ETHOS URBAN

Appendix A – Liverpool Hospital Integrated Services Building (SSD 10389) - Response to Agency Submissions

Agency Submissions and Response

Issue Raised	Proponent's Response
Department of Planning, Industry and Environment	
Traffic Clarification is sought with regards to the performance of the Lachlan Street/Forbes Street intersection and the potential consequential impacts of a decline in service at this intersection, upon the Lachlan Street/Goulburn Street intersection, as detailed below: • the SIDRA results (Table 12 of the EIS) indicate that the existing degree of saturation of the Lachlan Street/Forbes Street intersection is 0.93 in the AM peak with the 'proposed' degree of saturation of this intersection to be 0.42. The text supporting this indicates that the Lachlan Street/Forbes Street intersection is expected to operate close to capacity (i.e. degree of saturation 0.93). With this intersection operating at near capacity, the impacts upon the operation of Lachlan Street/Goulburn Street are to be more clearly presented. • additional intersection performance tables must be added that clearly show the performance of these intersections currently, once the development is operational and once operational with mitigation measures so that the result of the mitigation measures upon degree of saturation and level of service can be clearly demonstrated. • additionally, noting changes may need to be made to the Lachlan Street/Forbes Street intersection (current proposal for stop signs), details of consultation with the relevant roads authority are to be provided.	A detailed response to this query including additional intersection performance tables is provided by GTA at **Appendix G**. Council has been consulted regarding the proposed upgrades. It is noted that they are in support of the shared zone in this location. It is noted that Council has requested that approval of the detailed design of the shared zone form part of the section 138 application for Campbell Street.
Construction parking Detail of the arrival times and the number of construction vehicles accessing the site is to be provided, including detail of where all construction vehicles will be accommodated and how impacts to the surrounding road network and community will be minimised. Cumulative impacts of the development of the adjoining multi-storey car park at the hospital campus are also to be considered.	At this stage a contractor has not been appointed and so the EIS has prepared an indicative assessment of construction vehicles within the EIS. A detailed Construction Traffic and Pedestrian Management Plan will be prepared by the appointed contractor prior to construction works commencing. The CTPMP will be prepared in consideration of works occurring at the MSCP. The Plan will detail arrival times, management of construction vehicles on the site and mitigation measures to the surrounding road network. It is noted that the EIS confirms construction worker parking at Section 6.7.15. Liverpool Hospital is highly constrained with limited space to provide on-site parking for all construction workers and construction worker vehicles will not be permitted to park on local streets. While Health Infrastructure will allow the contractor to nominate a preferred option as part of the

	tender (along with a Construction Traffic and Pedestrian Management Plan), a location at Warwick Farm Racecourse has been explored following discussions between Health Infrastructure and The Australian Turf Club. The final location of worker parking will be decided by the contractor. A Construction Management Plan has been prepared by Johnstaff and is included at **Appendix N**.
Design Detail regarding incorporation of Aboriginal Cultural Heritage into the development as advised in the State Design Review Panel process is to be provided.	Consultation has been held with local Aboriginal Land Council representatives to seek feedback on the architectural, interior, landscaping and wayfinding design. The Arts in Health Strategy will incorporate the results of a survey undertaken to understand the desired themes for the precinct, as guided by the Arts Working Group.
Noise Detailed justification must be provided for the significant works proposed outside of recommended construction hours. If works outside of recommended construction hours are proposed, a works plan must be included to detail how often works would occur outside the recommended times and the period of time these works would continue.	The proposed out of hours works and special construction hours have been revised. An updated assessment has been undertaken by Acoustic Logic on the proposed construction hours outside of the standard hours at **Appendix H**.
Flooding Noting the hospital campus is subject to mainstream flooding and overland flows, detail of modifications to flows that will occur both during construction and once the development is complete is to be provided. This must include detail of where flood levels will increase in the surrounding area, including land not part of this development application, as a result of the alteration to flows through the hospital campus site.	'Flooding and Stormwater SSDA Report (LHAP-CI-TTW-RPT-MW-009008 C)' demonstrates that the proposed development will not adversely impact flood levels up to the 1 in 100-year event. It is noted that pre-development and post-development overland flow analysis has been prepared by TTW and is included at **Appendix L**.
Groundwater The EIS states groundwater was encountered at RL0. Noting the excavations required to facilitate the development, detail of groundwater management must be provided.	It should be noted that the EIS include a typographical error with regard to groundwater. Groundwater was measured at depths of 5.3m (RL 6.4m), 7.3m (RL 3.3m) and 4.0m (RL 7.9m). Groundwater inflows into the basement and ground floor level excavations are expected to occur as local seepage flows at the base of the fill, through gravel bands or relic joints/fissures within the alluvial and residual clays, and at the soil/rock interface (if encountered), particularly after heavy rain. Seepage volumes into the excavations are expected to be localised, of limited volume and controllable by conventional sump and pump discharge systems. Discharge from the drainage system should be piped to the stormwater system. The excavation will need to be monitored as it progresses by the contractor and JKG to confirm the drainage requirements. Refer to **Appendix J**.
Remediation While a Remediation Action Plan (RAP) has been prepared (Appendix L2), wording in the EIS states that a RAP is to be undertaken. Commitment is to be provided by Health Infrastructure to the implementation of the prepared RAP.	The RAP provided with the EIS is proposed to be implemented.
Consultation Provide detail of the feedback received during consultation (both prior to lodgement of the EIS and following exhibition of the EIS) and elaborate how this feedback has been used to inform and refine the design of the proposal.	Since the exhibition of the EIS, the project team has met with representatives from Liverpool City Council on 3 August 2020 and 13 August 2020 to discuss the feedback and issues raised. The additional consultation undertaken is detailed in the amended Consultation Report prepared by Johnstaff and included at **Appendix N**.
Mitigation Measures A table of detailed mitigation measures is to be provided. It is not considered sufficient to refer to the measures provided within technical reports. Mitigation measures must be clearly consolidated and committed to by Health Infrastructure.	A table of detailed mitigation measures has been prepared by Ethos Urban and is included in the Response to Submissions and Additional Information Report which accompanies this submission.

NSW Environment, Energy and Science	
Aboriginal Cultural Heritage Assessment Report	
EES notes that an ACHAR has been submitted and prepared by RPS Group dated 21 February 2020, and EES recommends that should an approval be granted that any recommendations within the ACHAR form part of conditions of consent.	Noted.
Biodiversity	
EES has reviewed the biodiversity development assessment report (BDAR) prepared by Narla Environmental dated April 2020 and EES considers that the BDAR provides an adequate assessment of the proposed development. Therefore, EES has no further comments on biodiversity issues.	Noted.
Flooding	
EES has reviewed the Flooding and Stormwater Report prepared by TTW for Health Infrastructure, dated 13 March 2020 and provides the following comments: • The development site is outside the 1% AEP flood limit (i.e. low flood risk area), but within the PMF extent which covers most of the site except the western portion. The drainage improvement works proposed by the proponent in the western portion of the site (i.e. along Goulburn and Campbell Streets) is expected to alleviate the overland flooding impacts along the road reserve for events larger than 1% AEP. The flooding due to climate change scenarios (represented by 0.5% AEP and 0.2% AEP as proxies to rainfall increase) is expected to be insignificant or nil. • The above report confirms that the land use of the development site falls under the critical uses and facilities and the development should be considered under the concessional category provided the proposed development will reduce the flood risk to properties and people of the site. The report also confirms that the site will be redeveloped based on the requirements for concessional development categories including the evacuation requirements based on an effective warning time. • EES concurs that the factors relevant to the concessional development categories as outlined in the above report will need to be considered by the proponent (which include evacuation requirements, car parking and driveways, flooding impacts, floor levels, building components, structural soundness, management and design, and fencing), if the SSD is approved. • EES does not have any comments in relation to flood risk management at the development site provided the development approval includes a condition to comply with the requirements of the concessional development.	Noted.

