NOISE IMPACT ASSESSMENT



Bar and Restaurant
10 Fairfield Road, Openshaw
Manchester, M11 1EW

Report by
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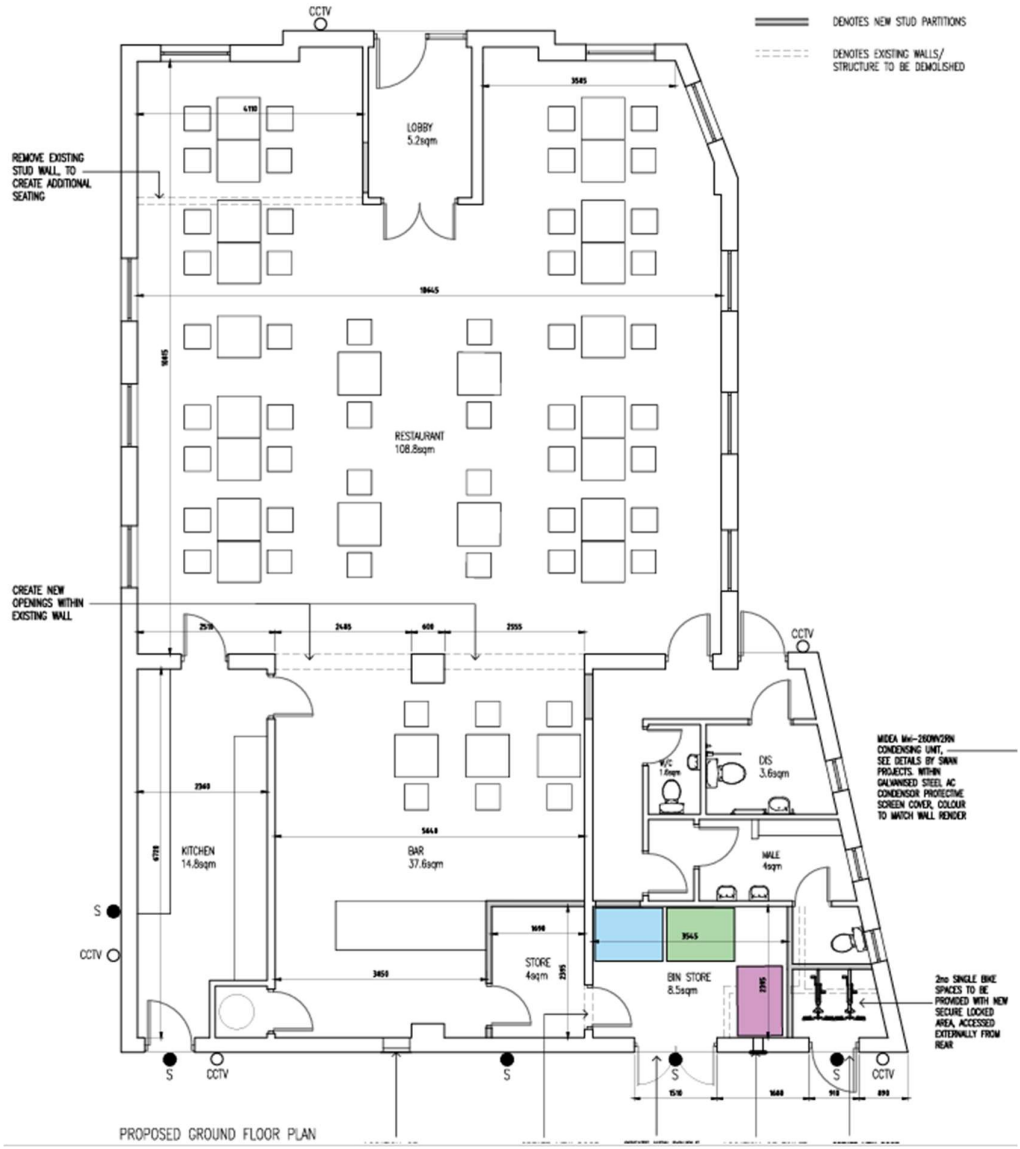
Contents

1.0 INTRODUCTION 4
2.0 SITE DESCRIPTION 5
3.0 GUIDANCE 9
4.0 SURVEY RESULTS 13
5.0 RESTAURANT / BAR NOISE LEVELS 13
6.0 PREDICTED NOISE IMPACT 18
7.0 UNCERTAINTY 19
8.0 CONCLUSION 20
9.0 NOISE MITIGATION 22
APPENDIX 1 24
APPENDIX 2 25
APPENDIX 3 26
APPENDIX 4 27
APPENDIX 5 27

1.0 INTRODUCTION

1.1 This Noise Impact Assessment has been prepared to support a proposed Bar and Restaurant on Fairfield Road, Openshaw Manchester, on behalf of Paul Butler Associates for their client, the applicant. We understand that the Bar and Restaurant will open from 12pm until 11pm Tuesday to Thursday, 10am until 1am Friday to Sunday and closed on Mondays. It is understood that the bar-restaurant would have 4-7 employees and a maximum of 40-50 covers daily.

Figure 1 – Internal Layout



1.2 The assessment follows BS 4142:2014+A1:2019 and BS8233:2014, comparing predicted source noise levels with measured existing ambient and background sound levels at the closest residential receptors at the rear of the building.

1.3 Background sound levels were taken from a weekend of monitoring including a Saturday which is likely to be the most sensitive time for residents, see Appendix 5 for data and typical background levels L90. We also took measurements using a sound source, “pink noise” and sweep measurements inside the building and then measurements externally to indicate the level of sound insulation provided by the building. Measurements were made 2-3m from windows or doors, i.e. the acoustically weakest part of the building.

1.4 This report describes the assessment methodology, calculations, and findings, including the effect of proposed mitigation.

1.5 A glossary of acoustic terminology is provided in Appendix 1.

2.0 SITE DESCRIPTION

2.1 The site at Fairfield Road, Openshaw, Manchester (M11 1EW) is located within an established mixed residential and commercial area of Openshaw, approximately 4 miles east of Manchester city centre. The building of approximately 209m^2 is a detached former Salvation Army building positioned at the corner of Fairfield Road and Toxteth Street, close to the junction with Ashton Old Road (A635). The immediate surroundings comprise a mixture of residential properties, modern flats, local retail uses and larger commercial premises, with Lime Square retail park located directly opposite the site. Fairfield Road itself is predominantly residential in character, comprising a combination of houses and purpose-built or converted flats.

2.2 The building is located immediately adjacent to Fairfield Road and in close proximity to Ashton Old Road (A635), which forms a significant local transport route and therefore significant road traffic noise levels through Openshaw. Unlike a pedestrianised city centre environment, the prevailing sound climate is therefore influenced by regular road traffic movements, including cars, vans, buses and other vehicles using Ashton Old Road and the surrounding local road network. Additional intermittent sound sources are likely to arise from vehicle movements, deliveries and servicing associated with the surrounding commercial and retail premises, including Lime Square retail park. Bus stops are located in close proximity to the site on both Fairfield Road and Ashton Old Road. Hard building façades and boundary treatments will provide some localised reflection of road traffic and other environmental noise sources.

