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Proposed Residential Development

42 High Street, Wombwell, Barnsley, S73 8BH

Noise Impact Assessment

For: NYPA Ltd

24th March 2026

Ref: NIA-12547-26-12853-V1-High Street, Wombwell (Final).docx
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1 Introduction

1.1 Overview

Environmental Noise Solutions Ltd (ENS) has been commissioned by NYPA Ltd to undertake a noise survey and assessment for the proposed change of use of to form a residential development at 42 High Street, Wombwell, Barnsley, S73 8BH (hereafter referred to as 'the site').

Following a planning consultation with Barnsley Metropolitan Borough Council (Ref: 2025/1061) the following comments were made by the Environmental Health Department in relation to noise:

> *'As with similar residential developments in busy mixed commercial/residential locations, we would need to be satisfied that acceptable noise levels within the dwelling will be achieved (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)). Noise from plant, commercial etc. as well as noise transference from the ground floor commercial to the first-floor residential properties, would all need to be taken into consideration. A Noise Impact Assessment is the method by which these can be assessed and any mitigation identified'*

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 pertinent guidelines
- 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 as necessary. It has been prepared to accompany a planning application to be submitted to Barnsley Metropolitan Borough Council

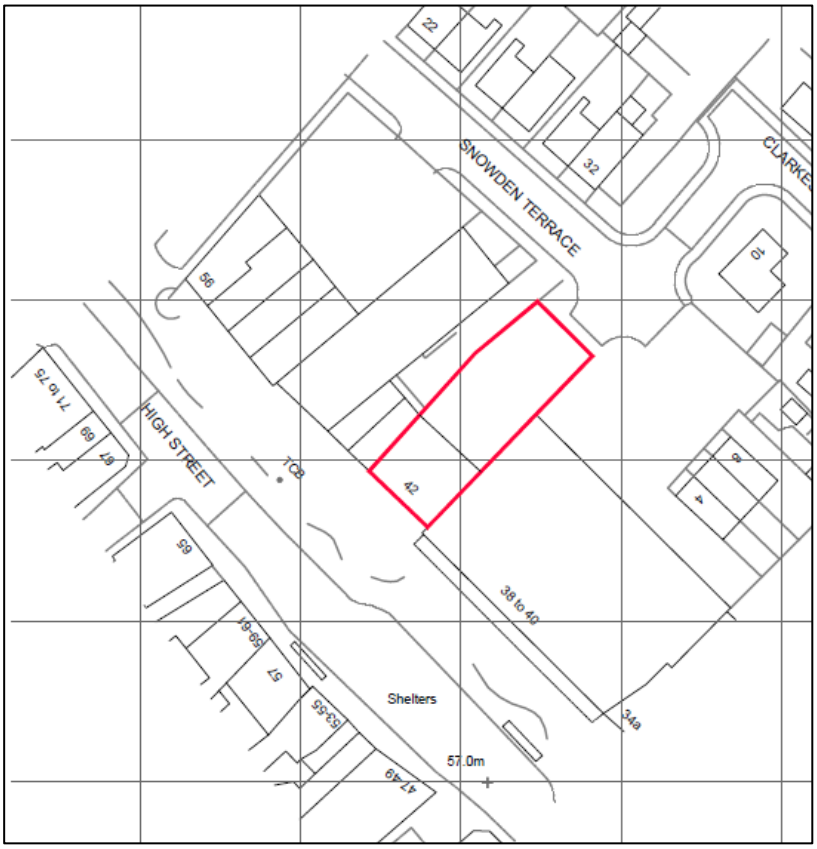
The report has been prepared for NYPA Ltd for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties referring to the report should consult NYPA Ltd and ENS as to the extent to which the findings may be appropriate for their use.

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 mixed-use setting on High Street in Wombwell, as shown (highlighted in red) in Figure 1.1.

Figure 1.1: Location of Proposed Development



Planning permission is sought for the conversion of the first-floor office / storage area to form 2 no. self-contained flats with existing retail unit at ground floor.

The site is bounded by (see Appendix 2 for site layout):

- High Street to the south-west
- Clarkes Croft / Snowden Terrace to the north-east
- Neighbouring retail units to the north-west and south-east

The ambient noise climate at the site is characterised by road traffic and pedestrian shoppers on High Street on the front façade and distant road traffic on the rear façade with no other significant noise sources noted.

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 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

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 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.

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.

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

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' (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 $L_{AFMax\ (2300\text{-}0700)}$

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 residential development and considered to represent good resting and sleeping conditions:

- ≤ 35 dB $L_{Aeq\ (0700\text{-}2300)}$ during the daytime
- ≤ 30 dB $L_{Aeq\ (2300\text{-}0700)}$ and 45 dB L_{AFMax} not regularly exceeded during the night-time

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)

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 Wednesday 4th March 2026 through to Thursday 5th March 2026.

