Figure 12 Main Hospital entrance off Parkside Crescent and Central Road (Main Entry)

Source: Ethos Urban:

Figure 13 Left in/left out access to Appin Road

Source: Ethos Urban

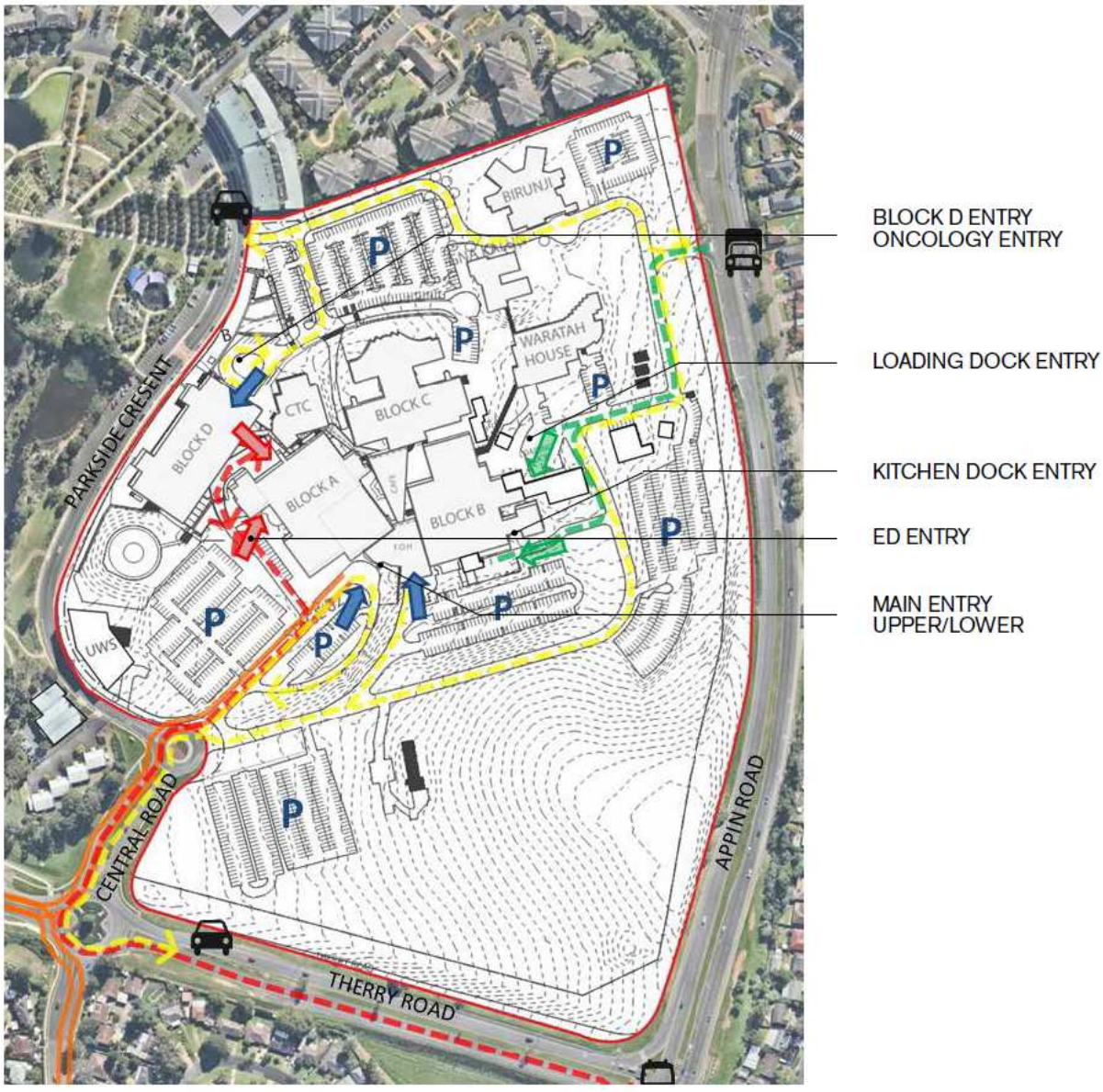

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Figure 14 Existing Site access

Source: BLP

3.4 Surrounding Development

The site is bounded by:

- **To the north:** Campbelltown Private Hospital (refer to **Figure 15**) and a seniors living development adjoin the northern boundary of the hospital. The Main Southern Railway is located to the north with the Macarthur Railway Station approximately 1km metres to the north-west;
- **To the west:** Parkside Crescent and Marsden Park (refer to **Figure 16**) are to the immediate west. Beyond the park is low to medium density residential development, and Macarthur Square Shopping Centre (refer to **Figure** 17) is 480m to the west;
- **To the east:** Appin Road with low scale residential areas beyond; and
- **To the south:** Therry Road with low scale residential areas beyond. Thomas Reddall High School is located 150m from the edge of the hospital campus.

Figure 15 Campbelltown Private Hospital and Campbelltown Hospital access from Parkside Crescent

Source: Ethos Urban

Figure 16 Marsden Park

Source: Ethos Urban

Figure 17 Macarthur Square Shopping Centre

Source: Ethos Urban

4.0 Description of the Development

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

This application seeks approval for the following development:

- Demolition of structures;
- Partial excavation of the site (due to the sloping topography);
- The construction of a new 13 storey (two of these levels are partially below ground) Clinical Services Building containing:
  - An Emergency Department;
  - Operating Theatres;
  - Intensive Care Unit;
  - Mental Health;
  - Birthing and Speciality Care Nursery;
  - Surgical and Medical Beds;
  - Helipad facilities; and
  - An Ambulance Bay.
- Construction of a new Hospital Spine and connections to existing hospital buildings;
- Construction of augmented and new internal hospital access roads and links, including a connection to Appin Road and Therry Road;
- Construction of an at-grade car park;
- Tree removal; and
- Associated building services.

A photomontage of the proposed development is shown at **Figure 18**.

Figure 18 Photomontage of the proposed new CSB

Source: BLP

4.1 Design Principles

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

- Meet the clinical service priorities required of Campbelltown Hospital with consideration given to the budgetary allocation provided by the Government;
- Facilitate a response that will culminate with the provision of a world class acute health facility which will become a civic focus for the community and the people of the Campbelltown district;
- Provide for efficiencies and flexibility for operation and function and longer-term expansion strategies;
- Focus on contemporary models of patient centred care; and
- Enhance communication between the multidisciplinary staff team and optimise clinical outcomes in a secure and safe environment.

4.2 Numerical Overview

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

Table 4 Key development information

Component	Proposal
Campus area	19.33 hectares
Maximum Height	RL 140.25m (57 metres)
Gross Floor Area	75,123m^2

4.3 Demolition and Site Preparation

The proposal includes demolition of existing structures within the development footprint largely restricted to the existing at-grade car parks in the location of the future CSB, as well as various low-scale structures to enable construction of the Hospital Spine. A demolition plan is provided at Architectural Plan 01-002 at **Appendix D**.

The site will be excavated to accommodate two floors that will be partially below and partially above ground. **Figure 19** shows the existing ground line (in blue), and the extent of excavation proposed.

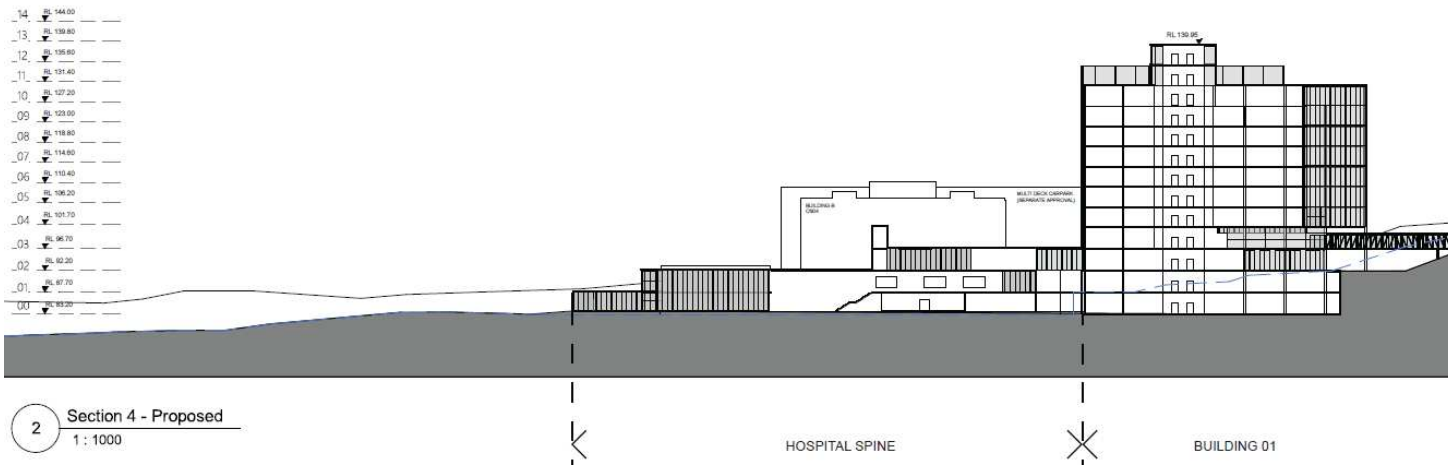

Figure 19 Section view of CSB

Source: BLP

4.4 New Clinical Services Building (CSB)

Building Height and Massing

The proposed new CSB is located over 13 storeys to a maximum height of RL140.25m (57 metres) when measured from ground, inclusive of 13 habitable levels, a rooftop plant level and a rooftop helipad. The building has a total GFA of 75,123m^2. A floor by floor summary is provided at **Table 5**.

The building incorporates an arrangement of mass that generally forms two main buildings in an east-west alignment with a connecting wing over a common podium.

The massing incorporates a series of voids and 'U' shaped wings or 'fingers' that allow for penetration of light into the building. The building is oriented to primarily face south and north, which defines the primary arrival point to the hospital from Therry Road.

The CSB will link to existing hospital corridor connections from Building A and Building B at Level 00, Level 1 and Level 2.

Emergency Department Drop Off and Ambulance Bay

An Emergency Department public drop off point is proposed Level 00 at the western end of the CSB. A separate patient drop-off and ambulance bay is proposed at Level 00 at the north-west of the CSB. The ambulance bay will accommodate 7 ambulances (see **Figure 20**).

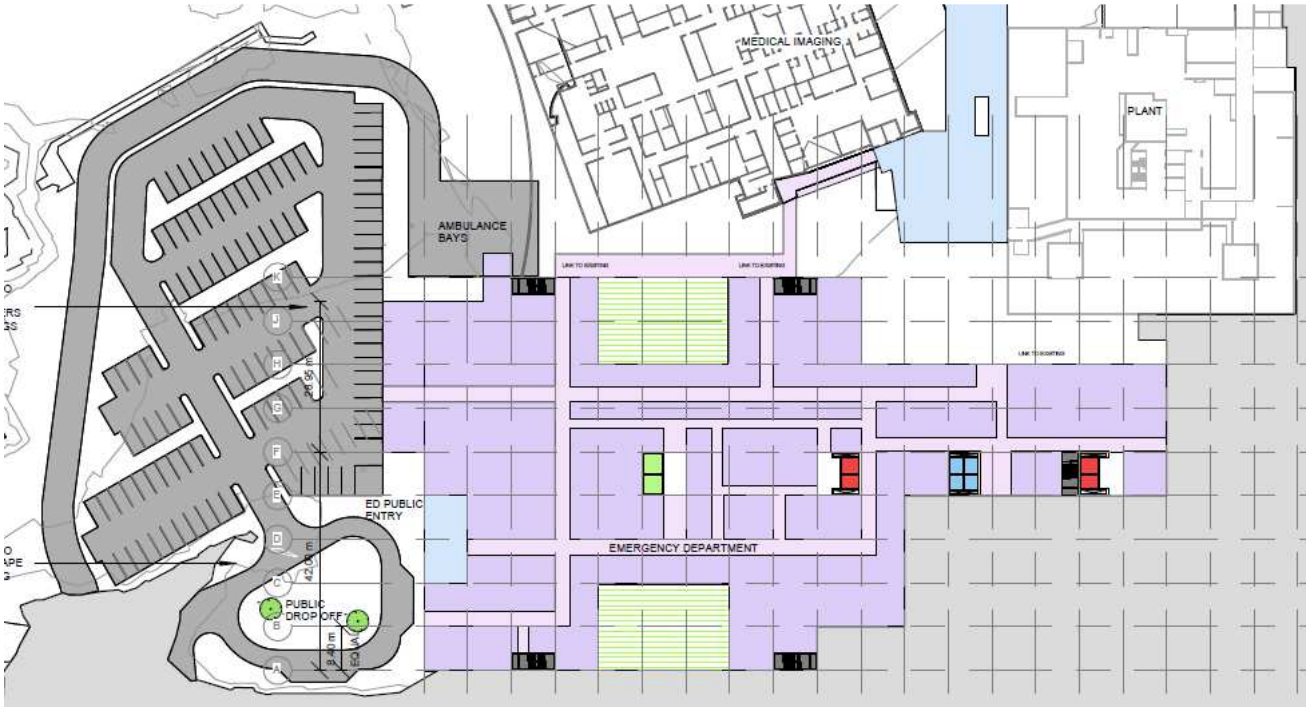

Figure 20 Level 00 Floor Plan

Source: BLP

Main Entrance

The Main Entrance to the CSB is located on Level 2 along the southern facade. The main entry incorporates a public drop off and a bus stop drop off. From the main entry the public can access the CSB, Building A and Building B (see **Figure 21**). The main entrance forms the initial component of a Hospital Spine that starts at the CSB and extends further north to connect the various buildings of the campus.

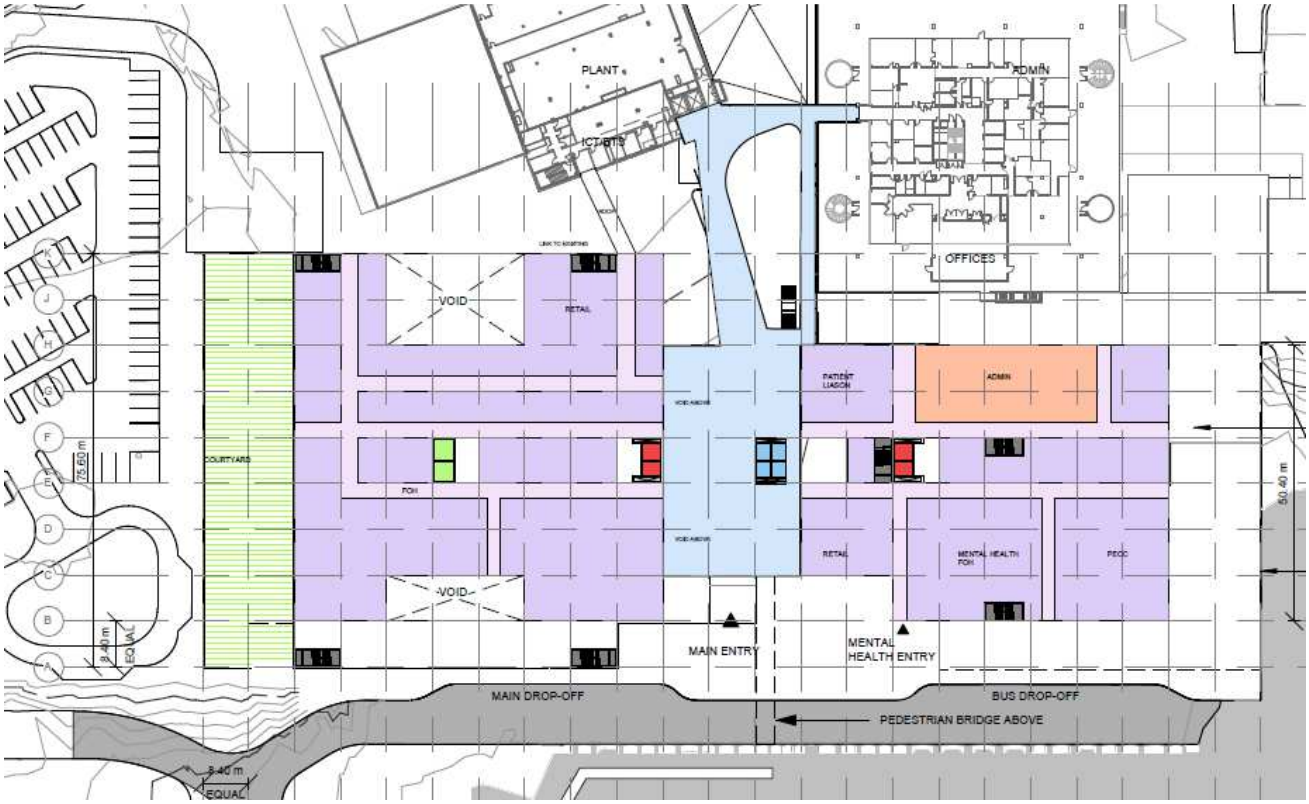

Figure 21 Level 2 Floor Plan and Main Entry drop off arrangements

Source: BLP

Car Park Pedestrian Bridge

To improve pedestrian access between the at-grade car parks south of the CSB and the building, this application includes a pedestrian bridge, at Level 3 (**Figure 22**), extending over the main CSB entry (**Figure 23**).

