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67 DALE STREET, MILNROW, OL16 3NJ

NOISE INGRESS ASSESSMENT

R2313-REP01-SJW

7 AUGUST 2024

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INTERNAL AMBIENT NOISE - R2313-REP01-SJW

REPORT DETAILS

Project	67 Dale Street, Milnrow, OL16 3NJ
Client	Chris Taylor
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Signed	

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SUMMARY

Red Acoustics Ltd has been commissioned by Chris Taylor to conduct an assessment of internal ambient noise measurements to verify that measured daytime and night-time noise levels meet the internal ambient noise level criteria in accordance with local authority criteria.

The results of the internal ambient noise measurements have demonstrated compliance with performance requirements for the proposed residential rooms overlooking Dale Street.

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1.0 INTRODUCTION

Red Acoustics Ltd has been commissioned by Chris Taylor to conduct Post-completion internal ambient noise measurements to verify that measured daytime and night-time noise levels meet the internal ambient noise level criteria in accordance with local authority criteria.

The measurements were conducted on the following date periods:

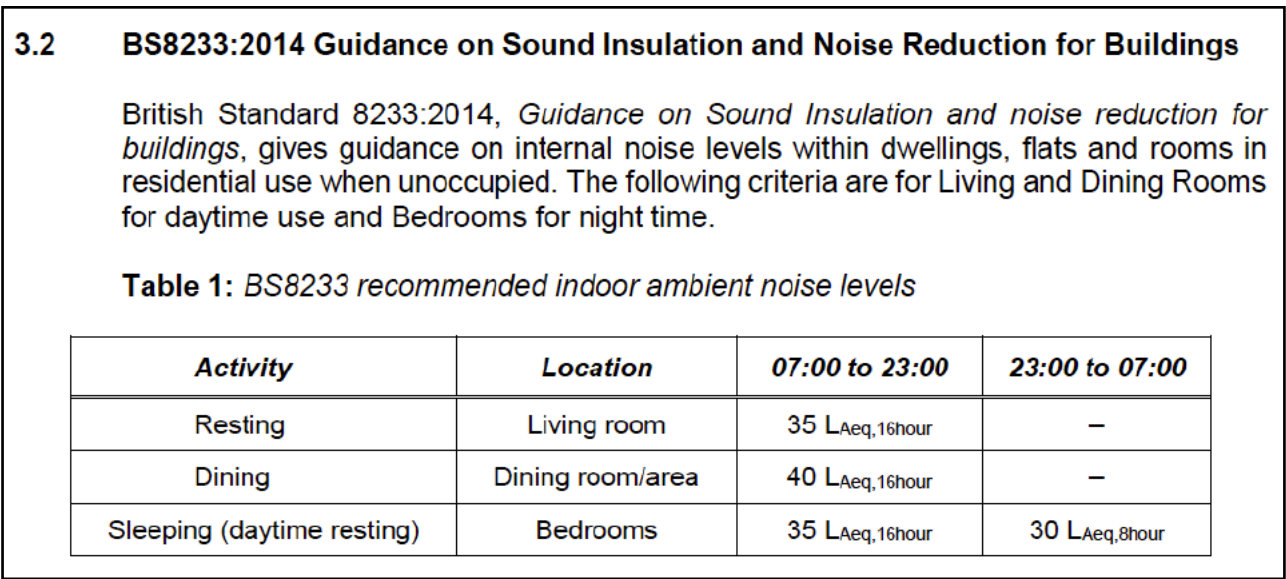
Friday 2 August 2024 - Monday 5 August 2024

A glossary of acoustic terms used in this report is given in Appendix A.

2.0 PERFORMANCE REQUIREMENTS

The target noise ingress criteria are presented in Figure 2.1 below.

