



To:	James Henry	of:	
From:	Paul Knowles	of:	AEC
Checked by:	Ross Chamberlain	of:	AEC

Moseley Road, Manchester

Discharge of Condition 8

1.0 Introduction

- 1.1 Acoustic and Engineering Consultants Ltd (AEC) has been appointed by James Henry to undertake noise measurements and an appropriate assessment to review whether Condition 8 placed on the scheme by Manchester City Council (MCC), can be discharged.
- 1.2 Condition 8 was placed on the scheme in response to new items of external plant that have been installed at the residential development that has been built at the above site. As such, MCC has requested the following:

“Condition 8 - Acoustic insulation

From the information that has been provided which includes the data and covering letter from Robbins Systems regarding installation of a Profi-air from Fränkische ventilation system (Ref: MV61997, dated 03/09/2021), condition 8 of application 128939/FO/2020 cannot be discharged at the present time.

For the condition to be discharged, the additional information as set out in the Council's email to you dated the 10th of November 2021 will need to be provided. For the avoidance of doubt, this requires that you can demonstrate that the Council's internal noise criteria will still be met if this equipment is installed.

As there will be a discharge of the MVHR system, the applicant will also need to ensure that this complies with the Council's external plant condition:-

a) 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 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location. Prior to commencement of the use hereby approved the scheme shall be submitted to and approved in writing by the City Council as local planning authority in order to secure a reduction in the level of noise emanating from the site. The scheme shall be implemented in full before the use commences or as otherwise agreed in writing by the City Council as local planning authority.

b) 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 report shall be detailed along with any measures required to ensure compliance with the agreed noise criteria.

Reason - To minimise the impact of the development and to prevent a general increase in pre-existing background noise levels around the site.

Once work is complete the applicant will need to demonstrate that the recommendations of the Miller Goodall Noise assessment number 102573 have been implemented, and provide a Verification Report to show that the MCC internal noise criteria and fixed plant noise criteria are being met.

2.0 Noise Measurements and Assessment

- 2.1 Noise levels were measured by AEC on Wednesday 22 and Thursday 23 November 2023. The calibration certificates for the measurement equipment used by AEC is presented in Appendix A.
- 2.2 Measurements of the plant equipment that has been installed and whether the internal noise level criteria has been met was carried out across these days. The findings of these measurements are discussed separately, below.

Plant Noise Levels

Criteria

- 2.3 Following a review of the Miller Goodall noise assessment, the typical background noise level was approximately 42dBL_{A90,15min}. Therefore, to comply with MCC requirement the rating level of the plant would need to be controlled to no greater than 37dBL_{Ar,Tr} external to the nearest noise sensitive receptor. This was measured during the night-time period and, therefore, would also meet any daytime criteria given that this is considered the most noise sensitive period of operation.

Assessment of Measured Noise Levels

- 2.4 A Vaillant aroTHERM plus VWL 75/6 has been installed on the gable end of each property. During the noise survey on Thursday 23 November 2023, a noise level of 52dBL_{Aeq,T} was measured at 0.5m from the unit while operating at its typical rate.
- 2.5 The nearest window of an adjacent residential property to each unit is approximately 4m away. Calculations indicate that the noise from the unit would be around 34dBL_{Aeq,T} external to the nearest window.
- 2.6 During the measurements it was observed that the units were not tonal, intermittent or impulsive in nature. However, they as the main noise source in the area is road traffic, a +3dB correction has been applied as the noise source is distinctive.
- 2.7 Therefore, the rating level would be 37dBL_{Ar,Tr} which would meet MCC's required noise level limit from plant.

Internal Noise Levels

Criteria

- 2.8 The required internal noise level limits to be achieved within residential developments are outlined in MCC document 'Planning & Noise – Technical Guidance' (2015) (PNTG).

