



ACOUSTIC
CONSULTANTS LTD

Post-Works Assessment

**TV House
Clarendon Road, N8 0DJ**

Reference: 11314/CP

Client:

Virgin Media Limited

Document Control

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The report has been prepared in good faith, with all reasonable skill and care, based on information provided or available at the time of its preparation and within the scope of work agreement with the Client. We disclaim any responsibility to the Client and others in respect of any matters outside the scope of the above. The report is provided for the sole use of the named Client and is confidential to them and their professional advisors. No responsibility is accepted to other parties.

The report limits itself to addressing solely on the noise, acoustic, and vibration aspects as included in this report. We provide advice only in relation to noise, vibration and acoustics. It is recommended that appropriate expert advice is sought on all the ramifications (e.g. CDM, structural, condensation, fire, legal, etc.) associated with any proposals in this report or as advised and concerning the appointment. It should be noted that noise predictions are based on the current information as we understand it and, on the performances noted in this report. Any modification to these parameters can alter the predicted level. All predictions are in any event subject to a degree of tolerance of normally plus or minus three decibels. If this tolerance is not acceptable, then it would be necessary to consider further measures.

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1. Introduction

Virgin Media Limited has appointed Acoustic Consultants Ltd to conduct a post-works assessment following the relocation of existing external rooftop plant at TV House, Clarendon Road, London, N8 0DJ.

The assessment is based on the results of on-site noise surveys conducted both before and after plant relocation works.

The assessment has been undertaken in accordance with planning conditions outlined by the London Borough of Haringey (Application Number: HGY/2025/2464).

2. The Site & Development

The site is located on Clarendon Road, London, within a mixed-use area. The nearest noise-sensitive receptor (NSR) is approximately 4 m to the north (shown as a green dot in Figure 1).

This assessment considers the change in background noise levels following the relocation of existing external rooftop plant (see Figure 2 and Figure 3), which is understood to have the potential to operate during both daytime and nighttime periods.

The site, NSR locations, and pre- and post-works plant layouts are shown below.

Figure 1: A Google Satellite view annotated with site location (red), and NSR location (green dot)

