



BREEAM COMPLIANCE TESTING SUMMARY

HORIBA MIRA - PLOT 44

Swanvale Development Limited
2062574-RSKA-RP-002-(01)





General notes

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Author(s): Kartik Subramaniam

Technical reviewer:

Thomas Goose

Signature:

Signature:

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1 Introduction

1.1 Instruction

Pre-completion acoustic testing has been carried out on the 14th of January 2026 for the mixed commercial and industrial site (Plot 44) on within the MIRA Technology Park Technology Centre on Watling Street (A5), Nuneaton, CV10 0TU.

This test report is provided for Swanvale Development Ltd ("the Client").

Testing has been carried out to provide evidence against the requirements of BREEAM New Construction v6.1 (UK) for the targeted credits under Hea 05 indoor ambient noise levels, and Pol 05 using criteria established in the design stage report 2062292-RSKA-RP-001-(02) 'HORIBA MIRA Plot 44 – BREEAM Hea05 and Pol05 Acoustic Assessment', dated 23 June 2025.

Testing accreditation applies to the Shell & Core stage only.

1.2 Site Description

The site is bounded by Watling Street (A5) to the south, Wood Lane to the east, the A444 to the west and Fenn Lanes to the north/north-east. It is situated approximately 3km north of Nuneaton and 5.5km west of Hinckley.

The development is situated in a predominantly agricultural area and the site comprises office units along its centre, southern and south-western perimeter, with vehicle testing tracks and testing facilities occupying the majority of its north and north-eastern area.

Plot 44 is located approximately 125m north of Watling Street (A5) and 150m west of Wood Lane, along the southeastern corner of the technology park.

The building proposed within the plot is split into two identically mirrored halves, Unit 44a located along the west of the building and Unit 44b located along the east side of the building.

The development comprises large warehouse storage areas along the northern facade and open plan office spaces (ground and first-floor) along the southern façade of the plot. Reception areas for both units are located on the southern corners of the building.

The nearest noise sensitive receptors to the development site have been identified as the houses in Lindley Lodge Cottages on Watling Street (R1) and in Grange Cottage Farm on Wood Lane (R2). R1 and R2 are approximately 120m south and 250m east of the proposed development building.

The site layout is provided in Figure 1.1 below showing the nearest noise sensitive properties, the proposed building and the surrounding road networks.



