

HEATHROW 360
UNIT 2 WESTLANDS
MILLINGTON ROAD
HAYES

Environmental Noise Survey Report
& Plant Noise Impact Assessment

19 December 2024

Client: Indurent Propco A2 Ltd

47 Esplanade
St. Helier
JE1 OBD
Jersey

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Please Note

Quantum Acoustics Ltd have prepared this report with generally accepted acoustic consultancy principles, using all reasonable skill, care and diligence. This is as per the terms agreed between Quantum Acoustics Ltd and our Client. Information referred to herein which may have been provided by third parties should not be assumed to have been checked and verified by Quantum Acoustics Ltd, unless specifically confirmed to the contrary. Both confidential and commercially sensitive information is contained within this document, and as such it should not be disclosed to third parties. Any third party choosing to rely on this document does so at their own risk.

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1.0 INTRODUCTION

It is proposed to refurbish Heathrow 360, Unit 2 Westlands, Millington Road, Hayes, UB3 4AZ.

The refurbishment will involve installing new external condenser units.

Quantum Acoustics Ltd have been appointed to undertake an environmental background noise survey to establish appropriate plant noise emission criteria and subsequently assess the acceptability of atmospheric noise emission from the proposed condenser unit.

This report presents our methodology and findings.

2.0 SITE DESCRIPTION

Heathrow 360, Unit 2 Westlands is located in Millington Road, Hayes UB3 4AZ. The location is shown below, outlined in red.



Site Plan (Google Imagery 2022, The GeoInformation Group)

The immediately surrounding area is of residential and commercial use. To the immediate south, east and west of the site are residential dwellings located on Station Road, Redmead Road and Dawley Road. The major M4 motorway is located to the south of the site approximately 600m away. Beyond the M4 to the south are greenfield land and Crane Meadows. To the north of the site lies the rest of the commercial estate making up Millington Road including locations such as an Asda Superstore and various commercial warehouses. Further north past the commercial estate are additional residential dwellings located on the A437 and Keith Road at a distance of 300m. To the northwest of the site approximately 550m away is the Hayes & Harlington train station and associated railway. To the immediate west of the site is a neighbouring commercial and office space warehouse attributed to Attewell Ltd.

The site is located within the jurisdiction of The London Borough of Hillingdon Council.

3.0 ENVIRONMENTAL NOISE SURVEY METHODOLOGY

An environmental noise survey was undertaken from approximately 12:00 hours on 17 December 2024 to approximately 12:45 hours on 18 December 2024.

The weather conditions were deemed suitable for the measurement of environmental noise. Where conditions have been found to affect the measurement survey, this is reported, and the relevant data is either omitted in part or full and survey work is repeated if necessary.

3.1 Measurement Procedure

Noise monitoring equipment was located at the following positions:

Position	Description
Position M1	At the western boundary of the site. The microphone was attached to a metal fence at a height of approximately 2.0m above local ground level.
Position M2	At the southern boundary of the site. The microphone was attached to a boom pole in free field conditions attached to a tree at a height of approximately 2.0m above local ground level.
Position M3	At the eastern boundary of the site. The microphone was attached magnetically to a metal fence at a height of approximately 2.0m above local ground level.

Noise monitoring positions are shown on the following plan.



Automated Measurement Location

Measurement Position Plan (Google Imagery 2022, The GeoInformation Group)

The sound level meters were set up to continuously measure the A-weighted (dBA) L_{90} , L_{eq} and L_{max} sound pressure levels over sampling periods of 15 minutes duration.

3.2 Equipment

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

Location ID	Description	Manufacturer	Type	Serial Number
M1	Type 1 Sound Level Meter	Convergence Instruments	Convergence	CttUJI0Q0VcfCJtQ6 2r5vD
M2	Type 1 Sound Level Meter	Svantek	971A (RT)	143557
M3	Type 1 Sound Level Meter	Convergence	Convergence	AnJerX2S8X23KDlyx ODRvD
	Acoustic Calibrator	Svantek	SV 33B	99005

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.

