

101 Pickwick Street Corsham

Plant Noise Assessment Report

32724/ENS1

12 December 2025

For:
Cliffe Property Investments Limited
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Document Control

Rev	Date	Comment	Prepared by	Checked by	Authorised by
0	12/12/2025	-			
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1.0 Introduction

Hann Tucker Associates have been commissioned to undertake an environmental noise survey to provide a basis for assessment of plant noise emissions at 101 Pickwick Street in Corsham, Wiltshire.

2.0 Objectives

To inspect the site to familiarise ourselves with its layout and surroundings and to identify a suitable accessible location for environmental noise measurements.

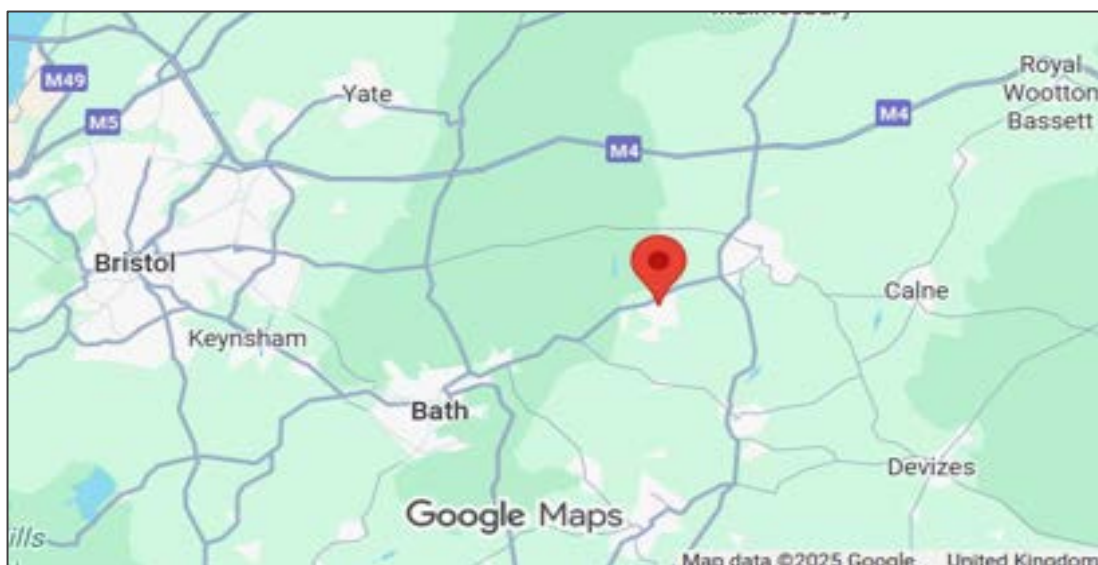
To undertake noise level measurements during the quietest daytime and night-time periods on a typical weekday in general accordance with BS 7445. To record the A-weighted (dBA) L_{eq} and L_{90} environmental noise levels.

To recommend suitable plant noise emission criteria based on the requirements of the Local Authority to avoid causing a statutory noise nuisance.

3.0 Site Description

3.1 Location

The site is located at 101 Pickwick Street in Corsham as shown on the Location Map below.



This site falls under the jurisdiction of Wiltshire County Council.



3.2 Description

The site is located on Pickwick Street at the junction of Dickens Avenue and is an existing petrol station. There are predominantly residential properties around the site.

The site is shown in the Site Plan below.



4.0 Acoustic Terminology

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

5.0 Survey Methodology

The survey was undertaken by Nick Russell MIOA.

5.1 Procedure

Fully automated environmental noise monitoring was undertaken from approximately 11.15 hours on Friday 15 August to 12:15 hours on Monday 18 August 2025.

Due to the nature of the survey, i.e. unmanned, it is not possible to accurately comment on the weather conditions throughout the entire survey period. However, at the beginning of the survey



period the weather conditions were calm, and the sky had very limited cloud cover. We understand that during the survey there were little or no periods of rain. These conditions are considered suitable for obtaining representative measurement results.