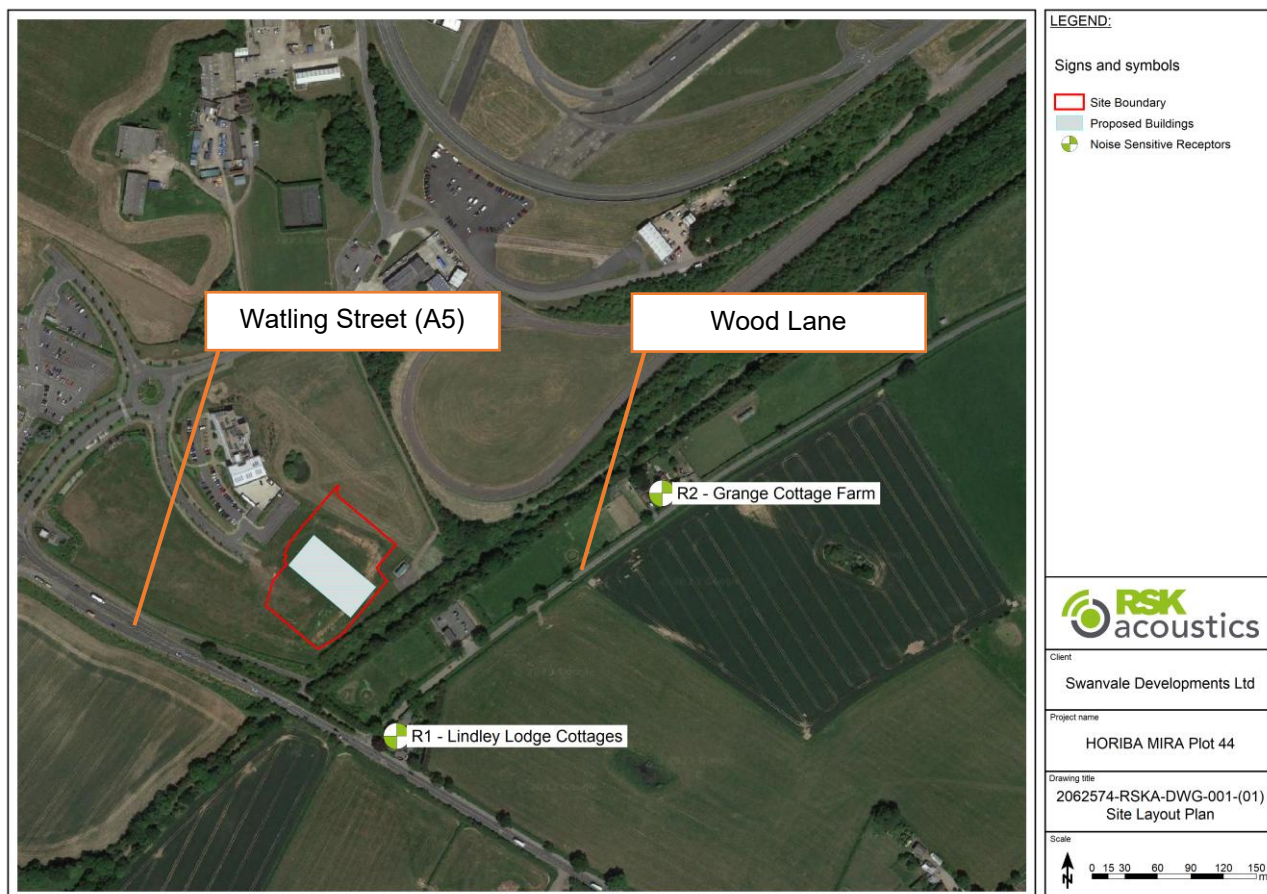


Figure 1.1 Site plan showing monitoring locations and nearest existing noise sensitive receptors

Based on aerial imagery and site attendance, the following NSRs have been used for assessment purposes during the BREEAM acoustic review stage.

Receptor Ref.	Description	What3Words (Approximate)
R1	Lindley Lodge Cottage	///objecting.design.pencil
R2	Grange Cottage Farm	///passage.bleaching.select

Table 1.1 Noise sensitive receptor locations associated with existing properties



1.3 Plant installations

1.3.1 Design Stage Information

It is understood that Plot 44a and 44b share a plantroom compound located centrally on the roof of the building.

There are also fixed plant installations (condensers) understood to be located along the on the east and west facades of the building (on the ground floor).

