



Sanctuary Acoustics

Acoustics Consultancy.

**NOISE ASSESSMENT FOR
MR & MRS MAYER
TO
ACCOMPANY
A
FULL PLANNING APPLICATION
FOR THE
PROPOSED CHANGE OF USE
OF
AGRICULTURAL BUILDINGS
INTO
RESIDENTIAL DWELLINGS
AT
UPPER HEAKLEY FARM
BALL LANE
BROWN EDGE.**

DOCUMENT 001

BY

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FEBRUARY 2026**

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EXECUTIVE SUMMARY

Sanctuary Acoustics Ltd has been instructed by Mr & Mrs Mayer to assess the noise environment in the vicinity of agricultural buildings on farm land which lies adjacent to Ball Lane, Brown Edge, Staffordshire, ST6 8SW. A previous planning application had been submitted proposing change of use for the site with the conversion of 2 x agricultural buildings into 4 x new residential dwellings under application number DET/2025/0040. This prior approval application received a refusal from the LPA.

Comments from *Staffordshire Moorlands District Council* have provided five reasons for why refusal has been made with reason 2 reflecting on residents amenity and the issue of noise impacts, amongst other issues, which have not been addressed by the client in previously submitted plans and details.

This noise reports seeks to clarify the existing noise climate on the site and recommendations for mitigation measures were necessary.

The primary noise sources impacting onto the site is farm activity from mostly farm traffic and intermittent road traffic on Ball Lane. Some horses were noted in the adjoining field but other than the owners dogs, no other domesticated animals were noted in view of the measurement locations. Due to the rural location, birdsong and wildlife were evident at intervals. Some of the roofs and walls to the nearby agricultural buildings have corrugated metal sheets which do generate noise when moving due to wind speed and/or changes in wind direction. It should be noted that there was no perception of any fixed mechanical plant noise at either measurement location from air conditioning units or air handling units etc., or any other similar items of fixed plant.

To summarise:

1. Noise measurements were undertaken on the proposed development site which is located on farm land at Upper Heakley Farm, Ball Lane, Brown Edge, ST6 8SW. The proposed development is of two farm buildings either side of a central road with the northern farm building being the smaller of the two.
2. Noise measurements were taken at two external locations to assess noise currently impinging onto the site. The noise at Location 1 lying further north into the site was taken off the central road opposite the smaller farm buildings' eastern elevation and was defined primarily as farm activity including farm traffic noise and farm employees and farm family members on the site plus some road traffic noise from Ball Lane and animal/birdsong noise from the wider area. The noise at Location 2 to the southern elevation of the larger farm building to the south and closer to other buildings and Ball Lane was subjected to the same noise sources. It should be noted that some of the farm buildings, both those proposed for conversion as well as those to remain as farm buildings have corrugated metal sheeting in sections. Some of this sheeting was not securely fixed into place and subsequently during the survey, an increase in wind speed and/or change in wind direction caused this sheeting to generate an increase in noise level which can be noted from 22:00 on the 5th February to 01:00 on the 6th February and again from 02:15 to 04:30 on the 6th February. This was particularly noted at Location 1 with Location 2 being partially shielded

from the rear and so the impact of the corrugated sheeting moving was not as perceptible.

3. The noise assessment was conducted with measurements commencing at Location 1 from 16:00 on Wednesday 4th February to 08:00 on Friday 6th February and at Location 2 from 16:15 on Wednesday 4th February to 08:00 on Friday 6th February which were all for a continuous period and in secure locations. The measurements at each location were for a continuous logging period and were set to record at 15-minute intervals which were later extrapolated to obtain the 1-hour L_{Aeq} and L_{A90} .
4. The noise measurements were referenced to the *National Planning Policy Framework (NPPF)*. Further reference was also made to *BS 8233:2014 Guidance on sound insulation and noise reduction for buildings*, *BS 7445-1:2003 Description and Measurement of Environmental Noise – Part 1: Guide to Quantities and BS 4142:2014 Methods for rating and assessing industrial and commercial sound*. Additional reference was made to the *WHO Guidelines* and *Birmingham City Council's Planning Consultation Guidance Note Noise & Vibration (PCGN)* and their methodology for determining suitable glazing and ventilators in relation to measured daytime and night-time L_{Aeq} . It also states maximum noise levels from individual noise events in habitable rooms of 45dB(A) L_{Amax} .
5. BS 8233:2014 recommends a 30dB L_{Aeq} in Bedrooms at night for Sleeping and 35dB L_{Aeq} in Living Rooms for daytime Resting and 40dB L_{Aeq} within Dining Rooms.
6. The Location 1 measurement as a night-time 8-hour L_{Aeq} from 23:00 on the 4th February to 07:00 on 5th February was 47.8dB(A) with the L_{Aeq} 8-hour from 23:00 on the 5th February to 07:00 on 6th February being 52.4dB(A) L_{Aeq} 8-hour. The daytime 16-hour L_{Aeq} from 07:00 to 23:00 on the 5th February was 50.6dB(A) L_{Aeq} 16-hour. The lowest measured background noise level (L_{A90}) measured on site at Location 1 was 30.8dB(A) taken between 23:15 to 23:30 on 4th February. The most significant daytime ambient noise measurement as a 15-minute measurement was 56.0dB(A) L_{Aeq} from 22:45 to 23:00 on 5th February and as a logarithmically averaged 1-hour measurement it was 54.4dB(A) L_{Aeq} from 22:00 to 23:00 on 5th February. The most significant night-time ambient noise measurement as a 15-minute measurement was 58.8dB(A) L_{Aeq} from 23:15 to 23:30 on 5th February.
7. The Location 2 measurement as a night-time 8-hour L_{Aeq} from 23:00 on the 4th February to 07:00 on 5th February was 41.1dB(A) L_{Aeq} 8-hour and from 23:00 on the 5th February to 07:00 on 6th February it was 45.5dB(A) L_{Aeq} 8-hour. The daytime 16-hour L_{Aeq} from 07:00 to 23:00 on the 5th February was 44.5dB(A) L_{Aeq} 16-hour. The lowest measured background noise level (L_{A90}) measured on site at Location 2 was 30.7dB(A) taken between 23:15 to 23:30 on 4th February. The most significant daytime ambient noise measurement as a 15-minute measurement was 48.6dB(A) L_{Aeq} from 09:15 to 09:30 on 5th February and as a logarithmically averaged 1-hour measurement it was 47.2dB(A) L_{Aeq} from 08:00 to 09:00 on 5th February. The most significant night-time ambient noise measurement as a 15-minute measurement was 50.1dB(A) L_{Aeq} from 23:15 to 23:30 on 5th February.
8. Maximum noise events $L_{AFmax,outside}$ are above the 55dB(A) level between 23:00 and 07:00 at both locations. Typically as a rule of thumb, 55.0dB(A) outside an open window will produce 45.0dB(A) inside the room.

9. Suitable glazing types, including laminated or partially laminated glazed units would reduce noise ingress. Example double glazing types are given in section 4 from pages 34 to 37 although Pilkington Glass produce standard units as depicted in figure 18 on page 39. The glazing types on pages 34 to 37 have been modelled using the *Marshall Day Acoustics Sound Insulation Prediction Software, Insul*. With reference to glazing criteria in the *Birmingham City Council PCGN*, it is recommended that the glazed units for habitable rooms to all elevations for the dwellings should meet a minimum noise criteria of $32\text{dB } R_w + C_{tr}$. The WHO guidance also states that internal maximum noise events greater than $45\text{dB(A) } L_{Amax}$ should be restricted to occurring no more than on 10-15 occasions during any one night-time period.
10. If ventilation to the new dwellings is to be provided by façade ventilators then any such ventilators should achieve a minimum noise rating of $38\text{dB } D_{n,e,w} + C_{tr}$ for all dwellings. If ventilation is to be provided alternatively by a mechanical whole building system such as an MVHR type ventilation system then any mechanical system or similar would need to be assessed against *BS 4142* and take into consideration existing background noise levels, (L_{A90}) at the façade of the nearest residential dwelling. The rating level of the plant should also take into consideration any acoustic features such a new system may contain for example discrete tones or impulses. Any new mechanical system should not exceed the background noise level. Therefore, on considering the lowest measured existing background noise level (L_{A90}) at both locations with Location 1 at $30.8\text{dB(A) } L_{A90}$ which was measured on Wednesday 4th February from 23:15 to 23:30, while at the same time Location 2 registered $30.7\text{dB(A) } L_{A90}$, the rating of any mechanical system when also taking into consideration any acoustic features the system may have such as tones and impulsive sounds, should be rated at $L_{Ar} 25\text{dB(A)}$ or less at the nearest residential facade.
11. Provision has been made for designated amenity spaces and therefore, *BS 8233:2014 Guidance on sound insulation and noise reduction for buildings* states a lower limit of $50\text{dB(A) } L_{Aeq}$ and an upper limit for ambient noise level in external amenity spaces of $55\text{dB(A) } L_{Aeq}$ which should not be exceeded. During the noise survey it was noted at both locations the external ambient noise level for outdoor amenity spaces was on or below the $50\text{dB(A) } L_{Aeq}$ lower limit (LOAEL) and so amenity space noise impact should not be an issue.
12. With satisfactory glazing and ventilation measures in place against noise primarily from farm activity and road traffic, the proposed change of use from farm buildings (Class Q) to residential dwellings (Class C3) would make sufficient use of the prime location, low noise levels and its transport connections.

1. INTRODUCTION

Sanctuary Acoustics Ltd has been instructed by Mr & Mrs Mayer to assess the noise environment in the vicinity of land adjacent to Ball Lane, Brown Edge. Planning approval is being sought for the change of use of 2 x agricultural buildings into 4 x dwellings at Upper Heakley Farm. The prior approval application to *Staffordshire Moorlands District Council* resulted in refusal under application number DET/2025/0040 with the decision document providing five reasons for refusal with reason 2 including the potential impact of noise onto any future occupants.

Reason 2 from the decision document states the following;

“In order for such a proposal to be granted Prior Approval, it is necessary to demonstrate whether or not there would be any matters that would make the development unacceptable in terms of noise impacts and whether the location or siting of the building(s) makes it otherwise impractical or undesirable for the building to change from agricultural use to a use falling within Class C3 (dwelling houses) of Schedule 1 to the Use Classes Order. There is insufficient detail to demonstrate how the existing farming activities could continue without causing unacceptable potential noise and odour impacts to potential future occupants of the proposed dwellings. The plans clearly show the existing vehicular access to the farm beyond the development site. Farm vehicles would have to pass in extreme close proximity to the rear of the detached dwelling and directly in front of the principal elevation of the terraced row which contains windows serving all the lounges and a number of first floor bedrooms. This relationship is unacceptable as farm related vehicles could be passing the properties at all times of the day and night, therefore creating a conflict between agricultural working and residential uses being in close proximity. The application therefore fails to comply with Class Q.2 (1) (b) and (e) of Class Q of The Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended). The application is also contrary to Chapter 12 ‘Achieving well-designed places’ of the National Planning Policy Framework and policy DC1 and SD4 of the Staffordshire Moorlands Local Plan”.

The comments from the officer at *Staffordshire Moorlands DC* has highlighted the potential impact of farm related noise being an issue onto these proposed dwellings and the subsequent affect upon the amenity of future residents. In addition to farm noise there is road noise from Ball Lane, existing residents’ activity and birdsong.

It should also be noted there was no perception of fixed mechanical plant noise such as air handling units etc., on the applicant site.

Figure 1 depicts the site’s location with the proposed buildings in a red outline on Upper Heakley Farm with the farms perimeter in a blue outline at Ball Lane, Brown Edge, ST6 8SW.

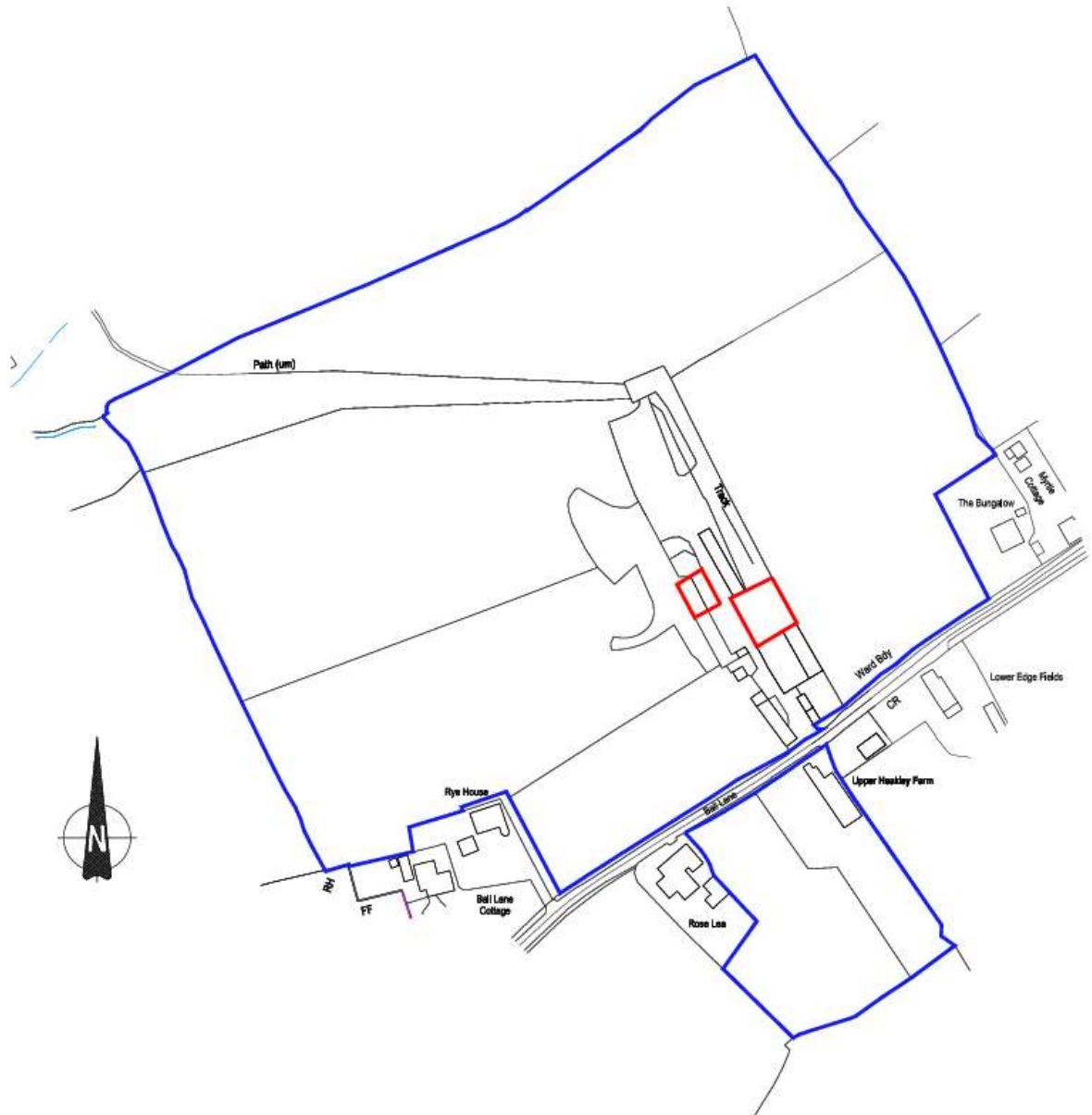


Figure 1: This depicts the location plan with the buildings earmarked for change of use in a red outline.

Figure 2 depicts the proposed site layout with the two agricultural buildings with associated car parking and rear residential amenity spaces as they are currently proposed.

