WSU BANKSTOWN CITY CAMPUS | SSD_9831

CONSOLIDATED RESPONSE TO DPIE RFI DATED 4 NOVEMBER 2020 AND ADDITIONAL INFORMATION REQUESTED DATED 11 DECEMBER 2020.

Table of Responses:

Table 01	Response to DPIE RFI dated 11 December 2020
Table 02	Response to Council RFI dated 4 November 2020
Table 03	Response to DPIE RFI dated 4 November 2020
Table 04	Response to TfNSW RFI dated 4 November 2020
Table 05	Response to Energy Environment & Science - dated 4 November 2020
Table 06	Response to EP&A RFI dated 4 November 2020

Attachments:

- Attachment A – Councils Option B Drainage Works
- Attachment B – Civil Drawings
- Attachment C – Ground Floor Façade Details and Podium Elevations
- Attachment D – Architectural Plans
- Attachment E – VPA Public Domain Scope of Works
- Attachment F – Addendum to TMAP
- Attachment G – MRV Swept Paths
- Attachment H – Tree Removal Plan
- Attachment I – Solar Report Addendum
- Attachment J – Wind Report Addendum
- Attachment K – Site Specific DCP Compliance Table
- Attachment L – Stormwater Drainage Longitude
- Attachment M – Detailed Survey
- Attachment N – Detailed Floor Plans and Elevations
- Attachment O – Detailed Schedule of Finishes
- Attachment P – Arborist Impact Assessment

WSU BANKSTOWN CITY CAMPUS | SSD_9831

TABLE 1 - Response to DPIE Additional Information Request dated 11 December 2020		
1.0	**Flooding**	
1.1	Provide a description in layman's terms of the additional drainage works being funded by the VPA (i.e. what is included in Council's Option B).	Draft Voluntary Planning Agreement (VPA) has been submitted to Council on the 11 December 2020. It includes a commitment to funding required flood management works, specifically Council's (Option B) full drainage upgrade solution. Refer to **Attachment A** – Council's Option B drainage works prepared by Council on 17 November 2018.
1.2	Provide a plan showing the modelled 1% AEP level, flood planning level and PMF levels adjacent to all access points to the site at the completion of the stormwater works. The same plan should show all FFLs.	Refer to **Attachment B1**– Civil Drawing C00-41 prepared by Bonacci Refer to **Attachment B2**– Civil Drawing C00-42 prepared by Bonacci <u>Response</u>: Both Civil drawings prepared by Bonacci include 1% AEP levels and FFL's highlighted in yellow.
2.0	**Ground Floor Façade Details**	
2.1	Clear elevations demonstrating all ground floor façade materials have not been provided. Provide either:	Refer to **Attachment C** - Ground Floor Façade Details Podium Elevations prepared by Lyons
2.2	Ground floor elevations similar to those provided for all other levels (A41 series plans); or	
2.3	Updated main elevation drawings (A40 series) and label all ground floor façade materials on all elevations (note the current drawings only label some parts of the facades and in many cases the annotations do not match up with the legend on each page).	
3.0	**Removal of Boundary Encroachments**	
3.1	Provide amended plans locating the property wholly within the property boundary. The Department considers the amendments may result in matters that need to be assessed and therefore amended plans are required for assessment prior to determination as the amendments:	Council and Walker reached a resolution (18th January 2021) on the Ground Plane (North East corner) that addresses most of the issued raised by Council; • Colonnade on Rickard Rd provides weather protection

TABLE 1 - Response to DPIE Additional Information Request dated 11 December 2020		
	• are likely to affect the positions of columns with flow-on impacts for the interface of the development with the public domain and the positioning of ramps. The Department requires this be resolved prior to determination. • may require changes to the setback of walls on Levels 3, 8 and 14 to ensure an adequate recess is maintained to these levels as a result of repositioning of columns. • must ensure no further redesign is required that would reduce the integrity of the architectural façade features.	• Appian Way Lobby ramp replaced with graded paving with feathered stairway • Operable façade is introduced into the café / dining to increase activation • Group DLA (accessibility consultant) have confirmed they support option 1B's approach from access perspective. The following reports have been amended to reflect the design changes; Refer to **Attachment D -** DA plans DA00-00 prepared by Lyons. **Refer to Appendix I** - Solar Report prepared by Urbis. **Refer to Appendix J** - Wind Report prepared by Windtech.
4.0	**Rickard Road Interface and Ground Floor Plane**	
4.1	The proposal does not address the requirements of 'Bankstown Complete Streets', including the requirement to provide a pedestrian footpath inside the boundary, unimpeded by columns or ramped building entries. Compliance with this requirement would result in a substantial change to the ground floor plane, and the Department requires updated plans for assessment prior to determination.	Refer to **Attachment E** (page 10 Section 3.1 Access and Circulation) - VPA Public Domain Scope of Works prepared by Aspect on 27 November 2020. Response: As per the *Complete Streets* action plan a separate cycle path (2500mm wide) and 1800mm wide pedestrian path is proposed along the frontage of the WSU building, which enables connections to the west and east in the future if possible.
4.2	If it is not proposed to comply with this requirement, you are asked to provide some reasoning and assessment of the proposed design. If an alternative design to the current design is proposed (the response mentions 'the Public Domain Reference Design prepared by Aspect on behalf of Council'), please provide a copy of the relevant plans / design for assessment.	Not applicable.
4.3	The response also requests the imposition of conditions requiring an additional doorway to Rickard Road as well as a condition that may remove one ramp and significantly reduce the length of another ramp. It is unclear which ramps are affected, how these changes would be made and what the impacts to the ground floor plane would be. Therefore, revised plans should be provided to enable an assessment of the changes prior to determination.	Refer to **Attachment D –** Architectural Plans prepared by Lyons.

TABLE 1 - Response to DPIE Additional Information Request dated 11 December 2020		
5.0	**Parking and VPA**	
5.1	As raised in our letter, there is a shortfall of parking spaces either being provided on the site or being funded by the VPA. In response to this issue, you advise it is projected that there will only be 245 staff on site at any one time, which generates a requirement for 37 spaces. However, the traffic assessment provides: *"It is estimated that there will be around 2,000 students and 650 University / Education space staff at any one time, allowing for varying lecture times, external meetings, sick leave and holiday leave."* The assessment also shows that during the period to 1pm on weekdays, 604 staff would arrive at the site and only 34 would leave, resulting in 569 staff on the site at one time. The assessment also shows that up to 2,025 students would be on the site at this time. On the basis of this anticipated peak demand, the proposal generates a requirement for 187 spaces, resulting in a shortfall of 100 spaces. The VPA should be amended to fund 100 spaces, rather than 50.	Refer to **Attachment F** – Addendum to the Transport Management and Accessibility Plan (TMAP) prepared by Arup. Response: Since the EIS was submitted in late 2019, WSU has refined its staff requirements and timetabling. There will be a total of 645 staff members, however, they will not all be on site simultaneously. If they were, there would be 1 staff member for every 3 students, given there will be 2,000 students on site. This is a very high ratio of staff to students, even allowing for staff working in the library, research, administration or support services. A more likely ratio is 1 staff member on site per 8 students, which is 250. We understand that the traffic and parking assessment will be adjusted accordingly. Staffing and student numbers cannot be estimated with pinpoint accuracy. Timetabling, research activities, holidays and the like will make for variations across days, weeks and semesters. However, we believe that these figures provide enough certainty to allow planning for car parking and traffic.
6.0	**Bike Parking**	
6.1	In accordance with the DCP, the following bike parking is required: • 32 staff bicycle spaces in the basement. • 20 visitor and student spaces in the public domain. • 80 visitor and student spaces on the site. The proposed condition to resolve this matter post determination is not supported and the Department requires resolution of the 80 visitor and student spaces. Based on Council advice to date, Council are not supportive of more than 20 spaces being provided in the public domain. The provision of the other 80 visitor and	Refer to **Attachment D –**DA plans DA00-00 prepared by Lyons. Response: The site will now include 136 bicycle parking spaces on Site and 20 spaces within the Public Domain. Basement 1: • Staff = 56 • Students/Visitors = 42

TABLE 1 - Response to DPIE Additional Information Request dated 11 December 2020		
	student spaces may have implications for the layout and functioning of the ground floor or the external space on the site and therefore should be resolved prior to determination. If spaces are to be provided in the basement, further details are required to show: that safe access can be provided to the spaces; that the spaces are separate from the secure staff spaces; end of trip requirements; and that the spaces would not affect the provision of carparking or other basement facilities.	Ground Floor: • Students/Visitors on Site = 38 • Students/Visitors within Public Domain = 20 The total number of bicycle spaces comes to a total of 156 which exceeds the DCP requirements of 132.
7.0	**Access**	
7.1	The Department requested updated information to address medium rigid vehicle access to the basement via the loading dock and access to the Appian Way. This has not been provided and cannot be addressed by condition as it may require fundamental changes to the plans to ensure the access is properly resolved prior to determination.	Refer to **Attachment G –** MRV swept paths prepared by Arup. <u>Response:</u> The applicant will use a private waste collection service (Suez or of the like) and has confirmed that the 3.8m clearance will facilitate waste to be collected by a rear lift collection system which only requires 3.4m height clearance. The MRV that will be used (see image below) will facilitate a standard container from 120L to 1100L capacity
8.0	**Tree Protection**	
8.1	The Arborist Report requested by the Department has been provided, however it does not provide any clarity on which trees adjacent to the site require protection during the construction works. The EIS provides that two of the trees would be retained and protected as identified in the Arborist report. However, the Arborist report only identifies 23 trees and the advice in the response is that all 23 trees have been removed under DA697/2019 and that tree protection has been provided to two trees within Paul Keating Park as required.	Refer to **Attachment H –** Tree Removal Plan prepared by Aspect and Ecological Tree Impact Map. <u>Response</u>: A revised SEARs request was sent to the DPIE in August 2019 following the removal of the early works from the SSDA. Tree removal was approved with Early Works DA (DA-697/2019) on 3 September 2020, and was informed by Ecological (2019) 'Arborist Report' at Attachment 08 to the response submitted on 30 Nov 2020. The Report notes that 23 trees were on or adjacent to the site. 21 trees have been removed, and protection has been provided to the two trees within Paul Keating Park as required. The retained and protected trees are numbered 22 and 23 and are shown on Figure 3: Tree Impact Map of the Ecological Report (page 12). See below.
8.2	Please provide plans or documentation which demonstrate which trees require protection during the construction phase.	

