Environmental Noise Solutions Limited

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

Proposed Residential Development

Land to the Rear of

24 Common Road, Brierley, Barnsley

Noise Impact Assessment

For:
JR Planning Consultancy

15th April 2026

Ref: NIA-12557-26-12855-V2-Brierley (Final).docx
Author: R. Whitaker BSc (Hons) MIOA

Contents

1 Introduction

1.1 Overview

Environmental Noise Solutions Ltd (ENS) has been commissioned by JR Planning Consultancy to undertake a noise survey and assessment for the proposed demolition of an existing agricultural building and the erection of new build dwelling at land to the rear of 24 Common Road, Brierley, Barnsley (hereafter referred to as 'the site').

With regard to the planning history at the site, prior approval was granted for the change of use of the agricultural storage barn to form a dwelling in October 2014. This planning permission lapsed in 2022.

Further planning permission (Ref: 2021/1673) for the development was subsequently refused by Barnsley Metropolitan Council in February 2022. The decision to refuse was appealed and planning permission was further refused through appeal by The Planning Inspectorates (Ref: APP/R4408/W/22/3297059), the following reason was given in relation to noise.

> *'14. There have been no objections from the Council's Environmental Health Officers. However, from the evidence before me, I am not convinced that the living conditions of future occupiers of the proposed development would not be adversely affected in regard to noise, odour and disturbance, particularly as there is a possibility that farming operations can intensify. The location of the building being in close proximity to existing farm buildings and external areas would be undesirable.'*

The objectives of the noise impact assessment were to:

- Determine external noise levels at the site
- Assess the potential impact of the external noise climate on the proposed residential development with reference to the pertinent requirements
- Provide recommendations for a scheme of sound attenuation works, as necessary, to protect future occupants of the proposed residential development from a 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.

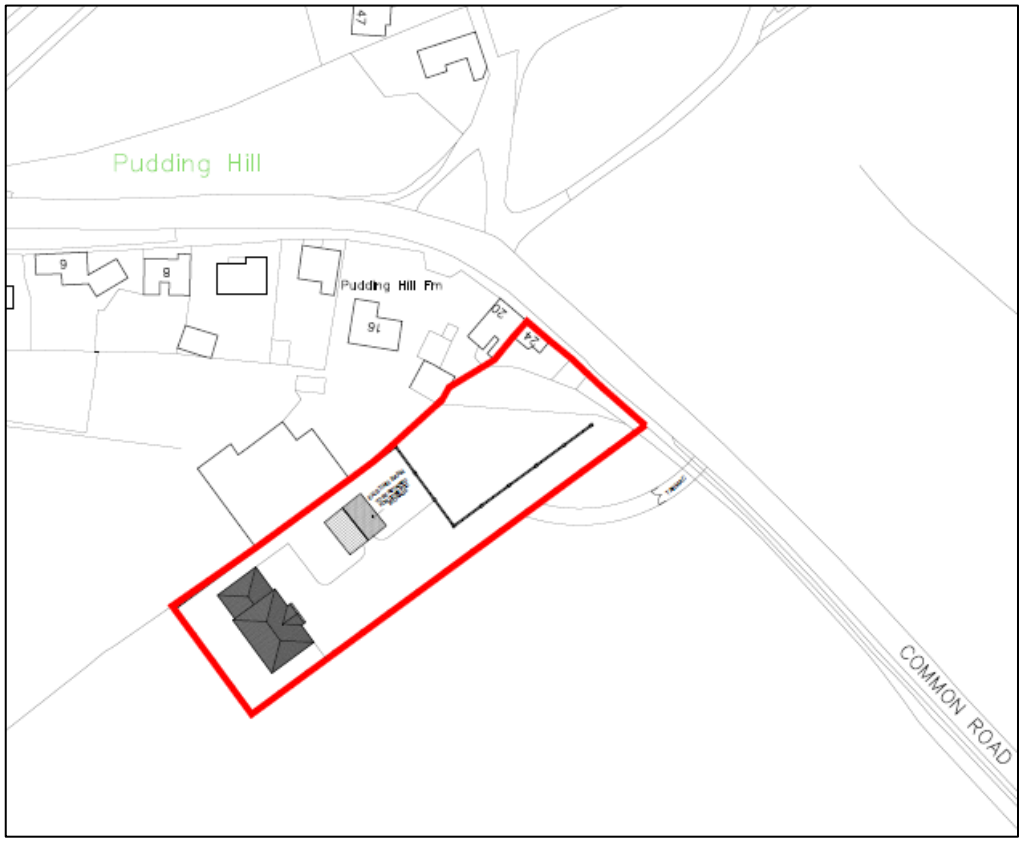
The report has been prepared for JR Planning Consultancy for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties referring to the report should consult JR Planning Consultancy and ENS as to the extent to which the findings may be appropriate 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 to the south-west of Common Lane within the village of Brierley as shown (highlighted in red) in Figure 1.1.

