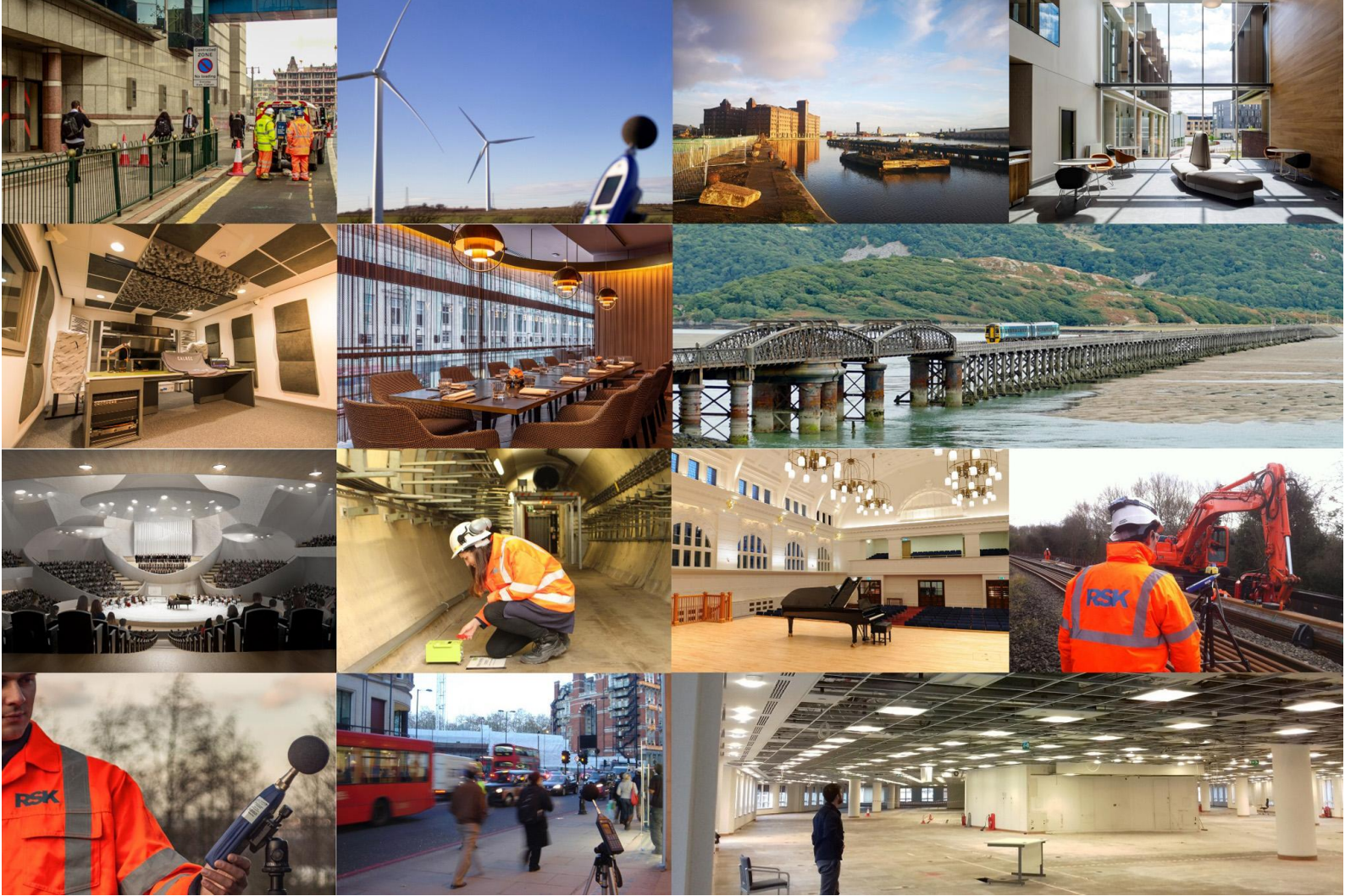




NOISE ASSESSMENT

LAND EAST OF CALNE ROAD, LYNEHAM,
WILTSHIRE

Ashflame Properties Ltd

2063557-RSKA-RP-000-(05)





General notes

Project Name:	Land East of Calne Road, Lyneham, Wiltshire
Title:	Noise Assessment
Client:	Ashflame Properties Ltd
Issue Date:	09 December 2025
Report No.	2063557-RSKA-RP-000-(05)

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Author(s): Alex West MIOA

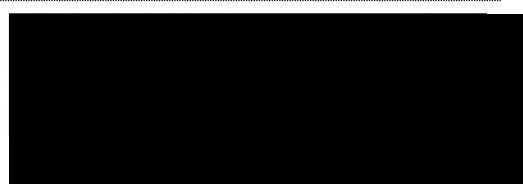
Technical reviewer:

Gwenc'hlan Touriner MIOA

Signature:



Signature:



Date: 09 December 2025

Date:

09 December 2025

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Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by RSKA for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Acoustics Ltd.



Executive Summary

RSK Acoustics Limited was commissioned by Ashflame Properties Ltd to carry out a noise assessment to support an outline planning application of up to 200 dwellings on Land East of Calne Road, Lyneham, Wiltshire.

Baseline noise surveys were conducted using unattended measurements during both daytime and night-time periods over a period of one week, covering weekdays and weekend.

The assessment adopts the methodology within ProPG Planning & Noise to evaluate the risk of adverse noise effects. The majority of the site is categorised as low risk, with predicted external noise levels complying with the upper BS 8233:2014 guideline for outdoor amenity spaces; therefore, no specific mitigation is required. Proposed residential areas closest to the A3102 are classified as medium risk, with external noise levels exceeding the upper guideline level of 55 dB $L_{Aeq, 16\text{hour}}$ in BS 8233:2014. Medium risk areas therefore requiring mitigation; this can include a range of measures including boundary treatments in the form of suitably positioned garden fences, and strategic building placement.

Internal noise criteria are expected to be met with standard double glazing and trickle ventilators throughout the development; however, detailed requirements should be confirmed at the final design stage. For overheating scenarios, additional mitigation such as enhanced glazing, reduced window sizes, solar shading or mechanical ventilation may be necessary in higher-risk areas to comply with Approved Document O.

The implementation of the recommended noise mitigation measures within this report will ensure that the development achieves compliance with the specified external and internal noise design targets.

In summary, the site is considered suitable for residential development from a noise perspective, provided good acoustic design principles are incorporated into the masterplan at the detailed design stage.



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1 Introduction

1.1 Instruction

RSK Acoustics has been appointed by Ashflame Properties Ltd to carry out a noise assessment of the proposed residential development of up to 200 dwellings on Land East of Calne Road, Lyneham, Wiltshire.

The noise assessment is to be submitted alongside an outline planning application (with all matters reserved except for access) for residential development (Use Class C3), provision of public open space, and associated infrastructure on land east of the A3102, Lyneham.

This report describes the assessment methodology, baseline conditions currently prevailing across the proposed site and the effect of noise on the proposed residential development, in order to determine the suitability of the site for residential purposes.

Mitigation measures have been identified where necessary and practicable to achieve appropriate acoustic standards.

The objectives of the assessment presented within this report are as follows:

- Establish existing noise levels and characterise the acoustic environment across the proposed development site
- Assess the suitability of the site for development in terms of noise
- Provide outline mitigation measures to ensure suitable levels of amenity for proposed noise-sensitive development

A glossary of acoustic terminology relevant to the assessment is appended to this document.

1.2 Site Location and Description

The site is bounded to the west by the A3102, to the north by the Ministry of Defence (MOD) 'Defence School of Electronic and Mechanical Engineers'. Immediately south and east of the site is agricultural land and at approximately 150 metres south is an existing poultry farm.