TABLE 1 - Response to DPIE Additional Information Request dated 11 December 2020		
		Tree removals are now complete, and Trees 22 and 23 protected as approved/required by DA 697/2019.
9.0	**Waste**	
9.1	The Department requested that the application amend or clarify waste generation rates. This has not been addressed.	Elephants Foot Response: A combination of rates has been used to estimate the volumes of waste and recycling in the future building as it is Elephants Foot Recycling Solutions' view that the rate for Tertiary Education currently detailed in the NSW EPA's *Better Practice Guide for Resource Recovery In Residential Developments 2019* significantly overestimates the actual volumes of waste and recycling generated by university buildings. Accordingly, Western Sydney University (WSU) has provided operational waste management data from an existing building within their campus that has a comparable population and operations to the proposed Bankstown campus. It is understood that the operational data has been attained from a university building with a population of 2998. Please see below a summary of the operational data from the existing WSU building: 5x 660L general waste bins collected daily 3x 660L paper/cardboard recycling bins collected daily 2x 660L co-mingled recycling bins collected daily 2x 240L food/organic bins collected daily Table 1 below details a comparison between the operational data from the existing WSU building, the volume estimated from the Operational Waste Management Plan (OWMP) Revision H August 2020 and the volumes estimated using the tertiary education rate from the *Better Practice Guide for Resource Recovery In Residential Developments 2019*. To ensure consistency between figures, the calculations assume the proposed building will have a population of 2000 students and 250 staff at any one time and a 5-day operating week

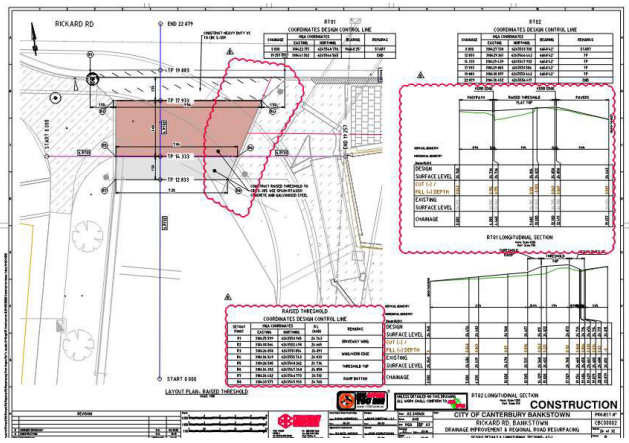
TABLE 1 - Response to DPIE Additional Information Request dated 11 December 2020

Table 1: A comparison of waste and recycling volumes

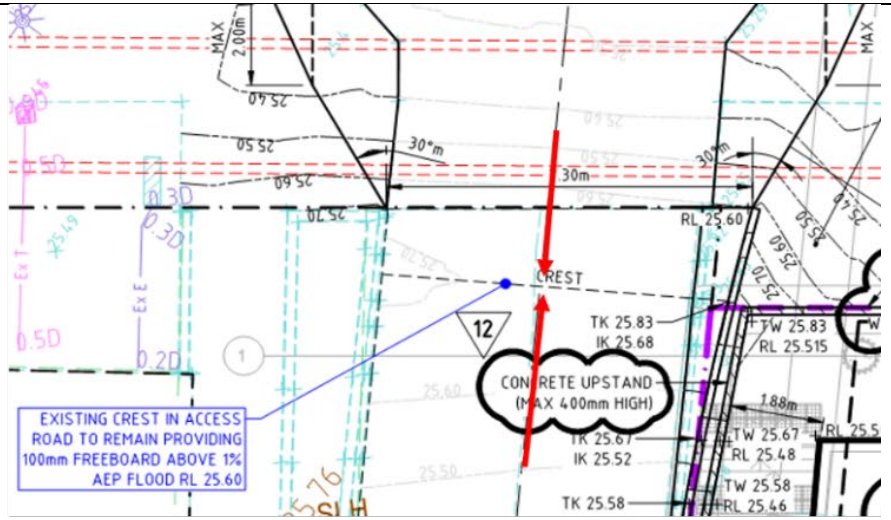
Waste stream	Operational data from WSU with a building population of 2998	Total of Estimates from the Operational Waste Management Plan Rev H Aug2020	Estimated volumes of waste and recycling as per NSW EPA's *Better Practice Guide for Resource Recovery in New Developments* 2019
General Waste	3,300L Per Day	6,803.4L Per Day	22,500L Per Day
Food/Organic bins	480L Per Day		
Paper/cardboard Recycling	1,980L Per Day	5,546.87L Per Day	22,500L Per Day
Co-Mingled Recycling	1,320L Per Day		

For the purposes of waste room design in the proposed building, it is recommended that the rates in the OWMP Rev H Aug2020 are maintained. As shown in the table above, the volume estimates per day in the OWMP are around 170% higher for waste and 168% higher for the recycling than the total volumes of waste and recycling from operational data. Therefore, the estimates in the OWMP Rev H are likely to result in waste rooms that are an appropriate size, while still considering a possible "worst case scenario".

In addition, it is our belief that current waste and recycling generation rate for Tertiary Education within the NSW EPA *Better Practice Guide for Resource Recovery in New Developments* 2019 can be easily corrected. If the rate were to be applied per student per week, rather than per student per day then the estimated volumes would be very similar to the operational data in the table above. Hence, our view that this is simply a typographic error in the document.

TABLE 02 - Response to Council - 4 November 2020		
Item	**COUNCIL**	**RESPONSE**
C01	DPIE must ensure the determination of the planning proposal occurs prior to the determination of the SSDA. DPIE must ensure the SSDA complies with the LEP Amendment as published on the NSW legislation website.	The proposal complies with the planning controls contained in the draft LEP Amendment 11, exhibited between 14 October and **13** November 2020.
C02	The clause 4.6 written requests for height and FSR not be accepted as they would set an undesirable precedent for DAs and the planning proposal process. The applicant's clause 4.6 is beyond the ordinary scale and scope of Council's consistent application of clause 4.6.	On 8 October 2020, DPIE advised that the Clause 4.6 pathway would not be adopted.
C03	The clause 4.6 written requests are also considered to be inadequately founded, and primarily rely on the benefits of the proposal as whole, instead of the variations sought.	On 8 October 2020, DPIE advised that the Clause 4.6 pathway would not be adopted.
C04	The draft site specific DCP provisions for this site are to be generally complied with or form conditions of consent where appropriate.	**Refer to Attachment K.**
	Issue 2 – Flood Risk Management (Flooding Model) – *Recommended actions and amendments to the SSDA*	
C05	The civil drawings must incorporate the newly constructed vehicular crossing at the top end of The Appian Way and levels around the large inlet structure as they are and incorporate them into the new street design.	Council Drawing "*Rickard Road, Bankstown from Chapel Road to the Appian Way, Drainage Improvement & Regional Road Resurfacing*" shows the required as-built levels. 

		The levels on this drawing have been incorporated into the design, as shown on drawing *Site and Stormwater Drainage Plan Sheet C00-42 Rev 05,* prepared by Bonacci, **at Appendix O** of amended application submitted on 28 August 2020.
C06	Council, the Department and the applicant meet to discuss the approach to modelling as raised in the above comments and agree on an approach to move forward through amended reports.	Walker and Council met on the following dates; • 17 November 2020 • 18 December 2020 • 18 January 2021
C07	Council would not support significant adverse impacts on these locations, particularly in relation to flood risk and increased risk to life.	Refer to section 1 (Table 01) Refer to **Attachment A** – Council's Option B drainage works prepared by Council on 17 November 2018.
C08	Council recommends that the full drainage upgrade solution "Option B" as referenced in the DHI (2020) report be considered for mitigating the flood impacts.	Refer to section 1 (Table 01) Refer to **Attachment A** – Council's Option B drainage works prepared by Council on 17 November 2018.
C09	Alternatively, the flood assessment model and report should be revised to account for the ~12.0 m3/s residual flow across the "Rickard Road Median" as per Table 1 (DHI, 2020) and with Finished Floor Levels (FFL) based on this.	Refer to section 1 (Table 01) Refer to **Attachment A** – Council's Option B drainage works prepared by Council on 17 November 2018.
C10	Basement driveways and fire stair entrances indicate levels to demonstrate 1% AEP and PMF flood levels (for all access points including lifts and ventilation). Commentary on the PMF flood level at the basement entry points also be provided in the amended reports.	The Bonacci assessment incorporates flood levels from Council's Option B that are comparable to flood levels in the DHI modelling. The DHI levels were used to determine the required Finished Floor Level (FFL) at RL 25.60. The basement vehicle entrance is on the western side of the site, off the BLaCK driveway, which has an existing crest at its intersection with Rickard Road that diverts flood waters toward The Appian Way, and away from the driveway and therefore basement entrances. See drawing *Site and Stormwater Drainage Plan Sheet 1 C00-41 Rev 09,* prepared by Bonacci, at **Appendix O** of amended application submitted on 28 August 2020.



C11	There are concerns that the basement poses a high risk to engulfment and risk to life and property. There may need to be considerations about evacuation of people located at the lowest levels prior or during the flood event.	Please see *Western Sydney University Bankstown City Campus Development – Flood Emergency Response Plan,* dated 11 August 2020 and prepared by Bonacci, submitted on 28 August 2020.
C12	Council review the amended reports, given the impact on surrounding sites.	Noted.
C13	It is recommended that the Flood Assessment Report is amended to clearly state the flood levels, freeboard at the entrances of interest to match the information presented in Figure 49.	Noted, Bonacci and Lyon's will update this to illustrate the compliance with the freeboard.
C14	The architectural plans do not clearly show the levels at the basement entry, fire stairs and other points for water ingress to the basement. It is requested that the architectural plans be amended to clearly show this level information.	Refer to **Attachment D –** Architectural Plans prepared by Lyons.
C15	The architectural plans do not clearly show both adjoining existing ground levels and proposed levels adjoining the site, please amend.	Refer to **Attachment D –** Architectural Plans prepared by Lyons.
C16	Standard details be provided for the proposed capping in the civil drawing package.	The following note has been added - **Refer to Attachment L** Stormwater drainage longitude Sheet 1 C00 – 45 Rev 02 prepared by Bonacci 14 October 2020

		The contractor shall remove the redundant stormwater in its entirety, or the contractor shall identify the redundant stormwater at the downstream side, via flow testing to ensure that it is the correct connection. Once the appropriate downstream connection is determined, the contractor shall plug the downstream connection within the stormwater pit. *This shall be sealed off watertight by placing concrete within the pipe (as shown below), once substantial strength has been reached, the contractor can fill the upper portion of the redundant stormwater pipe from within the excavation with unshrinkable fill/low strength concrete to prevent inflow and water ponding in the disregarded pipe. The contractor must ensure to mark if the pipe was removed or filled solid on as-built drawings and provide to the engineer for record.*
C17	Drainage pits that are to be modified or constructed as part of the project are clearly identified (numbered) and the relevant standard drawing referenced in the civil drawing package. A pit schedule is recommended for inclusion.	**Refer to C16 (Table 02) - Refer to Attachment L** Stormwater drainage longitude Sheet 1 C00 – 45 Rev 02 prepared by Bonacci 14 October 2020
C18	Drawings are amended to show the full outline of the Sydney Water culvert.	An accurate investigation survey has been carried out to clearly identify the location of the existing Sydney Water Assets **Refer to Attachment M** – *Detailed Survey of existing underground services prepared by Crux 10 November 2020.* The Sydney Water assets are shown on the *Site and Stormwater Drainage Plan Sheet 1 C00-41 Rev 09* 'and *Site and Stormwater Drainage Plan Sheet 2 C00-42 Rev* prepared by Bonacci, **at Appendix O** of amended application submitted on 28 August 2020.
C19	Council is consulted with regards to proposed layouts of the roads and footpaths surrounding the proposed WSU site for integration into the civil design.	Please see more detailed drawings *Site and Stormwater Drainage Plan Sheets 1, 2, 3 &4 C00-41, 42, 43 and 44* prepared by Bonacci, **at Appendix O** of amended SSDA application submitted on 28 August 2020. The Civil Drawings at **Appendix O** of the amended SSDA proposal detail the proposed treatment of external ground level, and the adjoining public domain, including pavements, typical sections, roads and kerb set outs, pavement cross sections and the interface area. Please refer to the following drawings prepared by Bonacci: • *C00-60 Site works and Stormwater Details Sheet 1 Rev 08* • *C00-61 Site works and Stormwater Details Sheet 2 Rev 08* • *C00-62 Typical Site Sections Rev 04* • *C00-65 Council standard layback Rev 04* • *C00-70 Overall Pavement Plan Rev 08* • *C00-61 Site works and Stormwater Details Sheet 2 Rev 08* • *C00-70 Overall Pavement Plan Rev 08* • *C00-75 Pavement Details Rev 02*

