Units 1-9 Crabtree Lane Manchester

BREEAM Report

33025/BREEAM

01 May 2026

For:
Triton Construction
Hare Park Mills
Hare Park Lane
Hightown
Liversedge
WF15 8EP



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BREEAM Report
33025/BREEAM

Document Control

Rev	Date	Comment	Prepared by	Authorised by
0	01/05/2026	-		
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Appendix A – Acoustic Terminology

Time History Plot 33025/TH1

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1.0 Introduction

A new commercial unit is currently being constructed at Crabtree Lane, Manchester.

The scheme is aiming for a BREEAM rating of “Very Good” under BREEAM 2018. As such, Hann Tucker Associates has been appointed to appraise the design against the requirements of Hea 05 and Pol 05.

This report presents our findings.

2.0 Objectives

To assess the proposed building design with regards to the guidance detailed within BREEAM: New Construction 2018, specifically the BREEAM credits available under the sections Hea05 and Pol 05.

3.0 Site Description

3.1 Location

The site is located in Manchester. The location is shown in Figure 1 below.



Figure 1 Location Map (Map data ©2026 Google)

The site falls within the jurisdiction of Manchester City Council.

3.2 Description

The site is located on Crabtree Lane and is surrounded by nearby commercial food stores, industrial warehouses and residential properties. To the north of the site lies Ashton New Road, across from which lie rows of residential houses and fast-food restaurants. Adjoining the site to the north is an ALDI store and associated car park. To the immediate east of the site is a home bargains store, and to the south is an equipment supplier operating from a large warehouse. To the west of the site across Crabtree Lane is a car workshop, industrial yard, and public house.

The site is shown in Figure 2 below.



Figure 2 Site Plan (Imagery ©2026 Google, Map data ©2026)

4.0 BREEAM Acoustics

A prerequisite of the BREEAM assessment is that a suitably qualified acoustician is appointed to carry out the assessment.

This report has been compiled by Jake Howarth of Hann Tucker Associates, whose qualifications and professional status are summarised below:

Table 1 Jake Howarth Professional Qualifications and Status

Jake Howarth Professional Qualifications and Status	
Position	**Qualifications**
Associate	BEng(Hons) Acoustics, Salford University Member of the Institute of Acoustics (MIOA) Over 10 years' experience in Acoustic Consultancy

There are two relevant sections of BREEAM pertinent to the acoustic design of the building. These refer to internal (Hea05) and external (Pol05) requirements as discussed below:

4.1 Hea05 – Acoustic Performance

The development falls under the category of Industrial, Retail, Prisons and Other Building Types. Hea05 of BREEAM has up to three credits available for this building type, however, as the scheme is to provide a shell & core building only the indoor ambient noise level criteria should be assessed.

The wording for this credit is detailed below:

Table 2 Industrial, Retail, Prisons and Other Building Types (three credits)

Industrial, Retail, Prisons and Other Building Types (three credits)	
Second Credit – Indoor Ambient Noise Levels	
Criteria	Achieve indoor ambient noise levels that comply with the design ranges given in Section 7 of BS 8233:2014.
Testing Requirement	A programme of pre-completion acoustic testing is carried out by a compliant test body in accordance with the acoustic testing and measurement procedures outlined in the Methodology on the facing page section of this BREEAM Issue.
Rooms with Specific Functions	Education space (teaching and learning spaces)refer to Table 5.14 on page 109 Medical treatment rooms refer to Table 5.15 on page 110

4.2 Pol 05

There is 1No credit available under Pol 05. The criteria for which the credit can be awarded is set out below:

1. There are no noise-sensitive areas within the assessed building or within 800m radius of the assessed site.

OR

2. Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800m radius of the assessed site, a noise impact assessment compliant with BS 4142:2014 is commissioned. Noise levels must be measured or determined for:
    a. Existing background noise levels:
        i. at the nearest or most exposed noise-sensitive development to the proposed assessed site
        ii. including existing plant on a building, where the assessed development is an extension to the building
    b. Noise rating level from the assessed building.
3. The noise impact assessment must be carried out by a suitably qualified acoustic consultant.
4. The noise level from the assessed building, as measured in the locality of the nearest or most exposed noise-sensitive development, must be at least 5 dB lower that the background noise throughout the day and night.
5. If the noise sources from the assessed building are greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with the criterion.

5.0 Baseline Noise Survey

5.1 Procedure

Fully automated environmental noise monitoring was undertaken by Christopher Fisk AMIOA and assisted by Euan Ellis BA(Hons) from approximately 11:00 hours on Tuesday 7 April 2026 to 11:30 hours on Friday 10 April 2026, to establish full daytime and night-time noise levels over a typical weekday and weekend period. Measurements were taken continuously of the A-weighted (dBA) L_{90}, L_{eq}, and L_{max} sound pressure levels over discrete 2 and 15-minute periods.

