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**LAND WEST OF NORTH LODGE
CODFORD**

NOISE ASSESSMENT

Technical Report: R10948-1 Rev 4

Date: 11th July 2025

For: Gary Lewis

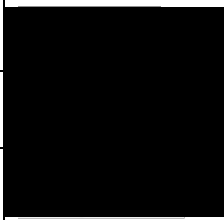


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Report Ref: R10948-1 Rev 4

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1.0 INTRODUCTION

- 1.1 24 Acoustics Ltd has been instructed by Gary Lewis to undertake a noise assessment at land to the west of North Lodge, Codford, in relation to the proposed development of two residential dwellings.
- 1.2 This report has assessed noise from road traffic using the A36 based on the latest proposals provided by Gary Lewis dated January 2023. This assessment has included:
- Ambient noise monitoring at the proposed site;
 - Assessment of internal noise levels within habitable rooms;
 - Assessment of noise levels within external amenity areas.
- 1.3 The report presents the results of the assessment, following site visits and an environmental noise survey undertaken between 16th to 22nd January 2025.
- 1.4 All noise levels in this report are quoted in dB relative to 20 μ Pa. A glossary of the acoustic terminology used in this report is provided in Appendix A.

2.0 SITE DESCRIPTION

- 2.1 The site is located on a no-through road, which runs north-west from near the junction of New Road and High Street at the north-west of Codford. The site is bounded by North Lodge to the south-east and an empty parcel of land to the north-west. The A36 forms the boundary along the south-western side of the site with the no-through road forming the north-eastern boundary.
- 2.2 Figure 1 shows an aerial image of the site and surroundings. Figure 2 shows the proposed site layout.
- 2.3 It is proposed to build two new two-storey four-bedroom residential properties, with gardens and individual double garages.
- 2.4 Noise from road traffic using the A36 is the main source of ambient noise across the site.

3.0 CRITERIA

National Planning Policy Framework and Noise Policy Statement for England

- 3.1 The National Planning Policy Framework (NPPF) [Reference 1] states that planning policies and decisions should aim to:
- a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development and avoid noise giving rise to significant adverse impacts on health and the quality of life;
 - b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.
- 3.2 The NPPF also refers to the Noise Policy Statement for England (NPSE) [Reference 2] which is intended to apply to all forms of noise, including environmental noise, neighbour noise and neighbourhood noise. The NPSE sets out the Government's long-term vision 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' which is supported by the following aims.
- Avoid significant adverse impacts on health and quality of life;
 - Mitigate and minimise adverse impacts on health and quality of life.
- 3.3 The NPSE defines the concept of a 'significant observed adverse effect level' (SOAEL) as 'the level above which significant adverse effects on health and quality of life occur'. The following guidance is provided within the NPSE:
- "It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available."*
- 3.4 The National Planning Practice Guidance (NPPG) [Reference 3] is written to support the NPPF with more specific planning guidance. The NPPG reflects the NPSE and states that noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment. It also states that

opportunities should be taken, where practicable, to achieve improvements to the acoustic environment. The NPPG states that noise can over-ride other planning concerns but should not be considered in isolation from the other economic, social, and environmental dimensions of the proposed development.

- 3.5 The NPPG expands upon the concept of SOAEL (together with Lowest Observable Adverse Effect Level, LOAEL and No Observed Effect Level, NOEL) as introduced in the NPSE and provides a table of noise exposure hierarchy for use in noise impact assessments in the planning system.
- 3.6 The NPPF, NPSE and NPPG documents do not refer to specific noise criteria. For residential developments 24 Acoustics considers that the spirit of the requirements of the NPPF and NPSE will be complied with if criteria from British Standard 8233: 2014 and guidance from the World Health Organisation are adopted for internal noise levels within dwellings.

Professional Practice Guidance on Planning & Noise (ProPG)

- 3.7 The Professional Practice Guidance on Planning and Noise (ProPG) [Reference 4] was published jointly by the Association of Noise Consultants, Institute of Acoustics and Chartered Institute of Environmental Health in May 2017. The guidance relates to the consideration of existing sources of transportation noise upon proposed new residential development and strives to:
- Advocate full consideration of the acoustic environment from the earliest possible stage of the development control process;
 - Encourage the process of good acoustic design in and around new residential developments;
 - Outline what should be taken into account in deciding planning applications for new noise-sensitive developments;
 - Improve understanding of how to determine the extent of potential noise impact and effect;
 - Assist the delivery of sustainable development.
- 3.8 The guidance describes a recommended approach for new residential development, which includes four key elements of the assessment process, identified below:
- i. Good acoustic design process;
 - ii. Internal noise level guidelines;

- iii. External amenity area noise assessment;
- iv. Assessment of other relevant issues.

3.9 It is important to note that the guidance in ProPG does not constitute an official government code of practice and neither replaces nor provides an authoritative interpretation of the law or government policy.

BS 8233:2014 and WHO Guidelines

- 3.10 BS 8233:2014 [Reference 5] provides design guidance for dwelling houses, flats and rooms in residential use and recommends that internal noise levels in dwellings do not exceed 35 dB $L_{Aeq,16hr}$ in living rooms and bedrooms during the day, 40 dB $L_{Aeq,16hr}$ in dining rooms during the day and 30 dB $L_{Aeq,8hr}$ in bedrooms at night.
- 3.11 BS 8233:2014 also notes that *"Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$, depending on the character and number of events per night."*
- 3.12 Although the guidelines have no formal standing, the World Health Organisation (WHO) provides guidance on desirable internal noise levels to minimise the risk of sleep disturbance. The WHO 2000 guidelines [Reference 6] suggest internal night-time noise levels not exceeding 30 dB $L_{Aeq,8hr}$ or regularly (10 – 15 times per night) exceeding 45 dB $L_{Amax,f}$ for 'a good night's sleep'.
- 3.13 BS 8233:2014 suggests an upper guideline value of 55 dB $L_{Aeq,16hr}$ for noise levels in external amenity spaces such as gardens. This is considered an aspirational limit and BS 8233 recognises that the desirable noise levels for external amenity areas are not always achievable in certain locations. BS 8233 also states that development should not be prohibited on the basis of noise levels within external amenity areas.