¹Section 3.6.1.1 of this document states:

“Manchester City Council has adopted the following internal limits for residential properties:

- *Bedroom (night-time – 23.00 – 07.00) 30dBL_{Aeq} (individual noise events should not normally exceed 45dBL_{Amax, F} by more than 15 times);*
- *Living Rooms (daytime – 07.00 – 23.00) 35dBL_{Aeq}.”*

Measurements

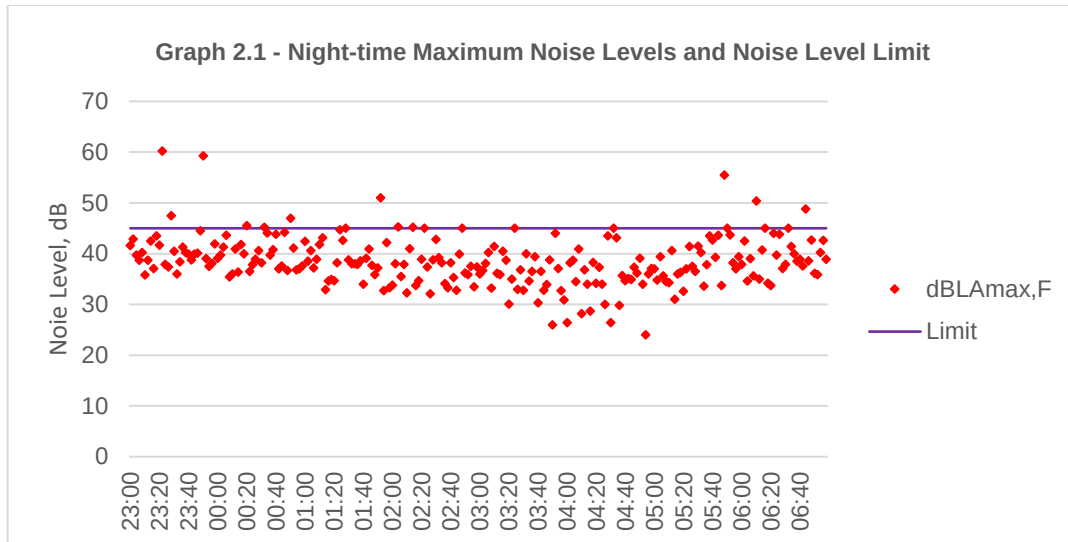
- 2.9 Internal noise levels were measured between 1600h on Wednesday 22 and 0700h on Thursday 23 November 2023, in the first-floor bedroom of Plot 1 of the proposed development. This room was selected as it had direct line of sight of Moseley Road, which is the main noise source in the area.
- 2.10 As the development is ventilated via a mechanical ventilation and heat recovery system (MVHR), the measurements were undertaken with windows closed. It was understood that the MVHR system was in operation whilst the measurements were being conducted.
- 2.11 The internal noise level measurements were undertaken in general accordance with the Association of Noise Consultants guidance “Measurement of Sound Levels in Buildings” issued in June 2020.
- 2.12 The daytime and night-time internal ambient noise levels measured during the survey are presented in Table 2.1, along with the criteria for comparison purposes.

Table 2.1 – Measured Internal Ambient Noise Levels and Criteria

Period	Noise Level, dBL _{Aeq, T}	
	Measured Level	Criteria
Daytime (1600 – 2300h)	34	≤ 35
Night-time (2300 – 0700h)	29	≤ 30

- 2.13 The above demonstrates that the ambient noise level requirements were achieved during both the daytime and night-time periods.
- 2.14 The maximum noise levels measured over two-minute sampling times are presented in Graph 2.1, below. The night-time maximum noise level criteria of 45dBL_{Amax, F} is also presented on the graph for reference purposes.

¹ PNTG was updated in October after the project had been granted planning permission.



2.15 Based on the above dataset, there were fewer than 15 exceedances of 45dBL_{AFmax}, during the night-time period, therefore, the requirements have been achieved.