		• *C00-80 Basement Ramp Longitudinal Sections Sheet 2 Rev 08* • *C00-81 Road Setout Plan Rev 03* • *C00-82 Road Longitudinal Sections Sheet 1 Rev 03* • *C00-83 Road Longitudinal Sections Sheet 2 Rev 03* • *C00-84 Road MC01 Cross Sections Rev 03* • *C00-85 Road MC02 Cross Sections Sheet 1 Rev 03* • *C00-86 Road MC02 Cross Sections Sheet 2 Rev 03* Notwithstanding, Walker Corporation and Council are preparing a design for the public domain.
C20	Full suite of amended civil drawings and flood assessment reports be provided to reflect all flooding issues raised.	Please see detailed drawings **Refer to Appendix O** of the Amended SSDA submitted on the 28 August 2020 - *Site and Stormwater Drainage Plan Sheets 1, 2, 3 &4 C00-41, 42, 43 and 44* .
C21	Standard pits shown on drawing C00-61 shall be as per Council's Standard Drawings.	The applicant has liaised with Council on this matter, and requests the following condition be imposed on any consent: *Drawing C00-61 Site works and Stormwater Details Sheet 2 shall be amended to include details of Council's Standard Drawings for pits and submitted to Council for approval prior to issue of the relevant Crown Building Certificate.*
C22	Rickard Road Interim Drainage Upgrade Modelling, Revision Final 1.0, prepared by DHI dated 18 August 2020	Refer to section 1 (Table 1) **Attachment A** – Council's Option B drainage works prepared by Council on 17 November 2018.
C23	The Minister will need to be a party to the planning agreement, due to the proposed exclusion of contributions.	Noted.
C24	As proposed by the applicant, a condition of consent be applied to require a planning agreement to be entered into. The timing of the agreement in the condition is to be confirmed by Council.	The applicant requests the following condition be imposed on any consent: *(a) A signed VPA shall be submitted by Walker and registered on the title of the Site within 6 months of the date the SSDA is granted consistent with the Letter of Offer addressed to Council submitted with this application and dated 18 November 2020.* *(b) Should the VPA not be signed by all parties within 6 months of the date the SSDA is granted:* *i. the Parties are to, in good faith, do all things reasonably necessary to expedite finalisation of the VPA; and* *ii. Walker will provide to Council a bond equalling the Total Contribution Value to secure its obligations as set out in this Offer (Bond). The Bond is to be returned to Walker on the execution of the VPA.*

C25	It is difficult to assess the architectural quality of the various façade types as drawings are provided in 1:200. It is recommended that detailed floor plans and elevations of key facade types in 1:20 or 1:50 be provided, showing construction method, architectural detailing and materiality.	The required drawings are at **Attachment N –** *Detailed floor plans and elevations prepared by Lyons 15 October 2020.*
C26	The building must be amended to so that it is located wholly with its site, with the exception of awnings and public domain works.	The building now complies. Refer to **Attachment D –** Architectural Plans prepared by Lyons.
C27	The design needs to be amended as per the previous recommendation to be consistent with the Bankstown *Complete Streets Plan* (Figure 4) with a 2.2m footpath adjoining site boundary, 0.5m kerb separation, 2.5m two-way cycle path and 2m landscape strip adjoining the road.	The applicant has liaised with Council regarding this matter, and requests that the following condition be applied to any approval: *The public domain within the site and adjoining areas of Rickard Road, The Appian Way and Paul Keating Park must be designed in accordance with the Public Domain Reference Design prepared by Aspect on behalf of Council. Amended civic design plans must be submitted to Council for approval prior to issue of the relevant Crown Building Certificate.*
C28	Awnings are to be provided for the full length of the building facing the Appian Way and continue around and along Rickard Road frontage and the south elevation frontage to provide weather protection and human scale. This is also recommended for the south elevation to alleviate the impacts of wind downdraft.	The design includes pedestrian weather and wind protection, a clear path around the building and a high quality urban design outcome. Along the Rickard Road and Paul Keating Park frontages the ground level is recessed behind the podium volume providing weather protection. Continuous coverage around all three frontages is completed by the awning over The Appian Way. This is consistent with Council's peer review report *WSU Urban Design Peer Review Report – Final*, prepared by Tract and dated 18 September 2019, which includes the following: ***Weather Protection*** *9. It is recommended that a street level awning be provided along The Appian Way and a colonnade space be provided alongside Rickard Road and Paul Keating Park.* (Page 9)
C29	The proposal is to demonstrate that it achieves a minimum of 5% tree canopy cover on podiums/sky terraces (within the property boundary) and 15% tree canopy cover on streets (Appian Way and Rickard Rd). This could form a condition of consent.	As Council suggests, it is requested that the following condition be applied to any approval: *Landscape details demonstrating that a minimum of 5% tree canopy cover is achieved on the podiums and sky terraces, and a minimum of 15% tree canopy cover is achieved along The Appian Way alignment and within the Rickard Road public domain are to be submitted to Council for approval prior to issue of the relevant Crown Building Certificate.*
C30	Detailed floor plans and cross-sections should be provided in 1:50 or 1:20 demonstrating construction detailing for soil on structures. The standards under the Apartment Design Guide section 4P *Planting on structures* can	As Council suggests, it is requested that the following condition be applied to any approval: *Detailed plans and cross-sections of planters on structures shall be submitted to the Council for approval prior to issue of the relevant Crown Building Certificate. They should be at a scale of 1:50*

	be used as reference. Alternatively, a condition of consent relating to minimum soil structures in line with section 4P can be imposed.	*or 1:20 that comply with the standards described in Section 4P 'Planting on structures' of the Apartment Design Guide can be used as reference.*
C31	2m to 3m recesses be provided to the walls at Levels 3, 8 and 14 allowing sufficient planting to be provided on the recesses for urban greenery, façade interest, ameliorate urban heat and to reduce building bulk when viewed from the public domain. This will partly offset the removal of the proposed 'Green Wall' proposed in the earlier submission from the project (see alternative condition recommended further below).	The applicant has liaised with Council regarding this issue, and it was specifically discussed on 18 November 2020 and amendments have been incorporated in the amended plans (Refer to **Attachment D** – Architectural Plans prepared by Lyons). The amended design (**refer to attachment D**) recessed terraces on each of these levels, where possible. Where not possible because of the building's essential lift core, articulation has been incorporated into the façade using material.
C32	Ramps dominate the frontages, thereby not achieving the active frontages sought by the draft DCP. Retail at street level should be explored and ramping or chair lifts provided within the building. Amended plans must be provided to remove many of the ramps that dominate the building frontages.	Refer to section 3.1 (Table 1) Refer to **Attachment D** – Architectural Plans prepared by Lyons.
C33	Large areas of blank wall along Appian Way are proposed, which is inconsistent with activating the street, creating a safe environment and promoting design excellence. These issues need to be addressed in the building through redesign or innovative design solutions, which could include interactive screens, digital art or other creative solutions in line with Council's original submission.	The applicant requests that 2 conditions be applied to any approval to address this issue: • *Designs for digital art or other creative solutions mounted on the eastern face of the building core within The Appian Way lobby shall be submitted to Council for approval prior to issue of the relevant Crown Building Certificate.* • *No opaque glass, film or security roller doors shall be permitted on any retail tenancy facing public domain.*
C34	Provision of a direct street opening to the exhibition space on Rickard Road should be incorporated to enable independent use and potential other future uses.	Amended doorway provided - Refer to **Attachment D** -Architectural Plans prepared by Lyons.
C35	Given the importance, prominence and scale of the proposal, it is recommended that detailed schedule of finishes be provided as part of the assessment process.	A detailed schedule of materials is provided in Section 4.8 of the Architectural Design Report prepared by Lyons at Appendix E of the amended application submitted on 28 August 2020. Refer to **Attachment O.**

C36	The Department be satisfied that the proposed wind mitigation measures will appropriately shield pedestrian amenity along Appian Way and in Paul Keating Park.	Refer to **Appendix J** - Wind Report prepared by Windtech.
C37	The Rickard Road frontage Public Domain area must be designed in accordance with Council's *Bankstown Complete Streets Plan*, page 153, the 'Rickard Road Central' proposed section, including provision for pedestrians, cycleway and landscaping.	Refer to C27 (Table 02)
C38	Further details shall be provided to Council in regard to the materials to be used for the colonnade treatments. The materials and design must be to Council's satisfaction prior to the issue of a Crown Building Certificate for above ground works.	As suggested by Council, it is requested that the following condition be applied to any consent: *Details of the external materials to be used on ground level facades, columns, soffits glass panels, windows etc, shall be submitted to Council for approval prior to issue of the relevant Crown Building Certificate.* Notwithstanding, details have been prepared and the applicant is liaising with Council on their finalisation. Please see **Attachment N**, and brief description below. **Columns -** Prefinished powder coated fluted metal column casing. Column casing is offset at ground and soffit with negative relief detail to expose grey column (paint finish) and integrated LED lighting is concealed within the casing to illuminate the pavement. Refer Drawing A52-11[T1] for details **Pavement** - Grey granite paving (Aston Grey) on concrete base and screed. Finish: Flamed / Minimum P3 AS4586-2013 Wet Pendulum Test **Building 'Plinth'** to base of glazed retail facades - Grey granite (Aston Grey) rainscreen with recessed bluestone shadow line at base of wall to pavement **Handrails -** Stainless steel handrails **Soffits -**Timber soffits with expressed ribbed rafters. Integrated linear LED Lighting. Refer Drawing A52-11[T1] for details
C39	The applicant must provide a recess wall of a minimum of 2m at Levels 3, 8 and 14 along the eastern and northern elevations and allow sufficient planting to be provided on the recesses for urban greenery and perceptible from the public domain.	Please refer to C31 (Table 02)
C40	Tree-lined and planted pedestrian-focused streetscape utilising sub-surface vaulted	Please refer to C27 (Table 02)