NSW Environment Protection Authority	
Noise	
Construction Noise Assessment The EPA considers additional information must be provided regarding: • the application of a 5 dB penalty to the sound power level of some construction equipment; • an assessment of the cumulative impact of plant and equipment for construction scenarios; • more assessment of the application of mitigation measures for specific construction scenarios; and • justification for out of standard hours work in accordance with the Interim Construction Noise Guideline (DEC, 2009) (ICNG). The AAR lists in Table 29 the sound power levels for items of construction plant and equipment proposed to be used during construction activities for the project. It is noted that two of these items (a handheld jackhammer and powered hand tools) have been labelled as attracting a 5 dB penalty due to their annoying noise characteristics. The EPA considers that other items in Table 29, such as the excavator with hydraulic hammer and demolition saw, would also be likely to attract a 5 dB penalty due to annoying characteristics, however have not been marked as such in the table. The applicant should review the sound power levels in Table 29 and whether any additional penalties are applicable. The applicant should also provide an assessment of the predicted impacts from the proposed construction activity scenarios (e.g. demolition of existing structures, foundation excavation, construction of new building, etc.) which will comprise the use of a number of the plant and equipment items concurrently, as well as predicted noise impacts for individual plant items. The EPA notes that significant noise impacts are predicted from the proposed construction activities both during standard construction hours and outside standard construction hours. This is particularly the case at Receiver 2 (Goulburn Street Residences), where noise levels are predicted to exceed the 'highly noise affected' level in the ICNG. The AAR makes a range of general recommendations for mitigation measures that could be employed to reduce noise from construction activities. However, no specific assessment of how these measures could be applied to the equipment list of Table 29 and the resultant reductions in overall impacts at sensitive receivers for the various construction activity scenarios has been provided.	Further SoundPLAN modelling has been undertaken based on the construction methodology and activities likely to be undertaken at the site simultaneously resulting in the worst case scenario during both the standard construction hours, outside of the standard construction hours and the special construction hours. The SoundPLAN noise modelling presents the cumulative predicted external noise levels to the nearest sensitive receivers. The predicted noise generation to the identified surrounding receivers during the construction phase has been documented by Acoustic Logic. Where the construction activities result in the predicted noise level being above the management levels, mitigation measures have been recommended. It is noted that the construction activities will only exceed the noise management levels at Receiver 2 – Goulburn Street Residences (external). Further discussion is provided in **Appendix H**.
The AAR has put forward a very brief justification for adopting construction hours outside the standard hours in Sections 13.1 and 15.1. Proposed hours are: • Friday – 6:00 pm to 10:00 pm period • Saturday – 1:00 pm to 3:00 pm • Saturday – 5:00 pm to 10:00 pm; • Sunday – 8:00 am to 5:00 pm; and	It is noted that the type of work proposed outside the recommended standard hours and special construction hours has been revised and is now limited to the following activities: • Concrete finishing works including the use of a Helicopter float. • Erection and installation of stationary crane

• Sunday – 5:00 pm to 10:00 pm Based on the information provided the EPA does not have sufficient information to support the out of hours construction activity, including the need for: 1) detailed justification (refer section 2.3 of the ICNG); 2) details of construction scenarios; and 3) appropriate mitigation measures being put forward to reduce noise impacts to an acceptable levels.	These hours will be required for the construction of the Main Works on selected evenings and weekends so as to maintain operation of the existing hospital and in consideration of Council restricted hours of operation on Campbell street during weekdays. An assessment has been undertaken by Acoustic Logic on the proposed construction hours outside of the standard hours and justification of the out of hours works in consideration of the ICGN is provided at **Appendix H**.
Operational Noise Assessment The AAR has set noise criteria for operational noise emissions from the proposal in Section 8.3.4. Section 8.3.5 discusses the generic operational noise sources likely to be installed on site, together with a broad description of whether they will be able to satisfy the operational noise criteria, and what mitigation measures may be required to address these noise emissions. However, detailed and specific assessment and discussion on these matters has not been included in the AAR and has been deferred to the post-consent detailed design stage. The EPA recognises the staged nature of the design process in significant projects such as these, and that limited detail may be available on which to base a comprehensive assessment of operational noise in the early stages of this process. However, the SEARs for the project clearly require that the applicant 'identify and provide a quantitative assessment of the potential noise and vibration impacts on the identified sensitive receivers due to the operations of the hospital'. A more detailed quantitative assessment of the potential operational noise impacts from the proposal – using representative items of plant and equipment referenced from similar projects or other suitable sources – should be provided to satisfy the SEARs requirement. This should include a quantitative assessment of the effectiveness of any feasible and reasonable noise mitigation and management measures, should they be required, to achieve the noise criteria put forward in the AAR. In lieu of this, specifying target operational noise design criteria is an appropriate alternative.	Acoustic Logic have identified that the major noise sources generated by the operation of the project site is mechanical plant. The additional Acoustic Impact Assessment prepared by Acoustic Logic and included at **Appendix H**, determines that noise emissions from plant servicing the project should be in accordance with the Liverpool DCP and NSW EPA 'Noise Policy for Industry' 2017. Accordingly, pursuant to these guidelines and policies, project amenity noise emission goals have been established with regard to the surrounding sensitive receivers and the mechanical plant that would be expected to service the site have been established. Further discussion is provided in **Appendix H**.
EPA Recommended Conditions (see submission for detail)	HI will review the draft conditions issued by the Department of Planning, Industry and Environment at the appropriate time.
Contaminated Lands As part of the Response to Submissions (RtS) the EPA recommends the applicant engage an EPA-accredited Site Auditor to review the appropriateness of the reports prepared to date (including the site assessment report and the RAP) and prepare Interim Audit Advice.	A site audit statement will be prepared by an EPA-accredited Site Auditor post approval.
The EPA recommends the following conditions of consent: 1. The applicant must conduct a Detailed Site Investigation to determine the full nature and extent of the contamination at the project area after demolition works. The detailed site investigation(s) must be undertaken, and the subsequent report(s), must be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the Contaminated Land Management Act 1997. The reports must be prepared, or reviewed and	HI accepts the general intent of these conditions. HI will review the draft conditions issued by the Department of Planning, Industry and Environment at the appropriate time.

approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. 2. The Unexpected Finds Procedure and the Remediation Action Plan (RAP) must be updated following results of further detailed site investigations and implemented throughout duration of project work. 3. Prior to commencement of operation, the applicant must submit a Validation Report for the development. The Validation Report must: a) be prepared, or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. b) be prepared in accordance with the relevant guidelines made or approved by the EPA under section 105 of the Contaminated Land Management Act 1997. c) Include, but not be limited to: i. comment on the extent and nature of the remediation undertaken; ii. if material is to remain in-situ and capped, describe the location, nature and extent of any remaining contamination on site as well as any ongoing management requirements; iii. if treated material is to remain on the subject site, results of sampling of treated material, compared with the treatment criteria in the most updated RAP; iv. results of any validation sampling, compared to relevant guidelines/criteria; and v. comment on the suitability of the area for the intended land use. d) be submitted to the Planning Secretary for review one month after the completion of remediation works 4. Prior to commencement of operation, the applicant must obtain confirmation from the Certifying Authority in writing that the requirements of condition 3 have been met. 5. The applicant must engage a NSW EPA-accredited Site Auditor to provide increased certainty to the Department on the appropriateness of the site for the proposed use. The applicant must obtain from a NSW EPA-accredited Site Auditor a Section A2 Site Audit Statement accompanied by an Environmental Management Plan prepared by a certified consultant, and submit it to the Planning Secretary and relevant Council for information no later than one month before the commencement of operation. 6. The development must not be used for the purpose approved under the terms of this consent until a Site Audit Statement determines the land is suitable for that purpose and any conditions on the Site Audit Statement have been complied with.	
Civil Aviation Safety Authority	
CASA has reviewed the Liverpool Health and Academic Precinct Main Works Submission Aviation Flight Path Report. CASA does not regulate helicopter landing sites and therefore has	Noted.

no issues with Flight Path Report and no objections to the proposed Liverpool Hospital Redevelopment.	
CASA notes there could be a minor discrepancy in the documentation. According to Flight Path Report, the height of the 'LHAP Stage 2' is RL 43.1m. According to the architectural drawings ASSDA- MW-16/18 of 8 May 2020 and the Environmental Impact Statement, the maximum 'Top of Roof' of the north/south In-patient Unit tower is 45.1m.	The Aviation Flight Path Report prepared by Avipro and included at **Appendix M** has been amended to reflect the height of the LHAP Stage 2. AviPro confirm that while the Stage 2 structure will be above the height of the Primary HLS by 2.39m, this is not significant as the preferred flight path does not cross over the Stage 2 building and therefore will not impose a constraint on the HLS. Further discussion is provided at **Appendix M**.
Heritage NSW	
The following comments have been made on the archaeological heritage content of the Statement of Heritage Impact (RPS 2002). The report references archaeological investigations undertaken in 1993 (Higginbotham) and 2009 (AHMS) that both uncovered historical phases of site occupation, with remains such as footings associated with the 1820s Moore Hall, a box drain, a ditch, postholes, deposits and post-1865 artefacts. Heritage NSW observes that both investigations were sampling programs involving test trenches, rather than larger-scale open area excavations, which is of note given the scope of archaeological evidence encountered during the works. Taking this evidence into consideration, the report assesses the archaeological potential of the site as low to moderate in Section 5.1 and low to nil in Sections 7.2.6 and 8.1, with high potential for historical drain/s to survive intact in localised, less disturbed areas of the site without basements. It is noted in the report that the sandstone capped box drain uncovered in the 2009 excavations is not depicted on Liverpool town plans. However, it is not made clear why other un/anticipated archaeological evidence may not survive *in situ*, as well as the drain/s, within less disturbed site areas. Heritage NSW does not concur with the assessment of archaeological potential and observations of impact. It is reasoned that a diverse archaeological resource, dating to various historical phases and including unanticipated remains, has previously been discovered on site. Further, as mentioned in the report, it is noted that areas without basements on the site may be (reasonably) undisturbed and, it is argued, may therefore contain a range of archaeological evidence.	RPS have provided further detail on the Moore Hall and AHMS 2007-2009 assessment. This is included at **Appendix I**. Additional assessment of the archaeological potential on the site has also been undertaken. The updated information supports the conclusions of the archaeological potential presented in *The Liverpool Health and Academic Precinct – Integrated Services Building and Refurbishment of the Clinical Services Building: Statement of Heritage Impact* (RPS, 2020). The additional assessment also confirms that the proposal area has a low and low to nil potential of containing archaeological remains associated with the structures identified in the 1827, 1850, 1915, 1932, 1943 and 1961 plans and aerials. The exception to this is the potential for drains, which is based on the 2007 archaeological monitoring program and it is noted that there is moderate to high potential for similar drains to survive in localised, less disturbed areas of the proposal area. Therefore, the assessment of the archaeological potential presents in the Statement of Heritage Impact will not be altered and the conclusions drawn broadly correspond. An unexpected finds protocol has been prepared in the event archaeological remains not anticipated are identified. Further discussion is provided at **Appendix I**.
The significance assessment presented in the report (Section 6.6) only addresses potential 19th century drains on site, which are assessed as of Local significance for their association with the early town of Liverpool. In Sections 7.2.6 and 8.1, drains are considered to have the potential to be of Local or State significance, dependent upon the evidence and intactness. The significance assessment therefore appears unresolved. A significance assessment for the historical archaeological resource of the entire site (as a whole) has not been included.	The addendum prepared by RPS confirms that the significance of the drains networks identified is likely to be significant at a local level only (as stated in Section 6.6.1.1 of the Statement of Heritage Impact submitted with the EIS). It is noted that the previous archaeological assessment found that the archaeological remains including any potential drain network would be significant at a local level only. Further to this, RPS have provided an additional assessment of significance for the potential historical archaeological remains of the proposal area in accordance with the 'Assessing Significance for Historical Archaeological Sites and Relics' OEH 2009 criteria. As noted in the

