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9-12 NEW COLLEGE PARADE,
LONDON

NOISE IMPACT AND EXPOSURE ASSESSMENT

Report **17408-NEA-01 RevF**

Prepared March 2025

Issued For

New College Ltd

Executive Summary

This noise impact and exposure assessment has been undertaken so external building fabric elements can be specified in order to meet appropriate internal noise criteria within 9-12 New College Parade, London.

The assessment adheres to the Local Authority requirements, the principles provided by the *National Planning Policy Framework*: 2024 (NPPF) and internal noise criteria stated within BS 8233: 2014 *'Guidance on sound insulation and noise reduction for buildings'.*

Proposals comprise the demolition of existing onsite buildings, with the partial retention of certain existing facades, leading to redevelopment of the site to provide a hotel development of 52 bedrooms, with associated restaurants, kitchen and ancillary spaces. Hotel bedrooms will be located across basement to fourth floors, with restaurants at basement and ground floor level.

A noise and vibration survey has been undertaken as detailed in the report, in order to establish the prevailing environmental noise and vibration levels at the site.

A detailed analysis has been carried out of the measured road traffic noise intrusion through the external building fabric, combined with anticipated emissions from identified existing plant installations, to proposed hotel bedrooms. Sound insulation performance specifications have been proposed for glazing systems. It is essential that certificated performances should be sought from the manufacturer of the proposed glazing systems.

The assessment has demonstrated that appropriate internal noise levels should be achievable with the installation of suitable glazing systems, ensuring the development is not adversely affected by existing levels of noise in the area.

Vibration levels measured have fallen below or just within the classification of "Low Probability of Adverse Comment", according to BS 6472-1: 2008 '*Guide to evaluation of human exposure to vibration in buildings*' and so would not be expected to constitute a significant concern to the development.

The operation of the mixed-use development, including hotel and associated restaurant use, is not expected to have a negative impact on nearby noise sensitive residential receivers, provided an outline noise management plan is implemented. A preliminary noise impact assessment has been undertaken in order to assess and set noise limits for any proposed fixed plant associated with the development, as well as any noise generated from the operation of the hotel. In this way, any impacts on existing sensitive receivers are expected to be suitably controlled.

This report is designed to be suitable to discharge typical noise planning conditions, as per our original scope of work.

Clement Acoustics has used all reasonable skill and professional judgement when preparing this report. The report relies on the information as provided to us at the time of writing and the assumptions as made in our assessment. The report should not be relied upon for detailed design by third parties without permission.

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Document Revision	Date of Revision	Reasons for Revision	Revision By
RevF	March 2025	Updated to reflect changes in proposals to full hotel use, and reference to latest NPPF	Duncan Martin MIOA

1.0 INTRODUCTION

Clement Acoustics has been commissioned by New College Ltd to assess the suitability of the site at 9-12 New College Parade for mixed-use development.

Proposals comprise the demolition of existing onsite buildings, with the partial retention of certain existing facades, leading to redevelopment of the site to provide a hotel building with 52 hotel bedrooms with restaurants and ancillary spaces. Hotel bedrooms will be located across basement to fourth floors, and associated restaurants will be split between the basement and ground floors.

This report presents the results of environmental noise and vibration surveys undertaken in order to measure prevailing background levels and details the proposed internal noise and vibration level criteria.

The impacts of existing noise and vibration levels in the surrounding area on the proposed hotel uses are considered, as well as any impacts of the development on surrounding sensitive receivers. Full details of necessary mitigation measures in order to meet relevant criteria are also provided.

2.0 SITE DESCRIPTION

The proposed development site currently houses a two-storey building with commercial units at ground floor and offices on the first floor. Proposals comprise the demolition of existing onsite buildings, with the partial retention of certain existing facades, leading to redevelopment of the site to provide a hotel building with 52 hotel bedrooms with associated restaurants and ancillary spaces.

Hotel bedrooms will be located across basement to fourth floors, and associated restaurant spaces will be split between the basement and ground floors.

The site is in a parade of buildings typically housing commercial units at ground floor, with offices or residential apartments above. Finchley Road is located to the south, which is a busy road housing a mix of commercial and residential uses. Mixed use buildings are located to all other sides.

At the time of the survey, the background noise climate was dominated by road traffic from Finchley Road. Noise from adjacent and nearby commercial uses will also be taken into account.

3.0 ARCHITECTURAL ASSUMPTIONS

3.1 Room Dimensions

The Proposed Planning Drawings pack, issued January 2025, has been consulted to determine typical bedroom room and window dimensions for the hotel bedrooms.

Calculations are based on a room volume of 26 m^3 and window area of 4 m^2, which presents the worst-case assessment conditions for calculation of internal noise levels.

3.2 Room Finishes

Our assessment assumes that hotel bedrooms will contain typical amounts of soft furnishings, including beds and curtains.

4.0 CRITERIA

Relevant criteria have been taken from Local Authority requirements and relevant national standards, such that the impact of noise and vibration on the development, as well as the impact of the development on the local area can be considered.

