THE LANTERN, 75 HAMPSTEAD RD LONDON, NW1 2PL

Environmental Noise Survey & Plant Noise Assessment Report

24 June 2023

Client:

Hollen LLP
13 – 14 Dean Street
London
W1D 3RS

QA23118/ENS

Document Control

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Role	Name	Signature	Date
Preparation	**Andrew Fermer** Director BSc (Hons) MIOA		24/06/2023

For Information

Please Note
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Contents

1.0 INTRODUCTION

It is proposed to install a standby generator in the basement of the Lantern Building, 75 Hampstead Rd, London, NW1 2PL, to be used only for the emergency event of the building losing all power.

Quantum Acoustics Ltd have been appointed to undertake an environmental background noise survey and atmospheric plant noise impact assessment to Local Authority requirements, in relation to new generator related ventilation plant proposed. This report presents our survey methodology, plant assessment and findings.

2.0 SITE DESCRIPTION

The Lantern Building, 75 Hampstead Rd, London, NW1 2PL is a nine storey office building with the entrance fronting Hampstead Road. The site location is indicated in red below and is located within the juristiction of Camden Borough Council.

Site Plan (Google Imagery 2022, The GeoInformation Group)

3.0 ENVIRONMENTAL NOISE SURVEY

An automated environmental noise survey was undertaken from approximately 12:00 hours on the 21st June 2023 to approximately 12:00 hours on the 22nd June 2023.

Weather conditions were mainly dry and with light winds. The conditions were therefore deemed generally suitable for the measurement of environmental noise.

3.1 Measurement Procedure

Noise monitoring equipment was located at the following location:

Position	Description
Position A	The microphone was located at roof level, attached to a railing on the Drummond Street façade 1.5m from roof level

The approximate location is shown on the following plan.

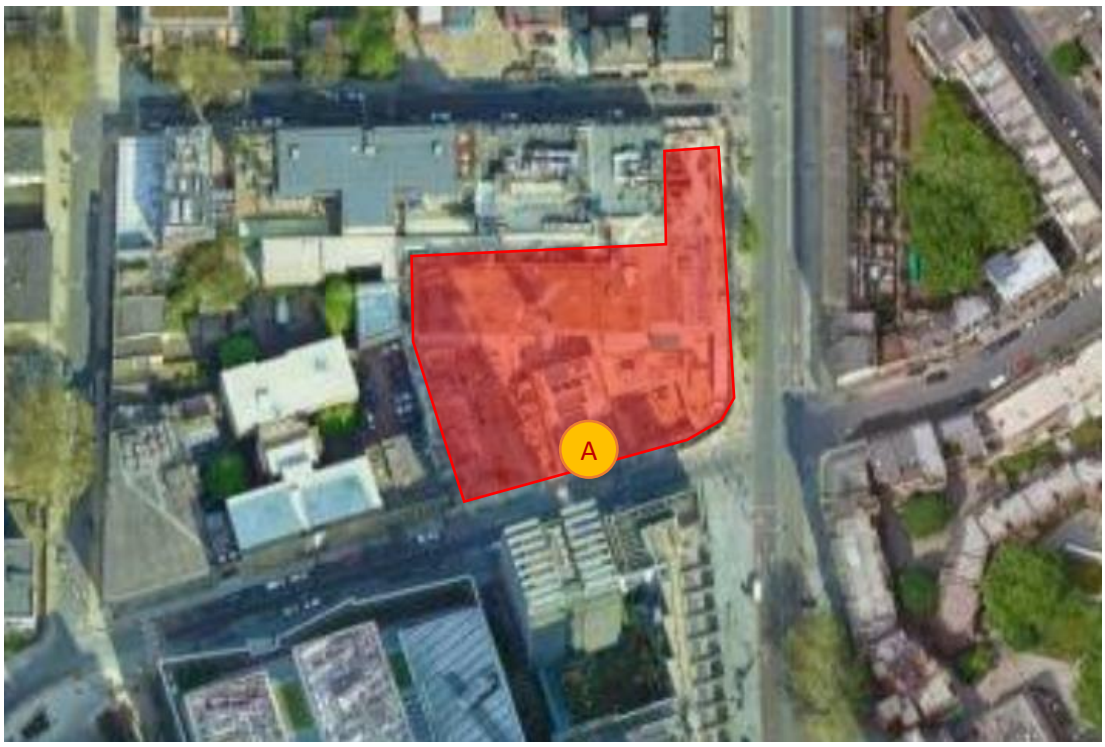


Figure 2. Measurement Location Plan (Google Imagery 2022, The GeoInformation Group)

3.2 Equipment

Details of the equipment used for the survey are summarized in the following table:

Description	Manufacturer	Type	Serial Number
Type 1 Sound Level Meter	Svantek	971A	124770
Acoustic Calibrator	Svantek	SV 33B	99005

Calibration of the equipment is traceable to national standards. Calibration certificates are available upon request. Calibration certificates for the equipment, traceable to national standards, used in this survey are available upon request.

