

Western Sydney University, Bankstown

Post Occupation Mechanical Noise Monitoring

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Attention To	Walker Corporation Pty Ltd

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1 INTRODUCTION

This report presents the results of acoustic testing conducted by Acoustic Logic associated with educational facility Western Sydney University located at 74 Rickard Rd, Bankstown. Acoustic testing has been conducted to address the requirements of conditions E5 and E6 of development consent conditions SSD - 9831.

Condition E5 and E6 of SSD – 9831 development consent conditions post occupation read as follows:

Operational Noise limits

- E5** *The Applicant must ensure that noise generated by operation of the development does not exceed the noise limits in Acoustic Services Report dated 12 August 2020 and prepared by Norman Disney & Young, as amended by the requirements of condition B27.*
- E6** *The Applicant must undertake short term noise monitoring in accordance with the Noise Policy for Industry where valid data are collected following the commencement of use of each stage of the development. The monitoring program must be carried out by an appropriately qualified person and a monitoring report must be submitted to the Planning Secretary within two months of commencement of use of each stage of the development to verify that operational noise levels do not exceed the recommended noise levels for mechanical plant identified in Acoustic Services Report dated 12 August 2020 and prepared by Norman Disney & Young as amended by the requirements of condition B27. Should the noise monitoring program identify any exceedances of the recommended noise levels referred to above, the Applicant must implement appropriate noise attenuation measures so that operational noise levels do not exceed the recommended noise levels or provide attenuation measures at the affected noise sensitive receivers.*

Noise emission from mechanical plant to nearby receivers have been assessed with noise emission criteria outlined below for the project site.

2 NOISE EMISSION CRITERIA

We have reviewed the unattended noise monitoring data conducted by Norman Disney & Young shown in Table 1.

Table 1 – Unattended Background Noise Measurement by Norman Disney & Young

Noise Index	Noise Level dB re 20 µPa		
	Daytime 0700 to 1800	Evening 1800 to 2200	Night-time 2200 to 0700
Location A – Rickard Rd			
L _{A90} (RBL)	54	54	41
L _{Aeq}	65	65	60
Location B – Chapel Rd			
L _{A90} (RBL)	54	51	42
L _{Aeq}	64	63	61

The formulated noise emission criteria for nearby receivers are hence summarised below based on the above consent condition requirements:

Table 2 – Mechanical Plant Noise Emission Criteria formulated by Norman Disney & Young

Location	Time	Descriptor	External PTNL [dBA]
Commercial premises/Council Building/Library/Hoyts	When in use	L _{eq} , 15min	63
Passive Recreational (Southern boundary, Paul Keating Park)	When in use	L _{eq} , 15min	55
Residential properties (on Rickard Road)	0700 to 1800	L _{eq} , 15min, day	58
	1800 to 2200	L _{eq} , 15min, evening	55
	2200 to 0700	L _{eq} , 15min, night	46

Location	Time	Descriptor	External PTNL [dBA]
Residential properties (on Chapel Road)*	0700 to 1800	L _{eq} , 15min, day	58
	1800 to 2200	L _{eq} , 15min, evening	53
	2200 to 0700	L _{eq} , 15min, night	47
*Additional monitoring conducted in February-March determined PNTL of 1-2dB(A): Day 58dB(A), Evening 55dB(A), Night 46 dB(A).			

3 ON-SITE MEASUREMENT

3.1 MEASUREMENT PERIOD

Attended acoustic measurements were conducted on Monday 5th June 2023 between 4:00 pm-5:10pm. Each measurement was taken for 15 mins. A detailed location of the measurement is shown in Figure 1.

3.2 MEASUREMENT EQUIPMENT

Attended noise measurements were conducted using a Norsonic 131 Sound Analyser. The analyser was set to fast response and calibrated before and after the measurements using a Norsonic Sound Calibrator type 1251. No significant drift was noted.

