Daycare4Dogs
Longley Lane
Sharston

Environmental Noise Survey and Noise Impact Assessment Report

30907/NIA1

8 September 2023

For:

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Document Control

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1.0 Introduction

Hann Tucker Associates Limited (Hann Tucker) has been commissioned Daycare4Dogs to undertake a noise assessment for a site in Sharston, Manchester.

The site, which is located on Longley Lane, is being considered for use as a dog daycare facility.

The site is subject to road noise from Longley Lane as well as industrial noise from the adjacent garage units.

Baseline noise conditions have been established by means of a detailed noise survey, presented herein. The findings have subsequently been used to assess the suitability of the site for accommodating a dog daycare facility. Measures required to mitigate noise impacts for the proposed development (when operational) have been discussed in context with relevant national & local planning policies, design standards and good practice guides.

2.0 Objectives

To undertake an environmental noise survey to establish the existing L_{Amax}, L_{Aeq} and L_{A90} environmental road, rail, and air traffic noise levels at selected accessible positions.

To undertake additional attended noise level measurements at the current site to establish source noise levels from the dogs, in order to estimate the impact on the nearest noise sensitive receptors.

Based on the results of the survey, to undertake a noise assessment to assess the suitability of the site for commercial use in accordance with the Noise Policy Statement for England (NPSE), National Planning Policy Framework (NPPF), Planning Practice Guidance (ProPG), British Standard BS8233:2014 and Local Authority requirements.

To discuss noise mitigation and acoustic design solutions to achieve acceptable noise levels in residential areas.

With reference to BS 4142 and other relevant guides, to propose suitable noise limits for plant and commercial operations to protect neighbouring noise sensitive receptors.

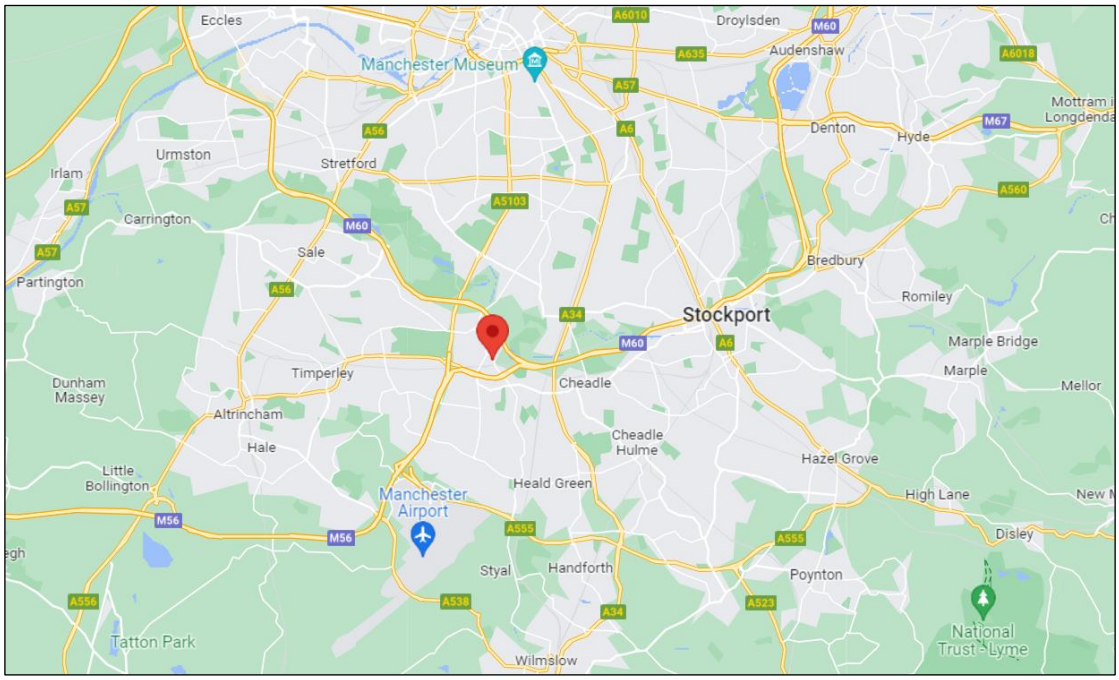
3.0 Acoustic Terminology

For an explanation of the acoustic terminology used in this report please refer to Appendix A enclosed.

4.0 Site Description

4.1 Location

The site is located in Sharlston Industrial Area along Longley Road. The location is shown in the Location Map below.



