Our Ref: MUN-WAM

13 February 2018
Karen Harragon
Director – Social and Other Infrastructure Assessments
NSW Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Megan Fu

Dear Ms Harragon,

RobertsDay
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RE: SSD 8388 – SSD DA – MACQUARIE UNIVERSITY ARTS PRECINCT
192 BALACLAVA ROAD, MACQUARIE PARK
RESPONSE TO SUBMISSIONS (RTS)

We write on behalf of Macquarie University in relation to the current SSD DA for the Macquarie University Arts Precinct Project (MUAPP) and provide a response to submissions arising from the public exhibition of the project. We note submissions were received from the following:

- Sydney Trains
- Transport for NSW
- RMS
- EPA
- Sydney Water
- City of Ryde Council

No public submissions were received by the Department. The Office of the Government Architect of NSW also provided comments to the Department, to which we have also provided comments / response.

This response includes the following documentation for the Department's consideration and assessment:

- TLB and JK Geotechnics – response to Sydney Trains matters, noting liaison with Sydney Trains will be ongoing and in parallel to the planning process (as relevant / necessary) – letters and accompany information dated 24 January 2018 and 23 January 2018, respectively;
- TDG – response to submissions by TfNSW, RMS, and Council – letter and supporting information dated 23 January 2018;
- Wood & Grieve – letter and updated Noise &Vibration Impact Assessment in response to EPA noise and vibration matters – dated 2 February 2018; and
- BNMH – response to Government Architect NSW comments, including revised and updated plan set – made in conjunction with Group GSA and MGAC to address landscaping and accessibility matters – dated 30 January 2018.

Should you have any questions or seek further information please do not hesitate to contact me on 0437 259 581.

Yours Sincerely

Oliver Klein
Senior Associate
RobertsDay

RESPONSE TO SUBMISSIONS

SUBMITTOR / Issues Raised	RESPONSE
SYDNEY TRAINS	
Sydney Trains has taken the above matters into consideration during the proposal review, and in order to protect Sydney Trains assets and operations, your Department is requested to impose the conditions listed below:	Noted. Responses as per each comment below.
Prior to the commencement of works the Applicant shall prepare and provide to Sydney Trains for approval/certification the following final version items in compliance with the ASA Development Near Rail Tunnels (http://www.asa.transport.nsw.gov.au/sites/default/files/asa/asa-standards/t-hr-ci-12051-st.pdf): 1. Final Geotechnical and Structural report/drawings that meet Sydney Trains requirements. The Geotechnical Report must be based on actual borehole testing conducting on the site closest to the rail corridor. 2. Final Construction methodology with construction details pertaining to structural support during excavation. The Applicant is to be aware that Sydney Trains will not permit any rock anchors/bolts (whether temporary or permanent) within its land or easements. 3. Cross sectional drawings showing the rail corridor, sub soil profile, proposed basement excavation and structural design of sub ground support adjacent to the rail corridor. All measurements are to be verified by a Registered Surveyor. 4. Detailed Survey Plan showing the relationship of the proposed developed with respect to Sydney Trains easement and rail corridor land. 5. If required by Sydney Trains, an FE analysis which assesses the different stages of loading-unloading of the site and its effect on the rock mass surrounding the rail corridor. 6. If required by Sydney Trains, a Monitoring Plan. Any conditions issued as part of Sydney Trains approval/certification of the above documents will also form part of the consent conditions that the Applicant is required to comply with.	MQU and its consultant team is presently working with Sydney Trains to resolve all relevant matters. MQU will keep DPE advised of progress in response to these matters and provide a copy of all responses. Our aim will be o seek to resolve these matters prior to approval being granted by DPE for this SSD DA, however, in the event that these matters are not resolved prior to approval, an appropriately (re)worded condition(s) may be suitable. In the first instance please see documentation from both TLB and JK Geotechnics, dated 24 January 2018 and 23 January 2018, respectively. This documentation includes plans, sections and other information in relation to: - The railway corridor 1st and 2nd reserve locations - Location of the buildings and works, including sub surface structural works / footings to a limited depth and in limited locations - Impacts study including estimated bearing pressures and pressure contours - Peer review by JK Geotechnics to confirm / advise on impacts and - Commentary on Infrastructure SEPP compliance (clause 86). In summary, based on both TLB and JK Geotechnics review /advice, the works will have negligible and localised / minimal impacts upon the rail corridor / rail infrastructure. The impacts will be similar to existing scenarios and essentially unchanged. No negative impact or impact to the integrity of the rail corridor is envisaged. It is understood that this package of material, with further proposed liaison with Sydney Trains has the potential to remove and refine the suggested conditions proposed by Sydney Trains.
If required by Sydney Trains, prior to the commencement of works, prior to the issue of the Occupation Certificate, or at any time during the excavation and construction period deemed	Noted and as addressed above.

