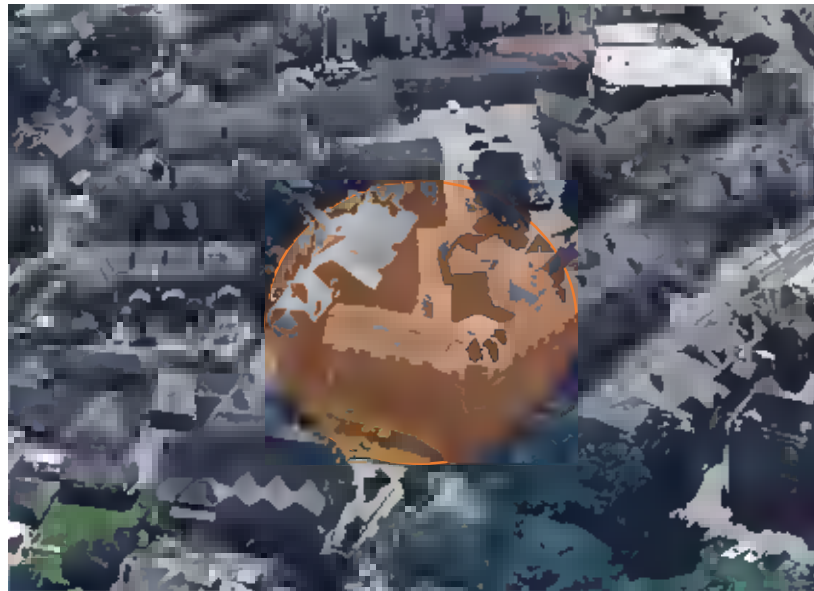




**PEAK BUILDINGS
TERRACE ROAD
BUXTON, SK17 6DY**

**Change of Use from Public Access Museum to Mixed Commercial and
Domestic Use**



Noise Impact Assessment

Report by
S. B. Mellor, MA, CMIOSH, MIIRSM, MIOA

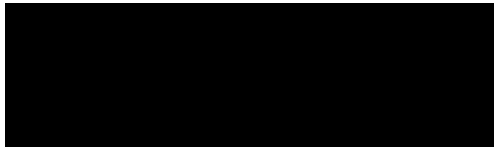
Report Date: 24th August 2026

Ref: E23562

Site Visited by: S. B. Mellor MA, MIOA, CMIOSH

Site Visits: 27th March and 30th March 2026

Signed:



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1.0 INTRODUCTION

SBM Safety Solutions was commissioned by Inc Architects Ltd to conduct an environmental noise impact assessment for the “Peak Buildings”, Terrace Road, Buxton, SK17 6DY. The owner intends to convert the buildings, including a former museum, into a mix of commercial spaces (offices) and apartments. Noise monitoring at the site will assess current conditions and evaluate the risk of adverse impacts on future residents.

Figure 1



The plan suggests that the ground floor will serve multiple functions, providing space for both businesses and homes. The first through fourth floors are intended to be converted into apartments. This report will assess the current background noise levels and consider potential future noise sources that could affect residents.

Ambient and background noise levels were measured over the weekend at three locations including Terrace Road and Hardwick Square — to account for road and commercial noise. A brief measurement was also taken inside the courtyard, which is screened from the main road and partially from the rear road, to compare with levels facing both roads.

Indicative measurements were also undertaken to estimate the sound insulation provided by the building.

Acoustic terminology is explained at Appendix 1 of this report; references in Appendix 2; the author's qualifications and experience are described in Appendix 3; and images of the location and monitoring positions at Appendix 4.

2.0 SITE DESCRIPTION

The buildings are located on Terrace Road, a principal route connecting Buxton's central commercial district with The Crescent, Pavilion Gardens and the wider town centre. Terrace Road forms part of a mixed-use environment comprising retail, hospitality, office space and established residential accommodation above ground-floor commercial units.

The immediate surroundings include a range of commercial uses typical of a town-centre setting. Adjoining Hardwicke Hall along the terrace are several small businesses including cafés, boutique shops and service-based premises.

Opposite from the building, two commercial units operate on the ground floor, with residential accommodation situated above. Additionally, there is a row of adjoining townhouses.

Approximately 20–30 metres downslope along Terrace Road is a cluster of food-and-drink premises, including cafés, bars and restaurants, some of which provide outdoor seating during peak periods.

Again, to the rear of Hardwicke Hall, there are mix of commercial, residential and an infant school.

Figure 2 - Building Location (highlighted) plus Monitoring Positions.

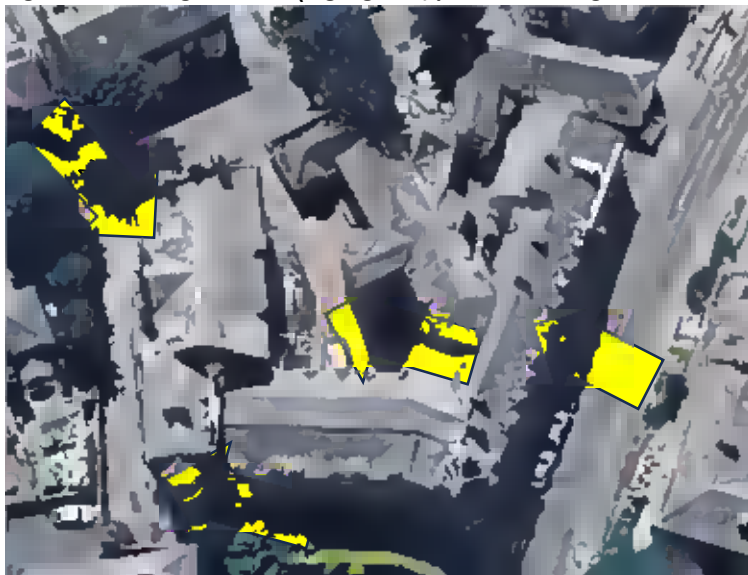


Figure 3 - Monitoring Position (front)



Figure 4 - Monitoring Position (rear)



Figure 5 - Monitoring Equipment (Courtyard)



Monitoring was carried out at Positions 1, 2 and 3 to establish the existing noise climate – ambient and background levels L90 at the nearest sensitive receptors (proposed dwellings). An extra measurement, position 4, was taken inside the courtyard area to determine the likely level of screening provided by the buildings for courtyard facing rooms.

Measurements were also taken internally and externally to indicate the existing sound insulation level provided by the building.

Sources of noise at the location contributing to the ambient noise levels:

- Road traffic – near and distant, fluctuating due to the variety and sizes of vehicles. Resident activities close-by. School children and passing pedestrians and patrons accessing the town centre shops.

3.0 NOISE CRITERION

3.1 NPPF (National Planning Policy Framework)

When considering proposals for new residential development in locations affected by existing noise sources, the principal planning policy document is the National Planning Policy Framework (NPPF), most recently updated in December 2024. The NPPF sets out the Government's planning policies for England and requires that planning decisions mitigate and reduce to a minimum, potential adverse impacts resulting from noise and avoid significant adverse effects on health and quality of life.

Supporting the NPPF is the Planning Practice Guidance (PPG), a web-based resource first introduced by the Department for Communities and Local Government (DCLG) in March 2014. The PPG provides detailed guidance on the application of national planning policy, including specific advice relating to noise-sensitive development and the assessment of environmental noise impacts. As an online resource, the PPG is subject to periodic updates and should be referred to in its current form.

The overall aim of the Planning Practice Guidance (PPG), consistent with the principles of the National Planning Policy Framework (NPPF) and the Noise Policy Statement for England (NPSE), is to determine whether the effects of noise exposure fall below or exceed the Lowest Observed Adverse Effect Level (LOAEL) and the Significant Observed Adverse Effect Level (SOAEL) for the particular context under consideration.

The PPG adopts a risk-based approach to the assessment of noise impacts and provides guidance on the likely effects associated with both noise-generating and noise-sensitive developments. A summary of the potential effects of noise exposure and the corresponding planning considerations is presented within the PPG and is reproduced in the following table.

Table 1

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

Neither the National Planning Policy Framework (NPPF), the Noise Policy Statement for England (NPSE), nor the Planning Practice Guidance on Noise (PPG: Noise) prescribe absolute noise level criteria that universally

define the No Observed Effect Level (NOEL), Lowest Observed Adverse Effect Level (LOAEL), or Significant Observed Adverse Effect Level (SOAEL) for all noise sources and situations. Instead, these thresholds are intended to be applied on a case-by-case basis, taking account of the specific characteristics of the noise source, the receiving environment, and the nature of the proposed development.

