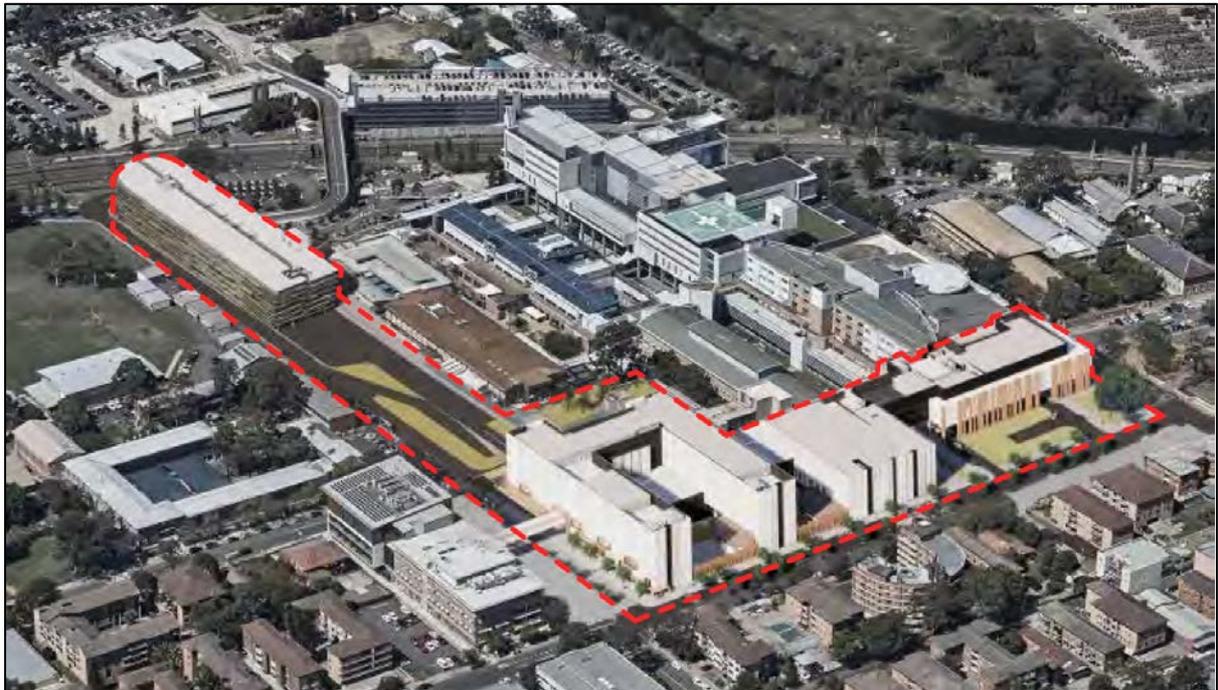




Liverpool Hospital Redevelopment and Multi-storey Carpark

State Significant Development Assessments Report
SSD-10388 and SSD-10389

November 2020



Published by the NSW Department of Planning, Industry and Environment

dpie.nsw.gov.au

Title: Liverpool Hospital Redevelopment and Multi-storey Carpark

Subtitle: State Significant Development Assessments Report

Cover image: Aerial view of new Integrated Services Building and multi-storey carpark (Source: fitzpatrick +partners)

© State of New South Wales through Department of Planning, Industry and Environment 2020. You may copy, distribute, display, download and otherwise freely deal with this publication for any purpose, provided that you attribute the Department of Planning, Industry and Environment as the owner. However, you must obtain permission if you wish to charge others for access to the publication (other than at cost); include the publication in advertising or a product for sale; modify the publication; or republish the publication on a website. You may freely link to the publication on a departmental website.

Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (November 2020) and may not be accurate, current or complete. The State of New South Wales (including the NSW Department of Planning, Industry and Environment), the author and the publisher take no responsibility, and will accept no liability, for the accuracy, currency, reliability or correctness of any information included in the document (including material provided by third parties). Readers should make their own inquiries and rely on their own advice when making decisions related to material contained in this publication.

Glossary

Abbreviation	Definition
AHD	Australian Height Datum
BCA	Building Code of Australia
CIV	Capital Investment Value
CPP	Community Participation Plan
Council	Liverpool City Council
Department	Department of Planning, Industry and Environment
DPI	Department of Primary Industries, DPIE
EESG	Environment, Energy and Science Group, DPIE
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPI	Environmental Planning Instrument
ESD	Ecologically Sustainable Development
Heritage	Heritage NSW, Department of Premier and Cabinet
LEP	Local Environmental Plan
Minister	Minister for Planning and Public Spaces
NPWS	National Parks & Wildlife Service, DPIE
RMS	Roads and Maritime Services, TfNSW
SEARs	Planning Secretary's Environmental Assessment Requirements
Planning Secretary	Secretary of the Department of Planning, Industry and Environment
SEPP	State Environmental Planning Policy
SRD SEPP	State Environmental Planning Policy (State and Regional Development) 2011
SSD	State Significant Development
TfNSW	Transport for NSW

Executive Summary

This report provides an assessment of two State significant development (SSD) applications for a new hospital building and refurbishment works (SSD-10389) and a multi-storey carpark (SSD-10388) at Liverpool Hospital, located on the corner of Elizabeth and Goulburn Streets, Liverpool. The Applicant is Health Administration Corporation and the proposal is located within the Liverpool local government area (LGA).

Assessment summary and conclusions

The proposals would provide additional and improved health care facilities and car parking to support increased demand at Liverpool Hospital. The Department concludes the proposal is in the public interest and recommends that the application be approved, subject to conditions.

The Department has considered the merits of the proposals in accordance with the relevant matters under section 4.15(1) and the objects of the *Environmental Planning and Assessment Act 1979* (EP&A Act), the principles of Ecologically Sustainable Development (ESD), the issues raised in submissions, as well as the Applicant's response to these.

The Department identified built form and urban design, traffic and transport, noise and vibration and heritage as the key issues for assessment. The Department's assessment concluded:

- the built form is appropriate for the site, meets the development standards that apply to the site and has been developed through a design review process that has ensured the proposals exhibit design excellence.
- overshadowing caused by the development would be offset by the public benefit of the proposals.
- the proposals include sufficient public domain improvements, including offset tree planting, to support the new buildings and provide improved access and green space across the site. However, the proposed Campbell Street shared zone is not supported given technical traffic issues related to the design.
- the traffic generated by the proposals can be accommodated on the surrounding road network and sufficient car parking would be provided to meet demand generated by the new Integrated Services Building and existing surplus demand.
- noise impacts associated with the development can be appropriately mitigated, subject to detailed design incorporating acoustic attenuation measures to achieve recommended noise limits and the preparation of construction noise and vibration management plans and out-of-hours protocols where construction works are proposed over the whole weekend.
- the proposals would have acceptable impacts on heritage items on and around the site, except for potential impacts on archaeological resources, which are required to be managed in accordance with relevant guidelines as part of the construction process, given the history of the site and previous findings.

The impacts of the proposals have been addressed in the Environmental Impact Statement, the Response to Submissions (RtS) for the new hospital building and refurbishment works, Response to Submissions and Amended Development Application (Amended proposal) for the new multi-storey

carpark and additional information. Conditions of consent are recommended to ensure that the identified impacts are managed appropriately.

The proposals

The SSD-10389 proposal seeks approval for construction and operation of a new eight storey Integrated Services Building (ISB), including basement and plant and refurbishment works (main works application). The SSD-10388 proposal seeks approval for the construction and operation of a multi-level carpark (carpark application). The proposals also include site works, demolition, remediation, road/driveway works and landscaping works.

The carpark application was amended after exhibition of the original proposal to include an additional level of car parking.

The main works application would support 232 construction jobs and 418 new operational jobs. The carpark application would support 360 construction jobs and two new operational jobs.

The site

The proposals are located at the Liverpool Hospital campus, which is legally described as Lot 501 in DP 1165217, Lots 1 and 2 in DP 1236362 and Lot 100 in DP 1097121. The land is located in the Liverpool LGA. The ISB is located along the western boundary along Goulburn Street from Campbell Street to Elizabeth Street and the new multi-level carpark is located along the northern boundary of the western campus between Forbes Street and Burnside Drive. Refurbishment works are to existing buildings located centrally and along Elizabeth Street.

Statutory context

The proposals are SSD under clause 14 of Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011, as the developments for the purpose of a hospital and ancillary facilities (carpark) each have capital investment values of more than \$30 million. Therefore, the Minister for Planning and Public Spaces is the consent authority.

Engagement

The applications were publicly exhibited concurrently between 28 May 2020 until 24 June 2020 (28 days). The Department of Planning, Industry and Environment (the Department) received nine submissions from public authorities on the main works application, and eight submissions, including seven from public authorities and one from the public, on the carpark application. An additional six submissions from public authorities were received in response to the Applicant's RtS for the main works application and five for the Amended proposal for the carpark application.

The key issues raised in the submissions included: Campbell Street shared zone impacts; public domain and streetscape impacts; bicycle parking facilities; contamination; landscaping; adaptability of the design of the carpark; flood evacuation; car parking impacts during construction; archaeological impacts; and extended construction hours.

Contents

1	Introduction	1
1.1	Site description	1
1.2	Surrounding development	4
2	Project	5
2.1	Physical layout and design.....	9
2.2	Timing.....	10
2.3	Related development	10
3	Strategic context	13
4	Statutory context	15
4.1	State significance	15
4.2	Permissibility	15
4.3	Other approvals.....	15
4.4	Mandatory matters for consideration.....	15
4.5	Biodiversity Conservation Act 2016	19
5	Engagement	21
5.1	Department’s engagement.....	21
5.2	Summary of submissions	21
5.3	Public authority submissions.....	21
5.4	Response to submissions and amended proposal	26
6	Assessment	32
6.1	Built form and urban design	32
6.2	Transport and traffic impacts.....	45
6.3	Noise and vibration impacts	50
6.4	Heritage Impacts	54
6.5	Other issues	55
7	Evaluation	59
8	Recommendation	60
9	Determination	61
	Appendices	62
	Appendix A – List of referenced documents	
	Appendix B – Statutory Considerations	
	Appendix C – Recommended Instruments of Consent	

1 Introduction

This report provides an assessment of two State significant development (SSD) applications for a new hospital building and refurbishment works (SSD-10389) and a multi-storey carpark (SSD-10388) at Liverpool Hospital, located on the corner of Elizabeth and Goulburn Streets, Liverpool.

The SSD-10389 proposal (main works application) seeks approval for construction and operation of the Integrated Services Building (ISB) and refurbishment works including:

- a new eight storey building.
- tree removal.
- demolition, remediation, road, landscaping and utility works.
- skybridge over Campbell Street.

The SSD-10388 proposal (carpark application) seeks approval for construction and operation of an eight level carpark, including: multi-storey and at-grade carparks; demolition works; remediation works; road connections; and landscaping.

The applications have been lodged by Health Infrastructure, on behalf of Health Administration Corporation (the Applicant). The site is located within the Liverpool local government area (LGA).

1.1 Site description

The Liverpool Hospital campus is legally described as Lot 501 in DP 1165217, Lots 1 and 2 in DP 1236362 and Lot 100 in DP 1097121, and is located within the Liverpool City Centre. The east and west parts of the campus are located on a single allotment, which is divided by the railway line corridor between Liverpool Railway Station and Warwick Farm Railway Station as illustrated in **Figure 1**. The northern part of the campus is located on the remaining lots. The hospital is located approximately 500m north of Liverpool Railway Station and bus interchange. Additionally, the site is located approximately 1km south-west of the Warwick Farm Railway Station.

The main works application and carpark application are located on the western part of the campus, with the ISB being located along the western boundary along Goulburn Street from Campbell Street to Elizabeth Street, and the new multi-level carpark along the northern boundary of the western campus between Forbes Street and Burnside Drive. The main works application also includes a skybridge over Campbell Street to the northern campus. The project locations are shown in **Figure 2**.

The site of the main works application currently contains various hospital buildings with heights between one to three storeys (above ground) and the refurbishment works largely involve buildings on the southern part of the western campus (Caroline Chisholm, old clinical services building (CSB) and new CSB). The carpark application site currently contains a multi-storey carpark (CP2), at-grade parking and a roundabout intersecting with Burnside Drive (see **Figure 3**). The site is relatively flat with a slight fall to the north-east.

A local heritage item, being the Plan of Town of Liverpool (early town centre street layout–Hoddle 1827), is situated around the western edges of the campus and the site is partly located within the local Bigge Heritage Conservation Area (see **Figure 4**). Also located on the site is an avenue planting on Elizabeth Street of heritage significance (listed on the s170 heritage register).



Figure 1 | Local context map (Base source: EIS)

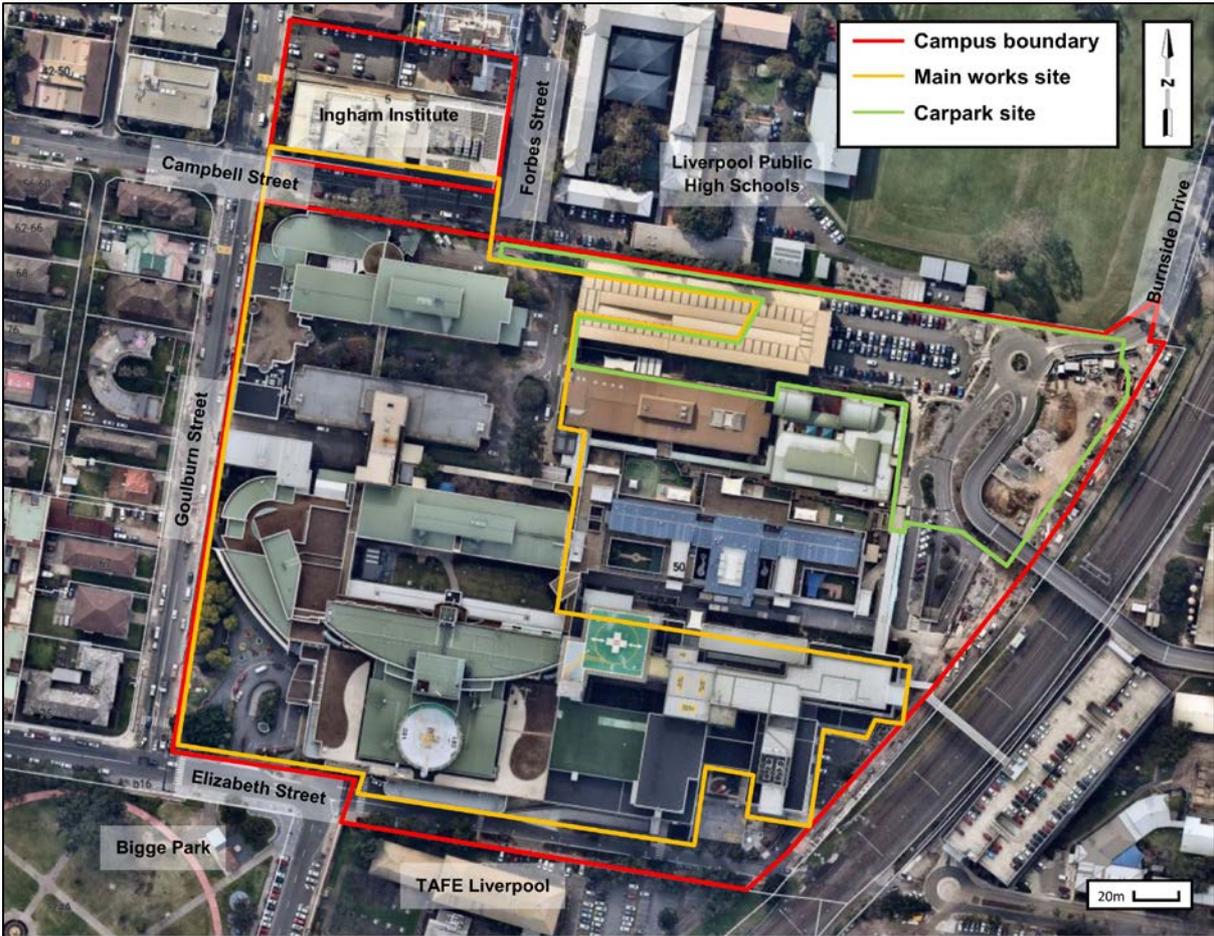


Figure 2 | Site layout (Base source: Nearmap)

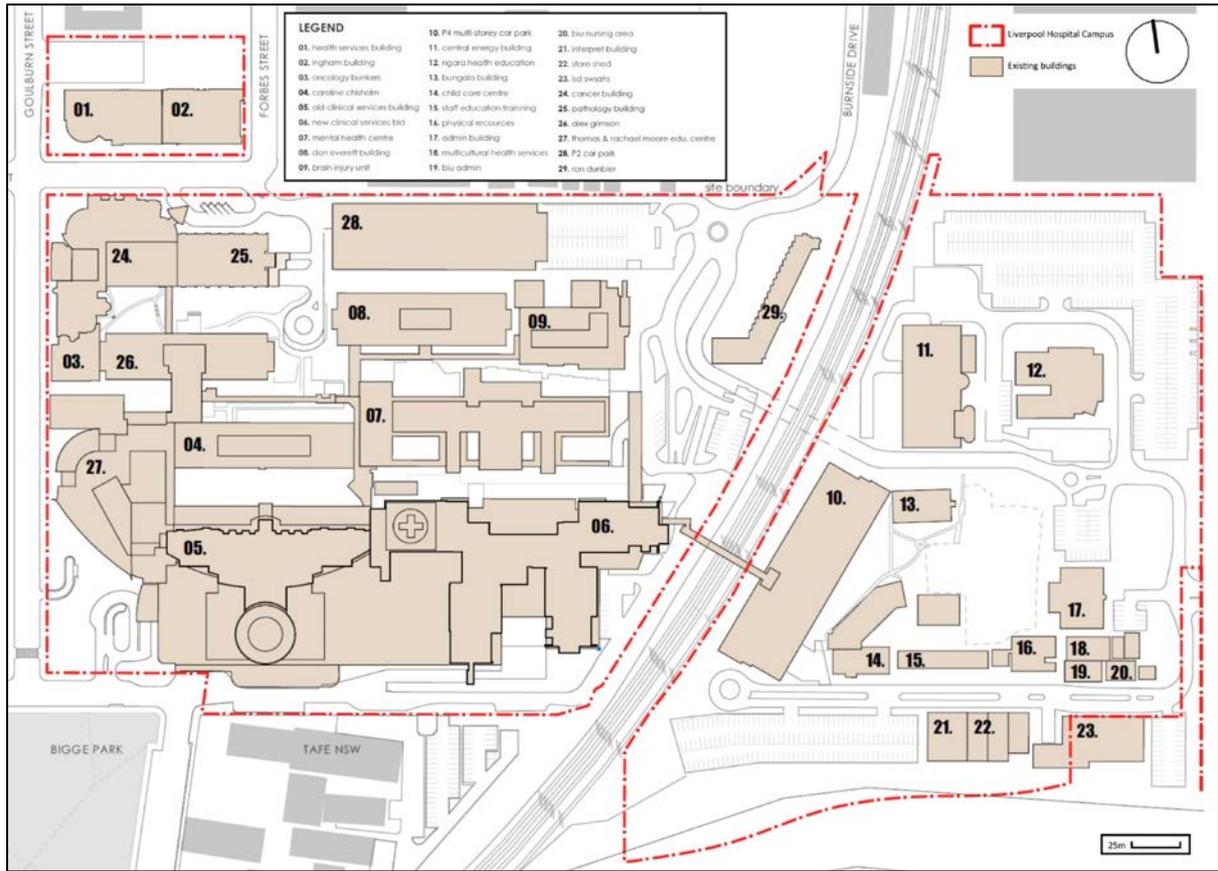


Figure 3 | Existing site plan (Source: EIS)