necessary by Sydney Trains, a joint inspection of the rail infrastructure and property in the vicinity of the project is to be carried out by representatives from Sydney Trains and the Applicant. These dilapidation surveys will establish the extent of any existing damage and enable any deterioration during construction to be observed. The submission of a detailed dilapidation report will be required unless otherwise notified by Sydney Trains.	
The following items are to be submitted to Sydney Trains for review and endorsement prior to the commencement of works: • Machinery to be used during excavation/construction.	Noted. This can/will be provided at that time.
An acoustic assessment is to be submitted to Council prior to the commencement of works demonstrating how the proposed development will comply with the Department of Planning's document titled "Development Near Rail Corridors and Busy Roads- Interim Guidelines".	We assume the relevant authority is the DPE rather than Council? The proposed condition appears redundant or superfluous given the existence of the university and these buildings some 40 years prior to the rail tunnel becoming operational beneath the campus. The existing occupancy and use of the campus is unaffected by rail noise or vibration given the existing degree of separation.
Prior to the commencement of works the Applicant is to engage an Electrolysis Expert to prepare a report on the Electrolysis Risk to the development from stray currents. The Applicant must incorporate in the development all the measures recommended in the report to control that risk.	Noted. An Electrolysis Expert to be later engaged as part of this project.
If required by Sydney Trains, prior to the commencement of works a Risk Assessment/Management Plan and detailed Safe Work Method Statements (SWMS) for the proposed works are to be submitted to Sydney Trains for review and comment on the impacts on rail corridor.	Noted that this is only 'if required'. A preliminary review can be undertaken to determine if the Risk Assessment/Management Plan and detailed Safe Work Method Statements (SWMS) will be required.
Unless advised by Sydney Trains in writing, all excavation, shoring and piling works within 25m of the rail corridor are to be supervised by a geotechnical engineer experienced with such excavation projects.	Noted.
No rock anchors/bolts are to be installed into Sydney Trains property or easements.	Noted.
Prior to the issuing of an Occupation Certificate the Applicant is to submit as-built drawings to Sydney Trains and Council. The as-built drawings are to be endorsed by a Registered Surveyor confirming that there has been no encroachment into Sydney Trains property or easements, unless agreed to be these authorities. The Principal Certifying Authority is not to issue the final Occupation Certificate until written confirmation has been received from Sydney Trains confirming that this condition has been satisfied	Noted.
If required, prior to the commencement of works the Applicant is to contact Sydney Trains Engineering Management Interfaces to determine the need for public liability insurance cover. If insurance cover is deemed necessary this insurance be for sum as determined by Sydney Trains and shall not contain any exclusion in relation to works on or near the rail corridor, rail infrastructure. The Applicant is to contact Sydney Trains Engineering Management Interfaces to obtain the level of insurance required for this particular proposal.	Noted.
If required, prior to the commencement of works the Applicant is to contact Sydney Trains Engineering Management Interfaces to determine the need for the lodgement of a Bond or Bank Guarantee for the duration of the works.	Noted.

Sydney Trains or Transport for NSW (TfNSW), and persons authorised by those entities for the purpose of this condition, are entitled to inspect the site of the development and all structures to enable it to consider whether those structures have been or are being constructed and maintained in accordance with the approved plans and these conditions of consent, on giving reasonable notice to the principal contractor for the development or the owner or occupier of the part of the site to which access is sought.	Noted.
Prior to the commencement of works the Applicant is to submit to Sydney Trains a plan showing all craneage and other aerial operations including loading details for the development and must comply with all Sydney Trains requirements. If required by Sydney Trains, the Applicant must amend the plan showing all craneage and other aerial operations to comply with all Sydney Trains requirements.	Noted.
Copies of any certificates, drawings, approvals/certification or documents endorsed by, given to or issued by Sydney Trains must be submitted to Council for its records prior to the issuing of a Construction Certificate.	We assume the relevant authority is the DPE rather than Council? Noted.
Any conditions issued as part of Sydney Trains approval/certification of any documentation for compliance with the Sydney Trains conditions of consent, those approval/certification conditions will also form part of the consent conditions that the Applicant is required to comply with.	Noted.
TRANSPORT FOR NSW	
The proposed timing for the main construction works is expected to occur from June 2018 to February 2020. The early stages of the construction works will likely coincide with the temporary shutdown of the Epping-Chatswood Rail Link and operation of the Temporary Transport Plan (TTP). There is the potential that construction vehicle movements associated with this development would impact the operation of the TTP and general transport operations within the locality. Therefore, construction vehicle movements should be managed in coordination with TfNSW.	Noted.
The Applicant should be conditioned to prepare a Construction Pedestrian Traffic Management Plan (CPTMP). This plan must be endorsed by the Sydney Coordination Office of TfNSW prior to commencement of any works.	Noted, noting however that a preliminary Construction Traffic Management Plan has already been prepared. The final Construction Traffic Management Plan can incorporate any relevant and reasonable additional requirements.
Based on the review of the Preliminary CTMP by TDG dated October 2017, the following is noted: • Construction works proposed June 2018 to February 2020 (duration of 21 months) • Proposed construction hours: o Mon-Fri: 7am – 7pm o Sat: 8am – 4pm • During peak construction (8 months) – up to 80 truck movements per day • Traffic Volumes during peak construction – max 10 movements per hour • Trucks movements to be outside of peak hours • Vehicle type: o During excavation (2 months) – truck and dog and 19m articulated vehicles; o During remaining stages – HRV (12 to 13m trucks); and	Noted. TDG advises as follows: The increase in truck movements generated during construction (a maximum of 10 movements per hour, or one movement every six minutes) will not be discernible given the traffic volumes on the surrounding road network. Further, the proposed truck access route will no longer pass the Macquarie Centre. Therefore, an assessment of the impacts against the redevelopment of the Macquarie Centre has not been provided as the MUAPP is expected to have a negligible impact on this project. See also the TDG response letter.

