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ENVIRONMENTAL
SOLUTIONS

Acoustic assessment for proposed snail breeding and distribution building and six lodges on land off Preston Road, Ribchester, PR3 3XL.

Prepared for

David Liversidge Architecture Construction Development,
259 Rossendale Road,
Burnley,
Lancs,
BB11 5BZ.

May 2021

Contents

1. Introduction

1.1. Martin Environmental Solutions has been commissioned to undertake an acoustic assessment to support a planning application for a snail breeding and distribution centre and six lodges on land off Preston Road, Ribchester.

Site Location and Context

1.2. The site is located to the north of Preston Road, and west of Ribchester Village. It lies behind properties front the road which is the main road through the village. Access to the site is from Preston Road. The area is predominantly agricultural with residential properties to the southwest and to the south along Preston Road.

1.3. An aerial Photograph is enclosed in Figure 1.

1.4. It is the potential impact on the neighbouring residential properties that has prompted this report.

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 February 2019, 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 LAeq,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 Lancashire guidance, WHO and BS 8233: 2014.

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 The proposed commercial unit is to house an existing business, L'Escargotiere (Ribble Valley) Ltd, who are located close by in smaller premises in Longridge. The company breed and process snails for human consumption.

3.2 A site visit was conducted to the existing facility to assess the current level of noise from the site. The site consists of an internal chiller, and jet washer. Vehicle deliveries are made twice a week via a small van. There are no other significant sources of noise from the business.

3.3 On site monitoring was carried out over the 19th-20th May 2021 to ascertain the prevailing background sound levels for the area of the proposed development. The sound level meter, a Cirrus Optimus Green meter and outdoor kit was placed to the southern boundary of the site in line with the rear gardens of the existing properties, and at a height or approx. 1.2m.

3.4 The meter was field calibrated before and after the measurements were undertaken with no significant deviation. Full calibration certificates area available on request.

3.5 The weather during monitoring was for the main dry and sunny with little to no wind. Towards the end of the monitoring period the weather changed and was over-cast with a short shower.

3.6 The full results are available in Appendix A, with a summary in the table below.

Start Time	End Time	Duration	L_{Aeq}	L_{A90}	L_{AMax}
19/05/2021 11:25	19/05/2021 23:00	11:34:01	52.3	40.5	84.4
19/05/2021 23:00	20/05/2021 07:00	08:00:00	46.6	31.6	79.9
20/05/2021 07:00	20/05/2021 12:00	05:00:01	53.2	43.2	84.9

3.7 The background sound level was dominated in the early hours by birdsong and other animal noises (Sheep/cattle) with the occasional passing vehicle. Later in the day the dominant source was passing vehicles along the main road.

Proposed Lodges

3.8 The proposed lodges are to be located an additional 6m plus away from the road and at a much lower level, resulting in the intervening ground acting as a barrier to any

noise from the road and blocking the line of sight to the road. This will have the benefit of reducing sound levels by around 10dB at the lodges.

3.9 BS8233:2014 recommends a lower criterion of 50dB(A) and an upper criterion of 55dB(A) for external amenity areas. The monitoring results confirm that the site is already below the upper criterion recommended. Given the proposed location of the lodges, being further away from the roadside, the barrier attenuation offered by the lower ground level the amenity space around the lodges will, likely be subjected to sound levels below the lower recommended criterion level.

3.10 Other sound sources identified in addition to the traffic, i.e., the wildlife are often considered pleasant and sought after in such a setting as that proposed.

3.11 The lodges are to be constructed to a high specification; and the current minimum construction standards which are set out in BS3632:2015 for lodges states that a sound reduction level of 35dB R_w must achieve.

3.12 This would place internal sound levels at 18.2dB (A) during the day and 11.6dB(A) at night. Even if taking account of a 15dB reduction for an open window the sound levels would be 33.2dB(A) during the day and 26.6dB(A) at night. Below the recommended criterion identified in section 2 above.

3.13 Occupants of the lodges will therefore not be aversely affected by the prevailing sound levels and will experience a No Observed Effect Level as detailed by the Noise Policy Statement for England.

The new commercial unit

3.14 The new proposed unit will be used for the breeding, preparation, and packaging of snails for human consumption. The operating hours of the site will be standard office hours.

3.15 As identified above there are very few noise sources associated with the proposed commercial unit, and all of these are located internally. Refrigeration units to be located internally and towards the rear of the building away from nearby residential properties. This includes the preparation area where the ‘jet-washer’ is currently used.

3.16 Weekly dispatch activities involve the carrying buy hand of snails from the building to the waiting vans before departure and therefore will not generate any significant sound

levels beyond that of a standard vehicle driving off. Not dis-similar to the dominant background sound levels of passing traffic along the road.

3.17 The building is to be constructed from a coated profiled steel cladding with a minimum sound reduction of 25dB R_w. The building is located 46m from the boundary of the nearest property, although this is office accommodation the hibernation, preparation and chiller are located to the rear and at least 56m away.

3.18 The prevailing background sound level is 31.6dB $L_{A90,8hrs}$ at night and 40.5dB L_{A90} during the day. To ensure no increase to the background sound levels at the nearby properties the sound level from any activities should be 10dB below the background, thus 21.6dB and 30.5dB at the boundary.

