NOISE IMPACT ASSESSMENT

BS 4142:2014+A1:2019

Proposed Outdoor Terrace Seating Area for shisha



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REPORT DETAILS

Report Title	Noise Assessment: Proposed Outdoor Terrace Seating Area for shisha
Site Address	3-5 Park Cres, Manchester, M14 5DU
Project No.	NALPRO130426.01a
Consultant Contact	[redacted]

QUALITY ASSURANCE

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Assessment Summary

The Local Council have asked for a noise assessment to demonstrate that the proposed outdoor terrace area for the recreational smoking of Shisha outside the restaurant can operate without causing noise to residents above.

A noise assessment is required to assess the likely noise impact from guests chatting at the outdoor area seated outside during the daytime.

Background noise measurements were undertaken during the initial assessment in outside the front of the nearest sensitive receptors. The data collected during this period has been used to characterise the existing acoustic environment around the site and specific noise from guests.

Noise levels were measured in the daytime of 19th April 2026.

The lowest recorded daytime background sound level was measured as 51 dB LA90,15min.

External Noise

Noise levels from the external seating area based on 10 seated guests with five chatting has been assessed at the NSR.

Based on several seated guests chatting (66dBA), distance attenuation and line of sight calculations, a rating for intermittency the noise at the NSR 4m is 47 dBA, below the lowest measured background noise level of 51 dB LA90 daytime; therefore, the noise impact is expected to be low during the day.

Noise intrusion levels with residential windows open have been determined assuming that the insulation provided by a window, partially open for ventilation, is 15 dB as suggested by BS 8233 and WHO. The noise impact within bedrooms and living spaces is expected to be desirable.

The results of the noise assessment demonstrate that, external noise from the guests' voices near sensitive receivers will be considered **low** and **desirable** during the daytime.

1. Proposal

1.1 The Local Council have asked for a noise assessment to demonstrate that the proposed outdoor terrace area for the recreational smoking of Shisha outside the restaurant can operate without causing noise to residents above.

1.2 A noise assessment is required to assess the likely noise impact from guests chatting at the outdoor area seated outside against the front of the restaurant during the daytime.

2. Existing Context

2.1 The site (4 storey) is an attached brick-built property near to a main road (Wilmslow Road) with residential apartments to above the site.

2.2 The environmental health department of the local planning authority raised concerns of noise emissions from guests chatting outside on neighbouring noise sensitive residential properties during the daytime.

3. Criteria

3.1 The following targets have been selected in accordance with 'BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound.' This will be achieved when the Rating Level is below the representative background sound level.

3.2 Whilst there are no prescribed standards for the assessment of noise impact where human voice is the primary source, reference can be made to 'BS8233:2014 – Guidance on sound insulation and noise reduction for buildings' [British Standards Institution] which gives guideline criteria for internal ambient noise levels in residential dwellings.

4. Noise Policy and Guidance

Noise Policy Statement for England (NPSE)

4.1 The NPSE sets out the Government's policy on noise and includes the long-term vision of promoting good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.

4.2 This long-term vision is supported by the following aims:

4.3 Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life.

4.4 There are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation. They are:

- NOEL (No Observed Effect Level) – this is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise;
- LOAEL (Lowest Observed Adverse Effect Level) – this is the level above which adverse effects on health and quality of life can be detected.

4.5 Extending these concepts further, NPSE leads to the concept of a significant observed adverse effect level:

- SOAEL (Significant Observed Adverse Effect Level) – this is the level above which significant adverse effects on health and quality of life occur.

4.6 NPSE acknowledges that it is not possible to have a single objective noise-based measure that defines NOEL, LOAEL and SOAEL that is applicable to all sources of noise in all situations. It is therefore suggested that more specific advice from other applicable noise standards and guidance could be employed to determine suitable noise level criteria within the overall principles of the NPSE.

National Planning Policy Framework (NPPF)

4.7 The revised NPPF was updated in December 2024 and sets out the government's planning policies for England and how these are expected to be applied. This document replaces the first NPPF published in March 2012 and includes minor clarifications to the revised version published in July 2018, February 2019, July 2021, and 2023.

4.8 Where issues of noise impact are concerned the NPPF provides brief guidance in Chapter 15 '*Conserving and enhancing the natural environment*' as follows:

Paragraph 170:

Planning policies and decisions should contribute to and enhance the natural and local environment by preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.

Paragraph 180:

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

Paragraph 182:

Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

Planning Practice Guidance (PPG)

4.9 PPG is written in support of the NPPF and provides an increased level of specific planning guidance.

4.10 It suggests that noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment. It is also suggested that noise should not be considered in isolation and separately from issues such as the economic, social and other environmental dimensions of proposed development.

