

10 PRATT MEWS LONDON NW1 0AD

Environmental Noise Survey And Noise Impact Assessment

9 October 2024

Client: I.P.M Personal Pension Trustees Limited

Cambridge House Campus Six Caxton Way Stevenage Hertfordshire SG1 2XD

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For Information

Please Note

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Contents

1.0	INTRODUCTION	4
2.0	SITE DESCRIPTION	5
3.0	PROPOSED DEVELOPMENT	7
4.0	PLANNING CONTEXT AND DESIGN GUIDANCE	8
5.0	EXISTING NOISE LEVELS	. 15
6.0	PLANT NOISE IMPACT ASSESSMENT	. 19
7.0	CONCLUSIONS	. 22



1.0 INTRODUCTION

- 1.1 Quantum Acoustics Ltd have been commissioned to prepare a Noise Impact Assessment in relation to the proposed installation of new roof mounted plant at 10 Pratt Mews, London, NW1 OAD (herein referred to as the 'Site').
- The proposal includes the installation of 3 condenser units on the proposed 2nd floor roof extension at 10 Pratt Mews.
- 1.3 This Noise Impact Assessment:
 - Provides the results of noise monitoring conducted at the Site.
 - Establishes plant noise emission limits based on the requirements set by the Local Planning Authority.
 - Evaluates the noise impact of the proposed development on the nearest noise-sensitive properties adhering to relevant national and local planning guidelines.
 - Recommends any necessary noise attenuation measures to ensure compliance with Local Authority standards, if required.



2.0 SITE DESCRIPTION

2.1 The Site is a mid-terraced two-storey building located at 10 Pratt Mews, NW1 0AD, as shown in the figure below:



- 2.2 The Site is situated in the heart of Camden Town in a cul-de-sac off Pratt Street. It forms part of a row of two to three-storey buildings of mixed residential and commercial usage.
- 2.3 The rear of the Site faces the rear of 86 Camden High Street whilst the front of the Site faces Pratt Mews. Across Pratt Mews to the east, directly opposite the Site, is Regents House which comprises mixed commercial and residential usage.
- 2.4 The surrounding area mainly comprises a mixture of residential and commercial usage.
- 2.5 The Site is under the jurisdiction of Camden Council.
- 2.6 The red line boundary of the Site is shown in closer detail in the figure below:

09 October 2024



Site and Neighbouring Land Uses





3.0 PROPOSED DEVELOPMENT

- 3.1 The proposed development includes installation of 3 no. condensers on the proposed 2nd floor roof of the Site.
- 3.2 The location of the proposed plant can be seen below:





4.0 PLANNING CONTEXT AND DESIGN GUIDANCE

4.1 Set out below is a brief explanation of key national and local planning policies, which provide the key policy framework for determining whether the development delivers the Government's overarching policy requirement for sustainable development.

National Planning Policy Framework

4.2 The overarching aim of the planning regime is to ensure the compatibility of land uses. With regard to noise, the National Planning Policy Framework sets out two primary policies which seek to ensure that new noise sensitive development is adequately protected from noise; that the impact of noise from new noise generating land uses on existing residential uses is minimised and that existing commercial/industrial uses and community facilities do not have unreasonable restrictions imposed on them by new noise sensitive development:

Paragraph 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 impact 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; and
- c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

Paragraph 193

"Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed."



Noise Policy Statement for England

4.3 With regard to 'adverse' impacts and 'significant adverse' impacts, the NPPF directs the reader to the advice contained in DEFRA's "Noise Policy Statement for England" (NPSE). This Policy Statement introduces the concept of a "Significant Observed Adverse Effect Level" (SOAEL), "Lowest Observed Adverse Effect Level" (LOAEL) and "No Observed Effect Level" (NOEL). These are concepts aligned with toxicology outcomes derived from guidance given by the World Health Organisation.

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.

Planning Practice Guidance

- 4.4 The application of national planning is highlighted in the government's "National Planning Practice Guidance" (NPPG). This seeks to help clarify understanding the perception of noise effects, outcomes and actions that should be taken to align decision making with the NPPF. In line with the NPPF concept of basing decision making on the identification of "significant" or "other" impacts on health and quality of life, the NPPG aligns its guidance with the NPSE.
- 4.5 The table below summarises this guidance:

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Noise Exposure Hierarchy Table

Response	Examples of Outcomes	Increasing Effect Level	Action
	No Observed Effect Level (NOEL)		
Not present	No effect	No Observed Effect	No specific measures required
	No Observed Adverse Effect Level (NOAEL)		
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 (LOAEL)	
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 (SOA	EL)	
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



National Planning Policy Framework

- 4.6 The following paragraph is from the National Planning Policy Framework (NPPF). The NPPF was revised in July 2012.
 - "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 impact 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."

