

20211100.2/0308A/R1/SN

3/08/2023

ADCO Constructions Pty Ltd
Level 2
7-9 West Street
NORTH SYDNEY NSW 2060

Attn: Ben Matarranz

New Liverpool Primary School, Liverpool - Condition B38 Acoustic Review

Acoustic Logic have undertaken an acoustic review of external noise emissions from the mechanical plant and equipment proposed to service the New Liverpool Primary School to be constructed on the corner of Burnside Drive and Lachlan Street, Liverpool.

The review was undertaken utilising the mechanical layouts and fan selections provided by Steensen Varming, Project No. 207148, dated 30.11.2021 and has been reviewed in accordance with the requirements of SSDA Condition B38 'Operational Noise - Design of mechanical plants' which states:

'Operational Noise – Design of mechanical plants

B38. Within 60 days of the date of Modification 2 approval, the Applicant must submit evidence to the Certifier that the acoustic treatments referred to in section 5.1.2 of the NVA and the Addendum Noise Impact Assessment prepared by Acoustic Logic dated 06 April 2023 have been incorporated into the design to ensure that development will not exceed the recommended project noise trigger levels (PNTLs) identified in the NVA.'

Based on the requirements of condition B38, section 5.1.2 of the NVA prepared by Aecom Australia Pty Ltd titled 'SSDA Noise and Vibration Impact Assessment' (Ref: 60624838-RPNV-06_02) dated 10-Jun-2021 details the following acoustic treatments:

5.1.2 Acoustic treatments

The following acoustic treatments would be incorporated into the NLPS design:

- Acoustic louvres to all condenser plant rooms. Acoustic louvres are to have the minimum transmission loss presented in Table 20.
- Internally lined ductwork comprising minimum 2 metres straight duct and one bend to be applied to each condenser unit discharge. Internal lining to be minimum 50 mm thick.
- External plant room walls and roofs, with the exception of acoustic louvred area, to have a minimum R_w 40 acoustic performance

Table 20 Minimum acoustic louvre transmission loss, dB

Louvre location	Indicative depth, mm	Octave Band Centre Frequency, Hz							
		63	125	250	500	1k	2k	4k	8k
Plant room	300	4	7	9	13	14	12	12	8

The acoustic assessment and recommended acoustic treatments nominated within this letter are to be installed to satisfy the Project Noise Trigger Levels (PNTLs) identified within Table 7 of the NVA which is presented below:

Table 7 NPfI project noise trigger levels

Type of receiver		Time of day	Intrusiveness noise level (RBL+5) (L _{Aeq, 15 minutes}), dB(A)	Project amenity level (L _{Aeq, 15 minutes}), dB(A)	Project noise trigger level (L _{Aeq, 15 minutes}), dB(A)
Residential Receivers	NCA1	Day	52	58	52
		Evening	49	48	48
		Night	45	43	43
	NCA2	Day	52	58	52
		Evening	49	48	48
		Night	46	43	43
	NCA3	Day	52	58	52
		Evening	51	48	48
		Night	49	43	43
School Classroom – Internal		Noisiest 1-hour period when in use	-	38 ¹	38 ¹
Hospital Ward – Internal		Noisiest 1-hour	-	33	33
Hospital Ward – External		Noisiest 1-hour	-	48	48
Place of Worship – Internal		When in use	-	38	38
Area specifically reserved for passive recreation		When in use	-	48	48
Active recreation area		When in use	-	53	53
Commercial Premises		When in Use	-	63	63
Industrial Premises		When in use	-	68	68

The following acoustic treatments to the mechanical plant and equipment servicing the New Liverpool Primary School are recommended and should be installed in addition to those already nominated within the mechanical layouts provided by Steensen Varming.

We can confirm that the below acoustic treatments will satisfy the Project Noise Trigger Levels (PNTLs) identified within Table 7 of the NVA and therefore satisfy condition B38.

Recommended Acoustic Treatments to Mechanical Plant and Equipment

Condenser Plant Room:

- Plant room entry door to be minimum 45mm thick solid core construction with full perimeter acoustic seals (Raven RP10 or equal), an automatic bottom drop seal (Raven RP38 or equal) and a meeting stile seal (Raven RP16si or equal).
- The proposed 3m high, solid plant room walls are to be constructed from an imperforate material such as blockwork/masonry or an equal construction and have all gaps acoustically sealed.
- Where intake louvres are required, these should be an acoustic louvre and have an insertion loss equal to the below:

Freq Hz	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
Insertion Loss dB	4	7	9	13	14	12	12	8

Outdoor Condenser Units within Plant Room:

(ARUM080LTE5/ARUM140LTE5/ARUM180LTE5/ARUM300LTE5/ARUM420LTE5)

- Condenser units should be vibration isolated from the base building structure with NRD mounts or equal.
- Condenser unit model no. ARUM420LTE5: These condenser units should have minimum 0.5m of rigid ductwork internally lined with 50mm thick insulation on the discharge side.

All Toilet Exhaust Fans, Outside Air Fans and Exhaust Fans

- Vibration isolate the fan from the base building structure with NRD mounts or equal.

EAF-GF-P1-01/02/03

- Install minimum 0.5m of rigid ductwork internally lined with 25mm thick insulation on the discharge side.

EAF-GF-P2-02

- Install minimum 0.5m of rigid ductwork internally lined with 25mm thick insulation on the discharge side.

EAF-L1-P2-02

- Install minimum 0.5m of rigid ductwork internally lined with 25mm thick insulation on the discharge side.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'S. Nichols'. The signature is written in a cursive, slightly slanted style.

Acoustic Logic Pty Ltd
Shane Nichols