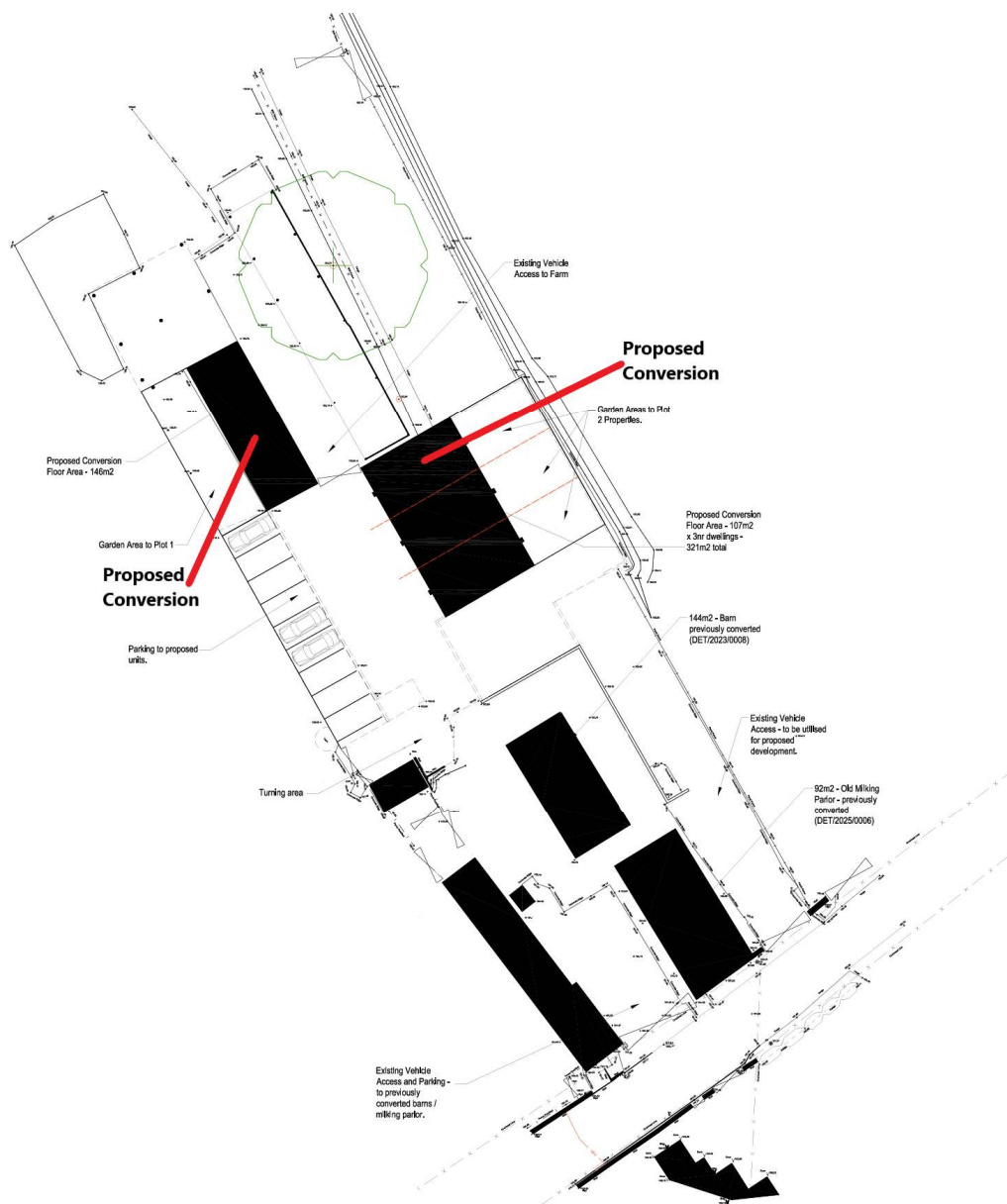


Figure 2: This depicts the proposed site plan.

Noise is covered, although briefly, in the *National Planning Policy Framework (NPPF)* which states that the planning system should contribute to and enhance the natural and local environment.

Planning policies and decisions should;

- aim to avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;
- mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from the new development, including through the use of conditions;
- recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established;
- identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

The *Department for the Environment, Food and Rural Affairs (Defra)* have issued an explanatory note to the *Noise Policy Statement for England (NPSE)* which states that the long term vision of Government noise policy is to “*promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.*”

The *NPPF* guidance however gives no objective, tangible standards or criteria to inform planning decisions in respect to noise. The framework does quote existing guidance to make reference to including *WHO* guidelines and *BS 8233*. *BS 8233* currently in its fifth imprint; *BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings* was issued in 2014.

Furthermore, when the primary noise source is road traffic derived, a shortened method inline with the *Calculation of Road Traffic Noise (CRTN)* is also deemed acceptable to quantify noise and is referred to within the auspices of both *BS 8233* and *PPG24* and its measurement criteria. This method proves valuable as it is often difficult to find a secure location in which to leave noise monitoring equipment unmanned over a continuous 24-hour period or enable identification of specific noise sources. The site is impacted by road traffic as a primary noise source but with other intermittent noise sources, particularly activity from nearby residents, the use of *CRTN* was not considered in this instance.

Applicable guidance divides the 24 hour period into daytime and night-time segments with the daytime period from 07:00 to 23:00 hours and night-time from 23:00 to 07:00. The noise survey was conducted between 16:00 on Wednesday 4th February 2026 to 08:00 on Friday 6th February 2026.

2. MEASUREMENTS AND OBSERVATIONS

Two noise measurement locations were used to assess noise currently impinging onto the site. Location 1 was situated at ground level opposite the smaller northern building to assess noise impacting onto the site from passing farm traffic and the wider vicinity. Location 2 was situated just inside the larger building which is open at the southern elevation to the elements which is where the second meter was position with the view southwards towards those buildings that have already received planning approval and Ball Lane. The daytime and night-time measurements both appear to be fairly consistent, which have been peppered occasionally by noise events from passing vehicles and people. On the second night, the noise level picks up at Location 1 which is due to changes in wind direction blowing metal sheeting on the roofs and walls of the various agricultural buildings on the site. The partially enclosed Location 2 to the south doesn't register these noise levels at such perceptible levels as the majority of the metal sheeting movements would appear to be to the side (west) or rear (north) of Location 2.

In addition to farm activity being associated as the primary noise, secondary noise was also noted from birdsong and occasional aircraft overhead.

For the onsite noise measurements, the sound level meters were setup for various intervals during the day and night where they could measure noise levels from multiple noise sources currently impacting onto the site.

The sound level meters at Locations 1 & 2 were setup in secure locations and left to log noise at 15-minute intervals with each location measurement being over a 40-hour period. The daytime ambient noise (L_{Aeq}) and background noise (L_{A90}) measurements were later averaged to provide the extrapolated 1-hour results at

Location 1 for daytime measurements between 07:00 and 23:00. Overall, the measurement intervals were taken inline with *BS 4142* which states measurement intervals during the daytime should be for a duration of 1-hour between 07:00 and 23:00 and at 15-minute intervals between 23:00 and 07:00. These measurement durations also comply with *BS 8233*. To avoid stopping and starting the measurements as well as giving an indication of the occurrence of significant maximum noise events the sound level meter was set up to monitor at 15-minute intervals.

The measurements at Locations 1 and 2 were conducted from Wednesday 4th February 2026 to Friday 6th February 2026. The measurements were continuous and were taken at Location 1 from 16:00 on the 4th February to 08:00 on the 6th February with those at Location 2 from 16:15 on the 4th February to 08:00 on the 6th February 2026.

Figure 3 depicts the measurement locations on the Upper Heakley Farm site which is adjacent to Ball Lane.

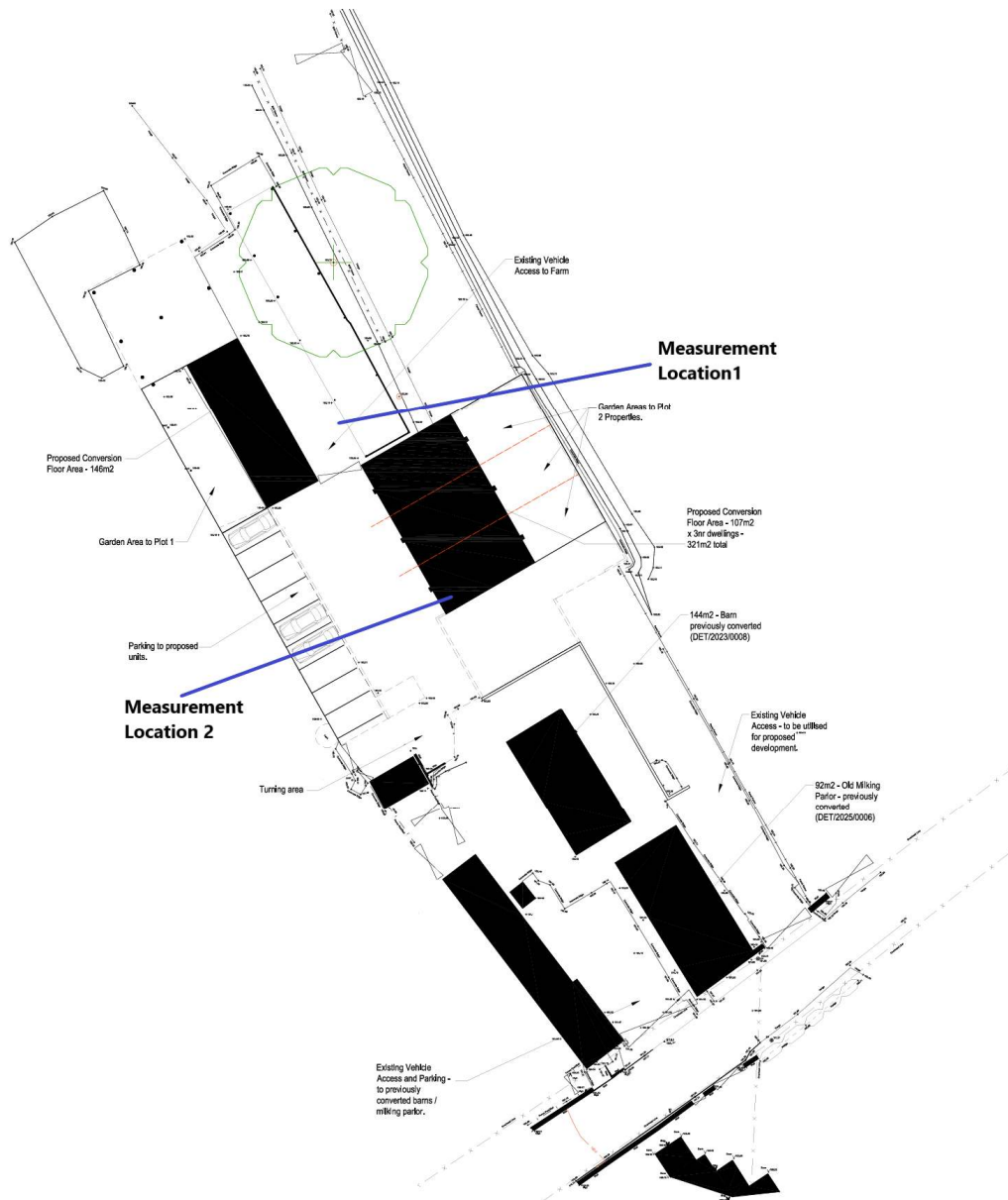


Figure 3: This depicts the positioning of the measurement locations.

The noise measurement locations were chosen to assess noise currently impinging onto the proposed development site and within those rooms being most prone to farm traffic, residential neighbour noise and any other noise ingress.

In order to assess the existing noise environment, the following were considered:

- Farm activity and associated vehicle traffic noise directly or indirectly through the site between the two agricultural buildings earmarked for change of use. This also includes some noise derived from farm residents' activity and employees walking around the site. Road traffic on Ball Lane appeared intermittent.
- Noise from any other external sources including residential and commercial premises with and without fixed mechanical plant.
- The glazing and overall façade construction, ventilation methods and room layout most susceptible to noise ingress, in particular from farm traffic which was noted as the primary noise source at both measurement locations plus some birdsong and intermittent raised voices from residents & farm employees plus occasional vehicles passing the site on Ball Lane.
- There was no fixed plant noise perceptible on site or within the vicinity i.e., generators, air handling units etc. With planning approval for the new development, any new fixed mechanical plant proposed for the new dwellings will have to reflect background noise levels (L_{A90}) which should not be exceeded.

The Location 1 measurements were taken from the retained farm building opposite the smaller agricultural building identified for change of use to the west of the central road passing through the site. This location used a Norsonic 131 Sound Level Meter (Serial Number 1313597) which was calibrated before and after the noise measurements were taken using a CEL 284/2 Acoustic Calibrator (Serial Number 4-02123778). These items of equipment have traceable calibration certificates with these two items of equipment being designated as Type 1 instruments inline with IEC 61672 & 61260 and IEC 60942 respectively.

The Location 2 measurements in the southwestern corner of the larger agricultural building identified for change of use, were taken from a partially enclosed space to the rear. The meter faces south which is open and faces onto the central road through the site from the east. This location used a Norsonic 131 Sound Level Meter (Serial Number 1314009) which was calibrated before and after the noise measurements were taken using a CEL 284/2 Acoustic Calibrator (Serial Number 4-02123778). These items of equipment have traceable calibration certificates with these two items of equipment being designated as Type 1 instruments inline with IEC 61672 & 61260 and IEC 60942 respectively.

The Sound Level Meters were mounted on tri-pods 1.35m above ground level with the sound level meter positioned away from solid boundary fencing to avoid/reduce specula reflections. The Norsonic 131 sound level meters were calibrated to 114dB at 1kHz before and after the noise survey. *BS 4142: 2014 Method for rating industrial and commercial sound* states caution should be exercised when wind speeds are greater than 5m/s. The wind speeds in the vicinity were checked using a Proster Digital Anemometer model MS6252A.

At the commencement of the noise survey on Wednesday 4th, it was 7°C with a partially cloudy sky becoming overcast into the night and into Thursday 5th with temperatures decreasing to 5°C during the night and becoming overcast. Thursday 5th has some precipitation with winds and a lower temperature of 4°C. The overcast

skies and precipitation remain into Friday 6th with temperatures increasing only slightly to 5°C by the end of the survey. There were perceived occasional gusts registering on the Anemometer at the start of the noise survey on Wednesday 4th up to 0.8m/s with occasional gusts up to 1.5m/s at the end of the survey on Friday 6th.

A glossary of the acoustic parameters/terms used can be found in Appendix A.

BS 7445-1:2003 Description and measurement of environmental noise – Part 1:

Guide to quantities and procedures states in sections:

5.2.2 Outdoor measurements;

When it is desired to minimise the influence of reflections then measurements should, whenever possible, be carried out at least 3.5m from any reflecting structure other than the ground. When not otherwise specified, the preferred measurement height is 1.2m to 1.5m above the ground. Other measurement heights may be specified in pertinent standards.

5.2.3 Outdoor measurements near buildings;

“These measurements shall be carried out at places where the noise to which a building is exposed is of interest. If not otherwise specified, the preferred measurement positions are 1m to 2m from the façade and 1.2m to 1.5m above each floor level of interest”.

The noise results obtained at Location 1 in the northwestern section of the site are depicted in figure 4.

Figure 4 depicts the view from the sound level meter northwards up the central road through the farm site. The smaller agricultural building earmarked for conversion is opposite



Figure 4: This depicts the view northwards from measurement Location 1.
Figure 5 depicts the view from the sound level meter in a southerly direction.



Figure 5: This depicts the view north from measurement Location 1.

The noise results obtained for the first day of measurements on Wednesday 4th February at Location 1 commencing at 16:00 through to 23:00 are detailed in table 1.