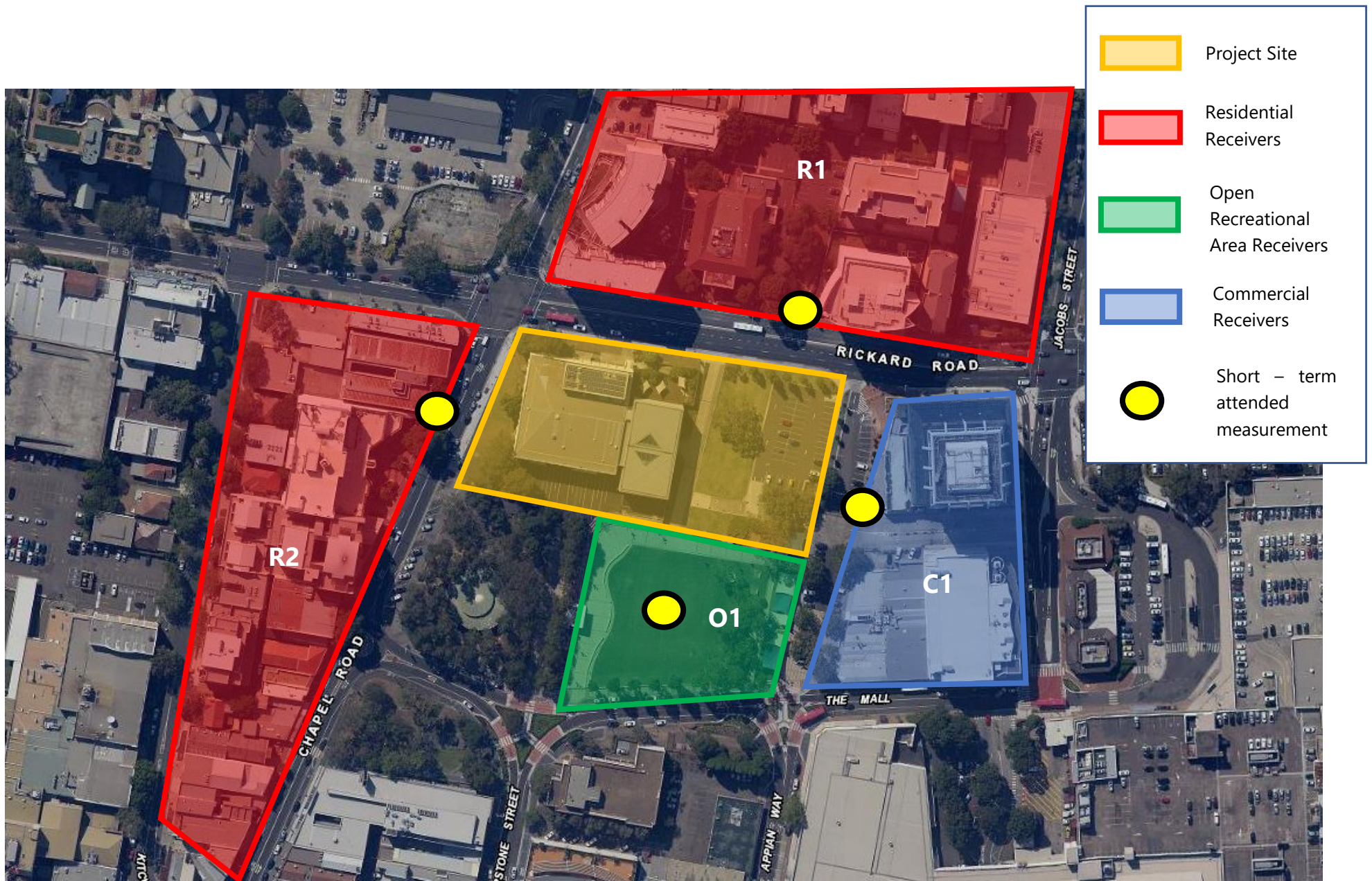


Figure 1 – Site Map and Measurement location

3.3 MEASUREMENT RESULTS FOR ALL MECHANICAL EQUIPMENT NOISE EMISSION

The measurement results of noise from all mechanical equipment are summarised in the following table. It was noted by mechanical contractors *Climatech Pty Ltd* that the real operating hours of the rooftop mechanical plant is from 09:00am to 05:00pm.

Table 3 - Measurement Results to Comply with Condition E5 and E6

Measurement Location	Measurement Time	Measured Noise level	Equipment/Plant in operation	Criteria	Complies
Residential on Rickard Road (R1)	04:00pm – 04:15pm	68 dB $L_{Aeq, 15min}$ (Inaudible due to being masked by traffic noise)	BK.1/B1/RF/KEF.1 BK.1/B1/RF/KEF.2 BK.1/B1/RF/KEF.3 BK.1/B1/RF/KEF.4 BK.1/L18/CT.1 BK.1/L18/CT.2 BK.1/L18/CT.3 BK.1/RF/GEF.1 BK.1/RF/TEF.1 (All operating at designed speed)	58dB $L_{Aeq, 15min}$ Daytime (7:00am - 6:00pm)	Yes, see notes below
Residential on Chapel Road (R2)	04:17pm – 04:33pm	57 dB $L_{Aeq, 15min}$ (Inaudible due to being masked by traffic noise)			Yes, see notes below
Paul Keating Park (O1)	04:35pm – 04:50pm	55 dB $L_{Aeq, 15min}$		55dB $L_{Aeq, 15min}$ (When in use)	Yes
Hoyts Bankstown (C1)	04:55pm – 05:10pm	59 dB $L_{Aeq, 15min}$		63dB $L_{Aeq, 15min}$ (When in use)	Yes

*Maximum noise level measured at the boundary of surrounding receivers.

Smoke exhaust fans (SEF) on the rooftop areas were observed to not in operation.

The background noise on R1 and R2 are controlled by road traffic noise with an L_{max} of 71 dB(A) from passing vehicle on Rickard Road. Thus, the measured L_{Aeq} noise levels at these locations would not be appropriate to compare the noise impact from the operation of the university.

The RBLs at these locations may be more appropriate but will be still quite conservative. When reviewing the results from the attended noise monitoring, the measured RBL levels (56 dB $L_{90, 15min}$ for R1 and 55 dB $L_{90, 15min}$ for R2) were consistently below the L_{Aeq} criteria of 58 dBA.

4 CONCLUSIONS

Mechanical noise associated with educational facilities Western Sydney University located in 74 Rickard Road, Bankstown has been measured at nearby receivers on Monday 5th June 2023 between 4:00 pm - 5:10pm. The measurement results show that the attended noise monitoring associated mechanical noise emission from rooftop plant has no significant noise impact and was not audible at the assessment location.

Acoustic Logic has assessed the L₉₀ RBL for R1 and R2 and the attended noise measurement from the rooftop mechanical plant was below the adopted criteria for daytime.

All measurement at each location complies with the noise emission criteria set up in Section 2 of this report hence satisfy the requirements outlined in condition consents E5 & E6.

Please contact us should you have any further queries.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Ricky Lai', is positioned below the text 'Yours faithfully,'.

Acoustic Logic Pty Ltd
Ricky Lai