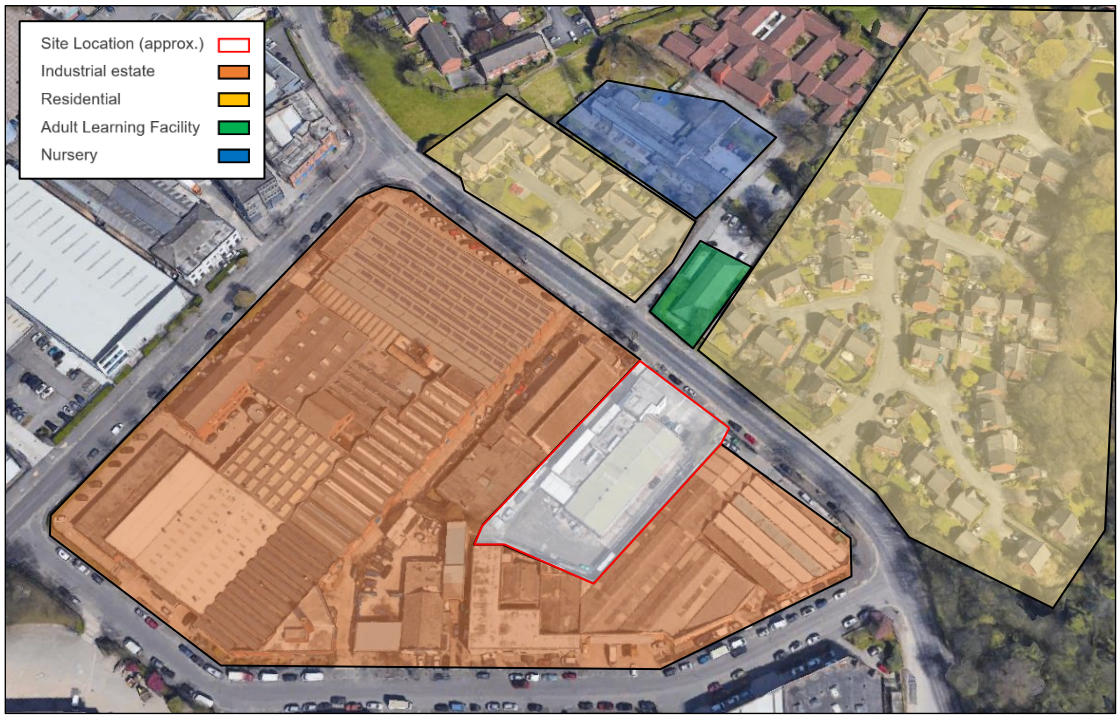
Location Map (Map data ©2023 Google)

The site falls within the jurisdiction of Manchester City Council.

4.2 Description

On the opposite side of Longley Lane to the northeast, are houses on Bronington Close, approximately 45m from the front of the unit. To the north and west of the site is an industrial unit currently operated by Top Tyres. To the east is M22 Autocentre. The site lies approximately 200m north of a railway. Approximately 500m to the north is the M60 and 500m to the south is the M56 motorway. It should be noted the site is approximately 4km north of Manchester airport, however, the noise contour data for the airport shows that the site is outside the boundaries.

The site is shown in the Site Plan below.



Site Plan (Google Earth 2023)

5.0 Project Proposals

The proposal is for the development of a dog daycare centre, which is moving from Bradnor Road in Sharston Industrial Area to 124 Longley Lane- a different unit in the same industrial estate.

Current and proposed site positions in Sharston Industrial Area

The proposed unit will operate similarly to the current unit. However, it has been discussed that the use may extend to an overnight “daycare”, so this has been considered in this assessment. Throughout the day, the dogs are rotated through different internal and external areas in groups of varying size. These groups are decided by the staff, who match the dogs to groups based on characteristics, temperament, etc. in order to minimise the distress of the animals. This relates to the “no bark policy” which is further discussed in Section 7.5.

It is understood that the dogs will be kept inside through the night, and staff will be on-site at all times such that the dogs are not left unsupervised and can be kept under control.

The proposed unit is only approximately 10m closer to residencies than the current unit, and is located on a busier road, which in turn means that higher background noise levels are expected to be in the vicinity of the proposed site than at the current site.

6.0 Planning Policies, Standards & Guidance

In order to provide a suitable assessment a number of national planning policies have been considered, including:

- The National Planning Policy Framework (NPPF), 2021
- The Noise Policy Statement for England (NPSE), 2010
- Planning Practice Guidance – Noise (PPGN), 2019

The above documents highlight the importance of considering the potential noise effects on any new residential development and provide a qualitative approach to assessment. However, each of the above does not provide any quantitative guidance. As such, all quantitative guidance used to form a noise impact assessment is taken from various other standards, guidance, and Local Authority requirements as summarised below:

- Manchester City Council’s Planning and Noise Technical Guidance (June 2022)
- World Health Organisation: 2018
- British Standard BS8233: 2014
- British Standard BS4142:2014 + A1:2019
- ProPG : Planning & Noise: 2017

Detailed information for relevant planning policies and guidance can be found within Appendix B.

We have contacted the local authority to confirm our methodology is suitable, however, at the time of writing, we have not yet received a response. Therefore, based on previous assessments, we have assessed using the general methodology of BS4142:2014 + A1:2019.

7.0 Environmental Noise Survey

7.1 Procedure

Fully automated environmental noise monitoring was undertaken by Will Robertson BSc (Hons) from approximately 10:30 hours on Wednesday 9 August 2023 to 10:00 hours on Tuesday 15 August 2023 in Position 1, and from approximately 10:30 hours on Wednesday 9 August 2023 to 03:45 hours on Saturday 12 August 2023 in Position 2. This was undertaken to establish full daytime and night-time noise levels over a typical weekday and weekend period. Measurements were taken continuously of the A-weighted (dBA) L_{90}, L_{eq}, and L_{max} sound pressure levels over discrete 15-minute periods in Position 1, and discrete 2 and 15-minute periods in the second position.

Additional attended measurements were performed at the currently operating unit between 11:00 hours and 12:00 hours on Wednesday 9 August 2023 with the purpose of establishing specific noise levels associated with the operation of the current unit, internal and external.

7.2 Measurement Positions

The noise level measurements were undertaken at 4no. positions as described in the table below.

Position	Type	Description
1	Unattended	To the north of the site, approx. 9m from the nearside edge of Longley Road. Microphone in façade conditions approx. 8m above ground (located on the roof).
2	Unattended	To the south of the site, approx. 70m from the nearside edge of Longley Road. Microphone in free-field conditions approx. 4m above ground.
3	Attended	Handheld measurement inside the nearby existing facility, placed on desk, amongst the dogs. During the measurement period no barks were noted.
4	Attended	Handheld measurement on the perimeter of the facility, next to the external area with dogs. During the measurement period 1no bark was noted inside and 1no bark was noted outside.

The positions are shown on the plans below.