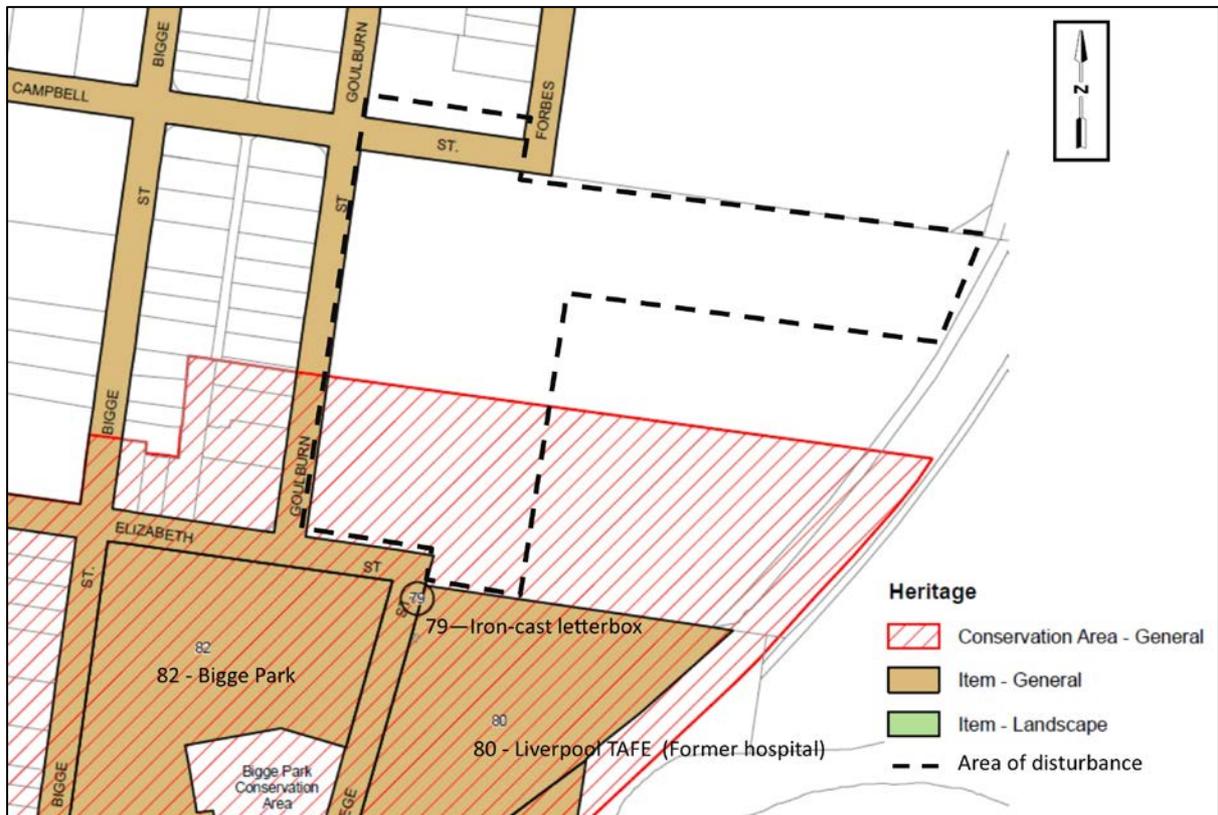


Figure 4 | Heritage items (Base source: EIS)

1.2 Surrounding development

Development surrounding the hospital:

- to the north of the site, beyond Campbell Street, is Liverpool Girls High School and Liverpool Boys High School, buildings for medical uses and medium to high density residential housing, including a recently constructed 10 storey residential building immediately north of the Ingham Institute.
- to the east of the site, beyond the railway line corridor and eastern hospital campus, is a mix of industrial land uses.
- to the south of the site, beyond Elizabeth Street, is Bigge Park and TAFE Liverpool.
- to the west of the site, beyond Goulburn Street, is a mix of single, four and six storey residential developments and the South West Radiology building. Further west is Liverpool CBD and Westfield Shopping Centre.

2 Project

The key components and features of the main works application (as refined in the Response to Submissions) and the carpark application (as modified in the Response to Submissions and Amended Development Application) are provided in **Table 1**. The demolition works, project layouts and views from street frontages are shown in **Figures 5 to 10**.

Table 1 | Main components of the project

Aspect	Description	
	Main works application (SSD-10389)	Carpark application (SSD-10388)
Project summary	Construction and operation of the ISB and refurbishment works	Construction and operation of a multi-level carpark
Uses	<p>New ISB building (187 beds):</p> <ul style="list-style-type: none"> expanded emergency department (ED). women's and paediatric services. cancer treatment centre. support services including pathology, satellite medical imaging and pharmacy. education and teaching spaces. ancillary retail facilities. basement loading dock. <p>Refurbished buildings:</p> <ul style="list-style-type: none"> reconfigured existing ED. expansion of the Intensive Care Unit (ICC). reconfigured operating theatres and same day surgery. use of Caroline Chisholm building for offices. 	<p>Carpark:</p> <ul style="list-style-type: none"> 80% staff parking. 20% visitor parking.
Demolition (refer to Figure 5)	<ul style="list-style-type: none"> Cancer building (1,980sqm) Pathology building (2,745sqm) Alex Grimson building (5,805 sqm) Thomas and Rachael Moore education centre (8,865sqm) 	P2 carpark (597 car spaces)
Contamination	<ul style="list-style-type: none"> Remediation proposed 	<ul style="list-style-type: none"> Remediation proposed
Site area	156,235sqm (East and west hospital campus)	

Aspect	Description	
	Main works application (SSD-10389)	Carpark application (SSD-10388)
Built form	<ul style="list-style-type: none"> • Eight storeys (32.9 metres) • Skybridge over Campbell Street 	Eight levels (25.2m)
Gross floor area (GFA)	42,400sqm (increase 23,005sqm)	20sqm
Site FSR	0.9 (East and west hospital campus)	
Vehicle access	<ul style="list-style-type: none"> • Main entrance and direct access to CP1 – Goulburn Street • Cancer clinics pick-up/drop-off - Forbes Street • Basement service vehicle access - northern link road from Burnside Drive 	<ul style="list-style-type: none"> • Main - Burnside Drive (Level 2) • Secondary - Forbes Street (Ground Level)
Car parking	Nil	1,248 car spaces
Bicycle parking	75 spaces (50 for staff in CP1 carpark and 25 for visitors in the public domain)	25 spaces
Motorcycle parking	Nil	63 spaces
Public domain and landscaping	<ul style="list-style-type: none"> • Goulburn Street Forecourt • Forbes Street Forecourt • Campbell Street Shared Zone • Caroline Chisolm Courtyards • Bunker Courtyards • Tree removal – 68 trees • Tree planting – 150 trees 	<ul style="list-style-type: none"> • Tree removal – Nil • Tree planting – 81 trees
Hours of operation	<ul style="list-style-type: none"> • General hospital access: 6am – 8pm daily • Hospital distribution centre: 7am – 3:30pm (Monday – Friday) • Hospital dock gate: 5am – 10pm daily 	6am – 10pm

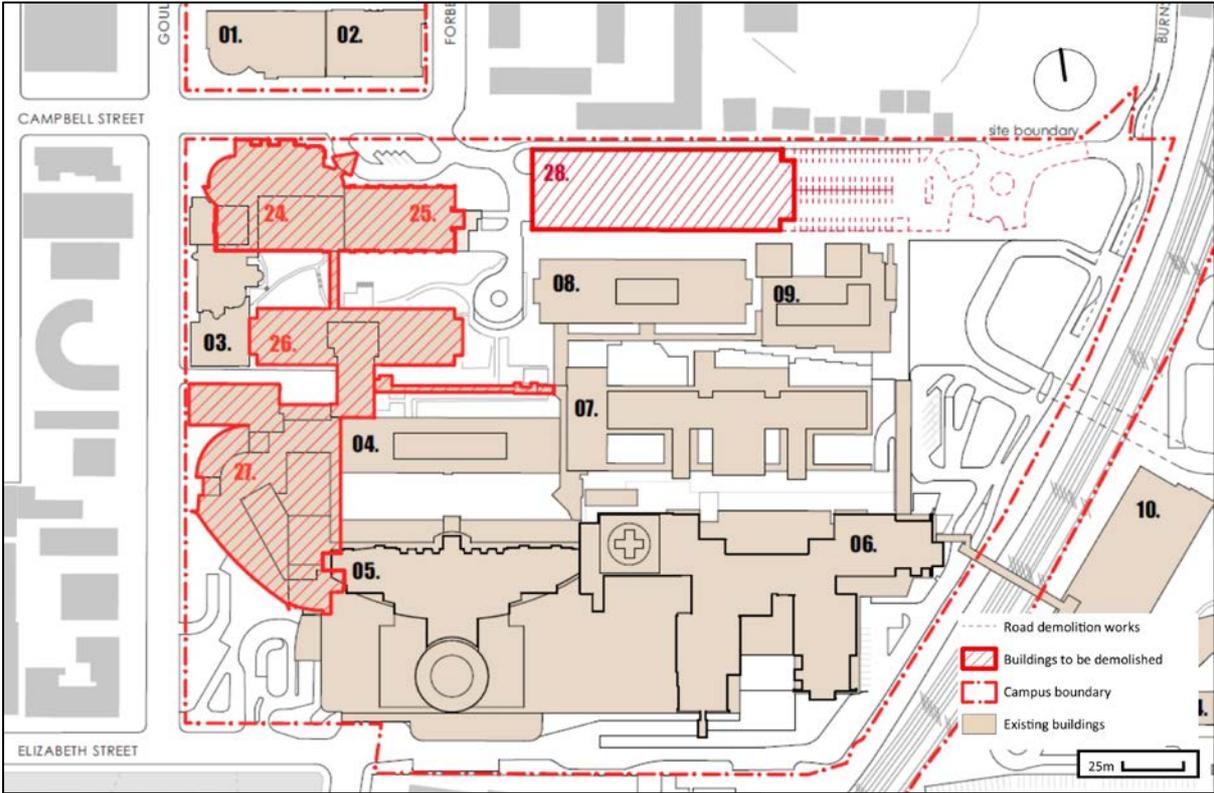


Figure 5 | Demolition works (Base source: EIS)

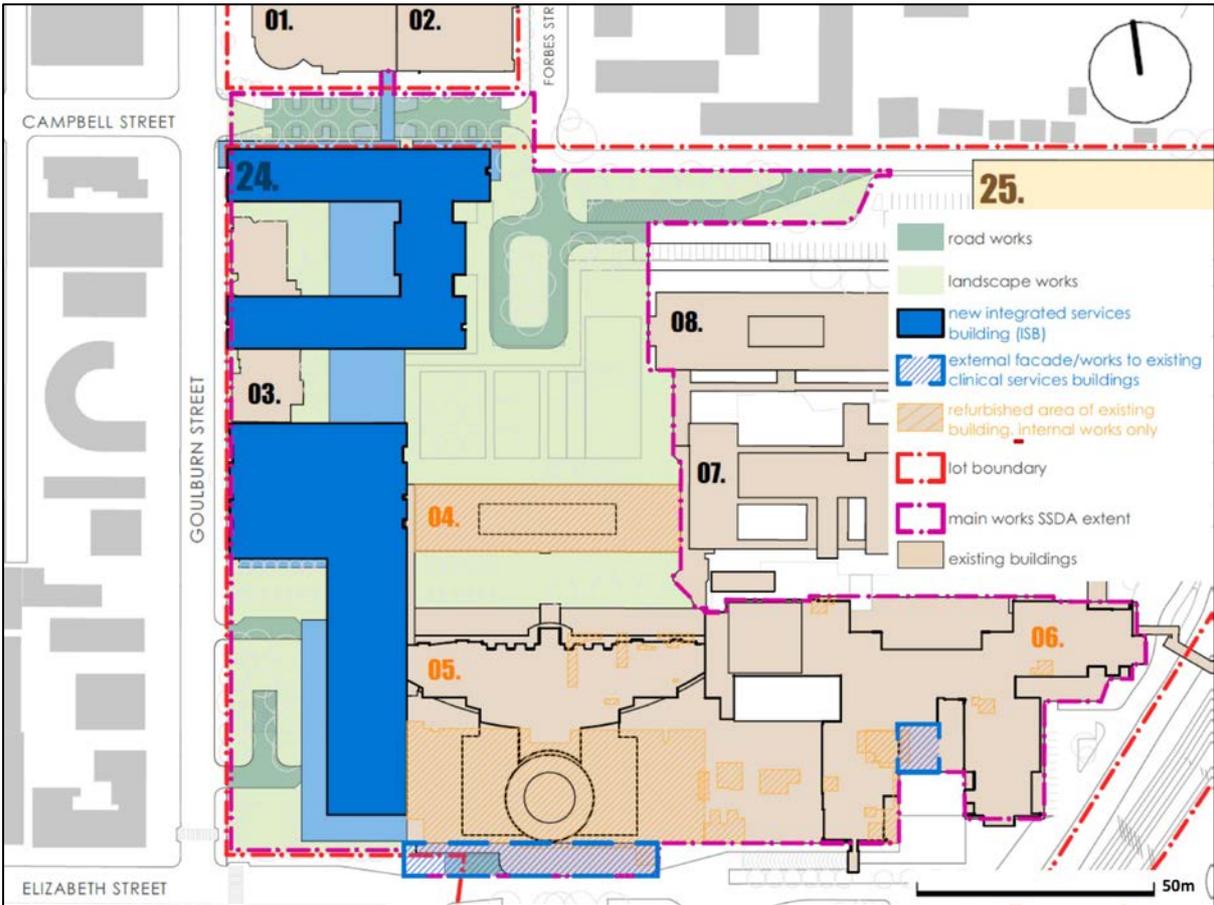


Figure 6 | Main works application site layout (Source: fitzpatrick+partners)

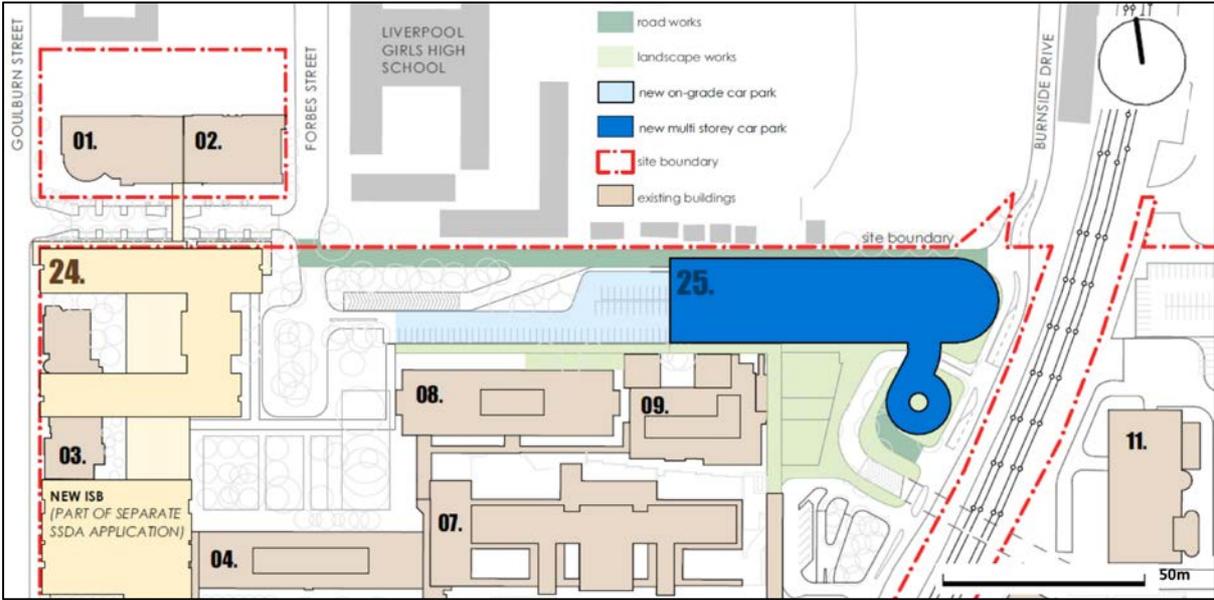


Figure 7 | Carpark application site layout (Source: Amended proposal)



Figure 8 | Illustrative view of main works application from Campbell and Elizabeth Street (Source: RtS)



Figure 9 | Illustrative view of main works application along Goulburn Street from Elizabeth Street (Source: RtS)



Figure 10 | Illustrative view of carpark application from Burnside Drive (Source: Amended Proposal)

2.1 Physical layout and design

The new building of the main works application is located along the western edge of the campus and extends from Campbell Street to Elizabeth Street and is situated above Building 3, which houses the

radiation bunkers. Located to the east are the Caroline Chisolm building and the old CSB, which are proposed to be refurbished, as well as the new CSB. The refurbishment works are generally internal works except a new southern façade for the old CSB, which fronts Elizabeth Street.

The main works application also includes public domain improvements along Campbell Street, Goulburn Street and Elizabeth Street, including a shared zone along Campbell Street between Forbes Street and Goulburn Street. A new skybridge is proposed over Campbell Street.

The carpark application includes works along the north-eastern edge of the western campus, extending from Burnside Drive to the new Forbes Street located at the end of Forbes Street and between the new ISB and new carpark.

2.2 Timing

The main works application is expected to commence construction in January 2021 and be completed by June 2026. The construction would be staged as follows:

- Stage 1 (January 2021 to second quarter of 2023)
 - demolition of existing education (Building 27), retail and kitchen.
 - stage 1 of new ISB.
 - decant of Alex Grimson, Oncology and Pathology to Stage 1 of ISB.
 - part refurbishment of Caroline Chisholm.
 - refurbishment of Emergency Department.
- Stage 2 (second quarter of 2023 to second quarter of 2026)
 - demolition of Pathology; Alex Grimson and Cancer.
 - stage 2 of ISB.
 - decant to Stage 2 of ISB.
 - complete refurbishment of Caroline Chisholm.
 - refurbishment of various departments within the CSBs.
 - construction of a shared zone on Campbell Street.

The construction works under the carpark application are expected to be undertaken over 21 months commencing in December 2020.

2.3 Related development

2.3.1 Concept Plan (MP 06_0116)

On 2 February 2007, the then Minister for Planning approved a Part 3A concept plan (MP 06_0116) for the redevelopment and expansion of the Liverpool Hospital (**Figure 11**).

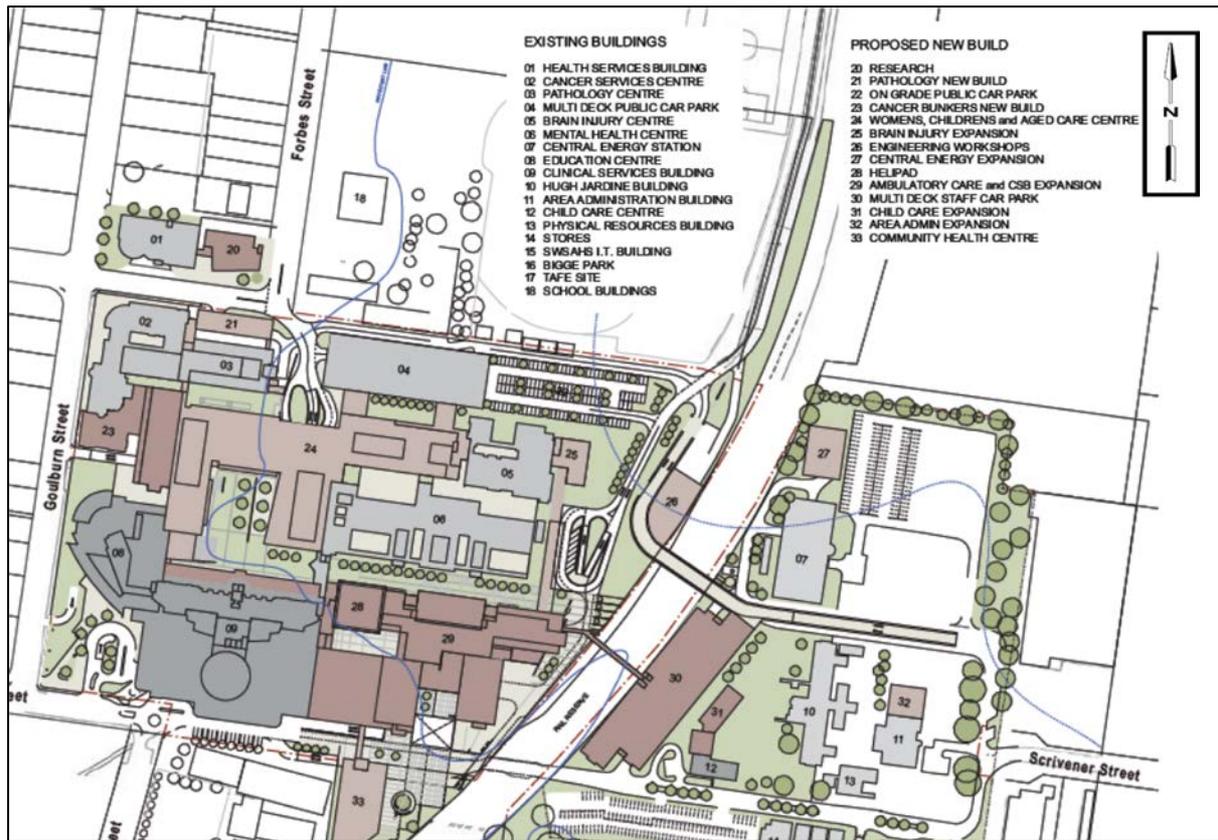


Figure 11 | Concept plan for Liverpool Hospital Redevelopment (MP 06_0116) (Source: Director General's Environmental Assessment Report)

The concept plan comprised the following elements:

- land use distribution across the site.
- new hospital building footprints and heights between four to eight storeys across the site.
- expanded research and educational facilities.
- provision of accommodation for students, nursing and medical staff, and patient relatives.
- vehicular and pedestrian access and car parking.
- landscaping.
- early site preparation works.