4.11 Local planning authorities' plan-making and decision taking should take account of the acoustic environment and in doing so consider:

- whether or not a significant adverse effect is occurring or likely to occur;
- whether or not an adverse effect is occurring or likely to occur; and
- whether or not a good standard of amenity can be achieved.

Technical Guidance

BS8233:2014 – Guidance on sound insulation and noise reduction for buildings

4.12 The following targets have been selected in accordance with 'BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound.' This will be achieved when the Rating Level is below the representative background sound level.

5. Subjective Impressions

5.1 The noise climate at the rear of the site is dominated by road traffic throughout the day/evening including cars and HGVs / LGVs where tyre / road interaction noise. Secondary noise sources have been identified as people chatting nearby.

6. Measurement Locations

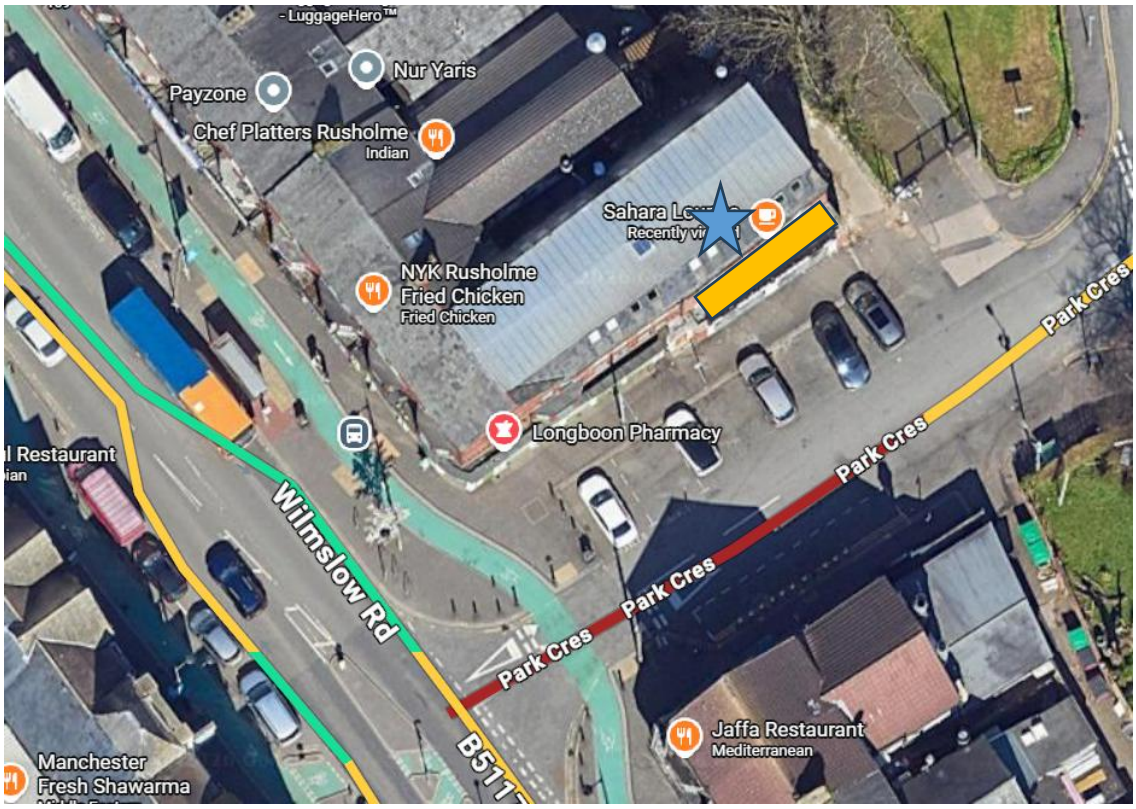
6.1 Background noise measurements were undertaken outside the rear of the nearest sensitive receptor leaving the monitoring equipment unattended for the daytime. The data collected during this period has been used to characterise the existing acoustic environment around the site.

6.2 Measurement and NSR locations are shown in figure 1 below:

7. Nearest Sensitive Receptor Locations

7.1 The nearest noise sensitive receptors (NSRs) have been identified as residential apartments on the first floor above the front of the site (NSR1) (4m).

7.2



8. Measurement Procedure

8.1 Unattended 15min background noise levels were measured on 19th April 2026. Full measurement times and durations can be found in Appendix B.

9. Measurement Equipment

9.1 Measurements were undertaken using a calibrated, Pulsar N45 class 1 sound level meter. Full equipment details can be found in **Appendix C.**

9.2 During all measurements the microphone was protected with an outdoor windshield.

9.3 Measurements at all monitoring locations were 'free field' (no vertical reflective surfaces within 3.5 metres of the microphone) and at a height of between 1.2 – 1.5 metres above ground level.

