Garth Hotel
Gower Street
London

Environmental Noise Impact Assessment Report
(For planning purposes only)

31493/PNA1 Rev1

11 September 2024

For:
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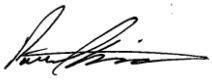
Document Control

Rev	Date	Comment	Prepared by	Checked by	Authorised by
0	09/09/24	-			
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1	11/09/24	Site Details Amended			
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Attachments

1.0 Introduction

Hann Tucker Associates have been commissioned to undertake an environmental noise survey to provide a basis for assessment of the environmental plant noise emissions from the proposed new plant at The Garth Hotel in London.

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 and BS 4142:2014 so as to avoid causing a statutory noise nuisance.

To assess the noise levels at the nearest noise sensitive receptor.

3.0 Site Description

3.1 Location

The site is located at 69 Gower Street in London as shown on the Location Map below.

This site falls under the jurisdiction of The London Borough of Camden.

3.2 Description

The site is a terraced ground plus three storey building on Gower Street in London. Surrounding properties comprise a number of similar hotels to the north and south. The site has a rear garden of a similar length to the adjoining properties. There are also some gardens to the west of the site on Ridgmount Gardens.

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 12.00 hours on Friday 26 April to 12:15 hours on Monday 29 April 2024.

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 was generally clear. We understand that during the survey there were some brief 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 a tree at the rear of the hotel garden approximately 2.4 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	80233	Calibration on 02/08/2023
Type 1 ½" Condenser Microphone	ACO Pacific	7052E	67983	Calibration on 02/08/2023
Type 1 Calibrator	Bruel & Kjaer	4230	1411668	Calibration on 27/07/2023

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 31493/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)	
$L_{Aeq,16hr}$	Lowest $L_{A90\ (15\ min)}$	$L_{Aeq,8hr}$	Lowest $L_{A90\ (15\ min)}$
50dB	46dB	46dB	41dB

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.

8.0 Plant Noise Emission Criteria

8.1 Local Authority Requirements

The site lies within the jurisdiction of London Borough of Camden. Camden's planning policy for controlling atmospheric noise emissions from building service plant is detailed in Appendix 3 of Camden Local Plan (adopted in July 2017). See below extraction from the Camden Local Plan.

"A relevant standard or guidance document should be referenced when determining values for LOAEL and SOAEL for non-anonymous noise. Where appropriate and within the scope of the document it is expected that British Standard 4142:2014 'Methods for rating and assessing industrial and commercial sound' (BS 4142) will be used. For such cases a 'Rating Level' of 10 dB below background (15dB if tonal components are present) should be considered as the design criterion).

Table C: Noise levels applicable to proposed industrial and commercial developments (including plant and machinery)

Existing Noise sensitive receptor	Assessment Location	Design Period	LOAEL (Green)	LOAEL to SOAEL (Amber)	SOAL (Red)
Dwellings**	Garden used for main amenity (free field) and Outside living or dining or bedroom window (façade)	Day	'Rating level' 10dB* below background	'Rating level' between 9dB below and 5dB above background	'Rating level' greater than 5dB above background
Dwellings**	Outside bedroom window (façade)	Night	'Rating level' 10dB* below background and no events exceeding 57dBL_{Amax}	'Rating level' between 9dB below and 5dB above background or noise events between 57dB and 88dB L_{Amax}	'Rating level' greater than 5dB above background and/or events exceeding 88dBL_{Amax}

**10dB should be increased to 15dB if the noise contains audible tonal elements. (day and night). However, if it can be demonstrated that there is no significant difference in the character of the residual background noise and the specific noise from the proposed development then this reduction may not be required. In addition, a frequency analysis (to include, the use of Noise Rating (NR) curves or other criteria curves) for the assessment of tonal or low frequency noise may be required.*

***levels given are for dwellings, however, levels are use specific and different levels will apply dependent on the use of the premises.*

"The periods in Table C correspond to 0700 hours to 2300 hours for the day and 2300 hours to 0700 hours for the night. The Council will take into account the likely times of occupation for types of development and will be amended according to the times of operation of the establishment under consideration."

"There are certain smaller pieces of equipment on commercial premises, such as extract ventilation, air conditioning units and condensers, where achievement of the rating levels (ordinarily determined by a BS:4142 assessment) may not afford the necessary protection. In these cases, the Council will generally also require a NR curve specification of NR35 or below, dependant on the room (based upon measured or predicted Leq,5mins noise levels in octave bands) 1 metre from the façade of affected premises, where the noise sensitive premise is

located in a quiet background area."

