Noise Impact Assessment

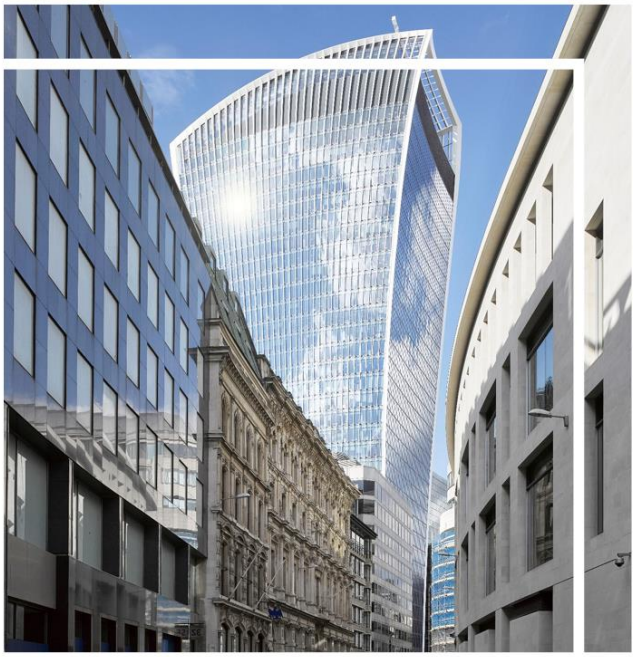
151 Shaftesbury Avenue

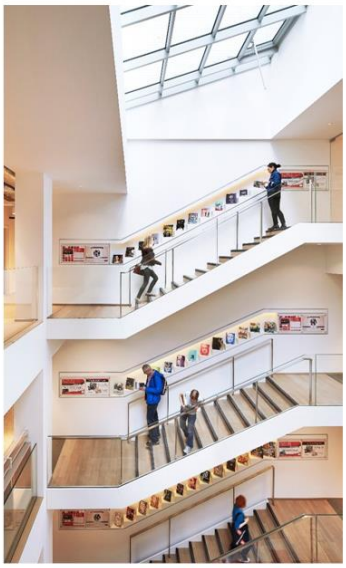
Royal London Mutual Insurance Society Limited

30 May 2024

32099-HML-XX-XX-RP-O-500001

Issue P01





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Author:	Martha Bird 
Checker:	Jack Richardson 
Approver:	Jack Richardson 
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HM Office:

The Hub
Fowler Avenue
Farnborough Business Park
Hampshire
GU14 7JF

T: +44 (0)1252 550 500
hilsonmoran.com
@HilsonMoran
hilson_moran
Hilson Moran

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Contents

1. Introduction

This noise impact assessment has been prepared by Hilson Moran on behalf of Royal London Mutual Insurance Society Ltd (RLMIS Ltd). It accompanies a planning application to London Borough of Camden Council (LBC) for the refurbishment of the existing mixed use building at 151 Shaftesbury Avenue (hereafter the "Site"), in addition to a proposed one-storey extension to provide additional new CAT A offices (hereafter the "Proposed Development").

This report provides details of noise surveys undertaken at the development site, and assessments undertaken that consider the impact and suitability of the Site for the Proposed Development.

The assessments undertaken and subsequently reported on primarily relate to the setting of appropriate noise emission limits for new fixed building services plant associated with the development in accordance with LBC's standard noise planning policy.

A glossary of the acoustic terminology used in this report is presented in Appendix A.

2. The Site, Site Setting and Proposed Development

2.1. Site Description

151 Shaftesbury Avenue is located within the London Borough of Camden (LBC). The site is directly bounded by commercial/residential to the north, Shaftesbury Avenue to the east, St Giles Passage to the south and New Compton Street to the west.

The existing building comprises a basement, lower ground, ground and seven further floors as well as outdoor amenity and plant space at roof level. There are existing residential units however there are proposed to be no changes to the residential units or residential core, thus no acoustic amendments.

2.2. Proposed Development

The Proposed Development includes the refurbishment of the existing office areas, in addition to a one-storey extension to provide new CAT office spaces. The proposals will also include the introduction of new items of building services plant. As noted above there are proposed to be no changes to the residential units or residential core.

2.3. Noise Sensitive Receptors

Noise Sensitive Receptors (NSRs) are defined in the LBC Local Plan 2017[1] as housing, schools and hospitals as well as offices, workshops and open spaces. It also states that the impacts on external amenity spaces such as gardens and balconies should be considered.

NSRs have been identified through a desktop study and on-site observations during the noise survey. The NSRs have been selected to provide an assessment location in each direction at the nearest identified sensitive location. By selecting the nearest NSRs, emission limits will also be protective of other further NSRs which will be inherently less exposed to noise from the Proposed Development.

The nearest identified NSRs are presented in Table 2.1.

[1] London Borough of Camden Council (LBC) (Adopted on 3 July 2017) '*Local Plan 2017', LP*.

