



INTERNAL NOISE LEVELS VERIFICATION ASSESSMENT

**44-46 YORKSHIRE STREET
ROCHDALE
OL16 1JW**



Report by
S.B. Mellor MA, MIOA, CMIOSH
SBM Safety Solutions Ltd.

Report Date: 18th December 2024
Ref.: E19371. BS8233
Site Visited: 16th and 18th December 2024
Site Visited by: S.B. Mellor
Signed:

A handwritten signature in blue ink, appearing to read 'S.B. Mellor', on a light green background.

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1.0 INTRODUCTION

At the request of Mr. N. Fletcher of Cassel and Fletcher, SBM Safety Solutions Ltd undertook a noise verification assessment in connection with the development of an existing building at 44-46 Yorkshire Street, Rochdale, OL16 1JW. The upper floors of the building have been developed for domestic use and the lower floor retained for commercial use.

Noise monitoring equipment was installed for daytime periods (7am until 11pm) and night time periods (11pm until 7am) to verify that internal levels in unoccupied rooms met the desirable levels from BS8233:2014 reproduced below and as stipulated by Rochdale Borough Council, also reproduced below.

References are included in Appendix 1; Acoustic terminology is explained in Appendix 2 of this report and the author's qualifications and experience are described in Appendix 3

2.0 SITE DESCRIPTION

The façade facing Yorkshire Street sits directly opposite a multi-story car park and the Rochdale Exchange Shopping Centre. There are a variety of other shops and uses adjacent to the shopping centre including, e.g. Greggs, B&M and Marks and Spencer. This is where external noise levels were found to be most significant during the initial noise impact assessment.

To the rear, off Baillie Street, there are bars, pubs and restaurants including a large Wetherspoon's pub (The Regal Moon) at approximately 20m, a Hogarth's pub at approximately 30m (there is also a closer outdoor seating area) and a café (The Petit Bistro) at approximately 15m.

(see Figure 1 below – source Google Earth).

Figure 1



Source – Google Earth

To the observer, there appeared to be a very low volume of vehicles at the rear – access for business use only. Yorkshire Street is pedestrianised. (See subjective impression for more details below).

3.0 ASSESSMENT CRITERIA

3.1 Rochdale Borough Council

Rochdale Borough Council have conditioned as part of the planning approval to develop this site that “verification testing” is performed to confirm that desirable internal levels are met with windows closed and ventilation in place. For this we had proposed to install monitoring equipment in example rooms – bed, living, other habitable room for 24

hours – with the equipment on a tripod located in the centre of the room with windows shut. This methodology was approved by Lisa Barker Environmental Health Operational Manager with Rochdale Borough Council.

Details of the planning conditions are reproduced below:

Planning Condition 8

The development hereby approved shall not be carried out otherwise than in accordance with the recommended glazing and wall ventilation specifications as detailed in the Noise Assessment ref. E19371. BS8233 prepared by SBM Safety Solutions, dated 14.09.22 and the construction specifications detailed on the approved Proposed Floor Plans 2, drawing no. BM/0623/BAILLIE/BR4 Revision A. Notwithstanding the above, no dwelling hereby approved shall be occupied until such time as verification testing has been undertaken in the residential units to demonstrate that the following maximum internal noise levels have been achieved, with the results of the verification testing having been submitted to and approved in writing by the Local Planning Authority:

*o 35 dB(A) Leq (16 hour) in the bedrooms with windows shut and other means of ventilation provided between 7 am and 11pm;
o 30dB(A) Leq 8 hour in the bedrooms with windows shut and other means of ventilation provided between 11pm and 7am;
o 35 dB(A) Leq (16 hour) in the living room/s with windows shut and other means of ventilation provided between 7 am and 11pm;*

o 40dB(A) Leq (16 hour) in other habitable rooms with windows shut and other means of ventilation provided at all times.

Reason: In the interests of safeguarding the living conditions of future residents in accordance with Places for Everyone Joint

Development Plan policy JP-P1, policies DM1 & G9 of the adopted Rochdale Core Strategy and the National Planning Policy

3.2 British Standard 8233:2014 (Guidance on Sound Insulation and Noise Reduction for Buildings)

The latest version of BS.8233 “Guidance on Sound Insulation and Noise Reduction for Buildings”, was published in February 2014. BS 8233:2014 adopts guideline external noise values provided in WHO for external amenity areas such as gardens and patios. The Standard states that it is “desirable” that the external noise does not exceed 50 dB $L_{Aeq,T}$ with an upper guideline value of 55 dB $L_{Aeq,T}$. Where design standards cannot be

achieved for traditional amenity spaces (e.g. gardens and patios) then the 'lowest practical levels' should be achieved.