8.2 BS 4142:2014

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

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.

In summary it is not possible to set plant noise emission criteria purely on the basis of BS 4142:2014. It is reasonable to infer from the above, however, that a difference of around -5dB corresponds to "No Observed Effect Level" as defined in the Noise Policy Statement for England.

8.3 Proposed Criteria

On the basis of the above and the results of the environmental noise survey, we propose that the following plant noise emission criteria should be achieved at 1 metre from the nearest noise sensitive residential window, and within neighbouring gardens, with all plant operating

simultaneously.

Plant Noise Emission Criteria (dB re $2x10^{-5}$ Pa)	
Daytime (07:00 – 23:00 hours)	**Night-time (23:00 – 07:00 hours)**
36dBA	31dBA

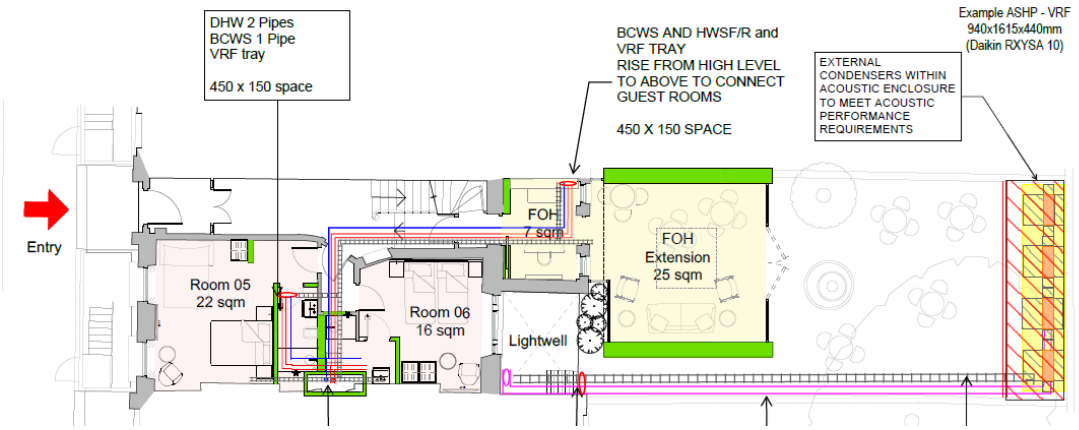
If plant contains tonal or impulsive characteristics the external design criteria should be reduced by 5dBA.

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

9.0 Plant Noise Impact Assessment

9.1 Predicted Cumulative Noise Levels

We have assessed the potential noise impact of the proposed plant on the nearest residential receptors based upon the information we have currently received from Introba in line with the current plant layout drawing dated September 2024. This drawing shows the location of the proposed plant installed inside an acoustic enclosure at the end of the garden of the property. We reproduce a screenshot of this arrangement below.



Our assessment has been carried out to the nearest residential windows which are within the facades of the adjoining buildings and also to the nearest neighbouring garden. These windows are approximately 16 metres away; the gardens are approximately 4 metres away.

The details of the proposed building services plant are as follows:

Description	Manufacturer	Qty	Plant Model	Sound Pressure Level at 1m (dBA)
External Condenser	Daikin	2	RXYSA-10A	57
External Condenser	Samsung	2	AE140BXYDEG/EU	47

The above external condensers will be installed within acoustic enclosures that reduce the noise levels by a minimum of 13dBA.

It is understood that the above plant could operate continuously.

The following table summarises our prediction of the proposed plant cumulative noise level:

	Sound Pressure Level (dBA) at 1m
2 No. RXYSA-10A (+3dB)	60
2 No. AE140BXYDEG/EU (+3dB)	50
Cumulative Noise Level	61

The following table summarises our predictions of atmospheric noise emission from the plant area to the nearest noise sensitive residential window, for the daytime and night-time periods.

	Sound Pressure Level (dBA)
Cumulative Noise Level	61
Distance Correction (16m)	-23
Reduction from Acoustic Enclosure	-13
Façade Reflection	+3
Calculated Specific Noise Level at Receptor from plant within the plant area	**28**

9.1.1 Noise Impact Assessment

Daytime

The following table presents our impact assessment of noise from the proposed plant to the residential window above the plant for the daytime period, undertaken in accordance with BS 4142:2014.