Accordingly, the assessment has been undertaken with reference to relevant national policy and recognised technical guidance, including the World Health Organization (WHO) Guidelines for Community Noise and BS 8233:2024 *Guidance on Sound Insulation and Noise Reduction for Buildings*. These documents provide appropriate noise criteria for residential environments and form the basis of the assessment methodology and evaluation presented within this report.

The PPG: Noise further emphasises that noise should not be considered in isolation from the wider planning balance. In line with the principles of the NPSE and the NPPF, the assessment of noise impacts should be considered alongside the economic, social and environmental benefits of the proposed development when determining the overall acceptability of a planning application.

3.2 ProPG Professional Practice Guidance on Planning & Noise (May 2017) excerpts are reproduced below

The Professional Practice Guidance on Planning and Noise (ProPG) has been produced to provide practitioners with guidance on a recommended approach to the management of noise within the planning system in England.

The scope of ProPG is restricted to the consideration of new residential development that will be exposed predominantly to airborne noise from transport sources.

New apartments, flats and houses are the most common type of new residential development; however, the guidance can also be applied to other types of residential developments such as residential institutions, care homes etc.

The two sequential stages of the overall approach are:

Stage 1 – an initial noise risk assessment of the proposed development site; and

Stage 2 – a systematic consideration of four key elements.

The overall Stage 1 approach is considered to support wider Government planning and noise policy and guidance at the date of publication of this document, including the NPPF, NPSE and PPG-Noise.

The noise risk assessment may be based on measurement or prediction (or a combination) as appropriate and should aim to describe noise levels over a “typical worst case” 24-hour day either now or in the foreseeable future.

The four key elements to be undertaken in parallel during Stage 2 of the recommended approach are:

- **Element 1 – demonstrating a “Good Acoustic Design Process”;**
- **Element 2 – observing internal “Noise Level Guidelines”;**
- **Element 3 – undertaking an “External Amenity Area Noise Assessment”;** and
- **Element 4 – consideration of “Other Relevant Issues”.**

The approach is underpinned by the preparation and delivery of an “Acoustic Design Statement” (ADS). An ADS for a site assessed as high risk should be more detailed than for a site assessed as low risk.

An ADS should not be necessary for a site assessed as negligible risk. The choice of recommendation is as follows: “grant without conditions,” “grant with conditions,” “avoid” or “prevent.” The recommended ProPG internal noise level guidelines are described in Figure 4. These guidelines reflect and extend current practice contained in BS8233:2014.

Figure 4

ACTIVITY	LOCATION	07:00 – 23:00 hrs	23:00 – 07:00 hrs
Resting	Living room	35 dB LAeq,16hr	-
Dining	Dining room/kitchen	40 dB LAeq,16hr	-
Sleeping (daytime resting)	Bedroom	25 dB LAeq,16hr	30 dB LAeq,8hr 45 dB LAeq,16hr

NOTE 1 The Table provides recommended internal LAeq target levels for overall noise in the design of a building. These are the sum total of structure-borne and airborne noise sources. Ground-borne noise is assessed separately and is not included as part of these targets, as human response to ground-borne noise varies with many factors such as level, character, timing, occupant expectation and sensitivity.

NOTE 2 The internal LAeq target levels shown in the Table are based on the existing guidelines issued by the WHO and assume normal diurnal fluctuations in external noise. In cases where local conditions do not follow a typical diurnal pattern, for example on a road serving a port with high levels of traffic at certain times of the night, an appropriate alternative period, e.g. 7 hour, may be used, but the level should be selected to ensure consistency with the internal LAeq target levels recommended in the Table.

NOTE 3 These internal LAeq target levels are based on annual average data and do not have to be achieved in all circumstances. For example, it is normal to exclude occasional events, such as fireworks night or New Year's Eve.

NOTE 4 Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or LAmax, depending on the character and number of events per night. Sporadic noise events could require separate values. In most circumstances in noise-sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45dB LAmax more than 10 times a night. However, where it is not reasonably practicable to achieve this guideline then the judgement of acceptability will depend not only on the maximum noise levels but also on factors such as the source, number, distribution, predictability and regularity of noise events (see Appendix A).

NOTE 5 Designing the site layout and the dwellings so that the internal target levels can be achieved with open windows in as many properties as possible demonstrates good acoustic design. Where it is not possible to meet internal target levels with windows open, internal noise levels can be assessed with windows closed, however any facade openings used to provide whole dwelling ventilation (e.g. trickle ventilators) should be assessed in the "open" position and, in this scenario, the internal LAeq target levels should not normally be exceeded, subject to the further advice in Note 7.

NOTE 6 Attention is drawn to the requirements of the Building Regulations.

NOTE 7 Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal LAeq target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved. The more often internal LAeq levels start to exceed the internal LAeq target levels by more than 5 dB, the more that most people are likely to regard them as "unreasonable". Where such exceedances are predicted, applicants should be required to show how the relevant number of rooms affected has been kept to a minimum. Once internal LAeq levels exceed the target levels by more than 10 dB, they are highly likely to be regarded as "unacceptable" by most people, particularly if such levels occur more than occasionally. Every effort should be made to avoid relevant rooms experiencing "unacceptable" noise levels at all and where such levels are likely to occur frequently, the development should be prevented in its proposed form (see Section 3 D).

It should be noted that the acoustic performance of the building envelope will be reduced in the event windows are opened for ventilation or cooling purposes, typically reducing the insulation to no more than 10 to 15 dB(A).

Most residents value the ability to open windows at will, for a variety of reasons. *"The acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed, and noise levels should ideally not be above the range 50 – 55 dB LAeq,16hr."*

ProPG Stage 1

For an initial assessment, the following table can be referred for indications of suitability:

Table 2

Level Day	Level Night	Risk	Conclusion
Below 50 dB(A) day	Below 40 dB(A) at night	Negligible Risk	Site is likely to be acceptable
Between 50 and 60-65 dB(A) day	Between 40 and 50-55 dB(A) night	Low Risk	Likely to be acceptable provided that Good Acoustic Design (GAD) is followed
Between 60-65 and 70 dB(A) day	Between 50-55 and 60 dB(A) night	Medium Risk	Likely to be less suitable and application may be refused unless ADS demonstrates GAD, how adverse effects will be mitigated, and significant adverse effects avoided
Above 70 dB(A) day	Above 60 dB(A) night	High Risk	Increased risk of refusal, which may be reduced by demonstrating GAD in a detailed ADS, expert advice recommended

3.3 British Standard 8233:2024 (Guidance on Sound Insulation and Noise Reduction for Buildings)

The current version of BS 8233, *Guidance on Sound Insulation and Noise Reduction for Buildings* (2024), provides guidance on suitable internal and external noise levels for residential development. The Standard adopts the guideline values presented within the World Health Organization (WHO) guidance and recommends that external amenity areas, such as private gardens, patios and balconies, should ideally achieve noise levels not exceeding 50 dB LAeq,T. In recognition of the practical constraints associated with some development sites, BS 8233 indicates that external

noise levels up to 55 dB LAeq,T may be acceptable where it is not reasonably practicable to achieve the desirable guideline value. Where these guideline levels cannot be attained in conventional outdoor amenity spaces, the Standard advises that noise levels should be reduced to the lowest practicable level through the application of good acoustic design principles and appropriate mitigation measures.

BS 8233:2024, *Guidance on Sound Insulation and Noise Reduction for Buildings*, provides recommended internal and external noise criteria for residential development. For external amenity areas, such as private gardens, patios and balconies, the Standard adopts guideline values derived from World Health Organization (WHO) recommendations. BS 8233 advises that it is desirable for noise levels in outdoor amenity spaces to achieve 50 dB LAeq,T or less, whilst recognising that, in some circumstances, levels of up to 55 dB LAeq,T may be acceptable where it is not reasonably practicable to attain the desirable guideline value.

Where the recommended criteria cannot be achieved for traditional outdoor amenity areas, the Standard advises that noise levels should be reduced to the lowest practicable level through appropriate site design and mitigation measures.

BS8233 recommends internal ambient noise levels for dwellings as shown below. It should be noted that the daytime criteria relate to a 16-hour assessment period (07:00–23:00 hours), whilst the night-time criteria relate to an 8-hour assessment period (23:00–07:00 hours).