An extract of the "Design Range" of BS.8233's Table 4 for indoor noise levels (with Notes 4 & 7) appears below and it should also be noted that the assessment period is for the whole of the day (16 hours) or night (8 hours).

Figure 2

Table 4 Indoor ambient noise levels for dwellings

Activity	Location	07:00 to 23:00	23:00 to 07:00
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 4 regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,P}$ depending on the character and number of events per night. Sporadic noise events could require separate values.

NOTE 7 Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved.

"For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable."

4.0 NOISE LEVEL INFORMATION

4.1 Existing Noise Climate

Methodology

The site was visited on 16th December 2024 and SBM Safety Solutions installed noise monitoring instrumentation internally in unoccupied rooms (centre) with windows closed and ventilation open. **Rooms were chosen where external noise is likely to be most impactful, i.e. where external noise levels would be most significant – overlooking Yorkshire Street at the Front and Baillie Street at the rear. Therefore, if the requirements are met in these rooms then levels in all other rooms are also likely to be met.**

Figure 3 – Windows Closed and Vents Opened



The sound level meters used (with “outdoor kit”) plus on-site calibrator can be found in Table 4 below. The meters calibrated correctly before and after the measurements; all instrumentation had been laboratory calibrated within the preceding 2 years.

Table 1

Instrument	Type	Serial No.	Calibration Cert. No.	Date of Due Calibration
Svan 977A	Sound Level Meter	69280	1501866-1	07/03/2026
Svan SV12L	Preamp	110531	1501866-1	07/03/2026
Aco Pacific 7052E	Microphone	61121	1501866-1	07/03/2026
Cirrus 511E	Calibrator	39816	Cirrus 248531	26/04/2026
Svan 977	Sound Level Meter	36870	1502651-1	21/05/2025
Svan SV12L	Preamp	71675	1502651-1	21/05/2025
Aco Pacific 7052E	Microphone	70160	1502651-1	21/05/2025
Svan SV33B	Calibrator	112680	1502651-2	21/05/2025
Svan 977	Sound Level Meter	97425	1504401-1	27/01/2025
Svan SV12L	Preamp	106428	1504401-1	27/01/2025
Aco Pacific 7052E	Microphone	71561	1504401-1	27/01/2025