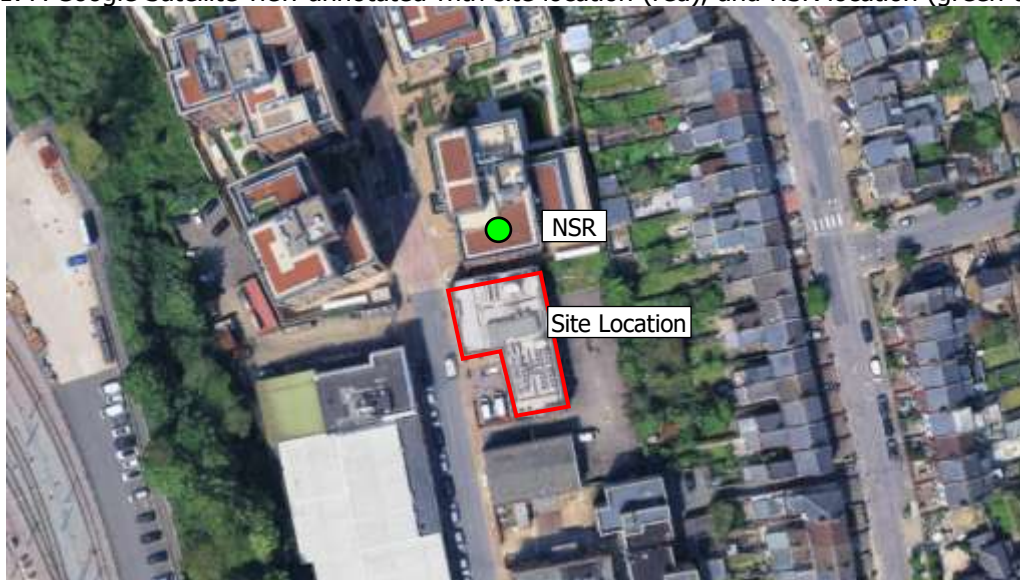


Figure 2: Pre-works plant location

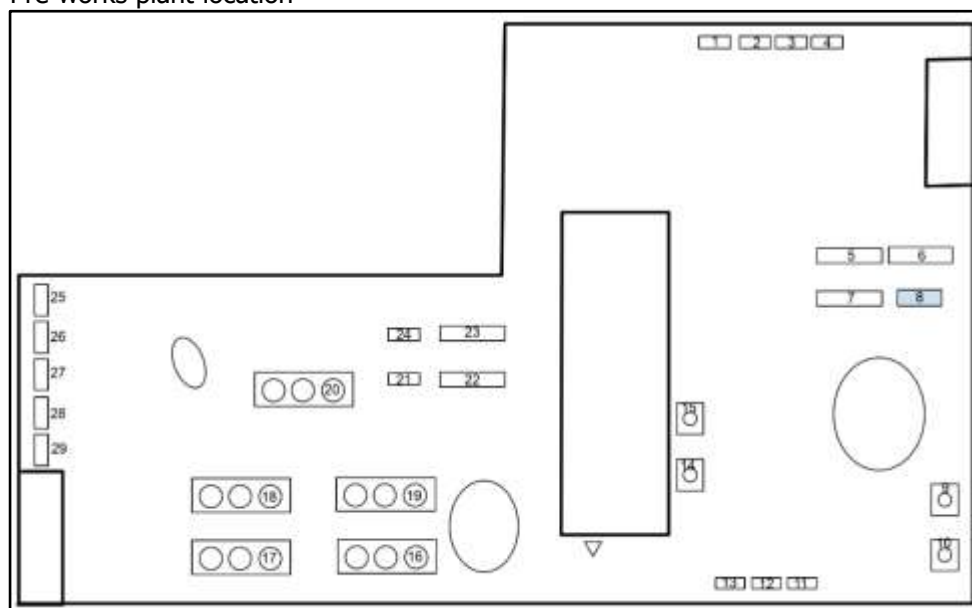
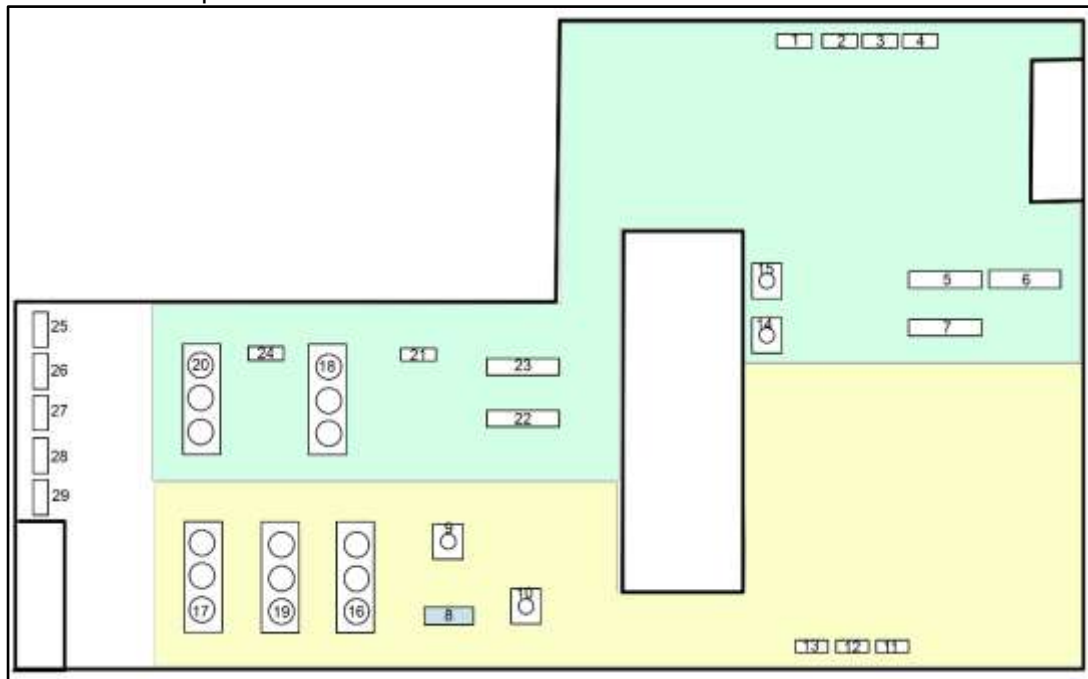


Figure 3: Post-works plant location



The plant details were provided by the client and are presented below. The table also presents the correlating reference number of the plant as seen on the previous figures.

