

Ms Teresa Gizzi
Department of Planning and Environment
GPO BOX 39
SYDNEY NSW 2001

Dear Ms Gizzi

**SSD 8636 – SYDNEY UNIVERSITY ENGINEERING AND TECHNOLOGY PRECINCT –
ENVIRONMENTAL IMPACT STATEMENT (EIS)**

I am writing to you in reply to your invitation to the Environment Protection Authority (EPA) to make a submission concerning the above project EIS.

The EPA requests that this submission be read in conjunction with its letter dated 2 August 2017 in respect of the draft SEARs for the project and its letter dated 25 February 2014 and associated correspondence concerning the Campus Improvement Program.

The EPA emphasises that it does not review or endorse environmental management plans or the like for reasons of maintaining regulatory 'arm's length'. The EPA has not reviewed any environmental management plan forming part of or referred to in the EIS.

The EPA notes with concern that:

- (a) the development site is close to off-campus noise sensitive receiver locations, especially surrounding residences and adjoins the Seymour Theatre complex (for which the University is understood to be trustee);
- (b) demolition of the north tower of the existing Electrical Engineering building is likely to have significant noise impacts on surrounding residences, especially those in Shepherd Street, Boundary Street, Calder Road and Cleveland Street;
- (c) construction of the new building and renovation of the south tower is likely to have significant noise impacts on surrounding residences, especially those in Shepherd Street, Boundary Street, Calder Road and Cleveland Street;
- (d) background noise monitoring outlined in EIS Appendix 012 *Noise and Vibration Assessment* is inconsistent with the guidance material in the New South Wales Industrial Noise Policy;

- (e) EIS Appendix 012 *Noise and Vibration Assessment* appears to be inappropriately focused on noise impacts at on-campus facilities instead of on the impacts at off-campus noise sensitive receiver locations;
- (f) the EIS omits reference to the Radiation Control Act and Regulation and the standards adopted thereunder which prevail over any ARPANSA codes and Australian Standards to the extent of any inconsistency.

The EPA has identified the following site specific concerns based on the project information available on the Department of Planning and Environment major projects web site:

- (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) demolition and construction phase noise and vibration impacts (including recommended standard construction hours and intra-day respite periods for highly intrusive noise generating work) on noise sensitive receivers such as surrounding residences;
- (c) demolition and construction phase dust control and management,
- (d) demolition and construction phase erosion and sediment control and management;
- (e) operational noise impacts on noise sensitive receiver locations (especially surrounding residences and the Seymour Theatre complex) arising from operational activities, including mechanical services (especially HVAC plant and equipment, lift motors and emergency generator operations and testing);
- (f) potential operational use of equipment and substances that may warrant variation of the existing radiation management licence held by Sydney University under the Radiation Control Act and Regulation;
- (g) design, installation and operation of any Underground Petroleum Storage System (UPSS) serving the proposed back-up/emergency generator;
- (h) practical opportunities to implement water sensitive urban design principles, including stormwater re-use; and
- (i) practical opportunities to minimise consumption of energy generated from non-renewable sources and to implement effective energy efficiency measures.

Further details are provided in attachment A.

Should you require clarification of any of the above please contact John Goodwin on 9995 6838.

Yours sincerely



SARAH THOMSON
Unit Head, Metropolitan Infrastructure
NSW Environment Protection Authority

Attachment A

ATTACHMENT A

- ENVIRONMENT PROTECTION AUTHORITY COMMENTS –

SYDNEY UNIVERSITY ENGINEERING AND TECHNOLOGY PRECINCT

1. General

The EPA considers that the project comprises distinct phases of construction and operation and has set out its comments on that basis.

The EPA notes the proximity of surrounding residences which may be adversely affected by noise impacts during demolition, site preparation, construction and operation phases of the project.

2. Construction phase

The EPA anticipates that site establishment, demolition, bulk earthworks, construction and construction-related activities will be undertaken in an environmentally responsible manner with particular emphasis on –

- the further investigation of site contamination following demolition,
- compliance with recommended standard construction hours,
- intra-day respite periods from high noise generating construction activities (including jack hammering, rock breaking, pile boring or driving, saw cutting),
- feasible and reasonable noise and vibration minimisation and mitigation,
- effective dust control and management,
- erosion and sediment control, and
- waste handling and management, particularly concrete waste and rinse water.