Table 2.1: Description of Noise Sensitive Receptors and Commercial Receptors

Identifier	Address	Usage
NSR1	167-177 Shaftesbury Avenue	Residential
NSR2	Covent Garden Hotel, 10 Monmouth Street	Hotel
NSR3	166-170 Shaftesbury Avenue	Residential
NSR4	The Chinese Church in London, 166A Shaftesbury Avenue	Religious
NSR5	1-25 Pendrell House	Residential

Figure 2.1 below shows the identified NSRs in the context of the site and its surroundings.

Figure 2.1: Location Plan showing Site Boundary and Noise Sensitive Receptors

3. Assessment Criteria

When selecting appropriate criteria for assessment, consideration was given to relevant planning policy and regulations, as follows:

- The National Planning Policy Framework (NPPF)[2];
- The Noise Policy Statement for England (NPSE)[3];
- The Noise Planning Practice Guidance[4]; and
- LBC Council Local Plan 2017.

It should be noted that no specific numerical noise criteria are detailed in these documents.

With regard to acoustic design and noise control, the NPPF provides a set of overarching aims, broadly reflecting those already contained in the NPSE. They are directed towards the avoidance of significant adverse impacts and reduction of other adverse impacts on health and quality of life; set within the context of the Government's policy on sustainable development. These documents are described in further detail in Appendix B.

There are proposed to be no changes to the residential units or residential core, and so a suitability assessment for the residential uses is not considered necessary.

3.1. Building Services Plant Noise

The significance of building services noise impacts depends upon a number of factors. These include:

- the absolute noise level;
- the nature of the noise;
- the time and duration at which the noise occurs;
- whether the noise is temporary, intermittent or permanent;
- whether the impact is as a result of a new source; and
- whether it is a change to an existing source and/or the sensitivity of the receptor.

At this stage in the design of the development, details of the building services plant are yet to be fixed and therefore, accurate predictions to determine the significance of the likely effects of their noise emission are not possible. Consequently, suitable plant noise emission limits have been set to which the plant must adhere and these are based on the measured background (L_{A90}) noise levels and the plant noise requirements of LBC. These will be used as a basis for the development of the mechanical design moving forward.

[2] Department for Communities and Local Government (DCLG) (2021); '*The National Planning Policy Framework*', TSO.
[3] Department for Environment, Food and Rural Affairs (DEFRA) (2010); '*Noise Policy Statement for England*', DEFRA.
[4] Department for Communities and Local Government (DCLG) (2014); '*Planning Practice Guidance website*', DCLG. (http://planningguidance.planningportal.gov.uk/).

3.2. London Borough of Camden Council

Consultation with the Environmental Health Department of LBC will be undertaken in due course, however from previous experience and our review of planning applications for similar developments in the area, we understand that LBC's typical planning conditions in relation to noise emissions from building services are as follows:

"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 (15 dB if tonal components are present) should be considered as the design criterion."

The above requirement is anticipated to apply to fixed building services that may operate to serve the building day-to-day. Due to the short-term and infrequent operation of emergency building services, such as generators and smoke extract systems, it is typically permitted for these items to achieve a relaxed noise emission standard. From a review of LBC's Local Planning Policy and Guidance documents, we understand the following standard is applicable for emergency plant:

"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 10 dB 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 forms part of the application."

4. Baseline Noise Survey

4.1. Survey Methodology

Long-term unattended noise measurements were conducted over a five-day period between 13:00 hrs on 30th August 2023 and 10:00 hrs on 4th September 2023 at L2, and between 11:00 hrs on 4th September 2023 and 14:00 hrs on 11th September 2023 at L1. An unattended noise measurement was conducted over a 9hr period between 13:30 hrs and 22:30 hrs 30th August 2023 at L1. The noise measurements were undertaken to establish the typical variation of noise at the Site during typical weekday and weekend periods.

The long-term unattended measurements were supplemented with attended short-term measurements to help determine the spatial difference in noise between roof level (where the unattended measurements were conducted), and the road frontage at Shaftesbury Avenue and New Compton Street.

The sound level meters were set to continuously record data in raw form, such that subsequent post-processing could derive relevant noise metrics to assess with project criteria.

A plan showing the long-term (LT) and short-term (ST) external measurement locations is presented in Figure 4.1 overleaf and described in Table 4.1.

Figure 4.1: Location Plan showing Site Boundary, Noise Sensitive Receptors and Monitoring Locations

Table 4.1: Description of Noise Measurement Positions

Position	Description	Observations and Predominant Noise Sources
L1	5th floor level on external terrace nearest New Compton Street	The predominant noise source was vehicular traffic on local roads. Noise from planes, church bells and plant on neighbouring buildings also contributed to the noise climate.
L2	Roof level at perimeter of roof nearest Shaftesbury Avenue	The predominant noise source was vehicular traffic on Shaftesbury Avenue. Noise from existing plant on 151 Shaftesbury Avenue also contributed to the noise climate.
S1	Street level directly below L1 on New Compton Street	The predominant noise source was vehicular traffic on New Compton Street. Noise from human activity also contributed to the noise climate.
S2	Street level directly below L2 on Shaftesbury Avenue	The predominant noise source was vehicular traffic on Shaftesbury Avenue. Noise from human activity also contributed to the noise climate.