Calibration checks were carried out prior to and on completion of the survey, with no significant calibration drift observed.

4.0 SURVEY FINDINGS

The following section uses the following acoustic terms:

A-weighted noise levels are frequency-weighted in a way that approximates the frequency response of the human ear and allows sound levels to be expressed as a single figure value. The A-weighted level is therefore a measure of the subjective loudness, rather than physical amplitude.

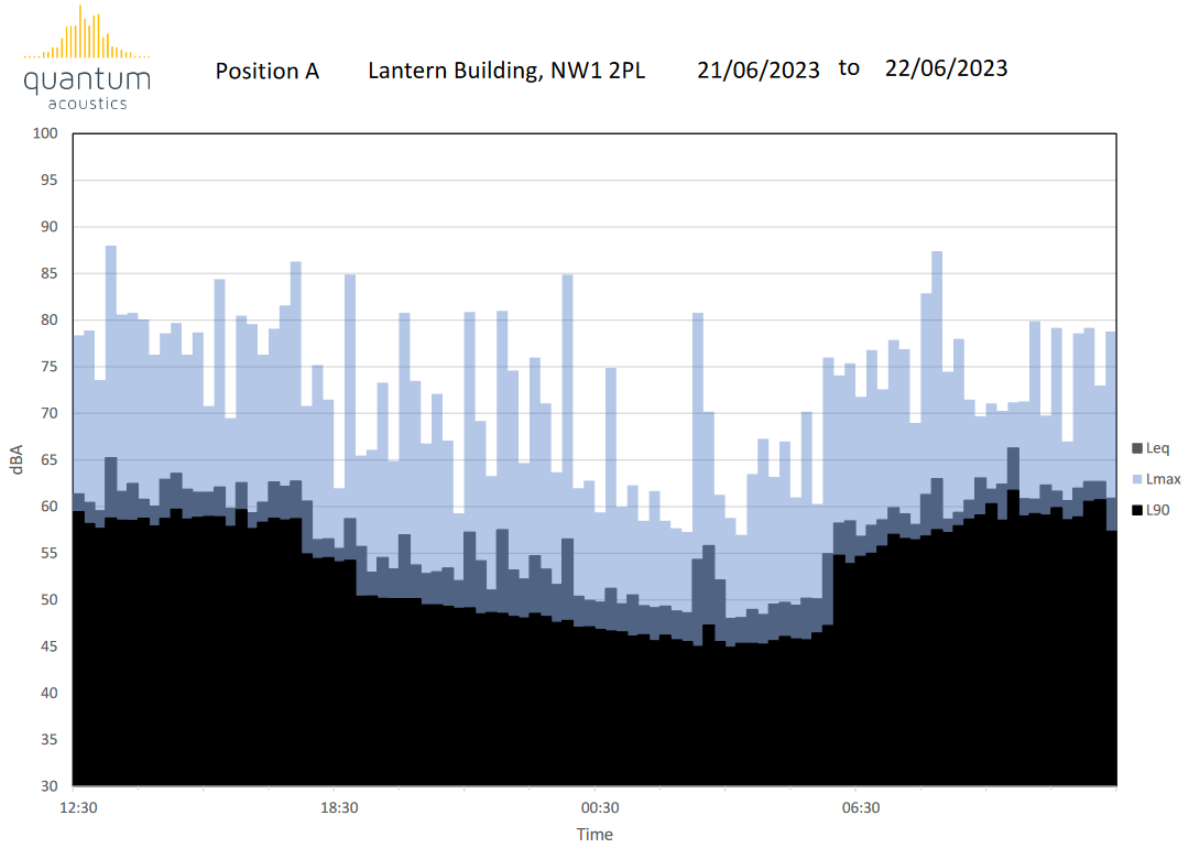
L_{90} is the noise levels that is exceeded for 90% of the measurement period. It reflects the quiet periods during that time and is often referred to as the "background noise level". It is often used as a basis for setting noise emission criteria.

