



Acoustic & Engineering Consultants Limited

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Ref: P4852/L01/DMT

16 February 2023

To:	Joe Carter	of:	ab engineering
Cc:	As per email distribution list	of:	

Dear Joe,

As requested, please find below details of the external plant noise measurements, undertaken by AEC on the roof of the Christabel Pankhurst building, with confirmation that the noise levels do not exceed the limits stated in the relevant planning condition.

Christabel Pankhurst - External Plant Noise Verification Measurements

1.0 Introduction

There is a planning condition requiring noise measurements and a verification report relating to external roof plant at the newly constructed Christabel Pankhurst building, 323 Oxford Road, Manchester, M13 9PS.

The condition states:

"a) Any externally ancillary equipment, plant and servicing hereby approved shall be selected and/or acoustically treated in accordance with noise limits and mitigation measures as set out in the following submitted document: AEC Noise Assessment P4113/R1/DMT received by Manchester City Council as Local Planning Authority 8th June 2020 Email from ADP re. S278 works and Environmental Health comments received via email 16th October 2020

b) Before any of the external ancillary equipment, plant and servicing is first operational (except for limited noise testing purposes), a verification report will be required to validate that the work undertaken confirms to the above noise criteria. The report shall give the results of post-completion testing to confirm that the proposed noise limits are being achieved once the equipment and any mitigation measures have been installed. Any instances of non-conformity with the above criteria shall be detailed along with any measures required to ensure compliance. The report and any necessary mitigation measures shall be submitted to and approved in writing by the City Council as Local Planning Authority and the development shall be implemented, and retained thereafter, in full in accordance with 127104/FO/2020 Page 8 of 14 the approved details before the external ancillary equipment, plant and servicing is first brought into use."

The relevant noise limits are provided in Table 5.1 of the Noise Assessment report referenced in the above condition, and are provided in the excerpt below:

Table 5.1 – Indicative Plant Noise Level Assessment		
Description	Daytime Noise Level	Night-time Noise Level
Background Noise Level	46dBL _{A90}	41dBL _{A90}
Plant Noise Limit at Catholic Chaplaincy	41 dBL _{Ar,Tr}	36 dBL _{Ar,Tr}
Distance Attenuation from Roof Plant Location to Catholic Chaplaincy	+17dB	+17dB
Rating Level of the combined plant items @ 5m	58dBL _{Ar,Tr}	53dBL _{Ar,Tr}

Simplistically, the noise limit is **53dBA at 5 metres from all plant** to satisfy the worst-case night-time period. If an acoustic character (rating) correction is required then this limit may need to be lower.

2.0 Roof Plant Noise Measurements & Assessment

Plant noise measurements were undertaken between 1900-2000h on Wednesday 15th February 2023.

The sound level meter used ("AEC Kit 1") conforms to BS EN 61672-1: 2013 '*Electroacoustics – Sound level meters - Part 1 Specifications*' for Class 1 Type Z meters, and was checked calibrated before and after the measurement periods using a Brüel & Kjær type 4231 (94dB) calibrator. There was no significant drift of calibration. Calibration certificates are available on request.

The 1/3rd octave band centre frequency data was obtained for all measurements.

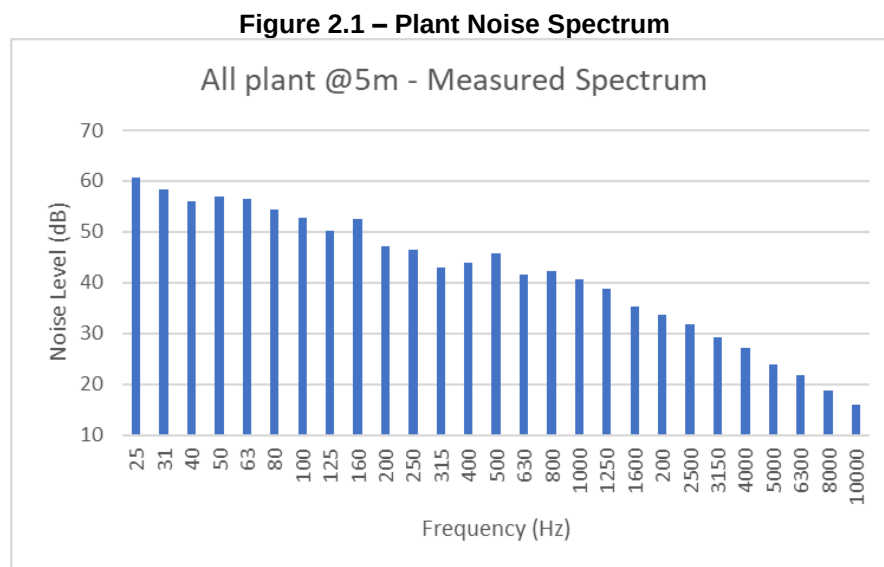
The rooftop plant was all operating at normal duties during the noise measurements.

The measurements were all between 1 to 2 minutes in duration, as the noise was steady and constant (unfluctuating). Any external noise affecting the source noise measurements was paused out such as sirens, buses and level crossing beeps.

