eastern boundary and within University of Sydney land. Four of the significant trees to be removed include the four (4) Camphor laurel (*Cinnamomum camphora*) tree species which are regarded as High retention status under the Preliminary Arboricultural Impact Assessment and are listed on the City of Sydney's Significant Tree Register. These tree species however are regarded as invasive weeds in many parts of NSW. The BDAR at **Appendix X** refers to them as a High Threat Exotic, and a high threat to natives. It refers that their removal and replacement with native trees is a gain for biodiversity.

The Tree Succession Strategy which forms part of the landscape proposal includes the installation of nine (9) advanced size new trees of various species around the oval edge. The proposed removal of trees within the University will provide the additional space and solar access required for the establishment and development of the new trees, which will provide screening of the proposed East Wing Building. The installation of healthy new trees will ensure the canopy cover and amenity around the oval edge is maintained over the long term as Trees 590, 597 and 598 are late mature specimens with a relatively short ULE.

It is considered that the overall landscape amenity of the site is improved, by the addition of landscape embellishments, improving the quality of landscaping, as well as the creation of new landscape areas for staff and visitors of the hospital to use and enjoy.

Tree Canopy Coverage

The Draft *Greener Places* framework prepared by the Government Architect NSW sets a target for Greater Sydney to reach 40% tree canopy by 2056. The City of Sydney tree canopy targets vary from

15% in CBD areas to 50% in suburban areas. As the site is in close proximity to the city, and the nature of the land use, it would be expected to achieve a canopy target closer to the CBD target.

The Tree Canopy Target summary at **Table 23** above provides the total canopy cover for the proposed extent of works is 13.4%, inclusive of portion of University of Sydney land, decreasing from 17.2%.

A reduction is to be expected in the context of it being such a constrained site, the nature of the land use and the quantum of floorspace required to be meet clinical demand. The Design Jury for the competitive design process made a decision to forgo the scheme with less impactful building footprint and greater tower (Fitzpatrick and Partners scheme) for a scheme that had less bulk and scale impacts on the site and context but with the requirement to demolish heritage significant buildings and trees (Bates Smart scheme).

Refer to the findings within the Arboricultural Impact Assessment and Landscape Report at **Appendix Y** and **Appendix L** respectively.

6.6 Traffic, Transport and Accessibility

A Transport and Accessibility Impact Assessment has been prepared by SCT Consulting. Refer to this report at **Appendix AH**. A summary of their findings is provided below.

Traffic

Traffic Generation

The traffic modelling assessment indicates that the anticipated traffic volumes associated with the development's traffic generation impact on the surrounding road network is negligible. An additional 209 trips are expected to be generated during the AM peak and an additional 176 trips during the PM peak as a result of the proposed development. Lower trip generation is lower during the PM peak given most staff arrive prior to 8AM and depart in a distributed manner throughout the afternoon and into the evening. Outbound movements are also larger in the afternoon when most patient discharges occur.

Table 33 Summary of Generated Trips
Source: SCT Consulting

		AM Peak (8-9AM)		PM Peak (4-5PM)	
User group	**Headcount / volume growth**	**Inbound**	**Outbound**	**Inbound**	**Outbound**
Staff	30%	62	31	31	62
Outpatients	33%	44	22	18	18
Inpatients and visitors	43%	37	7	15	28
Logistics	40%	4	2	2	2
Total	-	147	62	66	110

Impact on Intersections

SIDRA modelling was completed at four intersections being Parramatta Road / Missenden Road to the north of the hospital, Missenden Road / Carillon Avenue and Carillon Avenue / Hospital Road to the south of the hospital, and Missenden Road / Johns Hopkins Drive which is the access point into the East Campus.

Table 34 Current Intersection Performance
Source: Traffic Impact Assessment, SCT Consulting

Intersection	AM Peak Base year 2022 8-9AM				PM Peak Base year 2022 4-5PM			
	Vol.	DoS	Delay (sec)	LoS	Vol.	DoS	Delay (sec)	LoS
Parramatta Road / Missenden Road	3,992	0.78	17.2	B	3,580	0.98	29.1	C
Missenden Road / Johns Hopkins Drive	715	0.46	10.8	A	756	0.62	12.2	A
Missenden Road / Carillon Avenue	1,637	0.75	35.5	C	1,538	0.83	37.0	C
Carillon Avenue / Hospital Road	1,249	0.60	10.2	A	923	0.64	13.4	A

Table 35 Projected Intersection Performance
Source: Traffic Impact Assessment, SCT Consulting

Intersection	AM Peak with development 2031 8-9AM				PM Peak with development 2031 4-5PM			
	Vol.	DoS	Delay (sec)	LoS	Vol.	DoS	Delay (sec)	LoS
Parramatta Road / Missenden Road	4,029	0.80	19.3	B	3,615	0.83	29.3	C
Missenden Road / Johns Hopkins Drive	763	0.50	12.3	A	796	0.64	13.1	A
Missenden Road / Carillon Avenue	1,687	0.73	35.8	C	1,576	0.67	36.3	C
Carillon Avenue / Hospital Road	1,249	0.62	10.4	A	983	0.34	17.3	B

Modelling showed that the four key intersections in the vicinity of RPA Hospital are expected to perform at an adequate Level of Service (LoS) during the peak periods, with the poorest performance being LoS C. The only intersection that has a change in performance is the Carillon Avenue / Hospital Road intersection in the PM peak, which goes from LoS A currently to LoS B in 2031.

Overall, the impact to traffic is marginal due to the increase in vehicle traffic as a result of the redevelopment being relatively small and distributed through the network. No upgrades to road infrastructure are deemed required.

Loading Facilities

The proposed development includes upgrades to the existing main loading dock of the RPA Hospital. The loading dock is expanded to accommodate seven (7) additional courier vehicles spaces – three (3) for B99 (99th percentile) vehicles and four (4) for small rigid vehicles (SRVs).

This provision is expected to significantly improve traffic flow at the loading docks by taking smaller courier vehicles off the roadway. The additional seven courier spaces will ensure that smaller freight vehicles that do not need a raised platform for offloading can be parked to the east of Lambie Dew Drive. This will resolve the issue of courier vehicles either parking along Lambie Dew Drive and reducing the trafficable width of the road or occupying bays that are designed for MRVs or HRVs. The improvement to congestion on Lambie Dew Drive will be significant as courier vehicles (SRV or smaller) are one of the most common delivery vehicle types at RPA's loading docks.

The straightening of Lambie Dew Drive also increases the maneuvering space at the loading docks. Maneuverability is also improved for freight vehicles, particularly for MRVs and HRVs which now only need a three-point turn at most to complete an entry or exit.

Parking

As noted in Section 3.11,changes to parking are proposed including provision of additional pick up drop off parking and ambulance parking, and loss of some staff and public parking impacted by the

realignment of Lambie Dew Drive and the construction of a temporary helipad. No additional parking spaces for staff and visitors are included in the proposed development and the net change in staff parking is -12, while pick up drop off spaces are proposed to increase by 2 parking spaces (-2 in the Northern Arrival and +4 on Missenden Road), and ambulance parking increases. The four public drop off parking spaces on Missenden Road are within the road reserve and therefore approval will be sought for these works under Section 138 of the Roads Act 1993, and in accordance with Section 4.42(1)(f) of the EP&A Act.

The impact to staff and visitor parking (excluding pick up and drop off bays) is -195 in the short-term (construction phase) and -12 in the long term. Parking on site is summarized in **Table 37** below. There is a temporary loss of parking associated with the temporary helipad however as demonstrated in **Section 2**, this was the best location for helipad. Furthermore, parking impact from the helipad does not coincide with increased parking demand as the parking will be reinstated prior to operation of the new development, when use of the temporary helipad ceases. In the long term it is anticipated that on-site parking will be able to meet the expected hospital demand once the new buildings are in operation, with an occupancy rate of 93%. Parking occupancy rates are summarised below in **Table 36**.

Table 36 Parking Availability over Time
Source: Traffic Impact Assessment, SCT Consulting

Period	Supply	Demand	Occupancy
Current	2,595	2,078	80%
Short-term / Construction Phase	2,400	2,078	87%
Long-term / Operational Phase	2,583	2,398	93%

Table 37 Current and Proposed Carparking Locations
Source: Traffic Impact Assessment, SCT Consulting

	Current			Proposed		
Carpark name	**Capacity**	**Occupancy (%)**	**Access**	**Capacity**	**Change (permanent)**	**Change (temporary)**
Point Parking - St Johns College	78	97%	Public	78	0	0
Queen Elizabeth II Basement Car Park	51	47%	Staff	51	0	0
Marie Bashir Centre Surface Car Park	44	93%	Staff	44	0	0
Marie Bashir Centre Basement Car Park	31	45%	Staff	31	0	0
RPAH Staff Car Park	996	68%	Staff	801	0	-195
Secure Parking - Hospital Road	1027	96%	Public	1027	0	0
Salisbury Road Car Park - Radiation Oncology	14	100%	Authorised	14	0	0
Wilson Parking - Lifehouse	105	99%	Public	105	0	0
Brown St Car Park	12	50%	Staff	12	0	0
Wilson Parking - RPA Medical Centre	214	85%	Public	214	0	0
Level 2 car park	12	100%	Staff	0	-12	
ICT car park	11	55%	Staff	11	0	0
King George V carpark *	0	-%	-	0	0	0
Total	**2,595**	**83%**	**-**	**2,388**	**-12**	**-195**

** Recently decommissioned*

End of Trip Facilities

The proposed development will make provision for showers, change rooms and secure bicycle parking facilities for use by staff. The proposed arrangement is subject to further design development and will be reflected in revised drawings to be provided in the Response to Submissions stage. The intent would be to provide approximately 200 bicycle parking spaces across the RPA Hospital campus consistent with the 7% mode share target for cycling and staff number projections associated with the proposal. There are approximately 80 existing bike parking spaces on campus and the project requires 280 bike spaces across the campus to provide for a 7% mode share.

A mix of Class B (secure cages) and Class C (metal frames) have been targeted, subject to Hospital approval. Vertical and horizontal bike racks will be proposed, and AS2890.3 requires minimum of 20% of spaces to be horizontal ground level spaces. Staff bike parking spaces will typically be located in carparks or landscape zones. Public bike parking will be located in pedestrian zones adjacent to entrances and landscape. By providing storage areas in a highly visible and conveniently located area adjacent to entries the project is promoting awareness and uptake of cycling.

An audit of existing end of trip amenities available to staff on campus is being undertaken to determine the extent of new-build facilities necessary to meet future needs. Existing end of trip facilities will be utilised and expanded as necessary.

Some of the locations for bicycle parking being explored include:

- Public realm and landscape (East Campus);
- East Block Level 1 (East Campus);
- Patient Transfer Carpark and East Block (East Campus);
- Multi Deck Staff Carpark (West Campus);
- Professor Marie Bashir Centre (PMBC) in the undercover carpark (West Campus);
- Staff and visitor (S&V) on grade carpark (West Campus).

