

Suite 24
Doncaster Business Innovation Centre
Ten Pound Walk
Doncaster
DN4 5HX

Proposed Residential Development Land to the South-West of Bloomhouse Lane, Darton

Noise Impact Assessment

For:
Homes By Honey

17th December 2025

Ref: NIA-12368-25-12640-v1 Woolley Colliery Road, Barnsley
Author: S. Jefferson BSc (Hons) MIOA

Contents

1	Introduction	1
1.1	Overview	1
1.2	Site Description and Development Proposals	2
2	Policy Context and Assessment Guidance	3
2.1	National Planning Policy Framework	3
2.2	Noise Policy Statement for England	3
2.3	Planning Practice Guidance on Noise	4
2.4	ProPG Planning and Noise: New Residential Development	4
3	Noise Survey	6
3.1	Overview	6
3.2	Summary	6
3.3	Analysis	7
4	Noise Assessment	8
4.1	Design Noise Levels	8
4.2	Scheme of Sound Attenuation	8
5	Summary and Conclusions	10
	Appendix 1 – Abbreviations and Definitions	11
	Appendix 2 – Proposed Site Layout and Noise Measurement Positions	12
	Appendix 3 – Proposed Barrier Locations	13

1 Introduction

1.1 Overview

Environmental Noise Solutions Ltd (ENS) has been commissioned by Homes By Honey to undertake a noise impact assessment for the proposed residential development on land to the south-west of Bloomhouse Lane, Darton, Barnsley, S75 5JA (hereafter referred to as ‘the site’).

The objectives of the noise impact assessment were to:

- Determine the ambient noise climate at the site
- Assess the potential impact of the existing noise climate on the proposed residential development with reference to pertinent guidelines
- Provide recommendations for a scheme of sound attenuation works, as necessary, so that the future occupants of the proposed development do not experience any unacceptable loss of amenity due to noise

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

This report has been prepared for Homes By Honey for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties referring to the report should consult Homes By Honey and ENS as to the extent to which the findings may be appropriate for their use.

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

1.2 Site Description and Development Proposals

The site is located on land to the south-west of Bloomhouse Lane, circa 5.3 km to the north-west of Barnsley town centre, as shown (highlighted in red) in Figure 1.1.

Figure 1.1: Location of proposed residential development



The site is bounded by:

- Bloomhouse Lane to the north-east
- Woolley Colliery Road to the west
- Existing residential dwellings to the south
- Open land to the east

The ambient noise climate at the site is controlled by the distant M1 motorway (circa 400 metres to the west) and intermittent vehicles along Bloomhouse Lane and Woolley Colliery Road, with no other significant noise sources noted by the survey engineer.

Weighwell Engineering is located towards the northern corner of the proposed development site, with operating hours confirmed as 0800-1630 hours Monday to Friday, with no operation during the weekend. The company produces scientific instruments for weighing locomotives. It should be noted that the survey engineer confirmed Weighwell Engineering to be conducting normal operations throughout the course of the survey, and did not note any noise from the commercial unit, consequently, the premises are not considered a significant contributor to the prevailing noise climate during typical operational conditions.

Development proposals are for 111 no. new-build residential dwellings with associated landscaping and access roads.

2 Policy Context and Assessment Guidance

2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF)¹ was updated in February 2025 and sets out the Government's planning policies for England and how these are expected to be applied.

Where issues of noise impact are concerned the NPPF provides brief guidance in paragraph 187 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'.

Paragraph 198 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'.

With regard to extant community noise sources and the potential to affect proposed new developments, Paragraph 200 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.'

The NPPF also refers to the 2010 DEFRA publication, the Noise Policy Statement for England (NPSE) which reinforces and supplements the NPPF.

2.2 Noise Policy Statement for England

The Noise Policy Statement for England² (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

1 National Planning Policy Framework. Ministry of Housing, Communities and Local Government (2021)

2 Government Department for Environment, Food and Rural Affairs. Noise Policy Statement for England. March 2010.

The 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

According to the explanatory notes in the statement, where a noise level falls between the lowest observable adverse effect level (LOAEL) and a level which represents a significant observable adverse effect level (SOAEL):

‘...all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life whilst also taking into consideration the guiding principles of sustainable development. This does not mean that such effects cannot occur.’

2.3 Planning Practice Guidance on Noise

Planning Practice Guidance³ (PPG) is an online resource 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

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.