2.3 The areas surrounding the site are relatively varied, comprising traditional residential properties alongside modern residential developments, commercial buildings and retail premises. Fairfield Road contains a mixture of houses and flats, including a number of modern properties constructed or converted after 1980.

2.4 The wider area is characterised by established urban development and a mixture of residential, retail and commercial land uses. Lime Square retail park is located immediately opposite the site and accommodates a range of larger retail and food-and-drink uses, generating associated vehicle movements, customer activity and servicing noise. The immediate locality has also experienced residential development in recent years, resulting in a mixed pattern of established and newer residential properties. The acoustic environment is consequently influenced by a combination of road traffic, retail activity, residential comings and goings and intermittent commercial servicing. There are no significant areas of open countryside or extensive soft landscaping immediately surrounding the site, and the overall sound climate is typical of an established urban area adjoining a principal local road.

2.5 The acoustic character of the area is therefore predominantly that of a mixed urban residential and commercial environment, with road traffic forming an important and relatively consistent component of the prevailing sound climate. The proximity of Ashton Old Road (A635), together with the Fairfield Road junction and nearby retail uses, means that intermittent vehicle movements, pedestrian activity, deliveries and general commercial noise form an inherent component of the local acoustic environment. Residential receptors along Fairfield Road and within the surrounding modern developments are consequently exposed to a higher baseline of urban activity than would typically be experienced in a quieter suburban or rural setting. In this context, low-level noise associated with normal commercial, retail and residential activity would be considered consistent with the established character of the area.

2.6 The nearest receptors are shown below:

Figure 2 - Receptors



Receptor Distances from Building (Approximate Metres):

Table 1

Receptor	Distance (metres) from Rear Facade
Opposite	17.5m

2.7 Baseline ambient and background sound levels were measured at the edge of the flat roof at the same hight at the first floor of the building opposite where there appear to be residents. This will be representative of the acoustic environment around the site. We will use the times when the bar-restaurant will be open for the ambient and background levels (see appendix). In the absence of any conflicting evidence, it is reasonable to assume that the remaining receptors experience broadly similar background conditions, given their comparable distances from local sound sources and their shared exposure to the wider acoustic environment.

2.8 Equipment and Measurement Procedure

The site was visited on 10th and 13th July 2026 to make observations and also to install monitoring instrumentation. The instrumentation was installed at the edge of the flat roof (as noted above); consequently, a façade reflection correction was not necessary.

Figure 3 – Pink noise generated internally to establish building insulation levels



2.9 LAeq, 1hr measurements were taken over a weekend to establish the existing noise climate – i.e. ambient and background levels L90.

2.10 Measurements were then made internally and externally using a controlled source of "pink noise" through a speaker to establish the "breakout" level and therefore the level of sound insulation provided by the building. See appendices for measurement data. These sound insulation characteristics of the existing building envelope have been established and measured transmission losses have subsequently been used within the prediction estimates of external noise levels arising from the proposed use.

Table 2 – Sound Insulation Provided by The Building

Location	Reduction
Rear Kitchen Door	46.5 dB(A)
Middle Garden Side	33.9 dB(A)
Front Façade	34.2 dB(A)
Nearside Window	37.6 dB(A)

2.11 The weather conditions during the entire period were – dry, hot, and sunny, with temperatures of approximately 12 to 33 degrees Celsius (night / day) with light wind speeds ranging between <0.5m/s and 3.8m/s (NE) measured on an electronic anemometer, similar to that forecast. It is not considered that weather conditions would have influenced the results.

2.12 The sound level meter used, and ancillary equipment can be found in the table below:

The instrumentation had been laboratory calibrated within the preceding 2 years.

Table 3 – Instrumentation

Instrument	Type	Serial No.	Calibration Cert. No.	Date of Due Calibration
Svan 977A	Sound Level Meter	69280	1501866-1	06/03/2028
Svan SV12L	Preamp	110531	1501866-1	07/03/2028
Aco Pacific 7052E	Microphone	61121	1501866-1	07/03/2028
Cirrus 511E	Calibrator	39816	Cirrus 248531	26/04/2028
With outdoor kit and all-weather windmuff				
Avante A12	Active Speaker	1689600620	n/a	n/a
Avante A12	Active Speaker	1689600531	n/a	n/a
Stereo Recording of pink noise played on iPhone				

3.0 GUIDANCE

3.1 Various standard and criteria will be referenced for this noise impact assessment. However, BS4142 is the principal standard for assessing the likelihood of adverse impact on residents from commercial use.

- National Planning Practice Guidance the National Planning Practice Guidance (PPG)
- BS 4142:2014+A1:2019
- WHO Guidelines for Community Noise (1999)

3.2 National Planning Practice Guidance the National Planning Practice Guidance (PPG)

This web-based resource was launched by the Department for Communities and Local Government (DCLG) to support the NPPF[1] and make it more accessible and advises on how planning can manage potential noise impacts in new development. A summary of the effects of noise exposure (in terms of health and quality of life) associated with both noise generating developments and noise sensitive developments is presented within the PPG and reproduced in the Table below.

Table 4

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not noticeable	No Effect	No Observed Effect	No Specific Measures Required

[1] *National Planning Policy Framework NPPF was published in March 2012 (revised recently in 2023) and sets out the Government's planning policies for England and how these are expected to be applied.*

Noticeable and not intrusive	Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect **(NOEL)**	No Specific Measures Required
Lowest Observed Adverse Effect Level (LOAEL)			
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; closing windows for some of the time because of the noise. Potential for non-awakening sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level (SOAEL)			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. having to keep windows closed most of the time, avoiding certain activities during periods of intrusion. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Observed Adverse Effect	Prevent

3.3 BS4142:2014 – Rating Industrial Noise Affecting Mixed Residential and Industrial Areas. While BS 4142 which is primarily intended for industrial and commercial sound, states, *"Response to sound can be subjective and is affected by many factors, both acoustic and non-acoustic.*

3.3.1 *"The significance of its impact, for example, can depend on such factors as the margin by which a sound exceeds the background sound level, its absolute level, time of day and change in the acoustic environment, as well as local attitudes to the source of the sound and the character of the neighbourhood…This British Standard describes methods for rating and assessing sound of an industrial and/or commercial nature".*

3.3.2 This British Standard describes a method for assessing whether a specific sound may have an adverse impact. The Standard requires that the ambient noise *(totally encompassing sound in a given situation at a given time, usually composed of sound from*

many sources near and far) including the "specific" sound from the source in question is measured in terms of the equivalent continuous sound level LAeq [see Appendix 1 for acoustic terms], which is then corrected for the residual sound (total LAeq excluding the "specific" sound).