Table 3: BS8233 Internal Levels

Activity / Room	Daytime (07:00–23:00)	Night-time (23:00–07:00)
Living rooms	35 dB LAeq,16hr	—
Dining rooms / areas	40 dB LAeq,16hr	—
Bedrooms	35 dB LAeq,16hr	30 dB LAeq,8hr

BS8233 recommends that noise levels within external amenity areas should ideally not exceed 50 dB LAeq,T, with an upper guideline value of 55 dB LAeq,T that may be acceptable in noisier environments. Where these values cannot be achieved, the development should be designed to secure the lowest practicable noise levels within external amenity spaces.

3.4 WHO “Guidelines for Community Noise”

The external amenity criteria contained within BS 8233 are derived from the World Health Organization (WHO) *Guidelines for Community Noise* (1999). The WHO guidance identifies outdoor living area noise levels of 50 dB LAeq as desirable to protect against moderate annoyance, with 55 dB LAeq representing an upper guideline value above which a significant proportion of the population may become seriously annoyed. These values continue to inform the external amenity criteria adopted within BS 8233 and are therefore relevant to the assessment of residential outdoor spaces.

The World Health Organization (WHO) *Guidelines for Community Noise* (1999) recommend that external night-time noise levels at residential façades should not normally exceed 45 dB LAeq,8hr and 60 dB LAmax where occupants may wish to sleep with windows partially open. These recommendations assume a typical noise reduction of 15 dB between external and internal noise levels with a partially open window.

The WHO guidance forms the basis of many of the noise criteria subsequently adopted within BS 8233 and other UK planning guidance.

3.5 BS4142:2014 – Rating Industrial Noise Affecting Mixed Residential and Industrial Areas

BS4142:2014 states, *“Response to sound can be subjective and is affected by many factors, both acoustic and non-acoustic.*

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”.

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). 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

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.

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.

4.0 MEASUREMENT PROCEDURE

The site was visited on Friday 27th March 2026 and instrumentation was installed at positions 1, 2 and 3 to determine existing noise levels over a weekend period at the front and rear of the property and facades overlooking the likely sources of noise (principally road traffic). The equipment was situated 1m from the first-floor façade and so a correction for reflection is necessary (-3dBA). LAeq, 1hr measurements were taken to establish the existing noise climate – i.e. ambient and background levels L90. An additional short period measurements was also taken in the “courtyard” as noted above (position 4).

Additional measurements were also made on site to establish the existing level of sound insulation afforded by the building by measuring immediately outside the ground floor entrance and inside the building and also inside the room which was used for the weekend period internally with window closed.

The weather conditions during the monitoring period were occasional light rain and sunny spells with some gusts of wind (and temperatures of approximately 1 to 8 degrees Celsius (night / day) and a wind speed ranging between <0.5m/s to 8m/s (W) measured on an electronic anemometer, similar to the forecast data.

The sound level meters used, and ancillary equipment can be found in the table below. The meters calibrated correctly before and after the on-site measurements at 94dBA (977C & 977A) and 114dBA (977) to within +/- 0.2dBA.

Table 2

Instrument	Type	Serial No.	Calibration Cert. No.	Date of Due Calibration
Svan 977	Sound Level Meter	36870	1502651-1	30/07/2026
Svan SV12L	Preamp	71675	1502651-1	30/07/2026
Aco Pacific 7052E	Microphone	70160	1502651-1	30/07/2026
Svan SV33B	Calibrator	112680	1502651-2	30/07/2026
Svan 977C	Sound Level Meter	97425	1504401-1	23/01/2027
Svan SV12L	Preamp	106428	1504401-1	23/01/2027
MTG MK255	Microphone	19919	1504401-1	23/01/2027
Universal (Cirrus Type)	Calibrator	12379	Cirrus 252050	23/10/2027
Svan 977A	Sound Level Meter	69280	1501866-1	07/03/2027
Svan SV12L	Preamp	110531	1501866-1	07/03/2027
Aco Pacific 7052E	Microphone	61121	1501866-1	07/03/2027
Cirrus 511E	Calibrator	39816	Cirrus 248531	26/04/2026
With outdoor kit and all-weather windmuffs				

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

5.0 MEASUREMENT RESULTS

The results obtained are shown in Tables 6-13 below.

Table 3 – Existing Ambient and Background (L90) dBA Position 1 (Front)

'Day / Start Time	LAeq	LAmx	LAmn	L01	L10	L50	L90	L95
27/03/2026 13:00:00	72.1	90.3	49.2	81.2	75.2	69.3	62.1	60.1
27/03/2026 14:00:00	71.2	87.7	46.5	80.1	74.4	68.9	58.8	56.0
27/03/2026 15:00:00	70.0	94.4	49.5	78.6	73.1	67.2	60.1	58.0
27/03/2026 16:00:00	70.4	89.3	48.7	79.2	73.2	67.5	60.2	58.7
27/03/2026 17:00:00	71.6	84.0	47.2	79.0	75.3	69.6	58.4	54.9
27/03/2026 18:00:00	72.4	90.6	47.4	80.7	76.1	68.9	58.0	54.9
27/03/2026 19:00:00	71.5	92.8	43.5	80.4	75.9	66.1	54.2	51.0
27/03/2026 20:00:00	72.0	95.7	38.2	80.7	76.0	66.1	53.5	50.3
27/03/2026 21:00:00	70.7	94.9	39.3	80.9	74.7	62.4	49.1	46.4
27/03/2026 22:00:00	71.4	105.7	38.0	80.6	74.8	60.7	46.6	43.9
27/03/2026 23:00:00	68.2	89.6	35.1	79.9	72.0	54.9	40.8	39.0
28/03/2026 00:00:00	67.1	93.8	34.9	79.3	69.4	49.7	38.6	37.7
28/03/2026 01:00:00	65.1	88.1	33.8	78.1	66.2	42.9	36.7	36.0

28/03/2026 02:00:00	62.3	84.9	30.7	76.4	61.0	40.7	35.0	34.1
28/03/2026 03:00:00	62.7	87.4	30.4	76.8	59.0	38.4	33.7	32.9
28/03/2026 04:00:00	61.5	84.0	29.8	76.4	57.1	40.3	33.1	32.0
28/03/2026 05:00:00	66.7	89.1	35.6	80.1	66.4	45.5	39.6	38.8
28/03/2026 06:00:00	67.8	88.7	36.0	80.0	70.2	51.5	41.7	40.6
28/03/2026 07:00:00	70.3	87.4	40.4	80.6	75.2	60.1	47.0	45.1
28/03/2026 08:00:00	71.6	89.6	46.4	80.9	76.0	65.4	54.4	51.8
28/03/2026 09:00:00	71.8	89.3	46.9	79.7	75.6	68.9	57.8	54.8
28/03/2026 10:00:00	72.9	95.3	47.9	81.0	75.9	70.6	59.9	56.5
28/03/2026 11:00:00	71.2	85.8	50.6	78.5	74.6	69.5	60.3	58.0
28/03/2026 12:00:00	73.1	89.0	48.8	80.5	76.4	71.3	61.3	58.6
28/03/2026 13:00:00	72.9	88.0	51.6	79.7	76.2	71.2	61.9	59.4
28/03/2026 14:00:00	73.3	100.6	48.0	80.3	75.3	69.9	60.2	57.2
28/03/2026 15:00:00	72.7	91.6	49.5	79.9	76.5	70.5	60.3	57.5
28/03/2026 16:00:00	72.7	100.2	50.1	79.9	75.7	70.6	62.0	59.5
28/03/2026 17:00:00	71.9	86.6	50.5	79.1	75.5	69.8	59.8	57.1
28/03/2026 18:00:00	71.6	92.8	42.4	80.1	75.6	67.2	56.0	53.2
28/03/2026 19:00:00	72.4	85.3	42.1	80.8	76.8	68.0	56.2	53.2
28/03/2026 20:00:00	71.3	88.2	35.0	81.1	76.0	63.5	48.2	44.5
28/03/2026 21:00:00	71.5	92.6	37.5	81.6	75.9	63.2	50.1	46.2
28/03/2026 22:00:00	70.3	98.2	36.9	80.7	74.6	60.9	46.3	43.0
28/03/2026 23:00:00	72.0	105.7	35.6	80.9	73.6	57.9	42.5	40.7
29/03/2026 00:00:00	68.2	88.1	33.2	80.3	71.6	52.6	38.4	37.1
29/03/2026 01:00:00	66.9	93.5	33.4	79.2	69.2	49.8	38.9	37.6
29/03/2026 02:00:00	65.0	84.9	31.4	78.6	65.4	43.3	36.0	34.9
29/03/2026 03:00:00	62.7	83.7	30.2	77.3	60.0	39.2	33.7	32.9
29/03/2026 04:00:00	61.6	82.6	30.4	75.7	59.7	38.5	33.7	32.9
29/03/2026 05:00:00	63.7	87.5	30.2	77.5	62.0	41.8	36.0	34.6
29/03/2026 06:00:00	67.4	96.5	36.0	78.5	69.7	51.5	40.2	39.0
29/03/2026 07:00:00	67.9	87.7	37.4	78.5	72.5	57.2	45.7	43.9
29/03/2026 08:00:00	70.1	88.0	42.1	79.9	74.3	63.9	51.5	48.5
29/03/2026 09:00:00	71.5	90.4	44.3	79.0	75.3	68.6	57.5	54.6
29/03/2026 10:00:00	72.4	96.6	49.2	79.6	75.8	70.2	60.1	57.6
29/03/2026 11:00:00	75.0	90.4	50.1	81.0	78.6	73.3	63.0	60.8
29/03/2026 12:00:00	75.7	90.0	54.8	81.8	79.0	74.5	64.6	62.4
29/03/2026 13:00:00	75.4	95.7	53.7	81.6	78.8	74.2	64.6	62.7
29/03/2026 14:00:00	74.8	92.1	53.8	82.2	78.7	72.0	61.6	59.5
29/03/2026 15:00:00	74.5	104.9	50.8	81.2	77.2	69.9	59.4	57.1
29/03/2026 16:00:00	72.0	95.7	48.2	80.5	76.4	66.9	55.7	53.5
29/03/2026 17:00:00	71.3	85.8	45.4	80.2	75.9	65.6	53.9	51.6
29/03/2026 18:00:00	70.7	88.8	42.9	79.8	75.5	64.2	52.8	50.6
29/03/2026 19:00:00	69.6	91.1	45.7	79.4	74.0	63.2	53.9	51.8
29/03/2026 20:00:00	67.9	85.9	43.5	79.0	72.6	57.8	48.0	46.6
29/03/2026 21:00:00	67.5	89.8	39.4	79.3	71.2	55.6	45.0	43.5
29/03/2026 22:00:00	65.1	86.0	35.2	78.1	66.6	50.5	40.5	39.0
29/03/2026 23:00:00	62.3	85.3	35.9	76.3	59.5	44.7	40.1	39.2
30/03/2026 00:00:00	60.4	88.5	34.3	73.1	53.0	40.9	37.4	36.7
30/03/2026 01:00:00	63.5	93.4	37.0	73.5	55.0	47.4	41.5	39.7
30/03/2026 02:00:00	66.3	94.1	33.8	78.7	56.4	45.1	37.8	36.2
30/03/2026 03:00:00	66.3	93.3	33.8	80.2	60.9	41.8	38.3	37.2
30/03/2026 04:00:00	70.1	90.7	39.2	83.1	72.4	52.7	43.6	42.2