Sanctuary Acoustics Ltd

Time Period 04/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
16:00 to 16:15	38.1dB(A)	31.0dB(A)	59.7dB(A)	40.4dB(A)	34.2dB(A)
16:15 to 16:30	39.0dB(A)	31.6dB(A)	51.7dB(A)	42.0dB(A)	34.0dB(A)
16:30 to 16:45	37.8dB(A)	32.9dB(A)	48.3dB(A)	40.2dB(A)	34.7dB(A)
16:45 to 17:00	43.2dB(A)	32.9dB(A)	57.8dB(A)	47.1dB(A)	34.8dB(A)
17:00 to 17:15	37.9dB(A)	32.4dB(A)	54.5dB(A)	40.3dB(A)	34.3dB(A)
17:15 to 17:30	40.6dB(A)	32.2dB(A)	57.2dB(A)	43.6dB(A)	34.3dB(A)
17:30 to 17:45	39.7dB(A)	30.9dB(A)	61.1dB(A)	40.6dB(A)	33.0dB(A)
17:45 to 18:00	38.0dB(A)	31.9dB(A)	54.0dB(A)	40.4dB(A)	33.7dB(A)
18:00 to 18:15	36.9dB(A)	30.6dB(A)	55.9dB(A)	39.7dB(A)	32.8dB(A)
18:15 to 18:30	36.8dB(A)	31.1dB(A)	53.5dB(A)	39.7dB(A)	33.0dB(A)
18:30 to 18:45	42.0dB(A)	31.4dB(A)	58.8dB(A)	44.9dB(A)	33.4dB(A)
18:45 to 19:00	40.5dB(A)	31.9dB(A)	55.4dB(A)	43.4dB(A)	34.1dB(A)
19:00 to 19:15	40.0dB(A)	31.7dB(A)	57.5dB(A)	42.7dB(A)	34.0dB(A)
19:15 to 19:30	40.5dB(A)	31.9dB(A)	56.8dB(A)	43.0dB(A)	34.2dB(A)
19:30 to 19:45	41.9dB(A)	31.6dB(A)	58.9dB(A)	45.3dB(A)	34.1dB(A)
19:45 to 20:00	38.0dB(A)	31.3dB(A)	54.0dB(A)	40.6dB(A)	33.4dB(A)
20:00 to 20:15	36.6dB(A)	31.0dB(A)	51.1dB(A)	39.8dB(A)	32.8dB(A)
20:15 to 20:30	40.4dB(A)	31.3dB(A)	56.3dB(A)	43.2dB(A)	33.2dB(A)
20:30 to 20:45	41.8dB(A)	30.7dB(A)	62.4dB(A)	43.5dB(A)	33.6dB(A)
20:45 to 21:00	41.5dB(A)	30.5dB(A)	57.2dB(A)	44.8dB(A)	34.5dB(A)
21:00 to 21:15	42.1dB(A)	30.6dB(A)	73.9dB(A)	41.7dB(A)	33.4dB(A)
21:15 to 21:30	39.3dB(A)	30.0dB(A)	57.5dB(A)	41.9dB(A)	32.5dB(A)
21:30 to 21:45	38.0dB(A)	29.0dB(A)	55.3dB(A)	40.6dB(A)	31.5dB(A)
21:45 to 22:00	40.2dB(A)	29.1dB(A)	55.4dB(A)	43.3dB(A)	32.8dB(A)
22:00 to 22:15	41.7dB(A)	29.7dB(A)	64.1dB(A)	44.1dB(A)	33.1dB(A)
22:15 to 22:30	42.7dB(A)	30.6dB(A)	63.4dB(A)	46.1dB(A)	33.9dB(A)
22:30 to 22:45	44.6dB(A)	30.3dB(A)	72.8dB(A)	47.7dB(A)	34.1dB(A)
22:45 to 23:00	42.0dB(A)	30.2dB(A)	66.6dB(A)	43.0dB(A)	32.6dB(A)

Table 1: Noise results for 16:00 to 23:00 at Location 1 on the 4th February 2026.

Table 2 details the night-time measurements at location 1 from 23:00 to 00:00.

Time Period 04/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
23:00 to 23:15	42.3dB(A)	28.9dB(A)	68.0dB(A)	43.4dB(A)	31.5dB(A)
23:15 to 23:30	43.8dB(A)	28.5dB(A)	64.2dB(A)	42.6dB(A)	30.8dB(A)
23:30 to 23:45	39.8dB(A)	29.3dB(A)	66.4dB(A)	41.5dB(A)	32.0dB(A)
23:45 to 00:00	38.1dB(A)	29.4dB(A)	54.6dB(A)	40.6dB(A)	31.6dB(A)

Table 2: Noise results for 23:00 to 00:00 at Location 1 on the 4th February 2026.

Table 3 details the results from 00:00 to 07:00 at Location 1 on the 5th February.

Sanctuary Acoustics Ltd

Time Period 05/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
00:00 to 00:15	39.4dB(A)	30.5dB(A)	56.5dB(A)	41.9dB(A)	32.8dB(A)
00:15 to 00:30	42.8dB(A)	31.1dB(A)	63.7dB(A)	46.1dB(A)	33.9dB(A)
00:30 to 00:45	45.2dB(A)	32.5dB(A)	66.2dB(A)	47.2dB(A)	35.1dB(A)
00:45 to 01:00	45.2dB(A)	32.0dB(A)	67.4dB(A)	48.6dB(A)	35.0dB(A)
01:00 to 01:15	43.2dB(A)	30.7dB(A)	67.4dB(A)	45.8dB(A)	33.5dB(A)
01:15 to 01:30	39.7dB(A)	30.2dB(A)	59.2dB(A)	42.7dB(A)	33.2dB(A)
01:30 to 01:45	44.9dB(A)	31.0dB(A)	69.3dB(A)	47.5dB(A)	33.9dB(A)
01:45 to 02:00	42.6dB(A)	31.1dB(A)	67.7dB(A)	43.8dB(A)	33.5dB(A)
02:00 to 02:15	44.6dB(A)	31.4dB(A)	72.6dB(A)	46.5dB(A)	33.7dB(A)
02:15 to 02:30	52.3dB(A)	30.6dB(A)	83.8dB(A)	51.7dB(A)	35.5dB(A)
02:30 to 02:45	48.5dB(A)	33.1dB(A)	74.6dB(A)	51.0dB(A)	37.1dB(A)
02:45 to 03:00	46.6dB(A)	31.3dB(A)	71.1dB(A)	46.8dB(A)	34.4dB(A)
03:00 to 03:15	47.3dB(A)	32.8dB(A)	74.7dB(A)	49.0dB(A)	35.9dB(A)
03:15 to 03:30	49.5dB(A)	34.3dB(A)	73.4dB(A)	51.2dB(A)	37.8dB(A)
03:30 to 03:45	47.9dB(A)	31.8dB(A)	73.9dB(A)	51.5dB(A)	35.3dB(A)
03:45 to 04:00	47.8dB(A)	32.9dB(A)	71.9dB(A)	50.9dB(A)	36.6dB(A)
04:00 to 04:15	46.3dB(A)	32.5dB(A)	70.4dB(A)	49.7dB(A)	35.2dB(A)
04:15 to 04:30	50.6dB(A)	32.2dB(A)	83.2dB(A)	50.0dB(A)	35.7dB(A)
04:30 to 04:45	50.2dB(A)	35.5dB(A)	74.1dB(A)	52.3dB(A)	38.2dB(A)
04:45 to 05:00	53.7dB(A)	33.8dB(A)	79.7dB(A)	54.2dB(A)	38.2dB(A)
05:00 to 05:15	47.6dB(A)	33.1dB(A)	72.6dB(A)	49.9dB(A)	37.1dB(A)
05:15 to 05:30	46.3dB(A)	35.1dB(A)	69.5dB(A)	48.9dB(A)	38.0dB(A)
05:30 to 05:45	49.6dB(A)	35.0dB(A)	75.9dB(A)	51.5dB(A)	38.6dB(A)
05:45 to 06:00	47.4dB(A)	35.6dB(A)	71.8dB(A)	50.1dB(A)	37.9dB(A)
06:00 to 06:15	47.0dB(A)	35.6dB(A)	73.4dB(A)	49.0dB(A)	38.1dB(A)
06:15 to 06:30	52.1dB(A)	37.4dB(A)	77.5dB(A)	53.2dB(A)	39.7dB(A)
06:30 to 06:45	49.7dB(A)	37.7dB(A)	72.4dB(A)	52.7dB(A)	41.6dB(A)
06:45 to 07:00	46.9dB(A)	36.9dB(A)	72.4dB(A)	49.2dB(A)	39.6dB(A)

Table 3: Noise results for 00:00 to 07:00 at Location 1 on the 5th February 2026.

Table 4 details the results from 07:00 to 19:30.

Sanctuary Acoustics Ltd

Time Period 05/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
07:00 to 07:15	48.7dB(A)	38.4dB(A)	70.1dB(A)	52.5dB(A)	40.7dB(A)
07:15 to 07:30	49.7dB(A)	38.2dB(A)	72.7dB(A)	52.0dB(A)	42.3dB(A)
07:30 to 07:45	52.4dB(A)	40.1dB(A)	73.4dB(A)	55.8dB(A)	42.7dB(A)
07:45 to 08:00	50.5dB(A)	39.9dB(A)	71.7dB(A)	53.4dB(A)	42.1dB(A)
08:00 to 08:15	51.8dB(A)	41.5dB(A)	72.8dB(A)	54.5dB(A)	43.9dB(A)
08:15 to 08:30	52.6dB(A)	38.8dB(A)	74.6dB(A)	54.8dB(A)	41.6dB(A)
08:30 to 08:45	50.4dB(A)	38.9dB(A)	73.2dB(A)	53.0dB(A)	41.7dB(A)
08:45 to 09:00	51.3dB(A)	40.6dB(A)	73.6dB(A)	54.1dB(A)	43.2dB(A)
09:00 to 09:15	52.3dB(A)	39.7dB(A)	73.1dB(A)	54.8dB(A)	43.5dB(A)
09:15 to 09:30	54.4dB(A)	45.1dB(A)	73.7dB(A)	56.8dB(A)	49.1dB(A)
09:30 to 09:45	50.4dB(A)	40.8dB(A)	69.9dB(A)	53.1dB(A)	44.5dB(A)
09:45 to 10:00	51.3dB(A)	41.5dB(A)	63.4dB(A)	54.2dB(A)	46.1dB(A)
10:00 to 10:15	54.8dB(A)	44.1dB(A)	72.0dB(A)	57.2dB(A)	49.8dB(A)
10:15 to 10:30	53.9dB(A)	43.6dB(A)	72.4dB(A)	56.2dB(A)	49.0dB(A)
10:30 to 10:45	50.0dB(A)	39.2dB(A)	70.4dB(A)	52.9dB(A)	43.8dB(A)
10:45 to 11:00	50.3dB(A)	38.1dB(A)	73.1dB(A)	52.2dB(A)	42.1dB(A)
11:00 to 11:15	49.8dB(A)	37.1dB(A)	71.3dB(A)	52.9dB(A)	42.1dB(A)
11:15 to 11:30	50.9dB(A)	39.4dB(A)	70.7dB(A)	53.4dB(A)	44.5dB(A)
11:30 to 11:45	52.4dB(A)	41.1dB(A)	71.0dB(A)	55.1dB(A)	46.2dB(A)
11:45 to 12:00	52.6dB(A)	40.9dB(A)	74.0dB(A)	54.5dB(A)	46.5dB(A)
12:00 to 12:15	50.5dB(A)	38.8dB(A)	75.0dB(A)	53.0dB(A)	43.0dB(A)
12:15 to 12:30	47.6dB(A)	37.7dB(A)	72.3dB(A)	50.3dB(A)	40.9dB(A)
12:30 to 12:45	47.2dB(A)	37.2dB(A)	68.0dB(A)	50.0dB(A)	40.2dB(A)
12:45 to 13:00	46.1dB(A)	36.5dB(A)	68.2dB(A)	48.1dB(A)	39.9dB(A)
13:00 to 13:15	50.2dB(A)	37.7dB(A)	64.2dB(A)	52.8dB(A)	44.2dB(A)
13:15 to 13:30	48.3dB(A)	37.8dB(A)	70.3dB(A)	50.2dB(A)	40.7dB(A)
13:30 to 13:45	49.9dB(A)	38.2dB(A)	71.6dB(A)	52.7dB(A)	41.0dB(A)
13:45 to 14:00	45.2dB(A)	36.6dB(A)	58.6dB(A)	48.5dB(A)	39.4dB(A)
14:00 to 14:15	48.1dB(A)	37.2dB(A)	66.6dB(A)	51.3dB(A)	40.3dB(A)
14:15 to 14:30	47.7dB(A)	37.6dB(A)	71.1dB(A)	50.1dB(A)	40.4dB(A)
14:30 to 14:45	48.0dB(A)	36.8dB(A)	71.2dB(A)	50.6dB(A)	39.6dB(A)
14:45 to 15:00	49.2dB(A)	37.5dB(A)	68.4dB(A)	51.9dB(A)	40.6dB(A)
15:00 to 15:15	49.9dB(A)	38.3dB(A)	70.4dB(A)	52.9dB(A)	41.0dB(A)
15:15 to 15:30	46.6dB(A)	37.8dB(A)	68.8dB(A)	50.1dB(A)	39.9dB(A)
15:30 to 15:45	46.3dB(A)	36.2dB(A)	70.0dB(A)	48.5dB(A)	39.5dB(A)
15:45 to 16:00	49.5dB(A)	38.4dB(A)	71.0dB(A)	52.1dB(A)	40.5dB(A)
16:00 to 16:15	50.2dB(A)	37.6dB(A)	74.2dB(A)	52.9dB(A)	40.8dB(A)
16:15 to 16:30	51.5dB(A)	39.7dB(A)	77.1dB(A)	53.2dB(A)	43.5dB(A)
16:30 to 16:45	50.1dB(A)	38.5dB(A)	73.9dB(A)	52.4dB(A)	41.5dB(A)
16:45 to 17:00	49.2dB(A)	37.6dB(A)	72.9dB(A)	51.5dB(A)	40.4dB(A)
17:00 to 17:15	48.2dB(A)	37.2dB(A)	71.2dB(A)	50.9dB(A)	40.6dB(A)
17:15 to 17:30	47.0dB(A)	37.2dB(A)	71.0dB(A)	49.2dB(A)	40.3dB(A)
17:30 to 17:45	46.2dB(A)	36.6dB(A)	72.6dB(A)	48.2dB(A)	39.8dB(A)
17:45 to 18:00	44.9dB(A)	36.2dB(A)	65.5dB(A)	48.0dB(A)	38.5dB(A)
18:00 to 18:15	50.3dB(A)	36.5dB(A)	81.3dB(A)	50.6dB(A)	39.5dB(A)
18:15 to 18:30	47.4dB(A)	36.0dB(A)	68.7dB(A)	50.2dB(A)	38.4dB(A)
18:30 to 18:45	47.7dB(A)	37.3dB(A)	67.8dB(A)	50.7dB(A)	40.2dB(A)
18:45 to 19:00	47.5dB(A)	35.4dB(A)	67.3dB(A)	51.1dB(A)	39.9dB(A)
19:00 to 19:15	49.3dB(A)	37.3dB(A)	74.6dB(A)	51.5dB(A)	40.7dB(A)
19:15 to 19:30	49.2dB(A)	36.3dB(A)	75.0dB(A)	51.1dB(A)	40.8dB(A)

Table 4: Noise results for 07:00 to 19:30 at Location 1 on the 5th February 2026.

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Table 5 details the results from 19:30 to 23:00.

Time Period 05/02/2026	Measurement Parameters				
	L_{Aeq}	L_{Amin}	L_{Amax}	L_{A10}	L_{A90}
19:30 to 19:45	47.7dB(A)	36.0dB(A)	72.5dB(A)	50.5dB(A)	39.8dB(A)
19:45 to 20:00	46.0dB(A)	35.0dB(A)	68.4dB(A)	48.8dB(A)	38.6dB(A)
20:00 to 20:15	45.4dB(A)	34.5dB(A)	63.7dB(A)	48.8dB(A)	37.7dB(A)
20:15 to 20:30	42.7dB(A)	33.2dB(A)	59.6dB(A)	45.9dB(A)	36.2dB(A)
20:30 to 20:45	45.4dB(A)	32.9dB(A)	71.6dB(A)	48.3dB(A)	36.4dB(A)
20:45 to 21:00	46.2dB(A)	34.2dB(A)	71.2dB(A)	49.0dB(A)	37.8dB(A)
21:00 to 21:15	46.8dB(A)	33.6dB(A)	72.0dB(A)	49.4dB(A)	36.4dB(A)
21:15 to 21:30	42.4dB(A)	32.8dB(A)	59.3dB(A)	45.6dB(A)	35.8dB(A)
21:30 to 21:45	45.0dB(A)	32.5dB(A)	69.8dB(A)	47.9dB(A)	36.2dB(A)
21:45 to 22:00	45.0dB(A)	33.4dB(A)	58.6dB(A)	48.7dB(A)	37.1dB(A)
22:00 to 22:15	50.6dB(A)	40.0dB(A)	67.7dB(A)	53.6dB(A)	44.8dB(A)
22:15 to 22:30	54.2dB(A)	47.0dB(A)	62.4dB(A)	56.4dB(A)	50.6dB(A)
22:30 to 22:45	55.1dB(A)	48.1dB(A)	68.5dB(A)	57.2dB(A)	51.9dB(A)
22:45 to 23:00	56.0dB(A)	48.4dB(A)	65.4dB(A)	58.3dB(A)	52.5dB(A)

Table 5: Noise results for 19:30 to 23:00 at Location 1 on the 5th February 2026.

Table 6 details the results from 23:00 to 00:00.

Time Period 05/02/2026	Measurement Parameters				
	L_{Aeq}	L_{Amin}	L_{Amax}	L_{A10}	L_{A90}
23:00 to 23:15	55.9dB(A)	48.7dB(A)	64.5dB(A)	58.1dB(A)	52.7dB(A)
23:15 to 23:30	58.8dB(A)	48.6dB(A)	65.3dB(A)	61.0dB(A)	55.1dB(A)
23:30 to 23:45	57.3dB(A)	49.6dB(A)	64.3dB(A)	59.5dB(A)	54.2dB(A)
23:45 to 00:00	55.6dB(A)	46.7dB(A)	64.3dB(A)	57.9dB(A)	52.2dB(A)

Table 6: Noise results for 23:00 to 00:00 at Location 1 on the 5th February 2026.

