Plant Noise Commissioning Report

Storage World, Ambrose Street, Manchester

Prepared on behalf of:
PF Investments Limited

BE 18953

Report Reference: 21044-RP-AC-01

Build Energy Ltd
A37 Aerodrome Studios
2-8 Airfield Way
Christchurch
Dorset
BH23 3TS

0330 055 3405
info@buildenergy.co.uk

Report Reference:

Issue	Issue Date	Author	Notes
V1	07/08/2026	**Jamie Murray, MIOA**	-

The present document, its content, its appendices and/or amendments ("the Document") have been created by Build Energy Limited ("Build Energy") for informative purposes. They contain private information referring to Build Energy and/or its subsidiaries (the "Company"), and are addressed exclusively to its recipients. Consequently, they shall not be, totally or partially, disclosed, published and/or distributed without the previous and written consent of Build Energy, unless it is made an explicit reference to the ownership of Build Energy in the intellectual property rights. The whole content of this Document, whether text, images, brands, logotypes, colour combinations or any other element, its structure or design, selection and presentation of the materials included therein are protected by both industrial and intellectual property rights – Build Energy's ownership – and shall be respected by both recipient and addressee of the present Document. In particular, but without restricting the generality of confidentiality obligation, any reproduction – except for private use, transformation, distribution, public communication – at any third party's disposal – and generally, any other way of exploitation – through any procedure – of the whole or part of the Document, as well as its design, selection and presentation of materials included therein is strictly forbidden.

Company No. 07833780 VAT Reg.126036639

Table of Contents

1.0 Introduction 4

1.1. Overview 4

1.2. Site Description 4

1.3. Development Proposals 5

2.0 Assessment Guidance & Requirements 6

2.1. Local Authority Guidance 6

2.2. BREEAM Pol 05 6

2.3. BS 4142 Assessment Methodology 6

3.0 Environmental Noise Survey 6

3.1. Procedure 6

3.2. Noise Climate 7

3.3. Measurement Position 7

3.4. Equipment 7

3.5. Results 8

4.0 Acoustic Commissioning Measurements 9

4.1. Procedure 9

4.2. Equipment 9

4.3. Results 9

5.0 Fixed Plant Noise Assessment 10

5.1. Plant Noise Emission Limits 10

5.2. Assessment 10

6.0 Conclusion 11

1.0 Introduction

1.1. Overview

Build Energy Ltd has been commissioned to undertake acoustic commissioning of the installed mechanical plant associated with the proposed development at Storage World, Ambrose Street, Manchester.

This report sets out the assessment methodology, findings, and recommended mitigation measures where relevant.

1.2. Site Description

The site is located on Ambrose Street in Manchester and is generally surrounded by neighbouring industrial/commercial premises and a railway line to the north. The nearest noise sensitive receptors are approximately 150 m to the south of the proposed plant and fully screened from any line of sight, as highlighted on the plan below.

