ACOUSTIC CONSULTANTS LTD

Condition 17 and 18 Assessment

Planning Condition 17 and 18
325 Deansgate, Manchester

Reference: 10071/C17/C18/OP

Client
Ask Deansgate 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

Ask Deansgate Limited have appointed Acoustic Consultants Limited to undertake noise monitoring in order to aid the discharge of Planning Condition 17 relating to plant noise at the newly constructed hotel located at 325 Deansgate, Manchester.

Measurements of the externally roof mounted plant have been undertaken to check compliance against the relevant planning conditions.

The author of this report is a Member of the Institute of Acoustics (MIOA) with over four years' experience in the industry. This report has been approved by a Member of the Institute of Acoustics (MIOA) and Director of the company with over 18 years' experience in the industry.

2. Planning Conditions

2.1. **Condition 17**

Manchester City Council Planning Application Number: 139059/JO/2024, Condition 17 states:

(a) Notwithstanding the noise and vibration section (including appendices) of the ES stamped as received by the City Council, as Local Planning Authority, on the 8 January 2020, prior to the first use of the aparthotel hereby approved, details of any externally mounted ancillary plant, equipment and servicing shall be submitted for approval. For the avoidance of doubt, externally mounted plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5 db (Laeq) below the typical background (La90) level at the nearest noise sensitive location.

(b) The approved scheme shall be implemented and prior to the first use of the development, a verification report will be required to validate that the work undertaken conforms to the recommendations and requirements approved as part of part (a) of this planning condition. The verification report shall include post completion testing to confirm the noise criteria has been met. In instances of non conformity, these shall be detailed along with mitigation measures required to ensure compliance with the noise criteria. Any mitigation measures shall be implemented in accordance with a timescale to be agreed with the City Council, as Local Planning Authority, and thereafter retained and maintained in situ.

2.2. **Condition 18 states:**

Notwithstanding the noise and vibration section (including appendices) of the ES stamped as received by the City Council, as Local Planning Authority, on the 8 January 2020, prior to the first use of the commercial unit, as shown on drawing 10185-SHP-Z1-00-PL-A-B5D8- G200-0001_Rev 03 received by the City Council, as Local Planning Authority, on the 15 January 2024, prior to the first use of each commercial unit development hereby approved, details of any externally mounted ancillary plant, equipment and servicing shall be submitted for approval. For the avoidance of doubt, externally mounted plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5 db (Laeq) below the typical background (La90) level at the nearest noise sensitive location.

(b) The approved scheme shall be implemented and prior to the first use of the development, a verification report will be required to validate that the work undertaken conforms to the recommendations and requirements approved as part of part (a) of this planning condition. The verification report shall include post completion testing to confirm the noise criteria has been met. In instances of non conformity, these shall be detailed along with mitigation measures required to ensure compliance with the noise criteria. Any mitigation measures shall be implemented in accordance with a timescale to be agreed with the City Council, as Local Planning Authority, and thereafter retained and maintained in situ.

3. Noise Monitoring

Plant noise monitoring was undertaken at the site between Thursday 28th and Friday 29th April 2026.

3.1. 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 1: Equipment and calibration status

Equipment Description / Manufacturer / Type	Serial Number	Date of Calibration	Calibration Certification Number
SLM, NTI, XL2	A3A-02242-F0	06/01/2026	UK-26-000
Pre-Amp, NTI, MA220	2332	06/01/2026	UK-26-000
Microphone, NTI, MC230A	A32918	06/01/2026	UK-26-000
Calibrator, SvanTek, SV33B	175330	17/09/2025	-
SLM, NTI, XL2	A3A-02236-F0	06/01/2026	UK-26-001
Pre-Amp, NTI, MA220	2369	06/01/2026	UK-26-001
Microphone, NTI, MC230A	A32951	06/01/2026	UK-26-001

3.2. Monitoring Procedure

The microphones in each instance were left in a free-field position on a tripod at a height of approximately 1.5 metres from ground and 1 metre away from all reflecting surfaces.