3.3.3 A correction for character is made if *"a tone, impulse or other characteristic occurs"*. For tonality, a correction of between +2dB and 6dB is considered acceptable and for impulsivity between 3 and 9dB. See table below.

Table 4

Character	Just Perceptible	Clearly Perceptible	Highly Perceptible
Tonality	+2dB	+4dB	+6dB
Impulsivity	+3dB	+6dB	+9dB

3.3.4 *"Where the specific sound features characteristics that are neither tonal nor impulsive, though otherwise are readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied. Where tonal and impulsive characteristics are present in the specific sound within the same reference period then these two corrections can both be taken into account. If one feature is dominant, then it might be appropriate to apply a single correction. Where both features are likely to affect perception and response, the corrections ought normally to be added in a linear fashion".*

3.3.5 Intermittency

"When the specific sound has identifiable on/off conditions...if the intermittency is readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied".

The final figure, including any character correction is known as the Rating level. This Rating Level is then compared with the measured background [LA90] level. The greater this difference the greater the likelihood of "adverse impact" (See Notes 1 & 2 from BS4142:2014 below).

NOTE 1

a) Typically, the greater this difference, the greater the magnitude of the impact.

b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.

c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.

d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

NOTE 2

Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact.

3.4 The guidelines entitled "Guidance for Community Noise"; were approved by the World Health Organisation and consider guideline values for annoyance in the community. These have been set at 50 or 55 dBA, representing daytime levels below which a majority of the adult population will be protected from becoming moderately or seriously annoyed, respectively. An extract of "*Table 4.1 from Section 4.4"* appears below:

Table 5 ***– Table 4.1 from Guideline values for community noise in specific environments (Extract).***

Specific environment	***Critical health effect(s)***	***LAeq [dB]***	***Time base [hours]***	***LAmax, fast [dB]***
Outdoor living area	*Serious annoyance, daytime and evening* *Moderate annoyance, daytime and evening*	*55* *50*	*16* *16*	*-* *-*
Dwelling, indoors *Inside bedrooms*	*Speech intelligibility and moderate annoyance, daytime and evening* *Sleep disturbance, night-time*	*35* *30*	*16* *8*	*45*
Outside bedrooms	*Sleep disturbance, window open (outdoor values)*	*45*	*8*	*60*

3.4.1 The guidelines also suggest that; "*At night, sound pressure levels at the outside façades of the living spaces should not exceed 45 dB LAeq and 60 dB LAmax, so that people may sleep with bedroom windows open. These values have been obtained by assuming that the noise reduction from outside to inside with the window partly open is 15 dB."*

LAeq for daytime is for 16 h and for night-time 8h. BS8223 is based on the WHO Guidelines and as can be seen has similar values.

3.4.2 WHO Community Noise Guidelines State:

- 55 dB LAeq – threshold for serious annoyance
- 50 dB LAeq – threshold for moderate annoyance

3.4.3 These documents provide context, but BS 4142 remains the primary assessment method.

4.0 SURVEY RESULTS

4.1 Background sound levels were taken from the monitoring dataset (10/07/2026). See appendix. Measurements include LAeq, LAFmax, LAFmin, and statistical indices.

4.2 **LA90** values are typically **50–52dB** for when the bar restaurant is proposed to open:

- Closed Monday
- 12pm until 11pm Tuesday to Thursday
- 10am until 1am Friday to Sunday

(See appendices for the raw data and L90 table).

4.3 A representative level of **50dB** (from the range above) has been adopted for the typical background for use in the BS 4142 assessment.

5.0 RESTAURANT / BAR NOISE LEVELS

5.1 The principal activities / sources of sound are understood to include:

- Extraction in the small kitchen area
- Customers arriving and departing and using the car park (very limited parking)
- Amplified music and occasional live music
- Breakout sounds (doors opening)
- Air conditioning plant

5.2 The internal we have adopted for the assessment is **85 dB(A)**. This represents a robust worst-case operating condition comprising **full occupancy, customer activity, amplified background music and occasional live entertainment**. Typical day-to-day operation is expected to generate much lower internal sound levels, i.e. weekday mornings and afternoons and even weekday evenings. With the venue also operating as a restaurant then amplified music may also be turned lower so that conversations can

be held and also to protect staff hearing, i.e. below 80 dB(A). Live music may occasionally be higher. **A typical octave band spectra at 85 dB(A) is shown below**[2].

Table 6 – Amplified music frequency spectra at 85dBA

Octave Band Centre Frequency (Hz)	Level (dB)
63	82
125	81
250	79
500	81
1k	85
2k	83
4k	78
8k	72

5.3 There will also be a **kitchen extraction system** with ducting installed through the building and via a louvre in the wall. Kitchen extract fan sound power levels have been taken from the manufacturer's published acoustic data for the selected unit as shown below (see also the applicable appendix).

Table 7 = Level dB (Kitchen Extraction)

Octave Band (Hz)	125	250	500	1k	2k	4k	8k
Suction LwA5	55	56	58	57	54	50	50
Blowout LwA6	54	57	61	62	56	50	48
Casing Breakout LwA2	53	49	50	52	43	37	32

5.4 From the Tables above and from the weekend measurements (ambient and background), we can discern the resultant noise levels at the nearest receptor (rear) off the kitchen door for internal noise and "breakout" sounds through the building structure:

[2] The internal octave-band spectrum adopted for the assessment represents a conservative design spectrum for a busy bar/restaurant with amplified background music and occasional live entertainment. The spectrum has been derived from published building acoustics references and engineering judgement, based on the methodology described in Bies & Hansen (2009) and Morfey (2001).

- We have adopted a representative internal source spectrum for the restaurant/bar with amplified music (e.g. an overall **85 dB(A)** design spectrum).
- We subtract the measured building envelope transmission loss (derived from our pink-noise measurements).
- We then apply a distance attenuation from the façade to the receptor (17.5 m).

5.4.1 We then use the octave bands to obtain the predicted external A-weighted level at the nearest dwelling.

Table 8 – Transmission Loss (Building Sound Insulation)

Octave Band (Hz)	Transmission Loss (dB)
125	40.8
250	44.9
500	44.4
1000	44.2
2000	48.5
4000	51.6
8000	49.6

Table 9 – Predicted Levels at the Rear House (Octave Band Frequencies dB)

Octave Band (Hz)	At Façade	At Receptor
125	48.8	31.9
250	37.5	20.6
500	32.7	15.8
1000	32.6	15.7
2000	30.4	13.5
4000	27.3	10.4
8000	12.6	≈0 (effectively negligible)

Note: The receptor is approximately: 17.5 m
Measurements were made at approximately: 2.5 m
So, distance attenuation is: $20\log_{10}\left(\frac{17.5}{2.5}\right)$

5.4.2 The resulting overall level is predicted to be around **33–35 dB(A)** at the nearest dwelling.

Table 10 – Predicted Breakout Sound from the Rear at the Nearest House

Parameter	Value
Internal design level	85 dB(A)
Pink noise test level	99.1 dB(A)
Scaling factor	−14.1 dB
Measurement distance	2–3 m
Receptor distance	17.5 m
Additional propagation attenuation	16.9 dB
Predicted level at nearest dwelling	**~34 dB(A)**

5.5 We can use the same existing ambient and background noise levels to assess the potential for impact from **kitchen extraction** and the air conditioning unit installed on the roof. The unit will have a plant screen to match the rendered gable and screened from the front by the older part of the building.