Illustrative masterplan and parameter plan are reproduced in Appendix B – Project Drawings for reference and information purposes.

A monitoring location plan is presented in Section 4 of this report (see Figure 1).



2 Regulatory Framework

2.1 National Policy Guidance and Standards

A summary of the planning policies, standards and guidance documents relevant to this assessment is provided in Table 1.

Document	Summary
Planning policy	
National Planning Policy Framework (NPPF) 2025	The NPPF sets out the government's planning policies for England and how they are to be applied. The NPPF includes statements relating to noise and the requirement to take it into account during the planning process.
Noise Policy Statement for England (NPSE) 2010	The NPSE sets out the long-term vision of Government noise policy: to promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.
Standards and guidance	
BS 7445-1:2003 <i>'Description and measurement of environmental noise'</i>	BS 7445 defines the basic quantities to be used for the description of noise in community environments and describes basic procedures for the determination of these quantities.
BS 8233:2014 <i>'Guidance on sound insulation and noise reduction for buildings'</i>	BS 8233 provides guidance for controlling noise in and around buildings. It applies to the design of new buildings and refurbished buildings undergoing a change of use.
BS EN IEC 60942:2018 <i>'Electroacoustics – Sound calibrators'</i>	BS EN IEC 60942 specifies the performance requirements for sound calibrators.
BS EN 61672-1:2013 <i>'Electroacoustics – Sound level meters'</i>	BS EN 61672-1 provides electroacoustic performance specifications for sound measuring instruments.
Overheating: <i>Approved Document O</i> , 2021	Approved Document O (ADO) of the Building Regulations aims to protect the health and welfare of occupants of the building by reducing the occurrence of high indoor temperatures. The document specifies internal noise limits which should be met to ensure the overheating mitigation strategy is usable.
ProPG: Planning & Noise <i>'Professional Practice Guidance on Planning & Noise'</i> , 2017	ProPG P&N has been produced to provide practitioners with guidance on a recommended approach to the management of noise within the English planning system in respect of new residential developments.

Table 1 Planning policies, standards and guidance

2.2 Local Policy

2.2.1 Wiltshire Core Strategy (adopted January 2015)

The development plan for Wiltshire currently comprises the Wiltshire Core Strategy (adopted January 2015) alongside saved policies from former district local plans (Wiltshire Council, 2015). The Core Strategy establishes the spatial strategy for development across the county for the period 2006-2026, including strategic policies for design quality, environmental protection, and amenity safeguarding.



Current Adopted Policy (Wiltshire Core Strategy 2015):

- Core Policy 57: Ensuring High Quality Design and Place Shaping

Requires development to have regard to the compatibility of adjoining uses, impact on amenities of existing occupants, and ensure appropriate amenity levels including consideration of *"privacy, overshadowing, vibration, and pollution (e.g. light intrusion, noise, smoke, fumes, effluent, waste or litter)"*.

2.2.2 Wiltshire Local Plan Pre-Submission Draft 2020-2038

Wiltshire Council is undertaking a comprehensive Local Plan Review to replace the Core Strategy and establish an updated planning framework for the period 2020-2038. The Wiltshire Local Plan Pre-Submission Draft (Regulation 19) was published for consultation in September 2023 (Wiltshire Council, 2023). This emerging plan represents the council's submission version prior to independent examination and, once adopted, will supersede the Core Strategy and remaining saved district plan policies.

Emerging Policy (Wiltshire Local Plan Pre-Submission Draft 2020-2038):

- Policy 98: Ensuring High Quality Design and Place Shaping

Requiring development to ensure appropriate amenity levels including consideration of *"vibration, and pollution (e.g. light intrusion, noise (including vibration), smoke, odour, fumes, effluent, waste or litter)"*.

- Policy 91: Conserving and Enhancing Wiltshire's Landscapes

Requires development to *"be located and designed to prevent erosion of relative tranquillity (light pollution and noise) and intrinsically dark landscapes"*.

- Policy 88: Biodiversity and Geodiversity

Requires consideration of disturbance effects including noise over the lifetime of development including construction, operational and restoration phases.

- North Wiltshire Local Plan Policy NE18: Noise and Pollution

This saved policy, which prohibited development generating or subject to harm from excessive noise or vibration, has been removed in the emerging plan with its objectives subsumed into Policy 98 (Wiltshire Council, 2023, p.312-313).

2.3 Local Authority Consultation

2.3.1 Pre-Survey Consultation

Consultation was sought with Wiltshire Unitary County Council by email on 30 September 2025 prior to the baseline noise survey. This consultation detailed the proposed approach to the monitoring and assessment methodology in accordance with Planning Policy Framework (NPPF) 2025 and Wiltshire Council specific guidelines (*Wiltshire Core Strategy*).

As of the date of this report, the only correspondence received from the Council was a request for a more precise site location. This was addressed with a response sent on 9 October 2025. No additional feedback or communication from the Council has been received at the time of completing this noise assessment.



3 Acoustic Standards for Development

3.1 Initial Noise Risk Assessment

ProPG Planning & Noise provides a framework for an early-stage approach to understanding the potential risk of adverse effects from noise. This should not be used as the basis of any decision regarding site suitability; however, it enables identification of the challenges that will be faced when determining the mitigation measures required to meet residential acoustic design standards.

Noise risk assessment	Potential effect	Pre-planning application advice
Indicative daytime noise levels ($L_{Aeq,16hr}$) Indicative night-time noise levels ($L_{Aeq,8hr}$) High Medium Low Negligible	Increasing risk of adverse effect	High noise levels indicate that there is an increased risk that development may be refused. This risk may be reduced by demonstrating a good acoustic design process has been followed. As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed. It should be demonstrated how the adverse impacts of noise will be mitigated and minimised and that a significant adverse noise impact will be avoided in the finished development. At low noise levels, the site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed and demonstrated in an acoustic design statement, which confirms how the adverse impacts of noise will be mitigated and minimised in the finished development.
	No adverse effect	These noise levels indicate that the development site is likely to be acceptable from a noise perspective, and the application need not normally be delayed on noise grounds.
Notes [1] Noise levels do not account for the acoustic effect of any scheme mitigation measures [2] $L_{Aeq,16hr}$ for daytime (07:00 – 23:00), $L_{Aeq,8hr}$ for night-time (23:00 – 07:00) [3] An indication that there may be >10 noise events at night with $L_{Amax} > 60dB$ means that the site should not be regarded as a negligible risk		

Table 2 ProPG initial site noise risk assessment



3.2 Design Targets for Residential Dwellings

For the purpose of this assessment, the acoustic standards set out in Table 3 have been adopted during normal conditions. The values presented in the table represent the level above which adverse effects on health and quality of life can be detected.

Location	Criterion	Origin
Internal daytime noise levels in living rooms and bedrooms	35 dB $L_{Aeq,16hr}$	BS 8233:2014
Internal daytime noise levels within dining rooms/areas	40 dB $L_{Aeq,16hr}$	BS 8233:2014
Internal noise levels within bedrooms at night	30 dB $L_{Aeq,8hr}$	BS 8233:2014
Internal noise levels within bedrooms during the night from individual events (≤ 10 -15 occurrences)	45 dB L_{AFmax}	ProPG
Noise levels within external amenity areas associated with dwellings	50-55 dB $L_{Aeq,T}$ ^[1]	BS 8233:2014
Notes ^[1] 50 dB $L_{Aeq,T}$ is the desirable threshold level, 55 dB $L_{Aeq,T}$ is the upper guideline level		

Table 3 Noise criteria for residential use (normal conditions)

3.3 Design Targets for Residential Dwellings during Overheating Scenario

While compliance with Approved Document O of the Building Regulations (AD-O) criteria is required as evidence of compliance with Building Regulations, guidance is provided within this document regarding the noise constraints at planning stage due to the potential implications this may have on the development overheating mitigation strategy.

