
LADY'S LITTLE PAWS LIMITED

NOISE IMPACT ASSESSMENT

UNIT 1B, JUBILEE WORKS, VALE STREET, RADCLIFFE
BL2 6QF

Client: Lady's Little Paws Limited

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REPORT VERSION CONTROL:

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1 INTRODUCTION

1.1 Overview

1.1.1 By instruction from Lady's Little Paws Limited ('the client'), NoiseAir was commissioned to provide acoustic consultancy services, in support of a proposed planning application for the development of a dog daycare facility at the location: Unit 1B, Jubilee Works, Vale Street, Radcliffe BL2 6QF, herein referred to as the 'development site'.

1.1.2 General limitations with respect to this NIA are outlined in **Appendix A**.

1.2 General Information

1.2.1 At the time of writing, the site is currently a disused commercial unit located within a larger industrial and commercial estate, Jubilee Works, in Radcliff.

1.2.2 The development site is bound by commercial units to the east and south and the Jubilee Works access road and car parking to the west and north. The wider Jubilee Works industrial estate is bound by Blackshaw Brook and further commercial properties to the west, residential and commercial properties to the south and rural greenfield land to the north and east.

1.3 Identified Noise Sensitive Receptors

1.3.1 The nearest identified noise sensitive receptors (NSR) are No. 1 and No.3 Vale Street located c. 110 m south-east of the development site.

1.3.2 **Figure 1** shows an aerial photograph of the development site with respect to the local area and its context.



Figure 1: Development site aerial photograph.

1.4 Development Proposals

- 1.4.1 Proposals for the development site outline a minor internal modification to the existing unit for conversion to a dog daycare facility housing up to 35 no. dogs. The proposed internal modification is the removal of an existing partition wall.
- 1.4.2 The operational hours of the dog daycare facility, Lady's Little Paws, are understood to be between the hours of 07:00 and 19:00, Monday to Friday with ad hoc weekend operation between the hours of 08:00 and 18:00.
- 1.4.3 It is understood that the development site has a legal capacity of up to 42 no. dogs. It is understood that no dogs will be boarding over night at the premises.
- 1.4.4 The following assessment is based upon client supplied plans as presented in **Figure 2**.

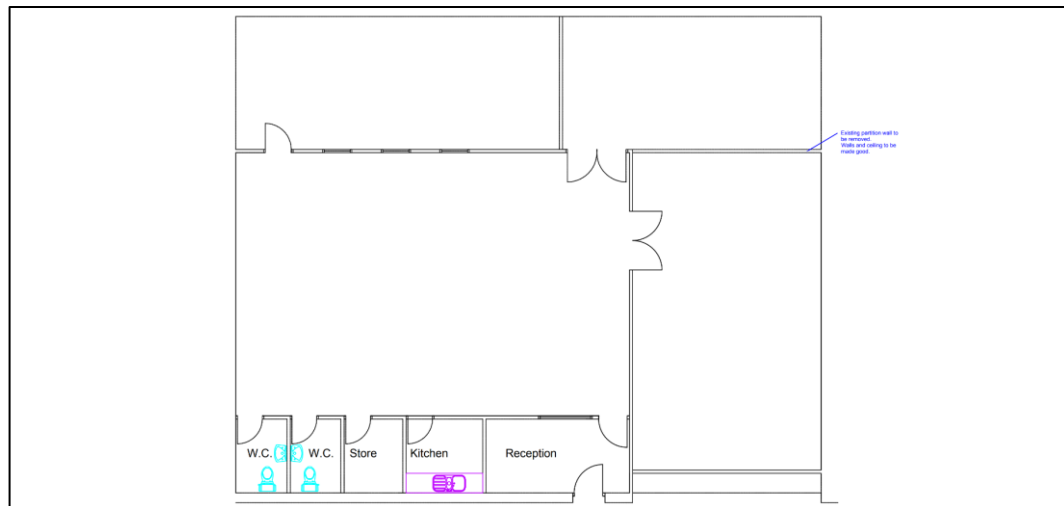


Figure 2: Proposed site layout.

2 ASSESSMENT METHODOLOGY AND SCOPE OF WORKS

2.1 National Planning Policy Framework [NPPF 2023]

- 2.1.1 The NPPF sets out the government's planning policies for England and how they are expected to be applied. It aims to achieve sustainable development; stating that planning policies and decisions should prevent unacceptable levels of noise pollution from new and existing development while affirming that National Policy Statements form part of the national planning policy framework and should be considered in planning decisions.