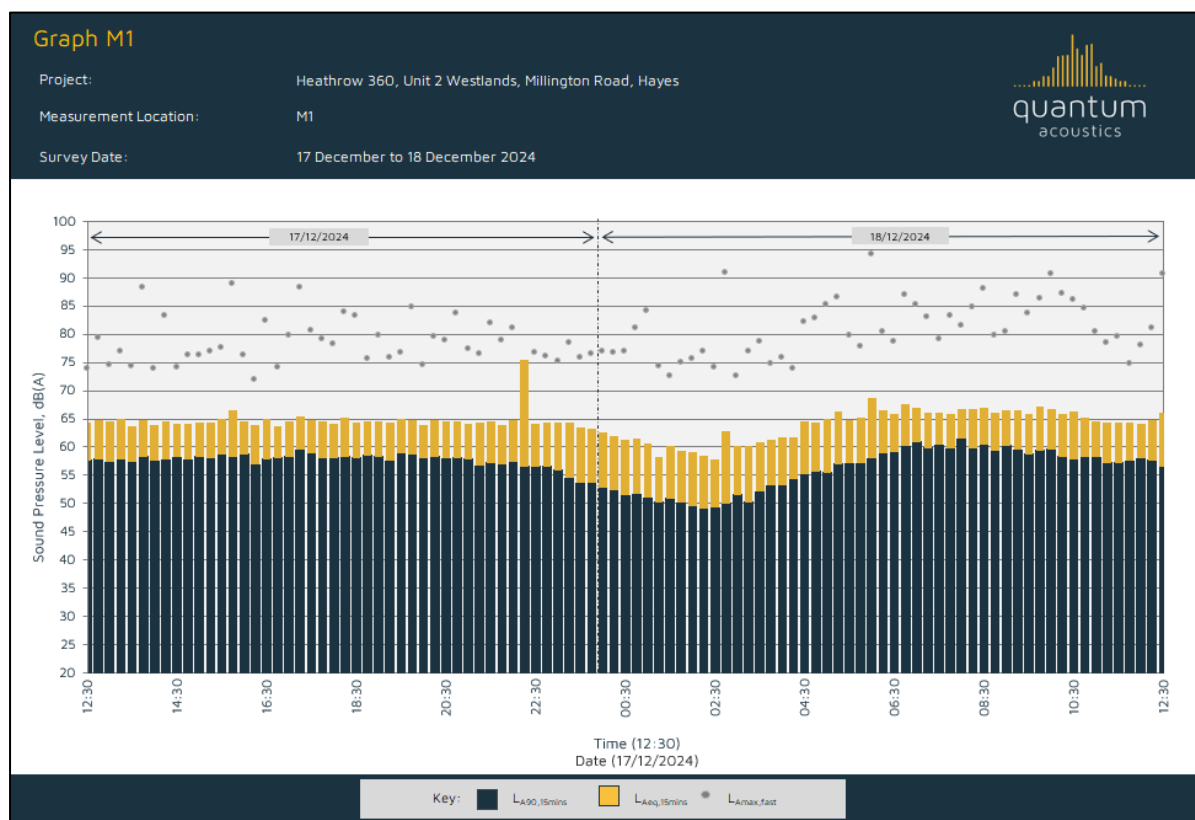
L_{90} is the noise levels that is exceeded for 90% of the measurement period. It reflects the quiet periods during that time and is often referred to as the "background noise level". It is often used as a basis for setting noise emission criteria.

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 graphs below, showing the A-weighted L_{90} , L_{eq} and L_{max} noise levels measured during each consecutive 15-minute period of the survey.