30/03/2026 05:00:00	72.8	94.0	41.4	83.9	77.0	61.4	49.8	47.3
30/03/2026 06:00:00	74.4	95.2	45.8	84.3	78.7	66.9	55.0	52.0
30/03/2026 07:00:00	73.3	98.2	48.0	81.6	76.9	69.5	57.5	54.5
30/03/2026 08:00:00	74.3	92.6	50.9	82.9	77.7	71.7	61.8	59.6
30/03/2026 09:00:00	74.0	95.6	50.2	83.2	76.9	71.0	61.7	59.1
30/03/2026 10:00:00	72.7	99.4	51.5	81.7	75.3	69.9	61.7	59.1
30/03/2026 11:00:00	73.7	99.1	51.1	81.3	75.3	69.6	61.1	58.8
30/03/2026 12:00:00	73.7	98.9	49.7	82.5	75.4	69.5	60.8	58.3
	LAeq	Time	Façade Correction					
Day	72.3	48 hours	69.3					
Night	67.7	24 hours	64.7					

Table 4 - Position 1 - 1/1/ Octave Band Levels

1/1 Octave	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
Day	67.1	66.0	66.0	68.8	64.8	57.9
Night	61.0	59.6	60.1	63.0	59.1	52.0

Table 5 - Existing Ambient and Background (L90) dBA Position 2 (Rear)

'Day / Start Time	LAeq	LAmx	LAmn	L01	L10	L50	L90	L95
27/03/2026 13:00:00	55.9	71.9	44.5	63.4	58.5	54.3	50.0	49.0
27/03/2026 14:00:00	56.7	77.6	43.5	65.5	59.3	54.7	49.5	48.3
27/03/2026 15:00:00	57.1	72.6	43.7	66.7	59.8	54.4	50.0	48.8
27/03/2026 16:00:00	56.3	75.2	42.0	65.6	58.7	53.8	49.4	48.3
27/03/2026 17:00:00	56.7	74.5	43.9	66.0	59.2	54.4	48.7	47.5
27/03/2026 18:00:00	55.6	73.7	40.3	64.1	58.5	53.3	47.0	45.7
27/03/2026 19:00:00	54.5	67.0	39.8	62.1	58.3	52.0	45.3	44.2
27/03/2026 20:00:00	54.3	72.3	35.8	63.0	58.1	50.4	42.8	41.3
27/03/2026 21:00:00	53.5	73.5	35.0	62.9	57.2	49.0	41.5	40.3
27/03/2026 22:00:00	53.8	79.5	35.6	62.8	57.1	47.7	40.8	39.5
27/03/2026 23:00:00	51.1	71.7	34.0	61.6	55.1	43.7	38.3	37.3
28/03/2026 00:00:00	50.4	71.9	32.7	61.1	54.2	42.8	37.7	36.7
28/03/2026 01:00:00	48.7	71.8	32.1	60.2	52.3	40.4	36.2	35.3
28/03/2026 02:00:00	47.1	74.5	30.0	59.3	49.3	39.6	35.4	34.4
28/03/2026 03:00:00	47.4	68.5	31.3	59.6	49.1	39.6	35.4	34.5
28/03/2026 04:00:00	45.7	75.5	31.5	58.0	46.4	39.4	35.5	34.7
28/03/2026 05:00:00	53.2	76.3	34.6	65.1	52.3	42.5	38.7	37.9
28/03/2026 06:00:00	50.5	69.4	36.4	61.1	54.3	44.1	40.1	39.4
28/03/2026 07:00:00	53.2	76.9	36.8	62.3	57.4	48.1	42.9	41.8
28/03/2026 08:00:00	55.7	73.0	41.5	63.5	59.1	53.2	47.2	46.1
28/03/2026 09:00:00	57.5	73.2	45.1	65.2	60.6	55.8	50.2	48.8
28/03/2026 10:00:00	57.9	75.8	46.0	65.7	60.7	56.0	51.3	50.1
28/03/2026 11:00:00	58.0	71.4	46.1	65.9	61.1	56.0	51.6	50.4
28/03/2026 12:00:00	58.7	76.3	47.0	66.2	61.6	57.0	52.2	50.9
28/03/2026 13:00:00	60.0	74.1	47.5	67.7	63.2	58.0	52.8	51.3
28/03/2026 14:00:00	60.5	92.8	45.8	67.0	61.2	56.1	50.9	49.6
28/03/2026 15:00:00	59.3	75.6	44.5	68.0	62.4	56.9	51.1	49.7
28/03/2026 16:00:00	58.7	82.0	45.1	66.6	61.7	56.6	51.0	49.5
28/03/2026 17:00:00	57.3	70.5	44.5	65.2	60.1	55.5	50.0	48.8
28/03/2026 18:00:00	55.0	73.4	41.2	62.6	58.4	52.5	46.5	45.3