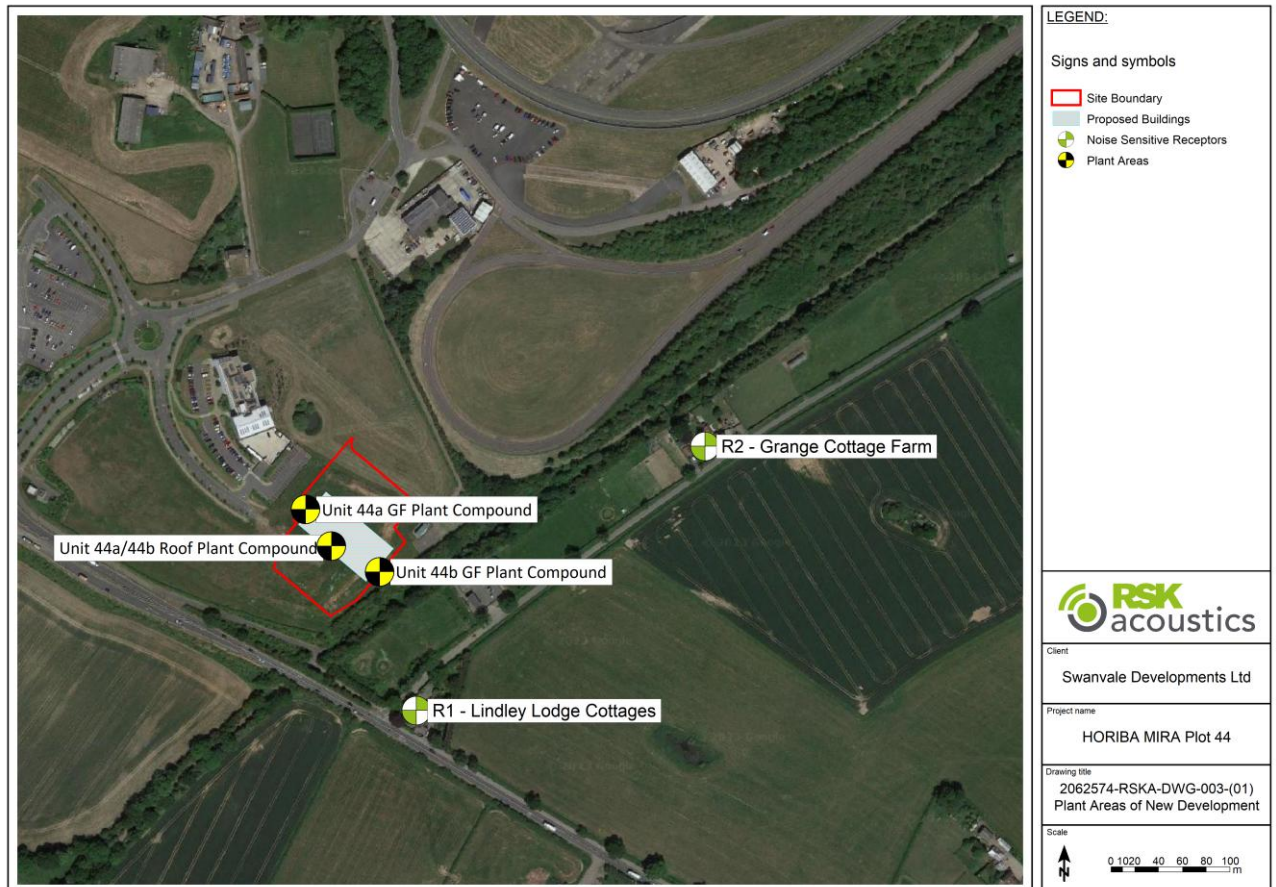


Figure 1.2 Location of external plant items



2 Criteria

2.1 Hea 05 Internal Ambient Noise Level Criteria

With respect to the requirements detailed within BREEAM New Construction v6.1 (UK) and the guidance in BS 8233, the following target has been considered appropriate for this site with respect to Hea 05 second credit for the habitable rooms identified in the design stage:

Room	Design range, dB $L_{Aeq,T}$
Open office (GF and 1F)	$\leq 45-50$
Reception lobby (GF)	$\leq 45-55$
Large Meeting Room (1F)	$\leq 35-45$

Table 2.1 Indoor ambient noise level criteria

For the purposes of this assessment, 'office hours' refers to the period 08:00 to 18:00 on a typical weekday.

The indoor ambient noise level (IANL) is a product of external noise sources from outside of the building and noise from internal building services.

2.2 Pol 05 External Plant Noise Level Criteria

As there are existing noise-sensitive properties within an 800 m radius of the development site, the following assessment criterion has been applied:

- The Rating Level from the cumulative operation of all fixed building services plant associated with the Shell & Core aspect of the development must be at least 5 dB lower than the representative background sound level (dB $L_{A90,T}$) throughout the day and night-time period.

The above has been derived using the guidance and prescribed methodologies within BREEAM NC 2018 and BS 4142.