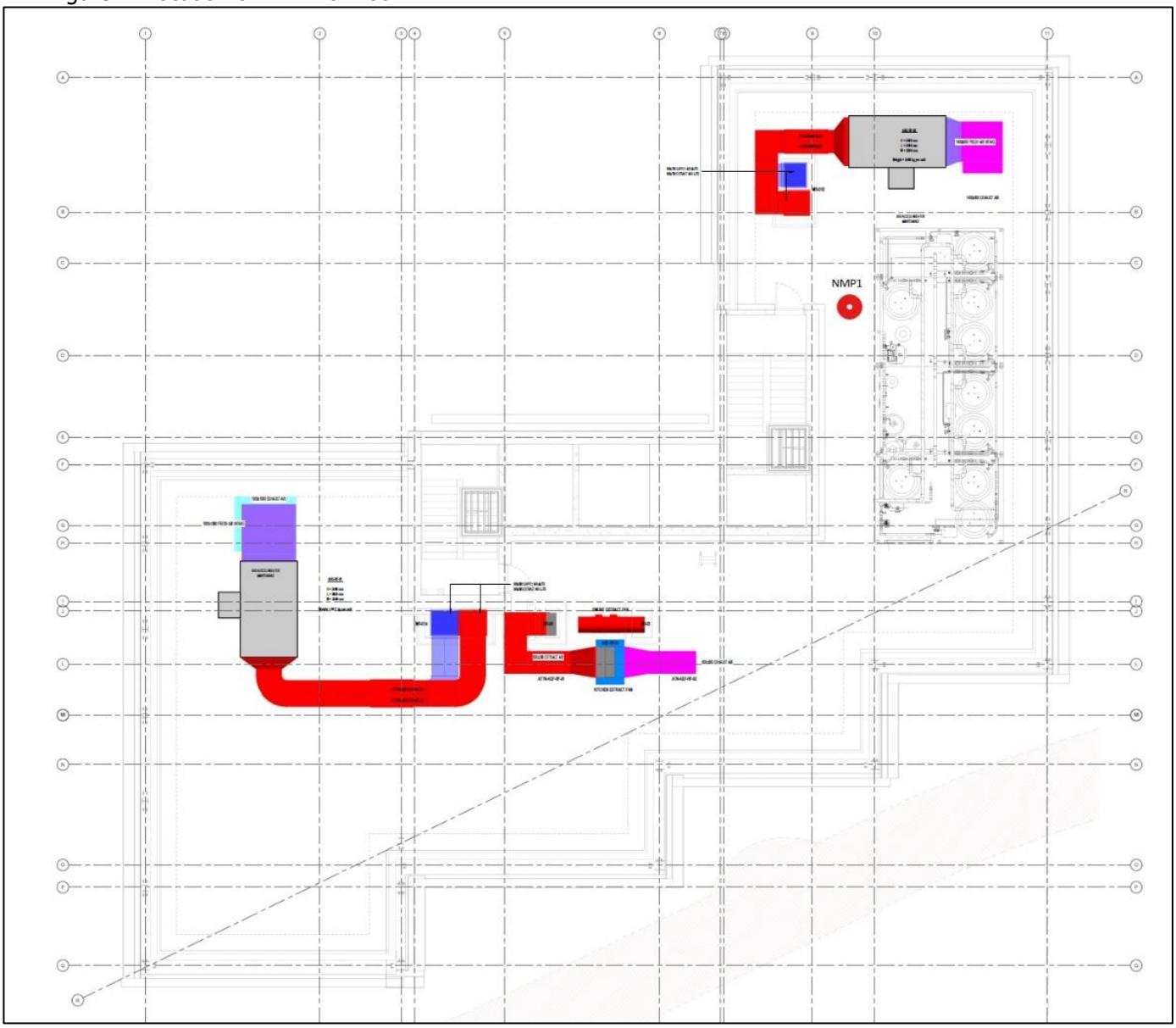
3.3. Plant Noise

Plant noise measurements were undertaken on the roof over a continuous period between 09:45hrs on Thursday 28th April and 09:45hrs on Friday 29th April 2026.

