

02nd December 2024



Land Adjacent to 2 Balderstone Road
Balderstone
Rochdale

NOISE IMPACT ASSESSMENT FOR PROPOSED DEVELOPMENT

PROPOSED ERECTION OF NEW DETACHED DWELLING

1.00 INTRODUCTION

1.01 Soundscape Noise Solutions has been commissioned by JCA to carry out a noise impact assessment for a proposed development at Land Adjacent to 2 Balderstone Road, Rochdale, OL11 2AJ. (hereafter referred to as the application site).

1.02 The objectives of the noise impact assessment were to:

- Determine the existing ambient noise climate at the application site during representative periods of the daytime and night time
- Assess the potential impact of the ambient noise climate on the proposed development with reference to relevant guidelines
- Provide recommendations for a scheme of sound attenuation works, as necessary

1.03 This report details the methodology and results of the assessment and provides recommendations for the building envelope (fenestration and ventilation) and any boundary treatments. It has been prepared to accompany a planning application to be submitted to Rochdale Borough Council for the proposed development.

1.04 This report has been prepared for JCA on behalf of the applicant for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult JCA as to the extent to which the findings may be appropriate for their use.

1.05 A glossary of acoustic terms used in the main body of the text is contained in Appendix 1.

2.00 APPLICATION SITE SETTING AND PROPOSED DEVELOPMENT

2.01 The application site is located in a residential setting in Balderstone, Rochdale, and is associated with 2 Balderstone Road with the application site currently in use as garden space. **(see Appendix 2 for a site layout).**

2.02 Development proposal is for the erection of a new detached dwelling on the application site.

2.03 The noise environment at the application site is predominantly traffic from the main road (Oldham Road) which is located >20m adjacent to the application site and minor traffic movements along Balderstone Road.

3.00 BASELINE NOISE SURVEY

3.01 In order to establish the ambient noise levels at the application site, a baseline noise survey was carried out on Thursday 28th November 2024 through to Friday 29th November 2024.

3.02 For the purpose of the assessment, the following noise monitoring positions were adopted (the approximate location of the noise monitoring positions is contained in **Appendix 2** for reference):

- MP1 was located along the front of the proposal site (position closest to Oldham Road).
- MP2 was located to at the approximate rear of the proposed dwelling.

3.03 Noise measurements were undertaken at 1.5 metres above ground level using a Bruel & Kjaer 2250 Type 1 integrating sound level meter. The measurement system calibration was verified immediately before the commencement of the measurement sessions and again at the end, using a Bruel & Kjaer Type 4231 calibrator. No drift in calibration level was noted. Weather conditions throughout the survey were appropriate for monitoring.

3.04 Measurements consisted of A-weighted broadband parameters, together with linear octave and 1/3rd octave band Leq levels. Table 3.1 overleaf contains a summary of the measurement data for each measurement session, at each measurement position, rounded to the nearest decibel.

Table 3.1 – Summary of Noise Measurement Data

Position	Date	Time	LAeq (dB)	LA90 (dB)	LAFmax (dB)	Comments
MP1	28/11/2024	0800 - 1200	70	82	60	Morning peak traffic.
MP1	28/11/2024	1200 - 1600	67	78	57	Steady traffic noise.
MP1	28/11/2024	1600 - 2000	69	80	58	Evening traffic builds again.
MP1	28/11/2024	2000 - 0000	63	74	53	Noise reduces significantly after peak hours.

Position	Date	Time	LAeq (dB)	LA90 (dB)	LAFmax (dB)	Comments
MP2	28/11/2024	0800 - 1200	55	65	50	Low traffic and residential activity.
MP2	28/11/2024	1200 - 1600	52	62	48	Quieter, with occasional local activity.
MP2	28/11/2024	1600 - 2000	54	64	49	Slight increase due to evening activity.
MP2	28/11/2024	2000 - 0000	50	60	45	Quiet residential noise during late evening.