It is widely considered that a relaxation to the normal acoustic criteria is permissible during peak summer months where occupants may be willing to compromise on noise ingress for purpose of thermal comfort. Suitable internal noise levels during overheating periods (i.e. when open windows or other measures are required to be implemented for the control of overheating) are provided below.

Location	Criterion	Origin
Internal noise levels within bedrooms at night	40 dB $L_{Aeq,8hr}$	AD-O
Internal noise levels within bedrooms during the night from individual events (≤ 10 occurrences)	55 dB L_{AFmax}	AD-O

Table 4 Noise criteria for residential use (overheating control)

Based on typical assumptions, the resulting outside-to-inside level difference for window openings necessary to satisfy the simplified method of AD-O are expected to be approximately 5 dB for 'high' risk locations and 10 dB for 'moderate' risk locations. The site is located in a 'moderate' risk location.



4 Baseline Noise Survey

4.1 Noise Survey Methodology

Baseline noise measurements were undertaken at various positions across the site between Wednesday 8 October and Tuesday 14 October 2025. The survey included long-term, continuous measurements at three unattended monitoring locations in close proximity to the main noise sources affecting the site.

Table 5 below describes the monitoring locations, while Figure 1 illustrates their positions on a map.

Location	Location (what3words)	Description
N-MP1	salary.bleaching.rejected	Quantify industrial noise emissions from existing poultry farm
N-MP2	everyone.poses.match	Quantify road noise emissions from A3102
N-MP3	free.imparting.kilowatt	Quantify noise emissions from the Defence School of Electronic and Mechanical Engineer site

Table 5 Monitoring locations.



Figure 1 Monitoring location plan



Survey Equipment

The following equipment was used to undertake the noise survey.

Location	Equipment	Type	Serial number	Calibration date
N-MP1	Sound Level Meter	01 dB Fusion	15172	12/05/2025
N-MP2	Sound Level Meter	01 dB Fusion	15187	17/07/2025
N-MP3	Sound Level Meter	01 dB Fusion	14916	04/02/2025
All	Acoustic Calibrator	Rion NC-75	35124522	14/03/2025

Table 6 Monitoring equipment

All measurements were undertaken in free field conditions with the microphone positioned at least 3.5 metres away from significant reflecting surfaces and at 1.5 metres above ground height to the requirements of BS 7445.

The sound level meters used conform to the Class 1 requirements of BS EN 61672-1:2013. The calibrator used conforms to the Class 1 requirements of BS EN IEC 60942:2018.

The equipment used had a calibration history that is traceable to a certified calibration institution which is available on request. The calibration of the sound level meters was checked before and after measurements, with no significant drift noted (within ± 0.5 dB tolerance). Measurements were logged in continuous 15-minute integration periods (with supplementary 1-second data).

4.2 Weather Conditions

Weather conditions are provided based on publicly available data from Weather Station ICHIPP56¹, installed at Dauntsey Wharf approximately 3 km from the site, and observations at the beginning and end of the survey period. The weather conditions are detailed in Table 7.

Date	Average Temperature (°C)	Total Precipitation (mm)	Average Wind Speed (m/s)	Prevailing Wind Direction
Wednesday 08/10/2025	11	0	<1	N
Thursday 09/10/2025	11	0	<1	N
Friday 10/10/2025	12	0	<1	N
Saturday 11/10/2025	10	0	<1	N
Sunday 12/10/2025	8	0	1	NE
Monday 13/10/2025	8	0	1	NE
Tuesday 14/10/2025	10	0	3	ENE

Table 7 Meteorological conditions

Analysis of weather data determined that conditions were generally conducive to noise monitoring.

¹ <https://www.wunderground.com/dashboard/pws/ICHIPP56/graph/2025-10-14/2025-10-14/daily>



5 Baseline Noise Survey Results

A summary of the measured noise levels at locations MP1 to MP3 are presented in Table 8 to Table 10.

Measured levels include the following metrics:

- $L_{Aeq, T}$ The equivalent continuous A-weighted sound pressure level over a specified time interval T, representing the constant sound level that would contain the same acoustic energy as the actual fluctuating sound over that period. $L_{Aeq, 16hr}$ and $L_{Aeq, 8hr}$ form the primary metric for initial site noise risk assessment and overall noise impact evaluation.
- $L_{AFmax, 2 mins}$ (10th highest) quantifies the 10th highest maximum A-weighted sound pressure level measured using Fast (F) time weighting. The highest L_{AFmax} within each 2-minute period is used in the analysis².
- $L_{A10, T}$ The A-weighted sound pressure level exceeded for 10% of the measurement time interval T.
- $L_{A90, T}$ The A-weighted sound pressure level exceeded for 90% of the measurement time interval T.

Time history plot for each monitoring location is provided in Appendix B.

5.1 Location MP1

Date	Time period, T	Measured noise levels, dB ⁽¹⁾			
		$L_{Aeq, T}$	$L_{AFmax, 2 mins}$ (10th highest)	$L_{A10, T}$	$L_{A90, T}$
Wednesday 08/10/2025	Daytime (11:00-23:00) ⁽²⁾	47	-	49	41
	Night-time (23:00-07:00)	43	55	43	32
Thursday 9/10/2025	Daytime (07:00-23:00)	48	-	49	42
	Night-time (23:00-07:00)	40	51	42	35
Friday 10/10/2025	Daytime (07:00-23:00)	50	-	50	41
	Night-time (23:00-07:00)	40	55	42	33
Saturday 11/10/2025	Daytime (07:00-23:00)	49	-	47	39
	Night-time (23:00-07:00)	39	53	41	32
Sunday 12/10/2025	Daytime (07:00-23:00)	46	-	46	38
	Night-time (23:00-07:00)	40	51	41	31
Monday 13/10/2025	Daytime (07:00-23:00)	48	-	47	40
	Night-time (23:00-07:00)	41	53	41	34
Tuesday 14/10/2025	Daytime (07:00-12:00) ⁽²⁾	53	-	51	43
Averaged ⁽³⁾ noise levels	Daytime (07:00-23:00)	48	-	48	40
	Night-time (23:00-07:00)	40	53	42	33
⁽¹⁾ $L_{Aeq, T}$ values are the logarithmic average of $L_{Aeq, 15min}$ samples. The $L_{A10, T}$ and $L_{A90, T}$ are the arithmetic average of $L_{A10, 15min}$ and $L_{A90, 15min}$ samples. L_{AFmax} accounts for the 10 th highest $L_{AFmax, 2min}$ sample within the period.					
⁽²⁾ Measurements not taken throughout full 16-hour period and therefore not included in the calculation of averaged noise levels					
⁽³⁾ Arithmetic average of derived daytime 16-hour and night-time 8-hour values. Partial periods are not included					

Table 8 Noise monitoring data summary – MP1

The noise environment at MP1 was dominated by road traffic noise from the A3102. Noise from the poultry farm was barely audible. Noise from wind in foliage and birdsong was audible at the monitoring location.

² Studies referenced in the Approved Document O Noise Guide demonstrate that measurement sampling periods between 1-minute and 3-minutes correlate most closely to actual awakening events, compared with longer sampling periods.



Noise from the poultry farm was measured as barely audible during baseline surveys and, while included in the overall acoustic environment, was not significant enough to affect the proposed development. In contrast, noise emissions from the A3102 will impact the proposed development to a far greater extent. Based on this, noise emissions from the poultry farm have not been considered for further specific assessment.

