



CHALLENGER BUILDING SERVICES LTD
ROCHDALE ROAD EAST, HEYWOOD

INTERNAL AMBIENT NOISE LEVEL COMMISSIONING
R2258-REP02-SJW
18 DECEMBER 2025

REPORT DETAILS

Project	Rochdale Road East, Heywood
Client	Challenger Building Services Ltd 140 Lee Lane Horwich BL6 7AF
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INTERNAL AMBIENT NOISE LEVEL COMMISSIONING - R2258-REP02-SJW

SUMMARY

Red Acoustics Ltd has been commissioned by Challenger Building Services Ltd to undertake internal ambient sound level verification measurements. The purpose of the survey was to confirm that measured daytime and nighttime noise levels comply with the internal ambient noise level criteria defined by Rochdale Borough Council.

The results indicate a marginal exceedance of 1dB above the internal ambient noise level criterion within the most exposed apartment living room space. Compliance with the Rochdale Borough Council performance requirements was achieved in all other tested spaces.

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1.0 INTRODUCTION

Red Acoustics Ltd has been commissioned by Challenger Building Services Ltd to undertake internal ambient sound level verification measurements. The purpose of the survey was to confirm that measured daytime and nighttime noise levels comply with the internal ambient noise level criteria defined by Rochdale Borough Council.

The targets relate to noise ingress from external environmental sound sources. Measurements were undertaken in Apartments 2 and 27 between 10th and 11th December 2025 to assess sound ingress levels with the installed façade mitigation in place.

2.0 PERFORMANCE REQUIREMENTS

In assessing noise ingress, reference is made to target criteria set by Rochdale Borough Council for internal habitable spaces.

The noise design targets for internal habitable spaces are detailed in Table 2.1. The targets are based on the advice provided in BS8233:2014/WHO guidelines as well as accepted Local Authority criteria.

Table 2.1: BS8223:2014 Design Targets

Space	L _{Aeq,16hr} (07:00 - 23:00)	L _{Aeq,8hr} (23:00 - 07:00)	Typical L _{Amax} (23:00 - 07:00)
Living Room	35dB	-	-
Bedroom	-	30dB	≤45dB

As detailed in the BS8233:2014 and WHO (1999) guidance, events exceeding 45dB L_{AFmax} shall occur no more than 10-15 times per night. For the purpose of the commissioning measurements, compliance in this regard has been demonstrated by confirming the 10th highest measured maximum event due to external sources in each bedroom space at night.

3.0 MEASUREMENT PROCEDURE

Measurements were undertaken with the microphone mounted on a tripod positioned at the approximate centre of each bedroom and living space. During the measurement periods, all doors and windows were closed. Owing to the highly reverberant nature of the unfurnished rooms, reverberation time corrections were applied, with the selected living room and bedroom spaces corrected to reverberation times of 0.8 seconds and 0.5 seconds respectively. The sound level meters were configured to measure 5 minute A-weighted sound pressure levels and were calibrated both before and after the survey period. No drift in sensitivity was observed. Details of the instrumentation used are provided in Appendix A.

A sample of 2 bedroom spaces and 2 living room spaces were selected to provide a representative sample of the development. Table 3.1 contains details of each internal ambient noise measurement conducted.

Table 3.1: Internal Ambient Noise Measurements Details

Measurement Position	Date	Equipment Number	Measurement Location
1	10-11 December 2025	RED13	First Floor Apartment 2 Bedroom
2	10-11 December 2025	RED09	First Floor Apartment 2 Living Room
3	10-11 December 2025	RED08	Forth Floor Apartment 37 Bedroom
4	10-11 December 2025	RED10	Forth Floor Apartment 37 Living Room