28/03/2026 19:00:00	55.7	76.0	40.0	63.7	59.5	52.6	45.7	44.4
28/03/2026 20:00:00	53.7	72.8	34.0	62.4	57.8	49.0	42.7	41.4
28/03/2026 21:00:00	54.1	74.0	37.2	63.6	58.1	48.8	42.8	41.7
28/03/2026 22:00:00	52.6	78.2	34.7	61.6	56.5	47.0	41.6	40.6
28/03/2026 23:00:00	52.9	81.3	34.3	62.4	55.6	45.3	39.9	38.8
29/03/2026 00:00:00	50.8	72.3	32.9	61.6	54.7	43.7	39.0	38.0
29/03/2026 01:00:00	49.2	70.4	33.5	60.1	52.8	42.7	38.3	37.3
29/03/2026 02:00:00	48.0	66.0	32.4	59.8	50.2	41.6	37.7	36.7
29/03/2026 03:00:00	46.1	66.5	32.1	58.5	46.8	40.6	37.3	36.4
29/03/2026 04:00:00	47.3	74.4	33.4	58.1	47.7	41.2	37.7	36.9
29/03/2026 05:00:00	50.0	72.8	34.5	62.0	49.6	42.2	39.0	38.1
29/03/2026 06:00:00	51.2	79.3	36.7	60.7	54.1	44.9	40.9	40.1
29/03/2026 07:00:00	51.6	70.3	37.9	60.5	55.6	47.3	42.9	42.0
29/03/2026 08:00:00	60.1	83.0	40.4	73.3	58.1	51.0	45.2	44.2
29/03/2026 09:00:00	56.0	80.8	41.3	62.6	58.2	53.6	47.5	46.2
29/03/2026 10:00:00	56.3	81.2	44.7	63.6	58.8	54.5	49.5	48.2
29/03/2026 11:00:00	58.1	71.2	48.1	63.7	61.0	57.1	52.7	51.7
29/03/2026 12:00:00	59.4	75.8	51.5	64.8	61.8	58.4	54.8	54.0
29/03/2026 13:00:00	59.6	71.2	51.4	64.7	62.1	58.8	54.9	54.1
29/03/2026 14:00:00	58.1	71.0	48.9	64.3	61.0	56.8	52.7	51.9
29/03/2026 15:00:00	58.1	85.4	47.3	64.9	60.2	56.1	51.7	50.8
29/03/2026 16:00:00	55.6	69.1	44.8	62.6	58.8	53.6	48.8	47.9
29/03/2026 17:00:00	55.2	71.4	43.2	62.8	58.6	52.9	47.8	46.7
29/03/2026 18:00:00	55.1	74.2	42.8	63.1	58.3	52.3	46.9	45.8
29/03/2026 19:00:00	63.9	104.9	44.1	69.7	64.0	56.5	49.6	48.1
29/03/2026 20:00:00	57.3	74.9	41.5	66.5	61.3	52.8	46.2	45.2
29/03/2026 21:00:00	56.8	73.4	39.4	66.6	61.0	51.5	44.1	42.7
29/03/2026 22:00:00	56.9	74.0	37.2	67.1	61.3	49.2	41.1	39.9
29/03/2026 23:00:00	53.5	69.2	35.7	64.5	57.7	45.4	40.0	39.2
	LAeq	Time	Façade Correction					
Day	57.4	42 hours	54.4					
Night	50.2	17 hours	47.2					

Table 6 - Position 2 - 1/1/ Octave Band Levels

1/1 Octave	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
Day	58.4	55.1	52.5	52.9	48.5	41.5
Night	51.1	47.3	45.0	45.8	40.9	34.0

Table 7 - Existing Ambient and Background (L90) dBA Position 3 (Turret)

Day / Start Time	LAeq	LAmaz	LAmín	L01	L10	L50	L90	L95
27/03/2026 13:00:00	61.1	79.4	42.3	70.2	65.5	54.7	47.5	46.4
27/03/2026 14:00:00	62.4	90.8	42.1	73.1	65.4	56.2	48.5	47.2
27/03/2026 15:00:00	62.1	83.0	43.3	72.2	65.1	57.0	49.1	47.6
27/03/2026 16:00:00	60.8	82.8	40.5	69.6	65.1	55.5	46.5	45.5
27/03/2026 17:00:00	60.3	75.3	41.9	69.7	64.9	53.7	46.3	45.3
27/03/2026 18:00:00	59.1	73.6	41.2	69.0	63.8	51.7	45.1	44.2
27/03/2026 19:00:00	58.3	79.8	39.8	69.1	63.0	48.6	43.7	42.8
27/03/2026 20:00:00	60.0	91.7	36.2	69.1	60.6	46.3	41.3	40.1
27/03/2026 21:00:00	54.6	78.4	36.1	67.1	55.4	45.4	40.4	39.2

BS8223: 2014

Location: Peak Buildings, Terrace Road, Buxton, SK17 6DY

Noise Assessment

27/03/2026 22:00:00	54.7	75.7	34.9	66.9	56.2	44.6	39.7	38.5
27/03/2026 23:00:00	49.9	70.1	34.9	63.7	49.8	41.8	37.8	37.1
28/03/2026 00:00:00	51.0	76.4	34.0	64.6	49.4	41.5	37.1	36.4
28/03/2026 01:00:00	48.5	70.7	34.0	61.1	46.7	39.1	35.9	35.4
28/03/2026 02:00:00	46.7	72.7	33.0	57.2	44.5	37.9	34.8	34.4
28/03/2026 03:00:00	50.3	73.0	32.9	63.6	48.3	38.0	34.8	34.2
28/03/2026 04:00:00	47.2	72.7	32.4	56.7	45.4	37.9	34.4	33.9
28/03/2026 05:00:00	50.5	76.8	35.3	62.0	49.1	41.6	37.8	37.2
28/03/2026 06:00:00	51.1	73.4	36.0	64.7	50.7	44.0	39.7	38.7
28/03/2026 07:00:00	54.4	75.7	37.6	67.3	54.9	46.7	42.6	41.6
28/03/2026 08:00:00	59.9	80.7	41.1	70.5	64.3	51.0	45.7	44.8
28/03/2026 09:00:00	61.1	80.7	42.2	70.6	65.3	55.0	48.3	47.3
28/03/2026 10:00:00	61.4	78.4	44.2	70.2	65.8	56.4	48.4	47.4
28/03/2026 11:00:00	61.1	86.0	33.9	69.8	65.1	55.2	48.8	47.6
28/03/2026 12:00:00	61.4	79.7	43.9	70.7	65.8	56.0	49.1	48.1
28/03/2026 13:00:00	61.7	75.6	44.5	71.3	66.2	55.5	49.1	48.0
28/03/2026 14:00:00	60.8	84.3	43.9	70.2	65.5	53.5	47.7	46.9
28/03/2026 15:00:00	61.3	81.2	42.4	71.2	65.9	54.4	47.6	46.5
28/03/2026 16:00:00	59.5	74.8	42.9	69.7	64.6	51.1	46.7	45.8
28/03/2026 17:00:00	59.9	75.9	41.2	69.4	65.0	51.8	46.5	45.6
28/03/2026 18:00:00	58.3	81.2	39.7	69.5	62.3	48.6	43.8	42.8
28/03/2026 19:00:00	57.5	79.3	39.0	69.6	60.1	47.6	43.2	42.3
28/03/2026 20:00:00	56.2	74.3	38.8	69.1	57.8	45.8	42.1	41.4
28/03/2026 21:00:00	53.8	73.7	36.6	66.5	54.2	45.4	42.2	41.4
28/03/2026 22:00:00	53.4	72.9	35.8	66.5	53.5	43.6	39.4	38.5
28/03/2026 23:00:00	51.6	73.6	35.1	65.5	51.3	42.6	38.3	37.6
29/03/2026 00:00:00	53.4	82.0	33.0	64.9	48.7	41.1	36.6	35.7
29/03/2026 01:00:00	50.5	83.4	34.2	62.2	47.8	40.2	36.8	36.2
29/03/2026 02:00:00	51.4	75.5	33.8	64.7	46.9	39.2	35.9	35.4
29/03/2026 03:00:00	46.4	73.9	33.3	58.1	43.9	37.6	35.1	34.7
29/03/2026 04:00:00	55.0	85.8	32.7	62.6	45.8	38.3	34.8	34.3
29/03/2026 05:00:00	49.1	71.0	33.3	62.3	48.1	40.6	36.1	35.3
29/03/2026 06:00:00	56.1	88.8	35.8	66.2	51.3	43.4	39.3	38.5
29/03/2026 07:00:00	55.2	76.1	39.0	67.7	56.0	46.5	42.6	41.9
29/03/2026 08:00:00	58.5	73.5	39.6	69.5	63.2	48.9	44.2	43.2
29/03/2026 09:00:00	58.3	73.3	41.8	68.3	63.2	50.6	45.9	45.1
29/03/2026 10:00:00	59.9	75.3	43.1	69.5	64.7	52.8	47.4	46.6
29/03/2026 11:00:00	63.7	79.5	47.9	73.6	68.0	57.6	52.0	51.0
29/03/2026 12:00:00	65.1	88.5	42.6	73.9	68.7	58.8	53.6	52.7
29/03/2026 13:00:00	65.0	89.3	43.0	74.5	69.0	59.3	54.3	53.5
29/03/2026 14:00:00	62.9	84.9	44.2	72.8	67.0	57.2	52.2	51.2
29/03/2026 15:00:00	63.9	91.2	39.5	73.2	66.3	57.1	51.3	50.3
29/03/2026 16:00:00	60.9	83.6	45.3	71.2	64.6	54.7	49.1	48.3
29/03/2026 17:00:00	60.1	82.2	36.9	71.0	63.7	53.4	48.4	47.4
29/03/2026 18:00:00	58.7	84.3	43.6	69.0	61.9	52.6	47.2	46.2
29/03/2026 19:00:00	64.6	95.5	44.4	76.0	65.4	57.1	50.4	48.6
29/03/2026 20:00:00	59.7	87.4	33.7	69.9	61.3	55.8	51.6	50.9
29/03/2026 21:00:00	57.2	86.1	47.7	67.0	58.6	54.8	49.6	49.1
29/03/2026 22:00:00	53.8	76.6	48.4	62.2	55.1	52.0	50.7	50.3
29/03/2026 23:00:00	55.6	79.5	44.8	66.5	57.5	51.5	47.5	46.8
30/03/2026 00:00:00	54.4	77.3	44.5	65.4	55.1	49.6	46.3	45.8