During the survey, it was observed that the daytime noise climate in the area is dominated by vehicular traffic on Shaftesbury Avenue and New Compton Street. Other noise sources included human activity, existing plant on 151 Shaftesbury Avenue's roof, church bells, planes and distant construction activity. The night-time noise climate was not directly observed however from our review of the area and captured noise data, we suspect night-time noise levels are dominated by road traffic movements primarily.

4.2. Equipment & Calibration

Equipment used during the survey is summarised in Table 4.2.

Table 4.2: Equipment and Calibration Records

Meter Location	Make	Model	Serial Number	Calibration Date
L1 (30th August)	Norsonic	Nor140	6952	25/07/2022
L1 (4th – 11th September)	01dB	Duo	11063	12/12/2022
L2	01dB	Duo	11063	12/12/2022
S1	Norsonic	Nor140	6953	22/11/2021
S2	Norsonic	Nor140	6953	22/11/2021

Further details, including calibration certificates are available on request.

4.3. Noise Results

Long-term unattended measurements were undertaken to establish the variation of noise at the Site in two external locations. To supplement the results of the long-term measurements, short-term monitoring was undertaken at two external locations.

Figure 4.2 and Figure 4.3 below present the graphical results of the noise survey for measurement position L1 and L2, whilst a summary of the noise results at all locations is presented in Table 4.3.