Image showing unattended measurement locations at proposed site (© Google Earth 2023)

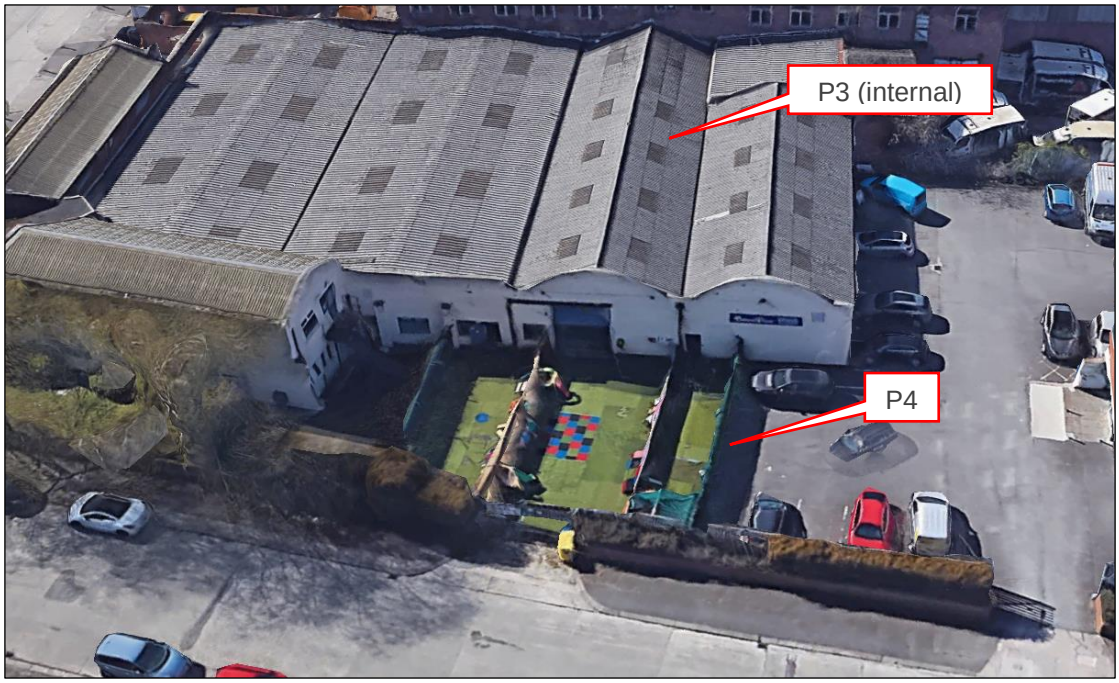


Image showing attended measurement positions at existing Daycare4Dogs unit (© Google Earth 2023)

7.3 Weather Conditions

For the unattended survey between Wednesday 9 August 2023 and Tuesday 15 August 2023, local weather reports indicated there were some notable periods of heavy rainfall, namely on Saturday afternoon, Sunday morning and night, and Monday. During the measurement period, temperatures ranging from 14°C (night) to 27°C (day) and wind speeds less than 5 m/s, except for Friday afternoon. During our time on site, skies were clear with patchy cloud cover, wind conditions were light and from a southernly direction and road surfaces were dry.

Although it has been noted that there were periods of rainfall which have been excluded fromanalysis, the duration of the survey was long enough to obtain sufficient measurement data outside of these periods for the subsequent assessments.

During the attended survey on Wednesday 9 August 2023 the weather was generally clear and dry with no periods of rainfall.

7.4 Instrumentation

The instrumentation used during the survey is presented in the table below:

Position	Description	Manufacturer	Type	Serial Number	Calibration
1	Type 1 Data Logging Sound Level Meter	Larson Davis	824	3838	Calibration on 30/05/2023
2	Type 1 Data Logging Sound Level Meter	Larson Davis	LxT	5104	Calibration on 30/05/2023
3 & 4	Type 1 Data Logging Sound Level Meter	Larson Davis	LxT	5103	Calibration on 30/05/2023
All	Type 1 Calibrator	Larson Davis	CAL200	3083	Calibration on 27/03/2023

Each sound level meter, including the extension cable, was calibrated prior to and on completion of the surveys. No significant changes were found to have occurred (no more than 0.3 dB).

Each unattended sound level meter was located in an environmental case with the microphone connected to the sound level meter via an extension cable. Each microphone was fitted with a windshield.

7.5 Results

The results have been plotted on Time History Graphs 30907/TH1 to 30907/TH2 enclosed presenting the 15-minute A-weighted (dBA) L_{90}, L_{eq} and L_{max} levels at each measurement position throughout the duration of the survey.

In order to compare the results of our survey with the relevant guidelines it is necessary to convert the measured $L_{Aeq(15\,minute)}$ noise levels into single figure daytime $L_{Aeq(16\text{-}hour)}$ (07:00-23:00 hours) and night-time $L_{Aeq(8\text{-}hour)}$ (23:00-07:00 hours) levels.

The lowest typical $L_{A90,15min}$ measurements recorded during the survey at Position 1 of the proposed site are presented in the table below:

Lowest Typical Measured $L_{A90,15min}$ Noise Level (dB)	
Daytime (07:00 – 23:00)	**Night-time (23:00 – 07:00)**
46	42

Position 1 measurements have been corrected from façade to free field levels

The following table summarises noise levels recorded at each of the attended measurement positions.

Position	Period	Sound Pressure Level (dB)		
		$L_{Aeq,T}$	$L_{A90,T}$	$L_{Amax,T}$
3	11:00-11:15	56	47	80
4	11:48-12:03	53	43	87

Position 3 measurements have been corrected from façade levels to free field levels

Position 3 is considered to be a façade level, as the meter was placed on a desk during the measurement period by the worker, to conform with the “No-bark Policy”. This policy was explained to us and it meant that we were unable to enter the area where the dogs were kept, as this could have unduly agitated them and therefore, we would record an unrepresentative measurement. The unit normally operates with regular staff entering the areas, to clean and move the dogs to different quadrants. By having the meter placed in the room by a member of staff, a more accurate measurement of normal operation was recorded.