	system is required, to allow for optimal root growth in-ground within deep-soil zone, with sufficient surface area and soil volume, and in raised planters where located on-structure.	
C41	The landscape strip behind the kerb is supported to assist management of mid-block crossing movements. All landscaping is to be irrigated and/or utilise passive watering from stormwater runoff and Water Sensitive Urban Design principles.	Please refer to C27 (Table 02)
C42	Tree species in-ground to be ornamental natives capable of reaching 20m at maturity, e.g. *Corymbia maculata*, *Eucalyptus crebra*, *Corymbia citriodora, Brachychiton populneus, Brachychiton acerifolia* or approved equivalent, to Council approval. *Acacia longifolia* (and other Acacia species (Wattle)) not supported. *Ficus opposita* not supported. *Lophostemon conferta* not supported as planted 'on-structure'	The applicant is liaising with Council regarding this matter. It is requested that the following condition be applied to any consent. *A Landscape Plan identifying appropriate species and addressing Council's* June 2018 *Australian White Ibis Management Plan shall be submitted to Council approval prior to issue of the relevant Crown Building Certificate.*
C43	CBD Type 1 pavement specification utilising Council's standard drawing S-021 for laying and slip resistance standards. CBD Type 1 segmental pavement specification for pedestrian footway, utilising exfoliated finish 'Charcoal' colour granite 400mm x 400mm x 40mm thick laid in a running bond pattern set transverse to kerb, or approved equal.	**Please refer to C27 (Table 02)**
C44	Provide fixed awnings with a soffit height of minimum 3.6 m above the finished ground floor level.	Refer to **Attachment D** – Architectural Plans prepared by Lyons.
C45	Under awning lighting is to be provided to achieve appropriate luminance levels for pedestrians (Refer to relevant Australian Standards). Lighting to be recessed into the soffit of the awning.	It is requested that a condition be applied to any approval: *Under awning lighting must be recessed into the soffit of the awning and is to meet luminance levels for pedestrians required by AS 1158, 'Lighting for roads and public places', and use Australian Standard for Amenity Lighting 'P' and 'V' category, and artwork 'effect' lighting. Details shall be submitted to Council for approval prior to issue of the relevant Crown Building Certificate.*
C46	Lighting to meet Australian Standards for Amenity Lighting utilising appropriate 'P' and	Refer to C45 (Table 02)

	'V' category in addition to artwork 'effect' lighting.	
C47	Conditions of consent relating to standard kerb, pathway and pedestrian upgrade works to be included.	As suggested by Council, it is requested that the following condition be applied to any approval: *Details of kerb, pathway and pedestrian works shall be comply with Council standards and shall be submitted to Council for approval prior to issue of the relevant Crown Building Certificate.*
C48	Controls 1.9 C7 and 1.9 C8 of the draft DCP relating to the signage strategy along Appian Way and the Green Travel Plan are to form conditions of consent.	As suggested by Council, it is requested that the following condition be applied to any approval: *A signage strategy for the public domain is to be prepared in compliance with Control 1.9 C7 and C8 of the draft site specific DCP and submitted to Council for approval prior to issue of the relevant Crown Building Certificate.*
C49	To ensure that the SSDA plans are consistent with the Appian Way public domain works (which is currently a live discussion), a condition of consent should be imposed that all plans must be consistent with the public domain design of the planning agreement. Where they are inconsistent, the planning agreement public domain design will prevail. All public domain and landscape plans should be conditioned to be subject to Council approval.	Please refer to C27 (Table 02)
C50	As raised in Council's original submission, a condition of consent is to be included for a Plan of Management in consultation with Council, to determine the security measures to be incorporated in the building design. The Plan should include CCTV internally and externally with a storage capacity of a minimum 28 days.	The applicant has liaised with Council regarding this matter and requests the following condition be applied: *A Plan of Management that details security measures incorporate in the building, including CCTV internally and externally with a storage capacity of a minimum 28 days, shall be submitted to Council for approval prior to issue of the relevant Crown Building Certificate.*
C51	Revised traffic and manoeuvring information is provided for Council's review on the basis of the above comments.	Refer to section 7.1 (Table 01) Refer to **Attachment G** – MRV swept paths prepared by Arup
C52	The applicant meet with Council and the Department about the design of Appian Way, pedestrian conflicts, pick up drop offs, and impacts on Council's Civic Tower.	Please refer to C27 (Table 02)

C53	Approximately 20 bicycle spaces are allowable in the public domain. The rest are to be accommodated in the building.	Refer to section 6.1 (Table1) Refer to **Attachment D –** Architectural Plans prepared by Lyons
C54	WSU BCC building management monitor the drop-off and pick-up and provide regular updates to Council following occupation. If the arrangement is causing queuing to the surrounding road network, it is expected that Council rangers will monitor the area and enforce any vehicles parking in the bays. If the arrangement is congested and not sustainable, WSU will investigate alternative locations that can be used for drop-off and pick-up (including basement levels within the site. It is acknowledged that Council rangers would be responsible for compliance of traffic activity on Appian Way as it is a public Road Reserve and it is considered that the functionality of Appian Way will be compromised by the proposed drop off/pick up zone.	Please refer to C27 (Table 02)
C55	Civic Drive, Appian Way must not be used for construction vehicle egress.	Refer to **Appendix Q** to the Amended SSDA - Preliminary *Construction Pedestrian and Traffic Management Plan* prepared by Arup 12 August 2020. Notwithstanding this can be addressed in the Construction Traffic Management Plan, and a condition: *The Construction Traffic Management Plan shall be submitted to Council for approval prior to issue of the relevant Crown Building Certificate, that includes the following:* *a. A description of the development;* *b. Location of any proposed work zone(s);* *c. Details of crane arrangements including location of any crane(s);* *d. Haulage routes;* *e. Details of measures to prevent construction vehicles from using Civic Drive and The Appian Way, excluding areas within Lot 15 DP 1256167.* *f. Proposed construction hours;* *g. Predicted number of construction vehicle movements and detail of vehicle types, noting that vehicle movements are to be minimised during peak periods;* *h. Details of specific measures to ensure the arrival of construction vehicles to the site do not cause queuing on public roads;*

		i. Details of the monitoring regime for maintaining the simultaneous operation of buses and construction vehicles on roads surrounding the site; *j. Pedestrian and traffic management measures:* *k. Construction program and construction methodology;* *l. A detailed plan of any proposed hoarding and/or scaffolding;* *m. Any potential impacts to general traffic, cyclists, pedestrians and light rail and bus services within the vicinity of the site from construction vehicles during the construction of the proposed works; and* n. *Proposed mitigation measures should any impacts be identified on general traffic, public transport, pedestrians and cyclists.*
C56	It is not clear if the swept paths shown on the Basement 1 Architectural Plans are for MRV and the plan refers to a 3.8m clearance. However, this clearance is not as per the AS 2890.2 and a height clearance of 4.5m is required for MRVs.	The applicant will use a private waste collection service (Suez or of the like) and has confirmed that the 3.8m clearance will facilitate waste to be collected by a rear lift collection system which only requires 3.4m height clearance. The MRV that will be used (see image below) will facilitate a standard container (from 120L to 1100L)

The rear lift collection system is best suited to sites with **limited access and space.**

Vehicle specifications

Overall length	8.0m
Overall width	2.5m
Height (travel)	3.4m
Height (in operation)	3.4m
Weight (vehicle only)	13.0t
Weight (payload)	9.5t
Turning circle	25.0m

SUEZ has procedures in place to help ensure our operations are conducted in a manner that protects the health and safety of our employees, customers, contractors, suppliers and the general public, providing a safe and healthy working environment.

Overview

- Best suited for lightweight and small to mid-sized waste volumes
- Ideal for workshops, offices, restaurants and retail outlets
- Suits businesses that generate odorous food wastes as the waste can be bagged and cleared daily
- Perfect secondary partner for a primary Front Lift or Roll-on/Roll-off (RORO) system
- Convenient range of standard containers from 120L to 1100L capacities
- Bins are colour-coded to Australian Standards for easy identification of waste streams
- Reduced labour costs when bin is located close to waste generation source
- Easily maneuverable due to solid rubber wheels
- Equally suitable for indoor or outdoor use
- Carts can be supplied in a range of sizes ensuring flexibility and total compatibility with the customer's site

		Container options and accessories • Foot pedal operated lid • Wheel locking device • Range of bin sizes • Tow hitches • Flip top and roll top lids • Wheel brakes • Liners • Security posts • Cart cradle • Waste ID labels • Bin lifters • Padlocks and chains  **Container specifications** Plastic (polyethylene) Capacity / 120L / 240L / 660L / 1100L Height / 0.92m / 1.075m / 1.235m / 1.485m Width / 0.54m / 0.58m / 1.36m / 1.36m Length / 0.62m / 0.715m / 0.765m / 1.07m Weight / 9.5kg / 13.5kg / 45kg / 65kg
C57	The current design is not considered best practice. The proposed waste management system will potentially cost the university more in waste collection costs and the local neighbours will have the impact of increasing numbers of waste trucks and noise in the Bankstown CBD. There is also more that the university could do to reduce the number of waste vehicles visiting the site each week and subsequent CO2 emissions.	**Refer to 9.1 (Table 01)**
C58	It is recommended that the university design for larger bins and larger waste vehicles and look to implement a food waste recycling system to reduce waste to landfill.	**Refer to 9.1 (Table 01)**

TABLE 3 - Response to DPIE - 4 November 2020		
D01	Provide an updated flooding assessment to address the matters raised by Council (attached). The Department strongly recommends liaison with Council technical staff to clarify the parameters and details of the required assessment.	The applicant has been liaising with Council regarding this matter. Please refer to C05 and C22 (Table 02)
D02	The updated assessment should: – describe in clear language the interim stormwater management upgrade works. – only include in the interim model stormwater management upgrade works that are recently completed, currently underway or scheduled to be carried out imminently (and completed prior to occupation of the development). – describe clearly and provide modelling to demonstrate what specific additional works, following the interim upgrades, would be required to mitigate the remaining impacts of the development.	The applicant has been liaising with Council regarding this matter. Please refer to C05 and C22 (Table 02)
D03	Provide further advice, based on consultation with Council, on the likely timing for completion of these additional works and clarify funding arrangements for these works having regard to the letter of offer.	The Planning Agreement will include provisions that schedule the timing of Occupation with completion of the required infrastructure upgrades. Please refer to C05 and C22 (Table 02)
D04	Address risks to the basement as identified by Council, and provide additional information on finished floor levels and basement entry levels to address the matters raised by Council. Should revised modelling results permit, lower ground floor levels where possible.	Please refer to C05 and C22 (Table 02)
D05	Provide an assessment against the Draft DCP, which has been designed to guide development on the site.	Refer to Attachment K

D06	The Department considers more information and amended plans are required to address the following requirements of the DCP: – A minimum of 100 bicycle spaces for student and visitors are to be provided. A maximum of 20 bicycle spaces are permitted within the public domain footprint. Plans should be amended to address this requirement and demonstrate how 80 student / visitor spaces can be accommodated on the site.	DA drawings comply, rrefer to section 6.1 (Table1) Refer to **Attachment D –** Architectural Plans prepared by Lyons
D07	– Parking is to be provided in accordance with the rates specified in Table 1. Any shortfall in parking provision may be addressed through a Planning Agreement in accordance with Section 7.4 of the Environmental Planning and Assessment Act 1979. The Department notes that under Table 1, the proposal generates a requirement for 200 spaces, provides only 87 spaces and the letter of offer only makes provision of funding for funding of 50 spaces.	Refer to section 5 (Table 01) **Refer to Attachment F** – Addendum to the Transport Management and Accessibility Plan (TMAP) prepared by Arup
D08	– Where services such as fire escapes, service doors and equipment hatches / fire boosters cannot be avoided on ground level facades, elements of visual interest, such as display cases, or creative use of materials must be incorporated into the design. Advise how this is achieved and include on the elevations.	The applicant has liaised with Council regarding this matter, and requests the following condition be applied to any consent: *Following discussion with Council held on the 18 January 2021, the applicant will accept a condition requiring the fire boosters to be contained within a cabinet or similar structure designed and finished to the satisfactory of Council. Plans to be issued prior to the relevant Crown Building Certificate.*
D09	– Active street frontages are to be provided along the site frontage to The Appian Way, Rickard Road and Paul Keating Park to the extent identified in Figure 2.	Refer to Section 3.1 (Table 1) Refer to **Attachment D -** DA plans DA00-00 prepared by Lyons.