Table 7 details the results from 00:00 to 07:00 on the 6th February 2026.

Sanctuary Acoustics Ltd

Time Period 06/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
00:00 to 00:15	55.7dB(A)	47.3dB(A)	75.0dB(A)	57.8dB(A)	52.2dB(A)
00:15 to 00:30	54.7dB(A)	42.3dB(A)	64.1dB(A)	57.4dB(A)	49.4dB(A)
00:30 to 00:45	52.1dB(A)	40.4dB(A)	64.0dB(A)	54.8dB(A)	47.0dB(A)
00:45 to 01:00	51.1dB(A)	40.6dB(A)	61.2dB(A)	54.0dB(A)	45.9dB(A)
01:00 to 01:15	48.9dB(A)	36.4dB(A)	62.3dB(A)	52.1dB(A)	42.5dB(A)
01:15 to 01:30	47.2dB(A)	35.0dB(A)	66.5dB(A)	50.8dB(A)	39.5dB(A)
01:30 to 01:45	45.0dB(A)	33.0dB(A)	58.6dB(A)	48.6dB(A)	38.0dB(A)
01:45 to 02:00	43.2dB(A)	32.3dB(A)	63.5dB(A)	46.7dB(A)	36.2dB(A)
02:00 to 02:15	46.1dB(A)	33.5dB(A)	59.2dB(A)	49.8dB(A)	37.9dB(A)
02:15 to 02:30	51.2dB(A)	40.3dB(A)	61.2dB(A)	54.3dB(A)	44.8dB(A)
02:30 to 02:45	53.2dB(A)	43.2dB(A)	62.6dB(A)	55.9dB(A)	49.0dB(A)
02:45 to 03:00	52.1dB(A)	41.1dB(A)	71.7dB(A)	54.6dB(A)	46.8dB(A)
03:00 to 03:15	52.8dB(A)	41.9dB(A)	69.1dB(A)	55.3dB(A)	48.4dB(A)
03:15 to 03:30	55.4dB(A)	45.3dB(A)	64.7dB(A)	57.7dB(A)	51.6dB(A)
03:30 to 03:45	55.0dB(A)	45.5dB(A)	63.7dB(A)	57.3dB(A)	51.5dB(A)
03:45 to 04:00	55.4dB(A)	45.7dB(A)	63.9dB(A)	57.7dB(A)	51.6dB(A)
04:00 to 04:15	52.8dB(A)	41.9dB(A)	64.5dB(A)	55.4dB(A)	48.6dB(A)
04:15 to 04:30	50.6dB(A)	37.7dB(A)	61.3dB(A)	53.6dB(A)	44.2dB(A)
04:30 to 04:45	47.3dB(A)	35.0dB(A)	59.9dB(A)	50.8dB(A)	40.1dB(A)
04:45 to 05:00	44.4dB(A)	34.1dB(A)	67.1dB(A)	47.7dB(A)	37.7dB(A)
05:00 to 05:15	43.0dB(A)	33.8dB(A)	56.7dB(A)	46.5dB(A)	37.0dB(A)
05:15 to 05:30	42.2dB(A)	33.3dB(A)	59.6dB(A)	44.9dB(A)	36.5dB(A)
05:30 to 05:45	43.5dB(A)	33.5dB(A)	71.4dB(A)	44.4dB(A)	36.4dB(A)
05:45 to 06:00	44.5dB(A)	34.8dB(A)	58.7dB(A)	47.4dB(A)	37.9dB(A)
06:00 to 06:15	45.2dB(A)	36.0dB(A)	62.5dB(A)	48.3dB(A)	39.3dB(A)
06:15 to 06:30	45.9dB(A)	36.4dB(A)	66.0dB(A)	49.2dB(A)	39.8dB(A)
06:30 to 06:45	47.3dB(A)	37.1dB(A)	66.6dB(A)	50.0dB(A)	40.2dB(A)
06:45 to 07:00	46.3dB(A)	34.7dB(A)	60.2dB(A)	50.0dB(A)	38.3dB(A)

Table 7: Noise results for 00:00 to 07:00 at Location 1 on the 6th February 2026.

Table 8 details the results from 07:00 to 08:00.

Sanctuary Acoustics Ltd

Time Period 06/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
07:00 to 07:15	46.3dB(A)	34.8dB(A)	60.5dB(A)	50.3dB(A)	38.3dB(A)
07:15 to 07:30	45.7dB(A)	36.3dB(A)	69.3dB(A)	48.1dB(A)	39.6dB(A)
07:30 to 07:45	45.3dB(A)	36.8dB(A)	62.3dB(A)	47.1dB(A)	39.4dB(A)
07:45 to 08:00	44.7dB(A)	37.5dB(A)	67.7dB(A)	47.1dB(A)	40.2dB(A)

Table 8: Noise results for 07:00 to 08:00 at Location 1 on the 6th February 2026.

Table 9 details the calculated hourly averages for ambient noise level (L_{Aeq}) and background noise level (L_{A90}) from 16:00 and 23:00 at Location 1 on 4th February.

Time Period 04/02/2026	Measurement Parameters	
	L _{Aeq} 1-hour	L _{A90} 1-hour
16:00 to 17:00	40.1dB(A)	34.4dB(A)
17:00 to 18:00	39.2dB(A)	33.9dB(A)
18:00 to 19:00	39.6dB(A)	33.4dB(A)
19:00 to 20:00	40.3dB(A)	33.9dB(A)
20:00 to 21:00	40.5dB(A)	33.6dB(A)
21:00 to 22:00	40.2dB(A)	32.6dB(A)
22:00 to 23:00	42.9dB(A)	33.5dB(A)

Table 9: Hourly noise results from 16:00 to 23:00 at Location 1 on Wednesday 4th February.

Table 10 details the calculated hourly averages for ambient noise level (L_{Aeq}) and background noise level (L_{A90}) from 07:00 and 23:00 at Location 1 on 5th February.

Time Period 05/02/2026	Measurement Parameters	
	L _{Aeq} 1-hour	L _{A90} 1-hour
07:00 to 08:00	50.5dB(A)	42.0dB(A)
08:00 to 09:00	51.6dB(A)	42.7dB(A)
09:00 to 10:00	52.4dB(A)	46.3dB(A)
10:00 to 11:00	52.8dB(A)	47.3dB(A)
11:00 to 12:00	51.6dB(A)	45.1dB(A)
12:00 to 13:00	48.2dB(A)	41.2dB(A)
13:00 to 14:00	48.8dB(A)	41.7dB(A)
14:00 to 15:00	48.3dB(A)	40.2dB(A)
15:00 to 16:00	48.4dB(A)	40.3dB(A)
16:00 to 17:00	50.3dB(A)	41.7dB(A)
17:00 to 18:00	46.7dB(A)	39.9dB(A)
18:00 to 19:00	48.4dB(A)	39.6dB(A)
19:00 to 20:00	48.2dB(A)	40.1dB(A)
20:00 to 21:00	45.1dB(A)	37.1dB(A)
21:00 to 22:00	45.1dB(A)	36.4dB(A)
22:00 to 23:00	54.4dB(A)	50.8dB(A)

Table 10: Hourly noise results from 07:00 to 23:00 at Location 1 on Thursday 5th February.

Table 11 details the calculated hourly averages for ambient noise level (L_{Aeq}) and background noise level (L_{A90}) from 07:00 and 08:00 at Location 1 on 6th February.

Time Period 06/02/2026	Measurement Parameters	
	L _{Aeq} 1-hour	L _{A90} 1-hour
07:00 to 08:00	45.5dB(A)	39.4dB(A)

Table 11: Hourly noise results from 07:00 to 08:00 at Location 1 on Friday 6th February.

The noise results obtained at Location 2 at the southern elevation of the larger agricultural building was subjected to the same noise sources on the site such as farm activity along the central road and the wider farm, but the meter location was sheltered to the rear and sides but is closer to Ball Lane.

Figure 6 depicts the view from the second sound level meter to the south. The central road passes to the right with the already approved conversion of the lower farm building to the south underway. It should be noted that no construction works were taking place during this noise survey.



Figure 6: This depicts the view to the south and west.

The noise results obtained for the first day of measurements on Wednesday 4th February at Location 2 commencing at 16:15 through to 23:00 are detailed in table 12.

Sanctuary Acoustics Ltd

Time Period 04/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
16:15 to 16:30	41.0dB(A)	31.9dB(A)	55.2dB(A)	45.0dB(A)	33.9dB(A)
16:30 to 16:45	39.9dB(A)	32.7dB(A)	55.3dB(A)	43.1dB(A)	34.7dB(A)
16:45 to 17:00	42.3dB(A)	33.1dB(A)	63.4dB(A)	45.7dB(A)	35.0dB(A)
17:00 to 17:15	38.5dB(A)	32.6dB(A)	49.2dB(A)	41.6dB(A)	34.5dB(A)
17:15 to 17:30	40.1dB(A)	32.3dB(A)	53.6dB(A)	43.1dB(A)	34.2dB(A)
17:30 to 17:45	39.1dB(A)	31.9dB(A)	53.7dB(A)	42.1dB(A)	33.7dB(A)
17:45 to 18:00	40.0dB(A)	32.2dB(A)	58.0dB(A)	42.3dB(A)	33.7dB(A)
18:00 to 18:15	37.3dB(A)	30.7dB(A)	48.8dB(A)	40.4dB(A)	32.9dB(A)
18:15 to 18:30	37.6dB(A)	31.7dB(A)	50.0dB(A)	40.3dB(A)	33.4dB(A)
18:30 to 18:45	40.8dB(A)	32.6dB(A)	58.1dB(A)	43.9dB(A)	34.2dB(A)
18:45 to 19:00	41.5dB(A)	33.4dB(A)	69.3dB(A)	43.4dB(A)	35.1dB(A)
19:00 to 19:15	38.8dB(A)	32.7dB(A)	53.5dB(A)	41.1dB(A)	34.3dB(A)
19:15 to 19:30	38.9dB(A)	32.2dB(A)	58.8dB(A)	40.8dB(A)	34.1dB(A)
19:30 to 19:45	42.9dB(A)	32.4dB(A)	61.4dB(A)	46.2dB(A)	34.6dB(A)
19:45 to 20:00	37.5dB(A)	31.8dB(A)	50.5dB(A)	39.1dB(A)	33.9dB(A)
20:00 to 20:15	36.4dB(A)	32.0dB(A)	49.0dB(A)	37.7dB(A)	33.8dB(A)
20:15 to 20:30	37.1dB(A)	32.1dB(A)	52.3dB(A)	39.0dB(A)	33.8dB(A)
20:30 to 20:45	38.6dB(A)	31.1dB(A)	53.4dB(A)	41.2dB(A)	33.7dB(A)
20:45 to 21:00	41.8dB(A)	31.0dB(A)	71.4dB(A)	40.3dB(A)	34.1dB(A)
21:00 to 21:15	38.2dB(A)	32.8dB(A)	56.6dB(A)	39.3dB(A)	34.3dB(A)
21:15 to 21:30	36.4dB(A)	30.4dB(A)	49.8dB(A)	38.0dB(A)	33.1dB(A)
21:30 to 21:45	36.1dB(A)	30.0dB(A)	51.7dB(A)	37.7dB(A)	32.2dB(A)
21:45 to 22:00	37.0dB(A)	30.7dB(A)	56.8dB(A)	39.1dB(A)	32.9dB(A)
22:00 to 22:15	37.3dB(A)	30.3dB(A)	51.1dB(A)	39.4dB(A)	32.6dB(A)
22:15 to 22:30	38.4dB(A)	30.5dB(A)	54.7dB(A)	41.0dB(A)	32.9dB(A)
22:30 to 22:45	37.8dB(A)	30.8dB(A)	53.9dB(A)	40.1dB(A)	33.6dB(A)
22:45 to 23:00	36.7dB(A)	29.8dB(A)	51.3dB(A)	38.4dB(A)	32.8dB(A)

Table 12: Noise results for 16:15 to 23:00 at Location 2 on the 4th February 2026.

Table 13 details the night-time measurements at Location 2 from 23:00 to 00:00.

Time Period 04/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
23:00 to 23:15	34.9dB(A)	29.5dB(A)	49.7dB(A)	37.1dB(A)	31.5dB(A)
23:15 to 23:30	34.1dB(A)	29.0dB(A)	47.3dB(A)	36.4dB(A)	30.7dB(A)
23:30 to 23:45	38.9dB(A)	29.5dB(A)	56.1dB(A)	41.4dB(A)	31.9dB(A)
23:45 to 00:00	34.3dB(A)	29.4dB(A)	45.8dB(A)	36.4dB(A)	31.6dB(A)

Table 13: Noise results for 23:00 to 00:00 at Location 2 on the 4th February 2026.

Table 14 details the results from 00:00 to 07:00 at Location 2 on the 5th February.

Sanctuary Acoustics Ltd

Time Period 05/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
00:00 to 00:15	37.5dB(A)	30.9dB(A)	53.6dB(A)	38.2dB(A)	33.3dB(A)
00:15 to 00:30	37.6dB(A)	31.3dB(A)	56.4dB(A)	39.7dB(A)	34.1dB(A)
00:30 to 00:45	40.9dB(A)	31.5dB(A)	63.6dB(A)	42.8dB(A)	34.7dB(A)
00:45 to 01:00	41.6dB(A)	32.9dB(A)	66.0dB(A)	44.6dB(A)	36.1dB(A)
01:00 to 01:15	36.3dB(A)	29.4dB(A)	49.8dB(A)	38.5dB(A)	32.8dB(A)
01:15 to 01:30	37.2dB(A)	29.6dB(A)	64.3dB(A)	37.9dB(A)	32.3dB(A)
01:30 to 01:45	37.9dB(A)	31.5dB(A)	55.8dB(A)	40.5dB(A)	33.5dB(A)
01:45 to 02:00	37.5dB(A)	30.9dB(A)	50.5dB(A)	40.0dB(A)	33.3dB(A)
02:00 to 02:15	37.0dB(A)	30.9dB(A)	51.2dB(A)	39.6dB(A)	33.0dB(A)
02:15 to 02:30	42.4dB(A)	32.2dB(A)	63.1dB(A)	45.3dB(A)	34.9dB(A)
02:30 to 02:45	42.3dB(A)	33.2dB(A)	67.9dB(A)	44.2dB(A)	36.6dB(A)
02:45 to 03:00	39.9dB(A)	31.7dB(A)	63.7dB(A)	43.0dB(A)	34.0dB(A)
03:00 to 03:15	42.8dB(A)	32.1dB(A)	73.8dB(A)	43.5dB(A)	34.5dB(A)
03:15 to 03:30	41.3dB(A)	33.0dB(A)	55.3dB(A)	44.0dB(A)	35.8dB(A)
03:30 to 03:45	41.2dB(A)	32.7dB(A)	58.7dB(A)	44.3dB(A)	35.6dB(A)
03:45 to 04:00	40.5dB(A)	31.4dB(A)	61.8dB(A)	42.8dB(A)	34.1dB(A)
04:00 to 04:15	40.2dB(A)	33.4dB(A)	63.6dB(A)	42.5dB(A)	35.7dB(A)
04:15 to 04:30	42.0dB(A)	33.0dB(A)	63.4dB(A)	44.1dB(A)	36.2dB(A)
04:30 to 04:45	42.1dB(A)	33.8dB(A)	60.0dB(A)	45.0dB(A)	37.3dB(A)
04:45 to 05:00	44.0dB(A)	33.4dB(A)	64.7dB(A)	46.2dB(A)	37.1dB(A)
05:00 to 05:15	42.1dB(A)	34.9dB(A)	62.3dB(A)	44.2dB(A)	37.2dB(A)
05:15 to 05:30	41.5dB(A)	33.6dB(A)	62.6dB(A)	43.5dB(A)	36.4dB(A)
05:30 to 05:45	43.3dB(A)	36.0dB(A)	66.8dB(A)	44.9dB(A)	38.4dB(A)
05:45 to 06:00	42.0dB(A)	35.6dB(A)	63.4dB(A)	44.4dB(A)	37.5dB(A)
06:00 to 06:15	42.9dB(A)	36.4dB(A)	60.0dB(A)	45.4dB(A)	39.1dB(A)
06:15 to 06:30	43.9dB(A)	36.4dB(A)	68.8dB(A)	45.5dB(A)	39.0dB(A)
06:30 to 06:45	45.2dB(A)	37.0dB(A)	65.8dB(A)	46.4dB(A)	40.6dB(A)
06:45 to 07:00	42.9dB(A)	36.8dB(A)	56.2dB(A)	45.2dB(A)	38.7dB(A)

Table 14: Noise results for 00:00 to 07:00 at Location 2 on the 5th February 2026.

