

Abbey House
Noise Impact
Assessment

P01

10 September 2025

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1.0 INTRODUCTION

This Noise Impact Assessment has been prepared by Max Fordham (MFLP) to support planning application for the conversion of the existing roof of Abbey House into a rooftop terraces.

Abbey House is a part 6-storey, part 5-storey commercial office building located at 32 Booth Street, Manchester, M2 4AB. The building is situated in a dense urban environment of the city centre, surrounded by a mix of commercial, civic, and institutional buildings.

The rooftop of the 4th floor currently houses a caretaker's flat, which has been unused since 2005, now vacant. The proposal seeks to revitalise this underutilised area of the building by removing a disused caretaker's flat and replacing it with external amenity space for the benefit of the office occupiers.

The following report relates to changes to the rooftop space only.

Objectives

This acoustic report addresses the following objectives:

- To review relevant legislation, policy and guidance documents.
- To establish the Local Authority's acoustic requirements for the proposed development.
- To undertake an environmental noise survey at a selected position.
- To establish appropriate noise levels in regard the proposal with reference to the Local Authority's requirement.
- To assess the activity noise emissions from the roof terrace.

A glossary of the technical terminology used in this report is provided in the Appendix 7.1 at the end of this document.

2.0 LEGISLATION, POLICY AND GUIDANCE

2.1 National Planning Policy

National Planning Policy Framework

The NPPF was last updated in December 2024 and sets out the government's planning policies for England and how these are expected to be applied. It provides a framework within which locally prepared plans can provide for sufficient housing and other development in a sustainable manner.

It states in paragraph 187 e) of the NPPF that 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”*.

Furthermore, it states in paragraphs 198 and 200 that planning policies and decisions should:

- 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 (paragraph 198 a)).
- Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason (paragraph 198 b)).
- 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 (paragraph 200).

The NPPF refers to the Noise Policy Statement for England 2010.

Noise Policy Statement for England 2010

The Noise Policy Statement for England 2010 (NPSE) sets out the government’s long-term noise policy to *“promote good health and a good quality of life through the effective management of noise within the context of government policy on sustainable development”* (paragraph 1.6).

The NPSE states that *“excessive noise can have wide-ranging impacts on the quality of human life, health (for example owing to annoyance or sleep disturbance) and use and enjoyment of areas of value such as quiet places and areas with high landscape quality”*.

The NPSE cites the following aims in the Explanatory Note section:

- First aim of the NPSE: Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of government policy on sustainable development.
- Second aim of the NPSE: Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of government policy on sustainable development.
- Third aim of the NPSE: Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of government policy on sustainable development.

The NPSE also states that *“examples of noise management can be found in many areas including reducing noise source; the use of the land use and transport planning systems, compensation measures, the statutory nuisance and licensing regimes and other related legislation”* (paragraph 2.2).

The NPSE introduces guidance to assist in defining adverse impacts:

- 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 noise.
- LOAEL – Lowest Observed Adverse Effect Level: this is the level above which adverse effects on health and quality of life can be detected.
- SOAEL – Significant Observed Adverse Effect Level: this is the level above which significant adverse effects on health and quality of life occur.

The NPSE acknowledges “that it is not possible to have a single objective noise-based measure that is mandatory and applicable to all sources of noise in all situations” (paragraph 2.15).

Planning Practice Guidance 2024

The Planning Practice Guidance 2024 (PPG) sets out the government's planning policies for England and how these are expected to be applied.

The government’s planning practice guidance web pages provide advice on various issues, including noise (<https://www.gov.uk/guidance/noise--2>). When considering when noise is relevant to planning, the advice (published in March 2014 and last updated in July 2019) states that “noise needs to be considered when new development may create additional noise, or would be sensitive to the prevailing acoustic environment (including any anticipated changes to that environment from activities that are permitted but not yet commenced)” (paragraph: 001, reference ID: 30-001-20190722, revision date: 22 07 2019).