Access

Vehicular Access

The main vehicular public access to the RPA Hospital East Campus is via Missenden Road, which connects to the hospital loop road servicing the eastern campus. The loop road consists of Johns Hopkins Drive to the north, Gloucester House Drive to the south and Lambie Dew Drive on the east. This loop road provides vehicle access to critical hospital functions including the ambulance bay, women and babies, the main loading docks and patient pick-up and drop-off. As noted previously this access will not change, however congestion on the loop road will be improved by the changes being made to parking within the loading dock.

The western campus is located between Church Street and Missenden Road, which provide north-south access.

Pedestrian Access

Improvements to pedestrian priority are generally being implemented where the redevelopment is occurring, including at the ED / Ambulance drop-off on Missenden Road, the Northern Arrival and adjacent to the temporary HLS. New zebra crossings and additional footpath coverage will increase walkability and pedestrian amenity.

The Northern Arrival will establish two new crossing locations on Johns Hopkins Drive, which will connect pedestrians to and from the east-west link

Associated with the temporary helipad, two zebra crossings are being added across Grose Street, one at the intersection of Hospital Road and Grose Street, and one at the entrance to the Queen Mary Building. The temporary helipad will be operational for three years however these pedestrian upgrades and installation of lift will be permanent.

Pick Up and Drop Off

The proposed development affects the ED drop-off area as well as the public pick up drop off at the Women's and Babies building, soon to be the Northern Entrance. In both instances the proposed changes lead to better outcomes in terms of pedestrian safety and traffic flow.

At the emergency drop-off area on Missenden Road, additional ambulance bays are proposed, as well as a dedicated accessible public drop off bay, and a pedestrian prioritized route into a new public ED entrance. The current ambulance exit will have its direction reversed, so that ambulances will enter the drop off area at this location, where-as a new entryway will provide a separate access for the public.

The upgrades to the ED drop off include works within the road reserve (Missenden Road), being line marking for a new “Keep Clear” zone on Missenden Road (to assist emergency vehicles arriving from the south on Missenden Road in entering the ED drop off), as well as a minor kerb realignment where Missenden Road meets Johns Hopkins Drive, and addition of four public drop-off parking bays. the works are subject to Section 138 of the Roads Act 1993.

This separation of private car and ambulance drop off locations will reduce the confusion for users on arrival and avoid the scenario of improperly parked cars blocking ambulance access. Pedestrians will now also get their own footpath and marked crossing. Further, the available ambulance bays at ED will be doubling to eight bays. This will provide much needed capacity at this location and minimise situations where medics have to move their ambulances for new inbounds or to find informal parking. A dedicated accessible public drop off at the ED will be a significant improvement as the current ED arrival does not have provision for accessible parking and does not indicate where the public can drop off patients.

At the Northern Entrance pick up drop off (replacing the existing Women’s and Babies pick up drop off), the renovated entry will have a new accessible pedestrian walkway on the west side, a flatter plaza area under the entry canopy, and a new footpath across the driveway where none currently exists. Parking layouts are modified to provide 4 regular parking spaces and 2 accessible parking spaces, resulting in an overall loss of two parking spaces. The new footpath creates a safe point for pedestrians to cross at this location while the walkway to the west of the plaza provides a place for landscaped area where staff and visitors can wait or seek respite.

Access to Public Transport

The site is well connected to public transport services with the closest bus stop being located 150m to the north of the main hospital building, on Missenden Road. Additionally, Parramatta Road (450m north of site) and King Street (450m south of site) are serviced by a wide range of bus services. The nearest rail station is one kilometre from the hospital (Macdonaldtown Station). To improve public transport access, RPA Hospital has an existing staff shuttle service to Redfern station. This minibus runs from 3:30pm to midnight every day of the week, with an approximate frequency of once every 30 minutes. The shuttle has a full load at 20 passengers, and reportedly has less than 50% occupancy after 6:30pm.

No changes are proposed for public transport access, with the bus stops remaining in their existing locations. However, as part of the Green Travel Plan, RPA hospital will continue to advocate for an increase in bus routes / service frequencies along Missenden Road outside the hospital and seek to increase the number of hospital-run shuttle buses that bring staff to and from Redfern Station.

Green Travel Plan

A Green Travel Plan (inclusive of Workplace Travel Plan) has been developed (refer **Appendix AH**). It provides a review of existing facilities and travel habits, and overarching principles and objectives relating to sustainable travel. It is intended to be dynamic and respond to staff and visitor behavior.

Most staff at the hospital work regular hours. As a proportion, 81% of a weekday’s staff are part of the morning shift, 12% are afternoon shift, and 7% are night shift.

A staff travel survey was conducted in June 2021 and was completed by approximately 25% of all RPA staff (1,199 responses). As part of the survey staff were questioned about their willingness to change modes, if mode shifts were supported by appropriate infrastructure, such as end of trip facilities and bicycle parking. The results of the survey were very positive and on this basis the proposal includes ambitions for mode split to shift away from car usage and towards public and active transport.

The targets for staff (summarized below in **Table 38**) are considered reasonable given the proximity of the site to public transport, the suite of cycling upgrades being rolled out across the City of Sydney LGA, as well as the willingness of staff to change their modes. During the COVID-19 pandemic private car usage increased as a result of concerns about the spread of infectious disease, however the use of non-car modes has improved since this time, and it is expected that it will continue to normalize /

increase. Further, most hospital staff shifts are daytime shift (93%) and only 7% are work night shift, meaning that public and active transport is a feasible option for most staff from a safety and convenience perspective.

The mode shift will be delivered through strategies to reduce car dependency and encourage staff to use sustainable transport modes. The Green Travel Plan proposes communicating to staff about the available facilities and the benefits of more sustainable modes of transport. The proposed initiatives build on prior work of the SLHD to encourage alternate travel modes and enable non-vehicle transport with existing end of trip facilities. SLHD/RPA Hospital will continue to advocate for the interests of staff to Transport for NSW and the City of Sydney in encouraging continual improvements to cycling infrastructure and public transport options. Additionally, it is proposed to increase the existing scheduling of the RPA Hospital shuttle from Redfern Train Station.

Table 38 Staff Mode Share Targets
Source: Traffic Impact Assessment, SCT Consulting

	Pre COVID	Existing	Difference	2028	Long term target (2050) (Typical
Walk	9%	9%	1%	10%	12%
Cycle	3%	2%	5%	7%	12%
Rail	17%	13%	5%	18%	23%
Bus	14%	11%	4%	15%	19%
Total non-car	*43%*	*35%*	15%	*50%*	*66%*
Car	56%	64%	-14%	50%	33%
Other	1%	1%	0%	-	-
Total	**100%**	**100%**	**-**	**100%**	**100%**

Construction Traffic Management

A Preliminary Construction Traffic Management Plan (PCTMP) has been prepared by SCT as part of the Transport and Accessibility Impact Assessment. Refer to this at **Appendix AH**.

The PCTPMP provides an overview of facilities and connectivity within and around the site, and the anticipated transport demands of the site. This plan considers the interface of multiple transport modes (including specialty modes such as service vehicles and ambulances) and strategies which may be required to safely and efficiently manage these. The document is preliminary in nature and is intended to be dynamic and respond to the future operation of the site. It is anticipated a detailed CTPMP will be required to be prepared as a condition of consent.

- Construction traffic management - the majority of construction vehicles are expected to access the site from Parramatta Road or King Street via Missenden Road. Construction staging, delivery and waiting areas are yet to be determined and will be done so by the preferred contractor;
- Local traffic – construction vehicles volumes are modest (approximately 60 vehicles per day) which is not expected to have a significant impact on local traffic patterns during construction. However, this is subject to arrival patterns of construction vehicles and will need to be assessed by the contractor in their CTMP;
- Construction parking – as the site is located in a constrained urban environment, construction workers are not expected to drive to RPA Hospital and will be encouraged to travel using alternate modes. As such, on-site parking will not be provided for use by construction staff, though a small contingency has been reserved in parking forecasts.
- Pedestrian impact – impacts to pedestrians during construction will be determined subject to staging, loading and unloading arrangements, to be confirmed by the contractor. Measures will be implemented to retain pedestrian access and safety through and around the site;
- Cyclist impact - there are no changes to dedicated cycleways in the area;
- Emergency services - emergency vehicles accessing the operational hospital emergency department and other critical areas will be unimpeded by construction works;

- Cumulative local impacts - There is no nearby construction confirmed that would require coordination with the proposed development. While University of Sydney will begin construction of the Sydney Biomedical Accelerator (SBA) on their site to the south-east of RPA, the haulage routes and construction zones will be separate from those used for the RPA redevelopment.

Concluding Comments on Traffic

As concluded in appended Transport and Accessibility Impact Assessment:

- With 10 years of background traffic growth and an estimated increase of 30%, all intersections continue to operate at acceptable Levels of Service;
- Parking demand and supply will be catered for within the existing car parking provision where occupancy rates are expected to increase to 93%. There is an acknowledged pinch point during operation of the temporary helipad however this is temporary and it is expected that the helipad will be decommissioned at operation of the new hospital, and when staff numbers start to increase;
- Pedestrian infrastructure will improve as a result of upgrades proposed at a number of locations across the campus;
- Construction traffic management will be dealt within the site and within the approved work hours; and
- The proposed development is considered acceptable with regards to its traffic and parking impacts. The capacity of the local road network and the site with regards to both traffic and parking is considered sufficient to cater for the redevelopment and is recommended for approval.
- A 15% increase in the existing non-car travel mode share (combined: walking, cycling, public transport) is targeted which is considered achievable in consideration of end of trip facilities being provided in the development, coupled with targeted strategies for promoting active and public transport mode shift and advocacy by RPA Hospital for additional public transport services.

6.7 Noise and Vibration

A Noise and Vibration Impact Assessment has been prepared by Arup and is appended at **Appendix U**.

Unattended noise monitoring was completed at the location of the most sensitive receivers to the site; being St Andrews College and St Johns College. These are the nearest residential uses to the hospital site and are shown in pink in **Figure 45.** The noise levels recorded at these locations were taken as the 'baseline' upon which the noise impact of the proposal is measured.

Figure 45 Site, sensitive receiver and noise monitoring locations
Source: Arup

Construction Noise

Construction Noise levels have been predicted based on the expected intensity, location of activities and the type of equipment used during the construction period however these are at best estimates, and it is acknowledged that these factors have the ability to make actual noise levels slightly different.

Exceedances are recorded at many locations with the most affected receivers predicted to be R1 (St John's College), R2 (St Andrew's College) and R3 (the Queen Mary Building) who will be "highly noise affected".

Results show that construction noise is predicted to exceed 'noise affected' levels during standard hours and outside standard hours for most receivers, with residential receiver R1, R2 and R3 predicted to be highly noise affected for works during standard hours and outside standard hours.