Table 15 details the results from 07:00 to 19:30.

Sanctuary Acoustics Ltd

Time Period 05/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
07:00 to 07:15	44.7dB(A)	37.6dB(A)	64.0dB(A)	47.5dB(A)	40.1dB(A)
07:15 to 07:30	44.9dB(A)	38.1dB(A)	66.1dB(A)	47.3dB(A)	40.3dB(A)
07:30 to 07:45	45.0dB(A)	38.5dB(A)	64.0dB(A)	47.6dB(A)	40.3dB(A)
07:45 to 08:00	46.4dB(A)	39.0dB(A)	67.3dB(A)	48.4dB(A)	41.3dB(A)
08:00 to 08:15	48.2dB(A)	40.2dB(A)	67.8dB(A)	50.4dB(A)	42.7dB(A)
08:15 to 08:30	46.5dB(A)	37.9dB(A)	62.9dB(A)	49.6dB(A)	40.2dB(A)
08:30 to 08:45	47.0dB(A)	38.7dB(A)	70.8dB(A)	49.3dB(A)	40.4dB(A)
08:45 to 09:00	46.7dB(A)	39.7dB(A)	65.3dB(A)	49.3dB(A)	42.1dB(A)
09:00 to 09:15	46.4dB(A)	39.2dB(A)	70.2dB(A)	48.3dB(A)	41.0dB(A)
09:15 to 09:30	48.6dB(A)	41.8dB(A)	68.7dB(A)	50.9dB(A)	44.5dB(A)
09:30 to 09:45	44.6dB(A)	39.1dB(A)	57.0dB(A)	46.8dB(A)	41.1dB(A)
09:45 to 10:00	45.8dB(A)	39.4dB(A)	62.2dB(A)	48.3dB(A)	41.8dB(A)
10:00 to 10:15	48.1dB(A)	40.7dB(A)	68.8dB(A)	50.2dB(A)	43.4dB(A)
10:15 to 10:30	46.0dB(A)	41.1dB(A)	64.1dB(A)	48.1dB(A)	42.6dB(A)
10:30 to 10:45	44.0dB(A)	38.4dB(A)	58.9dB(A)	46.5dB(A)	40.2dB(A)
10:45 to 11:00	43.9dB(A)	38.3dB(A)	58.6dB(A)	45.8dB(A)	40.2dB(A)
11:00 to 11:15	44.1dB(A)	37.3dB(A)	59.0dB(A)	46.7dB(A)	40.0dB(A)
11:15 to 11:30	42.7dB(A)	37.9dB(A)	57.6dB(A)	44.7dB(A)	40.0dB(A)
11:30 to 11:45	44.5dB(A)	38.6dB(A)	55.6dB(A)	46.6dB(A)	41.1dB(A)
11:45 to 12:00	43.9dB(A)	39.2dB(A)	60.0dB(A)	46.2dB(A)	41.1dB(A)
12:00 to 12:15	44.3dB(A)	37.5dB(A)	56.8dB(A)	46.8dB(A)	40.2dB(A)
12:15 to 12:30	43.6dB(A)	37.3dB(A)	61.1dB(A)	45.8dB(A)	39.6dB(A)
12:30 to 12:45	43.7dB(A)	37.0dB(A)	56.2dB(A)	46.1dB(A)	39.8dB(A)
12:45 to 13:00	42.6dB(A)	36.2dB(A)	57.1dB(A)	44.7dB(A)	38.6dB(A)
13:00 to 13:15	44.9dB(A)	38.6dB(A)	60.9dB(A)	47.3dB(A)	41.3dB(A)
13:15 to 13:30	44.6dB(A)	37.6dB(A)	65.2dB(A)	47.2dB(A)	39.7dB(A)
13:30 to 13:45	44.7dB(A)	37.2dB(A)	59.1dB(A)	47.3dB(A)	40.0dB(A)
13:45 to 14:00	42.1dB(A)	35.5dB(A)	55.3dB(A)	44.4dB(A)	38.3dB(A)
14:00 to 14:15	42.6dB(A)	37.3dB(A)	52.7dB(A)	45.2dB(A)	39.3dB(A)
14:15 to 14:30	43.0dB(A)	37.0dB(A)	57.0dB(A)	45.6dB(A)	38.9dB(A)
14:30 to 14:45	42.6dB(A)	36.8dB(A)	59.2dB(A)	45.3dB(A)	38.7dB(A)
14:45 to 15:00	45.1dB(A)	37.7dB(A)	67.0dB(A)	47.2dB(A)	39.5dB(A)
15:00 to 15:15	44.8dB(A)	38.4dB(A)	56.8dB(A)	47.6dB(A)	40.5dB(A)
15:15 to 15:30	43.8dB(A)	36.9dB(A)	62.7dB(A)	46.6dB(A)	39.3dB(A)
15:30 to 15:45	43.8dB(A)	37.1dB(A)	57.7dB(A)	47.1dB(A)	39.3dB(A)
15:45 to 16:00	45.2dB(A)	37.8dB(A)	55.7dB(A)	48.3dB(A)	40.2dB(A)
16:00 to 16:15	44.9dB(A)	37.9dB(A)	58.5dB(A)	47.9dB(A)	40.4dB(A)
16:15 to 16:30	45.7dB(A)	37.5dB(A)	68.6dB(A)	47.8dB(A)	40.5dB(A)
16:30 to 16:45	47.6dB(A)	38.0dB(A)	77.7dB(A)	48.0dB(A)	40.3dB(A)
16:45 to 17:00	44.7dB(A)	36.7dB(A)	63.5dB(A)	47.1dB(A)	39.5dB(A)
17:00 to 17:15	44.5dB(A)	36.9dB(A)	58.6dB(A)	47.6dB(A)	39.6dB(A)
17:15 to 17:30	44.0dB(A)	37.7dB(A)	61.6dB(A)	46.0dB(A)	39.8dB(A)
17:30 to 17:45	43.3dB(A)	37.3dB(A)	54.9dB(A)	46.1dB(A)	39.6dB(A)
17:45 to 18:00	42.6dB(A)	36.2dB(A)	58.1dB(A)	45.0dB(A)	38.2dB(A)
18:00 to 18:15	42.4dB(A)	36.9dB(A)	61.1dB(A)	44.5dB(A)	38.6dB(A)
18:15 to 18:30	43.0dB(A)	35.6dB(A)	55.3dB(A)	46.1dB(A)	38.1dB(A)
18:30 to 18:45	43.2dB(A)	37.3dB(A)	61.1dB(A)	45.6dB(A)	39.1dB(A)
18:45 to 19:00	44.9dB(A)	36.7dB(A)	63.8dB(A)	47.2dB(A)	39.0dB(A)
19:00 to 19:15	43.5dB(A)	37.2dB(A)	56.3dB(A)	46.5dB(A)	39.2dB(A)
19:15 to 19:30	42.9dB(A)	36.0dB(A)	56.1dB(A)	45.3dB(A)	38.9dB(A)

Table 15: Noise results for 07:00 to 19:30 at Location 2 on the 5th February 2026.

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Table 16 details the results from 19:30 to 23:00.

Time Period 05/02/2026	Measurement Parameters				
	L_{Aeq}	L_{Amin}	L_{Amax}	L_{A10}	L_{A90}
19:30 to 19:45	42.4dB(A)	35.8dB(A)	56.7dB(A)	44.8dB(A)	38.3dB(A)
19:45 to 20:00	42.6dB(A)	34.5dB(A)	61.8dB(A)	44.8dB(A)	37.1dB(A)
20:00 to 20:15	40.9dB(A)	34.5dB(A)	55.3dB(A)	43.4dB(A)	37.2dB(A)
20:15 to 20:30	40.0dB(A)	33.5dB(A)	52.5dB(A)	42.8dB(A)	36.1dB(A)
20:30 to 20:45	40.2dB(A)	33.5dB(A)	56.0dB(A)	43.0dB(A)	35.9dB(A)
20:45 to 21:00	41.6dB(A)	34.6dB(A)	54.6dB(A)	44.3dB(A)	37.6dB(A)
21:00 to 21:15	41.2dB(A)	33.5dB(A)	56.8dB(A)	44.5dB(A)	35.9dB(A)
21:15 to 21:30	42.2dB(A)	33.1dB(A)	68.6dB(A)	43.4dB(A)	35.7dB(A)
21:30 to 21:45	40.3dB(A)	32.0dB(A)	53.1dB(A)	43.5dB(A)	35.1dB(A)
21:45 to 22:00	40.7dB(A)	32.7dB(A)	55.8dB(A)	43.4dB(A)	35.5dB(A)
22:00 to 22:15	41.4dB(A)	35.2dB(A)	60.6dB(A)	43.5dB(A)	38.3dB(A)
22:15 to 22:30	44.2dB(A)	40.6dB(A)	53.2dB(A)	45.3dB(A)	42.7dB(A)
22:30 to 22:45	44.3dB(A)	41.2dB(A)	56.3dB(A)	45.8dB(A)	42.8dB(A)
22:45 to 23:00	45.1dB(A)	40.8dB(A)	58.6dB(A)	46.9dB(A)	43.1dB(A)

Table 16: Noise results for 19:30 to 23:00 at Location 2 on the 5th February 2026.

Table 17 details the night-time measurements at Location 2 from 23:00 to 00:00.

Time Period 05/02/2026	Measurement Parameters				
	L_{Aeq}	L_{Amin}	L_{Amax}	L_{A10}	L_{A90}
23:00 to 23:15	47.0dB(A)	42.1dB(A)	56.3dB(A)	49.3dB(A)	44.2dB(A)
23:15 to 23:30	50.1dB(A)	44.0dB(A)	61.3dB(A)	52.1dB(A)	47.2dB(A)
23:30 to 23:45	49.2dB(A)	43.4dB(A)	60.9dB(A)	51.2dB(A)	46.4dB(A)
23:45 to 00:00	48.8dB(A)	42.6dB(A)	59.5dB(A)	51.0dB(A)	45.8dB(A)

Table 17: Noise results for 23:00 to 00:00 at Location 2 on the 5th February 2026.

Table 18 details the results from 00:00 to 07:00 at Location 2 on the 6th February.

Sanctuary Acoustics Ltd

Time Period 06/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
00:00 to 00:15	48.6dB(A)	42.4dB(A)	57.3dB(A)	51.0dB(A)	45.2dB(A)
00:15 to 00:30	48.5dB(A)	40.7dB(A)	58.9dB(A)	51.0dB(A)	44.7dB(A)
00:30 to 00:45	46.8dB(A)	38.5dB(A)	59.5dB(A)	49.9dB(A)	42.0dB(A)
00:45 to 01:00	45.6dB(A)	37.1dB(A)	57.4dB(A)	48.7dB(A)	41.1dB(A)
01:00 to 01:15	44.4dB(A)	35.8dB(A)	63.9dB(A)	47.6dB(A)	39.6dB(A)
01:15 to 01:30	42.8dB(A)	34.5dB(A)	55.8dB(A)	46.1dB(A)	37.9dB(A)
01:30 to 01:45	41.6dB(A)	33.3dB(A)	57.7dB(A)	44.6dB(A)	37.0dB(A)
01:45 to 02:00	40.1dB(A)	33.0dB(A)	51.9dB(A)	43.1dB(A)	35.9dB(A)
02:00 to 02:15	39.9dB(A)	32.9dB(A)	59.3dB(A)	42.3dB(A)	36.1dB(A)
02:15 to 02:30	41.9dB(A)	36.2dB(A)	56.3dB(A)	44.0dB(A)	38.9dB(A)
02:30 to 02:45	43.5dB(A)	38.9dB(A)	56.2dB(A)	45.7dB(A)	41.1dB(A)
02:45 to 03:00	44.0dB(A)	38.2dB(A)	64.0dB(A)	46.1dB(A)	40.2dB(A)
03:00 to 03:15	44.3dB(A)	38.2dB(A)	58.9dB(A)	46.9dB(A)	40.8dB(A)
03:15 to 03:30	46.6dB(A)	40.4dB(A)	56.7dB(A)	49.1dB(A)	43.0dB(A)
03:30 to 03:45	46.9dB(A)	40.3dB(A)	58.2dB(A)	49.6dB(A)	43.6dB(A)
03:45 to 04:00	48.1dB(A)	40.8dB(A)	56.8dB(A)	50.6dB(A)	44.3dB(A)
04:00 to 04:15	47.2dB(A)	39.7dB(A)	58.7dB(A)	50.2dB(A)	42.8dB(A)
04:15 to 04:30	46.3dB(A)	37.8dB(A)	57.1dB(A)	49.5dB(A)	41.3dB(A)
04:30 to 04:45	45.2dB(A)	35.7dB(A)	58.7dB(A)	48.6dB(A)	39.5dB(A)
04:45 to 05:00	43.3dB(A)	34.6dB(A)	56.8dB(A)	46.6dB(A)	38.1dB(A)
05:00 to 05:15	41.5dB(A)	35.4dB(A)	54.1dB(A)	44.5dB(A)	37.8dB(A)
05:15 to 05:30	40.6dB(A)	35.2dB(A)	55.2dB(A)	43.1dB(A)	37.4dB(A)
05:30 to 05:45	40.3dB(A)	34.7dB(A)	56.8dB(A)	42.8dB(A)	36.9dB(A)
05:45 to 06:00	41.8dB(A)	35.0dB(A)	56.3dB(A)	44.2dB(A)	37.2dB(A)
06:00 to 06:15	40.9dB(A)	35.4dB(A)	53.5dB(A)	43.1dB(A)	38.0dB(A)
06:15 to 06:30	42.6dB(A)	35.4dB(A)	54.8dB(A)	46.1dB(A)	38.2dB(A)
06:30 to 06:45	41.0dB(A)	36.4dB(A)	51.2dB(A)	42.9dB(A)	38.4dB(A)
06:45 to 07:00	43.2dB(A)	35.6dB(A)	56.5dB(A)	45.9dB(A)	38.3dB(A)

Table 18: Noise results for 00:00 to 07:00 at Location 2 on the 6th February 2026.

Table 19 details the results from 07:00 to 08:00.

Time Period 06/02/2026	Measurement Parameters				
	L _{Aeq}	L _{Amin}	L _{Amax}	L _{A10}	L _{A90}
07:00 to 07:15	40.3dB(A)	35.5dB(A)	57.1dB(A)	42.4dB(A)	37.7dB(A)
07:15 to 07:30	41.6dB(A)	35.8dB(A)	63.8dB(A)	43.5dB(A)	37.9dB(A)
07:30 to 07:45	44.5dB(A)	35.2dB(A)	65.3dB(A)	46.3dB(A)	37.8dB(A)
07:45 to 08:00	43.0dB(A)	36.1dB(A)	62.2dB(A)	45.7dB(A)	38.3dB(A)

Table 19: Noise results for 07:00 to 08:00 at Location 2 on the 6th February 2026.

Table 20 details the calculated hourly averages for ambient noise level (L_{Aeq}) and background noise level (L_{A90}) from 17:00 and 23:00 at Location 2 on 4th February.

Time Period 04/02/2026	Measurement Parameters	
	L _{Aeq} 1-hour	L _{A90} 1-hour
17:00 to 18:00	39.5dB(A)	34.0dB(A)
18:00 to 19:00	39.7dB(A)	34.0dB(A)
19:00 to 20:00	40.1dB(A)	34.2dB(A)
20:00 to 21:00	39.0dB(A)	33.9dB(A)
21:00 to 22:00	37.0dB(A)	33.2dB(A)
22:00 to 23:00	37.6dB(A)	33.0dB(A)

Table 20: Hourly noise results from 17:00 to 23:00 at Location 2 on Wednesday 4th February.

Table 21 details the calculated hourly averages for ambient noise level (L_{Aeq}) and background noise level (L_{A90}) from 07:00 and 23:00 at Location 2 on 5th February.

Time Period 05/02/2026	Measurement Parameters	
	L _{Aeq} 1-hour	L _{A90} 1-hour
07:00 to 08:00	45.3dB(A)	40.5dB(A)
08:00 to 09:00	47.2dB(A)	41.5dB(A)
09:00 to 10:00	46.6dB(A)	42.4dB(A)
10:00 to 11:00	45.9dB(A)	41.8dB(A)
11:00 to 12:00	43.8dB(A)	40.6dB(A)
12:00 to 13:00	43.6dB(A)	36.4dB(A)
13:00 to 14:00	44.2dB(A)	40.0dB(A)
14:00 to 15:00	43.5dB(A)	39.1dB(A)
15:00 to 16:00	44.4dB(A)	39.9dB(A)
16:00 to 17:00	45.9dB(A)	40.2dB(A)
17:00 to 18:00	43.7dB(A)	39.3dB(A)
18:00 to 19:00	43.5dB(A)	38.7dB(A)
19:00 to 20:00	42.9dB(A)	38.4dB(A)
20:00 to 21:00	40.7dB(A)	36.8dB(A)
21:00 to 22:00	41.2dB(A)	35.6dB(A)
22:00 to 23:00	44.0dB(A)	42.1dB(A)

Table 21: Hourly noise results from 07:00 to 23:00 at Location 2 on Thursday 5th February.