Local Authority Guidance

- 3.14 Wiltshire Council's Planning Consultation Guidance Note for Noise and Vibration (October 2023) refers to the guidance in the ProPG and states the following internal and external noise limits for residential properties impacted by transport noise:

- Bedrooms (night-time - 23.00 - 07.00) 30 dB L_{Aeq} (individual noise events should not normally exceed 45 dB $L_{Amax,f}$ by more than 10 times)
- Living Rooms (daytime - 07.00 - 23.00) 35 dB L_{Aeq}
- Gardens and terraces (daytime 07:00 – 23:00) 50 dB L_{Aeq}

Summary

3.15 The impact of noise upon the proposed development has been assessed using the following maximum noise levels, due to road traffic:

- 35 dB $L_{Aeq,16hr}$ daytime noise level for bedrooms and living rooms;
- 30 dB $L_{Aeq,8hr}$ night-time noise level for bedrooms;
- 45 dB $L_{Amax,f}$ night-time noise levels in bedrooms for regular events;

3.16 Noise levels in gardens shall be considered against the values discussed above (50 and 55 dB $L_{Aeq, 16hr}$ daytime noise levels in gardens.

4.0 ENVIRONMENTAL NOISE SURVEYS

Instrumentation

4.1 An environmental noise survey was undertaken on site between 16th and 22nd January 2025. The following instrumentation was used:

- 2 x Rion precision sound level meters Type NL-52;
- Brüel and Kjær acoustic calibrator Type 4231.

4.2 Noise measurements were undertaken in samples of 1 minutes, in terms of the overall A-weighted and octave band L_{eq} , L_{90} and $L_{max,f}$ noise levels. Measurements were made in accordance with BS 7445:1991 "Description and measurement of environmental noise Part 2 - Acquisition of data pertinent to land use" [Reference 7]. The noise monitor was fitted with an environmental wind shield

4.3 The instrumentation calibration was checked before and after the survey in accordance with the manufacturer's instructions. No significant drift in calibration was recorded. Calibration of 24 Acoustics' equipment is traceable to National Standards.

4.4 All instruments were fitted with environmental weather shields during the surveys. The weather during the survey period was generally fine a dry, with wind speeds less than 5 m/s.

4.5 The measurement locations are described below and shown in in Figure 1.

- Monitoring Location 1 – Towards the south-western side of the site, in-line with the proposed façade of Plot 2 at a height of 1.5 m to measure noise levels at ground floor level.
- Monitoring Location 2 – Towards the south-western side of the site, in-line with the proposed façade of Plot 2 at a height of 4.5 m to measure noise levels at first floor level.

4.6 The measured noise levels at the monitoring locations (expressed as L_{Aeq} , L_{A90} and L_{Amax}) are shown graphically in Appendix B. The measured average (L_{Aeq}) data values have been combined to generate the overall 16-hour daytime and 8-hour night-time free field levels; these are shown in Tables 1 & 2. 24 Acoustics considers the typical L_{Amax} value to be the 10th highest value during the night-time period.

Date	Measured Noise Levels		
	Daytime (07:00 to 23:00) dB L_{Aeq} , 16 hour	Night-time (23:00 to 07:00)	
		dB L_{Aeq} , 8 hour	dB L_{Amax}
Thursday 16/1/2025	59	54	68
Friday 17/1/2025	60	51	67
Saturday 18/1/2025	59	50	67
Sunday 19/1/2025	59	54	67
Monday 20/1/2025	59	54	67
Tuesday 21/1/2025	60	54	68
Wednesday 22/1/2025	62	-	-
Representative	60	53	67

Table 1: Ambient Noise Levels at Measurement Monitoring Location 1 (1.5m height)

Date	Measured Noise Levels		
	Daytime (07:00 to 23:00) dB LAeq, 16 hour	Night-time (23:00 to 07:00)	
		dB LAeq, 8 hour	dB LAmax
Thursday 16/1/2025	62	56	70
Friday 17/1/2025	62	54	70
Saturday 18/1/2025	61	53	69
Sunday 19/1/2025	61	56	70
Monday 20/1/2025	62	57	70
Tuesday 21/1/2025	62	57	70
Wednesday 22/1/2025	64	-	-
Representative	62	55	70

Table 2: Ambient Noise Levels at Measurement Monitoring Location 2 (4.5m height)

- 4.7 Measurements were undertaken at different heights to establish the screening provided by the existing earth bund which runs along the south-western boundary between the site boundary and the A36, which is the dominant source of noise at the site.
- 4.8 The existing bund rises at least 3 m above the A36 but the site is raised in this location so the effectiveness of the bund for acoustic screening is reduced (see Figure 3). This marginal screening is reflected in the measurements results in Tables 1 and 2.