4.1 London Plan 2021

The assessment and recommendations in this report have been undertaken in accordance with Policy D14 of the adopted plan, which contains the following relevant sections:

"*D14. In order to reduce, manage and mitigate noise to improve health and quality of life, residential and other non-aviation development proposals should manage noise by:*

> *5) separating new noise-sensitive development from major noise sources (such as road, rail, air transport and some types of industrial use) through the use of distance, screening, layout, orientation, uses and materials – in preference to sole reliance on sound insulation*
>
> *6) where it is not possible to achieve separation of noise-sensitive development and noise sources without undue impact on other sustainable development objectives, then any potential adverse effects should be controlled and mitigated through applying good acoustic design principles*".

4.2 National Planning Policy Framework: 2024 (NPPF)

The NPPF, which was first published in 2012 with the latest revision in December 2024, outlines the Government's environmental, economic and social policies for England. The NPPF aims to enable local authorities to produce their own distinctive local and neighbourhood plans, which should be applied in order to meet the needs and priorities of their communities.

Paragraph 187 of *The Conserving and enhancing the natural environment* section of the NPPF includes references to noise stating that:

> *'Planning policies and decisions should contribute to and enhance the natural and local environment by:*
>
> *…*
>
> *e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;…'*

Paragraph 198 of *The Ground Conditions and Pollution* section of the NPPF includes references to noise stating that:

> *'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…'*

4.3 BS 8233: 2014 Internal Noise Criteria

BS 8233: 2014: '*Guidance on sound insulation and noise reduction for buildings*' [BS 8233] presents recommended acceptable internal noise levels for residential spaces during daytime and night-time hours.

These levels are shown in Table 4.1.

Activity	Location	Design range $L_{eq,T}$	
		Daytime (07:00-23:00)	Night-time (23:00-07:00)
Resting	Living Room	35 dB(A)	-
Dining	Dining Room/Area	40 dB(A)	-
Sleeping	Bedroom	35 dB(A)	30 dB(A)

Table 4.1: BS 8233: 2014 recommended internal background noise levels

When considering typical design targets for amenable noise levels in hotel bedrooms, BS 8233 states the following in section 7.7.5.1.1:

> *"The recommendations for ambient noise in hotel bedrooms are similar to those for living accommodation"*.

The relevant residential criteria, i.e. those for bedrooms as shown in Table 4.1, have therefore also been adopted for hotel bedrooms.

4.4 World Health Organisation Guidelines

The World Health Organisation (WHO) document on *'Guidelines for Community Noise'* 1999 states the internal noise level guidelines as summarised in Table 4.2.

Specific Environment	Critical Health Effects	$L_{eq,T}$	$L_{max,\ F}$
Dwelling, Indoors	Speech Intelligibility and moderate annoyance, daytime and evening	35 dB(A)	-
Inside Bedrooms	Sleep disturbance, night-time	30 dB(A)	45 dB(A)

Table 4.2: WHO Internal noise level guidelines

The document also states *'For a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45dBA LAmax more than 10-15 times per night, (Vallet & Varnet 1991).'*

As the guidance for sleep disturbance is relevant to hotel bedrooms, this will be adopted when considering the impact of noise on hotel bedrooms.

4.5 Proposed Noise Level Criteria

On the basis of Sections 4.1 to 4.4 above, Table 4.3 presents our proposed minimum design targets to be achieved in the worst affected bedrooms.

Location	Period	Design Target	
		$L_{eq, T}$	$L_{max, F}$
Hotel Bedrooms	Daytime (07:00-23:00 hours)	35 dB(A)	-
	Night-time (23:00-07:00 hours)	30 dB(A)	45 dB(A)*

Table 4.3: Proposed noise level criteria

***Please note that this is not an absolute limit, however, $L_{max, F}$ 45 dB(A) should not be regularly exceeded.**

The façade design specifications set out in this document should be sufficient to achieve these recommended internal levels.

4.6 Vibration Assessment Criteria

BS 6472-1: 2008 '*Guide to evaluation of human exposure to vibration in buildings*' defines the vibration magnitudes at which complaints are likely to occur.

The calculated VDV is therefore compared against the criteria taken from Table 1 of the standard, which are summarised in Table 4.4.

Place and Time	Low Probability of Adverse Comment	Adverse Comment Possible	Adverse Comment Probable
Residential Buildings, 16hr Day	0.2 to 0.4 $ms^{-1.75}$	0.4 to 0.8 $ms^{-1.75}$	0.8 to 1.6 $ms^{-1.75}$
Residential Buildings, 8hr Night	0.1 to 0.2 $ms^{-1.75}$	0.2 to 0.4 $ms^{-1.75}$	0.4 to 0.8 $ms^{-1.75}$

Table 4.4: Assessment criteria for daytime and night-time vibration levels

For hotel bedrooms, human sensitivity is expected to be comparable to that of typical residential settings and the same criteria will therefore be adopted.

4.7 Local Authority Criteria for Noise Emissions

For any proposed fixed plant, noise emissions must comply with Local Authority criteria. The London Borough of Camden typically requires that noise emissions from any fixed plant are controlled such that they are at least 10 dB below the measured background noise level, when assessed 1 m outside any nearby residential window.