9.4 The following set-up parameters were used on the sound level meters:

- Time Weighting: Fast
- Frequency Weighting: A
- Averaging-Integrating Period: 15 minutes
- Data Logging: Repeat (Contiguous)

9.5 With the equipment set up in the configuration used during measurement, field calibration checks were performed on site immediately before and after the survey period using a sound calibrator. No significant drift (i.e. no greater than ±0.5 dB) in the calibration value was observed between the initial and final checks.

9.6 Full calibration details can be provided.

10. Weather Conditions

10.1 Weather conditions were deemed acceptable for background noise measurement. Full meteorological conditions are detailed in **Appendix D**.

11. Noise Source Levels

11.1 The noise level of the 5 guests chatting has been taken from a similar study.

11.2 The combined worst-case scenario with all all 5 guests chatting at the same time; the total sound pressure level scenario noise level is tabulated below:

Table 1: Noise level

Scenario	LAeq (dB)	r, m
5 guests chatting	66	1.0

BS4142:2014 Assessment

12. Specific Sound Levels

12.1 The specific sound level is denoted LAs and is the A-weighted, equivalent noise level at the NSR locations over the reference time period.

12.2 The NSRs are located directly opposite the site, See Figure 1 for the location of sensitive receptors. Full calculations are shown in **Appendix C**:

12.3 The Specific Sound Level of the guests chatting to the nearest NSR location above the front of the site is summarised below:

Table 2: Specific Sound Levels

NSR	Specific Sound Level, dB L_{As}
1 (4m)	44

13. Background Sound Level

13.1 The lowest daytime background sound level was measured as 51 dB LA90,15min.

14. Rating Level

14.1 The specific sound level may be corrected for certain characteristics that make a sound more noticeable at the NSR locations. Corrections for tonality, impulsivity and intermittency may be applied.

14.2 The associated rating penalties from intermittency and resultant sound rating levels, dB Lar, are tabulated below:

Table 3: Rating Penalties, dB, and Sound Rating Levels

NSR	dB L_{As}	Tonality	Impulsivity	Intermittency	dB L_{Ar}
1	44	0		3	47

15. Rating Level Vs Background

15.1 The rating level is to be compared to the background sound level to determine the resultant noise impact in accordance with BS4142:

> A Sound Rating Level at or below the background noise level is indicative of *Low Impact;*
>
> A Sound Rating Level that exceeds the background noise level by around + 5dB is likely an indication of *Adverse Impact*, depending on the context;
>
> A Sound Rating Level that exceeds the background noise level by around + 10dB is likely an indication of *Significant Adverse Impact*, depending on the context.

15.2 The noise impact during the daytime is tabulated below:

Table 4: Noise Impact

NSR	Rating Level, dB L_{Ar}	Difference, dBA	Impact
1	47	-4	Low Impact

16. External Noise from Outdoor Seating Area

16.1 Noise levels from the external seating area based on 10 seated guests with five chatting has been assessed at the NSR.

16.2 Based on several seated guests chatting (66dBA), distance attenuation and line of sight calculations, a rating for intermittency the noise at the NSR 4m is 47 dBA, below the lowest measured background noise level of 51 dB LA90 daytime; therefore, the noise impact is expected to be low during the day.

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17. Summary

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17.3 Background noise measurements were undertaken during the initial assessment in outside the front of the nearest sensitive receptors. The data collected during this period has been used to characterise the existing acoustic environment around the site and specific noise from guests.

17.4 Noise levels were measured in the daytime of 19th April 2026.

17.5 The lowest recorded daytime background sound level was measured as 51 dB LA90,15min.

<u>External Noise</u>

17.6 Noise levels from the external seating area based on 10 seated guests with five chatting has been assessed at the NSR.

17.7 Based on several seated guests chatting (66dBA), distance attenuation and line of sight calculations, a rating for intermittency the noise at the NSR 4m is 47 dBA, below the lowest measured background noise level of 51 dB LA90 daytime; therefore, the noise impact is expected to be low during the day.

17.8 Noise intrusion levels with residential windows open have been determined assuming that the insulation provided by a window, partially open for ventilation, is 15 dB as suggested by BS 8233 and WHO. The noise impact within bedrooms and living spaces is expected to be desirable.

17.9 The results of the noise assessment demonstrate that, external noise from the guests' voices near sensitive receivers will be considered low and desirable during the daytime.

18. Uncertainties

18.1 Uncertainty can arise when a calculation method, such as distance correction, is used to determine an overall noise level at an NSR location; however, it is an accepted method when the noise sources are yet to be introduced to the site.