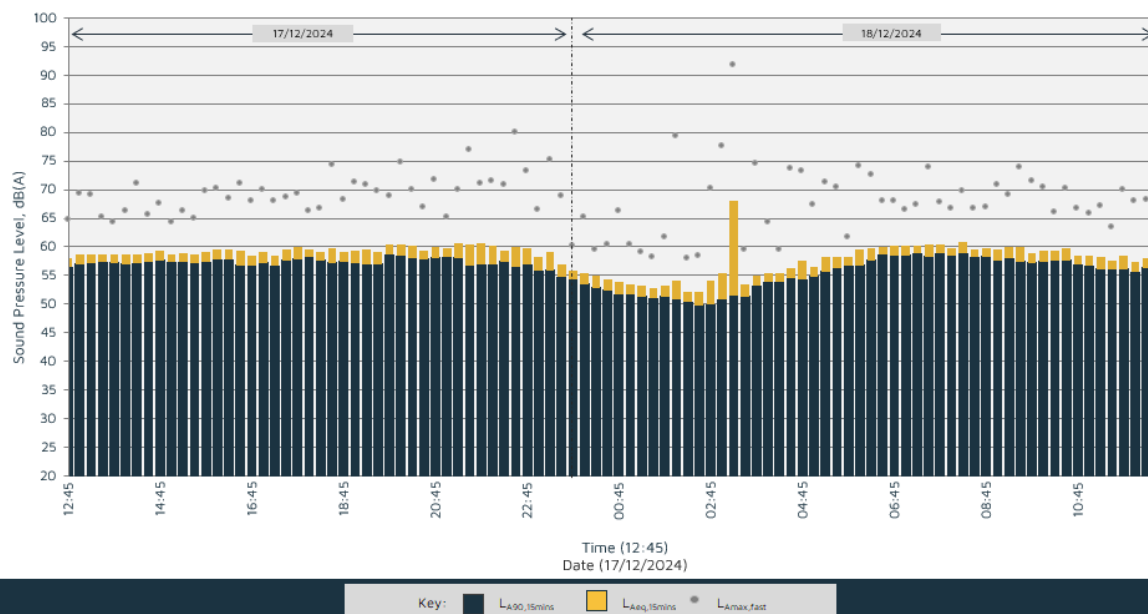


Graph M2

Project: Heathrow 360, Unit 2 Westlands, Millington Road, Hayes

Measurement Location: M2

Survey Date: 17 December to 18 December 2024

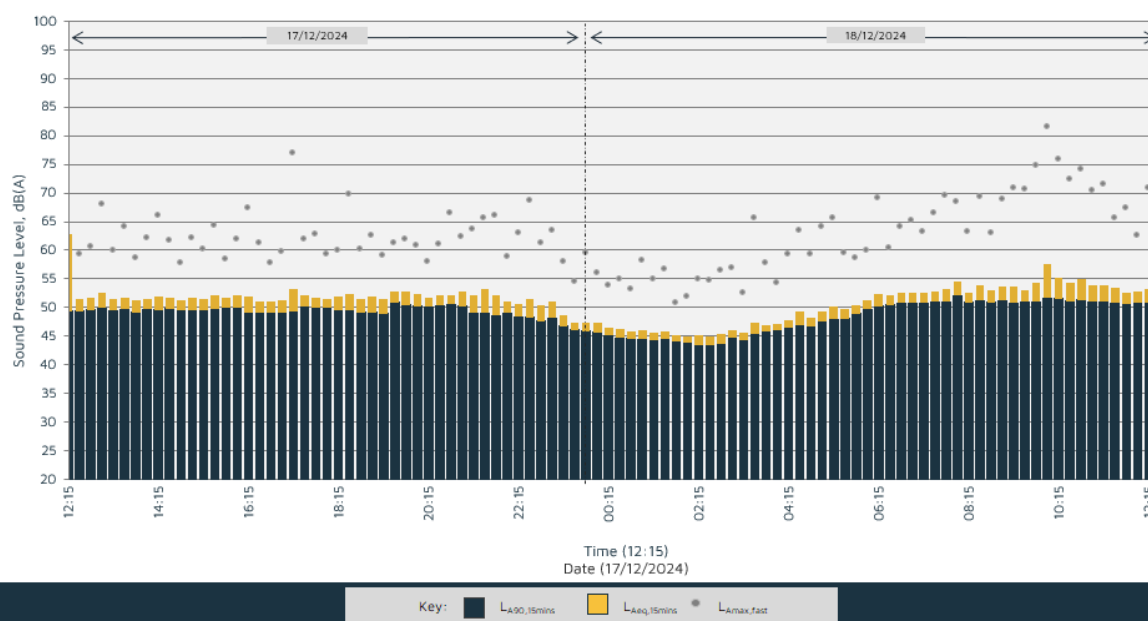


Graph M3

Project: Heathrow 360, Unit 2 Westlands, Millington Road, Hayes

Measurement Location: M3

Survey Date: 17 December to 18 December 2024



The measured daytime L_{Aeq} (16 hour) and night-time L_{Aeq} (8 hour) are presented in the table below:

L_{eq} Noise Levels		
Position	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Position M1	66	64
Position M2	59	58
Position M3	53	48

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

Modal Background L_{90} Noise Levels		
Position	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Position M1	58	54
Position M2	57	51
Position M3	50	45

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

Minimum Background L_{90} Noise Levels		
Position	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Position M1	57	49
Position M2	56	50
Position M3	48	43

4.2 Noise Climate

During the periods we were present at site, the subjectively dominant noise sources were associated with the nearby A437 Road and activities associated with nearby Asda superstore and residential dwellings to the south. The commercial/retail activities are believed to have been confined to normal working/trading hours. Ambient noise levels measured at all positions were influenced by traffic noise from the A437 (Station Road) and local roads such as Redmead Road, light aircraft flying overhead and wildlife.

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 certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty 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 December 2023.

'191. 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 Local Authority Requirements

The site lies within the jurisdiction of The London Borough of Hillingdon.

The adopted Local Plan for Hillingdon Borough Council comprises two sections. The two sections of the Local Plan form the council's future development strategy for the borough and set out a framework of detailed policies to guide planning decisions.