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

- MP1 was located on the front façade overlooking at High Street.
- MP2 was located on the rear façade overlooking the first-floor flat roof.

Noise measurements were undertaken using NTi XL3 Type 1 integrating sound level meters at 1 metre from the existing building façade and at first floor level. 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. Weather conditions were therefore considered appropriate for noise monitoring.

3.2 Summary

Table 3.1 overleaf presents a summary of the noise data for each measurement session, at each measurement position, rounded to the nearest decibel. As measurements were made at 1 metre from the existing building façade, a –3 dB façade enhancement correction has been applied to the measured levels for all monitoring positions in order to establish the free field levels.

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	04/03/26	1043-2300	59	49	61	-	Road traffic and pedestrian shoppers.
	04-05/03/26	2300-0700	52	32	58	72*	
	05/03/26	0700-1002	59	53	63	-	
MP2	04/03/26	1154-2300	48	42	51	-	Distant road traffic
	04-05/03/26	2300-0700	41	31	47	59*	
	05/03/26	0700-1003	47	44	49	-	
** 11th highest maximum noise level event during the night-time*							

3.3 Analysis

Noise levels on the front façade (MP1) overlooking High Street were measured at up to **59 dB $L_{Aeq\ (0700\text{-}2300)}$** and **52 dB $L_{Aeq\ (2300\text{-}0700)}$** respectively. Typical (11th highest) maximum noise levels at MP1 were measured at up to **72 dB L_{AFMax}** during the night-time.

Noise levels on the front façade (MP2) overlooking the rear of the development were measured at up to **48 dB $L_{Aeq\ (0700\text{-}2300)}$** and **41 dB $L_{Aeq\ (2300\text{-}0700)}$** respectively. Typical (11th highest) maximum noise levels at MP2 were measured at up to **59 dB L_{AFMax}** during the night-time.

The ambient noise climate at the site is characterised by road traffic on High Street with no other significant noise sources noted.

3.4 Sound Insulation Test of Existing Separating Floor

Airborne sound insulation testing was undertaken between the existing ground floor retail unit and the proposed first floor residential development.

Two source positions were used. The spatial average sound pressure level was obtained for each source position in both source and receiving rooms using a swept microphone technique (continuously moving). An averaging time of 30 seconds was used for each microphone sweep. Reverberation time measurements were undertaken using one loudspeaker position and an interrupted source. The average of six decay measurements for each frequency band was determined from three fixed microphone positions with two readings in each case. The measurement system calibration was verified immediately before the commencement of the measurement sessions and again at the end, with no drift in calibration level noted.

The airborne sound insulation of the existing separating floor is summarised in the following table. For reference, $D_{nT,w}$ is a single-number quantity which characterizes the airborne sound insulation of the separating element between the source and receiving rooms as defined in BS EN ISO 717-1.

Table 3.2 – Sound Insulation Test Results of Separating Floor

Source Room	Receiving Room	$D_{nT,w}$
Ground Floor Retail Unit	Proposed First Floor Residential Development	55 dB

The airborne sound insulation of the existing separating floor is 55 dB $D_{nT,w}$, which is considered to be relatively high.

4 Noise Assessment

4.1 Design Noise Levels

Design noise levels for the front facade of the development overlooking High Street have been measured /calculated at:

- **≤ 59 dB $L_{Aeq\ (0700\text{-}2300)}$** during the daytime
- **≤ 52 dB $L_{Aeq\ (2300\text{-}0700)}$** during the night-time
- **≤ 72 dB L_{AFMax}** during the night-time

Design noise levels for the rear of the development are taken as follows:

- **≤ 48 dB $L_{Aeq\ (0700\text{-}2300)}$** during the daytime
- **≤ 41 dB $L_{Aeq\ (2300\text{-}0700)}$** during the night-time
- **≤ 59 dB L_{AFMax}** during the night-time

4.2 Scheme of Sound Attenuation

In order to calculate the sound insulation requirements for habitable rooms 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).