The planning practice guidance web pages include further explanation of the effect level categories introduced in the NPSE and explore how actions, such as a requirement for noise mitigation or prevention of a development, might be assessed with respect to whether or not noise levels are considered above the category thresholds. The noise exposure hierarchy table from the noise guidance (see Figure 1) summarises the noise exposure hierarchy based on the likely average response of those affected (paragraph: 005, reference ID: 30-005-20190722, revision date: 22 07 2019).

Response	Examples of outcomes	Increasing effect level	Action
No Observed Effect Level			
Not present	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. 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
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

Figure 1: Noise exposure hierarchy table, from the NPSE.

Summary

In summary, national planning policy does not provide quantitative advice, such as absolute noise level limits, which define SOAEL, LOAEL and NOAEL which is applicable to all sources of noise in all situations in a planning context.

2.2 Local Policy

Manchester's Local Development Framework – Core Strategy Development Plan Document (DPD)

The Core Strategy, adopted by Manchester City Council on 11th July 2012, sets out key policies for the Manchester development over a period of 15 years (from 2012 to 2027).

In regard to noise issue, an extract from Policy DM 1 - *Development Management* is given below:

“All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:

- Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise.”

Manchester City Council Planning & Noise – Technical Guidance

The guidance (issued in December 2015) aims to provide help and advice in relation to noise in a planning context to encourage good acoustic design. It outlines what is expected in relation to current guidance and policy with the aspiration that new developments achieve the highest possible standards without compromising the health and wellbeing of people that live and work within the City of Manchester.

In regard to activity noise other than entertainment venues, the Guidance does not provide specific noise requirement. Although, the assessment criteria should be able to demonstrate the following:

3.6 MCC assessment criteria

In the context of government policy, Manchester City Council require that developments aim for:

1. A noise level between the No Observed Effect Level (this is the level of noise exposure below which no effect at all on health or quality of life can be detected) and the Lowest Observed Adverse Effect Level (this is the level of noise exposure above which adverse effects on health and quality of life can be detected).

If point 1 can not be achieved, then:

2. If the assessment results in a level between the Lowest Observed Adverse Effect Level and the Significant Observed Adverse Effect Level (this is the level of noise exposure above which significant adverse effects on health and quality of life occur), mitigation will be necessary to reduce the level and thus conditions will be attached.

If points 1 & 2 can not be achieved, then:

3. If the assessment results in a Significant Observed Adverse Effect Level after mitigation, the application will be recommended for refusal.

3.6.1 MCC guidance

The NPPF, NSPE and NPPG do not present absolute noise level criteria which define SOAEL, LOAEL and NOAEL which is applicable to all sources of noise in all situations in a planning context.

One of the aims of this document, therefore, is to address this ambiguity and provide a suite of noise level design targets for typical developments (which are in accordance with current policies and standards).

3.0 NOISE SURVEY

3.1 Site Context

Abbey House is a part 6-storey, part 5-storey commercial office building located at 32 Booth Street, in a dense urban environment of Manchester city centre (M2 4AB), surrounded by a mix of commercial, civic, and institutional buildings.

The building has a peculiar 'C shape' forming part of a block edged by Mosley Street (southwest), Booth Street (southeast), and Cooper Street (northeast). A narrow, one-way road (West Mosley Street) runs off Princess Street, under part of the building at ground floor level and connects to Booth Street. 80 Mosley Street adjoins Abbey House with 11 Cooper Street (Waldorf House) and 73 -75 Princess Street forming the remaining parts of the block.

Currently the roof hosts various plant and kit for mechanical ventilation, the lift head and the former caretaker's accommodation.

Figure 2 shows a view of the site context (included location of the noise survey for further reference).