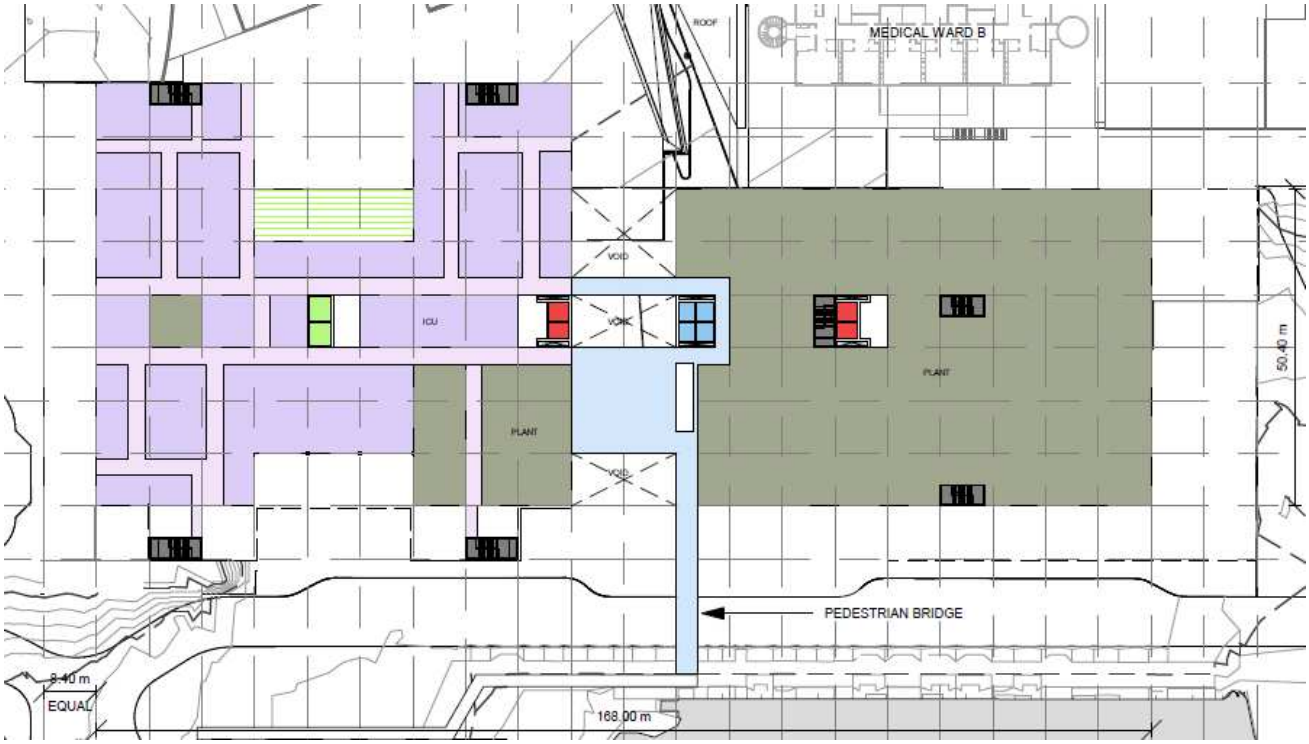

Figure 22 Level 3 Floor Plan

Source: BLP

Figure 23 Elevation view of the Level 3 pedestrian bridge

Source: Arcadia

Green Spaces

The CSB incorporates a series of outdoor spaces across various levels that act as courtyards. These spaces will provide access to outdoor space for patients and staff.

Hospital Spine

Central to the organisation of the campus is the establishment of the Hospital Spine, which will run north-south through the centre of the site. The Spine will act as the primary public space connector and pedestrian circulation network. The Spine (part of which forms part of this SSD) is both an indoor and outdoor space, and blurs the line between landscape and architecture. It connects a number of larger landscape spaces and buildings allowing people to experience different areas with each visit.

Two key elements will be used to define this space, expressed structural columns and the roof/ceiling. The walls are envisaged to be secondary, simple glazing elements that maximise light and connection to the adjacent green spaces. These elements will extend as an external canopy to the north.

The new Hospital Spine is shown in **Figure 24**.

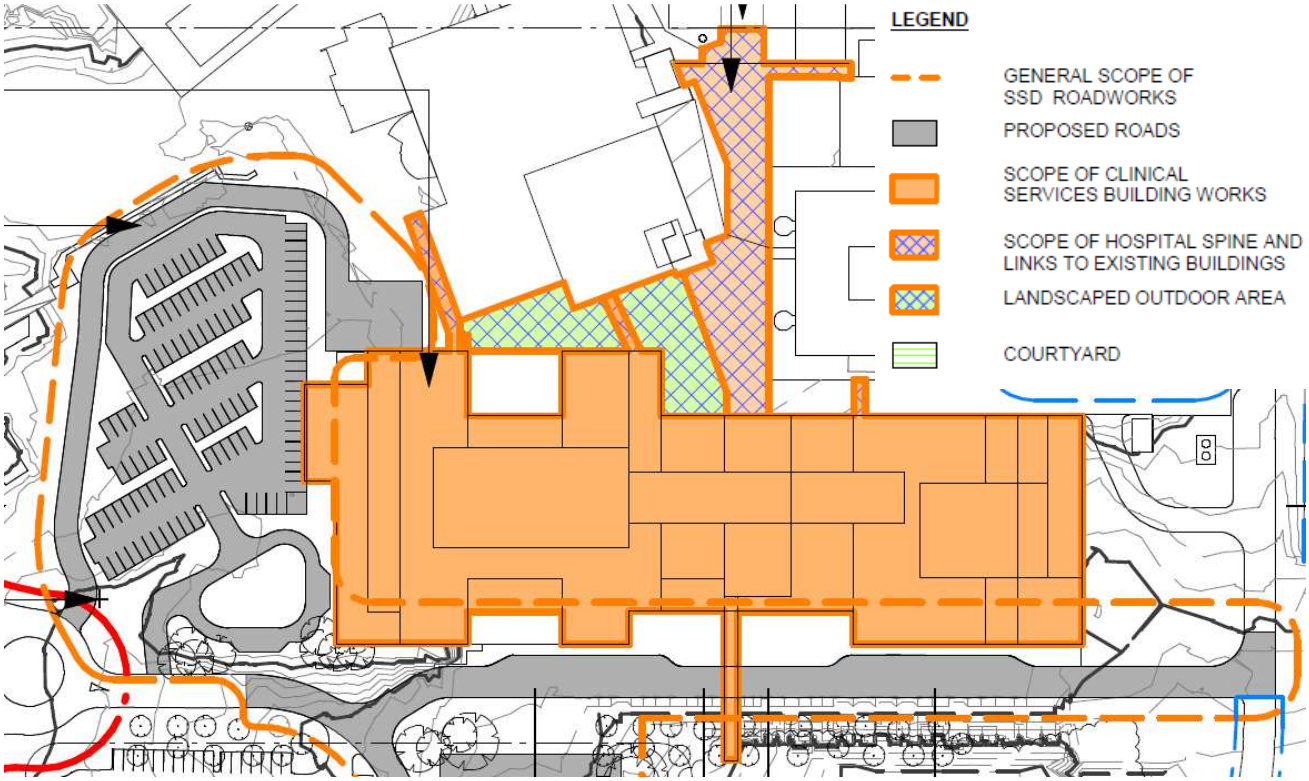

Figure 24 Hospital Spine

Source: BLP

Retail

Two retail spaces are incorporated at Level 2 with one retail tenancy co-located with the main CSB entry and the second located at the junction of the CSB, Building A and Building B (see **Figure 21**).

Floor Space by Level

The proposed building is to be used as a 'health services facility' as defined in the Campbelltown LEP 2015. The proposed uses for each level within the CSB are outlined in **Table 5**.

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Table 5 Floor by Floor summary

Level	Use	GFA
Level 00	• Emergency Department • 2 x courtyard spaces	8,739m^2
Level 1	• Surgery • Mortuary • Central Sterile Services Department	9,022m^2
Level 2	• Main Entry • 2 x Retail • Mental Health • Administration • Psychiatric Emergency Care Centre • Courtyard space	8,543m^2
Level 3	• Intensive Care Unit • Courtyard Space • Plant • Pedestrian bridge to car park	4,270m^2
Level 4	• Birthing • Special Care Nursery • Mental Health • Administration • 3 x Courtyard Spaces	7,870m^2
Level 5	• Inpatient Unit • Mental Health • Administration • 4 x courtyard spaces	7,028m^2
Level 6	• Inpatient Unit • Administration • Mental Health • 2 x Courtyard Spaces	6,288m^2
Level 7	• Inpatient Unit • Mental Health – Older Persons • Administration • 2 x Courtyard Spaces	5,943m^2
Level 8	• Inpatient Unit • Administration • Mental Health - Youth	5,943m^2
Level 9	• Inpatient Unit – Paediatric • Administration • Child and Adolescent Mental Health • 2 x Courtyard Spaces	5,661m^2
Level 10	• Paediatric Day Care • Paediatric Clinics Paediatric • Mental Health • Administration	5,661m^2
Level 11	• Plant	-
Level 12	• Roof	155m^2

Level	Use	GFA
	• Helipad	
Total		**75,123m²**

External Materials and Finishes

BLP has adopted a colour palette based on the idea of 'flights of colours' that occur in the bushland setting and dye sampling of native tree barks and leaves similar to species found in the remnant local Cumberland Plains Woodlands in the local area (see **Figure 25**). Each wing or 'finger 'is proposed to have its own subtle colour variant to create an identity and to aid in wayfinding.

The use of patterning has been derived from cross sectional studies of local tree species which adds finer grained textual elements. This would be applied to facades with the most prominent vantage, with the patterning acting as a wayfinding element.

Solid sections of facades include profiled ceramic tiles. The profiling aims to allow the play of light along the facades surfaces. A warm colour palette of varying textures and gloss levels accentuate play of light.

External materials are proposed to include glazing, aluminium, tiles and glass fibre reinforced concrete.

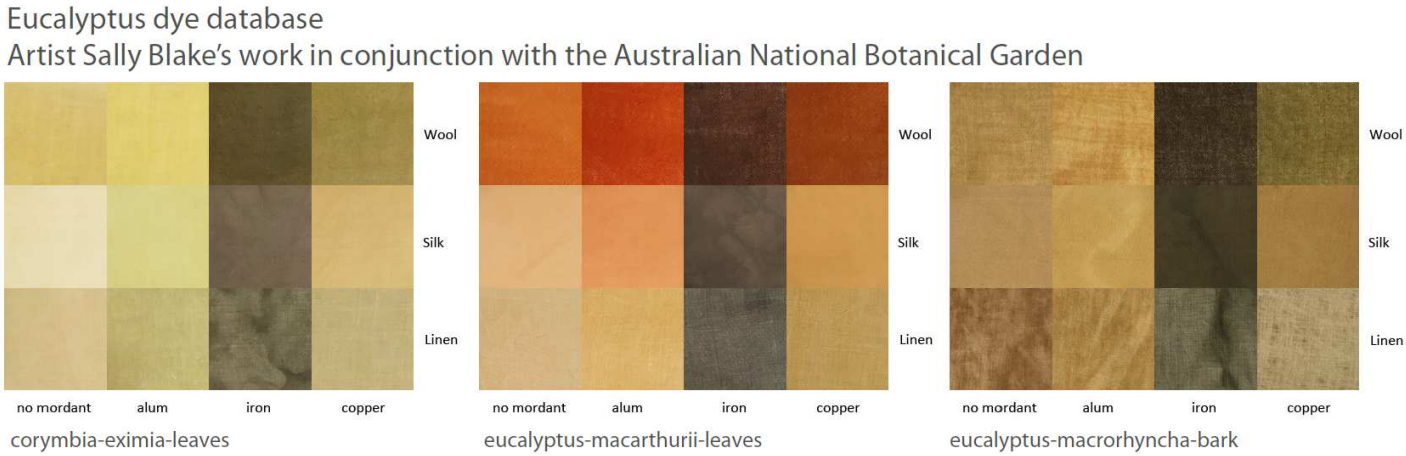

Figure 25 Eucalyptus dye sampling colours

Source: BLP

4.5 Landscaping and Public Domain

Landscape drawings have been prepared by Arcadia Landscape Architects and are included at **Appendix F**. The landscape scheme has two distinctive elements, outlined below.

Western Car Park Precinct

The Emergency Department public drop off area and adjacent car park will incorporate hard and soft landscape elements including water features and sandstone elements that will provide sensory relief for visitors, patients and staff. Discrete seating areas are incorporated in a bushland setting that includes car park screening and water sensitive urban design features (**Figure 26**).

Figure 26 Western Car Park Landscape Plan (Level 00)

Source: Arcadia

Main Entry and Breakout Zone

The landscape strategy responds to the undulating landform and the main hospital entry and drop off to provide a space that allows safe access within a landscaped setting. Sandstone elements unify the space within a mix of terracing and planters. To the east of the CSB the landscaping opens to provide discrete seating opportunities and an open turfed area which acts as a break out zone for visitors, patients and staff. Generous planting acts to screen open space from the roadway (**Figure 27**).

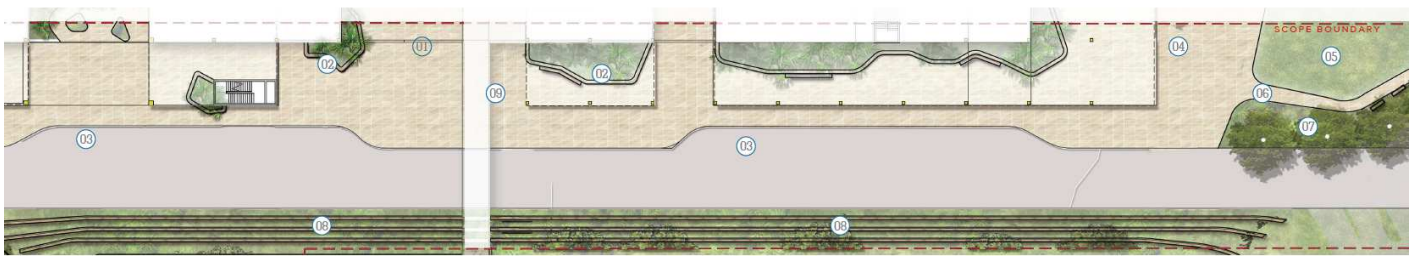

Figure 27 Main Entry and Breakout Zone (Level 2)

Source: Arcadia

4.6 Tree Removal

To accommodate the proposed work the proposal seeks approval for the removal of 53 trees. An assessment of biodiversity and tree removal is provided at **Section 6.7** and **Section 6.8** respectively.