2.1 Site contamination (including asbestos containing material)

The EPA anticipates that given the age of the north tower and other structures on the development site, asbestos containing materials are likely to be encountered during demolition.

Recommendation

The proponent be required (prior to commencing any work on the development site) to prepare and implement a procedure for identifying and dealing with unexpected finds of site contamination (including asbestos containing materials and lead-based paint). And, that that procedure includes details of who will be responsible for implementing the unexpected finds procedure and the roles and responsibilities of all parties involved.

2.1.1 asbestos waste

Since late 2015, clause 79 of the Waste Regulation has required transporters of loads of asbestos waste to provide certain details of the loads to the EPA using the “WasteLocate” system. These details include details of the source site, date of proposed transport, details of the proposed destination site

and the approximate weight of asbestos waste in the load. The information must be provided to the EPA before transportation of the load commences.

WasteLocate is an online tool that allows the EPA to track the transport of asbestos waste. Transporters are required to use WasteLocate to report the movement of more than 100 kilograms of asbestos waste or more than 10 square metres of asbestos sheeting within NSW. The details can be reported on WasteLocate by using an app on a mobile phone or tablet or by using a computer.

Recommendations

1. 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'.

Note: The EPA provides additional guidance material at its web-site

<http://www.environment.nsw.gov.au/waste/asbestos/index.htm>.

2. 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.

2.1.2 site contamination

The EPA understands that an accredited site auditor may have been engaged for the purposes of the project.

The EPA notes that –

- (a) until existing structures, infrastructure and utilities are demolished and removed from the site, a detailed assessment of the nature and extent of soil and groundwater contamination of the development site is impracticable, and
- (b) soil sample collection from nine boreholes over a site area of for 7,500 square metres is less than the minimum regime (i.e. 17 to 19 sampling sites) recommended in the EPA's Sampling Design Guidelines.

EIS Appendix 010.1 *Detailed Site Investigation* recommends amongst other things that -

- (a) a hazardous material survey be undertaken prior to demolition of existing structures and infrastructure; and
- (b) additional site assessment be undertaken following demolition and relocation of existing structures and utilities, including the hazardous goods store.

The EPA expects that, following completion of additional soil and groundwater investigation, the *Remediation Action Plan* (RAP) reported in EIS Appendix 010.2 would be appropriately updated. Further, the updated RAP would be referred to an accredited site auditor for review.

Recommendations

1. The proponent be required, prior to undertaking any construction, to ensure that following demolition of any existing structures, infrastructure and underground utilities, further investigation of soil and groundwater contamination would be undertaken –

- (a) across the development site, particularly within the footprint of those structures, infrastructure and utilities, and
 - (b) within the footprint and immediate environs of the hazardous goods store.
- 2. The proponent be required to ensure that following the additional site investigation, an updated remedial action plan is prepared to address any identified soil or groundwater contamination.
- 3. The proponent be required to ensure that additional site investigation and updating of the remedial action plan to address the contamination is undertaken consistent with the guidance provided in the –
 - NSW EPA Sampling Design Guidelines,
 - Guidelines for the NSW Site Auditor Scheme (3rd edition) 2017,
 - Guidelines for Consultants Reporting on Contaminated Sites, 2011, and
 - The National Environment Protection (assessment of contamination) Measures 2013 as amended.
- 4. The proponent be required to engage a site auditor accredited under the *Contaminated Land Management Act 1997* (CLM Act) to review the adequacy of the site investigations, unexpected finds protocol, and any remedial action plan.
- 5. The proponent be required to ensure that the recommendations of the Remedial Action Plan (as reviewed by the accredited site auditor) are implemented.
- 6. The proponent be required to:
 - (a) prepare an Asbestos Works Management Plan (AWMP) that includes stringent requirements for controlling dust emissions in the development site so as not to affect the adjoining land;
 - (b) ensure the AWMP is reviewed by and considered appropriate by the accredited site auditor;
 - (c) provide a site audit statement (SAS) and accompanying site audit report (SAR) prepared following completion of remediation and validation, certifying suitability of the development site for the proposed use prior to undertaking any construction;
 - (d) ensure that any contamination identified as meeting the trigger in the EPA '*Guidelines for the Duty to Report Contamination*') is notified in accordance with requirements of section 60 of the Contaminated Land Management Act';
 - (e) ensure the proposed development does not result in a change of risk in relation to any pre-existing contamination on the site so as to result in significant contamination; and
 - (f) the processes outlined in *State Environmental Planning Policy 55 - Remediation of Land (SEPP55)* be followed, to assess the suitability of the land and any remediation required in relation to the proposed use.