Summary

- 2.16 The above assessment demonstrates that noise from the external plant complies with the noise level limit requirement as outlined in Condition 8.
- 2.17 In addition, internal ambient and maximum noise levels also comply with the requirements of Condition 8.
- 2.18 As a result, Condition 8 can be discharged.

APPENDIX A – Calibration Records

CERTIFICATE OF CALIBRATION		
ISSUED BY	Cirrus Research plc	
DATE OF ISSUE	27 January 2022	CERTIFICATE NUMBER 169146
Cirrus Research plc Acoustic House Bridlington Road Hunmanby North Yorkshire YO14 0PH United Kingdom		Page 1 of 2 Approved signatory C.Scott Electronically signed: 
Sound Level Meter : IEC 61672-3:2013		
Instrument information		
Manufacturer:	Cirrus Research plc	Notes:
Model:	CR:171B	
Serial number:	G078287	
Class:	1	
Firmware version:	3.2.3197	
Test summary		
Date of calibration: 27 January 2022		
The calibration was performed respecting the requirements of ISO/IEC 17025:2017.		
Periodic tests were performed in accordance with procedures from IEC 61672-3:2013.		
The sound level meter submitted for testing successfully completed the class 1 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.		
However, no general statement or conclusion can be made about conformance of the sound level meter to the full specifications of IEC 61672-1:2013 because (a) evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to determine that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 or correction data for acoustical test of frequency weighting were not provided in the Instruction Manual and (b) because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.		
Notes		
This certificate provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory. The results within this certificate relate only to the items calibrated. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%.		

CERTIFICATE OF CALIBRATION

Certificate Number:

169146

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Environmental conditions

The following conditions were recorded at the time of the test:

Before Pressure: 101.62 kPa Temperature: 22.6 °C Humidity: 39.9 %
After Pressure: 101.70 kPa Temperature: 22.8 °C Humidity: 41 %

Test equipment

Equipment	Manufacturer	Model	Serial number
Signal Generator	TTI	TG4001	350654
Attenuator	Cirrus Research	ZE:952	93467
Environmental Monitor	Comet	T7510	16986334

Additional instrument information

Instruction manual:

Reference level range: Single range

Pattern approval: No

Source of pattern approval: -

Preamplifier

Model: MV:200F
Serial number: 5719F

Microphone

Model: MK:224
Serial number: 206255A

Test results summary

Test	Result
Toneburst response	Complies
Electrical noise-floor	Complies
Linearity	Complies
Electrical Frequency weightings	Complies
Frequency and time weightings at 1 kHz	Complies
C-weighted peak	Complies
Overload indication	Complies
High level stability	Complies
Long-term stability	Complies
Acoustic Frequency weightings	Complies

CERTIFICATE OF CALIBRATION

ISSUED BY **Cirrus Research plc**
DATE OF ISSUE **27/01/22** CERTIFICATE NUMBER **169145**



Cirrus Research plc
Acoustic House
Bridlington Road
Hunmanby
North Yorkshire
YO14 0PH
United Kingdom

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Test engineer:
D.Swalwell
Electronically signed:

Microphone

Microphone capsule

Manufacturer: Cirrus Research plc

Model: MK:224

Serial Number: 206255A

Calibration procedure

Date of calibration: 20 January 2022

Open circuit: 44.1 mV/Pa

Sensitivity at 1 kHz: -27.1 dB rel 1 V/Pa

The microphone capsule detailed above has been calibrated to the published data as described in the operating manual of the associated sound level meter (where applicable).

The frequency response was measured using an electrostatic actuator in accordance with BS EN 61094-6:2005 with the free-field response derived via standard correction data traceable to a National Measurement Institute.

The absolute sensitivity at 1 kHz was measured using an acoustic calibrator conforming to IEC 60942:2003 Class 1.