Figure 2.1: Performance standards



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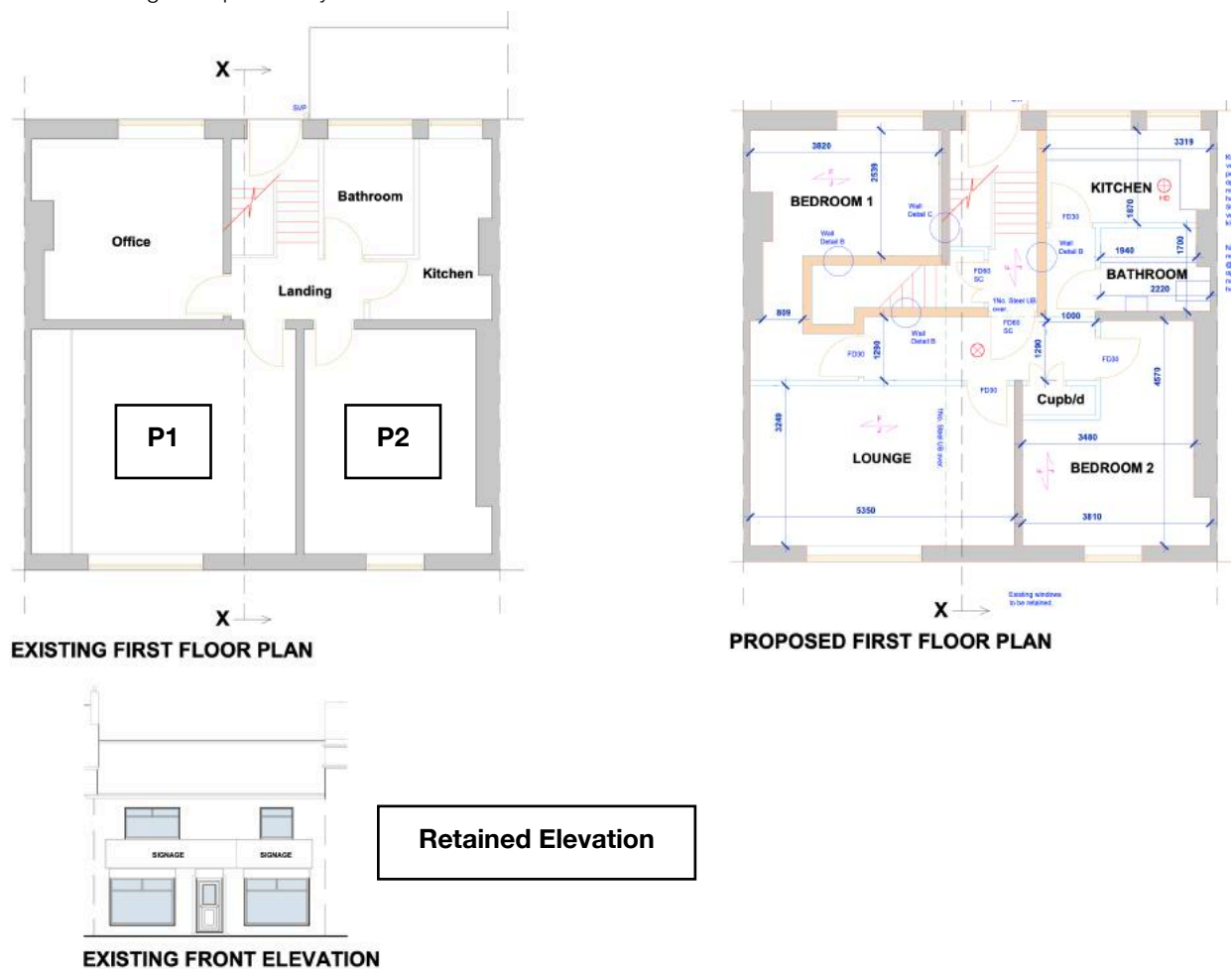
3.0 MEASUREMENT PROCEDURE

Measurements were taken with the sound level meters mounted at the approximate centre of each measured space, and at least 1.5 meters from any reflective surface. During the measurements the windows and doors were closed. The sound level meters were set to measure A-weighted noise levels and spectra over 5 minute intervals and was calibrated before and after the survey period - no drift in sensitivity was observed over the survey period.

Details of all instrumentation used is given in Appendix B.

Figure 3.1 shows the existing and proposed first floor layout and the location of the noise survey meters. A sample of 2 spaces were selected in-line with the requirements. Both spaces are retaining the existing glazing and frames.

