



Acoustic Survey and Assessment for Proposed Wedding Teepee at Bowland Wild Boar Park, Bowland Country Park, Chipping, Preston, PR3 2HB.

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 for a wedding venue at Bowland Wild Boar Park, Bowland Country Park, Chipping, Preston PR3 2HB.

Site Location and Context

- 1.2. The development site is situated to the northeast of the wild boar park and surrounded by woodland. The main access point to both sites is to the north. The nearest property is 610m to the southeast on the far side of the valley and the next closest being 630m west of the site.
- 1.3. An aerial Photograph is enclosed in Figure 1.
- 1.4. The report has been produced to identify the potential impact form the proposed development and to identify any mitigation measures to ensure no adverse impact is experienced from it.



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 September 2023, 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. 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.



2.13. 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.

2.14. 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

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



2.16. 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

- 3.1 In order to obtain representative background sound levels for the area on site monitoring was undertaken over the 26th-27th February 2024.
- 3.2 A Cirrus Optimus Green sound level meter was utilised for the monitoring. The meter was set up on the edge of the proposed development area, away from the nearby road and the boar park.
- 3.3 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.
- 3.4 The weather during the monitoring was dry with little to no wind. A slight shower was experienced just before the meter was collected on the final day.
- 3.5 The full results are shown in Appendix A, with a summary in the tables below.

Start Time	End Time	Duration	L _{Aeq}
26/02/2024 11:00	26/02/2024 23:00	11:59:59	38.8
26/02/2024 23:00	27/02/2024 07:00	08:00:00	34.9
27/02/2024 07:00	27/02/2024 13:00	06:00:01	52.2

- 3.6 Background sound levels to the rear of the site were dominated by wildlife.
- 3.7 The nearest properties are located 610m to the northeast with another 630m to the northwest, over this distance a reduction of 56dB will be experienced from the sound level 1m from the tent.

$$Dist\ att = 20\log\left(\frac{r}{R}\right)$$

$$Dist\ att = 20\log\left(\frac{1}{605}\right)$$

$$Dist\ att = 55.8dB(A)$$

- 3.8 The tent itself will also muffle and attenuate some noise from the venue, particularly the higher frequency sound.
- 3.9 With a high internally generated sound level of 90dB(A) the sound level at the nearest property will be below 34dB(A). Internal levels through an open window would be



19dB(A), well below the prevailing sound level in the area, and well below the recommended day and night-time sound levels detailing in section 2 of the report.

- 3.10 Even the low frequency sound would be below those within the typically used NANR 45 curve, with some headroom left before the recommended levels are reached.
- 3.11 The above indicating that the venue will not result in any adverse impact on the nearby neighbouring properties when sound levels are restricted to 90dB(A) when measured 1m from the façade of the teepee.
- 3.12 However, on the wider Wild Boar site are some camping pods. These will be utilised by guest attending the event, but given the relatively short 68m to the nearest pod a reduction of only 37dB will be experienced. The lodges have been designed to meet current guidelines, meaning they comply with the minimum 35dB R_w reduction. Internal sound levels therefore being in the region of 18dB(A), but slightly higher sound levels will be experienced at the lower frequencies.
- 3.13 To combat this and to reduce the sound levels experienced at both the camping pods and the nearby residential properties it is recommended that a carefully designed speaker system be installed with controls allowing sound levels to be limited at an octave level within the teepee.



4 Conclusion

- 4.1 Calculations of the potential impact of the development have been carried out and compared to the recommended sound levels from the World Health Organisation, BS8233:2014, those typically used by Lancashire authorities and the prevailing sound level in the area.
- 4.2 These have identified that a high sound level of 1m from the façade of the development can be produced without resulting in any detrimental impact on the identified receptors. However further mitigation measures are recommended in the form of a speaker system with independent controls over octave sound levels.
- 4.3 The inclusion of the above mitigation measures will ensure that the sound levels at receptor locations 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.