3.19 Although the site will not operate at night utilising the night-time prevailing background sound level of 31.6dB, the internal sound level can be as high as 87.6dB(A) without resulting in any adverse impact on the neighbouring properties.

$$SPL_{ext} = SPR_{int} - attenuation\ (R_w) - 6 - \text{distance attenuation}$$

$$SPR_{int} = SPL_{ext} + distance\ attenuation + 6 + attenuation\ (R_w)$$

$$SPR_{int} = 21.6 + 35 + 6 + 25$$

$$SPR_{int} = 87.6dB(A)$$

3.20 This is above the Noise at Work regulations criteria for providing hearing protection, significantly above any sound levels produced by the business from the use of the refrigeration units, jet washer or feeding and processing the snails.

3.21 As such the operations of L'Escargotiere (Ribble Valley) Ltd will not result in any adverse impact on the existing residential properties.

4 Conclusion

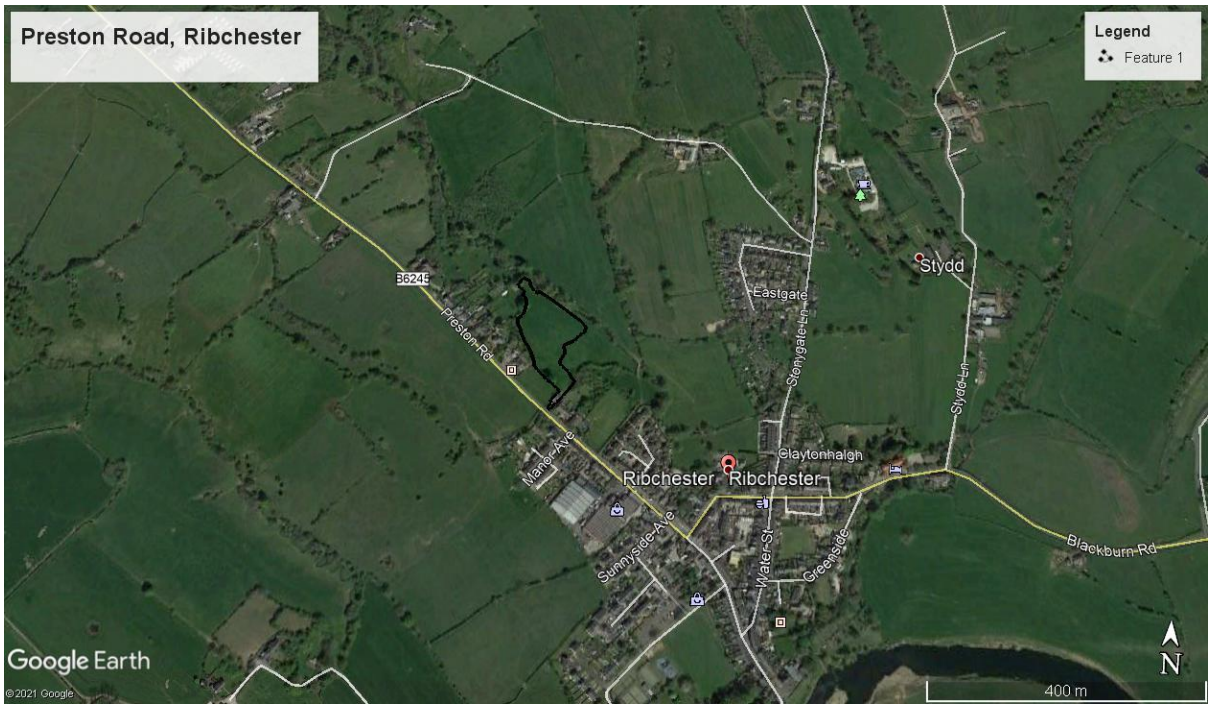
4.1 On-site monitoring has identified existing prevailing background sound levels, and a site visit to the existing facility has confirmed that the business does not produce any significant noise, with limited equipment on site and very few vehicle movements all of which are standard LDV size.

4.2 Standard construction methods for the proposed lodges have also shown to be adequate to protect future occupants from the prevailing sound levels in the area.

4.3 The proposed development will ensure that the internal and external sound levels are acceptable for both in the proposed lodges and the existing residential properties 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



Appendix A – Full Monitoring Results

Time	L_{Aeq} (dB)	L_{AMax} (dB)	L_{A90} (dB)
19/05/2021 11:25	52.3	84.4	40.3
19/05/2021 12:00	51.8	69.8	40.7
19/05/2021 13:00	53.0	73.0	43.2
19/05/2021 14:00	53.5	76.6	42.3
19/05/2021 15:00	53.0	69.2	41.7
19/05/2021 16:00	53.4	69.9	43.4
19/05/2021 17:00	53.7	70.5	43.2
19/05/2021 18:00	53.9	77.7	42.6
19/05/2021 19:00	51.3	65.1	40.0
19/05/2021 20:00	50.3	69.0	41.2
19/05/2021 21:00	48.9	64.0	39.1
19/05/2021 22:00	47.4	70.2	36.4
19/05/2021 23:00	47.3	63.7	34.0
20/05/2021 00:00	42.0	62.3	35.1
20/05/2021 01:00	41.4	58.5	33.5
20/05/2021 02:00	40.5	64.6	30.8
20/05/2021 03:00	37.8	63.1	30.8
20/05/2021 04:00	49.0	75.7	40.8
20/05/2021 05:00	48.2	78.2	39.5
20/05/2021 06:00	50.9	79.9	40.6
20/05/2021 07:00	52.6	76.7	42.8
20/05/2021 08:00	52.5	71.0	43.5
20/05/2021 09:00	51.7	72.2	42.6
20/05/2021 10:00	52.3	74.7	43.2
20/05/2021 11:00	55.6	84.9	42.9