5.0 ENVIRONMENTAL NOISE SURVEY

5.1 Unattended Noise Survey Procedure

Measurements were undertaken at two positions as shown on indicative site plan 17408-SP1. The choice of the positions was based both on accessibility and on collecting representative noise data in relation to the identified significant noise sources.

The surroundings and positions used for the monitoring locations are described in Table 5.1.

Position No.	Description
1	The microphone was mounted on a 1st storey window at the front of the building. The microphone was positioned 1 m in front of the window [1]
2	The microphone was mounted on a tripod within a courtyard at the rear of the building. The microphone was positioned 1.5 m above ground and away from reflective surface [2]

Table 5.1: Description of unattended monitoring locations

Note [1]: The position was not considered to be free-field according to guidance found in BS 8233: 2014, and a correction for reflections has therefore been applied. Based on the presence of the reflective surface and the nature of surrounding noise sources, a correction for reflections of 3 dB has been applied, in line with the recommendations of the standard.

Note [2]: The position was considered to be free-field according to guidance found in BS 8233: 2014, and a correction for reflections has therefore not been applied.

Continuous automated monitoring was undertaken for the duration of the survey between 12:15 on 17 March 2022 and 10:30 on 21 March 2022.

The measurement procedure generally complied with BS 7445: 1991: '*Description and measurement of environmental noise, Part 2- Acquisition of data pertinent to land use*'.

5.2 Weather Conditions

At the time of set-up and collection of the monitoring equipment, the weather conditions were generally dry with light winds It is understood that the weather conditions during the unattended survey remained dry with wind speeds below 5 m/s.

It is considered that the weather conditions did not significantly adversely affect the measurements and are therefore considered suitable for the measurement of environmental noise.

5.3 Equipment

The equipment calibration was verified, by means of a field verification check, before and after use and no abnormalities were observed.

The equipment used was as follows.

- 1 No. Svantek Type 977 Class 1 Sound Level Meter
- 1 No. Svantek Type 971 Class 1 Sound Level Meter
- Rion Type NC-74 Class 1 Calibrator

6.0 VIBRATION SURVEY

6.1 Procedure

In addition to the noise survey, an assessment of vibration was carried out within the existing building at the site, at ground floor level, on the structural floor. The survey was undertaken to address possible vibration levels caused by London Underground trains, passing a section of underground Northern Line which is understood to run close to the development site.

The vibration survey was carried out between 11:20 on 17 March 2022 and 10:30 on 21 March 2022.

Due to the survey being continuous, multiple train passes were measured over the course of the survey.

The vibration monitoring position was located on the ground floor structure of the building with the approximate location indicated on the site plan 17408-SP1. Measurements were made of vertical (z-axis) and horizontal (x and y axes) vibration levels during the course of the survey.

6.2 Equipment

The equipment used was a Rion VM-56 with associated tri-axial accelerometer.

7.0 RESULTS

7.1 Environmental Noise Survey

The $L_{Aeq:\ 5min}$, $L_{Amax:\ 5min}$, $L_{A10:\ 5min}$ and $L_{A90:\ 5min}$ acoustic parameters were measured throughout the duration of the survey.

Measured levels are shown as time histories in Figures 17408-TH1 & TH2. A summary of the measured noise levels is presented in Table 7.1.

Measurement Position	Period	Ambient Noise Level $L_{eq,T}$	Typical Maximum Noise Level $L_{Fmax,\ 5min}$	Minimum Background Noise Level $L_{90,\ 5min}$
1	**Daytime** [07:00 - 23:00]	71 dB(A)	-	49 dB(A)
	Night-time [23:00 - 07:00]	69 dB(A)	85 dB(A)	41 dB(A)
2	**Daytime** [07:00 - 23:00]	57 dB(A)	-	41 dB(A)
	Night-time [23:00 - 07:00]	52 dB(A)	68 dB(A)	33 dB(A)

Table 7.1: Site noise levels for daytime and night time

The levels presented in Table 7.1 are as expected considering the site location on a main road with commercial units nearby. Provided adequate mitigation measures are put in place during the design and construction phase of the development, recommended internal noise levels can be achieved. Outline mitigation measures are described in Section 9.0 of this report.

Maximum noise levels shown in Table 7.1 are deemed to be 'not regularly exceeded' as required for maximum internal noise level specification purposes.

7.2 Vibration Survey

The acceleration levels were measured over the 1 Hz to 80 Hz frequency range and then converted to VDV.

Horizontal measurements were undertaken using W_d weighting, vertical measurements were undertaken using W_b weighting as recommended in BS 6472: 2008.

The $VDV_{b/d,night}$ exposure level was calculated using equation 2 from BS 6472: 2008.

The results are summarised in Table 7.2.