5.5.1 The kitchen outlet is to be located at approximately 20m from the nearest house – the building angle increases the distance at this outlet point from the nearest house. Assuming free-field hemispherical propagation:

$$\Delta L = 20\log_{10}\left(\frac{20}{3}\right) = 16.5 \text{ dB}$$

5.5.2 Based on the manufacturer's data, the **kitchen extraction "blowout"** has an overall sound pressure level of **61 dB(A) at 3m**. That's the single-figure value for the discharge outlet. We can also use the octave band data as shown in the table below.

Table 11 – Octave Band Levels at the Receptor dB

Octave Band (Hz)	SPL @ 3 m (dB)	Distance Correction (dB)	Predicted SPL @ 20 m (dB)
63	56	-16.5	39.5
125	54	-16.5	37.5
250	57	-16.5	40.5
500	61	-16.5	44.5
1000	62	-16.5	45.5
2000	56	-16.5	39.5
4000	50	-16.5	33.5
8000	48	-16.5	31.5

The resulting overall level is approximately: **44.5 dB(A)** at 20 m in free-field conditions.

5.5.3 We know that building breakout: ~34 dB(A) and kitchen extract: ~45 dB(A), therefore t**he kitchen extraction is likely to be the dominant source of noise at the nearest residential receptor.**

Table 12 – Kitchen Extraction / Background LA90 dB

Source	Predicted LAeq at Nearest Receptor
Building breakout	~34 dB(A)
Kitchen extract discharge	~44–45 dB(A)
Existing background (LA90)	~50 dB(A)

5.5.4 The manufacturer's published octave-band sound pressure data have been used to predict noise emissions from the proposed kitchen extract discharge. Allowing for geometric spreading over a distance of approximately 20 m to the nearest noise-sensitive

receptor, the predicted free-field sound pressure level is approximately **45 dB(A)**. This is approximately **5 dB below** the prevailing daytime background sound level of **50 dB(A)** and is therefore not expected to give rise to an adverse acoustic impact, provided the installed plant performs in accordance with the manufacturer's published acoustic data.

Table 13 – Bar-restaurant Breakout and Extraction Sounds dBA

Noise Source	Distance to Receptor	Predicted Level	Background Level	Assessment
Building breakout	17.5 m	34 dB(A)	50 dB(A)	Well below background
Kitchen extract discharge	20 m	45 dB(A)	50 dB(A)	Below background
Combined operational noise*	—	≈45 dB(A)	50 dB(A)	Below background

*The combined level is still about **45 dB(A)** because the building breakout (34 dB(A)) contributes very little when added logarithmically to the extract noise. The combined level is approximately **45.4 dB(A)**.

5.6 It is also proposed as noted above that an AC unit will be installed on the flat roof. This will be at approximately 25m from the nearest house.

Predicted Sound Pressure Level at 25m
Distance attenuation for a point source in free field:

$$L_p(r) = L_p(1\text{ m}) - 20\log_{10}(r)$$

For r = 25 m:

$$20\log_{10}(25) = 27.96\text{ dB}$$
$$L_p(25\text{ m}) = 59 - 27.96 \approx \mathbf{31\text{ dB(A)}}$$

So, each band at 25 m ≈ band at 1m − 28 dB.

Table 144

Octave band centre (Hz)	Lp,A at 1 m (dB)	Distance Correction (dB)	Lp,A at 25 m (dB)
63	48	-28	20
125	52	-28	24
250	55	-28	27
500	56	-28	28
1000	54	-28	26
2000	50	-28	22
4000	46	-28	18
8000	42	-28	14
Overall A-weighted	59	-28	**≈31**

5.7 As well as internal sounds associated with the bar-restaurant there will also be patrons entering the front entrance and vehicles (minimal as it is a very small, shared car park) entering the rear car park. This would also include occasional deliveries.

5.7.1 The proposed rear parking area will accommodate a limited number of vehicles associated with staff and patrons. Vehicle movements will be relatively infrequent and are expected to occur primarily during opening and closing periods. Vehicle speeds within the car park will be low and associated noise emissions are therefore not considered likely to result in adverse acoustic impact at nearby residential properties. Also, since there is only 40–50 covers, perhaps 4-5 parking spaces and cars moving at walking speed, this isn't likely to be a controlling noise source.

5.7.2 The principal customer entrance is located on the front elevation adjacent to the main road. Consequently, the majority of customer arrivals and departures will occur on the highway frontage where existing traffic noise dominates the acoustic environment. Limited activity is anticipated within the rear service area, and patrons are not expected to congregate at the rear of the premises.

5.7.3 Patrons will be encouraged to leave quietly, and staff will monitor the rear of the premises during closing. The rear of the premises will be used primarily for kitchen deliveries, staff access and emergency escape.

6.0 PREDICTED NOISE IMPACT

6.1 Predicted external noise levels from all proposed operational sources have been compared with the measured background sound levels (LA90 ≈ 50 dB) at the nearest residential receptor. The assessment considers breakout noise from internal activity, kitchen extract discharge, and the proposed air-conditioning unit.

6.2 Breakout noise from internal bar/restaurant activity has been modelled using the measured transmission losses of the existing building envelope and the adopted internal design spectrum of 85 dB(A). After applying façade transmission losses and distance attenuation to the nearest receptor (17.5 m), the predicted external level is approximately **34 dB(A)**. This is **well below** the prevailing background sound level and therefore represents a **low impact** under BS4142.

6.3 The kitchen extract discharge is predicted to generate approximately **44–45 dB(A)** at the nearest receptor (20 m). This is **below** the measured background level of 50 dB(A). As the extract is the dominant operational source, its level relative to background is the primary determinant of impact. A rating correction is not considered necessary because the discharge does not exhibit tonal, impulsive, or intermittent characteristics beyond normal mechanical plant operation.

6.4 The proposed AC condensing unit (MIDEA MVi-260WV2RN1(A)) has a manufacturer sound pressure level of 59 dB(A) at 1m. Applying free-field distance attenuation to 25m

results in a predicted level of **≈31 dB(A)** at the nearest dwelling. This is significantly below both the background level and the levels associated with other plant items and is therefore not expected to contribute materially to the overall acoustic impact.