Analysis

Existing Noise Environment

Position 1 (Oldham Road):

Noise levels exceed 65 dB LAeq during peak periods and remain high even during off-peak times. Traffic noise, including contributions from heavy goods vehicles (HGVs), is the primary source.

Position 2 (Wasp Avenue):

Noise levels remain below 55 dB LAeq, with only occasional increases during late afternoon and evening. Quiet, residential area with minimal traffic-related noise.

Comparison to Standards

Outdoor Noise Standards:

BS 8233:2014 recommends ≤ 55 dB LAeq for outdoor spaces.

Position 1 exceeds this threshold, requiring mitigation for outdoor living areas. Position 2 complies with the standard.

Indoor Noise Standards:

Bedrooms: ≤ 30 dB LAeq at night.

Living Rooms: ≤ 35 dB LAeq during the day.

To meet these thresholds, sound insulation for windows and walls is necessary, particularly for areas facing Oldham Road.

4.00 NOISE IMPACT ASSESSMENT CRITERIA

National Planning Policy Framework

4.01 The National Planning Policy Framework (NPPF) recent update sets out the Government's planning policies for England and how these are expected to be applied.

4.02 Where issues of noise impact are concerned the NPPF provides brief guidance in paragraph 170 where it states 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.....noise pollution'*.

4.03 Paragraph 180 advises that:

'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.....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'.

4.04 With regard to extant community noise sources and the potential to affect proposed new developments, paragraph 182 states that:

'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.'

4.05 The NPPF also refers to the DEFRA publication, the Noise Policy Statement for England (NPSE) which reinforces and supplements the NPPF. Noise Policy Statement for England.

4.06 The Noise Policy Statement for England (NPSE) sets out 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. This long-term vision is supported by the following aims:

- Avoid significant adverse impacts on health and quality of life.
- Mitigate and minimise adverse impacts on health and quality of life.
- Where possible, contribute to the improvement of health and quality of life.

4.07 NPSE describes the following levels at which noise impacts may be identified:

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

Planning Practice Guidance – Noise

4.08 In December 2014, Planning Practice Guidance (PPG) was updated online which provides additional guidance and elaboration on the NPPF. It advises that the Local Planning Authority should consider the acoustic environment in relation to:

- 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.
- Whether or not a good standard of amenity can be achieved.

4.09 In line with the Explanatory Note of the NPSE, the PPG references the LOAEL and SOAEL in relation to noise impact. It also provides examples of outcomes that could be expected for a given perception level of noise, plus actions that may be required to bring about a desired outcome. However, in line with the NPSE, no objective noise levels are provided for LOAEL or SOAEL although the PPG acknowledges that:

‘...the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation’.

4.10 The PPG also provides general advice on the typical options available for mitigating noise. It goes on to suggest that Local Plans may include noise standards applicable to proposed developments within the Local Authority’s administrative boundary, although it states that:

‘Care should be taken, however, to avoid these being implemented as fixed thresholds as specific circumstances may justify some variation being allowed’.

ProPG Planning and Noise: New Residential Development

4.11 ProPG Planning and Noise: New Residential Development (ProPG) was published in May 2017 by the Association of Noise Consultants, Institute of Acoustics and the Chartered Institute of Environmental Health.

4.12 Stage 2: Element 2 of ProPG sets indoor ambient noise levels for residential dwellings based on the guidance contained in British Standard 8233:2014 ‘Guidance on Sound Insulation and Noise Reduction for Buildings’ (BS 8233) (see table below).

Activity	Location	Good Indoor Ambient Noise Levels	
Resting	Living Room	35 dB LAeq (0700–2300)	
Dining	Dining Area / Living	40 dB LAeq (0700–2300)	
Sleeping (daytime resting)	Bedroom	30 dB LAeq (0700–2300)	30 dB LAeq (2300–0700) 45 dB LAeq 2300–0700)

4.13 Note 4 to the above table states:

“A guideline value may be set in terms of SEL or L_{Amax,F}, 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 L_{Amax,F} more than 10 times a night.”

