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NOISE IMPACT ASSESSMENT FOR EXISTING DOG KENNELS
LAND AT RAILWAY TERRACE, GOLDTHORPE, S63 9AF

1.00 INTRODUCTION

1.01 Environmental Noise Solutions Ltd (ENS) has been commissioned by Andrew Bailey Architects to undertake a noise impact assessment for existing dog kennels at land at Railway Terrace, Goldthorpe, S63 9AF (hereafter referred to as the application site).

1.02 The objectives of the assessment were to:

- Assess the potential impact of the kennels on the nearest noise sensitive receptors (residential dwellings) with reference to pertinent guidelines
- Provide recommendations for structural controls and management controls, as necessary, to ensure that the nearest noise sensitive receptors do not experience a loss of amenity due to noise

1.03 This report details the methodology and results of the assessment. It has been prepared to accompany a retrospective planning application to be submitted to Barnsley Metropolitan Borough Council for the dog kennels.

1.04 This report has been prepared for Andrew Bailey Architects for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult Andrew Bailey Architects and ENS as to the extent to which the findings may be appropriate for their use.

1.05 A glossary of acoustic terms used in the main body of the text is contained in Appendix 1.

2.00 DESCRIPTION OF APPLICATION SITE AND PROPOSED DOG BREEDING KENNELS

2.01 The application site is located in a mixed-use area in Goldthorpe, Barnsley, and is bound by (see Appendix 2 for annotated site plan):

- Allotments to the south
- Existing residential dwellings on Railway Terrace to the east
- Open woodland to the north, with commercial units (refrigeration supplier) beyond
- A dismantled railway line to the west, with existing residential dwellings beyond

2.02 It is noteworthy that the application site has been in use since 2008 with no history of noise complaints. This is due to the fact that the kennels are used for breeding (rather than boarding) purposes, and predominantly for breeding dalmatians, which are not prone to excessive barking, especially where a fixed routine (e.g. feeding and exercise) is in place.

2.03 Following a site visit, it was observed that:

- There are 8 no. individual kennels with small outdoor runs
- The external walls of the kennels are block construction with insulation and cladding
- The roof construction consists of lightweight metal cladding with insulation between the ceiling and roof
- Dogs are exercised under supervision in an exercise yard; two to three dogs at a time
- There is an existing circa 1.8-metre-high timber fence along the southern boundary of the application site

2.04 The nearest noise sensitive receptors (NSRs) are considered to be:

- Existing residential dwellings on Railway Terrace, circa 40 metres to the east of the kennels and exercise yard (NSR1)
- Existing residential dwellings on St. Michaels Close, circa 60 metres to the west of the kennels and exercise yard (NSR2)

3.00 BASELINE NOISE SURVEY

3.01 In order to establish the existing ambient and background noise levels at the nearest NSRs, a baseline noise survey was undertaken on Wednesday 13th January 2021 through to Thursday 14th January 2021.

3.02 The following noise monitoring positions were adopted (the approximate locations of the noise monitoring positions are shown in Appendix 2 for reference):

- MP1 was located on Railway Terrace, representative of NSR1
- MP2 was located on St. Michaels Close, representative of NSR2

3.03 Noise measurements were undertaken using a Bruel & Kjaer 2250 Type 1 integrating sound level meter. The measurement system calibration was verified immediately before and after the measurement sessions using a Bruel & Kjaer Type 4231 calibrator. No drift in calibration level was noted. Weather conditions throughout the survey were appropriate for monitoring. A windshield was fitted for all measurements. All noise measurements were made in a free field environment at a height of circa 1.5 metres above local ground level.

3.04 Measurements consisted of A–weighted broadband parameters, together with linear octave band L_{eq} levels. Table 3.1 overleaf presents a summary of the measurement data for each measurement session, rounded to the nearest decibel.

3.05 The ambient and background noise climate in the vicinity of the application site is characterised by distant road traffic on the surrounding road network and occasional train passes to the west.

3.06 Typical daytime background noise levels at MP1 and MP2 were circa **43 dB $L_{A90\ (15\ min)}$** and **41 dB $L_{A90\ (15\ min)}$**, respectively.

3.07 No noise was noted from dogs within the kennels during the course of the survey, and it was confirmed with the applicant that dalmatians are not prone to excessive barking. Whilst a change in environment (e.g. feeding time) may lead to barking, this diminishes as the dogs get used to the routine. Further, any such events would only occur for a short duration and would be mitigated by the existing building envelope.