o 16m atrium columns (to be delivered outside peak times). • No assessment of the cumulative impact of adjacent developments including the redevelopment of Macquarie Centre is provided.	
The increase in construction vehicle movements from the proposed development has the potential to impact on general traffic and bus operations during commuter peak hours, as well as the safety of pedestrians and cyclists.	The increase of 10 movements per hour will not be discernible given Epping Road accommodates approximately 3,000vph during peak times. The truck access route has been amended as outlined within Figure 1 of the letter prepared by TDG, dated 23 January 2018 (TDG Letter). The access roads are all classified within the RMS *NSW Combined Higher Mass Limits and Restricted Access Vehicle Map* as roads permitted for 25/26m B-Double trucks. Accordingly, these roads have been assessed as being appropriate for use by large trucks. Therefore, the access route is considered appropriate and will not generate any traffic safety or capacity issues. In order to maintain pedestrian and cyclist safety within the university campus, marshals will be placed at key pedestrian crossing points.
Notwithstanding the above, the following comments are provided in response to the Preliminary CTMP by TDG dated October 2017:	Response as set out below.
The proposed truck access route shown in Appendix 1, Figure 2 is not supported as it has the potential to adversely affect the traffic/transport network, in particular: o bus routes on Epping Road, Balaclava Road and Herring Road, particularly during the operation of the TTP; o the removal the bus layover on the northern kerb of Hadenfeld Ave to accommodate truck and dog movements as shown in the swept path analysis at Appendix 3 – Figure 4; o bus interchange operations, including high pedestrian activity and bus boarding and alighting; and o cumulative impacts of construction vehicles from developments along Herring Road.	TDG advises as follows: The truck access route has been amended as outlined within the TDG Letter. It is considered that the revised route addresses these comments.
The Applicant should demonstrate why the alternate truck routes provided in the response to the comments provided by TfNSW (as detailed in Section 7.3 of the PCTMP) are not suitable. This may require: o desktop study of road dimensions, traffic facilities and site constraints; o swept path analysis of the construction vehicles used, noting that the PCTMP stipulates that a truck and dog vehicle will only be used during excavation (2months) and a single unit truck or HRV will be used for all other construction activity.	An alternative truck access route is proposed, as the use of Culloden Road is not considered appropriate. The TDG letter advises as follows: The truck access route proposed by TfNSW would utilise Culloden Road. The following comments are made in relation to the proposed route by TfNSW: - The intersections of Culloden Road with Talavera Road and Waterloo Road, which are controlled by roundabouts, do not permit easy

	access for larger vehicles due to the layout of the intersections. - Culloden Road acts as a residential street and is not appropriate to be used on a regular basis by trucks. - Macquarie University has strong instructions to separate construction and student traffic to mitigate WHS risks, which would not be achieved by using Culloden Road.
An alternate truck route that does not include Herring Road should be provided.	Provided, as per the TDG Letter. Notwithstanding the above, an alternative truck access route is proposed from the route outlined within the CTMP, in order to address comments made by TfNSW. The revised route is as follows: - Vehicles travelling to/from the east will access Epping Road via the Pittwater Road / M2 Motorway Interchange. - Vehicles travelling to/from the west will access Epping Road via Lane Cove Road and the associated interchange with the M2 Motorway. Vehicles will then enter the University via Balaclava Road, as shown within Figure 1 of the TDG letter. These roads are all classified within the Roads and Maritime Services NSW Combined Higher Mass Limits and Restricted Access Vehicle Map, as roads permitted for 25m/26m B - Double trucks. Accordingly, these roads have been assessed as being appropriate for use by vehicles larger than that proposed as part of this proposal (truck and dog or HRV). The revised route will prevent trucks being required to use Herring Road, ensuring that construction traffic associated with the MUAPP will be separated as far as possible from: - The bus interchange and bus routes that operate along Herring Road; - Construction traffic associated with the MUAPP; and - The high pedestrian and cyclist traffic along Herring Road. Accordingly, the revised truck route addresses key concerns raised by TfNSW, will ensure separation of construction traffic from nearby developments and vulnerable road users, and provides an appropriate alternative to the use of Culloden Road.

Clarification should be provided of the proposed truck route to the site from the east, as westbound vehicles exiting the M2 Motorway are not permitted to enter Herring Road as only left and right turn movements to Talavera Road are permitted.	Herring Road is no longer proposed to be used by trucks during construction.
The CTMP should stipulate the existing AM and PM peak period for the Macquarie Park precinct and specify that all heavy vehicles will travel outside these hours.	The increase of 10 movements per hour will not be discernible given Epping Road accommodates approximately 3,000vph during peak times. Therefore, the impact generated by truck movements will be negligible at all times of the day, and it is considered that the existing truck operating times are acceptable.
Recommendation TfNSW requests that the Applicant be conditioned to the following: • Prepare a Construction Pedestrian and Traffic Management Plan (CPTMP) in consultation with the Sydney Coordination Office within TfNSW. The CPTMP needs to specify, but not limited to, the following: o Location of the proposed works areas; o Haulage routes; o Construction vehicle access arrangements; o Proposed construction hours; o Estimated number of construction vehicle movements; o Construction program; o Consultation strategy for liaison with surrounding stakeholders; o Any potential impacts to general traffic, cyclists, pedestrians and bus services within the vicinity of the site from construction vehicles during the construction of the proposed works; o Cumulative construction impacts of projects including Sydney Metro Northwest and the Epping to Chatswood Temporary Transport Plan; o 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; and o The Applicant shall provide the builder's direct contact number to the Transport Management Centre and Sydney Coordination Office within Transport for NSW to resolve issues relating to traffic, freight, servicing and pedestrian access during construction in real time. The Applicant is responsible for ensuring the builder's direct contact number is current during any stage of construction. • Submit a copy of the final plan to the Coordinator General, Sydney Coordination Office for endorsement, prior to the commencement of any work.	Noted, subject to TDG inputs as set out above and in response to matters raised by TfNSW.