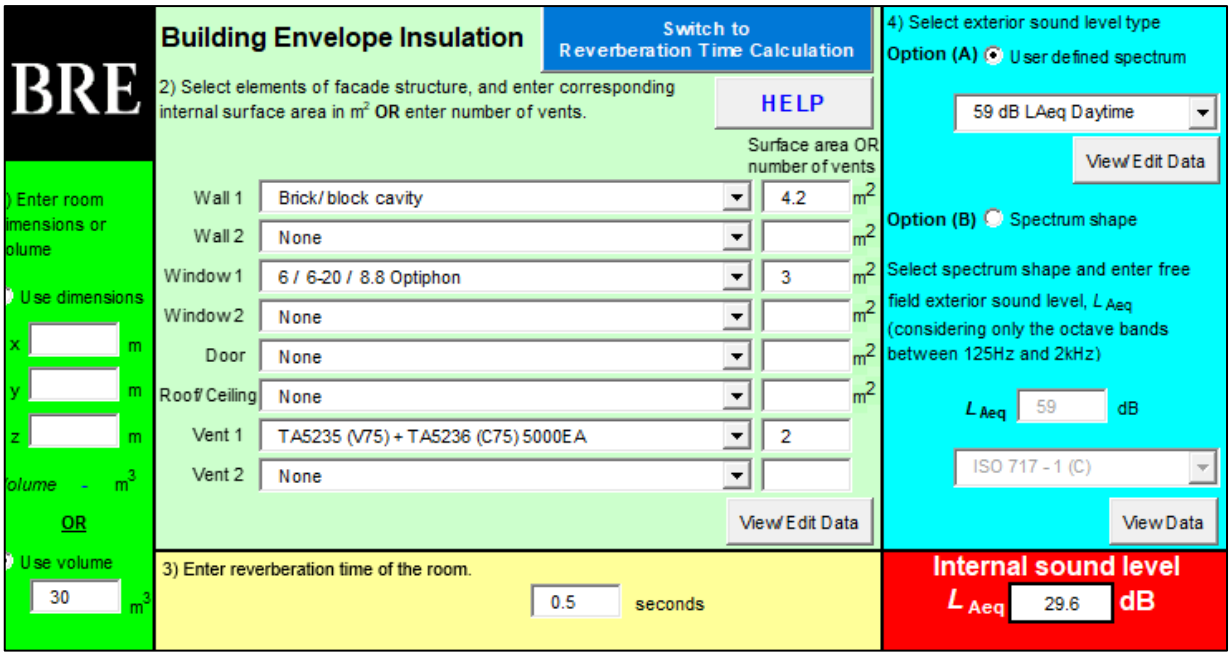
Approved Document F 'Ventilation' (ADF) states that where natural ventilation is used, background ventilation of at least 10'000 mm² EA must be provided for habitable rooms within a single storey apartment.

Bedrooms and living rooms on the front façade overlooking High Street should be provided with enhanced glazing rated at least **38 dB R_w+C** (such as 6 mm glass / 6-20 mm cavity / 8.8 Optiphon mm glass) in conjunction with acoustic trickle vents (or wall vents) rated at least **38 dB $D_{n,e,w}$+C** (such as the Titon V75 vent (TA5235) with C75 canopy (TA5236) or equivalent, 2 no. vents per bedroom and 3 no. vents per living room).

Bedrooms and living rooms on the rear façade should be provided with standard glazing rated at least **28 dB R_w+C_{tr}**, such as 6 mm glass / (6-20) / 4 mm glass, in conjunction with standard trickle vents rated at least **33 dB $D_{n,e,w}$ + C_{tr}**, such as the Greenwood 5000EA (2 no. vents per bedroom and 3 no. vents per living room).

An example BRE calculation spreadsheet is shown in Figure 4.1 overleaf.

Figure 4.1: Example BRE Calculation Spreadsheet



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.

4.3 Internal Noise Transfer

The airborne sound insulation performance of the existing separating floor has been measured at **55 dB $D_{nT,w}$**, which is relatively high and above the requirements of ADE 2003.

In layman's terms, this means that the noise level in the first-floor residential development will be circa 55 dB lower than in the ground floor retail units.

Therefore, in order to exceed the criterion of ≤ 35 dB $L_{Aeq\ (0700\text{-}2300)}$ within the first-floor residential development, the internal reverberant noise level within the ground floor retail units would have to exceed 90 dB $L_{Aeq,\ T}$.

Such levels are significantly above those that could be conceivable in such a space. For context, 85 dB L_{Aeq} is the level at which hearing protection becomes mandatory in an industrial workplace.

It is therefore concluded that the existing separating floor construction is appropriate.

5 Summary and Conclusions

A noise impact assessment has been undertaken for the proposed change of use of to form a residential development at 42 High Street, Wombwell, Barnsley, S73 8BH.

The ambient noise climate at the site is characterised by road traffic and pedestrian shoppers on high street on the front south-western façade and distant road traffic on the north-eastern façade.

A scheme of sound insulation works has been developed to protect the proposed residential development from the ambient noise climate.

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 – Proposed Layout First Floor