Figure 1.1: Location of Proposed Development



Commensurate with the rural location, the noise environment at the site is due to birdsong, vegetation noise and distant road traffic to the north-east on Common Road with no other significant noise sources noted. Agricultural vehicle movements were occasionally audible but were not significant.

Proposals are for the demolition of an existing detached agricultural building to form a residential two-storey dwelling. The building is currently used for storage and was previously used as a stable.

The site is located adjacent to a neighbouring farm to the north and an existing barn to the north-east which is currently used for storage. The fields to the south and south-west are used as paddocks for horses with arable land beyond further to the south-east.

No significant noise was noted from the surrounding farm land or buildings. It should also be considered that no windows are proposed on the north-western facade of the development overlooking the farm. With regard to the horse paddocks directly to the south and south-west it is understood that these fields were used for arable farming historically, this is not considered to pose any constrains on the site as arable farming and any associated noise is considered infrequent, sporadic and seasonal.

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'.

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 England[2] (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

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.'

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.

2.3 Planning Practice Guidance on Noise

Planning Practice Guidance[3] (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 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'.

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.

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'[5] (BS 8233), see Table 2.1.

Table 2.1: Indoor Ambient Noise Levels in Dwellings

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

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)

5 British Standards Institution (2014). *British Standard 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings.*

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 $L_{Aeq\ (0700\text{-}2300)}$
- ≤ 30 dB $L_{Aeq\ (2300\text{-}0700)}$
- 45 dB $L_{Amax,F}$ not exceeded on more than 10 occasions 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 $L_{Aeq,16hr}$.'

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 9th March 2026 through to Monday 16th March 2026.

For the purpose of the assessment a single noise monitoring position (shown in Appendix 2) was adopted as was located on the north-western façade of the development.

Noise measurements were undertaken, using an NTi XL3 Type 1 integrating sound level meter. 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}, L_{A10} L_{A90}, and L_{AFMax} together with linear octave and 1/3rd octave band data. The noted weather conditions during the survey were dry with wind speeds < 5 m/s with the exception of the evening of Wednesday 11th March 2026 through to the morning of Friday 13th March 2026 when heavy rain and wind was present. The noise data for this period has been excluded from the assessment and is highlighted in Table 3.1.

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} (dB)	L_{A90} (dB)	L_{A10} (dB)	L_{AFMax} (dB)	Comment
MP1	09/03/26	1119-2300	41	33	45	-	Distant road traffic, foliage and bird song
	10/03/26	0700-2300	44	37	48	-	
	11/03/26	0700-2300	42	35	47	-	
	12/03/26	0700-2300	53	46	58	-	Bad weather - levels excluded
	13/03/26	0700-2300	44	35	49	-	Distant road traffic, foliage and bird song
	14/03/26	0700-2300	40	33	46	-	
	15/03/26	0700-2300	45	35	50	-	
	16/03/26	0700-0945	41	38	48	-	
	09-10/03/26	2300-0700	35	24	41	56*	Distant road traffic, foliage and bird song
	10-11/03/26	2300-0700	41	27	47	59*	
	11-12/03/26	2300-0700	45	32	51	63*	Bad weather - levels excluded
	12-13/03/26	2300-0700	43	35	49	61*	
	13-14/03/26	2300-0700	36	26	43	56*	Distant road traffic, foliage and bird song
	14-15/03/26	2300-0700	35	27	41	56*	
	15-16/03/26	2300-0700	38	29	44	59*	

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

3.3 Analysis

The ambient noise climate at the site is due to bird song, vegetation noise and distant road traffic to the north-east on Common Road with no other significant noise sources noted. Agricultural vehicle movements were occasionally audible but were not significant.

Noise levels on the evening of the 11th March through to the morning of the 13th March 2026 were affected by heavy rain and wind and were therefore not appropriate for noise monitoring. This data is therefore not considered further.

Daytime and night-time noise levels at MP1 (unaffected by the weather) were measured at **45 dB $L_{Aeq\ (0700\text{-}2300)}$** and **41 dB $L_{Aeq\ (2300\text{-}0700)}$** respectively. Typical (11th highest) maximum noise levels at MP1 were measured at **59 dB L_{AFMax}** during the night-time.

Such levels are relatively low, commensurate with the semi-rural setting.