Heritage NSW considers that the site significance assessment should have been expanded and refined. It is noted, for example, that the *Archaeological Assessment, "Moore Hall" site* (Wendy Thorp, 1993) concludes Moore Hall, which is located on the site, is of high cultural significance.	Statement of Heritage Impact and the addendum (included at **Appendix I**), the proposal area has been subject to disturbances since the mid-twentieth century associated with various phases of development within the hospital precinct.
In Section 8.2, Recommendation 3 proposes that if any drains are encountered during the development, all works should cease in the area and an archaeologist be contacted to record the archaeology. Heritage NSW notes that this recommendation does not mention relics or any other archaeological evidence. Recommendation 4 proposes an Unexpected Finds Protocol, under Section 146 of the Heritage Act 1977. It is a statutory obligation for any person/s who believe they have discovered or located a relic to notify the Heritage Council. As such, Recommendation 4 is a mandatory lawful requirement in any circumstance. Primarily due to the historical occupation uncovered during previous archaeological investigations on site, Heritage NSW considers that the current recommendations are too limited in scope for necessary management of the potential quantum and character of archaeology on site. Given the above, Heritage NSW considers that the report in its current form does not assess or support appropriate management of the potential archaeological resource on site. It is recommended that, at a minimum, an archaeological monitoring program (supervised by a suitably qualified historical archaeologist) is a more appropriate management strategy for the site. The archaeological program would need to be supported by an Archaeological Research Design (ARD), that includes an archaeological site assessment and an excavation methodology to guide the proposed works, produced by a suitably qualified historical archaeologist, who meets the Excavation Director Criteria of the Heritage Council of NSW.	As recommended, RPS have provided an update to Recommendation 3 to include all archaeological remains such as stone capped brick and other drains. Refer to **Appendix I**. It is noted that the proposal area is identified as having low to nil potential for archaeological remains including works or relics as defined under the Act. Further, RPS agree that an unexpected finds procedure is a lawful requirement. While RPS have determined that the existing recommendations and mitigation strategies included in the Statement of Heritage Impact submitted with the EIS are sufficient, they have provided an additional recommendation to ensure the appropriate management of potential archaeological resources on the site under 'Recommendation 5.' In this way, an archaeological research design and methodology has been prepared to support an archaeological monitoring program. Further discussion is provided at **Appendix I**.
Liverpool City Council	
Local Character Part 4 of LDCP provides a vision for a 4.5m landscaped setback along Goulburn Street. Having regard to the submitted concept, it is noted that the proposed development replaces low scale buildings with some landscaped setback along Goulburn Street with buildings up to and close to 35 metres in height without any form of landscaped setback. In this regard, it is considered that the proposed development does not respond to the essential elements that make up the character of its urban environment. It is requested that the scheme is revised to respond to this matter.	A detailed response to this issue is provided by Fitzpatrick and Partners at **Appendix E**.
Bicycle Parking A bicycle parking rate of 10 per cent of staff for both staff and visitor provision is considered more appropriate to meet strategic goals. This would equate to: • 42 bicycle spaces for staff in the basement of the CP1 car park • 42 spaces for visitors in the public domain	The proposed development seeks to increase the bicycle parking provision in accordance with Council's comments to the following: • Minimum 50 secure staff bicycle parking spaces in the P1 basement car park • Minimum 25 visitor bicycle parking spaces throughout the new public domain • Minimum 25 visitor bicycle parking spaces in the new MSCP.

	In combination with existing bicycle parking spaces at the hospital, this is expected to meet all cycle demands.
DEVELOPMENT ENGINEERING CONSIDERATION Appendix A provides conditions of consent relating to development engineering so at to be imposed on any consent granted for the redevelopment of Liverpool Hospital.	HI will review and comment on the Draft Conditions that are issued by the Department of Planning, Industry and Environment at the appropriate time.
TRAFFIC PLANNING CONSIDERATION Concern is raised in relation to the proposed 10km/h shared zone along Campbell Street between Goulburn Street and Forbes Street. Campbell Street is currently carrying approximately 700 and 450 vehicles in the AM and PM peak hours respectively. To meet TfNSW 10km/h shared zone criteria, traffic flow along Campbell Street will be required to reduce to less than 100 vehicles per hour and less than 1,000 vehicles per day. Based on traffic volumes at Campbell Street and Forbes Street intersection, 93% of traffic is from Goulburn Street South and Campbell Street East. The proposed directional signage plan on the north to the development site might not be effective to reduce traffic from Campbell Street to less than 100 vehicles per hour. The section of Campbell Street to be changed is currently a bus route and section of bus routes 851, 853,854 and 857, and a school bus route for the adjoining high schools. The proposed one-lane two-way slow point within the shared zone will have a significant impact on the bus operation and traffic movement. Consultation is required with TfNSW, bus operators, the schools and the endorsement of the Liverpool Pedestrian Active Transport and Traffic Committee. As such, the proposed 10km/h shared zone along Campbell Street between Goulburn Street and Forbes Street is to be deferred as part of this development, for the applicant to carry out the above consultation and referral to the Liverpool Pedestrian, Active Transport and Traffic Committee. Should the applicant wish to pursue the shared zone and associated improvement works, a separate application is to be lodged with Council's Traffic and Transport Section and TfNSW.	It is noted that Council has provided an addendum to its original submission which indicates support for the shared zone. The project team will work with Council and TfNSW on the detailed design of the share zone as part of the S138 application to Council. Following a meeting with Council on 3 August 2020, the project team and Council have agreed that the shared zone can be approved under this application in principal, with a condition to submit the detailed design for review and approval by Council under a section 138 application. Therefore, it is not considered warranted that the shared zone be deferred as part of this application, but rather it is suggested that a condition of consent be imposed requiring approval for the share zone under S138 of the Roads Act. Further to this, the intersection modelling undertaken for Lachlan Street and Forbes Street demonstrates that it does not require upgrading to a roundabout following the redevelopment, with or without a shared zone. As such, a condition to this end should not be imposed.
It should be noted that, to minimise traffic impact of the hospital redevelopment, conditions are recommended for the following improvement works to be carried out: • Installation of a roundabout at Forbes Street and Lachlan Street intersection; and • Minor signal improvement at Elizabeth Street/Bigge Street intersection. Forbes Street/Lachlan Street intersection is an existing four-way intersection with priority sign control. The expected increase in traffic movements would require traffic movements through the intersection to be regulated, with a roundabout. The Elizabeth Street/Bigge Street intersection is an existing four-way signalised intersection with basic two-phase signal operation and does not have right turn arrows. The expected increase in traffic movements would require right tun movement to be have dedicated right turn arrow phase.	The anticipated increase in traffic at the Bigge Street / Elizabeth Street intersection from the proposed development is considered to be minor in comparison to the traffic generated by the assessed surrounding development, including 26 Elizabeth Street. Notwithstanding, SIDRA modelling indicates that the additional traffic generated can be accommodated at the intersection under its current arrangement. It is noted, following a workshop held with Council of 3 August 2020, that the proposed change in priorities at the intersection on Lachlan and Forbes Street was supported by Council to address this issue, subject to detailed design consideration as part of a S138 approval under the Roads Act.