The Local Plan Part 1 sets out the overall level and broad locations of growth up to 2026. It comprises a spatial vision and strategy, strategic objectives, core policies and a monitoring and implementation framework with clear objectives for achieving delivery.

Hillingdon Borough Council have produced Supplementary Planning Documents (SPD) to provide detail on developmental strategic policies. These have been termed Planning Obligations adopted 10 July 2014.

Polices relevant to the proposed development with regards to noise are set out below:

Policy EM8 – Land, Water, Air and Noise

"...

Noise

The council will investigate Hillingdon's target areas identified in the Defra Noise Action Plant, promote the maximum possible reduction in noise levels and will minimise the number of people potentially affected.

The Council will seek to ensure that noise sensitive development and noise generating development are only permitted if noise impacts can be adequately controlled and mitigated. ..."

Hillingdon Borough Council set out a number of Strategic Objectives which align with specific planning policies, relevant to Policy EM8 and noise is SO10 as set out below:

"SO10: Improve and protect air and water quality, reduce adverse impacts from noise including the safeguarding of quiet areas and reduce the impacts of contaminated land."

The Local Plan Part 2 'Development Management Policies and Site Allocations and Designations' were adopted as part of the borough's development plan in January 2020. Policies relevant to this proposal are set out below:

"Policy DMT 1: Managing Transport Impacts

Development proposals will be required to meet the transport needs of the development and address its transport impacts in a sustainable manner. In order for developments to be acceptable they are required to:

...

v) have no significant adverse transport or associated air quality and noise impacts on the local and wider environment, particularly on the strategic road network."

"Policy DMT 2: Highways Impacts

Development proposals must ensure that:

...

iii) they do not contribute to the deterioration of air quality, noise or local amenity or safety of all road users and residents.

..."

