NOISE IMPACT ASSESSMENT

BS 4142:2014+A1:2019

Commercial Noise:
Proposed Coffee House

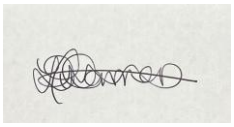


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REPORT DETAILS

Site Address	34 John Dalton St. Manchester, M2 6LE
Report Title	Noise Assessment: Proposed Coffee House
Project No.	NALPRO110526.01
Consultant Contact	jonathan@noiseassessments.co.uk

QUALITY ASSURANCE

Issue No.	Status	Issue Date	Comments	Author	Approved
1	FINAL	18/05/26	-		
2	FINAL	30/06/26	Updated based on council comments	J Mape BSc (Hons) PgDip IOA Cert. Environ. Noise **Noise Consultant**	D Warren **Director**

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1. Proposal

1.1 A ground commercial property applying to operate as Coffee House seeks planning permission for it's for the change of use of an existing premises (formerly a hair salon, to a Class E(b) coffee house to confirm that its new noise meets noise control guidelines. The client has completed a noise assessment at 34 John Dalton St. Manchester, M2 6LE.

1.2 The site will serve freshly made tea, coffee and light snacks.

1.3 No extraction system for the small reheating oven required. There is no new external plant proposed. There is a previously approved AC unit at the site.

1.4 Commercial sites are adjoining the proposed coffee house and above.

1.5 The nearest residents are apartments to the west from the front of the site, approximately 11m with no line of sight, and adjacent to the site 14m.

1.6 A noise assessment is required to assess the likely noise impact from noise generated from the preparation of coffee, Turbochef oven (during reheat cycles, 30-90 seconds at a time) and people chatting within the site though the open door to outside during the daytime and night-time.

1.7 The front of the site has large, double-glazed window and entry/exit door.

Consultant

1.8 Jonathan has experience in environmental, noise and vibration monitoring, acoustic consultancy and impact assessment gained over a period of 21 years in the industry, across the UK, Australia, Brunei, Turkey and the Middle East. He has a Degree in Environmental Science, Postgraduate Diploma in Environmental Monitoring. He has also completed the IOA Certificate in Environmental Noise, from the University of Liverpool.

1.9 Jonathan specialises in the measurement and assessment of noise and vibration for a wide range of planning applications, including those requiring EIA, across the industrial, commercial, residential, and mineral extraction sectors. Jonathan is also involved in undertaking various aspects of indoor occupational monitoring and reporting for projects relating to worker health.

2. Existing Context

2.1 The site (ground floor) is set within a commercial row of 4-storey attached buildings. The site is surrounded by residential apartments and commercial unit, adjacent to a busy main road.

2.2 The environmental health department of the local planning authority is likely to raise concerns of noise emissions from the breakout noise from the making of coffee on sensitive residential properties during the daytime and night-time.

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

Local Guidance: Planning and Noise Technical Guidance, October 2022

4.1 The Manchester Planning and Noise Technical Guidance (October 2022) provides structured advice for developers, acoustic consultants, and local planning authorities to manage noise effectively in the planning system. It emphasizes protecting public health, well-being, and quality of life while facilitating sustainable development.

Noise Policy Statement for England (NPSE)

4.2 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.

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

4.4 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.

4.5 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.

4.6 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.

4.7 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)

4.8 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.

4.9 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)

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

4.11 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.

4.12 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

BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound'

BS4142 Is a recognised standard for assessing the noise impact of fixed plant machinery via relation of noise emissions to current background noise levels.

5. Nearest Sensitive Receptor Locations

5.1 The nearest noise sensitive receptors (NSRs) have been identified as residential apartments at the side and front of the site.

6. Subjective Impressions

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

7. Measurement Locations

7.1 Unattended/attended background noise measurements were undertaken outside the front of the nearest sensitive receptor. The data collected during this period has been used to characterise the existing acoustic environment around the site.

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

Figure 1: Site & Measurement Location



Background measurement location M1

Site location

NSR1 (11m) NSR2 (14m)

8. Measurement Procedure

8.1 Noise levels were measured on Sunday 17th May 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 meters. Full equipment details can be found in **Appendix C.**

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

9.3 The calibration level of the meters was checked before and after the survey with a sound calibrator with no variation in the levels observed.