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RMS	
Roads and Maritime has reviewed the submitted application and raises no objections to the proposed development subject to the following conditions being included in any determination issued by the department:	Noted.
1. The Sydney Coordination Office has been established to monitor and coordinate traffic and transport issues in the Macquarie Park Precinct. Several construction projects, including the Sydney Metro North West Project are likely to occur at the same time as this development within the Macquarie Park Precinct.	Noted, and as set out above in response to TfNSW comments of the same nature and type.
The cumulative increase in construction vehicle movements from these projects could have the potential to impact on general traffic and bus operations within the Macquarie Park Precinct, as well as the safety of pedestrians and cyclists particularly during commuter peak periods.	As above.
Therefore the applicant is requested to consult with Sydney Coordination Office to coordinate traffic and transport impacts within the wider Macquarie Park Precinct with respect to a Construction Traffic Management Plan detailing construction vehicle routes, number of trucks, hours of operation, access arrangements and traffic control should be submitted to Council for approval prior to the issue of a Construction Certificate.	This duplicates requirements as generally set out in the TfNSW requirements / requested conditions. Noted and agreed.
EPA	
General Comments	
The EPA anticipates potential water quality impacts on Mars Creek can be avoided by implementing appropriate erosion and sediment controls and adopting water sensitive urban design principles during the project demolition/construction and operational phases respectively.	Sediment and erosion control measures are proposed to be employed during the demolition / construction phase of the development. Stormwater management during both construction and operation has been provided with the DA documentation. In terms of WSUD, the City of Ryde has adopted a stormwater management policy that incorporates "best practice" principles of Water Sensitive Urban Design. The project will include use of rainwater & on-site detention storage tanks and filtration cartridges that will reduce pollutants to meet Council's reduction targets.
The EPA notes the proximity of the aged care facility located off Balaclava Road (between University Avenue and Epping Road) and anticipates potentially significant noise impacts during demolition, site preparation, bulk earthworks, construction and construction-related activities.	Noted – see further below.
The EPA has identified the following site specific concerns: (a) the need for a detailed assessment of potential site contamination, including information about groundwater and a detailed assessment of the footprint and surrounds of existing buildings following their demolition; (b) construction phase noise and vibration impacts (including recommended standard construction hours and intra-day respite periods for highly intrusive noise	(a) See further below. (b) Noted. (c) Noted. (d) Noted. (e) Noted – although this appears to be a template response applied generically to school projects with neighbours in closer proximity than that of the prevailing scenario

generating work) on noise sensitive receivers such as surrounding residences; (c) construction phase dust control and management, (d) construction phase erosion and sediment control and management; (e) operational noise impacts on noise sensitive receivers (especially surrounding residences on adjoining and adjacent holdings) arising from operational activities such as public address/school bell systems, community use of school facilities, waste collection services and mechanical services (especially air conditioning plant); (f) the need to assess feasible and reasonable noise mitigation and management measures (including time restrictions on the use of the facilities proposed to be available for community use) to minimise operational noise impacts on surrounding residences; (g) practical opportunities to implement water sensitive urban design principles, including stormwater re-use; and (h) practical opportunities to minimise consumption of energy generated from non-renewable sources and to implement effective energy efficiency measures.	of existing and long-running university use of the site. (f) As above, the proposed use by MQU's Art Faculty will not be a new use and will not generate community use in the manner applied by this generic and template response. This appears more geared towards afterhours use of a school's sports court or hall for noisier community uses in closer proximity to residential uses than may otherwise be anticipated in this MQU context. (g) WSUD response further below. (h) See further below.
Construction Phase – Site Contamination and hazardous materials	
The EPA understands that buildings W6A and W6B are proposed to be stripped out and refurbished and a ' faculty showcase building' erected on the southern side of those buildings in a position currently occupied by earth mounds.	Noted.
The EPA anticipates that given the age of buildings W6A and W6B, asbestos containing materials and lead-based paints are likely to be encountered during demolition/stripping out.	Noted. The HAZMAT report provided sets out the likely or anticipated asbestos containing materials and lead-based paints likely to be encountered.
Section 12 to EIS Appendix J Stage 1 Environmental Site Assessment recommends further investigation following removal of the earth mounds located south of building W6A and prior to further excavation.	Noted.
EIS Appendix K comprises a hazardous materials survey report that provides an "… update to the current Asbestos Registers for buildings W6A and W6B …" as well as determining the presence of other hazardous material in those buildings.	Noted – as set out above.
Clause 79 of the *Protection of the Environment Operations (Waste) Regulation 2014* has required transporters of loads of asbestos waste to provide certain details of the loads to the EPA using the "WasteLocate" system. And, those details – (a) include the source site, date of proposed transport, details of the proposed destination site and the approximate weight of asbestos waste in the load, and (b) must be provided to the EPA before transportation of the load commences. Note: The EPA provides additional guidance material about tracking asbestos waste via the following link to its web-site: http://www.epa.nsw.gov.au/your-environment/waste/tracking-transporting-hazardouswaste/transporting-asbestos-waste-tyres/tracking-asbestos-waste-locate	Noted.