4.7 Car Parking and Access

4.7.1 Vehicle Access

This application seeks approval for improved connections to the local road network, including:

- The relocation of the existing left-in, left-out connection to Appin Road; and
- A new left-in, left-out connection to Therry Road.

Emergency vehicles will be provided with a dedicated internal road from the Parkside Crescent/Central Road roundabout to the new Emergency Department Ambulance Bays.

To accommodate the CSB the proposal will also require the modification of internal roads (shown in dark grey at **Figure 28**, **Figure 29** and **Figure 30** below).

Figure 28 Proposed internal road and car park layout adjoining the CSB

Source: BLP

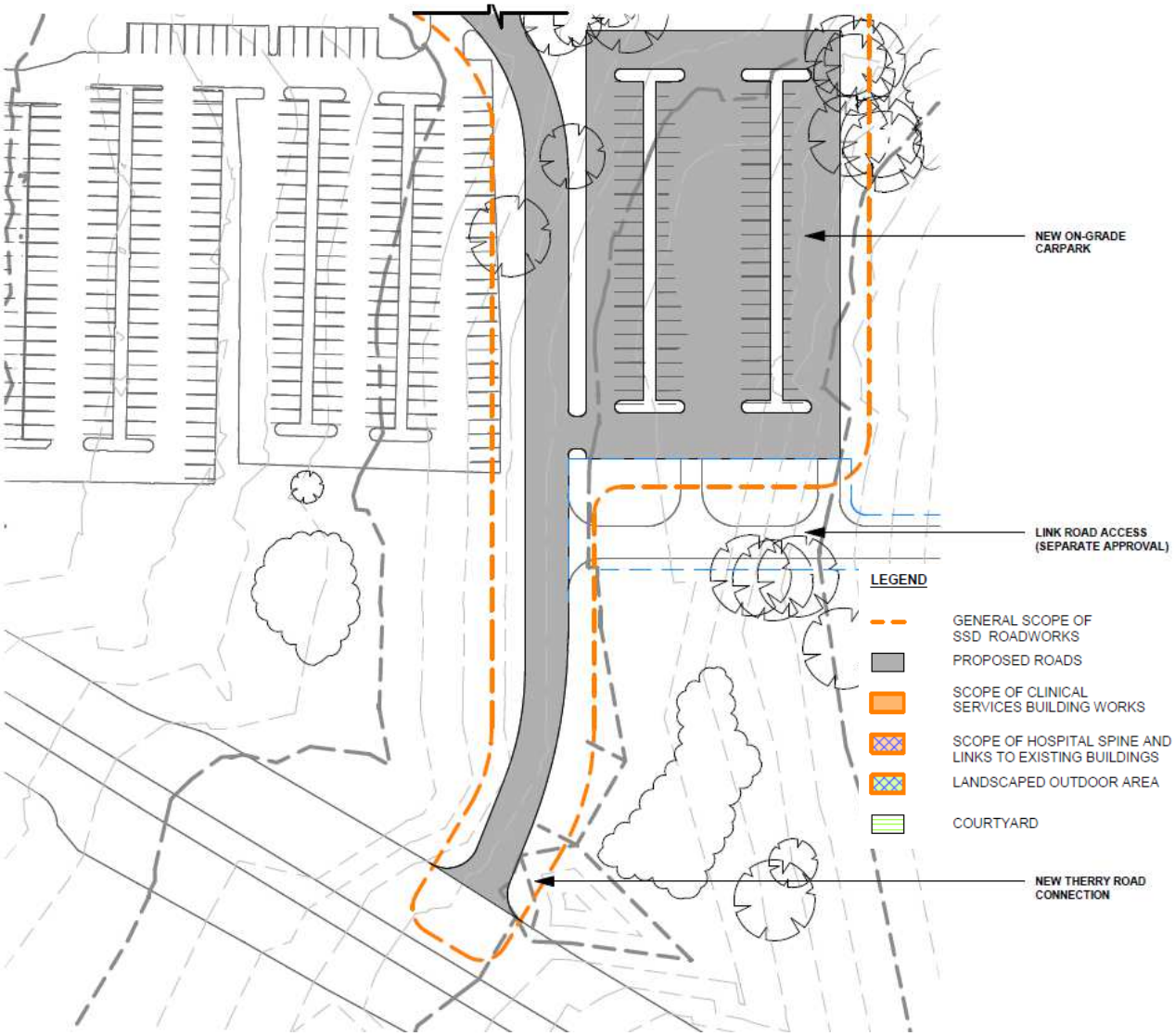

Figure 29 Proposed Southern Car Park and new Therry Road connection

Source: BLP

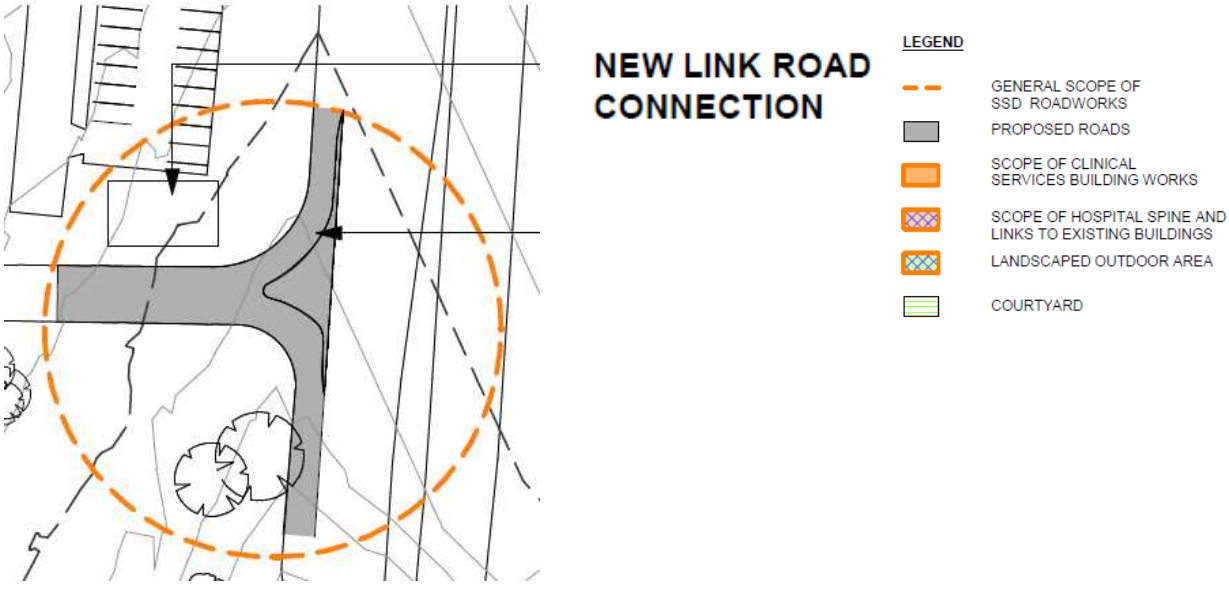

Figure 30 Proposed Appin Road connection

Source: BLP

4.7.2 Pedestrian Access

The existing pedestrian infrastructure and connections on-site will generally be maintained. At the location of the proposed new building and at-grade car parks, existing infrastructure will be replaced with new pedestrian links, including a path from the new development to the existing buildings. A pedestrian bridge is proposed at Level 3 of the CSB that will connect to the southern at-grade car parks.

4.7.3 Car Parking

The proposal includes removal of 366 on-grade parking and the provision of 205 new car parking spaces across the hospital campus. The works will amend existing car parks to provide a re-planned layout and parking, including introduction of a new at-grade car park south of the CSB.

As outlined at **Section 2.2.1** and **2.2.2** various car parking works are being undertaken in the east of the campus under separate approvals processes. This includes construction of a multi-storey car park and on-grade parking that will deliver car parking for 756 additional vehicles. A summary of car parking requirements and provision is provided at **Section 6.4.**

4.7.4 Loading Dock

The existing hospital has a loading dock on the western side of the campus adjoining Building B. The loading dock will continue to be the central loading point for the hospital and is proposed to be upgraded under a separate approval (refer to **Section 2.2.3**).

4.8 Services and Utilities

4.8.1 Electricity

JHA Consulting Engineers has confirmed the electrical supply requirements for the proposal at **Appendix Z**. The existing network will be augmented with an additional switching station proposed. New underground cabling will connect to two (2) new chamber substations within the CSB. One of the chamber substations will house three (3) 1500kVA transformers and will be connected to the new HV feeder. The other chamber substation will house one (1) 1500kVA transformer and will be connected to the existing HV feeder for the site.

4.8.2 Water

Water mains are available and will be provided from the existing reticulated system. An application to Sydney Water has been made to confirm capacity requirements (**Appendix AA**).

Potable water to the new building will be provided from the existing reticulated system. The two services are interconnected within the site. The system has been installed with the intention of creating a 150mm site ring main with isolation valves to enable the closure of sections without disrupting the water supply. The ring main will be completed as part of this development. Isolation valves will be installed within the existing piped system to enable the new works to proceed with minimal disruption to the operation of the hospital.

4.8.3 Sewer

The hospital is serviced by three existing sewer connections. While Donnelley Simpson Cleary note the surrounding mains have sufficient capacity, an application to confirm the capacity of the network has been made to Sydney Water (**Appendix AA**).

4.8.4 Gas

The campus is currently supplied by a medium/high pressure gas main at Therry Road. An application has been made to Jemena to determine adequacy of the network to support the proposal (**Appendix AA**).

4.8.5 Telecommunications

The proposal will utilise the existing communications services available at Campbelltown Hospital

4.9 Construction Staging and Job Creation

The development will be constructed within the environment of an operating hospital. The CSB will be constructed in a single stage, with construction works expected to commence in 2018 and be completed in 2022.

The Stage 3 proposal will generate approximately 250-350 construction jobs during the construction process. Approximately 418 FTE (Full Time Equivalent) jobs will be created at the completion of the new CSB.

4.10 Construction Hours

The proposed hours of construction are proposed as follows:

- Monday to Friday inclusive: 6.30am to 6.00pm;
- Saturday: 7.00am to 3.00pm; and
- No work on Sundays and Public Holidays.

A 30-minute extension in the morning on week days (i.e. Monday to Friday) is sought to enable preparatory actions to occur early in the morning so as to minimise clashing with early hospital shift staff. Noise intensive equipment and/or processes would not be permitted during this time.

An Acoustic Assessment is provided at **Section 6.11** and **Appendix Q**.

5.0 Consultation

In accordance with the SEARs issued for this project, consultation was undertaken with the following stakeholders:

- Government Architect NSW;
- Campbelltown City Council;
- TfNSW;
- RMS;
- Sydney Water;
- Local Aboriginal Land Council;
- Hospital user groups; and
- The local community

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

Agency and Council Consultation

Health Infrastructure NSW has been engaged in ongoing consultation with Council regarding the development, and other works currently being carried out on the hospital campus. Meetings to discuss the detailed design of the CSB and other matters including project scope, onsite parking, access, flooding and drainage were held on 21 November 2017 and 21 February, 26 February, 23 April, 17 May and 5 June 2018.

The project team met with representatives of TfNSW on 30 May 2018and representatives of RMS on 14 November 2017. To address TfNSW comments the project maintains the currently designed two bus layby areas, with provisions for future extension if required by an increase in bus services.

Health Infrastructure NSW met with representatives of RMS on 14 November 217 and 31 July 2018. RMS provided design comments regarding the Appin Road and Therry Road connections that will be addressed by the project prior to the determination of the application.

A summary of meeting minutes and meeting details prepared by Health Infrastructure is provided at **Appendix B**.

Local Aboriginal Land Council

The project team has commenced engagement with the Tharawal Local Aboriginal Land Council to discuss the involvement of interested registered people in the project.

In addition, several meetings have been held with the local Aboriginal Health team to discuss the proposal, as well as opportunities to incorporate Aboriginal art and culture into the project. Positive comments were received during this consultation.

NSW Government Architect

Representatives of Health Infrastructure NSW and project architects BLP met with the Office of the Government Architect NSW on 30 May and 27 June 2018 to review the design of the CSB in line with ‘Better Placed – An integrated design policy for the built environment of NSW 2017’. The meeting minutes for the meeting are provided at **Appendix B**, and a summary of the key topics raised at the meeting of 30 May and 27 June 2018 is provided in **Table 6**. A detailed response to these meetings is provided at **Appendix B**. Further consultation will be undertaken in accordance with requirements of the Government Architect.

Table 6 NSW Government Architect comments

Comment
Meeting 1 – 30 May 2018
• Operation of the Spine • Clarity of wayfinding, circulation • Building form and façade expression
Meeting 2 – 27 June 2018
• Operation and function of the spine and circulation • Built form and façade expression and articulation • Sustainability and ESD approach • Access arrangements and potential vehicle conflicts • Landscape and public realm • Consultation with community cultural groups

Community Consultation

Health Infrastructure NSW has undertaken ongoing consultation and engagement with the local community during the design development, including community consultation sessions on 31 May and 2 June 2018. A summary of issues and responses is provided below.

Issue	Response
Concerns with paid parking	Paid parking is part of the NSW Health policy, implemented state wide with concessions available.
Carparking proximity to residential areas	Local resident Light pollution controls will be provided, and the works will be staged to minimise disruption to local residents.
Cancer therapy – dedicated and convenient parking is required	There is a dedicated carpark for cancer. It is part of the operational policy to maintain dedicated cancer parking.

The community consultation and engagement strategy has comprised:

- Consultation with the local hospital user groups;
- Engagement with local community;
- A project website with ongoing updated information on the development's progress;
- Social media updates;
- Media announcements; and
- Facts sheets and project information at public locations.

The proposed development will be placed on public exhibition for 30 days in accordance with clause 83 of the *Environmental Planning and Assessment Regulation 2000*. During the public exhibition period Council, State agencies and the public will have an opportunity to make submissions on the project.

6.0 Environmental Assessment

This section of the report assesses and responds to the environmental impacts of the proposed DA. It addresses the matters for consideration set out in the SEARs (see **Section 1.5**). The Mitigation Measures at **Section 7.0** complement the findings of this section.

6.1 Relevant EPIs, Policies and Guidelines

The relevant strategies, environmental planning instruments, policies and guidelines as set out in the SEARs are addressed in **Table 7**.