2.2 Noise Policy Statement for England (NPSE)

- 2.2.1 The Noise Policy Statement for England (NPSE), published in March 2010, states 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".
- 2.2.2 The NPSE sets out the government's overall policy on noise within the context of sustainable development. It introduces three concepts for noise management: avoid significant adverse effects; mitigate and minimise adverse effects; and where possible, contribute to improvements in health and quality of life.
- 2.2.3 It also establishes a hierarchy of noise management actions: avoid; reduce; remedy; mitigate; compensate.
- 2.2.4 The NPSE also introduces the below categories with respect to 'adverse impacts'.

'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'.

- 2.2.5 The NPSE states that significant adverse effects on health and quality of life should be avoided. Where the impact lies somewhere between LOAEL and SOAEL, it requires that all

reasonable steps are taken to mitigate and minimise the adverse effects of noise. In this regard, a certain degree of impact between LOAEL and SOAEL would be acceptable in terms of planning policy, provided that the impact has been mitigated and minimised by design.

2.3 Planning Practice Guidance - Noise [PPG 2019]

2.3.1 PPG 2019 provides guidance on how noise should be considered in planning decisions. It was published in 2014 and updated in 2019. The document advises on how to avoid, mitigate or minimise adverse effects of noise through good acoustic design and appropriate conditions or obligations.

2.3.2 **Table 1** summarises the noise exposure hierarchy outlined within the PPG.

Table 1: National Planning Practice Guidance Noise Exposure Hierarchy		
Perception	Increasing Effect Level	Action
Not noticeable	No Observed Effect	No specific measures required
Noticeable and not intrusive	No Observed Adverse Effect	No specific measures required
Lowest Observed Effect Level		
Noticeable and intrusive	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Effect Level		
Noticeable and disruptive	Significant Observed Adverse Effect	Avoid
Noticeable and very disruptive	Unacceptable Adverse Effect	Prevent

2.4 Scope of Works

2.4.1 The scope of the assessment includes consideration of the potential impact of breakout noise from the proposed dog daycare facility upon sensitive areas of existing residential properties surrounding the site.

2.5 Assessment Criteria

2.5.1 It is noted that the comments refer to the provision of suitable mitigation to protect residents from unacceptable noise levels. While this NIA will seek to provide any required mitigation, the comments do not refer to any assessment criteria.

2.5.2 It is noted that at the time of writing, a British Standard to assess the noise impact from dog daycare facilities is not in existence. It is therefore considered appropriate to draw upon

guidance from published documents reasoned to be suitable for this with a view to providing a fair and reasonable assessment.

- 2.5.3 Location of Premises for the Boarding and Breeding of Dogs and Other Animals - Supplementary Planning Guidance – 1999 (SPG:1999) is a document published by South Holland District Council.
- 2.5.4 The document seeks to allow a balance to be achieved between allowing development and protecting existing amenity. The document is established by reference to the Town and Country Planning Acts and is typically used to assess noise impact of the boarding, breeding or keeping of animals.
- 2.5.5 It is therefore considered appropriate to draw upon the guidance in this document for the subsequent assessment.
- 2.5.6 Given the dog day care proposal is considered a commercial business and the character of the noise made by the dogs are likely to have tonal and intermittent character it is considered appropriate to assess the noise impact utilising BS 4142:2014, a brief summary of which is also provided below.

British Standard 8233:2014 (BS 8233:2014)

- 2.5.7 Although, at the time of writing, there exists no standard for the assessment of noise from dog kennelling facilities, in many cases, the assessment of noise breakout from such facilities have focused on a method of assessment adopting the British Standards BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings'.
- 2.5.8 British Standard 8233:2014 – *Guidance on sound insulation and noise reduction for buildings* (BS 8233) provides guidance on internal ambient noise levels, resulting from break-in of external environmental noise that should not be exceeded in various locations within dwellings.
- 2.5.9 Guidelines for buildings in terms of internal noise level are reported in **Table 2**.

Table 2: Summary of Internal Noise Guidelines.			
Activity	Location	0700 – 2300 hours	2300 – 0700 hours
Resting	Living Room	35 dB L _{Aeq,16hour}	-
Dining	Dining room / area	40 dB L _{Aeq,16hour}	-
Sleeping (daytime resting)	Bedroom	35 dB L _{Aeq,16hour}	30 dB L _{Aeq,8hour}

- 2.5.10 The standard clarifies that these values are based on the existing guidelines issued by the World Health Organisation (WHO). In addition, it states that the internal noise levels may be relaxed by up to 5 dB whilst maintaining a reasonable living condition. Conversely, in terms of internal maximum levels to be achieved during the night, the standard does not recommend any limits for individual noise events. However, a guideline value may be set in terms of SEL or L_{AFmax} , depending on the type and the number of events per night.
- 2.5.11 Furthermore, BS 8233:2014 provides guidance on desirable noise levels in areas that are intended to be used for external amenity space, such as gardens, balconies and roof gardens which are intended to be used for relaxation. For these spaces it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$ up to a level of 55 dB $L_{Aeq,T}$ for noisier environments.
- 2.5.12 In addition to the aforementioned BS 8233:2014 assessment, a relative assessment of the subject sound will be conducted against the prevailing background sound levels.