The PPG also provides general advice on the typical options available for mitigating noise, suggesting 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’.

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. The following guidance documents provide some meaningful context.

2.4 ProPG Planning and Noise: New Residential Development

ProPG Planning and Noise: New Residential Development (ProPG)⁴ was published in 2017 by the Association of Noise Consultants, Institute of Acoustics and the Chartered Institute of Environmental Health.

³ Planning Practice Guidance on Noise: <http://planningguidance.planningportal.gov.uk/blog/guidance/noise/>

⁴ ‘ProPG Planning and Noise: New Residential Development (ProPG)’, 2017. Association of Noise Consultants (ANC), Institute of Acoustics (IOA) and the Chartered Institute of Environmental Health (CIEH)

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 2.1.

Table 2.1: Indoor Ambient Noise Levels in Dwellings

Activity	Location	Indoor Ambient Noise Levels	
Resting	Living Room	35 dB L_{Aeq} (0700-2300)	-
Dining	Dining Room/Area	40 dB L_{Aeq} (0700-2300)	-
Sleeping (daytime resting)	Bedroom	35 dB L_{Aeq} (0700-2300)	30 dB L_{Aeq} (2300-0700) 45 dB $L_{Amax,F}$ (2300-0700)

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.’

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 L_{Aeq} target levels should not normally be exceeded, subject to the further advice in Note 7’.

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’.

On the basis of the above, the following criteria (with windows closed and an alternative means of ventilation provided) are considered appropriate for the proposed development and considered to represent good resting and sleeping conditions:

- ≤ 35 dB L_{Aeq} (0700-2300) in habitable rooms during the daytime
- ≤ 30 dB L_{Aeq} (2300-0700) in bedrooms during the night-time
- 45 dB L_{AFMax} not regularly exceeded in bedrooms during the night-time

With regard to external amenity, ProPG reflects the advice given in BS 8233 as follows:

‘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 $L_{Aeq,16hr}$.’

‘These guideline values may not be achievable in all circumstances where development might be desirable. In such a situation, development should be designed to achieve the lowest practicable noise levels in these external amenity spaces.’

3 Noise Survey

3.1 Overview

In order to determine the level of external noise affecting the proposed development, noise monitoring was carried out on Monday 3rd through to Tuesday 4th November 2025.

The adopted noise monitoring positions (shown in Appendix 2) were as follows:

- MP1 was located at the north-eastern boundary of the site, at 10 metres from Bloomhouse Lane
- MP2 was located at the south-western boundary of the site, at 10 metres from Woolley Colliery Road
- MP3 was located at the northern corner of the site (boundary with Weighwell Engineering)
- MP4 was located at the south-eastern boundary of the site

Noise measurements were undertaken in free field conditions at 4 metres above ground level using Brüel & Kjaer 2250 and NTi XL3 Type 1 integrating sound level meters. Each meter was connected to a windshield covered microphone positioned at the locations detailed above.

The measurement system calibration was verified immediately before and after the survey period using a Brüel & Kjaer Type 4231 calibrator. No drift in calibration levels greater than 0.5 dB was noted.

Measurements consisted of A-weighted broadband parameters including $L_{Aeq,T}$, L_{A10} , L_{A90} , and L_{AFmax} octave band data. The noted weather conditions during the surveys were dry with wind speeds < 5 m/s. Weather conditions were therefore considered appropriate for noise monitoring.

3.2 Summary

Table 3.1 presents a summary of the noise 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	$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB)	$L_{A10,T}$ (dB)	L_{AFMax} (dB)	Comment
MP1	03/11/25	1040–2300	57	52	60	-	Road traffic on Bloomhouse Lane and distant M1
	03-04/11/25	2300–0700	51	47	54	63*	
	04/11/25	0700–1140	56	54	58	-	
MP2	03/11/25	1515–2300	59	52	63	-	Road traffic on Woolley Colliery Road and distant M1
	03-04/11/25	2300–0700	52	47	56	67*	
	03-04/11/25	0700–1155	58	55	62	-	
MP3	03/11/25	1026–1424	59	58	61	-	Distant M1 motorway
MP4	03/11/25	1234–1334	55	53	56	-	

* 11th highest maximum noise level event during the night-time

3.3 Analysis

Noise levels at the site are due to intermittent vehicles along Bloomhouse Lane and Woolley Colliery Road, and constant underlying noise from the distant M1 motorway.