The concept plan included provision for an additional 330 beds across the hospital campus, amounting to a total of 940 beds. Additionally, the concept plan included provision for an additional 894 car parking spaces across the hospital campus, amounting to a total of 2,400 spaces.

On 21 August 2020, the Applicant surrendered the concept plan approval as all the works intended to be delivered under the approved concept plan had been constructed, and the concept plan was no longer required. The provisions of the concept plan therefore no longer need to be considered.

2.3.2 Stage 1 Project Application (MP 06_0166)

Concurrent to the concept plan, a Stage 1 Project Application was approved on 2 February 2007 for demolition, remediation works, service diversions, archaeological assessment, excavation and structural works. These works have been completed.

2.3.3 Stage 2 Project Application – Clinical Services Complex (MP 08_0036)

On 18 December 2008, the then Minister for Planning approved a Project Application for Stage 2 Building Works for a new Clinical Services Complex (MP08_0036). The project approval included expanding and refurbishing the existing CSB, construction of a new CSB, and ancillary stormwater and landscaping works. These works have been completed.

2.3.4 Infrastructure and Ancillary Hospital Works (MP 08_0062)

On 15 April 2009, the then Minister for Planning approved a Project Application for Infrastructure and Ancillary Hospital Works (MP08_0062). The application included construction of a multi-storey car park on the eastern campus, at-grade car parks on the western and eastern campuses, pedestrian bridge and vehicle bridge over the rail corridor, extension to the childcare centre on the eastern campus, engineering services building on the eastern campus, internal and external road works, and landscaping.

This project approval was modified on two occasions:

- on 24 December 2010, a delegate of the Minister approved the relocation and redesign of the Hume Highway intersection and Remembrance Avenue and Hart Street road works.
- on 21 November 2011, a delegate of the Minister approved amendments to the design of the childcare centre.

The works, as modified, have been completed.

2.3.5 Ingham Health Research Institute (MP 10_0055)

On 11 November 2010, the then Minister for Planning approved the Project Application for the Ingham Health Research Institute (MP10_0055). The application included the construction of a five-storey medical research building. These works have been completed.

2.3.6 Liverpool Hospital Redevelopment – Stage 2.1 (MP10_0056)

On 4 July 2011, the then Minister for Planning and Infrastructure approved the Project Application for Stage 2.1 of Liverpool Hospital Redevelopment comprising expansion of the Cancer Therapy Centre and construction of a new two-storey Clinical Skills Training Centre. These works have been completed.

3 Strategic context

Liverpool Hospital and the proposed carpark are located within the Western Sydney Local Health District and are integral in delivering health services to the Sydney metropolitan region. Liverpool Hospital is the district hospital for the local catchments of Liverpool and Fairfield and a referral hospital for the South Western Sydney Local Health District (SWSLHD). The redevelopment would increase bed numbers and provide additional services.

Demand for public health infrastructure and services in the region is increasing due to a growing and ageing population. The Applicant advises that the population forecasts indicate that the region is expected to grow by 41 per cent by 2031, a growth rate that is double that anticipated for the rest of NSW. Liverpool Hospital and ancillary facilities, including car parking, is required to expand to support this population growth and increasing demand for health services. The proposed redevelopment and carpark are critical to meet projected demand, and to deliver quality health care, health education and research facilities.

The hospital is located within the Liverpool Innovation Precinct (LIP), which was established in response to being identified as a collaboration area under Greater Sydney Commission's Greater Sydney Regional Plan *A Metropolis of Three Cities*. The Liverpool Innovation Precinct Steering Committee (LIPSC), which comprises key stakeholders across business, health, education, transport and local council, was established in 2016 to support the LIP. A Precinct Strategy (**Figure 12**) was prepared for the LIP and identifies opportunities for development at the hospital and the wider LIP, acknowledging the hospital as an anchor and the important role it has for the future vision of the precinct.



Figure 12 | Land Use Analysis and Precinct Strategy (Liverpool Innovation Precinct)

The Department considers that the proposal is appropriate for the site given:

- it is consistent with the Greater Sydney Commission's Greater Sydney Regional Plan A *Metropolis of Three Cities*, as it will deliver health infrastructure to meet the growing needs of Sydney.
- it is consistent with the Transport for NSW's *Future Transport Strategy 2056*, as it would provide additional health care facilities in a highly accessible location and provide access to additional new employment opportunities close to public transport.
- it is consistent with the vision outlined in the Greater Sydney Commission's Western City District Plan, as it would provide additional, upgraded health care facilities within the recognised Liverpool CBD health and education precinct and support investment in the identified collaboration area.
- it is consistent with Infrastructure NSW's *State Infrastructure Strategy 2018 – 2038 Building the Momentum*, as it facilitates investment in health infrastructure to support the growing population.
- it is consistent with the Greater Sydney Commission's Liverpool Area Place Strategy, as it would deliver on the priorities of the strategy and increase health jobs within the precinct.
- it is consistent with Liverpool Council's Local Strategic Planning Statement, as it would grow Liverpool Hospital, which is recognised as a key anchor of the Liverpool Innovation Precinct and continue to support the delivery of jobs in health, a key sector that provides jobs for the LGA.
- it will deliver health infrastructure for a growing and ageing population, improve service levels in hospitals through the construction of new health facilities, and the creation of jobs during both the construction and operation phases of the development.

The main works application would also support 232 construction jobs and 418 new operational jobs.

The carpark application would also support 360 construction jobs and two new operational jobs.

4 Statutory context

4.1 State significance

The two proposals are SSD under section 4.36 (development declared SSD) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as the developments each have a CIV in excess of \$30 million and are for the purposes of a hospital, including ancillary carparking, under clause 14 of Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011.

The Minister is the consent authority under section 4.5 of the EP&A Act.

In accordance with the Minister for Planning and Public Spaces delegation to determine SSD applications, signed on 9 March 2020, the Executive Director, Infrastructure Assessments may determine these applications as:

- the relevant Council has not made an objection to either application.
- there are less than 50 public submissions in the nature of objection relating to either application.
- a political disclosure statement has not been made for either application.

4.2 Permissibility

The site is identified as being located within the SP2 Infrastructure - Health services facility and Educational establishment zone by the Liverpool Local Environmental Plan (LLEP) 2008. Hospitals, including ancillary car parking, are permissible with consent within the zone. Therefore, the Minister for Planning and Public Spaces or a delegate may determine the carrying out of the development.

4.3 Other approvals

Under section 4.41 of the EP&A Act, a number of other approvals are integrated into the SSD approval process, and consequently are not required to be separately obtained for the proposals.

Under section 4.42 of the EP&A Act, a number of further approvals are required, but must be substantially consistent with any development consent for the proposals (e.g. approvals for any works under the *Roads Act 1993*).

The Department has consulted with the relevant public authorities responsible for integrated and other approvals, considered their advice in its assessment of the proposals, and included suitable conditions in the recommended conditions of consent for both proposals (see **Appendix C**).

4.4 Mandatory matters for consideration

4.4.1 Environmental planning instruments

Under section 4.15 of the EP&A Act, the consent authority is required to take into consideration any environmental planning instrument (EPI) and draft EPIs that are of relevance to the development the subject of the development application. Therefore, the assessment report must include a copy of, or reference to, the provisions of any EPIs and draft EPIs that substantially govern the proposals and that have been considered in the assessment of the proposals.

The Department has undertaken a detailed assessment of these EPIs and draft EPIs in **Appendix B** and is satisfied both applications are consistent with the requirements of the EPIs and draft EPIs.

4.4.2 Objects of the EP&A Act

The objects of the EP&A Act are the underpinning principles upon which the assessment is conducted. The statutory powers in the EP&A Act (such as the power to grant consent) are to be understood as powers to advance the objects of the legislation, and limits on those powers are set by reference to those objects. Therefore, in making an assessment, the objects should be considered to the extent they are relevant. A response to the objects of the EP&A Act is provided at **Table 2**.

Table 2 | Response to the objects of section 1.3 of the EP&A Act

Objects of the EP&A Act	Consideration
a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State’s natural and other resources,	The proposed developments would ensure the proper management and development of land for the provision of much needed health infrastructure. Improved health care facilities would provide significant social and economic benefits to the community.
b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,	The proposals include measures to deliver ecologically sustainable development (ESD). ESD is discussed in Section 4.4.3 .
c) to promote the orderly and economic use and development of land,	The proposals deliver health services consistent with the objectives of the State Environmental Planning Policy (Infrastructure) 2007 and overarching strategic policies for the locality. The expansion would also be of economic benefit through job creation and infrastructure investment.
d) to promote the delivery and maintenance of affordable housing,	Not applicable
e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,	The proposals would not result in the loss of any threatened or vulnerable species, populations, communities or significant habitats.

Objects of the EP&A Act	Consideration
f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),	The proposed developments are not anticipated to result in any significant impacts upon building and cultural heritage, including Aboriginal cultural heritage. See Section 6.4 .
g) to promote good design and amenity of the built environment,	The proposed developments have been developed through the State Design Review Panel process. It is acknowledged that the main works proposal would result in unavoidable amenity impacts on the residential properties to the west. Subject to conditions requiring mitigation measures be implemented, it is considered that an acceptable level of amenity would be preserved. The Department considers the overall built form of the development to be complementary to existing development within the health and education precinct. See Section 6 .
h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,	The Department has considered the proposed developments and has recommended a number of conditions of consent for each proposal to ensure the construction and maintenance is undertaken in accordance with legislation, guidelines, policies and procedures (Appendix C).
i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,	The Department publicly exhibited the proposals (Section 5.1) and consulted with Council and other public authorities and considered their responses (Sections 5.1 and 6).
j) to provide increased opportunity for community participation in environmental planning and assessment.	The Department publicly exhibited the proposals as outlined in Section 5.1 , which included notifying adjoining landowners and displaying the proposals on the Department's website during the exhibition period.

4.4.3 Ecologically sustainable development

The EP&A Act adopts the definition of ESD found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

- the precautionary principle.
- inter-generational equity.
- conservation of biological diversity and ecological integrity.
- improved valuation, pricing and incentive mechanisms.

The main works application proposes ESD initiatives and sustainability measures, including:

- passive heating and cooling design.
- native low water landscaping.
- rainwater harvesting for irrigation.
- efficient water fixtures and fittings.
- durable materials with optimal thermal performance.
- covered/shaded outdoor respite areas.

In addition, the main works application would be designed to provide a 10 per cent improvement on the National Construction Code (NCC) for energy efficiency in building fabric and building services / systems and target 5 star equivalent rating against the Green Building Council of Australia (GBCA) Design and As-Built version 1.3 rating tool.

The carpark application has been designed with an open façade to facilitate air circulation and reduce the need for mechanical ventilation, providing a more sustainable development.

The Department has considered the proposed developments in relation to the ESD principles. The precautionary and inter-generational equity principles have been applied in the decision-making process via a thorough and rigorous assessment of the environmental impacts. The proposed developments are consistent with ESD principles as described in sections 6.24 and 6.21 of the Applicant's main works application and carpark application EIS's (respectively), which have been prepared in accordance with the requirements of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation).

Overall, the proposals are consistent with ESD principles and the Department is satisfied the proposed sustainability initiatives will encourage ESD, in accordance with the objects of the EP&A Act.

4.4.4 Environmental Planning and Assessment Regulation 2000

Subject to any other references to compliance with the EP&A Regulation cited in this report, the requirements for Notification (Part 6, Division 6) and Fees (Part 15, Division 1AA) have been complied with.

4.4.5 Planning Secretary's Environmental Assessment Requirements

The EIS's are compliant with the Planning Secretary's Environmental Assessment Requirements (SEARs) and are sufficient to enable an adequate consideration and assessment of the proposals for determination purposes.

4.4.6 Section 4.15(1) matters for consideration

Table 3 identifies the matters for consideration under section 4.15 of the EP&A Act that apply to SSD in accordance with section 4.40 of the EP&A Act. The table represents a summary for which

additional information and consideration is provided in **Section 6** and relevant appendices or other sections of this report and EIS's, referenced in the table.

Table 3 | Section 4.15(1) matters for consideration

Section 4.15(1) Evaluation	Consideration
(a)(i) any environmental planning instrument	Satisfactorily complies. The Department's consideration of the relevant EPIs is provided in Appendix B .
(a)(ii) any proposed instrument	The Department's consideration of the relevant draft EPIs is provided in Appendix B .
(a)(iii) any development control plan (DCP)	Under clause 11 of the SRD SEPP, DCPs do not apply to SSD. Notwithstanding, consideration has been given to DCPs where relevant in Section 6 .
(a)(iiia) any planning agreement	Not applicable.
(a)(iv) the regulations <i>Refer Division 8 of the EP&A Regulation</i>	The applications satisfactorily meet the relevant requirements of the EP&A Regulation, including the procedures relating to applications (Part 6 of the EP&A Regulation), public participation procedures for SSD and Schedule 2 of the EP&A Regulation relating to EIS.
(b) the likely impacts of that development including environmental impacts on both the natural and built environments, and social and economic impacts in the locality	Likely impacts can be appropriately mitigated or conditioned - refer to Section 6 .
(c) the suitability of the site for the development	The site is suitable for the development as discussed in Sections 3, 4 and 6 .
(d) any submissions	Consideration has been given to the submissions received during the exhibition period. See Sections 5 and 6 .
(e) the public interest	Refer to Sections 6 and 7 .

4.5 Biodiversity Conservation Act 2016

Under section 7.9(2) of the *Biodiversity Conservation Act 2016* (BC Act), SSD applications are "to be accompanied by a biodiversity development assessment report (BDAR) unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values".

The impact of Liverpool Hospital Redevelopment and Liverpool Hospital Multi-storey carpark on biodiversity values has been assessed in the BDARs accompanying the EIS's and is considered in **Section 6**.

5 Engagement

5.1 Department's engagement

In accordance with Schedule 1 of the EP&A Act, the Department publicly exhibited the applications from 28 May 2020 until 24 June 2020 (28 days). The applications were exhibited on the Department's website and at NSW Service Centres.

The Department notified adjoining landholders and relevant State and local government authorities in writing. Department representatives visited the site to provide an informed assessment of the development.

The Department has considered the comments raised in the public authority and public submissions during the assessment of the application (**Section 6**) and/or by way of recommended conditions in the instrument of consents at **Appendix C**.

5.2 Summary of submissions

The Department received nine submissions from public authorities on the main works application. The Department received eight submissions, comprising seven submissions from public authorities and a submission from the public, on the carpark application. A summary of the issues raised in the submissions is provided at **Table 4** and copies of the submissions may be viewed at **Appendix A**.

The public submission supported the works proposed in the carpark application but advocated that additional bicycle parking should be provided, including locked cages for staff, and that the spaces should be located in safe and accessible locations.

5.3 Public authority submissions

A summary of the issues raised in the public authority submissions is provided at **Table 4** and copies of the submissions may be viewed at **Appendix A**.

Table 4 | Summary of public authority submissions to the EIS exhibition

Council

Council supports the proposals and provided comments on both applications.

In relation to the **main works application**, Council provided comments regarding:

- supporting the proposed shared zone along Campbell Street, but separating it from the development to allow for further consultation with relevant stakeholders and approval from the Liverpool Pedestrian, Active Transport and Traffic Committee. This is only unless traffic concerns are resolved, including reducing vehicles from a peak of 700 to 100 per hour and the one-lane two-way slow point impact on school bus routes.
- compatibility with local context, particularly the need for a landscaped setback (4.5m) along Goulburn Street given the 35m high buildings.
- increasing bicycle parking from a rate of five per cent of staff to 10 per cent to promote healthy built environments (recommends 42 spaces each for staff and visitors).

-
- signal improvements are required for the Elizabeth Street and Bigge Street intersection to address the expected increase in traffic movements.
 - remediating the site in accordance with relevant guidelines and preferably removal and disposal of contamination off-site instead of managed on site.
 - confirming if any regulated premises (such as food premises) or public pools are proposed.
 - addressing Council's Draft Liverpool City Centre Public Domain Master Plan (LCC PDMP), including streetscape upgrades along Goulburn Street, integrated public/private domain paving, additional streetscape furniture and meeting Council planting specifications.
 - strengthening the connection to Bigge Park by establishing a pedestrian priority shared zone along Elizabeth Street (between Goulburn Street and College Street).
 - retaining the Lemon Scented Gums on Campbell Street and undertaking advanced tree planting to offset tree removal and maintain urban tree canopy.
 - replicating the architectural style and façade details on the western façade of the emergency department on the southern façade to ensure consistency and legibility in the built form.
 - providing additional vertical signage to improve legibility.
 - analysing health services demand data and social impacts further to optimise delivery of community benefits and integration.
 - minimising overshadowing of Bigge Park.

In relation to the **carpark application**, Council provided comments regarding:

- providing floor heights (3.5m instead of the proposed 2.8m) and minimising sloping floors to support adaptive re-use given to anticipated transition to connected and autonomous vehicles.
- providing electric vehicle charging stations for cars and bicycles.
- developing a local traffic management plan to address increased traffic resulting from the carpark and redevelopment.
- providing a green roof and additional garden beds with mature trees in the at-grade carpark to mitigate adverse effects of urban heat island.
- utilising planting and species appropriate for the conditions of the planted location.
- utilising climbing plant species to cover the façade to improve the visual amenity of the building.
- managing light spill, including monitoring mechanisms.

Council provided the following comments regarding both applications:

- insufficient risk screening for hazards in accordance with relevant guidelines.
 - contamination assessment and remediation actions must be reviewed by certified consultants.
 - confirming the presence of underground petroleum storage systems (UPSS).
 - mitigating and managing additional traffic, mechanical plant and construction noise impacts.
 - confirming if any regulated water systems are proposed.
 - requiring a Construction Environmental Management Plan (CEMP) for the development.
 - obtaining approval for any sewer rising main.
 - providing adequate lighting for safety, particularly at night.
-

- incorporating sustainability measures, including photovoltaic technology, sustainable materials, stormwater capture devices to allow for re-use and passive irrigation for tree planting.
- providing public art, including on the northern façade of the carpark building and on hoarding.
- parking rates and managing impact on socially disadvantaged, including providing a minimum one hour free parking.
- promoting pedestrian movement and providing convenient access to internal open spaces, such as terrace courtyards, rooftop gardens/recreation space.
- supporting employment of local people.
- promoting CBD activation and supporting medical tourism.
- providing dedicated smoking areas.
- utilising technology for wayfinding.
- complying with stormwater and flooding recommendations and preparing a flood evacuation plan.
- design specifications for waste management areas, which must be contained on-site.
- preparing a heritage interpretation plan for endorsement by the Department.

Council also provided recommended engineering, traffic and parking conditions for both applications, should the applications be supported.