British Standard 4142:2014 (BS 4142:2014)

- 2.5.13 British Standard 4142:2014 - Methods for rating and assessing industrial and commercial sound, sets the methodology for rating and assessing sound of an industrial and commercial nature, which includes sound from fixed installations such as mechanical and electrical plant and equipment.
- 2.5.14 In BS 4142:2014, a noise rating is determined and compared with the existing local background sound level based on several more cumulative acoustic feature corrections to apply where appropriate. For example, if the noise includes a distinguishable tone, impulse, intermittency or other readily distinguishable sound characteristic, then additional cumulative penalties individually ranging from 0 to 9 dB may be applied depending on the type of noise.
- 2.5.15 BS 4142:2014 seeks to determine a “representative” background sound level, stating that “...the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods”.
- 2.5.16 The assessment of the impact depends upon the margin by which the rating level of the specific sound source exceeds the background sound level but also promotes a consideration of the context in which the sound occurs when making an assessment. BS 4142:2014 states that an initial estimate of the impact of the specific sound is made by subtracting the measured background sound level from the rating level, while considering the following points:

-
- Typically, the greater this difference, the greater the magnitude of the impact;
 - A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;
 - A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context; and,
 - 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.

2.5.17 Therefore, a BS 4142:2014 assessment may deduce a low impact where the specific sound level is below the background sound level.

3 ACOUSTIC SURVEY

3.1 Acoustic Survey Details

3.1.1 NoiseAir conducted unattended noise monitoring between 10th October 2024 to 14th October 2024 at the development site.

3.1.2 Noise monitoring was undertaken at one monitoring location (ML1), the position of which is shown in **Figure 3** below.



Figure 3: Approximate monitoring location.

3.1.3 The noise measurements were made using a Class 1, integrating sound level meter (SLM). The acoustic equipment was calibrated to comply with Section 4.2 of BS 7445-1:2003¹, before and after the noise monitoring periods.

3.1.4 Details of the SLMs and associated field calibration can be found in **Table 3** below.

Table 3: Summary of SLM Used for Survey and Associated Field Calibration.						
SLM (Serial No.)	Preamp (Serial No.)	Microphone (Serial No.)	Calibrator (Serial No.)	Calibration		
				Start	End	Drift
NOR140 (1403342)	NOR1209 (12943)	NOR1225 (33192)	SVANTEK (10818)	-26.5	-26.4	0.1

3.1.5 The weather conditions were noted to be as outlined in **Table 4** at the start and end of the monitoring period.

¹ BS7445-2003 "Description and measurement of environmental noise – Part 1: Guide to quantities and procedures.

Table 4: Summary of Weather Conditions Noted at the Start and End of the Monitoring Duration		
	10 th October 2024	14 th October 2024
Roads	Dry	Dry
Temperature (°C)	8	6
Wind speed (ms ⁻¹)	2.7 NNW	2.2 ENE
Cloud Cover (Approx. %)	10	10
Humidity (%)	73	84

3.2 Measured Sound Levels

3.2.1 **Figure 4** details a level vs time graph of the recorded L_{Aeq} and L_{A90} sound levels over 15-minute time periods for the entire monitoring duration at ML1.