Daytime and night-time ambient noise levels at MP1 were measured up **57 dB LAeq (0700-2300)** and **51 dB LAeq (2300-0700)** respectively, with an 11th highest maximum noise level of **63 dB LA_FMax** during the night-time.

Daytime and night-time ambient noise levels at MP2 were measured up **59 dB LAeq (0700-2300)** and **52 dB LAeq (2300-0700)** respectively, with an 11th highest maximum noise level of **67 dB LA_FMax** during the night-time.

Weighwell Engineering was operational during extended measurements at MP3, with no noise breakout noted during the measurement period.

4 Noise Assessment

4.1 Design Noise Levels

Design noise levels for habitable rooms adjacent to/fronting towards Bloomhouse Lane (MP1) are as follows:

- $\leq 57 \text{ dB } L_{Aeq} (0700-2300)$ during the daytime
- $\leq 51 \text{ dB } L_{Aeq} (2300-0700)$ during the night-time
- $\leq 63 \text{ dB } L_{AFMax}$ during the night-time

Design noise levels for habitable rooms adjacent to/fronting towards Woolley Colliery Road (MP2) are as follows:

- $\leq 59 \text{ dB } L_{Aeq} (0700-2300)$ during the daytime
- $\leq 52 \text{ dB } L_{Aeq} (2300-0700)$ during the night-time
- $\leq 67 \text{ dB } L_{AFMax}$ during the night-time

4.2 Scheme of Sound Attenuation

In order to calculate the sound insulation requirements of the building envelope for habitable rooms throughout the development, the Building Research Establishment (BRE) building envelope insulation calculation spreadsheet was used. This spreadsheet is based on the calculation methodology advocated in BS 8233. The spreadsheet allows input of external noise levels, typical room dimensions and reverberation time together with parameters for the various elements of the building envelope and calculates the internal noise level in terms of the external noise level metric (L_{Aeq} and L_{AFMax} in this case).

Habitable rooms throughout the site may be fitted with double glazing rated at least **25 dB R_w+C_{tr}** (such as 4 mm glass / 12 mm cavity / 4 mm glass) in conjunction with wall vents or trickle vents rated at least **32 dB $D_{n,e,w}$** per 4000 mm² EA (vent open) such as the Titon Trimvent Select Xtra S13 with XC13 canopy.

As evidenced in the calculation sheet below, this configuration will provide circa 25 dB(A) sound insulation from external to internal at the site.

Figure 4.1: BRE Calculation Spreadsheet

The screenshot shows the BRE Building Envelope Insulation spreadsheet. It is divided into several sections:

- Top Left:** BRE logo.
- Top Center:** "Building Envelope Insulation" and "Switch to Reverberation Time Calculation".
- Left Panel (Green):** "1) Enter room dimensions or volume". Options: "Use dimensions" (x, y, z in meters) and "Use volume" (25 m³).
- Center Panel (Light Green):** "2) Select elements of facade structure, and enter corresponding internal surface area in m² OR enter number of vents."

Element	Material/Type	Surface area OR number of vents	Unit
Wall 1	Brick/block cavity	5	m ²
Wall 2	None		m ²
Window 1	4/12/4 double glazing	1.5	m ²
Window 2	None		m ²
Door	None		m ²
Roof/Ceiling	None		m ²
Vent 1	Titon XS13 5000 EA with XC13 500 Canopy	2	
Vent 2	None		
- Bottom Center (Yellow):** "3) Enter reverberation time of the room." Value: 0.5 seconds.
- Right Panel (Cyan):** "4) Select exterior sound level type".
 - Option (A) User defined spectrum: 59 dB LAeq (Day)
 - Option (B) Spectrum shape: ISO 717 - 1 (C)
- Bottom Right (Red):** "Internal sound level" L_{Aeq} 33.9 dB.

The resultant internal noise levels are set out in the table below.

