



Architectural & Environmental Consultants
Acoustics | Vibration | Air Quality

Noise Assessment

Land North of Whychurch Farm

Noise Assessment

Project: LAND NORTH OF WHYCHURCH FARM

Report reference: RP01-25393-R1

Client: GLEESON LAND LTD
ARENA OFFICES, BUILDING B
WATCHMOOR PARK, RIVERSIDE WAY
GU15 3YL CAMBERLEY

Our details: CASS ALLEN ASSOCIATES LTD
BEDFORD I-LAB
BEDFORD
MK44 3RZ

Document control:

REVISION	ISSUE DATE	REPORT BY	CHECKED BY	NOTES
0	26 January 2026	Nathan Hyde, BSc (Hons), Acoustics Consultant	Adam Bamford, BSc MIOA DipIOA, Principal Acoustics Consultant	Initial issue
1	29 January 2026	Nathan Hyde, BSc (Hons), Acoustics Consultant	Adam Bamford, BSc MIOA DipIOA, Principal Acoustics Consultant	Updated Development Layout

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY
2. INTRODUCTION
3. PROJECT DESCRIPTION
4. PLANNING POLICY
5. NOISE AFFECTING THE DEVELOPMENT
6. PLANT NOISE IMPACT ASSESSMENT
7. CONCLUSIONS

APPENDIX 1 DEVELOPMENT LAYOUT

APPENDIX 2 SURVEY RESULTS

APPENDIX 3 MODELLING RESULTS

APPENDIX 4 FAÇADE CALCULATIONS

APPENDIX 5 PART O ACOUSTIC REQUIREMENTS FOR BEDROOMS AT NIGHT

1. EXECUTIVE SUMMARY

- 1.1 Cass Allen has been instructed by Gleeson Land Ltd to assess noise affecting a proposed new development at Land North of Whychurch Farm in Malmesbury.
- 1.2 The assessment was carried out in accordance with relevant local and national planning guidance.
- 1.3 A noise survey was carried out at the site. Noise levels at the site are dictated by road traffic noise emissions from the A429 and the B4014. Noise levels due to the adjacent commercial uses (Whychurch Farm, QTS and TR Auto Servicing & Repairs) was insignificant compared to road traffic noise.
- 1.4 A 3D noise model of the development was constructed based on the results of the site noise survey. The noise model was used to calculate road traffic noise levels at all facades of the development.
- 1.5 Noise affecting the development has been assessed in accordance with ProPG guidance. The design of the development is considered to be acceptable subject to the adoption of acoustically upgraded glazing and ventilation and acoustic screening around gardens. This can be investigated further at the detailed design stage and may be secured by the imposition of a noise related planning condition by the Local Planning Authority.
- 1.6 Compliance with noise criteria in Building Regulations Part O has also been assessed. Some bedrooms will need to be designed so that windows can remain closed at night without the rooms overheating. This can be assessed further in due course.
- 1.7 Appropriate limits for noise from mechanical plant have been calculated based on measured noise levels at the site and guidance given in BS4142. It is envisaged that it will be straightforward to achieve the plant noise limits. This will be investigated further at the detailed design stage and may be secured by the imposition of a noise related planning condition if deemed necessary by the Local Planning Authority.
- 1.8 In summary, it is our view that the site is suitable for the development in terms of noise levels and that planning permission may be granted subject to the imposition of suitable planning conditions, if necessary.