4.2 Example Rooms - Results

4.2.1 Apartment 12 Living / Dining / Kitchen Space

Figure 4

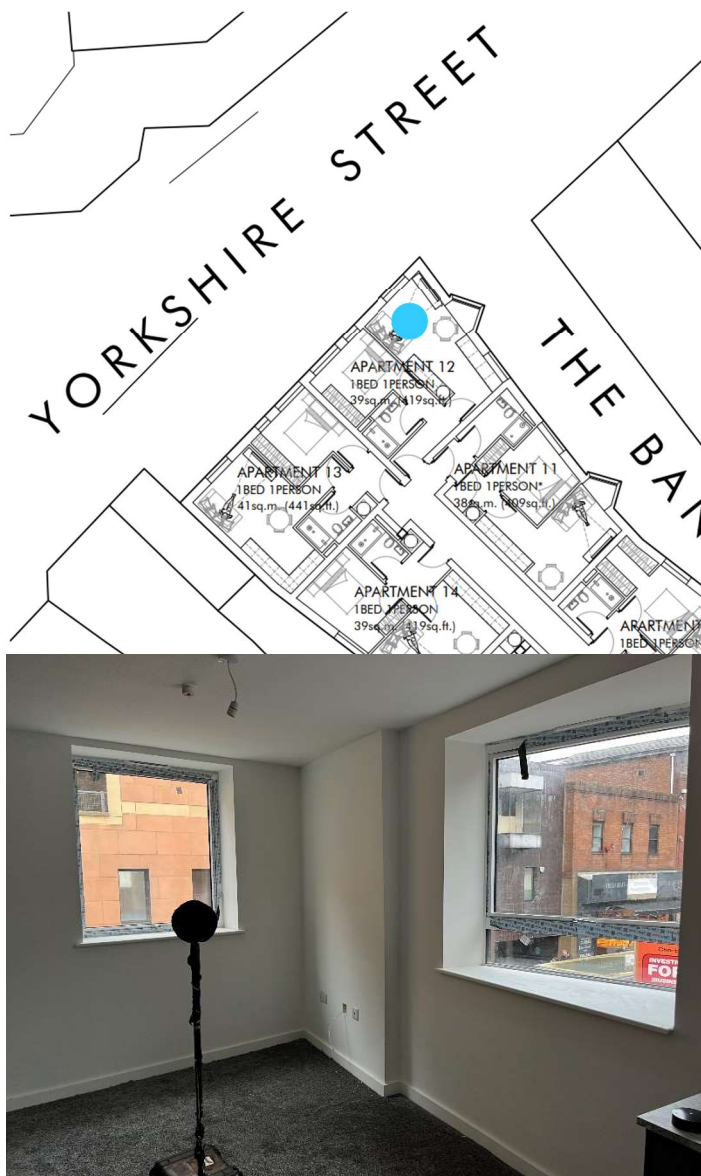


Table 2 – Daytime And Night time Measurement dBA

Day / Start Time	LAeq	LAmx	LAmn	L01	L10	L50	L90	L95
16/12/2024 17:00:00	33.4	53.3	23.4	42.4	35.8	30.6	27.2	26.5
16/12/2024 18:00:00	31.9	56.3	22.0	41.4	31.5	26.9	25.0	24.5
16/12/2024 19:00:00	30.1	60.1	21.4	39.5	29.7	26.3	24.2	23.6
16/12/2024 20:00:00	28.5	51.4	20.1	38.5	28.4	25.5	23.7	23.3
16/12/2024 21:00:00	26.9	46.4	19.5	35.8	28.8	24.5	22.4	21.9
16/12/2024 22:00:00	25.8	46.4	19.0	34.0	27.3	24.0	21.8	21.3
16/12/2024 23:00:00	24.7	44.8	17.7	34.2	25.6	22.4	20.2	19.7
17/12/2024 00:00:00	24.5	49.3	17.0	34.6	24.1	21.6	19.9	19.4
17/12/2024 01:00:00	21.4	44.9	15.2	27.8	22.5	19.8	17.6	17.1
17/12/2024 02:00:00	21.6	49.9	15.4	26.3	22.8	20.7	17.9	17.4
17/12/2024 03:00:00	22.0	46.1	15.7	28.8	23.4	21.0	18.0	17.5
17/12/2024 04:00:00	25.1	51.7	19.5	34.8	24.9	22.9	21.3	20.9
17/12/2024 05:00:00	26.5	52.0	21.6	34.6	27.2	24.9	23.4	23.0
17/12/2024 06:00:00	29.9	51.0	23.8	38.3	30.7	28.7	26.0	25.4
17/12/2024 07:00:00	34.0	59.1	27.8	42.2	35.5	31.5	29.8	29.3
17/12/2024 08:00:00	35.1	62.2	29.5	42.8	36.4	32.9	31.0	30.7
17/12/2024 09:00:00	35.1	54.7	30.0	42.2	37.1	33.6	31.8	31.3
17/12/2024 10:00:00	36.7	56.2	30.0	44.2	39.0	34.9	32.5	31.9
17/12/2024 11:00:00	37.4	59.7	30.3	44.7	39.5	35.6	32.9	32.3
17/12/2024 12:00:00	38.1	52.4	29.1	44.8	40.6	36.7	33.7	33.0
17/12/2024 13:00:00	38.8	60.5	30.6	46.5	41.1	37.0	34.1	33.5
17/12/2024 14:00:00	38.5	56.0	30.4	46.7	41.0	36.1	33.0	32.4
17/12/2024 15:00:00	36.1	61.0	28.7	43.4	38.0	34.1	31.7	31.2
17/12/2024 16:00:00	37.1	66.0	27.0	45.6	39.2	34.3	30.7	29.9
17/12/2024 17:00:00	33.6	55.3	26.3	42.7	35.6	30.5	28.5	28.1
17/12/2024 18:00:00	31.8	51.6	25.8	40.9	34.0	29.2	27.6	27.3
17/12/2024 19:00:00	32.1	55.7	25.2	41.0	34.6	29.0	27.4	27.0
17/12/2024 20:00:00	33.2	47.6	24.6	41.7	36.8	29.1	26.8	26.4
17/12/2024 21:00:00	29.6	48.7	23.8	39.3	30.0	27.1	25.7	25.3
17/12/2024 22:00:00	27.6	46.5	22.0	35.1	28.6	26.2	24.7	24.3
17/12/2024 23:00:00	27.1	46.0	21.6	36.8	27.7	25.2	23.6	23.3
18/12/2024 00:00:00	27.8	54.1	19.7	37.6	26.5	23.9	22.3	21.9
18/12/2024 01:00:00	23.1	39.3	18.9	27.7	24.5	22.6	21.0	20.5
18/12/2024 02:00:00	22.8	36.6	17.7	28.3	24.3	22.0	20.2	19.8
18/12/2024 03:00:00	22.5	41.4	17.1	28.5	24.8	21.3	19.3	18.9
18/12/2024 04:00:00	25.3	51.8	17.8	35.5	25.4	22.3	20.4	19.9
18/12/2024 05:00:00	25.8	54.6	19.5	30.7	26.9	24.9	22.8	22.2