Measurements were taken continuously of the A-weighted (dBA) L_{90} and L_{eq} sound pressure levels over 15-minute periods.

5.2 Measurement Position

The microphone was attached to an open mesh metal fence overlooking St Pancras Way at a height of approximately 1.7 metres above ground level.

The approximate location of the measurement position is shown on the following plan.





5.3 Instrumentation

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

Description	Manufacturer	Type	Serial Number	Laboratory Calibration
Type 1 Data Logging Sound Level Meter	Svantek	971	74368	Calibration on 17/07/2024
Type 1 ½" Condenser Microphone	ACO Pacific	7052E	68293	Calibration on 17/07/2024
Type 1 Calibrator	Brüel & Kjær	4230	1511010	Calibration on 26/07/2024

The sound level meter, including the extension cable, was calibrated prior to and on completion of the survey. No significant change was found to have occurred (no more than 0.1 dB).

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

6.0 Results

The results have been plotted on Time History Graph 32724/TH1 enclosed, presenting the 15-minute A-weighted (dBA) L_{90} and L_{eq} levels at the measurement position throughout the duration of the survey. The typical minimum L_{A90} (15 min) measurements recorded during the survey are presented in the table below:

Daytime (07:00 – 23:00 hrs)		Night-time (23:00 – 07:00 hrs)	
$L_{Aeq,16hr}$	Typical Lowest L_{A90} (15 min)	$L_{Aeq,8hr}$	Typical Lowest L_{A90} (15 min)
56dB	29dB	50dB	26dB

7.0 Discussion Of Noise Climate

Due to the nature of the survey, i.e. unmanned, it is not possible to accurately describe the dominant noise sources, or specific noise events throughout the entire survey period. At the beginning and end of the survey period, however, the dominant noise source was noted to be traffic flow noise from adjacent roads with some contribution from building services plant on other adjacent buildings.



8.0 Plant Noise Emission Criteria

Building services plant external noise emission levels will need to comply with local planning authority requirements and statutory noise nuisance legislation.

In light of the low background noise levels recorded on site, reference is made to BS4142 Section 11 – Assessment of Impacts which provides the following advice;

“The absolute level of sound. For a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low.

Where background sound levels and rating sound levels are low, absolute level might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.

Where residual sound levels are very high, the residual sound might itself result in adverse impacts or significant adverse impacts, and the margin by which the rating level exceeds the background might simply be an indication of the extent to which the specific sound source is likely to make those impacts worse.”

The daytime and night-time noise levels are considered to be "low" in the context of BS 4142 guidance, and it is therefore considered appropriate to consider the potential noise impact in terms of absolute noise levels.

The World Health Organisation's "Guideline for Community Noise" and "Night Noise Guidelines for Europe" include specific guidance on "absolute" magnitudes of noise that represent LOAEL values, i.e. a daytime value of 45dB $L_{Aeq,16hour}$ and a night-time value of 40dB $L_{Aeq,8hour}$. It is important to note that WHO includes in its definition of 'community noise', sources such as "road, rail and air traffic, industries, construction and public work, and the neighbourhood". It is therefore clear that WHO guidance does not exclude industrial noise from the sources intended to be captured by stated guideline values.



To take account of such factors, it is considered appropriate to align absolute design targets with the numerical guidance values indicated by the WHO, using:

- Use a shorter measurement reference period which will help provide a more appropriate measure of any intermittent periods of industrial activity (e.g. adopting the reference assessment periods promoted in BS 4142: 2014 (i.e. a one-hour assessment period during the daytime and a 15-minute assessment period during the night); and
- Apply corrections to account for the character of the noise (e.g. tonality, intermittency, etc.). Again, the guidance of BS 4142 is considered to represent an appropriate methodology for applying such corrections.