Figure 4.2: Unattended Noise Measurements, Position L1

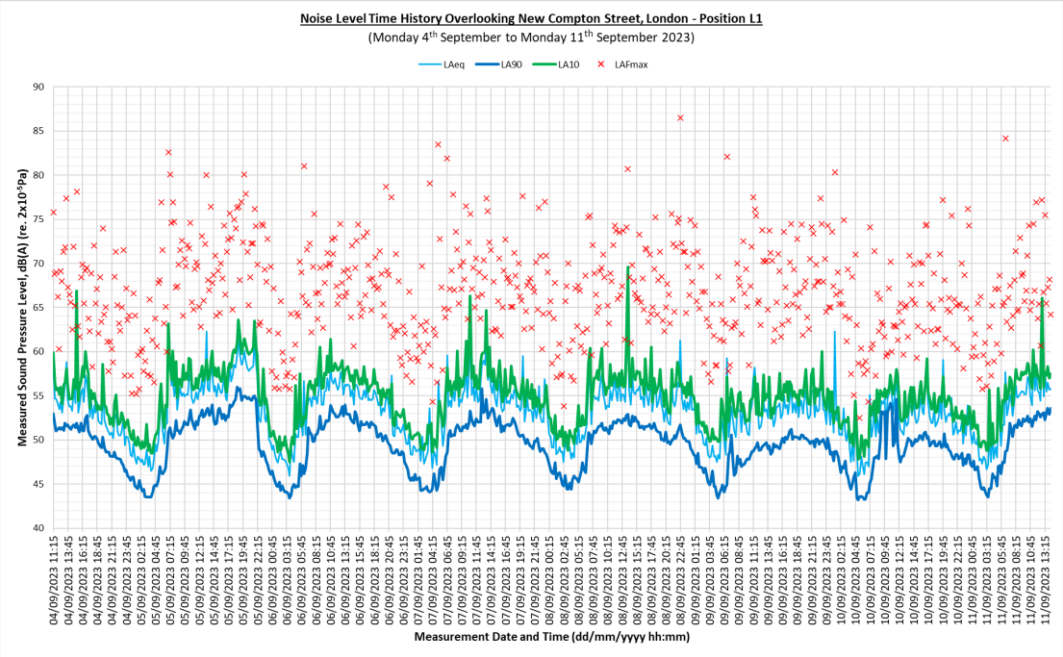


Figure 4.3: Unattended Noise Measurements, Position L2

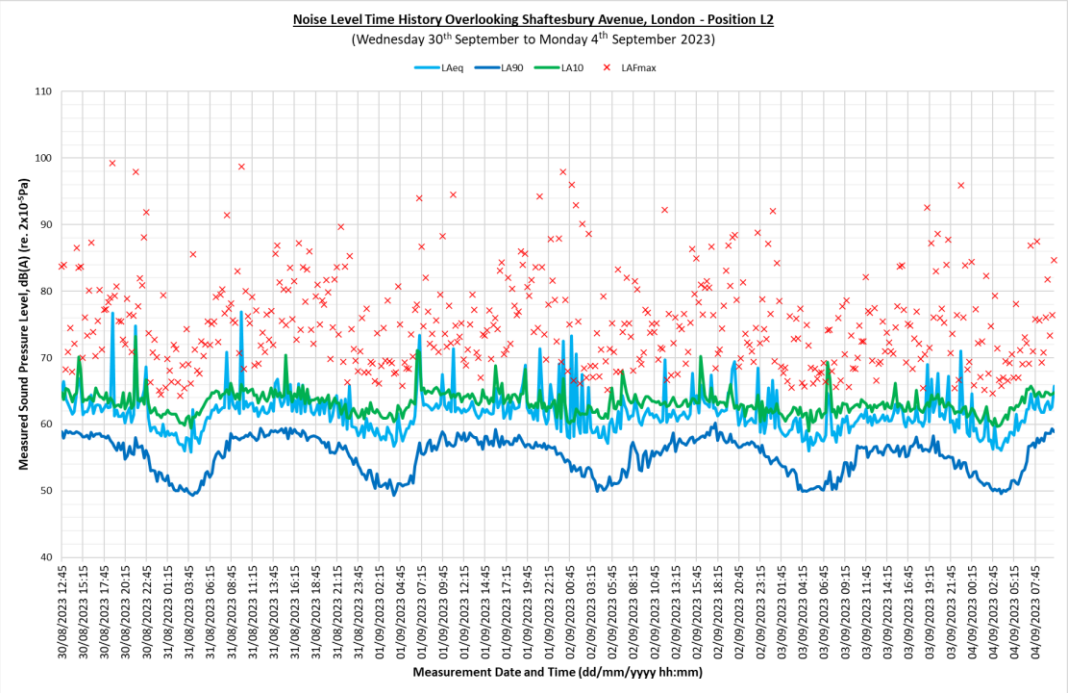


Table 4.3: Summary of Noise Measurement Results

Monitoring Location	Period	Duration	$L_{Aeq,T}$ dB	$L_{A90,15min}$ dB		$L_{AFmax,5min}$ dB
			Ave[1]	Min	10%ile[2]	95%[3]
L1 (30th Aug)	Day	16 Hours	54	47	48	76
L1 (4th–11th Sept)	Day	16 Hours	54	42	47	74
	Night	8 Hours	49	41	42	73
L2	Day	16 Hours	62	48	53	86
	Night	8 Hours	60	47	48	86
S1	Day	30 Minutes	57	51	51	81[4]
S2	Day	30 Minutes	72	62	62	97[4]

Notes: [1] Logarithmic average over the day / night survey periods; [2] The 10th percentile $L_{A90,15min}$ value considered representative of the background noise level.[3] The 95th percentile L_{AFmax} value presented is considered representative of typical highest L_{AFmax} levels experienced. [4] Maximum noise level. All figures are rounded to the nearest whole decibel.

Based on our analysis of the noise measurements described above, we have determined that the lowest 15-minute background noise level during daytime periods was 42 dB $L_{A90,15min}$ at L1 and 48 dB $L_{A90,15min}$ at L2. During night-time periods, the lowest background noise levels were 41 dB $L_{A90,15min}$ at L1 and 47 dB $L_{A90,15min}$ at L2.

4.4. Vibration Survey

Attended vibration measurements were undertaken on Thursday 9th September 2023 at four positions across the Site. The purpose of the measurements was to determine the spatial variation of rail induced groundborne vibration from underground trains on the Elizabeth line which runs directly below the Site. The vibration measurement locations are indicated on Figure 4.4, Figure 4.5 and described in Table 4.4.

Vibration measurements were taken over 20-minute periods at each location to quantify the magnitude of groundborne vibration from a representative sample of train events. Measurements were taken using a calibrated RION VM-56 vibration meter (SN 680015) with a tri-axial accelerometer fixed to a DIN plate. Ground spikes were used where measurements on carpet were unavoidable to provide a sufficient connection with the building structure. The meter was set-up to continuously record vibration levels for each axis every 100 ms to enable the measurement data to be analysed and individual train events to be isolated.