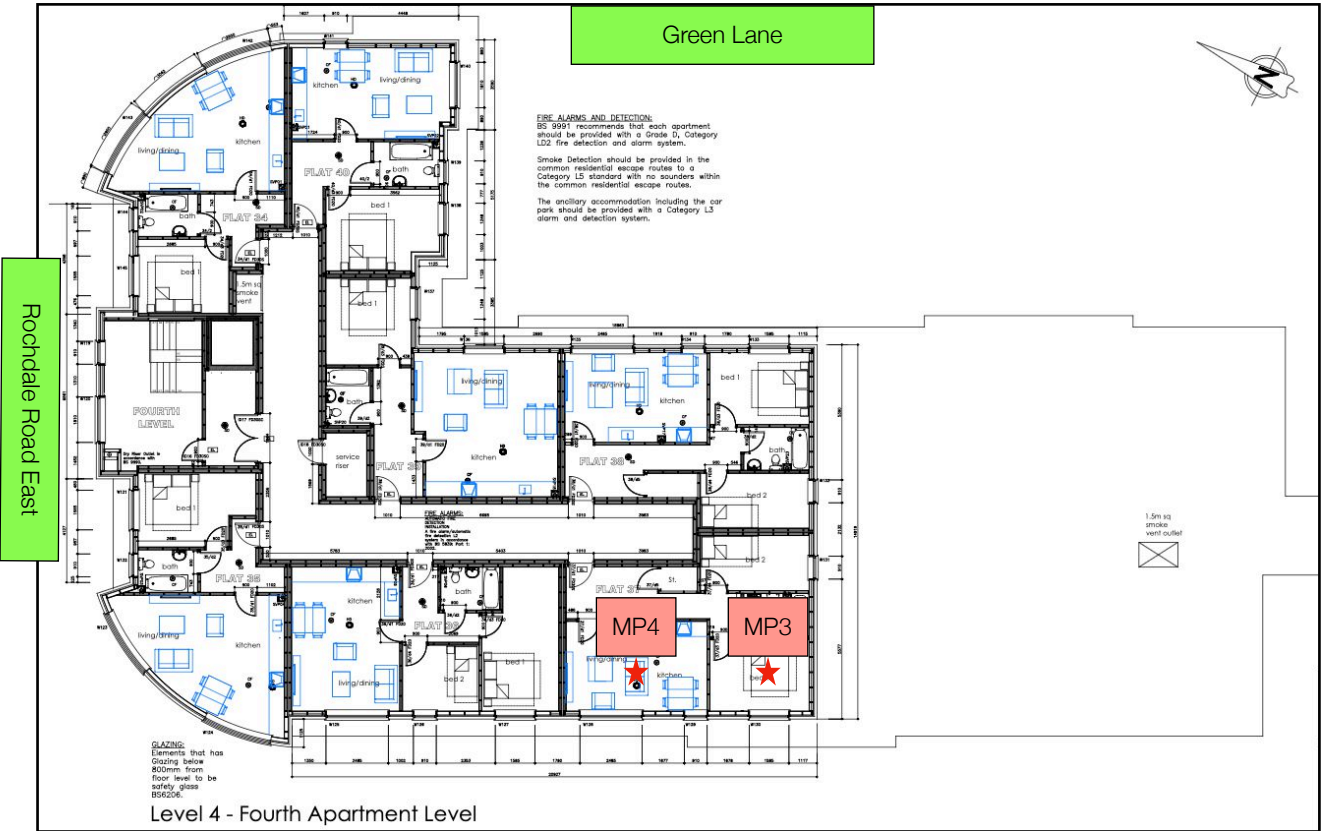
Measurements were undertaken in each unoccupied residential dwelling following practical completion of the dwellings, however some internal works were ongoing at the time of commissioning.

Figures 3.1 and 3.2 below shows the general arrangement plans detailing the measurement locations.

Figure 3.1: Internal Ambient Sound Measurement Positions - 1st Floor



Figure 3.2: Internal Ambient Sound Measurement Positions - 4th Floor



4.0 INDOOR AMBIENT NOISE LEVEL RESULTS

Results for each 16hr / 8hr measurement period are presented in Table 4.1.

Table 4.1: Internal Ambient Noise Measurement Results

Measurement Position	Room Type	Daytime $L_{Aeq,16hour}$ (dBA)	Nighttime $L_{Aeq,8hour}$ (dBA)	Nighttime 15th Highest L_{AFmax} (dBA)	Compliance with Target
1	First Floor Apartment 2 Bedroom	-	27	45	YES
2	First Floor Apartment 2 Living Room	36	-	-	1dB exceedance
3	Forth Floor Apartment 37 Bedroom	-	25	39	YES
4	Forth Floor Apartment 37 Living Room	33	-	-	YES

It should also be noted that the data as measured and presented does include some occasional contamination from internal activity within the building during daytime periods. This would account for the marginal exceedance above the target in Apartment 2 Living Room.

5.0 CONCLUSION

The results indicate a marginal exceedance of 1dB above the internal ambient noise level criterion within the most exposed apartment living room space. Compliance with the Rochdale Borough Council performance requirements was achieved in all other tested spaces.

APPENDIX A: TEST DETAILS

Location

Rochdale Road East, Heywood

Date of Measurements

10-11 December 2025

Personnel

Simon Webster BEng (Hons) MIOA

Instrumentation

Table A1 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.

Instrumentation Used

Table A1: List of Instrumentation Used

Kit No	Equipment Description	Type Number	Serial Number	Date of Last Calibration	Calibration Certificate Number
RED08	Sound Level Meter	XL2	A2A-22062-F0	28 March 2025	UK-25-039
RED09	Sound Level Meter	Type 140 Type 1	1402793	01 May 2024	47694
RED10	Sound Level Meter	Type 118 IEC 60651 Type 1	30560	01 May 2024	47687
RED13	Sound Level Meter	Type 140 Type 1	1402994	01 May 2024	47691
Sound Calibrator		Type 1251 IEC 60942-1997 Class 1	31040	31 October 2025	52541