Document B – Planning Obligations SPD

"Noise – Qualifying Developments

5.17 The Council's Noise SPD sets out requirements to be considered in the assessment of noise. Planning obligations may be sought in the following circumstances:

- Where a development would cause nearby residential development to be affected by noise exposure categories B – D and/or Table 2 (Residential Noise Criteria) as outlined in the Noise SPD to be exceeded;*
- Where a development would cause exceedences of 60 LAeqTdB upper limit as outlined in Noise SPD for schools and hospitals;*

- *Where there would be exceedances of internal noise criteria for school and offices as outlined in Table 3 of the Noise SPD;*
- *To mitigate impacts on the character of an area, of sites of importance for nature conservation or to ensure the welfare of livestock or other animals;*
- *Where there would be exceedance of noise limits prescribed in Annex 2 of Mineral Policy Statement 2 (MPS 2);*
- *To control noise at source where planning conditions or other statutory licences are not applicable; and*
- *As a result of a noise measurement survey or noise management plan.*

"Type of Obligations Sought

5.18 Planning obligations to address noise and vibration issues may include the following:

- *Measures to reduce noise at source such as vehicle fleet selection, quiet beepers and other administrative or work place practices.*
- *Mitigation measures such as noise barriers and sound insulation of residential properties and other noise sensitive receptors*
- *Provision of off-site landscaped buffers*
- *Road and other surfaces incorporating provision of quieter surfaces such as porous asphalt*
- *The preparation and implementation of noise management plans.*

5.19 These noise control measures should complement noise control measures available through normal planning and other statutory procedures. In certain cases monitoring may be required to ensure standards can be met and maintained. As such contributions towards the establishment and ongoing maintenance of this may be required if necessary.

5.5 BS 4142:2014

BS 4142:2014+A1:2019 "Methods for Rating and Assessing Industrial and Commercial Sound" addresses the likelihood of adverse impact from noise generated by plant equipment. A noise rating is determined and compared with the existing local background sound level, and several cumulative acoustic feature corrections to the noise rating are available to apply where appropriate. For example, if the noise includes a distinguishable tone, impulse, intermittency or other readily distinguishable sound characteristic.

BS 4142:2014 seeks to determine a "representative" background sound level, stating that "...the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods".

The assessment of the impact depends upon the margin by which the rating level of the specific sound source exceeds the background sound level but also promotes a consideration of the context in which the sound occurs when making an assessment. BS 4142:2014 states that an initial estimate of the impact of the specific sound is made by subtracting the measured background sound level from the rating level, while considering the following points:

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

6.0 PLANT NOISE EMISSION CRITERIA

To comply the aforementioned guidance including the Local Authority's requirements, and on the basis of the noise survey results, the following environmental plant noise emission criteria are proposed to be achieved {at 1 metre from the noise sensitive residential window}:

Position	Plant Noise Emission Limits L_{eq} dBA re 2×10^{-5} Pa	
	Daytime (07:00 - 23:00)	Night-time (23:00 - 07:00)
Position M1	52	44
Position M2	51	45
Position M3	43	38