18/12/2024 06:00:00	28.4	47.1	22.6	37.0	29.4	26.8	25.1	24.6
	LAeq	Time						
Day	34.7	22 hours						
Night	25.6	16 hours						

This **meets** the requirements for habitable rooms and living rooms i.e. daytime 35-40dBA LAeq, 16hrs and night time 30dBA LAeq, 8hrs.

4.2.2 Apartment 13 Bedroom

Figure 5



Table 3 – Daytime And Night time Measurement dBA

Day / Start Time	LAeq	LAmx	LAmn	L01	L10	L50	L90	L95
16/12/2024 17:00:00	32.4	57.1	23.7	41.2	34.1	29.1	26.3	25.8
16/12/2024 18:00:00	30.1	54.6	23.2	38.8	30.7	26.3	24.8	24.5
16/12/2024 19:00:00	30.7	66.6	22.4	37.9	29.1	25.9	24.2	23.8
16/12/2024 20:00:00	27.1	48.1	21.7	35.6	27.1	25.2	24.0	23.6
16/12/2024 21:00:00	26.3	46.2	21.7	34.2	28.1	24.7	23.2	22.9
16/12/2024 22:00:00	25.2	47.2	21.2	32.3	26.2	24.2	22.8	22.4
16/12/2024 23:00:00	25.0	48.7	20.9	32.8	26.2	23.2	21.8	21.6
17/12/2024 00:00:00	24.5	46.1	20.7	32.1	25.2	22.9	21.7	21.4
17/12/2024 01:00:00	22.4	45.2	19.9	27.0	23.6	21.5	20.5	20.4
17/12/2024 02:00:00	22.6	46.6	20.0	25.0	23.5	22.2	20.6	20.4
17/12/2024 03:00:00	22.7	38.1	20.2	26.4	24.2	22.3	20.7	20.5
17/12/2024 04:00:00	24.1	43.1	21.6	29.8	25.2	23.3	22.4	22.3
17/12/2024 05:00:00	25.1	44.1	22.4	30.3	26.1	24.4	23.4	23.3
17/12/2024 06:00:00	29.2	45.7	23.3	36.1	31.1	28.2	25.3	24.8
17/12/2024 07:00:00	33.5	59.5	27.4	42.2	34.7	30.9	29.2	28.8
17/12/2024 08:00:00	34.4	61.0	28.3	41.1	36.3	32.0	30.1	29.7
17/12/2024 09:00:00	33.8	55.3	29.0	41.2	34.9	32.0	30.4	30.0
17/12/2024 10:00:00	36.0	56.0	29.1	44.7	37.5	33.4	31.2	30.7
17/12/2024 11:00:00	36.0	54.8	29.5	44.7	37.8	33.7	31.4	30.9
17/12/2024 12:00:00	36.3	54.9	29.3	43.8	38.6	34.6	32.2	31.6
17/12/2024 13:00:00	37.8	57.0	29.5	46.5	40.0	35.6	32.8	32.2
17/12/2024 14:00:00	37.0	57.9	29.4	45.3	39.3	34.7	32.1	31.5
17/12/2024 15:00:00	35.2	59.3	27.5	42.5	36.8	33.1	30.9	30.4
17/12/2024 16:00:00	35.3	59.8	26.7	44.4	37.0	32.3	29.4	28.9
17/12/2024 17:00:00	32.1	52.5	26.8	40.4	33.7	30.0	28.4	28.1
17/12/2024 18:00:00	30.3	47.1	26.0	37.7	32.2	28.8	27.4	27.1
17/12/2024 19:00:00	31.8	57.3	25.5	40.4	33.5	28.5	27.0	26.8
17/12/2024 20:00:00	32.5	55.3	25.2	40.2	35.5	29.1	27.0	26.6
17/12/2024 21:00:00	28.7	45.0	24.4	36.3	30.4	27.2	26.0	25.7
17/12/2024 22:00:00	27.2	44.3	23.2	33.0	28.2	26.4	25.0	24.7
17/12/2024 23:00:00	27.0	47.1	22.6	34.9	27.6	25.4	24.2	23.9
18/12/2024 00:00:00	29.4	59.4	21.8	36.6	27.0	24.5	23.3	23.0
18/12/2024 01:00:00	23.9	41.7	21.3	27.7	25.0	23.4	22.3	22.0
18/12/2024 02:00:00	23.7	42.1	20.7	28.0	25.5	22.9	21.8	21.5
18/12/2024 03:00:00	22.9	43.5	20.4	28.0	24.2	22.3	21.2	20.9
18/12/2024 04:00:00	23.8	43.8	20.5	30.2	24.7	22.8	21.6	21.3
18/12/2024 05:00:00	25.0	44.1	21.4	28.8	26.2	24.6	22.9	22.6