Table 39 Predicted Noise Levels at Nearest Affected Off-site Receiver Locations (partial extract)
Source: Noise and Vibration Impact Assessment, Arup

Receiver	NML, $dBL_{Aeq(15\ min)}$		Predicted sound level at receiver, $dBL_{Aeq(15\ min)}$				
	Noise affected	Highly noise affected	East extension / East wing	Vertical extension	Lambie Dew Drive	Temp. HLS	Ambulance bay
During standard hours							
R1	62	75	86	108	84	74	57[3]
R2	61	75	81	86	82	57[3]	53[3]
R3	62	75	77	86	55[3]	102	64

Receiver	NML, $dBL_{Aeq(15\ min)}$		Predicted sound level at receiver, $dBL_{Aeq(15\ min)}$				
	Noise affected	Highly noise affected	East extension / East wing	Vertical extension	Lambie Dew Drive	Temp. HLS	Ambulance bay
Outside standard hours (extended Saturday hours)[4]							
R1	54	59	76	96	77	-[6]	57[3]
R2	55	60	70	74	76	-[6]	53[3]
R3	54	59	66	75	49[3]	-[6]	64

Note: for temporary helipad works, no works are proposed outside standard hours, and no excavation, demolition and piling works are proposed generally outside of standard hours.

Predicted sound pressure level ≤ noise affected level
Noise affected level < predicted sound pressure level ≤ highly noise affected
Highly noise affected < predicted sound pressure level

It is reiterated that the predictions represent an expected worst-case scenario and that noise mitigation measures could be undertaken to further mitigate the impact on nearby receivers.

Table 39 in the Noise and Vibration Impact Assessment details preliminary feasible and reasonable work practices. In relation to the Temporary HLS location of works, these include:

- Use low-noise construction equipment and/or methods where possible;
- Turn off plant and equipment when not in use;
- Locate stationary plant (concrete pumps, air-compressors, generators, etc.) as far away as possible from sensitive receivers;
- Use site sheds and other temporary structures or screens/hoarding to limit noise exposure where possible.

Construction Traffic Noise

An estimated 65 construction vehicles will be accessing the site throughout the day during the busiest period of construction of the main works. From the predictions, the potential increase in the traffic noise level due to construction traffic is less than 2dB. Therefore, the proposed construction traffic activity is considered to have a minor impact which will not significantly affect the existing acoustic environment.

Construction Impact Summary

The predictions for construction noise impacts generally, represent an expected worst-case scenario and that noise mitigation measures could be undertaken to further mitigate the impact on nearby receivers. The predicated noise levels would only be experienced for limited periods of time when works are occurring and should not be experienced for full daytime or night-time periods.

Feasible and reasonable measures to reduce noise impacts will be implemented and would include:

- Only approved out of hours activities should occur outside of standard working hours;
- Managing noise from construction work that might be undertaken outside the recommended standard hours;
- Locating stationary plant as far away as possible from sensitive receivers;
- Using site sheds and other temporary structures or screens/ hoarding to limit noise exposure where possible;
- Sealing of openings in the building prior to commencement of internal works to limit noise emission;
- Appropriate choice of low-noise construction equipment and/or methods; and
- Consultation with the community during construction.

As recommended by Arup, a detailed Construction Noise and Vibration Management Plan (CNVMP) will be prepared in which specific attention would be given to mitigating and managing potential impacts upon the surrounding receiver locations. The CNVMP will be prepared by the contractor prior to the commencement of work.

Refer to the Noise and Vibration Impact Assessment at **Appendix U** for further details.

Construction Hours

In addition to the standard construction hours, approval is being sought to extend Saturday construction hours on Saturdays to permit low and moderately noisy works to occur from 1pm-7pm with the exception of the Temporary HLS, to be consistent with the "Category 1" working hours as per the City of Sydney Construction Code.

Within the Noise and Vibration Impact Assessment, Arup recommended that approval be granted for the extension to operating hours on Saturdays, on the condition that the works being undertaken are low and moderate noise activities only, such as site preparation works. Demolition, excavation and piling works, and works to the Temporary HLS, are excluded from OOHW activities.

The proposed construction hours are summarized in Table 40.

Table 40 Proposed Construction Hours
Source: Noise and Vibration Impact Assessment, Arup

Day	Hours	ICNG Construction Activities	Proposed Construction Activities
Monday to Friday	7am to 6pm	All works permitted, except blasting permitted 9am-5pm only.	7am to 6pm
Saturday	8am to 1pm	All works permitted, except no blasting 8am to 9am.	8am – 1pm
Saturday	1pm to 7pm	No works permitted	1pm – 7pm: – Excluding "high" impact noisy works (demolition, excavation and piling) – Excluding Temporary HLS
Sunday and Public Holiday	All day	No works permitted	No works

Out of Hours Works – Fit-out and Refurbishment

In addition to the hours noted above the proposal would seek to conduct out-of-hours fit-out and refurbishment works, where they are being conducted indoors, with base building works are completed and there are no openings in the façade near where the works are being conducted.

It is noted that works are typically permitted to occur outside of standard project construction hours, where there is considered to be a minimal noise impact upon external sensitive receivers. Internal fit-out and refurbishment would typically meet these criteria.

The contractor is to use discretion when carrying out these out-of-hours works and avoid using louder plant where it may pose a disruption to nearby external receivers.

As these proposed works are not expected to impact external receivers, a quantitative construction noise assessment is not warranted. Impacts to internal receivers would be considered on a case-by-case basis in consultation with HI.

Out of hours works would also be sought ad hoc where required to in order to minimise impact on staff and patients in the hospital.

Operational Noise

The primary operational noise sources with the potential to impact upon surrounding noise sensitive uses has been identified as building services (i.e. mechanical, electrical and hydraulic plant and equipment) and vehicular movements (including helicopter). Noise from building plant is expected to be negligible.

Traffic

Arup modelled predicted noise levels associated with traffic based on data from SCT that loading dock operations would increase by 48 truck / delivery vehicles per day. Arup noted that no loading dock activities are understood to take place outside of the daytime period, and that from the modelling the loading dock operations are not expected to significantly impact the worst-affected receiver.

Off-site traffic would increase noise levels by 1.2dB, where less than 2dB is considered a minor impact.

Temporary HLS

As provided at **Section 2.1**, an options analysis for siting of the temporary HLS was undertaken and this found no other suitable locations than the roof of existing multi story carpark in the west campus for temporary HLS to operate for the duration of the construction works (approximately three years) because the existing HLS in the east campus cannot operate during construction due to risk to safety from cranes, etc.

There are no current regulations that specifically assess helicopter noise emissions in NSW and that the Lmax criteria is not applicable to emergency medical helicopters under AS2363.

Potential noise impacts of the proposed helicopter landing site have been assessed by generating LAeq and LAmax contours using the United States Federal Aviation Administration's (US FAA) AEDT software version 3.0d. AEDT is the current industry standard software used for modelling aircraft noise.

The Agusta AW139 has been identified by the aviation consultant as the design helicopter.

Noise data for the Agusta AW139 is not available in the AEDT database. A substitute helicopter, Aerospatiale SA330J, was used, being comparable in size, maximum load and engine type to the AW139. However, the SA330J is considered to be noisier than the AW139. As a result, the noise profile of the SA330J is considered a conservative estimate.

Data from 2018 – 2021 shows that RPA transferred an average of 107 patients per year; mostly inbound . It is therefore assumed that a temporary HLS would be used approximately nine – ten times per month on average (or once every three days). The percentage of landings that occur during the night-time period (10pm – 7am) varies from 27% to 42%. In assessing potential sleep disturbance impacts, the assessment has considered operations during the night period as defined by the NSW Noise Policy for Industry.

Exceedances of LAeq and LAmax criteria are predicted for both day and night-time periods. LAmax values represent the absolute maximum noise levels that may be experienced by the affected receivers.

Regarding potential sleep disturbance impacts, historical data indicates that most helicopter movements occur during the day-time period; nevertheless, regular sleep disturbance impacts are expected.

Predictions indicate that noise from emergency medical helicopters will impact the nearest sensitive receivers, namely:

- R3: Queen Mary Building, 106-112 Church Street (Residential);
- H7: Naamuru Parent and Baby Unit (Hospital Ward).

In regard to impacts on the Naamuru Parent and Baby Unit, it is noted that there are only eight bedrooms in the facility. The temporary relocation of the HLS will result in a reduction of noise exposure for a greater number of vulnerable patients within the RPA Hospital main building.

Table 41 Predicted Results from Helicopter Noise Assessment – Laeq
Source: Noise and Vibration Impact Assessment, Arup

Receiver	Distance, m	W Approach NE Departure				NE Approach W Departure			
		Day		Night		Day		Night	
		dBL_{Aeq}	*Criteria*	dBL_{Aeq}	*Criteria*	dBL_{Aeq}	*Criteria*	dBL_{Aeq}	*Criteria*
R3	27	66	*60*	66	*50*	67	*60*	67	*50*
H7[2]	30	65	*60*	65	*50*	66	*60*	66	*50*

Note:
1. Red highlighted cells indicate an exceedance of criteria.
2. H7 is assessed as residential due to the nature of the space; i.e. contains rooms for families to live in temporarily

Table 42 Predicted Results from Helicopter Noise Assessment – Lamax
Source: Noise and Vibration Impact Assessment, Arup

Receiver	Distance, m	W Approach NE Departure				NE Approach W Departure			
		Day		Night		Day		Night	
		dBL_{Amax}	*Criteria*	dBL_{Amax}	*Criteria*	dBL_{Amax}	*Criteria*	dBL_{Amax}	*Criteria*
R3	27	106	*85*	106	*80*	105	*85*	105	*80*
H7[2]	30	108	*85*	108	*80*	107	*85*	107	*80*

Note:
1. Red highlighted cells indicate an exceedance of criteria.
2. H7 is assessed as residential due to the nature of the space; i.e. contains rooms for families to live in temporarily

Several mitigation measures have been explored to minimise the impacts of the proposed temporary HLS. These included:

- Architectural treatment at affected residents north of the HLS;
- Noise barriers at the northern site boundary;
- Relocation of the HLS;
- Helicopter size restrictions;
- Approach and departure paths restrictions.

None of the above were deemed feasible. Refer to **Table 20** in the Noise and Vibration Impact Assessment for details (**Appendix U**).

Noise exposure for nearby residents (Queen Mary Building and the Naamuru Parent and Baby Unit) will be significant, but the proposed location is considered to be the only suitable location on or near the RPA campus after consideration of a range of options. Furthermore, the temporary HLS is:

- Critical to support clinical functions;
- Forecast to have limited (2-3) flights per week;
- Not a permanent facility.

Permanent HLS

The permanent HLS on the East Wing provides an alternate to the existing HLS on the main hospital building, where wind conditions make the existing HLS unusable. it is understood that there is no significant proposed change in helicopter flight paths / movements. The expected noise increases for each helicopter movement has been assessment in the Noise and Vibration Impact Assessment (Table 21 of that report). This found expected increases for noise sensitive receivers within and surrounding the site were between 1 and 9 dB(A). Therefore, the noise impacts associated with the new permanent HLS is not expected to significantly impact nearby receivers based on its proximity to the existing HLS (based on the understanding that flight paths / number of helicopter movements will not change significantly from existing)..