Table 7 Summary of consistency with relevant Strategies, EPIs, Policies and Guidelines

Instrument/Strategy	Comments
Strategic Plans	
NSW State Priorities	NSW State Priorities are twelve high-level priorities for the State, being: • Creating jobs; • Delivering infrastructure; • Driving public sector diversity; • Improving education results; • Improving government services; • Improving service levels for hospitals; • Keeping our environment clean; • Making houses more affordable; • Protecting our kids; • Reducing domestic violence reoffending; • Reducing youth homelessness; and • Tackling childhood obesity. The proposal seeks to redevelop an existing hospital to improve service levels for health in the SWSLHD. The proposal will therefore meet this key priority, whilst also creating jobs and delivering infrastructure in the Macarthur region.
A Metropolis of Three Cities – The Greater Sydney Region Plan	The Greater Sydney Region Plan aims to set a 40-year vision (up to 2056) and establish a 20-year plan to manage growth and change for Greater Sydney in the context of economic, social and environmental matters. At the core of this plan is the 'metropolis of three cities' concept that will transform land use and transport patterns and boost Greater Sydney's liveability, productivity and sustainability by spreading the benefits of growth to all its residents. The plan includes 40 separate objectives to achieve this vision across the following themes: • Infrastructure and collaboration; • Liveability; • Productivity; and • Sustainability. The development of hospital infrastructure in Campbelltown assists in the delivery of many of these objectives, including: • Infrastructure supports the three cities; • Benefits of growth realised by collaboration of governments, community and business; • Services and infrastructure to meet communities' changing needs; • Communities are healthy, resilient and socially connected; and • Internationally competitive health, education, research and innovation precincts. Ultimately, Campbelltown-Macarthur is identified as a Health and Education Precinct as well as a Metropolitan Cluster. This symbolises the importance of Campbelltown's hospital infrastructure on the growth and development of the wider area. Significant growth is forecast for the Western City, and the increased development of hospital infrastructure is required to meet the needs of this evolving city.
Western City District Plan	The Western City District Plan is a 20-year plan to manage growth in the context of economic, social and environmental matters to achieve the 40-year vision for Greater Sydney. It is a guide for implementing the Greater Sydney Region Plan at a district level and is a bridge between regional and local planning. It sets a vision for the Western City to become the 'Parkland City' where residents will have quicker and easier access to a wider range of jobs,

Instrument/Strategy	Comments	
	housing types and activities. The vision will improve the District's lifestyle and environmental assets. Campbelltown Hospital is identified within the Plan as a major contributor to jobs growth in the Campbelltown-Macarthur Health and Education Precinct. Health care and social assistance is the most significant employment category in the LGA and is forecast to grow by 2.35% per year, resulting in approximately 13,500 jobs by 2041. A key action for the Campbelltown-Macarthur Precinct is to facilitate health and education precincts that: • Create the conditions for the continued co-location of health and education facilities, and services to support the precinct and growth of the precincts; and • Have high levels of accessibility; • Attract associated businesses, industries and commercialisation of research; and • Facilitate housing opportunities for students and workers within 30 minutes of the precinct. The proposed development is therefore central to the growth of the wider precinct and increases the number of jobs close to homes in the region, consistent with the priorities of the District Plan.	
Future Transport Strategy 2056 and supporting plans	The Future Transport Strategy 2056 sets the 40-year vision, directions and outcomes framework for customer mobility in NSW, which will guide future transport investment over the long term. The supporting plans provide further detail on customer outcomes or place-based planning documents to guide the Strategy's implementation. The proposal includes improvements to the internal road system that will incorporate a dedicated bus stop in front of the CSB main entry that will facilitate and encourage safe, convenient access by public transport. A review of the proposed improvements to transport infrastructure near Campbelltown Hospital indicates that there are no proposals that will directly impact or be impacted by the proposed development. Nearby projects include: • Upgrade of Narellan Road to a six-lane road; • Macarthur interchange provision of three extra commuter car parking spaces; and • Campbelltown interchange provision of 450 extra commuter car parking spaces.	
Crime Prevention Through Environmental Design (CPTED) Principles	Refer to **Section 6.3.6**.	
Planning Guidelines for Walking and Cycling	The Planning Guidelines for Walking and Cycling provide guidance to land-use planners to ensure that walking and cycling improvements are taken into consideration in planning policy and practice. The Guidelines provide a walking and cycling focus to the NSW Government's Integrating Land Use and Transport Planning Policy Package. The Guidelines provide recommendations for improved awareness of the various public and active transport options available at a site and recommendations for cycle and cyclist facilities. The hospital is located in a generally remote location and accordingly a very low proportion of hospital users walk (0.2% of staff, 1.2% of visitors) or cycle (no staff cycle and 0.4% other users) to the hospital. PTC observe that the existing footpath connections to the hospital are adequate. The proposal includes internal roads and connections that will further enhance the walking and cycle infrastructure within the hospital campus providing convenient access to the CSB. Due to the low levels of users accessing the hospital by bicycle the hospital will continue to be serviced by the existing 10 bike racks provided on-site.	
Healthy Urban Development Checklist, NSW Health	The proposal will enable the construction of a new hospital building, providing improved functionality and capability and efficiency. This facility is within walking distance of the Macarthur train station and 800m from Campbelltown CBD. By providing such a social infrastructure facility within close proximity to these key locations, it is considered that the proposal is consistent with the intent of the Healthy Urban Development Checklist by allowing for and encouraging active transport to the site.	
Better Placed – An integrated design policy for the built environment of NSW 2017	Better Placed has been developed by the Government Architect as an integrated design policy for the built environment of NSW. It includes seven distinct objectives that have been created to define the key considerations in the design of the built environment. A review of the proposals consistency with the principles of Better Placed is provided below.	
	Objective 1. Better fit *Contextual, local and of its*	The new CSB responds to the surrounding context and its prominent location at the centre of Campbelltown

Instrument/Strategy	Comments	
	place	Hospital providing an appropriate scale befitting of the Hospital and its needs while respecting the local character and scale through generous setbacks. The adopted materials and colour scheme incorporates visual interest by featuring abstract materials and colours to acknowledge local Cumberland Plain Woodland.
	Objective 2. Better performance *Sustainable, adaptable and durable*	NSW Health Infrastructure has taken a responsible approach to ensuring the principles of ESD are incorporated into the CSB ensuring effective and environmentally responsive ESD initiatives including: • NSW HI Guidelines Clause 2.3 states "Integrated built environment sustainability must be considered, including appropriate designs for energy and water, using appropriate materials." • Green Star – All new facilities target a Green Star Health Care 4 Star equivalency rating – noting Green Star 4 Star is considered 'Australian Best Practice'. • Energy Targets – All new standalone buildings will have a mandatory required of delivering a 10% improvement on national construction code (NCC) Section J.
	Objective 3. Better for community *Inclusive, connected and diverse*	The CSB incorporates accessible access to all spaces to cater to the varying needs of the public who will use the facilities. Publicly accessible open space provides opportunities for enjoyment of the outdoor space. Additional vehicle parking will be provided, and the site will have pedestrian paths that connect to the surrounding streetscape allowing access by public transport to ensure suitable access arrangements for all members of the community. The Hospital offers essential services that will support the health needs of the Macarthur Region.
	Objective 4. Better for people *Safe, comfortable and liveable*	The CSB has sought to balance the operational needs of the Hospital while providing a fit for purpose building that incorporates high quality design features to make patients and staff more comfortable including, intimate landscaped parks surrounding the building, generous outdoor balconies on Level 00 and Levels 2 - 7 and generous outdoor seating fronting the west and east of the CSB. The CSB provides passive surveillance to all spaces surrounding the building consistent with CPTED principles ensuring the site will be a safe and useable public space.
	Objective 5. Better working *Functional, efficient and fit for purpose*	The CSB is the next stage of the expansion of Campbelltown Hospital. It seeks to link with the existing hospital building to provide an integrated facility that will allow the hospital to work effectively to meet the health care needs of a growing population whilst improving performance though improved and state of the art facilities.
	Objective 6. Better value *Creating and adding value*	The CSB will cater for the increased health demands of the community, whilst meeting the NSW Government's budget for the works. Robust materials and adherence to NSW HI design requirements will ensure the new CSB will deliver better value for the NSW Government.
	Objective 7. Better look and feel *Engaging, inviting and attractive*	These design principles have informed the CSB as outlined by BLP and further addressed in the Architectural Statement at **Appendix E**.

<table>
<tr><th>Instrument/Strategy</th><th>Comments</th></tr>
<tr><td colspan="2">State Legislation</td></tr>
<tr><td>EP&A Act</td><td>The proposed development is consistent with the objects of the EP&A Act for the following reasons:
It promotes the social welfare of the community;
It will facilitate ecologically sustainable development;
It allows for the orderly economic development of land;
It achieves a high-quality design outcome to the benefit of patients, staff and the public; and
It is development for public purposes and will facilitate the delivery of community services.
The proposed development is consistent with Division 4.7 of the EP&A Act, particularly for the following reasons:
The development has been declared to have state significance;
The development is not prohibited by an environmental planning instrument; and
The development has been evaluated and assessed against the relevant heads of consideration under section 4.15(1).</td></tr>
<tr><td>EP&A Regulations</td><td>The EIS has addressed the specific criteria within clause 6 and clause 7 of Schedule 2 of the EP&A Regulation. Similarly, the EIS has addressed the principles of ecologically sustainable development through the precautionary principle (and other considerations), which assesses the threats of any serious or irreversible environmental damage (see Section 5.5).

As required by clause 7(1)(d)(v) of Schedule 2, the following additional approvals will be required in order to permit the proposed development to occur.
<table>
<tr><th>Act</th><th>Approval Required</th></tr>
<tr><td colspan="2">Legislation that does not apply to State Significant Development</td></tr>
<tr><td>Coastal Protection Act 1979</td><td>N/A</td></tr>
<tr><td>Fisheries Management Act 1994</td><td>N/A</td></tr>
<tr><td>Heritage Act 1977</td><td>N/A</td></tr>
<tr><td>National Parks and Wildlife Act 1974</td><td>N/A</td></tr>
<tr><td>Native Vegetation Act 2003</td><td>N/A</td></tr>
<tr><td>Rural Fires Act 1997</td><td>N/A</td></tr>
<tr><td>Water Management Act 2000</td><td>N/A</td></tr>
<tr><td colspan="2">Legislation that must be applied consistently</td></tr>
<tr><td>Fisheries Management Act 1994</td><td>No</td></tr>
<tr><td>Mine Subsidence Compensation Act 1961</td><td>No</td></tr>
<tr><td>Mining Act 1992</td><td>No</td></tr>
<tr><td>Petroleum (Onshore) Act 1991</td><td>No</td></tr>
<tr><td>Protection of the Environment Operations Act 1997</td><td>No</td></tr>
<tr><td>Roads Act 1993</td><td>Yes</td></tr>
<tr><td>Pipelines Act 1967</td><td>No</td></tr>
</table></td></tr>
<tr><td>Biodiversity Conservation Act</td><td>An assessment of Biodiversity impacts is provided at Section 6.7. A Biodiversity Development Application Report is provided at Appendix L.</td></tr>
<tr><td>SEPP 33</td><td>An assessment of hazardous waste has been undertaken by Space 2 Develop (Appendix N) to assess potential risks associated with the proposed use. The report concludes that there is a low to medium risk associated with clinical waste. Hazardous waste is further discussed at Section 6.9.

The storage of dangerous goods is discussed at Section 6.10.</td></tr>
<tr><td>SEPP 55</td><td>Douglas Partners has completed a Detailed Site Investigation (Contamination) report, which is available at Appendix T. The report concludes that the potential for contamination constraints at the site with respect to the proposed redevelopment is considered to be low and the site is</td></tr>
</table>

Instrument/Strategy	Comments	
	suitable (from a contamination perspective) for the proposed redevelopment. Further information regarding contamination is available in **Section 6.16**.	
Draft Remediation of Land SEPP	An ongoing review of SEPPs by the DP&E has resulted in the proposed repeal of SEPP 55, retaining some of its elements and adding new provisions to establish a modern approach to the management of contaminated land. In addition to the provisions addressed in SEPP 55 above, new provisions will be added in the new SEPP to: • Require all remediation work that is to be carried out without development consent to be reviewed and certified by a certified contaminated land consultant; • Categorise remediation work based on the scale, risk and complexity of the work; and • Require environmental management plans relating to post-remediation management of sites or ongoing operation, maintenance and management of on-site remediation measures (such as a containment cell) to be provided to Council. The Detailed Site Investigation (**Appendix T**) does not recommend that remediation is required for the site, and therefore further assessment under the additional provisions of the Draft Remediation of Land SEPP is not required.	
SEPP (Infrastructure)	The aim of this SEPP is to facilitate the effective delivery of infrastructure across the State, including providing for consultation with relevant public authorities about certain development during the assessment process. Schedule 3 of the SEPP states the threshold for traffic generating development that is to be referred to RMS. This threshold is 100 or more beds for sites with access to a classified road, or 200 or more beds for sites with access to any road. The CSB will deliver 384 beds, accordingly the proposal will be referred to RMS.	
SEPP (State and Regional Development)	The aim of this policy is to identify development that is SSD. Pursuant to the SEPP SRD a project will be SSD if it falls into one of the classes of development listed in Schedule 1 of the SEPP. 'Hospitals, medical centres and health research facilities' with a CIV of $30 million or more are identified as SSD and are considered to be development of State significance. The proposed development has a CIV of greater than $30 million and so qualifies as SSD. A CIV Statement has been prepared by Aecom and is provided under separate cover.	
Local Planning Instruments and Controls		
Campbelltown Local Environmental Plan 2015	Clause 2.1 – Zone	The proposed hospital use is permissible with development consent in the SP2 – Infrastructure: Health Services Facilities zone.
	Clause 4.3 – Height of Buildings	No maximum height of building control applies to the site.
	Clause 4.4 – Floor Space Ratio	No Floor Space Ratio control applies to the site.
	Clause 5.10 – Heritage Conservation	The site is not identified as containing any heritage item under the CLEP 2015.
Campbelltown (Sustainable City) Development Control Plan 2015	It is noted that development control plans are not a matter for consideration in the assessment of SSD DAs by virtue of Clause 11 of SEPP SRD, which states that *'Development Control plans… do not apply to… State significant development'*. Notwithstanding this, the Campbelltown DCP provides guidance for development. This guidance has been considered by the relevant consultants, where relevant (for example stormwater engineering requirements).	

6.2 Built Form and Urban Design

6.2.1 Bulk and Scale

The proposed built form massing is the result of extensive design analysis undertaken by BLP aimed at achieving an optimum urban design outcome for a site with a range of complex variables, hospital user group requirements and competing planning objectives.

The proposed building is 13 storeys in height and while taller than existing buildings, which range between 4-6 storeys in height, the density of the proposed building envelope is reflective of the importance of the new, modern, CSB within the hospital campus, as well as the functional requirements of the building. In particular, the proposed building layout and massing within the campus seeks to concentrate density in the centre of the campus, where it adjoins existing hospital development, and is away from more sensitive uses, and open space to the west of the site.

6.2.2 Setbacks

The CSB is located centrally within the hospital campus with significant setbacks to surrounding sensitive receivers. The CSB is located approximately:

- 160 metres west of residential development opposite Appin Road;
- 240 metres from residential development and the Campbelltown Private Hospital to the north;
- 240 metres from residential development to the south, opposite Therry Road; and
- 300 metres east of residential development opposite Birunji Creek.

The proposal faciliates a suitably scaled building within the hopsital campus environment. Setbacks to surrounding buildings have been informed by operational and functionality needs of the hospital including paths of travel, access to sunlight and efficient use of land. By locating the CSB to the south of existing buildings the CSB will have little to no impact from overshadowing (refer to **Section 6.3.1**).

6.3 Environmental Amenity

6.3.1 Solar Access and Overshadowing

Shadow diagrams that illustrate the extent of overshadowing generated by the proposal have been provided by BLP (**Appendix D**). The diagrams show the greatest impact of overshadowing throughout the year, being the winter solstice and show the impact at 9am, 12pm and 3pm (Refer to **Figure 31** – **Figure 33**).

The diagrams show that the proposal will shadow only land within the hospital campus and would not have any impact on solar access to surrounding residential development. Within the hospital ground the proposal does not shadow any areas of public recreation or designated staff outdoor areas. Notwithstanding, there are a variety of landscaped areas across the hospital campus that receive sunlight, ensuring access to sunlight in a landscaped setting across the day.