Figure 4.4: Lower Ground Floor Plan Showing Vibration Monitoring Locations

Figure 4.5: First Floor Plan Showing Vibration Monitoring Locations

Figure 4.6: Second Floor Plan Showing Vibration Monitoring Locations

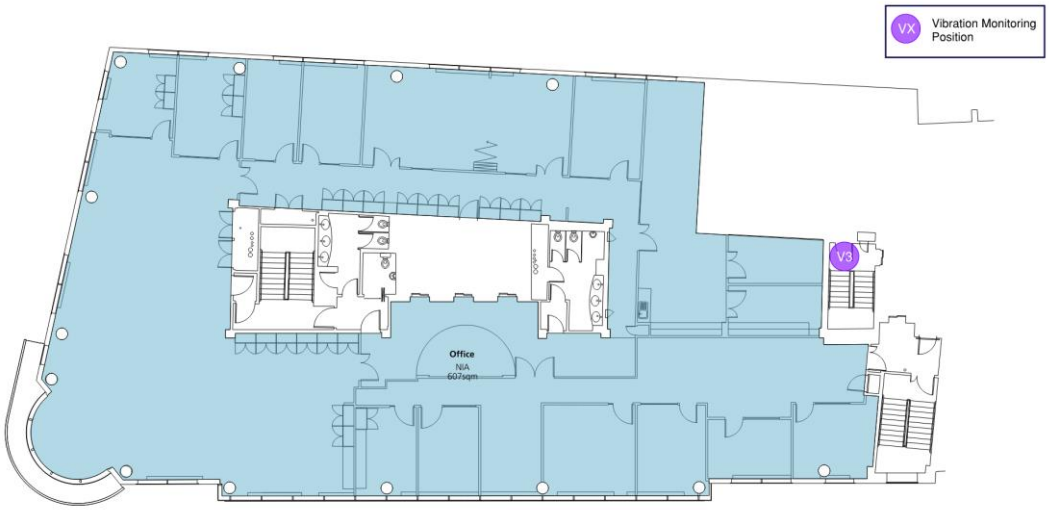


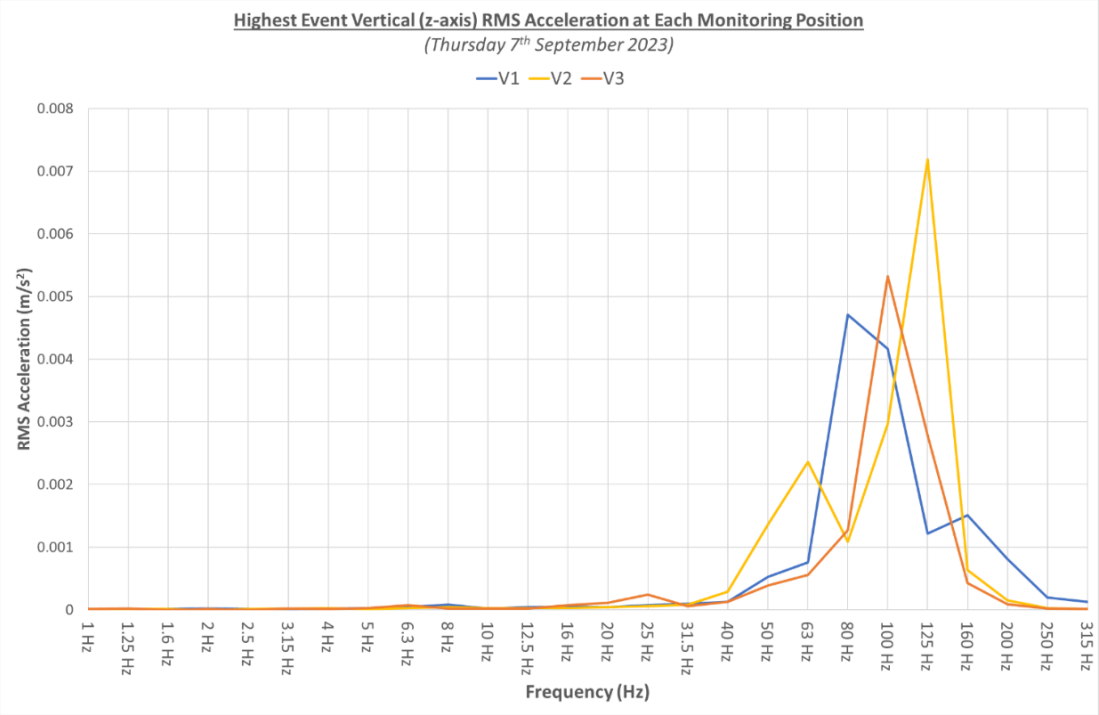
Table 4.4: Vibration Survey Monitoring Positions

Monitoring Position	Description
V1	Monitoring location in the lower ground car park near to the north eastern corner. The surface was concrete on grade (i.e. not suspended).
V2	Monitoring location in the 1st floor central residential core stairwell in the north section of the building. Measurements conducted on carpeted floor.
V3	Monitoring location in the 2nd floor central residential core stairwell in the north section of the building. The surface was carpeted floor.

4.4.1. Vibration Results

The highest measured RMS acceleration levels at each measurement position are presented on Figure 4.7 below. Our data analysis shows vibration in the vertical (z-axis) is notably higher than in the horizontal axis (x & y), which is typical for building vibration caused by underground train movements. Consequently, only results from the z-axis results are presented.

Figure 4.7: Highest Event Vertical (Z-Axis) RMS Acceleration at Each Monitoring Position



5. Noise Impact Assessment

5.1. Building Service Plant Noise

Noise from building services plant shall be designed, constructed and/or operated to achieve the following noise criteria at the nearest designated NSRs presented in Table 5.1 below.

Table 5.1: Building Services External Noise Limits

Receptor Location *(Figure 2.1)*	Representative Measurement Location	Time period	Background Noise Level $L_{A90,15min}$ dB 10%ile[1]	Noise Emission Limit dB $L_{Ar,Tr}$[2,3]
NSR1 / NSR5	L1	Daytime	47	37
		Night-time	42	32
		Emergency (all times) [4]	42	52
NSR2 / NSR3 / NSR4	L2	Daytime	53	43
		Night-time	48	38
		Emergency (all times)[4]	48	58

Notes: [1] The 10th percentile $L_{A90,15min}$ value considered representative of the background noise level. [2] Noise from services shall be rated in accordance with BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'. The assessment intervals shall be 1 hour for daytime periods (07:00 – 23:00 hrs) and 15 minutes for night-time periods (23:00 – 07:00 hrs). [3] For noise source which contain tonal or intermittent characteristics these limits shall be reduced by 5 dB. [4] Emergency sources are defined as emergency plant or an emergency life supporting generators, noting that additional restrictions on timing of testing apply.