In the context of this assessment, it is understood that the plant items associated with the development would operate within daytime hours (07:00-23:00) only, however night-time periods are also shown for completeness.

Baseline noise surveys have been conducted for the site in December 2025 for the design stage assessments by RSK (ref. 2062574-RSKA-RP-002 – 'HORIBA MIRA Plot 44 – BREEAM Hea05 and Pol05 Acoustic Assessment'). Baseline surveys have been conducted measuring over midweek and weekend periods for a minimum of 96 hours.

The background sound levels derived from the baseline surveys conducted and BREEAM target noise levels adopted within the design stage Acoustic Review report is summarised in Table 2.2 below.

Receptor	Representative Background Sound Level, dB L_{A90}		Pol 05 / BS 4142 Rating Level limit, dB $L_{Ar,Tr}$	
	Daytime	Night-time	Daytime	Night-time
R1	48	35	43	30
R2	39	34	34	29

Table 2.2 Pol 05 Limits Derived in design stage Acoustic Review report – Daytime (07:00-23:00)



3 Methodology

3.1 Site Attendance Notes

It should be noted that testing of the site was conducted within Unit 44b only due to access limitations with Unit 44a. From information provided by the client prior to attendance, it is understood both units have identical base build, floor layout, and similar plant installations.

Therefore, it had been considered appropriate to use measurements conducted within Unit 44b as representative for Unit 44a.

An engineer was present to operate the plant in order to measure noise levels with plant on and off (residual levels). All plant was noted to be operational at full design duty for both internal and external testing.

No external noise, including road traffic, was noted to be audible within Plot 44b. Noise within the building consisted solely of ventilation / air handling activities. Externally, road traffic noise from the A5 was the dominant source of noise, with occasional vehicle movements audible within the MIRA facility.

3.2 Internal Ambient Noise Measurements

Measurements were taken in a minimum of three positions for each habitable room in the units, with the microphone situated at a height of 1.2 metres above the floor level and at least 1 metre away from any vertical surface.

At each room, sampling methodology comprised of measurements of minimum 5 minutes ($L_{Aeq,5 \text{ mins}}$) across at least three locations. Total durations measured per room ranged between 15-45 minutes.

Supplementary notes were undertaken during each measurement detailing the outdoor activities taking place at the time of the measurements.

3.3 External Plant Noise Measurements

Each unit in the new development has three external condensers located on the ground floor, and air handling units (AHU) within the roof plantroom. The plant provides air-conditioning and mechanical ventilation for the offices within the unit.

The roof plant room in 44b houses a FlaktGroup vQS040c-R-FRVC Air Handling Unit, and 44a is understood to house a similar unit.

External noise measurements undertaken on the roof were noted to be influenced by both Plot 44a and Plot 44b's AHU plant.

Plant within the ground floor compounds could not be inspected as access was not available during the survey, however the plant information provided by the client after the survey is as follows:

Within the base build, the external compound in Unit 44a comprises one Daikin REYA8A, one Daikin REYA10A, and one Daikin RXYA8A; and in Unit 44b the compound comprises of two Daikin REYA12A, and one Daikin RXYSA6AY1.

From manufacturer information, plant installations in both external compound are similar in their total sound power level output.

3.4 Equipment

The following calibrated equipment was used for the acoustic testing.

Description	Manufacturer	Model	Serial No.	Calibration Due
Class 1 sound level meter	Rion	NL-52	00976175	14/03/2026



Description	Manufacturer	Model	Serial No.	Calibration Due
Calibrator	Rion	NC-75	35270126	26/08/2025

Table 3.1 Calibration equipment list

The calibration of each sound level meter was checked before and after the measurements, using the acoustic calibrator at 94 dB at 1 kHz; no significant calibration drift was noted (+/- 0.3 dB).