D10	– Tree selection must not be suitable for Australian White Ibis birds. Other Ibis management techniques must be implemented, utilising Council's Australian White Ibis Management Plan as a guide.	Please refer to C42 (Table 02)
D11	– A Loading Dock Management Plan is to be submitted with any development application that demonstrates that deliveries and pick-ups will be properly managed without impacting on Rickard Road, access into the Bankstown Library and Knowledge Centre and the university basement driveway. The Plan must specify the times when deliveries or pick-ups can be made, and require advance bookings to be made with the loading dock manager.	The applicant has liaised with Council regarding this matter, and requests the following condition be applied to any consent: *A Civic Loading Dock Management Plan that outlines procedures for the management of deliveries and pick-ups to the basement, including provision for advance bookings with the building manager and access hours shall be shall be submitted to Council for approval prior to occupation of the building.*
D12	Noting Council advice that consent is not given for protrusions onto Council land, updated plans are to be provided demonstrating the building (other than awnings) is located wholly within the property boundary without removing or reducing the architectural façade features. As this is likely to affect the position of columns and therefore the interface of the development with the public domain, updated plans are required for assessment	Please refer to C2 (Table 02)
D13	Provide further information and details of colonnade design. Colonnades should be a unifying feature at the integration with the public domain and therefore consideration should be given to ensuring a more uniform approach in column size and spacing, noting in particular the wide variety of columns on Rickard Road.	Please refer to C38 (Table 02) The design of the Rickard Road ground plane has been carefully considered to optimize the urban design outcome. The columns reflect the architectural design of the building, and requirements for structure. Please see **Attachment O** – Schedule of Finishes
D14	Address the requirements of 'Bankstown Complete Streets' for Rickard Road Central, in particular the requirement to provide a 1.8m wide pedestrian footpath inside the site	Please refer to C27 (Table 02)

	boundary, unimpeded by columns or ramped building entries.	
D15	Update the elevations to label all elements and materials used in the ground floor facades. The Department notes the Appian Way elevation does not label the proposed materials and finishes at the ground level and therefore the extent of visual permeability is unclear having regard to the active street frontage controls of the proposed DCP.	Please refer C35 (Table 02) - Refer to **Attachment O** – Schedule of Finishes
D16	The Greater Metropolitan Regional Environmental Plan No 2 – Georges River Catchment applies to the site. As such, the Draft Environment SEPP also applies. Provide an assessment against the relevant matters for consideration.	*The Greater Metropolitan Regional Environmental Plan No 2 – Georges River Catchment* requires new or expanding urban development to take into accordance the requirements of the NSW Floodplain Development Policy and Manual. The proposal is complaint with the planning principles of the *Greater Metropolitan Regional Environmental Plan No 2 – Georges River Catchment* as: • Bonacci Group have prepared detailed stormwater management and flood modelling in accordance with local and state policies. • Onsite detention has been designed to control stormwater runoff from the development to ensure discharges from the site do not exceed predevelopment stormwater discharges. • Water quality pollutant reduction targets as per Green Building Council Australia will be achieved. • Appropriate soil erosion and sediment management plans have been prepared to mitigate against any detrimental run-off during construction. • The proposal is consistent with Canterbury Bankstown Council DCP, *Bankstown City Council 2009 Development Engineering Standards, Green Building Council of Australia Green Star- Design & As built Stormwater, Bankstown Development Control Plan 2015 Part B12 Flood Risk Management, Canterbury Bankstown Stormwater System Repor*t and *Landcom 2004 Soils and Water Managing Urban Stormwater.* Controls within the Greater Metropolitan Regional Environmental Plan No 2 – Georges River Catchment will be updated and transferred to proposed Environment SEPP, except for outdated and duplicated provisions, which will be deleted.
D17	Provide additional background noise monitoring to address the concerns raised by the EPA (attached) and update the acoustic assessment accordingly.	Please see responses to EPA comments below.
D18	The EIS refers to an Arborist Report and the need for tree protection for two trees in Paul Keating Park during the construction works.	A revised SEARs request was sent to the DPIE in August 2019 following the removal of the early works from the SSDA.

	Provide a copy of the Arborist Report which identifies the trees and the tree protection measures.	Tree removal was approved with Early Works DA (DA-697/2019) on 3 September 2020, and was informed by an Arborist Report at **Attachment P –** prepared by Ecological on 11 June 2019. The Report notes that 23 trees were to be removed on or adjacent to the site. The trees have been removed, and protection has been provided to the two trees within Paul Keating Park as required.
D19	Amend or clarify how the waste generation rates have been calculated noting the significant deviation from EPA figures / Council expectations.	Please see responses to EPA comments below.
D20	Include a bar scale on the updated plans to enable accurate measurement and assessment.	Please refer to architectural plans in **Attachment D.**

TABLE 04 – TFNSW – 4 Nov 2020		
T01	Impose a condition: The applicant shall prepare a Construction Pedestrian and Traffic Management Plan (CPTMP) in consultation with the Bankstown City Council. The CPTMP shall specify matters including, but not limited to, the following: o A description of the development; o Location of any proposed work zone(s); o Details of crane arrangements including location of any crane(s); o Haulage routes; o Proposed construction hours; o Predicted number of construction vehicle movements and detail of vehicle types, noting that vehicle movements are to be minimised during peak periods; o Details of specific measures to ensure the arrival of construction vehicles to the site do not cause queuing on public roads; o Details of the monitoring regime for maintaining the simultaneous operation of buses and construction vehicles on roads surrounding the site; o Pedestrian and traffic management measures;	Please refer to C55 (Table 02)

TABLE 04 – TFNSW – 4 Nov 2020		
	o Construction program and construction methodology; o A detailed plan of any proposed hoarding and/or scaffolding; o Any potential impacts to general traffic, cyclists, pedestrians and light rail and bus services within the vicinity of the site from construction vehicles during the construction of the proposed works; and o Proposed mitigation measures. Should any impacts be identified, the duration of the impacts and measures proposed to mitigate any associated general traffic, public transport, pedestrian and cyclist impacts should be clearly identified and included in the CPTMP.	

TABLE 05 - ENERGY ENVIRONMENT & SCIENCE- 4 Nov 2020		
E01	The Flood Emergency Response Plan was updated in October 2020. The level of consultation for this Plan is unclear. Consultation with the NSW State Emergency Service (SES) is recommended on the Flood Emergency Response Plan and on the issue of shelter in place. Reference should be made to any Local Flood Plan, prepared by the NSW SES.	It is requested that a condition be applied as follows: *The NSW State Emergency Service (SES) shall be consulted on the Flood Emergency Response Plan, and an amended Plan, if required, submitted to Council for approval prior to occupation of the building.*
E02	• The BDAR waiver request said 17 trees to be removed, but EIS says 23 trees to be removed.	Please refer to D18 (Table 03) Refer to Arborist Report at **Attachment P –** prepared by Ecological on 11 June 2019
E03	• There are no trees proposed at ground level within the site and DPIE 'needs to be satisfied with this approach'.	11 trees will be planted within the site, in The Appian Way Alignment in a substantial deep soil area between the basement and the Sydney Water culverts. Trees to be planted at ground level include: a) 8 x advanced large canopy local native trees along Appian Way in deep soil b) 5 x advanced medium canopy native trees in large concrete pots above grade along Rickard Road

TABLE 05 - ENERGY ENVIRONMENT & SCIENCE- 4 Nov 2020		
E04	**Recommended Conditions** 1. Trees removed by the development shall be replaced by a diversity of local native provenance species at a ratio greater than 1:1 at ground level. 2. Tree planting for this SSD shall use advanced and established local native provenance trees with a minimum plant container pot size of 100 litres, or greater for local native tree species which are commercially available. Other local native tree species which are not commercially available may be sourced as juvenile sized trees or pre-grown from provenance seed. 3. The Landscape Plan shall be revised by a suitably qualified bush regenerator and include details on: a) the native vegetation community that once occurred in this locality b) a list of local provenance tree, shrub and groundcovers to be used in the landscaping or if not possible due to microclimates created by the built environment, other native alternatives c) the quantity and location of plantings d) the pot size of the local native trees to be planted e) the area/space required to allow the planted trees to grow to maturity f) Plant maintenance. The planted vegetation should be regularly maintained and watered for 12 months following planting. Should any plant loss occur during the maintenance period the plants should be replaced by the same plant species.	A total of 31 trees will be planted within the site, which exceeds the 1:1 ratio sought by EES. All large trees will be advanced in pots larger than 100 litres, and sourced locally unless tree stock is not appropriate. The site is within an established, existing urban area that has been extensively developed, and redeveloped. In this context, species choices should be based on these principles: • Council's vision for a cohesive planting strategy across the CBD: • maintaining a comfortable pedestrian environment with sun in winter and shade in summer; • growing conditions; • establishing an urban canopy; and • long-term maintenance efficiency for Council and WSU. A condition that requires the landscape plan to be **reviewed** by a bush regenerator is acceptable. However, these principles will guide species choice. Intensive planting and trees proposed on building terrace levels will further mitigate urban heat island effect across the extents of the building mass. Proposed trees on terrace levels include: a) 4 x advanced medium size native trees (minimum 20 m^3 of soil for each tree) b) 14 x advanced small size local native trees.