5.2 Location MP2

Date	Time period, T	Measured noise levels, dB ⁽¹⁾			
		L _{Aeq,T}	L _{AFmax,2 mins} (10th highest)	L _{A10,T}	L _{A90,T}
Wednesday 08/10/2025	Daytime (11:00-23:00) ⁽²⁾	63	-	67	43
	Night-time (23:00-07:00)	57	78	50	30
Thursday 09/10/2025	Daytime (07:00-23:00)	64	-	68	43
	Night-time (23:00-07:00)	56	76	47	26
Friday 10/10/2025	Daytime (07:00-23:00)	64	-	68	44
	Night-time (23:00-07:00)	55	76	50	28
Saturday 11/10/2025	Daytime (07:00-23:00)	63	-	67	42
	Night-time (23:00-07:00)	54	75	49	28
Sunday 12/10/2025	Daytime (07:00-23:00)	63	-	67	42
	Night-time (23:00-07:00)	58	77	50	29
Monday 13/10/2025	Daytime (07:00-23:00)	64	-	68	45
	Night-time (23:00-07:00)	57	76	48	28
Tuesday 14/10/2025	Daytime (07:00-12:00) ⁽²⁾	65	-	69	48
Averaged ⁽³⁾ noise levels	Daytime (07:00-23:00)	63	-	68	44
	Night-time (23:00-07:00)	56	76	49	28
⁽¹⁾ L _{Aeq,T} values are the logarithmic average of L _{Aeq,15min} samples. The L _{A10,T} and L _{A90,T} are the arithmetic average of L _{A10,15min} and L _{A90,15min} samples. L _{AFmax} accounts for the 10 th highest L _{AFmax,2min} sample within the period.					
⁽²⁾ Measurements not taken throughout full 16-hour period and therefore not included in the calculation of averaged noise levels					
⁽³⁾ Arithmetic average of derived daytime 16-hour and night-time 8-hour values. Partial periods are not included					

Table 9 Noise monitoring data summary – MP2

During installation and collection of the sound level meter at location MP2, the dominant source of noise across the site was road traffic along the A3102. Movement from foliage due to wind and birdsong was also audible.



5.3 Location MP3

Date	Time period, T	Measured noise levels, dB ⁽¹⁾			
		L _{Aeq,T}	L _{AFmax,2 mins} (10th highest)	L _{A10,T}	L _{A90,T}
Wednesday 08/10/2025	Daytime (11:00-23:00) ⁽²⁾	44	-	45	35
	Night-time (23:00-07:00)	42	56	41	28
Thursday 09/10/2025	Daytime (07:00-23:00)	47	-	49	39
	Night-time (23:00-07:00)	36	50	36	24
Friday 10/10/2025	Daytime (07:00-23:00)	46	-	48	37
	Night-time (23:00-07:00)	38	53	40	26
Saturday 11/10/2025	Daytime (07:00-23:00)	42	-	43	33
	Night-time (23:00-07:00)	34	46	35	26
Sunday 12/10/2025	Daytime (07:00-23:00)	40	-	41	32
	Night-time (23:00-07:00)	33	46	33	25
Monday 13/10/2025	Daytime (07:00-23:00)	41	-	41	34
	Night-time (23:00-07:00)	32	44	32	25
Tuesday 14/10/2025	Daytime (07:00-12:00) ⁽²⁾	44	-	43	36
Averaged ⁽³⁾ noise levels	Daytime (07:00-23:00)	43	-	44	35
	Night-time (23:00-07:00)	36	49	36	26
⁽¹⁾ L _{Aeq,T} values are the logarithmic average of L _{Aeq,15min} samples. The L _{A10,T} and L _{A90,T} are the arithmetic average of L _{A10,15min} and L _{A90,15min} samples. L _{AFmax} accounts for the 10 th highest L _{AFmax,2min} sample within the period.					
⁽²⁾ Measurements not taken throughout full 16-hour period and therefore not included in the calculation of averaged noise levels					
⁽³⁾ Arithmetic average of derived daytime 16-hour and night-time 8-hour values. Partial periods are not included					

Table 10 Noise monitoring data summary – MP3

The noise environment at MP3 consisted of distant traffic noise from the A3102, movement of foliage due to wind, birdsong and occasional airplane noise. No audible activity on from the Defence School of Electronic and Mechanical Engineer site was observed.



6 Noise Assessment Methodology

6.1 Noise Prediction Model

A computer noise model of the proposed development has been constructed using SoundPLAN noise v9.1. Noise levels across the proposed development site have been derived from the noise prediction model, which has been calibrated against the measured levels at the baseline survey locations.

The noise source included in the model is the A3102. The model considers the below scenarios:

- Daytime - ambient $L_{Aeq,16hr}$ (07:00 – 23:00).
- Night-time - ambient $L_{Aeq,8hr}$ (23:00 – 07:00).
- Night-time – Maximum L_{AFmax} (23:00 – 07:00).

An overview of the modelling parameters is provided in Table 11. The results are presented in Appendix C.

Item	Setting
Algorithm	Calculation of Road Traffic Noise (CRTN) - for roads during daytime and night-time.
Ground absorption	Hard, acoustically reflective ground (0.0 coefficient): Roads and hard standing areas. Acoustically soft (assumed 0.7 coefficient): Grass or vegetated areas.
Meteorological conditions	10 degrees Celsius. 70 % humidity. Wind from source to receiver.
Receptor height	Ground Floor: 1.5 metres above ground First Floor: 4.0 metres above ground
Source Modelling	Calibration of the model accounts for the road network acting as a source of noise impacting the site (Road / Line source).
Site Layout	The indicative site boundary (provided by the client) has been incorporated.
Terrain	OS Terrain data (1 metre resolution) has been included within the model.

Table 11 Modelling parameters

6.2 Model Calibration

Differences between measured levels and predicted/modelled levels are presented in Table 12.

Location	Measured noise level, dB			Predicted noise level, dB			Difference, dB		
	Day	Night		Day	Night		Day	Night	
	$L_{Aeq,16h}$	$L_{Aeq,8h}$	L_{AFmax}^1	$L_{Aeq,16h}$	$L_{Aeq,8h}$	L_{AFmax}	$L_{Aeq,16h}$	$L_{Aeq,8h}$	L_{AFmax}
MP1	48	40	-	47	41	-	-1	1	-
MP2	63	56	76	63	56	76	0	0	0
MP3	43	36	-	45	39	-	2	3	-
Note: 1 $L_{AFmax,2 mins}$ (10 th highest)									

Table 12 Noise model calibration levels

Calibrated noise levels at MP1 and MP2 are within ± 1 dB(A) of measured levels. At MP3 the night-time predictions are + 3 dB. This is considered an acceptable level of confidence to the modelling exercise, with the + 3 dB calibration offering a conservative estimate of noise emissions.



The L_{AFmax} assessment has been based on calibration of the measured values from MP2 alone, as it is the closest to the dominant noise source, namely the A3102 which is considered the reasonable cause of night-time maximum noise level across the site.

The confidence in the model calibration justifies the exclusion of the nearby poultry farm and the Defence School of Electronic and Mechanical Engineer site from further specific assessment, as their limited audibility and lack of measurable impact would otherwise have affected calibration beyond acceptable limits.



7 Site Suitability and Recommendations

7.1 Site Overview

Noise contour maps, illustrating in graphical format how the noise attenuates across the site, are provided in Appendix C.

Drawing on the indicative masterplan (see Figure 1), the site has been categorised into 11 different residential areas, presented in Appendix C. The highest predicted noise levels and risk categories (in line with ProPG risk assessment method, shown in Table 2) for each of the Areas, are summarised below in Table 13.