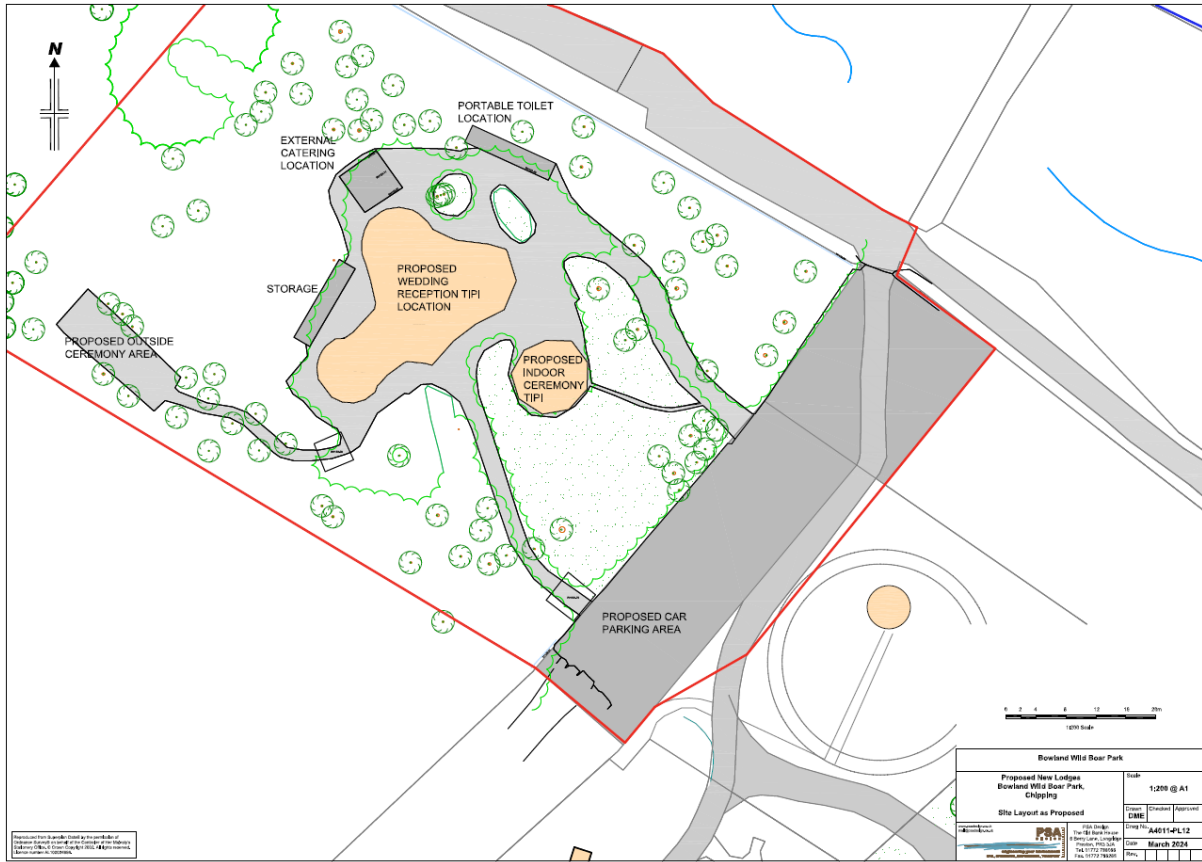


Figure 1 – Aerial Photograph





Figure 2 – Proposed Layout





Appendix A – Full Monitoring Results

Time	L _{Aeq} (dB)	L _{AMax} (dB)	L _{A90} (dB)
26/02/2024 11:00	40.0	61.3	31.9
26/02/2024 12:00	39.6	61.6	32.9
26/02/2024 13:00	43.3	67.5	32.8
26/02/2024 14:00	38.0	55.8	33.0
26/02/2024 15:00	36.7	56.2	31.4
26/02/2024 16:00	36.7	55.5	29.4
26/02/2024 17:00	43.8	73.0	30.1
26/02/2024 18:00	36.5	59.4	28.1
26/02/2024 19:00	32.3	58.8	27.7
26/02/2024 20:00	31.9	57.6	27.6
26/02/2024 21:00	29.5	50.2	27.6
26/02/2024 22:00	30.5	55.7	27.4
26/02/2024 23:00	27.8	44.5	26.7
27/02/2024 00:00	31.3	55.5	26.9
27/02/2024 01:00	30.0	58.7	26.4
27/02/2024 02:00	27.7	43.3	26.7
27/02/2024 03:00	31.5	55.0	28.5
27/02/2024 04:00	31.6	51.3	29.1
27/02/2024 05:00	31.9	58.3	28.1
27/02/2024 06:00	42.3	75.3	28.4
27/02/2024 07:00	41.8	59.5	34.4
27/02/2024 08:00	40.1	61.2	33.1
27/02/2024 09:00	39.2	61.7	32.8
27/02/2024 10:00	57.7	86.3	33.3
27/02/2024 11:00	54.2	75.7	35.1
27/02/2024 12:00	50.8	75.1	41.3



Appendix B – 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.