Remediation Action Plan Council's Environmental Health Section would also request for the Application to be supported by a Section B1 and B2 Site Audit Statement prepared by a NSW EPA Accredited Site Auditor to determine the nature and extent of contamination and the appropriateness of the management plan. If a Long-term Environmental Management Plan is required, Council's Environmental Health Section would also request the Department to impose a requirement for the preparation of a Section A2 Site Audit Statement by a NSW EPA Accredited Site Auditor to determine land use suitability subject to compliance with either an active or passive environmental management plan.	A site audit statement will be prepared by an EPA-accredited Site Auditor post approval.
Underground Petroleum Storage Systems (UPSS) JK Environments Pty Ltd indicated that the hospital contains underground petroleum storage systems. On 1st September 2019, the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019 was implemented to minimise risk to human health and the environment by requiring best practice design, installation, maintenance, and monitoring of UPSS in New South Wales. A significant change resulting from the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019 included the transfer of regulatory responsibility for the majority of UPSS in NSW to Local Government. It is requested that the Applicant confirms whether Liverpool Hospital contains UPSS requiring regulation under the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019.	A standby Diesel Generator system will be provided to meet the Engineering guidelines and Hospital requirements for Standby Power of the new buildings. The amount of stored fuel will be based on the generator(s) running continuously for 24 hours. The diesel storage tank will be located on Basement Level 1 (i.e. the lowest level of the building) in accordance with AS1940 The Storage and Handling of Flammable and Combustible Liquids. Diesel is not considered a hazardous material requiring a Hazardous area classification due to the ignition temperature being above 60 degrees. The proposed tank will be around 30-40k litres. located in a custom above ground double skinned bulk storage tank located in a purpose built room in the basement level.
Acoustic Assessment The proposed development would be located within close proximity to existing residential premises and may be a source of offensive noise and potentially impact upon human health and amenity. A quantitative assessment is required of all noise and vibration generating activities associated with the proposed development. The proposed development is an intensification of the site's use and is expected to generate additional traffic on local roads which may affect existing residential or other noise-sensitive land uses. In particular, the proposed hospital is likely to be a traffic generating development as outlined in Clause 104 and Schedule 3 of State Environmental Planning Policy (Infrastructure) 2007. In this regard, it is believed that the acoustic report shall take into consideration all applicable guidelines including the NSW Road Noise Policy (RNP) (EPA, 2011). Acoustic Logic Consultancy suggested that mechanical plant would be selected at the detailed design stage of the project. It is believed that mechanical plant shall be selected in consultation with a suitably qualified acoustic consultant to ensure compliance with the assessment criteria. In addition, a Construction Environmental Management Plan comprising a Noise and Vibration Management Plan (NMP) is required for the proposed development. In accordance with Council's requirements, it is strongly recommended that the Department requires acoustic reports to be prepared or reviewed and certified by a suitably qualified acoustic consultant who is a member of the Australian Acoustical Society or employed by an Association of Australasian Acoustical Consultants (AAAC) member firm. The report's cover or title page must confirm the consultant's membership with the Australian Acoustical Society or employment by an Association of Australasian Acoustical Consultants (AAAC) member firm.	The Additional Acoustic Impact Assessment (**Appendix H**) provides an outline of the mechanical plant that is expected to service the site and has undertaken a preliminary review in accordance with the noise objectives / criteria that should be achieved. It is noted that the detailed mechanical plant design and equipment selections are not available at this stage, and detailed acoustic controls can be assessed at the CC stage to ensure that the overall plant noise emissions satisfy the relevant requirements. Notwithstanding, it is noted that experience with similar projects indicates that it is possible to achieve the requirements with appropriate treatment of plant. The additional Acoustic Impact Assessment also provides detail on Acoustic Logics accreditation as a qualified acoustic consultant. Refer to **Appendix H**.

Regulated Premises The Applicant shall confirm whether the retail component of the proposed hospital would comprise regulated premises including but not limited to food premises, hairdressing or beauty salons. Furthermore, it is requested that the Applicant confirms whether the proposed hospital would contain a 'public swimming pool or spa pool' within the meaning of the Public Health Act 2010. Note: Under the Public Health Act 2010, a 'skin penetration procedure' does not include any procedure carried out by a registered health practitioner, or by a person acting under the direction or supervision of a registered health practitioner, in the course of providing a health service.	No retail operators have been selected at this stage. A separate application will be prepared for the use of the retail tenancies at the appropriate time.
Regulated Systems The Applicant is requested to confirm whether regulated systems such as warm-water and/or cooling water systems would be installed at the premises in accordance with the Public Health Act 2010, Public Health Regulation 2012 and AS 3666. If so, these systems must be notified to Council and will require regulation under the abovementioned legislation.	Council will be notified by the sub-contractor in accordance with the legislation.
Construction Environmental Management Plan A detailed Construction Environmental Management Plan (CEMP) must be prepared for the proposed development. The CEMP must address all environmental aspects of the development's construction phases, and include, where relevant, but not be limited to, the following: 1. Asbestos Management Plan; 2. Project Contact Information; 3. Site Security Details; 4. Timing and Sequencing Information; 5. Site Soil and Water Management Plan; 6. Noise and Vibration Control Plan; 7. Dust Control Plan; 8. Health and Safety Plan; 9. Waste Management Plan; 10. Incident Management Contingency; and 11. Unexpected Finds Protocol.	A detailed CEMP will be prepared by the contractor prior to commencement of construction. A condition of approval reflecting this is expected.
Sewage Management It is unclear whether a sewer rising main would be required for the proposal. Section 68 of the Local Government Act 1993 indicates that approval is required to install, construct or alter a waste treatment device and operate a system of sewage management at the premises. "Operate a system of sewage management" means hold or process, or re-use or discharge, sewage or by-products of sewage (whether or not the sewage is generated on the premises on which the system of sewage management is operated). Therefore, separate approval may be required under Section 68 of the Local Government Act 1993 if the proposal includes infrastructure to hold or process, or re-use or discharge, sewage or by-products of sewage. In these circumstances, the Applicant is required to demonstrate that the system's design and capacity are adequate for its intended purpose taking into consideration maximum load requirements, unforeseen incidents and shutdown contingencies.	There will be a sewer holding pit in the main works building, which is discharged to the authorities sewer main. As per the definition of sewage management under 68A of the government act, this requirement of the Act does not apply to sewer holding pits that discharge to the sewer main.

Referral to NSW Health and the NSW EPA NSW Health (Public Health Unit) should be encouraged to provide comments in relation to the proposed development to ensure that it addresses all associated human health and environmental risks.	The SSD application has been prepared in consultation with NSW Health. NSW EPA has provided comments.
Preliminary Hazard Analysis The application was supported by a report titled 'Report to Health Infrastructure on Preliminary Hazard Analysis for Proposed New Integrated Services Building at Liverpool Hospital, Main Campus, Elizabeth Street, Liverpool, NSW (Ref: E32837BDrpt PHA) prepared by JK Environments dated 25th February 2020. In accordance with the Secretary's Environmental Assessment Requirements (SEARs) issued 27th November 2019, the Environmental Impact Statement was required to include a preliminary screening in accordance with State Environmental Planning Policy No. 33- Hazardous and Offensive Development. If the preliminary screening indicated that the development was 'potentially hazardous', a Preliminary Hazard Analysis (PHA) was required to be prepared in accordance with the Hazardous Industry Planning Advisory Paper No. 6- Guidelines for Hazard Analysis (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011). According to JK Environments, their Preliminary Hazard Analysis was prepared with consideration for the: Hazardous and Offensive Developments Applications Guidelines; Applying SEPP 33 guidelines (DoP, 2011) and the Hazardous Industry Planning Advisory Paper No. 6- Hazard Analysis (DoP, 2011). JK Environments did not confirm whether the Multi-Level Risk Assessment (DoP, 2011) guideline was considered during the preparation of their report as required by the SEARs. The consultant indicated that the primary aim of the PHA was to determine if the proposed Integrated Services Building was classed as a 'potentially hazardous industry' and/or 'potentially offensive industry'. It should be noted that this is not the objective of a PHA. Instead, the risk screening method set out in the Applying SEPP 33 guideline (DoP, 2011) provides the first step in determining whether the proposed development is potentially hazardous. Clause 12 of State Environmental Planning Policy No. 33- Hazardous and Offensive Development requires a PHA to be prepared and submitted with any Development Application for a potentially hazardous industry. Appendix 5 of the Applying SEPP 33 Guidelines stipulates that the purpose of a PHA is to: • Identify all potential hazards associated with a proposal; • Analyse all hazards in terms of their consequences to people and the biophysical environment and their likelihood of occurrence; • Quantify the analysis and estimate the resultant risks to surrounding land uses and the environment; and • Assess the risks in terms of the location, land use planning implications and existing criteria and ensure that the proposed safeguards are adequate and thus demonstrate that the operation will not impose an unacceptable level of risk. The Department of Planning confirms that the PHA is an in-depth risk investigation which is preliminary only in the sense that it is based on the preliminary information available at the time	A revised SEPP 33 Preliminary Risk Screening Assessment has been prepared by JK Environments. The Assessment has applied the SEPP 33 guidelines and confirms that the quantities of hazardous materials are below the screening threshold quantities as outlined in the SEPP 33 guidelines and therefore the vehicle movements of hazardous materials are not considered as potentially hazardous with respect to SEPP 33. Refer to **Appendix K**.