Table 1: Plant Specification

Manufacture	Make	Quantity	Reference Number	Sound Power Level (dBA)
Daikin	RY35D	1	1	55
Mitsubishi	PUZ-ZM100YKA2	3	2, 3, 4	69
Airedale	CR50H-0	3	5, 6, 7	81
Denco Happel	121	1	8	79
Mitsubishi Electric	PUHY-p250	2	9, 10	81
Toshiba	RAV264AH-PE	1	11	67
Mitsubishi	PUHZ-RP100VHA	1	12	79
Toshiba	RAV-SM1603AT-E1	5	13, 21, 24, 28, 29	65
Mitsubishi	PUHY-P250YHM	1	14	81
Mitsubishi	PUHY-P250YJM	1	15	81
Airedale	CR105V-0	5	16, 17, 18, 19, 20	82
Airedale	CR065	2	22, 23	81
Toshiba	RAV-GM1601ATP8-E	3	25, 26, 27	72

3. Planning Condition

The London Borough of Haringey has outlined the following planning condition (Application Number: HGY/2025/2464):

"The applicant shall submit a post-installation survey produced by a competent person demonstrating there would be no increase in the cumulative noise level LAeq 15 min arising from the proposed plant, measured at 1m from the facade of the nearest residential premises. This survey must be submitted to the LPA for approval in writing. The measurement of the noise level should be carried out in accordance with the methodology outlined in BS 4142:2014 and A1:2019."

To assess compliance with this condition, the following assessment compares measured pre- and post-works background noise levels to confirm if the plant relocation results in an increase or decrease in noise levels relative to the pre-works noise levels.

4. Noise Monitoring

Two long-term, partially attended noise surveys were carried out: including a pre-works survey between 19 March 2025 and 20 March 2025, and a post-works survey between 30 March 2026 and 1 April 2026.

4.1. Monitoring Equipment

Sound Pressure Levels were measured using a Class 1 sound level meter with a half-inch condenser microphone, using the 'fast' setting. The equipment is checked regularly using a Quality System meeting the requirements of British Standard EN ISO/IEC 17025:2017 "General requirements for the competence of testing and calibration laboratories"; in accordance with British Standard EN 10012:2003 "Measurement management systems. Requirements for measurement processes and measuring equipment"; and traceable to the National Standards.

This equipment was checked and calibrated as noted below and the certificates are available for inspection.

Table 2: Details of the equipment used and their calibration dates

Model	Serial Number	Date of Calibration	Calibration Certification Number
SLM, NTI, XL3	A3A-01423-F0	27/01/2025	UK-25-011
Pre-Amp, NTI, MA220	14613	27/01/2025	UK-25-011
Microphone, NTI, MC230A	A28049	27/01/2025	UK-25-011
Calibrator, Larson Davis CAL200	18293	14/04/2026	1517027-2
SLM, NTI, XL2	A2A-20416-E0	14/10/2025	1513636-1
Pre-Amp, NTI, MA220	9568	14/10/2025	1513636-1
Microphone, NTI, MC230A	A19772	14/10/2025	1513636-1
Calibrator, Larson Davis, CAL200	19704	28/05/2025	1512321-1

The meters were calibrated at the start and end of the monitoring period. There was no significant change in calibration to the meters over the measurement period.

4.2. Weather Conditions

For the pre-works survey weather conditions were dry and calm, with wind speeds below 5 m/s. The prevailing wind direction was south easterly, and temperatures ranged from 11°C to 19°C. Under these conditions, the measured noise data is not considered to have been adversely affected.

For the post-works survey weather conditions were dry and calm, with wind speeds below 5 m/s. The prevailing wind direction was north westerly, and temperatures ranged from 7°C to 18°C. Under these conditions, the measured noise data is not considered to have been adversely affected.

4.3. Monitoring Procedure

4.3.1. Pre-Works Survey

The survey aimed to determine background noise levels at the site, in a location representative of the NSRs. A long-term noise measurement was conducted over a 24-hour period, with a microphone mounted on a tripod at a height of 1.5 meters in a free-field position (see the blue dot in the figure below).

The main sources of noise during the survey were the existing plant equipment and some occasional road traffic from Clarendon Road.

During the noise survey exercise, it was observed that some of the plant equipment was not operating at the time of measurement. This likely resulted in recorded noise levels being lower than what might be expected under peak operating conditions. However, this reflects the current operational reality of the development, as the inactive equipment is only required during the hottest days of the year when additional cooling demand arises. Therefore, the survey accurately captures typical noise emissions under the building's standard usage patterns rather than its theoretical maximum output.