3.3.1. **NMP1**

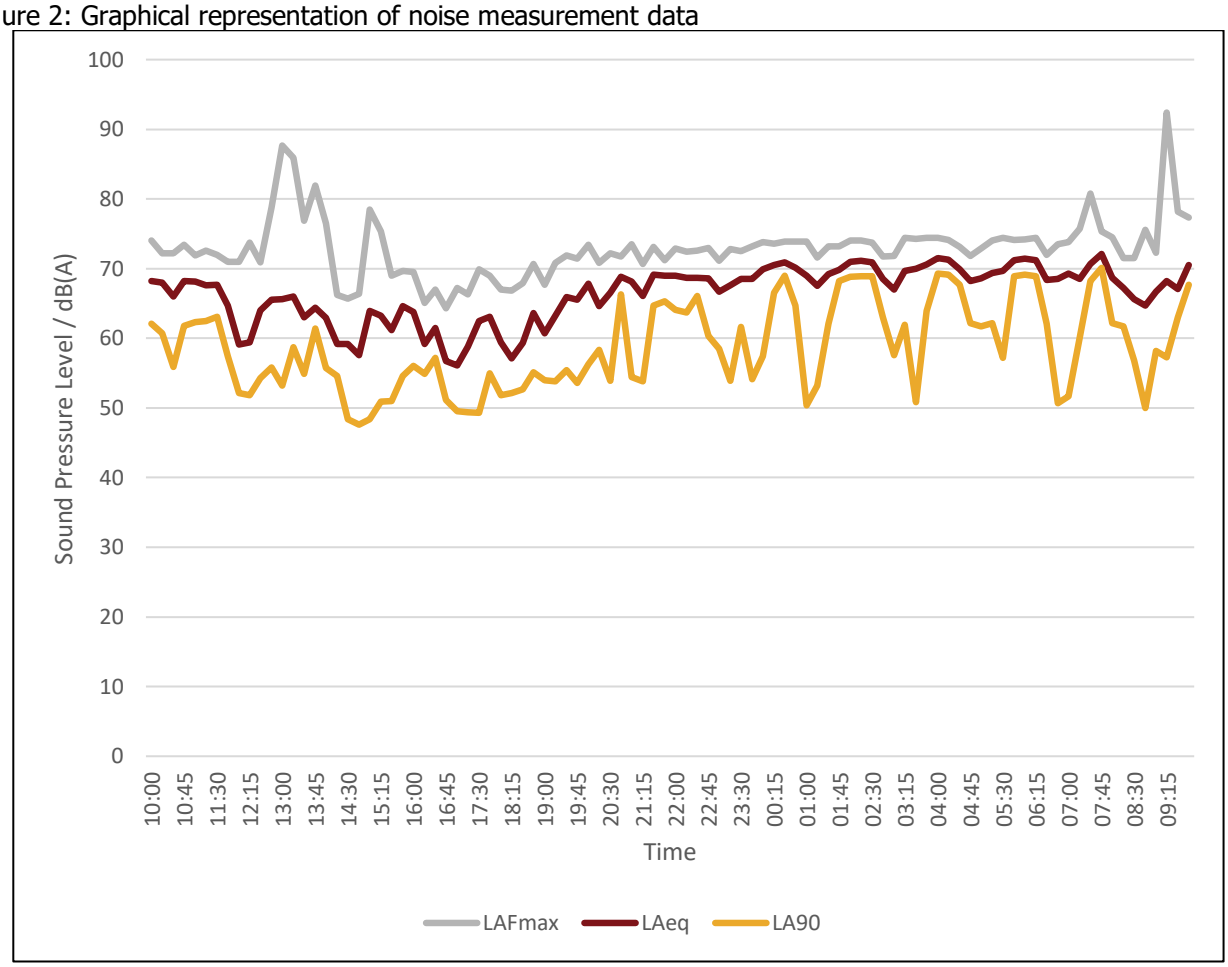
Measurements were taken in the position marked below.

Figure 1: Location of NMP1 on roof



The below figure provides a graphical representation of the measured noise levels.