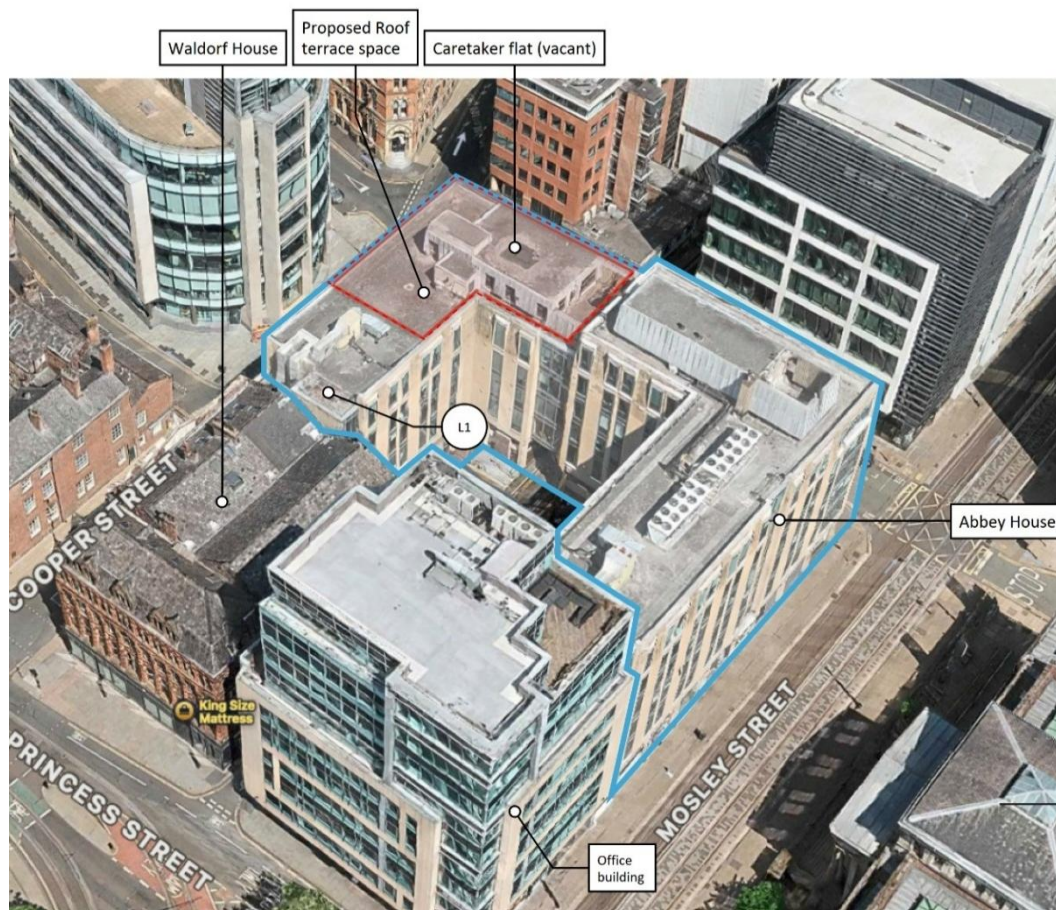


Figure 2: Aerial view of the Site and its surroundings, including measurement location L1 for reference.

3.2 Noise Survey

Methodology

A long-term unattended noise survey was undertaken on-site to establish the baseline noise environment of the application site and to determine its suitability of the proposal.

The noise survey was undertaken from 16:00 hours on Thursday 22 to 10:00 hours on Tuesday 27 May 2025, encompassing the weekend. Noise levels were monitored and stored continuously over 15-minute time interval with a fast time-weighting and a rating sample of 1 second.

The measurements were taken of the A-weighted (dBA) mean noise level ($L_{Aeq,15min}$) and the background ($L_{AF90,15min}$) noise level.

The noise survey was undertaken in accordance with BS 7445.

Measurement Locations

The location chosen for the long term noise survey was at the roof of the Abbey House building (location L1 in Figure 2) in proximity to Waldorf House. Picture of the setting up are given in the Appendix 7.3 at the end of this document.