Transport for NSW (TfNSW)

TfNSW advised for the **main works application**:

- active transport has not been adequately considered, particularly the demand for bicycle parking and associated end-of-trip facilities.
- improvement of facilities to support pedestrian connectivity and accessibility to nearby train stations for pedestrians and cyclists should be considered.
- the Green Travel Plan (GTP) should encourage the use of sustainable transport to the site and support a reduction in single vehicle trips. The GTP should include:
 - mode share targets to support the objectives of the plan.
 - short-long term actions/strategies.
 - a transport access guide.
 - workplace policies that reduce work-related travel.
 - use of parking policies to achieve goals.
 - mechanisms to support carpooling.
 - appointment of a co-ordinator.
 - monitoring and review process.
 - staffing details.
 - visitor diagnostics.

TfNSW advised for the **carpark application**:

- accessible car parking should address hospital demand and not only demand generated from the main works application.

- cumulative demand from people displaced from CP2 (being demolished) and construction vehicles has not been sufficiently considered.
- the proposed development is located in proximity to RailCorp land and assets and there is a potential to impact on the safe and efficient operation of the Sydney Trains services and integrity of the assets and recommended conditions are provided to manage the potential impacts.

TfNSW also recommended conditions relating to providing off-street bicycle parking spaces and end-of-trip facilities in accordance with Council's DCP, preparation of the GTP in consultation with TfNSW and preparation of a detailed Construction Traffic and Pedestrian Management Plan (CTPMP) in consultation with Council, should the applications be supported.

Heritage NSW

Heritage NSW, as delegate of the Heritage Council of NSW, provided the following comments in relation to the **main works application**:

- the assessment of archaeological potential and observations of impact is not supported given the diverse archaeological resources previously located on the site.
- the assessment of archaeological significance requires clarification given conflicting statements and inadequate consideration of the whole site.
- unexpected finds protocol and monitoring for drains is insufficient to manage potential quantum and character of archaeology on site.
- an archaeological monitoring program (prepared and supervised by a suitably qualified historical archaeologist) would be an appropriate management strategy for the site.

Environment, Energy and Science Group (EESG) of the Department

EESG advised for the **main works application**:

- the recommendations of the Aboriginal Cultural Heritage Assessment Report (ACHAR) should be included in the conditions.
- the biodiversity development assessment report (BDAR) provides an adequate assessment of the proposed development.
- the development is located on flood affected land and mitigation measures are required to reduce the flood risk to properties and people on the site, including evacuation requirements, car parking and driveways, flooding impacts, floor levels, building components, structural soundness, management and design and fencing.
- Conditions are required to ensure the mitigation measures proposed to address flood risk management are adopted.

EESG advised for the **carpark application**:

- tree removal details (nil tree removal or removal of 0.26ha) should be clarified and mitigation measures provided if tree removal is being undertaken as part of the application.
- use a diversity of local native species of advanced sizes (minimum 75L pot size) in the landscaping to improve urban tree canopy cover and biodiversity outcomes.
- commit to ongoing maintenance of landscaping.

- natural grass should be used instead of synthetic to minimise urban heat island effect and provide habitat value.
- the *Gleditsia triacanthos* trees on the site are an invasive exotic species and should be removed and replaced with local native species unless they are a non-invasive variety and are unlikely to germinate.
- trees removed under a separate approval within and around the site should also be offset and a tree planting ratio of greater than 1:1 should be adopted to mitigate the urban heat island effect.
- the development is located on flood affected land and mitigation measures are required to reduce the flood risk to properties and people on the site, including evacuation requirements, car parking and driveways, flooding impacts, floor levels, building components, structural soundness, management and design, and fencing. The proposed shelter-in-place option is not supported, and an evacuation plan should be prepared.

Environment Protection Authority (EPA)

EPA advised the following in relation to both applications:

- assessment of cumulative construction noise impacts from multiple construction activities and identification of mitigation measures to address the predicted exceedance of the 'highly noise affected' levels is required.
- calculation of sound power levels of construction equipment with annoying noise characteristics should be adjusted accordingly.
- further justification to support the out of standard hours work is required.
- detailed quantitative noise impact assessment of mechanical plant and compliance with noise limits is required or establish target operational noise design criteria as an alternative.
- interim audit advice from an EPA Accredited Site Auditor should be provided to confirm the findings of the site investigation reports and Remediation Action Plan (RAP) for the main works application would be appropriate to ensure the site can be made suitable for the intended use pursuant to the *Contaminated Land Management Act 1997* and State Environmental Planning Policy No. 55 – Remediation of Land.

EPA also provided recommended conditions for: managing construction and operational noise and vibration; and detailed site investigation process and validation requirements for remediation works.

Bankstown Airport

Bankstown Airport advised that the height of the proposed development has no implications for the airport.

Civil Aviation Safety Authority (CASA)

CASA advised that they do not object to the proposed developments.

Sydney Water

Sydney Water advised that:

- requirements for the **main works application** would be provided to the Applicant through the Notice of Requirements process that the Applicant has initiated for the development.
- the **carpark application** is located in proximity to Sydney Water's assets and approved plans must be provided to determine any further requirements.

Endeavour Energy

Endeavour Energy advised that:

- the Applicant has initiated the process for electrical supply increase, which is being reviewed, but awaiting information from the Applicant. Three new switching stations are proposed to be installed with two of them on Goulburn Street frontage and one on Campbell Street frontage.
- provided the load of the new carpark is incorporated in the application for the above supply increase, then there is no further consultation required.

5.4 Response to submissions and amended proposal

Following the exhibition of the applications, the Department placed copies of all submissions received on its website and requested the Applicant respond to the issues raised in the submissions.

On 9 September 2020, the Applicant provided a Response to Submissions (RtS) (**Appendix A**) on the issues raised during the exhibition of the main works application. On 16 September 2020, the Applicant provided a Response to Submissions and Amended Development Application (Amended proposal) (**Appendix A**) on the issues raised during the exhibition of the carpark application.

The RtS for the main works application:

- provided further details regarding appropriateness of the design in relation to Goulburn Street, particularly the design of the setback, which is designed around the retention of the existing bunkers.
- made minor design changes to incorporate additional brick elements on the lower levels of the southern façade of the southern podium. This provides a more sensitive response to the adjacent old CSB and integrated approach with the design of the western façade, while retaining the glazing on upper levels to maximise views to Bigge Park.
- increased bicycle parking from 50 spaces (25 staff and 25 visitor) to 75 spaces (50 staff and 25 visitor).
- provided further traffic modelling associated with potential impacts from the Campbell Street shared zone.
- provided further landscaping details, noting that the Goulburn Street works do not form part of the application. Goulburn Street upgrades include those separately approved by Council to address localised flooding issues and future works to address wider precinct upgrades works

to be designed. The paving has been revised to better integrate with the Council approved Goulburn Street works.

- revised the out-of-hours request to limit works to concrete finishing works (including the use of a Helicopter float) and erection and installation of stationary crane.
- clarified that the height of the building would not impact the operations of the helicopter landing surface (HLS) on the site.
- provided further assessment to confirm the conclusions and recommendations regarding low potential for archaeology and implementation of unexpected finds to manage potential impacts.
- preliminary hazards analysis confirming that storage and transportation of potentially hazardous material is below screening thresholds.
- provided overland flow analysis to confirm that the development would not adversely impact flood levels up to the 1 in 100-year event.
- provided further details regarding consultation.

The Amended proposal for the carpark application including the following amendments:

- an additional level to the carpark, increasing the building height from 22.3m to 25.2m (RL32.8 to RL35.7).
- an additional 151 car parking, eight motorcycle and 25 visitor bicycle spaces in the multi-storey carpark.
- an additional eight trees and resulting loss of one car space in the at-grade carpark.

The Amended proposal for the carpark application also:

- provided a further transport assessment confirming that the additional car parking and associated traffic impacts can be accommodated in the surrounding network capacity, and car parking is appropriate to further alleviate historical on-street impacts.
- revised the out-of-hours request to limit works to concrete finishing works (including the use of a helicopter float) and erection and installation of stationary crane to only Saturday from 1pm to 3pm.
- provided overland flow analysis to confirm that post and pre-development flows would remain the same.
- provided further details regarding consideration of impacts on the rail corridor and infrastructure, including confirmation of previous consultation with Sydney Trains.
- provided a revised wind assessment confirming that the recommended wind mitigation measure originally proposed would continue to be sufficient to address the revised design.
- provided further details regarding consultation.

The RtS for the main works application and Amended proposal for the carpark application were made publicly available on the Department's website and referred to the relevant public authorities. The Department received an additional six submissions from public authorities including Council for the main works application and an additional five submissions from public authorities including Council for the carpark application. No submissions were received from the public in response to either.

Given that the submissions were received outside the statutory community participation period, the Department has not placed these on the website. Nonetheless, the Department has reviewed all submissions and requested the Applicant to respond to the additional matters raised in these submissions.

A summary of the issues raised in the public authority submissions is provided at **Table 5**.

Table 5 | Summary of public authority submissions to the RtS and Amended proposal

Council

Council reviewed the RtS and Amended proposal and noted they had addressed some aspects of its original submission. However, Council reiterated comments regarding support of the shared zone along Campbell Street, and restated that the matters from its original submission remain unresolved and that the design of carpark should be adaptable, particularly a 3.5m floor-to-floor for the ground and roof levels.

Council provided the following additional comments in relation to the **main works application**:

- traffic modelling for the shared zone scenario identified significant improvements when mitigation measures are implemented to address the traffic impacts of the shared zone. It is unclear how the improvements are achieved, and discrepancies appear in the modelling. Further details regarding the assumptions and revised modelling should be provided.
- the plans should indicate the wider Goulburn Street upgrades even though they do not form part of the application, so works can be understood within the future streetscape context.
- the granite banding to establish a gradual transition in paving type on Goulburn Street is supported and consideration of engravings or inlays should be considered.
- seating areas should be shaded.
- sensory plant species should be used to improve mental and physical wellbeing.
- vegetation/vertical planting should be provided along the colonnade to improve the architectural character and visual amenity.
- capping and containing contamination and ongoing management with a Long Term Environmental Plan (LTEMP) is not supported but in the case that it is pursued, contamination and the LTEMP must be reviewed by an EPA Accredited Site Auditor and the relevant Site Audit Statements obtained.
- retail food components should meet public health standards and regulations.
- mechanical plant should be selected in consultation with a suitably qualified consultant at detailed design stage.
- a management plan should be prepared to manage construction noise and vibration impacts.
- Lemon Scented Gums on Campbell Street should be retained.
- canopy cover should be equal to cover prior to development from day one of occupation.
- Councils Public Arts Officer should be consulted in the early stages of preparation of the campus wide Public Arts Strategy.
- wayfinding in the CBD should be provided.

Council provided the following additional comments in relation to the **carpark application**:

- a local traffic management plan is required to address increased traffic resulting from the carpark, including signs and line marking along access to/from the carpark.
- mechanical plant should be selected in consultation with a suitably qualified consultant at detailed design stage.

-
- roof-top peripheral landscaping and pergolas/trellises should be provided to mitigate adverse effects of urban heat island.
 - sustainability measures, including photovoltaic technology, sustainable materials, stormwater capture devices to allow for re-use during dry months should be provided.
 - additional trees should be provided given the increase in car parking.
 - ensure planting under the building overhang has sufficient sunlight and water through additional irrigation during summer months.
 - the northern façade facing Liverpool Boys High School and Liverpool Girls High School should incorporate public art.
 - wayfinding in the CBD should be provided.

Council provided updated recommended traffic and parking conditions, should the application be supported.

Transport for NSW

TfNSW provided recommended conditions requiring preparation of the Green Travel Plan in consultation with TfNSW and preparation of a detailed Construction Traffic and Pedestrian Management Plan (CTPMP) in consultation with Council. Previous recommended conditions relating to impacts on rail corridor were also identified as still relevant.

Heritage NSW

Heritage NSW, as delegate of the Heritage Council of NSW, reiterated its concerns regarding the archaeological assessment and the proposed archaeology strategy. Limiting the monitoring program to the south-west is not supported, as other areas of the site that are less disturbed have the potential for resources.

Heritage NSW provided recommended conditions for the main works application to manage potential impacts, including an archaeological monitoring program (prepared and supervised by a suitably qualified historical archaeologist), undertaken in accordance with its guidelines, preparation of an excavation report and heritage interpretation strategy.

EESG

EESG noted that its comments on the EIS for the main works application had been addressed and some of its comments in relation to the carpark application were satisfactorily addressed. However, EESG maintained:

- local provenance plant species should be utilised in the landscaping.
- that notwithstanding tree removal within the area of disturbance for the carpark was undertaken under a separate approval, tree planting across the area should offset total tree loss and be greater than 1:1 to combat the urban heat island effect.

EESG provided recommended conditions to address these matters. EESG was satisfied with the response regarding flooding, subject to the preparation of an appropriate emergency management and evacuation plan.

EPA

EPA advised that it was generally satisfied with the responses and the out-of-hours work (OOHW) on Saturday between 1pm and 3pm was adequately justified. EPA maintained that the previous recommended conditions regarding noise still apply. It noted that significant noise impacts are predicted at Goulburn Street residences in relation to the main works application, where the Noise Management Level (NML) is predicted to be exceeded by up to 21dB, and therefore a Construction Noise and Vibration Management Plan is required.

EPA further advises that more information should be provided regarding the duration of work, or number of weekends required for OOHW, or number of times that specific activities will occur out of hours. EPA recommended that a Community Communication Strategy and an Out-of-Hours Work Protocol (OOHWP) be prepared.

CASA

CASA noted that the maximum height of the proposed car park building has been revised to RL35.7 and noted that this is higher than the height of the secondary HLS on the site, which is situated at RL34.7.

Further information

In response to public authority submissions and the Department's request for further information, the Applicant provided Response to Request for Additional Information (RRFAI) for each application.

The RRFAI for the main works application provided further clarifications and included the following:

- clarification of site boundary to include Campbell Street shared zone works.
- further overshadowing analysis of impacts on Goulburn Street properties.
- clarification that the out-of-hours request for Saturday is for the period 1pm to 10pm.
- reiterated that the expectation is that traffic will find an alternate route and would reduce to the levels required to support the Campbell Street shared zone.
- noted that TfNSW has not raised any issues with shared zone and impacts on bus services and the adjoining schools were generally supportive of the proposal. Further consultation would be undertaken post approval and TfNSW and Council approval would be required as part of the Section 138 application under the *Roads Act 1993*.
- landscape plan illustrating the separately approved adjacent public domain works.
- re-iterated that canopy cover would be at 87 per cent at five years and 350 per cent at maturity.
- advised that CBD signage would not be appropriate given it is an existing hospital.

The RRFAI for the carpark application provided further clarifications and included the following:

- proposed tree planting has been increased from 55 to 81 trees, which offsets the 81 removed as part of the clearing works already undertaken on the site under separate approval. The proposed planting in conjunction with the 15 required as part of the separate approval would meet the planting ratio of 1:1 recommended by EESG.

- the increased height would not impact HLS as it is below the height of the operational HLS and that the secondary helipad was not operational.
- designing carparks for habitable purposes or adaptable for habitable purposes is not appropriate on the hospital site as any future hospital buildings would have functional and operational requirements.
- substantial planting has been proposed across the campus and the Applicant does not support planting on the roof.
- wicking beds which have a storage volume at the base are proposed in lieu of traditional stormwater detention tanks.
- incorporation of art on the northern façade is being considered.
- advised that CBD signage would not be appropriate given it is an existing hospital.
- temporary parking at the Bigge Street/Campbell Street carpark and Liverpool Westfield has been made available for construction worker parking.

Further public authority advice

TfNSW provided further advice indicating that the shared zone along Campbell Street would not be supported as:

- it does not comply with its Shared Zone Technical Direction.
- insufficient information and analysis has been provided to support an unrealistic reduction in peak traffic volumes to levels required for a shared zone given Forbes Street is a through street serving two schools, medical research institute, residential buildings, hospital car park and more than 60 time-restricted on-street parking spaces.
- the existing raised pedestrian crossing on Campbell Street approximately 53m east of the Goulburn Street / Campbell Street intersection is sufficient for pedestrian demand.
- a shared zone as a leg of a signalised intersection has potential safety issues where vehicles would queue within the intersection.
- the increased travel time from a reduction of speeds from 30km/hr to 10km/hr (24 seconds) would not be sufficient to deter vehicles from using Campbell Street.
- it does not meet the footpath widths that would warrant a shared zone.
- buses traverse through the shared zone.
- further investigation of feasible bus route diversion and bus stop relocation is required.
- a school zone is present along Campbell Street and Goulburn Street and school zones cannot be enclosed within a shared zone and cannot be removed without changes to school access.

6 Assessment

The Department has considered the EIS, the issues raised in submissions, the RtS and Amended proposal in its assessment of the proposal. The Department considers the key issues associated with the proposal are:

- built form and urban design.
- transport and parking impacts.
- noise and vibration impacts.
- heritage impacts.

Each of these issues is discussed in the following sections of this report. Other issues considered during assessment are discussed at **Section 6.5**.

6.1 Built form and urban design

The proposals are subject to a maximum height of 35m and maximum FSR of 2.5:1 pursuant to LLEP 2008. Parts of the site are also subject to a height constraint of: 20m for the nine metres from the public right of way to protect sun access to the opposite Bigge Park; and 42.71AHD from the helicopter flight paths to the helipad on the site, which are protected and identified as a constraint in the LLEP 2008. Development within the CBD is required to exhibit design excellence.

6.1.1 Main works design

Built form

The proposal is for a five to seven storey hospital building (including plant and excluding basement) and refurbishment of existing buildings. The proposed building would accommodate various medical services, including: an expanded emergency department (ED); women's and paediatric services; cancer treatment centre; support services (including pathology, satellite medical imaging and pharmacy); and education and teaching spaces. The new building would also provide ancillary retail facilities and a basement loading dock.

The proposed building has an overall maximum height of 32.9m (RL45.1) for the seven-storey tower component and 23.9m (RL36.1) for the five storey southern podium component (**Figures 13 to 16**) and 42,400sqm of floor space. This equates to a net additional 23,005sqm of hospital floor space, accounting for the GFA of buildings demolished, and an increase in FSR from 0.75:1 to 0.9:1 across the eastern and western campus. The proposal is also stepped along the southern boundary with the plant level set back by nine metres, and therefore the proposal is a maximum height of 18m for nine metres from the site boundary.

The new building works comprise an irregular shaped building with rectangular shaped footprints situated over an existing hospital building. The floorplate extends the length of the site along the north-south axis on the western edge of the campus but is situated around an existing building and set back at the main entrance forecourt. It presents as two slender vertical towers on the corner of Campbell and Goulburn Streets and a southern podium element at the main entrance forecourt fronting Elizabeth Street and Goulburn Street with an interconnecting element that joins the two buildings (see **Figure 17**).