The monitoring location is shown in the figure below.

Figure 4: Google image showing the long-term noise monitoring location (blue dot), the site location (red box), and the closest NSR (green dot)



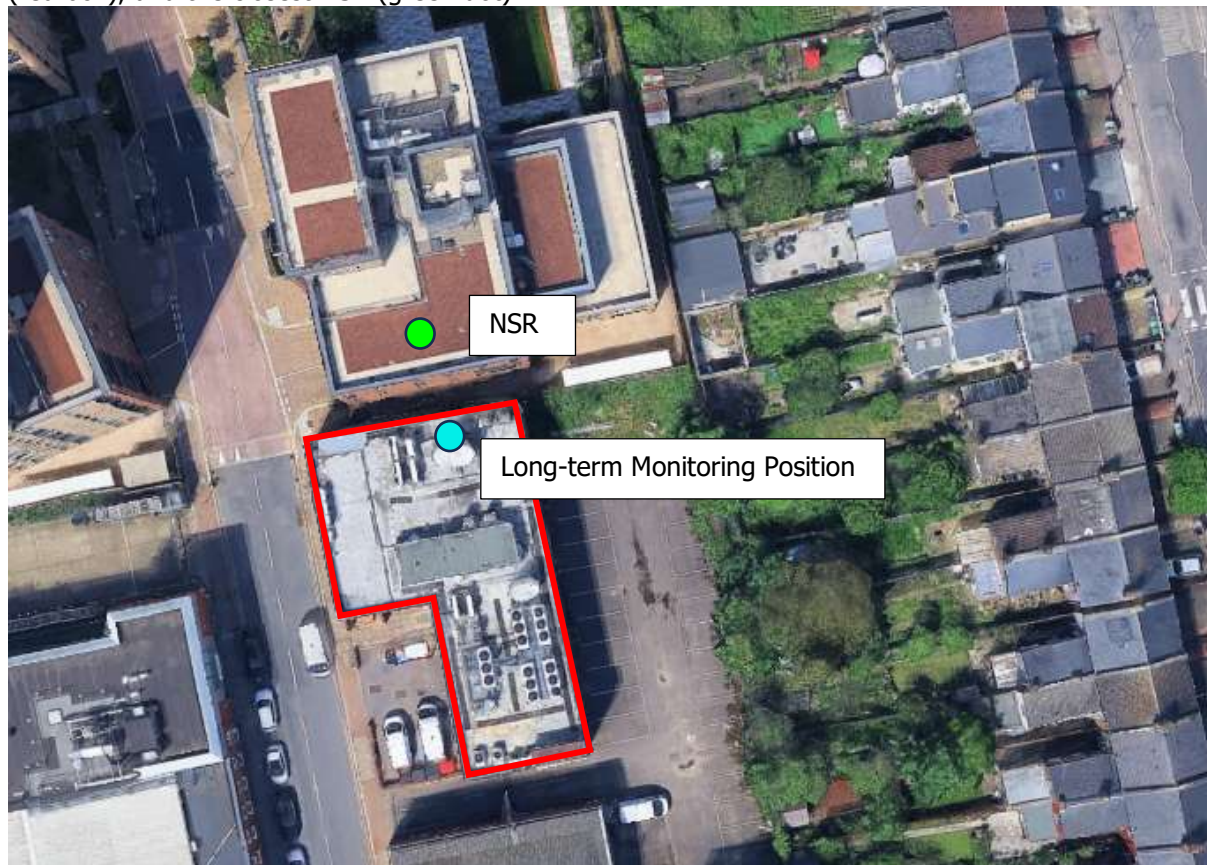
4.3.2. Post-Works Survey

The survey aimed to determine background noise levels at the site following the plant relocation, in a location representative of the NSRs. A long-term noise measurement was conducted over a 48-hour period, with a microphone mounted on a tripod at a height of 1.5 meters in a free-field position (see the blue dot in the figure below).

The main sources of noise during the survey were the plant equipment and some occasional road traffic from Clarendon Road.

The monitoring location is shown in the figure below.

