



Acoustic Survey and Assessment Proposed Industrial Units on Land at, Bolton Fold Farm, Alston Lane, Longridge, PR3 3BN.

Prepared for
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1. Introduction

- 1.1. Martin Environmental Solutions has been commissioned to undertake an acoustic survey and assessment to support a planning application xxx at small industrial units on land at Bolton Fold Farm, Alston Lane, Longridge, PR3 3BN.

Site Location and Context

- 1.2. The development site is located to the south of Bolton Farm complex. Farm buildings are located to the north with agricultural fields to the south, east and west. Residential properties lie beyond the farm buildings to the west and further away on the far side of Alston Lane.
- 1.2. An aerial Photograph is enclosed in Figure 1, together with a proposed layout drawing in Figure 2.
- 1.3. The report has been produced to clarify the potential impact on the proposed development and to identify mitigation measures if required to ensure the development is appropriate in terms of noise impact.



2. Policy and Guidance

- 2.1. The impact of noise can be a material consideration in the determination of planning applications. The planning system has the task of guiding development to the most appropriate locations. It is recognised that on occasions it will be difficult to reconcile some land uses, such as housing, hospitals, or schools, with other activities that generate high levels of noise. However, the planning system is tasked to ensure that, wherever practicable, noise-sensitive developments are separated from major sources of noise (such as road, rail and air transport and certain types of industrial development).
- 2.2. The Government's publication of the National Planning Policy Framework (NPPF), updated in December 2024, states that planning policies and decisions should prevent new and existing development from contributing to or being put at unacceptable risk from, of being adversely affected by unacceptable levels of noise pollution.
- 2.3. The Government have also issued the Noise Policy Statement for England (NPSE). The NPSE clarifies the Government's underlying principles and aims in relation to noise and sets a vision to promote good health and a good quality of life through the effective management of noise while having regard to the Government's sustainable development strategy. The NPSE aims to mitigate and minimise adverse impacts on health and quality of life through the effective management and control of noise.
- 2.4. The NPSE introduces the following terms, although no sound levels are given to represent these, many authorities have identified the sound level criteria in line with the World Health Organisation, BS8233:2014 and BS4142: 2014 levels. The terms introduced by the NPSE are:
- NOEL – No Observed Effect Level (<30dB(A) inside <50dB(A) outside, 10dB below background)
- LOAEL – Lowest Observed Adverse Effect Level (30-35dB(A) inside 50-55dB(A) outside, background to +5dB)
- SOAEL – Significant Observed Adverse Effect Level (>35dB(A) inside, >55dB(A) outside, >+10dB above background)
- 2.5. The sound levels within the brackets of the previous paragraph are those determined as appropriate levels to indicate the relevant effect levels represented by the NPSE.



- 2.6. Other commonly used examples of standards utilised by Local Planning authorities for the consideration of noise impacts include comparison of the likely noise levels to be experienced at a development, with levels that have been recommended by the World Health Organisation (WHO) as Guidelines for the prevention of Community Noise Annoyance and within BS8233: 2014.
- 2.7. The WHO recommended noise levels for outdoor amenity areas (gardens) that should not be exceeded are 55dB(A) $L_{Aeq,16hr}$ in order to avoid 'Serious Community Annoyance' or 50dB(A) $L_{Aeq,16hr}$ to avoid 'Moderate Community Annoyance' during the day. For indoor levels WHO set 35dB(A) $L_{Aeq,16hr}$ during the day to prevent Moderate Annoyance and 30 dB(A) $L_{Aeq,8hr}$ at night to prevent sleep disturbance.
- 2.8. The WHO guidance also recommends that maximum sound levels at night should not regularly exceed 45dB(A) within bedrooms to prevent sleep disturbance. Regularly is considered to be more than 10 times during any 8-hour night-time period.
- 2.9. BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' also specifies desirable noise levels to be achieved inside dwellings.
- 2.10. BS 8233:2014 'Sound insulation and noise reduction for buildings – Code of Practice' also specifies desirable noise levels to be achieved inside dwellings. BS 8233 presents two levels, the first between the hours of 07:00 – 23:00 and the second between 23:00 -07:00.
- 2.11. The daytime period suggests internal noise levels of 35dB $L_{Aeq,16hr}$, for resting in living rooms and bedrooms while for night-time a level of 30dB $L_{Aeq,8hr}$ is recommended. Criteria for external areas mirrors that within the WHO guidance.
- 2.12. Another commonly used standard is British Standard 4142:2014 'Method for rating industrial and commercial sound' compares the sound predicted by the source in question against the background, L_{A90} sound levels.
- 2.13. The "residual" L_{Aeq} measurement is then subtracted from the "ambient" L_{Aeq} measurement (with the sound source) to calculate the sound level created by the "problem" sound alone -termed the "specific" sound level.



