

Your ref
Our ref 247436
File ref AAcLetter001

ARUP

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For the attention of Paul Altree-Williams

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18 August 2016

Dear Sir/Madam

APHS/PPS Review of EPA Acoustics Comments for SSD Submission

In this letter, we provide responses to acoustics-related concerns raised by the NSW Environmental Protection Authority (EPA) in relation to the SSD submission for the Arthur Phillip High School (APHS) and Parramatta Public School redevelopments.

Issues raised:

Noise and vibration – during demolition, site preparation and construction

The EPA raised concerns about the noise impacts on the surrounding noise sensitive receivers (including residents on Charles Street and soon to be Western Sydney University Parramatta City) during demolition, site preparation and construction. Refer to pages 6 and 7 Section 2.2 of the submission for further detail.

Recommendation

The EPA recommends that standard construction hours and intra-day respite periods for highly intrusive noise generating work be imposed. Refer to pages 6 and 7 Section 2.2 of the submission for further detail.

Arup comments:

Input to construction noise management plan and construction noise monitoring is not included in Arup's scope of work. This work should be undertaken by the eventual Contractor, as they will have an understanding of the equipment to be used during the construction and the construction methodology.

Issues raised:

Operational noise impacts

The EPA raised concerns particularly around:

- *Background noise monitoring was undertaken at 2 locations rather than the most affected noise sensitive receivers;*
- *Background noise monitoring was undertaken during the first term of school rather than during school holidays;*
- *Daily graphs of noise logger measurements were not included; and*
- *Monitoring was likely to have been undertaken at street level whereas the most affected residences are located above street level,*

The noise impacts from the following operational activities would need to be addressed:

- *mechanical plant and equipment;*
- *external hire of school facilities;*
- *public address system (school bell and announcements);*
- *grounds maintenance; and*
- *waste collection.*

Arup comments:

1. The background noise monitoring locations were selected to be representative of noise levels at receivers less exposed to road traffic noise (Location 2), and at receivers more exposed to road traffic noise (Location 1). Based on this, we do not consider it necessary to undertake additional noise logging.
2. It is appropriate that we have undertaken noise logging during the school term, as this is when the schools are/will be operation, and operational noise limits should account for traffic noise levels during the school term. Using school holiday noise levels will likely result in the noise emission criteria being more onerous than is necessary, and potentially result in an underestimate of the sound insulation requirements for the facades of the schools. We also note that the NSW Industrial Noise Policy recommends that noise levels be measured outside of school holidays.
3. Daily noise graphs can be provided separately. They were not included in the multi-discipline engineering report due to the size of the overall report.
4. We generally try to avoid noise logging at residences, as we cannot be sure of the contribution from occupied noise at the residence itself. As a 'worst case' assumption, we can update the noise egress limits at the residential receiver to be based on the measurements at Location 2, considering the receiver is further away from Macquarie St than Location 1.
5. A detailed assessment of mechanical plant and equipment noise emission is being undertaken during the Detailed Design. External hire of the school facilities is being considered during Detailed Design as well. Noise impacts from grounds maintenance and waste collection are not design-related items.

Issues raised:

Amenity

- *Provide detail on noise monitoring locations*
- *Clarification on amenity criteria*
- *Vibration impacts*

Arup comments:

1. Noise monitoring locations, amenity criteria and vibration management requirements have been previously provided in Arup's Noise and Vibration Planning Report, issued 18 March 2016.

Please do not hesitate to contact me if you wish to discuss these items further.

Yours faithfully



Nick Boulter
Associate Principal

cc Louise Jarvis (Grimshaw Architects)
 Louise Browne (Grimshaw Architects)
 Julian Soper (Arup)
 Wesam Hyari (Arup)
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