

65-67 Maygrove Road

Environmental Noise Survey and Plant Noise Assessment Report

24974/PNA1-Rev2

03 May 2018

Regal Homes Construction Ltd
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Hann Tucker Associates

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Environmental Noise Survey and Plant Noise Assessment Report 24974/PNA1-Rev2

Document Control

Rev	Date	Comment	Prepared by	Authorised by
-	27-11-2017	-		
			Firas Farhan Principal Consultant BSc(Hons), MIOA	John Ridpath Director BSc(Hons), MIOA, MIEnvSc
1	27-04-2018	Change to generator location		
			Firas Farhan Principal Consultant BSc(Hons), MIOA	John Ridpath Director BSc(Hons), MIOA, MIEnvSc
2	03-05-2018	Change to Generator		
			Firas Farhan Principal Consultant BSc(Hons), MIOA	John Ridpath Director BSc(Hons), MIOA, MIEnvSc



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Appendix A – Acoustic Terminology

Appendix B – Acoustic Specification for Acoustic Screen

Graphs – 24974/TH1.01



1.0 Introduction

It is proposed to install an emergency generator on the roof of 65-67 Maygrove Road.

Hann Tucker Associates have been commissioned to undertake a detailed 24 hour daytime and night-time fully automated environmental noise survey of the site to establish the currently prevailing noise climate and propose suitable plant noise emission criteria, based on the results of the survey and the requirements of the Local Authority.

An assessment has been carried out to determine the plant noise emissions at the nearest noise sensitive window.

This report presents the survey methodology and findings.

2.0 Objectives

To establish, by means of detailed 24 hour daytime and night-time fully automated environmental noise monitoring, the existing A-weighted (dBA) L_{90} , L_{eq} and L_{max} environmental noise levels at a selected accessible position, thought to be representative of the nearest affected property.

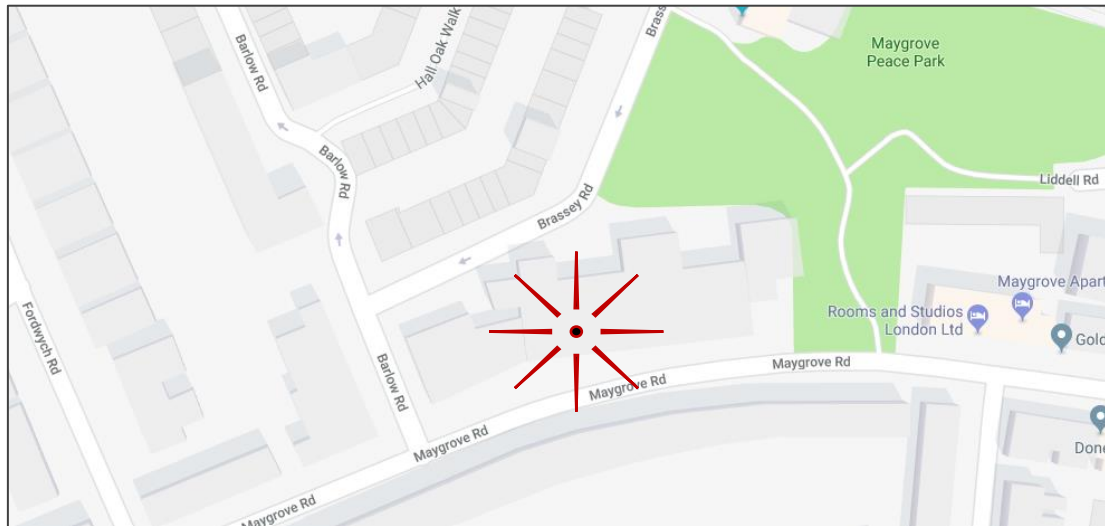
Based on the results of the noise survey, and with reference to the requirements of the Local Authority, to recommend suitable plant noise emission criteria.

To assess the proposed plant and comment on its acceptability.

3.0 Site Description

3.1 Location

The Site falls within London Borough of Camden's jurisdiction. The location is shown in the Location Map below.