These limits apply to the cumulative noise from the overall development; that is to say the limits would apply to all building services noise that may operate during any period, including future tenant plant items.

5.1.1. Outline Mitigation Recommendations

Due to the current phase of the development design, building services plant has not yet been finalised so it is not possible to undertake accurate calculations required for a full noise impact assessment to identify required acoustic noise mitigation measures. These will be conducted at future stages in the development design.

To meet the noise emissions limits in Table 5.1, careful attention should be paid to the selection, location, and design of all building services plant. Some items that should be considered through following design stages are:

- Selection of low noise plant, including consideration of frequency spectrum to avoid tonal components.

- Plant shall generally be specified at the peak operating efficiency. Poorly sized plant is likely to create excessive noise and/or have tonal components.
- Utilisation of screening, using acoustically robust methods can significantly reduce noise at nearby NSRs. Airflow paths which allow efficient operation of the plant by reducing short cycling (in the case of air-source systems) may need to be acoustically treated.
- Positioning of plant to maximise separation distance, or in the case of acoustically screened plant, increase path length differences to maximise screening potential.

6. Conclusions

Hilson Moran has been appointed by RLMIS Ltd to undertake a noise impact assessment for the refurbishment of the existing mixed use building at 151 Shaftesbury Avenue, in addition to a proposed one-storey extension to provide additional new CAT A offices.

There are proposed to be no changes to the residential units or residential core within the building, and so a suitability assessment for the residential uses has not been undertaken.

Nearby Noise Sensitive Receptors (NSRs) were identified through a desktop study and onsite observations, in line with LBC guidelines.

A baseline noise survey was conducted between 30th August and 11th September 2023 to establish and quantify the diurnal and spatial variation in noise levels at the Site in locations representative of the identified NSRs. The measured levels were used to set noise emission limits for building services plant, upon which the building services design shall be based on as the development design progresses.

This assessment is suitable to submit to Council for the purposes of accompanying the planning application for this development.

Appendix A – Acoustic Terminology

The following table contains a list of frequently used acoustic terms we use in our reports. The terms are defined with an explanation for each.

Term	Description
Decibel, dB	The decibel is a logarithmic unit of measurement used for quantifying sound. It is derived from the logarithm to base 10 of the ratio of two quantities. Use of a logarithmic scale has the advantage that it compresses the very wide range of sound pressures to which the ear may typically be exposed to a more manageable range of numbers.
Frequency, Hz	In sound, the number of cycles per second of a pressure fluctuation and frequency in sound is proportional to its pitch. Different frequencies are divided into octave and one third octave bands.
Sound Pressure Level, *Lp*	This is the unweighted or linear level which is measured prior to any weightings being applied. The sound pressure level is 20 times the logarithm to base 10 of the ratio of the reference sound pressure ($2x10^{-5}$) and the measured sound pressure.
Sound Power Level, L_w	This is the total sound energy radiated from a given source. The sound power Level is 10 times the logarithm to base 10 of the ratio of the reference sound power level ($1x10^{-12}$) and the measured power.
Frequency Weightings	Weightings can be applied to a spectrum of sound and act as a filter to account for different sensitivities and conditions.
Time Weightings	A time weighting to denote the response of the sound level meter. For most measurements the Fast time weighting is selected (F) however, a slow time weighting (S) is often used to for the measurement train noise and vibration.
A-weighted sound pressure level, L_{pA}	The sound pressure level with the A-weighting applied. The A-weighting is used for most environmental noise measurements and is used to weight a spectrum of sound to match the sensitivity of the human ear.
Equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$	The L_{Aeq} is an energy average and defined as the level of sound which, over a given period of time, would equate to the same A-weighted sound energy as the actual fluctuating sound.
Octave Bands	A band of frequencies in which the upper limit of the band is twice the frequency of the lower limit.
Maximum noise Level, L_{AFmax}	The maximum instantaneous noise level measured during a given period of time. The time weighting to which the meter is