Figure 3.1: Existing & Proposed Layout



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Table 3.1 contains details of each internal ambient noise measurement conducted.

Table 3.1: Internal Ambient Noise Measurements

Measurement Number	Date	Equipment Number	Measurement Location	Location
P1	Friday 2 August 2024 - Monday 5 August 2024	RED09	Proposed Lounge Space	First Floor Roadside Elevation
P2	Friday 2 August 2024 - Monday 5 August 2024	RED13	Proposed Bedroom Space	First Floor Roadside Elevation

Location P1 currently used as a craft room has ventilation ducts which penetrate the existing glazing. This resulted in a reduction in acoustic performance of the installed glazing. This will be discussed below.

The reverberation times within each space as measured were in line with the expected room use.

4.0 AMBIENT NOISE MEASUREMENT RESULTS

Noise Ingress

Table 4.1 compares the measured internal ambient noise levels against the target performance requirements within section 2.0.

Table 4.1: Noise Ingress Measurements

Receiver Room	Project Performance Requirement Noise Ingress Criteria		
	Proposed Living Room	Proposed Bedroom	
Test Result (Day) Friday L_{Aeq} , Part Day	34.3dB	24.6dB	35dB
Test Result (Night) Friday - Saturday L_{Aeq} , 8Hr	-	19.2dB	30dB
Test Result (Day) Saturday L_{Aeq} , 16 hr	31.1dB	25.3dB	35dB
Test Result (Night) Saturday - Sunday L_{Aeq} , 8Hr	-	18.9dB	30dB
Test Result (Day) Sunday L_{Aeq} , 16 hr	32.0dB	25.4dB	35dB
Test Result (Night) Sunday - Monday L_{Aeq} , 8Hr	-	19.7dB	30dB
Pass or Fail	Pass	Pass	

In addition the 5th highest maximum noise pass by events in the bedroom space were between 41dB L_{A1Max} and 44dB L_{A1Max} .

Figures 4.1 and 4.2 show the daytime 5 minute broadband logging data for the proposed living room space and the proposed bedroom space respectively.

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Figure 4.1: Noise Ingress Measurements - Flat 6 Living Room 5-Minute Logging Data