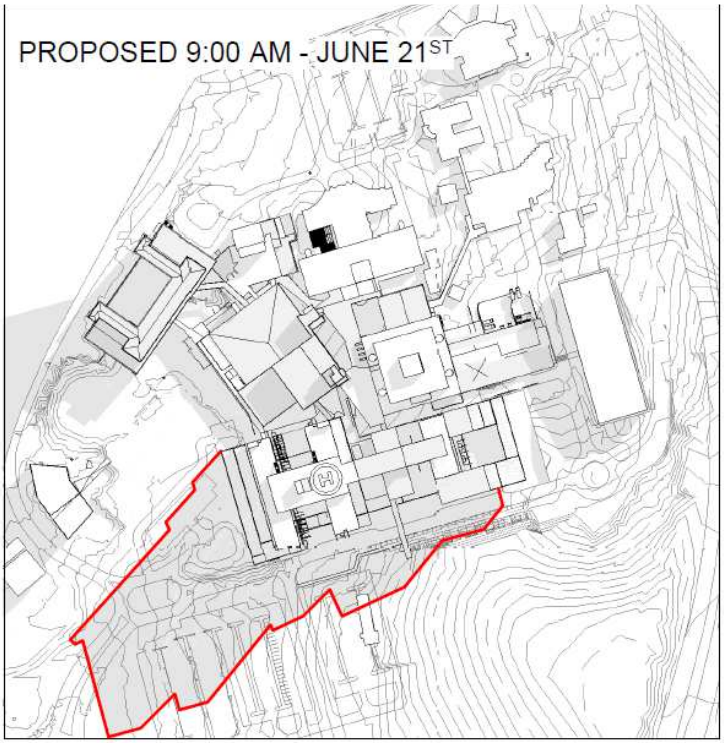

Figure 31 Shadow Diagram, 21 June 9am

Source: BLP

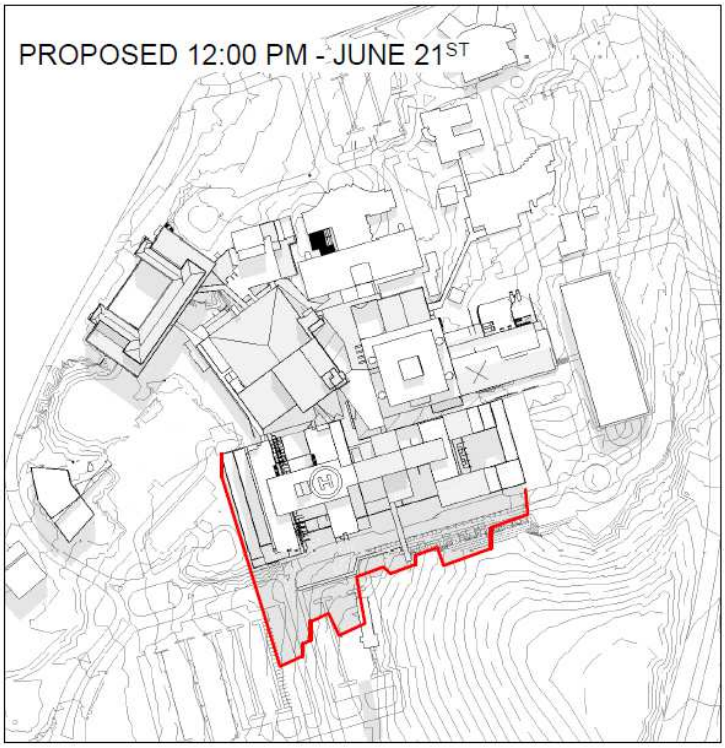

Figure 32 Shadow Diagram, 21 June 10am

Source: BLP

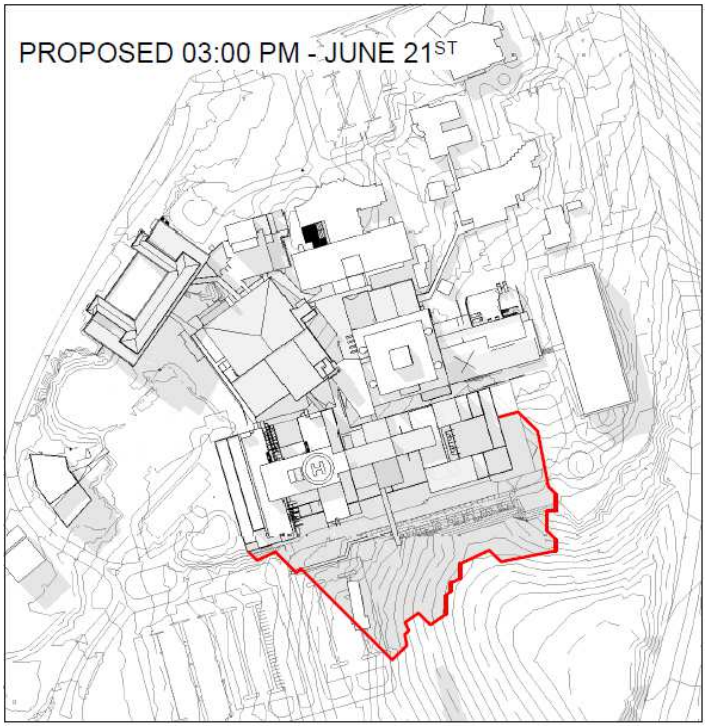

Figure 33 Shadow Diagram, 21 June 3pm

Source: BLP

6.3.2 Visual Privacy

The CSB is located centrally within the hospital campus, approximately 240 metres from the nearest residential dwellings located to the north (adjoining the northern boundary) and to the east, opposite Appin Road. Due to the significant setback and intervening development between the proposed CSB and sensitive receivers, there is no potential for overlooking to these properties.

6.3.3 View Impacts

Consideration has been given to the impact of the proposed development on existing views towards the campus from the surrounding area. A number of photomontages of the proposal have been prepared BLP and are shown at **Figure 34** - **Figure 37** and at **Appendix D**. The photomontages have been prepared to illustrate the view impact of the proposal from view points in the public domain surrounding the hospital.

Figure 34 Existing and proposed views from Central Road roundabout

Source: BLP

Figure 35 Existing and proposed views from opposite Marsden Park

Source: BLP

Figure 36 Existing and proposed views from Appin Road (north)

Source: BLP

Figure 37 Existing and proposed views from Appin Road (south)

Source: BLP

Whilst the proposal will change the view of the hospital from the public domain, the change is consistent with the evolution of the hospital campus. The CSB is setback a minimum 90m from the boundary and the photomontages demonstrate the CSB will result in limited change to views from the public domain. Existing view corridors to buildings on campus are not of any significance whereby their retention should be required. The proposal does not interrupt any significant regional views.

6.3.4 Lighting Impacts

Due to the 24-hour nature of the hospital use, lighting will be required throughout the night. The primary source of light spill from the building will come from areas of higher glazing and building entrances. Due to the location of the CSB and entrances (surrounded by existing development, landscaping and car parks) 24-hour illumination of these areas would not have a significant impact on surrounding residential development.

6.3.5 Wind Impacts

An Environmental Wind Assessment has been prepared by Arup for the proposed development and is provided at **Appendix G**. The wind assessment has determined the potential impact of the proposal on various outdoor areas within and around the building and the interaction of wind conditions with the proposed built form.

The proposed massing is significant when compared to the existing buildings at the hospital and would have some impact to the local wind conditions. In general, there would be some accelerated wind flows around building corners and some downwash however these are mitigated by the inclusion of colonnades and building setbacks.

Arup confirm the wind conditions surrounding the building at all locations would pass the safety/distress criterion. From a wind comfort perspective, all the surrounding areas are expected to meet the requirements for the intended use of the spaces as a transient space.

6.3.6 Crime Prevention Through Environmental Design

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

Principle 1 – Natural Surveillance

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

The development has been designed to provide passive surveillance over public areas, through the introduction of glazing to provide surveillance opportunities over the public domain and main hospital entry. This will promote the reality and / or perception that the open spaces are under casual surveillance during both the day and night. This acts as a way of creating the perception of risk in the minds of potential perpetrators. The well-lit nature of the hospital environment will also enhance passive surveillance providing continuous activation throughout the site.

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

- Appropriate signage should reinforce the building's main entrance;
- Utilise strategically placed capable guardians, such as reception staff, to provide natural surveillance to the building entries; and
- Utilise trees with a high canopy that provide good shade for pedestrians, complemented with low groundcover landscaping to ensure good visibility for pedestrians.

Principle 2 - Access Control

Access controls use physical and symbolic barriers to attract, channel or restrict the movement of pedestrians. As noted in Crime Prevention and the Assessment of Development Applications, effective access controls make it clear where people are permitted to go or not go and makes it difficult for potential offenders to reach and victimise people and damage property.

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

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

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

Principle 3 – Territorial Reinforcement

Territorial reinforcement refers to the clear identification of public spaces, and the creation of a sense of community ownership over such spaces. As noted in the Crime Prevention and the Assessment of Development Applications

people feel comfortable in, and are more likely to visit, places which feel owned and cared for. Well used places also reduce opportunities for crime and increase risk to criminals.

Landscaping around the campus differentiates public and private spaces. In addition, a number of strategies can be adopted to further improve the safety and security of the development. Including:

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

Principle 4 – Space Management

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

Durable and high-quality materials are proposed which will ensure that minimal maintenance is required for the proposed development. The use of durable façade treatments will also discourage graffiti or vandalism of the building facades. The continued maintenance of the building will ensure that it does not become degraded and will ensure that vandalism of the property is strongly discouraged.

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

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

6.4 Transport and Accessibility

A Traffic Impact Assessment has been prepared by PTC and is included at **Appendix H**. The assessment includes details around construction traffic movements and management measures. The report outlines the existing surrounding road network arrangements and conditions and provides an assessment of the traffic and parking impacts associated with the CSB.

As outlined at **Section 2.2**, a separate application has previously been submitted to Council for the construction of a multi-storey car park in the east of the site. The assessment provides an assessment inclusive of other works occurring within the hospital as relevant.

6.4.1 Operational Parking

Currently there are 1,280 car parking spaces provided for staff and visitors across the hospital campus. As outlined at **Section 2.1.1** and **2.1.2** a separate DA has been submitted to Council for the construction of a multi-storey car park and an application under Part 5 of the EP&A Act has been made for construction of on-grade parking in the east of the campus. These works will be completed prior to the completion of the CSB in 2022, and together will deliver an additional 834 parking spaces on the campus.

The proposal includes removal of 447 spaces and construction of 201 spaces (nett reduction of 246 spaces).

Future parking demand has been determined by PTC. A summary of the parking requirements and overall parking provision is outlined at **Table 8**. The assessment shows that the forecast demand of 1,797 parking will be met with an overall 1,868 car parking provided at the completion of the CSB in 2022.

Table 8 Car Park Assessment

Car Park Facility	On-site Parking Provision	Forecast Car Park Demand
Forecast demand 2021/22		1,797
Existing Car Parking Supply	1,280	
Multi Deck Car Park	+799	
On-Grade Car Parks Gain	+245	
On-Grade Car Park Loss	-210	
SSD works	-246	
Total	**1,868**	**1,797**

6.4.2 Operational Traffic

Traffic generation to and from the hospital is largely governed by the provision of parking within the hospital. The assessment has accounted for the maximum demand generated by the cumulative car parking across the hospital, inclusive of car parking proposed by the SSD and other car parking projects under separate approvals (as outlined at **Section 2.1.1** and **2.1.2**).

Not all vehicles would require access to the car park during the peak periods, so PTC have applied a 20% reduction in line with parking occupancy survey data, to reflect a conservative, anticipated traffic generation demand. The post development traffic generation based on a nett increase in car parking, is as follows:

- AM Peak trip generation = 528
- PM Peak trip generation = 528

Intersection Performance

Based on these trip generation rates and a trip distribution analysis using existing access patterns, all intersections assessed will continue to perform at a similar Level of Service as they did before the start of the proposed works. The road network performance has been measured against three parameters, being:

- Level of Service (LOS)
- Degree of Saturation (DOS)
- Average Vehicle Delay (AVD)

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

Table 9 Intersection Modelling Results

Intersection	Time	Period	LOS	DOS	AVD
Therry Road / Central Road Roundabout	AM Peak	Existing	A	0.421	8.2
		Development	A	0.488	9.0
	PM Peak	Existing	B	0.767	16.3
		Development	B	0.876	20.3
Parkside Crescent / Central Road Roundabout	AM Peak	Existing	A	0.264	5.3
		Development	A	0.402	6.2
	PM Peak	Existing	A	0.338	6.2
		Development	A	0.410	7.0
Parkside Crescent Access	AM Peak	Existing	A	0.159	2.0
		Development	A	0.193	2.3
	PM Peak	Existing	A	0.235	1.2
		Development	A	0.265	1.4
Appin Road Access	AM Peak	Existing	A	0.406	0.5

Intersection	Time	Period	LOS	DOS	AVD
		Development	A	0.438	0.7
	PM Peak	Existing	A	0.275	0.5
		Development	A	0.310	1.0
Therry Road New Acess	AM Peak	Existing	N/A	N/A	N/A
		Development	A	0.114	0.5
	PM Peak	Existing	N/A	N/A	N/A
		Development	A	0.263	0.5

The modelling indicates that all intersections will continue to operate with a good operation with the LOS being Level A or B for all intersections under the post-development scenario.

The degree of saturation and average delay increases slightly for all intersections, however, the analysis shows that the proposed works will not have an overall adverse impact on the surrounding road network in terms of capacity or delays. PTC concludes the proposal is unlikely to result in any significant traffic impact on the local traffic conditions.

6.4.3 Access

As discussed in **Section 4.7**, a new access point is proposed on Therry Road and the existing left-in, left-out connection to Appin Road is proposed to be relocated.

The provision of a second access point on Therry Road is anticipated to reduce the strain on the existing roundabout access. This will reduce the queuing that is currently experienced during the evening peak period. As shown in **Table 9**, modelling of the new Therry Road access displays a LOS A for both the AM and PM development scenarios. Further, the new access will reduce traffic using the existing Therry Road roundabout, balancing the volumes amongst the entries and reducing overall delays and queuing.

The existing Appin Road left-in / left-out access will be relocated further south to better service the multi-deck car park and the remainder of the hospital. The exit will also be converted from a high-angle slip lane with STOP control to a low-angle slip lane with a giveway control and acceleration lane. This further reduces delays by enabling egressing vehicles to accelerate along the merge lane and join the Appin Road through traffic, reducing the amount of stopping required and facilitating smoother traffic movement. The relocation of the access towards the south will also provide a greater distance between the access and the adjacent intersection to the north (Narellan Road / Oxley Street / The Parkway). This will ensure a greater buffer from potential queuing impacts from the Narellan Road / Oxley Street / The Parkway intersection.

PTC concludes that the proposed circulation and access arrangements provide an appropriate level of load capacity without the construction of excessive new roads. The construction of new roads is limited and responds to the geography of the site, while improving capacity and maintaining the ability to approach and depart the hospital from any direction. The proposed road network also provides regular shaped sites for future expansion.

6.4.4 Internal Roads

The future road layout within the hospital has been established based on the following key principals:

- Ease of vehicular access to and from any direction;
- Capacity to accommodate the peak traffic flows;
- Accommodate and manage the multiple user groups associated with the hospital;
- Simple and flexible to enable easy wayfinding; and
- Safety of all road users using all forms of transport (particularly pedestrians).

The proposal provides a new emergency department parking area, and an ambulance access road and ambulance only area alongside the new CSB. This will segregate emergency related traffic from the rest of the hospital traffic, providing a high level of amenity and access to these users.

In addition, new drop-off areas will be provided alongside the new hospital building with the first drop-off area for public use / taxis / car-share and the second for buses only. Separation of the two uses enables buses to get in and out of the hospital in a timely manner without conflicting with private vehicle drop-off.