18/12/2024 06:00:00	28.1	52.5	23.1	35.8	29.7	26.3	24.8	24.4
LAeq	Time							
Day	33.5	22 hours						
Night	25.6	16 hours						

This **meets** the requirements for bedrooms i.e. daytime 35dBA LAeq, 16hrs and night time 30dBA LAeq, 8hrs .

4.2.3 Apartment 6 Living / Dining / Kitchen Space

Figure 6

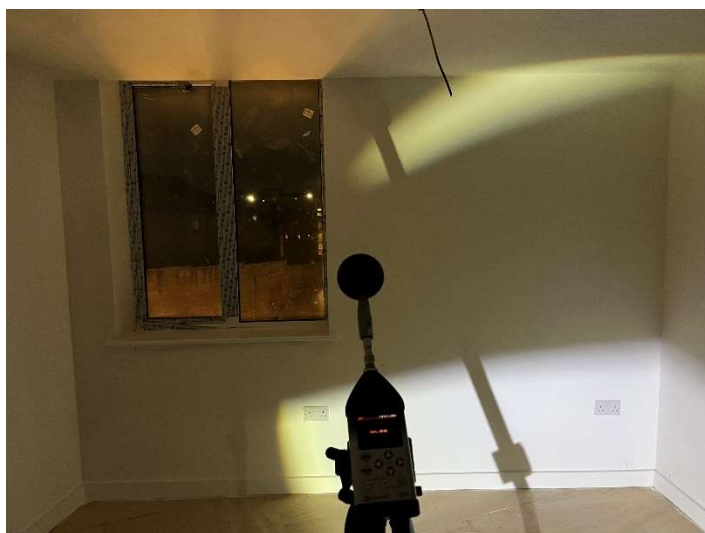
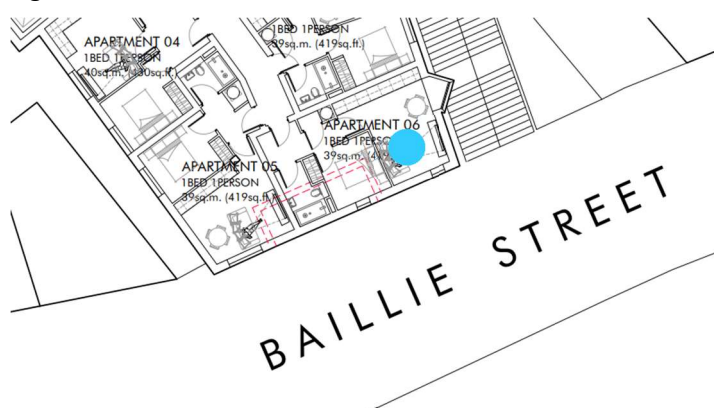