7.6 Discussion of Noise Climate

Due to the nature of the survey, i.e. unattended, it is not possible to accurately describe the dominant noise sources, or specific noise events throughout the entire survey period. However, at the beginning and end of the survey period the noise climate was noted to be dominated by road traffic noise along Longley Lane and at Position 2, a chiller at the rear of the site.

8.0 Assessment of Potential Noise Impact from Dog Barking

As set out in Section 7.1, Will Robertson of Hann Tucker Associates attended the existing nearby Daycare4Dogs site to measure the noise levels during typical operation. It was confirmed by staff that 137No dogs were currently present at the site but no significant noise from the dogs was noted; ; the dominant noise source noted inside the current unit was the staff's radio. During the duration of the attended site visit (~75 minutes), a total of 2no dog barks were observed.

These observations are similar to those made by another engineer from Hann Tucker Associates during a visit to a rescue site operated by the same Client as part of a separate successful planning application for a site in Eccles in 2017.

Due to the nature of the measurement position of the bark captured on the most recent visit (outside and distance unknown), we have used the previously captured free-field L_{Amax} noise level equivalent to approximately 85 dB at 1 metre to inform our assessment. It should be noted that this level is also congruent with findings and assessments of others in similar assessments.

Similar to the previous assessment, we have pessimistically assumed the duration of a single bark to be that of a second, which allows for the measured L_{Amax} level to be considered equivalent to an SEL, from which we can extrapolate over a designated assessment period for comparison against the measured background noise levels at the proposed site.

In order to carry out as robust an assessment as possible, we have opted to omit consideration of any potential losses due to the external building fabric of the unit in which dogs will be located at night, and instead have considered a worst-case assessment in which dog bark events will occur both day and night at the closest point of the site boundary to the nearest noise sensitive receptors.

For both our daytime and night-time assessments we have calculated the number of bark events that could occur within a single assessment period before the BS 4142 Rating Level at the receiver exceeds 5 dB above the existing background L_{A90} at the nearest noise property (residencies on Bronington Close, 45m distance). The tables can be seen overleaf.

Daytime: 07:00 - 23:00

The following table summarises our assessment of the potential noise impact of dogs barking whilst in the outdoor space bounded by a mesh fencing during the daytime. A mesh fence has been chosen as this is what was observed when attending the current site. Our assessment indicates that up to 360no bark events per hour (1no bark every 10s) could occur during a worst-case hour period before the BS 4142 Rating Level exceeds 5dB above the existing background L_{A90}:

Description	Daytime (07:00 – 23:00) Sound Level (dBA)
Single Bark SEL @ 1m	85
$L_{eq,1hr}$ @ 1m	75
Distance Loss (45m)	-33
Specific Noise Level @ Residence	42
BS 4142 Feature Correction (High Impulsivity)	+9
Rating Level @ Residence	51
Measured L_{90} Background Level	46
Exceedance	+5

Night-time: 23:00 – 07:00

The following table summarises our assessment of the potential noise impact of dogs barking whilst in the outdoor space bounded by a mesh fencing during the night-time. Our assessment indicates that more than 36no bark events (1no bark every 25s) could occur in a single worst case 15-minute period during the night before the BS 4142 Rating Level exceeds 5dB above the existing background L_{A90}:

Description	Night-time (23:00 – 07:00) Sound Level (dBA)
Single Bark SEL @ 1m	85
$L_{eq,1hr}$ @ 1m	71
Distance Loss (50m)	-34
Specific Noise Level @ Residence	38
BS 4142 Feature Correction (High Impulsivity)	+9
Rating Level @ Residence	47
Measured L_{90} Background Level	42
Exceedance	+5

9.0 Discussion

BS 4142:2014 suggests that where the excess of the rating level over the background sound level is 5 or lower, this is an indication of the proposed development having a low impact on the nearby sensitive receptor.

Based on our pessimistic assessment, which considers minimum losses due to distance (i.e. all outdoor barking emanating from the closest possible corner of the outdoor area) and no losses from the unit building fabric at night-time, we have demonstrated that up to 360 and 36 bark events could occur within the worst case hour (daytime 07:00-23:00) and 15 minutes (night-time 23:00-07:00) respectively before there is potential for the noise rating level to exceed the background sound level by up to 5 dB. Based on our on-site oversvations in which 2No. bark events occurred in 1No. hour the resulting noise level would be approximately 13dB below the prevailing background noise level at the nearest noise sensitive receptor.

We therefore anticipate it to be very unlikely that the development of the proposed site will result in exceedance of the noise level criteria set out within this report.

10.0 Conclusions

A detailed environmental noise survey has been undertaken in order to establish the currently prevailing environmental noise climate around the site.

The environmental noise impact upon the nearby dwellings has been assessed in the context of BS4142:2014 + A1:2019, and national and local planning policies.

The assessment shows the site is suitable for commercial development in terms of noise, without the need for any specific acoustic mitigation measures.

Based on our understanding of the operation of the proposed site, including our source noise survey, we would expect the number of bark events per assessment period to be significantly lower than the limits stated in our assessment. It should be noted that our assessment is based upon the understanding that the presence of staff on site at all times, coupled with the unique operation of the daycare facility, will significantly reduce the likelihood of the number of bark events reaching those calculated.

Appendix A

The acoustic terms used in this report are defined as follows:

dB — Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form. The relationships between Decibel levels do not work in the same way that non-logarithmic (linear) numbers work (e.g. 30dB + 30dB = 33dB, not 60dB).

dBA — The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The $_A$ subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted

It should be noted that levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.

