TECHNICAL MEMO

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INTERNAL NOISE COMMISSIONING TESTING: PREMIUM HOUSE, WORTHING

1 INTRODUCTION

Anderson Acoustics has been commissioned by OSM Construction to measure environmental noise levels inside a typical flat at the development located at Premium House, Worthing; to complete the discharge of planning condition 2 of planning application ref. NOTICE/0007/23.

2 - Works for implementing the development shall not commence until precise details of the proposed sound reduction and ventilation measures based on the mitigation strategy detailed in the submitted Environmental Noise Survey and Assessment J3652 Issue 3 necessary to protect the proposed noise sensitive development from external commercial noise and to prevent overheating have been submitted to and approved in writing by the local planning authority. The scheme shall achieve the sound reduction levels specified in the Report and shall include full details of proposed secondary glazing, internal wall treatment and an MVHR system. The noise level of any ventilation units when in use should not exceed the levels specified in BS8233:2014 and all duct work should be fitted on anti-vibration mounts. Following approval of the scheme and prior to first occupation of any dwelling unit, a test shall be undertaken and the results submitted to the local planning authority to demonstrate that the attenuation measures proposed in the scheme are effective and protect the residential unit from noise.

The purpose of the noise survey is to demonstrate the resultant internal ambient noise levels within the residential premises with the secondary glazing and MVHR system in operation. The BS 8233 guideline levels are presented below.

1.1 BRITISH STANDARD 8233

British Standard BS 8233:2014: *Sound insulation and noise reduction for buildings* provides guideline values for internal noise levels within a number of building types including residential dwellings.

In general, for steady external noise sources, it is desirable that the internal ambient noise level does not exceed the guideline values in Table 1-1.

Table 1-1: BS 8233 Guidelines

Activity	Location	Daytime	Night-time
Resting	Living room	35 dB $L_{Aeq, 16hour}$	-
Dining	Dining room/area	40 dB $L_{Aeq, 16hour}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq, 16hour}$	30 dB $L_{Aeq, 8hour}$

Note
Daytime assessment period – 07:00 to 23:00 hrs
Night-time assessment period – 23:00 to 07:00 hrs

BS 8233:2014 suggests that proposed development within noisy environments should be designed to ensure that the recommended internal design standards are achieved.

2 NOISE MEASUREMENTS

2.1 METHODOLOGY

To gather the necessary data, a noise monitor was installed within the bedroom of a first-floor level flat overlooking Brighton Road (A259) to further understand the worst case noise levels within the dwelling.

At the time of monitoring, the secondary glazing system was installed and the MVHR system was in operation.

The sound level monitor was installed in a bedroom in Flat C at approximately 17:30 hrs on 7th March and collected at approximately 13:30 hrs on 10th March 2025. The monitor was fixed to a tripod approximately 1.2m above floor level in an unfurnished bedroom.

Reverberation time measurements were completed on 7th March to allow for a correction where the monitoring was completed in an unfurnished room, given that when the room if fully furnished the reverberation time will decrease.

The microphone was fitted with a windshield, powered using external batteries. Continuous L_{Aeq} noise levels were recorded over 2-minute intervals, using the 'A' time weighting.

The sound level meter was calibrated before and after the survey period using a Rion NC-74 calibrator with no calibration drift observed. Full equipment details are provided in Table 2-1.

Table 2-1: Equipment details

Description	Equipment	Serial no.	Date Calibrated	Calibration Expiry	Calibration Certification Number [a]
AA-SLM-11 (Unattended)	NL-52 Sound level meter	00732147	26/01/2024	26/01/2026	TRCT24/1063
	NH-25 Preamplifier	32175			
	UC-59 Microphone	05339			
AA-SLM-32 (Reverberation Time)	SV971A	151376	16/12/2024	16/12/2026	1510508-1
Calibrator	Rion NC-74 calibrator	34304643	16/07/2024	16/07/2025	TCRT24/1543

Notes
[a] Certificates available upon request.

2.2 RESULTS

Table 2-2 details the measured reverberation time at the bedroom of Flat C. A reverberation time correction (based on a normalised 0.5 second value) has been applied to the internal noise levels, which was completed in an unfurnished room.

Table 2-2: Measured Reverberation Time (seconds)

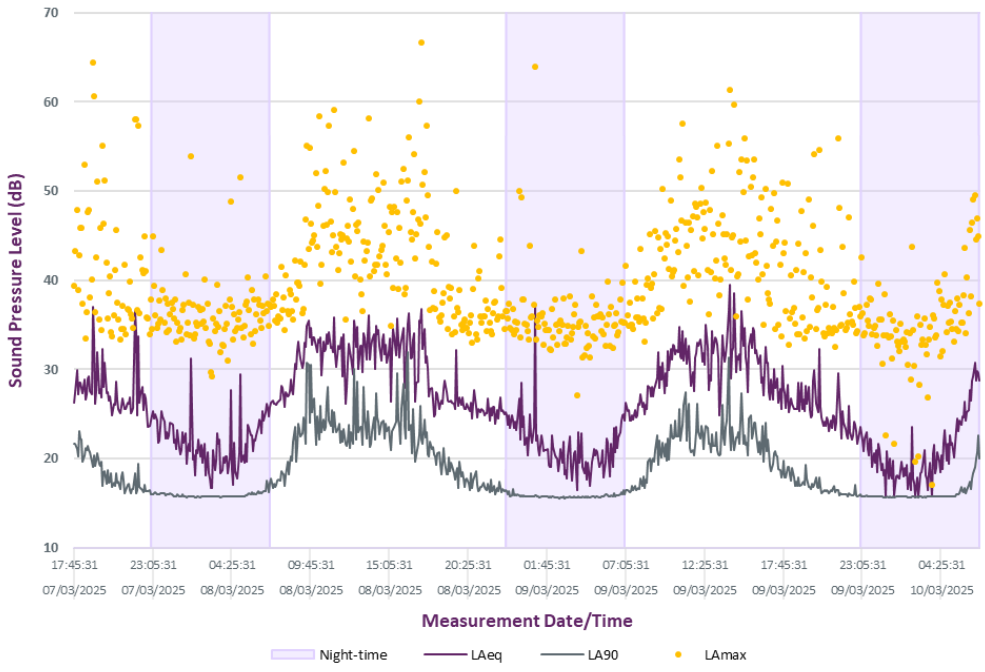
T_{mf}	Octave Band Frequency						
	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
0.8	0.5	0.8	0.8	0.8	0.9	0.7	0.7

The results of the noise survey are presented below in Table 2-3 and are shown in graphical form in Figure 2-1. It should be noted that the development is affected by ongoing construction activity during weekdays. Therefore, these periods have been removed from the assessment periods. Reverberation time corrections have been included.

Table 2-3: Noise results summary

Date	Period	Ambient Noise Level $L_{Aeq,T}$	Night-time L_{AFmax} Level, 10th Highest	Modal Background Noise Level $L_{A90,5min}$ dB
Friday 7th March 2025	17:30 to 23:00	26 dB	39	17
	23:00 to 07:00	21 dB		16
Saturday 8th March 2025	07:00 to 23:00	28 dB	38	24
	23:00 to 07:00	20 dB		16
Sunday 9th March 2025	07:00 to 23:00	27 dB	41	16
	23:00 to 07:00	20 dB		16

Figure 2-1: Graphical Survey Results



The results demonstrate that the BS 8233 criteria is achieved, and therefore Planning Condition 2 can be discharged.