Table 4 – Daytime And Night time Measurement dBA

Day / Start Time	LAeq	LAmaz	LAMin	L01	L10	L50	L90	L95
16/12/2024 20:00:00	23.1	40.0	18.8	30.8	24.2	22.0	20.5	20.1
16/12/2024 21:00:00	24.7	50.1	18.6	33.4	26.7	22.3	20.5	20.1
16/12/2024 22:00:00	23.5	43.4	18.0	32.0	24.4	21.5	19.8	19.3
16/12/2024 23:00:00	24.6	48.9	18.0	33.0	28.3	20.3	19.0	18.8
17/12/2024 00:00:00	22.7	50.9	17.4	31.5	24.9	19.5	18.4	18.2
17/12/2024 01:00:00	21.4	36.2	16.4	30.9	24.1	18.4	17.4	17.3
17/12/2024 02:00:00	20.2	37.4	17.0	25.3	23.5	18.4	17.5	17.4
17/12/2024 03:00:00	22.7	42.8	17.1	31.2	26.2	19.1	18.0	17.7
17/12/2024 04:00:00	23.9	45.0	18.2	31.9	27.2	20.1	19.0	18.8
17/12/2024 05:00:00	22.9	44.0	18.8	30.6	24.6	21.1	20.0	19.8
17/12/2024 06:00:00	25.5	41.2	19.8	34.7	28.1	22.8	21.4	21.1
17/12/2024 07:00:00	38.0	66.6	20.0	49.5	39.1	24.4	22.1	21.7
17/12/2024 08:00:00	42.0	70.1	21.3	52.1	44.1	29.6	24.1	23.5
17/12/2024 09:00:00	41.6	67.0	21.9	54.3	38.4	26.0	23.6	23.3
17/12/2024 10:00:00	44.4	80.4	22.1	52.4	39.8	28.0	24.1	23.6
17/12/2024 11:00:00	39.6	71.7	21.9	48.2	36.7	27.3	24.2	23.7
17/12/2024 12:00:00	29.5	57.0	21.6	37.8	30.5	26.2	24.4	24.0
17/12/2024 13:00:00	28.7	53.8	22.1	37.6	29.9	26.0	24.2	23.8
17/12/2024 14:00:00	39.8	65.4	22.4	51.2	40.8	29.3	25.4	24.8
17/12/2024 15:00:00	43.5	63.2	22.6	57.8	41.9	29.5	25.2	24.5
17/12/2024 16:00:00	27.7	46.7	21.7	36.1	29.6	25.7	23.8	23.4
17/12/2024 17:00:00	27.0	43.2	21.7	34.3	28.7	25.7	23.9	23.5
17/12/2024 18:00:00	25.7	44.9	21.2	33.1	26.7	24.4	23.0	22.7
17/12/2024 19:00:00	27.2	51.0	20.9	35.6	28.6	24.0	22.6	22.3
17/12/2024 20:00:00	29.4	46.1	20.6	38.0	32.9	25.6	22.8	22.4
17/12/2024 21:00:00	27.7	44.2	20.0	37.7	30.6	24.0	21.8	21.4
17/12/2024 22:00:00	24.4	41.5	18.9	32.6	25.8	22.7	21.1	20.8
17/12/2024 23:00:00	26.0	52.7	18.0	35.8	25.5	21.1	19.7	19.4
18/12/2024 00:00:00	25.6	50.4	17.7	35.3	27.2	21.1	19.1	18.8
18/12/2024 01:00:00	25.2	45.0	18.3	35.6	26.9	21.5	20.2	19.9
18/12/2024 02:00:00	26.6	44.0	17.9	36.9	30.2	21.3	19.6	19.3
18/12/2024 03:00:00	21.6	43.6	16.4	32.5	21.2	18.0	17.1	16.9
18/12/2024 04:00:00	22.2	46.1	16.6	32.5	22.1	18.3	17.3	17.0
18/12/2024 05:00:00	22.5	41.6	17.3	31.9	23.5	20.3	18.6	18.3
18/12/2024 06:00:00	30.5	58.8	18.5	42.2	29.6	22.4	20.5	20.1

	L _{Aeq}	Time
Day	35.2	16 hours
Night	24.8	16 hours

Note: There were some continuing construction activities occurring throughout the monitoring period especially at the rear of the building and it is possible that some activities in closer proximity to this room may have influenced the results for some of the L_{Aeq}, 1hr daytime periods (highlighted in green above). The L_{Amax} levels for these periods and one other were well above typical levels before and after which suggest some impact noise or similar. This is especially the case for this room as external noise at the rear of the building was below that of external noise off the front façade. With these periods excluded from the results then desirable levels will be met. Even with these periods included daytime levels overall would be below 40dBA.