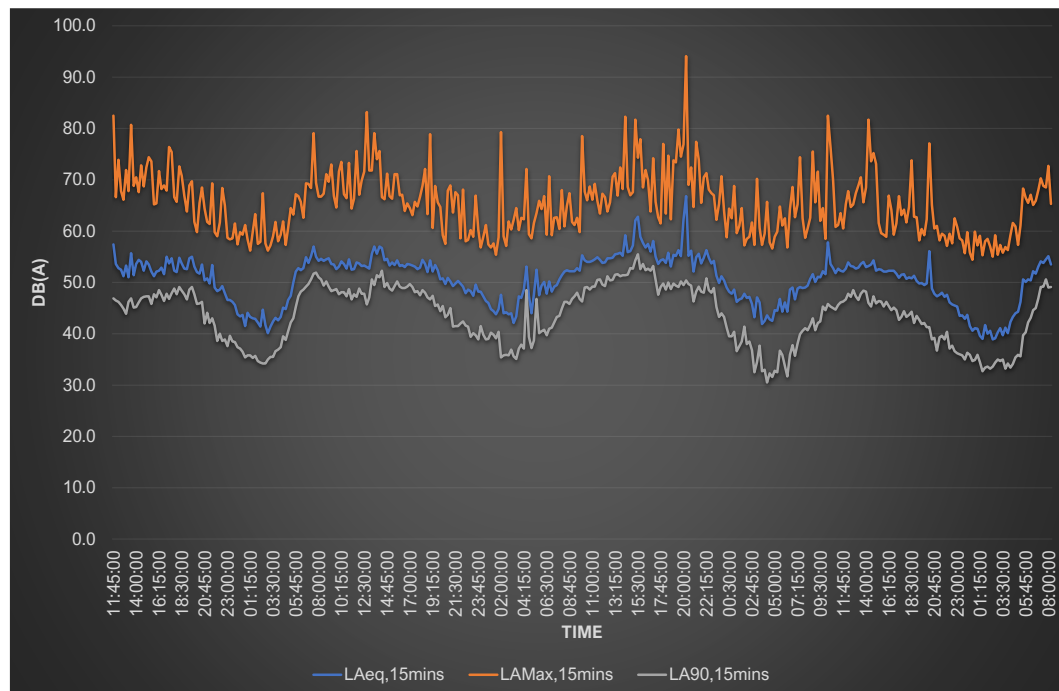


Figure 4: Level vs. time graph showing L_{Amax} , L_{Aeq} and L_{A90} sound levels – ML1.

3.2.2 Any periods of adverse weather considered detrimental to measured noise levels have been identified and removed from the data set for the subsequent noise impact assessment.

3.3 Background Sound Levels

3.3.1 A histogram showing the distribution of measured $L_{A90, 1hour}$ sound levels during the daytime at ML1 is presented in **Figure 5**.

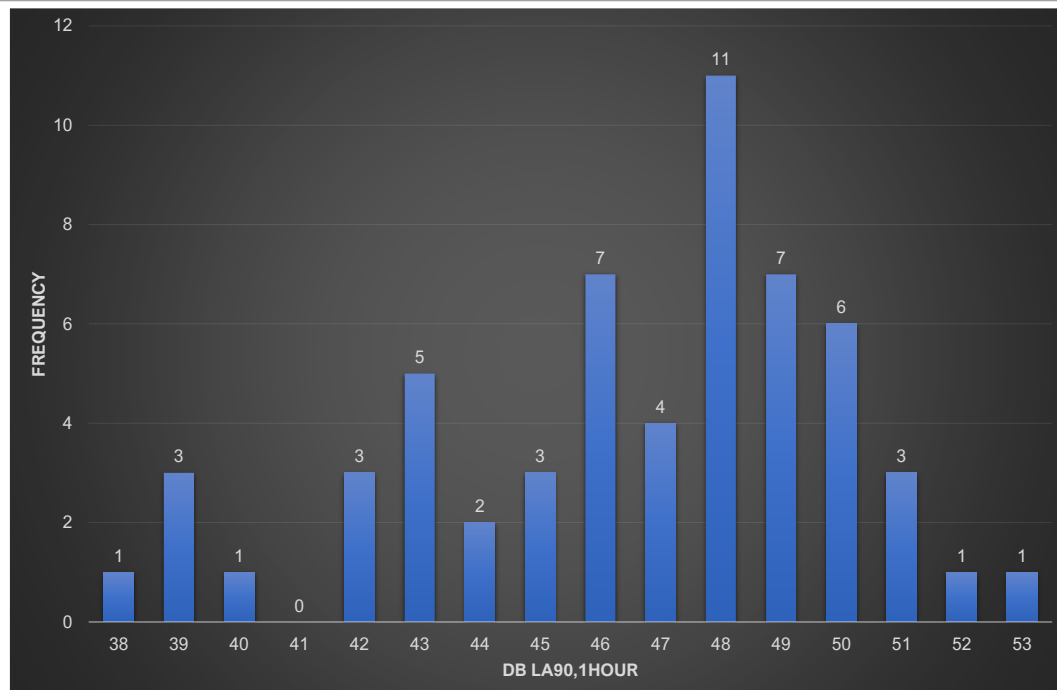


Figure 5: Daytime $L_{A90,1\text{hour}}$ noise readings at ML1.

- 3.3.2 A worst case background sound level of 38 dB(A) $L_{A90,1\text{hour}}$ has been selected for the subsequent assessment.