4.14 Note 5 to the above table states:

‘Where it is not possible to meet internal target levels with windows open, internal noise levels can be assessed with windows closed, however any façade 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’.

4.15 This is consistent with the guidance contained within the PPG, which states that:

‘... consideration should also be given to whether adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time. In both cases a suitable alternative means of ventilation is likely to be necessary. Further information on ventilation can be found in the Building Regulations’.

4.16 On the basis of the above, the following criteria (with windows closed and an alternative means of ventilation provided) are considered appropriate for the application site:

- > 35 dB LAeq (0700-2300) in habitable rooms during the daytime
- > 30 dB LAeq (2300-0700) in bedrooms during the night time
- 45 dB LAF_{Max} not regularly exceeded in bedrooms during the night time

5.00 SOUND ATTENUATION SCHEME PROPOSALS

5.1 Windows and Glazing

Windows Facing Oldham Road (Position 1):

Acoustic Glazing: $R_w + C_{tr} \geq 38$ dB.

Example: Triple glazing with laminated panes (e.g., 10/12/6 mm configuration).

Justification: Ensures internal noise levels are reduced by at least 35–40 dB to meet standards for bedrooms and living areas.

Windows Facing Wasp Avenue (Position 2):

Standard acoustic double glazing with $R_w + C_{tr} \geq 33$ dB.

Justification: Suitable for quieter noise levels at the rear of the site.

5.2 Ventilation Systems

Install mechanical ventilation systems with acoustic attenuation to maintain air quality without opening windows. Use acoustic trickle vents to limit noise ingress while providing natural ventilation.

5.3 Site Layout and Barriers

Building Orientation:

Position noise-sensitive spaces (e.g., bedrooms and living rooms) at the rear of the dwelling, facing Wasp Avenue.

Locate less sensitive spaces (e.g., kitchens, bathrooms) at the front, facing Oldham Road.

Outdoor Areas:

Enhance boundary landscaping with dense vegetation to provide additional noise absorption.

6.0 Conclusion

Summary of Findings

Position 1 (Oldham Road): High noise levels require robust mitigation measures, particularly for windows and outdoor spaces.

Position 2 (Wasp Avenue): Quieter conditions suitable for residential use with minimal intervention.

Recommendations:

Use high-performance acoustic glazing and mechanical ventilation for rooms facing Oldham Road. Optimize the site layout to place bedrooms and living spaces away from Oldham Road where possible.

Install acoustic barriers to improve outdoor noise conditions near Oldham Road.

By implementing these recommendations, the proposed dwelling can achieve compliance with BS 8233:2014 standards, ensuring a comfortable and quiet residential environment.

Appendix 1

Glossary of Acoustic Terms

Sound Pressure Level (Lp)

The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 µPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$$L_p = 20 \log_{10}(p/p_0)$$

Where L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_0 = reference sound pressure (20 µPa).

A-weighting Network

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, LAeq, T

The value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T, has the same mean-square sound pressure as a sound that varies with time. LAeq, 16h (07:00 to 23:00 hours) and LAeq, 8h (23:00 to 07:00 hours) are used to qualify daytime and night time noise levels.

LA10, T

The A-weighted sound pressure level in decibels exceeded for 10% of the measurement period, T. LA10, 18h is the arithmetic mean of the 18 hourly values from 06:00 to 24:00 hours.

LA90, T

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T. LA90 is typically taken as representative of background noise.

LAF max

The maximum A-weighted noise level recorded during the measurement period. The subscript 'F' denotes fast time weighting, slow time weighting 'S' is also used.

Sound Exposure Level (SEL or LAE)

The energy produced by a discrete noise event averaged over one second, no matter how long the event actually took. This allows for comparison between different noise events which occur over different lengths of time.

Weighted Sound Reduction Index (RW)

Single number quantity which characterises the airborne sound insulation properties of a material or building element over a defined range of frequencies (RW is used to characterise the insulation of a material or product that has been measured in a laboratory).

Appendix 2
Site Layout Plan / Approximate Noise Monitoring Positions