The EPA recommends use of “*certified consultants*” and requires all reports submitted to the EPA to comply with the requirements of the CLM Act to be prepared, or reviewed and approved, by a certified consultant.

2.2 Noise and vibration

The EPA anticipates that demolition, site preparation, bulk earthworks, construction and construction-related activities are likely to have significant noise and vibration impacts on surrounding residences and the Seymour Theatre complex.

2.2.1 general construction hours

EIS section 5.15 proposes demolition, construction and construction-related activities between the hours of 7.00 and 3.00 pm Saturdays.

The EPA emphasises that the proponent is a ‘public authority’ within the meaning of the *Protection of the Environment Administration Act 1991*. Further, the Environment Protection Authority has general responsibility under that Act for amongst other things:

- (a) ensuring that the best practicable measures are taken for environment protection in accordance with the environment protection legislation and other legislation, and
- (b) coordinating the activities of all public authorities in respect of those measures.

Table 1 to the EPA’s Interim Construction Noise Guideline clearly identifies the best practicable measures in respect of the recommended standard hours of construction (in the absence of strong justification for alternative hours). Accordingly, the EPA anticipates that demolition, site preparation, bulk earthworks, construction and construction-related activities should be undertaken during the recommended standard construction hours.

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.

2.2.2 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.

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.

Recommendation

The proponent be required to schedule intra-day 'respite periods' for demolition and construction activities identified in section 4.5 of the Interim Construction Noise Guideline as being particularly annoying to noise sensitive receivers, including surrounding residents.

2.2.3 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.

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.

2.2.4 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, 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.

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.

2.3 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.

Recommendation

The proponent be required to:

- (a) minimise dust emissions on the site, and
- (b) prevent dust emissions from the site.

2.4 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.

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.

2.5 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:

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.

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.

2.6 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 –

- (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.

3. Operational phase

The EPA considers that environmental impacts that arise once the development is operational should be able to be largely averted by responsible environmental management practices, particularly with regard to:

- (a) feasible and reasonable noise mitigation measures;
- (b) waste management in accordance with the waste management hierarchy;
- (c) water sensitive urban design; and
- (d) energy conservation and efficiency.

3.1 Noise and vibration impacts

The New South Wales Industrial Noise Policy (INP) provides guidance concerning best practicable measures for assessing and reporting on noise impacts of projects. Chapter 3 and Appendix B to the INP provide guidance concerning best practicable measures for establishing background noise levels using the long method, including that-

- (a) background noise monitoring should be undertaken at the most or potentially most affected noise-sensitive locations (i.e. off-campus locations), and
- (b) at least a 'week's worth' of valid monitoring data is required to establish background noise levels, and
- (c) noise levels measured during rain and during winds having a velocity of greater than 5 metres per second (i.e. 18 kilometres per hour) should be excluded when deriving background levels.

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 with concern that EIS Appendix 012 *Noise and Vibration Assessment* appears to inappropriately evaluate noise impacts at on-campus facilities instead of focusing on the impacts at off-campus noise sensitive receiver locations.

Background noise measurement

The EPA emphasises that properly establishing background noise levels in accordance with guidance material in the INP is fundamental to a consistent approach to the quantitative assessment of noise impacts of development.

INP section 3.1.1 recommends the tow step 'long-term method' is used for determining background noise at the planning and approval stages with the 'short-term method' being used for complaint and compliance assessment purposes.

However, EIS Appendix 012 *Noise and Vibration Assessment* that background noise monitoring was not undertaken in a manner consistent with the guidance provided in the INP.