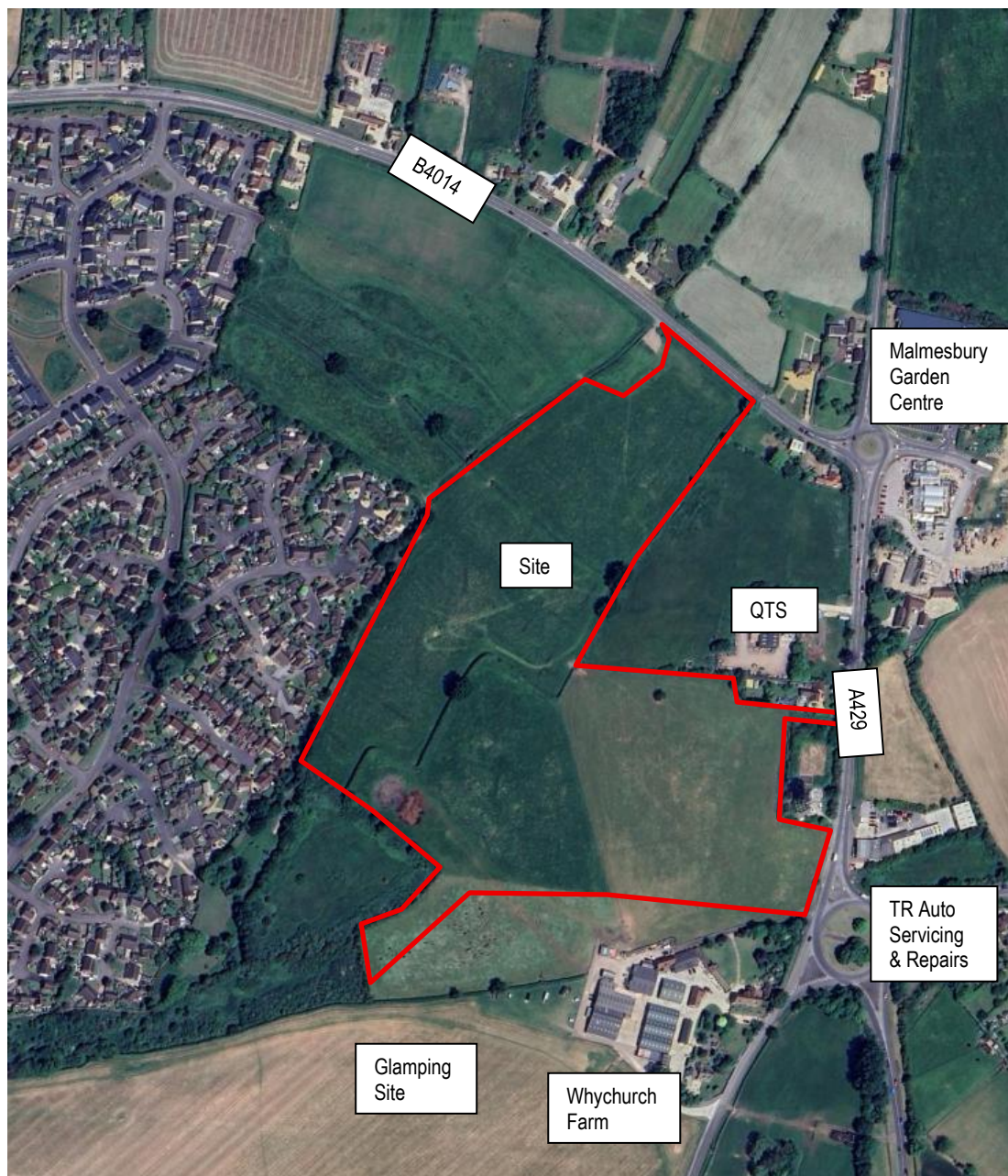
2. INTRODUCTION

- 2.1 Cass Allen has been instructed by Gleeson Land Ltd to assess noise affecting a proposed new development at Land North of Whychurch Farm in Malmesbury
- 2.2 The assessment has been carried out in accordance with relevant local and national planning guidance.
- 2.3 The aims of the assessment were:
- to establish the suitability of existing noise levels at the site for the proposed development
 - where required, identify appropriate measures to optimise the acoustic design of the development and achieve acceptable noise levels in habitable areas
- 2.4 This report contains technical terminology; a glossary of terms can be found at www.cassallen.co.uk/glossary.

3. PROJECT DESCRIPTION

- 3.1 The site currently contains open farm fields and is located in a mixed-use area, bounded to the east by the A429 and QTS (railing contractor), to the north by B4014 and to the south by Whychurch Farm. To the east of the site is the Malmesbury Garden Centre and TR Auto Servicing & Repairs (mechanics). To the south of the site is the St James Catholic School and a glamping site. To the west of the site is a residential area.
- 3.2 The site location is shown in Figure 1 below.

Figure 1 Site Location and Surrounding Area



- 3.3 The proposal is to develop the site into residential properties. A current drawing of the proposed development layout is shown in Appendix 1.

4. PLANNING POLICY

National Policy

- 4.1 Outline guidance for the assessment of noise affecting new developments is given in the National Planning Policy Framework (NPPF) (December 2024). Relevant sections in this case are highlighted below:

187. Planning policies and decisions should contribute to and enhance the natural and local environment by ... preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of ...noise pollution.

198. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise 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.

Local Policy

- 4.2 Wiltshire Councils Core Strategy (2015) provides outline guidance on how to mitigate noise within new developments within the borough. Core Policy 57 states that:

Applications for new development must be accompanied by appropriate information to demonstrate how the proposal will make a positive contribution to the character of Wiltshire through...

