EF13/5547, DOC 17/311388-01
SSD 7894

Mr David Gibson
Department of Planning and Environment
GPO BOX 39
SYDNEY NSW 2001

Dear Mr Gibson

SSD 7894 – SYDNEY UNIVERSITY CHAU CHAK WING MUSEUM – ENVIRONMENTAL IMPACT STATEMENT (EIS)

I am writing to you in reply to your invitation to the EPA to provide a submission in respect of the project EIS.

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

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

(a) handling, transport and disposal of any asbestos waste encountered during site preparation bulk excavation and construction;

(b) demolition, site preparation, bulk earthworks, construction and construction-related noise 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;

(d) demolition, site preparation, bulk earthworks and construction phase dust control and management;

(e) demolition, site preparation, bulk earthworks and construction phase runoff control and management;

(f) operational noise management; and

(g) the need to identify and implement practicable options for water sensitive urban design, and energy conservation and efficiency.

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The EPA expands on its concerns in Attachment A to this letter.

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

18/7/2017

JACINTA HANEMANN
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Attachment A

ATTACHMENT A

- ENVIRONMENT PROTECTION AUTHORITY COMMENTS –

SYDNEY UNIVERSITY CHAU CHAK WING MUSEUM

1. General

The EPA considers that the project comprises distinct phases of construction (including demolition) 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 the demolition, site preparation, construction and operation phases of the project.

2. Construction phase

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

- the site contamination unexpected finds protocol and waste classification in accord with EPA Guidelines,
- 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

EIS Appendix 17 Detailed Site Investigation (DSI) reviewed a 2013 preliminary site investigation report for the entire campus with 2 other reports which were supplemented by a surface inspection. The DSI Report indicates that –

- part of the development site has been used as tennis courts since the 1930s,
- the development site has been filled, with asbestos in soil/fill as a chemical of potential concern (Appendix F, section 2),
- previous investigation did not encounter any asbestos containing material,
- the proposed development includes 4 basement levels necessitating removal of fill and natural materials from the development site,
- the contaminant concentrations in fill are well below the site criteria, and
- the development site is suitable for the proposed use subject to the preparation and implementation of an unexpected finds protocol for contamination not encountered during the preliminary site investigation.

However, the EPA notes with concern the following data quality and sampling methodology issues –

- page 17 of the DSI Report confirms that the site assessment 'was not strictly completed in accordance with SEPP55' and thus does not meet the EIS requirement to assess the site suitability in relation to SEPP55 (EIS p7)',

- section 3.1 of the DSI Report describes the area of the development site area as 0.28 hectares however section 6.3 reports the site area as 2.8 hectares with such a discrepancy thwarting a proper assessment of whether the sampling density is adequate,

- section 4.3 of the DSI Report notes that preliminary in-situ waste classification was undertaken and no building materials were reported (Appendix 17, section 9) however the borehole investigation methodology used is not the preferred methodology for identifying the presence of asbestos in fill materials,

- DSI Report sections 6.2 and 12 confirm respectively that no Quality Assurance samples were collected and "... no comment can be made regarding the field QA" however the quality of the data was not assessed and data quality that does not meet the minimum data quality requirements of the assessment should not have been reported,

- Table C1_Summary of Results to the DSI Report indicates that combined statistical analysis was undertaken on fill and natural soils however fill and natural soils should be considered to be separate populations of data and thus are not appropriate for combined statistical analysis,

- the DSI is unclear whether the 'organic odour' referred to in Borehole 'Log #10' is an organic contaminant (such as hydrocarbon, volatile organic compound) odour or another odour, and

- previous investigations did not include required ground water sampling and analysis.

Recommendation

The proponent be required to revise the Detailed Site Investigation Report to –

(a) verify area of the development site, and

(b) include additional sampling data which meets the relevant data quality objectives.

Recommendation

The proponent be required to ensure that prior to any bulk excavation work –

(a) a delineation assessment is undertaken to better assign an appropriate waste classification to the material prior to any bulk excavation work, including test pit sample points in order to enable the visual identification of asbestos containing materials in fill, and

(b) if the delineation assessment referred to in paragraph (a) above identifies asbestos containing materials, appropriate contingency measures have been implemented.

Recommendation

The proponent be required to ensure that an unexpected finds protocol (including a plan of action in the event that asbestos containing material or other contamination being encountered during site preparation, bulk excavation or other construction activities) is prepared and implemented before any works commence on site.

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'.

Note: The EPA provides additional guidance material at its web-site: http://www.environment.nsw.gov.au/waste/asbestos/index.htm.

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.

Recommendation

The proponent be required to ensure that all excavated material 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);

2.2 noise and vibration

The EPA emphasises the importance of properly managing noise and vibration impacts during demolition, site preparation, bulk earthworks, construction and construction-related activities, especially in regard to high noise impact activities, such as grinding, jack hammering, pile driving, rock breaking and hammering, rock drilling, saw cutting and vibratory rolling.

EIS Appendix 20 appears to have been based on bored piling but is unclear whether percussive or impact piling methods are likely to be used.