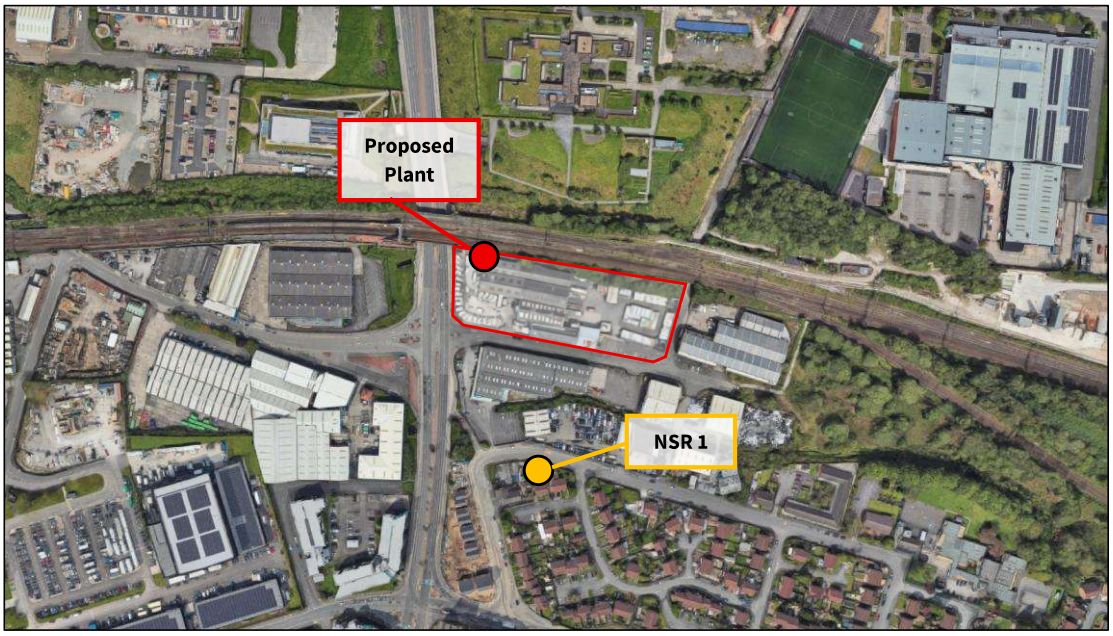


Figure 1.1 *Site location plan*

1.3. Development Proposals

The proposed development comprises the erection of a 5-storey storage facility, with a single condenser located along the northern elevation at ground level and small intake/extract fans to provide ventilation across the development, as follows:

- 1No condenser – Daikin 2MXM68A8
    - 48 dBA @ 1 m (28 dBA @ 10 m)
- 10No extract fans – System Air Prosilent XP 160S
    - 56 dBA SWL (28 dBA @ 10 m)
- 15No supply fans – System Air Prosilent XP 160S
    - 55 dBA SWL (27 dBA @ 10 m)

The proposed condenser location is shown below.