$L_{90,T}$ — L_{90} is the noise level exceeded for 90% of the period *T* (i.e. the quietest 10% of the measurement) and is often used to describe the background noise level.

$L_{eq,T}$ — $L_{eq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time period, *T*.

L_{max} — L_{max} is the maximum sound pressure level recorded over the period stated. L_{max} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the L_{eq} noise level.

L_p — Sound Pressure Level (SPL) is the sound pressure relative to a standard reference pressure of 2×10^{-5} Pa. This level varies for a given source according to a number of factors (including but not limited to: distance from the source; positioning; screening and meteorological effects).

L_w — Sound Power Level (SWL) is the total amount of sound energy inherent in a particular sound source, independent of its environment. It is a logarithmic measure of the sound power in comparison to a specified reference level (usually 10^{-12} W).

Appendix B

B. Planning Policies, Standards & Guidance

B.1 Noise Policy Statement for England

The Noise Policy Statement for England (NPSE) was published in March 2010 (i.e. before the NPPF). The NPSE is the overarching statement of noise policy for England and applies to all forms of noise other than occupational noise, setting out the long-term vision of Government noise policy which 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."

That vision is supported by the following NPSE noise policy aims which are reflected in three of the four aims of planning policies and decisions in paragraph 123 of the NPPF (see paragraph 8.2 (b) below):

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- *avoid significant adverse impacts on health and quality of life;*
- *mitigate and minimise adverse impacts on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life."*

The Explanatory Note to the NPSE has three concepts for the assessment of noise in this country:

NOEL – No Observed Effect Level
This is the level below which no effect can be detected and below which there is no detectable effect on health and quality of life due to noise.

LOAEL – Lowest Observable 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.

None of these three levels are defined numerically and for the SOAEL the NPSE makes it clear that the noise level is likely to vary depending upon the noise source, the receptor and the time

of day/day of the week, etc. The need for more research to investigate what may represent an SOAEL for noise is acknowledged in the NPSE and the NPSE asserts that not stating specific SOAEL levels provides policy flexibility in the period until there is further evidence and guidance.

The NPSE concludes by explaining in a little more detail how the LOAEL and SOAEL relate to the three NPSE noise policy aims listed above. It starts with the aim of avoiding significant adverse effects on health and quality of life, then addresses the situation where the noise impact falls between the LOAEL and the SOAEL when *"all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development."* The final aim envisages pro-active management of noise to improve health and quality of life, again taking into account the guiding principles of sustainable development which include the need to minimise travel distance between housing and employment uses in an area.

B.2 National Planning Policy Framework (NPPF)

The following paragraphs are from the NPPF (published July 2021):

185. 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:

a) 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;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

187. Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed."

Paragraph 185 also references the Noise Policy Statement for England (NPSE). This document does not refer to specific noise levels but instead sets out three aims:

- "Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.
- Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.
- Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development."

B.3 Planning Practice Guidance on Noise

Planning Practice Guidance (PPG) under the NPPF has been published by the Government as a web based resource at http://planningguidance.planningportal.gov.uk/blog/guidance/. This includes specific guidance on Noise although, like the NPPF and NPSE the PPG does not provide any quantitative advice. It seeks to illustrate a range of effect levels in terms of examples of outcomes as set out in the following table:

Perception	Examples of Outcomes	Increasing effect level	Action
Not noticeable	No effect	No Observed Effect	No specific measures required
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	
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.	Observed Adverse Effect	Mitigate and reduce to a minimum
		Significant Observed Adverse Effect Level	
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

Perception	Examples of Outcomes	Increasing effect level	Action
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 hard, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

B.4 Local Planning Policy

The site lies within the jurisdiction of Manchester City Council. Manchester City Council's Planning and Noise Technical Guidance (June 2022) notes the following with regards to control of new fixed building services plant.

"Noise from fixed plant, equipment or machinery can be very annoying and disruptive to people living nearby particularly where that item involved emits a noise with impulsive or tonal characteristics.

Many of the complaints Environmental Health receive about noise from plant, equipment and machinery specifically concern the character of the noise emitted. Any noise assessment needs to consider not only the overall level of noise emitted, but also its particular characteristics. The noise assessment should be based on BS 4142, and any application for fixed plant, equipment or machinery must demonstrate that:

'Externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location'.

By designing the sound pressure level of any plant items to generate a noise impact of at least 5dB below the existing background level, any plant noise impact should be of a negligible level which should not give rise to complaints from users or occupiers of existing noise-sensitive usages. See Appendix A with regards to the expectation of how to calculate a 'typical' background level."

B.5 World Health Organisation

The current Environmental Noise Guidelines 2018 for the European Region (ENG) supersede the Guidelines for Community Noise from 1999 (CNG). Nevertheless, the ENG recommends that all CNG indoor guideline values and any values not covered by the current guidelines (such as industrial noise and shopping areas) remain valid.

A summary of the guidance from the ENG and CNG is shown in the table below.

Source	CNG guideline indoors all sources	ENG guideline outdoors noise from specific source only
Road traffic noise	35 $L_{Aeq, 16h}$	53 dB L_{den}
	30 $L_{Aeq, 8h}$	45 dB L_{night}
Railway noise	35 $L_{Aeq, 16h}$	54 dB L_{den}
	30 $L_{Aeq, 8h}$	44 dB L_{night}
Aircraft noise	35 $L_{Aeq, 16h}$	45 dB L_{den}
	30 $L_{Aeq, 8h}$	40 dB L_{night}

With regard to single-event noise indicators, Section 2.2.2 of the WHO Environmental Noise Guidelines 2018 state:

"In many situations, average noise levels like the L_{den} or L_{night} indicators may not be the best to explain a particular noise effect. Single-event noise indicators – such as the maximum sound pressure level ($L_{A,max}$) and its frequency distribution – are warranted in specific situations, such as in the context of night-time railway or aircraft noise events that can clearly elicit awakenings and other physiological reactions that are mostly determined by $L_{A,max}$. Nevertheless, the assessment of the relationship between different types of single-event noise indicators and long-term health outcomes at the population level remains tentative. The guidelines therefore make no recommendations for single-event noise indicators."

