

Barclays, Hitchin

Environmental Noise Survey and Plant Noise Assessment Report

32822/PNA1

5 February 2026

For:
Wates
Wates House
Station Approach
Leatherhead
Surrey
KT22 7SW



Hann Tucker Associates

Consultants in Acoustics Noise & Vibration

Head Office: Duke House, 1-2 Duke Street, Woking, Surrey, GU21 5BA (t) +44 (0) 1483 770 595

Manchester Office: First Floor, 346 Deansgate, Manchester, M3 4LY (t) +44 (0) 161 832 7041

(w) hanntucker.co.uk (e) enquiries@hanntucker.co.uk



Environmental Noise Survey and Plant Noise Assessment Report 32822/PNA1

Document Control

Rev	Date	Comment	Prepared by	Reviewed by	Approved by
2	05/02/2026	GF assessment added.			
			Euan Ellis Assistant Consultant BA(Hons)	Jake Howarth Senior Associate BEng(Hons), MIOA	
1	02/02/2026	Plant noise assessment added.			
			Euan Ellis Assistant Consultant BA(Hons)	Jake Howarth Senior Associate BEng(Hons), MIOA	
0	19/01/2026	-			
			Sandy Wilson Consultant BSc(Hons)	Tom Bonnert Senior Associate BEng(Hons), MIOA	



Environmental Noise Survey and Plant Noise Assessment Report Report 32822/PNA1

Contents	Page
1.0 Introduction	1
2.0 Objectives	1
3.0 Acoustic Terminology	1
4.0 Site Description	2
5.0 Planning Policies, Standards & Guidance	3
6.0 Baseline Noise Survey	4
7.0 Plant Noise Emission Criteria	8
8.0 Conclusions	12

Attachments

Appendix A – Acoustic Terminology

Appendix B – Relevant Planning Policies and Guidance

Appendix C – Time History Graphs



1.0 Introduction

Hann Tucker Associates Limited (Hann Tucker) has been commissioned by Wates to undertake a plant noise assessment for a Barclays Bank site in Hitchin, Hertfordshire.

New building services plant is to be installed at the site, which is located on High Street in Hitchin. At the time of writing the plant selection and location has not yet been confirmed.

Hann Tucker Associates has therefore been commissioned to undertake a detailed environmental noise survey at the site to establish baseline noise conditions as presented herein.

Suitable plant noise emission criteria based on the requirements of the Local Authority and the application of BS 4142: 2014+ A1:2019 have been established.

2.0 Objectives

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

The survey will enable noise emission limits from the development to be identified with reference to the requirements of the Local Authority and/or the application of BS 4142: 2014 + A1:2019 and to minimise the possibility of noise nuisance to neighbours.

To assess the noise emissions from the proposed plant, based upon data with which we are provided, and comment upon the acceptability.

To advise on noise control measures if required.