Additional attended measurements were performed between 11:00 hours and 15:00 hours on Tuesday 7 April 2026 with the purpose of establishing noise levels at potential noise sensitive receptors around the site.

5.2 Measurement Position

The noise level measurements were undertaken at 6 positions as described in the Table 3 below.

Table 3 Noise Monitoring Location details

Position	Type	Description
1	Unattended	Located approximately 170m to the south of the site and attached to a lamp post on Crabtree Lane. Microphone approximately 2m above ground level and in free field conditions.
2	Unattended	Located approximately 70m to the northeast of the site and attached to a lamp post on Ashton New Road. Microphone approximately 2m above ground level and in free field conditions.
3	Attended	Located approximately 100m to the east of the site within a commercial carpark. Microphone attached to a tripod approximately 1.5m above ground level and in free field conditions.
4	Attended	Located approximately 70m to the northeast of the site and attached to a lamp post on Ashton New Road. Microphone approximately 2m above ground level and in free field conditions.
5	Attended	Located approximately 60m to the west of the site and attached to a tripod approximately1.5m above ground level. Microphone in free field conditions.
6	Attended	Located to the immediate west of the site on Crabtree Lane and attached to a tripod approximately 1.5m above ground level. Microphone in free field conditions.

The positions are shown in *Figure 3* below.

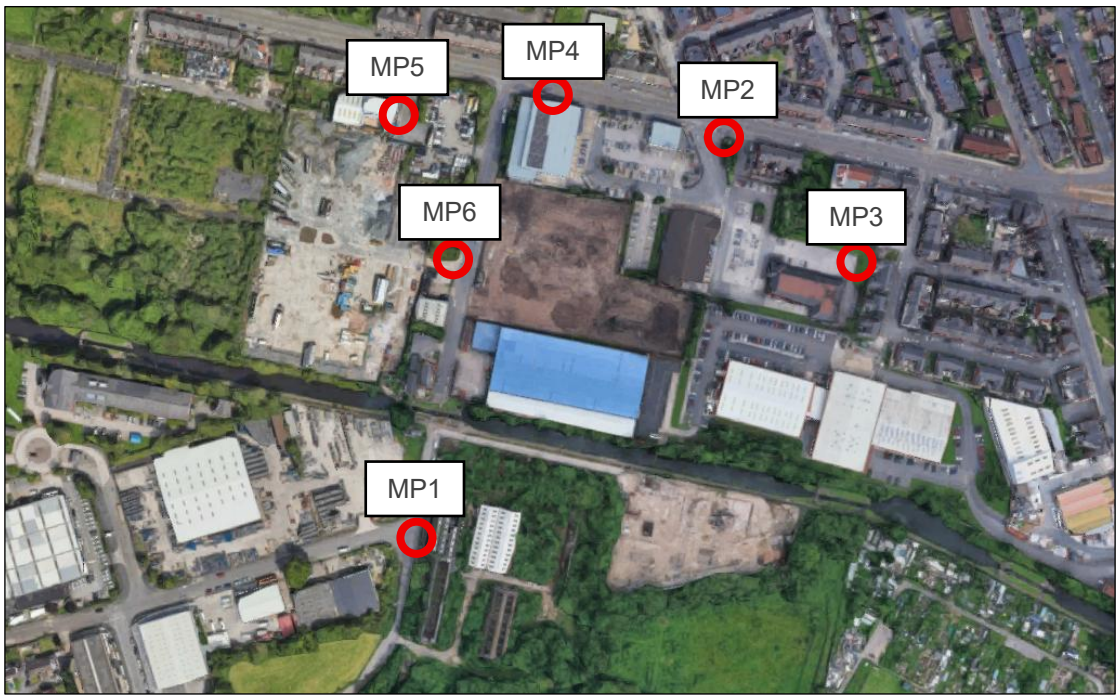


Figure 3 Plan Showing Measurement Positions (Imagery ©2026 Google, Imagery ©2026 Airbus, Maxar Technologies, Map data ©2026 - see above)

5.3 Weather Conditions

For the unattended survey between Tuesday 7 April 2026 and Friday 10 April 2026, local weather reports indicated no notable periods of prolonged rainfall, with temperatures ranging from 6 °C (night) to 22 °C (day) and wind speeds less than 5 m/s. During our time on site, skies were overcast/clear/largely clear with patchy cloud cover, wind conditions were light and from a southerly direction and road surfaces were dry.

During the attended survey on Tuesday 7 April 2026, the weather was generally clear and dry with no periods of rainfall and light wind conditions.