Results		Relevant Clause	Commentary
Specific sound level at receptor	$L_{Aeq,1h}$ = 28dB	7.3.6	See table above.
Background sound level	$L_{A90,1h}$ = 46dB	8.1.1 8.1.3 8.3	The background sound level was measured at the site and was considered to be representative of the typical background sound level.
Assessment made during the daytime so reference period is 1 hour		7.2	
Acoustic feature correction	+3dB	9.2	The plant is not considered to be tonal and hence no correction is applied. A correction of 3dB has been applied as the plant could be operating intermittently.
Rating level	31dB	9.2	Calculated by adding acoustic feature corrections to the specific sound level.
Difference between rating level and background sound level	-15dB	11	
Assessment indicates a low impact due to plant noise at the receptor.		11	The rating level does not exceed the background sound level. **It is estimated to be 15dB below** the background sound level.
Uncertainty of the assessment	Low	10	The background sound level is based on repeatable measurements made at the site. The plant is not thought to exhibit any tonal aspects or significant intermittency. Some minor uncertainty exists in the acoustic characteristics of the proposed plant, but as the rating level is below the background level this does not have any significance on the outcome of the assessment.

In summary, our assessment in accordance with BS 4142:2014 indicates a low noise impact as a result of the proposed plant at the nearest neighbouring residential window during the daytime.

Night-Time

The following table presents our impact assessment of noise from the proposed plant to the residential window for the daytime period, undertaken in accordance with BS 4142:2014.

Results		Relevant Clause	Commentary
Specific sound level at receptor	$L_{Aeq,1h}$ = 28dB	7.3.6	See table above.
Background sound level	$L_{A90,1h}$ = 41dB	8.1.1 8.1.3 8.3	The background sound level was measured at the site and was considered to be representative of the typical background sound level.
Assessment made during the daytime so reference period is 1 hour		7.2	
Acoustic feature correction	+3dB	9.2	The plant is not considered to be tonal and hence no correction is applied. A correction of 3dB has been applied as the plant could be operating intermittently.
Rating level	31dB	9.2	Calculated by adding acoustic feature corrections to the specific sound level.
Difference between rating level and background sound level	-2dB	11	
Assessment indicates a low impact due to plant noise at the receptor.		11	The rating level does not exceed the background sound level. **It is estimated to be 10dB below** the background sound level.
Uncertainty of the assessment	Low	10	The background sound level is based on repeatable measurements made at the site. The plant is not thought to exhibit any tonal aspects or significant intermittency. Some minor uncertainty exists in the acoustic characteristics of the proposed plant, but as the rating level is 10dBA below the background level this does not have any significance on the outcome of the assessment.

In summary, our assessment in accordance with BS 4142:2014 indicates a low noise impact as a result of the proposed plant at the nearest neighbouring residential window during the night-time.

Noise to Gardens

The following table summarises our predictions of atmospheric noise emission from the plant area to the adjoining gardens for the daytime periods.

	Sound Pressure Level (dBA)
Cumulative Noise Level	61
Distance Correction (4m)	-9
Reduction from Acoustic Enclosure	-13

Barrier from Garden Walls	-8
Calculated Specific Noise Level at Receptor from plant within the plant area	**31**

The following table presents our impact assessment of noise from the proposed plant to the adjoining gardens the daytime period, undertaken in accordance with BS 4142:2014.

Results		Relevant Clause	Commentary
Specific sound level at receptor	$L_{Aeq,1h}$ = 31dB	7.3.6	See table above.
Background sound level	$L_{A90,1h}$ = 46dB	8.1.1 8.1.3 8.3	The background sound level was measured at the site and was considered to be representative of the typical background sound level.
Assessment made during the daytime so reference period is 1 hour		7.2	
Acoustic feature correction	+3dB	9.2	The plant is not considered to be tonal and hence no correction is applied. A correction of 3dB has been applied as the plant could be operating intermittently.
Rating level	34dB	9.2	Calculated by adding acoustic feature corrections to the specific sound level.
Difference between rating level and background sound level	-14dB	11	
Assessment indicates a low impact due to plant noise at the receptor.		11	The rating level does not exceed the background sound level. **It is estimated to be 12dB below** the background sound level.
Uncertainty of the assessment	Low	10	The background sound level is based on repeatable measurements made at the site. The plant is not thought to exhibit any tonal aspects or significant intermittency. Some minor uncertainty exists in the acoustic characteristics of the proposed plant, but as the rating level is below the background level this does not have any significance on the outcome of the assessment.

In summary, our assessment in accordance with BS 4142:2014 indicates a low noise impact in the adjoining gardens as a result of the proposed plant during the daytime.

In line with (PAN) 1/2011 and based on residential use being a noise sensitive receptor, the noise impact of the proposed building services plant should be “neutral”.