Off-Site Traffic Noise

A conservative assessment of potential day and night increase in traffic noise from RPA Hospital was conducted by Arup. It was concluded, that considering the existing traffic numbers along Missenden

Road, the additional traffic created by development is predicted to represent an insignificant effect on the ambient noise environment.

Building Services

Building Services equipment has not been selected at this early stage of design. Therefore, detailed acoustic design will be required following confirmation of the building services equipment selections.

Loading Dock

Service vehicle delivery schedules are not yet available at this stage of the project (as is typical). Therefore, a preliminary assessment has been conducted, assuming 2 HRVs and 4 MRVs arriving at the loading dock at the same time within a 15- minute period. This assumption is used to assess a worst-case scenario of 2 HRVs and 4 MRVs arriving and reversing into the loading dock at the same time during the day period.

It is noted that most loading dock activities are understood to take place during the daytime period (9am – 4pm). From the modelling, Arup confirmed that the loading dock operations are not expected to significantly impact the worst-affected receiver.

Vibration

There is a risk that vibration from certain equipment may exceed human comfort / structural damage guidelines for some receivers due to their proximity to the works site being less than the recommended minimum working distance for vibration generating plant.

During development of the detailed Construction Noise and Vibration Management Plan an investigation of vibration impact upon existing buildings on the subject site and on all nearby sensitive receivers should take place, including an assessment of any vibration sensitive equipment that could possibly be impacted by the works.

Where the risk of disturbance due to vibration is predicted to be high, Arup recommends that the following methods are used to control of mitigate impact:

- Use of alternative lower vibration construction methods, such as using bored piled over driven piles;
- Use of lower vibration equipment;
- Arrange a programme of designated times when construction work may exceed the specified criteria; and
- Site planning can be used to keep vibration sources away from more sensitive receivers.

As noted above, a detailed CNVMP will be prepared during development. It is expected that vibration monitoring will be required.

Refer to the Noise and Vibration Impact Assessment at **Appendix U** for further details.

6.8 Aviation and Downwash

Aviation

Helicopter Operations

The existing site contains one (1) existing Helicopter Landing Site (HLS), located on the roof of the Clinical Services Building (Building 89) in the East Campus of RPA Hospital. The proposed construction of a new east wing at RPA Hospital in proximity to the existing HLS prohibits ongoing and safe Helicopter Emergency Medical Service (HEMS) operations from the existing HLS and requires a temporary HLS to be established elsewhere. After consideration of various options available, it was decided that the roof of an existing multi-storey carpark in the west campus would be the best location for the temporary HLS. In accordance with items 24.1 and 24.2 of the SEARs, an Aviation Report has been prepared by AviPro at **Appendix AB**.

The Aviation Report has considered the potential impact of both a temporary HLS (for use during construction) and permanent HLS at RPA Hospital and provides that the permanent rooftop HLS on the new eastern wing building in the east campus is appropriately designed, resulting in a minimal amount of overflight of occupied buildings.

The temporary relocation of the HLS to the multi-storey car park in the west campus presented the only feasible option to allow for the continued required air ambulance operations at RPA Hospital, either within the RPA campus or nearby. The construction cranes for the new east wing would constitute unacceptable hazards to safe helicopter flight. Construction of the northern expansion will bring workers, their equipment and building supplies dangerously close to the existing HLS such that helicopter operations could not continue. When construction of the RPA Hospital redevelopment is complete, the temporary HLS will be decommissioned and helicopter operations will return to the existing HLS on the roof of the main hospital building (or the new permanent HLS as its alternate).

Proposed height of Buildings – Airspace operations

The Sydney Obstacle Limitation Surface (OLS) Conical Surface varies from approximately 70m to 95m AHD across the RPA Hospital campus but is approximately 80m AHD overhead the RPA redevelopment site.

In other words, a development in the vicinity of RPA Hospital could be built to a maximum height of approximately RL80 before it enters the Sydney Aerodrome OLS.

The proposed buildings exceed this height and therefore approval for airspace intrusion is required. Preparation for the airspace application activity is underway.

Sydney Aerodrome Procedures for Air Navigation – Aircraft Operations (PANS-OPS) surfaces vary from approximately 135m to 150m AHD across The RPAH campus but is approximately 140m AHD overhead the RPA redevelopment site. A development in the vicinity of RPA Hospital could be built to a maximum height of approximately RL140 before it enters the PANS-OPS surface lower limit. Approval for (temporary) airspace intrusion would be required associated with crane use during construction.

Temporary HLS

As noted by the Aviation Report, it is not always possible to develop a facility which is fully compliant with all relevant guidance. To this end, a risk assessment is required to be undertaken by HEMS operators to ensure they are able to accommodate any shortcoming of the temporary site. In the case of the temporary HLS, the design is unable to avoid having a number of obstructions on preferred approach and departure paths. HEMS operators have all advised that this limitation is acceptable for the temporary period of HLS operation and in the interest of ensuring the best standard of clinical care for high priority patients. An operational brief will be prepared for the HEMS operators to provide all available detail on approach and departure angles and preferred directions assessed as part of the design of the temporary HLS.

The existing multi storey carpark with rooftop temporary HLS will remain operational during the operation of the temporary HLS. Some of the carparking spaces will go off-line until the Temporary HLS is decommissioned and full mutli storey carpark becomes operational again.

Concluding Comments

The Aviation Report finds the new permanent RPA rooftop HLS on the new eastern wing building in the east campus is appropriately designed. The proximity to adjacent occupied buildings is not ideal, but is unavoidable. It will result in a minimal amount of overflight of occupied buildings. If it occurs, this overflight will be unavoidable.

The temporary HLS, whilst not fully compliant with relevant guidelines, will be capable of hosting safe helicopter operations and is acceptable to HEMS operators. There was no other feasible, safe siting option available.

Downwash

A Temporary Helipad Flight Path and Rotorwash Assessment has been prepared by Arup and is provided at **Appendix AC**. The assessment was undertaken to determine the impact of building induced turbulence on helicopter operations, and the impact of helicopter induced rotorwash on pedestrians in the surrounding area. Computational Fluid Dynamics (CFD) was used to model both wind related aspects for the preferred helicopter flight paths indicated by the Aviation Report for the temporary HLS (at **Appendix AB**).

The assessment determined that vertical turbulence is more important for helicopter operations, however the majority of wind directions modelled on the preferred flight paths demonstrated that

alternate flight paths with lower vertical turbulence are available. Therefore, there is not considered to be an operational issue caused by building induced turbulence.

Eight helicopter positions were modelled to illustrate the impact of helicopter rotorwash on the pedestrian-level wind speed. Generally, the results of the assessment demonstrate that the wind speed measured in the accessible areas surrounding the helipad on the car park roof, and along Hospital Road, Grose Street, Church Street, and the laneway to Missenden Road, exceeds the 15 m/s criterion mean wind speed used in this study.

Regarding the carpark levels, different zones on Level 1 are impacted by rotorwash from most of the preferred flight paths. However, the pedestrian wind speed measured on Levels 2 to 4 complies with the criterion except for minor locations at the perimeter.

The Assessment finds exceedances of the safety criterion can be managed by:

1. Actively controlling pedestrian access in the affected areas during helicopter operation.
2. Adopting a helicopter approach at a greater height (steeper approach angle, or greater final vertical descent) thereby reducing the effects of rotorwash on ground level; and
3. Moving the helipad further from the highest ground level in the north-east corner of the car park towards the southern non-accessible zone.

However, items 2 and 3 above were found not to be feasible by the aviation consultant, AviPro:

- Item 2 - the Helicopter Emergency Medical Service (HEMS) pilots may well fly steeper approaches, but this will be investigated when trial flights occur during commissioning. The Civil Aviation Safety Regulations (CASRs) (esp. 91.410) place the onus on the aircraft captain to fly in the safest way possible so it is important they are not told how to fly; they are only highlighted the issues such as downwash;
- Item 3 was discounted in the "southern non-accessible zone" was discounted as an option for numerous practical reasons (refer Section 2.5 Feasible Alternatives and **Appendix AB** for the Aviation Report), mainly because of the excessively steep approach and departure paths required to get in and out, as well as the surface being unstable.

The effects of rotorwash will affect other loose lightweight objects in the affected zones. The strongest winds are on the roof of the car park and any loose items, stones, or rubbish should be removed prior to helicopter operations. The following recommendations were made in regard to impact on loose and lightweight objects in the affected zones:

- The gap below the porous balustrade on this level to catch displaced objects should be blocked, and
- Advice should be provided to residents along Church Street, and in the Queen Mary Building warning of the potential for rotorwash and to secure loose items such as furniture and bins.

In summary, building induced turbulence is not considered to be an issue for the proposed HLS location, however impacts on pedestrian level wind speeds in some areas exceed the pedestrian safety criteria of 15 m/s. Impacts caused by helicopter rotorwash will be effectively managed by actively controlling pedestrian access in the affected areas during helicopter operation and communicating with residents in the affected area so they can secure loose items. The carpark roof is the most affected zone, and will be cleared of loose items prior to helicopter operations. The top-storey of the carpark will be inoperable during the operation of the HLS and so will not be accessible to members of the general public.

6.9 Other Impacts

An assessment of other environmental impacts arising from the proposed development is provided below in **Table 43**.

Table 43 Assessment of Other Relevant Impacts

Impact of the Proposal	Assessment of Impact
Overshadowing	A solar study was completed by Bates Smart and is included in the Architectural Design Report at **Appendix I**. This demonstrates the potential solar access impacts of the proposed development on the existing surrounding uses at the Summer Solstice and the Winter Solstice. Additional overshadowing from the development is associated with the East Wing, the two-storey rooftop expansion of the Northern Arrival, and the Eastern Extension. The overshadowing effects portions of existing and proposed buildings however, there is no impact on the University of Sydney Oval 1 throughout the year. The Oval grandstand is shaded at 3pm on 22 December (Summer Solstice) and partially shaded on 22 September (Equinox) however the actual Oval experiences no overshadowing at all post-development. The Northern Arrival area will not be affected by overshadowing either. In the winter months before 12pm, the Eastern Wing primarily overshadows the area occupied by the Eastern Extension, as well as the east-facing facade of RPA Building 89 (the curved facade). The rooftop expansion of the Northern Arrival primarily impacts the north part of the central courtyard. In the winter months and on 21 March from 12pm onwards, the Eastern Wing overshadows part of the northern facade of the Susan Wakil Building on the University of Sydney campus, as well as the Bruce Williams Pavilion. Open space and public domain areas are considered more sensitive to loss of solar access and so given the impact of the proposed development on open space areas is minimal this is considered a good outcome.
Solar Access	The new East Wing is arranged so as to minimise impact on the existing buildings and maximise views from all rooms. This is in response to best practise health facility design which acknowledges that inpatient experience can be ameliorated and improved through good outlook and connection with nature. Rooms oriented to the north all receive at least two hours of direct sunlight, while some rooms to the south are affected by overshadowing. Solar access coverage improved on higher levels. Where possible, uses that require less solar access have been oriented to the south, such as Intensive Care Units which are located to the south, and have internal venetians to provide filtered light to these rooms.
Views and Visual Privacy	The design of patient rooms was highly influenced by a desire to provide views to landscaping/nature and visual privacy. Building façades include windows with angled hoods that can oriented to provide sun exposure or sun protection and direct views to minimize overlooking. On the mid-levels of the plan, rooms that may be affected by overlooking will have their window hoods angled to provide privacy and direct views. On the upper floors of the Eastern Wing, north facing and oval-facing rooms, there are no privacy impacts and therefore all window hoods are angled to provide sun protection.
Ventilation	Due to the hospital setting and infection control requirements, it is difficult to achieve natural ventilation in clinical areas. As part of the development of ESD measures to be incorporated into the design, the inclusion of hybrid ventilation to public areas is being explored, which would allow natural ventilation during suitable weather conditions.
Wind	A Pedestrian Wind Assessment has been prepared by Arup and is appended at **Appendix AA**.