Taking the above into account, it can be seen that absolute values of LOAEL for industrial noise could be taken as 45dB $L_{Ar,T}$ during the daytime and 40dB $L_{Ar,T}$ during the night-time. Where industrial/commercial noise does not exceed these values, no mitigation is considered necessary. Where existing background noise levels are higher than the absolute noise levels, the LOAEL should be taken to be numerically equivalent to the background noise level, and no mitigation should be required where noise does not exceed this value.

In order to align with BS 4142 guidance, absolute SOAEL values are taken to be 55dB $L_{Ar,T}$ daytime and 50dB $L_{Ar,T}$ night-time, i.e. values set to be 10dB above the LOAEL values indicated above. Noise emission from plant and machinery above these values should therefore be avoided, except in situations where existing background noise levels are already higher than these values, in which case, the SOAEL should be taken to be +10dB above the typical background noise level characterising the site.

Where noise levels are between the stated LOAEL and SOAEL values, mitigation should be considered to minimise noise to the lowest practicable level.

Reconciling the above guidance and based on the typical background noise levels determined from the results of the noise monitoring undertaken at the site, LOAEL and SOAEL values are taken to be:

Effect Level	Rating Level, $L_{Ar,T}$ dB	
	Daytime (07.00 – 23.00)	Night (23.00 – 07.00)
LOAEL	45	40
SOAEL	55	50



Notwithstanding the above, the site lies within the jurisdiction of Wiltshire County Council. Their advice regarding plant noise emissions is as follows:

“For most proposed industrial and commercial noise sources, an assessment in line with BS 4142 should be carried out at the façade of noise sensitive premises. One of the indications of the impact of a BS 4142 assessment is 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. New developments should contribute and enhance the area in which they are located and where possible i.e. prevent ‘noise creep’, contribute to the improvement of people’s health and quality of life as per the NPSE. Therefore, the design objective should be: ‘The development should be designed so as to achieve a rating level of 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location.”

Considering the LPA requirement, it is recommended that the plant noise emission criteria be set 10dB below the LOAEL values, to be achieved incident at the nearest noise sensitive residential windows, in free-field conditions, with all plant operating simultaneously.

Rating Plant Noise Emission Criteria (L _{Aeq,T} , dB)	
Daytime (07:00 – 23:00 hours)	Night-time (23:00 – 07:00 hours)
35 ¹	30 ²

¹During the daytime, plant noise emissions are controlled to a level set to be numerically equivalent to 10dB below the adopted absolute daytime LOAEL value 45dB L_{A,T}.

²During the night-time, plant noise emissions are controlled to a level set to be numerically equivalent to 10dB below the adopted absolute night-time LOAEL value 40dB L_{A,T}.

The above criteria are to be achieved with all the proposed plant operating simultaneously.