Axis	$VDV_{HL10\ Day}$	$VDV_{HL10\ Night}$	Indication
X-Axis [*Horizontal*]	0.01 $ms^{-1.75}$	0.004 $ms^{-1.75}$	*Below 'Low Probability of Adverse Comment'*
Y-Axis [*Horizontal*]	0.003 $ms^{-1.75}$	0.009 $ms^{-1.75}$	*Below 'Low Probability of Adverse Comment'*
Z-Axis [*Vertical*]	0.18 $ms^{-1.75}$	0.101 $ms^{-1.75}$	*'Low Probability of Adverse Comment'*

Table 7.2: Results of vibration VDV analysis

8.0 ADDITIONAL NOISE SOURCES

Through visual inspections undertaken onsite and use of satellite imagery, additional noise sources in the form of existing plant installations have been identified as highlighted in Figure 8.1. It should be noted that it is understood existing plant on the development site (highlighted green in Figure 8.1) will be removed as part of demolition and development works.

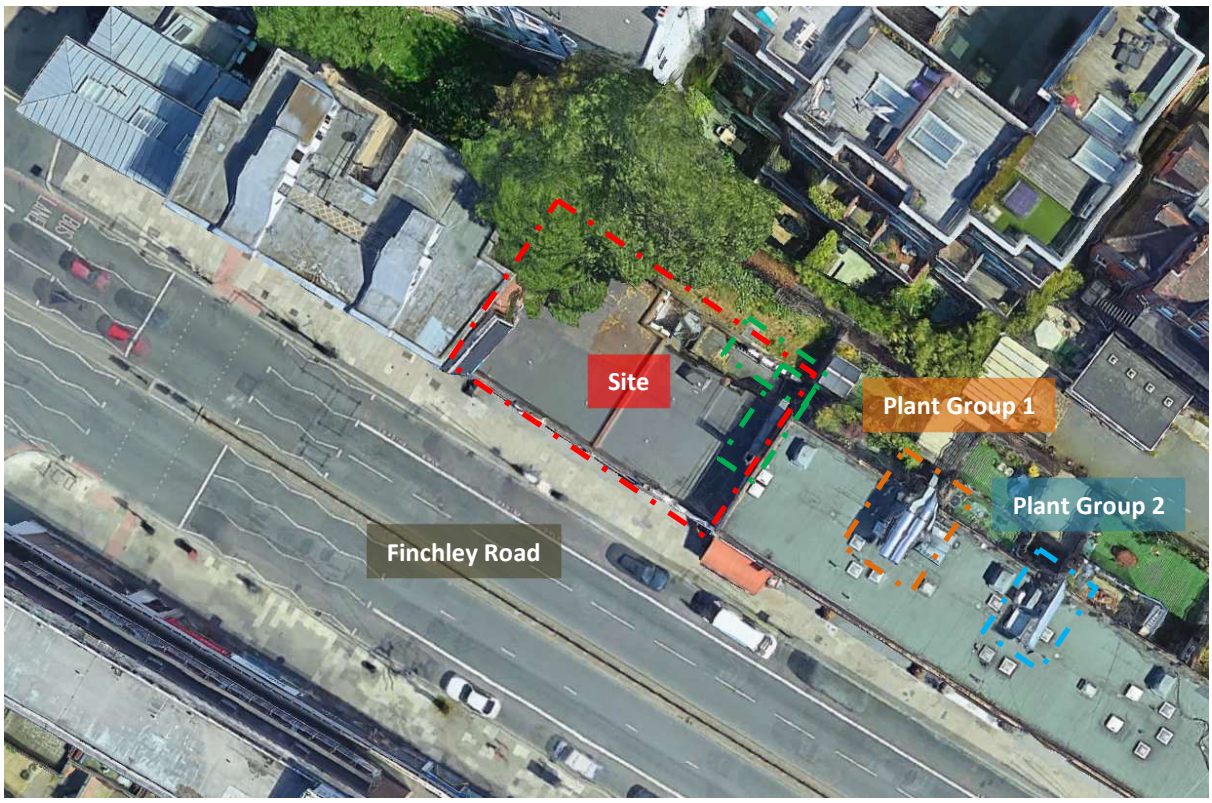


Figure 8.1: Site plan indicating identified sources of noise

The identified plant groups are understood to comprise the following:

- Plant Group 1
  - Extract plant associated with adjacent commercial kitchen
- Plant Group 2
  - Extract plant associated with nearby commercial kitchen

As proposals comprise a taller building than the existing building, windows could be more exposed to the identified plant units. Available data has therefore been used to inform calculations, such that worst case plant noise emissions can be taken into account.

8.1 Plant Assessment

As part of previous survey works on an adjacent site, Clement Acoustics has previously undertaken measurements of the same plant installations identified in Plant Groups 1 and 2.

Ambient noise emission measurements were taken in single octave bands, using a Class 1 Sound Level Meter in May 2019. It should be noted that plant appeared to be subjectively quieter during the visit to this site in March 2022. This could be due to plant not being fully operational at the installation and collection times, or it could be due to mitigation having been installed since the May 2019 visit. The data from May 2019 will be used in order to present a robust, worst-case assessment.

Measurements of the identified plant are summarised in Table 8.1.

Plant Unit	Sound Pressure Levels (dB, at stated distance) in each Frequency Band								
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	dB(A)
Plant Group 1 [*Measurement at 5 m*]	71	72	69	64	63	58	52	45	68
Plant Group 2 [*Measurement at 1 m*]	68	70	65	60	57	55	51	48	64

Table 8.1: Measured noise emission levels

Calculations have been undertaken assuming simultaneous operation of all units, taking into account the distance between Plant Group 1 and the site of approximately 15 m, and between Plant Group 2 and the site of approximately 28 m.