Proposed Residential Areas	Predicted Noise Level, dB			Pro PG
	L _{Aeq} , 16 hour	L _{Aeq} , 8 hour	L _{AFmax} , 2 mins	Risk Category
Area 1	59	54	69	Medium Risk
Area 2	58	52	66	Medium Risk
Area 3	57	52	65	Medium Risk
Area 4	57	52	67	Medium Risk
Area 5	53	48	57	Low Risk
Area 6	51	46	54	Low Risk
Area 7	50	45	53	Low Risk
Area 8	50	45	50	Low Risk
Area 9	48	43	49	Low Risk
Area 10	48	43	49	Low Risk
Area 11	47	43	49	Low Risk

Table 13 Residential area noise emission exposure

In accordance with the ProPG risk assessment method (refer to Table 2), the predicted noise levels along the western site boundary would categorise the western residential areas of site as '**medium risk**' of adverse effects due to noise (western part of Areas 1 – 4). Moving eastwards into the site, the noise levels would be less than 55 dB L_{Aeq,16hr} during the daytime and 50 dB L_{Aeq,8hr} during the night-time, which would categorise this area as being at '**low risk**' of adverse effects due to noise (Areas 5 – 11 and eastern part of Areas 1 – 4).

The predicted maximum noise levels events, vary between 70 dB L_{AFmax} at the worst impacted residential area (Area 1), to approximately 50 dB L_{AFmax} at Areas 9 – 11 towards the eastern boundary.

7.2 Acoustic Attenuation Measures

7.2.1 External Amenity Noise Levels

As illustrated in Appendix C, predicted daytime noise levels are at or below 55 dB L_{Aeq,16hr} across the majority of the proposed residential areas (Areas 5 - 11 and eastern part of Areas 1 – 4). This meets the guideline within BS 8233:2014 for outdoor spaces.

In the western part of Areas 1 – 4, predicted daytime noise levels are up to 59 dB L_{Aeq,16hr}. These levels exceed the recommended upper limit of 55 dB L_{Aeq,16hr} for external amenity areas in BS 8233:2014; it is recommended that good acoustic design strategies are implemented to reduce the external amenity noise levels to within acceptable levels. Good acoustic design strategies include:

- Positioning the gardens behind the proposed dwellings to allow the first row of buildings to provide screening between the A3102 and the external amenity areas
- Minimise gaps between buildings, possibly by placing garages or outbuildings between homes.



The implementation of the recommended noise mitigation measures will ensure that the development achieves compliance with the specified external noise design targets.

It should be noted that the predictions are based on an 'open' site, without the screening afforded by the future development dwellings and their final positioning.

7.2.2 Internal Noise Levels

Simple level difference calculations have been undertaken to determine the acoustic attenuation required of the building façade. Assuming a traditional construction with brickwork external walls and tiled (insulated) roof, the weakest elements of the building envelope are typically windows and ventilators.

For the basis of this assessment, standard double glazing and standard trickle ventilators are assumed to achieve a 25 dB R_w+C_{tr} reduction between the noise levels outside to inside.

Based upon the model output as illustrated in Appendix C and provided in Table 13, the noise emissions are predicted to be below 60 dB $L_{Aeq,16hr}$ (daytime), 55 dB $L_{Aeq,8hr}$ (night-time) and 70 dB L_{AFmax} (night-time) across all the proposed residential areas.

Therefore, the internal noise criteria of 35 dB $L_{Aeq,16hr}$ (daytime), 30 dB $L_{Aeq,8hr}$ (night) and 45 dB L_{AFmax} (night) as mentioned in Table 3 should be achieved with standard double-glazing windows and trickle vents across the site. The final requirements for the building envelope design would be subject to the final masterplan incorporated as part of the detailed design.

7.2.3 Control of Overheating

To comply with Approved Document O (AD-O), noise levels in bedrooms should not exceed 40 dB $L_{Aeq,8hr}$ or 55 dB L_{AFmax} (≤ 10 occurrences) during the night when an overheating mitigation strategy is adopted.

The site is within an area identified by AD-O to be at moderate risk of overheating (outside of London) and opening windows to remove excess heat in an overheating scenario would be expected to provide an outside to inside level difference of approximately 10 dB.

On this basis, internal noise levels are likely to exceed the AD-O criterion for residential dwellings at positions situated closest to the local roads (residential dwellings within Area 1 – Area 4). As such, a suitable attenuation strategy for these areas should be developed at detailed design in conjunction with the overheating engineer to ensure suitable internal conditions can be met.

Following the completion of an overheating assessment, the specific suite of mitigation measures applicable for the proposed scheme can be determined. The below provides indicative mitigation measures for consideration:

- Glazing with better G values
- Reduced window size
- Solar shading (such as shutters or external blinds)
- Mechanical ventilative cooling

It should be noted that the initial assessment is based on the simplified method of assessment. It is recommended during the detailed design (reserved matters) stage that input is sought from the wider design team to identify areas of overheating risk to ensure appropriate mitigation options are explored (where necessary).



8 Conclusions

RSK Acoustics Limited has been instructed by Ashflame Properties Ltd to undertake a noise assessment to support a planning application on Land East of Calne Road, Lyneham, Wiltshire. The applicant is seeking outline planning permission for the development of up to 200 new residential dwellings within the site.

A noise survey was undertaken between Wednesday 8 October and Tuesday 14 October 2025 to establish the baseline noise levels across the site, comprising unattended measurements throughout continuous daytime and night-time periods.

The assessment, following the ProPG Planning & Noise methodology, identified that most of the site is at low risk of adverse noise effects, with predicted external noise levels complying with BS 8233:2014 guidelines. Proposed developable areas nearest to the A3102 (western boundary) are categorised as medium risk, with the predicted external noise levels exceeding the upper guideline and therefore requiring mitigation; this can include a range of measures including boundary treatments in the form of suitably positioned garden fences, and strategic building placement.

Internal noise criteria are expected to be met across the site with standard double glazing and trickle ventilators assuming those façade treatments achieve a 25 dB R_w+C_{tr} reduction in noise between outside to inside. It is recommended that the final requirements be confirmed at the detail design stage. For overheating scenarios, additional mitigation may be necessary in higher-risk areas to comply with Approved Document O. The mitigation measures may include enhanced glazing, reduced window sizes, solar shading or mechanical ventilation. This is likely to be confined to those dwellings along the western part of the site, adjacent to the A3102.

The implementation of the recommended noise mitigation measures within this report will ensure that the development achieves compliance with the specified external and internal noise design targets.

In summary, the site is considered suitable for residential development from a noise perspective, provided that good acoustic design principles are incorporated into the masterplan and detailed design stages. These should include building orientation, strategic building placement, screening where practicable, and internal layout design to minimise noise impacts and ensure compliance with relevant standards.