6.5 When combined logarithmically, the dominant kitchen extract (≈45 dB(A)) and the much lower breakout and AC noise sources result in a total predicted level of **≈45 dB(A)** at the nearest receptor.

This remains **below the background sound level** and therefore indicates a **low likelihood of adverse impact** in accordance with BS4142:2014+A1:2019.

6.6 In the context of WHO Community Noise Guidelines and BS8233:2014, predicted external levels remain below the thresholds associated with moderate annoyance (50 dB LAeq) and significantly below the threshold for serious annoyance (55 dB LAeq). The predicted levels are also below the recommended night-time external façade criterion of 45 dB LAeq for open-window sleep protection.

Table 15- BS4142 Assessment

Parameter	Building Breakout	Kitchen Extract	AC Condensing Unit
Specific sound level, LAeq (dB)	34	45	31
Character correction (dB)	0	0	0
Rating level, LAr (dB)	34	45	31
Background sound level, LA90 (dB)	50	50	50
Difference (LAr – LA90) (dB)	-16	-5	-19
BS 4142 impact descriptor	Low impact	Low impact	Low impact

The proposed extract system comprises a commercially manufactured inline centrifugal fan operating at a relatively low sound pressure level. No evidence has been provided to indicate the presence of significant tonal, impulsive or intermittent characteristics. Accordingly, no acoustic character correction has been applied in accordance with the guidance contained within BS 4142:2014+A1:2019.

7.0 UNCERTAINTY

7.1 BS4142 requires consideration of uncertainty in both measurement and prediction. The following factors have been reviewed:

- All equipment was laboratory-calibrated within the preceding two years and field-checked before and after measurements. Instrumentation uncertainty is therefore minimal.

- Measurements were undertaken in dry, calm conditions with light winds (<3.8 m/s). Meteorological influence on measured levels is considered negligible.
- Background levels were measured over a weekend including peak residential sensitivity periods. The adopted background level (50 dB LA90) is representative and conservative.
- Internal source levels (85 dB(A)) represent a robust worst-case scenario including amplified music and full occupancy. Actual day-to-day levels are expected to be lower.
- Transmission losses were measured directly using controlled pink-noise tests. These values provide high confidence in breakout predictions.
- Distances to receptors have been measured on site and represent worst-case direct line-of-sight conditions.

7.2 Considering the above, the overall uncertainty in the assessment is low. Where uncertainty exists, assumptions have been made conservatively to ensure that predicted impacts do not underestimate potential effects.

7.3 The building will undergo significant improvements during the development which will likely improve the sound insulation.

8.0 CONCLUSION

8.1 A comprehensive assessment has been undertaken in accordance with BS4142:2014+A1:2019, BS8233:2014 and WHO Community Noise Guidelines. Predicted noise levels from all proposed operational sources; including internal breakout, kitchen extraction, and air-conditioning plant have been compared with measured background sound levels at the nearest residential receptor.

8.2 Breakout noise from internal activity is predicted to be **well below background** at approximately 34 dB(A). The kitchen extract discharge, the dominant source, is predicted at **44–45 dB(A)**, which remains **below the background level** of 50 dB(A). The proposed AC unit contributes only **≈31 dB(A)** at the receptor and is acoustically insignificant in the overall impact.

8.3 The combined operational noise level is approximately **45 dB(A)**, which is **below the prevailing background** and therefore indicates a **low likelihood of adverse impact** under BS4142. The proposed kitchen extract system has been assessed using the manufacturer's published acoustic data. The equipment is not expected to exhibit prominent tonal, impulsive or intermittent characteristics at the nearest residential receptor. Consequently, no acoustic character correction has been applied. Even if a modest correction of +2 dB were adopted, the resulting rating level would remain below the measured background sound level of 50 dB(A), indicating a low impact in accordance with BS 4142:2014+A1:2019.

8.4 In the wider context of WHO and BS8233 guidance, predicted levels remain below thresholds associated with moderate or serious annoyance and below night-time external façade criteria for sleep protection.

8.5 On this basis, the proposed bar and restaurant — with the specified plant, operational controls, and building envelope performance — is **not expected to give rise to adverse noise impact** at nearby residential properties. The development is therefore considered **acceptable in planning terms** with respect to noise.

8.6 Furthermore, the cumulative operational noise level is expected to remain below the existing ambient sound environment, which is dominated by traffic noise from the adjacent highway. This is especially the case at the front entrance to the building and receptors at locations with a view of the main road.

Table 16 - Impact

Source	Assessment	Predicted Impact
Building breakout	Octave-band prediction	Low
Kitchen extract	Manufacturer's data	Low
Roof-mounted condenser	Manufacturer's data	Low
Vehicle movements	Qualitative	Negligible
Customer arrivals/departures	Qualitative	Low
Deliveries	Daytime only	Negligible
AC Unit	Manufacturer's data	Negligible

8.7 The proposed bar-restaurant is well suited to this location, which already contains a mix of residential, retail and commercial uses and sits directly opposite Lime Square retail park. Repurposing the former Salvation Army building provides a sustainable reuse of an under-utilised property while supporting local employment and contributing to the ongoing regeneration of Openshaw. The site benefits from strong transport links and existing activity on Ashton Old Road, meaning customer movements and operational noise will be consistent with the established character of the area. With appropriate management and acoustic controls, the bar-restaurant can operate without adverse impact on nearby residents and will provide a positive addition to the local community. Amplified music will be controlled in line with the POP Code of Practice, ensuring responsible management of internal sound levels.

9.0 NOISE MITIGATION

9.1 Although predicted noise levels from all proposed operational sources fall below the existing background sound level at the nearest residential receptors, a number of proportionate and robust mitigation measures are recommended to ensure continued compliance and good acoustic practice throughout operation of the bar-restaurant.

9.2 **Building Envelope and Internal Sound Control**

- Maintain the existing building envelope in good condition, ensuring that windows, doors and seals remain functional and free from defects.
- Ensure that external doors are kept closed during periods of amplified music or busy occupancy, except for normal access and egress.
- Position internal loudspeakers away from external façades and avoid directing them towards doors or windows.
- Manage internal sound levels so that amplified music remains appropriate for a restaurant/bar environment and does not exceed the adopted design level of 85 dB(A) during peak periods. Amplified and live music should be controlled in line with the POP Code of Practice, ensuring responsible management of internal sound levels https://www.ioa.org.uk/publications/pop-code-practice

9.3 **Kitchen Extract System**

- Ensure the kitchen extract fan and ductwork are installed in accordance with manufacturer guidance, including correct mounting, isolation, and airflow settings.
- Fit anti-vibration mounts or flexible connectors where appropriate to minimise structure-borne transmission.
- Maintain the extract system regularly to prevent increases in noise due to wear, imbalance or airflow obstruction.
- Ensure the discharge outlet remains unobstructed and operates at the manufacturer's specified duty to avoid tonal artefacts or aerodynamic noise.