The resulting worst case noise emission level at the rear façade of the proposed development is shown in Table 8.2.

Element	Sound Pressure Levels (dB, at facade) in each Frequency Band								
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	dB(A)
Noise Levels at Rear Façade due to Plant	61	62	59	54	53	48	42	35	58

Table 8.2: Measured noise emission levels

The above levels will be logarithmically added to both the measured daytime and night-time residual noise levels shown in Table 7.1, when carrying out the assessment described in Section 9.0 for the rear façade.

9.0 NOISE EXPOSURE ASSESSMENT

9.1 External Building Fabric - Non Glazed Elements

It is currently understood that the non-glazed external building fabric elements of the proposed development would be comprised of either masonry or cladding constructions. This would contribute towards a significant reduction of ambient noise levels in combination with a good quality window configuration, as shown in Section 9.2.

All non-glazed elements of the building facades should be designed to provide a sound reduction performance of at least the figures shown in Table 9.1 when tested in accordance with BS EN ISO 140-3: 1995.

Element	Octave band centre frequency SRI, dB					
	125	250	500	1k	2k	4k
Masonry or Cladding SRI	41	43	48	50	55	55

Table 9.1: Minimum required sound reduction performance from non-glazed elements

9.2 External Building Fabric - Specification of Glazed Units

Sound reduction performance calculations have been undertaken in order to specify the minimum performance required from glazed elements in order to achieve recommended internal noise levels shown in Table 4.3. This specification therefore presents the most robust assessment, for BS 8233: 2014 criteria for internal noise levels in a hotel bedroom at all affected facades.

The minimum sound reduction index (SRI) value required for all glazed elements to be installed is shown in Table 9.2. **The performance is specified for the whole window unit, including the frame and other design features.**

Type	Façade	Minimum Sound Reduction Index (dB) at Octave Band Centre Frequency (Hz)					
		125	250	500	1k	2k	4k
A	Finchley Road Facade	27	27	37	45	44	54
B	Rear Facade	23	23	30	39	36	43

Table 9.2: Required glazing performance

Where non-vision spandrel panels are proposed, they should provide sound reduction performance at least equal to that required of the glazing in order to maintain the acoustic integrity of the external building fabric.

It is essential that prospective glazing system suppliers can demonstrate compliance with the acoustic performance detailed in our specification rather than simply offering a generic glazing configuration. The complete glazing system should achieve the performance requirements stated in Table 8.2 when tested in accordance with BS EN 10140-2: 2010.

It is essential that the performance presented in Table 9.2 is met. However, the following typical configurations would be expected to meet the required levels of sound insulation.

- Type A: 10 mm Glass / 12 mm Gap / 16 mm Glass – R_W 42 dB
- Type B: 6 mm Glass / 12 mm Gap / 8 mm Glass – R_W 35 dB

N.B. Type A is high performance acoustic glazing; Type B may require acoustic glazing.

Please note that the above guidance only considers acoustic performance. Other disciplines, which consider thermal, safety, durability etc. should be consulted to ensure suitability.

9.3 External Building Fabric - Specification of Trickle Ventilators

In order to comply with Building Regulations (Part F), fresh air ventilation to bedrooms is required via trickle ventilators or mechanical means.

The trickle ventilators should comply with the minimum octave band normalised weighted level differences stated in Table 9.3.

Type	Façade	Minimum $D_{n,e}$, Values (dB) at Octave Band Centre Frequency (Hz)					
		125	250	500	1k	2k	4k
A	Finchley Road Facade	*Mechanical Ventilation Recommended*					
B	Rear Facade	26	39	35	33	36	36

Table 9.3: Required trickle ventilator performance

It is essential that the performance presented in Table 9.2 is met. However, indicative overall performances for each ventilator type are as follows:

- Type A: Trickle ventilation not recommended
- Type B: $D_{n,e,w}$ 35 dB

It should be ensured that any mechanical extract and supply ventilation is designed to not exceed the internal noise criteria stated in Table 4.3.

9.4 Flanking Transmission

Where cladding or curtain walling systems are used, the complete system must be tested for flanking transmission in accordance with BS BS EN ISO 10848-2: 2017 and rated in accordance with BS EN ISO 717-1: 2013.

The system should provide a weighted normalised flanking level difference via the external façade of at least:

- Vertical flanking separating: $D_{nF,w + Ctr}$ 55 dB
- Horizontal flanking separating: $D_{nF,w + Ctr}$ 53 dB

It is recommended that party floors are sealed to two separate transoms and party walls sealed to two separate mullions, in order to suitably control flanking transmission.

All junctions where party walls and floors interface with the external building fabric should be carefully detailed. Suitable flexible cavity stops should be introduced into cavities at party floor/wall lines.

10.0 VIBRATION ASSESSMENT

BS 6472-1:2008 '*Guide to evaluation of human exposure to vibration in buildings*' defines the vibration magnitudes at which complaints are likely to occur.