5.4 Instrumentation

The instrumentation used during the survey is presented in the *Table 4* overleaf:

Table 4 Equipment Details & Calibration Information

Position	Description	Manufacturer	Type	Serial Number	Calibration
1	Type 1 Data Logging Sound Level Meter	Larson Davis	824	3838	Calibration on 05/08/2025
	Type 1 ½" Condenser Microphone	PCB	3777B02	132146	
	Pre Amp	Larson Davis	PRM902	4215	
2	Type 1 Data Logging Sound Level Meter	Larson Davis	LxT	4086	Calibration on 05/01/2026
	Type 1 ½" Condenser Microphone	Larson Davis	3777B02	174436	
	Pre Amp	Larson Davis	PRMLxTL1	42843	
3,4	Type 1 Data Logging Sound Level Meter	Brüel and Kjær	2250	3025254	25/02/2026
	Type 1 Calibrator	Bruel & Kjaer	4231	2308993	04/03/2026
5,6	Type 1 Data Logging Sound Level Meter	Larson Davis	LxT	LxT	30/05/2024
	Type 1 ½" Condenser Microphone	Larson Davis	3777B02	317684	
	Pre Amp	Larson Davis	PRMLxTL1	42842	
1, 2, 5, 6	Type 1 Calibrator	Bruel & Kjaer	Cal200	3083	Calibrated on 04/03/2026

Each sound level meter, including the extension cable, was calibrated prior to and on completion of the surveys. No significant changes were found to have occurred (no more than 0.3 dB).

Each sound level meter was located in an environmental case with the microphone connected to the sound level meter via an extension cable. Each microphone was fitted with a windshield.

5.5 Results

The results have been plotted on Time History Graphs 33025/TH1 to 33025/TH2 enclosed presenting the 15-minute A-weighted (dBA) L_{90}, L_{eq} and L_{max} levels at each measurement position throughout the duration of the survey.

In order to compare the results of our survey with the relevant guidelines it is necessary to convert the measured $L_{Aeq(15\,minute)}$ noise levels into single figure daytime $L_{Aeq(16\text{-}hour)}$ (07:00-23:00 hours) and night-time $L_{Aeq(8\text{-}hour)}$ (23:00-07:00 hours) levels.

The following histograms present the measured L_{90} background noise levels at unattended Measurement Positions 1 and 2.

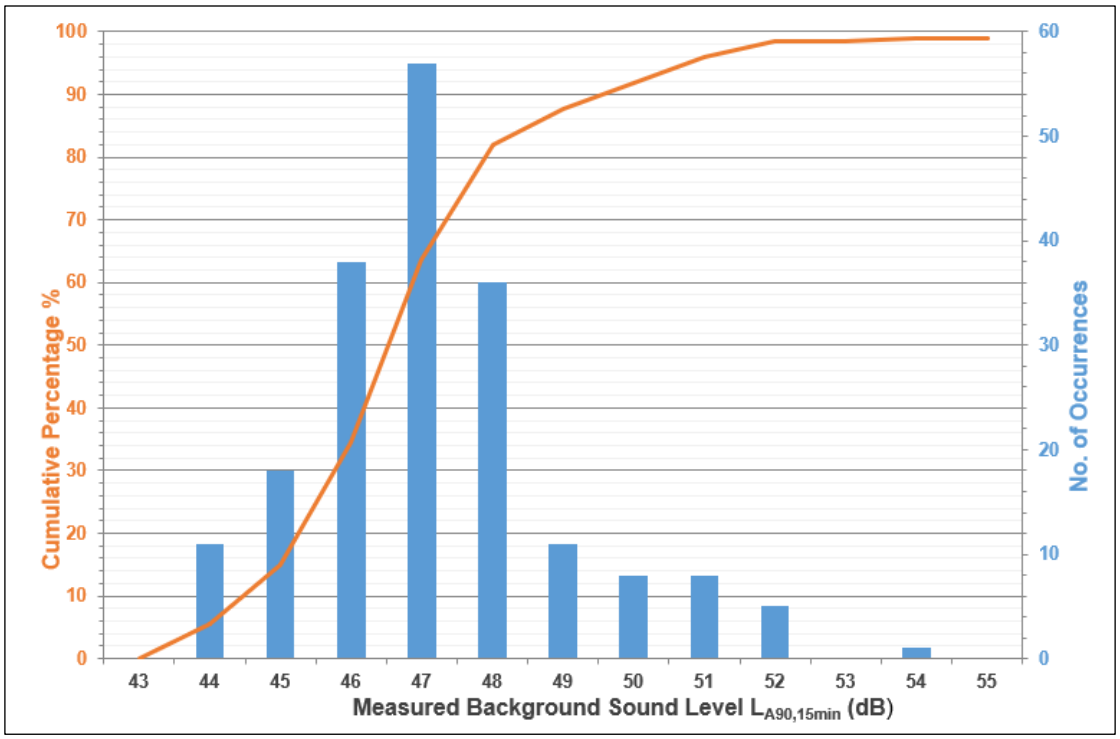


Figure 4 MP 1 Measured Daytime Background Noise Level (07:00 – 23:00)