Term	Description
	set for this measurement parameter is always indicated by either an F or S.
Percentile level, $L_{AN,T}$	A-weighted sound pressure level obtained using time-weighting F, which is exceeded for N% of a specified time interval. An example of this is background noise which is quantified with the L_{A90} descriptor, which is the A-weighted level which is exceeded for 90% of the measurement period.
Sound exposure level, L_{AE}	A level of a sound, of 1 s duration, that has the same sound energy as the actual noise event considered.
Rating Level, $L_{Ar,Tr}$	The equivalent continuous A-weighted sound pressure level of the noise, plus any adjustment for the characteristic features of the noise.
Ambient Noise Level	The noise level in a given environment whilst it is subject to all of its normal sources of noise.
Background Sound / Noise Level, L_{A90}	These are amongst the lowest noise levels measured over a given period of time and exclude short term, intermittent noise sources. The background noise level is quantified by the L_{A90} descriptor and is therefore the level which is exceeded for 90% of a given period of time.
Reverberation Time, T	The time that would be required for the sound pressure level to decrease by 60 dB after the sound source has stopped. The descriptor *T,* often includes other nomenclature to describe the type of reverberation time measurement or if the reverberation time is an average taken for specific frequencies. For example a T_{mf} is the mid-frequency reverberation time.
Absorption Coefficient, α	The fraction of reverberant sound energy absorbed by a material. It is expressed as a value between 1.0 which equates to perfect absorption and 0 which equates to zero absorption.
Absorption, A	The acoustic absorption derived from the multiplication of the absorption coefficient by the surface area of a given material.
Acoustic Class, A - E	Classification of sound absorbers into Sound Absorption Classes A-E, according to BS EN ISO 11654, including frequencies 200-5000 Hz
NRC	A single-number rating system used to compare the sound-absorbing characteristics of building materials. A measurement of the acoustical absorption performance of a material, calculated by averaging its Sound Absorption Coefficients at 250, 500, 1000 and 2000 Hz

Term	Description
Sound Reduction Index, R	The laboratory measured sound insulation properties of a material or building element in octave or third octave bands.
Weighted Sound Reduction Index, R_w	A single number which represents the sound reduction of a material. It is derived by plotting the sound reduction index against a set of reference curves. The curves are shifted until a best-fit is established and the curve which best fits the sound reduction spectrum is used to represent the single figure value.
Weighted Level Difference, D_w	The weighted level difference between a pair of rooms, stated as a single figure.
Standardized Weighted Level Difference, $D_{nT'w}$	The standardized, weighted difference in sound level between a pair of rooms, stated as a single figure. The level difference in octave bands is first normalized to a reference reverberation time and then plotted against a set of reference curves to establish a single figure value.
Weighted, Normalised Flanking Level Difference, D_{nFw}	The normalised, weighted difference in sound level between a pair of rooms via a flanking element, such as mullion or ceiling detail. The level difference in octave bands is first normalized to a reference amount of absorption and then plotted against a set of reference curves to establish a single figure value.
Normalised Element Level Difference, D_{ne}	The normalised difference in sound level between a pair of rooms via a small element such as a trickle ventilator. The level difference in octave bands is normalized to a reference amount of absorption.
Weighted, Normalised Element Level Difference, D_{new}	The normalised, weighted difference in sound level between a pair of rooms via a small element such as a trickle ventilator, stated as a single figure. The level difference in octave bands is normalized to a reference amount of absorption and then plotted against a set of reference curves to establish a single figure value.
C_{tr}	A correction term applied to the sound insulation single-number values (R_w, D_w, and $D_{nT,w}$). Applying the C_{tr} penalises a construction's performance if its low frequency performance is poor in relation its performance at higher frequencies.
Impact Sound	The noise generated by an impact on a structure. This is normally used to describe the noise created by people walking on a floor structure.
Weighted standardized impact sound pressure level, $L_{nT,w}$	A single-number quantity used to characterize the impact sound insulation of floors over a range of frequencies.

Term	Description
Cross-talk	Noise transmission between one room and another room or space via a duct or other path.
Insertion Loss, IL	The reduction of noise level due to the presence of a noise control device such as an attenuator, excluding any regeneration noise created by its presence.
Dynamic Insertion Loss, DIL	The reduction of noise level due to the presence of a noise control device such as an attenuator, including any regeneration noise created by its presence.
NR	The Noise Rating level. This is a single figure value derived by plotting a noise spectrum against a set of curves. The curve under which the spectrum fits is the resulting NR level.
Vibration	The vibratory motion of a surface can be characterised by: (a) displacement (m), (b) velocity (m/s), or (c) acceleration (m/s^2). The magnitude of the vibration can be quantified in several ways: **Peak to Peak** - The total excursion of the oscillation about the zero datum. **Peak** - This value gives the maximum excursion of the oscillation above or below the zero datum. **r.m.s.** - This value gives the root mean square of the time history over a specific time interval (time constant). **dB** - Vibration levels can be expressed in dB. A reference level of 10-6 m/s^2 r.m.s. is usually used for acceleration.
Ground borne noise	Audible noise caused by the vibration of elements of a structure, for which the vibration propagation path from the source is partially or wholly through the ground.
Structure borne noise	Audible noise caused by the vibration of elements of a structure, the source of which is within a building or structure with common elements.
V.D.V,	The VDV is the Vibration Dose a person is expected to be exposed to over the course of the day or night. The VDV is given by the fourth root of the time integral of the fourth power of the acceleration after it has been frequency-weighted.

Term	Description
eVDV	The estimated vibration dose value based on short duration measurements of transients with known durations and occurrences.

Appendix B – Planning Policy and Noise Guidelines

The various policies and guidelines which have been consulted in this report are summarised below. These have been used for the purposes of establishing the impact of the site on the existing environment and amenity of residents in the local area.