9.4 The sound level meter was set to measure various noise parameters including LAeq and LAmax values using a 'fast' time weighting.

9.5 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 E**.

11. Noise Source Levels

11.1 The potential internal noise levels been provided in-situ at the client's current coffee establishment at 97 Manchester Road, Chorlton Cum Hardy, M21 9GA during a busy Sunday morning when the coffee machines are in constant use.

11.2 The noise level is tabulated below:

Table 2: In-situ noise levels

Equipment	LAeq (dB)	r, m
Coffee machine, customer chatting	65	1.0

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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 adjacent to and west of the site, however the recessed open door will have a reduced line of sight for the apartments. See Figure 1 for the location of sensitive receptors. Full calculations are shown in **Appendix F**:

12.3 The Specific Sound Level of the internal noise breakout through the open door at the nearest NSR locations at the rear of the site are summarised below:

Table 3: Specific Sound Levels

NSR	Specific Sound Level, Db L_{As}
1 (11m)	34
2 (14m)	37

13. Background Sound Level

13.1 Environmental noise levels were measured on site Sunday 17th May 2026.

13.2 The lowest daytime background sound level was measured between 19:00-19:15 as 48 dB LA90,15min.

13.3 The lowest night-time background sound level was measured between 00:00-00:15 as 44 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 for intermittency and resultant sound rating levels, dB LAr, are tabulated below:

Table 4: Rating Penalties, dB, and Sound Rating Levels

NSR	dB L_{As}	Tonality	Impulsivity	Intermittency	dB L_{Ar}
1	34	0	0	3	37
2	37	0	0	3	40

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 5: Noise Impact

NSR	Rating Level, dB L_{Ar}	Difference, dBA	Impact
1	37	-11	**Low Impact**
2	40	-8	**Low Impact**

15.3 The noise impact during the night-time is tabulated below:

Table 5: Noise Impact

NSR	Rating Level, dB L_{Ar}	Difference, dBA	Impact
1	37	-7	**Low Impact**
2	40	-4	**Low Impact**

15.4 Noise breakout from the open door at the front of the site to the residential windows is below the lowest measured background noise level of 48 dB LA90 daytime and 44 dB LA90 night-time; therefore, the noise impact because of noise breakout is expected to be **low**.

15.5 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 because of noise breakout is expected to be **desirable**.

16. Summary

16.1 A ground commercial property applying to operate as coffee house seeks planning permission for its change of use of an existing premises (formerly a hair salon, to a Class E(b) coffee house to confirm that its new noise meets noise control guidelines. The client has completed a noise assessment at 34 John Dalton St. Manchester, M2 6LE.

16.2 The site will serve freshly made tea, coffee and light snacks.

16.3 No extraction system for the small reheating oven required or outdoor seating is proposed. There is no new external plant proposed. There is a previously approved AC unit at the site.

16.4 Commercial sites are adjoining the proposed coffee house and above.

16.5 The nearest residents are apartments to the west from the front of the site, approximately 11m with no line of sight, and adjacent to the site 14m with a partial line of sight into the site.

16.6 A noise assessment is required to assess the likely noise impact from noise generated from the preparation of coffee, Turbochef oven (during reheat cycles, 30-90 seconds at a time) and people chatting within the site though the open door to outside during the daytime and night-time.

16.7 The front of the site has large, double-glazed window and entry/exit door.

16.8 The associated rating penalties for intermittency and resultant sound rating levels, dB LAr, are tabulated below:

Rating Penalties, dB, and Sound Rating Levels

NSR	dB L_{As}	Tonality	Impulsivity	Intermittency	dB L_{Ar}
1	34	0	0	3	37
2	37	0	0	3	40

16.9 The lowest daytime background sound level was measured between 19:00-19:15 as 48 dB LA90,15min.

16.10 The lowest night-time background sound level was measured between 12:00-12:15 as 44 dB LA90,15min.

16.11 The noise impact during the daytime is tabulated below:

Noise Impact

NSR	Rating Level, dB L_{Ar}	Difference, dBA	Impact
1	37	-11	**Low Impact**
2	40	-8	**Low Impact**

16.12 The noise impact during the night-time is tabulated below:

Noise Impact

NSR	Rating Level, dB L_{Ar}	Difference, dBA	Impact
1	37	-7	**Low Impact**
2	40	-4	**Low Impact**

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16.14 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 because of noise breakout is expected to be **desirable**.