Impact of the Proposal	Assessment of Impact
	The Pedestrian Wind Assessment has been prepared by ARUP to assess the pedestrian level wind conditions for comfort and safety in and around the site. The report noted that: – From a comfort perspective, the wind conditions at the majority of locations in and around the site are classified as suitable for pedestrian standing or walking. These conditions are appropriate for the intended use of the space; and – From a safety perspective, there are two small areas in the undercrofts that have a marginal exceedance of the pedestrian safety criterion. These undercroft areas are through the loading dock area and are primarily for maintenance access, and not intended for general pedestrian. The exceedance in the eastern overland flow path section is not accessible to pedestrians as the head height is too low. The minor exceedance area in the northern undercroft occurs to the east of Lambie Dew Drive encompassing the pavement. After the wind modelling, the building form was modified in response, to improve conditions in the undercroft. It is expected that this would have improved conditions slightly. The Pedestrian Wind Assessment finds the positive changes made in geometry for the wind conditions include: – Reduction in massing and rounding of the western link above the roof of the existing building, – Greater articulation of the podium above the north end of the undercroft, and – Additional porosity in the north-west corner of the New East building. Negative aspect of the changes made are: – Reduction in tower setback from the northern edge of Level 6, and – Change in angle of the northern façade of the western link. The assessment concludes the geometric changes would be expected to have a net beneficial impact on the wind conditions through the undercroft. As the criteria exceedance is minor and the area is mainly used for maintenance access, simple wayfinding to discourage pedestrians passing through the loading bay, and/or installing strong wind warning signage in this area could be adopted. The design of this area will continue to be refined to improve wind conditions at this location subject to detailed design development.
Ecologically Sustainable Development (ESD)	Ecologically Sustainable Development (ESD) principles addressing water and energy use, material selection and waste management have been incorporated into the design of the proposed development. An ESD Report has been prepared by Climatewise detailing the ESD credentials of the proposed development. Refer to this report at **Appendix Z**. As noted by Climatewise, Health Infrastructure has their own Design Guide Note on Ecologically Sustainable Development, which sets a framework for reducing carbon emissions across all new NSW Health projects. In addition, the Royal Prince Alfred Hospital has a Strategy for reaching Carbon Zero by 2030 (*RPA Carbon Neutral 2030 Strategy*) and a climate action strategy which incorporates ESD measures among other principles (*RPA Climate Action 2040*). Both these strategies have defined the ESD Strategy for the RPA Hospital Redevelopment which incorporates a range of ESD initiatives, including: – Environmental Performance Targets, best practice outside air rates to habitable spaces, and water efficiency targets. – Indoor Environmental Quality related measures including efficient circulation and hybrid ventilation of air, materials that achieve an indoor ambient noise levels less

Impact of the Proposal	Assessment of Impact
	than 5dB, glare reduction, reverberation minimisation and low or zero Volatile Organic Compounds (VOC) paint, adhesives and sealants to minimize vaporisation of carbon containing chemicals. – Energy use reduction measures including façade design, sub-metering and a roof design to accommodate solar panels in the future. The development will achieve a minimum 10% improvement in energy efficiency compared to a baseline of National Construction Code. – Water use reduction measures including efficient fixtures, landscape irrigation and sub-metering to all major sources of energy and water use within the development; – 12 months of building services tuning carried out following completion, to tune building systems across all seasons. – Waste minimization through effective management of comingled waste, clinical waste, FF&E waste (for recycling, reuse, or third parties), and organic waste. Additional measures are still being considered for inclusion including hybrid electrification and inclusion of solar photovoltaic (PV) cells. Refer to the detailed assessment of the proposed development against ESD principles under the EP&A Regulations at **Appendix Z** of this EIS. ' A project-specific climate risk assessment has been carried out which has informed the development of a Climate Adaptation Plan. This paired with the implementation of the *RPA Climate Action 2040* Strategy will minimise the contribution of the hospital's operations to Climate Change.
Biodiversity	A Biodiversity Development Assessment Report (BDAR) was prepared by Narla Environmental and is appended at **Appendix X**. This BDAR has been prepared to demonstrate the proposed development is not likely to have any significant impacts on biodiversity values. The BDAR finds the development has been strategically positioned to minimise impacts on native vegetation and habitat as much as possible. The location of the Subject Property is within a highly degraded landscape, comprising a hospital and associated hardstands amongst areas of primarily planted native and exotic canopy trees and gardens. *Direct Impacts on Native Vegetation* The proposed development will result in impacts to the following vegetation; – 0.005 hectares of PCT 1778 Smooth-barked Apple – Coast Banksia/ Cheese Treeopen forest on sandstone slopes on the foreshores of the drowned river valleys of Sydney; and – 0.77 hectares of planted native and exotic vegetation. *Impacts on Threatened Species* No threatened species are expected to be impacted by the proposal. *Other* – No Serious and Irreversible Impacts (SAII) species credit species are present within the site, therefore no species credits are required to be offset for the proposed development. – Camphor laurel is a "high threat exotic" and is considered an invasive weed, and a high threat to natives. The BDAR concludes their removal and replacement with native trees is a gain for biodiversity. In order to avoid and minimise potential impacts of the proposal on local biodiversity values, a series of mitigation and management measures have been identified, which are

Impact of the Proposal	Assessment of Impact
	to be implemented as part of any Construction Environmental Management Plan (CEMP) produced for the site.
Ground and Water Conditions	<u>East Campus</u> A Geotechnical Interpretive Report has been prepared for the RPA Hospital east campus by Cardno at **Appendix AI**. The site is underlain by Ashfield Shale (Rwa) of Wianamatta Group from Middle Triassic period of Mesozoic era which is charactered as Black to dark-grey shale and laminite. Intrusive sub-surface investigations were carried out (drilling of boreholes) and testing to determine sub-surface conditions and make recommendations for construction methodology for the proposed building. Investigatory works comprised the drilling of eight (8) boreholes using a track and ute mounted drill rig. Four (4) BHs were drilled up to a depth of 8m below surface level (BSL) and four (4) BHs were drilled up to 15.21m BSL. The ground conditions encountered were relatively similar, comprising asphaltic pavement / concrete paver overlying fill, overlying residual soil and siltstone / laminite bedrock. From the borehole investigation undertaken on site, the subsurface ground profile was generally consistent with the geology maps. Groundwater seepage was observed at depths of 4.50m and 6.00m BSL. Due to the presence of shallow groundwater level, significant groundwater inflow is likely and would vary with rainfall events. Some seepage into excavations is likely to occur through fissures in the residual soil, at the soil / rock interface and from joints and bedding planes in the rock. No additional investigations relating to groundwater conditions were recommended. The permeability of the siltstone/sandstone rock mass is considered to be generally relatively low, although localised inflows could be high through discrete rock defects. It should be noted that groundwater levels may fluctuate depending on the time of year and following periods of wet weather. Recommendations were made by Cardno for construction methodologies for the proposed works based on testing. These relate to site preparation and earthworks, material management, excavation support, vibrations, foundations, ground anchors and pavement design. Refer to the Geotechnical Interpretive Report prepared by Cardno (**Appendix AI)** for further detail. <u>West Campus</u> A Geotechnical Interpretive Report r was prepared for the RPA Hospital west campus by Cardno at **Appendix AJ.** The investigation was undertaken to determine the in-situ ground conditions at the Helicopter Landing Site (HLS) atop the multi storey carpark on the corner of Grose Street and Hospital Road, and the Medical Gas Loading Bay on Susan Street. The regional geology of the site area is consistent with that of the east campus, outlined above. Investigatory works included the drilling of two (2) boreholes at the proposed HLS lift pit area with a track mounted drill rig using solid flight augers with Tungsten Carbide (TC) bit and rock coring was carried out using NMLC coring techniques. These boreholes were drilled up to a depth of 14.79m BSL. Groundwater seepage was encountered at 5.5m and 4.8m BSL respectively during the borehole investigation. The general ground conditions encountered are consistent with geology maps and those found in the east campus, outlined above. No additional investigations relating to groundwater conditions were recommended. The report letter then makes recommendations on preparation, formation and unsuitable materials based on AS3798-2007 '*Guidelines on Earthworks for Commercial and Residential Developments'* and Safe Work Australia Excavation Work – Code of Practice. Refer to the report at **Appendix AJ** for details.

Impact of the Proposal	Assessment of Impact
	Based on the findings of the investigation, it is also recommended that the placement of all structural fill and footing excavations be inspected, tested and certified where necessary, by a suitably qualified geotechnical engineer to ensure recommendations made in the report have been addressed. Acid Sulfate Soils As noted in the Geotechnical Interpretive Reports, the NSW Government Planning and Environment online mapping tool, eSPADE Version 2.1, indicates that the site is not mapped as being situated within or near an ASS risk area. The nearest mapped ASS risk area is approximately 600m north west in the vicinity of Johnstons Creek. Previous contamination investigation carried out for the main works also suggested that there are no indicators of acid sulfate soils and salinity within the sampled soils.
Flooding and Climate Change	As noted above, an Infrastructure Delivery, Management and Staging Plan – Flooding & Stormwater Report was prepared by TTW and is appended at **Appendix AE**. Flood behavior The RPA Hospital site is affected by flooding with an overland flow path running through the East Campus. The overland flow path runs north from Cadigal Lane through Lambie Dew Drive and then east into the University Oval. The site is located within the Johnstons Creek Flood Catchment. The ground floors of the new east building and east extension are open to maintain existing overland flow paths and ensure no adverse flood impacts on the existing hospital or adjacent properties. The post development 1% AEP and PMF scenarios show a change post development for the 1% AEP. In general water levels reduce beneath the East Extension and increase beneath the East Building. The increase is contained within the site boundary and so the flood impacts are deemed acceptable without the need for further flood mitigation controls. Climate change The impacts of Climate Change were analysed as part of the Johnstons Creek Flood Study. Climate change is expected to have an adverse impact on sea levels and rainfall intensities, both of which have the potential to have significant impact on flood behaviour at specific locations. Flood modelling was completed as part of Council's catchment wide study and the results show that the increase in rainfall will have localised increased in flood depth for the 1% AEP, with an increase of up to 600mm at the oval with a 30% increase in rainfall. This increase is significantly below the PMF flood level which is approximately 2.5m higher than the 1% AEP flood level. The increase in sea level rises only have impact in the immediate areas around the low-lying areas adjacent to Johnstons Creek, such as Rozelle Bay, with no affect at the hospital site. Flood Emergency Protocols TTW have prepared a preliminary flood emergency response plan to be incorporated into an overall Emergency Management Plan for the hospital. It includes procedures such as: – Education via staff awareness training, briefings and signage for visitors – Designation of staff roles during an event, including a chief warden, safety manager / first aid officer and flood / building wardens – Evacuation drills to be completed at a minimum every 12 months.