Recommendation The proponent be required prior to commencing work to prepare and implement an appropriate procedure for identifying and dealing with unexpected finds of site contamination, including – (i) asbestos containing materials, and (ii) lead-based paint,	Noted. This is an industry-accepted approach.
Recommendation The proponent be required to satisfy the requirements of the *Protection of the Environment Operations (Waste) Regulation 2014* with particular reference to Part 7 'asbestos wastes'.	Noted – as above.
Recommendation The proponent be required to consult with Safework NSW concerning the handling of any asbestos waste that may be encountered during the course of the project.	Noted – as above.
Construction Phase – Noise and Vibration	
The EPA anticipates that demolition, site preparation (including tree clearing), bulk earthworks, construction and construction-related activities are likely to have significant noise impacts on the nearest noise sensitive receiver, being the Baptist aged care centre (off Balaclava Road).	Noted.
General construction hours The EPA emphasises that demolition, site preparation, bulk earthworks, construction and construction related activities should be undertaken during the recommended standard construction hours.	See below. MQU has previously identified proposed construction hours: (Refer Appendix T - Prelim Construction Management Plan & Page 4 - TfNSW response).
Recommendation The proponent be required to ensure that as far as practicable all demolition, site preparation, bulk earthworks, construction and construction-related activities likely to be audible at any noise sensitive receivers such as surrounding residences are only undertaken during the standard construction hours, being – (a) 7.00 am to 6.00 pm Monday to Friday, (b) 8.00 am to 1.00 pm Saturday, and (c) no work on Sundays or gazetted public holidays.	Mon-Fri: 7am – 7pm Sat: 8am – 4pm Sundays and Public Holidays: No work Given that the impact of construction traffic is very minor, the work is well within the University boundaries, and that the University has previously sought and received approval for the same construction hours on other projects, it is requested that the proposed construction hours remain as proposed by MQU.
Intra-day respite periods The EPA anticipates that those demolition, site preparation, bulk earthworks, construction and construction-related activities generating noise with particularly annoying or intrusive characteristics (such as those identified as particularly annoying in section 4.5 of the Interim Construction Noise Guideline) would be subject to a regime of intra-day respite periods where – (a) they are only undertaken after 8.00 am, (b) they are only undertaken over continuous periods not exceeding 3 hours with at least a 1 hour respite every three hours, and. (c) 'continuous' means any period during which there is less than an uninterrupted 60 minute respite between temporarily halting and recommencing any of the intrusive and annoying work referred to in Interim Construction Noise Guideline section 4.5	Noted – re intra-day respite periods.

The EPA emphasises that intra-day respite periods are not proposed to apply to those demolition, site preparation, bulk earthworks, construction and construction-related activities that do not generate noise with particularly annoying or intrusive characteristics.	Noted, noting the DA's acoustic report recommends respite periods.
Recommendation The proponent be required to schedule intra-day 'respite periods' for construction activities identified in section 4.5 of the Interim Construction Noise Guideline as being particularly annoying to noise sensitive receivers, including surrounding residents.	Noted.
Idling and queuing construction vehicles The EPA is aware from previous major infrastructure projects that community concerns are likely to arise from noise impacts associated with the early arrival and idling of construction vehicles (including concrete agitator trucks) at the development site and in the residential precincts surrounding that site.	Noted.
Recommendation The proponent be required to ensure construction vehicles (including concrete agitator trucks) involved in demolition, site preparation, bulk earthworks, construction and construction-related activities do not arrive at the project site or in surrounding residential precincts outside approved construction hours.	Noted.
Reversing and movement alarms The EPA has identified the noise from 'beeper' type plant movement alarms to be particularly intrusive and is aware of feasible and reasonable alternatives. Transport for NSW (nee Transport Construction Authority), Barangaroo Delivery Authority/Lend Lease and Leighton Contractors (M2 Upgrade project) have undertaken safety risk assessments of alternatives to the traditional 'beeper' alarms. Each determined that adoption of 'quacker' type movement/reversing alarms instead of traditional beepers on all plant and vehicles would not only maintain a safe workplace but also deliver improved outcomes of reduced noise impacts on surrounding residents. Interim Construction Noise Guideline Appendix C provides additional background material on this issue.	Noted and agreed.
Recommendation The proponent be required to consider undertaking a safety risk assessment of site preparation, bulk earth works, construction and construction-related activities to determine whether it is practicable to use audible movement alarms of a type that would minimise the noise impact on surrounding noise sensitive receivers, without compromising safety.	As above.
Construction Phase – Dust Control and Management	
The EPA considers dust control and management to be an important air quality issue during demolition, site preparation, bulk earthworks and subsequent construction.	Noted.
Recommendation The proponent be required to : (a) minimise dust emissions on the site, and (b) prevent dust emissions from the site.	Noted. This has been considered in the preparation of the DA's preliminary Construction Management Plan.