B.6 British Standard BS8233: 2014

British Standard 8233: 2014 "Guidance on sound insulation and noise reduction for buildings" provides guidance for the control of noise in and around buildings.

Internal Areas

BS8233:2014 Section 7.7.2 titled "Internal ambient noise levels for dwellings" states:

"In general for steady external noise sources, it is desirable that internal ambient noise levels do not exceed the following guideline values:

Activity	***Location***	***Desirable Internal Ambient Criteria***	
		07:00 – 23:00	***23:00 to 07:00***
Resting	*Living Rooms*	*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 $L_{Aeq,8hour}$*

Note 1 The above table provides recommended levels for overall noise in the design of a building. These are the sum total of structure-borne and airborne noise sources. Groundborne noise is assessed separately and is not included as part of these targets, as human response to groundborne noise varies with many factors such as level, character, timing, occupant expectation and sensitivity.

Note 2 The levels shown in the above table are based on the existing guidelines issued by the WHO and assume normal diurnal fluctuations in external noise. In cases where local conditions do not follow a typical diurnal pattern, for example on a road serving a port with high levels of traffic at certain times of the night, an appropriate alternative period, e.g. 1 hour, may be used, but the level should be selected to ensure consistency with the levels recommended in the above table.

Note 3 These levels are based on annual average data and do not have to be achieved in all circumstances. For example, it is normal to exclude occasional events, such as fireworks nigh or News Year's Eve.

Note 4 Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$ depending on the character and number of events per night. Sporadic noise events could require separate values.

Note 5 If relying on closed windows to meet the guide values, there needs to be an appropriate alternative ventilation that does not compromise the façade insulation or the resulting noise level.

If applicable, any room should have adequate ventilation (e.g. trickle ventilators should be open) during assessment.

Note 6 Attention is drawn to the Building Regulations.

Note 7 Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved."

External Amenity Areas

BS8233:2014 Section 7.7.3.2 titled "Design criteria for external noise" states:

"For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$[1], with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited.

Other locations, such as balconies, roof gardens and terraces, are also important in residential buildings where normal external amenity space might be limited or not available, i.e. in flats, apartment blocks, etc. In these locations, specification of noise limits is not necessarily appropriate. Small balconies may be included for uses such as drying washing or growing pot plants, and noise limits should not be necessary for these uses. However, the general guidance on noise in amenity space is still appropriate for larger balconies, roof gardens, and terraces, which might be intended to be used for relaxation. In high-noise areas consideration should be given to protecting these areas by screening or building design to achieve the lowest practicable levels. Achieving levels of 55dB $L_{Aeq,T}$ or less might not be possible at the outer edge of these areas, but should be achievable in some areas of the space."

B.7 ProPG : Planning & Noise : 2017

The primary goal of the ProPG is to assist the delivery of sustainable development by promoting good health and well-being through the effective management of noise. It seeks to do that through encouraging a good acoustic design process in and around proposed new residential development having regard to national policy on planning and noise. It is applicable to noise from existing transport sources (noting that good professional practice should have regard to any reasonably foreseeable changes in existing and/or new sources of noise). The recommended approach is also considered suitable where some industrial or commercial noise contributes to the acoustic environment provided that is "not dominant".

This ProPG advocates a systematic, proportionate, risk based, 2-stage, approach. The approach encourages early consideration of noise issues, facilitates straightforward accelerated decision making for lower risk sites, and assists proper consideration of noise issues where the acoustic environment is challenging.

The two sequential stages of the overall approach are:

- Stage 1 – an initial noise risk assessment of the proposed development site; and
- Stage 2 – a systematic consideration of four key elements.

The four key elements to be undertaken in parallel during Stage 2 of the recommended approach are:

- Element 1 – demonstrating a "Good Acoustic Design Process";
- Element 2 – observing internal "Noise Level Guidelines";
- Element 3 – undertaking an "External Amenity Area Noise Assessment"; and
- Element 4 – consideration of "Other Relevant Issues".

The ProPG considers suitable guidance on internal noise levels found in “BS8233:2014: Guidance on sound insulation and noise reduction for buildings”. Table 4 in Section 7.7.2 of the standard suggests that “in general, for steady external noise sources, it is desirable that the internal ambient noise level does not exceed the guideline values”. The standard states (Section 7.7.1) that “occupants are usually more tolerant of noise without a specific character” and only noise without such character is considered in Table 4 of the standard.

Activity	Location	07:00 – 23:00 Hours	23:00 – 07:00 Hours
Resting	Living Room	35dB $L_{Aeq,16hr}$	-
Dining	Dining Room / Area	40dB $L_{Aeq,16hr}$	-
Sleeping (daytime resting)	Bedroom	35dB $L_{Aeq,16hr}$	30dB $L_{Aeq,16hr}$ 45dB $L_{Amax,F}$

NOTE 1 the Table provides recommended internal L_{Aeq} target levels for overall noise in the design of a building. These are the sum total of structure-borne and airborne noise sources. Ground-borne noise is assessed separately and is not included as part of these targets, as human response to ground-borne noise varies with many factors such as level, character, timing, occupant expectation and sensitivity.