BS 4142: 2014 + A1: 2019

- 4.7 This standard provides a rating and assessment methodology for assessing the potential adverse impact of commercial noise sources on neighbouring dwellings and is reference in documents supporting the Government's planning practice guidance on noise.
- 4.8 The assessment procedure initially compares the 'Rating Level' of the source with the 'Background Noise Level' when the source is not present.
- 4.9 The 'Rating Level (LAr) referred to is the specific noise level of the noise source under investigation (in terms of the LAeq noise index), to which corrections are applied if the noise has certain audible characteristics. The table below summarises the corrections to be applied based on a subjective assessment of noise source characteristics:

Character Correction					
Feature / Perception	Tonality	Impulsivity	Intermittency	Other Acoustic Characteristics	
Just perceptible	+2dB	+3dB	+3dB		
Clearly perceptible	+4dB	+6dB	When the specific sound has identifiable	+3dB	
Highly perceptible	+6dB	+9dB	on/off conditions that are readily distinctive		



- 4.10 The 'background noise level' (LA90) represents the noise level that is exceeded for 90% of the stated measurement period. For assessment purposes, the background noise level needs to be determined without the noise source under investigation operating.
- 4.11 The time of operation needs to be taken into account. During the day (normally taken to be as 07:00 23:00)
 a one-hour measurement period is considered appropriate. During the night (normally taken to be 23:00 07:00) a 15-minute time period is normally used.
- 4.12 The following guidance is then offered based on the outcome of this initial assessment:
 - A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
 - A difference of around +5 dB 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.

Local Planning Guidance

4.13 The 'Camden Local Plan' (adopted in July 2017) includes the following policy in relation to noise and vibration:

"Policy A4 Noise and vibration

The Council will seek to ensure that noise and vibration is controlled and managed.

Development should have regard to Camden's Noise and Vibration Thresholds (Appendix 3). We will not grant planning permission for:

a. development likely to generate unacceptable noise and vibration impacts; or

b. development sensitive to noise in locations which experience high levels of noise, unless appropriate attenuation measures can be provided and will not harm the continued operation of existing uses.

We will only grant permission for noise generating development, including any plant and machinery, if it can be operated without causing harm to amenity. We will also seek to minimise the impact on local amenity from deliveries and from the demolition and construction phases of development."

...



"Appendix 3

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 57dBLAmax	'Rating level' between 9dB below and 5dB above background or noise events between 57dB and 88dB LAmax	'Rating level' greater than 5dB above background and/or events exceeding 88dBLAmax

*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."



5.0 EXISTING NOISE LEVELS

General

- 5.1 Automated noise monitoring at the Site was undertaken over a 3-day period from approximately 12:00 hours on 20/09/2024 to 09:30 hours on 23/09/2024.
- 5.2 Automated noise monitoring was undertaken at one measurement location, as shown in the figure below:

Noise Monitoring Location



Noise Monitoring Description

Position	Description
1	The microphone was positioned at the rear of the Site facing the rear of 86 Camden High Street. It was mounted onto a drain pipe by a magnet at a height of approximately 2m above ground floor level.

5.3 The noise monitoring equipment at both positions were configured to record the LA90, LAeq, and LAmax, fast sound pressure levels over consecutive 15-minute periods to provide a detailed time history profile showing fluctuations in noise levels. The equipment was also configured to undertake higher resolution logging to assist with the identification of noise events.



Instrumentation

5.4 Details of the equipment used for the survey are summarised below.

Measurement Instrumentation

Position	Manufacturer	Туре	Serial Number
1	Convergence	NSRT_mk4	CHveJHWa0de1ghPCT6h5PD

- 5.5 All instruments hold current laboratory calibration certificates (available on request).
- 5.6 A field calibration check on all equipment was made at the start of the survey and a further calibration check made on completion. No significant drift in the calibration of any instrument was observed.

Weather

5.7 Over the survey period, the weather conditions were below-average temperatures. Winds were moderate, averaging below 5m/s and there was low humidity. There was precipitation on the night of the 22nd September, but this did not have a significant impact on the survey.

Discussion

5.8 Ambient noise levels were dominated by traffic noise from Camden High Street and intermittent noise from nearby commercial plant.

Results

5.9 A detailed graph showing the A-weighted LA90, LAeq and LAmax, fast sound levels measured is presented on the following page. A summary of the measured daytime (LAeq, 16 hour) and night-time (LAeq, 8 hour) noise levels are also presented in the following tables. These values represent noise levels from all noise sources (i.e. transportation noise sources, noise from neighbouring recreational uses and any noise generated by existing business operating within the Site).