Impact of the Proposal	Assessment of Impact
	– A flood emergency kit to be available prior to a flood event taking place and regularly checked to ensure that supplies within the kit are sufficient and in working condition. The Kit would include two-way radios, torches, batteries, waterproof bags, a first aid kit and other items.
Stormwater and wastewater	An Infrastructure Delivery, Management and Staging Plan - Flooding and Stormwater was prepared by TTW and is appended at **Appendix AE**. The footprint of the east extension clashes with the existing Sydney Water stormwater assets: A DN900 and DN1050 pipe running along the eastern boundary of the RPAH constructed in the 1940s. Existing access chambers for this pipe appear to be positioned just over the site boundary which is located just outside the existing site boundary fence line; and A DN1200 and DN1050 pipe which passes beneath the proposed building. This pipe was constructed in the 1960s as an upgraded diversion pipe for the aforementioned DN900 pipe. It is proposed to divert the stormwater around the proposed building location, as shown in Figure 14 in the report, as follows: Existing DN1200 and DN1050 that pass beneath the proposed building would be removed or made redundant as required; A new DN1200 pipe diversion pipe would be constructed which runs along the southern and eastern envelope of the proposed building. A minimum of 1.0m horizontal clearance is to be provided between the outside face of pipe and outside face of pile; Existing DN900 and DN 1050 pipe that run along the eastern site boundary will be removed for the extent shown and upgraded to the DN1200 pipe. Existing pipe connections will be modified to suit the larger pipe. A reducer will be placed at the downstream end of the DN1200 pipe to match into the existing DN1050 pipe; and The diversion pipe will be sized to DN1200 with 6m internal radius curved bends installed to reduce hydraulic pressure losses caused by the 90-degree changes in directions. A preliminary DRAINS model has been developed to show the diversion will not adversely impact the capacity of the existing network. During the construction stage of the project, an erosion and sediment control plan will be implemented to prevent sediment laden stormwater from flowing into adjoining properties, bushland, roadways or receiving water bodies. Stormwater controls onsite are detailed in an Erosion and Sediment Control Plan which is in accordance with relevant regulatory authority guidelines including City of Sydney DCP and Landcom NSW's Managing Urban Stormwater and Construction 'Blue Book'.
Hazards and Risks	Dangerous Goods A combined Dangerous Goods Risk Screening and Preliminary Hazards Analysis has been prepared by ARUP (refer **Appendix AO**). The report confirmed that the quantity of dangerous goods to be stored in the development meets the relevant thresholds under the SEPP Resilience and Hazards to be considered "potentially hazardous industry" and therefore required preparation of a Preliminary Hazards Analysis (PHA). Within the RPA east campus, dangerous goods are already stored in Gloucester House and the Molecular Imaging Department (in the RPA Hospital main building). Under the proposal, a new dangerous goods storage area is proposed on Level 2 of the East Wing and an existing cylinder storage area on the west campus (behind the Central Sydney Home Nursing Services) is to be redeveloped to accommodate an increase in dangerous goods. For the west campus dangerous goods area, a protective enclosure is proposed to

Impact of the Proposal	Assessment of Impact
	be built around the cylinder storage at their current enclosure, to achieve required separation distances. ARUP concluded that the current and proposed dangerous goods storage areas on the site will comply with the relevant standards and that there is no risk to off- and on-site populations associated with the storage of dangerous goods on the site. <u>Hazardous Materials</u> Hazardous Materials surveys were completed for all buildings affected by partial or complete demolition, being Buildings 63, 64, 75, 89, 94 and 95 on the East Campus, and Building 28 and the multi-storey carpark on the West Campus. Asbestos was found in all buildings surveyed except Building 28 and 63. Asbestos found will be removed by a licensed asbestos removalist prior to refurbishment or demolition works. Similarly Lead Containing Paint found in Building 94 will be removed prior to demolition of this building.
Contamination	The following documentation has been prepared to investigate contamination and recommend actions to render the site suitable for its intended use as a hospital: – Detailed Site Investigation (DSI), East Campus, by Cardno (**Appendix AK**) – DSI, West Campus, by Cardno (**Appendix AL**) – Remediation Action Plan (RAP), by Cardno, East Campus (**Appendix AM**) – Preliminary Site Audit Statement (East Campus), by AECOM (**Appendix AN**) <u>East Campus</u> Detailed Site investigation within the East Campus focused on the “Emergency Bay Area”(EBA) being where the ED drop off works are occurring, and the “Eastern Development” area, being the existing location of the Women’s and Babies Unit drop off plaza and the area to the rear of the main hospital building where new buildings are proposed. Soil sampling in the Eastern Development area determined that within the Women’s and Babies drop off area, all contaminants of concern analysed were found to be below the human health and ecological criteria. It was concluded that the soils within the depth of investigation in this area pose low risk to the hospital land use. The data collected for the Maternity Ward Parking Area indicated that no remediation is required, and the site is considered to be suitable for the proposed development. Asbestos was not observed in any of the tested samples Women’s and Babies Unit drop off plaza, however, due to the nature of fill Cardno conclude that it should be assumed asbestos may be present in the fill in other areas. Contamination was encountered to the rear of the existing hospital building at various soil depths that exceeded the high density residential and public open space human health criteria. The ecological and human health contaminants of concern were found to have low leaching potential and given that the natural soil underlying the fill is of low permeability the probability of these contaminants migrating is considered low. A RAP was prepared on this basis and to make this area suitable for the intended use. In relation to the “Emergency Bay Area”, the site target location was constrained and inaccessible to any form of safe or physical foot traffic or mechanical equipment, and as such a sample could only be collected from an accessible nearby area. Soils encountered at the borehole BH1 (TP301) completed 2 metres east of the EBA roadway retaining wall, consisted of asphalt overlying fill which was underlain by extremely weathered siltstone bedrock encountered at a depth of approximately 0.75m below ground level. Polycyclic aromatic hydrocarbons and petroleum hydrocarbon concentrations in this sample were significantly above the human health and ecological criteria, however, there is sufficient line of evidence that the exceedance may be attributable to interference from overlying asphalt matrix and not indicative of contaminant concentrations in soil. Notwithstanding,

Impact of the Proposal	Assessment of Impact
	additional detailed site investigations will be completed once the site target location becomes accessible and the Remediation Action Plan would be updated if required. Remediation Action Plan – East Campus As noted above, a RAP was prepared for the East Campus to detail methodologies required to remediate asbestos, B(a)P TEQ, B(a)P and metals (copper and zinc) contaminated soils identified during investigations completed by Cardno in 2022. Based on previous investigations undertaken at the site, the contamination present and requiring remediation consists of asbestos and B(a)P TEQ found to exceed human health criteria, and copper, zinc and B9a)P found to exceed ecological criteria. Other COPCs were detected below adopted human health and ecological criteria, and given the presence of site infrastructure, access to soils for investigation purposes was inhibited in many areas. As such, other contaminants may be discovered during site construction works and should continue to be considered during construction. Cardno find, that once all remediation works have been undertaken and the validation works have been completed successfully in accordance with the RAP, then the site would be considered suitable for the land use. West Campus Due to uneven ground level and difficulty accessing the proposed lift well pit locations, the investigation included installation of two bores to a maximum depth of 14.8m below ground level, at two localized areas along the public footpath, adjacent to Grose Street. The site has not experienced any major modifications in recent years and surrounding land to the north and the east have undergone significant changes and modifications. Shallow fill soil at one borehole (BH502) exceeded the soil ecological criteria (ESL) and human health criteria (HIL-B) for benzo(a)pyrene and benzo(a)pyrene TEQ concentration, respectively. These exceedances were not considered to present an unacceptable risk to human and ecological receptors under the current and future proposed commercial/ industrial land use setting. Cardno find that, overall, it is considered that the current data indicates the site is suitable for the proposed redevelopment Recommendations made in the contamination reports for east and west campuses referred above, are reflected within the mitigation measures at **Appendix C**. Site Audit AECOM as the site auditor appointed for the project, has prepared a Preliminary Site Audit Statement (Refer **Appendix AN**). AECOM provided the following comments on review of the DSI and RAP for the site: – The RAP and DSI prepared by Cardno are consistent with the NSW EPA (2020) reporting guidelines. – The data gap assessment prepared by Cardno is adequate and identified the data gaps that require to be addressed during the proposed remedial action and successfully documented in a validation report. – The remediation options assessment was adequate to identify the preferred remediation strategy. AECOM is of the opinion that due to the heterogeneity of the fill material it is likely that a long-term environmental management plan (LTEMP) will be required for remaining fill material, whether encapsulated or not. – The proposed waste criteria for the characterisation of material to be removed from the site is adequate. AECOM notes that all documentation related to the appropriate and lawful disposal of material must be provided in the validation report. Documentation related to the importation of all material to the site must also

Impact of the Proposal	Assessment of Impact
	demonstrate that it has been adequately characterised and fit for use at the site and provided in the validation report. – The proposed soil remediation criteria and if met will make the site suitable for the continued land use following remediation and redevelopment. – While AECOM generally agrees with the proposed groundwater criteria, the RAP appears to allow for sampling and analysis for per and poly-fluoroalkyl substances. The results must be assessed against the HEPA (2020) PFAS National Environmental Management Plan Version 2.0 (NEMP). – With regards to the estimated extent of remediation, given the variable and heterogeneous of the type of fill material present at the site it is the Auditor's opinion that the data gap investigation and site validation must ultimately demonstrate that the fill has been adequately characterised and is suitable for the land use. AECOM is of the overall opinion that completion of the data gap investigation and implementation of the RAP (including addressing their comments), will allow the site to be made suitable for the proposed redevelopment. The Auditor notes that adequate documentation demonstrating that the RAP has been implemented and the site successfully validated must be provided following remediation activities. It is also recommended that periodic updates are provided during remediation activities.
Waste	A Preliminary Construction and Operational Waste Management Plan (COWMP) has been prepared for the site and details the likely waste streams to be generated by the development. Waste is generated during construction in the form of buildings materials (timber, metals, plastics etc.), vegetation and general site waste such as small plastics and paper. During operation, medical waste streams will require regular collection including clinical, pharmaceutical, cytotoxic, and anatomical waste and genetically modified organisms. Non-medical waste streams including general waste, paper and cardboard, secure documents and comingled recycling will be collected by a waste contractor. The WMP is based on a hierarchy of avoid and reducing waste, followed by recycling and where neither of these are possible, waste disposal. A detailed WMP will be prepared by the waste contractor and will designate storage and collection areas including loading zones and stockpile locations.
Social Impact	A Social Impact Assessment (SIA) has been prepared for the proposed development by Urbis, and is appended at **Appendix W**. This report identifies and analyses the potential social impacts of the development and includes a social impact management plan to mitigate any social impacts. The methodology is consistent with the requirements of the DPIE's SIA Guideline (2021). **Table 44** below assesses the key social impacts resulting from the proposed development.