Construction Phase – Sediment Control	
Managing Urban Stormwater Soils and Construction, 4th Edition published by Landcom (the so-called 'Blue Book') provides guidance material for achieving effective sediment control on construction sites. The proponent should implement all such feasible and reasonable measures as may be necessary to prevent water pollution in the course of developing the site.	Noted.
The EPA emphasises the importance of – (a) not commencing demolition, site preparation, bulk earthworks, construction and construction related activities until appropriate and effective sediment controls are in place, and (b) daily inspection of sediment controls which is fundamental to ensuring timely maintenance and repair of those controls.	Noted.
Construction Phase – Waste Control and Management (General)	
The proponent should manage waste in accordance with the waste management hierarchy. The waste hierarchy, established under the *Waste Avoidance and Resource Recovery Act 2001*, is one that ensures that resource management options are considered against the following priorities:	Noted.
Avoidance including action to reduce the amount of waste generated by households, industry and all levels of government **Resource recovery** including reuse, recycling, reprocessing and energy recovery, consistent with the most efficient use of the recovered resources **Disposal** including management of all disposal options in the most environmentally responsible manner.	The reuse of the buildings demonstrates a high level of avoidance and resource recovery leading to reduced levels of disposal.
All wastes generated during the project must be properly assessed, classified and managed in accordance with the EPA's guidelines to ensure proper treatment, transport and disposal at a landfill legally able to accept those wastes. The EPA further anticipates that, without proper site controls and management, mud and waste may be tracked off the site during the course of the project.	
Recommendation The proponent be required to ensure that : (1) all waste generated during the project is assessed, classified and managed in accordance with the "Waste Classification Guidelines Part 1: Classifying Waste" (Department of Environment Climate Change and Water, December 2009); (2) the body of any vehicle or trailer, used to transport waste or excavation spoil from the premises, is covered before leaving the premises to prevent any spill or escape of any dust, waste, or spoil from the vehicle or trailer; and (3) mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorised plant leaving the site, is removed before the vehicle, trailer or motorised plant leaves the premises.	Noted. Noted and addressed as relevant through the preliminary Construction Management Plan and later final version of the same. Noted.
Construction Phase – Waste Control and Management (Concrete and concrete rinse water)	
The EPA anticipates that during the course of the project concrete deliveries and pumping are likely to generate significant volumes of concrete waste and rinse water. The proponent should ensure that concrete waste and rinse water is not disposed of on the project site and instead that –	Noted.

(a) waste concrete is either returned in the agitator trucks to the supplier or directed to a dedicated watertight skip protected from the entry of precipitation, and (b) concrete rinse water is directed to a dedicated watertight skip protected from the entry of precipitation or a suitable water treatment plant. ***Recommendation*** The proponent be required to ensure that concrete waste and rinse water are (a) not disposed of on the development site, and (b) prevented from entering waters, including any natural or artificial watercourse.	Noted. To be managed under the finalised Construction Management Plan.
Operational Phase – Noise and Vibration Impacts	
The EPA emphasises that 'offensive noise' means inter alia, noise that "… interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person …" who is outside the premises from which the noise is emitted. The EPA notes EIS Appendix S Noise and Vibration Impact Assessment appears to evaluate operational noise impacts at on campus rather than off-campus noise sensitive receivers such as the nearby Baptist aged care centre. The EPA understands that – (a) the proposed 'faculty showcase' building is proposed to be erected south of and immediately adjacent to building W6A, and (b) the mechanical ventilation/air-conditioning system serving the 'faculty showcase' building would operate 24 hours per day to provide constant climate control for the preservation of exhibits. ***Background noise measurement*** The EPA emphasises that properly establishing background noise levels in accordance with guidance material in the New South Wales Industrial Noise Policy (INP) is fundamental to a consistent approach to the quantitative assessment of noise impacts of development. The EPA is concerned that monitoring to establish background noise levels was not undertaken consistent with the guidance material provided in the INP. For instance, Figure 2 to EIS Appendix S shows that background noise measurements were erroneously undertaken within the University campus rather than at the most affected off-campus noise sensitive receivers. The EPA anticipates that the background noise measurements would have been affected by on campus noise sources near the monitoring locations shown in Figure 2. The Industrial Noise Policy guidance material also specifies that noise from an existing development should be excluded from background noise measurements. The EPA is unclear whether noise from buildings W6A and W6B was excluded from the background noise measurements. ***Recommendation*** The proponent be required to measure representative background noise levels –	Noted. This is largely because sensitive education and child care uses within the campus are more directly affected by both demolition and construction works. Wood & Grieve Engineers has advised as follows:

(a) at the most affected off-campus noise sensitive receivers, including Baptist aged care centre off Balaclava Road, and in accordance with guidance material in the Industrial Noise Policy, or (b) to adopt a deemed night period background noise level of 30 dBA. ***Mechanical plant and equipment*** Section 6.2 EIS Appendix S predicts noise emissions from the operation of mechanical services, plant and equipment but does not predict the evening and night period noise impacts at the most affected off-campus noise sensitive receivers, especially the nearby Baptist aged care facility. ***Recommendation*** The proponent be required to: (a) provide a comprehensive quantitative assessment of operational noise impacts on surrounding noise sensitive receivers, especially adjoining residences; (b) ensure mechanical plant and equipment installed on the development site does not generate - (i) noise that exceeds 5 dBA above the rating background noise level (day, evening and night) measured at the southern boundary of the development site opposite the Baptist aged care facility, and (ii) noise that exhibits tonal or other annoying characteristics.	With regards to the EPA's comment on the establishment of background noise levels, Wood & Grieve Engineers are of the opinion that the background noise levels were obtained in a conservative manner. Noise monitoring was established in close proximity to the development site to establish worst-case background noise levels during the evening and night periods for the most-affected noise sensitive receivers. The background noise levels measured in these locations on campus are likely to be lower than those measured at the most noise-affected point on the façade of the Baptist Aged Care Centre due to the centre's proximity to Epping Road. Hence, if the operation of mechanical plant satisfies the noise criteria established from lower background noise levels, it will satisfy criteria established from the higher background noise levels measured at the Baptist Aged Care Centre. In regards to the EPA's request for a comprehensive quantitative assessment of operational noise impacts on surrounding noise sensitive receivers, Wood & Grieve Engineers refer to Section 6.2 of the Noise & Vibration Impact Assessment for State Significant Development Application for the quantitative assessment and proposed mitigation measures. Within this section, we have calculated the maximum allowable sound power levels within the mechanical plant rooms required to meet the project specific noise levels established for each of the noise-sensitive receivers. These maximum allowable sound power levels for each of the plantrooms within the development are provided in Table 17 of the updated Noise & Vibration Impact Assessment – dated 2 February 2018.
Operational Phase – Waste Management	
The proponent should manage waste in accordance with the waste management hierarchy. The waste hierarchy, established under the Waste Avoidance and Resource Recovery Act 2001, is one that ensures that resource management options are considered against the following priorities: Avoidance including action to reduce the amount of waste generated by households, industry and all levels of government Resource recovery including reuse, recycling, reprocessing and energy recovery, consistent with the most efficient use of the recovered resources Disposal including management of all disposal options in the most environmentally responsible manner.	Noted.

Recommendation The proponent be required to identify and implement feasible and reasonable opportunities for the reuse and recycling of waste, including food waste.	Noted.
Operational Phase – WSUD and Energy Conservation and Efficiency	
EIS Appendix X comprises an environmentally sustainable development report that identifies potential– (a) water sensitive urban design measures, including – (i) rainwater harvesting and re-use, and (ii) water efficient fixtures; and (b) measures to maximise energy efficiency and minimise energy consumption, including – (i) solar passive design, and (ii) installation of solar photovoltaic energy power system. However, EIS Appendix X does not appear to commit the University to implementing the identified sustainability measures	Noted. Noting the Concept Plan approval stipulates the required ESD measures.
Recommendation The proponent be required to adopt and implement throughout the project all the practicable ecologically sustainable development measures outlined in EIS Appendix X.	Noted – remembering that the Concept Plan approval stipulates the relevant ESD targets or requirements for academic development / buildings on the campus.
Sydney Water	
Building Plan Approval	
The approved plans must be submitted to the Sydney Water Tap in™ online service to determine whether the development will affect any Sydney Water sewer or water main, stormwater drains and/or easement, and if further requirements need to be met. The Sydney Water Tap in™ online self-service replaces our Quick Check Agents as of 30 November 2015. The Tap in™ service provides 24/7 access to a range of services, including: • building plan approvals • connection and disconnection approvals • diagrams • trade waste approvals • pressure information • water meter installations • pressure boosting and pump approvals • changes to an existing service or asset, e.g. relocating or moving an asset. Sydney Water's Tap in™ online service is available at: https://www.sydneywater.com.au/SW/plumbing-building-developing/building/sydney-water-tap-in/index.htm	Noted.
Section 73 Certificate	
A Section 73 Compliance Certificate under the Sydney Water Act 1994 must be obtained from Sydney Water. It is recommended that applicants apply early for the certificate, as there may be water and sewer pipes to be built and this can take some time. This can also impact on other services and building, driveway or landscape design. Application must be made through an authorised Water Servicing Coordinator. For help either visit www.sydneywater.com.au > Plumbing, building and	Noted.

developing > Developing > Land development or telephone 13 20 92.	
City of Ryde Council	
It is considered that the EIS/ DA covers the necessary areas from a strategic planning prospective and therefore, there is no strategic planning objection to the EIS/DA. However, it is Council's request that the Engineering matters having regard to Transport and Accessibility requirements contained in the Secretary's Environmental Requirements as noted in the table next page should be considered prior to any approval is granted:	Noted – as addressed for relevant items below.
The current daily and peak hour vehicle, public transport, pedestrian and bicycle movements and existing traffic and transport facilities provided on the road network located adjacent to the proposed development; Applicant has not addressed the Bicycle and pedestrian Daily and Peak hour movements. All other items addressed and acceptable.	The peak hour bicycle and pedestrian movements are provided within the TDG Letter.
Assessment of the operation of existing and future transport networks, and their ability to accommodate the forecast number of trips to and from the development; 5.1 identifies no change to staff numbers. 5.8 identifies a minor increase. Inconsistency in information. Please clarify.	It is confirmed that there is to be no change to staff or student numbers at the University as part of the MUAPP. However, some staff and students may be moved between buildings on campus as part of the project.
Sustainable travel initiatives for employees, students and visitors that support the achievement of concept plan targets, particularly the provision of bicycle parking, end of trip facilities, green travel plans and wayfinding strategies; A copy of the plan should be provided and the mode targets identified to ensure compliance with the requirements. Does not assist in assessment if it is being updated.	The University Travel Plan 2012-2017 recommends achieving a mode share of 70% public transport and active transport by the year 2032. The MUAPP will provide wide pedestrian walkways to allow staff and students to easily access the public transport and active transport facilities located within the university and the surrounding area. Further, the MUAPP is in line with the Action Plan outlined within Section 10 of the Travel Plan.
Assessment of the impact of additional traffic generated by the proposed development on the existing road network; Report identifies no additional student or staff demand. Increase in GFA is anticipated. Inconsistency in the report identified in item 4. Report should be amended to reflect actual values.	As above.
The daily and peak vehicle movements impact on nearby intersections utilising traffic modelling endorsed by Roads and Maritime Services, with consideration of the cumulative impacts from other approved developments in the vicinity and the need/associated funding for upgrading or road improvement works (if required); Report identifies no additional student or staff demand. Increase in GFA is anticipated. Inconsistency in the report identified in item 4. Report should be amended to reflect actual values.	As above.
Measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and bicycle networks; Subject to the outcomes of the immediate above two items.	Not required given there is no change to staff or student numbers.
Anticipated student and staff numbers and subsequent implications for car and bicycle parking demand on the campus;	As above.