TABLE 05 - ENERGY ENVIRONMENT & SCIENCE- 4 Nov 2020		

TABLE 06 - EP&A – 4 Nov 2020		
	Please find below response to specific issues raised by EP&A in respect of operational noise. In summary the Consultant NDY has recommended that issues associated with Plant noise and the like are better assessed at the detail design stage, therefore the applicant will accept the following condition; ***Prior to installation of mechanical plant and equipment, the Applicant must incorporate the noise mitigation recommendations in the New Western Sydney University Bankstown City Campus Acoustic Services Report dated August 2020, and prepared by Norman Disney Young into the detailed design drawings. The Certifier must verify that all noise mitigation measures have been incorporated into the design to ensure the development will not exceed the recommended operational noise levels identified in the Acoustic Services Report (August 2020).***	
EP01	The EPA is concerned that the rating background levels (RBL) presented in both the original Noise Impact Assessment for the EIS, and the RtS NIA cannot be used with any confidence to determine project noise trigger levels.	<u>Rating background levels (RBL)</u> • Location of the building will affect most critically receivers on Rickards Road, Jacobs street, Chapel Road and The Mall. • Development located on an entire B4 Mixed zone, therefore the most sensitive receivers are any residential building located closer to the future building. • According to this, loggers were set at 1) 1- 5 Jacob street (similar condition of Rickard street) and 2) 402 Chapel Road (residential receiver) between 16th May and 24th Mar 2019. • A follow up logging was conducted on February / March 2020, with logger 1 stolen from an alternative site (61 Rickard Road) and logger in location 2 reporting values that do not change the median or the target criteria (PTNL) • Background levels on Chapel road were consistent on both logging dates which means the first background noise measurement was representative. • Selection of the loggers location were in accordance with NPfI as it was, as advised on table A1 “Methods for determining background noise” conducted on the reasonably most affected residences, as two different monitoring tests were conducted on the area. Rickards Road location was tried on the second round of tests, however logger was stolen from site, data on Chapel road was consistent in both rounds of tests, we consider that the second location selected (1- 5 Jacob street) is representative of background levels.

TABLE 06 - EP&A – 4 Nov 2020		
		• According to the ARUP SEARs transport management and accessibility plan (August 2020) of the project, intersections between Rickards road and Chapel / Jacobs road were the representative locations to assess traffic of the surrounding areas of the development (Section 5.2.3, Tables 10 and 11), which is consistent with the chosen acoustic loggers locations.
EP02	The siting of rooftop plant for the development (eg. cooling towers) remains an unresolved issue. Coupled with uncertainty around the sound power levels (SWL) of the plant the EPA is concerned that the project will exceed operational noise performance goals at nearby sensitive receivers.	<u>Rating background levels (RBL)</u> • Location of the building will affect most critically receivers on Rickards Road, Jacobs street, Chapel Road and The Mall. • Development located on an entire B4 Mixed zone, therefore the most sensitive receivers are any residential building located closer to the future building. • According to this, loggers were drop at 1) 1- 5 Jacob street (similar condition of Rickard street) and 2) 402 Chapel Road (residential receiver) between 16th May and 24th Mar 2019. • A follow up logging was conducted on February / March 2020, with logger 1 stolen from an alternative site (61 Rickard Road) and logger in location 2 reporting values that do not change the median or the target criteria (PTNL) • Background levels on Chapel road were consistent on both logging dates which means the first background noise measurement was representative. • Selection of the loggers location were in accordance with NPfI as it was, as advised on table A1 “Methods for determining background noise” conducted on the reasonably most affected residences, as two different monitoring tests were conducted on the area. Rickards Road location was tried on the second round of tests, however logger was stolen from site, data on Chapel road was consistent in both rounds of tests, we consider that the second location selected (1- 5 Jacob street) is representative of background levels. • According to the ARUP SEARs transport management and accessibility plan (August 2020) of the project, intersections between Rickards road and Chapel / Jacobs road were the representative locations to assess traffic of the surrounding areas of the development (Section 5.2.3, Tables 10 and 11), which is consistent with the chosen acoustic loggers locations.
EP03	**Dec 19 comment:** The background noise monitoring has not been undertaken in accordance with the NPfI and cannot be relied upon to derive project noise trigger levels for operational noise. Seven days of valid noise monitoring has not been provided when wind affected data is considered in the noise monitoring. Further, the receivers on Chapel	<u>Background monitoring</u> As included in **Appendix A** of the SEAR report for the logger located in Chapel Road and Jacob street, effective logger monitoring for winds under 5 m/s accounts more than 90% of the total hours for 7 days of valid noise monitoring. In addition, the second logging round for Chapel Street shows a valid monitoring of more than 82% of the total hours for 7 days. NDY confirm that between the two monitoring sessions a satisfactory valid time was covered for logging.

TABLE 06 - EP&A – 4 Nov 2020

	Road do not appear to be residential and therefore not considered representative of noise-sensitive receivers. **The RtS has not satisfactorily addressed this issue.**	
EP04	The RtS NIA indicates that additional monitoring was attempted in February / March 2020, however the additional assessment is unsatisfactory in the following areas: 1. Noise monitoring equipment was redeployed at 61-63 Rickard Road however the RtS NIA reports that the equipment was stolen and data unable to be analysed. The revised NIA then indicates that the original monitoring data was reanalysed using weather affected versus non-weather affected and concludes that: "*Overall the difference between weather affected and non-weather within 1-2 dB(A), which was within acceptable tolerances. We have retained the original project specific criteria"* 2. Noise monitoring equipment was also redeployed at 402 Chapel Road and the following conclusions outlined in the RtS NIA:	Refer to EP02

	Chapel Rd	Jacobs Rd	Chapel Rd
16-May-19	17.5	17.5	4
17-May-19	16.5	16.5	21
18-May-19	19	19	21
19-May-19	16.5	16.5	20
20-May-19	22	21	20
21-May-19	16.5	16.5	3
22-May-19	16	16	15
23-May-19	20	20	2
24-May-19	11	11.5	2
			20
			11
total hours	155	154.5	
7 days	168	168	139
%	92.3	92.0	82.7

TABLE 06 - EP&A – 4 Nov 2020

<table>
<tr><td></td><td>"Additional monitoring conducted in February / March 2020 was determined to be within 1-2 dB(A) of the previous findings. Given that there are no significant variations between the two data sets, we have retained the previous May 2019 findings and criteria for this report".</td><td></td></tr>
<tr><td>EP05</td><td>The noted conclusions in the RtS NIA with respect to background noise monitoring are not supported by any data analysis. It is not indicated whether the additional analysis / monitoring identified background noise levels 1-2 dB higher or lower than those reported in the original NIA. Therefore, it remains the EPA's position that the rating background noise levels presented in both the original NIA and the RtS NIA cannot be used with any confidence to derive intrusive noise levels satisfying the requirements of the NPfI.</td><td><u>Background noise and use of NPfI criteria for PTNL</u>

Table 4-1 of the SEAR report Section 4.2.1 compared with second monitoring shown below with consistent data:

<table>
<tr><th>Location</th><th>Noise index</th><th>Day time</th><th>Evening</th><th>Night time</th></tr>
<tr><td rowspan="2">1-5 Jacobs street (2019)</td><td>LA90 (RBL)</td><td>54</td><td>54</td><td>41</td></tr>
<tr><td>Laeq</td><td>65</td><td>65</td><td>60</td></tr>
<tr><td rowspan="2">402-410 Chapel road (2019)</td><td>LA90 (RBL)</td><td>54</td><td>51</td><td>42</td></tr>
<tr><td>Laeq</td><td>64</td><td>63</td><td>61</td></tr>
<tr><td rowspan="2">402-410 Chapel road (2020)</td><td>LA90 (RBL)</td><td>54</td><td>50</td><td>41</td></tr>
<tr><td>Laeq</td><td>63</td><td>67</td><td>60</td></tr>
</table></td></tr>
<tr><td>EP06</td><td>Additionally, both the original NIA and the RtS NIA present project amenity noise levels that have not been derived in accordance with the NPfI for the evening and night time period, in that existing ambient noise level have been assumed to be solely from industrial sources, which is highly unlikely. This has resulted in project amenity noise levels up to 8 dB higher than levels recommended under the NPfI.</td><td><u>Project amenity levels, project intrusiveness and NPfI method</u>

As in certain cases (evenings and nights) amenity levels were 10 dB below Existing ambient noise levels, correction of -10 dB was applied as NPfI recommends. Existing ambient noise level were derived from LAeq readings on loggers, which captured all noise sources from the area. Project amenity levels for an Urban zone are 60 dBA Day / 50 dBA Evening / 45 dBA night (Table 2.2 NPfI), corrected project amenity levels are not 8 dB higher: 58 dBA Day / 53 - 55 dBA Evening / 50 - 51 dBA night, final PTNL levels are more stringent to this. Refer to table below.</td></tr>
<tr><td>EP07</td><td>• The EPA recommends that background noise levels be verified to demonstrate that Project Noise Trigger Levels (PNTLs) have been appropriately determined.</td><td>According to Sections 2.3 and 2.4 of NPfI, selection of the PTNL follows the below procedure:
• Project intrusiveness criterion RBL + 5 dB
• Project amenity criterion as per Table 2.2 (in this case Residential / Urban zone) – 5 dB + 3 dB unless</td></tr>
</table>

TABLE 06 - EP&A – 4 Nov 2020

- Project amenity resultant is 10 dB or more below existing industrial noise, then
- Project amenity = Existing industrial noise – 10
- PTNL will be the most stringent of the two criteria as shown below

Location	Noise index	Day time	Evening	Night time
1-5 Jacobs street (2019)	LA90 (RBL)	**54**	**54**	**41**
	LAeq	65	65	60
402-410 Chapel road (2019)	LA90 (RBL)	**54**	**51**	**42**
	LAeq	64	63	61
402-410 Chapel road (2020)	LA90 (RBL)	**54**	**50**	**41**
	LAeq	63	67	60
Amenity levels Residential Table 2.2	Urban zone	60	50	45
1-5 Jacobs street (2019)	Intrusiveness	59	59	46
	Amenity	58	48	43
	10dB or more below existing noise level?	no	yes	yes
	Amenity* Corrected	58	55	50
402-410 Chapel road (2019)	Intrusiveness	59	56	47
	Amenity	58	48	43
	10dB or more below existing noise level?	no	yes	yes
	Amenity* Corrected	58	53	51
402-410 Chapel road (2020)	Intrusiveness	59	55	46
	Amenity	58	48	43

TABLE 06 - EP&A – 4 Nov 2020

	10dB or more below existing noise level?	no	yes	yes
	Amenity* Corrected	58	57	50
1 - 5 Jacobs Street PTNL	PNTL*	**58**	**55**	**46**
402 - 410 Chapel Rd PTNL (2019)	PNTL*	**58**	**53**	**47**
402 - 410 Chapel Rd PTNL (2020)	PNTL*	**58**	**55**	**46**

*Above values were the ones included in the SEAR report.

Some information that backs the above procedure:

- Project site is on a Mixed-use Zone type B4, surrounded by, commercial, cinema, supermarket, mall, pharmacies, residential and restaurant buildings with associated plant existing currently, therefore industrial noise levels are unlikely to reduce over time.
- Background noise levels RBL registered by the loggers are in line with table 2.3 of NPfI with urban residential (Day RBL>45 dBA; evening RBL>40 dBA; night RBL >35 dBA).
- PTNL levels are in accordance with the type of zoning (mixed use) above amenity levels described above for residential urban zone, but below commercial only premises.
- We do not believe an additional logging or alternative methodology for calculating the PTNL will provide more accurate parameters for boundary noise than the one provided above.