The sound level meters used conform to the Class 1 requirements of BS EN 61672-1: 2013 'Electroacoustics. Sound level meter, Specifications'. The calibrator used conforms to the requirements of BS EN 60942: 2018 'Electroacoustics, Sound calibrators'. The equipment used has a calibration history that is traceable to a certified calibration institution.

3.5 Weather Conditions

Weather conditions were noted to be largely clear with intermittent cloud cover, minimal wind speed (<5 m/s average), and a temperature of approximately 5 °C during attendance. Road surfaces were generally noted to be dry.



4 Internal Ambient Noise Level Results (Hea 05 Credit 2)

The following internal ambient noise level results have been obtained following the procedures for internal ambient noise levels and the guidance within the BREEAM Technical Manual under Hea 05 Methodology for measurement of ambient noise. There were no openable windows within the offices.

Measurements were carried out between 11:00 and 14:00 hours on Wednesday 14/01/2026. All building services ventilation plant was confirmed on site as operating at a typical worst-case duty for an occupied building.

During measurement, noise from the fan coil units were noted to be dominant. External noise was subjectively inaudible. There was no significant noise contribution from works within the site throughout the measurement period.

Room Description	Approx. Room volume (m ³)	Ventilation Type	Ventilation Condition	Measurement range, dB L _{Aeq,1min}	Spatial average, dB L _{Aeq,T}	Performance Criteria, dB L _{Aeq,T}
Reception lobby	95	Mechanical	Design duty	45-50	48	≤ 45-55
GF Office	685	Mechanical	Design duty	38-45	42	≤ 45-50
1F Office	505	Mechanical	Design duty	32-46	43	
1F Meeting Room	60	Mechanical	Design duty	33-46	43	≤ 35-45

Table 4.1 Internal ambient noise levels measurement summary

All indoor ambient noise levels recorded in tested unit have been measured to be suitably in line with the established criteria.



5 External Plant Noise Results (Pol 05)

5.1 Acoustic characteristics of the plant

According to BS 4142:2014+A1:2019 (BS 4142), where certain features of the specific noise level can increase the significance of impact of a sound level, a character correction is applied to provide a rated noise level (L_{Ar,T_r}). The characteristics of a sound that are likely to cause an increase in the significance of impact are tonality, impulsivity, intermittency or other characteristic features such as an identifiable 'hiss'.

BS 4142 discusses the addition of rating penalties (to the specific noise source) as a factor of 'perceptibility', where the prominence of tonal or impulsive sound from a source can be readily distinguishable over the residual sound. For this assessment, the addition of rating penalties has been considered the numerical comparison of the specific noise against the baseline residual noise level at each receptor derived from the calculation results below.

Subjective notes during the attended measurements indicate that the plant generally runs at a steady state.

5.2 Predictions at NSR

The cumulative plant noise levels at the most affected noise sensitive receptors have been predicted, based on the plant sources measured as shown in Table 5.1.

Predictions have been conducted with the assumption that the plant installations are of similar noise levels for Plot 44a and 44b as informed by the client.

It should be noted that the measured plant source levels include contributions due to reflections from the ground and building façade at the plant location.

A tonal analysis following the objective method for assessing the audibility of tones in sound: one-third octave method (BS 4142 Annex C) was performed on the measured plant levels.

Tonal components were found not present in the analysed spectrums when predicted at the facades of the nearest noise sensitive receptors. As such, no penalties for tonal components have been applied to the assessment.

The predictions are based on a simple calculation method that considers distance propagation losses and a conservative nominal loss of 5dB where line-of-sight is obscured between the plant and the receiver; and 10dB if it is further screened by the built form of the development.