This **meets** the requirements for habitable rooms and living rooms i.e. daytime 35-40dBA L_{Aeq}, 16hrs and night time 30dBA L_{Aeq}, 8hrs.

5.0 ASSESSMENT

Table 5 – Resultant Daytime and Night Time Levels to Nearest Whole Decibel dBA

Room	Daytime L _{Aeq} , 16hrs dB	Night Time L _{Aeq} , 8hrs dB	Result
Apartment 12 – Living Room / Dining Room / Kitchen	35	26	Meets the desirable levels from BS8233 and Rochdale Borough Council
Apartment 13 – Bedroom	34	26	Meets the desirable levels from BS8233 and Rochdale Borough Council
Apartment 6 – Living Room / Dining Room / Kitchen	35	25	Meets the desirable levels from BS8233 and Rochdale Borough Council

6.0 CONCLUSIONS

The above demonstrates that the window and ventilation specification is appropriate and that noise levels can be met with reference to BS8233: 2014 and the requirements of Rochdale Borough Council.

It is also likely that once all internal development work has been completed and all doors fitted, gaps filled and sealed, and flats furnished that internal levels are likely to improve.

There was some ongoing work during the survey particularly at the rear of the building and this is likely to have influenced some of the hourly measurements for the room situated at the rear. Whether we leave these hours in or eliminate them from the results the overall conclusion remains the same and the assessment is considered sufficiently robust.

APPENDIX 1

EXPLANATION OF ACOUSTIC TERMS

The dB or the decibel, is the unit of noise. The number of decibels or the level, is measured using a sound level meter. It is common for the sound level meter to filter or 'weight' the incoming sound so as to mimic the frequency response of the human ear. Such measurements are designated **dB(A)**.

A doubling of the sound is perceived, by most people, when the level has increased by 10 dB(A). The least discernible difference is 2 dB(A). Thus, most people cannot distinguish between, say 30 and 31 dB(A).

If a noise varies over time, then the **equivalent continuous level, or LAeq**, is the notional constant level of noise which would contain the same amount of acoustic energy as the time varying noise.

The following table gives an indication of the comparative loudness of various noises expressed in terms of the A weighted scale:

Source of noise	dB(A)	Nature of Noise
Inside Quiet bedroom at night	30	Very Quiet
Quiet office	40	
Rural background noise	45	
Normal conversational level	60	
Busy restaurant	65	
Typewriter @ 1m	73	
Inside suburban electric train	76	
Alarm clock ringing @ .5m	80	
Hand clap @ 1m	80	
HGV accelerating @ 6m	92	Very Loud

APPENDIX 2

REFERENCES

1. British Standard 8233:2014 (Guidance on Sound Insulation and Noise Reduction for Buildings).

APPENDIX 3

QUALIFICATIONS AND EXPERIENCE OF S.B. MELLOR

My full name is Steven Brian Mellor. I am the principal of the firm of SBM Safety Solutions Ltd, a consultancy company that specialises in health, safety and environmental services including noise assessment and control.

I hold a Master's degree in Health, Safety and Environmental Law, British Occupational Health Society (BOHS) M104 certificate in Noise and Vibration and Institute of Acoustics Certificate of Competence in Environmental Noise Measurement (Derby University) and Diploma in Acoustics and Noise Control (Bristol University). I am a member of the professional body for noise and vibration specialists, the Institute of Acoustics - MIOA.

I have some 20 years of experience dealing with problems caused by noise and vibration, both regarding noise and vibration in the environment, the workplace and the home. The firm of SBM Safety Solutions Ltd. was formed 18 years ago. During that time, we have advised many groups including employers, residents and developers about the problems of noise and vibration in the workplace and environment.