Appendix A – Glossary

Term	Definition
Ambient sound	The total sound at a given place, usually a composite of sounds from many sources near and far.
dB	Decibel. Scale for expressing sound pressure level. It is defined as 20 times the logarithm of the ratio between the root mean square pressure of the sound field and a reference pressure i.e. 2×10^{-5} Pascal.
dB(A)	A-weighted decibel. This provides a measure of the overall level of sound across the audible spectrum with a frequency weighting to compensate for the varying sensitivity of the human ear to sound at different frequencies. Example sound levels include: 140 dB(A) Threshold of pain 120 dB(A) Threshold of feeling 100 dB(A) Loud nightclub 80 dB(A) Traffic at busy roadside 60 dB(A) Normal speech level at 1m 40 dB(A) Quiet office 20 dB(A) Broadcasting studio 0 dB(A) Median hearing threshold (1000 Hz)
Frequency	The repetition rate of a sound wave. The subjective equivalent in music is pitch. The unit of frequency is the Hertz (Hz), which is identical to cycles per second. A thousand hertz is often denoted as kHz, e.g. 2 kHz = 2000 Hz. Human hearing ranges approximately from 20 Hz to 20 kHz.
L_{A10,T}	A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 10 % of a given time interval.
L_{A90,T}	A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90 % of a given time interval.
L_{Aeq,T}	This is defined as the notional steady sound level over a stated period of time (T), would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period.
L_{AFmax}	The maximum A-weighted sound pressure level in a given time period measured with a 'fast' response.
R_w	Weighted sound reduction index. A single-number index which characterises the frequency dependent airborne sound insulation performance of building elements determined under laboratory conditions.



Appendix B – Project Drawings



Figure B 1: Illustrative Masterplan



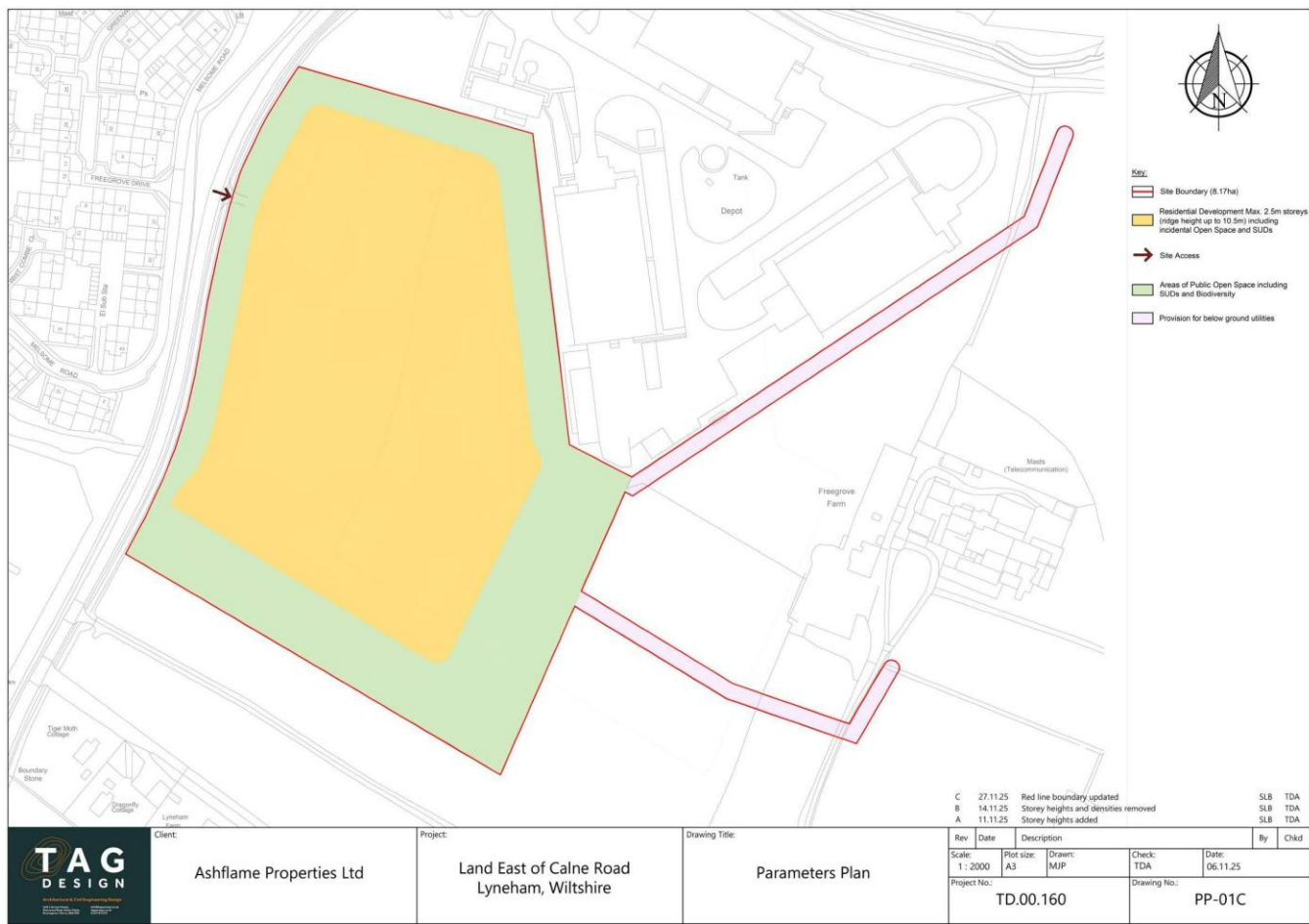


Figure B 2: Parameters Plan



Appendix C – Survey Results (Time History Graphs)