Location (Map Data © 2017 Google.)

3.2 Description

The site is a ground plus 3 storey residential block. The surrounding area is predominantly residential. Maygrove Peace Park is located to the northeast of the site. Subjectively the dominant noise source was noted to be road traffic on surrounding roads.

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

5.1 Procedure

Fully automated environmental noise monitoring was undertaken from approximately 14:30 hours on Wednesday 01 November 2017 to approximately 14:30 hours on Thursday 02 November 2017.

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 and end of the survey period the wind conditions were moderate. The sky was generally patchy cloud. We understand that generally throughout the survey period the weather conditions were similar to this. These conditions are considered suitable for obtaining representative measurement results.

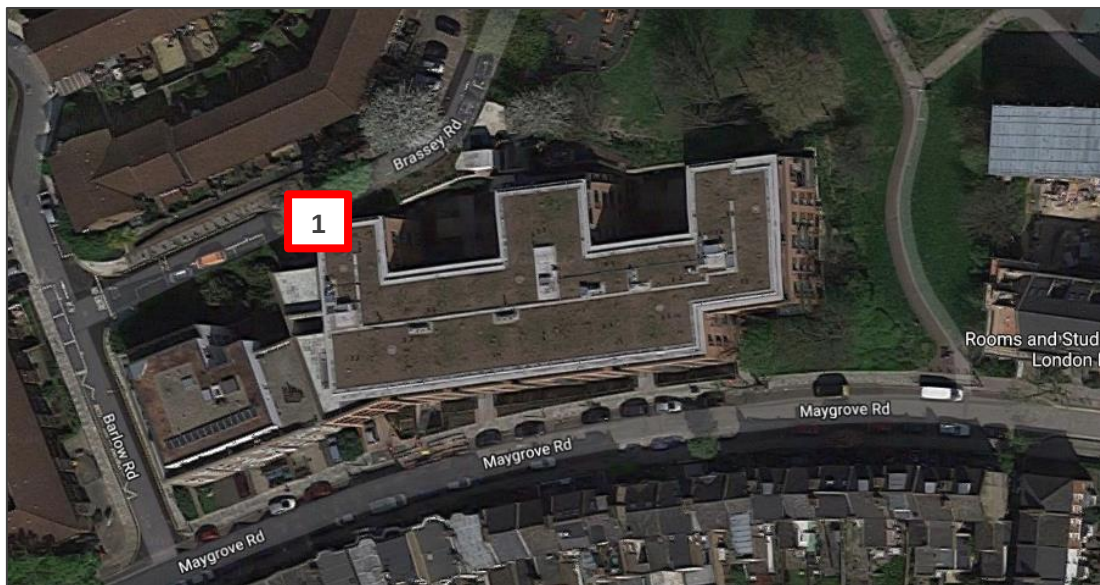


5.2 Measurement Position

The noise level measurements were undertaken at a single position at the development site. The measurement position is described in the table below.

Position No	Description
1	The sound level meter was located on the ground floor north of the site. The microphone was attached to a pole approximately 2m above ground level and approximately 1m from a noise reflecting surface overlooking the residential dwellings.

The position was selected in order to assess the lowest noise levels at the development site for subsequent use in setting plant noise emission criteria and is shown on the plan below.



Plan Showing Measurement Position (Imagery © 2016 Google Maps Map Data © 2015 Google.)

5.3 Instrumentation

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

Position	Description	Manufacturer	Type	Serial Number	Calibration
1	Type 1 ½" Condenser Microphone	PCB	377B02	107417	Calibration on 16/05/2017
	Type 1 Preamp	Larson Davis	PRM902	4158	Calibration on 16/05/2017
	Type 1 Data Logging Sound Level Meter	Larson Davis	824	3804	Calibration on 16/05/2017
-	Type 1 Calibrator	Larson Davis	CAL200	3082	Calibration on 03/07/2017



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 0.1dB).

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 Graphs 24974/TH1.01 enclosed, presenting the 15 minute A-weighted (dBA) L_{90} , L_{eq} and L_{max} noise levels at the measurement position throughout the duration of the survey.