Table 22 details the calculated hourly averages for ambient noise level (L_{Aeq}) and background noise level (L_{A90}) from 07:00 and 08:00 at Location 2 on 6th February.

Time Period 06/02/2026	Measurement Parameters	
	L _{Aeq} 1-hour	L _{A90} 1-hour
07:00 to 08:00	42.6dB(A)	37.9dB(A)

Table 22: Hourly noise results from 07:00 to 08:00 at Location 2 on Friday 6th February.

The results from both measurement locations reflect the impact of daily farm activity with vehicles and people on site plus any additional background noise from the wider area. During the survey Location 1 does show an increase in noise level late in the day on the 5th February and at intervals into the 6th February. This uptick in noise level has been highlighted as unsecured metal corrugated sheeting on various farm buildings on the site, some on the proposed buildings for change of use and some on other retained farm buildings. With planning approval it is assumed that on the proposed buildings for change of use such sheeting will be removed and replaced with appropriate building materials, but any remaining sheeting on other buildings should be securely fixed into place to stop movement.

Overall the results show how static the ambient noise measurements are during the day and through the night-time period at both locations. Location 1 is in a fully open

space while Location 2 is partially enclosed to the rear so the Location 2 results are slightly lower than at Location 1. Location 2 will pick up the central road activity while Location 1 will pick up or measure noise from all-encompassing directions including the movement of metal sheeting in the wind from the two rear buildings.

Both sets of results show the impact of a farm activity and traffic noise is dominated on this site.

The daytime ambient noise levels are generally in the high +30dB's to high +40dB's at Location 1 with ambient levels (L_{Aeq}) increasing slightly at periods between late on the 5th February to the early hours on the 6th February up to mid-50dB's due to corrugated metal sheeting on some farm buildings moving in the wind. The background noise levels (L_{A90}) were typically over a broader range from 31dB(A) to 50dB(A) L_{A90} during the daytime and 30dB(A) to 52dB(A) L_{A90} during the night-time. This shows that over the 24-hour period the background is generally low but increases with passing farm activity near the measurement location or the weather has an impact on the existing farm buildings' façade constructions.

The daytime ambient noise levels at Location 2 were generally in the high-30dBs to mid-40dB's (L_{Aeq}) from 07:00 to 23:00 with similar results through the night. The daytime background noise levels (L_{A90}) typically over a broader range from 32dB(A) to 42dB(A) L_{A90} with the night-time background noise levels (L_{A90}) being over a similar range.

All measurements were taken at 15-minute intervals.

At Location 1 the night-time 8-hour L_{Aeq} from 23:00 on the 4th February to 07:00 on 5th February was 47.8dB(A) L_{Aeq} 8-hour and from 23:00 on the 5th February to 07:00 on 6th February it was 52.4dB(A) L_{Aeq} 8-hour. The daytime 16-hour L_{Aeq} from 07:00 to 23:00 on the 5th February was 50.6dB(A) L_{Aeq} 16-hour. The lowest background noise level (L_{A90}) measured on site at Location 1 was 30.8dB(A) taken between 23:15 to 23:30 on 4th February. The most significant daytime ambient noise measurement as a 15-minute measurement was 56.0dB(A) L_{Aeq} from 22:45 to 23:00 on 5th February and as a logarithmically averaged 1-hour measurement it was 54.4dB(A) L_{Aeq} from 22:00 to 23:00 on 5th February. The most significant night-time ambient noise measurement as a 15-minute measurement was 58.8dB(A) L_{Aeq} from 23:15 to 23:30 on 5th February.

At Location 2 the night-time 8-hour L_{Aeq} from 23:00 on the 4th February to 07:00 on 5th February was 41.1dB(A) L_{Aeq} 8-hour and from 23:00 on the 5th February to 07:00 on 6th February it was 45.5dB(A) L_{Aeq} 8-hour. The daytime 16-hour L_{Aeq} from 07:00 to 23:00 on the 5th February was 44.5dB(A) L_{Aeq} 16-hour. The lowest background noise level (L_{A90}) measured on site at Location 2 was 30.7dB(A) taken between 23:15 to 23:30 on 4th February. The most significant daytime ambient noise measurement as a 15-minute measurement was 48.6dB(A) L_{Aeq} from 09:15 to 09:30 on 5th February and as a logarithmically averaged 1-hour measurement it was 47.2dB(A) L_{Aeq} from 08:00 to 09:00 on 5th February. The most significant night-time ambient noise measurement as a 15-minute measurement was 50.1dB(A) L_{Aeq} from 23:15 to 23:30 on 5th February.

The night-time ambient noise results, this will be used to determine the minimum noise criteria for façade glazing and ventilators on this occasion.

Any planned new fixed mechanical plant for the development will need to adhere to criteria found in *BS 4142:2014 – Methods for rating and assessing industrial and*

commercial sound. It is recommended that any proposed fixed plant for the new development should be housed at the rear and the rating level, (L_{Ar}) for noise produced by such plant should be at least 5dB lower than the lowest measured existing background noise level.

3. REFERENCE TO GUIDANCE

Noise sources impacting onto the farm buildings that have been proposed for change of use were primarily from farm activity such as farm vehicles, road vehicles on the central road and Ball Lane. Residents and employees of the Upper Heakley Farm were also active on the site. As mentioned earlier, corrugated metal sheeting that was not fixed securely in place was also generating noise during an uptick in wind speed and change of direction. Some noise from wildlife, domesticated animals and birdsong would also be evident at intervals. Other than when the corrugated sheeting was generating noise, noise levels at the measurement locations were not significant.

The previous guidance repealed in March 2012, Planning Policy Guidance 24 (PPG24), did contain useful noise criteria which is absent from the NPPF, although PPG24 did also make reference to other guidance such as BS 8233, CRTN and WHO guidance on sleep disturbance and community noise levels. *BS 8233:2014 Guidance on sound insulation and noise reduction for buildings* which was revised in 2014 is now a far more robust standard.

The revised BS 8233:2014 states suitable indoor ambient noise levels for dwellings which are detailed in table 23;

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35dB $L_{Aeq, 16hour}$	-
Dining	Dining room/area	40dB $L_{Aeq, 16hour}$	-
Sleeping (daytime resting)	Bedroom	35dB $L_{Aeq, 16hour}$	30dB $L_{Aeq, 8hour}$

Table 23: BS 8233:2014 Indoor ambient noise levels for dwellings

The *Noise Policy Statement for England (NPSE)* has stated the following criteria;

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 noise.

LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected. The NPSE expands these terms leading to the concept of a Significant Adverse Effect Level.

SOAEL – Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.

Table 24 details the applicable LOAEL and SOAEL.

Sanctuary Acoustics Ltd

Noise Source	Assessment Location	LOAEL	SOAEL	Times
General Environmental Noise and Road Traffic	Outdoor living space	50dB L _{Aeq} , 1hour	55dB L _{Aeq} , 1hour	Day 07:00 – 23:00
	Facade	50dB L _{Aeq} , 16hour	72dB L _{Aeq} , 16hour	Day 07:00 – 23:00
	Facade	45dB L _{Aeq} , 8hour	67dB L _{Aeq} , 8hour	Night 23:00 – 07:00
	Habitable Room	30dB L _{Aeq} , 8hour	40dB L _{Aeq} , 45dB L _{AFMax} 8hour	Night 23:00 – 07:00 (No more than 10-15 occurrences >45dB L _{AFMax} – WHO)
	Habitable Room	35dB L _{Aeq} , 16hour	45dB L _{Aeq} , 16hour	Day 07:00 – 23:00
Commercial noise or noise of industrial nature (not anonymous)	Façade	b/g – 10dB	b/g + 10dB	09:00 – 17:00 (approximate as work dependent up to 21:00)
	Façade	No change to ambient	Ambient 5dB L _{Aeq} increase	09:00 – 17:00 (approximate as work dependent up to 21:00)
	Outdoor living space	45dB L _{Aeq} , 1hour	50dB L _{Aeq} , 1hour	Day 07:00 – 23:00
	Habitable Room	35dB L _{Aeq} , 16hour	40dB L _{Aeq} , 16hour	Day 07:00 – 23:00

Table 24: NPSE Criteria

From the results obtained from the noise survey the following conclusions have been drawn and referenced to guidance on their analysis;

- The daytime L_{Aeq} noise levels measured opposite the northern smaller farm building at Location 1 was on the LOAEL with the L_{Aeq} 16-hour at 50.6dB(A).
- The daytime L_{Aeq} noise levels measured at the southern façade of the larger southern farm building was below the LOAEL for Location 2 with the L_{Aeq} 16-hour at 44.5dB(A).
- The night-time L_{Aeq} noise levels at Location 1 when measured at the proposed façades are in between the LOAEL and SOAEL two nights in a row at 47.8dB(A) and 52.4dB(A).
- The night-time L_{Aeq} noise levels at Location 2 when measured at the proposed façades were around the LOAEL two nights in a row at 41.1dB(A) and 45.5dB(A).
- The proposed outdoor living spaces are **below** the LOAEL lower limit at 50dB(A) L_{Aeq} at Location 1.
- The proposed outdoor living spaces are **below** the LOAEL lower limit at 50dB(A) L_{Aeq} at Location 2.
- The Location 1 measurement as a night-time 8-hour L_{Aeq} from 23:00 on the 4th February to 07:00 on 5th February was 47.8dB(A) with the L_{Aeq} 8-hour from 23:00 on the 5th February to 07:00 on 6th February being 52.4dB(A) L_{Aeq} 8-hour. The daytime 16-hour L_{Aeq} from 07:00 to 23:00 on the 5th February was 50.6dB(A) L_{Aeq} 16-hour. The lowest measured background noise level (L_{A90}) measured on site at Location 1 was 30.8dB(A) taken between 23:15 to 23:30 on 4th February. The most significant daytime ambient noise measurement as

a 15-minute measurement was 56.0dB(A) L_{Aeq} from 22:45 to 23:00 on 5th February and as a logarithmically averaged 1-hour measurement it was 54.4dB(A) L_{Aeq} from 22:00 to 23:00 on 5th February. The most significant night-time ambient noise measurement as a 15-minute measurement was 58.8dB(A) L_{Aeq} from 23:15 to 23:30 on 5th February.

- The Location 2 measurement as a night-time 8-hour L_{Aeq} from 23:00 on the 4th February to 07:00 on 5th February was 41.1dB(A) L_{Aeq} 8-hour and from 23:00 on the 5th February to 07:00 on 6th February it was 45.5dB(A) L_{Aeq} 8-hour. The daytime 16-hour L_{Aeq} from 07:00 to 23:00 on the 5th February was 44.5dB(A) L_{Aeq} 16-hour. The lowest measured background noise level (L_{A90}) measured on site at Location 2 was 30.7dB(A) taken between 23:15 to 23:30 on 4th February. The most significant daytime ambient noise measurement as a 15-minute measurement was 48.6dB(A) L_{Aeq} from 09:15 to 09:30 on 5th February and as a logarithmically averaged 1-hour measurement it was 47.2dB(A) L_{Aeq} from 08:00 to 09:00 on 5th February. The most significant night-time ambient noise measurement as a 15-minute measurement was 50.1dB(A) L_{Aeq} from 23:15 to 23:30 on 5th February.
- Maximum noise events $L_{AFmax, outside}$ are above the 55dB(A) level between 23:00 and 07:00 at both locations but are more inconsistent at night at Location 1. Typically as a rule of thumb, 55.0dB(A) outside an open window will produce 45.0dB(A) inside the room.

From the analysis of the noise survey results the following recommendations have been suggested;

- Locations 1 and 2 are dominated by farm activity including noise from the building fabric of some of the on-site farm buildings.
- Suitable double glazing should be fitted to the habitable rooms (living room and bedrooms) at all elevations. Based upon the external Location 1 and Location 2 measurements, double glazing with a minimum noise criterion should be fitted.
- Methods for providing ventilation for the dwellings will also be required. Façade ventilators such as acoustic trickle vents, acoustic airbricks, through wall attenuated vents could be fitted to allow an exchange of airflow. If façade ventilators are not to be installed then mechanical ventilation could be installed that will allow an exchange of airflow such as an MVHR system. If any through wall vents, acoustic airbricks, attenuated window vents etc., are also to be fitted into the façade, they would need to be acoustically rated. However, with an MVHR or a mechanical whole building system then this system in itself should not elevate existing noise levels. Any such system is likely to be housed at the rear or on the roof of the dwellings where it can also take-in fresh air and extract stale air out. Noise produced by such a ventilation system should be at least 5dB below existing background noise levels at the nearest residential façade and this should also factor in acoustic features that such a system may contain.

Any proposed new mechanical plant to provide an exchange of airflow for the development should also be considered first for its suitability with appropriate design and specification by the appointed M&E or HVAC Engineers.

The assessment of mechanical noise with acoustic characteristics such as tones and impulses is represented against criteria under clause 11 in *BS 4142:2014 – Methods for rating and assessing industrial and commercial sound*.

The commentary on clause 11 states;

“The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.”

The excess or deficit of the rating level over the background noise level is assessed against the following assessments.

- a) *Typically, the greater this difference, the greater the magnitude of the impact.*
- b) *A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.*
- c) *A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.*
- d) *The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.*

In addition to the specific noise level such as the noise produced from an air condenser, a correction factor may also be applied if such a noise also has certain acoustic features. Within *BS 4142* section 9.2 Subjective Method, the Joint Nordic Method is quoted which provides a sliding scale for acoustic features which are tonal or impulsive based upon being just perceptible, clearly perceptible and highly perceptible. For Tones it is +2dB, +4dB and +6dB and for Impulses +3dB, +6dB and +9dB.

The noise from activity associated with farm living and working is the primary underlying noise source in the vicinity at both measurement locations as well as birdsong, wildlife, domesticated animals and road traffic on Ball Lane.

Birmingham City Council has produced a noise and vibration document titled *Planning Consultation Guidance Note - Noise & Vibration* which is also known as *PCGN*.

The document provides recommended criteria to be achieved for glazing and ventilation based upon daytime and night-time L_{Aeq} and has been adopted by other local authorities such as *Worcestershire Regulatory Services* and *Lichfield District Council*.

Figure 7 depicts their criterion which in the absence of other national or local criteria on façade detailing has been referenced here. Glazed units and ventilators can be the weak link in a façade when compared to a brick & block construction.

Section 6 – Proposed Developments Containing Noise Sensitive Uses

Road and rail Traffic

External noise level Not exceeding		Acoustic Performance requirement	
Day (dB L _{Aeq})	Night (dB L _{Aeq})	Windows	Ventilators
		All windows and doors to habitable rooms to provide a sound reduction index (dB R _w + C _{tr}) of not less than	Ventilation to habitable rooms to provide a sound reduction index (dB D _{n,e,W} +C _{tr}) of not less than
< 50	< 45	No requirement See Note 1 below	
57	52	25	31
60	55	26	32
63	58	29	35
66	61	32	38
69	64	35	41
72	67	38	44
≥ 72	≥ 67	See Note 2 below	
Noise levels shall be rounded up to a whole dB when determining the external noise exposure			

Note 1: Research provided by the World Health Organisation suggests that “general daytime outdoor noise levels of less than 50 dB L_{Aeq} are desirable to prevent any significant community annoyance”. Where noise exposure is below this level no specific building envelope sound insulation is required.

Note 2: The EPU will not support approval. If consent is granted by Planning Committee then EPU will recommend standards unique to each application upon the request of Planning.

Figure 7: Birmingham City Council's PCGN criterion for specifying glazing and ventilators based upon measured L_{Aeq} noise levels.

Under the currently proposed scheme, provision has been made for creating outdoor amenity spaces for each dwelling. With these amenity spaces in place then daytime lower and upper ambient noise levels would apply as detailed in the following paragraph, it should be noted that the measured noise levels fluctuate from below the lower limit (LOAEL) to being on the lower limit (LOAEL) of this criteria as a 16-hour L_{Aeq}.

