

HINCHLEY ROAD, CHARLESTOWN - PROPOSED RESIDENTIAL DEVELOPMENT
NOISE IMPACT ASSESSMENT

On behalf of:
Miller Homes Ltd

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NOISE IMPACT ASSESSMENT

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On behalf of:
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1.0 INTRODUCTION

- 1.1 Hepworth Acoustics Ltd was commissioned by Miller Homes Ltd to carry out a noise impact assessment in connection with a proposed planning application for residential development on land at Hinchley Road, Charlestown.
- 1.2 The location of the proposed residential development, which is currently vacant land, is shown in **Figure 1**. The site is bounded by Caspian Road, which is a lightly trafficked residential road, to the north-east; a sports pitch associated with Co-op Academy North Manchester to the north-west; and Hinchley Road, which is also a lightly trafficked residential road, to the south and east. There are existing residential dwellings bordering the site, or on the opposite side of the roads bordering the site to the north-east, east and south. The M60 motorway is located over 300m away beyond the existing dwellings to the north-east.
- 1.3 On the basis of the above, whilst there is some distant road traffic noise at the site, the noise assessment has focussed on the potentially most significant and intrusive noise source that could affect the proposed dwellings, this being activities on the directly adjacent sports pitch. It is noted that the pitch is available for community use and so could be used during weekdays, including evenings, and at weekends.
- 1.4 The assessment has been based on the layout shown on drawings provided by Miller Homes Ltd dated February 2025. The proposed layout of the development is shown in **Figure 2**.
- 1.5 The noise assessment has included:
- An inspection of the site and surrounding area;
 - Measurement of noise levels during representative periods on Sunday morning;
 - Assessment of likely impact from existing football pitch;
 - Recommendation of appropriate mitigation measures.
- 1.6 The various noise units and indices referred to in this report are described in **Appendix I**. All noise levels mentioned in the text have been rounded to the nearest decibel, as fractions of decibels are imperceptible.

2.0 GUIDANCE

NPPF:2024

- 2.1 Paragraph 198 of the National Planning Policy Framework (NPPF), December 2024 states that planning policies and decisions should *“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: a) 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;”*

NPSE:2010

- 2.2 The Noise Policy Statement for England (NPSE) 2010, which is referred to in the NPPF, includes three aims:
- i. Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.
 - ii. Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.
 - iii. Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.
- 2.3 No specific guidance is given in the NPPF on acoustic design criteria, therefore, the guidance discussed below has been used for acoustic design purposes.

Sport England ‘Artificial Grass Pitch (AGP) Acoustics – Planning Implications’

- 2.4 The Sport England Design Guidance Note provides guidance on the acoustics related planning implications of AGPs. The Guidance Note refers to both NPPF and NPSE documents but also draws attention to the fact that there is *“no specific noise criteria for an AGP”* or sports pitch. The guidance refers to World Health Organisation (WHO) 1999 ‘Guidelines for Community Noise’ and from this

derives an appropriate daytime noise level outside a dwelling of 50 dB $L_{Aeq,1hr}$. Similarly, 50 dB is also recommended to avoid moderate annoyance in outdoor living spaces/external amenity areas. The assessment period has been reduced from 16 hours to 1 hour reflecting a “*typical time period for a community sports session*” and a robust assessment. These noise levels are also in line with the criteria of set out in BS8233.

Acoustic Design Criteria

2.5 Therefore, considering the above guidance the following noise criteria has been adopted in respect of controlling noise from the adjacent sports pitch:

- Daytime noise 50 dB $L_{Aeq,1hr}$ outside a dwelling.

3.0 NOISE SURVEY

- 3.1 Two separate visits to the site were undertaken on Sunday mornings with a view to measuring noise levels from use of the sports pitch during what would generally be considered the potentially most sensitive period of use.
- 3.2 On our initial visit to the site on Sunday 9 February 2025, the pitch was not in use. Upon return to the site on Sunday 16 February 2025, there was still no use of the pitch.
- 3.3 In spite of there being no use of the pitch on either day, some baseline noise measurements were taken during the morning of 16 February 2025 to quantify the residual noise climate.
- 3.4 Noise levels were measured at a location representative of the nearest dwellings to the pitch i.e. approximately 10 metres the boundary of the site, as shown in **Figure 1** and described below:
- 3.5 The measurements were carried out using a B&K 2250 'Class 1' sound analyser that was tripod mounted approximately 1.4m above the ground in 'free-field' conditions with the microphone fitted with a windshield. Calibration checks were carried out on the sound analyser both before and after the measurement periods with no variance in levels observed.
- 3.6 Weather conditions during the survey were considered acceptable for the purposes of the survey and subsequent assessment.
- 3.7 The results of the noise survey are summarised in **Table 2**, and the full results along with details of the equipment used, and the weather conditions during the survey periods, are shown in Appendix II.