that the analysis is undertaken. Therefore, sufficient information must be available to determine the risk to people, property and the environment at the proposed development site and in the presence of controls. As part of their assessment, JK Environments did not appear to follow the risk screening procedure contained within the Applying SEPP 33 guidelines (DoP) as risks were not assessed with consideration for: dangerous goods classifications; quantity of dangerous goods held on-site; mode of storage; distance of stored material from the site boundary; and average number of annual and weekly road movements of hazardous materials to and from the facility. Furthermore, a comparative assessment was not completed against the screening thresholds presented as tables and graphs in Appendix 4 of the Applying SEPP 33 guidelines (DoP, 2011). It should be noted that radioactive substances are excluded from the risk screening procedure as they are covered by national regulations and guidelines. As screening thresholds were not considered, the consultant was unable to confirm whether the proposed development would be potentially hazardous. More specifically, Section 7 of the report is vague and states that 'the PHA indicates that the proposed ISB development could be considered a potentially hazardous industry'. This finding does not provide the consent authority with sufficient information to determine the level of risk posed by the proposal and its acceptability. Due to the discrepancies outlined above, it is believed that the submitted report does not address the SEARs issued 27th November 2019 which requires the EIS to include a preliminary screening in accordance with State Environmental Planning Policy No. 33- Hazardous and Offensive Development and Applying SEPP 33 guideline (DoP, 2011). In determining whether a development is potentially hazardous or potentially offensive, consideration must be given to current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development. Despite this requirement, it appears that JK Environments neglected to consider all requirements of the Applying SEPP 33 guidelines (DoP, 2011) and Multi-Level Risk Assessment (DoP, 2011). The abovementioned concerns are brought to the attention of the Department of Planning, Industry and Environment for their consideration when assessing adherence to the SEARs issued 27th November 2019 and State Environmental Planning Policy No. 33- Hazardous and Offensive Development.	
Building Code of Australia o It is considered that the proposed development can readily achieve compliance with the relevant provisions of the BCA. It is noted at this stage, development of this nature can be readily addressed at S6.28 Crown Certificate stage. Therefore, any amendments required to the design documentation in order to comply with the BCA can be addressed in the preparation and assessment of the detailed documentation for S6.28 Crown Certificate without giving rise to significant changes to the proposal as submitted for SSDA. Detailed assessment of the S6.28 Crown Certificate architectural plans should be undertaken by the Nominated Accredited Certifier prior to issue of the S6.28 Crown Certificate.	Noted. The Principal Certifying Authority will be issuing a Crown Certificate in accordance with the EP&A Act.
Disabled Access Access must be provided to the building for people with a disability in accordance with the relevant requirements of the Building Code of Australia, Disability (Access to Premises – Buildings) Standard 2010 and Australian Standard – AS1428.1 (2009), Design for Access and Mobility – General requirements for new building work, to the satisfaction of the Certifying Authority.	The proposal can comply with DDA accessibility requirements. See Appendix W of the EIS.

Urban Design **Context** The site boundary for the proposed development should include Goulburn Street (i.e. between Campbell Street and Elizabeth Street) as part of the redevelopment site to create a more inviting, pedestrian friendly and safe environment for the users of the Liverpool hospital precinct. Refer to the Draft Liverpool City Centre Public Domain Master Plan (LCC PDMP) to identify the required streetscape upgrades along Goulburn Street including kerb blisters with street trees and integrated parking, pavement upgrades, street lighting, seating and landscaping. Draft LCC PDMP is available at https://listens.liverpool.nsw.gov.au/liverpool-city-centre-public-domain-master-plan).	Goulburn Street does not form part of this SSD DA. Works to Goulburn Street, including works to the footpath and street planting have been approved under a separate application in consultation with Council (refer to Section 2.2.3 and 5.0 of the EIS). As noted above, paving on the Goulburn Street street frontage does not form part of this application. However, in consultation with Council, the project will incorporate granite banding along with the specified concrete pavers to provide a seamless transition between the front street paving and building forecourt. Starting at the property boundary along Goulburn Street bands of granite within exposed aggregate concrete will transition from the all-granite street front paving. This granite banding is repeated across the site as an additional layer to the wayfinding strategy to subtly differentiate main building entries and provide a simple unifying ground plane footprint. An artist impression of the design outcome is shown at **Appendix D.**
The proximity to, and health benefits associated with Bigge Park, can be further enhanced by strengthening the connection between the hospital site and Bigge Park. As part of the redevelopment for the hospital precinct, a section of Elizabeth Street (i.e. between Goulburn Street and College Street) should be converted into a pedestrian priority shared zone that will allow for a safer pedestrian environment and open the forecourt of Liverpool hospital towards Bigge Park.	This section of Elizabeth Street was considered in the master planning of the proposed development. However, further detailed design demonstrated that given this road accommodates a range of bus services of varying frequency that service the hospital and its location directly adjacent to the emergency department and ambulance area, it is not considered appropriate as a shared zone.
Sustainability Incorporate sustainability measures including photovoltaic technology for lighting and incorporate the use of sustainable materials within the selected materials palette.	The project is committed to an Equivalent 5-Star Green Star Rating. The final ESD strategies will be determined through Design Development in conjunction with the HI ESD Evaluation Tool. The use of sustainable materials will be used where possible.
Incorporate passive irrigation for tree planting within the streetscape and general planting. Refer to WSUD tree pit detail as per Draft LCC PDMP (see Chapter 6.8 – WSUD Tree Pit Detail).	A passive irrigation system is being employed for all tree planting.
Landscape The landscape design should include public domain works along Goulburn Street (i.e. between Campbell Street and Elizabeth Street) to create a more vibrant, safer and well-designed environment for the hospital precinct (See 1.1 above).	Goulburn Street is not part of this SSD DA. Works to Goulburn, including works to the footpath and street painting have been approved under a separate application in consultation with Council (refer to Section 2.2.3 and 5.0 of the EIS). While paving on Goulburn Street does not form part of this application, an integrated design has been development and the boundary of the SSD has been extended to include the footpath fronting the plaza on the corner of Goulburn St and Elizabeth St.
The pavement design for any public domain works need to be in accordance with the paving strategy outlined in the draft LCC PDMP. See Chapter 6.13 'Paving' for core street paving typology (i.e. for treatments along Goulburn Street and Elizabeth Street). Paving treatments need to extend from the kerb to the building line on the ground floor, to create a seamless public/private domain (i.e. also consistent with Council's DCP). If any other paving design (e.g. feature paving) is being proposed within the lot boundary, the proposed paving within the private domain needs to integrate with the paving design in the public domain, as per the draft LCC PDMP.	As granite paving bands are proposed for the paving on the forecourt area, a relatively seamless transition between the street front paving and building forecourt can be achieved without the need for extending granite in full across the forecourt. A meeting was held with Council on 13 August 2020 to discuss this approach. As discussed above, the proposed landscaping design will provide a seamless transition. An artist's impression is included at **Appendix D**.
The landscape design should include additional seating along the hospital forecourt (i.e. near the bus stop at the corner of Elizabeth Street and Goulburn Street) and at the entry court (i.e. off Goulburn Street) and include additional streetscape furniture in accordance with the furniture	Additional seating is provided in this area and will be in accordance with the LCC PDMP furniture palette.

palette shown in the Draft LCC PDMP (See Chapter 6.14 'Furniture, Fixtures & Fittings' for further details).	
As part of the upgrades recommended (i.e. in 1.1 above), the development proposal should include an upgrade to the street lighting system for the frontage of the proposed development along Goulburn Street (i.e. between Elizabeth Street and Campbell Street). All streetlight poles shall be multifunction poles including all necessary accessories, in accordance with Council specification for Goulburn Street (colour to be black), also refer to the Draft LCC PDMP for further details.	Goulburn Street is not part of this SSD DA. Works to Goulburn, including works to the footpath and street painting have been approved under a separate application in consultation with Council (refer to Section 2.2.3 and 5.0 of the EIS).
The proposed planting palette should include sensory plant species that significantly assist in improving the mental and physical wellbeing of the users and would help create a healthier environment around the hospital precinct. A suggested list of sensory plant species has been outlined in the Draft LCC PDMP (see Chapter 6.12 'Trees & Vegetation' for further details and references).	The proposed species selected has used the Draft LCC DMP as a basis for the landscaping scheme. This list of species has been extensively supplemented with species with a proven record in difficult conditions with a particular focus on plants which offer lush ground level foliage and long-lasting displays of colour throughout the year. As much of the planting is to be primarily experienced visually - in what for many visitors, and patients will be a stressful time - ensuring a lush and thriving garden view is of utmost importance. Core species are featured throughout the ground floor courtyards and various roof gardens to provide a unified design, being supplemented by diverse species selected to ensure each space provides a unique experience for visitors.
Water elements integrated within the landscape create a sense of calm and tranquillity within the environment. The design should incorporate water features that create a peaceful and tranquil environment (i.e. both visual and audible).	While acknowledging the value of water features, open water within the public domain can pose issues with infection control in a hospital environment and is therefore not considered appropriate. The proposed landscape also offers ample amenity without the need of a water feature.
Passive irrigation of all landscape areas must be designed into the public domain.	Passive irrigation has been considered and incorporated.
All podium landscapes must have irrigation supplied from a non-potable water source. All podium landscapes must have 1000mm of soil plus drainage for trees, 600mm of soil plus drainage for shrubs and 300mm of soil for turf. All trees on podium must be provided with minimum 15m³ of soil volume per tree.	Irrigation will be supplied by either non-potable sources or supplemented by air conditioning condensate and other recycled sources within the hospital. All podium planting soil mediums consider loading limitations of upper floor podiums, as per current best practice. The design seeks to optimise soil depths within these constraints.
All new tree planting must be installed as minimum 100L potted stock. Council requests the retention of the Corymbia citriodora, Lemon Scented Gums on Campbell Street. These are significant trees with large canopies and must be retained.	Clouston confirms that all new tree plantings will be minimum 100 litre stock. The retention of the *Corymbia citriodora* has been raised with Council previously. Retention is not possible due to crown impacts with adjoining buildings. These trees will be replaced with *Lophostemon confertus*, which can be managed to avoid the recurrence of such impacts, while providing additional benefits to heat island impacts from a denser canopy. While the loss of visual amenity of these trees is acknowledged, it is worth noting that findings in the Liverpool City Council's pilot study on heat mitigation (described in the LCC PDMP), demonstrates that the more open canopy tree species, typically seen in Corymbia citriodora,, has less impact on heat mitigation than the denser canopy of native species such as Lophostemon confertus. Refer to the Clouston statement at **Appendix F**.