3.08 For the purposes of the assessment an exercise session with 3 no. dalmatian dogs within the outdoor yard was measured. The noise level associated with the dogs playing and occasionally barking was circa **61 dB $L_{Aeq\ (15\ min)}$ at 5 metres**.

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Table 3.1 – Summary of Noise Measurement Data

Position	Date	Time	$L_{Aeq, T}$ (dB)	$L_{A90, T}$ (dB)	Comment
MP1	04/01/21	1013-1108	48	43	Distant road traffic on the surrounding road network
MP1	04/01/21	1247-1310	51	45	
MP1	04/01/21	1800-1815	46	42	
MP1	04/01/21	1841-1855	47	40	
MP1	05/01/21	0003-0024	43	38	
MP1	05/01/21	0108-0137	41	36	
MP2	04/01/21	1115-1223	48	42	Distant road traffic on the surrounding road network, occasional train passes to the east
MP2	04/01/21	1334-1348	49	43	
MP2	04/01/21	1821-1836	45	40	
MP2	04/01/21	1900-1915	46	38	
MP2	05/01/21	0036-0103	43	33	
MP2	05/01/21	0142-0209	38	32	

4.00 NOISE IMPACT ASSESSMENT CRITERIA

National Planning Policy Framework

4.01 The National Planning Policy Framework (NPPF) was updated in June 2019 and sets out the Government's planning policies for England and how these are expected to be applied.

4.02 Where issues of noise impact are concerned the NPPF provides brief guidance in paragraph 170 where it states that planning policies and decisions should contribute to and enhance the natural and local environment by:

'preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of…..noise pollution'.

4.03 Paragraph 180 advises that:

'Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should…..mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life'.

4.04 The NPPF also refers to the 2010 DEFRA publication, the Noise Policy Statement for England (NPSE) which reinforces and supplements the NPPF.

Noise Policy Statement for England

4.05 The Noise Policy Statement for England (NPSE) sets out the long-term vision of promoting good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development. This long-term vision is supported by the following aims:

- Avoid significant adverse impacts on health and quality of life.
- Mitigate and minimise adverse impacts on health and quality of life.
- Where possible, contribute to the improvement of health and quality of life.

4.06 NPSE describes the following levels at which noise impacts may be identified:

- 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 the noise.
- LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected.
- SOAEL – Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.

Planning Practice Guidance – Noise

4.07 Planning Practice Guidance (PPG) is an online resource (last updated October 2019) which provides additional guidance and elaboration on the NPPF. It advises that the Local Planning Authority should consider the acoustic environment in relation to:

- Whether or not a significant adverse effect is occurring or likely to occur.
- Whether or not an adverse effect is occurring or likely to occur.
- Whether or not a good standard of amenity can be achieved.

4.08 In line with the Explanatory Note of the NPSE, the PPG references the LOAEL and SOAEL in relation to noise impact. It also provides examples of outcomes that could be expected for a given perception level of noise, plus actions that may be required to bring about a desired outcome.

4.09 Table 4.1 summarises the noise exposure hierarchy, based on the likely average response.

Table 4.1 – Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level (NOEL)			
Not Noticeable	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level (NOAEL)			
Noticeable and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level (LOAEL)			
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level (SOAEL)			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

4.10 However, in line with the NPSE, no objective noise levels are provided for LOAEL or SOAEL although the PPG acknowledges that:

'…the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation'.

4.11 The PPG also provides general advice on the typical options available for mitigating noise. It goes on to suggest that Local Plans may include noise standards applicable to proposed developments within the Local Authority's administrative boundary, although it states that:

'Care should be taken, however, to avoid these being implemented as fixed thresholds as specific circumstances may justify some variation being allowed'.

Location of Premises for the Boarding and Breeding of Dogs and Other Animals – Noise Issues

4.12 In lieu of any specific national guidance or recommended noise level standards relating to dog kennels, South Holland District Council in Lincolnshire carried out detailed research on this topic during the late 1990s. This research culminated in the publication of Supplementary Planning Guidance entitled 'Location of Premises for the Boarding and Breeding of Dogs and Other Animals – Noise Issues' in December 1999.

4.13 This guidance states "*the objective shall be that the specific noise level does not exceed the background noise level*". The reference time period for the specific noise level is 1 hour.