- 2.14. If the "problem" sound is tonal, such as whine or hum, or if it is impulsive such as bangs or clatters or if it is irregular enough to attract attention a correction is added to the "specific level" to produce the "rating level". The "background" L_{A90} measurement is then compared against the "rating level".
- 2.15. If the "rating level" exceeds the "background" by around 10dB(A) or more this "indicates a significant adverse impact". A difference of around 5dB(A) 'indicates an adverse impact. The lower the commercial noise level is, the lower the likely impact.
- 2.16. In addition, the 'ProPG Planning & Noise, Professional Practice Guidance on Planning & Noise, New Residential Development' provides a 4-staged approach to undertaking a risk assessment in relation to anticipated sound levels at new residential development and the provision of mitigation measures. The guidance is principally aimed at sites exposed predominantly to noise from transportation sources.
- 2.17. The first stage consists of an initial noise risk assessment, based on indicative day and night-time *noise* levels. Simply put, the higher the ambient noise in an area the greater the impact. The levels given are shown below although it should be noted that these are in excess of both the WHO and BS 8233: 2014 guidance.



Noise Risk Category*	Potential Effect if Unmitigated	Pre-Planning Application Guidance
0 – Negligible $L_{Aeq,16hr} < 50dB$ $L_{Aeq,8hr} < 40dB$	May be noticeable but no adverse effect on health and quality of life	In this category the development is likely to be acceptable from a noise perspective, nevertheless a good acoustic design process is encouraged to improve the existing environment and/or safeguard against possible future deterioration and to protect any designated tranquil areas. A noise assessment may be requested to demonstrate no adverse impact from noise. Application need not normally be delayed on noise grounds.
1 – Low $L_{Aeq,16hr} 50-63dB$ $L_{Aeq,8hr} 40-55dB$	Adverse effect on health and quality of life	In this category the development may be refused unless a good acoustic design process is followed and is demonstrated via a Level 1 Acoustic Design Statement which confirms how the adverse impacts of noise on the new development will be mitigated and minimised and that a significant adverse impact will not arise in the finished development. Planning conditions and other measures to control noise may be required.
2 – Medium $L_{Aeq,16hr} 63-69dB$ $L_{Aeq,8hr} 55-60dB$ $L_{AFmax} > 80dB^{**}$	Significant adverse effect on health and quality of life	In this category the development is likely to be refused unless good acoustic design process is followed and is demonstrated via a Level 2 Acoustic Design Statement which confirms how the adverse impacts of noise on the new development will be mitigated and minimised, and clearly demonstrates that a significant adverse noise impact will not arise in the finished development. Planning conditions and other measures to control noise will normally be required.
3 – High $L_{Aeq,16hr} > 69dB$ $L_{Aeq,8hr} > 60dB$ $L_{AFmax} > 80dB^{**}$	Unacceptable adverse effect of health and quality of life	In this category the development is very likely to be refused on noise grounds, even if a good acoustic design process is followed and is demonstrated via a Level 2 Acoustic Design Statement. Applicants are advised to seek expert advice on possible mitigation measures. Advice on the circumstances when the refusal of a new housing on noise grounds should normally be anticipated is included in the ProPG.

2.18. Stage 2, consists of a full assessment of the prevailing ambient noise and requires 4 elements to be considered:

- I. Element 1 – Good Acoustic Design
- II. Element 2 – Internal Noise Level Guidelines
- III. Element 3 – External Amenity Area Noise Assessment
- IV. Element 4 – Assessment of Other Relevant Issues

2.19. A good acoustic design is implicit in meeting the requirements of the NPPF and can help to resolve many potential acoustic issues.

2.20. Details of the criteria considered suitable are provided above for both internal and external sound levels. Element 4 includes such issues as local and national policy, likely occupants, wider planning objectives.



3. The Assessment

The development

- 3.1 The proposed development consists three blocks of small commercial units to the south of Bolton Fold Farm. A separate access road is to be constructed from the Alston Lane in the west. The units are to be positioned facing the farm wit access and car park between them and the existing farm buildings.
- 3.2 The site will operate between the hours of 08:00-17:00 Monday to Saturday, 11:00-17:00 on Sundays and Bank Holidays, therefore during standard daytime hours.
- 3.3 Figure 2 below provides an overview of the proposed development.

Existing Situation.

