



Your reference: SSD 5373
Our reference: DOC12/48939
Contact: Sarah Deards, 9995 6816

Ms Megan Fu
Metropolitan and Regional Projects North
Department of Planning and Infrastructure
GPO Box 39
Sydney NSW 2001

Dear Ms Fu

**EPA Submission - Public Exhibition of UNSW Materials Science and Engineering Building EIS
(SSD 5373)**

I refer to your letter dated 19 November 2012 seeking the Environment Protection Authority's (EPA) comments on the Environmental Impact Statement (EIS) for the UNSW Materials Science and Engineering Building (the project).

The EPA has reviewed the EIS and considers that the key environmental issue of concern for the project is noise and vibration impacts. The EPA also has concerns in relation to water quality; groundwater; soil contamination; air quality and the cumulative impacts of other local developments. The EPA has made a number of comments and recommended conditions of approval regarding these issues, which are outlined in Attachment 1.

The EPA notes that a number of the EPA's recommendations regarding the DGRs were not accepted by the Department of Planning and Infrastructure (DP&I). This has resulted in these issues not being adequately addressed in the EIS. The EPA considers that the EIS does not provide a comprehensive assessment of all potential environmental issues associated with the project.

If you wish to discuss any of the issues raised in this letter, please contact Sarah Deards on 9995 6816.

Yours sincerely

A handwritten signature in black ink, appearing to be 'M. Hanemann', followed by the date '21.12.2012'.

MARK HANEMANN
Unit Head, Metropolitan Infrastructure
Environment Protection Authority

Attachment 1: The EPA's comments and recommended conditions of approval for the UNSW Materials Science and Engineering Building (SSD 5373)

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Noise and vibration

The EPA has identified a number of issues with respect to noise and vibration, and recommends that these be addressed prior to issuing the project approval. These issues are outlined below, followed by recommended conditions of approval (CoA):

Construction noise – sensitive receivers

Construction noise impacts have not been assessed for on-campus student accommodation or educational facilities, both of which are in close proximity to the subject site. Whilst the EPA acknowledges that these facilities are operated by UNSW, the Acoustic Report should be amended to include residential receivers on site as well as those off site. Reasonable and feasible mitigation measures can then be implemented to mitigate noise impacts during construction on these sensitive receivers. The EPA recommended that this issue be addressed through the project DGRs in the letter to DP&I dated 27 July 2012, however this issue was not included in the DGRs. The EPA considers that this issue should be addressed prior to any construction beginning on site.

Acoustic Report – technical issues

The EPA has identified a number of technical issues with the Acoustic Report prepared by SLR (Appendix K of the EIS). These issues are detailed below, and the EPA recommends that they be addressed prior to DP&I granting consent to the project:

- Justification regarding the selection of long- and short-term noise monitoring locations has not been adequately provided. The *Industrial Noise Policy* (EPA 2000) requires justification to be provided with respect to the selection of monitoring locations, particularly with regard to proximity to sensitive receivers.
- The *Industrial Noise Policy* (EPA 2000) states that noise loggers should not be located near trees to avoid noise from wind blowing through foliage. It appears from Figure 1 of the Acoustic Report that the long term noise logger was located beneath trees.
- Information regarding the source of weather data has not been provided.
- The Acoustic Report indicates that wind and rain were experienced during the monitoring period, however the report does not indicate whether wind and rain-induced noise on the microphone was less than 10dBA below background, as required by the *Industrial Noise Policy* (EPA 2000).
- Section 5.1.4 of the Acoustic Report states that external noise levels at the Law and Chemistry Buildings once the Materials Science and Engineering Building is operating should not exceed 65 dBA LAeq. Given that the *Industrial Noise Policy* (EPA 2000) requires internal noise levels at educational facilities to be less than 35 dBA and the façade has been predicted to attenuate noise by 20 dBA, the EPA considers that this level should be revised to 55 dBA.
- The EPA recommends that noise monitoring be undertaken once the building is in use to confirm that controlling noise to the evening criterion at adjacent educational areas would result in compliance at the residential accommodation during the night time period, as stated in Section 5.1.6 of the Acoustic Report.
- Noise monitoring undertaken as part of the Acoustic Report was not completed at the most affected residential receivers in Doncaster Avenue. The EPA recommends that future noise monitoring be completed at the most affected residential receiver/s, rather than extrapolated from monitoring completed elsewhere.

Recommended conditions of approval – noise and vibration

Construction hours

The EIS does not contain a commitment by the proponent to undertake construction works during standard construction hours. The EPA therefore recommends a CoA stating the following:

All construction works must be undertaken during standard construction hours, as set out in the Interim Construction Noise Guideline (DECC 2009), as follows:

- Monday to Friday: 7am to 6pm

- Saturday: 8am to 1pm
- No work on Sundays and public holidays

Operational noise levels

The EPA recommends a CoA stating the following:

The building must be designed and constructed to ensure that operational noise levels comply with the requirements of the Industrial Noise Policy (EPA 2000).

This CoA will likely require the implementation of reasonable and feasible noise mitigation measures, including consideration of the siting, procurement and shielding of plant and equipment.

Additional noise monitoring

As recommended in the Acoustic Report, the EPA recommends a CoA stating the following:

Noise monitoring must be completed prior to construction works to confirm predicted noise levels and calculated criteria, in accordance with the Industrial Noise Policy (EPA 2000) and Interim Construction Noise Guideline (DECC 2009).

Construction vibration

The EPA recommends a CoA stating the following:

The project must be constructed with the aim of achieving the acceptable construction vibration values for human exposure set out in the guideline Assessing Vibration: a technical guideline (DEC 2006).