3.0 Acoustic Terminology

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

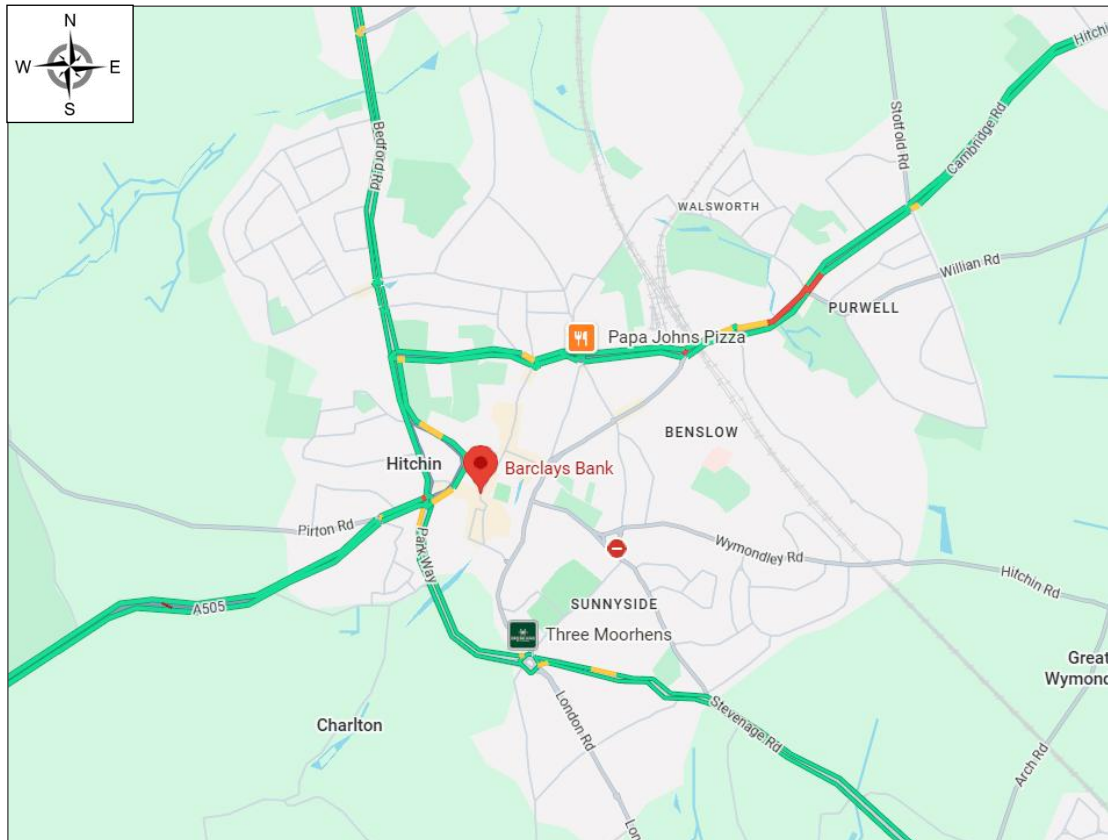


4.0 Site Description

4.1 Location

The site is located at 5/6 High Street in Hitchin, Hertfordshire.

The location is presented in the Location Map below.



Location Map (Maxar Technologies, Map data ©2026 Google)

The site falls within the jurisdiction of North Hertfordshire District Council.

4.2 Description

The site is located in the town centre of Hitchin and is bounded by High Street to east, Brand Street to the north, Paynes Park to the north and West Alley to the west. The site is situated in a mostly commercial area with residential properties located directly above and to the south of site.

The site is presented in the Site Plan on the following page:



Site Plan (Maxar Technologies, Map data ©2026 Google)

5.0 Planning Policies, Standards & Guidance

5.1 Policies & Guides

In order to provide a suitable assessment a number of national planning policies have been considered.

All guidance used to form a noise impact assessment is taken from various standards, guidance, and Local Authority requirements as summarised below:

- Local Planning Policy
- British Standard 4142:2014 + A1:2019
- Statutory Noise Nuisance

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



5.2 Specific Local Authority Criteria

The site lies within the jurisdiction of North Hertfordshire District Council. The NHDC Local Plan 2011-2031 was published in October 2016. Policy D3 Protecting living conditions states:

“Planning permission will be granted for development proposals which do not cause unacceptable harm to living conditions.

Where the living conditions of proposed developments would be affected by an existing use or the living conditions of an existing development would be affected by a proposed use, the Council will consider whether there are mitigation measures that can be taken to mitigate the harm to an acceptable level. If the Council is not satisfied that mitigation proposals would address the identified harm, development proposals will not be permitted.”

The policy does not state any specific numerical criteria for noise or vibration and therefore our assessment herein draws upon national guidance as set out in BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’.

6.0 Baseline Noise Survey

6.1 Procedure

Fully automated environmental noise monitoring was undertaken by Sandy Wilson BSc(Hons) from approximately 13:00 hours on Tuesday 16 December 2025 to 12:30 hours on Friday 19 December 2025, to establish existing baseline noise levels.

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

6.2 Measurement Position

The microphone was installed on the roof at the rear of the property approximately 1.5 metres above roof level and approximately 1.5m from the nearest façade. Therefore, the results contain local reflections.

The position is presented on the plan on the following page.



Plan Showing Measurement Positions (Maxar Technologies, Map Data © 2026 Google)

6.3 Weather Conditions

For the unattended survey between Tuesday 16 December 2025 and Friday 19 December 2025, local weather reports indicated no notable periods of rainfall, with temperatures ranging from -2°C (night) to 11°C (day) and wind speeds less than 5m/s. During our time on site, skies were largely clear with patchy cloud cover, wind conditions were subjectively light and road surfaces were dry.