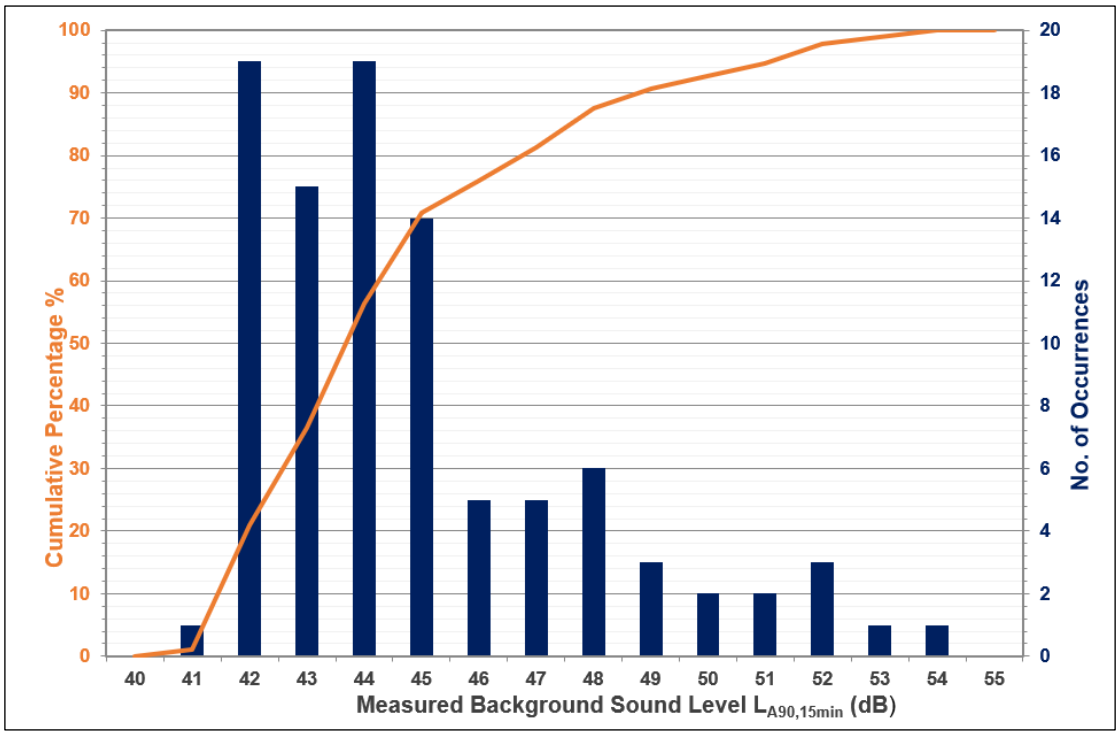


Figure 5 MP 1 Measured Daytime Background Noise Level (23:00 – 07:00)