EP08	**Dec 19 comment:** No quantitative operational noise assessment has been provided as required by the Secretary's environmental assessment requirements (SEARs). The proposed measures to minimise and mitigate noise are not supported by quantitative noise prediction modelling and are considered inadequate. **This issue has only been partially addressed.**	Quantitative operational noise assessment • For SSDA phases, both architecture and services design were simply not developed at that stage to provide a quantitative assessment. However, considering the Rooftop Plant for the development explanation described above, a plant room located on the roof comprising fans and cooling towers can have the below estimated noise levels and estimated final noise levels in the closest residential receiver (61 Rickard Road): • The above does not consider acoustic louvers or partial loads for evening and night operation condition (lower noise levels). Cooling towers can be the most onerous noisy equipment and can operate a partial loads during evenings and nights, adding the distance + angle propagation and any noise control device such a louvre will easily bring this equipment to reach the PTNL targets.

TABLE 06 - EP&A – 4 Nov 2020

		A preliminary selection of Cooling towers assessment included below: **Frequency (Hz)** / 63 / 125 / 250 / 500 / 1000 / 2000 / 4000 / 8000 / dBA Total 100% load CT Noise: 105 / 103 / 95 / 93 / 91 / 87 / 83 / 84 / **96** 75% load CT Noise: 109 / 105 / 100 / 92 / 89 / 85 / 81 / 72 / **96** 50% load CT Noise: 99 / 94 / 89 / 82 / 79 / 75 / 71 / 65 / **86** minus propagation Day: 67 / 66 / 59 / 57 / 56 / 52 / 49 / 50 / **61** minus propagation Evening: 71 / 68 / 64 / 56 / 54 / 50 / 47 / 38 / **61** minus propagation Night: 61 / 57 / 53 / 46 / 44 / 40 / 37 / 31 / **50** Minus Louver IAC SL-300 Day: 61 / 59 / 49 / 45 / 38 / 34 / 35 / 37 / **48** Minus Louver IAC SL-300 Evening: 65 / 61 / 54 / 44 / 36 / 32 / 33 / 25 / **50** Minus Louver IAC SL-300 Night: 55 / 50 / 43 / 34 / 26 / 22 / 23 / 18 / **39** The above proves that we can achieve the PTNL targets with the most onerous noisy equipment and some acoustic measures in the critical receiver.
	The RtS NIA has presented a quasi-quantitative assessment of operational noise levels, including an assessment of on-site vehicle movements. However, the following areas of potential uncertainty in the assessment remain outstanding: a. The report suggests that the outdoor balcony not be used after 10 pm as it cannot comply with the PNTLs for the Night period (Section 5.2). While the PNTLs will need to be confirmed, it is possible that operational restrictions may need to be applied to this aspect of the proposal in the form of a condition of consent. b. The report determines the overall vehicle noise from the use of the carpark based on a worst-case scenario where every space is taken within the carpark. The results show there would be a non-compliance during the night period and	<u>Outdoor Balconies assessment</u> **a) Section 5.2** of the SEAR report states that the balcony use should be limited and not used after 10 pm. Operational restrictions are ok to enforce this. **b) Section 5.3** of the SEAR report states operational Carpark noise will not comply with night time PTNL, however our assessment was based on the critical 100% of use of the carpark. The note included in the report, based on the ARUP TMAP traffic report, states the below:

TABLE 06 - EP&A – 4 Nov 2020		
	a potential non-compliance during the evening. This has implications for night-time functions with the development potentially unable to comply with the PNTLs. However, as noted previously the extent of the potential impact cannot be fully determined due to uncertainty with the PNTLs.	**Note*:** Further to the above, section 5.5.1 of the ARUP TMAP Traffic report, states that it is estimated that the car park will generate a total of 48 vehicular trips in the AM peak and 45 in the PM peak hour and not the estimated critical 100% of use as stated above, therefore we expect that the noise estimations will be complying with the PTNL at all times. Also Section 5.9.1 estimates that the demand for the carpark will considerably decrease after 18 hours and before 7 hours.
	c. Due to a lack of design progression, the assessment of noise from the rooftop plant area (Section 5.1) does not contain a detailed assessment of noise emission from plant. Although mitigation measures are listed, the EPA notes that Section 5.1 contains the following statement: "With equipment plant limiting the total SWL of Lw 80dB(A) the propagated noise in the closest receiver is still compliant with PTNL for Day, Evening and Night. This does not consider the effect of louvers or acoustic barriers and the fact that the operation might be less noisy during the night when the equipment will be working on a less onerous condition depending on the heat load." The EPA advises that the rooftop plant area includes (but is not limited to) 3 x rooftop level cooling towers. It is noted that a single cooling tower is likely to exceed the Lw 80 dBA "noise budget", and that options for mitigating noise from cooling towers are generally limited to barriers.	**c) Rooftop area:** please refer to the calculation above in Quantitative operational noise assessment

TABLE 06 - EP&A – 4 Nov 2020		
	As such, the EPA advises that clarification should be sought from the applicant as to the location and selection of plant for the rooftop plant area.	
EP09 EP10	The assessment of operational impacts contains significant uncertainties in the following areas: 1. PNTLs (noise criteria) have not been derived in accordance with the NPfI. Therefore, the true extent of potential impacts, and the extent of noise mitigation required cannot be determined based on the information submitted at this time. This includes potential operational restrictions on the proposed development	Refer to Background noise and use of NPfI criteria for PTNL
	2. Predicted operational noise levels are based solely on a single notional source noise level which appears to be lower than what would be expected for mechanical plant servicing a development of this type. The EPA expects that reasonable assumptions could be made about the type of mechanical plant potentially servicing such a development and a better estimation of site noise emissions made, together with the quantum of potential mitigation measures required. This is especially relevant when noise mitigation measures could affect the built form of the development.	**Refer to c) Rooftop area:** please refer to the calculation above in Quantitative operational noise assessment
EP11	**Dec 19 comment:** Plant on northern side of level 18 are close to the residential receivers at 61-63 Rickard Road. No feasible and reasonable alternative consideration is provided regarding layout and options to protect these receivers by orientating the plant to the southern facing side of	**Refer to c) Rooftop area:** please refer to the calculation above in Quantitative operational noise assessment

TABLE 06 - EP&A – 4 Nov 2020		
	the building. **The RtS NIA has not addressed this issue**.	
EP12	The EPA considers that the insufficient design detail, and inadequate predictive modelling of noise from mechanical services, needs to be remedied so that the applicant can be confident in the noise predictions being made.	Refer to Quantitative operational noise assessment (Cooling towers assessment) above.
	Issue 2 – Construction Noise	
	Please find below response to specific issues raised by EP&A in respect of Construction noise. In summary the project Acoustic Consultant NDY has advised that given the construction methodology will be finalised with detailed construction documentation prior to the issue of the relevant Crown Building Certificate, issues associated with construction noise and vibration are better assessed at that point. Therefore, the applicant will accept the following condition; **"A Construction Noise and Vibration Management Plan (CNVMP) must be prepared outlining noise mitigation measures required to achieve the construction noise management levels detailed in the *Interim Construction Noise Guideline* (DECC, 2009) prior to the issue of a Crown Certificate. The CNVMP is to apply the residential criterion of the *Interim Construction Noise Guideline* (DECC, 2009) to the nearby sensitive noise receivers of the Council Building and Hoyts Cinemas"** Also, refer to **Appendix R** – The draft *Construction Management Plan Rev B* of the SSDA submitted on the 28 August 2020.	
EP13	The EPA advises that consultation will need to consider the unique operating conditions and proximity of the cinema and Council buildings when selecting construction equipment and practices, and when determining offset distances for equipment use, and that this should inform the Construction Noise and Vibration Management Plan (CNVMP). It is suggested that offset criteria for residential receivers may more suitably apply to these uses.	Construction noise assessment • **Section 6.1** of SEAR report addresses construction noise with a quantitative analysis of the typical worst-case scenario construction equipment per phase and noise levels in accordance with BS 5228-1:2009 • **Section 6.3** include predicted construction noise impacts for excavation phase, structural works phase and fit out phase • In addition, NDY CAN J – 002[2.0] dated 26.06.2020 also include noise predictions for residential and for non-residential. • As included in **Section 6.3** of the SEAR report, predicted construction noise impacts were calculated in a conservative approach, including a wide range of equipment in each stage, all sources working simultaneously and at the same distance from receivers, this does not tend to happen, an offset distance between the sources (usually distributed within the construction site which is of a considerable size) will produce even less noise levels on the receivers. • As per above we do not consider that construction noise levels will exceed 75 dBA
EP14	**Dec 19 comment:** The EIS concludes that construction work will result in significant	Detailed quantitative calculations for construction of construction noise at nearby receivers, considering all receivers is below:

TABLE 06 - EP&A – 4 Nov 2020

	exceedances of the Highly Noise Affected management level of 75 dB(A) for some construction work taking place during the recommended standard hours of work described in the ICNG.	

Type of receiver	Distance in m	Machinery	Construction stage	Predicted sound levels	Notes
Residential Rickards Rd	25 -27 m	Tracked excavator, 30 t, 170kW Excavator with mounted rock breaker 23 t, 102 kW Articulated dump truck 23 t, 187 kW Dozer 28 t Tracked mobile crane 132 Kw / 55 t	Excavation and demolition	70	Worst case scenario considered, all machines workig simultaneously and closer to boundary (in reality this does not tend to happen)
		Tracked excavator, 30 t, 170kW Articulated dump truck 23 t, 187 kW Large Piling rig 110 t / 20 m deep / 1.2 m diameter Concrete mixer discharging with concrete Pump 26 Ton / 7 m3 + 22m boom Tracked mobile crane 132 Kw / 55 Ton	Structural piling Works	69	
		Handheld cordless nail gun (15 to 50 mm nails) Diesel Generator Tower Crane 88 Kw / 22 t Diesel scissor lift 24 Kw / 6 t Dust suppression unit trailer	Fit out Works	67	

EP15	However, the ASR does not provide predicted construction noise levels and offers only generic noise management options. This approach is inadequate and inconsistent with the SEARs requirement to prepare a quantitative assessment of construction noise impacts and identify measures to minimise and mitigate noise impacts.	