Figure 13 | North elevation of ISB (Source: RtS)



Figure 14 | East elevation of ISB (Source: RtS)

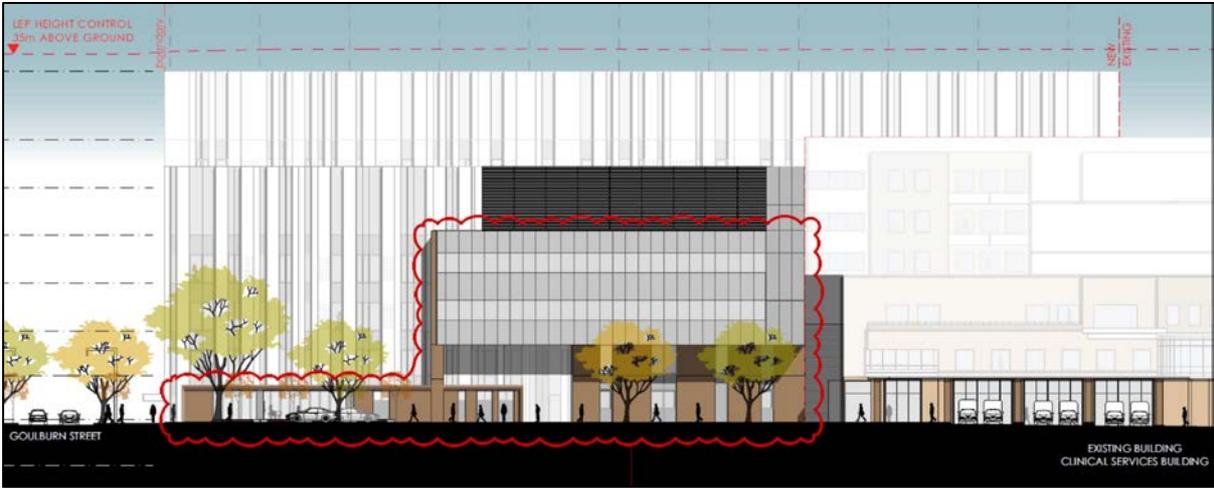


Figure 15 | South elevation of ISB (Source: RtS)

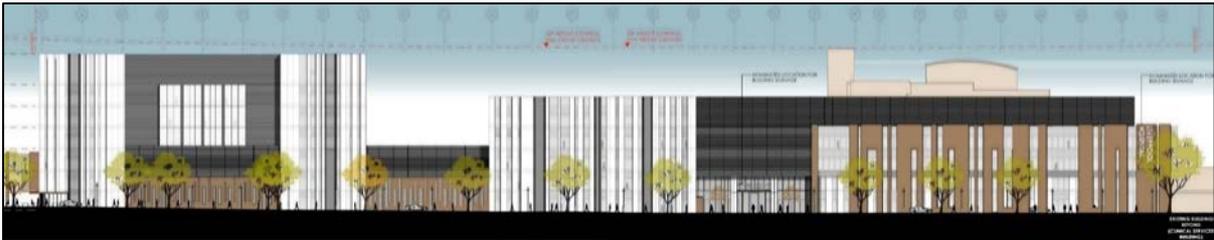


Figure 16 | West elevation of ISB (Source: RtS)



Figure 17 | Aerial view of ISB (Source: RtS)

The new building is comparable with the height of surrounding structures. The floorplate is consistent with the larger floorplates across the campus. This layout is typical of modern hospital buildings. Linkages to the existing CSB and Caroline Chisolm building on lower levels are also proposed. A new skybridge to the northern campus over Campbell Street is proposed on Level 2.

The new building has frontages to Campbell, Goulburn and Elizabeth Street as it extends along the western portion of the site. The building has entrances along Campbell and Goulburn Street. The proposed building aligns with site boundaries along Campbell Street and the northern section of Goulburn Street and defines the edge of the campus. Upper levels include modulation to break up the massing. Located at the southern section of Goulburn Street is the main entrance and reconfigured forecourt and located off Campbell Street at the junction with Forbes Street is new drop off zone and open space area.

The proposed materials and finishes vary for the three components of the ISB (**Figure 17**). The tower element to the north is comprised of vertical bands with differing materials to provide visual interest, including: white perforated aluminium panel over black horizontal metal louvres and glazing; white aluminium panels; charcoal fibre cement sheeting with black horizontal metal louvres and glazing. The interconnecting lower levels between the tower and southern podium utilise charcoal terracotta panel and louvres. The southern podium element primarily utilises vertical bands of brick work and glazing and black horizontal louvres for plant.

The design of the building has been guided by the Government Architect NSW's (GANSW) State Design Review Panel (SDRP) process.

Following exhibition of the EIS, Council raised concerns regarding: compatibility with the surrounding context, particularly along Goulburn Street and the need to provide a greater (4.5m) setback given the

35m high building; the architectural style and building façade details proposed for the western façade of the southern podium should be replicated on the southern façade to ensure consistency and legibility; and the existing and proposed building facades along the southern side of the hospital building should be blended to minimise the contrast between the old and new. GANSW advised the proposal had addressed matters raised through the SDRP process, except incorporation of Aboriginal cultural heritage into the proposal.

It was noted in the EIS that development was consolidated on the western portion of the campus to improve connectivity to Bigge Park, Elizabeth Street and the Liverpool CBD. The taller elements were located to the north to minimise overshadowing impacts to Bigge Park. The Applicant's RtS for the main works application made no design changes and noted that setbacks along Goulburn Street are dictated by existing buildings that contain critical health services that are to be retained. These existing buildings generally have a 1.5m setback and the proposed building responds to the alignment of these retained buildings, utilising a series of slender vertical towers to break up the massing of the tower element and materiality (brick) and a more comparable height for the southern podium to address the site context.

Council was generally satisfied with the Applicant's response and recommended vegetation/vertical planting along the proposed colonnade to improve the architectural character and visual amenity. GANSW was satisfied with the response, but requested a condition requiring delivery of the landscaping concurrently with the building.

The Department considers that the size of the building would result in some overshadowing impact on the residential properties to the west (see **Figures 18 to 23**). The Applicant has concluded that five residential flat buildings would be affected and that, apart from 61 Goulburn Street, the remaining residential units affected would retain two hours of solar access to their living rooms and 50 per cent of their private open space (POS) in mid-winter between 9am and 3pm. The Applicant noted that the overshadowing in mid-winter would impact:

- the eastern façades of 53 and 55 Goulburn Street between 9am and 9:30am, where there are no living areas or POS for the affected units.
- 61 Goulburn Street:
 - north facing units on the eastern end of the building currently receiving 15mins of solar access between 9am and 9:15am by eliminating solar access to their living areas and POSs (three units).
 - east facing units on the eastern end of the building between 9am and 9:30am on the second and third floor and between 9am and 9:45am on the first floor. These units would receive solar access until 11:30am.
- first and second floor units on the eastern end of 69 Goulburn Street (living areas and POS) between 9am and 9:15am and only first floor POS between 9:15am and 9:30am.
- first floor units on the eastern end of 71 Goulburn Street (living areas and POS) between 9am and 9:15am and only first floor POS between 9:15am and 9:30am.

In considering the impacts, the Department has noted that the Apartment Design Guide (ADG) that applies to the impacted residential development to the west, requires dwellings receive at least two hours of sunlight to their living rooms and 50 per cent of their private open space in mid-winter. It also recommends that where an adjoining property does not currently receive the required hours of solar access, the proposed building ensures solar access to neighbouring properties is not reduced by

more than 20 per cent. Council's DCP, that would apply to the affected residential development, requires for affected neighbouring properties a minimum of three hours of solar access between 9am and 5pm to the living rooms and 50 per cent of POS in mid-winter.



Figure 18 | Overshadowing in mid-winter – 9am (Source: RRFAI)



Figure 19 | Overshadowing in mid-winter – 9.15am (Source: RRFAI)



Figure 20 | Overshadowing in mid-winter – 9.30am (Source: RRFAI)



Figure 21 | Overshadowing in mid-winter – 9.45am (Source: RRFAI)



Figure 22 | Overshadowing in mid-winter – 10am (Source: RRFAI)



Figure 23 | Overshadowing in mid-winter – 11.30am (Source: RRFAl)

Due to the existing overshadowing from residential apartment buildings north of each building, solar access is already limited for some units, particularly to 61 Goulburn Street. Whilst there are impacts associated with the proposed development, the dwellings that currently receive more than two hours would retain two hours of solar access, except for the first floor east facing unit of 61 Goulburn Street. This unit and the north facing units on the eastern end of 61 Goulburn Street do not currently receive the minimum recommended by Council’s DCP. In these instances, the ADG recommends only a 20 per cent reduction, which is met except for the first floor east facing unit of 61 Goulburn Street (30 per cent) and the north facing units on the eastern end of 61 Goulburn Street.

As a result of the location of the main works application being consolidated to the north of the campus and east of the residential area, overshadowing is inevitable. Due to the height and siting of the building, the overshadowing of the living spaces would be significant for three units. The Applicant argued that the impacts are minor and appropriate in the context of the proposal as the:

- overshadowing of Goulburn Street units is limited to the very early morning and a large proportion of these properties would enjoy adequate sunlight across the remainder of the day.
- impacts would be negligible as an SSD application is currently being prepared for 61-71 Goulburn Street, Liverpool for the construction of a new eight storey mixed use development for a private hospital (SSD-10430).
- subject dwellings are zoned B4 Mixed Use and are within land identified for renewal as part of the Liverpool Innovation Precinct.

In considering the appropriateness of the development and the associated impacts, the Department notes that the proposal meets the relevant height and floor space controls and has been consolidated in the north to minimise overshadowing impacts on Bigge Park. It is noted that the height of the building is comparable with buildings on the site, recent development to the north and the scale envisaged for the LIP. Furthermore, the residential development to the west has been identified for renewal in the LIP masterplan.

The Department notes that at seven storeys, the new building would be one of the taller and more prominent buildings on the campus and in the locality. However, the Department also recognises the

changing nature of the area with the establishment of the LIP and accepts the increased scale and density of the proposal to be reflective of modern institutional development in a metropolitan context.

The Department considers that the built form of the development, including its location on the site and orientation, is acceptable within the context of the LIP and better responds to the objective to improve connectivity to the CBD and making Elizabeth Street more pedestrian orientated. The design of the development was driven by the need to integrate with existing buildings on the site and establish essential connections to the existing buildings. Developing vertically above existing buildings supports greater public domain improvements at the ground level, including an additional open space area adjacent to the new tower, which would likely be reduced if massing had to be relocated to minimise overshadowing impacts.

The design of the proposed building as it would present to Campbell and Elizabeth Streets is supported, with the slender tower forms and new open space area to the north and lower podium with brick façade and an enlarged forecourt to respond to the heritage context to the south. The visual bulk of the building is minimised through the vertical banding and varied articulation of the separate components of the singular building. The southern façade of the old CSB is also proposed to be upgraded, which would improve integration of the old and new buildings.

The Department acknowledges that as a result of the proposed built form and massing, the overshadowing impacts on the living spaces to residential properties to the west would be significant for a small number of units. However, given the anticipated growth of the LIP and Liverpool Hospital's anchoring role, as supported by the NSW Government, Greater Sydney Commission and the Western City District Plan, the form and density is acceptable to service the growing needs of the community. On this basis, the Department considers that the public benefit of the proposal to deliver much needed hospital beds to meet increased demand for quality healthcare would offset amenity impacts on residential dwellings to the west.

The Department has also considered whether the proposal demonstrates design excellence in accordance with LLEP 2008 (**Appendix B**), and concludes that the Applicant has addressed matters raised by the SDRP. Accordingly, the proposed development is considered to demonstrate design excellence, and the Department concludes that the proposed built form and design of the proposal is acceptable for the site.

Public domain

The main works application includes conceptual landscape design for three key public domain areas: new open space area behind the Campbell Street forecourt at the intersection with Forbes Street; enlarged forecourt at Elizabeth and Goulburn Street; and shared zone along Campbell Street. Landscaping is also proposed within the smaller internal bunker and Caroline Chisolm courtyards (see **Figure 24**).

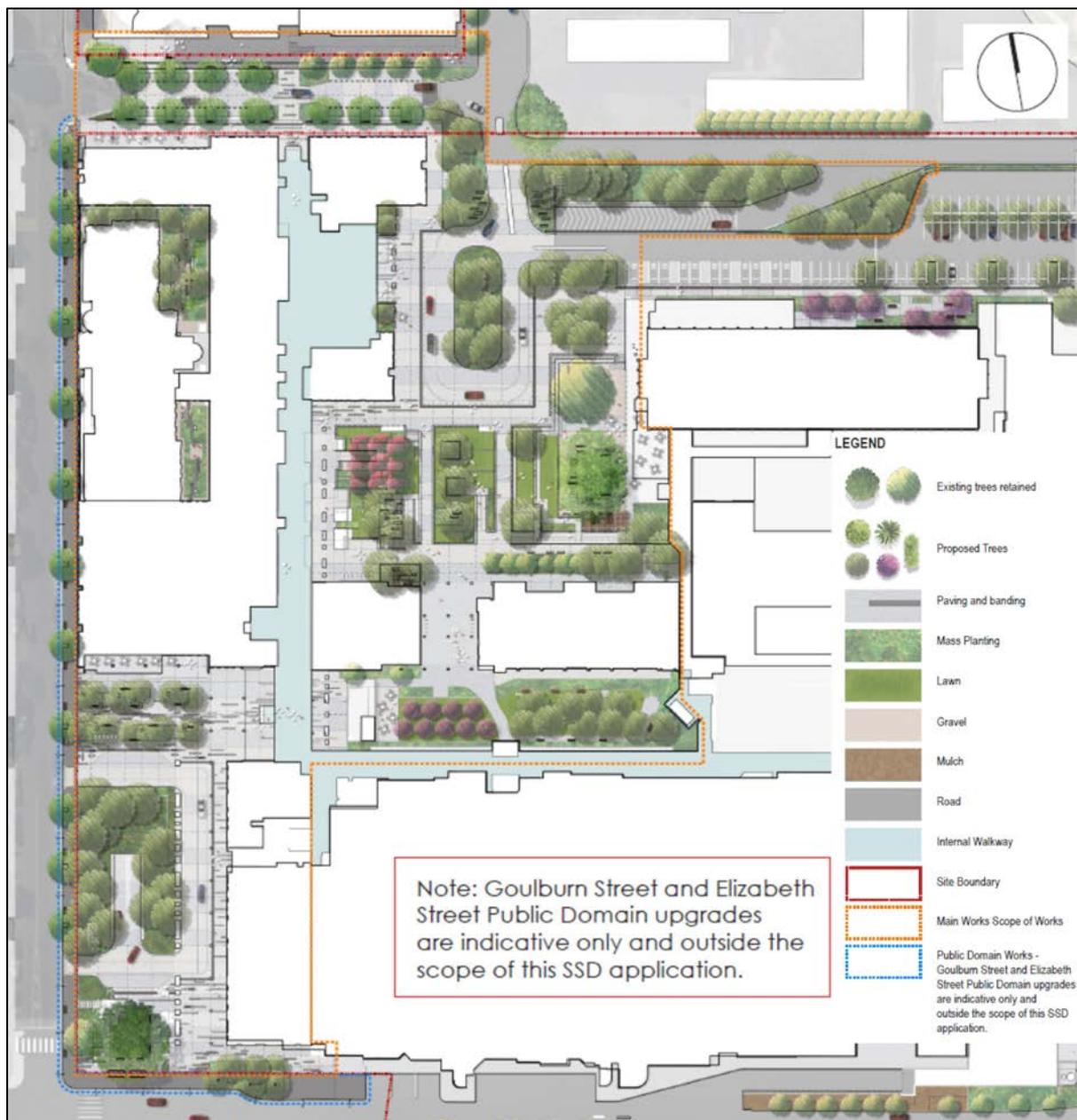


Figure 24 | Public domain and landscaping works (Source: RRFAI)

Following exhibition of the EIS, Council raised concerns regarding consideration of the Council's Draft LCC PDMP and the loss of the trees along Campbell Street. Council also raised concern regarding the shared zone along Campbell Street and requested further consideration of converting part of Elizabeth Street into a pedestrian priority shared zone that would allow for a safer pedestrian environment and open the forecourt of Liverpool hospital towards Bigge Park. The SDRP was generally supportive of the landscaping for the site, which was considered to tie the whole project together and address the microclimate of Liverpool. GANSW advised that the proposal had addressed matters raised through the SDRP process.

As part of the RtS, the Applicant provided a revised design for the paving but noted that public domain improvements along Goulburn Street were being undertaken under a separate approval. Council was generally satisfied with the response but maintained concerns regarding the design of the Campbell Street shared zone and implications on bus routes. Council also reiterated that the canopy cover

should be equal to cover prior to development and made minor recommendations regarding the landscaping.

In response, the Applicant has demonstrated that the landscape design addresses Council's comments except in relation to the canopy cover where the proposed canopy cover would be at 87 per cent at five years and 350 per cent at maturity. The Applicant contends that it is not physically possible to instantly replace lost canopy, even with extensive new plantings.

The proposal includes the removal of 68 trees and planting of 150 trees. The trees are proposed to be planted across the site with a concentration of trees within the reconfigured forecourt and the new forecourt and open space area (see **Figure 25**).



Figure 25 | New Forbes Street forecourt and open space area (Source: RRFAI)

The Department considers the landscaping proposed along the frontages and throughout the open space and forecourts would result in a positive public domain, which provides intuitive wayfinding to the main entrances and encourages activation of the spaces. The Department accepts the site is constrained by the retention of existing buildings along Goulburn Street, which limits opportunities for landscaping and public domain improvements along the western boundary. Further improvements are planned as part of a wider precinct works.

The Department also supports the addition of internal courtyards on the roof of the bunker and Level 2 as they would provide improved light, outlook and amenity to the maternity ward, cancer clinics and inpatient units. The Department acknowledges however that it would be difficult to achieve 100 per cent canopy cover replacement at completion of construction. The Department notes that the Caroline Chisolm courtyard works are located in isolation of the main works and there is an opportunity to deliver these landscaping works at the outset of the development to replenish the canopy cover sooner, as it equates to a third of the trees lost. The Department recommends that within 12 months of tree removal that the landscaping works for the Caroline Chisolm courtyard be completed to expedite the return of canopy cover to the site and mitigate the urban heat island effect.

The Campbell Street shared zone and prioritising pedestrians is supported, however, the traffic impacts and technical requirements for the shared zone have been determined to be unacceptable by TfNSW (see **Section 6.2.2**). Accordingly, the Department has recommended exclusion of these works from any approval granted for the proposal.

Conditions of consent are recommended requiring tree species to be indigenous to the area, as requested by EESG, and of appropriate pot sizes to ensure restoration of the canopy cover within an appropriate timeframe. Subject to the recommended conditions, the Department considers that overall, the proposed landscaping and public domain works would deliver an improved outcome for the site, particularly as the new Goulburn Street/Elizabeth Street forecourt would provide: an improved public domain interface compared to the vehicle entry that currently dominates the main entrance; and the tree planting and open spaces along this public domain interface would soften the appearance of the institutional functions. The reconfigured courtyard also contributes to the strategic vision of improving the pedestrian environment along Elizabeth Street.

Accordingly, the Department concludes that the proposed public domain works and proposed landscaping are acceptable for the site.

6.1.2 Carpark design

The proposed carpark was initially seven levels, but an amended application has been made increasing the height to eight levels (inclusive of a rooftop carpark level).

The proposed carpark is 25.2m (RL35.7) high and generally has a rectangular shape, except for a curvilinear eastern façade (see **Figures 26 to 29**). The carpark would have a consistent floorplate (dimensions of approximately 126m by 34m) and is setback 4.6m from the school boundary to the north, which is consistent with the setback of the demolished carpark building.

The carpark fronts Burnside Drive and the link road connecting Campbell Street and Burnside Drive. The carpark would be accessible from Burnside Drive on the second level and Campbell Street at ground level. The proposal also includes a smaller at-grade carpark adjoining the new forecourt and a pick-up/drop-off zone for the cancer clinics in the main works application to the west.