L_{eq} is the level of a notional continuous sound that would deliver the same sound energy as the actual fluctuating sound over the measurement period. This may be thought of as the "average" level during the measurement period.

L_{max} is the maximum noise level during the measurement period.

4.1 Noise Level Results

The noise survey results are presented in the graph below, showing the A-weighted L_{90}, L_{eq} and L_{max} noise levels measured during each consecutive 15-minute period of the survey.



The measured modal background (L_{90}) noise levels are presented in the table below:

Position	Modal Background L_{90} dB re2x10^{-5}Pa	
	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Position A	59	46

4.2 Noise Climate

During the periods that we were present at site, the subjectively dominant noise sources were noted to plant serving adjacent buildings and local road traffic.

5.0 RELEVANT PLANNING POLICIES AND NOISE ASSESSMENT GUIDANCE

5.1 Noise Policy Statement for England

The Noise Policy Statement for England (NPSE) was published in March 2010. The NPSE is the primary statement of noise policy for England and applies to all forms of noise other than occupational noise. The NPSE sets 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."*
>
> *"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 introduces guidance to assist in defining the adverse impacts:

> **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.

These categories are further discussed in the Planning Practice Guidance section below.

The NPSE acknowledges that it is not possible to have a single objective noise level based measure that is mandatory and applicable to all sources of noise in all situations.

5.2 Planning Practice Guidance

The government's Planning Practice Guidance is a web based resource and provide advice on various issues, including noise (https://www.gov.uk/guidance/noise--2). The advice (March 2014, latest update July 2019) states in the context of considering when noise is relevant to planning, "noise needs to be considered when new development may create additional noise, or would be sensitive to the prevailing acoustic environment (including any anticipated changes to that environment from activities that are permitted but not yet commenced)."

The Planning Practice Guidance pages also include more explanation of the effect level categories noted above, providing an explanatory Noise Exposure Hierarchy Table, which explores how actions such as a requirement for noise mitigation, or prevention of a development, might be assessed with respect to whether noise levels are considered above the category thresholds.

Response	Examples of outcomes	Increasing effect level	Action
No Observed Effect Level			
Not present	No effect	No Observed Effect	No specific measures required
Present 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			
Present 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			
Present and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding ertain activities during periods of intrusion; where there is no alternative ventilation, aving to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in etting to sleep, premature awakening and ifficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present 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

5.3 National Planning Policy Framework

The following paragraph is from the National Planning Policy Framework (NPPF). The NPPF was revised in 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'*

5.4 Plant Noise Emission Criteria

The site lies within the jurisdiction of Camden Council.

Camden's Local Plan advises as follows in relation to noise from generators (and associated equipment):

'Emergency equipment such as generators which are only to be used for short periods of time will be required to meet the noise criteria of no more than 10dB above the background level (L90 15 minutes). During standby periods, emergency equipment will be required to meet the usual criteria for plant and machinery. Conditions to this effect may be imposed in instances where emergency equipment forms part of the application.'

Confirmation was sought from Camden regarding the criteria which should be applied for the proposed type of generator plant within their jurisdiction (*'a standby generator to be used only for emergency in the event of the building losing all power'*). We were advised the generator as described would be required to meet the 'emergency' noise levels when running.

6.0 PLANT NOISE EMISSION CRITERIA

On the basis of the requirements as detailed within Section 5.4 above, we would propose the following criteria for the proposed generator and associated plant, to satisfy the requirements of the Local Authority:

10dB above the background level ($L_{A90,\ 15\ minutes}$) to be achieved at 1m from the nearest potentially affected residential window