30/03/2026 01:00:00	56.1	80.3	45.8	67.5	57.7	49.9	47.4	47.0
30/03/2026 02:00:00	52.1	76.8	34.2	63.6	53.3	43.6	37.3	36.3
30/03/2026 03:00:00	47.3	75.5	34.1	58.5	48.1	39.7	37.0	36.4
30/03/2026 04:00:00	55.0	77.8	37.3	69.1	53.4	45.1	41.2	40.5
	LAeq	Time	Façade Correction					
Day	60.6	42 hours	57.6					
Night	52.3	22 hours	49.3					

Table 8 - Position 3 - 1/1/ Octave Band Levels

1/1 Octave	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz
Day	60.0	56.3	54.0	55.7	51.9	46.4
Night	52.9	48.3	46.2	47.1	43.6	37.8

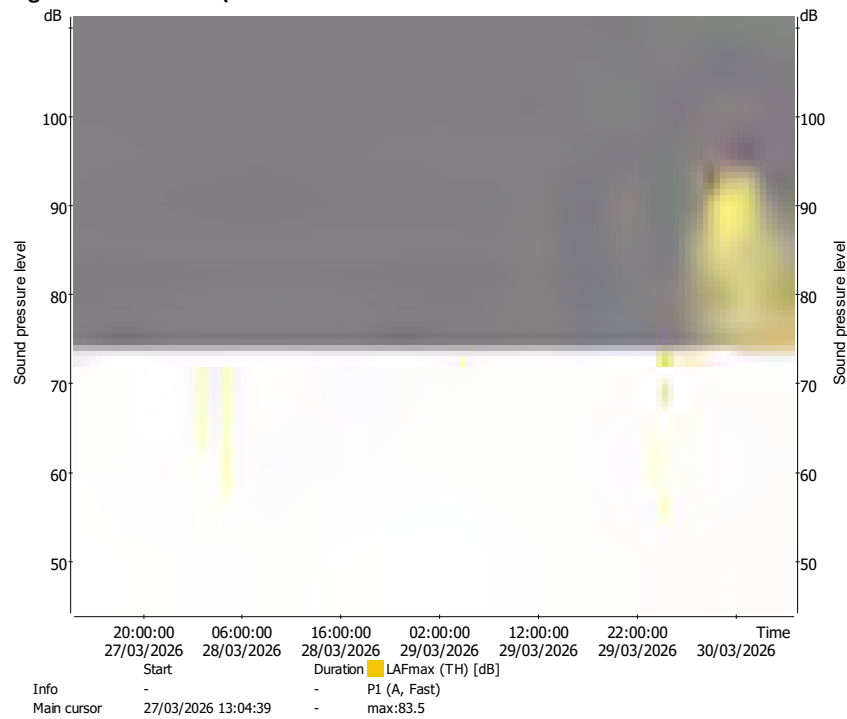
Table 9 - Existing Ambient and Background (L90) dBA – yard

Day / Start Time	Duration	LAeq	LAmaz	LAmaz	L01	L10	L50	L90	L95	Notes
30/03/2026 15:46:41.900	00:19:23.000	49.3	71.4	41.3	56.6	52.3	46.9	43.7	43.1	Yard

Table 10 - Sound Source Levels Internal and Externally (Breakout)

Day / Start Time	Duration	LAeq	LAmaz	LAmaz	L01	L10	L50	L90	L95	Notes
30/03/2026 16:07:49.700	00:02:01.000	70.9	79.3	59.1	76.7	73.9	70.3	62.8	61.4	Outside door
30/03/2026 16:10:21.500	00:03:39.000	44.5	64.7	31.6	52.9	46.9	41.3	34.7	33.6	Inside door
30/03/2026 16:14:42.500	00:06:00.000	48.8	64.2	32.9	57.8	51.8	46.1	39.1	37.3	Inside tested room

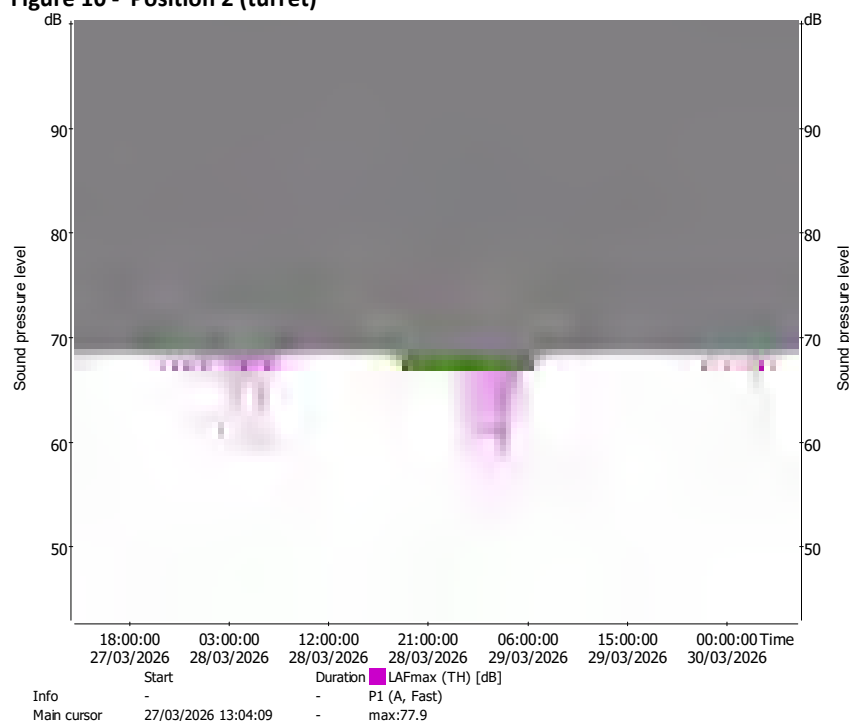
Figure 8 - Position 1 (front)



Info -
Main cursor 27/03/2026 13:04:29

Duration LAFmax (TH) [dB]
- P1 (A, Fast)
- max:68.9

Figure 10 - Position 2 (turret)



5.1 Level of Insulation Currently Provided (Internal Floor)

From Table 9 above we can make the following estimates:

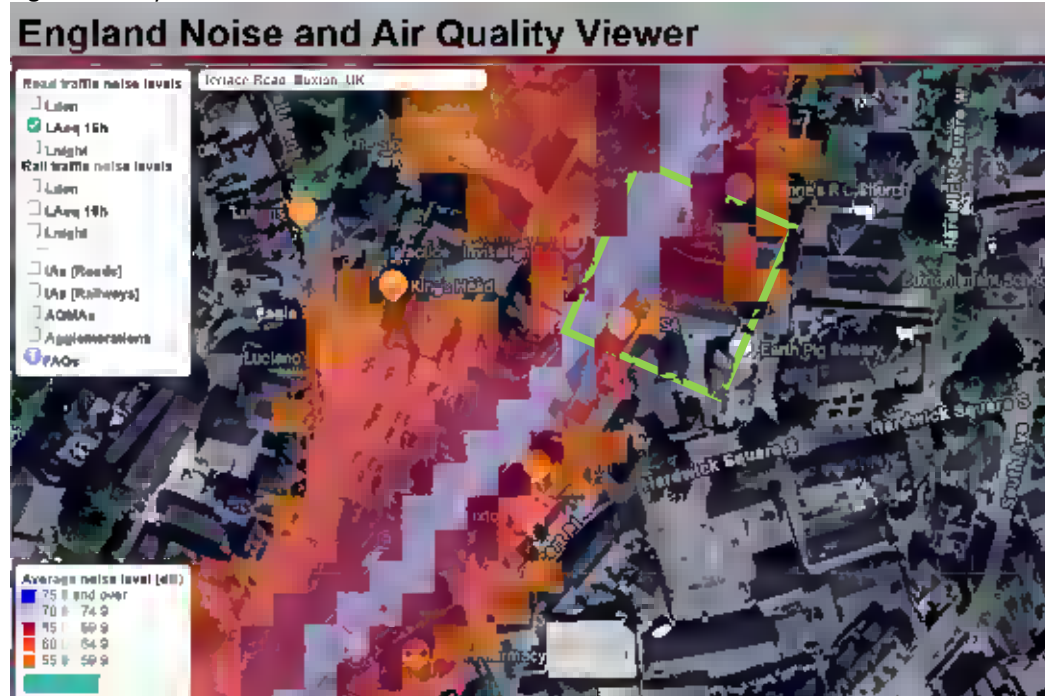
- Building G round Floor (front) = $[70.9 - 44.5] = 26.4\text{dBA}$
- First Floor (position 1 room) = $[73.7^1 - 48.8] = 24.9\text{dBA}$

5.2 DEFRA Data

We can also compare measured levels with synthetic data available from DEFRA for road traffic noise at this location. The noise levels from the DEFRA data are reproduced below for road noise.