5.0 ASSESSMENT

Acoustic Barrier

- 5.1 In order to reduce noise levels from the A36 affecting the proposed development, an acoustic barrier should be erected around the perimeter of the site as shown on Figure 2. The barrier should be at least 2.4 m height above site ground level and constructed from a solid, imperforate material (typically T&G timber) with a mass per unit area of at least 12 kg/m² (see Figure 3 for details). Note that increasing the mass of the acoustic barrier significantly beyond this value would present marginal gains with significant cost implications.

Good Acoustic Design

5.2 In accordance with the ProPG and Wiltshire Council's guidance, the design and layout of the site has incorporated the following 'good acoustic design' considerations:

- The proposed dwellings are set back from the A36, to maximise distance between the road and the dwelling;
- The topography of the site is advantageous for acoustic design, as the A36 is located in a cutting, with the proposed dwellings at a higher level;
- A noise barrier is proposed which, in conjunction with the topography of the site, will provide acoustic screening of noise levels from road traffic;
- Windows to some of the habitable rooms are not directly facing towards the road;
- External areas to the front of the dwelling (High Street side) will benefit from additional screening from the intervening building and garages.

Internal Noise Levels

5.3 Calculations based on drawings provided by Gary Lewis, dated January 2023 have been undertaken to determine the glazing requirements for the proposed residential property to ensure that the noise levels inside habitable rooms do not exceed 35 dB $L_{Aeq, 16 \text{ hour}}$ during the day and 30 dB $L_{Aeq, 8 \text{ hour}}$ at night (and also not regularly exceed 45 dB $L_{Amax, f}$ at night) from road traffic noise sources.

5.4 The calculations have assumed that external wall construction will comprise a cavity masonry construction, which will be specified to achieve a minimum sound insulation performance of 51 dB R_w .

5.5 The minimum acoustic requirements for glazing and ventilation applies to all new habitable rooms and all floors. The site has been split into zones which are described in Figure 2. The specifications for each zone are described below in Table 3.

	Room	Glazing Type	Ventilator Type
Zone 1	Bedrooms	Type A	Type A
	Living Rooms	Type B	Type B
Zone 2	Bedrooms	Type B	Type B
	Living Rooms	Type B	Type B

Table 3: Acoustic requirements

5.6 The acoustic performance requirements for the window types are stated below in Table 4.

Window	Minimum SRI (dB) per Octave Band Centre Frequency (Hz)					
	125	250	500	1k	2k	4k
Type A	25	25	33	44	44	49
Type B	23	22	27	38	40	41

Table 4: Minimum Required Window Performances

5.7 In making a comparison with the values in Table 4, it is important that the glazing figures used are the result of tests in accordance with ISO 10140, Part 2: 2010 and that the quoted minimum sound reduction specifications are met by the entire window system as a whole, including frames, seals, any insulated panels and not just the glass. The requirements also apply to any external glazed doors to habitable rooms.

5.8 The following window configurations, if installed properly, would be capable of achieving the required sound reduction performance:

- Window Type A: 6 mm glass: 12 mm cavity (minimum): 8.4 mm Stadiip Silence (or equivalent) (minimum 37 dB R_w).
- Window Type B: 6 mm glass: 12 mm cavity (minimum): 4 mm glass (minimum 33 dB R_w).

5.9 The indicative acoustic performance requirements for ventilation types are shown in Table 5.

Ventilation	Minimum $D_{n,e,w}$ (dB) per Octave Band Centre Frequency (Hz)					
	125	250	500	1k	2k	4k
Type A	43	42	36	37	40	45
Type B	40	36	35	31	33	36

Table 5: Indicative Ventilator Performance

5.10 The ventilation acoustic specifications in Table 5 relate to the following minimum sound insulation performance ratings, assuming two ventilators per habitable room:

- Type A: 38 dB $D_{n,e,w}$, acoustically attenuated trickle ventilator
- Type B: 33 dB $D_{n,e,w}$, acoustically attenuated trickle ventilator

5.11 Alternatively, a whole house MVHR system would also be suitable.

- 5.12 In making a comparison with the above ventilator specifications, it is important that the figures used are the result of laboratory tests with the vent in the open position. Note that the stated minimum performance value assumes two ventilators per habitable room. The specific ventilation requirements (e.g. equivalent free area etc.) should be confirmed by others.
- 5.13 The ventilation systems shall allow for adequate ventilation to meet background ventilation requirements as per Part F of the Building Regulations [Reference 8].
- 5.14 The above assessment demonstrates that the internal noise level criteria (outlined in Section 3) would be readily achievable, subject to the appropriate specification and design of the external façade elements.

External Noise Levels

- 5.15 With screening provided by the recommended barrier, noise levels in garden areas will vary, as described in Figure 3.