4 3D SOUND MODEL

4.1 Overview

- 4.1.1 A 3D sound model has been constructed in SoundPLAN™ to calculate the predicted sound pressure levels at the nearest NSRs. The model uses the calculation method from ISO 9613-2:2024² to account for the distance between the source and receiver and any screening or reflections provided by the surrounding buildings.
- 4.1.2 In accordance with SPG:1999, the number of dogs barking at a boarding site at any one time is assumed as the total number of dogs multiplied by 0.6. The maximum number of potential dogs in this case is 42 and therefore 25 dogs are modelled. Typically, for calculation purposes any decimal place represents 1 dog, however, the maximum dog noise activity level included within the guidance is for 25 dogs.
- 4.1.3 Given the typical management of such a facility it is considered unlikely that the dogs will bark for the full BS 4142:2014 1 hour reference period. It is therefore considered appropriate to apply an on-time correction. It is reasoned that when the dogs start barking, a member of staff at the day care will manage the situation to suppress the noise in a swift and timely manner. A conservative on-time for the dogs barking is therefore reasoned as 1 minute per BS 4142:2014 reference period.
- 4.1.4 As the dogs will remain inside while at the facility, the dog barking is modelled as two area sources located on the western façade, representing the entrance door and large glazed frontage, and calibrated to the octave frequency spectrum presented in **Table 5** which is adopted from SPG:1999.

Table 5: Octave Frequency Spectrum for One Dog Barking at 10 m from Source.					
Frequency (Hz)	125	250	500	1000	2000
dB	26.0	38.5	60.9	63.1	55.4

4.2 3D Sound Model

- 4.2.1 A noise contour plot illustrating the propagation of the sound from source to receptor during the daytime ($L_{Aeq,1hour}$) is given in **Figure 6**.

² ISO9613-2:2024 "Acoustics – Attenuation of sound during propagation outdoors – Part 2: Engineering method for the prediction of sound pressure levels outdoors"

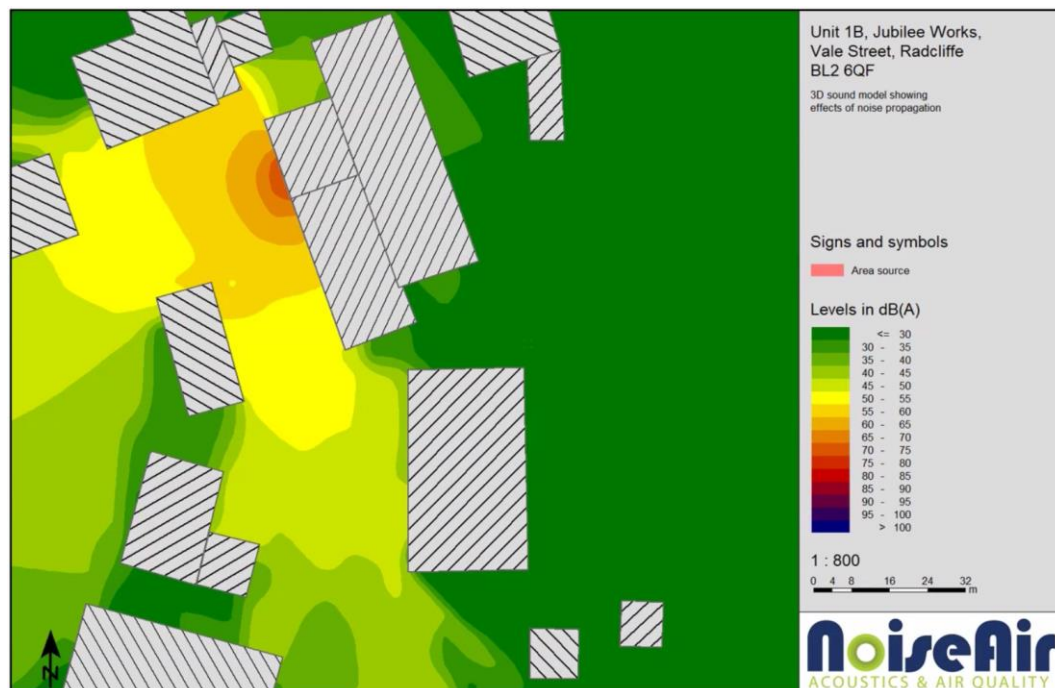


Figure 6: Noise contour plot during the Daytime – $L_{Aeq,1hour}$.

4.2.2 Receptor locations used in the noise model with calculated façade levels are presented in **Figure 7** below.



Figure 7: Illustration of the 3D sound model receptor locations.

4.2.3 **Table 6** below details the predicted noise levels at the worst-case receptor locations.