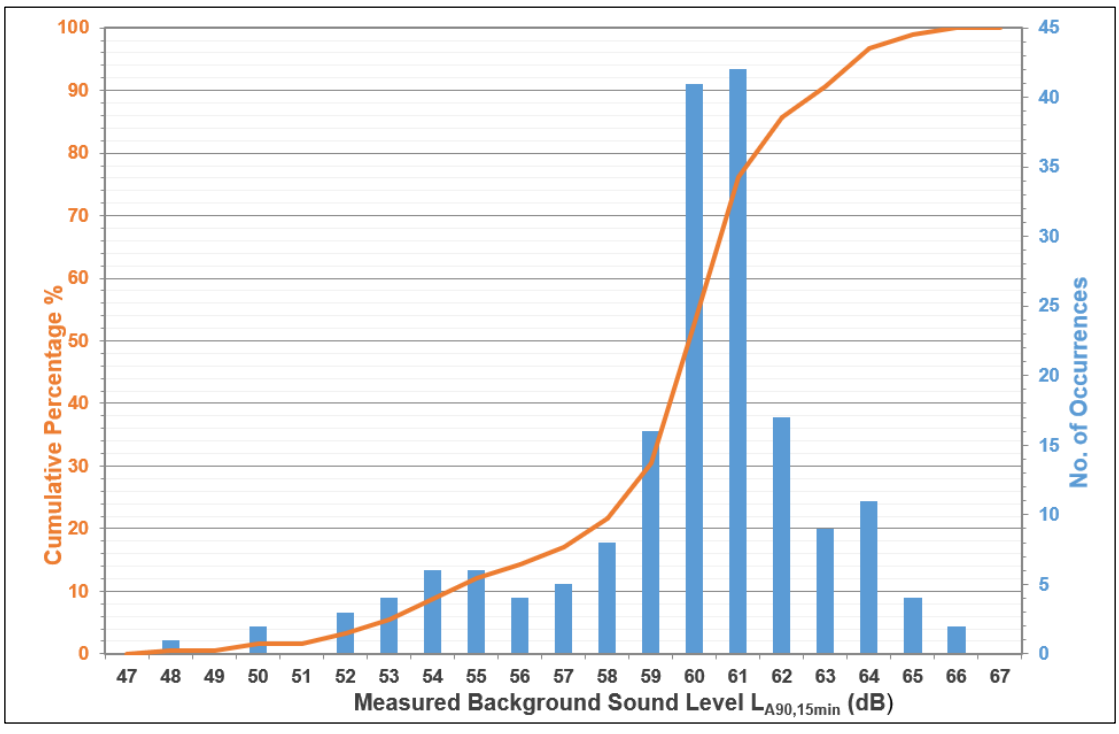


Figure 6 MP 2 Measured Daytime Background Noise Level (07:00 – 23:00)

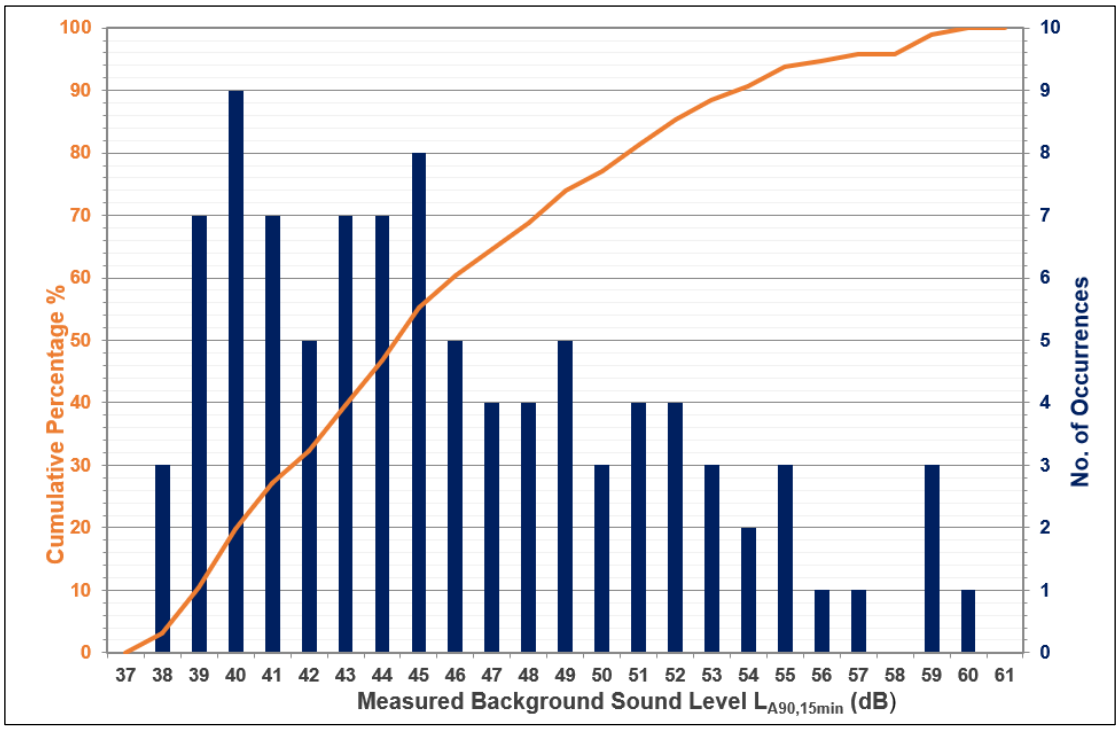


Figure 7 MP 2 Measured Daytime Background Noise Level (23:00 – 07:00)

A summary of the results, as used to inform subsequent assessments against current guidelines, is presented in Table 5 below. The L_{A90} values presented are the 'representative' levels determined through statistical analysis of the 15-minute readings, in line with BS 4142.

Table 5 Unattended Measure Results

Position	Day/Period	Daytime (07:00 – 23:00 hrs)		Night-time (23:00 – 07:00 hrs)		
		$L_{Aeq,16hr}$	L_{A90}	$L_{Aeq,8hr}$	L_{A90}	L_{Amax}
1	07/04/2026	53	47	53	42	73
	08/04/2026	55		55		73
	09/04/2026	55		51		69
	10/04/2026	56		-		-
2	07/04/2026	71	59	67	40	89
	08/04/2026	71		67		90
	09/04/2026	72		68		88
	10/04/2026	72		-		-

Table 6 below summarises noise levels recorded at each of the attended measurement positions.