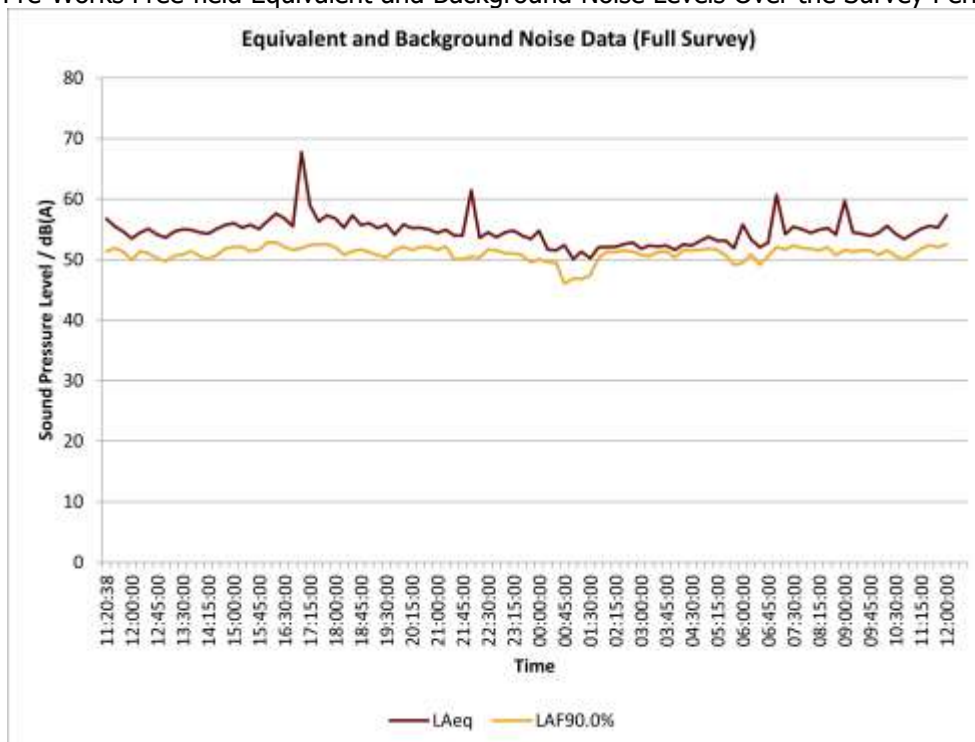
Figure 5: Google image showing the long-term noise monitoring location (blue dot), the site location (red box), and the closest NSR (green dot)



4.4. Measured Baseline Noise Levels (Pre-Works)

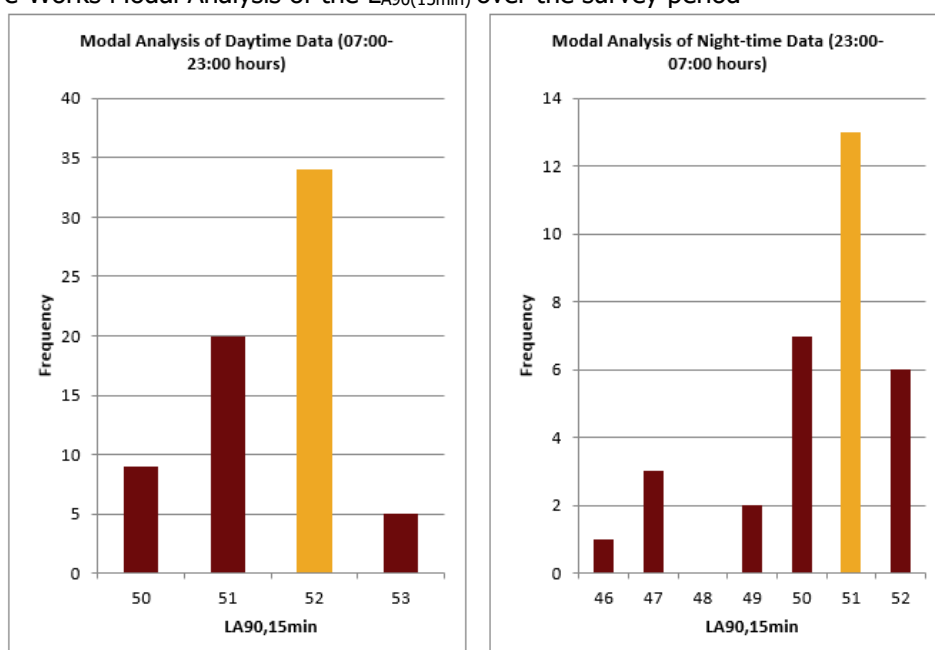
The chart below shows the equivalent noise level ($L_{Aeq,15min}$) and background noise level ($L_{A90,15min}$) in dB(A) over the duration of the pre-works survey.