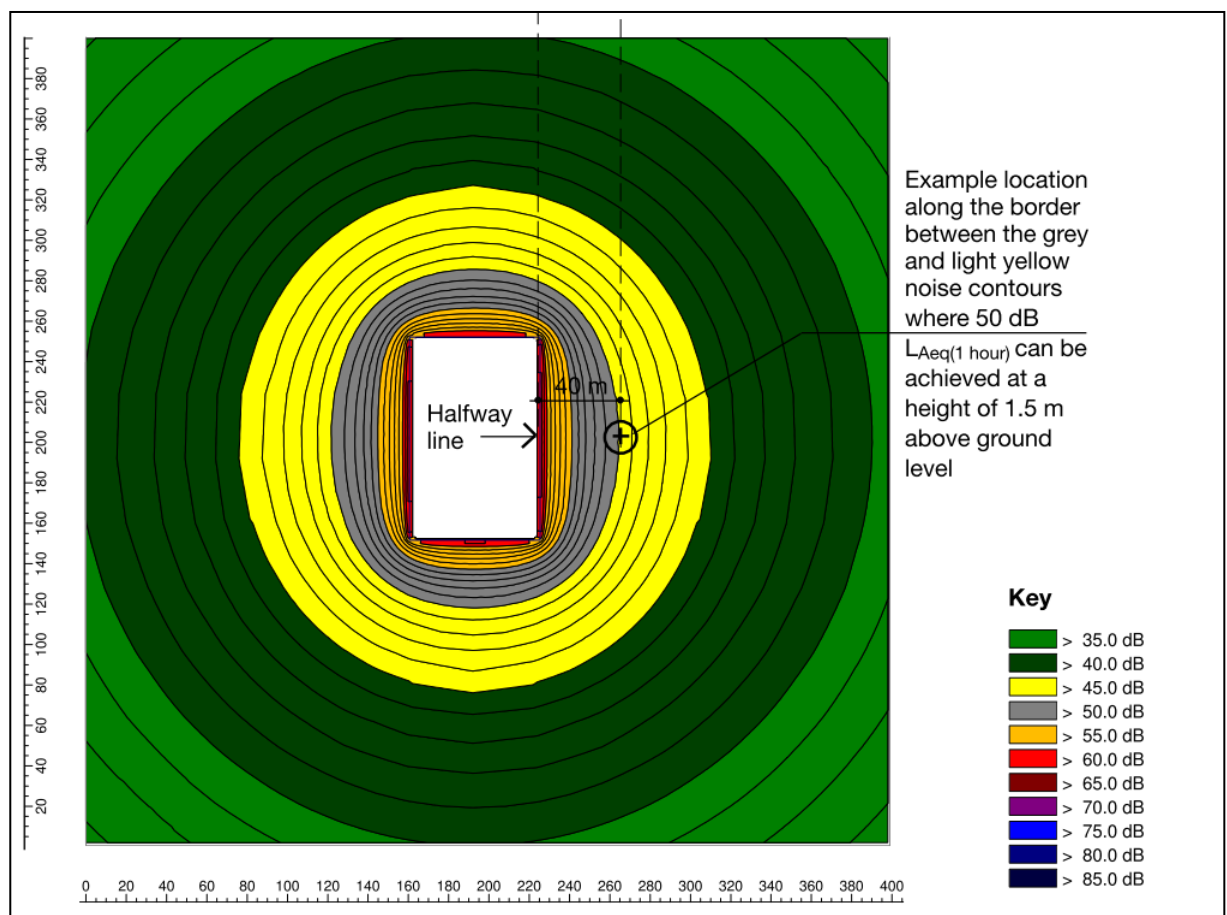
Table 2: Summary of Noise levels Measured (dB)

Location	$L_{Aeq,T}$	$L_{A90,T}$
A – 10m from the site	51 – 53	48 – 51

- 3.8 The noise levels measured during the survey were due to distant road traffic.