Table 6: Calculated Receptor Noise Levels - Worst Case			
Receptor Number	Facade	Floor	dB $L_{Aeq,1hour}$
1	External Amenity	GF	21.1
3	West	GF	20.5
		1.FI	21.2

5 ACOUSTIC ASSESSMENT

5.1 Overview

- 5.1.1 An acoustic assessment has been undertaken considering operational noise breakout from the site with respect to the closest identified noise sensitive receptor.

5.2 Specific Sound Level

- 5.2.1 A worst-case specific sound level of 21 dB(A) has been adopted for this assessment as presented by receiver point 3 in **Figure 7** and **Table 6**.

5.3 Background Sound Level

- 5.3.1 A worst case background sound level of 38 dB(A) $L_{A90, 1 \text{ hour}}$ has been selected for the assessment.

5.4 Initial Assessment

- 5.4.1 The initial assessment for the calculated noise breakout levels for all noise sources is presented in **Table 7**.

Table 7: BS 4142:2014 Assessment to Determine the Likelihood of Adverse Impacts on the Worst Affected Noise Sensitive Receptor	
Quantity	Daytime
	dB(A)
Specific Sound Level as Calculated in SoundPLAN™	21
Background Sound Level dB L_{A90}	38
Excess of Rating Level over Background Sound Level	-17
Initial Indication of Impact	Low

5.5 Discussion and Context

- 5.5.1 The initial assessment indicates that during the daytime, the excess of rating level above the existing background sound level is -17 dB(A). The initial assessment therefore indicates that operational activities at the site are likely to have low impact at the nearest noise sensitive receptor.

5.5.2 The context of the assessment is the proposed operation of a dog daycare facility located c. 110 m north-west of the nearest identified NSR located within a wider industrial and commercial estate.

5.5.3 The noise climate in the area is largely formed of road traffic noise emissions from the surrounding road network and noise breakout from the surrounding existing industrial and commercial estates.

5.5.4 Based on the above contextual considerations, operational activities at the proposed development site are likely to have a **low impact** at the nearest NSRs.

5.6 Uncertainty

5.6.1 Uncertainty of measurements can have a significant effect on the outcome and findings of an assessment and therefore such constraints are documented and discussed below.

5.6.2 The SLM used was a Norsonic Class 1 SLM's, it is generally recognised that Class 1 SLM's offer an uncertainty of ± 1.0 dB The instrumentation used for the survey has been calibrated by UKAS approved laboratories.

5.6.3 The sound levels measured (which include busier and quieter periods) are considered typical for the area.

5.6.4 Any periods of adverse weather considered detrimental to measured noise levels were identified and removed from the data set. Wind speeds during the survey visits were typically less than 5 ms^{-1} and the effect of wind generated noise is not considered to have a significant impact on this assessment.

5.6.5 The specific noise level and therefore rated noise level have been calculated using a 3D sound model, however, a conservative assessment of breakout noise levels has been undertaken.

5.6.6 It is therefore considered that, in this instance, the uncertainty of the calculations is likely to have minimal influence on the outcome of the assessment.

5.7 BS 8233:2014 Assessment of Daytime Noise Levels in Noise Sensitive Habitable Rooms with an Open Window

5.7.1 The predicted noise levels at the worst case façade, as detailed in **Figure 7** and **Table 6**, together with the level of attenuation provided by a partially open window has been assessed in **Table 8** for the daytime in accordance with BS 8233:2014.

Table 8: Level of Attenuation Required to Achieve the Internal Noise Guideline Levels with a Partially Open Window						
Receptor No.	Daytime	Worst Case Noise Level at Façade dB(A)	Attenuation Provided by Open Window dB(A)	Internal noise Level dB(A)	Target Internal Level dB(A)	Criteria Achieved
3	Daytime <i>L_{Aeq,16hours}</i>	21	-15	6	35	Yes

- 5.7.2 **Table 8** indicates that with the attenuation across a façade with a partially open window for ventilation purposes, worst-case internal noise levels with respect to the specific sound at the NSR's fall below that required by BS 8233:2014.
- 5.7.3 Furthermore, receptor point 1 (which was placed in the external amenity area) was calculated to be subjected to noise levels of 21 dB(A); this value falls significantly below the lower limit value of 50 dB(A) for people being moderately annoyed due to noise in their external amenity areas.

6 RECOMMENDATIONS

6.1 Overview

- 6.1.1 An acoustic assessment has been undertaken considering operational noise breakout from a dog day care facility. The initial assessment indicated a low impact. However, it is still considered prudent to provide recommendations to reduce potential noise impact further.