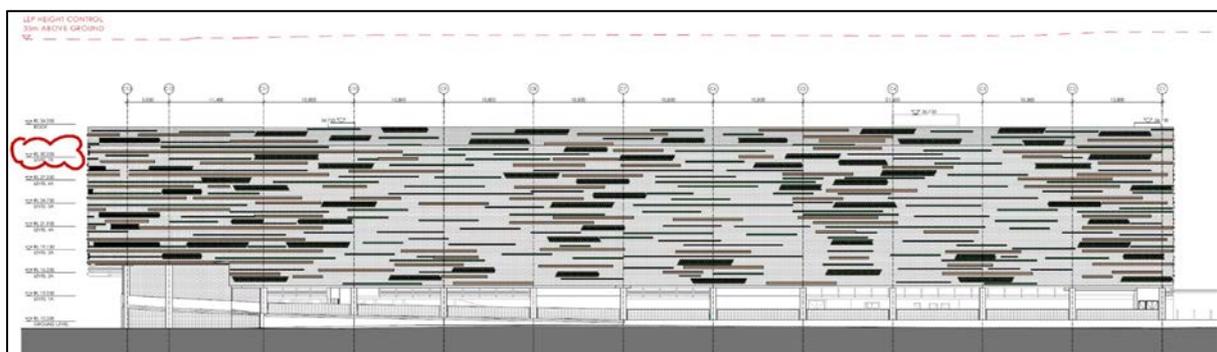


Figure 26 | North elevation of carpark (with the additional level) (Source: Amended proposal)

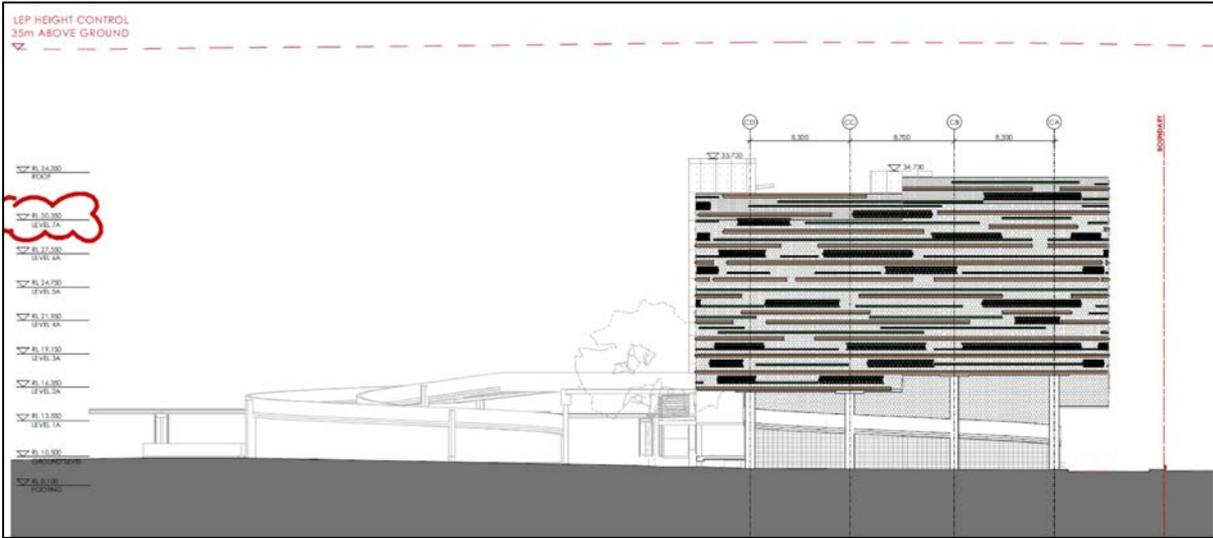


Figure 27 | East elevation of carpark (with the additional level) (Source: Amended proposal)

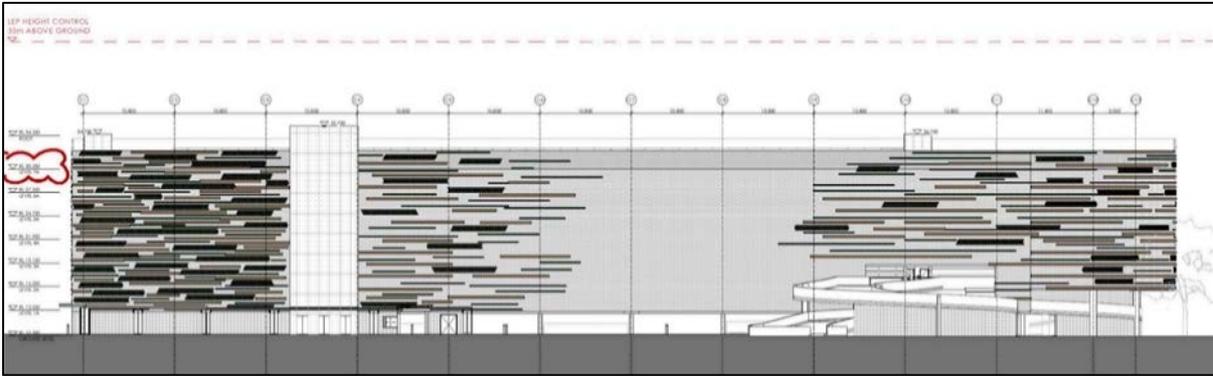


Figure 28 | South elevation of carpark (with the additional level) (Source: Amended proposal)

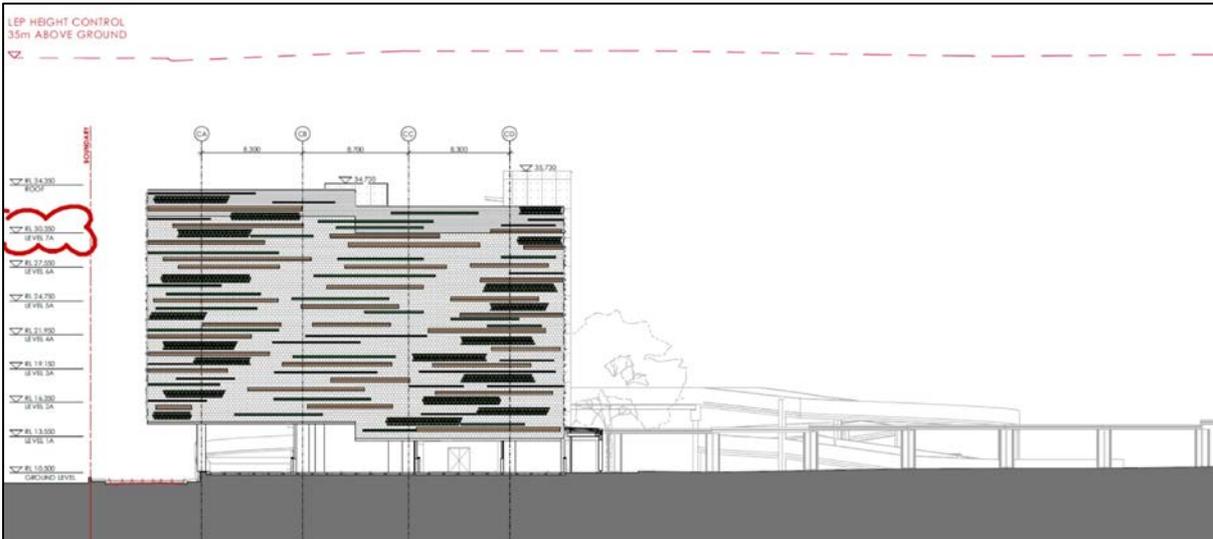


Figure 29 | West elevation of carpark (with the additional level) (Source: Amended proposal)

The proposal would present as a predominantly eight storey building and be highly visible from adjoining schools and along the rail corridor. The proposed façade of the carpark comprises mesh and horizontal aluminium panels, which would provide a more modern and contemporary building and

partially screening the internal operations of the carpark (see **Figure 30**). The treatment maintains transparency and natural ventilation.

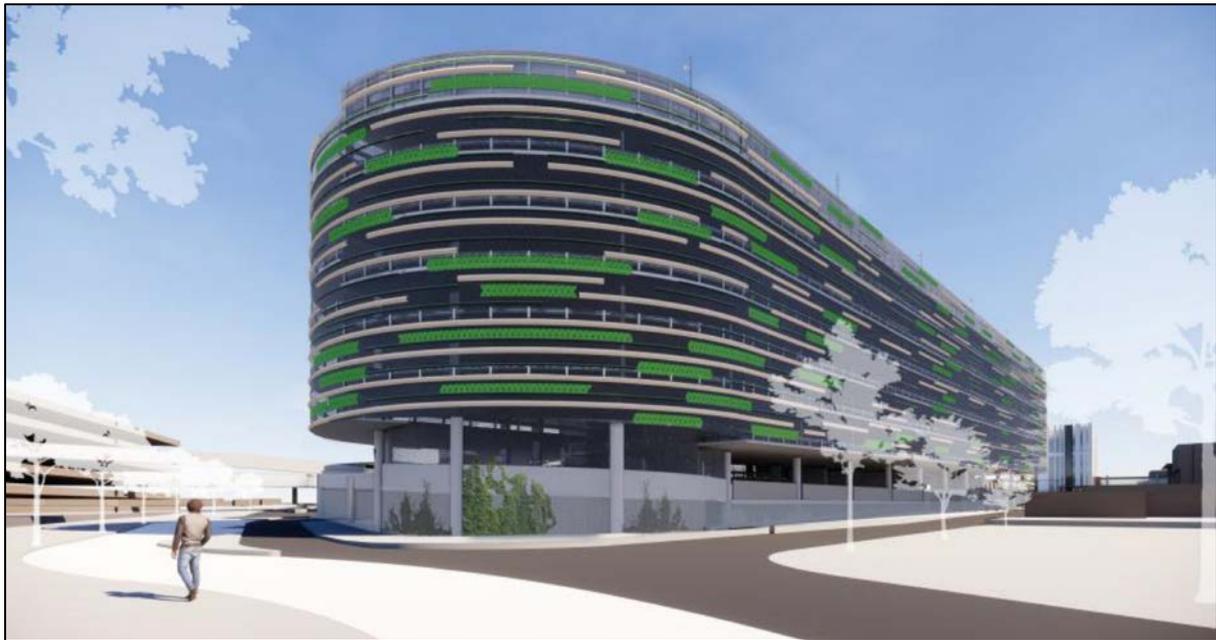


Figure 30 | Illustrative view of carpark materials and finishes (Source: Amended proposal)

Following exhibition of the EIS, EESG raised concerns regarding cumulative tree loss across the site. Council provided comments regarding the adaptability of the building given the intention to support autonomous vehicles within the CBD with advances in technology, particularly floor to ceiling heights.

Further to the inclusion of an additional floor, the Amended proposal for the carpark application includes additional tree planting (from 22 trees to 30 trees) but made no significant design changes in relation to matters raised by Council.

Council and EESG re-iterated their earlier comments regarding the Amended proposal and the adaptability of the floor to ceiling height of the ground level of the carpark.

The Applicant's RRFIA included additional planting to provide a total of 81 trees, which offsets the 81 trees previously removed under a separate approval. In conjunction with the 15 planted as part of that separate approval, the tree planting for the carpark application totals 96, which meets the planting ratio of greater than 1:1 required by EESG.

The Department has considered the design within the context of the surrounding streetscape and considers that the carpark is comparable with the demolished carpark, consistent with the buildings on the hospital campus and meets the height and floorspace controls (contributing only 20sqm of floor space). The design of the proposed carpark would be an improvement given the materials and finishes proposed. The carpark has incorporated architectural design features to screen the car parking within and provide visual interest to typically flat and blank façades of carpark structures. The proposed carpark would not result on amenity impacts on the surrounding land uses.

Tree planting is proposed within the at-grade carpark and the open space to the south of the carpark adjacent to the access ramp. This provides an overall increase in planting and useable green space on this part of the site.

While the Department notes Council's comments in relation to the adaptability of the building, the Department considers that it would be unreasonable to require increased floor to ceiling height and further increase the height of the building, given the Applicant's specific requirements for floorspace planning and limited opportunity to adapt a carpark building for future health purposes.

The Department has also considered whether the proposal demonstrates design excellence in accordance with LLEP 2008 (**Appendix B**). It is considered that the Applicant has adequately addressed the matters raised by the SDRP, and the proposed development is considered to demonstrate design excellence.

Accordingly, the Department concludes that the proposed built form and design of the proposed carpark is acceptable for the site.

6.2 Transport and traffic impacts

6.2.1 Traffic

Construction traffic

The Applicant submitted indicative Construction Traffic Management Plans (CTMPs) with the Transport and Accessibility Impact Assessment (TAIAs) for each of the applications. The CTMPs anticipate the primary travel routes for construction vehicles will be:

- main works application: approach from Hume Highway, Remembrance Avenue, Hart Street and Burnside Drive or Hume Highway, Bigge Street and Campbell Street; and departure via Burnside Drive, Hart Street, Remembrance Avenue and Hume Highway or Campbell Street, Bigge Street and Hume Highway.
- carpark application: approach from Hume Highway, Remembrance Avenue, Hart Street and Burnside Drive; depart via Burnside Drive, Hart Street, Remembrance Avenue and Hume Highway or Forbes Street, Campbell Street, Bigge Street and Hume Highway.

Access routes and the number of vehicles would vary throughout the stages of construction but is anticipated to peak between January 2021 and December 2021, with up to 100 construction related vehicles per day or around 10 vehicles per hour from the cumulative traffic from both applications.

The preliminary CTMPs encourage construction workers to use public transport to access the site and minimise traffic and parking impacts, particularly given the loss of parking during the construction of both projects. Construction Worker Transport Parking Management Plans are to be developed. The Applicant also advised that temporary parking at the Bigge Street/Campbell Street carpark and Liverpool Westfield has been made available for construction worker parking.

TfNSW advised that a CTPMP should be developed in consultation with Council, to ensure that construction traffic impacts are minimised and appropriately managed, including any cumulative construction impacts and access arrangements. Council also requested that the Department also ensure that the CTPMP be reviewed and endorsed by Council.

The Department has recommended conditions of consent requiring the Applicant to prepare and implement a CTPMP, in consultation with Council and TfNSW, and a Construction Worker Transportation Strategy (CWTS). Subject to preparation and implementation of the CTPMP and CWTS, the Department is satisfied that construction traffic impacts would be appropriately managed.

Operational traffic

The proposed works are located on the western campus and are generally bounded by Campbell Street and link road to the north, Burnside Drive and the rail corridor to the east, Elizabeth Street to the south and Goulburn Street to the west. The proposed carpark is located to the north-east of the western campus, which replaces CP2, and would support the existing operations of the Liverpool Hospital and the proposed intensification of the hospital use from the main works application. The traffic impacts from the main works and the additional car parking has been considered holistically given the traffic would be diverted to the new carpark.

The streets surrounding the development are local roads controlled by Council. The main entry to the hospital is located off Elizabeth Street and a secondary entry is proposed to be located off Campbell Street at the intersection with Forbes Street. The existing main entrance would be reconfigured, and the vehicle entrance relocated from Elizabeth Street to Goulburn Street, but would continue to operate as the main entrance and pick-up/drop-off area, with public vehicle access available to the emergency department (ED). The new entry towards the north would provide a new pick-up/drop drop-off area for the cancer clinics and service access would be via Burnside Drive and the northern internal link road.

The TAIAs have assessed peak hourly traffic generation that would access the carpark based on the number of car spaces and the existing arrival/departure patterns at the hospital carparks. MSCP Additional Level Transport Assessment (ALTA) was submitted with the Amended proposal for the carpark to analyse time impacts from the additional car parking level and Response to Transport-Related Submissions (RTRS) was submitted with the RtS for the main works application.

The ALTA identified that up to 351 vehicle additional trips would be generated in the AM peak period and an additional 247 trips during the PM peak period from the proposals, when trips from the existing parking on-site are discounted. The ALTA provided a revised SIDRA analysis of the impacts on nearby intersections, including the cumulative impacts from the nearby Westfield Shopping Centre redevelopment and development at 26 Elizabeth Street, and concluded that the impacted intersections would maintain similar levels of service (LOS) and remain at satisfactory levels (see **Table 6**). It was further noted that the demand at the surrounding intersections would not necessarily mean additional traffic as some of it would be from existing traffic using nearby on-street parking.

Table 6 | Existing and proposed LOS

Intersection	Peak	Pre-development LOS	Post-development LOS
Lachlan Street / Hart Street	AM	A	A
	PM	A	A
Forbes Street / Campbell Street / hospital access	AM	A	A
	PM	A	A
Goulburn Street / hospital access	AM	-	A
	PM	-	A
Elizabeth Street / hospital access	AM	A	-
	PM	A	-

Intersection	Peak	Pre-development LOS	Post-development LOS
Hume Highway / Bigge Street	AM	B	C
	PM	B	B
Burnside Drive / northern access road	AM	-	A
	PM	-	A
Burnside Drive / Burnside Drive bridge	AM	-	A
	PM	-	A
Burnside Drive / Multi-storey car park access	AM	A	A
	PM	A	A
Bigge Street / Campbell Street	AM	A	A
	PM	A	B
Bigge Street / Elizabeth Street	AM	B	B
	PM	B	B
Campbell Street / Goulburn Street	AM	B	B
	PM	B	B
Elizabeth Street / Goulburn Street	AM	A	A
	PM	A	A
Bigge Street / Moore Street	AM	B	B
	PM	B	B
Elizabeth Street / College Street	AM	A	A
	PM	A	A
Hume Highway / Remembrance Avenue	AM	B	B
	PM	B	B
Speed Street / Newbridge Road	AM	B	B
	PM	B	B

A further SIDRA analysis of impacts of the re-routing of traffic as a result of the Campbell Street shared zone was also provided. It identified that the impacts would be acceptable subject to reversing the priority at the Lachlan Street / Forbes Street intersection (relocating the stop signs from Lachlan to Forbes Street giving Lachlan Street priority). The above measures would ensure that the operation of the Lachlan Street / Forbes Street intersection remains at a good level of operation (LOS B) during both the AM and PM peak periods.

Following exhibition of the EIS, TfNSW raised no issue with the traffic assessment and Council advised that:

- signal improvements are required for the Elizabeth Street / Bigge Street intersection to address the expected increase in traffic movements.

- the proposed shared zone along Campbell Street is supported but should be assessed separately to allow further consultation with relevant stakeholders as it needs to be demonstrated that vehicles can be reduced from a peak of 700 to 100 per hour and the impact on bus routes from the one-lane two-way slow point can be accommodated.

Council reiterated its concerns regarding the shared zone in comments on the RtS for the main works application and noted anomalies in the assessment of the impacts from re-prioritising the Lachlan Street / Forbes Street intersection. TfNSW provided further advice outlining that the shared zone on Campbell Street is not supported as detailed in **Section 5.4**.

The Department concludes that the additional traffic generated by both projects would not have a significant impact on the surrounding road network and all intersections would continue to operate satisfactorily. The Elizabeth Street / Bigge Street intersection would maintain a similar level of service and minor increase in queues. Therefore, the Department has not required Council's recommended upgrade. Conditions of consent are recommended relating to excluding the shared zone from the approval and preparation of a final GTP.

The Department considers that the traffic generation associated with the proposals would be acceptable, subject to the deletion of the shared zone.

6.2.2 Parking and alternate transport

The proposal would result in the loss of 597 car parking spaces from the demolition of CP2 and proposes 1,248 car parking spaces, as amended in the revised proposal.

The RMS *Guide to Traffic Generating Development* does not provide a rate for car parking for public hospitals. The TAIAs calculate current parking demand generated for the existing hospital to be a maximum of 2,813 car spaces based on peak demand from staff and visitors (including patients and visitors).

The hospital campus currently provides approximately 2,295 on-site car parking spaces. As such, the hospital campus currently has a shortfall in car parking of 518 spaces.

The TAIAs estimate that the total parking demand would increase to 3,282 car spaces when the projected growth in staff and beds/treatment spaces at the hospital is considered, based on the same parking demand profile (i.e. same rate applied to projected visitor numbers and current levels of car parking demanded by staff). This is an increase in demand of 469 car parking spaces and a demand of 368 car spaces if a five per cent mode shift away from private vehicle travel by staff can be achieved. Based on this, the proposed car parking supply would meet the new demand generated and offset parking loss as a result of the two applications and ancillary works being undertaken across the campus (under separate approvals) (see **Table 7**).

The Applicant has identified the preparation of a Green Travel Plan (GTP) for the site and provided an overview of what it would cover in the TAIA for the main works application, with a targeted shift of five per cent away from private vehicle travel. To support the potential of a travel mode shift, the TAIA provides an analysis of sustainable transport infrastructure to and from the site. The campus is well serviced by public transport, with an extensive bus network servicing the bus stops located on and opposite the Elizabeth Street frontage, which support over 20 bus routes. Liverpool and Warwick Farm railway stations are also located within walking distance of the hospital and provide frequent service on three train lines.

Table 7 | Existing and proposed parking on campus

Location	Existing	Future	Change
CP1	143	94	-49*
CP2	597	1,248	+651
CP3	141	97	-44*
CP4	780	780	-
CP5	575	575	-
Health Services Building	35	35	-
Western Campus Fleet Vehicles Carpark	24	0	-24*
Total	2,295	2,289	+534

* Car spaces being removed under separate approvals

The TAIA considers the mode share shift to be feasible through the following changes/initiatives:

- introduction of carpool programs with incentives for carpool registered vehicles parking on the existing campus.
- the introduction of light rail (currently under construction) and potential improvements to bus services.
- promotion of cycling as an alternative mode of transport, with additional infrastructure to support this mode.
- implementation of a GTP with details of public transport options, key local walking and cycling routes, provision of transport information packs to new staff, and development of a travel plan booklet for staff and visitors.