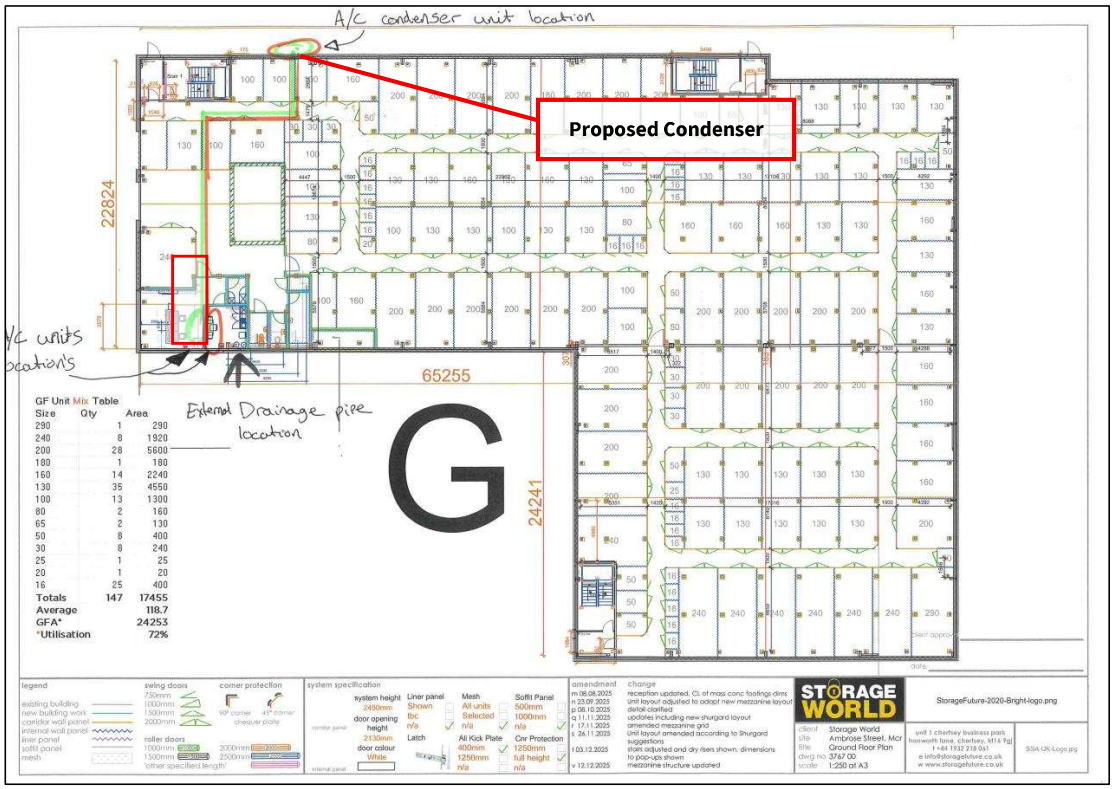


Figure 1.2 *Proposed plant area*

2.0 Assessment Guidance & Requirements

2.1. Local Authority Guidance

The development falls within the jurisdiction of Manchester City Council (MCC) who require that new fixed plant items achieve a rating level (per BS 4142:2014+A1:2019) of at least 5 dB below the existing typical background sound level.

2.2. BREEAM Pol 05

The development is targeting a credit under Pol 05 of BREEAM, for which the requirements are identical to the planning requirements set out above, specifically requiring that new fixed plant items achieve a rating level (per BS 4142:2014+A1:2019) of at least 5 dB below the existing typical background sound level.

2.3. BS 4142 Assessment Methodology

BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' (herein BS 4142) provides a method for assessing the likelihood of adverse impact from industrial and commercial sound sources at nearby noise-sensitive receptors.

The assessment compares the rating level of the source in question against the prevailing background sound level at the receptor location. The rating level is derived from the measured or predicted specific sound level, with corrections applied where the sound has distinctive characteristics such as tonality, impulsivity, or intermittency.

The difference between the rating level and the background sound level provides an initial estimate of impact. A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on context. A difference of around +5 dB is likely to be an indication of an adverse impact, depending on context. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on context. These initial estimates are then considered in context, taking account of factors such as the absolute noise levels, the character of the existing acoustic environment, the sensitivity of the receptor, and the nature and frequency of the sound.

3.0 Environmental Noise Survey

3.1. Procedure

Due to the lack of a secure position to install noise monitoring equipment at a position representative of the nearest noise sensitive receptor, attended noise measurements were undertaken at 1No position at the following times:

- **Daytime** - 14:00-16:00 hours on 06 May 2026
- **Evening** - 21:00-23:00 hours on 06 May 2026
- **Night-time** - 01:00-03:00 hours on 07 May 2026

Weather conditions were generally dry with light winds and therefore suitable for the measurement of environmental noise.

The measurement procedure complied with ISO 1996-2:2017 Acoustics '*Description, measurement and assessment of environmental noise - Part 2: Determination of environmental noise levels'* and BS 4142.

3.2. Noise Climate

The general noise climate was noted to be dominated by road noise from the nearby roads during daytime roads, and more distant roads during the quieter evening/night-time periods.

3.3. Measurement Position

The chosen measurement position is highlighted below. The measurement position was chosen to be representative of the nearest noise sensitive receptor and was positioned in free-field conditions.



Figure 3.1 *Survey measurement position*

3.4. Equipment

The equipment calibration was verified before and after use and no abnormalities were observed. The equipment used is described below.

Table 3-1: *Measurement instrumentation*

Equipment		Serial No.	Calibration Date	Certificate Ref.
SLM 1	**Class 1 Sound Level Meter** Svantek Type 971A	173136	19 Jan 2026	1516680-1
	Preamplifier Svantek SV18A	163637		
	Free-field Microphone ACO 7152	96767		
CAL 1	**Class 1 Acoustic Calibrator** Svantek SV33B	182123	30 Jan 2026	C182123-1

3.5. Results

The full measured sound levels throughout the survey duration are presented below, as used in all subsequent assessment.