6.4 Instrumentation

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

Description	Manufacturer	Type	Serial Number	Calibration
Type 1 Data Logging Sound Level Meter	Larson Davis	824	3053	Calibration on 21/05/2024
Type 1 ½" Condenser Microphone	PCB	377B02	10747	Calibration on 21/05/2024
Preamp	Larson Davis	PRM902	2752	Calibration on 21/05/2024
Type 1 Calibrator	Bruel & Kjaer	4230	494325	Calibration on 12/08/2025



Each sound level meter, including the extension cable, was calibrated prior to and on completion of the surveys.

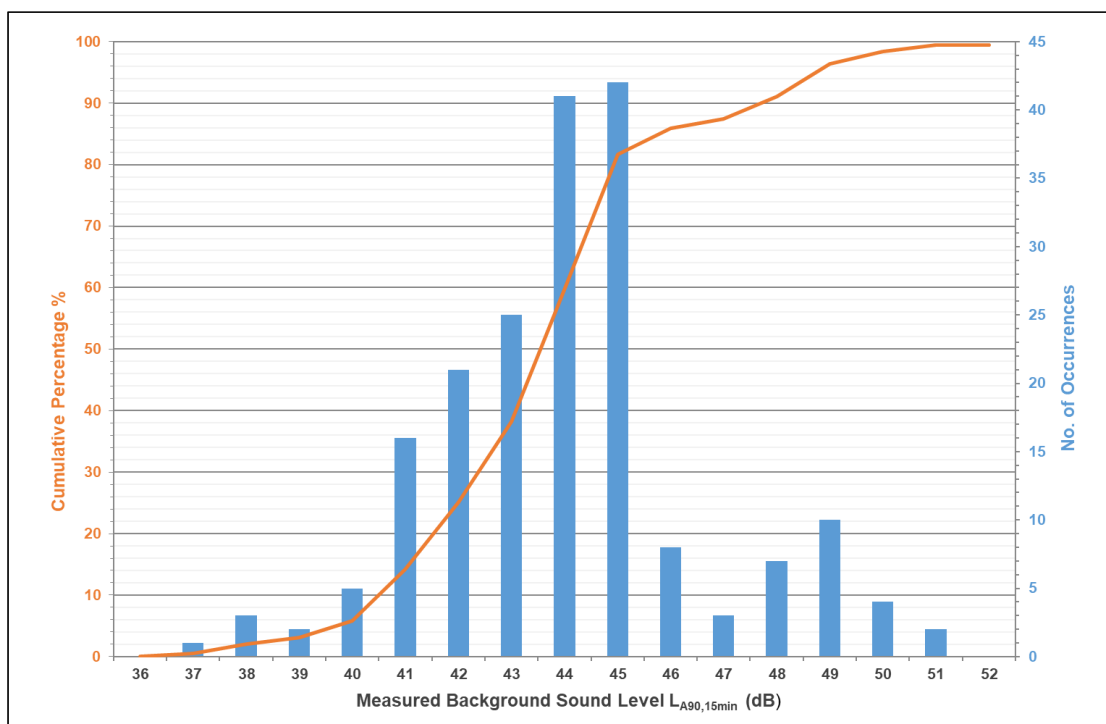
No significant change was found to have occurred (no more than 0.3dB).

Each 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.