There are tree removals proposed across the site, which will reduce the urban tree canopy in Liverpool. The project must provide a positive contribution to the urban tree canopy in Liverpool. Council requests the m2 of tree canopy removed for construction in each stage of work be returned via advanced tree planting from project completion for each stage of work.	Care has been taken to retain as many significant trees within the site as possible. Mature palms and the large mature fig on the corner of Goulburn and Elizabeth Streets have been retained along with a number of other mature trees in the Forbes Street entry and courtyard. While some trees have been removed to provide an additional 70,000m² of health services, new tree planting has been provided throughout the site, creating a more even and extensive long-term tree canopy cover across the campus. While it is not feasible to replace the canopy cover removed from site in its entirety from the immediate time of planting, proposed tree plantings will provide an increase of more than 40% coverage in 10 years, a significant improvement which will only increase over time; it is anticipated that canopy coverage will increase threefold from the current coverage in 30 years. Refer to the Clouston statement at **Appendix F** and the Response to Submissions and Additional Information Report prepared by Ethos Urban.
Safety The design needs to ensure that people feel safe around the hospital precinct especially at night. Include Crime Prevention Through Environmental Design (CPTED) principles in the design and detailing of public domain works.	The design accords with CPTED principles. An assessment of CPTED is provided at Section 6.6 and Appendix C of the EIS. The lighting strategy ensures that all lighting will be designed and documented in accordance with AS/NZ standards 1680 and 4282-1997 Control of the obtrusive effects of outdoor lighting. CPTED considerations through measures such as clear lines of site in all public domain areas and appropriate lighting levels have been addressed.
Lighting plays an important role in creating a safe and legible environment at night. Ensure adequate lighting is achieved around the hospital precinct including in the public domain on Goulburn Street, Forbes Street and Elizabeth Street. Consider appropriate building lighting to highlight the hospital precinct and achieve legibility at night.	
Amenity The proposal should explore the opportunity to integrate public art within the built environment and the surrounding public domain, to enhance the overall character within the hospital environment. A public art consultant should be engaged to prepare a public art strategy for the site, which includes consideration to various forms of art, availability of local artists and key locations where public art may be appropriate for the site. The strategy should ensure that public art is bespoke (i.e. not off-the-shelf) and relevant to the site and its context. Approval is to be sought by Council's Public Arts Officer or their direct supervisor/manager for all public artwork on site	The LHAP acknowledges the vital role of arts in health settings and has established a robust governance team of community, Council and clinical representatives. Public art and visual amenity for the precinct, in context of opportunities for improved clinical outcomes and engaging arts as a tool to connect Liverpool communities to the health service, is of high priority to the Arts Working Group (AWG). Supported by the Project Team, the AWG also acknowledge the role of engaging Council's Public Art Officer in the development of the campus wide public art strategy, currently in its earliest stages.
Aesthetics The architectural style and building façade details proposed for the western façade of the emergency department building needs to be replicated on the southern façade, to ensure consistency and legibility in the built form.	A detailed response to this issue is provided by Fitzpatrick and Partners at **Appendix E**.
Innovative ways to blend the existing and proposed building facades along the southern side of the hospital building (i.e. facing Bigge Park) should be considered, to minimise the stark contrast and difference in quality between the existing and the proposed sections of the building.	
Institutional buildings play an important role in adding legibility within the built environment. Include vertical signage (i.e. similar to the signage proposed for the western frontage), on the south western façade (i.e. facing Bigge Park) to help people identify and navigate their way to the hospital.	

Health Service Data Analysis A research on Liverpool Population & Social Infrastructure Study outlines that, there are currently seven dedicated community health centres across the LGA located in Hoxton Park, Liverpool, Moorebank and Miller and the opportunity exists to run outreaches using existing and proposed community facilities depending on need. In addition, there are two regional services located in Liverpool City Centre, including Liverpool (Public) Hospital. The provision of other services such as general practitioner and dental services, is through the market. Population projections indicate that the population of the SWSLHD will increase from 966,450 people in 2016 to 1.285 million people in 2031. This is an increase of 33% over the fifteen years. The Liverpool LGA population will grow by 41% by 2031, with an additional 86,950 people, a growth rate twice that expected for the rest of NSW. Liverpool Hospital also plays a role as a tertiary referral hospital for all of SWSLHD. It is assumed that the extended services and facilities will intensify the existing capacity of the hospital to reach and support a wider community need. However, presentation of further demand data could be added with the application to realize the potential market scenario and community benefits.	In 2016/2017, the hospital's emergency department had a bed occupancy rate of 99% and inpatient services were also at capacity at 102%. The pattern of demand shows that 91% of patients treated at Liverpool Hospital were residents of the SWSLHD, with 70% of the public hospital needs of Liverpool LGA residents met through services provided at the hospital. Looking towards 2031, the SWSLHD faces challenges in service delivery including significant population growth overall, in particular in the older and younger aged cohorts. Given the current occupancy rate being over capacity, the ability for Liverpool Hospital to deliver the additional services required is severely limited. The key driver for changes is to meet the additional clinical needs for the current and future community in the SWSLHD. Accordingly, the proposed development will provide additional inpatient services to meet growing demands, provide additional jobs and investment in the SWSLHD and Liverpool LGA, and provide an improved public domain outcome through high quality architectural design that appropriately addresses the street.
Social Impact Assessment (SIA) Liverpool Development Control Plan 2008 Part 1 Section 27 mentions the requirement of a comprehensive social impact assessment for applications for development of, or major changes to: - Drug rehabilitation services – including methadone clinics and safe injecting rooms - Hospitals, medical centres and community health service facilities - Freight transport facilities - Major public transport facilities. The DCP also indicates that any social impact assessment shall be prepared in accordance with Council's Social Impact Assessment Policy. Liverpool Council's Social Impact Assessment Policy provides detail guidelines for considering potential social impacts, parameters for assessing these and preparing management plan. The proposed development has conducted community and stakeholder consultation sessions and included some potential social impacts. However, a comprehensive social impact analysis is missing here which would cover broader aspect of demographic and socioeconomic analysis making this highly significant SSD more community integrated and informed decision based.	The Social Impacts of the proposal have been reviewed in consideration of the DCP as outlined at Section 6.25 of the EIS. The social impacts and benefits associated with the proposed development include: • A development that will provide a significant piece of social infrastructure, increasing the number of hospital beds. The design and capacity increase of the redevelopment is anticipated to have positive impacts on the overall health outcomes of the region; • Improves access to an extensive range of health services and facilities for people in Western Sydney; • Improves community participation opportunities for a range of members of society, including migrants, minority groups and socially disadvantaged groups; • Provides accessible access across the Hospital allowing equal ambulatory access; • Provides additional social benefits for the region in terms of providing adequate employment in the area; and Liverpool Hospital is a major health facility in the South Western Sydney Local Health District. To not invest in the development would exacerbate the service offering and capacity constraints of the existing health infrastructure in the region and require patients to continue to travel significant distances to receive adequate health care.
Connectivity & Pedestrian Access Council recommends considering parking rates and effective plan of management considering broader groups of the community, particularly the people in need. The concern of paid parking has been raised also during the community consultation sessions arranged by the department and concession mechanism has been mentioned as a mitigation measure (pg 51, SSD).	Paid parking is part of the NSW Health policy, implemented state-wide with concessions available.
Recreation & Open Space Overshadowing of the built form on Bigge Park to be avoided. Rather, promote more access to Bigge Park.	The massing has been focused towards Campbell Street with the tower elements stepping down towards Bigge Park, including setbacks in accordance with Clause 7.2 of the LEP that will ensure negligible shadows fall on Bigge park. The shadow that does fall in the park is restricted to a very small part of the north-east corner of the park. There is no shadowing of Bigge Park after 09.30am mid-winter. This means the park received uninterrupted solar access between 0930-3.00pm mid-winter.