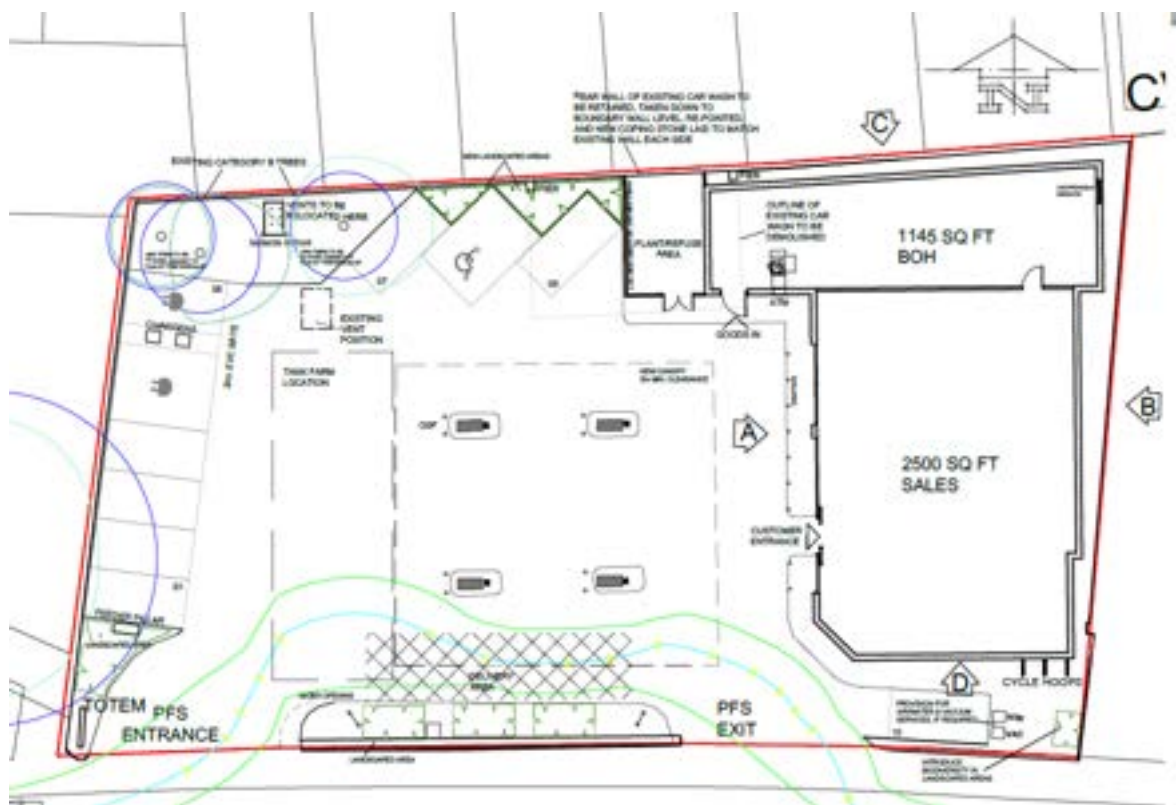
In most situations, conventional noise control engineering (e.g. use of attenuators, acoustic enclosures, etc.) can be used to reduce noise from process and fixed plant installations.

Noise shall be assessed in accordance with BS 4142:2014 with corrections applied for any plant emitting noise of a tonal or irregular quality.

It should be noted that the criteria proposed above are subject to the final approval of the Local Authority.

9.0 Plant Noise

The precise details of the building services plant at the site have not been decided. It is likely, however, that these will include some external condensers for air conditioning the store, providing refrigeration, some extract fans and some electric vehicle charging points. This plant will be designed to achieve the proposed plant noise emission day and night-time criteria, with suitable acoustic mitigation measures if required. The majority of the proposed plant is to be located in the Plant/Refuse area at the rear of the site as detailed in the drawing section below, courtesy of Wellsfield Associates. The electric chargers can be seen to the west of the site on the concourse.



The existing car wash and jet wash facilities were not in operation during our survey, but it is planned to remove these entirely from the proposed scheme. This would represent a subjective reduction in noise to the residential properties from previous times when this equipment was operating.

The noise level of any proposed plant shall be examined in order to establish if any tonal qualities are present and adjustments within the BS4142 calculations, for tonality and intermittency, shall be made if required.



10.0 Conclusions

An environmental noise survey has been undertaken to establish the currently prevailing environmental noise climate.

Environmental plant noise emission criteria have been recommended based on the results of the noise survey and with reference to the requirements of the local authority to avoid causing statutory noise nuisance.

Limiting noise level criteria have been established for further design, to ensure that any building services plant installed at the site will be in line with our proposed plant noise emission criteria.

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} L₉₀ 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*.