Weather Conditions

The weather conditions during the survey period have been found suitable for undertaking measurements of sound levels, with no significant periods of rainfall or strong breezes (<5 m/s) for the duration of the survey.

Noise Sources

Dominant noise sources were noted to be tram noise, road traffic noise along the surrounding road network as well as plant noise from building services from the building.

Measurement Equipment

The equipment used was a Norsonic 140 Class 1 sound level meter as per the specification given in BS 61672-1:2013 – ‘*Electroacoustics. Sound level meters – Specifications*’. The sound level meter uses a Norsonic 1225 free-field response microphone and a Norsonic 1209 microphone preamplifier. A Norsonic 1251 Class 1 portable sound calibrator (complying with BS 60942:2018 – ‘*Electroacoustics. Sound calibrators*’) was used to calibrate the sound level meter.

No significant calibration deviation occurred; details of the noise survey equipment are provided in the Appendix 7.2 on Table 3.

3.3 Noise Survey Results

Long-term Measurements

Time history of the long-term noise survey is given Figure 3. The difference in noise level emission visible in the graph is due to the operating AHU during the day close to the measurement position.

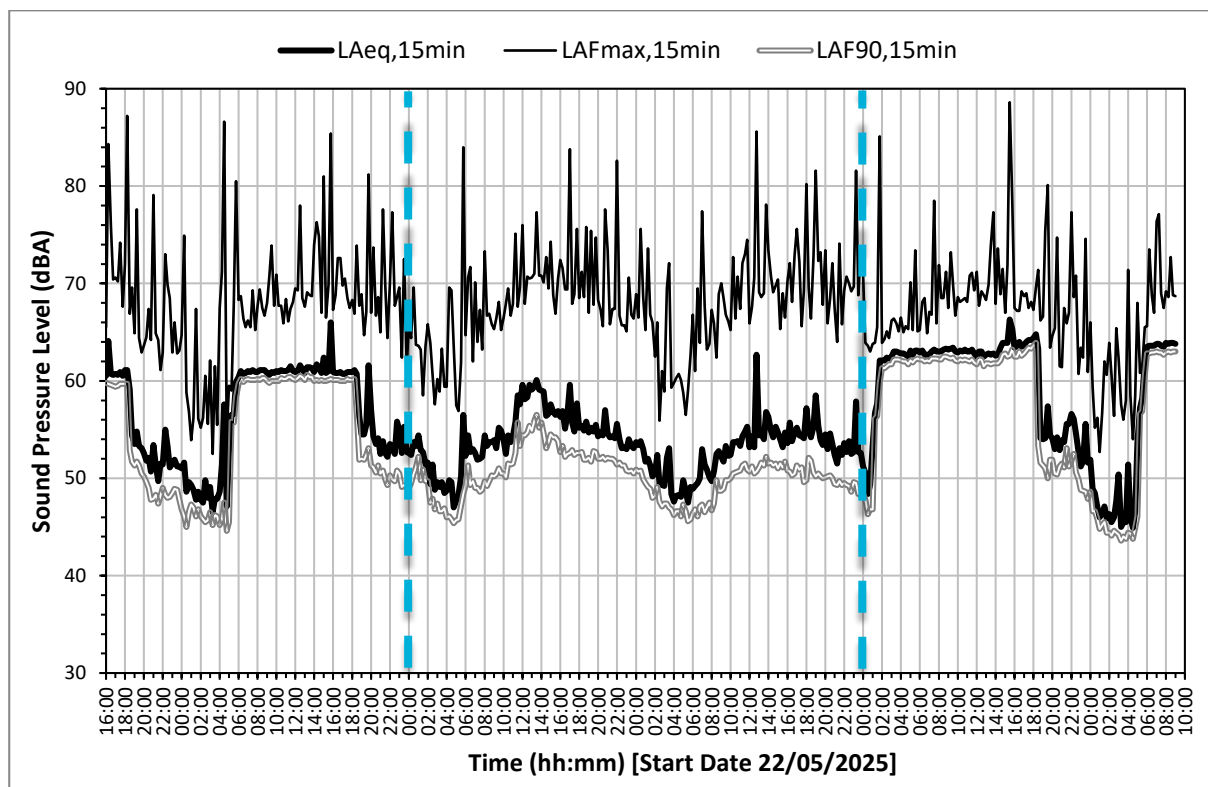


Figure 3: Long-term noise survey results (weekend period within dashed vertical lines)

