



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

Proposed Residential Development Land to the East of Wakefield Road, Mapplewell, Barnsley, S75 6DN

Noise Impact Assessment

For: Countryside Properties (UK) Ltd

22nd May 2026

Ref: NIA-12628-26-12923-v3 Wakefield Road, Mapplewell

Author: J.Hayes BSc AMIOA

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1 Introduction

1.1 Overview

Environmental Noise Solutions Ltd (ENS) has been commissioned by Countryside Properties (UK) Ltd to undertake a noise impact assessment for the proposed residential development at the land to the east of Wakefield Road, Mapplewell, Barnsley, S75 6DN (hereafter referred to as 'the site').

A reserved matters application for the development was approved by Barnsley Metropolitan Borough Council in November 2025, subject to conditions (planning ref: 2021/1405). Condition 11 relates to noise as follows:

"11 Prior to any work commencing, a noise mitigation scheme shall be submitted and agreed by the local planning authority, which shall be used to inform the layout and design of the scheme such that mitigation to achieve the following sound levels are achieved within all dwellings;

- Bedrooms: LAeq (8 hours) - 30dB (2300 to 0700 hours);

- Living Rooms & Bedrooms: LAeq (16 hour) - 35dB (0700 to 2300 hours);

- Bedrooms: LAFmax - 45dB (2300 to 0700 hours).

The assessment shall be accompanied by a plan which clearly identifies the different types of mitigation measures proposed, where each type of mitigation is proposed and a programme of implementation. Thereafter the development shall be carried out in accordance with the approved measures.

Reason: To reduce or remove adverse impacts on health and the quality of life, especially for people living and/or working nearby, in accordance with Local Plan Policy POLL1."

The objectives of the noise impact assessment were therefore to:

- Determine existing noise levels at the site
- Assess the potential impact of the external noise climate on the proposed residential development with reference to relevant guidelines
- Provide recommendations for a scheme of sound attenuation works as necessary

This report details the methodology and results of the assessment and provides recommendations as appropriate.

The report has been prepared for Countryside Properties (UK) Ltd 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 Countryside Properties (UK) Ltd 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 in a predominantly residential setting to the east of Mapplewell. The site which is the subject of the planning approval is indicated (outlined in red) in Figure 1.1 below.

Figure 1.1: Location of Proposed Development



The ambient noise climate at the site is characterised by road traffic along Wakefield Road during the daytime and night-time.

The development layouts are illustrated in Figure 1.2 for reference.

Figure 1.2: Proposed Development Layout



2 Policy Context and Assessment Guidance

2.1 Reserved Matters Approval 2021/1405

A reserved matters application for the development was granted by Barnsley Metropolitan Borough Council in November 2025, subject to conditions (planning ref: 2021/1405). Condition 11 relates to noise as follows:

“11 Prior to any work commencing, a noise mitigation scheme shall be submitted and agreed by the local planning authority, which shall be used to inform the layout and design of the scheme such that mitigation to achieve the following sound levels are achieved within all dwellings;

- Bedrooms: LAeq (8 hours) - 30dB (2300 to 0700 hours);*
- Living Rooms & Bedrooms: LAeq (16 hour) - 35dB (0700 to 2300 hours);*
- Bedrooms: LAFmax - 45dB (2300 to 0700 hours).*

The assessment shall be accompanied by a plan which clearly identifies the different types of mitigation measures proposed, where each type of mitigation is proposed and a programme of implementation. Thereafter the development shall be carried out in accordance with the approved measures.

Reason: To reduce or remove adverse impacts on health and the quality of life, especially for people living and/or working nearby, in accordance with Local Plan Policy POLL1.”

3 Noise Survey

3.1 Overview

In order to determine the level of external noise affecting the proposed development, a noise survey was undertaken from Monday 27th through to Tuesday 28th April 2026, and Wednesday 20th through to Thursday 21st May 2026.