¹ External Level 12-1pm

Figure 11 - Daytime Noise Levels for Road Traffic Noise



DEFRA strategic noise mapping for the site indicates that daytime noise levels (LAeq,16h 07:00–23:00) are typically in the range of 55–59.9 dB, with higher levels closer to Terrace Road, with corresponding night-time levels (Lnight 23:00–07:00) of 50–54.9 dB. In terms of impact, this would generally be considered low to moderate risk during the daytime and moderate risk at night.

Table 11 - Site Suitability Indicator (Road Traffic Noise)

Level Day	Level Night	Risk	Conclusion
Between 50 and 60-65 dB(A) day	Between 40 and 50-55 dB(A) night	Low Risk	Likely to be acceptable provided that Good Acoustic Design (GAD) is followed
Between 60-65 and 70 dB(A) day	Between 50-55 and 60 dB(A) night	Medium Risk	Likely to be less suitable and application may be refused unless ADS demonstrates GAD, how adverse effects will be mitigated, and significant adverse effects avoided

Our measured levels broadly concurred except for night time levels at the front, suggesting that road traffic is the principal source of noise at this location. The Defra data therefore tends to underestimate the level of risk.

6.0 ADDITIONAL OBSERVATIONS

To the observer, the principal sources of noise at this location were associated with road traffic.

7.0 ASSESSMENT OF RESULTS

7.1 Noise Levels from the Ground Floor Use

We were unable to use a sound source in the ground floor of the property as there was no power available. Development is ongoing and rooms are stripped, resulting in current acoustic weaknesses.

It is likely that the floor will need to undergo sound insulation testing under **Part E of The Building Regulations** where the single value required for floor insulation is **43dBA**, although requirements can sometimes be for a higher level of insulation depending on future proposed uses for the ground floor.

If the floor achieves 43dBA following testing then with that level of insulation, commercial sounds would have to exceed **78dBA** to be potentially problematic during the daytime, i.e. 7am until 11pm, [78-43=35] which is unlikely for the majority of commercial enterprises.

7.2 Estimates of Potential Impact based on the breakout noise and distance to the nearest receptor (2m)

The level of sound insulation afforded by the building is estimated to be a minimum **25-26dBA**. This is likely to be improved when development work is completed.

As an example, if commercial activities produced sounds of 75dBA, e.g. for a busy small café with some amplified music this would currently equate to **50dBA** externally [75-25=50].

Even with partially open windows on the first floor during summer, noise from these activities is unlikely to pose significant issues for future residents; internal noise levels are expected to remain at approximately 35dBA, as indicated by [e.g. 50-15=35dBA], and will generally be masked by road traffic on the busy façade facing Terrace Road. Implementation of the window improvements detailed below would further reduce breakout noise, consequently lowering the levels experienced at the partially open windows on the first floor.

7.3 Breakout and Patron Sounds / Delivery Vehicles and Pick Up / Extraction

Patron sounds entering and leaving the ground floor commercial spaces are not likely to be discernible above the same activities for other nearby shops and commercial uses and will also be masked by road traffic noise as noted above. The occasional delivery vehicle is also not likely to be discernible from other delivery vehicles on the same stretch of road.

Not all patrons/staff will arrive or leave at the same time of course and it will only take a few seconds on each occasion. The recommended window and ventilation specification will be robust enough to mitigate for this (see below) and for any increases in activity at this location.

Extraction and other external plant noise would also be included in the long periods of measurement at the front and rear.

7.4 Uncertainty

The following factors have a bearing on the uncertainty of the assessment:

- The existing party floor may perform better in reality than the required level of insulation from Part E of the Building Regulations once all development work has been completed.
- The level of sound insulation provided by the building is also likely to perform better once development work is completed.

- The specification for glazing and ventilation that we have suggested below is **robust enough for any increase in activity** at this location.

In summary, the evaluation is regarded as adequately rigorous and comprehensive.

7.5 Subjective Observations

As noted above, road traffic and passing patrons of the various commercial properties are present plus activities / external plant associated with the adjacent businesses.

7.6 BS4142

BS4142:2014 recognises that at night residents will be inside their properties [BS4142 A.6.1 and A.6.3] and that consequently "*Other guidance, such as BS 8233, might be applicable in this instance.*" Also, BS4142 is directed primarily to the circumstances of a proposed or existing noise source affecting existing property, i.e. circumstances where insulating the property is impracticable. Therefore, BS4142 can't take into account circumstances where the properties have not yet been built and where noise control, such as acoustic glazing and ventilation, can be incorporated such to alleviate "*...the primary concern is the potential for disturbance of residents who could be sleeping with open bedroom windows.*" The provision of acoustic glazing, ventilation and screening can

all change the impact of external noise. Consequently, where noise control can be incorporated into the properties [as here] SBM Safety Solutions uses BS 8233:2014, e.g. for the glazing and ventilation considering the commercial use on the ground floor.

8.0 INTERNAL SOUND LEVELS

8.1 Daytime Levels (07:00 to 23:00) Position 1, 2 and 3 and 4 (Courtyard)

1. LAeq,16hr = **69.3dB**
2. LAeq,16hr = **54.4dB**
3. LAeq,16hr = **57.6dB**
4. LAeq, t = 49.3dB* or **LAeq, 16hr 45.5dB**

*Noise levels in the courtyard area (screened from Terrace Road and partially screened from Hardwicke Place at the rear) are estimated to be around 9dB lower than those at position 2 for median level of 58dB at a similar time of measurement – 3:00pm [58-49=9] LAeq,16hrs **45.5dB**.

8.2 Nighttime Levels (23:00 to 07:00) Positions 1, 2, 3 and 4

1. LAeq,8hr = **64.7dB**
2. LAeq,8hr = **47.2dB**
3. LAeq,8hr = **49.3dB**
4. LAeq, 8hr = **38.2dB** (Estimate)

8.3 ProPG

ProPG is aimed principally at transport and new build housing. However, if we apply this guidance regarding risk to this development site then with the present levels of noise, this would place the site in the **low-high risk** categories as shown below (courtyard, rear to front respectively). Therefore, *good acoustic design is essential*. As noted above, we also need to consider sounds associated with the ground floor commercial uses.

Table 15 – ProPg

Level Day	Level Night	Risk	Conclusion
Between 50 and 60-65 dB(A) day	Between 40 and 50-55 dB(A) night	Low Risk	Likely to be acceptable provided that Good Acoustic Design (GAD) is followed
Between 60-65 and 70 dB(A) day	Between 50-55 and 60 dB(A) night	Medium Risk	Likely to be less suitable and application may be refused unless ADS demonstrates GAD, how adverse effects will be mitigated, and significant adverse effects avoided
Above 70 dB(A) day	Above 60 dB(A) night	High Risk	Increased risk of refusal, which may be reduced by demonstrating GAD in a detailed ADS, expert advice recommended

8.4 External Noise Levels

There are no plans for external amenity spaces but there are community green spaces including a park directly opposite the site off Terrace Road.

8.5 Internal Noise Levels

Detailed internal levels have been calculated using the typical octave band levels and an example construction using the methodology described in BS EN 12354-3:2000 [6]. For the purposes of prediction, the following have been assumed from the available plans (rooms highlighted below):

Reverberation time 0.3s for bedrooms.