As plant is part of the existing noise climate, noise level outcomes will be assessed accordingly. For completeness, noise survey outcome from the weekend (48 hours) has been assessed as well. Results are summarised on Table 1 (in brackets is the corresponding weekend values).

Table 1: Long-term noise survey results

Table 1: Long-term noise survey results				
Location	Date	Time period	L _{Aeq,T} (dBA) ^[1]	L _{AF90,15min} (dBA) ^[2]
L1	22/05/2025 to 27/05/2025	Daytime (07:00 to 23:00)	59 (55)	52 (51)
		Night-time (23:00 to 07:00)	54 (52)	47 (47)
^[1] logarithmic average of the noise levels during the entire duration of the survey				
^[2] the 40 th percentile value of the L _{AF90,15min} data values				

The background sound noise levels on Table 1 give an indication of the typical lowest noise levels likely to be experienced at the site.

4.0 EXTERNAL AMENITY SPACE

4.1 Project Proposal

With reference to Figure 2 the proposal is limited to the roof area on the parts of Booth Street and Cooper Street sides of the building (on the 4th floor) by removing the disused caretaker's flat and replacing it with external amenity space for the benefit of the office occupiers.

Two rooftop terraces will be created: one terrace (on Cooper Street) will be exclusively allocated to the fourth-floor office occupiers; the second terrace (on Booth Street) will be shared by the remaining office tenants.

The proposal relates to changes to the rooftop space only; the remaining roof space as well as the plant associated with the building are excluded in this planning proposal, therefore in this assessment.