Finally, the location of the multi-deck car park towards the Appin Road access will likely reduce dependency on the Therry Road roundabout access and further minimise any delays experienced in the morning and evening peak periods.

PTC concludes that the redesign of the internal road, setdown areas and ambulance access will result in improved access to the multi-deck car park, greater flexibility for staff and public access, improved capacity of the internal roads, and potential for future expansion opportunities.

6.4.5 Construction Parking

No on-site parking will be provided for construction workers. Employees and sub-contractors will be encouraged to use public and active transport to access the site and not park on public roads. As part of the induction program, contractors and sub-contractors will be advised that there is no parking within the site, or within the adjacent streets. To minimise impacts on street parking, contractors and sub-contractors will be encouraged to use public transport or to car pool.

To support alternative travel, secure areas will be made available within the work compounds for tradesmen and staff to store equipment.

6.4.6 Construction Traffic

Construction vehicles will access the hospital via the Therry Road and Appin Road access points. PTC has undertaken swept path analysis and confirm that vehicles up to 19m can access the site from Therry Road while 8.4m medium ridged vehicles can access from Appin Road.

Construction of the CSB will be undertaken at the same time as the multi-storey car park. PTC outline that a cumulative traffic assessment will need to be undertaken as the daily construction vehicle movements to and from the site are unknown at this stage.

6.4.7 Bicycle Parking

Campbelltown Hospital currently provides parking for 10 bicycles. Due to the low level of bicycle usage, the CSB does not propose to introduce any additional bike parking facilities as part of this application. This does not prevent the inclusion of bike parking or end of trip facilities as part of future works should they be identified as a requirement for staff or visitors.

6.4.8 Emergency Vehicles

As part of the proposed redevelopment, seven (7) ambulance parking bays will be provided. Ambulance access to the hospital will continue to be from the Therry Road/Central Road roundabout, with an ambulance access road and ambulance only area provided alongside the new CSB. During construction works, ambulances will continue to have unobstructed access.

6.4.9 Loading Facilities

The loading dock at Building B will continue to be the central waste collection point for the campus. The loading dock will be upgraded by Health Infrastructure via Part 5 of the EP&A Act (refer to **Section 2.2.3**). The size of vehicles that will service the loading dock will remain unchanged.

6.4.10 Green Travel Plan

A draft Green Travel Plan (GTP) has been prepared by PTC and is available at **Appendix I**. The GTP provides a package of measures with the aim of promoting sustainable transportation. The GTP will be finalised in consultation with hospital user groups.

Suggested strategies to influence travel demand include:

- Encourage staff, patients and visitors to use more sustainable travel options to get to the hospital;
- Encourage staff to adopt healthy transport choices such as walking and cycling where this is a realistic option;
- Explore car parking needs with public transport providers, which may include consideration of park and ride schemes;
- Pursue opportunities for sharing vehicles or transport not only for staff but to explore innovative solutions to minimise journeys;
- Allocate some dedicated carpooling spaces to promote carpooling by the staff members living in the same areas;
- Subsidise public transport and car share services to encourage alternate transport means;
- Consider a shuttle bus that can collect staff who live within 5-10km of the hospital; and
- Develop a Transport Access Guide to encourage staff and visitors to adopt alternative sustainable transport options.

6.4.11 Helipad

Currently the hospital uses the at grade helipad at the west of the campus for helicopter services. The existing flight path is from south east to north west.

The proposed development provides for improved helicopter operations by inclusion of a rooftop helipad. This reduces the length of the patient transfer. The flight path generally remains unchanged and impacts are expected to remain unchanged from the current scenario. Impacts are further minimised by locating the helipad towards the centre of the site.

Additional advantages of an elevated landing site over ground level sites include:

- A smoother and quicker transfer of patients;
- Fewer security issues;
- Lower long-term human resource demands;
- Greater safety, particularly to non-participants; and
- Lesser environmental impact, both noise and rotor wash.

An Aviation Report has been prepared for the CSB and is provided in **Appendix CC**.

6.5 Heritage

A Statement of Heritage Impact has been prepared by Biosis (**Appendix J**) in accordance with the NSW Heritage Manual Guidelines. The report confirms there are no historical structures or buildings within the Campbelltown Hospital campus and there is low potential for any archaeological finds due to the heavily modified landscape and lack of historical occupation. The site is not located on and local or state heritage register.

Biosis' assessment of heritage significance identifies Block B (Building B) as having local significance due to the association of the building with architect Barry Patten of Yuncken Freeman Architects and its representative nature of 1970s architecture. Building B is not listed as an item of heritage significance under the LEP. Biosis conclude the impacts of the CSB are acceptable from a heritage perspective. Biosis also conclude that the new Hospital Spine, which will link to Building B, replaces an existing link and will therefore have no further impact on the significance of Building B.

Biosis make the following recommendations:

- No further archaeological work is required in the study area due to the entire study area assessed as having low archaeological potential and the proposed development may proceed with caution.

- 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. The Heritage Council will require notification if the find is assessed as a relic. Relics are historical archaeological resources of local or State significance and are protected in NSW under the *Heritage Act 1977*. Relics cannot be disturbed except with a permit or exception/exemption notification.

6.6 Aboriginal Heritage

An Aboriginal Cultural Heritage Archaeological Survey Report has been prepared by Biosis (**Appendix K**). The assessment confirms there is limited potential for historical heritage values within the Campbelltown Hospital site and no Aboriginal sites registered with Aboriginal Heritage Information Management System. An archaeological survey was conducted on 17 May 2018. No new sites were discovered during the archaeological survey.

Consultation regarding development at Campbelltown Hospital was previously undertaken by Austral Archaeology (2012) which met the standards of the Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005) and the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010a). No specific landscape values were raised by the local Aboriginal stakeholders during the consultation process.
The following recommendations are made by Biosis for the proposal:

- No further archaeological work is required in areas identified as having low archaeological potential except in the event that unexpected Aboriginal sites, objects or human remains are unearthed during development.
- Should any 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. If the find is determined to be an Aboriginal object the archaeologist will provide further recommendations. These may include notifying the OEH and Aboriginal stakeholders.
- If any suspected human remains are discovered during any activity the proponent must:
  - Immediately cease all work at that location and not further move or disturb the remains.
  - Notify the NSW Police and OEH's Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location.
  - Not recommence work at that location unless authorised in writing by OEH.

6.7 Biodiversity

A Biodiversity Development Assessment Report (BDAR) has been prepared by Mike Lawrie, Stacey Wilson and Matthew Dowle (**Appendix L**) who are Accredited Persons under the *NSW Biodiversity Conservation Act 2016* (NSW BC Act). The BDAR has been prepared to meet the requirements of the Biodiversity Assessment Method (BAM) 2016, as established under Section 6.7 of the NSW BC Act.

The proposal impacts on two Threatened Ecological Communities (TEC) listed under the NSW BC Act including one Critically Endangered Ecological Community (CEEC), Cumberland Plain Woodland (CPW), and one Endangered Ecological Community (EEC), River-flat Eucalypt Forest.

Two Plant Community Types (PCTs) occurring in varying condition are present within the development site. The PCTs have been mapped as PCT *850 - Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain, Sydney Basin Bioregion* and PCT *835 - Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion.*

The assessment confirms:

- PCT 850 conforms to the CEEC 'Cumberland Plain Woodland in the Sydney Basin Bioregion' listed under the NSW BC Act.
- PCT 850 also conforms to 'Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest' listed under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), however the condition of this PCT did not meet the minimum condition thresholds under the EPBC Act.
- PCT 835 conforms to the EEC 'River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South-East Corner Bioregions' which is listed under the NSW BC Act.

- No threatened flora or fauna were recorded on the development site.

The BDAR outlines the measures taken to avoid, minimise and mitigate impacts to the vegetation and species habitat present within the development site and methodologies to minimise impacts during construction and operation of the development.

Following consideration of the above aspects, the residual unavoidable impacts of the project were calculated in accordance with the BAM by utilising the Biodiversity Assessment Method Credit Calculator (BAMC).

A small amount of vegetation within the development site will be removed, resulting in the clearing of 0.33 ha of CPW. The BAMC calculated that a total of 6 ecosystem credits are required to offset the unavoidable impacts on the development site. Because no habitat for candidate credit species was recorded in the study area, no species credits are required to offset the development.

Serious and Irreversible Impacts (SAII) values have also been considered in this assessment. CPW is a listed SAII. The SAII threshold for CPW is yet to be published by OEH. However, given the small area (0.33 ha) and poor condition of CPW to be impacted, it is considered unlikely that the development would result in an SAII.

Impacts to native vegetation that require offset are outlined at **Table 10**.

Table 10 Ecosystem credits required

PCT ID	PCT Name	Vegetation Formation	Direct Impact (ha)	Credits Required
850	Grey Box - Forest Red Gum grassy woodland on shale of the Cumberland Plain, Sydney Basin Bioregion	Coastal Valley Grassy Woodlands	0.33	6

6.8 Tree Removal

Existing trees on the site are proposed to be retained where possible. Eco Logical has prepared an Arboricultural Impact Assessment to discuss the proposed removal of trees and their significance (**Appendix M**). A total of 148 trees were assessed in the study area. The proposal will require the removal of 53 trees. Of the trees to be removed:

- Two (2) trees are of high retention value;
- 47 trees are of medium retention value; and
- Four (4) trees are of low retention value.

Any loss of trees will be offset in accordance with the requirements of the Biodiversity Offsets Scheme, as detailed in the Biodiversity Development Assessment Report.

Six (6) trees (one *Eucalyptus moluccana* and five *Corymbia maculata*) of medium retention value will be subject to medium impact of the tree protection zone. Further detailed assessments (root investigation) via non-destructive methods will be required to determine the suitability of retention for medium impact trees.

Eco Logical outline mitigation measures to reduce impact to trees that are to be retained in accordance with the requirements of *AS 4970-2009 - Protection of trees on development sites*.

6.9 Waste

A Waste Management Plan (WMP) has been prepared by Space 2 Develop and is included at **Appendix N**. The Plan provides an assessment of potential waste impacts of the construction and operation of the new CSB. The WMP identifies the potential types and volumes of waste that are expected to be generated in the construction and operational phases of the proposed development and suggests systems to be implemented to appropriately manage this waste.

6.9.1 Operational Waste

The following are the main waste streams that would be expected from the proposed development:

- General waste;

- Clinical waste;
- Paper and cardboard; and
- Comingled recycling.

The WMP identifies likely waste streams including potential volumes of each stream during operation of the CSB. It has been prepared with reference to the relevant legislation and policies.

It is noted that the CSB would not introduce any waste that is not already managed by the existing hospital operations. The WMP identifies management measures and disposal destinations for each waste stream for general, recycling and clinical waste.

The WMP calculates the total waste generation for the hospital following completion of the CSB, which will service a population of 801 beds. It is estimated that the hospital will generate a total of approximately 12,700 litres of waste and recyclables per day across the hospital campus.

All general waste will be deposited into dedicated 660 litre mobile garbage bins (MGB) that have been located in the various wards/departments of the redevelopment. These will be located in areas such as dirty utility rooms and other areas as required. Waste will be transported by hospital staff and emptied into a 30m^3 general waste compactor for collection.

660 litre MGBs will be located on each level of the development for recyclables (paper and cardboard). These will be transported on a 'needs' basis by site cleaners, taken to the central storage area (in the loading dock) and replaced with an empty bin. Once a commingled recycling system is implemented, then appropriately coloured MGB will be provided and transported by hospital staff as required.

The existing central loading dock in Building B will be upgraded by Health Infrastructure under a separate application under Part 5 of the EP&A Act (refer to **Section 2.2.3**). The loading dock will continue to be the central waste hub for the hospital campus and will be capable of handling the overall quantities of waste generated by the campus, including the proposed CSB.

6.9.2 Construction Waste

The WMP identifies likely waste streams including the possible volume of each stream during construction of the proposal. Generally, waste will be segregated on site and transported to a recycling facility.

A detailed construction waste management plan will be developed by the future site contractor as part of the CEMP for the CSB (refer to **Appendix N**). The contractor will be required to achieve compliance with EPA Guidelines.

6.9.3 Hazardous Waste

An assessment of hazardous waste has been prepared by Space 2 Develop (**Appendix N**). The assessment evaluates the hazards associated with the handling, storage and disposal of hazardous material during operation of the CSB. Hazardous waste generated by the hospital may include clinical, cytotoxic, pharmaceutical, radioactive and chemical waste streams.

The Preliminary Hazard Assessment indicates there is a low to medium risk associated with the consolidation of acute services.

NSW Health operates under existing waste disposal guidelines for collection, control, storage and transport of clinical wastes that accord to NSW Health, NSW EPA, Safework NSW, relevant Australian Standards and industry best-practice guidelines.

6.10 Hazards and Risks

State Environmental Planning Policy Number 33 - Hazard and Offensive Development (SEPP 33) establishes a protocol for planning for development that can be categorised as Potentially Hazardous or Potentially Offensive Development. The Department of Planning's SEPP 33 Guidelines (2011) establish screening thresholds for Dangerous Goods stored on site. If storage and transportation of dangerous goods is below these risk screening thresholds then,

under SEPP 33, the facility is not considered to be potentially hazardous development and a Preliminary Hazards Analysis (PHA) is not required.

It is not known at this stage the actual quantities of Dangerous Goods that will be stored at the site in all cases, however an assessment of the screening thresholds for the relevant dangerous goods has been carried out, and the hospital will be operated such that these thresholds are not exceeded.

Site Assessment

Substances proposed to be stored onsite that are hazardous or dangerous goods include cleaning agents and medical supplies such as drugs, sterilising resources and diagnostic materials. Of these, the substances that are classified as a Dangerous Goods are listed in **Table 11**, along with the screening thresholds applicable under the SEPP 33 Guidelines.

Table 11 Dangerous Goods Summary and SEPP 33 Screening Assessment

ADG Classification (and Packaging Group)	Substances	Applying SEPP 33 Screening Threshold	Site Storage Capacity
Class 2.1	Medical supplies and pesticides that are stored for use as a compressed gas where the gas is flammable – such as insect sprays containing acetylene, and lubrication sprays.	100 kg at 1m from the site boundary	Class 2.1 materials stored at the site will be stored within cabinets inside the hospital building, significantly more than 1m from the site boundary. These materials will be stored in small quantities in generally less than 1kg packages. In total, all class 2.1 materials will not exceed 100 kg combined across the hospital.
Class 3 (PG II) Class 3 (PG III)	Cleaning solutions, medical supplies and personal hygiene products containing flammable liquids – such as methanol, ethanol, acetone, methylated spirits, kerosene and mineral turpentine.	5 tonnes at 1m from site boundary	Class 3 materials stored at the site will be stored within cabinets inside the hospital building, significantly more than 1m from the site boundary. These materials will be stored in small quantities in generally less than 1L. In total, all class 3 materials are not expected to exceed 1,000L in combined volume across the hospital, and the hospital will certainly not exceed the 5 tonnes screening threshold for these materials.
Class 4 (PG II)	Sterilised hygiene products that are flammable solid substances because they contain flammable liquids – such as antibacterial wipes that contain isopropyl alcohol.	5 tonnes	Class 4.1 materials are limited to antibacterial wipes that will be stored at the site within cabinets inside the hospital building. These materials will be stored in significant quantities but it is not expected to exceed 1 tonne combined storage across the hospital, and the hospital will certainly not exceed the 5 tonnes screening threshold for these materials.
Class 5.1 (PG II)	Cleaning solutions that contain hydrogen peroxide, which can readily liberate oxygen and so can stimulate the combustion of other materials in the event of a fire.	5 tonnes	Class 5.1 materials are limited to cleaning agents that will be stored at the site within cabinets inside the hospital building. These materials will be stored in significant quantities but it is not expected to exceed 1 tonne combined storage across the hospital, and the hospital will certainly not exceed the 5 tonnes screening threshold for these materials.
Class 5.2 (PG II)	Medical supplies used to chemically sterilise medical equipment containing organic peroxides which are combustible, and can burn in the event of a fire.	10 tonnes	Class 5.2 materials are limited to chemical sterilising agents that will be stored at the site within cabinets inside the hospital building. These materials will be stored in significant quantities but it is not expected to exceed 1 tonne combined storage across the hospital, and the hospital will certainly not exceed the 10 tonnes screening threshold for these materials.
Class 6.1 (PG I)	Drugs and medical supplies that may be poisonous or toxic if swallowed, inhaled or by skin contact – including chemotherapy drugs and anaesthetics.	0.5 tonnes	Class 6.2 materials will be stored at the site within cabinets inside the hospital building. These materials will be stored in small quantities for specialised and individual administration to patients, and the hospital will certainly not exceed the screening threshold for these materials in aggregate.
Class 6.1 (PG II / III)		2.5 tonnes	
Class 8 (PG II)	Cleaning agents that contain corrosive substances such as acids and bases – including bleach which by chemical action, will cause damage when in contact with living tissue, or in the	25 tonnes	Class 6.2 materials will be stored at the site within cabinets inside the hospital building. These materials will be stored in significant quantities but the hospital will certainly not exceed the screening threshold for these materials in aggregate.
Class 8 (PG III)		50 tonnes	

ADG Classification (and Packaging Group)	Substances	Applying SEPP 33 Screening Threshold	Site Storage Capacity
	case of leakage will materially damage or even destroy other goods.		