6.2 Noise Management Plan [NMP]

- 6.2.1 Management and staff of the dog daycare centre should understand that the ability to identify and recognise potential causes of disturbance facilitates the successful planning to avoid these disturbances.
- 6.2.2 A NMP should be drafted so that the effective management of patrons and their dogs can be conducted. This will ensure noise is reduced, or where this is not practicable, lessened.
- 6.2.3 The following considerations should be made:

Management Controls

- To minimise new dogs meeting and to create a calm environment, each dog should attend on a regular set day / days each week.
- Staff should be trained in animal management and attend regular training where applicable.
- Clear signs advising owners to manage dogs and have respect of local residents between the drop off / collection vehicle and entering the daycare centre to minimise noise disturbance.

Dog Screening

- Conduct a thorough assessment with the owner to understand the dogs suitability for the environment.
- Dogs should be assessed with a small group of dogs, if they are deemed suitable consider offering a trial day.
- If dog is not deemed suitable, recommend a more appropriate service to the owner.

Removal of Unsuitable Dog

- Locate dog to isolated area in an attempt to establish why they have started excessive barking.

-
- If barking continues owners should be contacted and the dog should be picked up as soon as possible. While waiting for the pickup the dog should remain with a member of staff in an attempt to minimise and control the noise.

Neighbour Relationship

- A good relationship with the local residents is recommended such that any concerns they have can be raised without creating any hostility or confrontation.

Complaints Procedure

- A dedicated complaints number should be set up to allow affected members of the public a place to register comments or complaints with respect to noise.
- Staff should be trained on the complaints / actions procedure.
- A log of complaints and actions taken should be kept at the premises.
- All complaints should be addressed in a timely manner responses to the complaint should include planned actions and improvements that can be introduced.

7 CONCLUSIONS

7.1 Overview

- 7.1.1 By instruction from Lady's Little Paws Limited, NoiseAir was commissioned to provide acoustic consultancy services, in support of a proposed planning application for the development of a dog daycare facility at the location: Unit 1B, Jubilee Works, Vale Street, Radcliffe BL2 6QF.
- 7.1.2 An acoustic assessment has been undertaken considering operational noise breakout from a dog day care facility.

7.2 Conclusions

- 7.2.1 The assessment indicates that during the daytime, the excess of rating level above the existing background sound level is -17 dB(A). The assessment therefore indicates that operational activities at the site are likely to have low impact at the nearest noise sensitive receptor.
- 7.2.2 The BS 8233:2014 assessment indicates that where a resident has a partially open window for ventilation purposes a **low impact** with respect to noise from the proposed development is likely.
- 7.2.3 An example noise management plan is presented in Section 6 of this report which aims to reduce potential impact, and where that is not possible, lessen it.

APPENDIX A - REPORT LIMITATIONS

This Report is presented to Lady's Little Paws Limited and may not be used or relied on by any other person or by the client in relation to any other matters not covered specifically by the scope of this report.

Notwithstanding anything to the contrary contained in the report, NoiseAir Limited is obliged to exercise reasonable skill, care and diligence in the performance of the services required by Lady's Little Paws Limited and NoiseAir shall not be liable except to the extent that it has failed to exercise reasonable skill, care and diligence, and this report shall be read and construed accordingly.

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The conclusions and recommendations contained in this report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from who it has been requested and that such information is accurate. Information obtained by NoiseAir Limited has not been independently verified by NoiseAir Limited unless otherwise stated in the report and should be treated accordingly.

Where assessments of works or costs identified in this report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

Where / if estimates and projects are made within this report, are made based on reasonable assumptions as of the date of this report, such statements however by their very nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. NoiseAir Limited specifically does not guarantee or warrant any estimates or projects contained in this report.

