



Armstrong House
3 Bassett Avenue
Southampton
SO16 7DP

T: 02381 555 000

LAND AT ROMSEY ROAD, WHITEPARISH
NOISE ASSESSMENT

Technical Report: R10811-2 Rev 0

Date: 30th September 2025

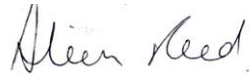
For: Bargate Homes Ltd
Second Floor, Lakeside 300
Broadland Business Park
Norwich
NR7 0WG

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Project Title: Land at Romsey Road, Whiteparish – Noise Assessment

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	Name	Position	Signature	Date
Prepared by	Aileen Reed BEng MIOA	Principal Consultant		30/9/25
Reviewed by	Chris McConnell BSc MSc MIOA	Principal Consultant		30/9/25
Reviewed & Approved by	Reuben Peckham BEng MPhil CEng MIOA	Principal Consultant		30/9/25
For and on behalf of 24 Acoustics Ltd				

Document Status and Approval Schedule

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0	Approved for issue	Aileen Reed	Chris McConnell	Reuben Peckham

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1.0 INTRODUCTION

- 1.1 24 Acoustics Ltd has been instructed by Bargate Homes Ltd to undertake a noise assessment for a proposed development site at Romsey Road, Whiteparish. The development has outline consent and it is proposed to submit a full planning application to develop the site for residential use.
- 1.2 This report has assessed the impact of noise from Romsey Road, which bounds the site to the north-east, upon the proposed residential development.
- 1.3 All noise levels in this report are presented in dB relative to 20µPa.

2.0 SITE DESCRIPTION & PLANNING CONSENT

- 2.1 The proposed development site lies to the south-west of Romsey Road on the eastern outskirts of the village of Whiteparish in Wiltshire. Wiltshire Council has granted outline planning consent (PL/2022/09532) for development of up to 25 dwellings and the consent includes a condition which relates to noise.
- 2.2 The site is subject to noise from road traffic on Romsey Road. The site location is shown in Figure 1 with an illustrative masterplan shown in Figure 2.
- 2.3 Condition 20 of the outline consent states the following:

"Prior to commencement of development an acoustic report shall be submitted to the LPA for approval in writing prior to implementation. The report shall demonstrate that the internal and external amenity standards of BS8233:2014 Guidance on sound insulation and noise reduction for buildings (or any subsequent version) and WHO Guidelines for Community noise (1999) can be achieved within the development. The report must include full details of any scheme of mitigation required to achieve this which, if approved, must be implemented in full and maintained in that way in perpetuity.

General: In discharging this condition the applicant should engage an Acoustic Consultant. The consultant should carry out a background noise survey and noise assessment according to BS8233:2014 (or any subsequent version) and demonstrate that internal and external noise levels will not exceed the guideline noise levels contained in Section 7.7 (table 4) of BS8233:2014. The report should also demonstrate that internal maximum noise levels in bedrooms will not normally exceed 45dB L_{Amax} between the hours of 23:00 and 07:00.

REASON: In the interests of the amenities of local residents and the occupiers of the new dwellings."

BS 8233:2014 and WHO Guidelines

- 2.4 BS 8233:2014 [Reference 1] 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.
- 2.5 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."
- 2.6 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 2] 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'.

External Noise Levels

- 2.7 The World Health Organisation provides guidance on the relationship between annoyance and noise levels in external amenity areas (gardens, terraces, balconies etc.). The guidance defines noise levels of 55 dB $L_{Aeq, 16hr}$ as the onset of significant community annoyance for these areas during daytime hours (07:00 and 23:00 hours). It should be noted that these values are aspirational and BS 8233:2014 refers to these levels as 'not achievable in all circumstances where development might be desirable'. In such situations development should be designed to achieve the lowest levels practicable in external amenity spaces but development should not be prohibited.

Summary

- 2.8 The impact of road traffic noise upon the proposed development has been assessed using the following recommended maximum internal noise levels:
- 35 dB $L_{Aeq,16hr}$ daytime noise level for 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;
 - A highly aspirational target of 55 dB $L_{Aeq, 16 hr}$ for external amenity spaces.

3.0 NOISE MEASUREMENT PROCEDURE AND RESULTS

Instrumentation

3.1 Noise measurements were undertaken on the site between 10th and 16th September 2024 using the following equipment:

- Rion (Class 1) precision sound level meter Type NL52;
- Brüel and Kjær acoustic calibrator Type 4231.

