

Ref: 0909/le/03

27 April 2022

Neil Shepherd
Shepherd Architecture and Surveying
Phoenix Business Centre
Phoenix Road
Barrow-in-Furness
Cumbria
LA14 2UA



2nd Floor 3 Hardman Square
Spinningfields Manchester M3 3EB

☎ 0161 457 0515 ■ 07415 151 901
✉ Enquiry@LighthouseAcoustics.co.uk
🌐 www.LighthouseAcoustics.co.uk

By email to: n.shepherd@shepherdas.co.uk

Dear Neil

BEACON CENTRE, 127-145 BARRINGTON STREET, MANCHESTER NOISE VERIFICATION REPORT

Further to our site visit on 8 April 2022 to undertake measurements of atmospheric plant noise emissions we present the results and assessment as detailed below.

1.0 Introduction

The installation of 4No. condenser units to serve the building has been completed. Lighthouse Acoustics has been commissioned to undertake measurements of atmospheric plant noise emissions in order to determine whether or not the requirements of the Local Authority are achieved. This report presents the methodology and results of our measurements.

2.0 Objectives

To visit site upon completion of the building services installation in order to undertake measurements of atmospheric plant noise emissions from the 4No. condenser units.

To undertake an assessment of atmospheric noise emissions from the 4No. condenser units to the nearest noise sensitive receptor based on the results of the measurements and the previous environmental noise survey.

To assess the measured noise levels and provide comments on the acceptability in terms of achieving the requirements of the Local Authority.

If required, to propose mitigation measures for atmospheric noise emissions in order to achieve the requirements of the Local Authority.

3.0 Atmospheric Plant Sound Emission Limits

Cumulative atmospheric plant sound emission limits are taken from Section 6.0 of the Plant Sound Assessment Report 0909/PSA1 dated 6 December 2022 and are presented in the table below.

Nearest Noise Sensitive Receptor	L _{Aeq} Cumulative Atmospheric Plant Sound Emission Limits at Nearest Noise Sensitive Receptor (dB)
	Daytime (07:30–21:00)
North	36

4.0 Site Description

The 4No. condenser units are situated along the rear (north) facade of the Beacon Centre, 127-145 Barrington Street, Manchester. 1No. unit is situated towards the western end of the building whilst 3No. units are situated towards the centre of the building.

The nearest noise sensitive receptors to the installed 4No. condenser units are the rear façades of the residential properties situated approximately 12m to the north of the site opposite the alleyway.

The site plan below indicates the extent of the site (red line), location of the installed condenser units (blue line), location of the nearest noise sensitive receptor (yellow line) and the surrounding environment.



Site plan indicating the extent of the site and the surrounding environment

5.0 Atmospheric Plant Noise Emission Measurements

5.1 Measurements

Since access was not available to the rear façades of the residential properties situated approximately 12m to the north of the site opposite the alleyway it was not possible to undertake measurements of atmospheric plant noise emission levels at the nearest noise sensitive receptor. Measurements were therefore undertaken at a distance of 1m from the 4No. condenser units in order to obtain the individual contributions. This data will subsequently be used to calculate the cumulative atmospheric plant noise emission levels at the nearest noise sensitive receptor.

The measurements were undertaken between 12:00 and 13:00 hours on 8 April 2022. The 4No. condenser units were understood to be operating at design duty for the duration of the measurements. The measurements were undertaken of the L_{Aeq} sound pressure levels over periods of 1 minute (due to steady noise). Atypical noises were excluded as far as reasonably possible.

5.2 Weather Conditions

During the survey period there was a calm wind (<1m/s) and the sky was scattered cloud. There was no rainfall and road surfaces were dry. The temperature was approximately 9°C.

The weather conditions during the survey period is therefore considered to be suitable for undertaking measurements of sound levels.

5.3 Equipment

The following equipment was used to undertake the atmospheric plant noise emission level measurements.

Equipment	Manufacturer	Model	Serial No.	Calibration Date
Class 1 Sound Level Meter	Casella	633C	0721320	26/10/2020
Preamplifier	Casella	495	001414	26/10/2020
Microphone	Casella	251	1025	26/10/2020
Class 1 Sound Calibrator	Casella	120/1	3864878	02/11/2021

Field calibration checks were performed on the sound level meter prior to and on completion of the survey and were found to be within acceptable tolerance limits.

6.0 Results

The results of the atmospheric plant noise emission level measurements are presented in the table below.

Plant Item	Location	Measured L _{Aeq} at 1m (dB)
1No. Condenser Unit 1x Samsung AC100RXADKG	Ground Level	54
3No. Condenser Units 1x Samsung AC100RXADKG 2x Samsung AC052RXADKG	Ground Level	58

A review of the one third octave band noise data for the above measurements indicates that they are unlikely to be considered to emit tonal noise.

7.0 Local Authority Requirements

It is understood that Manchester City Council require building services plant to be assessed in accordance with BS 4142 along with any mitigation measures detailed in order to achieve acceptable noise levels.

8.0 Assessment

The table below details the calculated L_{Ar} rating levels at the nearest noise sensitive receptor based on the measured L_{Aeq} levels at 1m along with the L_{Aeq} cumulative atmospheric plant sound emission limit and the difference between them.

Nearest Noise Sensitive Receptor	Rating Level L _{Ar,1hour} at Receptor (dB)	L _{Aeq} Cumulative Atmospheric Plant Sound Emission Limit at Nearest Noise Sensitive Receptor (dB)	Difference (dB)	Local Authority's Requirements Achieved
North (Opposite 1No. Unit)	32	36	-4	Yes
North (Opposite 3No. Units)	36	36	0	Yes

The assessment indicates that L_{Ar} rating levels are likely to achieve the proposed L_{Aeq} cumulative atmospheric plant sound emission limit at the nearest noise sensitive receptors. As such, atmospheric plant sound emissions from the proposed 4No. condenser units are likely to have a low impact at the nearest noise sensitive receptor and achieve the requirements of the Local Authority.

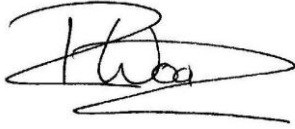
9.0 Conclusions

A site visit has been undertaken upon completion of the building services installation in order to undertake measurements of atmospheric plant noise emissions.

An assessment of atmospheric noise emissions from the 4No. condenser units has been undertaken to the nearest noise sensitive receptor based on the results of the measurements and the previous environmental noise survey.

The assessment indicates that the 4No. condenser units are likely to have a low impact at the nearest noise sensitive receptor and achieve the requirements of the Local Authority.

Yours sincerely
for LIGHTHOUSE ACOUSTICS

A handwritten signature in black ink, appearing to read 'Robin Wood', with a stylized, sweeping underline.

Robin Wood