NOTE 2 The internal L_{Aeq} target levels shown in the Table are based on the existing guidelines issued by the WHO and assume normal diurnal fluctuations in external noise. In cases where local conditions do not follow a typical diurnal pattern, for example on a road serving a port with high levels of traffic at certain times of the night, an appropriate alternative period, e.g. 1 hour, may be used, but the level should be selected to ensure consistency with the L_{Aeq} target levels recommended in the Table.

NOTE 3 These internal L_{Aeq} target levels are based on annual average data and do not have to be achieved in all circumstances. For example, it is normal to exclude occasional events, such as fireworks night or New Year’s Eve.

NOTE 4 Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$, depending on the character and number of events per night. Sporadic noise events could require separate values. In most circumstances in noise-sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45dB $L_{Amax,F}$ more than 10 times a night. However, where it is not reasonably practicable to achieve this guideline then the judgement of acceptability will depend not only on the maximum noise levels but also on factors such as the source, number, distribution, predictability and regularity of noise events (see Appendix A).

NOTE 5 Designing the site layout and the dwellings so that the internal target levels can be achieved with open windows in as many properties as possible demonstrates good acoustic design. Where it is not possible to meet internal target levels with windows open, internal noise levels can be assessed with windows closed, however any façade openings used to provide whole dwelling ventilation (e.g. trickle ventilators) should be assessed in the "open" position and, in this scenario, the internal L_{Aeq} target levels should not normally be exceeded, subject to the further advice in Note 7.

NOTE 6 Attention is drawn to the requirements of the Building Regulations.

NOTE 7 Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal L_{Aeq} target levels may be relaxed by up to 5dB and reasonable internal conditions still achieved. The more often internal L_{Aeq} levels start to exceed the internal L_{Aeq} target levels by more than 5dB, the more that most people are likely to regard them as "unreasonable". Where such exceedances are predicted, applicants should be required to show how the relevant number of rooms affected has been kept to a minimum. Once internal L_{Aeq} levels exceed the target levels by more than 10dB, they are likely to be regarded as "unacceptable" by most people, particularly if such levels occur more than occasionally. Every effort should be made to avoid relevant rooms experiencing "unacceptable" noise levels at all and where such levels are likely to occur frequently, the development should be prevented in its proposed form (See Section 3.D).

Figure 2. ProPG Internal Noise Level Guidelines (additions to BS8233:2014 shown in blue).

B.8 BS 4142:2014 + A1:2019

BS 4142: 2014 describes methods for rating and assessing the effects of outdoor sound levels, of an industrial and/or a commercial nature, "*on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident*".

The impact of a specific sound is indicated by subtracting the existing background noise level from the rating level (i.e. noise level from the proposed items of plant/machinery/etc plus any acoustic feature corrections). The standard states that:

- "a difference of around +10dB or more is likely to be an indication of a significant adverse impact";
- "a difference of around +5dB is of marginal significance is likely to be an indication of an 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".

The noise from the new development is expressed in terms of a rating level and given as a $L_{Aeq, T}$ noise level. The existing background noise level is expressed in terms of a $L_{A90, T}$ noise level. T is the assessment time interval, which is 1-hour for operations during daytime hours (07:00 to 23:00) and 15-minutes for operations during night-time hours (23:00 to 07:00).

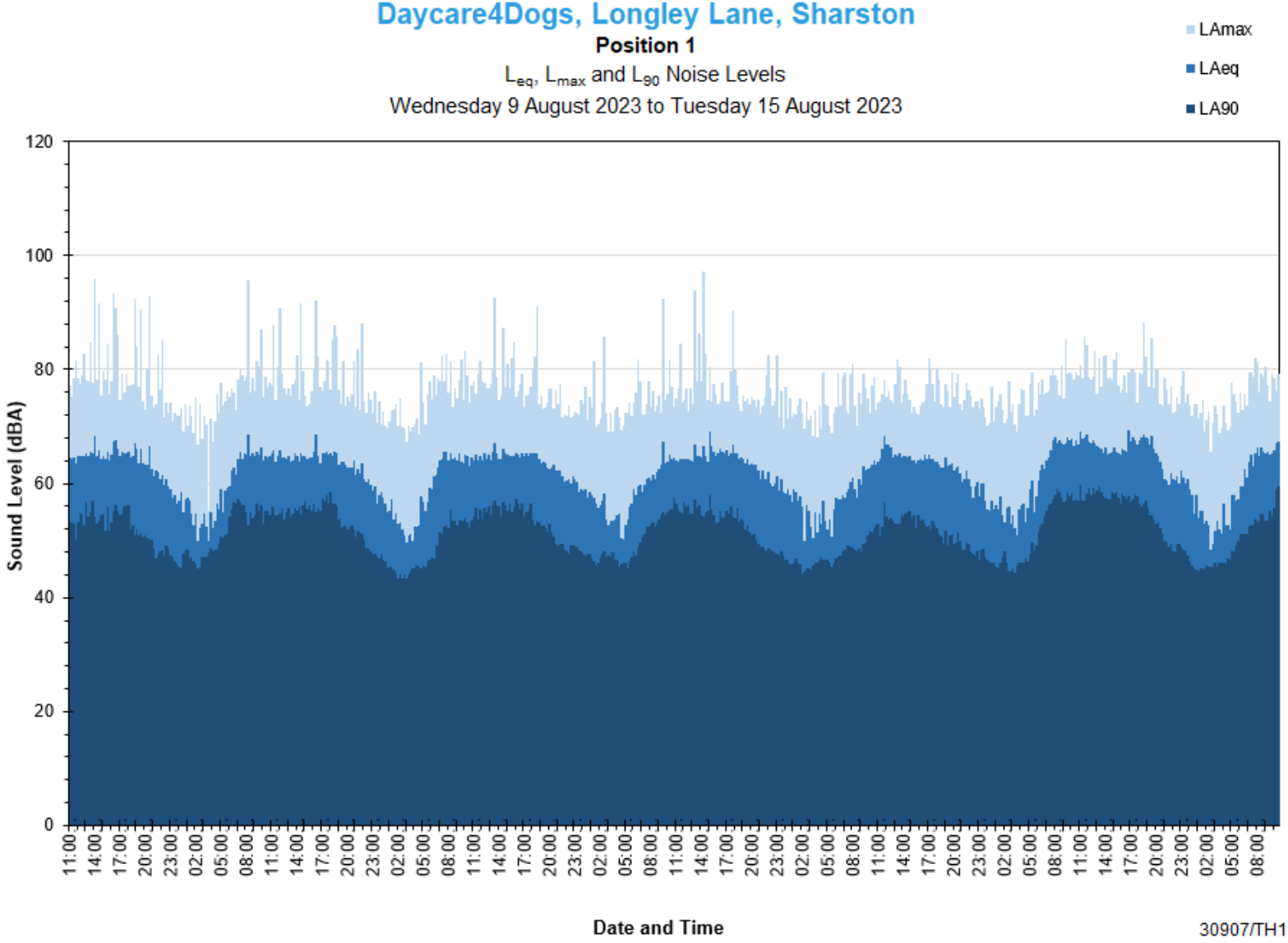
BS 4142:2014 states that if a noise source contains an 'acoustic feature', such as tonality, intermittency or impulsiveness, an appropriate penalty should be applied.