Table 6 Attended Measurement Results

Position	Date	Period	Sound Pressure Level (dB)		
			$L_{Aeq,T}$	$L_{A90,T}$	$L_{Amax,T}$
3	07/04/2026	12:15:00 – 12:30:00	48	45	65
		13:15:00 – 13:30:00	51	44	78
4	07/04/2026	12:45:00 -13:00:00	71	57	92
		14:00:00 – 14:15:00	72	58	94
5	07/04/2026	13:00:00 – 13:15:00	61	48	84
		14:00:00 – 14:15:00	61	52	83
6	07/04/2026	12:30:00 – 12:45:00	54	50	78
		13:30:00 – 13:45:00	53	46	70

5.6 Discussion of Noise Climate

5.6.1 Unattended Noise Climate

Due to the nature of the survey, i.e. unattended, it is not possible to accurately describe the dominant noise sources, or specific noise events throughout the entire survey period. However, at the beginning and end of the survey period the noise climate was noted to be dominated by road traffic noise.

During the attended survey, the noise climate was dominated by road traffic noise in all positions. In position 3, nearby extract fans associated with the commercial store were audible. It was also noted that tram pass-bys caused significant elevations in L_{max} readings at position 4

6.0 Hea05 Assessment

6.1 Internal Ambient Noise Level Criteria

Based on requirements of BREEAM 2018 the external noise intrusion levels (whether from road, rail or aircraft sources) should not exceed the following acoustic design criteria. These levels should be achieved when considering both environmental noise break-in and noise from building services.

Table 7 ***External Noise Intrusion Upper Limit***

Room Type	External Noise Intrusion Upper Limit
Office	45 $L_{eq,T}$
Main Unit	45 $L_{eq,T}$

It should be noted that the L_{eq} criterion is based on guidance within BS8233.

Proposed Façade Constructions

The final constructions of the units is currently unknown, however, we understand that the external wall is likely to comprise Euroclad Elite PLUS 51 to the warehouse and Kingspan KS1000 to the office areas. Both Euroclad and Kingspan provide octave band sound reduction indices for the systems. These are presented below.

Table 8 Sound Reduction Index, R, (dB) at each Octave Band

System	Sound Reduction Index, R, (dB) at each Octave Band Centre Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Euroclad Elite PLUS 51	18	20	28	33	42	50	60	63
Kingspan KS1000	20	18	20	24	20	29	39	47

The roof is also likely to to be a Kingspan KS1000RW system and would have the same sound reduction performance as set out above.

There are a number of roller shutter doors proposed. These are likely to be either Assa Abloy or Thermadoor roller shutters and suppliers documentation notes a sound reduction of 26 dB R_w for these systems.

Any glazing is likely to be a 8/16/8 configuration in a Kawneer AA100 curtain walling system. We would anticipate that the sound insulation performance of this system would be as follows:

Table 9 Sound Reduction Index, R, (dB) at each Octave Band

System	Sound Reduction Index, R, (dB) at each Octave Band Centre Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Kawneer AA100 with 8/16/8 glazing	20	20	18	28	38	34	38	38

6.2 Proposed Building Services

The building services plant is currently unknown. Details of the building services will be included once selections have been made.

6.3 Calculated internal noise levels

6.3.1 External Noise Break-in

Based on the measured noise external levels and the proposed constructions, we have calculated the levels of environmental noise break-in to both the office areas and the warehouse areas using the calculation procedure detailed in BS8233:2014.

To calculate the levels of environmental noise break-in a reverberation time of 0.8 seconds has been assumed for the office spaces and 1.5 seconds has been assumed for the warehouse.

The results are presented below:

Table 10 Calculated Internal Noise Level

Area	Calculated Internal Noise Level, L_{Aeq} (dB)
Office	<30
Warehouse	<30

Based on the above the levels of environmental noise break-in should be well below the 45 dB L_{Aeq} criteria.

7.0 Pol 05 Assessment

7.1 Proposed Limits

Based on the results of our noise survey, and the requirements of BREEAM 2018, we would propose the following plant noise emission criteria. The following limits are to be achieved at 1 m from residential windows are presented free field limits.

Table 11 Proposed Noise Egress Limits

NSR Location	Plant Noise Emission Criteria ($L_{Aeq,T}$, dB)	
	Daytime (07:00 – 23:00 hours)	Night-time (23:00 – 07:00 hours)
1	42	37*
2	54	37
3	54	37*

Predicted nighttime noise limit based on distance corrections from unattended positions and change in background noise levels between daytime and nighttime noise levels captured by unattended positions (*)

Noise shall be assessed in accordance with BS 4142:2014 with corrections applied for any plant emitting noise of a tonal or irregular quality.

7.2 Proposed Plant

The building services plant is currently unknown. Details of the building services will be included once selections have been made.