5.10 The noise survey results are presented in the tables below which show the A-weighted L90 and Leq noise levels measured during the survey.

The measured modal background (L₉₀) noise levels are presented in the table below:

Position	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)	
1	41	48	

The measured minimum background (L₉₀) noise levels are presented in the table below:

Position	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
1	37	34



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

Position	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
А	65	51



6.0 PLANT NOISE IMPACT ASSESSMENT

Plant Noise Criteria

6.1 Camden Council's thresholds for noise and vibration evaluate the impact in terms of various 'effect levels' described in the National Planning Policy Framework and Planning Practice. Design criteria have been established for proposed developments to cater for noise considerations in planning applications:

Green (LOAEL) : where noise is considered to be at an acceptable level. Amber (LOAEL to SOAEL): where noise is observed to have an adverse effect level, but which may be considered acceptable when assessed in the context of other merits of the development. Red (SOAEL): where noise is observed to have a significant adverse effect.

Green (LOAEL) – 'Rating Level' 10 dB below background

- 6.2 Therefore, for the proposed development to be considered at an acceptable level (Green), it is recommended that plant emission is 10 dB(A) below the background noise level at the nearest noise-sensitive receptor.
- 6.3 In this instance, a 2nd floor residential window located at the rear of 86 Camden High Street is the nearest noise-sensitive receptor to the Site.
- 6.4 We understand that the proposed plant will operate during daytime-hours. The following table presents the plant noise emission criterion to be achieved at 1 metre from the nearest noise-sensitive premises in line with the Local Authority requirements:

Daytime (07:00 – 23:00)
31

6.5 The modal L90 has been chosen as the representative background sound level because it provides a stable and accurate reflection of the typical background noise environment. This approach aligns with the principles of BS4142:2014 which emphasises obtaining a representative background noise level.



Impact of Proposed Plant on Nearest Noise-Sensitive Receptor

6.6 We have been informed that there is proposed to be 3 no. Fujitsu AOYG18KBTA2, air conditioning units, to be installed on the proposed 2nd floor roof of the Site.

Fujitsu AOYG18KBTA2					
Noise Level dB(A) at 1m from unit	50				
Position (Row)	1 st	2 nd	3 rd		
Distance from Receptor (m)	8.5	10	11.5		
Distance Loss dB(A)	-15	-17	-18		
Barrier Loss dB(A)	0	-5	-5		
Façade Correction dB(A)	3				
Noise Level at Receptor (dB(A))	38	31	30		
Cumulative Noise Level at Receptor (dB(A))		39			

6.7 The results presented in the above table indicate that the proposed plant would be 8 dB above the required 'Green' level set by Camden Council (31 dB). Therefore, mitigation methods are needed to attenuate the noise emissions from the proposed plant.

Mitigation Measures

6.8 It is recommended that acoustic enclosures should be installed around each condenser unit providing a minimum 8dB(A) sound attenuation. We understand a suitable acoustic enclosure is available from Environ Technologies which the manufacturers claim can provide 24dB(A) attenuation to the proposed condenser units.



Fujitsu AOYG18KBTA2					
Noise Level	50				
uB(A) at 111 from unit					
Position	1 st	2 nd	3rd		
Row	-	_			
Distance from Receptor	8.5	10	11.5		
m					
Distance Loss	-15	-17	-18		
dB(A)					
Barrier Loss	0	-5	-5		
dB(A)					
Façade Correction	3				
dB(A)					
Acoustic Enclosure					
Noise Reduction	-24				
dB(A)					
Noise Level at Receptor	14	7	6		
dB(A)					
Cumulative					
Noise Level at Receptor	15				
dB(A)					

6.9 With the mitigation measures applied, the cumulative noise level at the nearest noise-sensitive receptor would comply with the plant emission criteria set by Camden Council.



7.0 CONCLUSIONS

- 7.1 Noise monitoring has been undertaken at the location of the Proposed Development to establish the background noise levels of the surrounding area.
- 7.2 We have taken into consideration the nearest and most affected noise sensitive premises that may potentially be affected by the proposed plant.
- 7.3 Plant noise emission criterion has been proposed, on the basis of noise survey results, in accordance with the relevant guidance from the Local Planning Authority.
- 7.4 Calculations have been performed to assess the likely noise impact of the proposed plant on the nearest noise-sensitive receptor.
- 7.5 If the proposed condensers are fitted with acoustic enclosures as described in this report, we foresee no external plant related acoustic issues.



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