Where vibration values exceed the acceptable vibration dose values in Assessing Vibration: a technical guideline (DEC 2006), feasible and reasonable mitigation measures must be considered.

Where measures cannot be implemented to reduce vibration levels to below the maximum vibration dose values, the proponent must negotiate with the community, in accordance with Assessing Vibration: A technical guideline (DEC 2006),.

Construction noise and vibration management plan

The EPA recommends a CoA stating the following:

The proponent must prepare a Construction Noise and Vibration Management Plan (CNVMP) that includes the following:

- (a) *identification of all work areas and access routes (both private and public),*
- (b) *identification of the specific activities that will be carried out and associated noise sources at the premises and access routes,*
- (c) *identification of all potentially affected sensitive receivers (including on-campus receivers),*
- (d) *the construction noise and vibration objectives identified in accordance with the Interim Construction Noise Guideline (DECC 2009) and Assessing Vibration: a technical guideline (EPA 2000),*
- (e) *assessment of potential noise and vibration from the proposed construction methods (including noise from construction traffic) against the objectives identified in (d),*
- (f) *where the objectives are predicted to be exceeded, an analysis of feasible and reasonable noise mitigation measures that can be implemented to reduce construction noise impacts,*
- (g) *description of management methods and procedures and specific noise and vibration mitigation treatments that will be implemented to control noise and vibration during construction,*
- (h) *procedures for notifying sensitive receivers of construction activities that are likely to affect their noise and vibration amenity,*
- (i) *measures to monitor noise performance and respond to complaints.*

Operational noise and vibration compliance assessment

The EPA recommends a CoA stating the following:

The proponent must undertake a noise and vibration compliance assessment to confirm the predictions of the noise assessment referred to in the Acoustic Report. This assessment must be undertaken within three months of the commencement of operation of the project.

If the assessment indicates an exceedance of the noise and vibration targets identified in the Acoustic Report, the proponent must implement further reasonable and feasible measures (where required) to mitigate these exceedances in consultation with the affected property owners.

The Assessment must be undertaken:

- a) in accordance with the NSW Industrial Noise Policy (EPA 2000);*
- b) at each one of the locations listed in the Acoustic Report and any additional locations identified during any additional monitoring;*
- c) during operations representative of standard operation of the building; and*
- d) occur during each day, evening and night period as defined in the NSW Industrial Noise Policy (EPA 2000) for a minimum of:*
 - 1.5 hours during the day;*
 - 1 hour during the evening; and*
 - 1 hour during the night.*

Construction vibration – sensitive receivers

Construction vibration levels have not been calculated for on-campus accommodation or nearby educational facilities. The Acoustic Report states that vibration may be perceptible for relatively short periods of time when construction activities are adjacent to specific buildings. The EPA recommends a CoA stating the following:

Vibration levels must be calculated for all sensitive receivers (including educational and accommodation facilities on campus) and where levels exceed the limits specified in Assessing Vibration: a technical guideline (DEC 2006), reasonable and feasible mitigation measures must be implemented in accordance with this guideline.

Water quality

The EPA considers that water quality issues can be appropriately managed through employing the following recommended CoAs:

Erosion and sediment control plan

The proponent must develop and implement a comprehensive erosion and sediment control plan in accordance with Managing Urban Stormwater: Soils and Construction - Volume 1, Landcom, 4th ed. 2004

Water quality for discharge from site

All water discharged from the site must comply with section 120 of the Protection of the Environment Operations Act 1997, including any dewatered groundwater.

Groundwater

The EPA recommends the following CoA to ensure groundwater is managed appropriately during construction and operation:

Operational groundwater management

The building must be designed and constructed to ensure minimal groundwater ingress and minimise the need for pumping of any groundwater once the building is in operation.

Groundwater quality assessment

The DGRs require the EIS to demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. Groundwater at this location is relatively close to the surface and the aquifer in this area is very permeable. In addition it is likely that the construction works will intercept groundwater and that the basement of the building will intersect the groundwater table at times once the building is in use.

The EPA therefore recommends a CoA stating the following:

A groundwater quality assessment be undertaken prior to construction to ensure that the site is suitable for the proposed use, and to ensure that the building design is responsive to any groundwater quality issues that may be present. The groundwater quality assessment should also inform options for groundwater disposal and/ or management should dewatering be required during construction and/ or operation.

Contamination

Additional soil contamination assessment

The Geotechnical and Environmental Report in Appendix C of the EIS recommends a further contamination assessment of areas that are to remain exposed following construction of the Materials Science and Engineering Building. The EPA recommends that this assessment be completed in accordance with guidelines made under the *Contaminated Land Management Act 1995*.

Contamination management plan

The Geotechnical and Environmental Report in Appendix C of the EIS recommends that a contamination management plan be prepared for the site. The EPA recommends that preparation of this plan form a CoA for the project, to ensure that any unexpected conditions encountered in the fill material on site can be appropriately managed.

Waste classification

The EPA recommends a CoA stating the following:

All soil to be disposed of offsite must be classified in accordance with the Waste Classification Guidelines Part 1: Classifying Waste (DECCW 2009), and disposed of to an appropriately licensed facility.

Air quality

The EPA recommends a CoA stating the following:

The proponent must prepare and implement an Air Quality Management Plan. The Plan must identify all potential sources of dust on the site, and detail all proposed mitigation measures to minimise dust generation on site and prevent dust from leaving the site.

Cumulative impacts

The project DGRs require consideration of potential cumulative impacts due to other development in the vicinity. The EIS does not address cumulative impacts.