The 2014 edition of BS 8233 states on page 25 section 7.7.3.2 *Design criteria for external noise*;

“For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB L_{Aeq,T}, with an upper guideline value of 55dB L_{Aeq,T}, which would be acceptable in noisier environments. However, it is also recognised that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between the elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited.”

The daytime hourly ambient noise levels were as a 16-hour L_{Aeq} at Location 1 on the lower limit LOAEL 50dB(A). The daytime hourly ambient noise levels were as a 16-hour L_{Aeq} at Location 2 below the lower limit LOAEL 50dB(A). The provision for amenity spaces would therefore appear to be suitable with no prospect for raised noise levels impacting onto residents amenity.

4. GLAZING, VENTILATION & INSULATION.

The results obtained from the noise survey indicate that the most significant daytime site result at Location 1 (opposite smaller northern farm building) was 56.0dB(A) L_{Aeq} from 22:45 to 23:00 on the 5th February and the most significant night-time was 58.8dB(A) L_{Aeq} from 23:15 to 23:30 on the 5th February. The 16-hour L_{Aeq} , the single value average over the 16-hour period from 07:00 to 23:00 on the 5th February was lower at 50.6dB(A) L_{Aeq} 16-hour but the most significant night-time L_{Aeq} was up to 8dB(A) higher. The L_{Aeq} 8-hour results from 23:00 on the 4th February to 07:00 on 5th February was 47.8dB(A) L_{Aeq} and from 23:00 on the 5th February to 07:00 on 6th February was 52.4dB(A) L_{Aeq} .

The results obtained from the noise survey indicate that the most significant daytime site result at Location 2 (southern larger farm building elevation) was 48.6dB(A) L_{Aeq} from 09:15 to 09:30 on the 5th February and the most significant night-time was 50.1dB(A) L_{Aeq} from 23:15 to 23:30 on the 5th February. The 16-hour L_{Aeq} , the single value average over the 16-hour period from 07:00 to 23:00 on the 5th February was lower at 44.5dB(A) L_{Aeq} 16-hour but the most significant night-time L_{Aeq} was up to 5dB(A) higher. The L_{Aeq} 8-hour results from 23:00 on the 4th February to 07:00 on 5th February was 41.1dB(A) L_{Aeq} and from 23:00 on the 5th February to 07:00 on 6th February was 45.5dB(A) L_{Aeq} .

The minimum glazing and ventilation sound insulation criteria specified for this development has been based upon criterion detailed in *Birmingham City Council's PCGN* in order to provide a more precise recommendation to comply with in the absence of any similar national sound insulation criteria tables for façade elements.

Therefore, based upon a Location 1 night-time high between 23:15 to 23:30 on the 5th February, the glazing to all elevations for all proposed habitable rooms to these dwellings (houses) should seek to achieve a minimum noise criteria of 32dB $R_w + C_{tr}$ while any façade ventilators mounted in the window frames or attenuated wall vents, acoustic air bricks etc., penetrating through the external walls should seek to achieve a minimum 38dB $D_{n,e,w} + C_{tr}$. This is based upon L_{Aeq} daytime noise levels not exceeding 66dB(A) and night-time noise levels not exceeding 61dB(A).

Figure 8 depicts the elevations of the development and the recommended glazing and façade ventilator criteria.

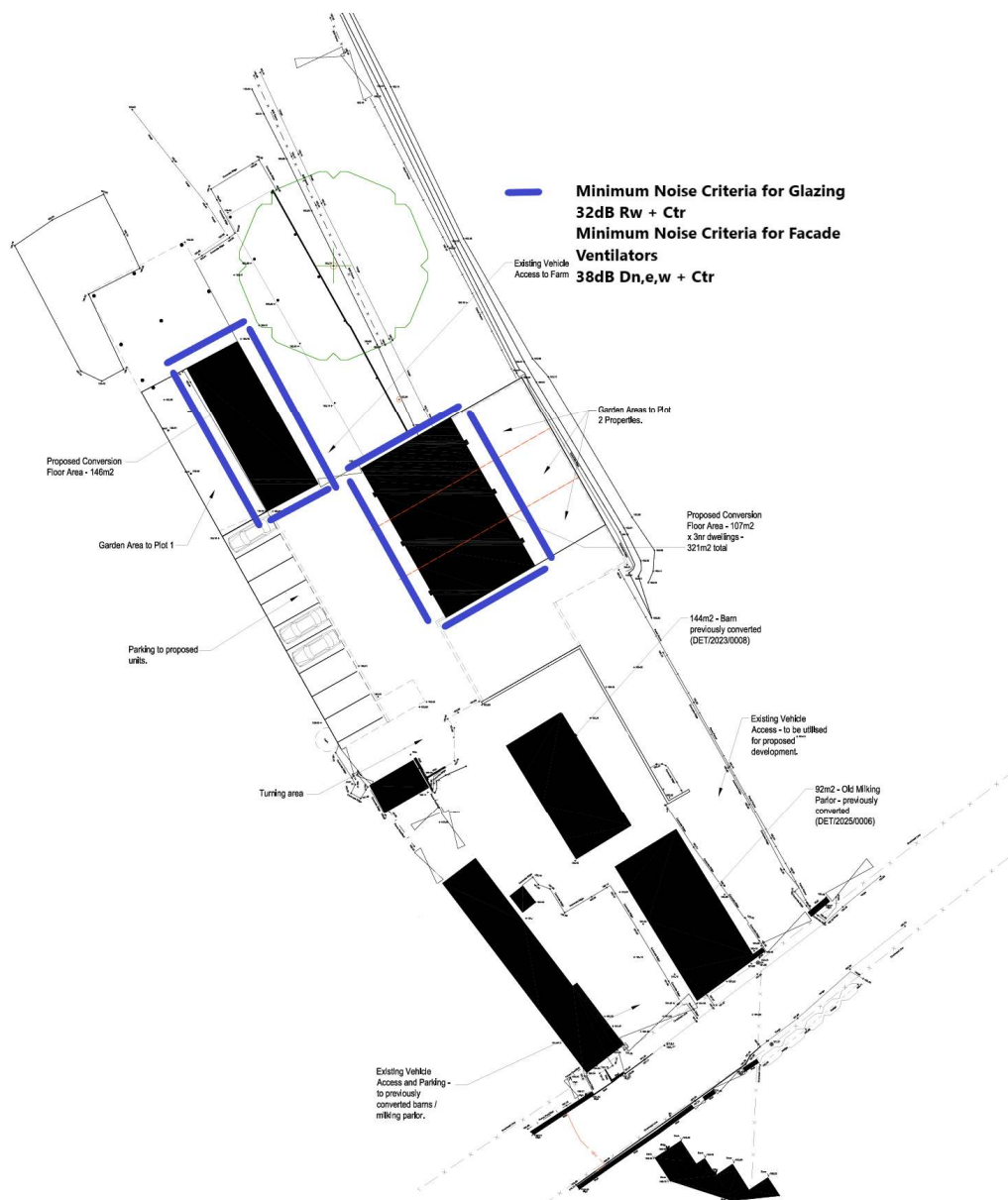


Figure 8: Recommended glazing and ventilation criteria for the exposed elevations.

The following eight example glazing types will achieve alternately rated $R_w + C_{tr}$ criteria. An *Insul* analysis of these glazing types is detailed below.

These are provided as examples only and the appointed glazing contractor should be able to confirm glazing specifications they can source that will achieve a minimum 32dB $R_w + C_{tr}$ for the glazed units. The examples here will achieve the $R_w + C_{tr}$ rating or better and are merely provided here as an indication of typical constructions.

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 18/02/2026

Job Name: Upper Heakley Farm



R_w	41 dB
C	-1 dB
C_{tr}	-5 dB

Notes:

GLAZING: 6 mm Glass / 12 mm airgap /
8.8 mm Laminated Glass (generic PVB)

Figure 9: 6/12/8.8lam glazing. $R_w + C_{tr}$ 36dB

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 18/02/2026

Job Name: Scholar Green



R_w	41 dB
C	-2 dB
C_{tr}	-6 dB

Notes:

GLAZING: 6 mm Laminated Glass / 12 mm airgap / 6
mm Laminated Glass

Figure 10: 6lam/12/6lam glazing. $R_w + C_{tr}$ 35dB

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 18/02/2026

Job Name: Upper Heakley Farm



R_w	39 dB
C	-1 dB
C _{tr}	-5 dB

Notes:
GLAZING: 6 mm Glass /10 mm airgap /
6 mm Laminated Glass (generic PVB)

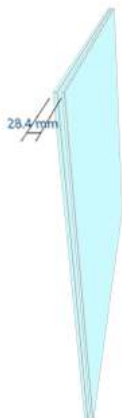
Figure 11: 6/10/6lam glazing. $R_w + C_{tr}$ 34dB

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 18/02/2026

Job Name: Upper Heakley Farm



R_w	41 dB
C	-1 dB
C _{tr}	-5 dB

Notes:
GLAZING: 10 mm Glass /12 mm airgap /
6 mm Laminated Glass (generic PVB)

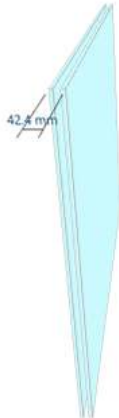
Figure 12: 10/12/6lam glazing. $R_w + C_{tr}$ 36dB

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 18/02/2026

Job Name: Upper Heakley Farm



R_w	44	dB
C	-1	dB
C_{tr}	-6	dB

Notes:
GLAZING: 10 mm Glass / 20 mm airgap /
12 mm Laminated Glass (generic PVB)

Figure 13: 10/20/12lam glazing. $R_w + C_{tr}$ 38dB

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 18/02/2026

Job Name: Upper Heakley Farm



R_w	47	dB
C	-2	dB
C_{tr}	-7	dB

Notes:
GLAZING: 12 mm Laminated Glass (generic PVB) / 10 mm airgap / 16 mm
Laminated Glass (generic PVB)

Figure 14: 12lam/10/16lam glazing. $R_w + C_{tr}$ 40dB

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 18/02/2026

Job Name: Upper Heakley Farm



R_w 45 dB

C -2 dB

Ctr -7 dB

Notes:

GLAZING: 6.8 mm Laminated Glass (generic PVB) / 20 mm airgap / 10 mm Laminated Glass (generic PVB)

Figure 15: 6.8lam/20/10lam glazing. $R_w + C_{tr}$ 38dB

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 18/02/2026

Job Name: Upper Heakley Farm



R_w 40 dB

C -2 dB

Ctr -6 dB

Notes:

Glazing (Double):

- Pane 1: 1 x 7.18 mm Laminated Glass (generic PVB)
- Cavity: 10 mm
- Pane 2: 1 x 7.18 mm Laminated Glass (generic PVB)

Figure 16: 6.8lam/10/6.8lam glazing. $R_w + C_{tr}$ 34dB

Ventilation to the habitable rooms should be provided by means of either façade ventilators & openable windows or a whole building mechanical system such as an MVHR system. Any mechanical ventilation system should not increase background noise levels. The appointed HVAC or M&E Engineers should be able to produce a suitable ventilation scheme that will take into consideration the existing measured background noise levels, L_{A90} . With the lowest measured background noise level being 30.7dB(A) L_{A90} at Location 2, which was only 0.1dB(A) lower than the lowest background noise level at Location 1, it is recommended that the noise from such a system when measured at the nearest residential façade should be no greater than 25.0dB(A) L_{Ar} .

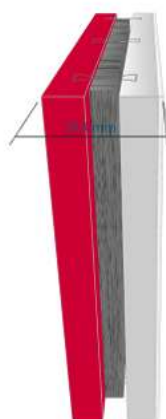
The external wall is likely to be a brick and block cavity construction. Figure 17 depicts the analysis of the cavity construction which would give a prediction of approximately 55dB $R_w + C_{tr}$.

Sound Insulation Prediction (v10.0.5)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within $R_w \pm 3$ dB

Date: 18/02/2026

Job Name: Upper Heakley Farm



R_w	60 dB
C	-2 dB
C_{tr}	-5 dB

Notes:

Butterfly Tie WALL: 1 x 110.0 mm Brick +
Butterfly Tie (75 mm Rockwool (40kg/m3) + 1 x 100.0
mm Concrete Block + 1 x 12.5 mm
Gyproc Wallboard

Figure 17: External cavity wall with internal plasterboard finish.

5. RECOMMENDATIONS

The proposed residential development on land at Upper Heakley Farm, Ball Lane, Brown Edge has been assessed with recommendations for;

- Glazed units for the habitable room's to all elevations of the proposed dwellings should achieve a minimum 32dB $R_w + C_{tr}$. Example glazing specifications have been detailed in section 4.
- Any façade ventilators mounted in the façade or within the frames of the glazed units to allow air flow into the dwelling without the need to open the windows or in conjunction with openable windows will also need to be acoustic rated with a minimum criteria of 38dB $D_{n,e,w} + C_{tr}$ to all elevations of habitable rooms on the development. Mechanical ventilation such as an MVHR ventilation system could be considered as an alternative to provide an exchange of airflow but such a system or anything similar should not raise existing background noise levels.
- An MVHR system in itself along with any other fixed plant should not raise existing background noise levels. Based upon the lowest background noise level at Location 1 of 30.8dB(A) from 23:15 to 23:30 on the 4th February and at Location 2 with a low background noise level of 30.7dB(A) also from 23:15 to 23:30 on 4th February, the rating level of any new fixed plant should be 5dB below existing background noise levels and therefore the rating level, L_{Ar} should be no greater than 25dB(A) at the nearest residential facade. If a mechanical whole building ventilation system is to be installed, then it should be able to provide a minimum of 4 x air changes per hour. Consideration should be given to *Building Regulations Approved Document F – Ventilation* and *Approved Document O – Overheating*.
- Standard insulated roof construction is assumed will be installed.

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In addition to the glazing examples given from pages 34 to 37, glazed units that will achieve a minimum 32dB $R_w + C_{tr}$ can be sourced from Pilkington Glass and examples of these units are detailed in figure 18. The value for $R_w + C_{tr}$ is given in the farthest column on the right.

Glass	Sound reduction index (dB)									
	Octaveband Centre Frequency (Hz)						R _w (C; C _{tr})	R _w	R _w +C	R _w +C _{tr}
	125	250	500	1000	2000	4000				
Single glazing										
6.8 mm Pilkington Optiphon™	22	26	31	37	40	40	36 (-1; -4)	36	35	32
8.8 mm Pilkington Optiphon™	27	29	34	38	40	43	37 (0; -2)	37	37	35
10.8 mm Pilkington Optiphon™	26	30	35	39	40	46	38 (-1; -3)	38	37	35
12.8 mm Pilkington Optiphon™	29	32	36	41	42	51	40 (-1; -3)	40	39	37
16.8 mm Pilkington Optiphon™	31	33	38	41	43	54	41 (-1; -3)	41	40	38
Insulating glass units										
6 mm / 16 mm argon / 6.8 mm Pilkington Optiphon™	21	28	37	48	48	54	40 (-2; -6)	40	38	34
6 mm / 16 mm argon / 8.8 mm Pilkington Optiphon™	25	27	38	48	47	55	41 (-2; -6)	41	39	35
8 mm / 16 mm argon / 8.8 mm Pilkington Optiphon™	21	30	39	47	50	55	42 (-3; -8)	42	39	34
10 mm / 16 mm argon / 8.8 mm Pilkington Optiphon™	28	31	42	45	50	58	44 (-2; -6)	44	42	38
10 mm / 20 mm argon / 8.8 mm Pilkington Optiphon™	28	36	43	47	49	58	46 (-2; -6)	46	44	40
8.8 mm Pilkington Optiphon™ / 16 mm argon / 12.8 mm Pilkington Optiphon™	28	36	45	53	56	64	48 (-2; -7)	48	46	41
10.8 mm Pilkington Optiphon™ / 24 mm argon / 16.8 mm Pilkington Optiphon™	35	41	48	53	55	65	52 (-2; -6)	52	50	46
12.8 mm Pilkington Optiphon™ / 20 mm argon / 16.8 mm Pilkington Optiphon™	35	45	49	50	54	65	51 (-1; -4)	51	50	47

Figure 18: Pilkington Glass glazing specifications that will achieve alternate $R_w + C_{tr}$ criteria.

The glazing detail here is typical of what glazing manufacturer's technical documentation will be represented as. Reputable glazing manufacturers such as Selectaglaze (www.selectaglaze.co.uk) will also be able to quote for glazed units such as for their unit depicted in figure 19.

The example Pilkington Glass unit detailed in figure 19 will achieve 33dB $R_w + C_{tr}$ where 38dB + (-5) = 33dB. This exact glazing specification would be suitable for the development.