Table 44 Social Impact of the Proposed Development

Social Impact	Assessment of Social Impact	Level of Impact
Delivery of Expanded Health Services	The redevelopment of RPA Hospital will increase the availability of public health services to residents in the SLHD as well as residents in NSW and Australia. The delivery of expanded health services at one of the major national referral hospitals will still have a very high positive social impact on the community.	Very High Positive
Increase in Open Space and Landscaping	The proposal will provide additional open space areas and improved landscape character for patients, their families, staff and visitors. The landscape design aims to enhance connection with Country and provide more usable and appealing spaces for use of patients, visitors and staff. The increase in open space and	Moderate Positive

Impact of the Proposal	Assessment of Impact		
		landscaping is likely to have a positive impact on the patient, visitor and staff experience.	
	Noise and Operational Impacts of the Temporary Helipad Landing Site	Noise impacts of the temporary helipad landing site are likely to have a negative impact on residents at 106-112 Church Street (Queen Mary Building) and the Naamuru Parent and Baby Unit. It is noted the operation of the helipad is critical and all other feasible alternative options were explored to find a location that would have the least impact on residential receivers. The implementation of mitigation strategies such as monitoring and a complaints process for residents to communicate any issues during the operation of the temporary HLS will allow noise impacts to be effectively managed.	Moderate Negative
	Stress on people accessing the Campus	Demand for car parking at RPA Hospital is already high. Without additional staff car parking, and with an increasing workforce and initially similar staff travel behaviour, there is likely to be a short-term negative impact on staff and visitors. Difficulties in accessing parking can heighten feelings of frustration and stress, and disrupt or delay people's daily activities. However, the implementation of the Green Travel Plan, which sets out short-term and long-term goals on shifting staff travel behaviour to choose more sustainable methods of transport is likely to have a neutral long-term impact.	Moderate Negative
	Removal of Heritage Items	The demolition of heritage buildings and heritage listed trees is likely to have a negative impact on the heritage significance of the site, which contributes to the overall character of the area and how people experience place. With the implementation of the recommendations made in the Statement of Heritage Impact (**Appendix P)** the demolition of heritage items will have a low negative impact on Camperdown residents, City of Sydney and Inner West LGA residents, RPA Hospital patients, families/carers and staff, University of Sydney students and staff.	Moderate Negative
	Overall, the proposed development is likely to result in a positive social impact on the community, providing a significant addition to the campus that will help meet the projected health needs in the SLHD and beyond. Subject to the implementation of standard and project-specific mitigation measures, identified negative social impacts will be effectively curtailed.		
Construction Management	A summary of the proposed construction hours, staging and duration is provided in Section 3.12 of this EIS. <u>Construction Parking</u> For an assessment of construction parking and traffic, refer to Section 6.6 of this EIS. <u>Construction Noise</u> For an assessment of construction related acoustic impacts, refer to Section 6.7 of this EIS. <u>Construction Waste</u> For an assessment of construction related waste impacts, refer above.		
Contributions and Benefits	Refer to Section 2.13 of **Appendix B** Statutory Compliance Table for a response on development contributions. There are no Voluntary Planning Agreements or Special Infrastructure Contribution Plans that affect land to which the application relates or the proposed development type.		

Impact of the Proposal	Assessment of Impact
	The proposed benefits of the proposed redevelopment are discussed at Section 6.12 Public Interest and in the Social Impact Assessment (**Appendix W**).
Archaeology	An Archaeological Assessment has been prepared by Biosis and is appended at **Appendix R**. The Archaeological assessment concludes that "the study area does not contain any recorded Aboriginal sites and has been assessed as having low archaeological potential due to disturbances observed in the study area. The proposed works will therefore not impact on any Aboriginal heritage values". In addition to the Archaeological Assessment, an Aboriginal Heritage Information Management System (AHIMS) search has been conducted for the site. The AHIMS search concluded that no Aboriginal places had been declared in or near the site, and one Aboriginal site was recorded in or near the above location, however this place is located beyond the boundary of the site within the eastern side of the University of Sydney campus. The Statement of Heritage Impact prepared by Heritage 21 did not cover archaeology however Heritage 21 noted that an archeologist may be required to monitor subterranean works and periodically examine the area by hand during excavation in order to test for features such as footings, artifact scatters and postholes. An unexpected finds protocol would be implemented for in an instance where archaeological remains were uncovered.
Infrastructure	A Water and Infrastructure Management Plan - Hydraulic Services has been prepared by Warren Smith Consulting Engineers at **Appendix AF**. The Plan describes existing hydraulic services connections for the site and outlines upgrade and augmentation strategies to serve the proposed development. Upgrades to the Sewer main as well as further assessment of the Western Avenue water main will be required to determine the need for additional infrastructure to support the proposed development, outlined below. <u>Water</u> The east campus has access to two (2) Sydney Water utility mains that surround the site including one (1) x 250mm diameter service in Missenden Road and one (1) x 450mm diameter service in Western Avenue. The report notes that the Missenden Road water main has sufficient capacity to supply a bed increase of 313. However, it is recommended by the consultant that the Western Avenue water main is assessed as it is proposed to extend from this connection to supply the new east block building given the proposed scope of works along Lambie Dew Drive. Water mains that surround and traverse the western campus have not been identified/ discussed due to the scope of works pertaining mainly to the east campus. <u>Sewer</u> There are currently two Sydney Water authority sewer mains that reticulate within the proposed redevelopment zones including a large 660mm x 990mm concrete oviform and a 300mm diameter service that extends from the oviform. These are located near the eastern boundary of the East Campus. The existing oviform sewer main that traverses underneath the existing hospital building is considered a critical asset to the Sydney Water network as it services a large catchment. This sewer main is approximately 6.5 metres deep and WSCE are seeking advice from Sydney Water on the relocation of the manhole which is positioned within the proposed construction zone. The relocated manhole (into Lambie Dew Drive) will then be utilised to drain any existing and new private sewer infrastructure into the oviform main as required. A CCTV survey of the 300mm diameter sewer main identified that there were no connections from neighbouring properties (St Andrew's College and University of Sydney) and so WSCE will seek the privatisation of this main to reduce the complexities associated with the diversion that is required given that Gloucester House (part of the RPA Hospital)

Impact of the Proposal	Assessment of Impact
	drains to this asset. Considerations for staging will be required to ensure the manhole relocation and pipeline diversion are coordinated with the early and main scope of works. Sewer mains that surround and traverse the western campus have not been identified/ discussed due to the scope of works pertaining mainly to the east campus. <u>Natural Gas</u> An Infrastructure Delivery, Management and Staging Plan- Electrical, ICT and Mechanical Utility Services Report has been prepared by Arup at **Appendix AG.** The plan describes existing electricity, communications and mechanical (including HLS) services connections for the site and outlines upgrade augmentation strategies to serve the proposed development. Broadly, a number of upgrades are required to support the proposed development and are outlined below. <u>Electricity</u> There are currently four Ausgrid substations that support the RPAH Hospital. The following impacts to electrical utilities have been identified: Existing substation S7327 supplying Centenary Institute will need to be demolished to enable the site to be cleared for the new East Wing Existing High Voltage (HV) underground network along Lambie Dew Drive (LDD) will need to be reconfigured due to the realignment and lowering of the existing road for the new East Wing and the East Expansion. The network currently supplies multiple substations in the Hospital and also the University of Sydney. An existing Ausgrid right of way (ROW) to substations on Lambie Dew Drive will be impacted during the proposed works. Existing Ausgrid substation S7654 exhaust louver will need to be relocated outside of the eastern expansion Existing Ausgrid light pole on Grose Street will need to be removed and replaced with new privately owned light integrated as part of the proposed Temporary Helicopter Landing Lobby. A new substation is proposed to support the new development and will be located on Level 2 above PMF level with direct access for servicing from Lambie Dew Drive. The Infrastructure Delivery, Management and Staging Plan – Electrical, ICT and Mechanical report prepared by Arup (**Appendix AG**) details the proposed staging of these works. <u>Communications</u> There are no impacts on the existing telecommunications infrastructure as a result of the proposed works. <u>Mechanical</u> No new mechanical utility services are required to support the proposed works, and no existing public or privately held mechanical utility infrastructure will be impacted by the proposed works.
Economic	The economic impacts of the proposed development are positive as job creation will result from the proposal, with an estimated 1,400 full time construction jobs, and additional 900 FTE operational jobs.

6.10 Cumulative Impacts

Cumulative construction impacts are anticipated due to other works expected to occur on the site and surrounds during the construction phase of the proposed development.

As summarised in **Table 16**, works occurring elsewhere within the RPA Hospital campus are expected to be completed by August 2023. Given the subject proposal is expected to commence construction in October 2023, the cumulative impact associated with these works (due to overlapping of construction) is expected to be nil.

Work proposed outside of the RPA Hospital Campus but in close vicinity include the Sydney Biomedical Accelerator (SBA) which will be built adjacent to RPA Hospital next to St Andrews Oval.

It is expected that construction of these works would overlap somewhat with the construction of the RPA Hospital. Given the SBA is in early planning the construction timing is not yet known and so the extent of the overlap is not known.

6.11 Site Suitability

There are no known site conditions which would prevent the development including geotechnical conditions, contamination, flooding, biodiversity, Aboriginal cultural heritage, historical archaeology, or other.

While two heritage buildings and existing trees will be impacted, this is a consequence of being a constrained site. Tree removal will be partly compensated by proposed tree planting strategy to suitably augment the tree canopy of the site. The demolition of heritage buildings will be partly mitigated by various measures to record and reuse items. A Preliminary Heritage Interpretation Framework has been prepared to realise actual strategies in the design. The interpretation strategy will be further developed following public exhibition.

The impact on surrounding land uses during construction and operation has been mitigated where possible. However, the noise impact of the temporary HLS during its operation will be significant for some adjoining residents. Refer to Section 2.5 of this report for justification of the temporary HLS.

RPA Hospital has historically been used for a hospital. The proposed development seeks to build on this established character through the provision of additional service capacity on the site. The proposed built form provides a scale of services that responds to the requirements and needs of RPA Hospital and the wider SLHD.

The site is therefore considered suitable for the proposed development.

6.12 Public Interest

The proposed redevelopment of RPA Hospital will offer significant public benefits by responding to clinical demands from forecast population growth in the SLHD, and improving quality of clinical care. The RPA Hospital redevelopment is critical to the progress and development of the CHERP and its contribution to the broader vision and objectives of the Tech Central District.