For the purposes of the assessment, the following external measurement positions were adopted (see Appendix 2 for illustrated measurement locations):

- MP1, located at the western boundary, set back 10 metres from Wakefield Road
- MP1A, located at the western boundary, set back 20 metres from Wakefield Road
- MP1B, located at the western boundary, set back 40 metres from Wakefield Road
- MP2, located at the northern corner of the site
- MP3, located at the location of the closest proposed plots to the Lidl plant compound/service yard

Measurements were undertaken using NTi Audio XL3 integrating sound level meters. A windshield was fitted for all measurements. The calibration of each measurement system was verified immediately before and after the survey using a Bruel & Kjaer Type 4231 calibrator. No drift in calibration level was noted.

The weather conditions during the survey were appropriate for monitoring, with dry conditions and wind speeds of generally < 5 m/s.

Measurements consisted of A-weighted broadband parameters, together with linear octave band data.

3.2 Summary

Table 3.1 presents a summary of the noise data for each measurement period, rounded to the nearest decibel.

Typical L_{AFmax} levels are given as the 11th highest over the full night-time period.

Table 3.1: Summary of Noise Measurement Data

Location	Date	Time	L_{Aeq} (dB)	L_{A90} (dB)	L_{A10} (dB)	L_{AFmax} (dB)	Comment
MP1	20/05/2026	1101-2300	64	52	70	-	Noise levels dominated by road traffic on Wakefield Road
	21/05/2026	0700-1105	66	56	71	-	
	20-21/05/2026	2300-0700	61	34	68	78	
MP1A	20/05/2026	1108-1123	60	55	63	-	
MP1B	20/05/2026	1125-1140	56	53	59	-	
MP2	27/04/2026	1333-1410	49	43	56	-	Distant road traffic and birdsong
MP3	27/04/2026	1647-2300	49	43	52	-	Distant road traffic and birdsong. Minimal noise from Lidl audible.
	28/04/2026	0700-1145	49	46	53	-	
	27-28/04/2026	2300-0700	47	37	53	61	

Noise levels at the site were dominated by road traffic on Wakefield Road during the daytime and night-time.

Noise levels at MP1 during the daytime and night-time were **65 dB LAeq (0700-2300)** and **61 dB LAeq (2300-0700)** respectively. Typical maximum noise levels during the night-time were measured at **78 dB LAfMax**.

Based on simultaneous measurements at MP1A and MP1B, noise levels reduced by circa 5 dB per doubling of distance from Wakefield Road. As such noise levels with distance from Wakefield Road are taken to be:

- **60 dB LAeq (0700-2300)**, **56 dB LAeq (2300-0700)** and **73 dB LAfMax** at 20 metres from Wakefield Rd
- **55 dB LAeq (0700-2300)**, **51 dB LAeq (2300-0700)** and **68 dB LAfMax** at 40 metres from Wakefield Rd

Noise levels at MP2 during the daytime were measured at up to **49 dB LAeq,T**.

Noise measurements undertaken at MP3 during a delivery at Lidl found that noise associated with loading was minimal, and plant noise was not significant. Distant road traffic remained dominant at the Lidl boundary.

Noise levels at MP3 during the daytime and night-time were **49 dB LAeq (0700-2300)** and **47 dB LAeq (2300-0700)** respectively. Typical maximum noise levels during the night-time were measured at **61 dB LAfMax**.

4 Noise Assessment

4.1 Design Noise Levels

The noise levels measured at the site have been used to determine the design noise levels throughout the site.