Table 4.1: External Noise Levels and Resultant Internal Noise Levels

Location	External Noise Level	Reduction	Resultant Internal Level
Plots fronting/adjacent to Bloomhouse Lane	≤ 57 dB L_{Aeq} (0700-2300) ≤ 51 dB L_{Aeq} (2300-0700) ≤ 63 dB L_{AFMax}	-25 dB	≤ 32 dB L_{Aeq} (0700-2300) ≤ 26 dB L_{Aeq} (2300-0700) ≤ 38 dB L_{AFMax}
Plots fronting/adjacent to Wooley Colliery Road	≤ 59 dB L_{Aeq} (0700-2300) ≤ 52 dB L_{Aeq} (2300-0700) ≤ 67 dB L_{AFMax}	-25 dB	≤ 34 dB L_{Aeq} (0700-2300) ≤ 27 dB L_{Aeq} (2300-0700) ≤ 42 dB L_{AFMax}

The following points should be noted:

- The glazing recommendations apply to the window within a sealed unit. It is the responsibility of the window supplier to ensure that the window frame does not compromise the performance of the glazing.
- When selecting a glazing system to satisfy the requirements outlined above, it is important to ensure that the $R_w + C_{tr}$ value is achieved (rather than simply the R_w value). Published R_w values tend to be higher than corresponding $R_w + C_{tr}$ values; therefore, incorrect selection could result in an overestimation of sound reduction performance which in turn could result in higher internal noise levels.
- The opening and free area of the ventilation units should be checked by a mechanical service engineer before designs are finalised. Should the equivalent open area be insufficient to meet the minimum requirements of ADF, it may be necessary to increase the number of units per habitable room. Where this applies, the required sound reduction of the ventilation units may need to be increased accordingly.

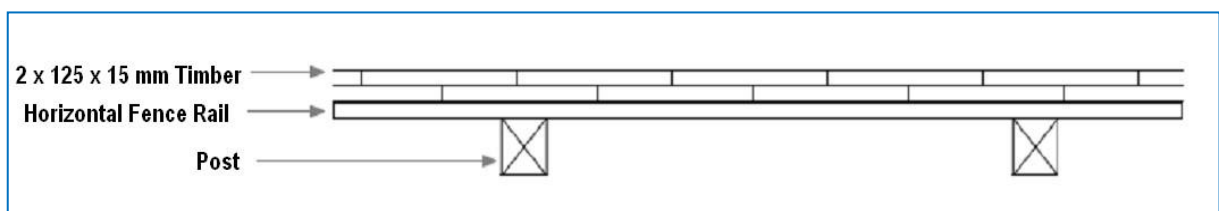
The site layout indicates that the majority of dwellings adjacent to Bloomhouse Lane or Wooley Colliery Road will ‘front onto’ the roads, such that gardens of these plots will be screened by the dwellings themselves.

In order to reduce garden levels as low as practicable, where gardens are not situated to the rear, it is recommended that they are provided with circa 2-metre-high solid timber fences or brick walls (see Appendix 3 for barrier locations). As a precaution, it is also recommended that acoustic screening is provided to gardens fronting towards Weighwell Engineering.

A brick wall of any construction is appropriate, providing there are no gaps in the construction.

If a solid timber fence is installed, then it should be ensured that it has a mass per unit area of ≥ 10 kg/m². The fence should have no gaps or holes and should be fully sealed at the ground (i.e. include a gravel board).

An indicative acoustic fence detail is illustrated below. The double-thickness solid timber construction is considered robust and appropriate.



5 Summary and Conclusions

A noise impact assessment has been performed for the proposed residential development at land to the south-west of Bloomhouse Lane, Darton, Barnsley, S75 5JA.

Noise monitoring was carried out on Monday 3rd November through to Tuesday 4th November 2025, to determine the level of external noise affecting the proposed development.

Section 4 provides recommendations for a noise mitigation strategy, to protect potential future residential development at the site from the existing noise climate using relevant guidance including BS8233 / ProPG.

Appendix 1 – Abbreviations and Definitions

Sound Pressure Level (L_p)

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

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, $L_{Aeq, T}$

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. $L_{Aeq, 16h}$ (07:00 to 23:00 hours) and $L_{Aeq, 8h}$ (23:00 to 07:00 hours) are used to qualify daytime and night-time noise levels.

$L_{A10, T}$

The A-weighted sound pressure level in decibels exceeded for 10% of the measurement period, T. $L_{A10, 18h}$ is the arithmetic mean of the 18 hourly values from 06:00 to 24:00 hours.

$L_{A90, T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T. L_{A90} is typically taken as representative of background noise.

$L_{AF \max}$

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.

Single Event Level / Sound Exposure Level (SEL or L_{AE})

The energy produced by a discrete noise event averaged over one second, regardless of the event duration. This allows for comparison between different noise events which occur over different lengths of time.

Weighted Sound Reduction Index (R_w)

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

Appendix 2 – Proposed Site Layout and Noise Measurement Positions