Type of receiver	Distance in m	Machinery	Construction stage	Predicted sound levels	Notes
Commercial / Hoyt's Cinema	25 - 30 m	Tracked excavator, 30 t, 170kW Excavator with mounted rock breaker 23 t, 102 kW Articulated dump truck 23 t, 187 kW Dozer 28 t Tracked mobile crane 132 Kw / 55 t	Excavation and demolition	69	Worst case scenario considered, all machines workig simultaneously and closer to boundary (in reality this does not tend to happen)
		Tracked excavator, 30 t, 170kW Articulated dump truck 23 t, 187 kW Large Piling rig 110 t / 20 m deep / 1.2 m diameter Concrete mixer discharging with concrete Pump 26 Ton / 7 m3 + 22m boom Tracked mobile crane 132 Kw / 55 Ton	Structural piling Works	69	
		Handheld cordless nail gun (15 to 50 mm nails) Diesel Generator Tower Crane 88 Kw / 22 t Diesel scissor lift 24 Kw / 6 t Dust suppression unit trailer	Fit out Works	68	

TABLE 06 - EP&A – 4 Nov 2020

<table>
<tr><td></td><td></td><td>
<table>
<tr><th>Type of receiver</th><th>Distance in m</th><th>Machinery</th><th>Construction stage</th><th>Predicted sound levels</th><th>Notes</th></tr>
<tr><td rowspan="3">Commercial / City Of Canterbury Bankstown Council building / Bankstown library</td><td rowspan="3">20 m</td><td>Tracked excavator, 30 t, 170kW
Excavator with mounted rock breaker 23 t, 102 kW
Articulated dump truck 23 t, 187 kW
Dozer 28 t
Tracked mobile crane 132 Kw / 55 t</td><td>Excavation and demolition</td><td>70.5</td><td rowspan="3">Worst case scenario considered, all machines workig simultaneously and closer to boundary (in reality this does not tend to happen)</td></tr>
<tr><td>Tracked excavator, 30 t, 170kW
Articulated dump truck 23 t, 187 kW
Large Piling rig 110 t / 20 m deep / 1.2 m diameter
Concrete mixer discharging with concrete Pump 26 Ton / 7 m3 + 22m boom
Tracked mobile crane 132 Kw / 55 Ton</td><td>Structural piling Works</td><td>70.5</td></tr>
<tr><td>Handheld cordless nail gun (15 to 50 mm nails)
Diesel Generator
Tower Crane 88 Kw / 22 t
Diesel scissor lift 24 Kw / 6 t
Dust suppression unit trailer</td><td>Fit out Works</td><td>69</td></tr>
</table>
</td></tr>
<tr><td>EP16</td><td>The RtS NIA now includes a quantitative assessment of construction noise at nearby receivers. It is noted that that these receivers include residential dwellings as well as sensitive commercial receivers such as Hoyts Cinemas and Council Buildings.</td><td>
<table>
<tr><th>Type of receiver</th><th>Distance in m</th><th>Machinery</th><th>Construction stage</th><th>Predicted sound levels</th><th>Notes</th></tr>
<tr><td rowspan="3">Passive recreational / Paul keating Park</td><td rowspan="3">20 m - 70 m</td><td>Tracked excavator, 30 t, 170kW
Excavator with mounted rock breaker 23 t, 102 kW
Articulated dump truck 23 t, 187 kW
Dozer 28 t
Tracked mobile crane 132 Kw / 55 t</td><td>Excavation and demolition</td><td>65</td><td rowspan="3">Worst case scenario considered, all machines workig simultaneously and closer to boundary (in reality this does not tend to happen)</td></tr>
<tr><td>Tracked excavator, 30 t, 170kW
Articulated dump truck 23 t, 187 kW
Large Piling rig 110 t / 20 m deep / 1.2 m diameter
Concrete mixer discharging with concrete Pump 26 Ton / 7 m3 + 22m boom
Tracked mobile crane 132 Kw / 55 Ton</td><td>Structural piling Works</td><td>65</td></tr>
<tr><td>Handheld cordless nail gun (15 to 50 mm nails)
Diesel Generator
Tower Crane 88 Kw / 22 t
Diesel scissor lift 24 Kw / 6 t
Dust suppression unit trailer</td><td>Fit out Works</td><td>63</td></tr>
</table>
</td></tr>
<tr><td>EP17</td><td>Section 6.3 of the RtS NIA suggests that as these receivers are not deemed to be “highly noise affected”, under the definition provided in the ICNG, “A formal Noise and Vibration Management Plan is therefore not anticipated to be required on the basis that the site is managed through feasible and reasonable noise mitigation methods as outlined in the NSW Interim Construction Noise Guidelines.”</td><td>

NDY consider their calculations are quantitative enough and considering the worst-case scenario (all machines working simultaneously per phase) and all affected buildings
A more detailed calculation and / or assessment will constitute a Construction Noise Management plan and as none of the levels are predicted to be above 75 dBA with reasonably calculations, we believe this is not necessary.

As per above, as none of the levels are predicted to be above 75 dBA for the construction, some general recommendations on mitigation methods were included in Appendix B, we do not believe that more specific examples are necessary at this stage.
</td></tr>
</table>

<table>
<tr><th colspan="3">TABLE 06 - EP&A – 4 Nov 2020</th></tr>
<tr><td>EP18</td><td>The EPA advises that although a quantitative assessment has now been undertaken to worst case conditions, there are no specific examples of reasonable and feasible mitigation that could be undertaken for those receivers that are deemed to be noise affected or particularly sensitive. Specifically, the EPA recommends that the specific application of the generic solutions provided in Appendix B for each sensitive receiver should be explored, as per the SEARs</td><td>• Appendix B includes fixed plant away from critical receivers, delivery trucks without reverse alarms, limit machines operating simultaneously, waste removal during day time, temporary site buildings as noise barriers, solid plywood hoardings, partial enclosures, and NDY CAN J – 002[2.0] dated 26.06.2020 includes reducing operation for noisier machinery (time management), substituting equipment with quieter alternatives (predicted equipment were among the noisiest in the BS 5228-2:2009 tables) and placing of acoustic barriers. Which additional specific examples is the council needing if we do not believe noise levels will be above 75 dBA?</td></tr>
<tr><td>EP19</td><td>Dec 19 comment: No quantitative assessment has been provided for vibration impacts from construction activities at the closest sensitive receivers, including the adjacent Bankstown Library and Knowledge Centre and residential dwellings, as required by the SEARs.</td><td>• Preliminary Vibration assessment was included in Section 6.2 of the SEAR report, Table 6 – 3 includes the quantitative calculations of the most onerous construction activity (vibratory piling) considering a semi hard to very stiff soil (which is the worst case scenario due to the fact that no geotechnical information is available). Vibration levels in mm/s were calculated for 4 different scenarios with velocities under 1.1 mm/s, basing on BS 5228-2:2009. All levels were very well below the cosmetic damage, therefore we believe sufficient information was provided.

Table 6-3: Vibratory Piling estimated vibration levels as per Table E.1 of the BS 5228 – 2.2009
<table><tr><th>Equipment</th><th>Vibration level PPV (mm/s)</th><th>Source</th></tr><tr><td>Percussive Piling (extraction of casing) Critical cases, located at 27 m from dwellings (Rickard Rd) and piles at 9 m depth</td><td>W= 85 Kj
V = 0.4 PPV (very stiff soils)
V = 0.2 PPV (very cohesive soils)</td><td rowspan="4">Table E1. BS 5228-2:2009</td></tr><tr><td>Vibratory Piling (extraction of casing) Critical cases, located at 27 m from dwellings (Rickard Rd) and piles at 9 m depth</td><td>kv=50% / δ = 1.3
V = 0.8 PPV</td></tr><tr><td>Percussive Piling (extraction of casing) Critical cases, located at 23 m from Council Building (Crn Rickard Rd / Jacobs St) and piles at 9 m depth</td><td>W= 85 Kj
V = 0.4 PPV (very stiff soils)
V = 0.2 PPV (very cohesive soils)</td></tr><tr><td>Vibratory Piling (extraction of casing) Critical cases, located at 23 m from Council Building (Crn Rickard Rd / Jacobs St) and piles at 9 m depth</td><td>kv=50% / δ = 1.3
V = 1.1 PPV</td></tr></table></td></tr>
</table>

<table>
<tr><th colspan="3">TABLE 06 - EP&A – 4 Nov 2020</th></tr>
<tr><td>EP20</td><td>• An assessment of required offsets for the use of various construction equipment has been provided within Section 6.2. The RtS NIA concludes that there would be exceedance of the human comfort criteria for several receivers if used indiscriminately.</td><td>Most onerous vibration equipment as piling using very still soil conditions and minimum boundary distances was calculated for all receivers with predicted vibration levels below maximum recommended levels in all standards. We do not believe there would be exceedance of the human comfort criteria.</td></tr>
<tr><td>EP21</td><td>• The EPA recommends that the applicant consider the offset distances and equipment use at the detailed design phase. A robust Construction Noise and Vibration Management Plant (CNVMP) must be completed, in consultation with the construction contractor, to ensure appropriate equipment selection and consideration of required offset distances to minimise construction vibration levels to within human comfort levels where feasible and reasonable.</td><td>Refer to references above, none of the predicted levels were above 75 dBA, we believe a Construction Noise and Vibration Management Plan (CNVMP) can be prepared and submitted to the Planning Secretary for approval prior to issue of the relevant Crown Building Certificate.</td></tr>
<tr><td>EP22</td><td>• Dec 19 comment: Furthermore, the assessment has not considered how construction noise and vibration will impact on the Hoyts Cinema and Council buildings located at the south western corner of Rickard Road and Jacobs Street, Bankstown.</td><td>• Table 6-3 vibratory piling estimated vibration levels calculated vibration levels at 27, 23 m distance. Below the table the report makes reference to Hoyts Cinema, located approximately at 23- 25 m from the construction site. Therefore quantitative estimations were also done considering this receiver.
• All estimated vibration levels are below 2 mm/s that is included in table 4-10 referencing DIN 4150-3 Construction vibration limits – long term. Therefore, all estimated levels are below the residential criteria (5 mm/s as per table below)</td></tr>
<tr><td>EP23</td><td>• Further to the above issue, it is noted that the cinema is within the minimum offset distance for human comfort levels. Given the operating conditions of a cinema, generic solutions such as notifying affected receivers may not be appropriate</td><td>Table 4-10: DIN 4150-3 Construction Vibration Limits – Long Term
<table><tr><th>Type of Structures</th><th>Guideline values for velocity, vi, in mm/s of vibration in horizontal plane of highest floor, at all frequencies</th></tr><tr><td>Buildings for commercial purposes, Industrial building and building of similar design</td><td>10</td></tr><tr><td>Dwellings and buildings of similar design and/or occupancy</td><td>5</td></tr><tr><td>Structures that because of their particular sensitivity to vibration, cannot be classified as above and are of great intrinsic value (e.g. listed buildings under preservation order)</td><td>2.5</td></tr></table></td></tr>
</table>

TABLE 06 - EP&A – 4 Nov 2020		
EP24	• Consultation with and consideration of the unique operating conditions of the cinema and Council buildings is required when selecting equipment, construction equipment and practices and determining offset distances for equipment use.	• The use or percussive piling on a 23 m distance from Hoyts cinema produces a vibration of 0.2 mm/s, this is below all the criteria for human comfort and substantially below the residential criteria 5 mm/s as per table above. • Residential criteria was used for all sensitive receivers, none of the predicted vibration levels (using the most onerous condition in the stiffest soil) was close to the residential criteria.
EP25	• It is suggested that the applicant utilise the residential criteria for all sensitive receivers, rather than applying a commercial criterion – due the nature of the business.	The CNVMP will include a consultation protocol that includes providing to Council, as owner and operator of BLaKC, the Theatre and Civic Tower and Hoyts with information regarding construction activities and incorporating their feedback.