Design noise levels for plots set back ≥ 10 metres from Wakefield Road are summarised as follows:

- ≤ 65 dB $L_{Aeq(0700-2300)}$ during the daytime
- ≤ 61 dB $L_{Aeq(2300-0700)}$ during the night-time
- ≤ 78 dB L_{AFmax} during the night-time

Design noise levels for plots set back ≥ 20 metres from Wakefield Road are summarised as follows:

- ≤ 60 dB $L_{Aeq(0700-2300)}$ during the daytime
- ≤ 56 dB $L_{Aeq(2300-0700)}$ during the night-time
- ≤ 73 dB L_{AFmax} during the night-time

Design noise levels for plots set back ≥ 40 metres from Wakefield Road are summarised as follows:

- ≤ 55 dB $L_{Aeq(0700-2300)}$ during the daytime
- ≤ 51 dB $L_{Aeq(2300-0700)}$ during the night-time
- ≤ 68 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).

Plots which are set back ≥ 10 metres from Wakefield Road should be provided with glazing rated at least **32 dB R_w+C_{tr}** , such as 10 mm glass / 6-20 mm cavity / 6 mm glass in conjunction with acoustic wall vents rated at least **44 dB $D_{n,e,w}+C_{tr}$** (vent open), such as the Duco Silenzio SR AK or equivalent.

As evidenced in the Building Research Establishment (BRE) building envelope insulation calculation spreadsheet below, the glazing/ventilation specification will provide circa 37 dB reduction of external noise levels.

Figure 4.1: BRE Calculation Spreadsheet – Plot Set Back ≥ 10 metres from Wakefield Rd

BRE Building Envelope Insulation

Switch to Reverberation Time Calculation

2) Select elements of facade structure, and enter corresponding internal surface area in m² OR enter number of vents.

Element	Description	Surface area OR number of vents	Area (m ²)
Wall 1	Brick/block cavity	5	5 m ²
Wall 2	None		
Window 1	10 / (6-20) / 6	1.2	1.2 m ²
Window 2	None		
Door	None		
Roof/Ceiling	None		
Vent 1	Duco Silenzio SR AK	1	
Vent 2	None		

3) Enter reverberation time of the room. 0.5 seconds

4) Select exterior sound level type
 Option (A) User defined spectrum
 65 dB LAeq (Daytime)
 View/Edit Data
 Option (B) Spectrum shape
 Select spectrum shape and enter free field exterior sound level, L_{Aeq} (considering only the octave bands between 125Hz and 2kHz)
 L_{Aeq} 64 dB
 ISO 717 - 1 (C)
 View Data

Internal sound level
 L_{Aeq} 27.9 dB

Habitable rooms which are set back ≥ 20 metres from Wakefield Road should be provided with glazing rated at least **25 dB R_w+C_{tr}**, such as 4 mm glass / 6-20 mm cavity / 4 mm glass, in conjunction with trickle vents rated at least **37 dB D_{n,e,w}+C_{tr}** (vent open), such as the Titon V75 vent (TA5235) with C75 canopy (TA5236) or equivalent.

As evidenced in the Building Research Establishment (BRE) building envelope insulation calculation spreadsheet below, the glazing/ventilation specification will provide circa 30 dB reduction of external noise levels.

Figure 4.2: BRE Calculation Spreadsheet – Plot Set Back ≥ 20 metres from Wakefield Rd

BRE Building Envelope Insulation

Switch to Reverberation Time Calculation

2) Select elements of facade structure, and enter corresponding internal surface area in m² OR enter number of vents.

Element	Description	Surface area OR number of vents	Area (m ²)
Wall 1	Brick/block cavity	5	5 m ²
Wall 2	None		
Window 1	6 / (6-20) / 4 double glazing	1.2	1.2 m ²
Window 2	None		
Door	None		
Roof/Ceiling	None		
Vent 1	SF X V75 / C75 5000EA	2	
Vent 2	None		

3) Enter reverberation time of the room. 0.5 seconds

4) Select exterior sound level type
 Option (A) User defined spectrum
 60 dB LAeq (Daytime)
 View/Edit Data
 Option (B) Spectrum shape
 Select spectrum shape and enter free field exterior sound level, L_{Aeq} (considering only the octave bands between 125Hz and 2kHz)
 L_{Aeq} 64 dB
 ISO 717 - 1 (C)
 View Data

Internal sound level
 L_{Aeq} 29.7 dB

Habitable rooms which are set back ≥ 40 metres from Wakefield Road, and throughout the remainder of the site, should be provided with glazing rated at least **25 dB R_w+C_{tr}** , such as 4 mm glass / 6-20 mm cavity / 4 mm glass, in conjunction with trickle vents rated at least **32 dB $D_{n,e,w}+C_{tr}$** (vent open), such as the Titon Trimvent Select Xtra S13 with XC13 canopy or equivalent should be used.