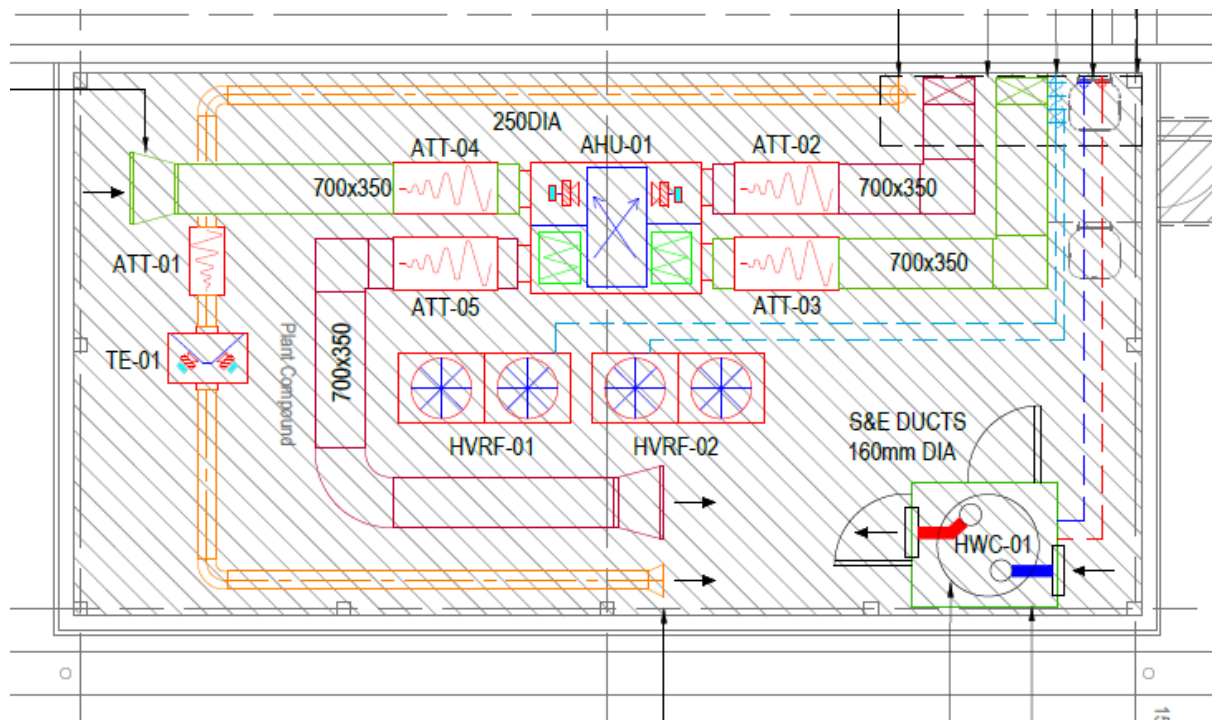
We also recommend that noise levels at 1m from openable windows of nearby offices do not exceed 55dBA.

The above criteria apply to cumulative noise level of all plant operating simultaneously, under normal operating conditions.

Relaxations of the above criteria may be acceptable for emergency plant, however they must be considered on a case-by-case basis.

7.0 PLANT NOISE IMPACT ASSESSMENT

The majority of the proposed mechanical services plant will be located in the existing rooftop plant enclosure, as illustrated below:



We understand the proposed condensers comprise 2No. Mitsubishi PURY-EM250YNW-A1. According to the manufacturer's noise data, the sound power level for these condensers is as shown in the table below:

Plant	Sound Power Level (Lw) (dBA)
Mitsubishi PURY-EM250YNW-A1	80

The above plant selection is indicative. If alternative plant is selected, it must not be any noisier.

The potentially most affected noise-sensitive receptors are dwellings on the opposite side of the A437, approximately 70 meters east, as illustrated below:



The following table summarises our assessment of condenser noise to the nearest noise sensitive residential window:

Item	dBA
Sound power level Mitsubishi PURY-EM250YNW-A1	80
Correction for sound power to sound pressure	-11
Propagation Loss to 70m	-37
Correction for 2No units	+3
Predicted Plant Noise Level	35
Criterion	38
Compliance	Yes

Our assessment thus indicates that environmental noise emissions from the proposed condensers should comply with the relevant requirements and planning guidance.

In addition, a third similar units is proposed to serve the transport and security office. However this is located well away from any noise sensitive receptor.

In addition, various ventilation fans are proposed. These will be attenuated using conventional in-duct attenuators, as required to ensure the combined plant noise levels meet the required criteria.

8.0 CONCLUSIONS

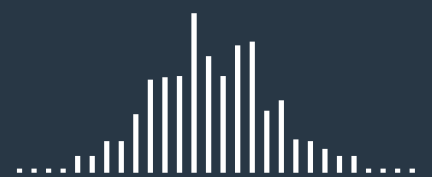
Quantum Acoustics have undertaken an environmental noise survey to establish the existing background noise levels.

Environmental plant noise emission criteria have been proposed based on the noise survey results and in accordance with the requirements of The London Borough of Hillingdon Borough Council, as well as UK guidance on noise and planning.

Environmental noise emissions from the proposed condenser have been assessed to the nearest noise sensitive receptors.

Our assessment indicates that environmental noise emissions from the proposed condenser should comply with the relevant requirements and planning guidance.

With regard to atmospheric plant noise emissions, we therefore see no reason why planning permission cannot be granted.



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