4 Noise Assessment

4.1 Design Noise Levels

The design noise levels at the site are as follows:

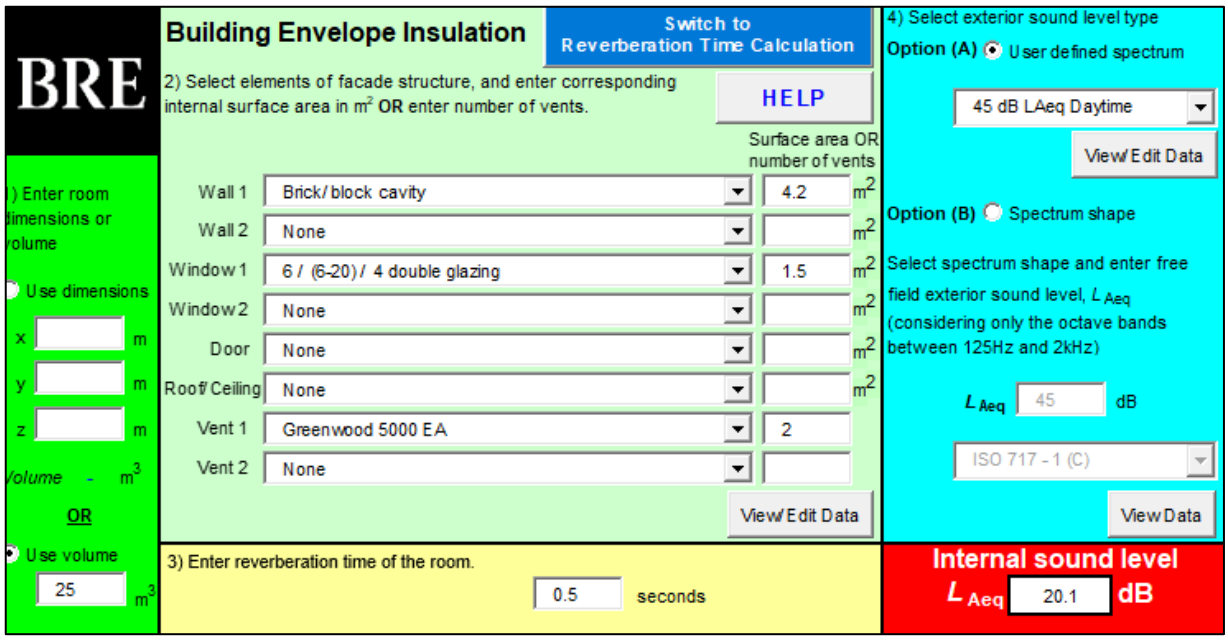
- **≤ 45 dB $L_{Aeq\ (0700\text{-}2300)}$** during the daytime
- **≤ 41 dB $L_{Aeq\ (2300\text{-}0700)}$** (and **59 dB L_{AFMax}**) during the night-time

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).

As evidenced in the calculation sheet below, a typical standard double-glazed window rated at least **28 dB R_w+C_{tr}** (such as 6 mm glass / 6-20 cavity / 4 mm glass) in conjunction with standard trickle vents or wall vents rated at least **32 dB $D_{n,e,w}$** per 4000 mm² EA (vent open) will provide circa 25 dB(A) sound insulation from external to internal at the site.

Figure 4.1: Indicative BRE Calculation Spreadsheet



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

Table 4.1 – External Noise Levels and Resultant Internal Noise Levels

External Noise Level	Reduction	Resultant Internal Level
≤ 45 dB $L_{Aeq\ (0700\text{-}2300)}$ ≤ 41 dB $L_{Aeq\ (2300\text{-}0700)}$ ≤ 59 dB L_{AFMax}	–25 dB	≤ 20 dB $L_{Aeq\ (0700\text{-}2300)}$ ≤ 16 dB $L_{Aeq\ (2300\text{-}0700)}$ ≤ 34 dB L_{AFMax}

On the basis of the above, standard double glazing (i.e. 6 mm glass / 12 mm cavity / 4 mm glass) and standard trickle vents are appropriate throughout the development.

Daytime ambient noise levels are below the desirable threshold for external amenity as described in ProPG/BS 8233. On this basis, specific mitigation of noise for external amenity areas is not required.

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 Rw value). Published Rw 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.

5 Summary and Conclusions

A noise impact assessment has been undertaken for the proposed demolition of an existing agricultural building and the erection of new build dwelling at land to the rear of 24 Common Road, Brierley, Barnsley

The ambient noise climate at the site is due to bird song, vegetation noise and distant road traffic to the north-east on Common Road with no other significant noise sources noted. Agricultural vehicle movements were occasionally audible but were not significant.

Ambient noise levels at the site are relatively low. As a consequence, standard double glazing and standard trickle vents are appropriate throughout the development, and there are no issues with respect to external amenity.

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:

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

Where L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_o = 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 – Noise Measurement Positions

Appendix 3 – Site Plan Drawing