Noise Measurement Procedure

3.2 The noise measurement location used (shown in Figure 1) was chosen to establish how noise from road traffic on Romsey Road affects the proposed site. A single long-term measurement location was selected and is described below:

- Location 1 – towards the north-east of the site approximately 20 m from the centre of Romsey Road.

3.3 In order to assess typical ambient noise levels, the sound level meter was configured to continuously monitor in one minute sample periods. The meter was set up to measure and store overall A-weighted statistical parameters including the L_{Amax} and L_{Aeq} parameters (measured on fast response). Noise 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 3].

3.4 The instrumentation was powered by an external battery and stored in a weatherproof case. Throughout the course of the survey, an outdoor microphone windshield was used. The weather throughout the survey was generally dry with wind speeds less than 5 m/s.

3.5 Calibration of the noise monitoring instrumentation was checked before and on completion of the measurements and no drift was found. The calibration of 24 Acoustics' instrumentation is traceable to National Standards.

Results

3.6 The results of the survey at Location 1 are shown graphically in Appendix B and are summarised in Table 1.

Day and Date	Day	Night	
	L _{Aeq} , 16 hr	L _{Aeq} , 8hr	L _{Amax} ,f
Tue 10 September	51	43	64
Wed 11 September	52	44	63
Thur 12 September	51	43	65
Fri 13 September	53	42	65
Sat 14 September	55	42	64
Sun 15 September	50	42	64
Mon 16 September	56	-	-
Average	53	43	65 max

Table 1: Noise Survey Results, Location 1 Romsey Road

*partial measurement

- 3.7 From subjective observations, it was noted that noise from road traffic on Romsey Road dominated ambient noise levels at this location and across the site.

4.0 CALCULATIONS AND ASSESSMENT

Acoustic Design

- 4.1 A site layout for the site has been provided and can be seen in Figure 2. Noise has been taken into consideration during development of the site layout with houses closest to the north-eastern site boundary oriented to face towards Romsey Road and set back from the road. This ensures that rear gardens are at least partially screened from road traffic noise from Romsey Road.

Acoustic Model – Road Traffic

- 4.2 An acoustic model of the site has been developed to determine noise levels across the developed site from road traffic noise. This has been based on the methodology of Calculation of Road Traffic Noise [Reference 4].
- 4.3 Figures 3 and 4 show the predicted L_{Aeq} noise contours across the developed site for the daytime, at a height of 1.5 m above local grade, and night-time at a height of 4 m above local grade.

Internal Noise

- 4.4 Using the results of the acoustic model, calculations have been undertaken to determine the glazing and ventilation requirements for the proposed residential properties to ensure that the noise levels inside the properties do not exceed 35 dB L_{Aeq}, 16 hour during the day and 30 dB L_{Aeq}, 8 hour at night (and also not regularly exceed 45 dB L_{Amax}, f at night) from road traffic noise sources.

- 4.5 Calculations are based on layout and elevation drawings provided by Bargate Homes in September 2025 and assume two trickle vents per habitable room.
- 4.6 The calculations have identified that acoustic glazing is not required, provided that standard double-glazed units achieve a minimum sound reduction of 30 dB R_w . Similarly, standard trickle vents achieving a minimum elemental level difference of 32 dB $D_{ne,w}$ will be adequate for use across the site.
- 4.7 Based on the above calculations and assumptions, internal noise levels within proposed properties will be acceptable.