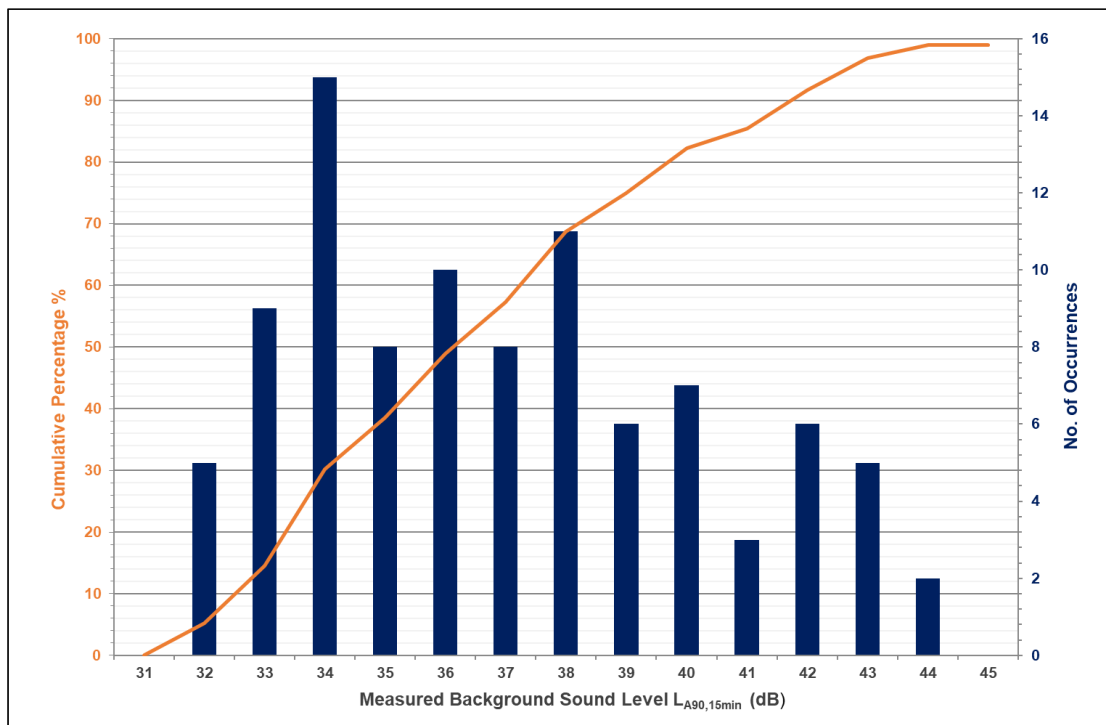
6.5 Results

The results have been plotted on Time History Graph 32822/TH1 enclosed presenting the 15minute A-weighted (dBA) L_{90} , L_{eq} and L_{max} levels at each measurement position throughout the duration of the survey.

BS 4142 states that “the background sound level must be reliable and suitably represent the particular circumstances and periods of interest. For this purpose, the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods.” Taking this into account, the following histograms have been created which display the occurrence of each sound level (L_{A90}) for the day and night-time periods.



Position 1: Statistical analysis of daytime background noise levels (07:00-23:00 hrs)



Position 1: Statistical analysis of night-time background noise levels (23:00-07:00 hrs)

Based on the above plots the L_{A90} values presented below are considered to be the 'representative' background sound levels determined through statistical analysis of the 15-minute readings in line with BS 4142.

Representative Measured $L_{A90(15min)}$ Background Sound Level (dB re 2×10^{-5} Pa)	
Daytime (07:00 – 23:00) Hours	Night-Time (23:00 – 07:00) Hours
41	34

6.6 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 from the surround road network and building services serving the neighbouring properties.



7.0 Plant Noise Emission Criteria

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

Based on the results of the noise survey and the requirements of the Local Authority (as outlined in Section 5.2), we propose that the following plant noise emission criteria be achieved incident at the nearest noise sensitive residential windows, in free-field conditions, with all plant operating simultaneously.

Plant Noise Rating Level ($L_{A,T,r}$, dB)	
Daytime (07:00 – 23:00 hours)	Night-time (23:00 – 07:00 hours)
38*	31*

* The above plant noise limits have been corrected by -3dB to account for the measured reflections during our survey and provide free-field levels applicable at receptors, as per the requirements of BS 4142.

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

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 above are subject to the final approval of the Local Authority.

For life safety standby plant, only used in emergencies and occasional testing - e.g. smoke extract fans and life safety generators - relaxations of the internal and external criteria are normally acceptable but should comply with local authority and occupational requirements and must not interfere with internal audible emergency alarms.