The VDV values shown in Table 6.2 are below or within the "low probability of adverse comment" limits. Therefore, vibration levels measured would not be expected to constitute a significant concern for this development.

11.0 DETERMINATION OF IMPACT ON SENSITIVE RECEPTORS

As the application is at an early stage of the design, criteria will be set, such that design works can be progressed in accordance with these.

For the proposed hotel use, an outline noise management plan is proposed, with would be expected to control any impact on sensitive receptors due to noise from activities or guests.

Identified sources of noise that should consider appropriate measures are as follows:

- Class A3 Use (e.g. Hotel or Associated Restaurant):
  - Fixed Plant (Kitchen Extract)
- Class C1 (Hotel) Use:
  - Fixed Plant (Air Conditioning / cooling)
  - Emergency Plant
  - Activities/Guests

All criteria have been based on the lowest measured background noise levels, which were measured on the rear facade.

11.1 Fixed Plant

Based on the results of the environmental noise survey and requirements of the London Borough of Camden, Table 11.1 presents the proposed plant noise emission criteria:

Period	Plant Noise Emission Limit $L_{eq:T}$
Daytime (07:00 - 23:00)	31 dB(A)
Night-time (23:00 - 07:00)	23 dB(A)
Kitchen Extract Operating hours (TBC)	To be determined dependant on operating hours (to be 10 dB below minimum background level for the period)

Table 11.1: Plant noise emission limits

Fixed plant associated with all uses should be designed in accordance with the relevant criterion shown in Table 11.1.

11.2 Emergency Plant (If applicable)

For backup plant, which is only operational infrequently other than daytime testing, noise emission criteria are typically less onerous. For the emergency plant, we would recommend criteria as follows:

> *"The cumulative measured or calculated rating level of noise emitted from the backup or emergency plant units to which the application refers, shall be no more than 10 dB(A) above the existing background noise level, at all times that the backup plant operates."*

As the backup plant could be in use at any time should there be a fire or power failure, Table 11.2 presents the proposed plant noise emission criterion.

Period	Emergency Plant Noise Emission Limit $L_{eq;T}$
Night-time [23:00 - 07:00]	Emergency Plant: 41 dB(A)

Table 11.2: Emergency plant noise emission limits

Emergency plant associated with the development should be designed in accordance with the relevant criterion shown in Table 11.2.

Emergency plant should only be tested during daytime hours on a weekday, in order to minimise disturbance to residential receivers during testing.

11.3 Outline Noise Management Plan for Hotel

The following measures are designed to control the impact of noise due to activities and guests in typical hotel scenarios on the sensitive receptors in the local area. These measures should not be considered exhaustive, and specific proposals may require alterations or additions as designs progress.

- It should be ensured that guests do not need to queue outdoors, particularly during evening and night-time hours,
- There should be no audible amplified music outside the hotel façade due to hotel activities (e.g. background music in lobby areas),
- Behaviour of guests outside the hotel should be monitored to ensure there is no unnecessary or excessive noise,

- Deliveries to the hotel or waste collections should be scheduled to fall with typical working hours only.

12.0 CONCLUSION

An environmental noise survey and vibration survey has been undertaken at 9-12 New College Parade in order to measure ambient levels in the area.

Proposals comprise the demolition of existing onsite buildings, with the partial retention of certain existing facades, leading to redevelopment of the site to provide a hotel building with 52 hotel bedrooms with restaurants and ancillary spaces. Hotel bedrooms will be located across basement to fourth floors, and associated restaurants will be split between the basement and ground floors.

Measured noise levels have allowed an assessment of the level of exposure to noise of the proposed development site to be made.

Outline mitigation measures, including a glazing specification and the use of appropriate ventilation have been recommended and is expected be sufficient to achieve recommended internal noise levels for sensitive parts of the proposed development according to BS 8233: 2014.

Vibration levels measured would not be expected to constitute a significant concern for this development.

Accordingly, the impact of noise and vibration on the proposed development is considered to be suitably controlled.

Noise emissions criteria and outline measures have been proposed, which are expected to ensure the noise impact of the development on sensitive receptors in the local area is suitably controlled.