The lowest L_{A90} (15 min) measurements recorded during the survey are presented in the table below:

Position	Lowest Measured $L_{A90(15min)}$ Background Noise Level (dB re 2×10^{-5} Pa)		
	Daytime (07:00 – 23:00) Hours	Night-Time (23:00 – 07:00) Hours	24 Hours
1	37 dBA	37 dBA	37 dBA

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. However at the beginning and end of the survey period the dominant noise source was noted to be from road traffic on surrounding roads.

8.0 Emergency Plant Noise Emission Criteria

The site falls within the London Borough of Camden's jurisdiction. We understand their requirement relating to emergency plant installation to be as follows:

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 (L_{90} 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.



Based on the above we propose the following emergency plant noise emission criteria, to be achieved at one metre from the window of the nearest neighbouring noise sensitive premises.

Nearest Noise Sensitive Premises to Position 1	Proposed Emergency Plant Noise Limit L_{Aeq} dBA at Nearest Noise Sensitive Façade		
	Daytime (07:00 – 23:00) Hours	Night-Time (23:00 – 07:00) Hours	24 Hours
	47 dBA	47 dBA	47 dBA

9.0 Plant Noise Impact Assessment

It is proposed to install the following generator on the roof of 65-67 Maygrove Road.

Plant Description	Location	Qty	Plant Make	Model Number
Generator	Roof	1	FG Wilson	P50-3