8.0 Plant Noise Impact Assessment

8.1 Proposed Plant

8.1.1 Plant Location

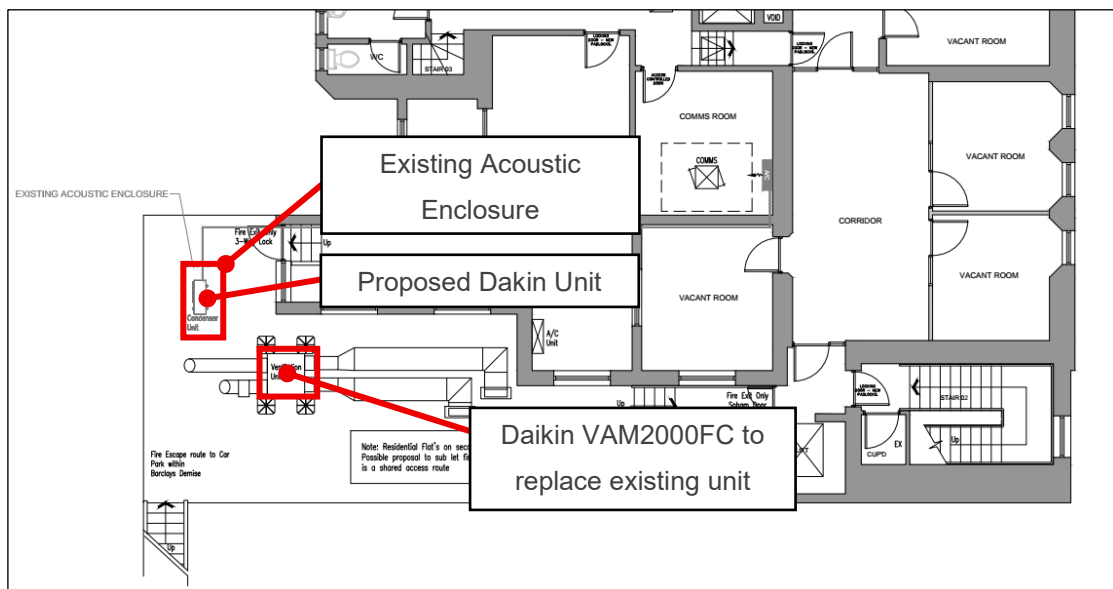
The proposed plant is to be located on the existing roof and is understood to comprise the following:



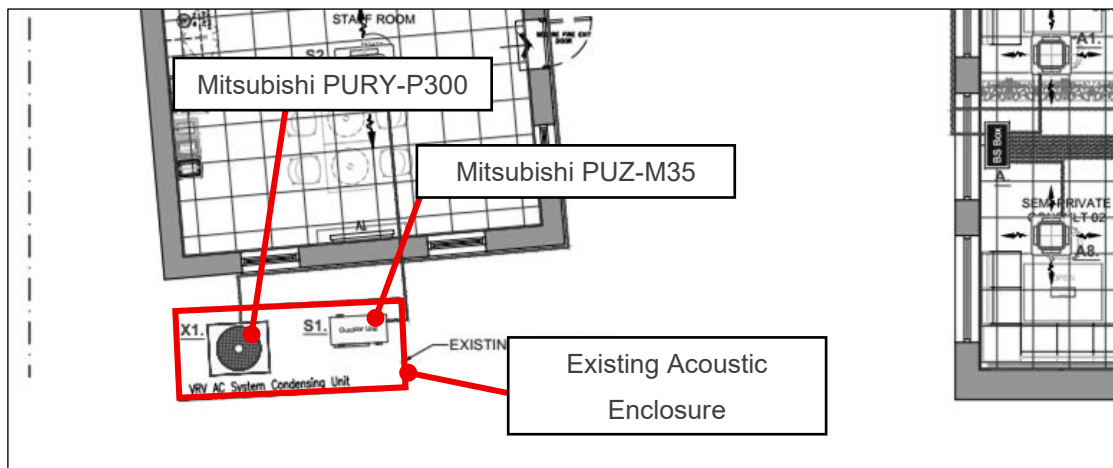
- First Floor
 - 1No. Daikin REYQ16U unit
 - 1No Daikin VAM2000FC unit
- Ground Floor
 - 1No Mitsubishi PUZ-M35
 - 1No Mitsubishi PURY-P300

The plan below highlights the location of the proposed plant. It is understood an existing acoustic enclosures will be retained around the proposed Dakin unit on the first floor and both plant items on the ground floor. these have been factored into our initial plant noise emission calculations.

It should be noted that the existing specification of the acoustic enclosures are unknown. However, from inspections they are solid metal construction with small attenuated louvres for airflow. We would expect these enclosure to provide at least 18 dBA of attenuation. However, this will need to be conformed through detailed design.



