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Proposed Residential New-Build Development Land at Penistone Road, Fenay Bridge, Huddersfield, HD8 0AS Noise Impact Assessment

For:

NYP Architectural Services Ltd

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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
2.5	Approved Document O	5
3	Noise Survey	6
3.1	Overview	6
3.2	Summary	6
3.3	Analysis	6
4	Noise Assessment	7
4.1	Design Noise Levels	7
4.2	Scheme of Sound Attenuation	7
4.3	External Amenity	8
4.4	Mitigation of Overheating	8
5	Summary and Conclusions	9
	Appendix 1 – Abbreviations and Definitions	10
	Appendix 2 – Noise Measurement Positions	11
	Appendix 3 – Glazing Mark-up	12

1 Introduction

1.1 Overview

Environmental Noise Solutions (ENS) has been commissioned by NYP Architectural Services Ltd (the client) to carry out a noise impact assessment for a proposed residential development at land to the west of Penistone Road, Fenay Bridge, Huddersfield, HD8 0AS (hereafter referred to as ‘the site’).

Planning permission (ref: 2025/62/93108/W) for the development was granted by Kirklees Council in June 2026, subject to conditions. Condition 4 relates to the control of noise as follows:

4. Before construction work commences, a report specifying the measures to be taken to protect the development from noise from all significant noise sources that are likely to affect the proposed development including road traffic shall be submitted to and approved in writing by the Local Planning Authority.

The report shall:

- a) Determine the existing noise climate*
- b) Predict the noise climate in living rooms and gardens (daytime), bedrooms (night-time) and other habitable rooms of the development*
- c) Detail the proposed attenuation/design necessary to protect the amenity of the occupants of the new residences (including ventilation if required).*

The development shall not be occupied until all works specified in the approved report have been carried out in full and such works shall be thereafter retained.

Reason: To protect the amenity of occupiers of the proposed development from noise or disturbance from nearby noise generating premises to accord with the aims of Policies LP24 and LP52 of the Kirklees Local Plan and Chapters 12 and 15 of the National Planning Policy

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 relevant 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 for noise attenuation as appropriate. It has been prepared to aid in the discharge of Condition 4 of Planning Permission ref: 2025/62/93108/W.

The report has been prepared 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 the client 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 occupies a former paddock on land to the west of Penistone Road, Fenay Bridge, Huddersfield, in a semi-rural area.

The site is bounded by:

- Existing residential dwellings to the north
- Open farmland to the south and west
- Penistone Road, with dwellings beyond, to the east

The approximate site location is indicated in red in Figure 1.1.

Figure 1.1: Location of Proposed Development



Development proposals are for a single new-build residential dwelling with associated landscaping and access road. Layout plans indicate that the proposed dwelling is set back circa 8 metres from the nearside carriageway of Penistone Road (A629).

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 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

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 (2025)

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 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 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	
		Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Resting	Living Room	35 dB $L_{Aeq,16hr}$	-
Dining	Dining Room/Area	40 dB $L_{Aeq,16hr}$	-
Sleeping	Bedroom	35 dB $L_{Aeq,16hr}$	30 dB $L_{Aeq,8hr}$ 45 dB $L_{AF,max}$

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 $L_{Aeq,16hr}$
- ≤ 30 dB $L_{Aeq, 8hr}$
- 45 dB $L_{AF,max}$ 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 $L_{Aeq,16hr}$.’

2.5 Approved Document O

Approved Document O, 2021 is written in support of Part O of Schedule 1 to the Building Regulations 2010. The approved document details methods of addressing overheating of residential dwellings and is applicable only across England.

The approved document has the following relevant guidance in Section 3 regarding noise ingress into buildings:

‘In locations where external noise may be an issue (for example, where the local planning authority considered external noise to be an issue at the planning stage), the overheating mitigation strategy should take account of the likelihood that windows will be closed during sleeping hours (11pm to 7am).

Windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following limits.

- 40 dB $L_{Aeq,T}$, averaged over 8 hours (between 11pm and 7am)
- 55 dB $L_{Amax,F}$ more than 10 times a night (between 11pm and 7am)’

3 Noise Survey

3.1 Overview

A noise survey was undertaken between Monday 13th and Wednesday 15th July 2026. Long-term noise measurements were undertaken in free-field conditions using an NTi XL3 Type 1 integrating sound level meter. The meter was connected to a windshield covered microphone at all times. Additional short-term attended measurements were undertaken using a Brüel & Kjær 2250 Type 1 integrating sound level meter, also equipped with a windshield-covered microphone throughout.

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

- MP1 was located at a position representative of the most exposed façade to Penistone Road, approximately 8 metres from the nearside kerb and approximately 4 m above ground level (AGL).
- MP2 was located to the north of the site at a position representative of the proposed garden area, with the microphone positioned 1.5 m AGL.

The measurement system calibration was verified immediately before and after the survey period using a Brüel & Kjær 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 $L_{AF,max}$ together with linear 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, 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)	$L_{AF,max}$ (dB)	Comment
MP1	13/07/26	1510—2300	62	46	67	-	Noise climate controlled by road traffic on Penistone Road
	14/07/26	0700—2300	64	52	68	-	
	15/07/26	0700—1055	65	56	69	-	
	13–14/07/26	2300—0700	57	30	64	77*	
	14–15/07/26	2300—0700	57	28	64	74*	
MP2	13/07/26	1643—1716	55	47	58	-	

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

3.3 Analysis

Noise levels at the site are controlled by vehicles on Penistone Road, no other significant noise sources were noted.