The measured noise levels are summarised on Figure 1 at the end of this report. All measurements indicate that the total noise level at 5 metres would not exceed 49dBAeq,T from all plant combined. Furthermore, the screening from the edge protection parapet could not be fully factored in, therefore, in the direction of the Chaplaincy building (the nearest sensitive receptor), noise levels would actually be lower as there is screening provided by the AHU and by the parapet (See Figure 2 below).

Based on all the measurements taken, the noise from all plant does not exceed **49dBAeq,T @5m**.

Based on a subjective assessment on-site, and an objective review of the 1/3 octave band frequency data presented below, there is no acoustic (rating) correction required.



In conclusion, based on the measurements of the operating rooftop plant, AEC can verify that the external plant noise is suitably controlled to meet the noise limits identified in "Noise Assessment P4113/R1/DMT" and can therefore recommend that this condition has been satisfied.

Yours sincerely,

David Terry

Checked by: WJK

FIGURE 1 – Noise Measurements of Roof Plant (dBA)

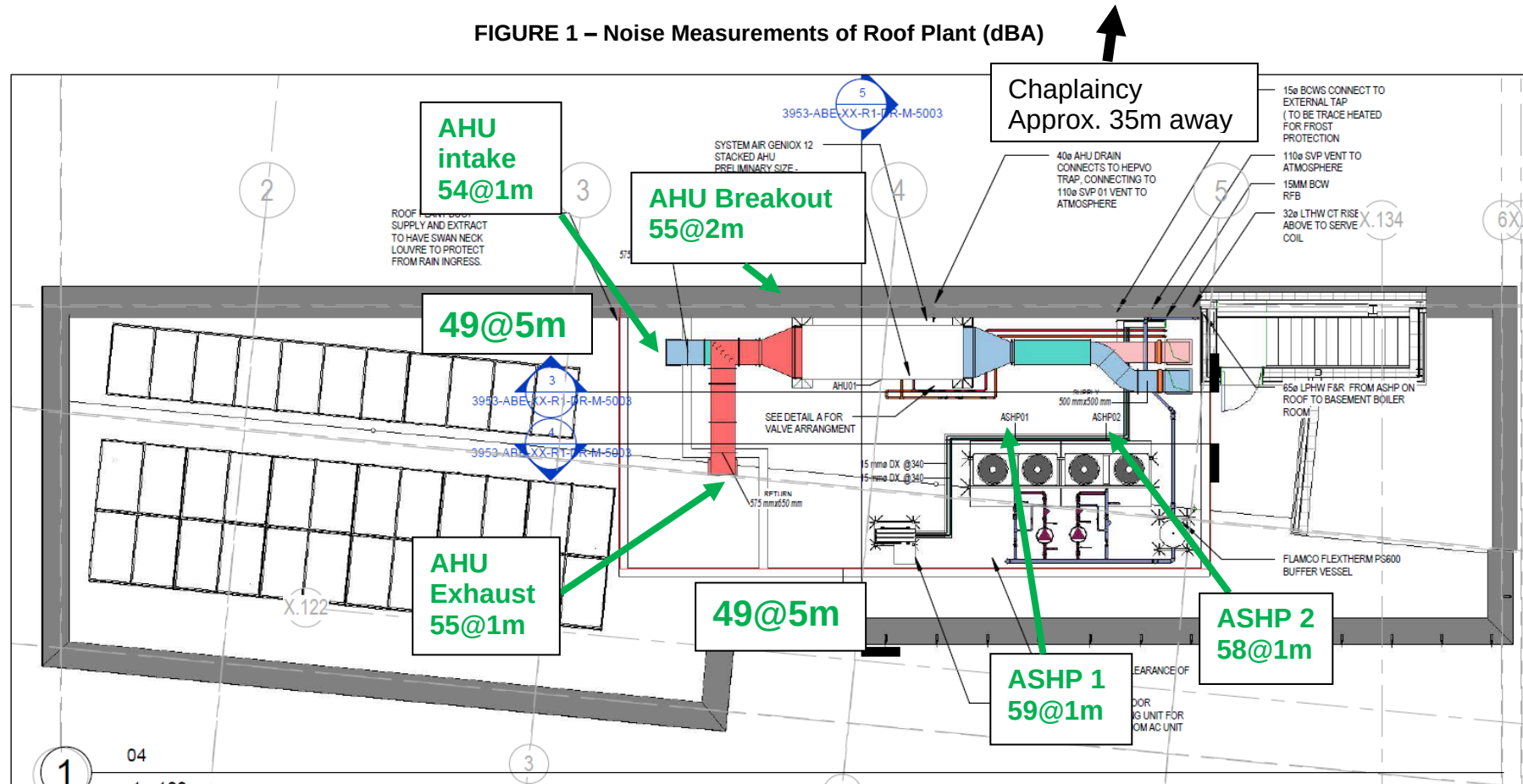


FIGURE 2 – View of Plant and Receptor