Promote more pedestrian circulation within the building elements and improve accessibility and connectivity to the surrounding street network.	A detailed response to this issue is provided by Fitzpatrick and Partners at **Appendix E**.
Partnership with Allied Health Services, Universities and funding of agencies like Live Life Get Active and Walking groups to promote health programs and educate the public about likely opportunities in the Health and Innovation Precinct of Liverpool Collaboration Area.	The Hospital operates with many partnerships that promote health programs including education of the public.
Alignment with Liverpool Collaboration Area Place Strategy: Specific Actions and Implementation Plan identified for the Health, Research and Innovation Precinct.	See assessment of the LCAP at Section 6.1 of the EIS.
Access to open spaces like terrace courtyards, rooftop gardens/recreation space within the built form to reduce dependence on adjacent parks and open space. This is to allow access to open space within a short walking distance without exiting the building.	The proposal includes access to various open spaces including courtyards, rooftop gardens and landscaped open spaces which will provide patients and staff with areas to rest and relax. All ground floor courtyards and recreational spaces are publicly accessible. Rooftop gardens are generally only accessible to staff and patient owing to security and patient safety requirements.
Local Jobs … Council is therefore seeking an undertaking from construction companies involved in major projects like the Liverpool Hospital expansion, to adopt a socially responsible policy to local job creation. A "Local Jobs for Local People" job creation policy which would support, enhance and harness the skills and potential of the Liverpool workforce and allied workforce agencies in Western Sydney is suggested. Such a policy should reference already established regional initiatives including: Skillsroad, SW Connect, Busy at Work, and Productivity Bootcamp.	The construction contract will include the requirement for reporting the employment and training outcomes for people from the Liverpool LGA.
City Activation Strategy The proponent is encouraged to make some reference to or at least consider the opportunity to activate the site and better integrate the precinct with the CBD. Council adopted its City Activation Strategy in 2018. The vision contained within this strategy is 'to foster an 18-hour walkable city with a lively and well-integrated mix of activities, in order to attract private investment and stimulate Liverpool's communities to make greater use of the City Centre and its attributes'. Activation opportunities around the Hospital development include: • Aged care targeted activations due to proximity to Uniting Care • Student targeted activations and engagement opportunities due to proximity to different universities, All Saints Catholic College and Liverpool Boys and Girls High School.	A detailed response to this issue is provided by Fitzpatrick and Partners at **Appendix E**.
Liverpool City Council has also developed a draft Public Domain Master Plan for the Liverpool city centre. This is a 10-year plan that will guide the development of public space in the city centre, such as council-owned streets, laneways, entries to the city, car parks, parks and reserves, areas around rivers and creeks, and heritage items. It also includes proposals for the new infrastructure within public spaces such as trees, vegetation, paving, signage, public art and furniture. The hospital development should be sympathetic to this plan and consider the effects on the Public Domain during and after construction.	While it is noted that the hospital campus is not required to adhere to the PDMMP, the draft LCC PDMP has been used to guide and inform design for the public realm at the interface of the land surrounding the hospital precinct.

Hoarding Standards Liverpool City Council adopted an updated Hoarding Standard in December 2020. The hoarding standard encourages provisions of public art, graphics and images on hoarding. Good imagery is an opportunity for the proponent to show how their development is contributing to the vibrancy and growth of the city. Good graphics and/ or artworks beautify a site and minimise the likelihood of graffiti or vandalism. The proponent is encouraged to work with Council to ensure that the hoardings feature high quality imagery and artwork.	HI are happy to work with Council to ensure the hoardings feature high quality imagery and artwork. The final hoarding imagery will be subject to NSW Government branding guidelines.
Smoking Council recommends that Liverpool Hospital explore opportunities to provide for designated smoking areas (that are appropriately enforced), such as well-ventilated smoking rooms, to reduce the number of patients and visitors smoking in the no smoking area. This can be further supported by regulation and clearer wayfinding signage to smoking areas.	NSW Health Smoke-Free Health Care Policy (PD2015_003) mandates that all NSW Health Facilities and grounds are smoke free. Liverpool Hospital are committed to complying with this policy and does not plan to accommodate smoking areas.
Medical Tourism Liverpool Hospital and the visitors it attracts to the CBD provides unique opportunities to leverage the Liverpool visitor economy. We believe there are opportunities for Liverpool Hospital to support the development of the visitor economy through activations and being an important anchor in the CBD and Liverpool Innovation Precinct.	HI is happy to discuss any opportunities with Council in regard to medical tourism separate to the SSD application process.
Wayfinding There are numerous examples of wayfinding technology available that would enhance this development and provide the community and visitors with an interactive tool that connects the hospital precinct, transport and the wider CBD. As this precinct develops more and more people will be attending the site and be interfacing with the CBD. Wayfinding technology may also include digital options such as app developments. This could also be an opportunity to ensure the safety of patients, staff, students and visitors by implementing a CCTV network with an open data source to allow it to interact with Council's CCTV network. Also, there may be an opportunity to monitor and report on public health outcomes as a result of this development. e.g. air quality sensors and facilitation of active transport solutions for staff, patients and visitors.	Way-finding signage will be included throughout to assist pedestrians, vehicles and the general public to manoeuvre around the precinct in a safe and efficient manner. This will include major signage locations at vehicle entry & exit points from Goulburn Street, Campbell/ Forbes Street and Burnside Drive, as well as directory board signage at each entry lobbies and general wayfinding signage at all critical junctions and intersections. We note that a precinct-wide approach to way-finding signage is necessary to ensure the proper operation of the hospital and the seamless integration of the Education Research Hub with the Main Hospital and any other health related infrastructure. As such, finalisation of the way-finding strategy, graphic design and typeface will be subject to further review with the LHD Main Works Project Team, NSW Health Infrastructure and key stakeholders.
FLOODING AND CATCHMENT i. The finished floor levels and crest level of ramp to the basement for the proposed redevelopment of Integrated Service Building shall be in accordance with Flooding and Stormwater SSDA Report, LHAP-CI-TTW-RPT-MW-009008 C for Liverpool Hospital Redevelopment, dated March 2020 prepared by Taylor Thompson Whitting.	Noted
ii. The PMF flood protection work shall be in accordance with Flooding and Stormwater SSDA Report, LHAP-CI-TTW-RPT-MW-009008 C for Liverpool Hospital Redevelopment, dated March 2020 prepared by Taylor Thompson Whitting and shall include all details of flood protection work including Operations & Maintenance manual of flood barriers and flood gates.	Noted.
iii. Water quality treatment trains shall be incorporated in the stormwater management plan. The water quality treatment system shall be in accordance with Flooding and Stormwater SSDA Report, LHAP-CI-TTW-RPT-MW-009008 C for Liverpool Hospital Redevelopment, dated March 2020 prepared by Taylor Thompson Whitting.	Water quality treatment system and treatment devices are subject to on-going design development, but will comply with the pollutant load reduction targets in the Liverpool DCP.

iv. A flood evacuation plan prepared by appropriately qualified professional shall be maintained for the site. The flood evacuation plan shall include suitable warning systems, signage and exits to ensure the safe evacuation of people during floods up to and including the Probable Maximum Flood.	This can be addressed by way of a condition of consent.
i. The Application shall specify how refuse and waste will be managed during demolition, construction and operation. Suitable waste storage facilities are to be provided as part of the proposal. The garbage/waste storage areas shall be clearly identified on the site plans and be located within the proposed building. The designated garbage/waste storage areas shall comply with the following requirements: a) The rooms shall be fully enclosed and provided with a concrete floor, and with concrete or cement rendered walls coved to the floor; b) Provided with a hose cock for hosing the garbage bin bay and a sewered drainage point in or adjacent to the bin storage area. The drainage point should have a fine grade drain cover sufficient to prevent coarse pollutants from entering the sewer. If the hose cock is located inside the bin storage bay, it is not to protrude into the space indicated for the placement of bins; c) The room shall have a floor waste which is to consist of a removable basket within a fixed basket arrestor and is to comply with Sydney Water requirements; and d) The room must include a tight-fitting, self-closing door and mechanical ventilation. ii. All waste collections for the new building and refurbished facilities must take place within the private property of Liverpool Hospital, no waste collections are to take place on a public road or kerbside. All drainage points within the waste bin storage area and within 15 metres of the point(s) where the bins will be collected should be fitted with fine grade drain covers, to prevent the entry of gross pollutants into the drainage system. It is recommended that the features provided in the bin storage areas should, as a minimum, align with section 25, 'Waste Disposal and Re-use Facilities', of the Liverpool DCP 2008. Bin area signage should be provided, which reflects the acceptable practices and materials for waste disposal and recycling under the relevant private waste agreements. iii. All recyclable materials should be kept separate from general waste, from the point of disposal to the point of tipping into the recycling truck. Recycling bins provided within the new facilities should be clearly identified and accompanied by signage in graphic form that details what materials are considered recyclable. The operational management plan of the building should detail that recyclables must be kept separate, loose and unbagged throughout the waste aggregation and collection process.	A Construction Waste Management Plan has been prepared for the proposal and is provided at Appendix U. The WMP has been prepared to assess the volumes and management of waste during the construction phase in accordance with the Protection of the Environment Operations Act 1997 and the NSW EPA Waste Classification Guidelines, Part 1: Classifying Waste. The Plan details the type, volume and disposal methods for all waste material during the construction phase. The WMP details the responsibilities of the principal contractor to lawfully dispose of waste and ensure that reports on the management and capacity of facilities to receive waste are recorded. Records will be kept of all wastes and recyclables generated and either used on the site or transported off-site during the demolition. The Plans identify garbage and waste rooms. The design can comply with items a – d in Councils letter. No waste collection is proposed off-site and would be undertaken within the basement loading dock.
iv. Liverpool Hospital must ensure that the building is serviced with the necessary waste services, including clinical/sharps wastes if such are being produced, at all times while the facilities are occupied, with licensed private waste contractors engaged to remove and legally dispose of all wastes. The waste arrangements must ensure that all waste is collected and tipped at facilities licensed to take that waste and to ensure that waste/litter does not make its way into the environment, waterways, or onto neighbouring properties or public land.	As outlined at Section 6.14 of the EIS, all hazardous waste will be disposed of at approved waste facilities, in accordance with the requirements of the relevant legislation. NSW Health operates under existing waste disposal guidelines for collection, control, storage and transport of clinical wastes that accord to NSW Health, NSW EPA, Safework NSW, relevant Australian Standards and industry best-practice guidelines.
v. The demolition contractor must engage a consultant to conduct a Hazardous Materials Register for demolition purposes prior demolition works.	The Hospital maintains a Hazardous Materials Survey Report and Register, which was provided at Appendix M of the EIS.