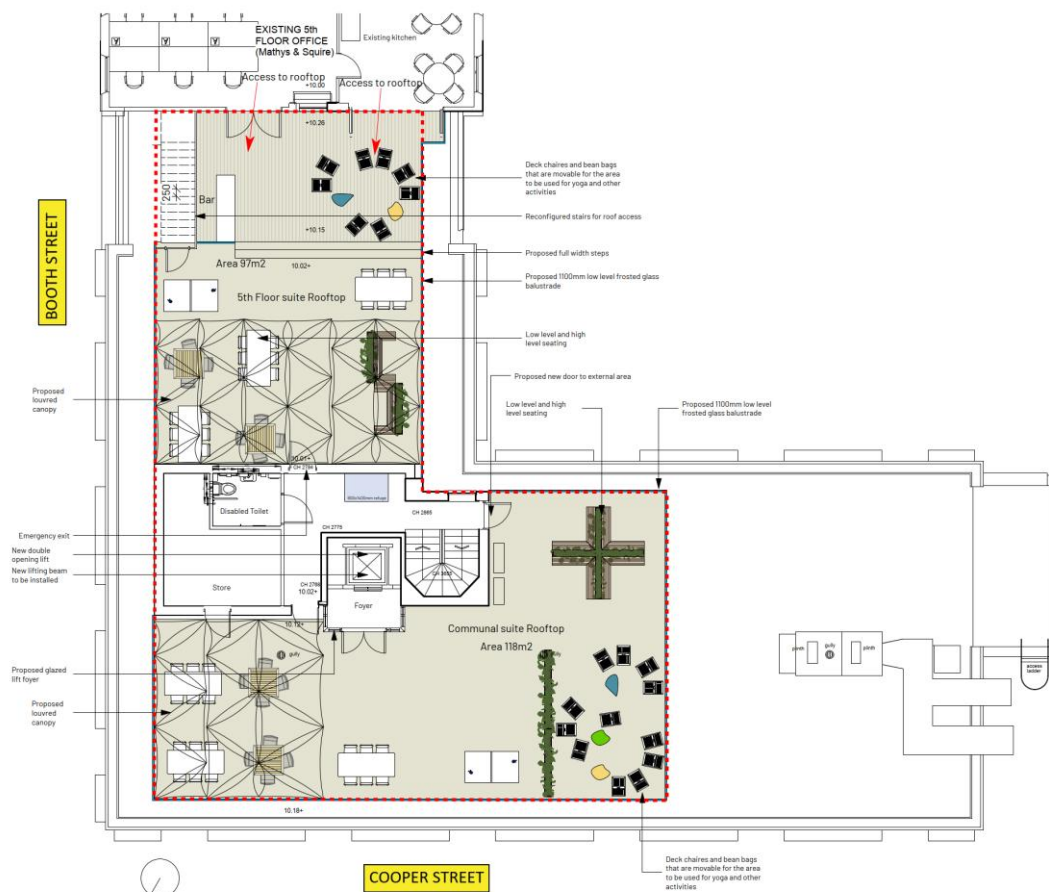


Figure 4: Proposed roof top terrace in red (4th floor)

5.0 ACITVITY NOISE ASSESSMENT

5.1 Design Criteria

Given the nature of the use of these outdoor spaces, the main consideration is regarding activity noise from the use of the terraces to the closest noise sensitive receptor.

The terraces are understood to be in use by office tenants only for general office breakout during working time (expected to be Monday to Friday between 8:00 am to 7:30 pm). Also, no music reproduction or PA is understood to occur on the terraces.

It is proposed that a suitable activity noise level limit at the nearest noise sensitive receptor is to be below the prevailing daytime ambient noise level, found to be 59dB L_{Aeq} (refer to Table 1).

In the context of MCC requirement, this target is anticipated to be a “No Observed Adverse Effect Limit” (NOAEL), where noise can be heard, occasionally affecting the acoustic character of the area, but not such that there is a perceived change in the quality of life in the neighbouring area.

A review of the MCC planning portal has shown that this approach has been used in other planning applications containing external roof terraces (Use Class E) within Manchester City Centre.

Therefore, it is anticipated that MCC will consider the daytime ambient noise level as an acceptable noise level limit for the subject proposal.

Noise Sensitive Receptor

The closest noise sensitive receptor (NSR) is the window of the residential development at the Waldorf House. With reference on Figure 4, the terraces location is outlined in Table 2.

Table 2: Rooftop terrace locations and maximum occupancy

Facades with terraces (usable area)	Distance from the receptor window
Terrace on Booth St	20m
Terrace on Cooper St	25m

5.2 Assessment

Methodology

The type of communication considered is direct speech, typical for person-to-person communications, with people in the same environment without the use of electro-acoustic system.

British Standard BS EN ISO 9921:2003, Annex A, gives the “vocal effort” of a speech from the person based on the noise environment. Vocal effort is expressed by the equivalent A-weighted sound-pressure level (dBA) at a distance of 1 m in front of the mouth.

Table A.1 — Vocal effort of a male speaker and related A-weighted speech level (dB re 20 µPa) at 1 m in front of the mouth

Vocal effort	$L_{S, A, 1 m}$ dB
Very loud	78
Loud	72
Raised	66
Normal	60
Relaxed	54

Figure 5: Vocal effort level from a male speaker (from table A.1 from BS EN ISO 9921:2003 Table A.1)

To predict the noise levels from the terraces the following assumptions have been made:

- Total occupancy of 40 people per terrace area, with the assumption of 50% of people speaking at one time.
- 50% of the speakers talking at a “normal” vocal effort and 50% talking at a “raised” vocal effort
- Normal vocal effort has a sound power of 68 dBA per person (dBA at 1 metre on axis)
- Raised vocal effort has a sound power of 74 dBA per person (66 dBA at 1 metre on axis)
- The assessment has assumed the use of all the spaces simultaneously.