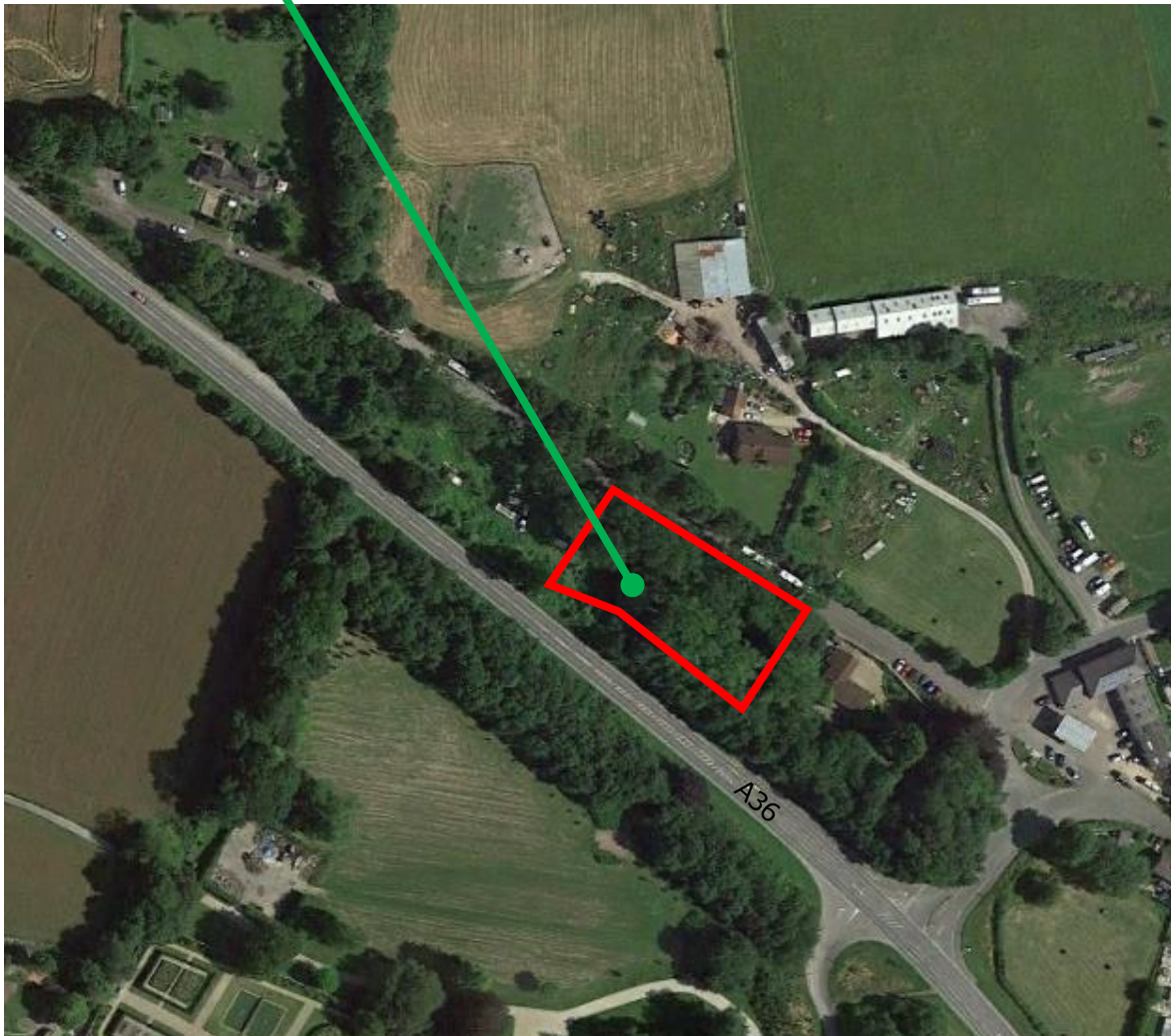
6.0 CONCLUSIONS

- 6.1 24 Acoustics Ltd has been instructed by Gary Lewis to undertake a noise assessment at land to the west of North Lodge, Codford in relation to the proposed development of two new residential dwelling.
- 6.2 Ambient noise surveys on site have been undertaken on site establish the existing road traffic noise levels during daytime and night-time periods. The noise impact assessment has been assessed based on the guidance in BS 8233: 2014.
- 6.3 Noise mitigation measures have been recommended, which include the provision of an acoustic barrier and acoustic glazing/ventilation specifications.
- 6.4 With appropriate acoustically rated glazing and ventilation, noise within habitable rooms would comply with maximum internal levels of 35 dB $L_{Aeq, T}$ during the daytime, 30 dB $L_{Aeq, T}$ at night and 45 dB $L_{Amax, f}$ at night for regular events.
- 6.5 Noise levels within external amenity areas will be acceptable, with the acoustic barrier in place.
- 6.6 On the above basis it is considered that, with the recommended measures, internal and external noise levels at the proposed dwelling will be acceptable.