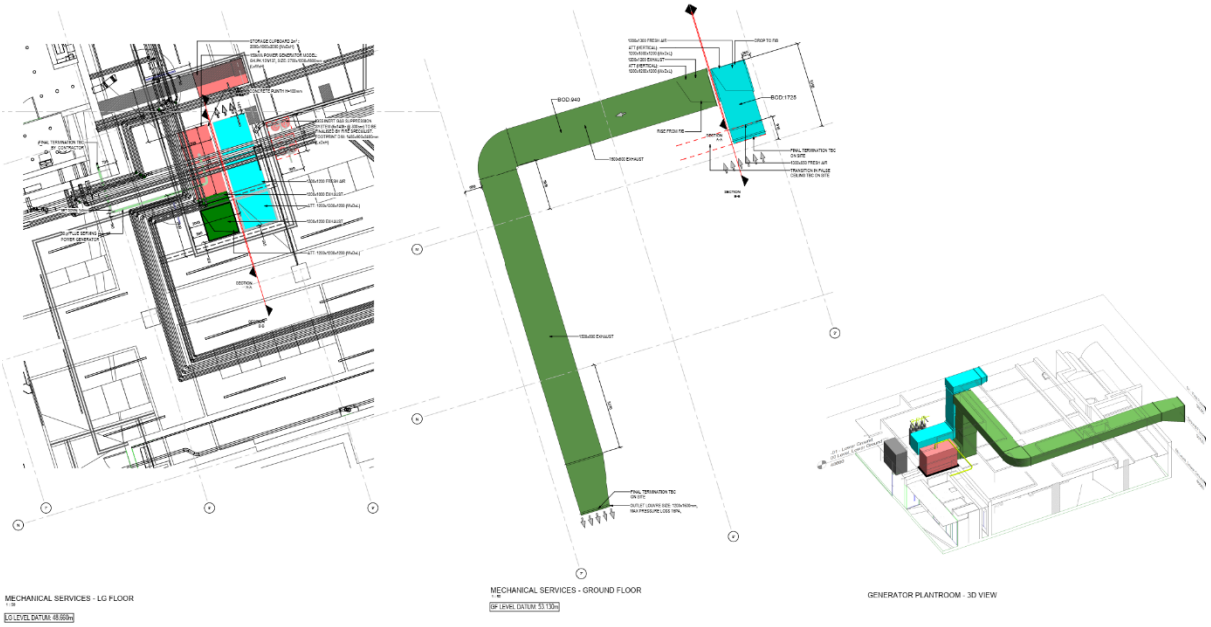
Based on the measured noise levels presented within Section 4.1 above, this equates to the following plant noise emission limit for the generator and associated plant when in use (assuming the potential for use during the daytime or night-time) to be achieved at 1m from the nearest potentially affected residential window:

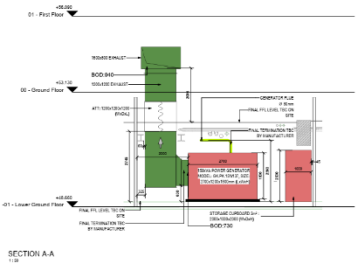
24hr Plant Noise Emission Limit L_{eq} dB re2x10^{-5}Pa
56dBA

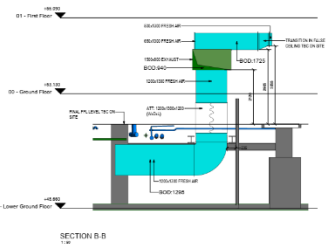
The above criteria is subject to final acceptance from Camden Borough Council.