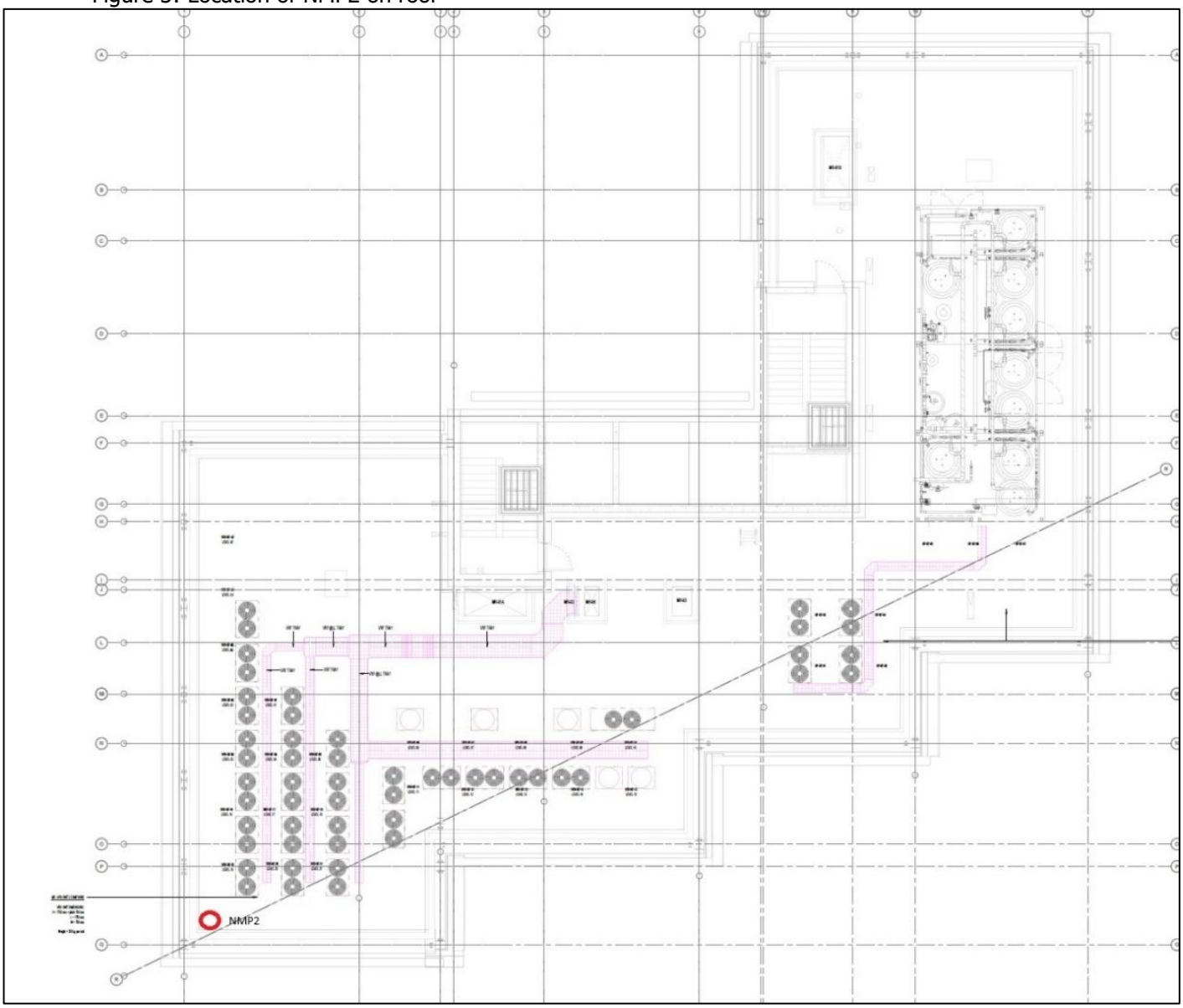
Figure 2: Graphical representation of noise measurement data



The noise level during the worst-case hour during the day has been determined to be 70dB $L_{Aeq,T}$. The noise level during the worst-case 15 minutes at night has been determined to be 70dB $L_{Aeq,T}$.