REFERENCES

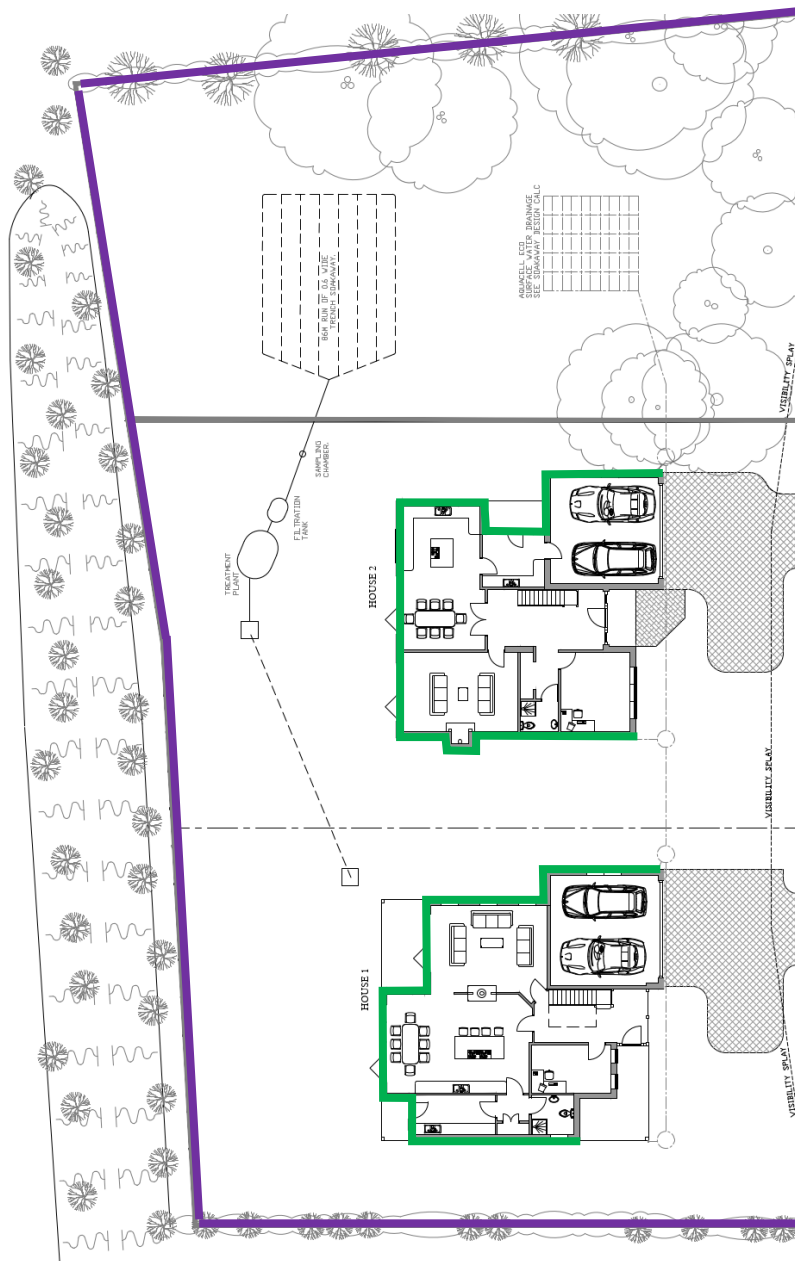
1. Department for Levelling Up, Housing & Communities. National Planning Policy Framework, updated 2024.
2. DEFRA. Noise Policy Statement for England, 2010.
3. Department of Communities and Local Government. National Planning Practice Guidance, July 2019.
4. Association of Noise Consultants, Institute of Acoustics, Chartered Institute of Environmental Health. Professional Practice Guidance on Planning and Noise, May 2017.
5. British Standards Institution. British Standard 8233:2014 Guidance on sound insulation and noise reduction for buildings, 2014.
6. World Health Organisation. Guidelines for Community Noise, 2000.
7. British Standards Institution. British Standard 7445:1991 Description and measurement of environmental noise Part 2 - Acquisition of data pertinent to land use, 1991.
8. Building Regulations. Approved Document F - Ventilation, 2021.

Measurement Locations 1 & 2



Project: Land West of North Lodge, Codford	Description: Site Boundary and Noise Monitoring Location		 24Acoustics www.24acoustics.co.uk
DWG No: Figure 1	Scale: N.T.S.	Rev: 0	
Date: February 2025	Drawn By: MH	Job No: 10948	