Council and TfNSW raised no issues with the assumptions used regarding the calculations for car parking demand by the proposals or the provision of additional car parking for the hospital uses or the targeted modal shifts. TfNSW raised concern regarding the temporary displacement of car parking while the new carpark is being built, and cumulative impacts from demand created by construction workers. TfNSW recommended that it be consulted in the preparation of the GTP.

The Applicant advised that a maximum of 230 parking spaces across the campus would be temporarily unavailable during construction, mitigated by providing additional parking at the Bigge Street / Campbell Street carpark and Liverpool Westfield. Consequently, there will be a no net loss in parking numbers during construction.

The Department notes that a portion of the new carpark would address the demand generated by the main works application and a portion is intended to address existing shortfall and reduce informal parking across the precinct. As the future redevelopment of the campus is expected to take longer than the construction of the carpark, there would potentially be an oversupply of car parking upon completion of the multi-storey carpark. However, given the historical shortfall, the supply would be easily absorbed by the existing unmet demand (518 spaces).

The car parking demand of 368 car parking spaces is based on a modal shift away from private vehicle travel. The Department has recommended a GTP be prepared and implemented upon occupation of the carpark, ensuring that a shift in travel behaviour is fostered before completion of the main works application. It would also need to be extended to these workers. The Department notes that the car parking proposed would meet the demand generated by the main works application regardless of the modal shift as the overall increase is 534 car spaces across the campus and demand is 469 car spaces. If the modal shift is achieved, then 166 spaces would be available to meet the currently unmet demand.

The Department considers that the car parking proposed satisfactorily addresses the requirements of the main works application.

6.3 Noise and vibration impacts

The EIS's were accompanied by acoustic assessments that assessed the operational noise and construction noise and vibration impacts associated with both applications. Revised noise assessments were provided with the RtS for the main works application and Amended proposal for the carpark, due to the Applicant's revised OOHW requests in response to EPA comments, and revised again for the main works application with further changes to the OOHW request due to an error omitting Saturday 3-5pm from the request. The reports assessed the impacts on nearby sensitive land receivers, including the adjoining schools, existing health buildings and residential receivers (see **Figures 31** and **32**).



Figure 31 | ISB noise sensitive receivers (Source: RtS)



Figure 32 | Carpark noise sensitive receivers (Source: Amended proposal)

A summary of the rating background levels (RBLs) for the most sensitive residential receivers are identified in **Table 8**.

Table 8 | RBLs for residential receivers

Sensitive receiver	Day	Evening	Night
Main works application - Goulburn Street residences	42 dB(A) _{L90}	41 dB(A) _{L90}	38 dB(A) _{L90}
Car park application - 41 Forbes Street	42 dB(A) _{L90}	42 dB(A) _{L90}	39 dB(A) _{L90}

6.3.1 Construction noise and vibration impacts

The Interim Construction Noise Guideline (ICNG) establishes construction noise management levels (NMLs) for surrounding sensitive residential receivers and for surrounding non-residential sensitive land uses and standard construction hours of 7am to 6pm on Mondays to Fridays and 8am to 1pm on Saturdays.

The noise assessments establish a noise management level (NML) of 52dB(A) for the residential receivers for both applications and internal level of 45dB(A) for schools and adjacent health buildings. The proposed works are proposed to be undertaken within and outside the standard construction hours in the ICNG. A noise management level (NML) of 47dB(A) is identified for the residential receivers for works to be undertaken outside the standard construction hours in the ICNG. The works proposed outside of the standard construction hours have been modified to only concrete finishing works (including the use of a helicopter float) and installation/dismantling of cranes. The final extended hours sought for each application is:

- main works application: 6pm to 10pm Friday, 1pm to 10pm Saturday and 8am to 10pm Sunday.
- carpark application: 1pm to 3pm Saturday.

Without noise mitigation for the main works application, the predicted noise levels would exceed the NML at the residences and exceed the highly noise affected management level of 75dB(A), reaching up to 82dB(A) during standard construction hours. It is anticipated that the NML at internal hospital receivers would also be exceeded reaching 64 dB(A) but NMLs at the schools, TAFE and external health facilities would be met during standard construction hours.

Without noise mitigation for the carpark application, the predicted noise levels would exceed the NML at the residences reaching up to 68 dB(A) during standard construction hours but would be below the highly noise affected management level of 75dB(A). It is anticipated that the NML at internal hospital receivers (58 dB(A)) schools (55dB(A)), adjacent health buildings (47dB(A)) would also be exceeded during standard construction hours.

Noise mitigation measures are recommended but require further resolution on appointment of a contractor. The noise assessments recommended for standard construction hours: that excavators use a pulverising head attachment instead of hydraulic hammer attachment where possible; that construction equipment be located away from residences and screened (where necessary); manage vehicle noise and maintain equipment. Other standard mitigation measures would need to be investigated to address the impacts, including: acoustic barriers; silencing devices; rubber mats for material handling areas; and treating noisy equipment.

Vibration impacts would be generated during demolition and excavation works. Sample testing of vibration impacts and ongoing monitoring is recommended.

The predicted noise levels from the OOHW for the main works and carpark applications are predicted to exceed the NML at the residences, reaching up to 68dB(A) and 49dB(A), respectively. However, the works would remain below the highly affected level of 75dB(A) that applies during standard construction hours. It is anticipated that the NML at internal hospital receivers and external health facilities would be met for the OOHW and other receivers would not be in operation during these times. Noise mitigation measures are recommended to mitigate impacts on the residential receivers but requires further resolution on appointment of contractor. In addition to the standard mitigation measures, it is recommended that construction noise is mitigated by: maintaining engines; using temporary buildings as barriers; minimising reversing; managing worker behaviour; plant selection; positioning of equipment; and consulting, notifying and establishing a complaints handling.

NSW EPA initially advised that the proposed extended construction hours sought in the EIS had not been adequately justified. In response to the amended construction hours described above, and the narrowing of the works proposed, the EPA was generally satisfied that the OOHW request was justified and recommended a condition restricting extended construction hours on Saturday afternoon to 1pm to 3pm for the carpark application and that an OOHW protocol be developed for the more extensive OOHW for the main works application.

The Department has recommended that Construction Noise and Vibration Management Sub-Plans be prepared by a suitably qualified expert and that consultation be undertaken with all noise sensitive receivers where noise levels are predicted to exceed the NML in the preparation of each of the plans. Further the Department has recommended that an OOHW protocol be prepared for the main works application.

Subject to compliance with the recommended conditions of approval and implementation of the proposed mitigation measures, the Department is satisfied that construction noise impacts can be appropriately managed.

6.3.2 Operational noise and vibration impacts

The noise generating activities associated with the operation of the main works application would be the operation of mechanical plant and equipment and for the carpark application it would be the operation of mechanical plant and equipment and traffic associated with the new carpark. The noise assessments identified the operational noise criteria under the relevant provisions of the *Noise Policy for Industry* (EPA, 2017) (NPI) and considered the impacts of the carpark application against the *NSW Road Noise Policy* (RNP).

The noise assessments assert that the mechanical plant and equipment noise emissions can be controlled to acceptable levels at the nearest noise sensitive receivers with typical attenuation. Detailed noise predictions should be conducted during the detailed design phases of the proposals to ensure that the mechanical plant and equipment noise emissions satisfy the noise emission criteria.

The noise assessment for the carpark application assessed the potential noise impacts associated with the carpark from traffic noise, which is predicted to reach 55dB(A) L_{eq} . The noise assessment concluded that as traffic noise would comply with the noise emission criteria at the open space area of the adjacent school (55 dB(A) $L_{eq, (15 \text{ hour})}$), it is therefore capable of complying with the criteria for other sensitive receivers.

EPA requested that detailed quantitative noise impact assessment of mechanical plant and compliance with noise limits be provided or that target operational noise design criteria be established as an alternative. EPA recommended conditions that the noise limits in **Table 9** for the operations of each proposal be complied with at the residential receivers for each of the applications.

Table 9 | Noise limits at residential receivers

Application	Noise Limits in dB(A) at any residence			
	Day $L_{Aeq(15 \text{ minute})}$	Evening: $L_{Aeq(15 \text{ minute})}$	Night $L_{Aeq(15 \text{ minute})}$	Night L_{AFmax}
Main works application	47	43	38	53
Car park application	47	43	38	54

The Department is satisfied the noise impacts generated by the development can be adequately managed and mitigated, subject to the verification of noise attenuation measures during the detailed design stage and verification of operating conditions upon commencement of operations. The Department has recommended conditions requiring the proposals demonstrate they can comply with the EPA's recommended noise limits and that post occupation monitoring is undertaken.

6.4 Heritage Impacts

6.4.1 European heritage

Statement of Heritage Impacts (SHIs) were submitted with the respective applications. It was identified that:

- the site forms part of the locally listed '1827 Plan of the Town of Liverpool'.
- located within the main works application area, the site contains 'Avenue Planting on Elizabeth Street', which is listed on the Section 170 Heritage and Conservation Register.
- the southern part of the main works area is also located within the 'Bigge Park Conservation Area'.

The SHIs also identify that the State listed 'former Liverpool Hospital' (Liverpool TAFE) heritage item and 'Bigge Park' and 'Cast-iron letterbox' are locally listed heritage items located in the vicinity of the site.

The archaeological assessment in the SHIs concluded that the site has low potential for archaeological remains but noted the network of nineteenth century drains which are shown to have extended across the Hospital and are significant for their connection with the early town of Liverpool.

The SHIs concluded that the proposed developments:

- would not impact the 1827 Plan of the Town of Liverpool as the proposed road works would not affect the 1827 town layout.
- the main works application would not impact the significance of the State and local items in the vicinity, as it would not impact the appreciation of their significance.
- the carpark application would not detrimentally impact State or local items in the vicinity due to the distance from the items.
- would result in the loss of the heritage planting along Elizabeth Street and archival recording should be undertaken.

The SHIs also noted that during construction all works should cease if:

- stone capped, brick or other drain is encountered, and archaeological recording undertaken.
- unexpected archaeological resources are identified, and Heritage NSW notified.

The SHIs provide recommendations to manage the heritage impacts, including recording of the trees along Elizabeth Street and establishing processes for managing excavation works and potential impacts on archaeological resources.

Heritage NSW raised no objection to the removal of the planting along Elizabeth Street. Heritage NSW advised that it did not support the findings regarding the archaeological assessment and conclusion that there would be low potential for resources, and recommended conditions to address potential archaeological impacts.

The Applicant provided additional information to justify its conclusion that there was low potential for resources, and a monitoring program in the south-west and an unexpected finds protocol for the remainder of the site is acceptable.

Heritage NSW advised that limiting the monitoring program to the south-west is not supported as areas of the site that are less disturbed have the potential for resources. Heritage NSW provided

recommended conditions requiring an archaeological monitoring program (prepared and supervised by a suitably qualified historical archaeologist) be undertaken in accordance with its guidelines, preparation of an excavation report and a heritage interpretation strategy.

The Department notes the advice of Heritage NSW and has recommended conditions of consent consistent with its comments. Subject to conditions of consent, the Department is satisfied there would be no significant, detrimental impacts on historic heritage and archaeology.

6.4.2 Aboriginal cultural heritage

The Aboriginal cultural heritage assessment (ACHA) reports document investigations undertaken on and around the site and provided a range of mitigation measures. The reports noted high levels of historic and modern disturbances. The ACHA reports included consultation with Aboriginal parties and an assessment of potential significance.

The ACHA reports found that the proposals would not impact on Aboriginal cultural heritage as no Aboriginal objects or areas of archaeological potential were identified.

The Department has recommended conditions of consent requiring implementation of the relevant recommendations of the ACHA reports. Subject to conditions, the Department is satisfied that impacts on Aboriginal cultural heritage would be appropriately managed.

6.5 Other issues

The Department's consideration of other issues is provided at **Table 10**.

Table 10 | Department's assessment of other issues

Issue	Findings	Department's consideration and recommended conditions
Contamination	<p>The Applicant submitted a Stage 1 and Preliminary Stage 2 Environmental Assessment for the main works application and a Stage 2 Environmental Assessment for the carpark application. These concluded that the sites are suitable for the proposed hospital and carpark subject to the implementation of Remedial Action Plans (RAPs). The RAPs were also provided in the EIS's.</p> <p>Several contaminants of concern in soils that exceeded their nominated soil acceptance criteria, as well as friable asbestos from previous demolition works, were identified at the site of the main works application. Petroleum hydrocarbons exceeded the adopted criteria in some soil samples at the site of carpark application. Detailed site investigations</p>	<p>The Department has recommended conditions requiring a Site Audit Report and Section A Site Audit Statement in accordance with the recommendations of the EPA in relation to the main works application.</p> <p>Conditions requiring the RAPs be revised to address further detailed site investigations post demolition works are also recommended.</p> <p>The Department is satisfied that assessments have been undertaken in accordance with the relevant guidelines, and</p>

Issue	Findings	Department's consideration and recommended conditions
	<p>are required post demolition works for both applications and revised RAPs prepared.</p> <p>EPA requested interim audit advice from an EPA Accredited Site Auditor be provided confirming the findings of the site investigation reports and RAP for the main works application. EPA also provided conditions requiring submission of site validation reports for both applications and relevant site audit statements for the main works application.</p>	<p>consistent with SEPP 55, and the site is suitable for the new hospital building and carpark, subject to remediation.</p> <p>The Department has considered EPA advice and accepts the recommendations in relation to validation requirements. The Department has recommended conditions to give effect to these requirements.</p>
Biodiversity	<p>Biodiversity Development Assessment Reports (BDARs) were submitted with the applications and noted that the areas for development have been historically cleared and altered and comprise existing buildings and minimal vegetation.</p> <p>The BDARs found no remnant vegetation, threatened flora or fauna occurred within the development sites.</p> <p>The BDAR for the main works application found that the proposal may impact 0.07ha of planted native vegetation that does not align with any particular Plant Community Type and therefore required no further assessment of impacts on biodiversity values or offsets was required.</p> <p>Vegetation within the carpark application area is being removed under a separate approval. The BDAR concluded that no further assessment of impacts on biodiversity values or offsets was required.</p> <p>Following exhibition of the EIS's, EESG raised no issues with the submitted BDARs but advised offset planting should equate to a ratio of greater than 1:1 inclusive of tree removal undertaken under separate approvals. EESG re-iterated this advice on review of the Amended proposal for the carpark application.</p>	<p>The Department notes the comments received from EESG and is satisfied the development would not result in any significant impacts on biodiversity.</p> <p>The Department has recommended conditions requiring all planted trees to be native species and construction impacts to be managed, including an ecologist being present for any vegetation clearing.</p>

Issue	Findings	Department's consideration and recommended conditions
	<p>The Applicant submitted revised landscape plans with additional tree planting for the carpark application, ensuring a tree planting ratio of 1:1 is achieved.</p>	
<p>Flooding and stormwater drainage</p>	<p>The development site is outside the 1% AEP flood limit (i.e. low flood risk area), but within the PMF extent, which extends across the carpark site and generally excludes the western portion of the site where the main works application is sited.</p> <p>Localised overland flooding from the CBD was identified along Campbell, Goulburn and Elizabeth Streets.</p> <p>Drainage improvement works approved under a separate approval (i.e. along Goulburn and Campbell Streets) are expected to alleviate the localised overland flooding impacts along the road reserves for events larger than 1% AEP.</p> <p>In response to the EIS and the RtS, Council and EESG were satisfied that subject to the development meeting the concessional development category requirements, including the evacuation requirements based on an effective warning time, flooding impacts are satisfactorily addressed.</p> <p>EESG did not support the shelter-in-place option for the carpark application given inundation would last for 48-72 hours or longer for PMF events and recommended that an evacuation plan be prepared in consultation with the NSW State Emergency Service (SES) and Liverpool City Council.</p>	<p>The Department understands that drainage works associated with alleviating the localised flooding along Goulburn Street, were approved under a separate planning pathway.</p> <p>The Department is satisfied that overland flow would be completed prior to the operation of the development and the proposed drainage system would operate satisfactorily as the Goulburn Street works are currently being finalised.</p> <p>In regard to flooding impacts, the Department has recommended conditions requiring any structures below the PMF level be constructed from flood compatible building components as per the recommendations of the Flooding and Stormwater Report and evacuation plans be prepared in consultation with relevant authorities.</p>
<p>Aviation impacts</p>	<p>An aviation report was submitted with the application to consider the impacts of the development on airspace protection.</p> <p>The height of the proposed main works building is higher than the primary helipad at 42.71AHD. However, the parts of the building located under the approach and departure paths are</p>	<p>The Department has recommended a condition requiring aviation obstruction lights be installed prior to occupation of the main works building, where relevant.</p>

Issue	Findings	Department's consideration and recommended conditions
	<p>lower than 42.71AHD. The aviation report recommends the proposed cooling towers (RL38.20) and laboratory exhaust (RL38.60) and roof tops of the southern podium have aviation obstruction lights at the highest points and corners of the buildings.</p> <p>CASA advised that it has reviewed the aviation report and advised they have no concerns with the assessment. CASA noted that the revised carpark is higher than the secondary helipad, which sits at 34.7AHD.</p> <p>The Applicant has advised the lower secondary helipad on the site is no longer operational. The Department also notes that the carpark is located outside of all the approach and departure paths of the helipads.</p> <p>Accordingly, the height of the proposals would not obstruct the approach and departure procedures of the helipads on the hospital campus.</p>	

7 Evaluation

The Department has reviewed the EIS's, RtS, Amended proposal and additional information and assessed the merits of the proposals, taking into consideration advice from the public authorities, including Council. Issues raised in the public submission have been considered and all environmental issues associated with the proposals have been addressed. Conditions are recommended to satisfactorily address any outstanding issues. The Department concludes the impacts of the proposed developments are acceptable and can be appropriately mitigated through implementing the recommended conditions of consent. Consequently, the Department considers the developments are in the public interest and should be approved subject to conditions.

The proposed developments are consistent with the objects of the *Environmental Planning and Assessment Act 1979* (including ecologically sustainable development) and with the State's strategic planning objectives for the site as set out in the Greater Sydney Regional Plan, *A Metropolis of Three Cities*, the Western City District Plan, Liverpool Area Place Strategy and Liverpool Council's Local Strategic Planning Statement.

The Department acknowledges the main works development would result in reduced solar access to dwellings on Goulburn Street opposite the site to the west, however recognises that the typology of buildings associated with the Liverpool Innovation Precinct would result in impacts due to the scale of development in the precinct as well as minimising impacts on heritage open space areas. The Department considers the overall public benefits of delivering health services offsets the impacts.

The Department is satisfied the proposed built form and scale of the developments are appropriate when considered in the context of the surrounding development and exhibit design excellence. The proposed shared zone along Campbell Street is not supported due to technical issues with the location and design. A condition has been recommended to exclude the works. Notwithstanding, the overall public domain and landscaping works provide significant improvements for the campus, particularly contributing to strategic goals to improve the Elizabeth Street pedestrian environment.

The Department concluded that the surrounding road network has adequate capacity to cater for the expected increase in traffic to the site and proposed access arrangements would be acceptable. Further, the car parking provided would meet demand generated by the intensification of hospital facilities and accommodate existing unmet demand. This would be supported by a Green Travel Plan that would further address demand by promoting a modal shift away from private vehicle travel.

The Department notes that the extended construction hours over the weekend for limited works would potentially affect residences to the west of the site. However, as details are currently unknown the Department has recommended an out-of-hours work protocol for these works.

The Department has concluded that the Applicant's intention to manage impacts on archaeology through an unexpected find protocol unacceptable and has recommended a monitoring program.

The proposals are in the public interest as they would deliver public benefits, including:

- the provision of health infrastructure to meet the demands of the growing population.
- improved service levels in hospitals through the construction of new health facilities in an accessible location.
- economic benefits, generating approximately 592 construction jobs, 420 operational jobs and investment in health infrastructure.

8 Recommendation

It is recommended that the Acting Executive Director, Infrastructure Assessments, as delegate of the Minister for Planning and Public Spaces:

- **considers** the findings and recommendations of this report.
- **accepts and adopts** the findings and recommendations in this report as the reasons for making the decision to grant consent to the applications.
- **agrees** with the key reasons for approval listed in the notice of decisions.
- **grants consent** for the applications in respect of Liverpool Hospital Redevelopment and Multi-storey Carpark (SSD-10389 and SSD-10388), subject to the conditions.
- **signs** the attached development consents and recommended conditions of consent.