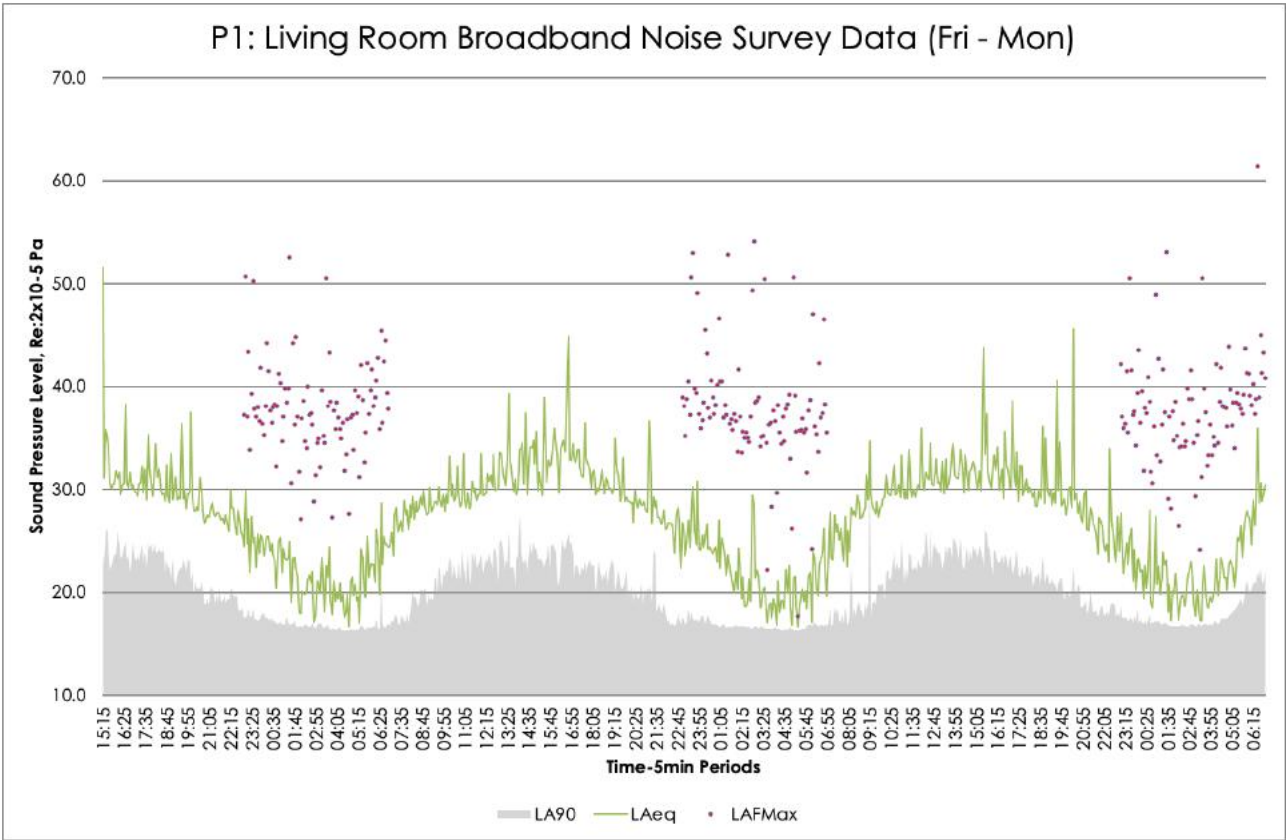
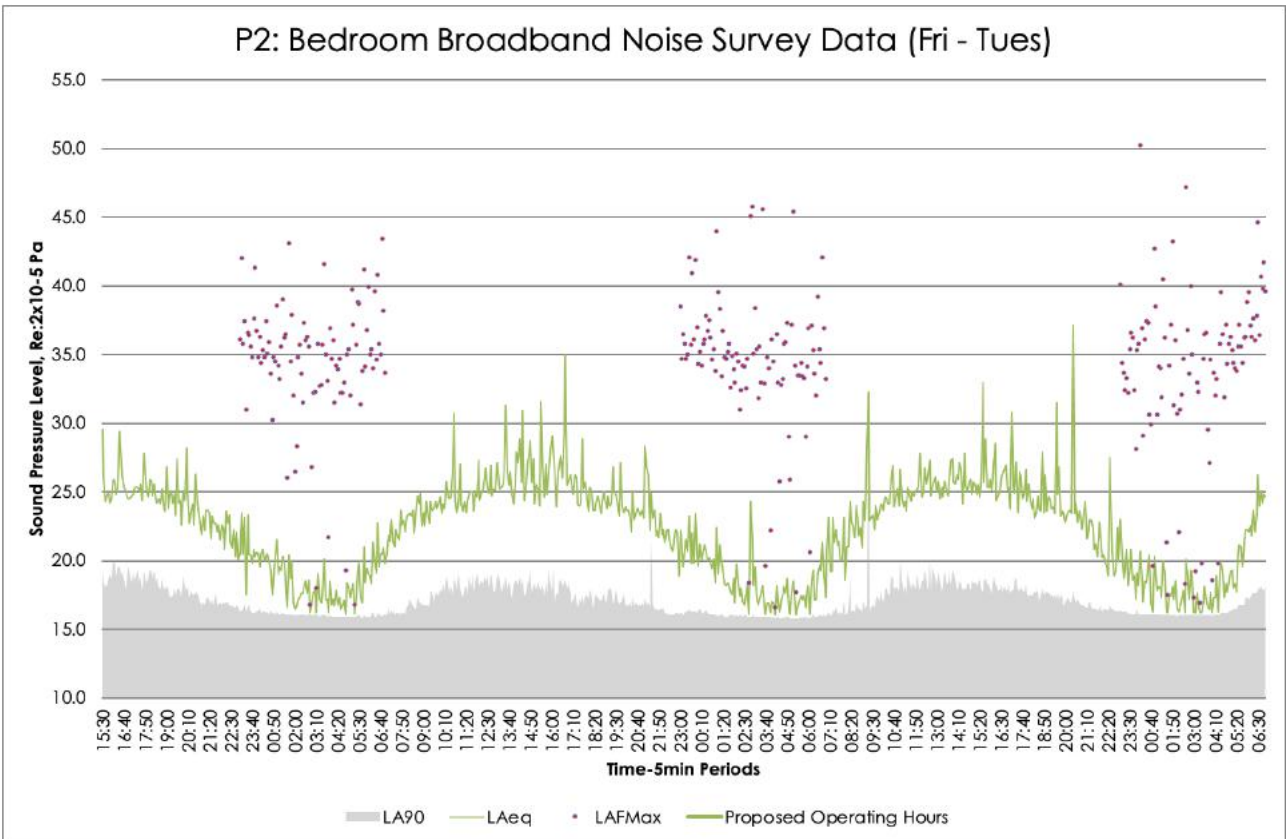