1 - Volume for the bedroom highlighted below (approximate) = 19m^3 and window area = 2m^2

2 - Volume for the bedroom highlighted below (approximate) = 25m^3 and window area = 2.5m^2

3 - Volume for the bedroom highlighted below (approximate) = 41m^3 and window area = 3m^2

4 - Volume for the bedroom highlighted below (approximate) = 34m^3 and window area = $2\text{m}^2 + 2\text{m}^2$

Figure 12 – First Floor Internal Layout and Example Rooms for Estimates of Internal Levels



8.6 Example Construction and Glazing

With the existing external noise level at **69dB** LAeq, 16hrs, desirable internal levels should be achievable where the existing structure is of solid brickwork, brick/block cavity or brick clad timber frame, tiled/slatted roof, 20kg/m² plasterboard ceiling with insulation above such as 100mm mineral wool and window and ventilation specification as described below.

The specification is robust enough to mitigate any increases in activity at this location.

The suggested glazing and ventilation is based on octave band levels established during the monitoring period and adjusted for the LAeq, 16hr daytime period level – this should achieve target internal levels.

8.7 Ventilation, Overheating and Open Windows

The ventilation specifications from BS8233 and ProPG are based on achieving the requirements of Approved Document F (ADF) of the Building Regulations. ProPG states that typically the attenuation from a partially open window is no more than 15dBA. Therefore, external levels should not exceed 50dBA Leq,16hrs during the daytime, 45dBA Leq,8hrs and 60dBA Lmax, F.

ProPG suggests that purge ventilation should only occur occasionally e.g. to remove odour from painting or burnt food). In 2020 the ANC issued the “*Acoustic Ventilation and Overheating – Residential Design Guide (AVO)*”. AVO assumes that the attenuation from a partially open window where transportation is the main source is 13dBA (compared to the 15dBA as noted above).

AVO presents guidance for allowable noise levels from transportation where windows are opened for the control of overheating. Internal levels should be below 50dBA Leq, 16hrs during the daytime, 42dBA Leq, 8hrs at night and 65dBA Lmax,F nighttime. Therefore, we can summarise the level of noise where it may be considered acceptable to control overheating (via opening windows) using the following Table.

Table 16 – Cooling (Open Windows)

Activity	Location	Daytime Level LAeq, 16hrs dB	Nighttime Level LAeq, 8hrs dB	Nighttime LMax,F
Resting	Living Room	63	-	-
Dining	Dining Room / Area	63	-	-
Sleeping (daytime resting)	Bedroom	63	55	78

According to the table above, the LAeq, t and LMax levels measured at the front-facing rooms (overlooking Terrace Road) indicate potential concerns when windows are opened for general ventilation or room cooling. Further discussion regarding alternative ventilation strategies and mitigation of overheating is provided in the conclusion section. For

The desirable nighttime levels would also be met for bedrooms (LAeq, 8hrs 30dB at night) at **23.1dB** [-4.6dBA difference between daytime and nighttime levels].

With the highest L_{Amax} levels at the front at 84dB and the predicted difference between external and internal levels of 42dB this would equate to internal levels of **42dB L_{Amax}** which meets the L_{Amax} criteria of 45dB L_{Amax} (ProPG) [84-42 = 42].

8.9 Example Bedroom 2

For this bedroom, it can be seen (Table 18) that the predicted internal daytime noise level of **28.4dB LAeq,16hr** using well sealed 4mm single glazing means that any specification for well-sealed glazing dependent on the requirements for these historic buildings would suffice. This includes the night time levels given the difference between daytime and nighttime levels and **L_{Amax}** levels given the highest night time levels at around **70dB** and the level difference (external and internal) of 29dB = 70-31=**41dB**.

Trickle ventilation has been included, if permissible as a historic building, otherwise windows can be opened for ventilation.

Table 20

BS EN 12354-Calc	Use	Volume	Volume	30	LAeq Ext	45.5
Version 4.3	length				LAeq Int	16.0
© 2014 Martec Environmental Consultants Ltd	width				dB(A) Diff	30
& Acute Acoustics Ltd	height					
External Spectrum Leq (Free Field & Linear)						
Adjustment to Given Level if required						
External Spectrum Adjusted for Level						
Wall	Block/block/cavity	Area m2	10.0			
Window	4mm single glazing	2.0				
Window	4mm single glazing	2.0				
Door	None	0.0				
Roof	None	0.0				
Vent Duct	Midland miss (rickle 4000mm²)	# Vents	1.0			
Internal SPL/dB(A)						
Octave Band Centre Frequency (Hz)						
125 250 500 1k 2k 4k						
58.4 55.1 52.5 52.9 48.5 51.5						
45.0 42.7 40.1 40.5 36.1 36.1						
45.5						
Element Sound Reduction Index [SRI]						
41 45 45 54 58 58						
Contrib						
10.3						
10.3						
0.0						
0.0						
0.0						
12.5						
dB(A)						
22.5 19.7 15.9 14.5 11.3 7.3						
35.0						

9.0 CONCLUSIONS AND RECOMMENDATIONS

The above demonstrates that with considered specification appropriate noise levels can be met with reference to BS8233: 2014 and ProPG, and sources of noise mitigated (See Table 17 below).

The following noise control measures are recommended:

- For the rooms at positions highlighted below (from the first floor and above), i.e. with a significant view of Terrace Road, secondary glazing (4/100/4 or 6/1001/6) with Greenwood MA3051 acoustic wall ventilation or other “alternative ventilation” is recommended. Alternative ventilation (MEV or PIV) as described below will provide

- For all other rooms, any specification of glazing which is well sealed would be suitable, with or without trickle ventilation, depending on what is permissible for these historic buildings.

Table 21: Required Element Performance or similar / better and approved [dB]

Element	Unit	Octave Band Centre Frequency [Hz]					
		125	250	500	1k	2k	4k
Secondary Glazing	SRI	26	34	44	44	38	38
Greenwood Wall Ventilation	SRI	47	46	49	56	66	69
Well-sealed single glazing 4mm	SRI	20	22	28	32	33	33
Trickle Ventilation	SRI	34	27	37	35	34	34

- The party floors and walls should be constructed to conform with Part E of the Building Regulation or to meet the requirements of the Local Authority given the ground floor uses. For an historic building, Part E requires that separating walls and floors achieve “reasonable resistance to sound” but allows alternative, relaxed or adapted acoustic solutions where full compliance would unacceptably harm the building’s character or fabric, provided the design still delivers the best practicable level of sound insulation.

[ADE_LOCKED.pdf \(publishing.service.gov.uk\)](#)

- For all other rooms, any specification for well-sealed windows would also suffice.

- **Alternative ventilation** as noted above will achieve desirable internal levels without the need to open windows - *Mechanical Extract Ventilation* (MEV) or *Positive Input Ventilation* (PIV) system will extract/supply air from the room but will not allow significant noise to enter from the outside, either because of the system's attenuation or because it vents to a quiet façade. Residents could then occupy these rooms without the need to open the windows. The units can be specified for applicable rooms or whole house systems.

Example systems can be found at:

- <https://www.nuaire.co.uk/residential/new-build>
- <https://www.envirovent.com/sectors/new-build-developers/>
- [CMEV.4e/CMEV.4eHT](#)

With acoustic controls:

- <http://nuaire.info/catalogue/Q-Aire.pdf>

Summer Bypass as standard - Provides cooling during warmer months:

- <https://www.nuaire.co.uk/residential/heat-recovery-mvhr/mrxboxab-eco4>

9.1 Overheating

The likelihood of “overheating” is beyond the scope of this acoustic report, but ventilation systems can incorporate cooling settings. The Good Homes Alliance has produced a tool for assessing the potential for overheating:

<https://goodhomes.org.uk/wp-content/uploads/2019/07/GHA-Overheating-in-New-Homes-Tool-and-Guidance-Tool-only.pdf>

9.2 Designing out Overheating

The best way to avoid overheating is to consider it at the design stage:

- designing in the correct use of thermal mass
- insulation and heating controls
- installing external shading
- maximising natural external spaces
- providing the correct cross ventilation regime.

9.3 Noise Levels from Ventilation/Cooling Systems

Typically, the ventilation arrangements should be designed to provide purge ventilation and Summertime cooling and to not cause noise levels within habitable space to exceed NR20 (noise rating) when in operation although each local authority may have their own requirements.

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

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
6. BS EN 12354-3:2000 *Building Acoustics-Estimation of Acoustic Performance in buildings from the performance of elements. Part 3 Airborne sound Insulation against outdoor sound.”*
7. ANC Acoustics Ventilation, and Overheating, Residential Design Guide, 2020.

APPENDIX 3

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 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 21 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 4

Site and Location Images