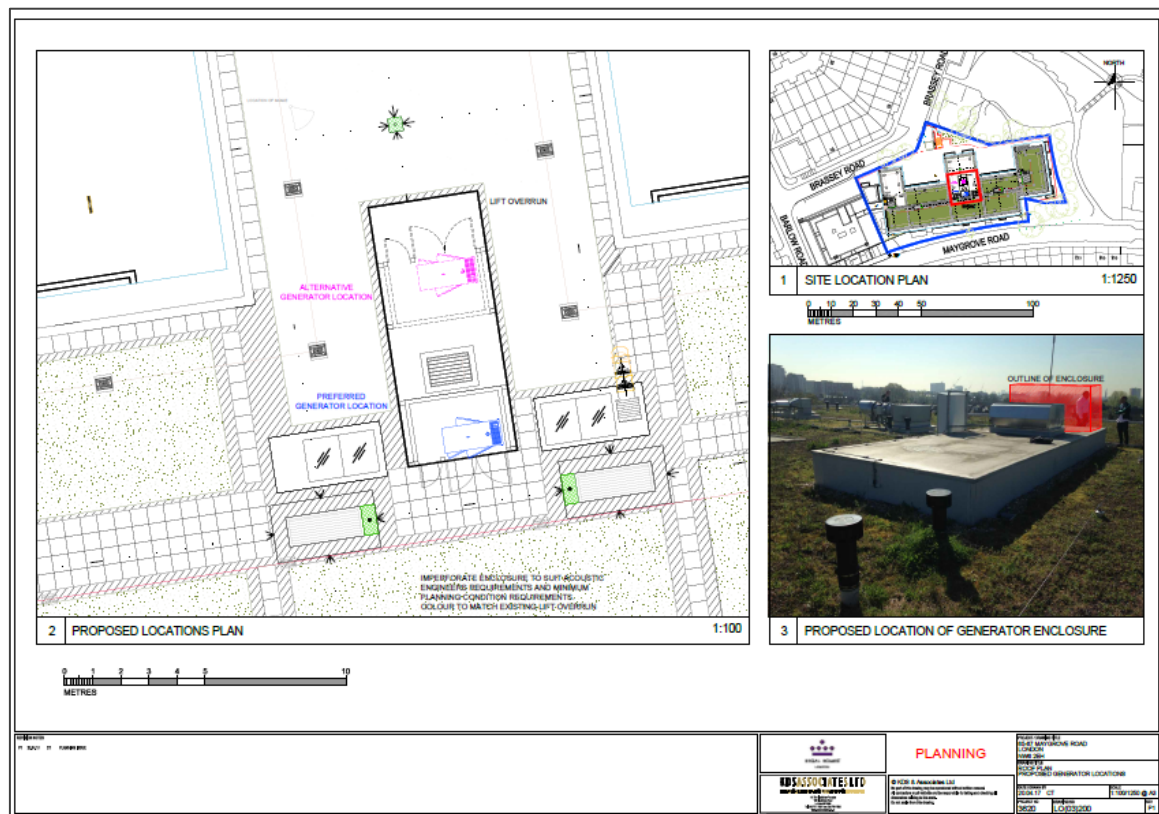
9.1 Plant Noise Data

We understand the manufacturer's noise data for the equipment is as follows::

Plant Description	Sound Pressure Level at 1m (dB re 2×10^{-5} Pa)
Generator	75 dBA

9.2 Location of Plant

It is proposed to install the generator on the roof of residential Block. The nearest neighbouring noise sensitive window is to the north on Brassey Road approximately 44m away. The generator is to have an imperforate screen on all sides no lower than the highest part of the generator. Enclosed is our Acoustic Specification for Acoustic Screen. The following drawing shows the proposed location:



Plan Showing Proposed Plant Location (KDS Associates)

9.3 Plant Noise Impact Assessment

We understand that the proposed unit will be operational in emergencies and during routine testing. The following table present our calculations relating to the emergency plant relocation.

Description	Sound Pressure Level (dB re 2x10 ⁻⁵ Pa)
Generator	75 dBA at 1 m
44m Hemispherical Radiation Distance Loss	-24 dBA
Barrier Loss	-8 dBA
Cumulative Noise Level at the Nearest Noise Sensitive Receptor	43 dBA
Façade Reflection	+3
Resultant Noise Level at the Nearest Noise Sensitive Receptor	46 dBA

Our calculations indicate that the proposed plant should be capable of achieving the requirements of the Local Authority outlined in Section 8.0.



10.0 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 planning condition.

An assessment has been carried out to determine the plant noise emissions at the nearest noise sensitive window.

The assessment indicates that the proposed plant, should be capable of achieving the proposed environmental noise criteria at the nearest noise.



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).



65-67 MAYGROVE

ACOUSTIC SPECIFICATION FOR

ACOUSTIC SCREEN

Acoustic screening shall extend:

- continuously around all sides of the plant area.
- from the roof up to a minimum height of equal to the highest part of the plant.

The screen shall be imperforate (solid) and have a minimum mass per unit area of at least 10kg/m². This could be achieved using two or more layers of a wide range of materials including, for example, plywood or equivalent sheeting board to a suitable thickness required to achieve the mass per unit area or 1.3mm galvanised steel sheet. All junctions should be staggered.

Doors, access panels and service penetrations shall be treated so as to maintain the acoustic performance of the assembled screen.

All junctions between the screen and adjacent structures shall be made good and sealed with a heavy grout and/or dense non-hardening mastic.

The complete structure shall be wind and weather resistant to standards agreed with the Client.

The exact design of the screen will be agreed with and approved by Hann Tucker Associates.

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Appendix A – Acoustic Terminology

Appendix B – Acoustic Specification for Acoustic Screen

Graphs – 24974/TH1.01



1.0 Introduction

An emergency generator has been installed to the north of 65-67 Maygrove Road. It is proposed to relocate the generator to the roof of the block.

Hann Tucker Associates have been commissioned to undertake a detailed 24 hour daytime and night-time fully automated environmental noise survey of the site to establish the currently prevailing noise climate and propose suitable plant noise emission criteria, based on the results of the survey and the requirements of the Local Authority.

