

SANDY BROWN

Consultants in Acoustics, Noise & Vibration

Memo: M003-A

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Project: 024609

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AP House, 35 King Street

Planning Condition 6(b) verification report

This memo details plant noise egress measurements undertaken to verify compliance with Planning Condition 6(b) and to assess the suitability of the plant screen provided to the plant enclosure.

Summary

- It can be confirmed that noise emissions from the plant area are below the limits set out in Sandy Brown report 024609-R02-D Planning Condition 6(a) discharge report.

Basis

This memo is based on the following information:

- TGAC-5245-M-57-02-Second-Floor-HVAC-Layout-Rev.F
- Sandy Brown report 024609-R02-D Planning Condition 6(a) discharge report.

Criteria

Manchester City Council

Manchester City Council (MCC) stipulates the following in regard to plant noise egress:

‘Externally mounted ancillary 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 (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location’.

Planning Condition 6(b) states the following:

Plant information

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A summary of the sound power levels of the rooftop plant items from manufacturer's data sheets are set out in Table 1.

Table 1 Summary of proposed plant item sound power levels

Plant item	Sound power levels, L_w (dB)							Total sound power level, L_w (dB)
	Octave band centre frequency (Hz)							
	125	250	500	1000	2000	4000	8000	
Daikin RXYSQ6TV9 (CU-01)	69	68	67	66	63	58	47	70
Daikin RXYSQ6TV9 (CU-02)	69	68	67	66	63	58	47	70
Daikin RXYSQ6TV9 (CU-03)	69	68	67	66	63	58	47	70
Daikin RXYSQ4TV9 (CU-04)	68	68	66	64	59	54	43	68
Daikin HZAG35A (CU-05)	66	62	62	57	50	45	39	62

During the daytime (07:00-23:00) it is understood that all the units can operate simultaneously. It is understood that at nighttime, only one condenser unit (CU-05) will operate.

Measurements

Attended measurements of the condenser units were undertaken on 16 May 2025 at AP House, 35 King St, Manchester. One-minute measurements were taken at approximately 1.2 m from roof level on a tripod with all condenser units running for daytime duty and with one condenser unit running to replicate nighttime duty.

A mark-up of the measurement positions and is provided in Figure 2.

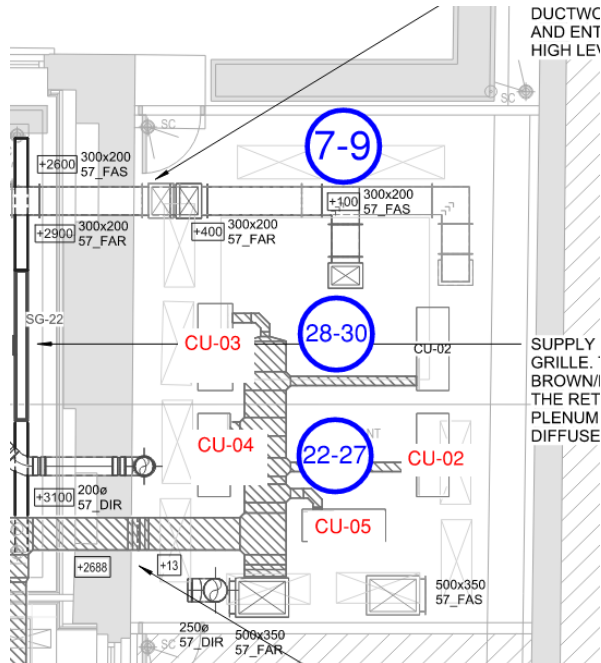


Figure 2 Mark-up of plant noise egress measurement positions

Assessment

Calculations have been undertaken in comparison to the measurement results obtained on-site to assess if the level inside the rooftop plant deck is in accordance with the predicted cumulative plant noise level. It should be noted that while on-site, the condenser units did not exhibit any impulsive noise or tonality, therefore no corrections for attention catching features have been applied. Calculations are provided at the end of this memo.

Table 2 Predicted sound pressure levels at nearest noise sensitive receiver

Noise sensitive receiver	Daytime limit, $L_{Aeq,15min}$ (dB)	Predicted daytime sound pressure level at receptor, L_{Aeq} (dB)	Nighttime limit, $L_{Aeq,15min}$ (dB)	Predicted nighttime sound pressure level at receptor, L_{Aeq} (dB)
37 King Street 4th floor offices	43	41	N/A	-
St. Ann's Square apartments	43	26	36	9
58-66 King St	43	40	36	34

Discussion

Measurements within the plant area resulted in lower noise levels from the condenser units than expected from the manufacturer's data sheets. Measurements taken in the locations noted in Figure 2 indicate that the plant screen provides suitable screening towards the terrace.

Based on the attended measurement results, comparison with predicted level due to plant and perceived noise sources noted while on site, it can be confirmed that the noise emissions from the plant area are below the limits set out in Sandy Brown report 024609-R02-D Planning Condition 6(a) discharge report.

Calculations

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