Figure 4.2: Noise Ingress Measurements - Flat 6 Bedroom Room 5-Minute Logging Data



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The results of the internal ambient noise measurements have demonstrated compliance with performance requirements in all rooms. Once all works are completed, noise ingress into the proposed Living Room space is expected to reduce further as the existing extract vent connections are removed and all glazing is made good.

5.0 CONCLUSION

The results of the internal ambient noise measurements have demonstrated compliance with performance requirements in all rooms,

APPENDIX A: GLOSSARY OF ACOUSTIC TERMS

Decibel (dB)

This is the unit used to quantify sound levels. The human ear has an approximately logarithmic response to acoustic pressure over a very large dynamic range (typically 20 micro-Pascals to 100 Pascals). We therefore use a logarithmic scale to describe sound pressure level, intensities and sound power levels. The logarithms used are to base 10. Hence, an increase of 10 dB in sound pressure level is equivalent to an increase by a factor of 10 in acoustic pressure in Pascals. Subjectively, this corresponds to a doubling in the perceived loudness of sound.

Octave & One-Third Octave Bands

The human ear is sensitive to sound over a range of frequencies between approximately 20Hz to 20000Hz (20kHz), and is generally more sensitive to medium and high frequencies than to low frequencies. In order to define the frequency content of a noise, the spectrum is divided into frequency bands, and the sound pressure level is measured in each band. The most commonly used frequency bands are octave bands, in which the mid-frequency of each band is twice that of the band below it. For instance, the octave bands above and below the 500Hz octave band are 1kHz and 250 Hz respectively. For finer analysis, each octave band may be split into three one-third octave bands or in some cases, finer frequency bands (e.g. 1/12 octaves).

APPENDIX B: TEST DETAILS

Location

67 Dale Street, Milnrow, OL16 3NJ

Date of Measurements

Friday 2 August 2024 - Monday 5 August 2024

Personnel

Simon Webster BEng. (Hons) MIOA

Instrumentation

Table B1 below presents the instrumentation used during the surveys.

Methodology

Before and after the measurements the sound level meters were check calibrated to an accuracy of $\pm 0.3\text{dB}$ using their associated Class 1 Calibrators. No drift in the instruments' sensitivities were noted across any of the survey periods.

Calibration Certificates

Copies of all calibration certificates are kept on file by Red Acoustics Ltd and can be supplied if requested.

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Instrumentation Used**Table B1:** List of Instrumentation Used

Kit No	Equipment Description	Type Number	Manufacturer	Serial Number	Date of Last Calibration	Calibration Certificate Number
P1: RED09	Sound Level Meter	Type 140 Type 1	Norsonic	1402793	01-May-24	47694
	Preamplifier	Nor 1209	Norsonic	12152	01-May-24	47693
	Microphone Capsule	Nor 1225	Norsonic	72874	01-May-24	47693
	Sound Calibrator	Type 1251 Class 1	Norsonic	34390	01-May-24	47685
P2: RED13	Sound Level Meter	Type 140 Type 1	Norsonic	1402994	01-May-24	47691
	Preamplifier	Nor 1209	Norsonic	12548	01-May-24	47690
	Microphone Capsule	Nor 1225	Norsonic	91872	01-May-24	47690
	Sound Calibrator	Type 1251 Class 1	Norsonic	34390	01-May-24	47685