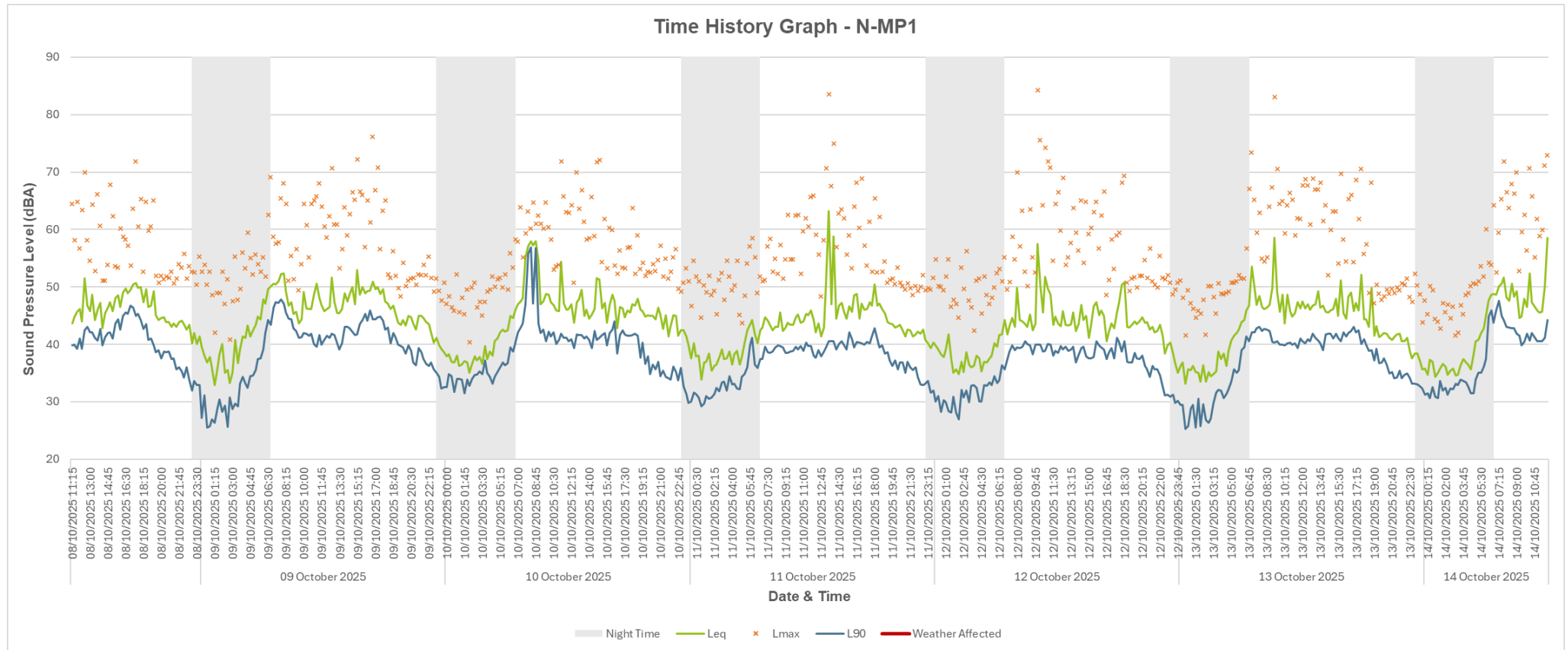


Figure B 3: N-MP1 Time History



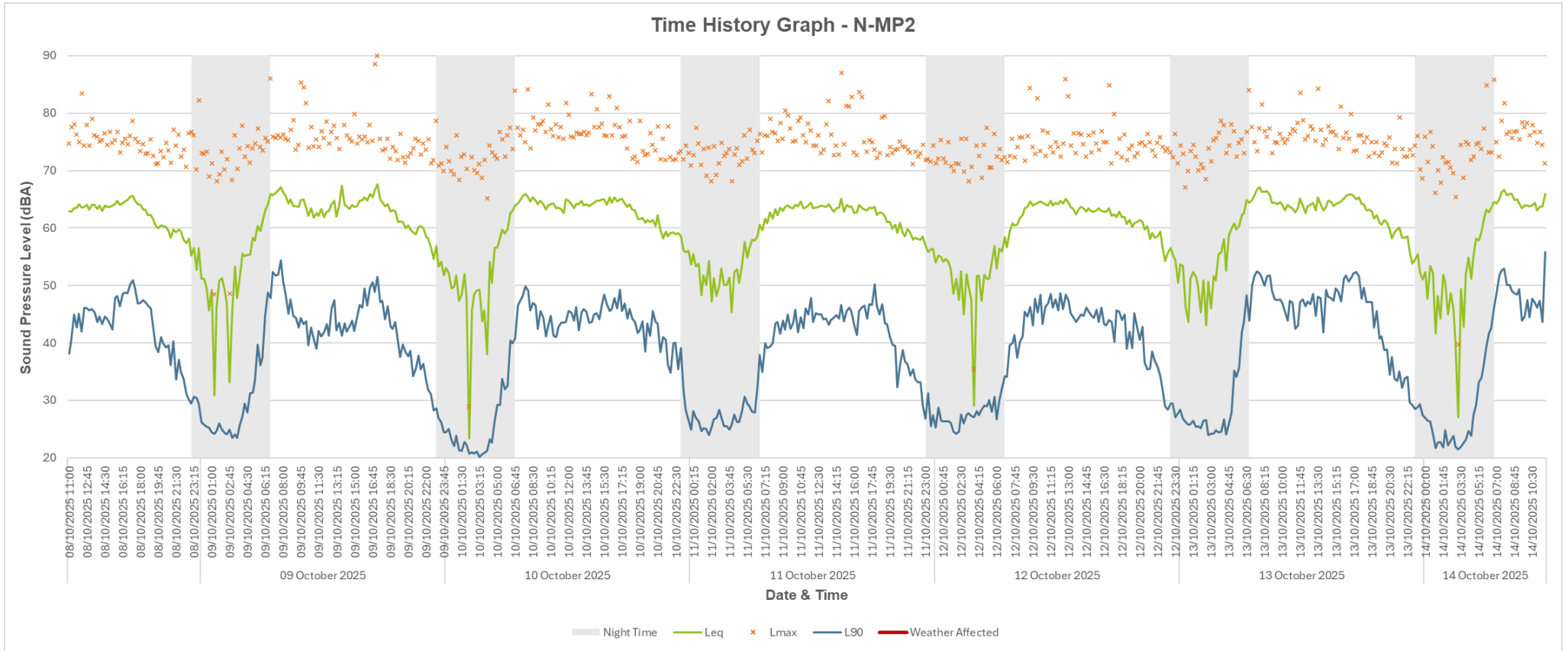


Figure B 4: N-MP2 Time History



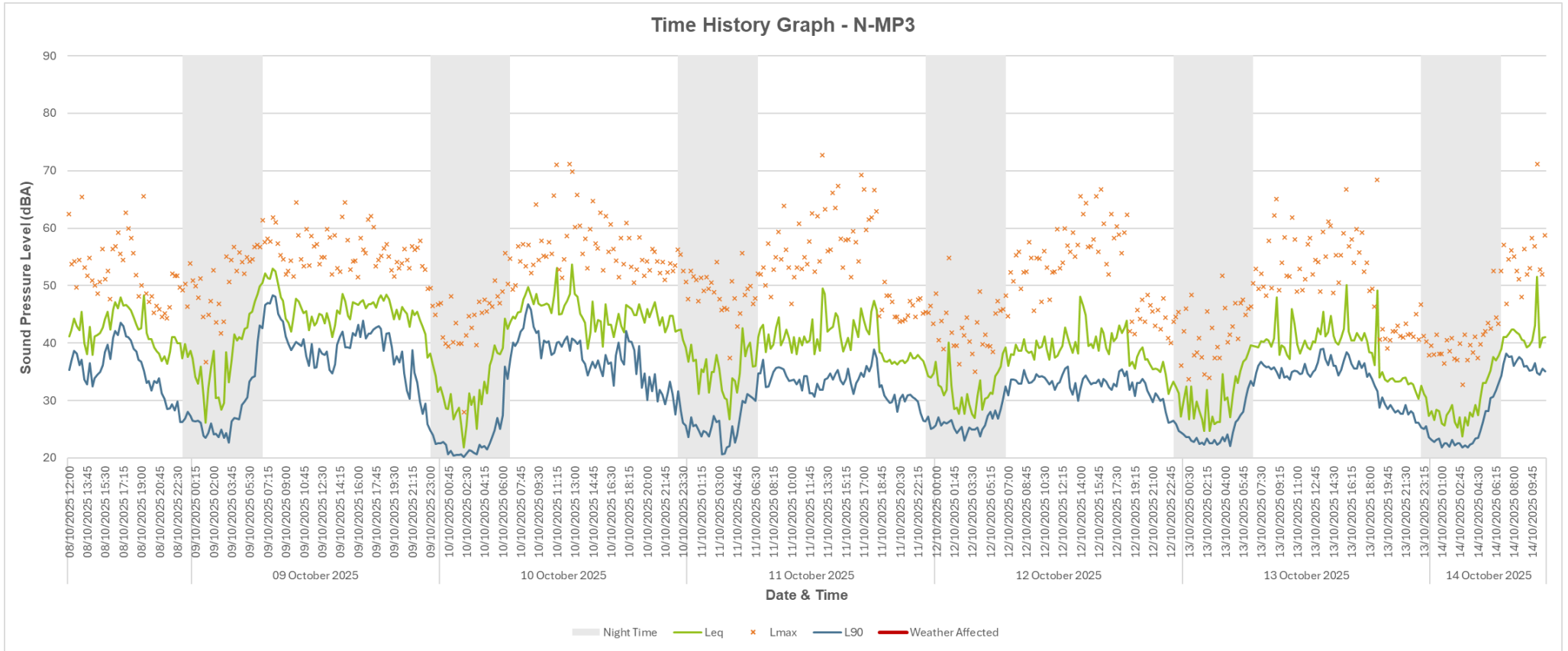


Figure B 5: N-MP3 Time History