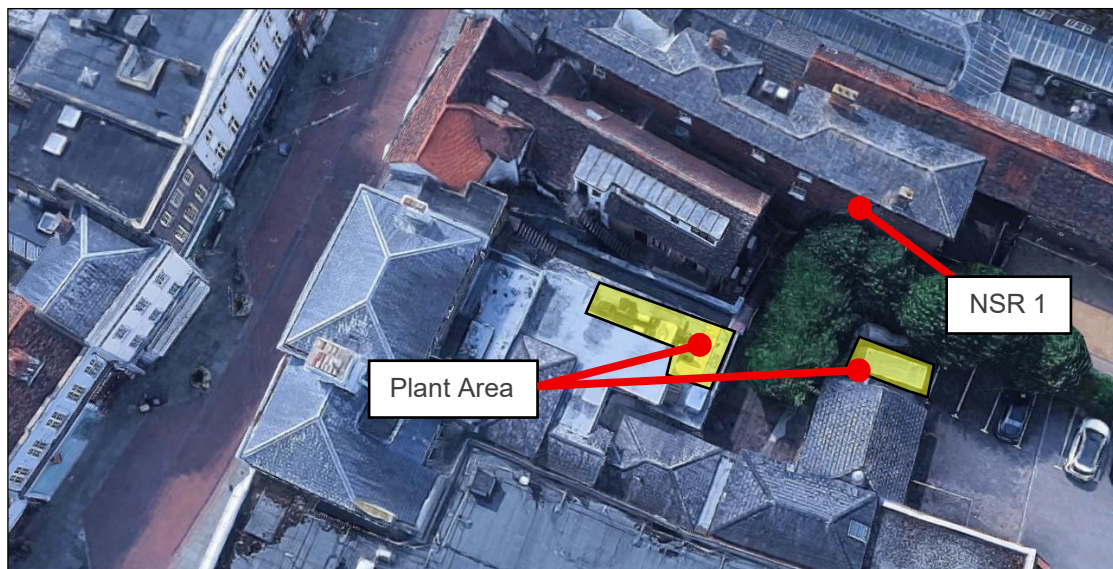
Proposed Plant – First Floor



Proposed Plant – Ground Floor

8.2 Noise sensitive Receptor Location

The image below highlights the location of the worst effected noise sensitive receptor (NSR). As the window to the east (marked as NSR 1) is not screened from the plant area, it has been identified as the worst effected receptor due to the lack of screening from the plant area, and therefore our plant noise egress calculations have been carried out to this location.



Noise Sensitive Receptor Location (Imagery ©2026 Google, Imagery ©2026 Airbus, Map data ©2026)

8.2.1 Plant/Store Operation

It is understood that the plant will operate between 9am and 4pm. Our assessment has therefore been carried out based on the plant operating during daytime hours only.

8.2.2 Plant Noise Data

The following table presents the manufacturer's noise data for the proposed rooftop units.

Plant Description	Sound Pressure Level (dB) at 1m at each Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
Daikin REYQ16U	67	69	64	62	55	52	52	47	63
Mitsubishi PUZ-M35	58	51	45	44	40	37	32	31	46
Mitsubishi PURY-P300	65	64	61	56	53	49	45	43	59

The acoustic data for Daikin VAM2000FC is only available as a sound pressure level measured 1.5m below the centre of the unit or as a sound power for the unit as a whole.

As such, based on the data provided calculations cannot be undertaken to determine the relative duct-borne noise contributions (ie intake and exhaust) as it is impossible to accurately determine the relative noise contributions from each path. Limiting levels at 1m from the intake and exhaust terminations will be provided for these units.

8.2.3 Plant Noise Impact Assessment

The noise level of the Daikin REYQ16U plant has been calculated at the residential receptor. The plant is likely intermittent in nature, so an acoustic feature correction of 3 dB has been applied to the calculations.

The table below sets out the calculations for the plant for which octave band data is available.

[illegible]



Description	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
Calculated Noise Level at receptor (dB)	-	-	-	-	-	-	-	-	22
Mitsubishi PURY-P300 Sound Pressure, SPL (dB)	65	64	61	56	53	49	45	43	53
Intermittency Correction	+3	+3	+3	+3	+3	+3	+3	+3	+3
Distance Correction (6m)	-9	-9	-9	-9	-9	-9	-9	-9	-9
Existing Enclosure	-	-	-	-	-	-	-	-	-18
Calculated Noise Level at receptor (dB)	-	-	-	-	-	-	-	-	35

Based on the above, the cumulative plant noise egress level at the nearest noise sensitive premises are as follows:

Period	Plant Noise Egress Criteria, L _{AfTr} (dB)	Cumulative Plant noise Egress Level (dB)	Compliance
Daytime (07:00 – 23:00)	38	36	Yes

The table above indicates that noise levels from the proposed plant are not expected to exceed the background noise criteria during daytime hours. Therefore, no mitigation strategy necessary.