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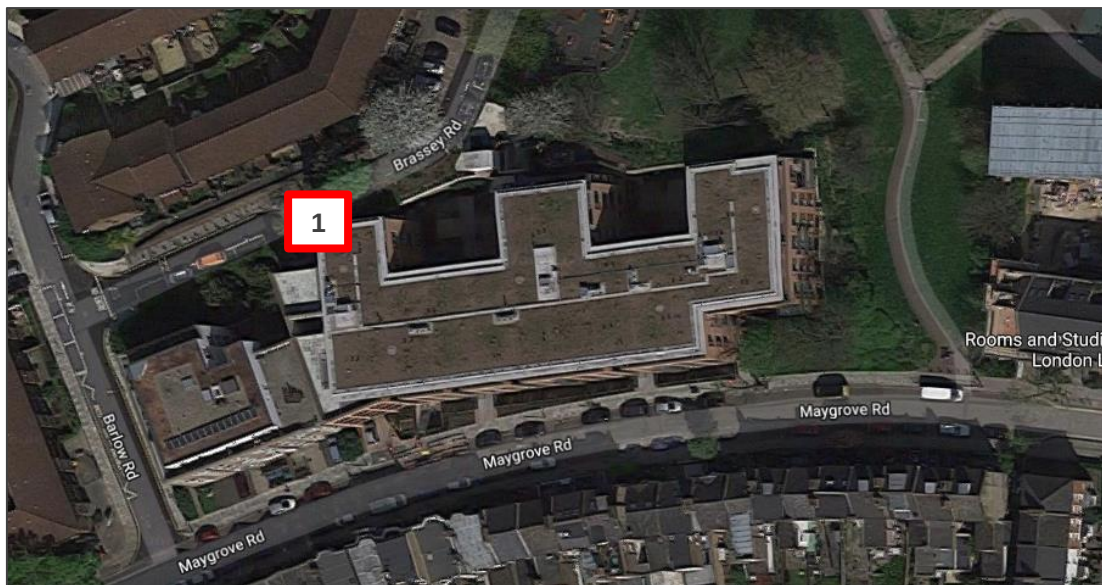


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7.0 Discussion Of Noise Climate

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. However at the beginning and end of the survey period the dominant noise source was noted to be from road traffic on surrounding roads.

8.0 Emergency Plant Noise Emission Criteria

The site falls within the London Borough of Camden's jurisdiction. We understand their requirement relating to emergency plant installation to be as follows:

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 (L_{90} 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.



Based on the above we propose the following emergency plant noise emission criteria, to be achieved at one metre from the window of the nearest neighbouring noise sensitive premises.

	Proposed Emergency Plant Noise Limit L_{Aeq} dBA at Nearest Noise Sensitive Façade		
	Daytime (07:00 – 23:00) Hours	Night-Time (23:00 – 07:00) Hours	24 Hours
Nearest Noise Sensitive Premises to Position 1	47 dBA	47 dBA	47 dBA

9.0 Plant Noise Impact Assessment

We understand the make and model of the installed generator is SDMO Model J44K. It is proposed to relocate the generator to be adjacent to an external lift shaft.