4.14 This is consistent with the guidance contained in British Standard BS 4142:2014+A1-2019 'Methods for Rating and Assessing Industrial and Commercial Sound' (BS 4142), which states that '*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'*. However, BS 4142 states that is not intended to be applied to the rating and assessment of domestic animals.

4.15 It is considered that compliance with the South Holland District Council guidance would mean that adverse effects are avoided.

5.00 NOISE IMPACT ASSESSMENT

5.01 As stated, no noise break-out was noted from dogs whilst within the kennels, so the assessment focuses on the use of the exercise yard during the daytime.

5.02 The noise level associated with 3 no. dalmatian dogs using the exercise yard was measured at **61 dB $L_{Aeq\ (15\ min)}$ at 5 metres**.

5.03 Assuming point-source propagation (–6 dB per doubling of distance), and at least 5 dB partial screening attenuation afforded by the existing fence, this equates to an exercise yard specific noise level of **38 dB $L_{Aeq\ (15\ min)}$** at NSR1. The specific noise level at NSR2 (taken to be unscreened) is **39 dB $L_{Aeq\ (15\ min)}$**.

5.04 Robustly assuming 2 no. exercise sessions could occur in a single hour, this equates to **35 dB $L_{Aeq\ (1\ hour)}$** at NSR1 and **36 dB $L_{Aeq\ (1\ hour)}$** at NSR2.

5.05 In accordance with the South Holland District Council Guidance, the predicted specific noise level associated with dogs outdoor exercising is at least 5 dB below the typical background noise levels at the nearest NSRs and is therefore unlikely to give rise to complaints.

5.06 In terms of the NPPF Planning Practice Guidance on Noise, it is considered that noise associated with the kennels is at the No Observed Adverse Effect Level as: it may be heard, but does not cause any change in behaviour or attitude; and it may slightly affect the acoustic character of the area, but not such that there is a perceived change in the quality of life.

5.07 The conclusions of the assessment are commensurate with there being no history of complaints at the application site, despite the kennels being in use since 2008.

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6.00 CONCLUSIONS

6.01 A noise impact assessment has been undertaken for existing dog kennels at land at Railway Terrace, Goldthorpe, S63 9AF.

6.02 The application site has been in use as a kennels for dog breeding since 2008 with no history of noise complaints.

6.03 The specific noise level associated with dogs outdoor exercising is at least 5 dB below the typical background noise levels at the nearest NSRs and therefore unlikely to give rise to complaints.

6.04 In terms of the NPPF Planning Practice Guidance on Noise, it is considered that noise associated with the kennels is at the No Observed Adverse Effect Level as: it may be heard, but does not cause any change in behaviour or attitude; and it may slightly affect the acoustic character of the area, but not such that there is a perceived change in the quality of life.

I trust the foregoing is sufficient for your needs. Should you have any queries regarding the above, please do not hesitate to contact me.

Yours sincerely



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Appendix 1
Glossary of Acoustic Terms

Sound Pressure Level (L_p)

The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 µPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$$L_p = 20 \log_{10}(p/p_0)$$

Where L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_0 = reference sound pressure (20 µPa).

A-weighting Network

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$

The value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T, has the same mean-square sound pressure as a sound that varies with time. $L_{Aeq, 16h}$ (07:00 to 23:00 hours) and $L_{Aeq, 8h}$ (23:00 to 07:00 hours) are used to qualify daytime and night time noise levels.

$L_{A10, T}$

The A-weighted sound pressure level in decibels exceeded for 10% of the measurement period, T. $L_{A10, 18h}$ is the arithmetic mean of the 18 hourly values from 06:00 to 24:00 hours.

$L_{A90, T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T. L_{A90} is typically taken as representative of background noise.

$L_{AF\ max}$

The maximum A-weighted noise level recorded during the measurement period. The subscript 'F' denotes fast time weighting, slow time weighting 'S' is also used.

Sound Exposure Level (SEL or L_{AE})

The energy produced by a discrete noise event averaged over one second, no matter how long the event actually took. This allows for comparison between different noise events which occur over different lengths of time.

Weighted Sound Reduction Index (R_W)

Single number quantity which characterises the airborne sound insulation properties of a material or building element over a defined range of frequencies (R_W is used to characterise the insulation of a material or product that has been measured in a laboratory).

Appendix 2
Annotated Site Plan / Noise Monitoring Positions