Recommended Minimum Extent of Barrier

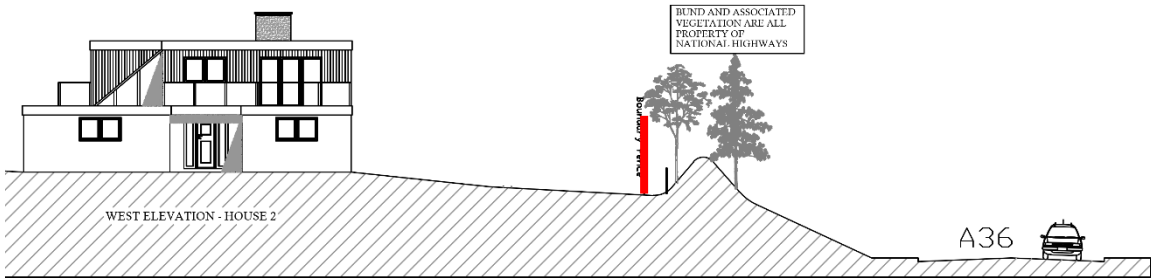
Acoustic Mitigation ZonesZone A 

Zone B – All other areas

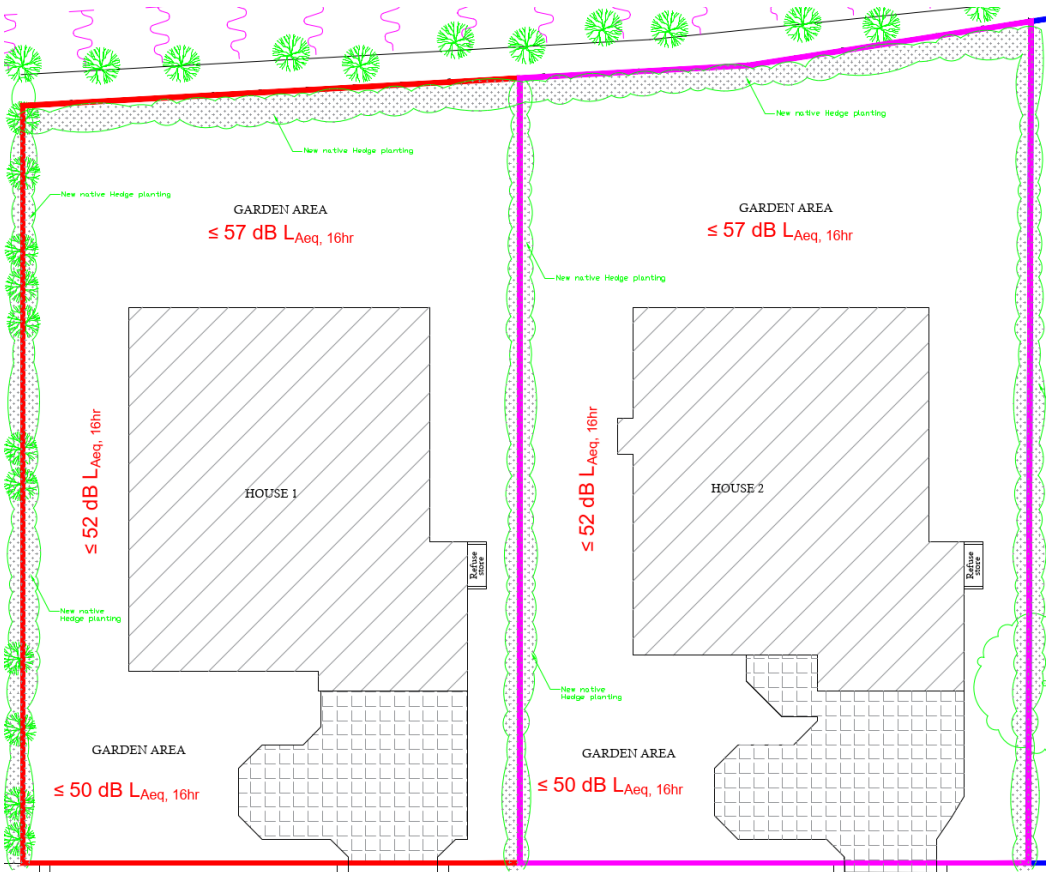
Project: Land West of North Lodge, Codford	Description: Site Layout Plan, Recommended Barrier Location & Mitigation Zones		 24Acoustics www.24acoustics.co.uk
DWG No: Figure 2	Scale: N.T.S.	Rev: 0	
Date: February 2025	Drawn By: MH	Job No: 10948	

Barrier Location

The barrier should be at least 2.4 m height above site ground level, constructed from a solid, impermeate material (typically timber) with a surface density of at least 12 kg/m²



Project: Land West of North Lodge, Codford	Title: Section Showing Barrier Location		 24Acoustics
DWG No: Figure 3	Scale: N.T.S.	Rev: 0	
Date: February 2025	Drawn By: MH	Job No: 10948	



Project: Land West of North Lodge, Codford	Title: Garden Daytime Noise Levels		 24Acoustics
DWG No: Figure 4	Scale: N.T.S.	Rev: 0	
Date: July 2025	Drawn By: MH	Job No: 10948	

APPENDIX A – ACOUSTIC TERMINOLOGY

Noise is defined as unwanted sound. The range of audible sound is from 0 to 140 dB. The frequency response of the ear is usually taken to be around 18 Hz (number of oscillations per second) to 18000 Hz. The ear does not respond equally to different frequencies at the same level. It is more sensitive in the mid-frequency range than the lower and higher frequencies and because of this, the low and high frequency components of a sound are reduced in importance by applying a weighting (filtering) circuit to the noise measuring instrument. The weighting which is most widely used and which correlates best with subjective response to noise is the dBA weighting. This is an internationally accepted standard for noise measurements.

For variable sources, such as traffic, a difference of 3 dBA is just distinguishable. In addition, a doubling of traffic flow will increase the overall noise by 3 dBA. The 'loudness' of a noise is a purely subjective parameter, but it is generally accepted that an increase/ decrease of 10 dBA corresponds to a doubling/ halving in perceived loudness.

External noise levels are rarely steady, but rise and fall according to activities within an area. In attempt to produce a figure that relates this variable noise level to subjective response, a number of noise indices have been developed. These include:

- i) The L_{Amax} noise level

This is the maximum noise level recorded over the measurement period.

- ii) The L_{Aeq} noise level

This is "equivalent continuous A-weighted sound pressure level, in decibels" and is defined in British Standard BS 7445 as the "value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T, has the same mean square sound pressure as a sound under consideration whose level varies with time".

It is a unit commonly used to describe construction noise and noise from industrial premises and is the most suitable unit for the description of other forms of environmental noise. In more straightforward terms, it is a measure of energy within the varying noise.