Daycare4Dogs, Longley Lane, Sharston

Position 1

L_{eq}, L_{max} and L_{90} Noise Levels

Wednesday 9 August 2023 to Tuesday 15 August 2023



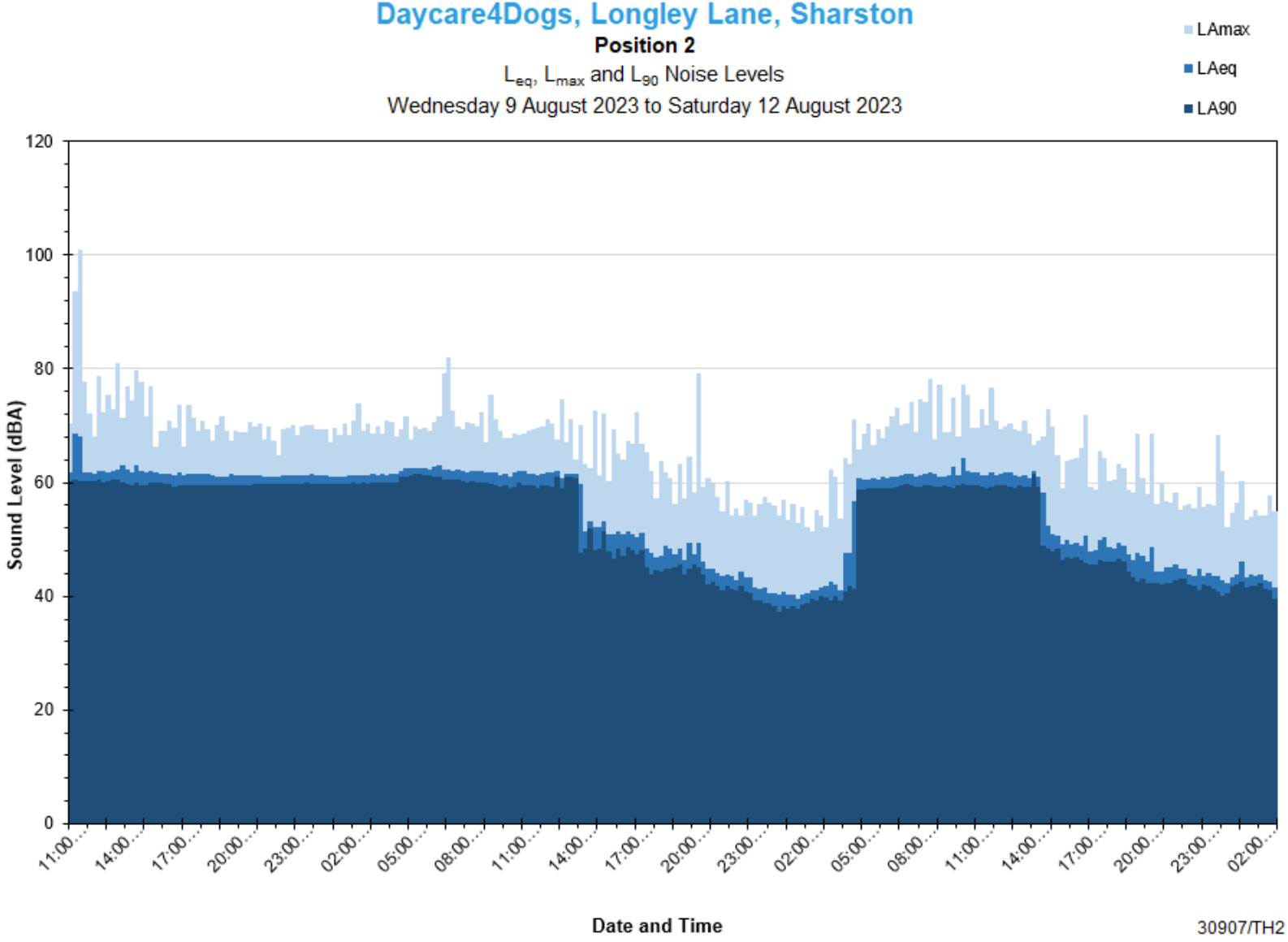
30907/TH1

Daycare4Dogs, Longley Lane, Sharston

Position 2

L_{eq}, L_{max} and L_{90} Noise Levels

Wednesday 9 August 2023 to Saturday 12 August 2023



30907/TH2