Table 3-2: *Measured noise levels*

Period	Time	dB $L_{A90,15min}$
Daytime	14:00	56
	14:15	56
	14:30	55
	14:45	54
	15:00	54
	15:15	56
	15:30	56
	15:45	57
	Minimum	**54**
Evening	21:00	51
	21:15	52
	21:30	53
	21:45	53
	22:00	51
	22:15	53
	22:30	51
	22:45	54
	Minimum	**51**
Night-time	02:00	39
	02:15	38
	02:30	38
	02:45	40
	03:00	38
	03:15	42
	03:30	41
	03:45	40
	Minimum	**38**

4.0 Acoustic Commissioning Measurements

4.1. Procedure

Sound level measurements were undertaken at 1 m from the installed plant items, operating at normal duty. Due to access (i.e. height) and the fact that the ventilation fans across the development are all the same model and duty, measurements were undertaken of the supply and extract fans at ground floor, to be considered representative of the noise levels from all other fans across the development.

Weather conditions were generally dry with light winds and therefore suitable for the measurement of noise.

4.2. Equipment

The equipment calibration was verified before and after use and no abnormalities were observed. The equipment used is described below.

Table 4-1: *Measurement instrumentation*

Equipment		Serial No.	Calibration Date	Certificate Ref.
SLM 1	**Class 1 Sound Level Meter** Svantek Type 971A	173136	19 Jan 2026	1516680-1
	Preamplifier Svantek SV18A	163637		
	Free-field Microphone ACO 7152	96767		
CAL 1	**Class 1 Acoustic Calibrator** Svantek SV33B	182123	30 Jan 2026	C182123-1

4.3. Results

The full measured sound levels from the plant items are presented below, as used in all subsequent assessment.

Table 4-2: *Measured plant noise levels*

Plant Item	Measured Sound Level at 1 m (L_{Aeq})
Condenser – Daikin 2MXM68A8	52 dB
Supply Fan – System Air Prosilent XP 160S	54 dB
Extract Fan – System Air Prosilent XP 160S	53 dB

5.0 Fixed Plant Noise Assessment

5.1. Plant Noise Emission Limits

External plant noise emission limits have been set below in accordance with achieving a rating level level of at least 5 dB below the existing minimum background sound level, to be calculated in accordance with BS 4142.

Table 5-1: *Plant noise emission limits*

Period	BS 4142:2014 Plant Noise Rating Level Limit ($L_{Ar,T}$)
Daytime (07:00 – 19:00)	49 dB
Evening (19:00 – 23:00)	46 dB
Night-time (23:00 – 07:00)	33 dB

5.2. Assessment

An assessment of the installed equipment is presented below, to demonstrate compliance with the requirements of both Manchester City Council and BREEAM Pol 05.

Table 5-2: *Plant noise assessment*

Description	Condenser	Supply Fans	Exhaust Fans
Sound pressure level at 1 m (L_{Aeq})	52 dB	53 dB	54 dB
Quantity Correction	0 dB	12 dB	10 dB
Distance correction	-44 dB	-41 dB	-41 dB
Screening correction	-10 dB	0 dB	0 dB
Resultant specific level at receptor (L_{Aeq})	-2 dB	24 dB	21 dB
	26 dB		
Acoustic feature correction	0 dB		
Rating level at receptor (L_{Ar})	26 dB		
Criteria (L_{Ar})	≤ 33 dB		
Compliance	✓		

The above indicates comfortable compliance with the requirements of Manchester City Council and BREEAM Pol 05. This is as expected given the well screened nature of the proposed plant position and significant distance to nearby receptors.

6.0 Conclusion

Build Energy Ltd has been commissioned to undertake an acoustic commissioning report in connection with the proposed development at Storage World, Ambrose Street, Manchester.

A baseline environmental noise survey was undertaken to establish the prevailing background sound levels at the nearest noise sensitive receptors. The typical background sound levels ($L_{A90,T}$) were established as follows:

- Daytime (07:00-19:00): 54 dB $L_{A90,1h}$
- Evening (19:00-23:00): 51 dB $L_{A90,1h}$
- Night-time (23:00-07:00): 38 dB $L_{A90,15min}$

Plant noise emission limits have been derived such that the rating level at the nearest noise sensitive premises does not exceed the prevailing background sound level by more than -5 dB, when assessed in accordance with BS 4142:2014+A1:2019.

Acoustic commissioning measurements of the installed plant has indicated that the plant noise emission limits are comfortably achieved by the proposed equipment.