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APPENDIX B - GLOSSARY

A-weighted sound pressure, p_A	Value of overall sound pressure, measured in pascals (Pa), after the electrical signal derived from a microphone has been passed through an A-weighting network. <i>NOTE: The A-weighting network modifies the electrical response of a sound level meter with frequency in approximately the same way as the sensitivity of the human hearing system.</i>
A-weighted sound pressure level, L_{pA}	Quantity of A-weighted sound pressure in decibels (dBA).
Acoustic environment	Sound from all sound sources as modified by the environment [BS ISO 12913-1:2013].
Ambient sound	Totally encompassing sound in a given situation at a given time, usually composed of sound from many sources near and far. <i>NOTE: The ambient sound comprises the residual sound and the specific sound when present.</i>
Ambient sound level, $L_a = L_{Aeq,T}$ (BS 4142:2014)	Equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time, usually from many sources near and far, at the assessment location over a given time interval, T <i>NOTE: The ambient sound level is a measure of the residual sound and the specific sound when present.</i>
Background sound	Underlying level of sound over a period, T, which might in part be an indication of relative quietness at a given location.
Background sound level, $L_{A90,T}$ (BS 4142:2014)	A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, measured using time weighting F and quoted to the nearest whole number of decibels.
Break-in	Noise transmission into a structure from outside.
Break-out	Noise transmission from inside a structure to the outside.
Equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$	Value of 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 the sound under consideration that varies with time.
Equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$ (BS 4142:2014)	Value of the A-weighted sound pressure level in decibels of continuous steady sound that, within a specified time interval, $T = t_2 - t_1$, has the same mean-squared sound pressure as a sound that varies with time.
Equivalent sound absorption area of a room, A	Hypothetical area of a totally absorbing surface without diffraction effects, expressed in square metres (m ²), which, if it were the only absorbing element in the room, would give the same reverberation time as the room under consideration
Facade level	Sound pressure level 1 m in front of the façade. <i>NOTE: Facade level measurements of L_{pA} are typically 1 dB to 2 dB higher than corresponding free-field measurements because of the reflection from the facade.</i>
Free-field level	Sound pressure level away from reflecting surfaces. <i>NOTE: Measurements made 1.2 m to 1.5 m above the ground and at least 3.5 m away from other reflecting surfaces are usually regarded as free-field. To minimize the effect of reflections the measuring position has to be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source). Estimates of noise from aircraft overhead usually include a correction of 2 dB to allow for reflections from the ground.</i>
Measurement time interval, T_m (BS 4142:2014)	Total time over which measurements are taken. <i>NOTE: This may consist of the sum of a number of non-contiguous, short-term measurement time intervals.</i>
Noise criteria	Numerical indices used to define design goals in a given space.

Octave band	Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit.
Reference time interval, T_r (BS 4142:2014)	Specified interval over which the specific sound level is determined. <i>NOTE: This is 1 h during the day from 07:00 h to 23:00 h and a shorter period of 15 min at night from 23:00 h to 07:00 h.</i>
Residual sound (BS 4142:2014)	Ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound.
Residual sound level, $L_r = L_{Aeq,T}$ (BS 4142:2014)	Equivalent continuous A-weighted sound pressure level of the residual sound at the assessment location over a given time interval, T.
Rating level, L_{Ar,T_r}	Equivalent continuous A-weighted sound pressure level of the noise, plus any adjustment for the characteristic features of the noise. <i>NOTE: This is used in BS 7445 and BS 4142 for rating industrial noise, where the noise is the specific noise from the source under investigation.</i>
Sound pressure, p	Root-mean-square value of the variation in air pressure, measured in pascals (Pa) above and below atmospheric pressure, caused by the sound.
Sound pressure level, L_p	Quantity of sound pressure, in decibels (dB).
Sound reduction index, R	Laboratory measure of the sound insulating properties of a material or building element in a stated frequency band.
Specific sound level, $L_s = L_{Aeq,T_r}$ (BS 4142:2014)	Equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T_r .
Specific sound source (BS 4142:2014)	Sound source being assessed.
Third octave band	Band of frequencies in which the upper limit of the band is 2% times the frequency of the lower limit.
Weighted level difference, D_w	Single-number quantity that characterizes airborne sound insulation between rooms, but which is not adjusted to reference conditions. <i>NOTE Weighted level difference is used to characterize the insulation between rooms in a building as they are. Values cannot normally be compared with measurements made under other conditions (see BS EN ISO 717-1).</i>

Symbols

D_w	Weighted level difference (dB)
D_{nT}	Standardized level difference (dB)
$D_{nT,w}$	Weighted standardized level difference (dB)
L_{Amax}	Maximum noise level (dB)
$L_{A,r,Tr}$	Rating level (dB)
L_n	Normalised impact sound pressure level (dB)
L'_{nT}	Standardised impact sound pressure level (dB)
$L'_{nT,w}$	Weighted standardised impact sound pressure level (dB)
$L'_{n,w}$	Weighted normalised impact sound pressure level (dB)
L_p	Sound pressure level (dB)
L_{pA}	A-weighted sound pressure level (dB)
$L_{AN,T}$	Percentile level (dB)
L_{AE}	Sound exposure level (dB)
$L_{Aeq,T}$	Equivalent continuous A-weighted sound pressure level (dB)
p	Sound pressure (Pa)
p_A	A-weighted sound pressure (dB)
$p_{A(t)}$	Instantaneous A-weighted sound pressure (Pa)

R	Sound reduction index (dB)
R_w	Weighted sound reduction index (dB)
T	Time interval (also used for reverberation time) (s)
t_0	Reference time interval (s)

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