9.4 **Air-Conditioning Condensing Unit**

- Install the AC unit on appropriate anti-vibration mounts to minimise structure-borne noise into the roof slab.
- Ensure the unit is positioned exactly as assessed, with no relocation closer to residential receptors without further acoustic review.

- Maintain the unit in accordance with manufacturer recommendations to prevent tonal noise from worn bearings, fans or compressors.
- Avoid placing any reflective surfaces or barriers immediately adjacent to the unit that could increase localised sound pressure levels.

9.5 **Operational Management**

- Staff should monitor customer activity at closing time and encourage quiet departure, particularly during late-evening periods.
- Rear external areas should not be used for congregation or smoking, and signage may be installed to reinforce this.
- Vehicle movements in the rear parking area should be minimised and kept to slow manoeuvring speeds, consistent with the predicted acoustic assumptions.

9.6 **Future Changes**

If any plant items are replaced, upgraded or relocated, or if additional external equipment is proposed, an updated acoustic review should be undertaken to confirm continued compliance with BS4142 and local planning requirements.

9.7 With the mitigation measures above in place and given that all predicted operational noise levels remain below the prevailing background sound level, the proposed development is expected to operate without giving rise to adverse noise impact at nearby residential properties.

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).

The Background level of noise is most commonly represented by the level which is exceeded for 90% of the time i.e. the LA90.

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

QUALIFICATIONS AND EXPERIENCE OF M. S. MELLOR

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

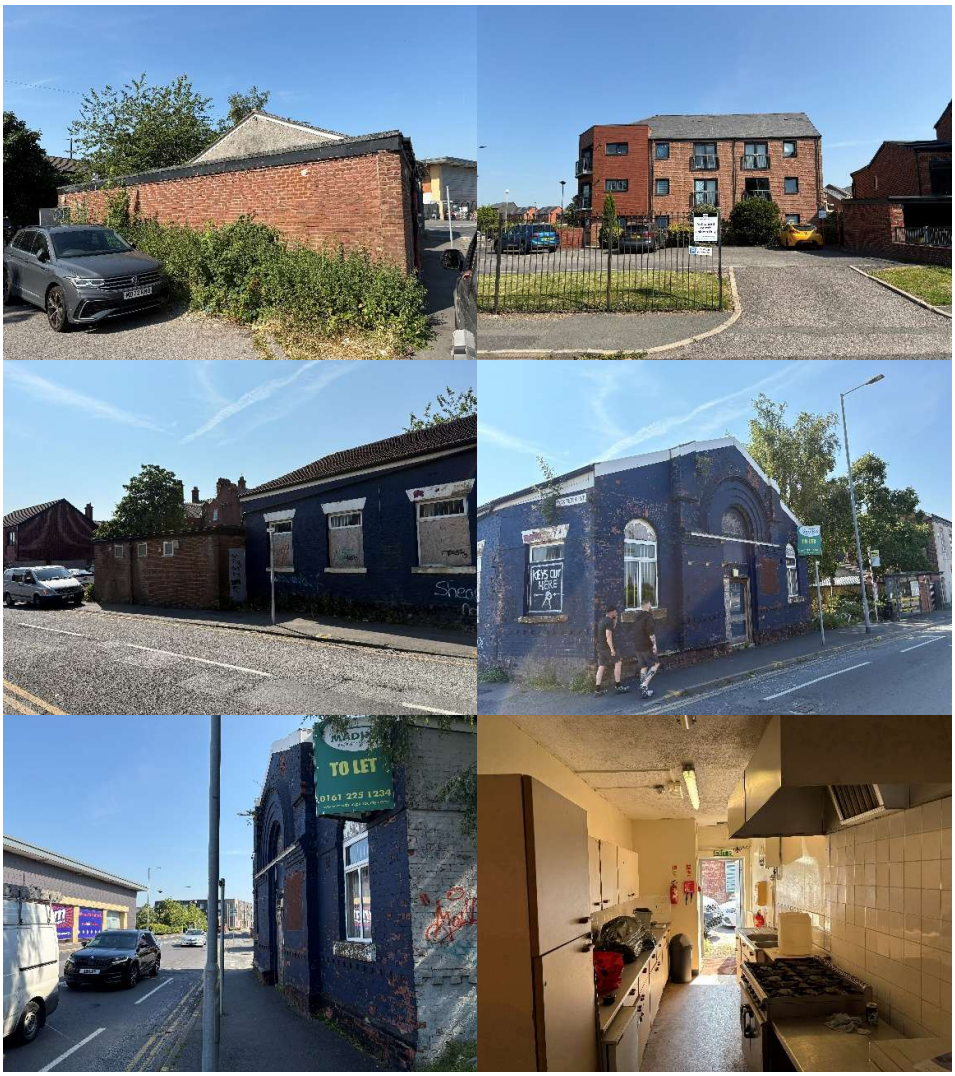
I hold a Master's degree in Health, Safety and Environmental Law, British Occupational Health Society (BOHS) M104 certificate in Noise and Vibration and Institute of Acoustics Certificate of Competence in Environmental Noise Measurement (Derby University), plus Diploma in Acoustics and Noise Control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

I have some 24 years' experience of dealing with problems caused by noise and vibration, both regarding noise and vibration in the environment, the workplace, and the home. The firm SBM Safety Solutions Ltd. was formed 22 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.

APPENDIX 3

Site and Location Images

Figure 4



APPENDIX 4

REFERENCES

1. National Planning Policy Framework or NPPF (2023).
2. British Standard 8233:2014 (Guidance on Sound Insulation and Noise Reduction for Buildings).
3. WHO "Guidelines for Community Noise".
4. BS4142:2014 – Rating Industrial Noise Affecting Mixed Residential and Industrial Areas.
5. ProPG Professional Practice Guidance on Planning & Noise, May 2017