EIS Appendix 20 discusses the use of bored piling methods in sections 4.2.2, Table 11, section 4.4.3, section 4.4.5 and Table 14. However, Appendix 20 also discusses impact piling –

- mitigation measures in Section 4.4.3, and
- indicative noise reduction for mitigation measures in Section 4.4.4 and Table 13.

Recommendation

The proponent be required to –

(a) confirm (before site preparation and bulk excavation commences) whether impact piling is proposed to be undertaken, and

(b) if impact piling is proposed, provide a revised noise impact assessment, including proposed additional noise and vibration mitigation and management measures such as intra-day respite periods.

2.2.1 general construction hours

The EPA emphasises that, in general, demolition, site preparation, bulk earthworks, construction and construction-related activities should be undertaken during the recommended standard construction hours.

Section 4.2.1.2 to EIS Appendix 20 proposes construction hours inconsistent with the recommended standard construction hours and omits strong justification for departing from those standard hours. In particular the proponent proposes extending Saturday working hours by starting earlier and finishing later than the standard hours of 8.00 am to 1.00pm.

Recommendation

The proponent be required to ensure that as far as practicable all demolition, site preparation, construction and construction-related work likely to be audible at any noise sensitive receivers, including residences, is undertaken only during the standard construction hours, being -

(a) 7.00 am to 6.00 pm Monday t0 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 those activities are only undertaken –

(a) after 8.00 am, and

(b) over continuous periods not exceeding 3 hours with at least a 1 hour respite every three hours (where '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, 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 those demolition, site preparation, bulk earthworks, construction and construction-related activities identified in section 4.5 of the Interim Construction Noise Guideline as being particularly annoying to noise sensitive receivers (i.e. surrounding residences).

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 (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.

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.

2.4 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.

2.5 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 during the course of developing the site.

The EPA notes that the development site slopes down to Gordons Bay

The EPA emphasises the importance of –

(a) not commencing demolition, bulk excavation, 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.

2.6 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.

2.7 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 EPA anticipates the proposed development may have significant operational noise impacts on nearby residences especially those located north of Parramatta Road, including noise emitted from –

(a) 'night period' (e.g. after 10.00 pm) uses of outdoor terraces/spaces, and

(b) mechanical plant and equipment, especially air conditioning required to maintain climate control parameters essential to collections preservation.

Outdoor spaces

The Industrial Noise Policy identifies the night period (after 10.00 pm) as the period during which potential sleep disturbance at residences warrants detailed impact assessment.

Section 5.2.2 to EIS Appendix 20 suggests that the outdoor spaces will be closed after 10.00 pm and thus the EPA anticipates that only indoor spaces would be used for any events that proposed to extend into the 'night period'. However, Table 19 and the accompanying text assesses noise impact from patrons and background music in the outdoor spaces against a 10.00 pm to midnight 'shoulder' period.

Recommendation

The proponent be required to ensure that terraces and other outdoor areas are not used after 10.00pm nor before 8.00 am.

Recommendation

The proponent be required to ensure that events held at the museum and on associated terraces and other outdoor areas do not generate noise that exhibits tonal, low frequency or other annoying characteristics.

mechanical plant and equipment

The EPA notes that the museum collections require constant climate control.

The EPA further notes that the EIS does not provide detailed noise impact assessment of any of the plant and proposes instead to prepare such an assessment pending detailed design becoming available. Instead, section 5.3.3 to EIS Appendix 20 proposes some generic potential treatment measures.

Recommendation

The proponent be required to:

(a) provide a quantitative assessment of predicted operational noise impacts on surrounding noise sensitive receivers, especially those residences which are likely to be the most affected by noise from mechanical plant and equipment, especially at night;

(b) ensure plant and equipment does not generate noise (measured at the most affected or potentially most affected residence) that exceeds –

  (i) 53 dBA $L_{Aeq(period)}$ for the daytime and evening periods, and

  (ii) 45 dBA $L_{Aeq(15minute)}$ for the night-time period; and

(c) ensure plant and equipment does not generate noise that exhibits tonal, low frequency or other annoying characteristics.

Recommendation

That consideration be given to requiring the proponent –

(a) to undertake noise compliance monitoring and assessment during commissioning of mechanical plant and equipment serving the development; and

(b) to report the results of the compliance assessment monitoring referred to in (a) to confirm that noise levels do not exceed levels predicted in the required noise impact assessment and acceptable noise criteria identified in the NSW Industrial Noise Policy, January 2000.

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 Water sensitive urban design

The EPA anticipates that the proponent would adopt water sensitive urban design principles:

(a) to minimise water consumption for potable and grounds maintenance uses; and

(b) to protect receiving waters from gross pollutants and other pollutants typical of runoff from the proposed land use.

The EPA notes that EIS Appendix 16 comprises an ESD Report which indicates that water conservation and efficiency would be addressed in conformity with the University's Sustainable Framework.

The EPA further notes specific proposals in section 3.3 to reduce consumption of potable water, including a rainwater harvesting and re-use for toilet flushing and other non-potable uses.

3.4 Energy conservation and efficiency

The EPA notes that section 3.2 to EIS Appendix 16 proposes a range of passive and active energy conservation and efficiency measures, including-

- A large thermal mass design, and
- roof top solar cells.