8.2.4 Limiting Noise Levels for Daikin VAM2000FC

It should be noted that the inlet, exhaust and the breakout noise of the proposed ventilation system cannot be directly assessed due to how the noise data has been presented. As such, the following limits at 1m from the inlet, exhaust and case should be complied with:

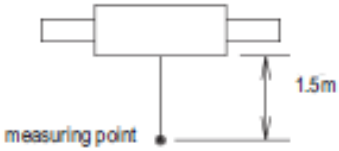
- Inlet noise limit at 1m: 60 dBA.
- Exhaust noise limit at 1m: 60 dBA
- Breakout noise limit at 1m: 60 dBA.

The above limits should be provided to a reputable attenuator supplier, however, they should be simple to comply with as the datasheet shows that a noise level of 40 dBA is produced 1.5m from the unit with approximately 1m of duct provided to the fan side. See below:



Air flow rate (dB)		
U-H	H	L
40	38	35

NOTES		
1. Ventilation mode: total heat exchange.		
2. Operation noise is measured in an anechoic chamber.		
3. The operation noise level may become higher than this value depending on the operation conditions, reflected sound and peripheral noise.		
4. Operation noise differs with operation and ambient conditions.		
5. U-H: ultra-high, H: high, L: low		
6. Location of microphone.		



Datasheet Excerpt Showing VAM2000FC Noise Levels at 1.5m Below the Unit.

9.0 Conclusions

An environmental noise survey has been undertaken in order to establish the currently prevailing noise levels.

Plant noise emission criteria have been recommended based on the results of the noise survey and with reference to the Local Authority's requirements.

An assessment of plant noise emissions has been carried out at the nearest noise sensitive receptor. Our calculations indicate that the noise levels of proposed plant items will not exceed the established daytime background noise limits at the receptor.

However, it should be noted that a direct assessment of the VAM2000FC unit was not possible due to the limitations of the data presented by the manufacturer. As such, limits have been set for the intake, exhaust and casing breakout of the unit.

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*.

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.

Sound Pressure Level (L_p) 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).

Sound Power Level (SWL or L_w) 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

Planning Policies, Standards & Guidance

B.1 BS 4142:2014 + A1:2019

When setting plant noise emission criteria reference is commonly made to BS 4142:2014 *“Methods for rating and assessing industrial and commercial sound”*.

The procedure contained in BS 4142:2014 provides an assessment of the likely effects of sound on people when comparing the specific noise levels from the source with representative background noise levels. Where the noise contains “a tone, impulse or other characteristic” then various corrections can be added to the specific (source) noise level to obtain the “rating level”.

BS 4142 states that: *“The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs”. An estimation of the impact of the specific noise can be obtained by the difference of the rating noise level and the background noise level and considering the following:*

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

The determination of the “rating level” and the “background level” are both open to interpretation, depending on the context.

B.2 Statutory Noise Nuisance

S79(1)(g) of the Environmental Protection Act 1990 defines a statutory nuisance as “*noise emitted from a premises so as to be prejudicial to health or a nuisance*”. A duty is placed on the Local Authority to serve an abatement notice under S80 if it becomes satisfied that a statutory nuisance exists.

There is however no quantitative definition/objective method in determining statutory noise nuisance, and as such we are not able to definitively advise or determine on such matters. Noise nuisance is subjective and requires multiple factors to be considered, including but not limited to:

- Straining to hear something is *generally* considered not a nuisance, however,
- Noise level (of source and relative to background), timing, duration, type of noise, frequency, location, continuous or repetitive, all factor into judging nuisance.

To mitigate against, though not remove entirely, the risk of a statutory noise nuisance, a noise assessment should be undertaken by a Suitably Qualified Acoustician. Adoption of appropriate and relevant industry standards/guides can provide a structured framework for such assessments, improving the credibility of mitigation efforts. It is also important to also recognise that ongoing management (both active and passive) may also be necessary depending on the context of the situation.