Recommended by:



Megan Fu
Principal Planner
Social Infrastructure Assessments

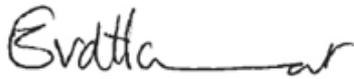
Recommended by:



Karen Harragon
Director
Social and Infrastructure Assessments

9 Determination

The recommendation is **Adopted** by:

A handwritten signature in black ink, appearing to read 'Erica van den Honert', with a long horizontal flourish extending to the right.

Erica van den Honert

A/Executive Director

Infrastructure Assessments

Appendices

Appendix A – List of referenced documents

The following supporting documents and supporting information to this assessment report can be found on the Department of Planning, Industry and Environment's website as follows.

1. Environmental Impact Statements
SSD-10388: <https://www.planningportal.nsw.gov.au/major-projects/project/25756>
SSD-10389: <https://www.planningportal.nsw.gov.au/major-projects/project/25761>
2. Submissions
SSD-10388: <https://www.planningportal.nsw.gov.au/major-projects/project/25756>
SSD-10389: <https://www.planningportal.nsw.gov.au/major-projects/project/25761>
3. Applicant's Amended Development Application and Response to Submissions
SSD-10388: <https://www.planningportal.nsw.gov.au/major-projects/project/25756>
4. Applicant's Response to Submissions
SSD-10389: <https://www.planningportal.nsw.gov.au/major-projects/project/25761>
5. Applicant's Responses to Request for Additional Information
SSD-10388: <https://www.planningportal.nsw.gov.au/major-projects/project/25756>
SSD-10389: <https://www.planningportal.nsw.gov.au/major-projects/project/25761>

Appendix B – Statutory Considerations

ENVIRONMENTAL PLANNING INSTRUMENTS (EPIs)

To satisfy the requirements of section 4.15(a)(i) of the EP&A Act, this report includes references to the provisions of the EPIs that govern the carrying out of the proposals and have been taken into consideration in the Department's environmental assessment.

Controls considered as part of the assessment of the proposals are:

- State Environmental Planning Policy (State & Regional Development) 2011 (SRD SEPP)
- State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP)
- State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55)
- State Environmental Planning Policy (Coastal Management) 2018 (Coastal SEPP)
- Draft State Environmental Planning Policy (Infrastructure) 2007 – Amendment Health Services Facilities (Draft Infrastructure SEPP)
- Draft State Environmental Planning Policy (Remediation of Land) (Draft Remediation SEPP)
- Draft State Environmental Planning Policy (Environment) (Draft Environment SEPP)
- Liverpool Local Environmental Plan (LLEP) 2008.

COMPLIANCE WITH CONTROLS

State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)

Table B1 | SRD SEPP compliance table

Relevant Sections	Consideration and Comments	Complies
3 Aims of Policy The aims of this Policy are as follows: (a) to identify development that is State significant development	The proposed developments are identified as SSD.	Yes
8 Declaration of State significant development: section 4.36 (1) Development is declared to be State significant development for the purposes of the Act if: a) the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and b) the development is specified in Schedule 1 or 2.	The proposed developments are permissible with development consent. The proposals are for a hospital and ancillary carparking each with capital investment values (CIV) in excess of \$30 million and therefore is development specified under clause 14 of Schedule 1 of the SRD SEPP.	Yes

State Environmental Planning Policy (Infrastructure) 2007

The Infrastructure SEPP aims to facilitate the effective delivery of infrastructure across the State by improving regulatory certainty and efficiency, identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure development, and providing for consultation with relevant public authorities about certain development during the assessment process.

An assessment of the developments against the relevant considerations of the Infrastructure SEPP is provided in **Table B2**.

Table B2 | Consideration of the relevant provisions of Infrastructure SEPP

Clause(s)	Consideration and comment
44 - 45 Development likely to affect an electricity transmission or distribution network	<p>The developments are located within the vicinity of an electricity transmission or distribution network. In accordance with the Infrastructure SEPP, the developments were referred to the relevant electricity supply authority for comment.</p> <p>The applications were referred to Endeavour Energy and it noted that:</p> <ul style="list-style-type: none">the Applicant has initiated the process for electrical supply increase, which is being reviewed but awaiting information from the Applicant.three new switching stations are proposed to be installed with two of them on Goulburn Street frontage and one on Campbell Street frontage.provided the load of the new carpark is incorporated in the application for the above supply increase, then there is no further consultation required. <p>The Department considers no additional conditions or amendments are necessary.</p>
84 – 88B Development in or adjacent to rail corridors and interim rail corridors	<p>The carpark application is located adjacent to the rail corridor, with the building set back 20m from the railway line. The Department consulted TfNSW, which provided recommended conditions of consent. These include conditions to ensure that no structural impacts or restrictions to access would result.</p> <p>The Department had included the relevant conditions in Appendix C.</p> <p>The Department notes that the development adjoining the rail corridor is for car parking, and would have minimal noise impacts given the short nature of exposure to rail noise. The main works application is located sufficiently away from the rail corridor and partially screened by existing buildings and designed to achieve internal amenity in accordance with Australian Standards and health design guidelines.</p>
98 – 104 Development in or adjacent to road corridors and road reservations	<p>The carpark application constitutes traffic generating development in accordance with clause 104 of the Infrastructure SEPP as it would provide more than 200 car parking spaces and meets the capacity increase requiring referral to TfNSW. The Infrastructure SEPP requires traffic</p>

Clause(s)	Consideration and comment
	<p>generating development to be referred to Roads and Maritime Services for comment.</p> <p>Both applications were referred to TfNSW (incorporating Roads and Maritime Services), as the carpark application was referred in accordance with the Infrastructure SEPP and the main works application was referred as it generated the capacity increase associated with the proposed increase in car parking spaces. TfNSW recommended conditions of consent a Green Travel Plan and Construction Traffic and Pedestrian Management Plan. These have been included in the conditions at Appendix C.</p>

State Environmental Planning Policy No. 55 - Remediation of Land

SEPP 55 aims to ensure that potential contamination issues are considered in the determination of a development application.

The Applicant submitted a Stage 1 and Preliminary Stage 2 Environmental Assessment for the main works application and a Stage 2 Environmental Assessment for the carpark application. These concluded that the sites are suitable for the proposed hospital and carpark subject to the implementation of Remedial Action Plans (RAPs). The RAPs were also provided in the EIS's.

A number of contaminants of concern in soils that exceeded their nominated soil acceptance criteria as well as friable asbestos from previous demolition works were identified at the site of the main works application. Petroleum hydrocarbons exceeded the adopted criteria in some soil samples at the site of the carpark application. Further, detailed site investigations are required post demolition works for both applications and revised RAPs prepared.

EPA requested interim audit advice from an EPA Accredited Site Auditor be provided confirming the findings of the site investigation reports and RAP for the main works application. EPA also provided conditions requiring submission of site validation reports for both applications and relevant site audit statements for the main works application.

The Department has recommended conditions requiring a Site Audit Report and Section A Site Audit Statement in accordance with the recommendations of the EPA in relation to the main works application. Conditions requiring the RAPs be revised to address further detailed site investigations post demolition works are also recommended.

The Department is satisfied that assessments have been undertaken in accordance with the relevant guidelines, and consistent with SEPP 55, and the site is suitable for the new hospital building and carpark, subject to remediation.

The Department has also considered the EPA's advice and accepts the recommendations in relation to validation requirements. The Department has recommended conditions to give effect to these requirements.

State Environmental Planning Policy (Coastal Management) 2018

The Coastal SEPP aims to promote an integrated and co-ordinated approach to land use planning in the coastal zone by managing development in the coastal zone and protecting the environmental assets of the coast, establishing a framework for land use planning to guide decision-making in the

coastal zone, and mapping the 4 coastal management areas (the coastal wetlands and littoral rainforests area, the coastal vulnerability area, the coastal environment area and the coastal use area) that comprise the NSW coastal zone for the purpose of the definitions in the *Coastal Management Act 2016*. The Coastal SEPP replaces SEPPs 14, 26, and 71.

The site is mapped in one of the coastal zones identified by the SEPP. The proposals are consistent with the relevant Planning Principles of the SEPP and will not have any significant adverse impact on the environmental assets of the coast. The works are located outside of the mapped areas.

Draft State Environmental Planning Policy (Infrastructure) 2007 – Amendment Health Services Facilities (Draft Infrastructure SEPP)

An amendment is proposed to State Environmental Planning Policy (Infrastructure) 2007 (the Infrastructure SEPP) to provide a more efficient planning framework for health infrastructure in NSW.

The proposed amendments form part of the NSW Planning Reform Action Plan to update certain planning provisions that will ensure the efficient delivery of important government infrastructure that serves the NSW community. This amendment will specifically facilitate efficient planning pathways for low impact health infrastructure.

The scope of the proposed amendment extends to development with consent, development without consent, complying development and exempt development provisions within the Infrastructure SEPP. The amendments would enable efficient delivery of infrastructure that is important to support the health and wellbeing of NSW communities such as community health centres, consulting rooms and ambulance facilities.

The updated provisions would ensure there is an appropriate level of environmental assessment commensurate with the impacts of the development, whilst also helping to deliver essential social infrastructure in a timely manner to the direct benefit of the people of NSW.

As the proposed developments are not low impact health infrastructure, the proposals are not affected by the Draft Infrastructure SEPP.

Draft State Environmental Planning Policy (Remediation of Land)

The Draft Remediation SEPP will retain the overarching objective of SEPP 55 promoting the remediation of contaminated land to reduce the risk of potential harm to human health or the environment.

Additionally, the provisions of the Draft Remediation SEPP require all remediation work carried out without development consent to be reviewed and certified by a certified contaminated land consultant. Remediation work is to be categorised based on the scale, risk and complexity of the work. Environmental management plans relating to post-remediation management of sites, including the ongoing operation, maintenance and management of on-site remediation measures (such as a containment cell) are to be provided to Council.

The Department is satisfied that the proposals will be consistent with the objectives of the Draft Remediation SEPP.

Draft State Environmental Planning Policy (Environment)

The Draft Environment SEPP is a consolidated SEPP which proposes to simplify the planning rules for a number of water catchments, waterways, urban bushland, and Willandra Lakes World Heritage Property. Once adopted, the Draft Environment SEPP will replace seven existing SEPPs. The proposed SEPP will provide a consistent level of environmental protection to that which is currently delivered under the existing SEPPs. Where existing provisions are outdated, no longer relevant or duplicated by other parts of the planning system, they will be repealed.

Given that the proposals are consistent with the provisions of the existing SEPPs that are applicable, the Department concludes that the proposed developments will generally be consistent with the provisions of the Draft Environment SEPP.

Liverpool Local Environmental Plan (LLEP) 2008

The LLEP 2008 aims to encourage the development of housing, employment, recreation and services to meet the needs of the existing and future residents of the Liverpool LGA. Of particular relevance, the LLEP 2008 aims to strengthen the regional position of the Liverpool city centre as the service and employment centre for Sydney's south west region and to promote the efficient and equitable provision of public services, infrastructure and amenities.

The Department has consulted with Council throughout the assessment process and considered all relevant provisions of the LLEP 2008 and matters raised by Council in its consideration of the proposals (**Section 5**). The Department concludes the developments are consistent with relevant provisions of the LLEP 2008. Consideration of the relevant clauses of the LLEP 2008 is provided in **Table B3**.

Table B3 | Consideration of the LLEP 2008

LLEP 2008	Department Comment/Assessment
Land Use Table – Zone SP2	Hospitals and ancillary facilities are permissible with consent in the SP2 zone.
Infrastructure – Health services facility and Educational establishment	The proposed hospital building, refurbishment works, and ancillary car parking facilities are considered to meet the objectives of the zone as they are providing health infrastructure and ancillary facilities.
Clause 2.7 Demolition requires development consent	Demolition works forms part of the development in both applications.
Clause 4.3 Building height	The site is mapped on the LLEP 2008 Height of buildings map as being subject to a maximum 35m building height. The proposed developments at 32.9m and 25.2m comply with the height control.
Clause 4.4 Floor space ratio	The site is mapped on the LLEP 2008 Floor space ratio map as being subject to a maximum floor space ratio (FSR) of 2.5:1.

LLEP 2008**Department Comment/Assessment**

The proposed developments would result in an overall increase in FSR across the eastern and western campus from 0.75:1 to 0.9:1, which complies with the FSR control.

Clause 5.10 Heritage conservation

In accordance with subclause 2, this SSD application seeks development consent for the demolition of the Thomas Rachel Moore Education Centre building and removal of trees within the Bigge Conservation Area, including the Section 170 listed trees. Consent is also sought for the construction of the new ISB within the Bigge Conservation Area.

The Department's consideration of the heritage impacts is detailed in **Section 6.4**, including archaeological impacts.

Clause 7.1 Objectives for development in Liverpool city centre

The proposals are consistent with the objectives for redevelopment of the city centre as:

- they do not alter the heritage significant street layout and reinforce the street character through consistent building alignments with existing development on the campus.
- they would provide a new quality public spaces area within the campus.
- the reconfigured main entrance forecourt seeks to improve the pedestrian environment along Elizabeth Street, which identified as an important pedestrian link between the city centre and the Georges River foreshore.

Clause 7.1 Sun access in Liverpool city centre

A 20m height limit applies to land within nine metres of the public right of way on the northern side of Elizabeth Street, opposite Bigge Park, between Bigge Street and College Street.

The plant level of the proposed ISB building is setback nine metres from the boundary and therefore complies with this control as an 18m high building is proposed within the protected sun access zone.

Clause 7.5 Design Excellence

The Department's consideration of the relevant matters in its assessment of design excellence is below.

Matter**Consideration**

(a) whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved,

The designs have been refined through the SDRP process and incorporate a high standard of design that addresses the surrounding context, including the heritage aspects along the southern boundary.

(b) whether the form and external appearance of the

The designs improve the amenity of the public domain through providing a modern

proposed development will improve the quality and amenity of the public domain,

hospital building that defines the boundary of the hospital and soft treatment for public entrances and visually interesting carpark façade.

(c) whether the proposed development detrimentally impacts on view corridors,

There are no significant view corridors that would be impacted by the developments and existing views towards Bigge Park and the river along the southern part of the site would be unaffected by the developments.

(d) whether the proposed development detrimentally overshadows Bigge Park, Liverpool Pioneers' Memorial Park, Apex Park, St Luke's Church Grounds and Macquarie Street Mall (between Elizabeth Street and Memorial Avenue),

The new ISB building would result in additional overshadowing of Bigge Park, but it would be minor as it only falls on the north-eastern corner of a very small portion of the park. The proposal complies with the sun access controls protecting sunlight to Bigge Park.

(e) any relevant requirements of applicable development control plans,

The designs have addressed requirements of the DCP. Where departures occur, they have been appropriately justified, including aligning the new ISB along Goulburn Street with existing retained buildings that have minimal setbacks.

(f) how the proposed development addresses the following matters—

(i) the suitability of the site for development,

The proposals are consistent with the zoning for the site and have been located on the site to minimise shadowing impacts, impacts on heritage zones and provide improved pedestrian environments.

(ii) existing and proposed uses and use mix,

The uses are consistent with the zoning and support existing facilities with modern facilities and car parking to support existing and proposed demand.

(iii) heritage issues and streetscape constraints,

The designs address heritage constraints, including a podium that has a scale and materiality that respects its relationship to the apartment buildings along Goulburn Street and the heritage listed TAFE site to the south.

(iv) the location of any tower proposed, having regard to the need to achieve an acceptable relationship with other towers (existing or proposed) on the same site or on neighbouring sites in terms of separation, setbacks, amenity and urban form,

The tower element of the hospital building has been situated to minimise impacts to adjoining public open space areas and heritage items. It also defines the hospital campus and would not impact any future tower development on the site or on neighbouring sites.

(v) bulk, massing and modulation of buildings,

The bulk, massing and modulation of the buildings are appropriate for the site and the existing and envisaged surrounding context.

(vi) street frontage heights,

The heights along each frontage responds to the context, with lower heights along the more sensitive boundaries due to heritage and solar access impacts on Bigge Park and taller forms where higher buildings built along site boundaries are situated.

(vii) environmental impacts such as sustainable design, overshadowing, wind and reflectivity,

The proposed ISB building will be required to achieve relevant sustainable design targets and the carpark has been designed to minimise mechanical ventilation requirements.

Overshadowing impacts are considered acceptable, the design includes wind mitigation measures and is not expected to result in reflectivity issues.

(viii) the achievement of the principles of ecologically sustainable development,

The proposed new buildings have been designed to be sustainable and the landscaping works would improve canopy

	<p>cover across the site in the medium term to address the urban heat island effect. The refurbishment of existing buildings also ensures that the embodied energy of these buildings is optimised and reduces the overall impacts of the life-cycle of the buildings.</p>
(ix) pedestrian, cycle, vehicular and service access, circulation and requirements,	<p>The proposal would result in improved legibility across the campus, including improved delineation of access for different users of the site, in terms of treatment areas and service requirements.</p>
(x) the impact on, and any proposed improvements to, the public domain.	<p>The proposals include significant public domain improvements, including improving pedestrian amenity along Elizabeth Street (due to the reconfiguration of the main entrance and redistribution of service vehicle traffic to designated locations away from Elizabeth Street) and new centrally located green open space area.</p>
Clause 7.7 Acid sulfate soils	<p>The site is mapped on the LLEP 2008 Acid Sulfate Soils Map as being located on Class 5 acid sulfate soils.</p> <p>The Stage 1 and Preliminary Stage 2 Environmental Assessment for the main works application found no presence of ASS. However, the Stage 2 Environmental Assessment for the carpark application found the presence of ASS and an ASS management plan has been prepared for that development and was submitted with the EIS. It was referred to relevant agencies who raised no issues with the ASS management plan.</p>
Clause 7.8 Flood planning	<p>The Department is satisfied that flood risk has been appropriately considered as:</p> <ul style="list-style-type: none"> (a) the design addresses the flood hazard of the land and would be designed to address the PMF. (b) would not adversely affect flood behaviour as pre-development and post-development overland flows would be maintained at the same levels. (c) measures to manage risk to life from flood, including the need for preparation of an evacuation plan have been considered and would

be prepared prior to occupation of the car park building, which is located within the PMF zone.

- (d) would not affect riverbanks or watercourses.
- (e) the buildings would be constructed to ensure they are able to withstand inundation up to the PMF.

The ISB has been identified as concessional development and consultation with Council has determined that there are no issues with the Applicant's assessment prepared in accordance with the Floodplain Development Manual and its development control plan.

Clause 7.17A Hospital helicopter airspace

This clause aims to protect hospital helicopter airspace and identifies referral requirements to the local health district, where development is under, or that intrudes into, hospital helicopter airspace.

The Application has been made by Health Infrastructure and the development is for the local health district.

Aviation assessments were submitted, confirming that the proposals would not intrude into the protected airspace associated with the existing helipads and appropriate lighting would be provided below the approach and departure paths. The local health district raised no issues with the height of the proposed developments as they would not impact helicopter flight paths to and from the hospital helipad. A condition has been recommended to ensure that appropriate lighting is installed before the building is operational.

7.31 Earthworks

Development consent is being sought for earthworks as part of this SSD application. The proposed extent of earthworks is considered acceptable as:

- (a) the works would not adversely impact on the existing drainage patterns and soil stability of the locality.
- (b) the proposed works will not impact on the capacity for any future redevelopment of the land.
- (c) excavated fill exported off site will be conditioned to be suitably validated prior to its removal.
- (d) the extent of earthworks proposed will not detrimentally impact on the amenity of adjoining land uses, with the scale of proposed development generally consistent with the existing buildings on site.
- (e) no fill is required to be imported to the site.
- (f) the likelihood of discovering and impacting on any relics has been assessed and conditions requiring a historical archaeological program have been recommended.
- (g) sediment and erosion control measures are proposed to be

implemented on-site by the Applicant during site works to minimise any potential for off-site impacts.

Other policies

In accordance with clause 11 of the SRD SEPP, Development Control Plans do not apply to State significant development.

Appendix C – Recommended Instruments of Consent