This glazing/ventilation specification has been tested by ENS on numerous sites and is known to provide circa 25 dB reduction of external noise levels.

The resultant internal noise levels with the existing glazing 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 set back ≥ 10 metres from Wakefield Road	≤ 65 dB L_{Aeq} (0700-2300) ≤ 61 dB L_{Aeq} (2300-0700) ≤ 78 dB L_{AFMax}	-37 dB	≤ 28 dB L_{Aeq} (0700-2300) ≤ 24 dB L_{Aeq} (2300-0700) ≤ 41 dB L_{AFMax}
Plots set back ≥ 20 metres from Wakefield Road	≤ 60 dB L_{Aeq} (0700-2300) ≤ 56 dB L_{Aeq} (2300-0700) ≤ 73 dB L_{AFMax}	-30 dB	≤ 30 dB L_{Aeq} (0700-2300) ≤ 26 dB L_{Aeq} (2300-0700) ≤ 43 dB L_{AFMax}
Plots set back ≥ 40 metres from Wakefield Road	≤ 55 dB L_{Aeq} (0700-2300) ≤ 51 dB L_{Aeq} (2300-0700) ≤ 68 dB L_{AFMax}	-25 dB	≤ 30 dB L_{Aeq} (0700-2300) ≤ 26 dB L_{Aeq} (2300-0700) ≤ 43 dB L_{AFMax}

The mitigation requirements throughout the site are summarised in Appendix 3.

Points to Note

- The ventilation provision should be checked by a mechanical service engineer before designs are finalised. Should the proposals be insufficient to meet the minimum requirements of ADF, it may be necessary to provide additional ventilators. Where this applies, the required sound reduction of the ventilation units should be considered accordingly.
- 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.

5 Summary and Conclusions

A noise impact assessment has been undertaken for the proposed residential development at the land to the east of Wakefield Road, Mapplewell, Barnsley, S75 6DN.

Noise monitoring was carried out at the site from Monday 27th through to Tuesday 28th April 2026, and Wednesday 20th through to Thursday 21st May 2026. The noise environment at the site was found to be due to road traffic on Wakefield Road.

A scheme of sound attenuation works has been developed to protect the proposed development from the ambient noise climate in accordance with pertinent guidelines. See Appendix 3 for summary of mitigation requirements.

On the basis of the above, the development is compliant with Condition 11 of the Reserved Matters approval.

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 – Noise Measurement Positions



Appendix 3 – Mitigation Requirements



Key	Glazing	Ventilation
	Glazing rated at least 32 dB R_w+C_{tr} , such as 10 mm glass / 6-20 mm cavity / 6 mm glass	Acoustic wall vents rated at least 44 dB D_{n,e,w}+C_{tr} (vent open), such as the Duco Silenzio SR AK
	Glazing rated at least 25 dB R_w+C_{tr} , such as 4 mm glass / 6-20 mm cavity / 4 mm glass	Trickle vents rated at least 37 dB D_{n,e,w}+C_{tr} (vent open), such as the he Titon V75 vent (TA5235) with C75 canopy (TA5236)
Unmarked	Glazing rated at least 25 dB R_w+C_{tr} , such as 4 mm glass / 6-20 mm cavity / 4 mm glass	Trickle vents rated at least 32 dB D_{n,e,w}+C_{tr} (vent open), such as the Titon Trimvent Select Xtra S13 with XC13 canopy