iii) The L_{A10} noise level

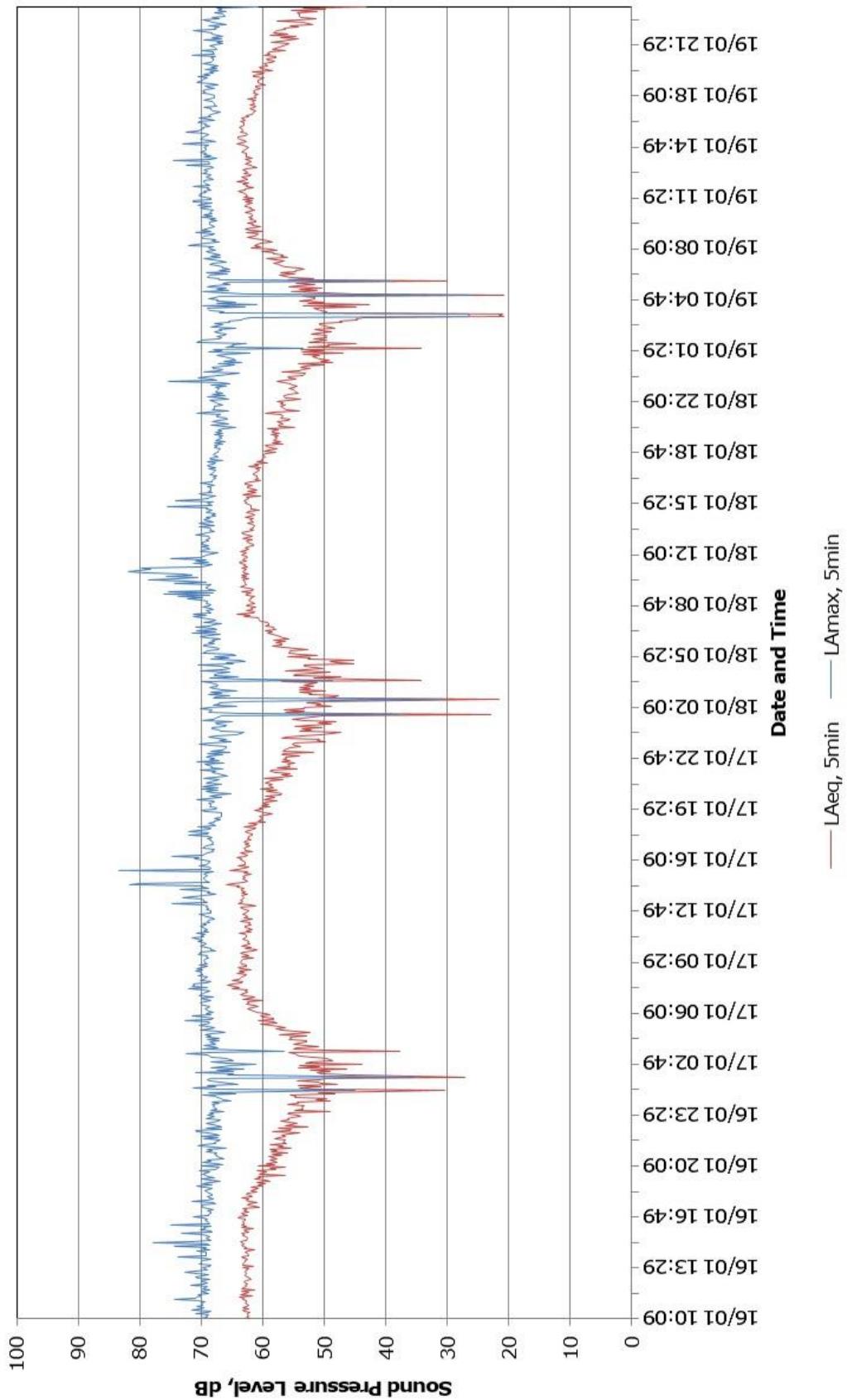
This is the noise level that is exceeded for 10% of the measurement period and gives an indication of the noisier levels. It is a unit that has been used over many years for the measurement and assessment of road traffic noise.

iv) The L_{A90} noise level

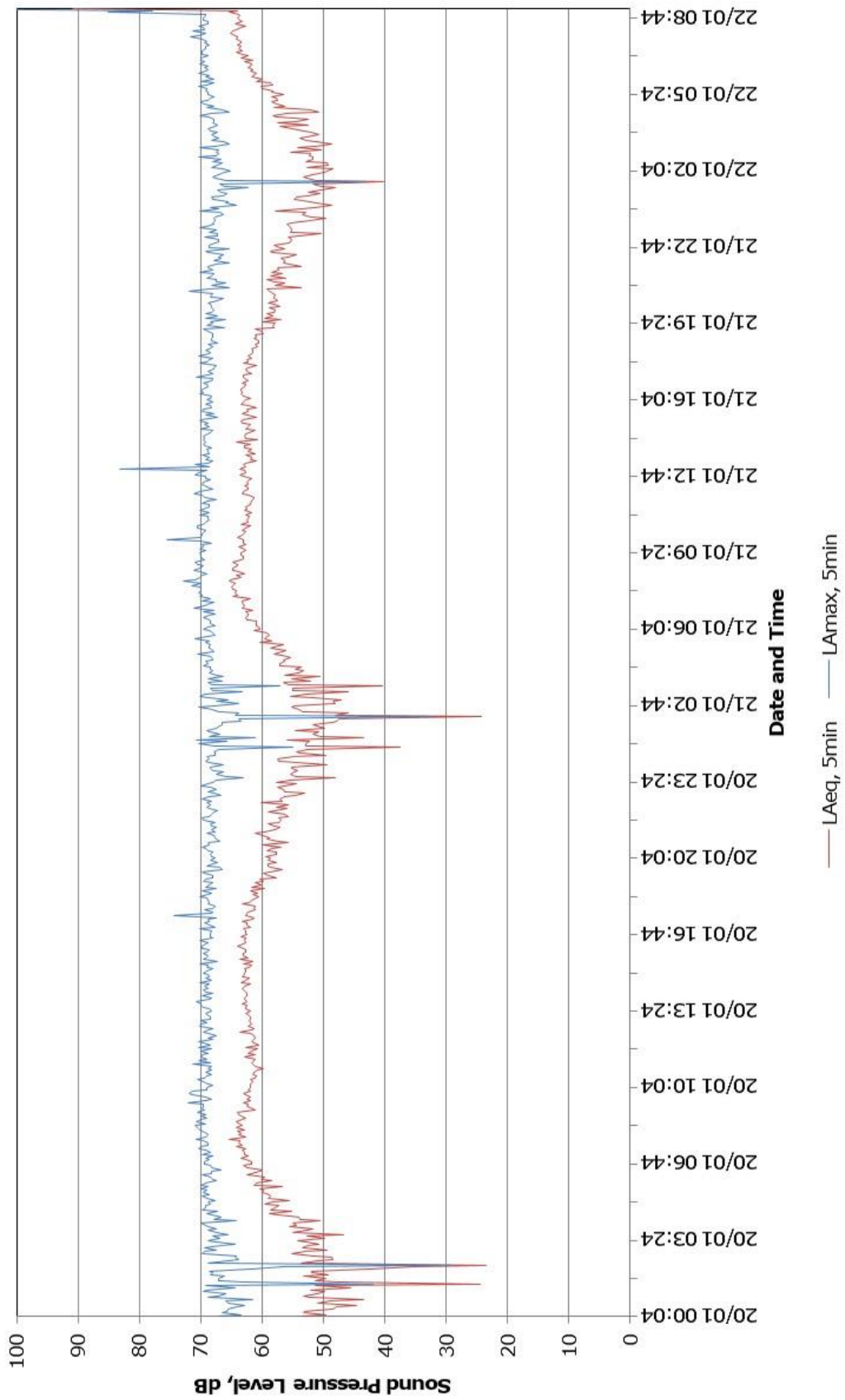
This is the noise level that is exceeded for 90% of the measurement period and gives an indication of the noise level during the quieter periods. It is often referred to as the background noise level and is used in the assessment of disturbance from industrial noise.