8.0 Conclusions

An assessment has been undertaken against the acoustic credits available in BREEAM: BREEAM Refurbishment manual.

The assessment indicates that the internal noise level criteria can be achieved and 1No Hea 05 credits should be achievable.

A Pol 05 noise egress limits have been set. An assessment is not possible at this stage due to the plant not having been selected. Once details of the plant are known a Pol 05 assessment will be undertaken.

Appendix A

The acoustic terms used in this report are defined as follows:

dB — Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form. The relationships between Decibel levels do not work in the same way that non-logarithmic (linear) numbers work (e.g. 30dB + 30dB = 33dB, not 60dB).

dBA — The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The $_A$ subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted

It should be noted that levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.

$L_{90,T}$ — L_{90} is the noise level exceeded for 90% of the period *T* (i.e. the quietest 10% of the measurement) and is often used to describe the background noise level.

$L_{eq,T}$ — $L_{eq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time period, *T*.

L_{max} — L_{max} is the maximum sound pressure level recorded over the period stated. L_{max} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the L_{eq} noise level.

L_p — Sound Pressure Level (SPL) is the sound pressure relative to a standard reference pressure of 2×10^{-5} Pa. This level varies for a given source according to a number of factors (including but not limited to: distance from the source; positioning; screening and meteorological effects).

L_w — Sound Power Level (SWL) is the total amount of sound energy inherent in a particular sound source, independent of its environment. It is a logarithmic measure of the sound power in comparison to a specified reference level (usually 10^{-12} W).

