MEMO

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Ref: P25-332-M01v1

Project: Maple House, Wythenshawe - Assessment of Fixed Plant Noise

Date: 29 July 2026

To: Mike Lloyd, Rider Levett Bucknall

From: David Thurstan BSc MIOA – Principal Consultant

Subject: **External Fixed Plant Noise Verification Assessment**

1. This memo sets out the findings of a verification assessment of noise from external plant associated with Maple House, Wythenshawe.

2. The verification of the external fixed plant noise is required in relation to condition 4b of Manchester City Council planning permission ref. 142407/FO/2025 dated April 2025. The condition states:

   "Prior to the operation of the scheme a verification report shall be submitted to and approved in writing by the City Council as local planning authority to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic report. The report shall also undertake post completion testing to confirm that the noise criteria have been met. Any instances of non-conformity with the recommendations in the verification report shall be detailed along with any measures required to be undertaken prior to operation of the scheme to ensure compliance with the agreed noise criteria."

Adopted Noise Limits

3. The typical background noise levels were determined from the results of a 24-hour noise survey as detailed in Hepworth Acoustics report P25-332-R01v2 dated January 2026.

4. The representative background noise level was 40 dB $L_{A90,T}$ for the daytime period and 29 dB $L_{A90,T}$ at night. Therefore, based on requirements of the condition 7a (i.e. 5 dB below the background sound level) the adopted noise limits are 35 dB $L_{Aeq,T}$ for the daytime and 24 dB $L_{Aeq,T}$ at night outside the nearest dwellings. The nearest dwellings are considered to be those on Coxon Road to west, approximately 100 metres from the equipment compound.

Measurement of Equipment Noise Emission Levels

5. A site visit was undertaken in the daytime on Tuesday 28 July 2026. The purpose of the visit was to carry out noise measurements to establish the noise emissions from the equipment.

6. The noise measurements were carried out using a Bruel & Kjaer 'Class 1' sound level meter (s/n: 3011706). Calibration checks were carried out both before and after the measurement periods with no variance in levels observed. The noise measurements were taken in 'façade' conditions (i.e. semi-enclosed by the plant compound) and at a microphone height of approximately 1.8 metres above the ground in line with the vertical fan on top of the units.

7. The following 12 no Daikin units have been installed on site:

   - 2x Daikin REYA8A VRF

- 9x Daikin REYA12A VRF
- 2x Daikin EWYE060CZP ASHP

8. The equipment operates at full capacity in the daytime, but in 'quiet mode' at night. As such, our measurements included both full capacity and 'quiet mode' operation.

9. The equipment, even at full capacity, generates low, steady noise. As such the verification noise measurements were taken as multiple short-term periods in terms of $L_{eq,T}$ at 1 metre from the equipment. The results are presented in Table 1 below:

Table 1: Measured noise emission levels from equipment, at 1m

Description	Octave band centre frequency (Hz)							A
	63	125	250	500	1k	2k	4k	
10x Daikin VRFs at full capacity	73	71	70	68	65	58	53	70
10x Daikin VRFs, quiet mode	69	64	69	59	55	53	50	64

10. During the site visit it was noted that the installation of the ASHP equipment had not been completed and therefore it was not possible to measure operational noise levels. Nevertheless, the potential noise from the ASHP have been considered in the assessment below.

Resulting Noise Levels at Nearby Dwellings

11. The measured source noise levels have been used to calculate the corresponding noise level outside the first-floor window (i.e. 4m above ground) of the nearest/most exposed dwelling (on Coxon Road), taking account of attenuation of sound over distance and the barrier attenuation provided by the 3 metre acoustic fence that surrounds the plant compound. Based upon our observations, the main source of noise from the units is considered to be the fan mounted at the top of the unit (i.e. 1.8m above ground), therefore given the proximity of the units to the acoustic fence, a calculation of barrier attenuation using the Fresnel method has been included.

12. In the absence of on-site verification noise measurements of the yet to be fully installed ASHP units, we have adopted a source noise level of 78 dB L_{wA} (sound power level) for each unit, based upon manufacturer's data.

13. The noise produced by the equipment is steady in nature with no tonality or impulsivity associated with its operation. Also, as the building is occupied 24 hours there will be no distinctive or abrupt on/off change in noise. On this basis, no acoustic feature corrections have been applied.

14. The assessment of noise from the VRF & ASHP fixed plant is shown in Table 2 along with the adopted noise limit.

Table 2: Assessment of VRF noise at the nearest dwellings (dB)

Description	Daytime	Daytime
Calculated specific sound level outside dwelling	25	23
Acoustic feature correction	0	0
Rating level of sound at dwelling	25	23
Adopted noise limit	35	24
Difference	-10	-1

15. The results in Table 2 show that the rating noise levels at the nearest dwellings are within the adopted noise limits, significantly so in the daytime.

Conclusion

16. It is therefore concluded that the noise from the equipment is/will be within the noise limits as required by the planning condition without the need for any specific additional noise mitigation measures.