External Noise Levels

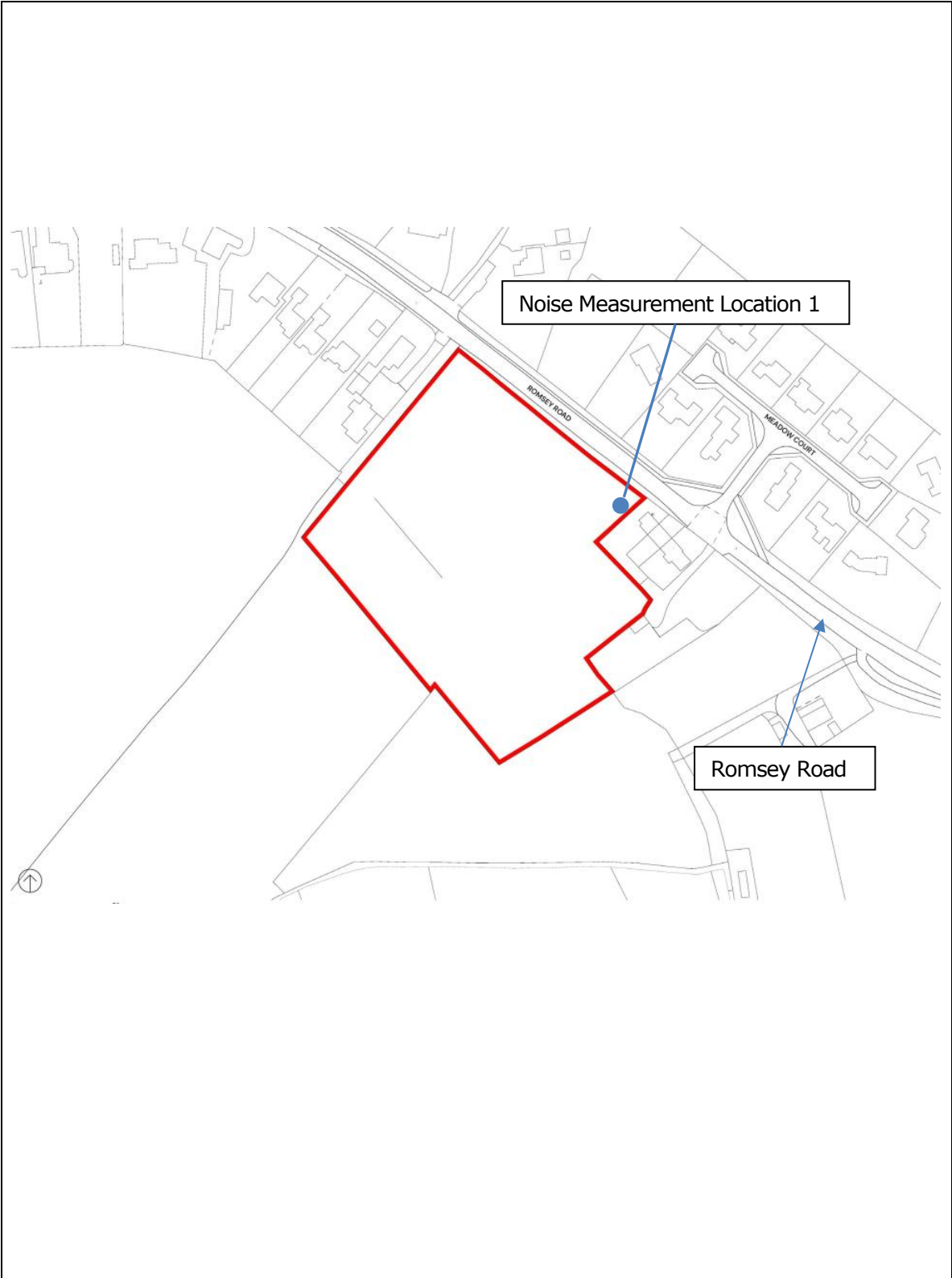
- 4.8 Noise measurement and propagation model results (as shown in Figure 3) show that, based on proposed layout plans, daytime external noise levels in private gardens are anticipated to be no greater than 55 dB $L_{Aeq, 16hr}$.
- 4.9 On this basis it is considered that the proposals, as presented, are acceptable on noise grounds.