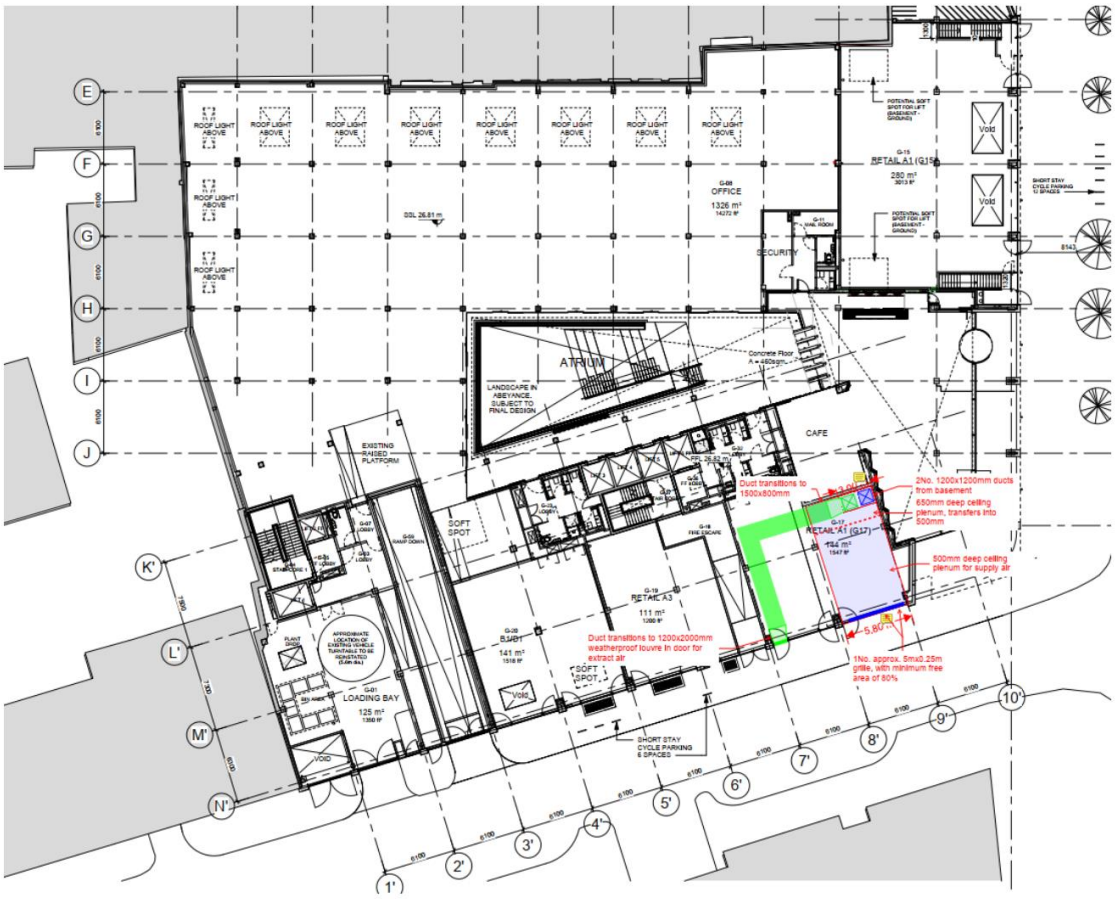
7.0 REVIEW OF PROPOSALS

The generator is proposed to be located within the basement, with air moving ductwork routed through a retail unit exiting through the façade at ground level as shown in the images below:









Together with the drawings above, we have been provided with an 'Extraction & Ventilation Strategy Report' dated 27th April 2023 and the following information in relation to the installation:

Façade 4030l/s (Intake, high level above glazed retail facade)
KG-15
5000X250 (Overall size 5032x282)
PS= 15
dbA= 50
Jet Velocity= 4.0m/s

Weatherproof option for exhaust door application (replaces existing glazed door)
3900l/s (Exhaust)
WGF-75 If we maintain 1200 wide
1200x2000
PS= 14
dbA= 25
Jet Velocity= 3.0m/s

Alternative exhaust grille option (non-weatherproof)
1200x1400
KG-15
PS= 8
dbA= 57
Jet Velocity= 3.0m/s

Based on the above and the provided extract and ventilation strategy report, we understand the following is proposed:

Supply Air Grille	-	Option B, 50% free area, 65dBA at 1m
Extract Air Grille	-	Exhaust grille, 57dBA at 1m

Based on the above, the resulting cumulative grille related noise during generator use is 66dBA at 1m.

8.0 ASSESSMENT

As per Section 7.0 above, the cumulative grille related noise during generator use is 66dBA at 1m, based on the information provided.

Taking the nearest potentially affected noise sensitive location to be residential windows of 175 Drummond Street (approximately 12m away) a level resulting from grille related noise during generator operation of 50dBA is indicated, taking distance losses and reverberant corrections into account. This is in line with the proposed Local Authority requirements as detailed in Section 6.0 and as such should be deemed compliant.

Any other noise sources associated with the operation of the generator (e.g fan noise, generator room breakout etc) should be specified to be attenuated to 55dBA or less at 1m from the Lantern Street façade, to ensure cumulative levels still meet the requirements of the Local Authority. This should be taken into consideration in the wider design and specification of the generator and basement plantroom.

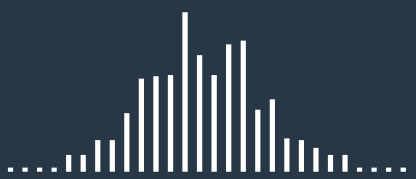
9.0 CONCLUSIONS

Quantum Acoustics have undertaken a fully automated environmental noise survey to establish the existing noise levels at the Lantern, NW1 2PL.

Environmental plant noise emission criteria have been established for the proposed generator use, on the basis of the noise survey results and in accordance with relevant guidance, including confirmed Local Authority requirements.

Environmental noise emissions from the assessed aspects of the proposed plant have been predicted at nearby noise sensitive receptors. Our calculations indicate that these environmental plant noise emissions, as detailed, should comply with the Local Authority criteria.

With regard to atmospheric plant noise emissions in relation to the proposed generator installation, we therefore see no reason why planning permission cannot be granted provided the advice in this report is followed.



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