vi. Ozone Depleting Substances should also be included in the Hazardous Materials Register. This is to cover the areas not initially identified with the existent Hazardous Materials Register present in the SSD.	The Hazardous Materials Register will include Ozone Depleting Substances (ODS).
Heritage The proposed development shall comply with the following requirements: *A Heritage Interpretation Plan (HIP) is to be prepared for the site. The interpretation plan should include, but not be limited to:* • *Evidence of the archaeological history of the site;* • *Previous buildings on the site; and* • *The history of the hospital.* *Evidence shall be submitted to the PCA that the HIP has been reviewed and endorsed by DPIE.*	HI would accept this as a condition of consent, with the HIP to be prepared post approval.
Lachlan Street and Forbes Street Intersection Forbes Street/Lachlan Street intersection is an existing four-way intersection with priority sign control. The expected increase in traffic movements would require traffic movements through the intersection to be regulated. It was originally suggested that a condition be imposed for a roundabout in this location so as to regulate traffic at the intersection. This intersection constitutes part of the Hoddle grid street pattern which is a foundational element of the Liverpool CBD. All development in the CBD is required to be designed in a manner that adequately responds to this key element of the CBD, including roadwork. Upon further consideration, it is considered that roundabouts are not considered to be roadworks that are sympathetic to the grid street pattern. Whilst Council maintains that treatment is required here to regulate the expected traffic movements, the installation of roundabouts so as to remedy this situation is discouraged. Council requests that the applicant investigates an alternative treatment that satisfactorily regulates the design of the intersection whilst improving the streetscape and pedestrian permeability.	As discussed previously, additional modelling has been undertaken for the Lachlan Street / Forbes Street intersection. The modelling illustrates that it is not anticipated that there will be any flow on effects from the intersection. Refer to the additional information provided by GTA at **Appendix G**.
Proposed shared zone on Campbell Street As previously discussed, the applicant proposes a 10km/h shared zone along Campbell Street between Goulburn Street and Forbes Street. The original submission provides an outline of the concerns raised by Council's Traffic and Transport Section with this proposal. Whilst these concerns are still considered to be pertinent to the assessment of the SSD application, it should be noted that Council supports the intended objective of the proposed shared zone to create a more pedestrianised area which complements the active frontage proposed as part of the redevelopment. Council requests that every attempt is made to address these concerns. However, in the event that shared zone is unachievable in the form proposed, it is recommended that the applicant investigate alternative treatments to the roadway so as to balance traffic concerns with the intended objective of the shared zone.	Noted. Refer to discussion on Council's concerns above.

Transport for NSW	
Active Transport Considerations Key Issue 7. Transport and Accessibility of the SEARs requires the Transport Impact Assessment (TIA), to provide: • proposed bicycle parking provision, including end of trip facilities, in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance. The TIA provided in support of the proposed redevelopment does not adequately address Active Transport considerations: • There is an opportunity for the TIA to be updated to comprehensively address the likely demand for bicycle parking similar to the car parking analysis. • Walking is mostly referred to in the report as a trip mode for people living close by. However, walking would be the second likely option for visitors and staff who do not have cars or choose to use public transport. Similarly, the report lacks detailed analysis regarding the likely demand for cycling infrastructure such as bicycle parking (as noted above) and end of trip facilities following the hospital redevelopment. Liverpool Council Development Control Plan, 2008 Part 1 provides requirements for bicycle parking and cycling facilities. Additionally, Table 13 (p92) provides requirements for Medical Centres and Health Consulting Rooms. It is requested that the applicant review the needs of cyclists and pedestrians and if required update the EIS and associated documentation specifically regarding the issues identified below: • Any needed improvements to pedestrian connectivity and accessibility to Liverpool and Warwick train stations following the redevelopment; • Detailed analysis of the likely demand for cycling infrastructure including bicycle parking and end of trip facilities following the redevelopment; and • Off-street bicycle parking and end of trip facilities to Liverpool Council requirements as outlined in their DCP 2008 Part 1. If the development is approved, it is requested that a condition be imposed as follows: *Prior to the issue of the first Occupation Certificate, off-street bicycle parking spaces and end of trip facilities are to be provided in accordance with the Liverpool Council DCP 2008 Part 1 and in accordance with AS2890.3.*	The Planning Guidelines for Walking and Cycling (Department of Planning, 2004) suggest staff and visitor bicycle parking for hospitals be provided at a minimum rate of 5% of staff. By 2025/ 26, it is estimated that there will be an additional 418 FTE staff working at the LHAP. Assuming average staff per weekday shift (ASDS) is approximately 80 per cent of FTE staff resulting in around 330 ASDS, this equates to a minimum provision of 34 bicycle parking spaces. The proposed bicycle parking provisions have been increased to 100 spaces in accordance with Council's comments. End of trip facilities will be provided and are included on amended architectural plans at **Appendix B**.

Green / Workplace Travel Plan The TIA provides a framework for the preparation and monitoring of a Green/ Workplace Travel Plan, along with a Travel Access Guide. These tools will help the Liverpool Hospital to better manage demand on the transport network. The recommendations below are provided to encourage the use of sustainable transport to the site, which will help reduce the use of single vehicle trips. It is requested that prior to the issue of the first Occupation Certificate, the applicant be conditioned to prepare a Green/ Workplace Travel Plan in consultation with TfNSW for the proposed development which must be approved by TfNSW. The Travel Plan should be aimed at both staff and visitors and: • Set mode share targets that encourage the use of public and active transport and reduce the proportion of single-occupant car journeys to the site; • Identify robust actions and strategies to meet the mode share targets in the first 2, 5 and 10 years post occupation; • Include a Transport Access Guide that provides information to employees, patients and visitors about the range of travel modes, access arrangements and supporting facilities that service the site including bicycle parking and other end of trip facilities; • Identify relevant workplace policies such as flexible working arrangements that enable administrative staff to travel outside peak periods, or which reduce the need for work related travel; • Consider the appropriateness of any relevant parking policies to manage travel demand, including a measure to apply higher car parking charges during peak times to encourage off-peak use; • Details of carpooling operations and monitoring of parking priority; • Appoint a Travel Plan Coordinator to oversee the implementation of the Travel Plan and Transport Access Guide; • Nominate a party responsible for the ongoing monitoring and review of the Travel Plan, including the delivery of actions and associated mode share targets; • Include a breakdown of staff shift patterns including the number of staff commencing shifts at particular times; and the residential postcodes of where those staff are travelling from, if known; and • Include, if available, details of visiting hours and anticipated numbers of patients and visitors.	HI would accept this as a condition of consent.
Construction Traffic Management It is noted the applicant submitted a Construction Management Plan and Overview Construction Traffic Management Plan as part of the supporting documentation.	Noted.
It is requested that the applicant be conditioned to prepare a detailed Construction Traffic and Pedestrian Management Plan (CTPMP) for approval by the Certifying Authority in consultation with Liverpool City Council.	Noted.

Endeavour Energy	
Network Connections Branch are progressing the Load Increase application for the Liverpool Hospital Project (Endeavour Energy Ref. ULL2968) and is awaiting confirmation of the feeder route selection from NSW Health. Their originally selected route is the same as the other existing feeders from Liverpool Zone Substation, hence no physical redundancy would be provided. Once the feeder route is confirmed, a Design Brief will be issued.	The hospital has numerous HV feeders from Multiple Zone substations in the area. Homepride, Moorebank, Liverpool Zone substations. If anyone of these feeders has a fault and looses power the other feeders can provide a back up supply. Therefore, there is physical redundancy in terms of cable routes geographical locations to the site. Please note there is also generator back up supplies all over the hospital site should a mains failure occur then generator back up supplies will be started and can provide back up power to all the essential loads until the grid supply is rectified and turned back on.
Three new switching stations are proposed to be installed with two of them on Goulburn Street frontage and one on Campbell Street frontage.	There will be two new switching stations installed on the south west corner of Goulburn Street and two new switching stations on the corner of Campbell Street and Forbes Street.
Sydney Water	
Sydney Water's servicing requirements for this proposed development are to be delivered under the Notice of Requirements for the Feasibility application that the proponent has already lodged with us – CN 172340. Or any future Notice of Requirements.	Noted.