5.0 CONCLUSIONS

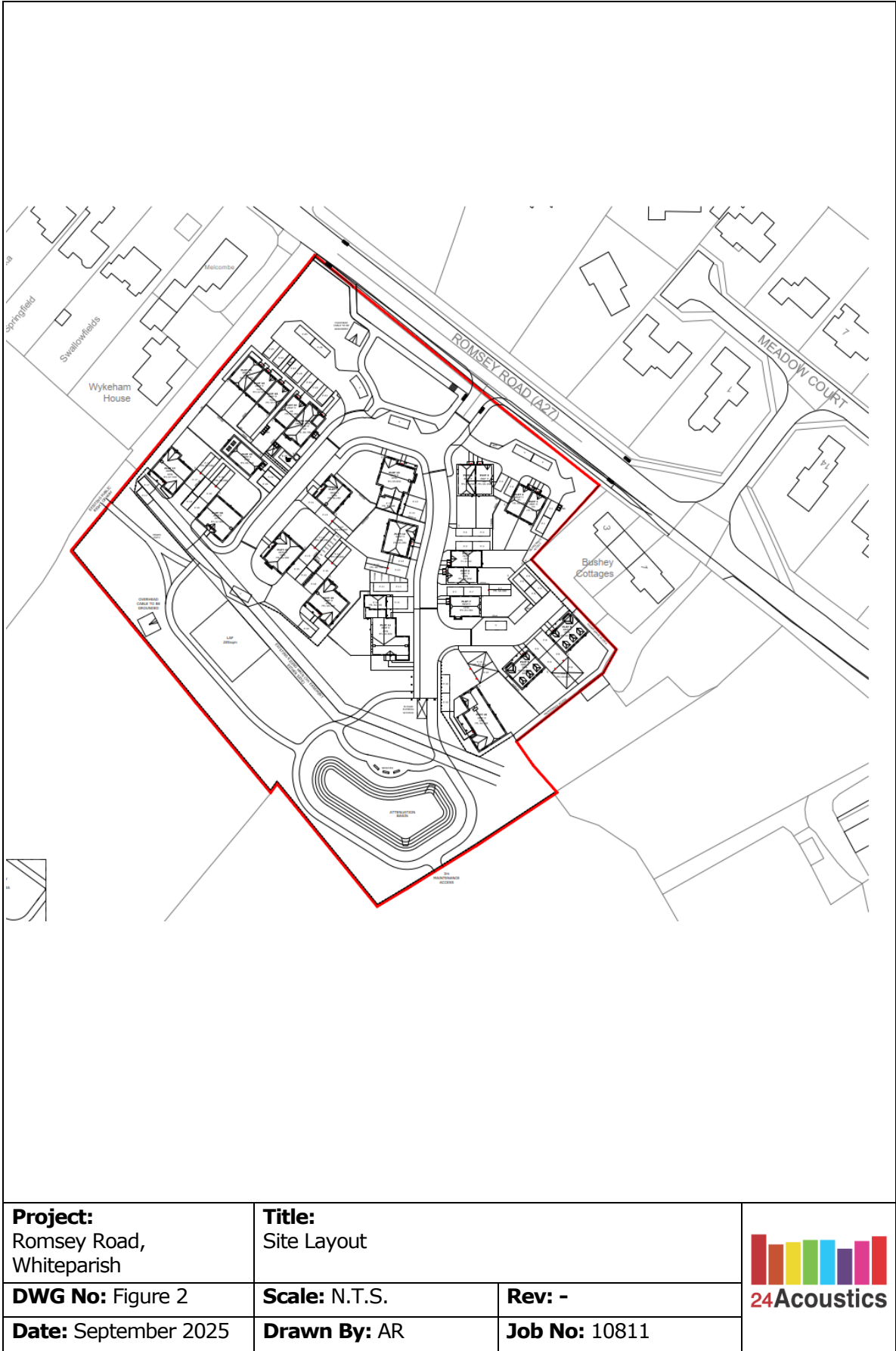
- 5.1 24 Acoustics Ltd has been instructed by Bargate Homes Ltd to undertake a noise assessment for a site at Romsey Road, Whiteparish in Wiltshire which is proposed for residential development.
- 5.2 Condition 20 of the outline consent (PL/2022/09532) for the site requires a noise assessment to be undertaken in line with the guidance of BS 8233:2014 and WHO Guidelines.
- 5.3 With appropriate glazing and ventilation as specified herein, noise within habitable rooms will 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.
- 5.4 External noise levels in private gardens within the developed site are predicted to be below 55 dB $L_{Aeq, 16 \text{ hour}}$.
- 5.5 On the above basis, it is considered that the noise impact at the proposed development site will be capable of achieving acceptable levels within the proposed residential properties and associated external amenity areas and will therefore meet the requirements of Condition 20.