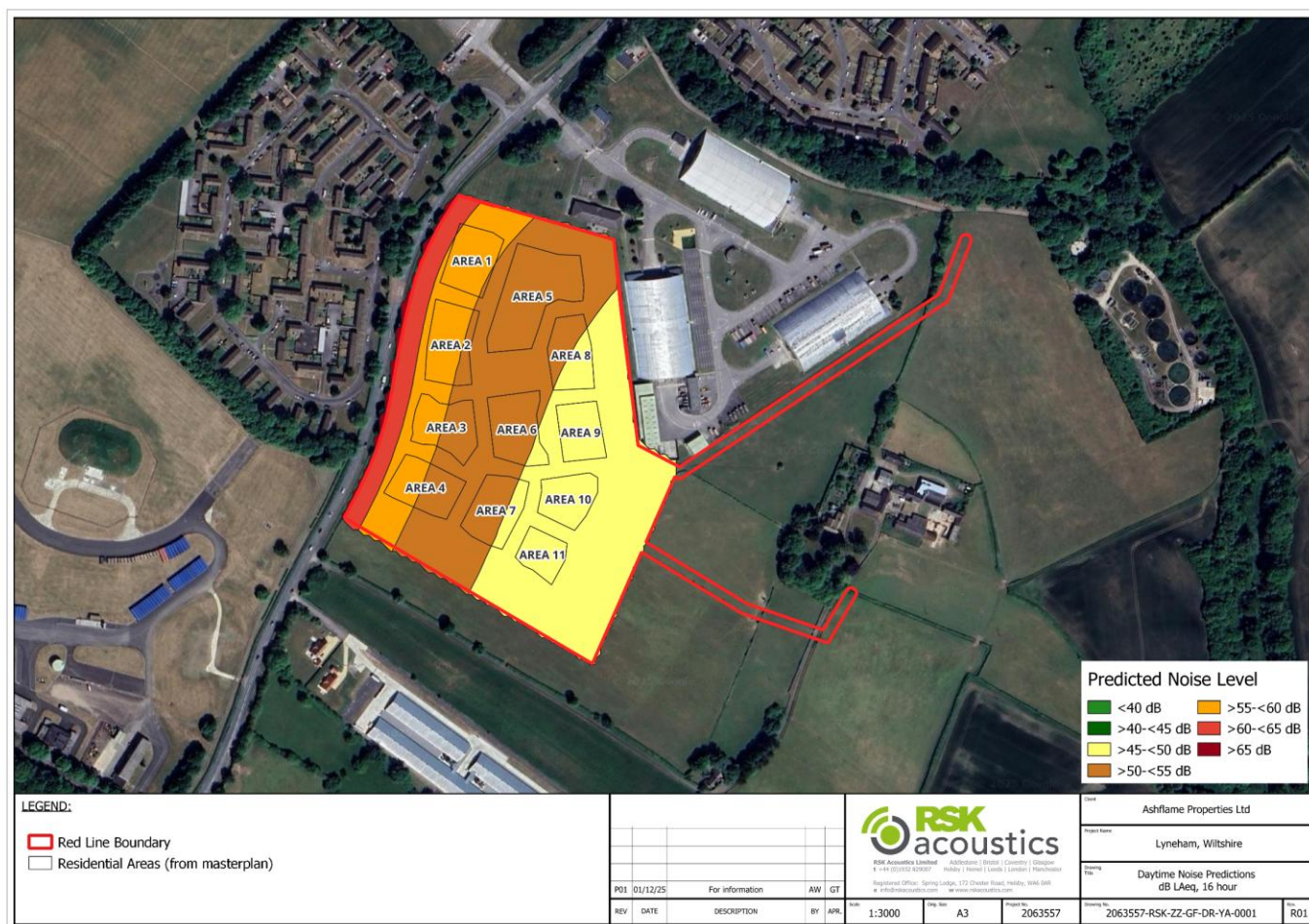


Figure D 1: Daytime Noise Predictions dB $L_{Aeq, 16\text{ hour}}$



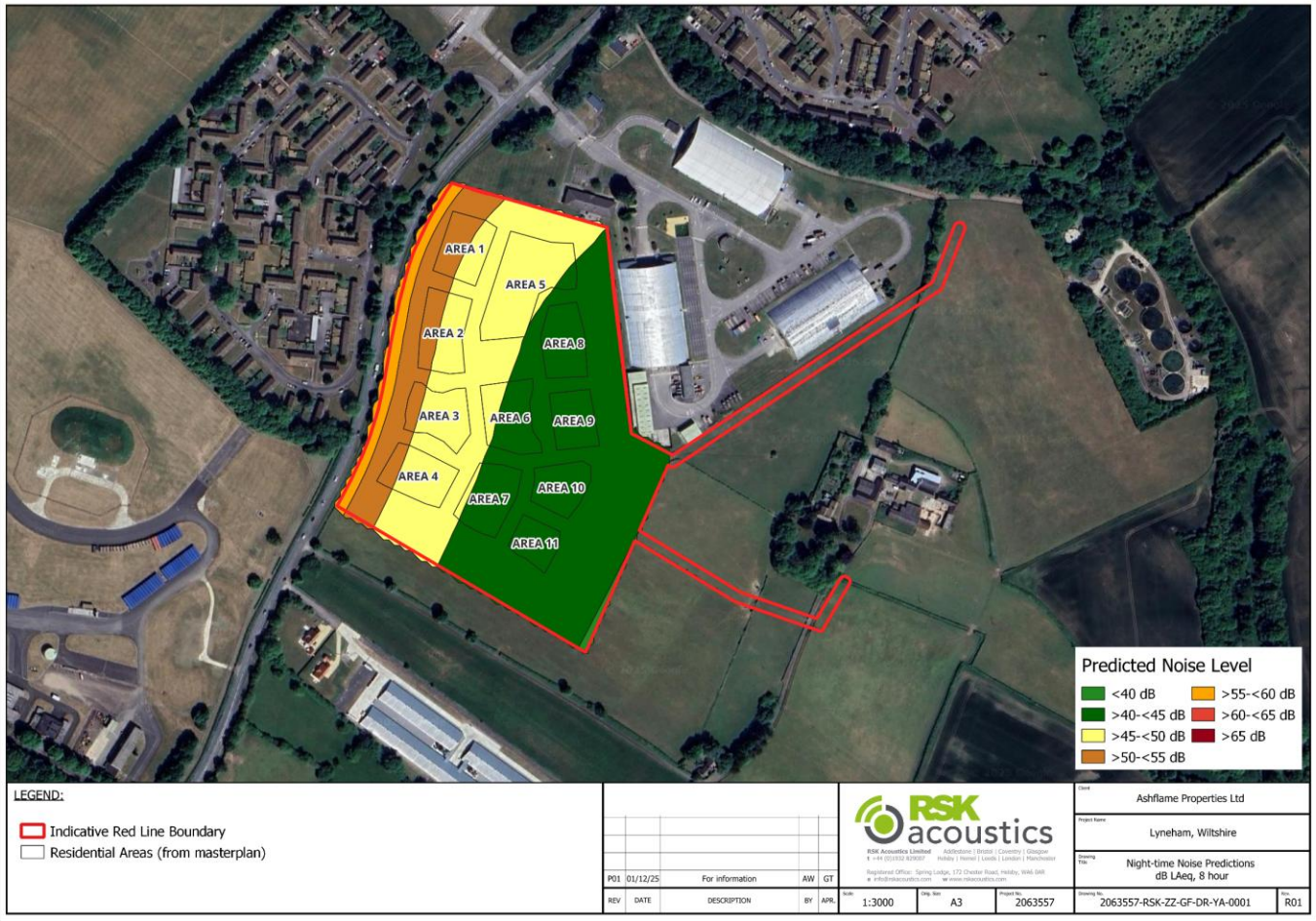


Figure D 2: Night-time Noise Predictions dB LAeq, 8 hour