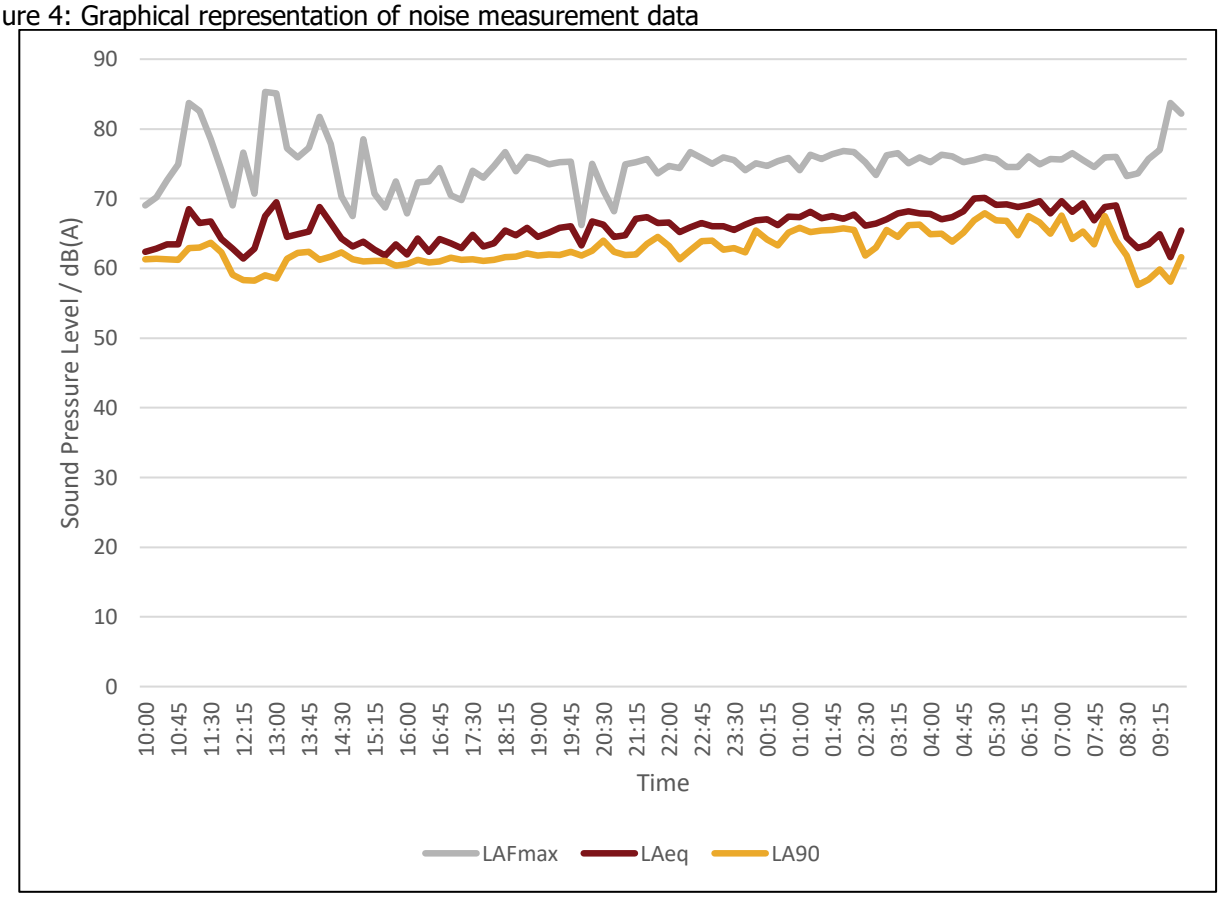
Measurements were taken in the position marked below.

Figure 3: Location of NMP2 on roof



The below chart provides a graphical representation of the measured noise levels.

Figure 4: Graphical representation of noise measurement data



The noise level during the worst-case hour during the day has been determined to be 68dB $L_{Aeq,T}$. The noise level during the worst-case 15 minutes at night has been determined to be 68dB $L_{Aeq,T}$.

4. Compliance with Planning Conditions 17 & 18

The below table provides the measured external plant noise levels in each measurement position and the calculated value at the nearest Noise Sensitive Receivers (NSR) using a correction for distance.

Noise limits were provided in Section 3.6.3 of the Noise and Acoustic Advice report (ref: 10071/JL).

Table 2: Compliance with Condition 17 &18

Measured Noise Level L_{Aeq} (dB)	**Distance to NSR (~m)**	**Distance Correction**	**Calculated Level L_{Aeq} (dB)**	**Noise Limit $L_{ar,15min}$ (dB)**	**Pass/Fail**
NMP1					
70	50	-38	31	46	**Pass**
NMP2					
68	80	-43	37	46	**Pass**

This report supports the discharge of Planning Condition 17 & 18 relating to plant noise.

5. Appendix 1 – Glossary of Acoustic Terminology

A-weighted sound pressure pA – 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 μPa)

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:

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

where:

p_0 is the reference sound pressure (20 μPa); 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, $L_s = L_{Aeq,Tr}$ – 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, $L_{Ar,Tr}$ – 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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