

Memo no: 9668.5A

Date: 07/09/2023

Project: St Gabriels Student
Accommodation

Subject: Roof top plant

St Gabriels Student Accommodation – Roof top plant

1. Introduction

1.1 This memo has been produced in support of a Section 73 application relating to the provision of roof top plant at St Gabriels student Accommodation, Manchester.

2. Plant details

2.1 The proposed roof top plant comprises:

- 2 no. DX condensers located on the 4th floor roof of Building 03 & 2 no. DX condensers located on the 4th floor roof of Building 04
- 1 no. smoke extract fan located on the 3rd floor roof & 1 no. smoke extract fan located on the 4th floor roof of Building 03 only

2.2 Manufacturer supplied sound data for the proposed DX condensers is summarised in Table 1.

Plant	Data type	dB(A)	Octave band centre frequency (Hz) linear sound power level (dB)						
			63	125	250	500	1k	2k	4k
DX condenser	L _w	69	73	71	69	67	64	60	54

Table 1: Manufacturer's sound data for DX condenser

2.3 The measured background sound levels, as detailed in the Apex Acoustics Noise Impact Assessment submitted with the original planning application, are detailed in Table 2.

Position	Assessment period	Representative background L _{A90,15min} (dB)
1 - Front (Facing Oxford Place)	Daytime (07:00 – 23:00 hrs)	52
	Night time (23:00 – 07:00 hrs)	50
2 - Rear (Shielded from Oxford Place)	Daytime (07:00 – 23:00 hrs)	51
	Night time (23:00 – 07:00 hrs)	49

Table 2: Background sound levels considered representative of the assessment periods

- 2.4 Condition 29 of the planning approval for the development, which it is understood would apply to the proposed roof top plant, requires that the plant noise rating level is 5 dB below the representative background sound level at the noise sensitive receptors. Taking the lowest $L_{A90,15min}$ value from Table 2 of 49 dB would give a plant noise rating level limit of $L_{Ar,Tr}$ 44 dB. The resulting noise level from the DX condensers would be comfortably below this limit at all existing receptors (including Melrose Apartments to the north and the student accommodation to the west and south) as well as noise sensitive residential facades within the St Gabriels development itself.
- 2.5 Following correspondence with the Environmental Protection Team at Manchester City Council¹ it has been confirmed that noise levels from emergency plant during routine testing should achieve a level not exceeding 10 dB above the existing background sound level. Taking the lowest $L_{A90,15min}$ value from Table 2 of 49 dB would give a plant noise rating level limit of $L_{Ar,Tr}$ 59 dB. Technical details for the smoke extract fans are not currently available, however, it is understood that a test key switch is to be included which allows the fans to run at 20% speed, thereby reducing noise levels during routine testing. It is understood that the fans would be tested once a month, and this could be scheduled at less sensitive times of the day.
- 2.6 Where it is calculated to be necessary, attenuation can be provided to the exhaust of the fans in order to achieve the required noise level at the noise sensitive receptors and this is a commonly adopted mitigation measure.

¹ Email from Lisa Jones, Environmental Protection Officer, 7th June 2023