APPENDIX 5

Monitoring Data – Ambient and Background dBA

Table 17

Start date & time	Duration	LAeq [dB]	LAFmax [dB]	LAFmin [dB]	L01	L10	L50	L90	L95
10/07/2026 1:00:35.700	01:00:00.000	55.5	77.6	37.1	63.7	57.3	53.4	49.7	48.6
10/07/2026 2:00:35.700	01:00:00.000	54.5	75.7	45.9	61.4	56.7	53.0	49.8	48.9
10/07/2026 3:00:35.700	01:00:00.000	54.7	77.3	45.1	61.7	56.2	52.8	49.6	48.7
10/07/2026 4:00:35.700	01:00:00.000	53.5	70.6	44.8	59.0	55.8	52.6	49.4	48.6
10/07/2026 5:00:35.700	01:00:00.000	55.5	86.1	45.4	62.0	56.4	53.4	50.4	49.5
10/07/2026 6:00:35.700	01:00:00.000	60.1	93.2	47.9	65.1	56.7	53.8	51.3	50.6
10/07/2026 7:00:35.700	01:00:00.000	54.3	74.6	48.1	59.2	56.1	53.5	51.0	50.2
10/07/2026 8:00:35.700	01:00:00.000	54.8	74.9	48.4	62.0	56.3	53.4	51.0	50.4
10/07/2026 9:00:35.700	01:00:00.000	60.0	88.0	49.4	68.2	57.0	54.1	51.9	51.3
10/07/2026 0:00:35.700	01:00:00.000	54.2	71.5	48.4	60.4	55.9	53.4	50.9	50.4
10/07/2026 1:00:35.700	01:00:00.000	54.0	67.4	48.6	58.9	55.9	53.3	51.0	50.5
10/07/2026 2:00:35.700	01:00:00.000	55.1	78.7	48.6	61.1	55.9	53.1	50.8	50.3
10/07/2026 3:00:35.700	01:00:00.000	53.1	80.3	42.2	57.9	54.7	51.6	48.5	47.4
11/07/2026 0:00:35.700	01:00:00.000	50.8	69.0	41.5	57.7	53.5	49.4	44.9	44.0
11/07/2026 1:00:35.700	01:00:00.000	50.9	73.0	40.6	61.3	52.2	48.1	44.2	43.4
11/07/2026 2:00:35.700	01:00:00.000	48.7	72.4	39.6	57.2	51.7	45.7	41.7	41.2
11/07/2026 3:00:35.700	01:00:00.000	48.1	66.0	40.0	56.1	51.4	45.5	42.1	41.6
11/07/2026 4:00:35.700	01:00:00.000	50.1	76.5	39.9	57.2	51.9	46.4	42.6	41.9
11/07/2026 5:00:35.700	01:00:00.000	58.0	88.7	41.0	57.8	53.1	47.9	44.0	43.2
11/07/2026 6:00:35.700	01:00:00.000	51.1	66.6	41.9	57.9	53.9	49.6	45.6	44.7
11/07/2026 7:00:35.700	01:00:00.000	51.5	67.2	43.5	58.2	54.2	50.2	46.6	45.8

11/07/2026 8:00:35.700	01:00:00.000	53.7	70.9	44.2	61.0	56.1	52.3	48.3	47.2
11/07/2026 9:00:35.700	01:00:00.000	54.3	75.7	44.6	61.5	56.0	52.6	49.0	48.1
11/07/2026 0:00:35.700	01:00:00.000	53.9	76.0	45.5	59.2	55.9	52.7	49.2	48.5
11/07/2026 1:00:35.700	01:00:00.000	53.7	69.1	46.2	59.8	55.9	52.8	49.8	49.1
11/07/2026 12:00:35.700	01:00:00.000	53.8	70.0	46.4	59.6	56.0	52.9	50.0	49.2
11/07/2026 13:00:35.700	01:00:00.000	54.0	75.2	46.5	59.7	56.1	52.8	49.9	49.1
11/07/2026 14:00:35.700	01:00:00.000	55.3	85.3	45.8	63.6	57.0	52.8	49.8	48.9
11/07/2026 15:00:35.700	01:00:00.000	57.1	85.0	46.1	64.3	57.1	53.3	50.5	49.6
11/07/2026 16:00:35.700	01:00:00.000	54.5	81.0	48.7	59.8	56.2	53.4	51.0	50.5
11/07/2026 17:00:35.700	01:00:00.000	54.8	72.3	48.7	60.6	56.9	53.7	51.3	50.6
11/07/2026 18:00:35.700	01:00:00.000	55.7	80.5	48.9	62.6	56.9	53.8	51.4	50.9
11/07/2026 19:00:35.700	01:00:00.000	56.6	85.2	48.3	63.7	56.6	53.7	51.2	50.7
11/07/2026 20:00:35.700	01:00:00.000	56.7	85.0	49.2	63.6	57.2	54.1	51.8	51.2
11/07/2026 21:00:35.700	01:00:00.000	57.3	85.8	48.3	66.1	56.7	53.7	50.9	50.3
11/07/2026 22:00:35.700	01:00:00.000	53.2	71.1	47.0	59.3	55.1	52.0	49.3	48.9
11/07/2026 23:00:35.700	01:00:00.000	53.1	77.6	44.8	60.1	54.4	51.2	48.9	48.4
12/07/2026 00:00:35.700	01:00:00.000	61.3	94.3	38.8	60.5	53.8	49.9	46.2	45.3
12/07/2026 01:00:35.700	01:00:00.000	57.1	87.5	42.4	60.5	55.0	51.3	47.1	46.1
12/07/2026 02:00:35.700	01:00:00.000	51.0	74.1	37.4	57.4	53.4	49.3	44.6	43.4
12/07/2026 03:00:35.700	01:00:00.000	49.9	70.7	37.1	56.7	52.8	47.9	44.0	42.9
12/07/2026 04:00:35.700	01:00:00.000	49.4	68.9	39.3	57.1	52.1	47.4	43.8	43.0
12/07/2026 05:00:35.700	01:00:00.000	49.6	65.4	38.0	56.6	52.7	47.7	43.3	42.2
12/07/2026 06:00:35.700	01:00:00.000	50.5	64.7	39.5	57.7	53.6	48.8	44.4	43.4
12/07/2026 07:00:35.700	01:00:00.000	51.3	77.3	41.8	58.1	53.7	49.6	45.5	44.6
12/07/2026 08:00:35.700	01:00:00.000	53.2	76.1	43.3	60.9	55.7	51.2	47.5	46.4
12/07/2026 09:00:35.700	01:00:00.000	54.1	71.6	44.9	61.2	56.6	52.5	49.0	48.0
12/07/2026 10:00:35.700	01:00:00.000	59.0	88.5	46.1	68.2	56.7	53.2	49.9	49.0
12/07/2026 11:00:35.700	01:00:00.000	55.4	77.9	46.1	62.8	56.5	53.1	50.0	49.2
12/07/2026 12:00:35.700	01:00:00.000	55.0	80.5	47.3	61.5	56.8	53.6	50.9	50.2
12/07/2026 13:00:35.700	01:00:00.000	55.2	75.5	47.8	62.6	56.9	53.6	51.1	50.5
12/07/2026 14:00:35.700	01:00:00.000	55.9	78.7	46.8	64.4	57.7	53.7	50.8	49.9
12/07/2026 15:00:35.700	01:00:00.000	55.8	82.8	47.3	62.5	57.4	54.3	51.5	50.9
12/07/2026 16:00:35.700	01:00:00.000	55.3	73.8	49.4	60.8	57.1	54.5	52.2	51.7
12/07/2026 17:00:35.700	01:00:00.000	58.6	87.3	48.9	63.5	57.2	54.4	51.9	51.2
12/07/2026 18:00:35.700	01:00:00.000	55.2	72.2	48.9	60.9	57.1	54.3	51.8	51.1
12/07/2026 19:00:35.700	01:00:00.000	56.1	80.7	48.6	62.2	57.3	54.5	51.8	51.2
12/07/2026 20:00:35.700	01:00:00.000	54.9	70.0	49.0	60.1	57.0	54.0	51.7	51.1
12/07/2026 21:00:35.700	01:00:00.000	55.7	81.0	47.9	61.0	56.5	53.5	50.8	50.2
12/07/2026 22:00:35.700	01:00:00.000	53.3	68.2	47.1	58.5	55.5	52.4	49.8	49.3
12/07/2026 23:00:35.700	01:00:00.000	52.5	77.7	41.9	59.0	54.6	50.8	46.8	45.8
13/07/2026 00:00:35.700	01:00:00.000	50.4	73.9	36.8	57.5	52.9	48.1	44.1	42.9
13/07/2026 01:00:35.700	01:00:00.000	48.7	70.6	36.4	55.8	51.3	46.3	42.1	41.1
13/07/2026 02:00:35.700	01:00:00.000	47.3	73.0	31.4	55.6	50.5	44.3	38.5	36.2