Appendix C

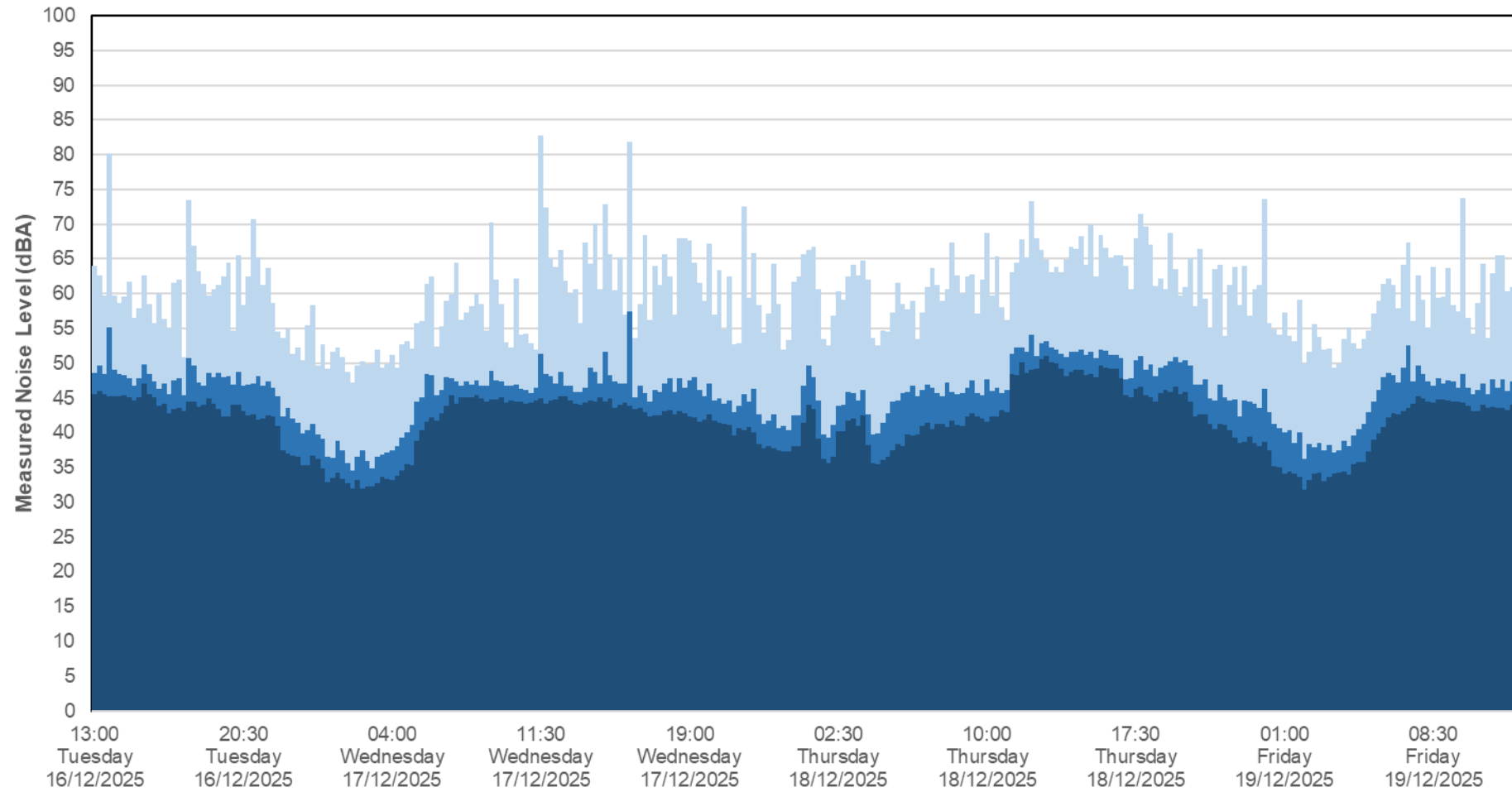
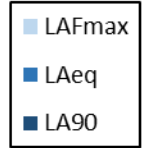
Time History Graphs

Barclays, Hitchin

Position 1

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

16 December 2025 to 19 December 2025



32822/TH1