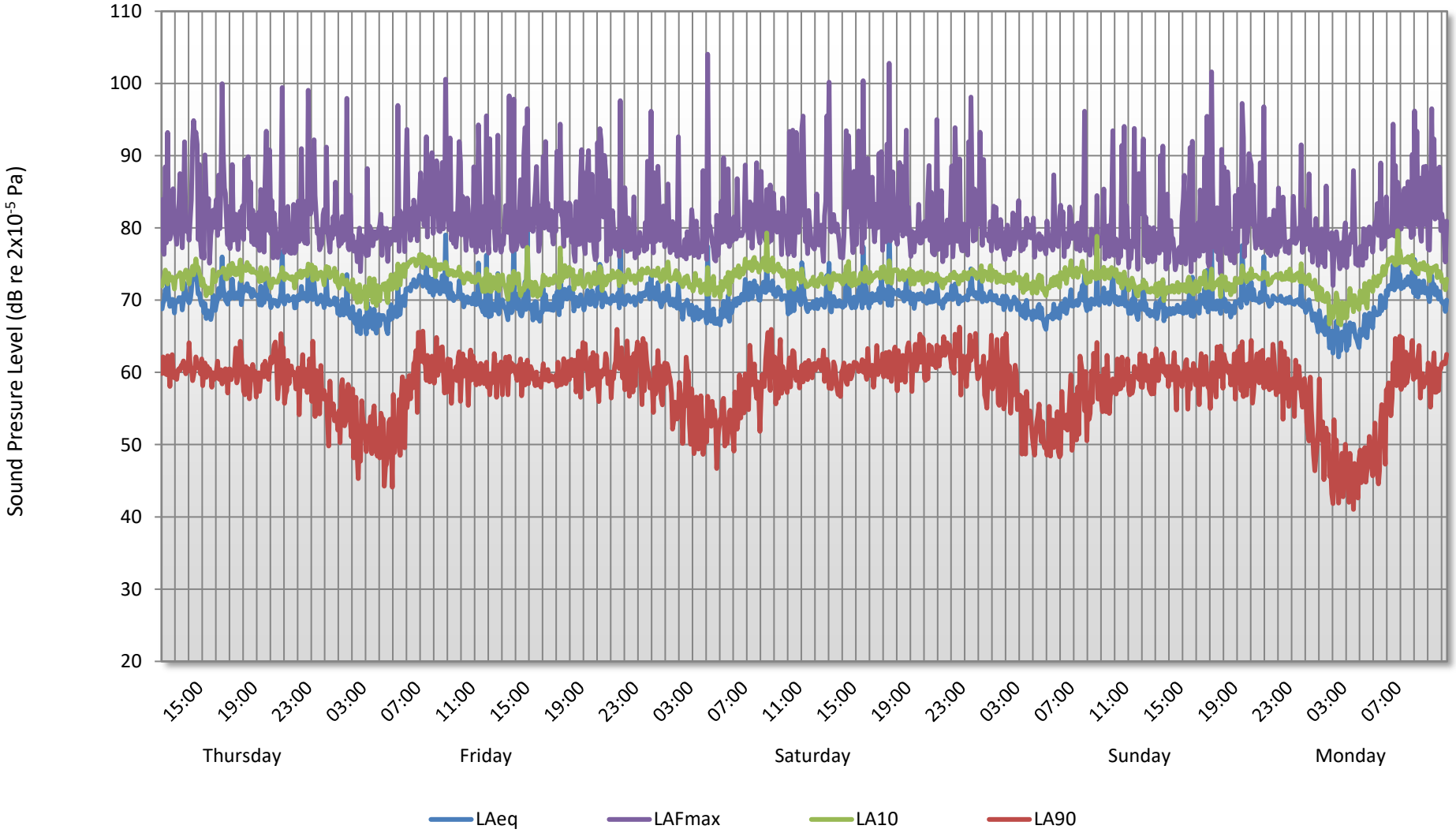
Author	**Duncan Martin** Director BSc (Hons) MIOA		March 2025
Reviewed	**John Smethurst** Director BSc (Hons) MIOA		March 2025

17408-SP1 Indicative site plan indicating noise and vibration monitoring positions **Date:** 26 March 2025