- 3.4 In order to obtain representative background sound levels for the area on site monitoring was undertaken over the 30th April-30th May 2025.
- 3.5 A Cirrus Optimus Green sound level meter was utilised for the monitoring. The meter was placed at a height of ~1.3m to the east of the development, away from any activities.
- 3.6 The meter was field calibrated at the start and end of the monitoring period with no significant variation and full laboratory calibration certificates are available on request.
- 3.7 The weather during the monitoring was dry, and warm, with little to no wind <5m/s.
- 3.8 The full results are shown in Appendix A, with a summary in the tables below.

Start Time	End Time	Duration	LAeq	LA90	LAMax
30/04/2025 16:00	30/04/2025 19:00	02:59:15	48.3	42.1	70.5
30/04/2025 19:00	30/04/2025 23:00	04:00:00	45.1	34.2	69.8
30/04/2025 23:00	01/05/2025 07:00	08:00:00	42.9	32.0	73.5
01/05/2025 07:00	01/05/2025 19:00	12:00:00	49.5	42.3	77.6
01/05/2025 19:00	01/05/2025 23:00	04:00:00	51.4	40.0	74.3
01/05/2025 23:00	02/05/2025 07:00	08:00:00	43.1	27.1	67.8
02/05/2025 07:00	02/05/2025 12:00	05:00:01	49.3	39.9	79.3

- 3.9 Background sound levels were dominated by activities at the neighbouring farm buildings to the north.



- 3.10 The buildings are constructed from composite metal cladding on steel frames with the lower section of the buildings being brick and concrete block walls between units. The brick/block walls will have an attenuation of ~50dB R_w , while the composite cladding ~40dB R_w ¹. However, the acoustically weak point of the building will be the roller shutter doors with an average of 19dB R_w attenuation.
- 3.11 Modelling of the sound emissions from the buildings have been undertaken based on a steady continuous internal sound level of 80dB(A), equivalent to the lower action level within the Control of Noise at Work Regulations and a busy manufacturing site.
- 3.12 Given the size of the development and the activities observed during the site visits these high internal sound levels are highly unlikely to be realised.
- 3.13 Appendix B and C provide the results of two models. The first in Appendix B shows the results of all units operating with the internal sound level of 80dB(A) and all doors closed. The second Appendix C shows all units operating with all doors open.
- 3.14 When closed the development will have no effect on the nearest receptor location, the farm house, with all doors open and all units operating with the identified high sound level the resulting impact will be 29dB(A) to the near boundary of the garden area and 22dB(A) at the ground level façade, 25dB(A) at first floor.
- 3.15 Given a 15dB attenuation² for an open window the sound levels to be experienced by the occupants would be 7dB(A) and 10dB(A).
- 3.16 The resulting sound levels being significantly below those recommended by the World Health Organisation or 50dB(A) in amenity areas externally and 35dB(A) during the daytime; and hours of operation; internally.
- 3.17 The resulting sound levels are also well below the prevailing background sound level identified during the daytime and night-time monitoring periods. Indicating no adverse impact will be experienced.

¹ <https://www.coverworld.co.uk/wp-content/uploads/2015/09/Coverworld-UK-Ltd-Acoustic-Performance-Built-Up-Standard.pdf>

² BS8233: 2014; Guidance on sound insulation and noise reduction for buildings



3.18 Given the nature of the development ta BS4142:2014 assessment is also suitable. No external plant was identified during the site visits, no tonal, intermittent, impact or distinctive sounds were identified from the recordings or visits. As a result, no corrections have been made to the specific sound level.

	Day	
Measured Ambient sound level	$L_{Aeq} = 49.5\text{dB}$	Average sound level measured on site
Residual Sound level	$L_{Aeq} = 45.1\text{dB}$	Taken from the measured lowest average evening sound levels when the site was not operational.
Background Sound Level	$L_{A90} = 32.0\text{dB}$	Taken from the measured lowest average evening sound levels when the site was not operational.
Reference period	60 minutes	Normal ref period,
Specific sound Level	$L_{Aeq} = 29.0\text{B}$	Calculated garden boundary sound level with all doors open and all units operating.
Acoustic feature	-	No correction applied
Rating level	29.0dB	
Background sound level	$L_{A90} = 32.0\text{dB}$	
Excess of Rating level over background level	(29-32) dB = -3dB indicates no significant adverse impact	
Uncertainty		Worst case background sound level used after site had closed and daily farming activities ceased.

3.19 The assessment indicates no adverse impact will be experienced by the nearby receptors on the farm or further afield.