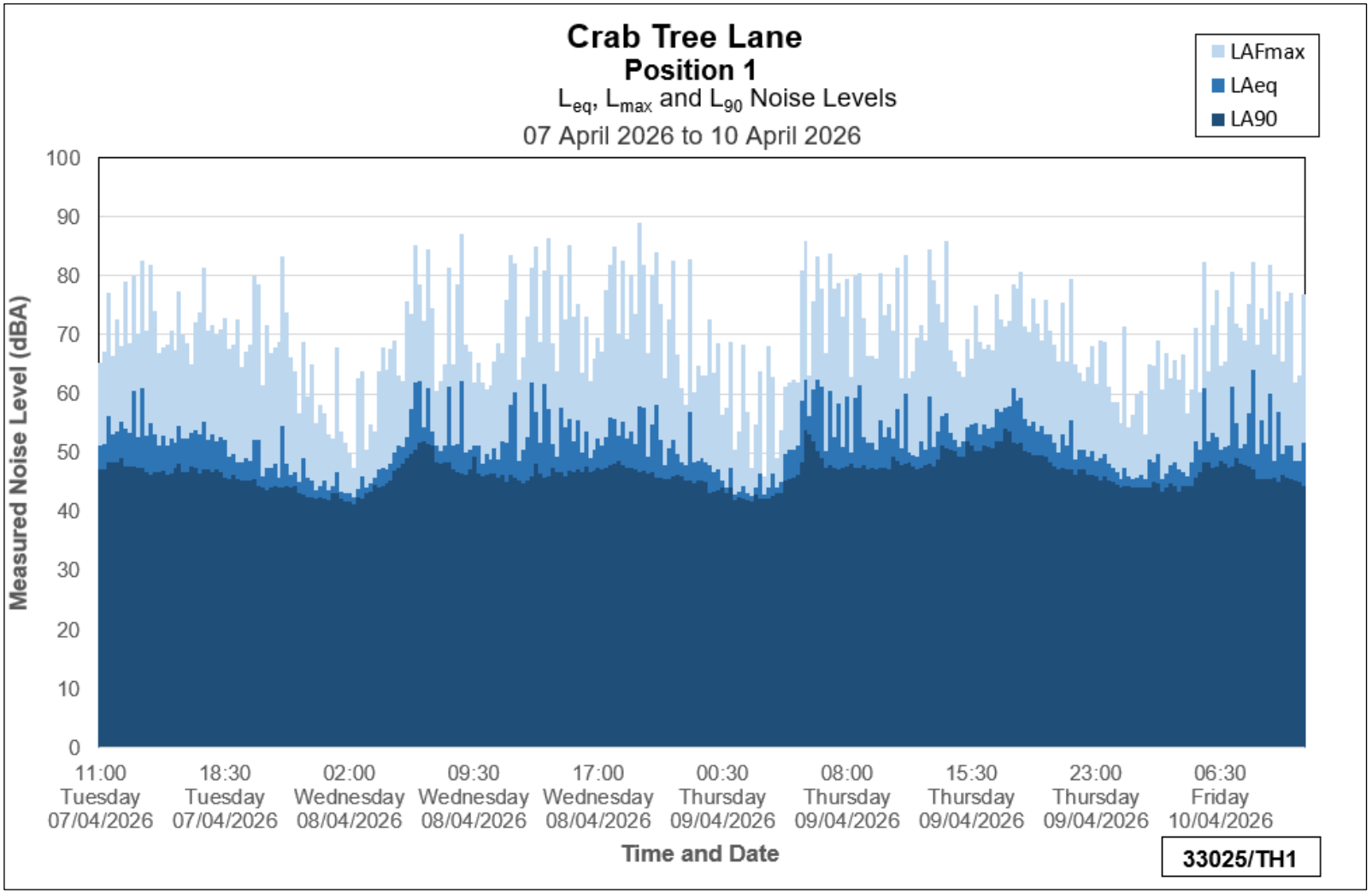


Figure 12 Crab Tree Lane Position 1

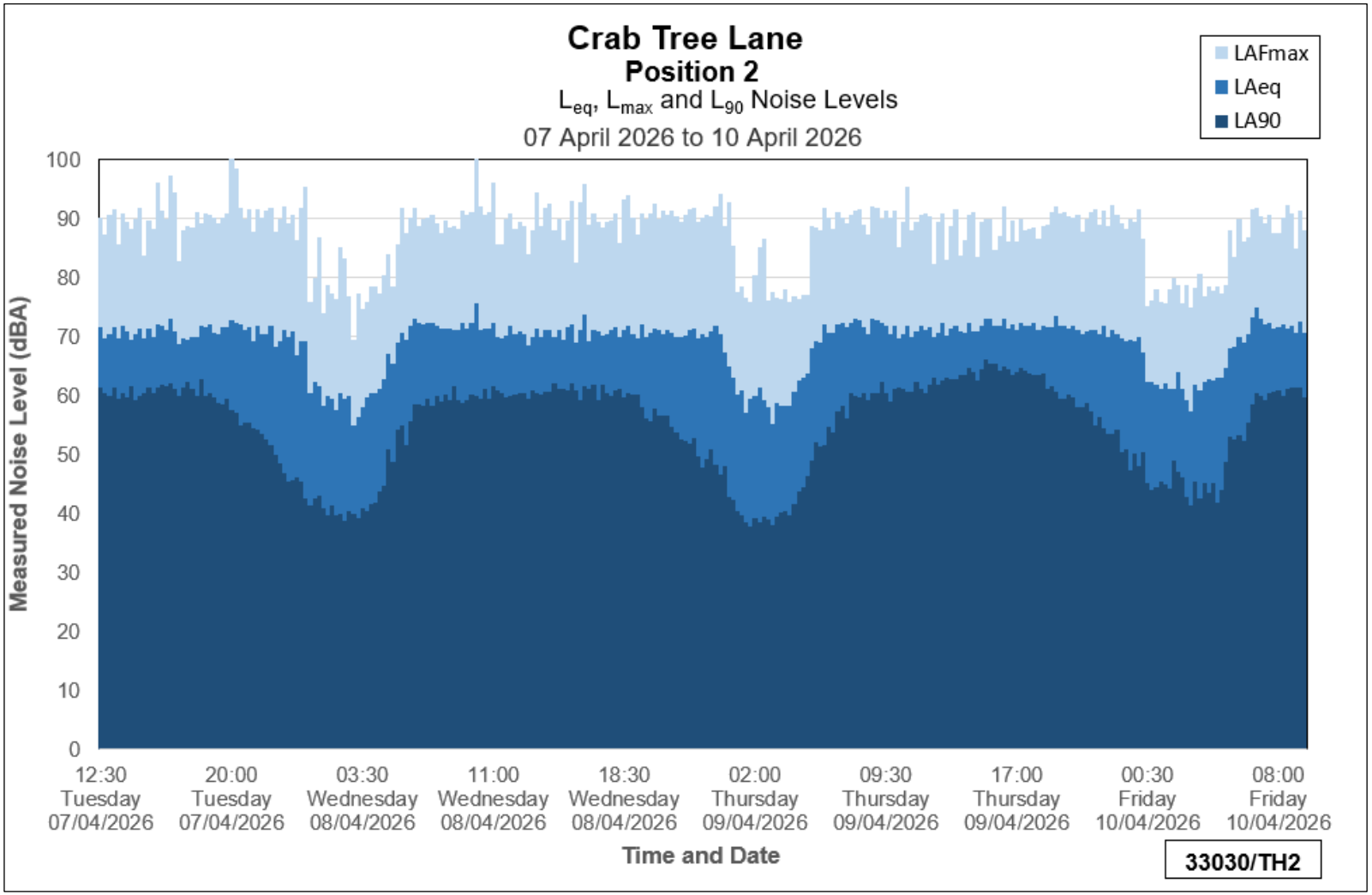


Figure 13 Crab Tree Lane Position 2