Results

Based on the assumption above, the noise levels at the nearest receptor window from activity noise is within 50~55 dBA, which is below the measured daytime ambient noise level of 59 dB L_{Aeq} .

6.0 SUMMARY AND CONCLUSION

Max Fordham LLP (MFLLP) have been appointed to provide acoustic report relating to the planning application at the Abbey House, 32 Booth Street, Manchester, M2 4AB.

An environmental noise survey has been undertaken in order to establish the currently prevailing noise climate on site.

Activity noise emission criteria have been established based on the results of the noise survey and with reference to the Local Authority's requirements.

Activity noise from people talking on the roof terraces has been assessed and the levels are calculated to be lower than the measured ambient noise levels at the nearest noise sensitive receptors. Thus, no significant impact is predicted at the nearest noise sensitive receptors.

In conclusion, the proposed plant noise emissions are considered not significant, and the site is considered acoustically suitable for the intended use.

7.0 APPENDIX

7.1 Glossary

A-WEIGHTED SOUND PRESSURE LEVEL (SPL), L_A (dBA). A-weighted SPL values (or noise levels) are weighted in a way that approximates the frequency response of the human ear and allows sound levels to be expressed as a single-figure value.

BACKGROUND SOUND LEVEL, $L_{A90,T}$ (dBA). The A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of a given time interval, T, measured using time weighting and quoted to the nearest whole number of decibels.

EQUIVALENT CONTINUOUS A-WEIGHTED SPL, $L_{Aeq,T}$ (dBA). Energy weighted average of the A-weighted sound pressure level over a time period, T. The level of a notional continuous sound that would deliver the same A-weighted sound energy as the actual fluctuating sound over the course of the defined time period, T.

MAXIMUM A-WEIGHTED SPL, L_{Amax} (dBA). The maximum A-weighted sound pressure level measured. If not specified, usually assumed to mean L_{AFmax} , i.e. L_{Amax} determined with a 'fast' (F) sound level meter time constant of 125 ms.

PERCENTILE NOISE LEVEL $L_{A1,T}$, $L_{A10,T}$, $L_{A90,T}$ (dBA). The value of the A-weighted sound pressure level that is exceeded for N% of any given time interval, T. For example, $L_{A1,T}$ is the value that is exceeded for 1% of the measurement period.

SOUND PRESSURE LEVEL (SPL), L (dB). The sound level measured on a logarithmic scale, with unit decibel dB. A free-field SPL refers to a level determined far enough from surfaces or façades, apart from the ground, so as not to be influenced by reflections from those surfaces.

7.2 Survey Equipment

Noise Survey

The Norsonic sound level meters were calibrated by an accredited United Kingdom Accreditation Service (UKAS) laboratory in accordance with the laboratory requirements of UKAS on the dates specified in Table 3.

Table 3: Details of the noise survey equipment.

Item	Make/type/serial no.	Date calibrated	Calibration due	Certificate no.
Class 1 Sound Level Meter	Norsonic/140 S/N 1406755	23/05/2024	23/05/2026	U47902
Microphone Preamplifier	Norsonic/1209 S/N 21284	23/05/2024	23/05/2026	U47902
Microphone	Norsonic/1225 S/N 579797	23/05/2024	23/05/2026	U47901
Sound Calibrator	Norsonic/1251 S/N 34890	04/04/2025	04/04/2026	U50567

Copy of the calibration certificates of the noise survey equipment are held by MFLLP and are available upon request.

7.3 Survey Photos



Figure 6: Setting up of the long-term noise survey