4 Conclusion

- 4.1 On-site monitoring has identified existing background sound levels for the area and an assessment of the potential sound emission from the site has been undertaken.
- 4.2 Modelling results have identified the resulting sound levels at the nearest receptor site, based on a worst-case scenario, these will be below the day and night-time background sound levels and below those levels recommended above in section 2 of the report.
- 4.3 The development will ensure that the internal and external sound levels are acceptable and will result in a No Observe Effect on the future residents in line with the Noise Policy Statement for England.
- 4.4 As such the development will meet the objectives of the National Planning Policy Framework in ensuring that no significant adverse impact is experienced by the future residents. The development is therefore considered to be acceptable in terms of noise.



Figure 1 - Aerial Photograph





Figure 2 – Proposed Layout Plan





Appendix A – Full Monitoring Results

Time	L _{Aeq} (dB)	L _{AMax} (dB)	L _{A90} (dB)
30/04/2025 16:00	48.6	70.5	40.3
30/04/2025 17:00	48.7	67.8	43.5
30/04/2025 18:00	47.5	67.9	41.9
30/04/2025 19:00	47.5	69.8	39.8
30/04/2025 20:00	45.6	67.2	36.8
30/04/2025 21:00	44.3	66.2	33.4
30/04/2025 22:00	40.3	62.6	32.6
30/04/2025 23:00	38.6	67.8	30.9
01/05/2025 00:00	42.0	67.6	31.0
01/05/2025 01:00	38.5	61.5	31.5
01/05/2025 02:00	37.1	61.2	31.9
01/05/2025 03:00	36.5	56.4	34.0
01/05/2025 04:00	39.3	59.6	34.8
01/05/2025 05:00	47.6	61.0	40.3
01/05/2025 06:00	47.1	73.5	43.8
01/05/2025 07:00	48.8	73.6	43.8
01/05/2025 08:00	49.4	68.2	43.0
01/05/2025 09:00	50.3	74.4	39.1
01/05/2025 10:00	49.1	70.0	39.5
01/05/2025 11:00	50.5	74.9	40.5
01/05/2025 12:00	48.0	67.9	42.5
01/05/2025 13:00	49.3	67.5	42.8
01/05/2025 14:00	50.5	70.6	42.7
01/05/2025 15:00	48.7	68.6	43.2
01/05/2025 16:00	48.8	69.4	43.2
01/05/2025 17:00	49.5	68.2	44.7
01/05/2025 18:00	49.6	77.6	44.3
01/05/2025 19:00	47.8	68.6	41.8
01/05/2025 20:00	48.1	74.3	40.9
01/05/2025 21:00	51.6	72.7	38.7
01/05/2025 22:00	54.5	71.8	36.7
01/05/2025 23:00	47.8	67.8	32.5
02/05/2025 00:00	41.0	61.1	27.1
02/05/2025 01:00	37.2	58.7	25.2
02/05/2025 02:00	36.4	61.6	27.2
02/05/2025 03:00	37.3	57.8	25.3
02/05/2025 04:00	38.9	54.8	27.8
02/05/2025 05:00	46.3	65.1	37.1
02/05/2025 06:00	44.0	67.7	38.2
02/05/2025 07:00	48.9	69.4	40.4
02/05/2025 08:00	50.3	75.6	38.5



02/05/2025 09:00	48.1	70.8	39.1
02/05/2025 10:00	50.0	79.3	39.1
02/05/2025 11:00	48.8	74.1	40.8

Appendix B – Modelling Results Doors Closed to All Units



--- Receiver Results - Summary ---

Receiver Name	Height (m)	Total dB(A)
Receiver Garden	1.5	-3.2
Receiver-facade	2.5	-6.2
Receiver-facade	4.5	-3.1

Appendix C - Modelling Results Doors Open to All Units



--- Receiver Results - Summary ---		
Receiver Name	Height (m)	Total dB(A)
Receiver Garden	1.5	28.8
Receiver-facade	2.5	22.1
Receiver-facade	4.5	25.8



Appendix D – Report Author Details

This report has been produced by Neil Martin, BSc (Hons), PGDip, CEnvH MCIEH, MIOA.

Neil is the principal acoustic consultant at Martin Environmental Solutions Ltd, a consultancy company specialising in Environmental Health disciplines including environmental noise assessment and control. He holds a Bachelor's degree in Environmental Health and Diploma in Acoustics. He is a Chartered Member of the Chartered Institute of Environmental Health and a Full member of the Institute of Acoustics.

Neil has over 20 years' experience working within a Local Authority Environmental Health setting, principally in the Environmental Protection and Public Health areas and has been working as an acoustic consultant since 2011.

Since its formation, Martin Environmental Solutions has advised and assisted many groups including residents, developers and local authorities about the problems of noise and vibration in the environment and the possible solutions. Neil also acts as an expert witness in the area of acoustics.