10.0 Conclusions

An environmental noise survey has been undertaken in order 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 BS 4142:2014 so as to avoid causing statutory noise nuisance.

Our assessment indicates that with the noise control measures as stated within, the proposed plant should achieve the proposed day and night-time plant noise emission criteria and hence we can see no acoustic reason why it should not be granted planning permission.

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.

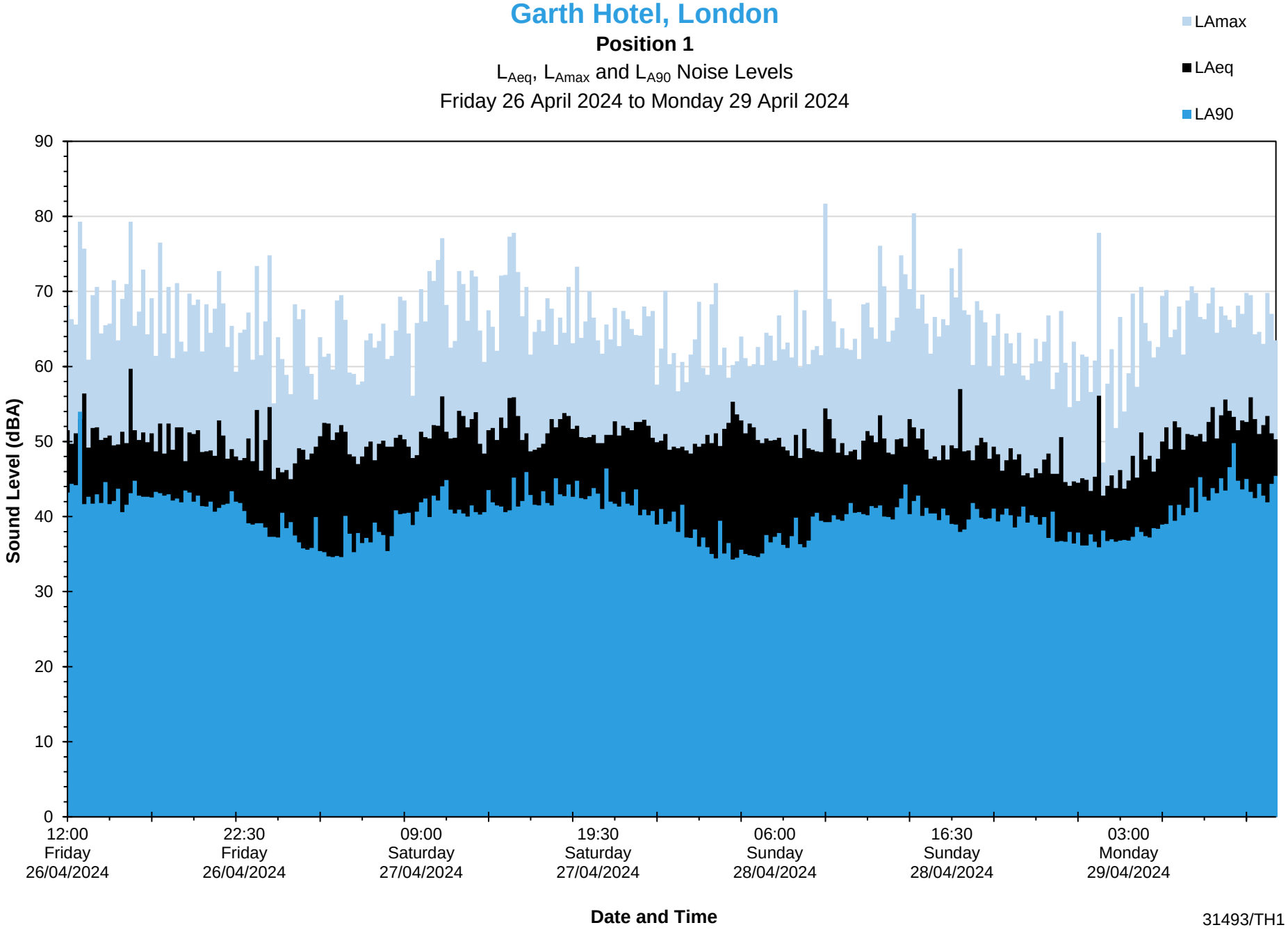
$L_{eq,T}$ — $L_{eq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time period, *T*.

Garth Hotel, London

Position 1

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

Friday 26 April 2024 to Monday 29 April 2024



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