Generally, the proposal will deliver a significant public benefit because it is for the purpose of important public social infrastructure that will meet the health and social needs of the local community. It will result in increased level and quality of clinical health services to satisfy current and forecast demand, and improve patient outcomes and staff satisfaction.

While there are direct adverse impacts to heritage items with the proposed demolition of heritage buildings and removal of significant trees/garden setting, these impacts must be balanced against the lack of feasible alternatives for the proposed development, the significant clinical need for the development, the other positives of the development, and proposed mitigating factors.

While the Temporary HLS will have significant acoustic impacts on nearby residents, the facility will only be temporary, and the existing HLS at RPA Hospital would otherwise have similar acoustic impacts on hospital patients, staff and visitors. An HLS is required to remain operational at the hospital during main works construction to support important clinical services within the SLHD and in the regions.

Other key benefits of the proposed hospital redevelopment include:

- It responds to a forecast increase in demand for health facilities;
- It will provide permanent facilities for patients and staff to meet current standards and best practice requirements;
- It will generate 1,400 full time construction jobs, and 900 FTE operational jobs;
- The site has been long used as a hospital and its redevelopment will ensure its longevity as a hospital is maintained to serve the SLHD community; and
- Aligns with the strategic project objectives as mentioned in the NSW State Health Outcomes, in addition to local and state objectives.

On balance, taking into consideration site suitability, environmental impacts, and key benefits detailed further above, the proposed development is in the public interest.

7. Justification of the Project

This EIS has been prepared for the proposed RPA Hospital redevelopment (SSD-47662959) in accordance with the SEARs issued by DPE on 29 August 2022, Part 8, Division 2 of the EP&A Regulation 2021, and Section 4.15(1) of the EP&A Act. It includes assessment of the proposed development against the relevant strategic and statutory planning framework, undertakes a merit assessment of the environmental impacts including assessment of site suitability, and an evaluation of the public interest.

Having regard to the above, the carrying out of the project is justified for the following reasons:

Clinical

- The Project will include the development of clinical and non-clinical services infrastructure to expand, integrate, transform and optimise current capacity within the hospital to provide contemporary patient centred care, including expanded and enhanced facilities.
- The last major redevelopment of RPA Hospital was undertaken from 1998 to 2004 projected to 2006 service needs. Since then, significant growth has been experienced in the volume and complexity of patients, requiring significant investment to address projected shortfalls in capacity and to update existing services to align with leading models of care.
- The population within SLHD is projected to grow by 40% by 2036, demonstrating a need for improved infrastructure, facilities and services. By 2031, the NSW Ministry of Health predicts a 31% population increase.
- The East Campus has been selected to accommodate the majority of the built form additions and expansion that complement the existing highly valuable acute clinical assets on this Campus. Furthermore, the East Campus provides opportunities for synergies with the adjacent University of Sydney Campus and associated research institutions, including the future Sydney Biomedical Accelerator.

Strategic/Contextual Fit

- The proposed expansion and redevelopment will reinforce the overall health orientated focus of the Camperdown Health, Education and Research Precinct (CHERP) and Tech Central, enhance health services to the community, and is in keeping with the future vision for the area;
- The proposal is consistent with the locality statement for “University of Sydney/Royal Prince Alfred Hospital” in the Sydney DCP as it includes new modern uses that complement heritage items and provides modern clinical floorspace that will allow RPA Hospital to continue to play a significant role as a specialized centre for health.

Engagement

Engagement for the RPA Hospital redevelopment has focused on early, proactive, transparent and regular communications throughout all stages of the project. This approach has ensured the community and other stakeholders have a clear understanding of the project scope and impacts. The proposed scheme represents a negotiated outcome, where elements have been amended in response to issues raised through the engagement process. Community and stakeholder engagement will continue for the full lifecycle of the project.

Consistency with Statutory Planning Framework

The proposed development is consistent with the principles of ecological sustainable development as defined by Section 193 (Part 8, Division 5) of the EP&A Regulation 2021.

Impact Assessment

The site is highly constrained by heritage, trees and flooding, which combined with clinical expansion demands and required research synergies, this has determined the built form and public domain response of the proposed development. This was honed during the design competition process through multiple competition entrants with their varying schemes, and the influence of the design jury.

And subsequently the design integrity panel influence on the direction of the winning scheme. The design competition process and winning entrant sought to have the most effective clinical solutions for the project which provides critical social infrastructure for the State, while balancing this against the environmental heritage, natural resources and other on-site constraints, as well as seek to have a good contextual fit, such as with the University of Sydney.

The key environmental impacts of the proposed development are given commensurate weight in the environmental impact section of this EIS (**Section 6**). These are namely, Heritage, Visual impact, Trees, Traffic, and Noise.

Site Selection

- During the master planning phase several sites across both the West and East Campuses were considered however the East Campus was deemed the most appropriate location for the main redevelopment given it provides better opportunities for adaptive reuse, integration, and expansion of the existing acute services. This proposal was also the most sustainable and least disruptive option considered as it allowed for the prolonging of the longevity of the hospital's existing building stock.
- The Design Excellence Strategy and Design Competition Brief proposed the East Campus as the site given the expansion of existing acute services was a high priority and this approach would allow for greater efficiencies and synergies through co-location of existing and proposed clinical services.

Built Form, Urban Design and Design Quality

- The proposed scheme was the winner in a competitive design process and is considered by the Design Integrity Panel to achieve design excellence as per the statutory requirements;
- The proposed built form is contextually appropriate in scale amongst the existing buildings at the RPA Hospital Campus and the heritage-listed buildings that form part of the broader University of Sydney Heritage Conservation Area.

Visual Impact

- Visual impact has been minimized through the scaling back of buildings on the approach to Missenden Road, the gentle curve of the East Wing and the tree succession plan to retain a visual buffer between the building and University Oval 1.

Heritage

- The RPA Hospital is important for its continuous use as a major Australian medical and surgical hospital since its opening in 1882. Critically, the proposed development allows for the ongoing and future use of the hospital;
- Within the Design Competition Brief, one of the key objectives forming the foundation of the Design Competition was, "The design concept is to be sympathetic to heritage items and vegetation that are located within and adjacent to the site, contributing to the character and quality of the Campus".
- While there are direct adverse impacts on heritage through proposed demolition of heritage buildings and tree removal, this is necessary to realise the important clinical growth of the hospital. Various built form options have been explored through master planning and design competition processes, and the current proposal is the culmination of these extensive investigations and design exercises;
- The Pathology building and the Chapel are located 2m below the Probable Maximum Flood (PMF) level and as a result, their ongoing use is untenable in the context of the changing climate. They are also located in the only possible location for new buildings in the constrained north-eastern corner of the east campus without creating an overly scaled east tower with bulk and scale impacts to the site and surrounds;
- The direct adverse impacts to heritage buildings will be mitigated in part by the measures outlined in the Statement of Heritage Impact and the Preliminary Heritage Interpretation Framework, including but not limited to, landscaped elements, salvage and reuse of original fabric in the landscape, building fabric, and public art.

- The direct adverse impacts to the heritage significant Rear Gardens (including removal of significant trees) will be mitigated in part by a proposed replantation strategy (on and off-site tree planting) incorporated into the landscape plans/ report. The Rear Gardens will also be re-interpreted in the new Central Courtyard as a place of respite. Planting is inspired by the heritage significant Rear Gardens with a mix of exotic and native trees, as well as dense understory planting;
- The heritage impact to the Albert Pavilion associated with the ED drop off works is minor and acceptable to ensure the functional requirements of the ED are met,
- The design incorporates several commitments made to reflecting and respecting Country in the design and on the site, that were informed by consultation with Aboriginal stakeholders.

Landscape Amenity

- The current gardens / open space areas of the precinct are underutilized by staff, visitors and patients. The proposal would enhance amenity for staff, visitors and patients through embellishment of landscaping, and the creation of new spaces such as courtyards for congregation and respite.

Ecology

- Any potential impact of the proposal on threatened species or habitat is expected to be localized and will not have an overall impact on the bioregional persistence of these species;
- Camphor laurel trees are regarded as a “high threat exotic”. It is an invasive weed, and a high threat to natives. The Biodiversity Development Assessment Report (BDAR) refers the partial removal of Camphor laurels from the site and their replacement with native trees as a gain for biodiversity overall. The Replantation Strategy includes a greater mix of native tree species for the site, including endemic species for Connection with Country.

Traffic

- The proposed development will not result in any adverse traffic impacts on the surrounding road network, and parking demand associated with the proposed development can be accommodated;
- A Green Travel Plan is included within the proposed development to encourage mode shift from private vehicles.

Noise and Vibration

- The proposed works during construction are predicted to result in exceedance of the relevant noise management levels at most off-site assessment locations. Mitigation measures will be implemented during the works to minimize these impacts including respite breaks, and only low and moderately noisy works permitted to occur outside of standard construction hours for certain components of the development;
- It is acknowledged the operation of the temporary HLS will have a significant noise impact on adjoining residents, while reducing noise impacts for hospital staff and visitors compared to the existing HLS location. The facility will only be temporarily in operation and efforts will be made for flights to be maximized during daytime hours unless they are a genuine emergency.

Economic

- The proposed development is anticipated to create 1,400 jobs during the construction phase and approximately 900 additional full time employment staff during the operational phase.

Cumulative Impacts

- Some of the approved REF (Part 5) works on the RPA hospital site will occur in advance of construction of the SSD works. Any overlap will be minimal and construction will be coordinated;
- HI and Sydney University are working collaboratively to minimise associated construction impact to both campus and their neighbours from the Sydney Biomedical Accelerator.

Site Suitability

While demolition of heritage buildings and removal of significant trees is required to facilitate the proposed development, this is a consequence of it being a constrained site and the need to expand

acute services from their current location and meet forecast clinical health care demand. The redevelopment of the site will uphold RPA Hospital's critical role within the health services network.

Public Interest

- The core social impacts of the proposal as concluded in the Social Impact Assessment, are the delivery of expanded hospital services (positive), high quality of open space areas (positive), noise associated with the temporary helipad (negative), parking shortages and removal of heritage items (negative). While the negative impacts of the proposal are acknowledged, the social benefits associated with the provision of health services are significant enough that the project will have an overall positive social impact on the community;
- The assessment of this proposed development has demonstrated that the proposed development will not generate environmental impacts that cannot be justified nor appropriately managed, and is consistent with the relevant planning controls for the site.

Assessment Summary

There are no known site conditions which would prevent the development including geotechnical conditions, contamination, flooding, biodiversity, Aboriginal cultural heritage, or other.

While there are environmental impacts relating to heritage, trees, and noise (construction and operation, particularly relating to temporary HLS), these are considered to be justified given the significant needs for the proposed expansion, the lack of feasible alternatives, and sufficiently ameliorated through the recommended mitigation measures and ongoing design development.

On balance, having considered site suitability, environmental impacts, and key benefits, the proposed development is in the public interest.

Given the above it is considered that the SSD Application has merit and can be supported by the Department of Planning and Environment and the Minister for Planning.