Chart 1: Pre-Works Free-field Equivalent and Background Noise Levels Over the Survey Period



The chart below displays a statistical analysis of the daytime and night-time data measured pre-works background sound levels.

Chart 2: Pre-Works Modal Analysis of the $L_{A90(15min)}$ over the survey period



The following table summarises the range and modal equivalent ($L_{Aeq,15min}$) and background ($L_{A90,15min}$) noise levels:

Table 3: Pre-Works Measured Range and Modal Values of the Equivalent and Background Noise Level (free-field)

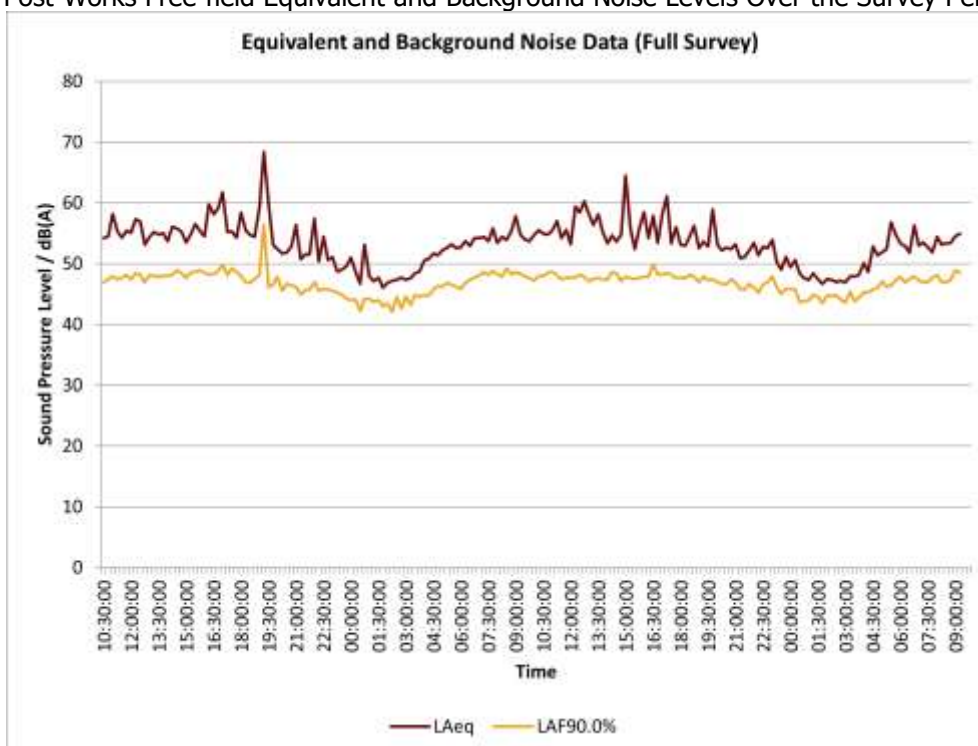
Period	dB $L_{A90,15min}$		dB $L_{Aeq,15min}$	
	Range	Mode	Range	Mode
Day (07:00 – 23:00)	50-53	52	53-68	55
Night (23:00 – 07:00)	46-52	51	50-56	53

From the analysis above we have determined a representative pre-works background sound level of 52 dB $L_{A90(1hour)}$ for daytime (07:00 to 23:00 hours) and 51 dB $L_{A90(15min)}$ for nighttime (23:00 to 07:00 hours).