17. Uncertainties

17.1 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.

17.2 The monitoring equipment is subject to a 1dB error margin, however calibration before and after measurements allows the drift within the margin to be monitored and thus demonstrates that minimal drift occurred throughout the measurements.

Appendices

APPENDIX A - Measurement Details				
Measurement	Start Date	Start Time	End Date	End Time
M1	17/05/26	11:00	18/05/26	12:30

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

APPENDIX C - Calibration Details					
Measurement	Calibrator Ref Level (dB)	Level Before (dB)	Deviation Before (dB)	Level After (dB)	Deviation After (dB)
M1	94.0	94.0	0	94.0	0

APPENDIX D - Meteorology Details						
Date	Temp C	Wind Speed m/s*	Wind Direction	Humidity %	Precipitation mm	Cloud Cover (Oktas)
17/05/26	14	1.9	w	82	0.0	4/8

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

APPENDIX E - Noise Attenuation

Utilising in-situ Levels

Equipment	Manufacturer Data, dB LpA	r_1 , m	r_2 , m	Barrier	Level at NSR_2
Coffee machines, customers chatting	65	11	1.0	- 10	34 (NSR1)
		14	1.0	-5	37 (NSR2)

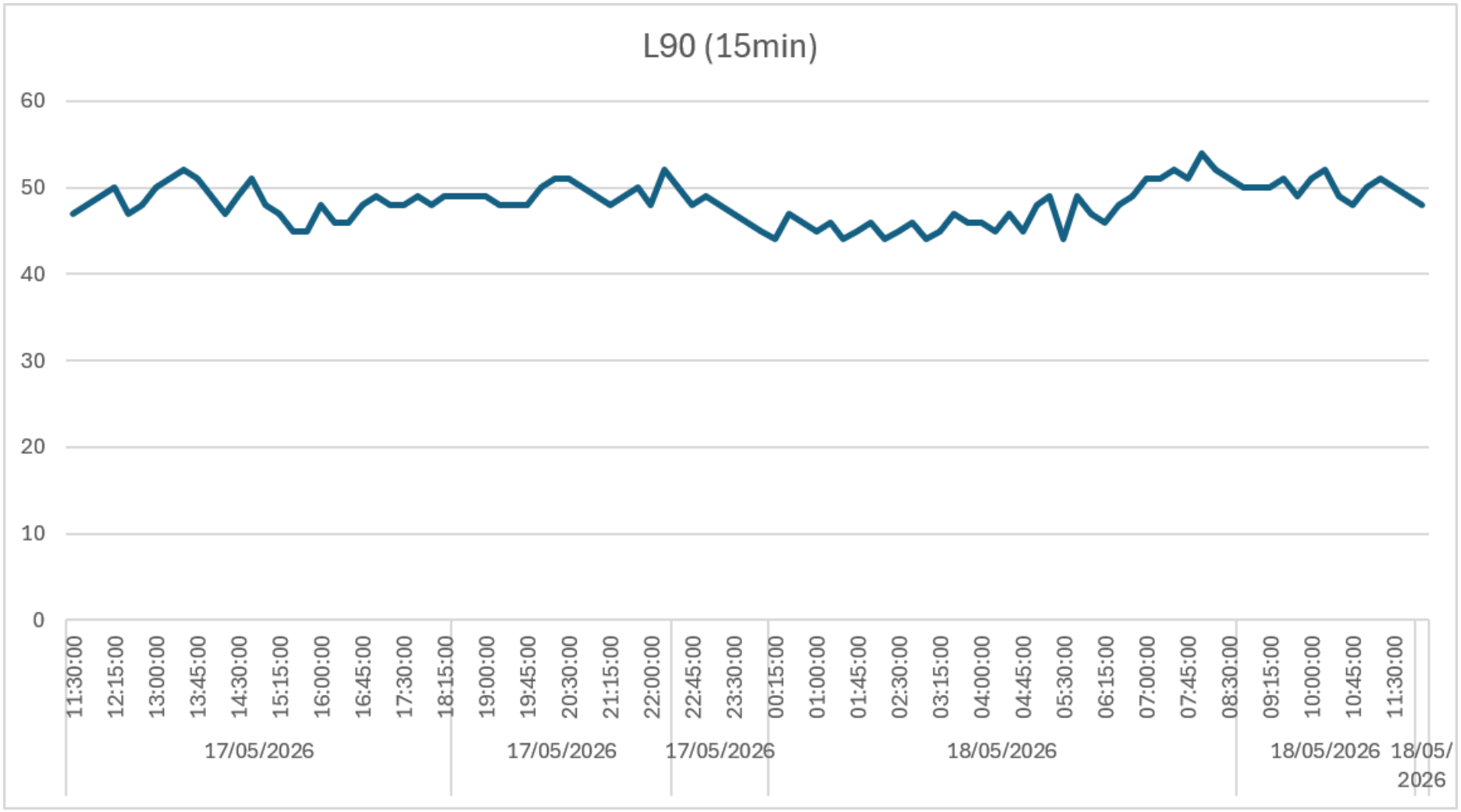
Barrier attenuation assumed as 5 dB and 10 dB for the partial and complete blockage of the line of sight respectively between source and receiver as per 'BS5228-1:2009 – Noise and vibration control on construction and open sites' pg. 130.