9-12 New College Parade, London

Position 1

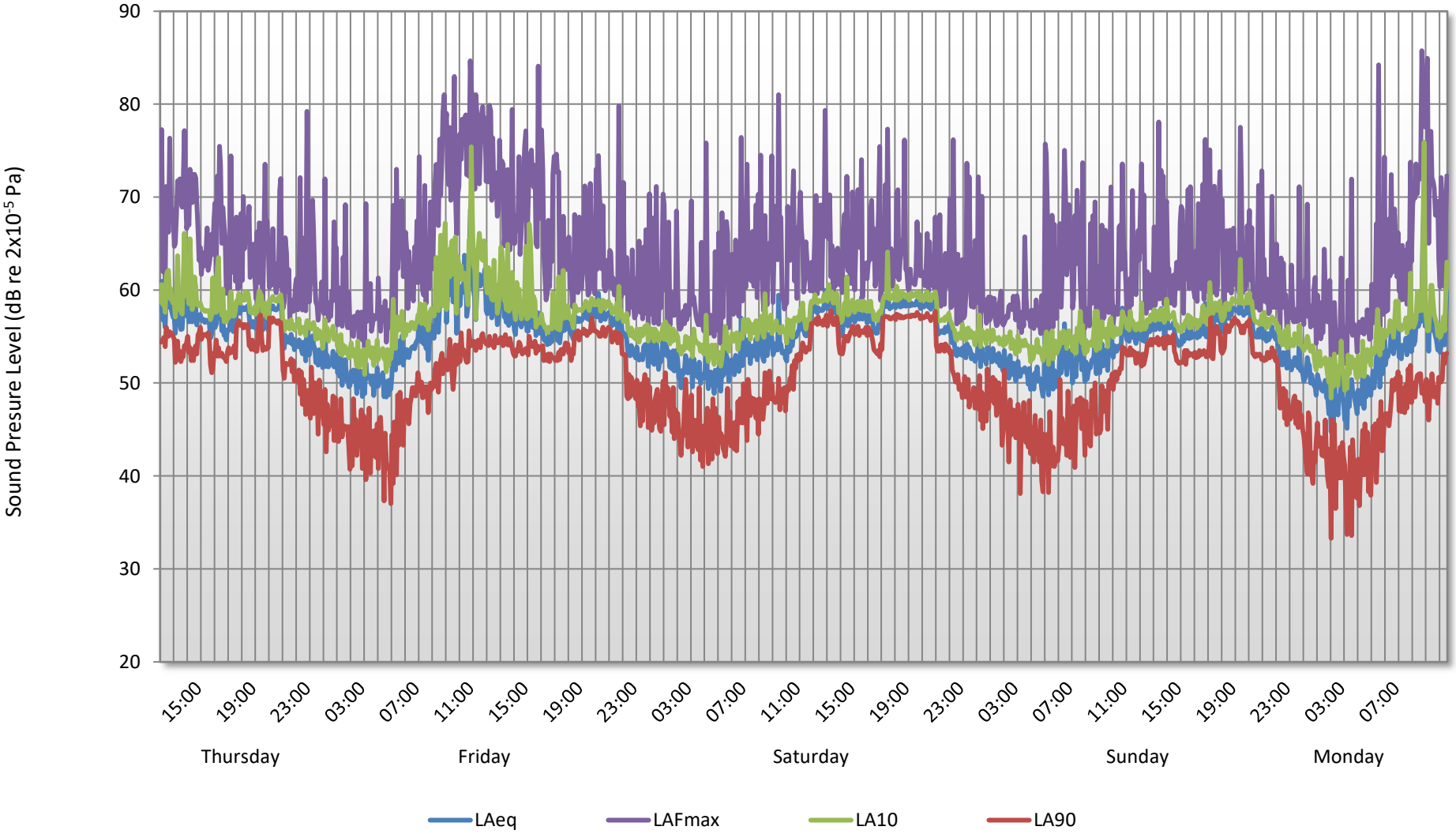
Environmental Noise Time History
17 March 2022 to 21 March 2022



9-12 New College Parade, London

Position 2

Environmental Noise Time History
17 March 2022 to 21 March 2022



APPENDIX A

GLOSSARY OF ACOUSTIC TERMINOLOGY

dB(A)

The human ear is less sensitive to low (below 125Hz) and high (above 16kHz) frequency sounds. A sound level meter duplicates the ear's variable sensitivity to sound of different frequencies. This is achieved by building a filter into the instrument with a similar frequency response to that of the ear. This is called an A-weighting filter. Measurements of sound made with this filter are called A-weighted sound level measurements and the unit is dB(A).

L_{eq}

The sound from noise sources often fluctuates widely during a given period of time. An average value can be measured, the equivalent sound pressure level L_{eq}. The L_{eq} is the equivalent sound level which would deliver the same sound energy as the actual fluctuating sound measured in the same time period.

L_{10}

This is the level exceeded for not more than 10% of the time. This parameter is often used as a "not to exceed" criterion for noise

L_{90}

This is the level exceeded for not more than 90% of the time. This parameter is often used as a descriptor of "background noise" for environmental impact studies.

L_{max}

This is the maximum sound pressure level that has been measured over a period.

Octave Bands

In order to completely determine the composition of a sound it is necessary to determine the sound level at each frequency individually. Usually, values are stated in octave bands. The audible frequency region is divided into 10 such octave bands whose centre frequencies are defined in accordance with international standards.

Addition of noise from several sources

Noise from different sound sources combines to produce a sound level higher than that from any individual source. Two equally intense sound sources operating together produce a sound level which is 3dB higher than one alone and 10 sources produce a 10 dB higher sound level.

Attenuation by distance

Sound which propagates from a point source in free air attenuates by 6dB for each doubling of distance from the noise source. Sound energy from line sources (e.g. stream of cars) drops off by 3 dB for each doubling of distance.

APPENDIX A

Subjective impression of noise

Sound intensity is not perceived directly at the ear; rather it is transferred by the complex hearing mechanism to the brain where acoustic sensations can be interpreted as loudness. This makes hearing perception highly individualised. Sensitivity to noise also depends on frequency content, time of occurrence, duration of sound and psychological factors such as emotion and expectations. The following table is a reasonable guide to help explain increases or decreases in sound levels for many acoustic scenarios.

Change in sound level (dB)	Change in perceived loudness
1	Imperceptible
3	Just barely perceptible
6	Clearly noticeable
10	About twice as loud
20	About 4 times as loud

Barriers

Outdoor barriers can be used to reduce environmental noises, such as traffic noise. The effectiveness of barriers is dependent on factors such as its distance from the noise source and the receiver, its height and its construction.

Reverberation control

When sound falls on the surfaces of a room, part of its energy is absorbed and part is reflected back into the room. The amount of reflected sound defines the reverberation of a room, a characteristic that is critical for spaces of different uses as it can affect the quality of audio signals such as speech or music. Excess reverberation in a room can be controlled by the effective use of sound-absorbing treatment on the surfaces, such as fibrous ceiling boards, curtains and carpets.