Daytime and night-time ambient noise levels at MP1 are taken as ≤ 64 dB $L_{Aeq,16hr}$ and 57 dB $L_{Aeq,8hr}$ respectively, with an 11th highest maximum noise level of up to 77 dB $L_{AF,max}$ during the night-time.

4 Noise Assessment

4.1 Design Noise Levels

Design noise levels at the site are as follows:

- $\leq 64 \text{ dB } L_{Aeq,16hr}$ during the daytime
- $\leq 57 \text{ dB } L_{Aeq,8hr}$ during the night-time
- $\leq 77 \text{ dB } L_{AF,max}$ 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, actual 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 $L_{AF,max}$ in this case).

As a precaution against elevated noise levels from Penistone Road, it is recommended that habitable rooms within the development are provided with enhanced glazing rated at least 34 dB R_w+C_{tr} (such as 6 mm Optiphon glass / 12 mm cavity / 8.8 mm Optiphon glass), together with a decentralised mechanical extract ventilation (dMEV) system comprising continuously running kitchen and bathroom extract fans operating at trickle rate, and acoustic trickle ventilators to habitable rooms rated at least 41 dB $D_{n,e,w}+C_{tr}$ per 5,000 mm² equivalent area (vent open), such as the Titon SF X V75 / SFSA C75, or equivalent (see Appendix 3 for glazing mark-up).

The ceilings (and side cheeks to the dormer windows) in any room-in-roof bedrooms requiring enhanced glazing should be double boarded, with 100 mm (minimum) mineral wool insulation above. The glazing requirements are also applicable to 'Velux' windows.

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.

4.3 External Amenity

The attended measurements undertaken at MP2, representative of the proposed external amenity area, identified daytime ambient noise levels of approximately **55 dB $L_{Aeq,T}$** . This is consistent with the upper end of the desirable range for external amenity spaces contained within BS 8233:2014 and, as such, the proposed garden area is considered capable of providing a suitable external acoustic environment without the need for additional mitigation. The site is positioned at a lower level than Penistone Road, such that the existing topography already provides a degree of acoustic screening from road traffic noise. This natural screening contributes to the compliant noise levels measured within the proposed garden area, and no further acoustic barrier is considered necessary.

4.4 Mitigation of Overheating

ADO states that for moderate risk locations (i.e. outside of London) the minimum free area of the open window should be at least 4% of the floor area of the room.

As the open area varies as a function of the floor area, for a typical floor-to-ceiling height of 2.4 m, a free area of 4% of the floor area equates to an external to internal noise reduction of 10 dB.

With reference to the internal targets contained in ADO, it is assumed that open windows can form the overheating mitigation strategy with no additional ventilation or cooling, providing the external noise levels outside bedrooms at night do not exceed **50 dB $L_{Aeq,8hr}$** and **65 dB $L_{AF,max}$** .

The measured external night-time noise levels of 57 dB $L_{Aeq,8hr}$ and up to 77 dB $L_{AF,max}$ exceed the Approved Document O criteria for relying on open windows as the primary overheating mitigation strategy. It is therefore assumed that bedroom windows will remain closed during sleeping hours, and this should be taken into account by the overheating assessor.

5 Summary and Conclusions

A noise impact assessment has been undertaken for the proposed residential development at land to the west of Penistone Road, Fenay Bridge, Huddersfield,

A noise survey was undertaken at the site to assess noise levels from existing noise sources. The noise environment at the site was found to be wholly controlled by road traffic on Penistone Road.

Section 4 of this report demonstrates that, subject to installation of the recommended glazing, acoustic ventilation and garden barrier, the proposed dwelling is capable of achieving the internal and external amenity criteria contained within BS 8233:2014 and ProPG. Accordingly, the requirements of Condition 4 have been satisfied and the Condition may be discharged.

Appendix 1 – Abbreviations and Definitions

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.

C_{tr}

In acoustics, C_{tr} is the spectrum adaptation term for road traffic and other low-frequency noise. It is used alongside the laboratory sound insulation rating R_w to give a more realistic indication of how well a building element (such as a window, door or wall) performs against real-world 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. $L_{Aeq,16h}$ (i.e. 07:00 to 23:00 hours) and $L_{Aeq,8hr}$ (i.e. 23:00 to 07:00) 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 one-hour 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.

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 μ Pa 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 μ Pa).

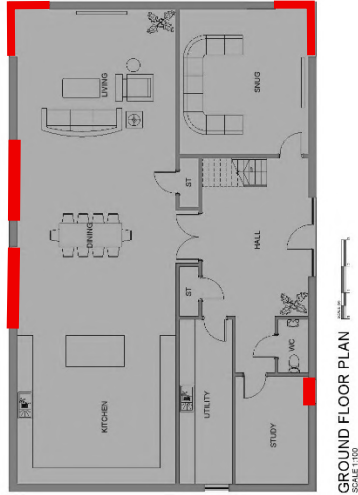
Weighted Sound Reduction Index (R_w)

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 – Glazing Mark-up



Enhanced laminated glazing rated at least 34 dB $R_{w}+C_{tr}$