Recommendation

The proponent be required to undertake background noise monitoring consistent with the guidance material provided in the New South Wales Industrial Noise Policy, including at least a week's worth of valid monitoring data measured at the most affected and likely most affected residences, especially residences in Cleveland, Shepherd and Boundary Streets, and Calder Road.

Mechanical plant and equipment

The Executive Summary to EIS Appendix 012 indicates that the rooftop back-up/emergency generator should be installed in an acoustic enclosure that achieves a rating of 80 dB(A) at 1 metre. And further, proposes other noise mitigation measures in respect of mechanical ventilation plant and equipment.

Recommendation

The proponent be required to:

- (a) provide a comprehensive quantitative assessment of operational noise impacts on surrounding noise sensitive receivers, especially surrounding residences;
- (b) ensure mechanical plant and equipment installed on the development site, including the rooftop emergency back-up generator, does not –
 - (i) emit noise that exceeds 5 dBA above the rating background noise level (day, evening and night) measured at the most affected or likely most affected surrounding residences, and
 - (ii) emit noise that exhibits tonal or other annoying characteristics.

Waste collection services

The EPA notes numerous reports of community concern arising from waste collection services, especially when undertaken during evening and night times.

Recommendation

The proponent be required to ensure waste collection services are not undertaken outside the hours of 7.30 am to 6.00 pm Monday to Friday.

Shepherd Street loading dock

EIS Drawing A-DA-3005 *Shepherd Street Elevation* indicates that the new loading dock entry is proposed opposite residences in Shepherd and Boundary Streets.

Recommendation

The proponent be required ensure delivery vehicle movements are not undertaken outside the hours of 7.30 am to 6.00 pm Monday to Friday.

3.2 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.

Recommendation

The proponent be required to identify and implement feasible and reasonable opportunities for the re-use and recycling of waste, including food waste.

3.3 Radiation control

Table 4 to EIS Appendix 011 includes a preliminary statement regarding the storage and usage of radioactive substances and, incorrectly comments that storage and handling of radioactive substances is dictated by the requirements of ARPANSA with consideration of Australian Standard 2243.4.

The EPA emphasises that whilst ARPANSA-issued codes are written to promote national policies and may be referenced by NSW regulations, the management and use of radioactive substances is regulated under the Radiation Control Act and Radiation Control Regulation.

The EPA notes that the proponent currently holds a Radiation Management Licence under the Radiation Control Act. The proponent is required to comply with all relevant requirements of the Act and Regulation and the conditions of its Radiation Management Licence concerning the use, handling, storage and disposal of radioactive substances for which it is responsible. At the same time, the proponent –

- (a) may need to develop or amend its radiation management plan and source security plan, based on the sum activity of the material being stored or used; and
- (b) must install and maintain appropriate signage is required for work areas, laboratories and storage where radioactive substances are used or stored.

Recommendation

The proponent be required to amend its radiation management plan and source security plan, based on the sum activity of the material being stored or used.

3.4 Underground Petroleum Storage System

Section 4.3 EIS Appendix 012 *Noise and Vibration Assessment* under the heading 'emergency operation indicates that a Caterpillar C13 diesel back-up generator is proposed to be installed on the roof of the new building.

The EPA is unclear whether the back-up generator will be fuelled from an Underground Petroleum Storage System (UPSS) within the meaning of the Protection of the Environment Operations (Underground Petroleum Storage System) Regulation 2014.

The proponent may only use an UPSS in accordance with the requirements of the Protection of the Environment Operations (Underground Petroleum Storage System) Regulation 2014. Any such UPSS must be designed, installed and operated with regard to Guidelines issued by the EPA.

Recommendation

The proponent be required to design, install and operate any underground petroleum storage system in accordance with the requirements of the Guidelines issued by the EPA.

3.5 Water sensitive urban design and energy conservation and efficiency

The EPA acknowledges that EIS Appendix 024 comprises an environmentally sustainable development report that proposes –

- (a) a range of water sensitive urban design measures, including –
 - (i) rainwater harvesting and re-use, and
 - (ii) water efficient fixtures; and
 - (b) a range of measures to maximise energy efficiency and minimise energy consumption, including installation of solar thermal panels for water heating.
-