APPENDIX B – ENVIRONMENTAL NOISE SURVEY RESULTS

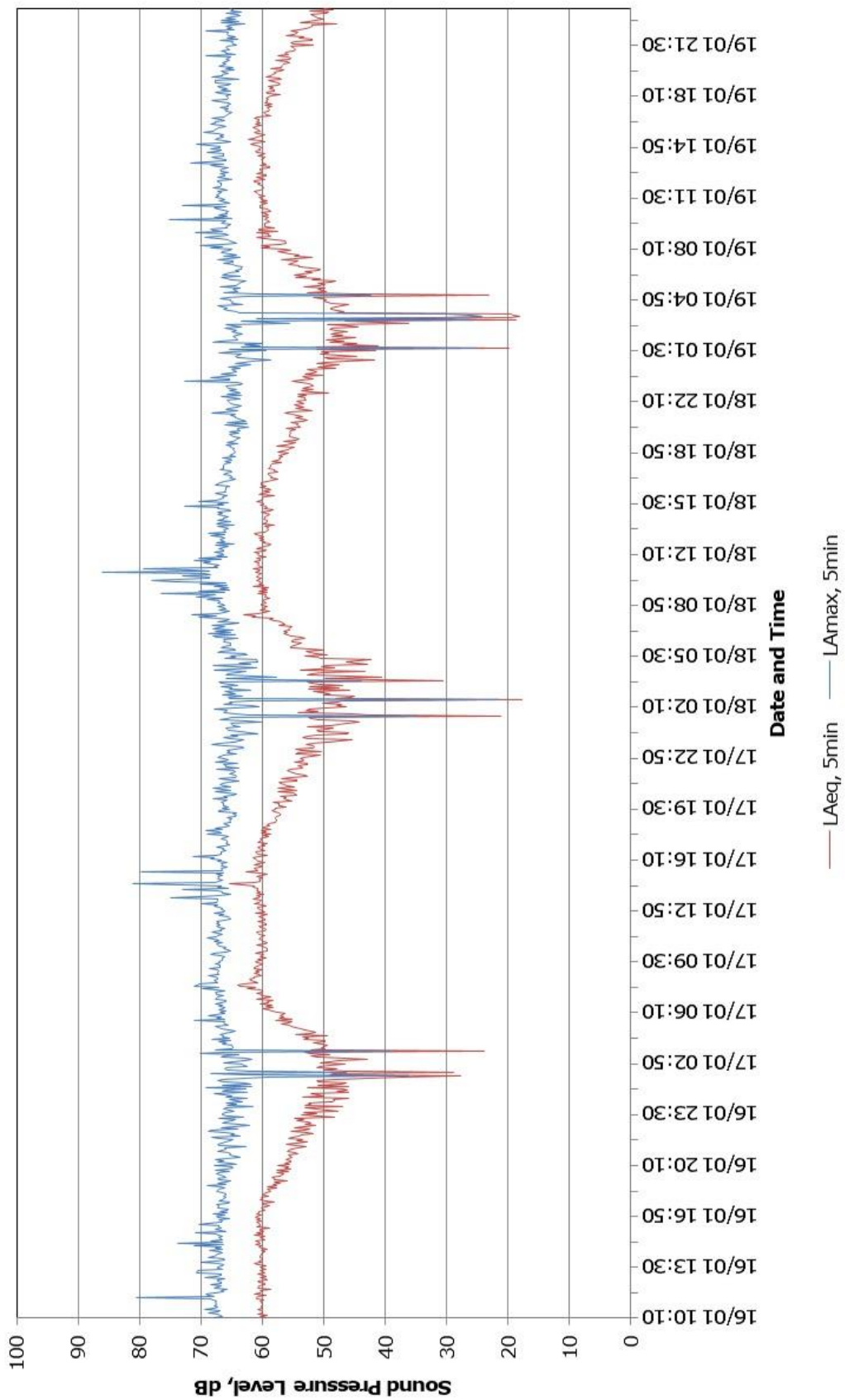
Environmental Noise Measurements - Location 2: First Floor Level Land West of North Lodge - 16th to 19th January 2025



Environmental Noise Measurements - Location 2: First Floor Level Land West of North Lodge - 20th to 22nd January 2025



**Environmental Noise Measurements - Location 1: Ground Floor Level
Land West of North Lodge - 16th to 19th January 2025**



**Environmental Noise Measurements - Location 1: Ground Floor Level
Land West of North Lodge - 20th to 22nd January 2025**