4.0 NOISE ASSESSMENT & RECOMMENDATIONS

- 4.1 Since the sports pitch was not in use during either of our site visits, the likely noise levels from use of the pitch have been calculated at the nearest proposed dwellings based on noise levels set out the Sport England guidance. We understand that the pitch is only be used during daytime hours and therefore the night-time need not be considered.
- 4.2 The Sport England Design Guidance Note describes noise level measurements that were “*undertaken during nine sports sessions on three separate AGPs. The sessions included football, hockey and rugby and participation by men, women and children. The purpose was to determine a ‘typical’ noise level generated from a ‘typical’ AGP sports session. Noise level measurements were taken at a distance of 10 metres behind the mid-way points along goal lines and sidelines. They were found to be highest behind the sideline halfway line ... From the measurement data, a typical free-field noise level of 58dB $L_{Aeq,1hr}$ at a distance of 10m from the sideline halfway marking has been determine as representative for noise from an AGP*”.
- 4.3 The relevant noise map form the Sport England Design Guidance Note is presented below.



- 4.4 The pitch noise levels described are consistent with noise levels measured by Hepworth Acoustics at similar facilities.
- 4.5 The pitch is situated north-west of the site, with the end (i.e. short edge) of the pitch approximately 10 metres from the middle of the proposed gardens of the nearest proposed dwellings. Using the reference source noise map as presented in the Sport England guidance (shown above), noise levels within the gardens will exceed the adopted noise criterion by up to 8 dB without noise mitigation. Therefore, some mitigation will be required to reduce the potential noise during use of the pitch. This would be most effective in the form of an acoustic barrier.
- 4.6 In order to determine a suitable height for the barrier, we have carried out some screening attenuation calculations.
- 4.1 Beyond the A-weighted noise levels set-out in the Sport England guidance, Hepworth Acoustics has previously measured source noise levels associated with sports pitches in individual octave bands. Using these values, adjusted to be equivalent to the 58 dBA noise level expected in the gardens as per the Sport England guidance, we have determined a suitable height for the acoustic barrier. The adopted football noise levels without the acoustic barrier are shown in **Table 3**:

Table 3: Adopted football match noise levels at 10 metres from the edge of the pitch (dB)

Description	Octave Band Centre Frequency (Hz)								A
	63	125	250	500	1k	2k	4k	8k	
Pitch Noise Level ($L_{eq,1hr}$)	55	53	46	46	53	54	46	29	58

- 4.2 In calculating the necessary height for the acoustic barrier, it has been assumed the acoustic centre of the sports pitch noise is 20m from the barrier, this ensures there is a balance between the distance of the noise source from the dwelling and the effectiveness of the barrier. In practice, the sources that will result in the most significant levels outside the dwellings will probably be those closest to the boundary with the houses and hence assuming a source distance of 20m from the barrier is a robust approach.
- 4.3 **Table 4** below shows the calculated noise levels in the rear garden of the nearest dwelling to the site assuming a 2.2m acoustic barrier, the recommend extents of which are shown in **Figure 2**.

Table 4: Calculated noise level at the garden of the nearest dwellings (dB)

Description	Octave Band Centre Frequency (Hz)								A
	63	125	250	500	1k	2k	4k	8k	
In rear garden ($L_{Aeq,1hr}$)	49	47	39	38	43	42	31	14	47

- 4.4 On this basis, a 2.2m acoustic barrier will reduce sports pitch noise levels outside the nearest dwellings to 47 dB $L_{Aeq,1hr}$. This is below the adopted external noise criterion for sports pitch noise and is below the existing measured ambient noise levels during a Sunday morning period.
- 4.5 The acoustic barrier can be in the form of a solid brick wall or acoustic fence. Acoustic fencing must be imperforate (i.e. have no holes or gaps), have a surface mass no less than 10 kg/m² and be at least 20mm thick.
- 4.6 Suppliers of proprietary acoustic fences include GRAMM Barrier Systems Ltd (www.grammbarriers.com) Jacksons Fencing (www.jacksons-fencing.co.uk), Guardian Fencing (www.guardianfencing.com) and Ransfords (www.ransfords.co.uk).
- 4.7 It is useful to note that there are existing dwellings on Northwold Drive that are a similar distance away from the pitch to those that are proposed.
- 4.8 It is also worth noting that, based on the noise measurements taken at the site and from review of published road traffic noise contour plots (**Appendix III**), it is unlikely that noise from the M60 will result in any unacceptable harm to residential amenity by reason of noise disturbance. It is therefore unlikely that any enhanced acoustic glazing or ventilation, or further screening of private gardens will be required.

Planning Condition

- 4.9 The need to ensure that an adequate scheme of noise mitigation is implemented can be formalised by an appropriately worded planning condition that requires a scheme of noise mitigation measures as described in this report to be implemented prior to occupation of relevant dwellings.