13/07/2026 03:00:35.700	01:00:00.000	49.5	75.3	36.0	57.7	51.1	45.5	41.6	40.7
13/07/2026 04:00:35.700	01:00:00.000	49.4	63.4	38.8	57.1	52.5	47.3	43.0	42.2
13/07/2026 05:00:35.700	01:00:00.000	52.3	64.9	43.0	58.7	55.0	51.0	47.4	46.5
13/07/2026 06:00:35.700	01:00:00.000	55.1	71.1	45.9	62.3	57.3	53.9	50.1	49.1
13/07/2026 07:00:35.700	01:00:00.000	54.9	70.5	46.9	60.9	56.9	53.8	50.8	49.9
13/07/2026 08:00:35.700	01:00:00.000	55.2	73.3	47.9	61.8	57.2	54.1	51.3	50.5
13/07/2026 09:00:35.700	01:00:00.000	55.1	75.5	47.2	61.7	56.8	53.7	50.8	50.0
13/07/2026 10:00:35.700	01:00:00.000	54.5	76.3	46.9	60.3	56.7	53.5	50.3	49.6
13/07/2026 11:00:35.700	01:00:00.000	55.7	83.4	46.2	64.6	57.0	53.6	50.8	50.0

Building sound insulation dBA

Table 18

Start date & time	Duration	LAeq[dB]	LAFmax[dB]	LAFmin[dB]	L01	L10	L50	L90	L95	Notes
10/07/2026 10:40:41.800	00:04:01.000	99.1	110.6	93.2	101.7	100.5	99.1	95.7	95.3	Noise Source Room - Pink Noise
10/07/2026 10:45:54.800	00:02:02.000	52.6	59.0	49.2	71.0	56.1	52.3	50.4	50.1	Rear - Kitchen Door
10/07/2026 10:49:50.300	00:02:18.000	65.2	69.1	61.7	68.6	67.5	64.5	63.4	62.8	Middle - Garden Side
10/07/2026 10:52:50.300	00:02:02.000	64.9	72.2	58.4	71.1	66.4	64.2	62.3	59.6	Front Façade
10/07/2026 10:56:19.100	00:02:11.000	61.5	67.4	56.9	70.7	66.5	61.1	59.5	59.0	Nearside Middle Window

To calculate the level of existing sound insulation provided by the building we have used the L90 levels for external measurements to eliminate extraneous noise (due to external activities on the day of the survey. The building provides approximatley 48.7, or 48dBA to the nearest whole decibel, of sound insulation at the rear façade next to the car park [99.1-50.4 (L90) = 48.7]. Off the other facades the range of sound insulation is around 36-40dBA.

Figure 2

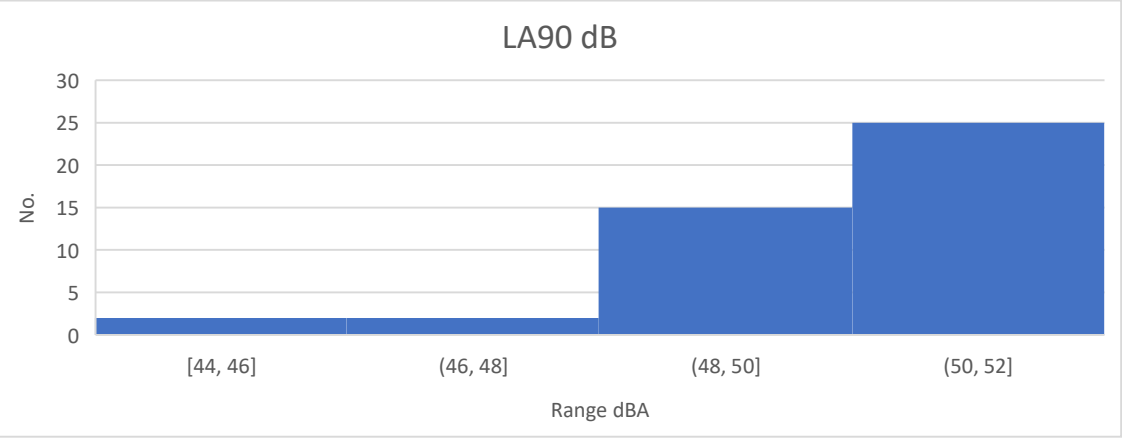


Figure 3 – Kitchen Extraction Sound Data

SOUND PRESSURE LEVEL CALCULATOR

Name	Value	Unit
Enveloping surface	Halphsphere	
Distance	3	m

Sound pressure	NR	mid-frequency tape										Unit	Formula symbol
		Σ	63	125	250	500	1000	2000	4000	8000	16000		
suction	57	64	32	55	56	58	57	54	50	50	32	dB(A)	LwA5
blowout	61	66	34	54	57	61	62	56	50	48	28	dB(A)	LwA6
Casing break out	53	57	36	53	49	50	52	43	37	32	28	dB(A)	LwA2

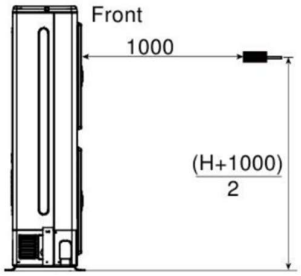
Figure 4 – AC Plant Sound Data

10.1 Overall

Table 2-10.1: Sound pressure level

Model	dB(A)
MVi-200WV2RN1(A)	58
MVi-224WV2RN1(A)	58
MVi-260WV2RN1(A)	59
MVi-280WV2RN1(A)	60
MVi-335WV2RN1(A)	61

Figure 2-10.1: Sound pressure level measurement (unit: mm)



10.2 Octave Band Levels

Figure 2-10.2 7/8HP octave band level