Control of Pollution Act 1974

The Control of Pollution Act 1974[5] gives local authorities special powers for controlling noise and vibration arising from construction and demolition works. These powers may be exercised either before or after works have been started.

Section 60 enables the local authority of an area in which works are scheduled or currently underway, to serve a notice of its requirements for the control of construction site noise/vibration on the person who appears to the local authority to be undertaking the works.

Section 61 provides a mechanism for the contractor or developer to take the initiative in approaching the local authority to ascertain its noise/vibration requirements before construction work starts.

The Act also covers Noise Abatement Zones, Codes of Practice and Best Practicable Means (BPM) regarding noise pollution.

Environmental Protection Act 1990, Part III

Section 79 of the Environmental Protection Act 1990[6] defines statutory nuisances and the requirement for local authorities to inspect their area for statutory nuisances, taking such steps as are reasonably practicable to investigate any complaint of a statutory nuisance.

Section 80 of the act gives local authorities the right, where a statutory nuisance exists or is likely to be caused, to serve an abatement notice requiring the abatement, prohibition or restriction of the nuisance.

Section 82 of the act allows a person aggrieved by a statutory nuisance to make a complaint to a Magistrates Court in an attempt to seek an abatement notice served on the person responsible for the nuisance.

Planning Policy

Planning policy at the national, regional, county and local level relevant to the proposed development is discussed below.

National Policy

National Planning Policy Framework

The National Planning Policy Framework (NPPF) seeks to contribute to and enhance the natural and local environment, including preventing new and existing developments from

[5] Her Majesty's Stationery Office (1974); '*Control of Pollution Act 1974*', HMSO, London.
[6] DEFRA (1990); '*Environmental Protection Act Part III*', DEFRA, 1990.

contributing to, and/or, being put at an unacceptable risk from noise pollution. In support of this, paragraph 185 of the NPPF states 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*".

Noise Policy Statement for England, March

The Noise Policy Statement for England (NPSE) was published in March 2010 by the Department for Environment, Food and Rural Affairs (DEFRA) and forms the overarching statement of noise policy for England. It 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.*"

The policy aims, through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development, to:

- Avoid significant adverse effects on health and quality of life;
- Mitigate and minimise adverse effects on health and quality of life; and
- Where possible, contribute to the improvement of health and quality of life.

The NPSE sets out three terms with regard to noise effects:

- No Observed Effect Level (NOEL) – the level below which no effect can be detected and below which no detectable effect on health and quality of life due to noise can be established;
- Lowest Observed Adverse Effect Level (LOAEL) – the level above which adverse effects on health and quality of life can be detected; and
- Significant Observed Adverse Effect Level (SOAEL) – the level above which significant adverse effects on health and quality of life occur.

The above terms are not defined numerically in terms of absolute levels within the NPSE which acknowledges that these will change depending on, but not limited to, the noise source, the receiver type and the time of day/day of week.

Guidance

Where detailed guidance is not contained in the documents described above, the most appropriate Standards and guidance have been adopted in the prediction and assessment of noise and vibration impacts.

The following documents are appropriate to the measurement of baseline noise levels and assessing noise of an industrial nature emanating from existing, new or proposed commercial premises:

- BS 7445-1:2003 'Description and Measurement of Environmental Noise'[7], defines parameters, procedures and instrumentation required for noise measurement and analysis.
- British Standard 4142:2014 'Methods for Rating and Assessing Industrial and Commercial Sound' describes methods for rating and assessing sound of an industrial and/or commercial nature for the purposes of: (a) investigating complaints, (b) assessing sound from proposed, new, modified or additional sources of sound of an industrial/commercial nature, and, (c) assessing sound at proposed new residential premises, with a view to determining the likelihood and degree of adverse impact, having regard to the context in which the sound occurs.

The following documents are appropriate when assessing noise affecting proposed new and existing development:

- National Planning Practice Guidance (NPPG) was released in March 2014 by the Department for Communities and Local Government (DCLG) and is a web-based resource to support the NPPF. NPPG 'Noise' outlines qualitatively when noise could be a concern, stating: "*Noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment...*".

Advice is provided concerning noise exposure and its effects and puts into context the advice stated within the NPSE. Table B.1 presents the qualitative guidance concerning the Noise Exposure Hierarchy, based on the likely average response, as set out in NPPG and with reference to the NPSE.

Table B.1: Noise Exposure Hierarchy Based on the Likely Average Response

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not noticeable	No effect	No Observed Effect	No specific measures required
	Noise can be heard, but does not cause any change in behaviour or	No Observed Adverse Effect	

[7] British Standards Institution (2003); '*BS 7445-1:2003 Description and Measurement of Environmental Noise*', BSI Standards Limited, London.

Noticeable and not intrusive	attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	Lowest Observed Adverse Effect Level (LOAEL)	No specific measures required
Noticeable 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, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during noticeable 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; disruptive/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 (SOAEL)	Avoid
Noticeable 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 harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

Hilson Moran

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