Report identifies no additional student or staff demand. Increase in GFA is anticipated. Inconsistency in the report identified in item 4. Report should be amended to reflect actual values.	
Service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times); Loading bay management plan should be established to provide guidance and restriction.	Given the infrequent use of the loading bay and the simple arrangement of the loading area, it is considered that the loading bay will operate without the need for a Loading Bay Management Plan.
Road and pedestrian safety adjacent to the proposed development and required road safety measures; Detailed drawings should be provided to illustrate the widths.	Scaled plans showing the pedestrian paths are provided within the TDG Letter, as Appendix B.
Traffic and transport impacts during construction, including: • *How these impacts will be mitigated for any associated traffic, pedestrian, cyclists, parking and public transport;* • *The preparation of a draft Construction Management Plan to demonstrate the proposed management of the impact;* • *Any cumulative impacts from construction activities for the Sydney Metro;* • *An assessment of road safety at key intersections and locations subject to heavy vehicle construction traffic movements and high pedestrian activity; and* • *Construction programming detailing significant milestones and events during the construction process.* Inclusion of the following: • Machine operated Street Sweepers to be used to clean local and state roads of spoil. • Roads to be kept in a serviceable state at all times. Council staff to direct site manager accordingly. Rectification works to be undertaken by applicant at no cost to council. • No staff are to park in on-street car parking spaces. all are to park within dedicated off-street parking spaces. • Traffic Control signage should be installed in accordance with TCWS Manual V4 and AS1742.3.	A detailed Construction Pedestrian and Traffic Management Plan is proposed as a Condition, and will be prepared by the appointed contractor closer to construction. It is recommended these inclusions form part of the Condition.

RESPONSE TO OFFICE OF GOVERNMENT ARCHITECT OF NSW LETTER

COMMENTARY	RESPONSE
The following additional information is requested prior to the completion of the approval process: • Include information to show the extent of the existing floor plate and façade to be retained on the architectural drawings. • A co-ordinated set of architectural and landscape drawings to enable a clear understanding of the key elements of the proposal. • Provide drawings and/or a design report that demonstrate the short to medium term landscape and urban design intent at the car park/Building 25WWC interface. Noting the long-term design intent to incorporate the future secondary east-west links as part of Building 25WWC's public domain. • Architectural and landscape drawings that demonstrate accessibility from the southern car park to/from the southern entry of 25WWC. • Photomontages and/or 3D representation of the form, massing and articulation of the 25WWB / 25WWC atrium spaces (views from the east and west). • The materials and finishes drawing must cover all the significant materials. • Documentation outlining the proposed sustainability benefits, initiatives and opportunities associated with the atrium spaces.	BNMH (in conjunction with Group GSA and MGAC) has prepared a detailed response to all matters raised in the Government Architect NSW letter. See this letter and new and revised plans attached.
Design recommendations are as follows: • Provide an improved strategy for equitable access to the following: - accessible circulation that is visually or spatially associated with the key axial routes connecting major gathering spaces and circulation nodal points. Such that equitable circulation at these key routes is provided. - accessible circulation from Wally's Walk to the lift lobby/concierge area of 25WWB that is equitable in terms of weather protection. - accessibility is required for direct movement from the southern car park arrival point to the covered colonnade 'break out' space. • Demonstrate accessibility from the accessible car parking locations to the 25WWC southern entry • The 25WWC southern perimeter/car park interface requires an improved urban design /landscape strategy to contribute to the immediate public domain, through connectivity and improved amenity. Noting this strategy is assumed to be a short to medium term response. The proposal provides for the long term aims for the campus public domain. Specifically connecting the 25WWC southern entry to a secondary pedestrianised east-west link. • The semi enclosed atrium spaces between 25WWB and 25WWC are significant spatial and compositional elements of the design. The proposal would benefit from maximising the opportunities afforded these spaces, to create continuing value for the public domain of the campus. Refer to the	As above, BNMH (in conjunction with Group GSA and MGAC) has prepared a detailed response to all matters raised in the Government Architect NSW letter. See this letter and new and revised plans attached.

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review section for expanded commentary on these opportunities. • Provide a strategy that maximises the safety for the general public and the users to the atrium spaces, in the short to medium term. The strategy will mitigate the effect of poor passive surveillance of these spaces to/from the public domain. (Noting that passive surveillance concerns may be alleviated in the longer term by the ambition to include the atrium within a secondary pedestrianised east-west link).	