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 F – Background Noise Levels



APPENDIX G – 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

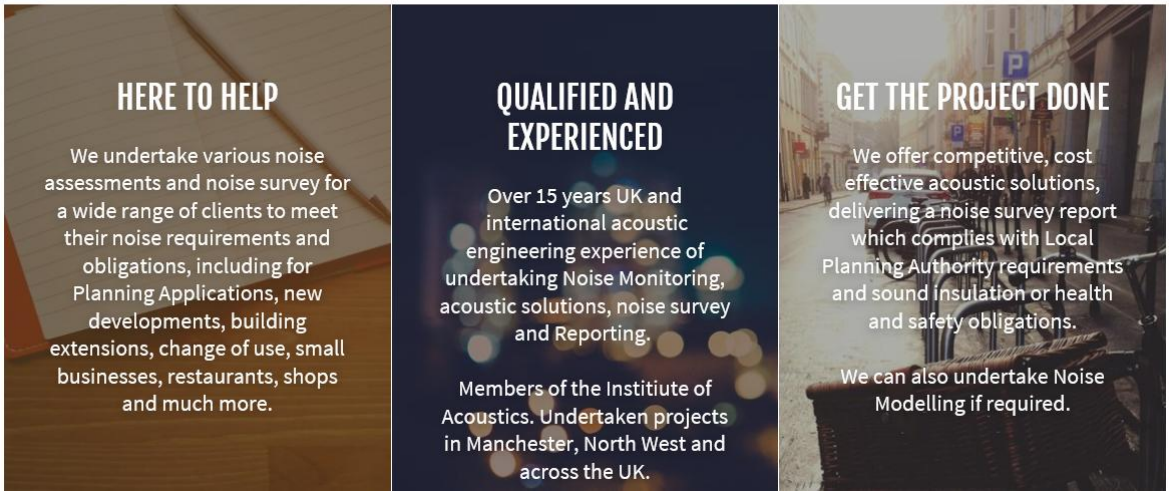
measuring position has to be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source).

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.

ABOUT US


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Channel 185, Discover Britain


HERE TO HELP
We undertake various noise assessments and noise survey for a wide range of clients to meet their noise requirements and obligations, including for Planning Applications, new developments, building extensions, change of use, small businesses, restaurants, shops and much more.
QUALIFIED AND EXPERIENCED
Over 15 years UK and international acoustic engineering experience of undertaking Noise Monitoring, acoustic solutions, noise survey and Reporting.
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GET THE PROJECT DONE
We offer competitive, cost effective acoustic solutions, delivering a noise survey report which complies with Local Planning Authority requirements and sound insulation or health and safety obligations.
We can also undertake Noise Modelling if required.