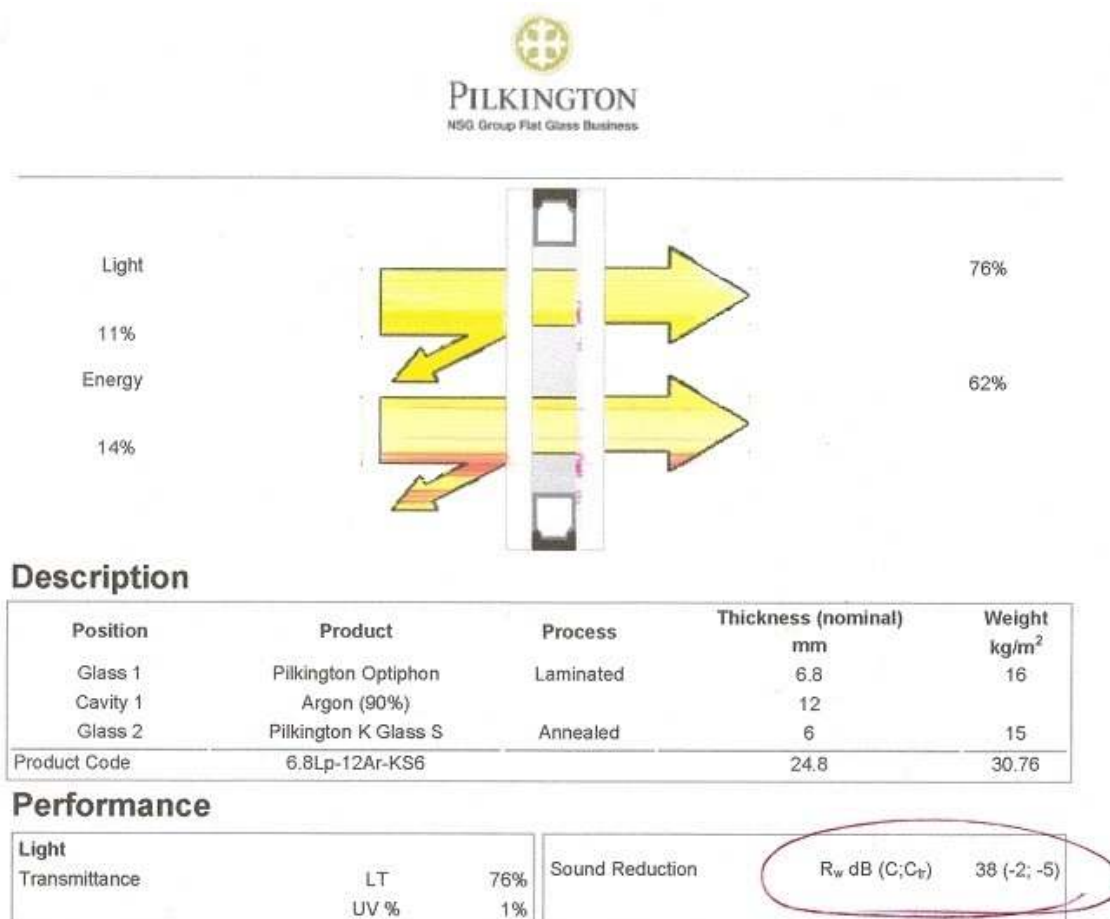


Figure 19: A Pilkington Glass glazing specification that will achieve $R_w + C_{tr}$ 33dB.

6. CONCLUSIONS

Noise measurements have been taken adjacent to the central road at Upper Heakley Farm, Ball Lane, Brown Edge. The measurement locations were chosen to take a worst case scenario with Location 1 opposite the northern smaller farm building, while Location 2 at the southern elevation of the larger southern farm building to ascertain the noise impact from farm activity on this central road and the wider farm premises plus road traffic on Ball Lane and the wider area.

To achieve the *BS 8233:2014* criteria for night-time sleeping it is recommended that internal ambient noise levels should achieve 30dB L_{Aeq} . In Living Rooms for daytime resting 35dB L_{Aeq} is sought while Dining Rooms should have a minimum 40dB L_{Aeq} .

Based on the noise levels measured at the site, the *Birmingham City Council PCGN* document which considers *WHO* and *BS 8233* criteria and referenced here in the absence of any national documentation on selecting glazing and ventilator types, it states that minimum sound insulation criteria should also be met.

Further into the site using a Location 1 night-time ambient noise measurement high of 58.8dB(A) L_{Aeq} on the 5th February, glazing to facades for all proposed habitable rooms to all elevations of the dwellings should seek to achieve a minimum 32dB $R_w + C_{tr}$.

Should ventilators be fitted to the facades by mounting them in the window frames or attenuated wall vents or acoustic air bricks etc., then they would need to achieve a minimum $38\text{dB } D_{n,e,w} + C_{tr}$ for all dwellings.

If ventilation to the development is to be provided by an alternative mechanical system such as an MVHR system then with a lowest background noise level of 30.7dB(A) measured at Location 2, any mechanical plant across the development should be rated with a noise level no greater than $25\text{dB } L_{Ar}$ at the nearest residential façade.

This glazing and façade ventilator criteria is based upon L_{Aeq} daytime external noise levels at Location 1 not exceeding 66dB(A) and night-time noise levels not exceeding 61dB(A) .

The current ambient noise levels do not exceed these levels but this glazing and façade rating should also ensure that maximum internal noise levels at night should be no greater than 45dB(A) L_{Amax} on more than 10 – 15 occasions as per *WHO* recommendations in a single night-time period.

The results also show that noise in amenity spaces is currently on or below the outdoor amenity space LOAEL lower limit of 50dB(A) .

With planning approval, the development will make good use of low noise levels on available land and provide occupants with good road links into Brown Edge and beyond.

7. SUMMARY.

Sanctuary Acoustics Ltd has been instructed by Mr & Mrs Mayer to assess the noise environment in the vicinity of agricultural buildings on farm land which lies adjacent to Ball Lane, Brown Edge, Staffordshire, ST6 8SW. A previous planning application had been submitted proposing change of use for the site with the conversion of 2 x agricultural buildings into 4 x new residential dwellings under application number DET/2025/0040. This prior approval application received a refusal from the LPA.

Comments from *Staffordshire Moorlands District Council* have provided five reasons for why refusal has been made with reason 2 reflecting on residents amenity and the issue of noise impacts, amongst other issues, which have not been addressed by the client in previously submitted plans and details.

This noise reports seeks to clarify the existing noise climate on the site and recommendations for mitigation measures were necessary.

The primary noise sources impacting onto the site is farm activity from mostly farm traffic and intermittent road traffic on Ball Lane. Some horses were noted in the adjoining field but other than the owners dogs, no other domesticated animals were noted in view of the measurement locations. Due to the rural location, birdsong and wildlife were evident at intervals. Some of the roofs and walls to the nearby agricultural buildings have corrugated metal sheets which do generate noise when moving due to wind speed and/or changes in wind direction. It should be noted that there was no perception of any fixed mechanical plant noise at either measurement location from air conditioning units or air handling units etc., or any other similar items of fixed plant.

To summarise:

1. Noise measurements were undertaken on the proposed development site which is located on farm land at Upper Heakley Farm, Ball Lane, Brown Edge, ST6 8SW. The proposed development is of two farm buildings either side of a central road with the northern farm building being the smaller of the two.
2. Noise measurements were taken at two external locations to assess noise currently impinging onto the site. The noise at Location 1 lying further north into the site was taken off the central road opposite the smaller farm buildings' eastern elevation and was defined primarily as farm activity including farm traffic noise and farm employees and farm family members on the site plus some road traffic noise from Ball Lane and animal/birdsong noise from the wider area. The noise at Location 2 to the southern elevation of the larger farm building to the south and closer to other buildings and Ball Lane was subjected to the same noise sources. It should be noted that some of the farm buildings, both those proposed for conversion as well as those to remain as farm buildings have corrugated metal sheeting in sections. Some of this sheeting was not securely fixed into place and subsequently during the survey, an increase in wind speed and/or change in wind direction caused this sheeting to generate an increase in noise level which can be noted from 22:00 on the 5th February to 01:00 on the 6th February and again from 02:15 to 04:30 on the 6th February. This was particularly noted at Location 1 with Location 2 being partially shielded from the rear and so the impact of the corrugated sheeting moving was not as perceptible.

3. The noise assessment was conducted with measurements commencing at Location 1 from 16:00 on Wednesday 4th February to 08:00 on Friday 6th February and at Location 2 from 16:15 on Wednesday 4th February to 08:00 on Friday 6th February which were all for a continuous period and in secure locations. The measurements at each location were for a continuous logging period and were set to record at 15-minute intervals which were later extrapolated to obtain the 1-hour L_{Aeq} and L_{A90} .
4. The noise measurements were referenced to the *National Planning Policy Framework (NPPF)*. Further reference was also made to *BS 8233:2014 Guidance on sound insulation and noise reduction for buildings*, *BS 7445-1:2003 Description and Measurement of Environmental Noise – Part 1: Guide to Quantities* and *BS 4142:2014 Methods for rating and assessing industrial and commercial sound*. Additional reference was made to the *WHO Guidelines* and *Birmingham City Council's Planning Consultation Guidance Note Noise & Vibration (PCGN)* and their methodology for determining suitable glazing and ventilators in relation to measured daytime and night-time L_{Aeq} . It also states maximum noise levels from individual noise events in habitable rooms of 45dB(A) L_{Amax} .
5. BS 8233:2014 recommends a 30dB L_{Aeq} in Bedrooms at night for Sleeping and 35dB L_{Aeq} in Living Rooms for daytime Resting and 40dB L_{Aeq} within Dining Rooms.
6. The Location 1 measurement as a night-time 8-hour L_{Aeq} from 23:00 on the 4th February to 07:00 on 5th February was 47.8dB(A) with the $L_{Aeq\ 8-hour}$ from 23:00 on the 5th February to 07:00 on 6th February being 52.4dB(A) $L_{Aeq\ 8-hour}$. The daytime 16-hour L_{Aeq} from 07:00 to 23:00 on the 5th February was 50.6dB(A) $L_{Aeq\ 16-hour}$. The lowest measured background noise level (L_{A90}) measured on site at Location 1 was 30.8dB(A) taken between 23:15 to 23:30 on 4th February. The most significant daytime ambient noise measurement as a 15-minute measurement was 56.0dB(A) L_{Aeq} from 22:45 to 23:00 on 5th February and as a logarithmically averaged 1-hour measurement it was 54.4dB(A) L_{Aeq} from 22:00 to 23:00 on 5th February. The most significant night-time ambient noise measurement as a 15-minute measurement was 58.8dB(A) L_{Aeq} from 23:15 to 23:30 on 5th February.
7. The Location 2 measurement as a night-time 8-hour L_{Aeq} from 23:00 on the 4th February to 07:00 on 5th February was 41.1dB(A) $L_{Aeq\ 8-hour}$ and from 23:00 on the 5th February to 07:00 on 6th February it was 45.5dB(A) $L_{Aeq\ 8-hour}$. The daytime 16-hour L_{Aeq} from 07:00 to 23:00 on the 5th February was 44.5dB(A) $L_{Aeq\ 16-hour}$. The lowest measured background noise level (L_{A90}) measured on site at Location 2 was 30.7dB(A) taken between 23:15 to 23:30 on 4th February. The most significant daytime ambient noise measurement as a 15-minute measurement was 48.6dB(A) L_{Aeq} from 09:15 to 09:30 on 5th February and as a logarithmically averaged 1-hour measurement it was 47.2dB(A) L_{Aeq} from 08:00 to 09:00 on 5th February. The most significant night-time ambient noise measurement as a 15-minute measurement was 50.1dB(A) L_{Aeq} from 23:15 to 23:30 on 5th February.
8. Maximum noise events $L_{AFmax, outside}$ are above the 55dB(A) level between 23:00 and 07:00 at both locations. Typically as a rule of thumb, 55.0dB(A) outside an open window will produce 45.0dB(A) inside the room.
9. Suitable glazing types, including laminated or partially laminated glazed units would reduce noise ingress. Example double glazing

types are given in section 4 from pages 34 to 37 although Pilkington Glass produce standard units as depicted in figure 18 on page 39. The glazing types on pages 34 to 37 have been modelled using the *Marshall Day Acoustics Sound Insulation Prediction Software, Insul*. With reference to glazing criteria in the *Birmingham City Council PCGN*, it is recommended that the glazed units for habitable rooms to all elevations for the dwellings should meet a minimum noise criteria of $32\text{dB } R_w + C_{tr}$. The WHO guidance also states that internal maximum noise events greater than $45\text{dB(A) } L_{Amax}$ should be restricted to occurring no more than on 10-15 occasions during any one night-time period.

10. If ventilation to the new dwellings is to be provided by façade ventilators then any such ventilators should achieve a minimum noise rating of $38\text{dB } D_{n,e,w} + C_{tr}$ for all dwellings. If ventilation is to be provided alternatively by a mechanical whole building system such as an MVHR type ventilation system then any mechanical system or similar would need to be assessed against *BS 4142* and take into consideration existing background noise levels, (L_{A90}) at the façade of the nearest residential dwelling. The rating level of the plant should also take into consideration any acoustic features such a new system may contain for example discrete tones or impulses. Any new mechanical system should not exceed the background noise level. Therefore, on considering the lowest measured existing background noise level (L_{A90}) at both locations with Location 1 at $30.8\text{dB(A) } L_{A90}$ which was measured on Wednesday 4th February from 23:15 to 23:30, while at the same time Location 2 registered $30.7\text{dB(A) } L_{A90}$, the rating of any mechanical system when also taking into consideration any acoustic features the system may have such as tones and impulsive sounds, should be rated at $L_{Ar} 25\text{dB(A)}$ or less at the nearest residential facade.
11. Provision has been made for designated amenity spaces and therefore, *BS 8233:2014 Guidance on sound insulation and noise reduction for buildings* states a lower limit of $50\text{dB(A) } L_{Aeq}$ and an upper limit for ambient noise level in external amenity spaces of $55\text{dB(A) } L_{Aeq}$ which should not be exceeded. During the noise survey it was noted at both locations the external ambient noise level for outdoor amenity spaces was on or below the $50\text{dB(A) } L_{Aeq}$ lower limit (LOAEL) and so amenity space noise impact should not be an issue.
12. With satisfactory glazing and ventilation measures in place against noise primarily from farm activity and road traffic, the proposed change of use from farm buildings (Class Q) to residential dwellings (Class C3) would make sufficient use of the prime location, low noise levels and its transport connections.

8. APPENDIX A

Acoustics Glossary of Terms

$L_{Aeq,T}$ – Equivalent continuous sound pressure level. This is the A-weighted sound pressure level in decibels (dB) of a continuous, steady sound that within a specified time interval, T, has the same mean squared sound pressure as a sound that varies with time. This parameter is used to refer to the ambient noise level.

L_{A10} – The A-weighted mean square sound pressure level that is exceeded for 10% of the time.

L_{A90} – The A-weighted mean square sound pressure level that is exceeded for 90% of the time. Referred to as the background noise level.

L_{Amin} – The lowest A-weighted noise level recorded during a noise event.

L_{Amax} – The highest A-weighted noise level recorded during a noise event.

L_{day} – is the A-weighted equivalent continuous sound pressure level (L_{Aeq}) over the 12-hour day period of 07:00 to 19:00 hours.

$L_{evening}$ – is the A-weighted equivalent continuous sound pressure level (L_{Aeq}) over the 4-hour evening period of 19:00 to 23:00 hours.

L_{night} – is the A-weighted continuous sound pressure level (L_{Aeq}) over the 8-hour night period from 23:00 to 07:00 hours.

L_{den} – is the day, evening, night level. L_{den} is a logarithmic composite of the L_{day} , $L_{evening}$ and L_{night} levels, with 5dB(A) added to the $L_{evening}$ value and 10dB(A) added to the L_{night} value.

Specific Noise Source – The noise source under investigation for assessing the likelihood of complaints.

Ambient Noise – Totally encompassing sound in a given situation at a given time usually composed of sound from many sources near and far.

Residual Noise – The ambient noise remaining at a given position in a given situation when the specific noise source is suppressed to such a degree that it does not contribute to the ambient noise.

Residual Noise Level, $L_{Aeq,T}$ – The equivalent continuous A-weighted sound pressure level of the residual noise.

R_w – The weighted sound reduction index is a single number quantity which characterises the airborne sound insulating properties of a material or building element over a range of frequencies.

C_{tr} – The spectrum adaptation term added to a sound insulation quantity such as R_w to compensate for particular sound spectra such as urban road traffic noise.

$D_{n,e,w}$ – The weighted element normalised level difference is a single number quantity which characterises the airborne sound insulating properties of a small building element over a range of frequencies.