Conclusion

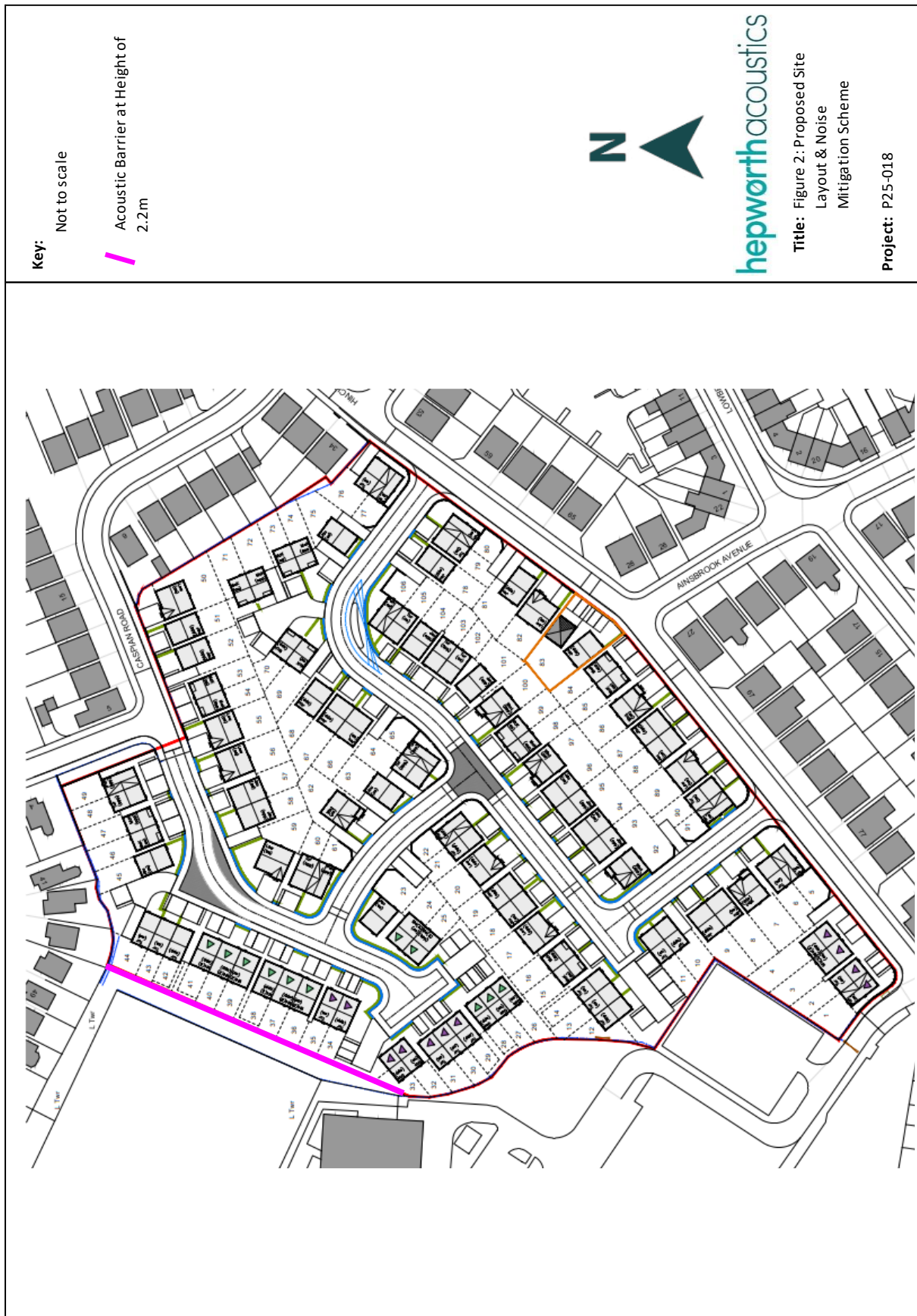
- 4.10 Subject to the implementation of the recommendations for mitigation measures made above we conclude that potential noise impact from existing the sports pitch should not result in any unacceptable harm to residential amenity by reason of noise disturbance.

- 4.11 Furthermore, 'significant adverse impacts' would be avoided and 'adverse impacts' would be mitigated/minimised, bringing the development in line with the aims of the Noise Policy Statement for England (NPSE) 2010.