4.5. Measured Baseline Noise Levels (Post-Works)

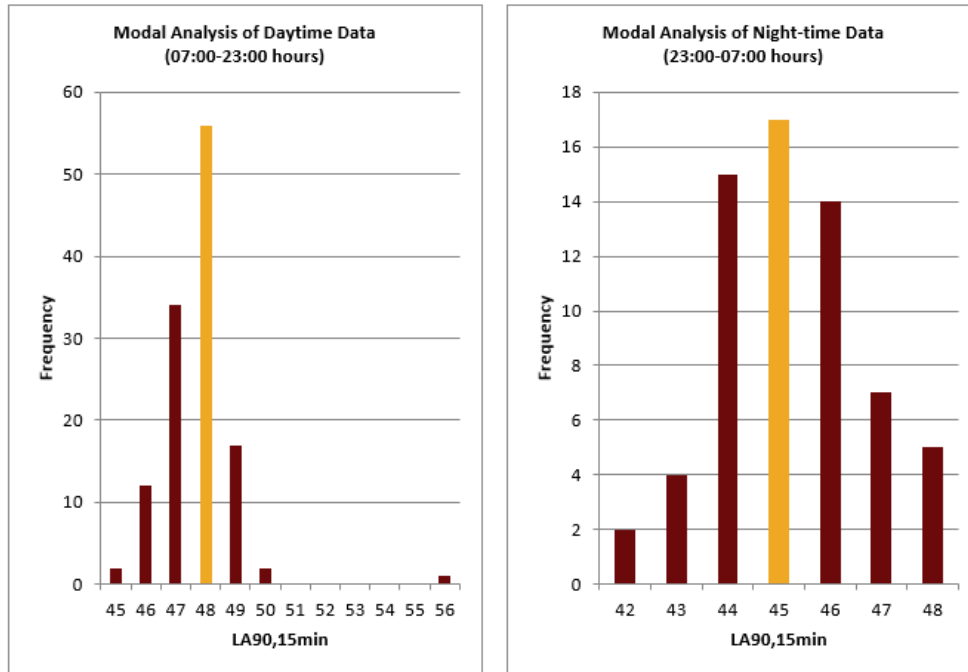
The chart below shows the equivalent noise level ($L_{Aeq,15min}$) and background noise level ($L_{A90,15min}$) in dB(A) over the duration of the post-works survey.

Chart 3: Post-Works Free-field Equivalent and Background Noise Levels Over the Survey Period



The chart below displays a statistical analysis of the daytime and night-time data measured post-works background sound levels.

Chart 4: Post-Works Modal Analysis of the $L_{A90(15min)}$ over the survey period



The following table summarises the range and modal equivalent ($L_{Aeq,15min}$) and background ($L_{A90,15min}$) noise levels:

Table 4: Post-Works Measured Range and Modal Values of the Equivalent and Background Noise Level (free-field)

Period	dB $L_{A90,15min}$		dB $L_{Aeq,15min}$	
	Range	Mode	Range	Mode
Day (07:00 – 23:00)	45-56	48	50-68	55
Night (23:00 – 07:00)	42-48	45	46-57	47

From the analysis above we have determined a representative post-works background sound level of 48 dB $L_{A90(1hour)}$ for daytime (07:00 to 23:00 hours) and 45 dB $L_{A90(15min)}$ for nighttime (23:00 to 07:00 hours).

5. Background Noise Level Comparison

The following table compares the pre-works and post-works background noise levels.

Table 5: Pre-Works and Post-Works Background Noise Level Comparison

Parameter	Daytime	Night-time
Pre-Works Background Level, $L_{A90}(T)$	52 dB	51 dB
Post-Works Background Level, $L_{A90}(T)$	48 dB	45 dB
Difference in Background Level	-4 dB	-6 dB

As can be seen above, the post-work background noise levels decreased by 4 dB during daytime hours and 6 dB during nighttime hours when compared to pre-work background noise levels.

Therefore, as post-work background noise levels are below pre-works background noise levels, the local authority planning condition is met.

6. Summary and Conclusions

Virgin Media Limited has appointed Acoustic Consultants Ltd to conduct a post-works assessment following the relocation of external rooftop plant at TV House, Clarendon Road, London, N8 0DJ.

The assessment has been undertaken in accordance with planning conditions outlined by the London Borough of Haringey (Application Number: HGY/2025/2464).

The noise impact assessment is based on the results of on-site noise surveys conducted before and after plant works.

As shown above, background noise levels following the plant relocations are lower during both daytime and nighttime periods when compared to pre-works noise levels. Therefore, the local authority planning condition is met, and the plant relocation is considered acceptable in terms of noise.

7. Appendix 1 – Glossary of Acoustic Terminology

A-weighted sound pressure p_A – value of overall sound pressure, measured in pascals (Pa), after the electrical signal derived from a microphone has been passed through an A-weighting network.