In addition to the above chemicals, the hospital will include the storage of dangerous goods that are not subject of screening criteria in the SEPP 33 Guidelines, as follows:

- Class 2.2 Non-flammable Non-toxic Compressed Gases: gases which are neither flammable nor poisonous whether compressed, including medical air, oxygen, nitrous oxide, and nitrogen. Oxygen would be stored externally in two tanks of 5.5 tonnes and 1.7 tonnes capacity, and would be refilled in-situ. Other medical gases would be delivered in individual tanks for use within the hospital. Class 2.2 compressed gases are non-flammable and non-toxic and do not pose any potential off-site risk to human health or the environment, and as such as not subject of screening under Applying SEPP 33.
- Class 9 Miscellaneous Dangerous Goods: miscellaneous dangerous goods, which pose little threat to people or property, and so are not subject of screening under Applying SEPP 33, but which may pose an environmental hazard. The hospital will store drugs and cleaning agents, sanitisers, sterilising agents, and lithium ion batteries that are classed as Class 9 Dangerous Goods. All of these materials will be stored within cabinets inside the hospital building in small quantities, individually packaged for use by staff and patients within the hospital. As they are appropriately packaged, and will be stored and used within the hospital, these materials pose very little potential risk to the environment as a result of spills or accidental release.
- Class C1 Combustible Liquid: diesel in three separate tanks located at Block A - 10,000 Litres underground tank, Block B - 5,000 Litres underground tank, and Block D - 5,000 Litre above ground tank located under the building. Diesel is a C1 combustible liquid, but is not considered to be a Dangerous Good if it is stored separately from Class 3 flammable liquids. No Class 3 flammable liquids will be stored in the vicinity of the diesel tanks. As such, the diesel fuel storage is not assessed as a Dangerous Good under the SEPP 33 Guidelines.

Transport Assessment

Transport of Dangerous Goods to the site will be undertaken by a regulated contractor and in accordance with standard safety procedures for each product. Because of the small volumes of dangerous goods to be stored at the hospital, the transportation screening thresholds established for each class of Dangerous Goods in Table 2 of the Applying SEPP 33 Guidelines will not be exceeded.

Conclusion

Given the low quantities of materials to be stored inside buildings at the site, and the commitment to store volumes below the thresholds set out in Applying SEPP 33, a PHA is not considered to be necessary.

6.11 Flooding

Enstruct has investigated the potential flood impacts of the proposal (**Appendix O**) and confirm that the CSB is located within an area that is subject to shallow overland flow. The extent of overland flow is limited to a depth of 0.1m during the 100-year ARI along the public drop off and Emergency Department (west of the CSB). To ensure the CSB remains unaffected, an overland flow diversion channel is proposed west of the CSB that will allow water flows to exit the hospital campus and prevent entry to the CSB. Enstruct confirm that the proposed floor level of the Emergency Department (Level 00) at RL 83.2 is adequate for the 100-year ARI. Consequently, the site is not impacted by flooding and the development will have no impact on flooding.

6.12 Water Cycle Management

6.12.1 Stormwater

Stormwater Management for the site is described in the Civil Report prepared by Enstruct at **Appendix O**. Runoff from the roof and building podiums will be collected by the building hydraulics system and conveyed into local stormwater drain pits. A system of pits and pipes will be provided to collect the runoff generated in the ground areas. Prior to any stormwater discharge, the stormwater flows will pass through a silt arrestor pit or Gross Pollutant Trap (GPT). The ambulance bay area will discharge into a dedicated GPT that connects to stormwater piping.

The Civil Report confirms the stormwater system has been designed to meet the requirements of the following standards and guidelines:

- Australian Rainfall & Runoff: Volumes 1 & 2;
- NSW Government Floodplain Development Manual (2005) - AS3500.3 Plumbing and Drainage: Stormwater Drainage;
- Managing Urban Stormwater, Soils and Construction, Volume 1, 4th edition, Landcom, March 2004;
- Concrete Pipe Selection and Installation - Concrete Pipe Association 1990;
- Campbelltown City Council Development Control Plan Volume 2 – Engineering Design for Development, June 2009; and
- Guidelines for developments adjoining land managed by the Office of Environment and Heritage 2013.

6.12.2 Water Sensitive Urban Design

A review of Water Sensitive Urban Design (WSUD) measures has been undertaken by Enstruct (**Appendix O**) and Donnelley Simpson Cleary (**Appendix P**). WSUD measures will be provided in accordance with:

- Campbelltown Council Development Control Plan 2009 (CDCP 2009);
- CDCP Volume 2 – Engineering Design for Development; and
- WSUD Technical Guidelines for Western Sydney;

The combination of a vegetated buffer, bioretention swales, vegetated swales, and filtration devices will be used through a treatment train approach to improve water quality before stormwater discharges from the site. These elements will achieve all the pollution reduction targets required to discharge stormwater to Burinji Creek Basin.

6.12.3 Water and Wastewater Management

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

- Water saving taps and outlets;
- 4 WELS stars rated dual flush toilets;
- 4 WELS stars rated tapware; and
- 3 WELS stars rated showers.

6.13 Noise and Vibration

An Acoustic Assessment has been prepared by Arup and is included at **Appendix Q**. The assessment has identified the potential acoustic and vibration impacts of the development upon the closest receivers and also noise intrusion upon the development. The closest potentially affected receivers are identified at **Figure 38**.

The existing acoustic environment has been determined using long-term noise monitoring. Based on the background and ambient noise monitoring carried out at the nearest affected residential locations, Arup has developed a set of project specific noise criteria (refer to Section 4 and 6 of the Acoustic Assessment) and Mitigation Measures to minimise any impacts from noise and vibration.

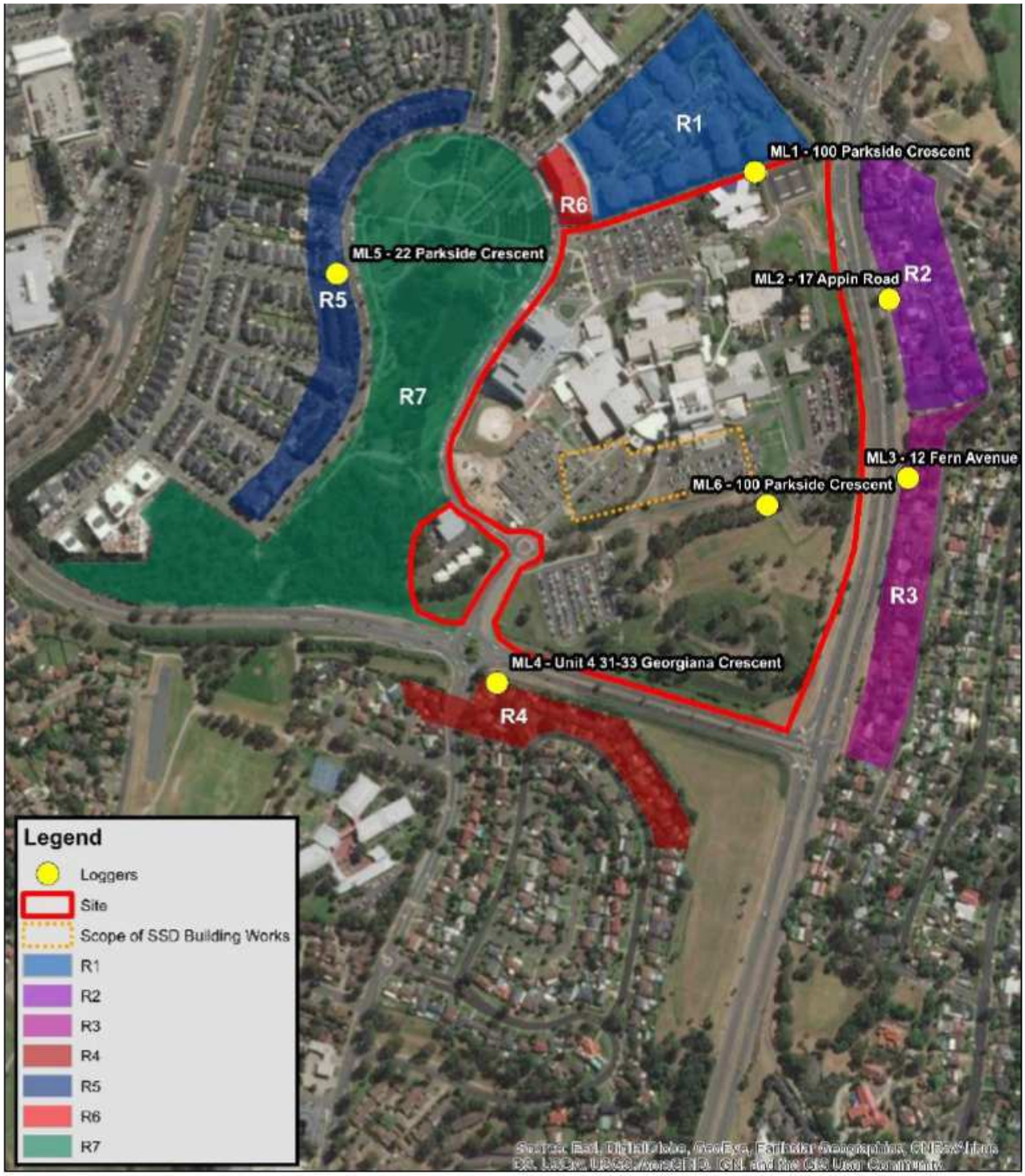

Figure 38 Site Monitoring Locations and Receiver Locations

Source: Arup

6.13.1 Construction Impacts

The construction program has yet to be fully established as the proposal is still at the planning phase of the development. A detailed program and methodology for the works has yet to be developed, and so the indicative assessment of noise emissions is based on typical construction activities.

Construction Noise

EPA guidelines adopt differing strategies for noise control depending on the predicted noise level at the nearest residences. For residential properties, the "noise effected" level occurs when construction noise exceeds ambient levels by more than:

- 10dB(A)Leq(15min) for work during NSW EPA recommended standard construction hours (7am-6pm Monday to Friday and 8am to 1pm on Saturdays); and
- 5dB(A)Leq(15min) for work outside of standard construction hours.

For residential properties, the "highly noise effected" level occurs when construction noise exceeds 75dB(A)Leq (15min) at nearby residences.

A summary of noise emission goals for both standard hours of construction and outside standard hours is provided at **Table 12** below.

Table 12 Construction Noise Emission Goals

Location	Noise management level, LAeq(15 min) dB(A)			
	Standard Hours Monday to Friday 7 am to 6pm; Saturday 8am to 1pm; Sunday and Public Holidays no work		Outside Standard Hours Noise management level based on evening period (i.e. 6 pm to 10 pm) background noise level	
	Noise Affected	Highly Noise Affected	Noise Affected	Highly Noise Affected
R1	55	75	48	53
R2	64	75	49	54
R3	55	75	40	45
R4	61	75	47	52
R5	56	75	45	50
R6	45 (internal noise level)	-	45 (internal noise level)	-
R7	60	-	60	-

The level of construction noise will depend on the construction activity and where the activity is taking place. Intrusive noise emissions are associated with equipment typically having sound power levels of approximately 115 – 120dB(A)Leq(15min). Some exceedance of the EPA "Noise Effected" target levels may occur at the boundary of existing residences surrounding the hospital by these activities.

A 30-minute extension to the hours of construction are sought on Monday – Friday between 6.30am and 7.00am. This is to enable preparatory actions to minimise conflict with the early hospital staff shirt. No noisy equipment or processes would be permitted during this time. These works have been assessed by Arup under standard ICNG hours and management levels.

Extended construction hours are proposed on Saturday between 7.00am - 8.00am and 1.00pm and 3.00pm. The extended hours on Saturday seek to reduce the construction program to reduce the overall duration and impact of the construction program on the operating hospital and on the community. The assessment confirms that the predicted construction noise levels are generally conservative and do not represent a constant noise emission that would be experienced by the community daily and throughout the project. Noise levels exceeding the "Highly Noise Effected" level of 75dB(A) at the residences are unlikely to occur for extended periods.

Work during extended construction hours would be subject to the noise management levels above, and all feasible and reasonable work practices should be applied to minimise the construction noise impacts. Recommended mitigation and management measures are outlined below.

Construction Vibration

Structural vibration as a result of construction activities is typically assessed by the following standards:

- German Standard DIN 4150-3 *Structural Vibration: Effects of Vibration on Structures*; and
- British Standard 7385 Part 2;

Excavation and earth retention works (piling) are the primary vibration generating activities.

Arup concludes that due to the distance between the site and the nearest residential properties, no vibration impacts are envisaged.

Construction Mitigation Measures

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

- Preparation of a detailed Construction Noise and Vibration Management Plan;
- Adherence to the standard approved working hours as outlined in the project approval;
- Manage noise from construction work that might be undertaken outside the recommended standard hours;
- The location of stationary plant (concrete pumps, air-compressors, generators, etc.) 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 (temporary or permanent) prior to commencement of internal works to limit noise emission;
- The appropriate choice of low-noise construction equipment and/or methods;
- Modifications to construction equipment or the construction methodology or programme. This may entail programming activities to occur concurrently where a noisy activity will mask a less noisy activity, or, at different times where more than one noisy activity will significantly increase the noise. The programming should also consider the location of the activities due to occur concurrently and
- Carry out consultation with the community during construction including, but not limited to advance notification of planned activities and expected disruption/effects, construction noise complaints handling procedures.

6.13.2 Operational Impacts

At this early stage the selection of plant for the proposal has not been finalised and accordingly detailed acoustic design assessment cannot be undertaken. However, an indicative assessment of primary plant items has been undertaken. It is noted that the CSB is located approximately 160 metres from the nearest off-site receivers, assisting in mitigating acoustic intrusion.