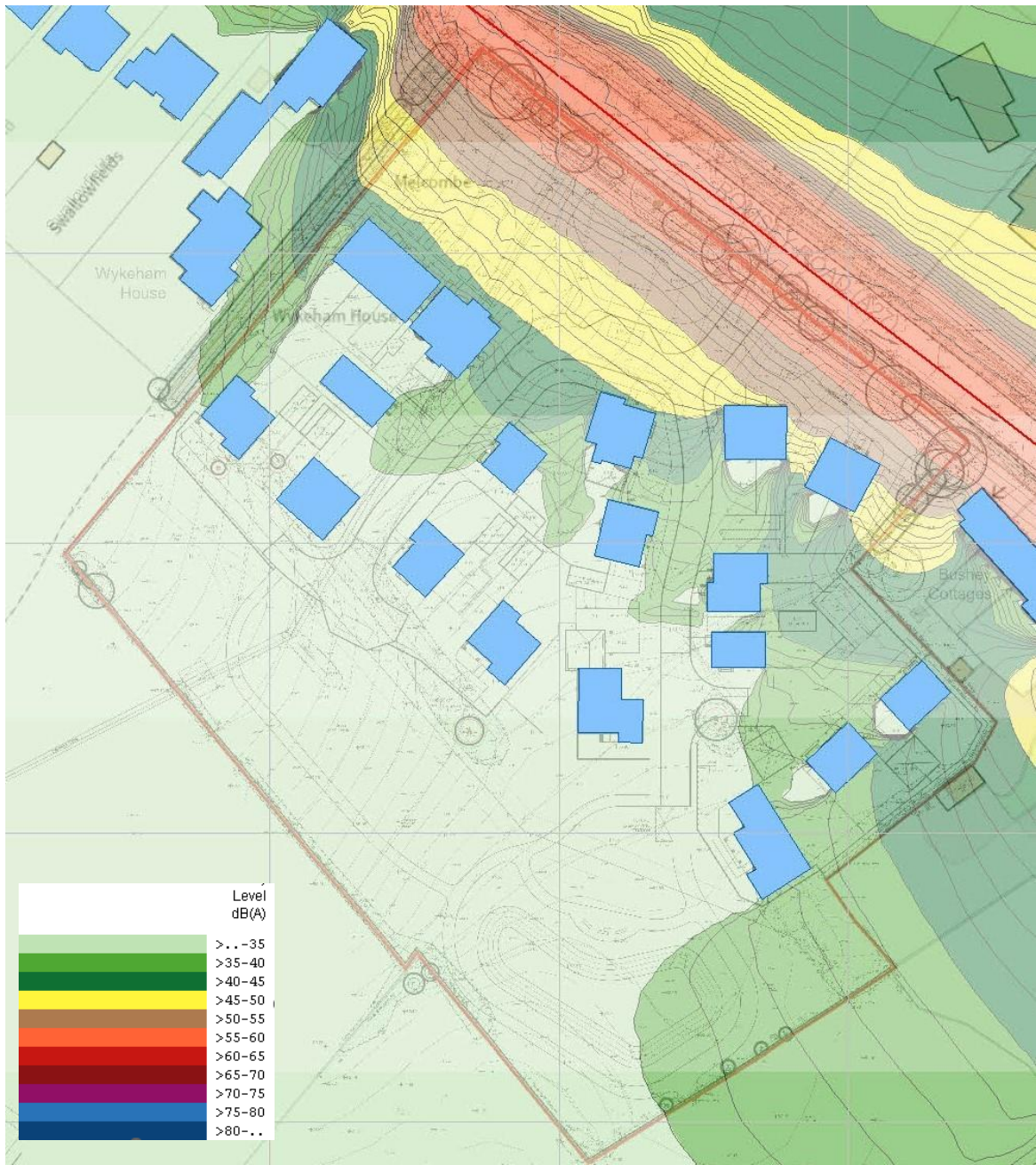
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1. British Standards Institution. British Standard 8233: Guidance on sound insulation and noise reduction for buildings, 2014.
2. World Health Organisation. Guidelines for Community Noise, 2000.
3. British Standards Institution. British Standard 7445: 1991 'Description and measurement of environmental noise Part 2 - Acquisition of data pertinent to land use'.
4. CRTN, Department of Transport, Welsh Office, HMSO, 1988.
5. Building Regulations. Approved Document F - Ventilation, June 2022.



Project: Romsey Road, Whiteparish	Title: Site and Noise Measurement Location		 24Acoustics
DWG No: Figure 1	Scale: N.T.S.	Rev: -	
Date: September 2025	Drawn By: AR	Job No: 10811	





Project: Romsey Road, Whiteparish		Title: Daytime (07:00–23:00) Noise Contours, dB L _{Aeq} , 16 hr		 24Acoustics
DWG No: Figure 3	Scale: N.T.S.	Rev: -		
Date: September 2025	Drawn By: AR	Job No: 10811		



Project: Romsey Road, Whiteparish	Title: Night time (23:00–07:00) Noise Contours, dB L _{Aeq} , 8 hr		 24Acoustics
DWG No: Figure 4	Scale: N.T.S.	Rev: -	
Date: September 2025	Drawn By: AR	Job No: 10811	

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:

- The L_{Amax} noise level

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

- The L_{Aeq} noise level

This is the "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.

- 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.

- 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

Figure B1: Land at Romsey Road, Whiteparish
Environmental Noise Survey, 10th to 16th September 2024