101 Pickwick Road, Corsham

Position 1

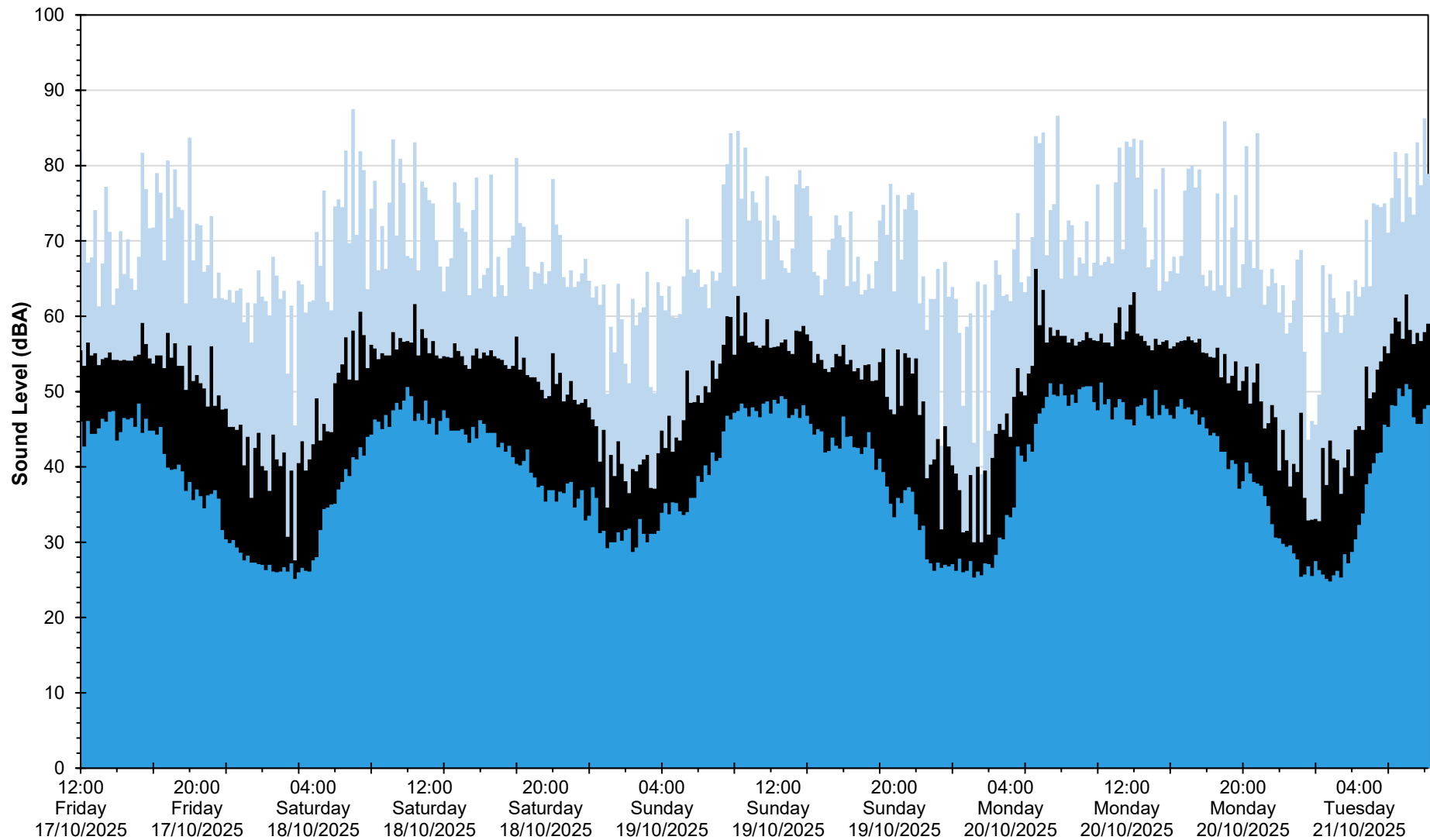
L_{Aeq} , L_{Amax} and L_{A90} Noise Levels

Friday 17 October 2025 to Tuesday 21 October 2025

■ L_{Amax}

■ L_{Aeq}

■ L_{A90}



Date and Time

32724/TH1