5.0 SUMMARY

- 5.1 The impact of noise from an adjacent sport pitch has been assessed for the proposed residential development at Hinchley Road, Charlestown.
- 5.2 The potential noise impact associated with use of the sports pitch on the proposed development has been assessed.
- 5.3 Given the proximity of the pitch to the proposed dwellings, an appropriate scheme of noise mitigation measures (i.e. an acoustic fence) has been recommended to adequately protect the amenity of the new residents and also safeguard the use of the sports pitch.
- 5.4 The implementation of an adequate scheme of noise mitigation measures can be ensured by the use of appropriately worded planning conditions.





Appendix I: Noise Units & Indices

Sound and the decibel

A sound wave is a small fluctuation of atmospheric pressure. The human ear responds to these variations in pressure, producing the sensation of hearing. The ear can detect a very wide range of pressure variations. In order to cope with this wide range of pressure variations, a logarithmic scale is used to convert the values into manageable numbers. Although it might seem unusual to use a logarithmic scale to measure a physical phenomenon, it has been found that human hearing also responds to sound in an approximately logarithmic fashion. The dB (decibel) is the logarithmic unit used to describe sound (or noise) levels. The usual range of sound pressure levels is from 0 dB (threshold of hearing) to 120dB (threshold of pain).

Due to the logarithmic nature of decibels, when two noises of the same level are combined together, the total noise level is (under normal circumstances) 3 dB(A) higher than each of the individual noise levels e.g. 60 dB(A) plus 60 dB(A) = 63 dB(A). In terms of perceived 'loudness', a 3 dB(A) variation in noise level is a relatively small (but nevertheless just noticeable) change. An increase in noise level of 10 dB(A) generally corresponds to a doubling of perceived loudness. Likewise, a reduction in noise level of 10 dB(A) generally corresponds to a halving of perceived loudness.

The ear is not equally sensitive to sound at all frequencies. It is less sensitive to sound at low and very high frequencies, compared with the frequencies in between. Therefore, when measuring a sound made up of different frequencies, it is often useful to 'weight' each frequency appropriately, so that the measurement correlates better with what a person would actually hear. This is usually achieved by using an electronic filter called the 'A' weighting, which is built into sound level meters. Noise levels measured using the 'A' weighting are denoted dB(A) or dBA.

Frequency and Hertz (Hz)

As well as the loudness of a sound, the frequency content of a sound is also very important. Frequency is a measure of the rate of fluctuation of a sound wave. The unit used is cycles per second, or hertz (Hz). Sometimes large frequency values are written as kiloHertz (kHz), where 1 kHz = 1000 Hz.

Young people with normal hearing can hear frequencies in the range 20 Hz to 20 kHz. However, the upper frequency limit gradually reduces as a person gets older.

Glossary of Terms

When a noise level is constant and does not fluctuate, it can be described adequately by measuring the dB(A) level. However, when the noise level varies with time, the measured dB(A) level will vary as well. In this case it is therefore not possible to represent the noise climate with a simple dB(A) value. In order to describe noise where the level is continuously varying, a number of other indices can be used. The indices used in this report are described below.

$L_{Aeq,T}$ This is the A-weighted 'equivalent continuous noise level' which is an average of the total sound energy measured over a specified time period. In other words, $L_{Aeq,T}$ is the level of a continuous noise which has the same total (A-weighted) energy as the real fluctuating noise, measured over the same time period. It is increasingly being used as the preferred parameter for all forms of environmental noise.

L_{AFmax} This is the maximum A-weighted noise level that was recorded during the measurement period in terms of 'Fast' time weighting.

$L_{A90,T}$ This is the A-weighted noise level exceeded for 90% of the time period. $L_{A90,T}$ is used as a measure of background noise.

Appendix II: Noise Survey Results

Date(s)	Daytime – Sunday 16 February 2025
Equipment	B&K 2250 'Class 1' sound analyser (serial no. 3011706) with tripod and associated calibrator
Weather	Daytime – Dry, ~6°C, clear skies and calm <3 m/s

Location A

Start Time	Measured Noise Levels (dB)			Comments
	L_{AFmax}	$L_{Aeq,5min}$	$L_{A90,5min}$	
09:59	58	51	49	The dominant noise source throughout was distant road traffic along the M60.
10:04	60	51	49	
10:09	63	53	50	
10:14	67	53	51	
10:19	62	53	51	
10:24	59	52	51	
10:29	62	53	51	
10:34	61	53	51	
10:39	62	51	50	
10:44	58	51	49	
10:49	57	51	48	
10:54	62	52	49	

Appendix III: Extrium Noise Contour Plots - Day