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

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

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

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

- Acoustic treatment of discharge and intake lines to internally housed plant rooms, as required;
- Inclusion of noise control measures for roof plant including acoustic attenuators and/or acoustic screens;

- Further acoustic assessment of building services equipment should be undertaken during the detailed design phase of the development to ensure that the cumulative noise of all equipment does not exceed the applicable noise criteria; and
- Inclusion of common engineering methods to control noise emission including:
  - Procurement of 'quiet' plant;
  - Commercially available acoustic attenuators for air discharge and air intakes of plant;
  - Acoustically lined and lagged ductwork;
  - Acoustic barriers between plant and sensitive neighbouring premises; and
  - Partial or complete acoustic enclosures over plant.

Arup concludes that the proposed development is capable of satisfying the standard NSW EPA noise policy requirements to achieve compliance with the criteria detailed at Section 4 and 6 of the Acoustic Report.

6.14 Bushfire

Eco Logical has prepared a Bushfire Assessment Requirements Statement (refer to **Appendix R**) which confirms that the area proposed for the CSB is:

- Not mapped as bush fire prone land (as per Section 146 of the EP&A Act); and
- The vegetation nearest the proposed SSD building works is not of sufficient dimensions or size to be a significant bushfire threat.

Accordingly, specific bushfire construction requirements, as identified in Planning for Bush Fire Protection (NSW Rural Fire Service 2006), do not apply to the proposed CSB building.

6.15 Sediment and Erosion Control

An Erosion and Sediment Control Plan has been prepared by Enstruct and is included at **Appendix O**. The Plan outlines the management processes to be put in place to maintain the quality of stormwater discharge during construction. Measures include sediment fences, settlement ponds and shaker grates.

Enstruct confirm all erosion and sedimentation management measures will be in accordance with Landcom guidelines – Managing Urban Stormwater Runoff: Soils and Construction ("Blue Book").

6.16 Geotechnical

A Geotechnical Investigation has been undertaken by Douglas Partners (**Appendix S**) to assess subsurface conditions. The investigation found the site surface comprises a combination of asphalt, concrete, topsoil and crushed sandstone in depths up to 0.6m. Silty clay and hard silty clay was encountered in depths 1.8-1.9m and 0.3-4.0m respectively. Siltstone directly underlies the clays and filling from low strength and grading to medium and high strength to depths up to 23m.

Based on the results of the site investigations, the report provides advice on the geotechnical aspects of the proposed civil and structural design. These recommendations relate to excavation, retention, footings, anchors, pavements and floor slabs and drainage and have been considered during the design of the proposal.

6.17 Groundwater

Whilst no free groundwater was observed in the boreholes for the period of time they were open, Douglas Partners note that previous investigations found groundwater depths ranging between 3.6 – 6.8m.

Previous investigation from 1998 indicates that there is potential for groundwater inflow in the vicinity of the new CSB. Whilst the extent of groundwater inflow would depend on weather conditions, short term inflow would be controlled from sumps within the excavation. Management of drainage behind perimeter walls and underfloor drainage will need to be included in the detailed design of the CSB, subject to observation of inflow during excavation. Potential drainage solutions may include discharge via a permanent pump system to stormwater systems or sewer.

Enstruct confirm that while dewatering is not projected to occur, the following management options for potential dewatering activities include:

- Pumping, transport and disposal off-site at a licensed liquid waste facility;
- On-site treatment and discharge to stormwater connections in accordance with acceptable criteria (e.g. ANZECC (2000), the 'Blue Book', and ANZECC Water Quality Guidelines for Fresh and Marine Waters 2000);
- On-site treatment and discharge to Council stormwater drains to criteria acceptable to relevant authorities; and
- Treated dewatering effluent may be allowed to be used for dust suppression.

Monitoring of discharged water will also be required to demonstrate compliance with the acceptable criteria.

6.18 Contamination

A Detailed Site Investigation for the hospital campus has been undertaken by Douglas Partners (**Appendix T**). In addition to the review of previous contamination investigations, Douglas Partners completed 17 bore holes as part of the investigation, while a further six cores were reviewed from previous investigations. No free groundwater was observed in the boreholes.

Testing of soil samples found all heavy materials (TRH/BTEX, PAH's, OCP's, PCB's and foreign materials) were found to have concentrations below the relevant criteria. No asbestos was reported.

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

Douglas Partners make the following recommendations:

- A building footprint inspection should be carried out after demolition of structures and prior to construction to confirm the contamination status of inaccessible areas;
- Excavated material must be classified by a qualified environmental consultant in accordance with the NSW EPA Waste Classification Guidelines; and
- An Unexpected Finds Protocol is to be established for use during bulk excavation.

6.19 Acid Sulfate Soil

Douglas Partners have confirmed that the site is not located in an ASS risk area.

6.20 Building Code Compliance

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

6.21 Accessibility

An Access Report prepared by I Access Consultants is provided at **Appendix V**. The Report concludes that the proposed development can achieve compliance with the relevant statutory requirements. The development has been assessed against the following Plans, Policies and relevant Australian Standards:

- Disability Discrimination Act 1992;
- Disability (Access to Premises - Buildings) Standards 2010 (DDA 1992);
- Building Code of Australia;
- AS1428.1:2009 Design for access and mobility - General requirements for access - New building work;
- AS1428.2:1992 Design for access and mobility - Enhanced and additional requirements - Buildings and facilities;
- AS1428.4.1:2009 Design for access and mobility - Means to assist the orientation of people with vision impairment - Tactile ground surface indicators;

- AS1428.5:2010 Design for access and mobility - Communication for people who are deaf or hearing impaired;
- AS1680.2.1:2008 Interior and workplace lighting - Specific applications - Circulation spaces and other general areas;
- AS1735.12:1999 Lifts, escalators and moving walks - Facilities for persons with disabilities;
- AS2890.6:2009 Parking facilities - Off-street parking for people with disabilities;
- AS4299:1995 Adaptable Dwellings;
- HB198:2014 Guide to the specification and testing of slip resistance of pedestrian surfaces; and
- Australasian Health Facility Guidelines.

6.22 Structural Adequacy

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

- AS/NZS 1170.0 – Structural Design Actions Part 0 General Principles;
- AS/NZS 1170.1 – Structural Design Actions Part 1 Permanent, Imposed and Other Actions;
- AS/NZS 1170.2 – Structural Design Actions Part 2 Wind Loads;
- AS1170.4 – Structural Design Actions Part 4 Earthquake Actions in Australia;
- AS2159 – Piling – Design and Installation;
- AS2670.1 – Evaluation of Human Exposure to Whole Body Vibration – General Requirements;
- AS2670.2 – Evaluation of Human Exposure to Whole Body Vibration – Continuous and Shock Induced Vibration in Buildings (1 to 80Hz);
- AS3600 – Concrete Structures;
- AS3700 – Masonry Code;
- AS4100 – Steel Structures; and
- AS4678 – Earth Retaining Structures.

6.23 Construction Management

A Preliminary Construction Management Plan (CMP) has been prepared by Health Infrastructure (**Appendix X**). The Preliminary CMP outlines site management principles and measures to mitigate impacts during the construction period. These measures include:

- Appropriate hoarding/fencing (as specified in Australian Standards and Workcover requirements) will be installed to prevent public and staff access and to maintain security for the various areas of the works;
- Site, precinct information and traffic signage and any temporary traffic measures required will be installed and maintained for the duration of the works;
- Any planned disruptions to hospital operations will be managed through the process of Disruption Notices (DNs);
- Contractor and sub-contractors will be advised during their site inductions that there is no parking within the Campbelltown Hospital site;
- Noise from the construction site shall not exceed the limits set out in the Interim Construction Noise Guidelines, EPA and Australian Standards;
- No machine work will occur outside the approved working hours set unless approval has been given through the DN process and as per the conditions of consent;
- As a minimum, the erosion and sediment controls for the works are to be designed, installed and maintained in accordance with the requirements of Managing Urban Stormwater: Soils and Construction “The Blue Book” 2004 (4th edition) and/or details provided by the project engineering consultants;

- To control dust generation water will be sprayed where necessary at the source of origin and surrounding areas to prevent airborne dust particles migrating into the surrounding environment;
- The contractor undertaking the works will be required to comply with Australian Standard 4970-2009: Protection of Trees on Development Sites for the proper care and protection of trees retained and integrated into the construction project; and
- Pedestrian and vehicular movements into and around the site will be maintained, or alternate routes determined where necessary, and be defined by clear signage. If necessary, physical traffic management personnel will be used to guide pedestrians and vehicles safely.

6.24 Ecologically Sustainable Development

The environmental performance of the development has been assessed by using clause 7(4) of Schedule 2 of the EP&A Regulations and the EIS is accompanied by an ESD statement prepared by Arup (**Appendix Y**). The initiatives and targets relate to the following aspects of the proposed development:

- NSW HI Engineering Services Guidelines, Doc. No. GL2016_020, dated 26 August 2016 provide guidance as part of their Engineering Services Guidelines to assist the design team in achieving the industry best practice requirements;
- The proposal will "target a Green Star Health Care 4 Star equivalency rating – noting Green Star 4 Star is considered ‘Australian Best Practice’";
- The proposed CSB will be required to deliver a 10% improvement on National Construction Code Section J requirements for energy efficiency through JV3 modelling; and
- The design measures outlined above and as discussed in detail by Arup in the ESD Statement demonstrate the way in which ESD is entrenched into the design proposal. Through the incorporation of these ESD measures, the CSB will be designed in accordance with recognised best practice principles, which are capable of being applied throughout the design and ongoing operation phases of the development.

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

- The precautionary principle;
- Intergenerational equity;
- Conservation of biological diversity and ecological integrity; and
- Improved valuation and pricing of environmental resources.

An analysis of these principles follows.

Precautionary Principle

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

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

Intergenerational Equity

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

- Implementing safeguards and management measures to protect environmental values;
- Facilitating job creation in close proximity to homes and public transport; and

- Improving the public domain and amenity in the Campbelltown Hospital precinct.

The proposal has integrated short and long-term social, financial and environmental considerations so that any foreseeable impacts are not left to be addressed by future generations. Issues with potential long-term implications such as waste disposal would be avoided and/or minimised through construction planning and the application of safeguards and management measures described in this EIS and the appended technical reports.

Conservation of biological diversity and ecological integrity

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

This BDAR outlines the measures taken to avoid, minimise and mitigate impacts to the vegetation and species habitat present within the Development Site and methodologies to minimise impacts during construction and operation of the development. A small amount of vegetation (0.51ha) within the development site will be removed. The BAMC calculated that a total of 10 ecosystem credits are required to offset the unavoidable impacts on the development site.

The proposal has a limited impact on the biological diversity and ecological integrity of the campus requiring a small area and poor condition of threatened ecological communities to be impacted. This will be offset in accordance with the NSW BC Act.

Improved valuation, pricing and incentive mechanisms

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

Additional measures will be implemented to ensure no environmental resources in the locality are adversely impacted during the construction or operational phases.

6.25 Public Benefit

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

This means that the decision on whether a project can proceed or not needs to be made in the full knowledge of its effects, both positive and negative, whether those impacts can be quantified or not. The proposed development involves the redevelopment of an existing hospital. The assessment must therefore focus on the identification and appraisal of the effects of the proposed change over the site's existing condition.

Social and Economic

The social and economic benefits associated with the proposal include:

- The proposed development will provide a significant piece of social infrastructure, increasing the number of hospital beds. The design and capacity increase of the redevelopment is anticipated to have positive impacts on the health outcomes of the region;
- The proposed development is anticipated to create additional employment in consultancy, construction and operation. This is anticipated to have additional social benefits for the region in terms of providing adequate employment in a rural area; and
- Campbelltown Hospital is a major health facility for the Macarthur Region. To not invest in the redevelopment of this hospital would require patients to be catered for under the existing infrastructure or travel significant distances to receive adequate health care.

Biophysical

The environmental impact assessment of the proposed development has demonstrated that:

- The development will generate limited environmental impacts, as it is on a completely cleared, highly modified site in an urban setting;
- The development will not have a significant impact on any threatened flora or fauna species;
- A small amount of vegetation within the development site will be removed, resulting in the clearing of 0.51ha. The BAMC calculated that a total of 10 ecosystem credits are required to offset the unavoidable impacts on the development site.

6.26 Contributions

The relevant contributions plan for the site is the *Campbelltown City Council Section 94A Contributions Plan 2011*. The purpose of the plan is to enable Council to require a contribution towards the provision, extension or augmentation of public amenities and public services that will, or are likely to be, required as a consequence of development within the LGA.

Health Infrastructure NSW is a government agency which relies on government grants to provide new facilities for the local community. The levying of a development contribution would divert a portion of these public funds, which have been specifically provided to fund a hospital redevelopment, to local services without any direct nexus to the impact on those services.

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

7.0 Environmental Risk Assessment

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

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

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

Figure 39 indicates the significance of environmental impacts and assigns a value between 1 and 10 based on:

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

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

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

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

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

Figure 39 Risk Assessment Matrix

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

8.0 Mitigation Measures

The collective measures required to mitigate the impacts associated with the proposed works are detailed in **Table 13** below. These measures have been derived from the previous assessment in **Section 6.0** and those detailed in appended consultants' reports.

Table 13 Mitigation Measures

Mitigation Measures
Reflectivity The building materials used on the facades of all buildings will be designed so as not to result in glare that causes discomfort or threatens the safety of pedestrians or drivers. A report/statement demonstrating consistency with this requirement will be submitted to the satisfaction of the Certifying Authority prior to the commencement of above ground works.
Transport and Accessibility Construction and operational traffic will be in accordance with the recommendations of the Traffic Impact Assessment Report prepared by PTC Consultants and dated 39 July 2018.
Aboriginal Heritage Aboriginal Heritage will be managed in accordance with the Aboriginal Cultural Heritage Archaeological Survey Report dated6 August 2018.
Biodiversity The proposal will be in accordance with the findings of the Biodiversity Development Assessment Report prepared by Eco Logical dated 26 July 2018.
Tree Protection Tree protection will be provided in accordance with Australian Standards (2009) AS4970: Protection of Trees on Construction Sites.
Waste Waste will be in accordance with the recommendations of the Waste Management Plan prepared by Space 2 Develop dated 25 July 2018.
Stormwater The proposal will be in accordance with the recommendations of the Civil Report prepared by Enstruct dated June 2018.
Noise and Vibration The proposal will be in accordance with the recommendations of the Acoustic Assessment Report prepared by Arup dated 27 July 2018
Contamination The proposal will be in accordance with the recommendations of the Detailed Site Investigation prepared by Douglas Partners dated August 2018.
Construction Impacts A Construction Environmental Management Plan (CEMP) will be prepared by the appointed contractor prior to the commencement of works. The CEMP will establish site management principles generally in accordance with the Preliminary Construction Management Plan prepared by Health Infrastructure dated August 2018.
Environmentally Sustainable Development The detailed design of the development is to incorporate all of the ESD principles and measures set out in the ESD Statement prepared by Arup dated 31 May 2018.

9.0 Conclusion

The Environmental Impact Statement (EIS) has been prepared to consider the environmental, social and economic impacts of the proposed Campbelltown Hospital CSB works. The EIS has addressed the issues outlined in the SEARs (**Appendix A**) and accords with Schedule 2 of the EP&A Regulation with regards to consideration of relevant environmental planning instruments, built form, social and environmental impacts including traffic, noise, construction impacts and stormwater.

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

- The proposal will facilitate the development of a new and modern health facility which will further support and strengthen the services and facilities provided at the hospital for the benefit of the Macarthur regional community.
- The area and shape of the site allows for the provision of new health facilities that meet the special design requirements for the future proposed uses, whilst not resulting in any significant adverse impacts on surrounding uses.
- The assessment of the proposal has demonstrated that the development will not result in any environmental impacts that cannot be appropriately managed and is consistent with the relevant planning controls for the site.
- The proposal is consistent with the principles of ecological sustainable development as defined by Schedule 2(7)(4) of the EP&A Regulation as well as Section J of the Building Code of Australia.

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