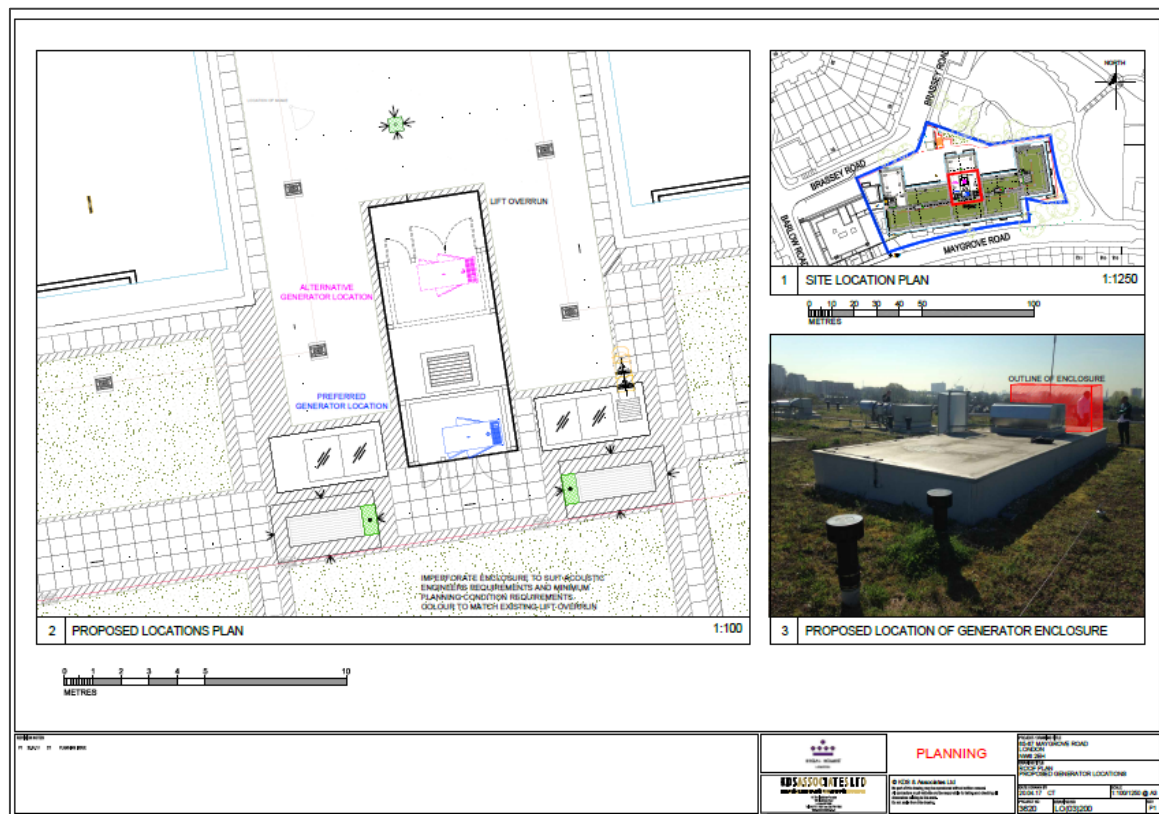
9.1 Plant Noise Data

Hann Tucker undertook noise measurements of the installed generator. The following table presents the sound pressure level measured at 1m:

Plant Description	Sound Pressure Level at 1m ($dB \text{ re } 2 \times 10^{-5}$) at Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
SDMO Model J44K	75	77	72	71	67	65	63	55	73

9.2 Location of Plant

It is proposed to install the generator on the roof of residential Block. The nearest neighbouring noise sensitive window is to the north on Brassey Road approximately 44m away. The generator is to have an imperforate screen on all sides no lower than the highest part of the generator. The following drawing shows the proposed location:



Plan Showing Proposed Plant Location (KDS Associates)

9.3 Plant Noise Impact Assessment

We understand that the proposed unit will be operational in emergencies and during routine testing. The following table present our calculations relating to the emergency plant relocation.

	Sound Pressure Level (dB re 2 x 10 ⁻⁵) at Octave Band Centre Frequency (Hz))								dBA
	63	125	250	500	1k	2k	4k	8k	
SDMO Model J44K	75	77	72	71	67	65	63	55	73
Barrier Loss	-5	-5	-5	-6	-7	-8	-10	-13	
44m Hemispherical Radiation Distance Loss	-24	-24	-24	-24	-24	-24	-24	-24	
Façade Reflection	+3	+3	+3	+3	+3	+3	+3	+3	
Calculated Noise Level at Window	49	51	46	44	39	36	32	21	46

Our calculations indicate that the proposed plant should be capable of achieving the requirements of the Local Authority outlined in Section 8.0.



10.0 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 planning condition.

An assessment has been carried out to determine the plant noise emissions at the nearest noise sensitive window.

The assessment indicates that the proposed plant, should be capable of achieving the proposed environmental noise criteria at the nearest noise.



Appendix A

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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).



65-67 MAYGROVE

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All junctions between the screen and adjacent structures shall be made good and sealed with a heavy grout and/or dense non-hardening mastic.

The complete structure shall be wind and weather resistant to standards agreed with the Client.

The exact design of the screen will be agreed with and approved by Hann Tucker Associates.