Appendices

APPENDIX A - Measurement Details

Measurement	Start Date	Start Time	End Date	End Time
M1	19/04/26	09:30	19/04/26	23:00

APPENDIX B - Equipment Details

Equipment	Make	Model	Class	Serial Number
Sound Meter	Pulsar	N45	1	1365
Calibrator	Pulsar	PM1	1	011121C

APPENDIX C - Meteorology Details

Date	Temp C	Wind Speed m/s*	Wind Direction	Humidity %	Precipitation mm	Cloud Cover (Oktas)
19/04/26	12	2.9	ssw	84	0.0	5/8

*Windspeeds measured on site using a Skywatch Xplorer 2 Anemo-Thermometer

APPENDIX D - Noise Attenuation

Utilising Measured Levels

Scenario	dB $L_{Aeq,T}$	r_1 , m	r_2 , m	Barrier	Level at NSR_2
5 guests chatting at the same time	66	4.0	1.0	-10	44 (NSR1)

Barrier attenuation assumed as 5 dB and 10 dB for the partial and complete blockage of the line of sight respectively between source and receiver as per 'BS5228-1:2009 – Noise and vibration control on construction and open sites' pg. 130.

Point source distance attenuation: $L_y = 20 \times \log \frac{r_1}{r_2}$

Where L_y is the distance attenuation factor and $r_{1,2}$ are the source -> measurement distance and source -> NSR distance in metres respectively

APPENDIX E – Terminology and Definitions

Noise
Sound only becomes noise (often defined as 'unwanted sound' or sound that is considered undesirable or disruptive) when it causes or contributes to some harmful or otherwise unwanted effect, like annoyance or sleep disturbance.

Acoustic Environment
Sound from all sound sources as modified by the environment.

Equivalent continuous A-weighted sound pressure level LAeq,T
Value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval T, has the same mean square sound pressure as a sound under consideration whose level varies with time.

A-weighting
The human ear is most sensitive to frequencies in the range 1 kHz to 5 kHz. On each side of this range the sensitivity falls off. A-weighting is used in sound level meters to replicate this sensitivity and respond in the same way as the human ear.

Octave Band
Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit.

Maximum Sound Pressure Level LAmax,T
Highest value of the A-weighted sound pressure level with a specified time weighting that occurs during a given event or measuring period.

The LA10,T Sound Level
The A-weighted sound pressure that is exceeded for 10% of a given time interval, T. It is often used to evaluate road traffic noise.

The LA90,T Sound Level
The A-weighted sound pressure that is exceeded for 90% of a given time interval, T, measured using time weighting F. It is often referred to as the background noise level and which might in part be an indication of relative quietness at a given location

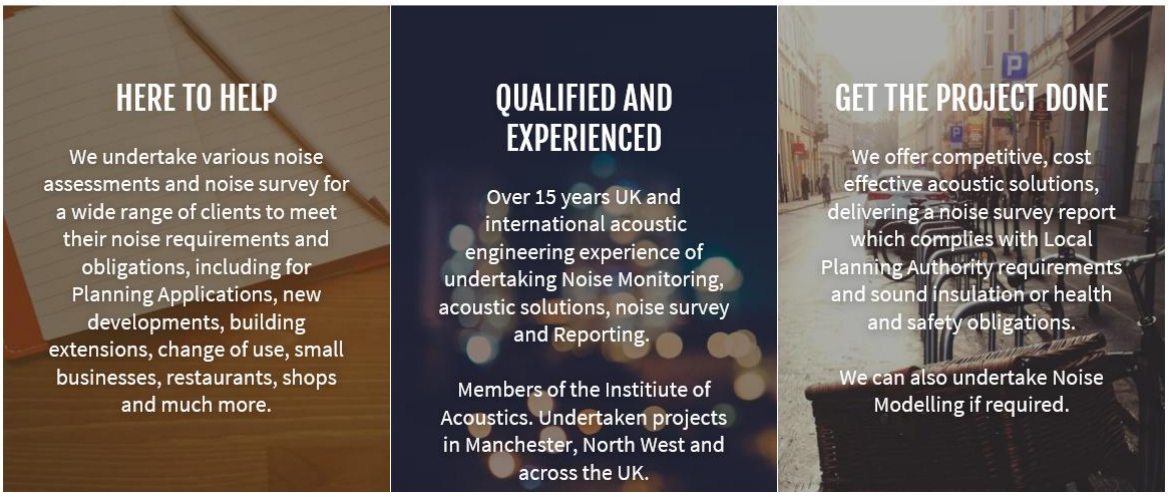
Free-field Level
The sound pressure level away from reflecting surfaces.
NOTE Measurements made 1.2 m to 1.5 m above the ground and at least 3.5 m away from other reflecting surfaces are usually regarded as free-field. To minimize the effect of reflections the

measuring position has to be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source).

Façade Level
The sound pressure level 1 m in front of the façade.
NOTE Facade level measurements of LpA are typically 1 dB to 2 dB higher than corresponding free-field measurements because of the reflection from the facade.

Indoor Ambient Noise
Noise in a given situation at a given time, usually composed of noise from many sources, inside and outside the building, but excluding noise from activities of the occupants.

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