Plant	Highest measured plant source level of plant at 1m, dB $L_{Aeq,T}$	Distance to Receptor, m	Distance Propagation loss, dB	Screening loss, dB	Acoustic Feature Corrections	Predicted level at receptor, dB L_{pA}
NSR1 - Lindley Lodge Cottage						
Unit 44a and 44b Roof Plant	59	160	-44	-10	0	5
Unit 44a GF Plant Compound	69	200	-46	-10	0	13
Unit 44b GF Plant Compound	69	125	-42	-5	0	22
Cumulative level, dB $L_{Aeq,T}$						23



Plant	Highest measured plant source level of plant at 1m, dB $L_{Aeq,T}$	Distance to Receptor, m	Distance Propagation loss, dB	Screening loss, dB	Acoustic Feature Corrections	Predicted level at receptor, dB L_{pA}
NSR2 - Grange Cottage Farm						
Unit 44a and 44b Roof Plant	59	325	-50	-10	0	-1
Unit 44a GF Plant Compound	69	340	-51	-10	0	8
Unit 44b GF Plant Compound	69	295	-49	-5	0	15
Cumulative level, dB $L_{Aeq,T}$						16

Table 5.1 Predicted sound pressure levels at the nearest receptors

5.3 Assessment Against BREEAM Criteria

An assessment of predicted cumulative levels from all external plant, against the derived limits at each NSR, is summarised in Table 5.2. In accordance with the procedures within BS 4142:2014 + A1:2019, predicted levels are rounded to integer values.

NSR Ref.	Description	Predicted cumulative specific sound level at receptor, dB $L_{Aeq,T}$	BS 4142 Rating Level, dB $L_{Ar,Tr}$	Pol 05 / BS 4142 Rating Level limit, dB $L_{Ar, Tr}$	Within Criteria?
R1	Lindley Lodge Cottage	23	23	≤ 43	Yes
R2	Grange Cottage Farm	16	16	≤ 34	Yes

Table 5.2 Assessment against Pol 05 Limits – Daytime (07:00-23:00)

The predicted levels above show the requirements of Pol 05 are met at all NSRs assessed.

It should be noted at this stage that future plant installations from tenant fit-outs should be designed to a suitable level to not exceed the established criteria.



6 Conclusions

Pre-completion acoustic testing has been carried out for the commercial site on Hortonwood 45, Telford to provide evidence against the requirements of BREEAM New Construction v6.1 (UK) for the targeted credits under Hea 05 indoor ambient noise levels, and Pol 05 using criteria established in report 2062574-RSKA-RP-001-(01) 'HORIBA MIRA Plot 44 – BREEAM Hea05 and Pol05 Acoustic Assessment', dated 23 June 2025.

The internal ambient noise level measurements undertaken at the habitable spaces (offices, lobbies, meeting rooms) within the tested unit are suitably in line with the established criteria, therefore providing evidence that the Hea 05 Second Credit has been achieved.

The cumulative noise levels from the measured external building services plant items have been predicted at the identified noise-sensitive receptors and assessed against the requirements of Pol 05 noise emissions limits as established from the background sound levels provided in the design stage acoustic design review report.

It has been shown from the assessment that the predicted noise emissions are below the Pol 05 criteria at all assessment locations, therefore it is recommended that the Pol 05 credit is awarded.



Appendix A – BREEAM Credentials

Suitably Qualified Acoustician (SQA)

This report has been prepared and reviewed by the following RSKA staff who meet Clauses 1 to 3 SQA criteria as defined in BREEAM, holding relevant degree in acoustics, more than three years relevant experience (within the past five years) and corporate membership to the Institute of Acoustics.

Prepared by: **Kartikeyan Subramaniam MEng. (Hons) AMIOA**

Position held: Acoustic Consultant

Qualifications: MEng. (Hons) Mechanical Engineering/ Acoustical Engineering

Affiliations: Associate Member of the Institute of Acoustics (AMIOA)

Acoustic Experience: >4 years

Reviewed by: **Thomas Goose BMus(Hons)(Tonmeister) MSc MIOA**

Position held: Associate Director

Qualifications: BMus(Hons)(Tonmeister) Music and Sound Recording; MSc Engineering Acoustics

Affiliations: Corporate Member of the Institute of Acoustics

Acoustic Experience >15 years