A-weighted sound pressure level, L_{pA} – quantity of A-weighted sound pressure given by the following formula in decibels (dBA)

$$L_{pA} = 10 \log_{10} (p_A/p_0)^2$$

where:

p_A is the A-weighted sound pressure in pascals (Pa);
 p_0 is the reference sound pressure (20 μ Pa)

Background sound level, $L_{A90,T}$ – A-weighted sound pressure level that is exceeded by the residual sound assessment location for 90% of a given time interval, T, measured using weighting F and quoted to the nearest whole number of decibels

Break-in - noise transmission into a structure from outside.

Decibel (dB) – The decibel is the unit used to quantify sound pressure levels. The human ear has an approximately logarithmic response to acoustic pressure over a very large dynamic range (typically 20 micro-Pascals to 100 Pascals). Therefore, a logarithmic scale is used to describe sound pressure levels and also sound intensity and power levels. The logarithms are taken to base 10. Hence an increase of 10 dB in sound pressure level is equivalent to an increase by a factor of 10 in the sound pressure level (measured in Pascals). Subjectively, this increase would correspond to a doubling of the perceived loudness of sound.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$ – value of the A-weighted sound pressure level in decibels of continuous steady sound that, within a specified time interval, T = t₂ – t₁, has the same mean-squared sound pressure as a sound that varies with time, and is given by the following equation:

$$L_{Aeq,T} = 10 \log_{10} \left[(1/T) \int_{t_1}^{t_2} [p_A(t)^2/p_0^2] dt \right] \quad (1)$$

where:

p_0 is the reference sound pressure (20 μ Pa); and
 $p_A(t)$ is the instantaneous A-weighted sound pressure (Pa) at time t

NOTE The equivalent continuous A-weighted sound pressure level is quoted to the nearest whole number of decibels.

Facade level – sound pressure level 1 m in front of the façade. Facade level measurements of L_{pA} are typically 1 dB to 3 dB higher than corresponding free-field measurements because of the reflection from the facade.

Free-field level – sound pressure level away from reflecting surfaces. Measurements made 1.2 m to 1.5 m above the ground and at least 3.5 m away from other reflecting surfaces are usually regarded as free-field. To minimize the effect of reflections the measuring position has to be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source).

Octave and Third Octave Bands – The human ear is sensitive to sound over a range of frequencies between approximately 20 Hz to 20 kHz and is generally more sensitive to medium and high frequencies than to low frequencies within the range. There are many methods of describing the frequency content of a noise. The most common methods split the frequency range into defined bands, in which the mid-frequency is used as the band descriptor and in the case of octave bands is double that of the band lower. For example, two adjacent octave bands are 250 Hz and 500 Hz. Third octave bands provide a fine resolution by dividing each octave band into three bands. For example, third octave bands would be 160 Hz, 250 Hz, 315 Hz for the same 250 Hz octave band.

Sound pressure level – Sound pressure level is stated on many of the charts. It is the amplitude of the acoustic pressure fluctuations in a sound wave, fundamentally measured in Pascals (Pa), typically from 20 micro-Pascals to 100 Pascals, but commonly simplified onto the decibel scale.

Sound reduction index, R – laboratory measure of the sound insulating properties of a material or building element in a stated frequency band.

Specific sound level, $L_s = L_{Aeq,T_r}$ – equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T_r .

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.

Rating level, L_{A,r,T_r} – Specific sound level plus any adjustment for the characteristic features of the sound.

Reverberation Time, T – The reverberation time is defined as the time taken for a noise level in an enclosed space to decay by 60 dB from a steady level once the noise source has stopped. It is measured in seconds. Often a 60 dB decay cannot be measured so the reverberation time is measured over a lesser range and corrected back to the time for a 60 dB drop assuming a constant decay rate. Common parameters are T20 (time taken for a 20 dB decay multiplied by three) and T30 (time taken for a 30 dB decay multiplied by two).

Vibration Dose Value, VDV – measure of the total vibration experienced over a specified period of time.

Estimated Vibration Dose Value, $eVDV$ – estimation of the total vibration experienced over a specified period of time. This is usually based on the number of events and shortened measurement data.

Weighted sound reduction index, R_w – Single-number quantity which characterizes the airborne sound insulating properties of a material or building element over a range of frequencies. The weighted sound reduction index is used to characterize the insulation of a material or product that has been measured in a laboratory (see BS EN ISO 717-1).



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