Environmental conditions

Pressure: 102.60 kPa

Temperature: 21.0 °C

Humidity: 25.0 %

CERTIFICATE OF CALIBRATION

Certificate Number:

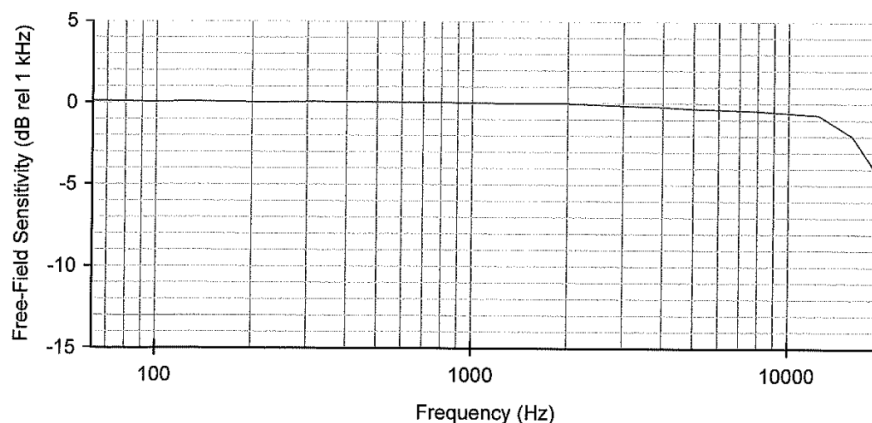
169145

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Free-Field Frequency Response : Tabular

Frequency (Hz)	Free-Field Sensitivity (dB rel 1 kHz)	Actuator Response (dB)
63	0.09	-0.10
80	0.08	-0.01
100	0.04	0.04
125	0.07	0.08
160	0.05	0.09
200	0.04	0.08
250	0.03	0.09
315	0.06	0.09
400	0.04	0.09
500	0.04	0.07
630	0.03	0.06
800	0.02	0.03
1 000	0.00	0.00
1 250	-0.03	-0.06
1 600	-0.02	-0.14
2 000	-0.03	-0.24
2 500	-0.10	-0.44
3 150	-0.17	-0.73
4 000	-0.23	-1.15
5 000	-0.34	-1.72
6 300	-0.39	-2.51
8 000	-0.47	-3.67
10 000	-0.59	-5.27
12 500	-0.71	-7.16
16 000	-1.99	-9.81
20 000	-4.75	-13.78

Free-Field Frequency Response : Graphical



Certificate of Calibration Issued by University of Salford (Acoustic Calibration Laboratory)		
Page 1 of 2		
APPROVED SIGNATORIES Claire Lomax [x] Sean Furlong []  Gary Phillips [] Danny McCaul []		
acoustic calibration laboratory The University of Salford, Salford, Greater Manchester, M5 4WT, UK http://www.acoustics.salford.ac.uk t 0161 295 3030/0161 295 3319 f 0161 295 4456 e c.lomax1@salford.ac.uk		

Certificate Number: 05683/1

Date of Issue: 04 May 2022

CALIBRATION OF A SOUND CALIBRATOR

FOR: Acoustic & Engineering Consultants Ltd
Suite 316, 3rd Floor
Broadstone Mill
Broadstone Road
Stockport
Cheshire
SK5 7DL

FOR THE ATTENTION OF: Ross Chamberlain

DESCRIPTION: Calibrator with housing for one-inch microphones
and adaptor type DB 0311 for half-inch
microphones.

MANUFACTURER: B&K

TYPE: 4230

SERIAL NUMBER: 1441331

DATE RECEIVED: 18 March 2022

DATE OF CALIBRATION: 29 March 2022

LOCATION OF CALIBRATION: Acoustic Calibration Laboratory,
Newton G31, University of Salford.

TEST PROCEDURE: CTP06 (Laboratory Manual)

Test Engineer (initial):	GP	Name:	Gary Phillips
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Results in this certificate relate only to instruments tested.

This certificate provides traceability of measurement to the SI system of units and/or to the units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full except with the prior written approval of the issuing laboratory.