...Vii Having regard to the compatibility of adjoining buildings and uses, the impact on the amenities of existing occupants and ensuring that appropriate levels of amenity are achievable within the development itself, including the consideration of... pollution (e.g. noise)

- 4.3 To address the requirements of the national and local policies, the following key acoustic matters have been assessed:

- noise affecting the habitable areas of the proposed development
- ground-borne vibration affecting the habitable areas of the proposed development
- noise emissions from mechanical plant associated with the development at the position of existing sensitive receptors in the area

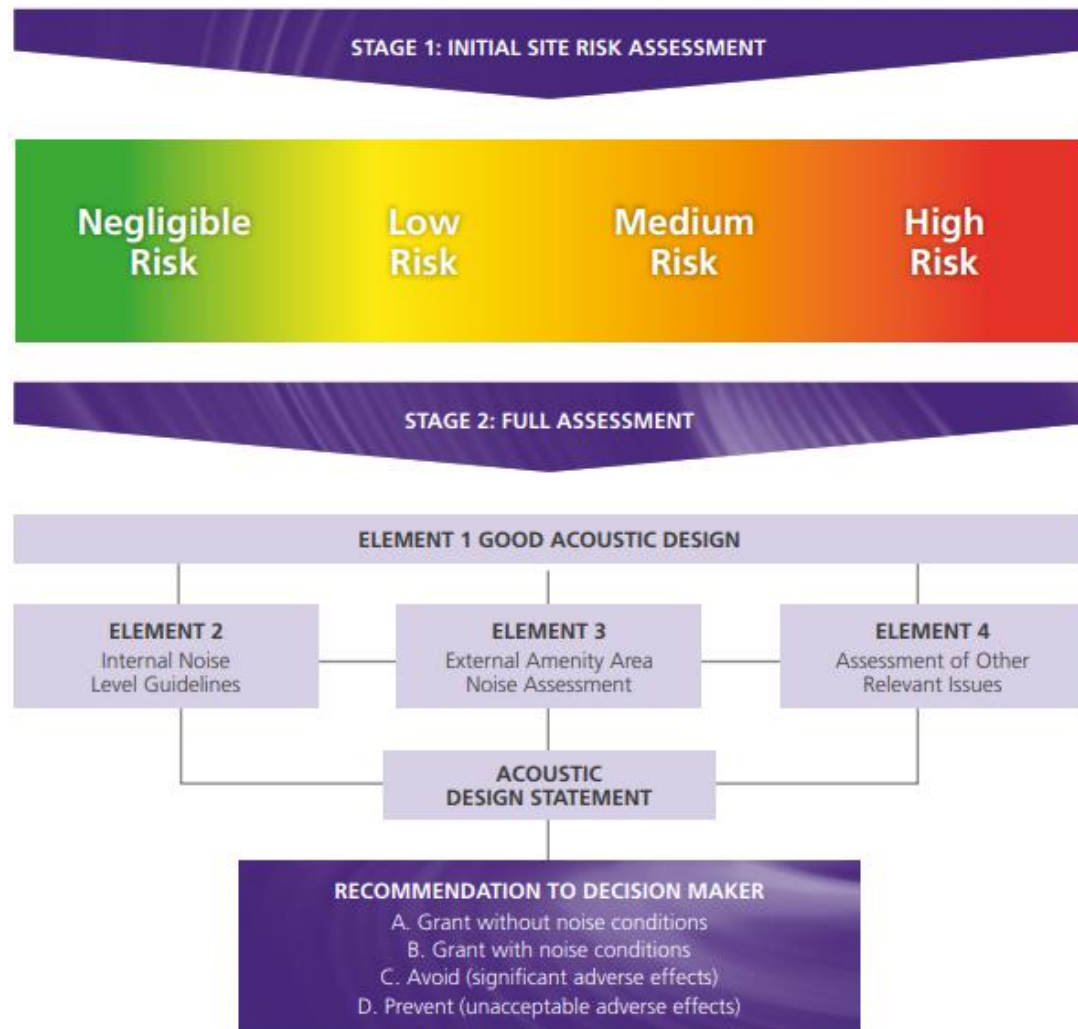
5. NOISE AFFECTING THE DEVELOPMENT

5.1 Specific guidance on the assessment of noise affecting new residential development is given in ProPG: Planning and Noise for New Residential Development, May 2017 (ProPG). The process within the ProPG guidance for the appraisal of noise levels affecting new residential development is considered to be current 'best practice' and has, therefore, been followed for the assessment. The assessment process can be summarised as follows:

- Stage 1 – measure noise levels at the site and carry out an initial noise risk assessment of the proposed development site based on the measured levels.
- Stage 2 – where a higher noise risk is identified, carry out a detailed assessment including the following four considerations:
 - Element 1 – the overall acoustic design and layout of the site
 - Element 2 – internal noise levels in habitable areas
 - Element 3 – noise levels in external amenity areas
 - Element 4 – consideration of other relevant issues
- Based on the results of the Stage 2 assessment, provide a recommendation to the decision maker on whether planning permission can and should be granted.

5.2 The process is shown visually in Figure 2 below.

Figure 2 ProPG Assessment Process



- 5.3 It should be noted that the guidance in ProPG relates primarily to noise from transportation sources, i.e. road traffic, aircraft, rail etc. Any significant noise from other sources (e.g. industrial, commercial or entertainment sources) is outside the scope of the ProPG guidance and, therefore, requires separate consideration. This is discussed further below in relation to noise from mechanical plant and existing adjacent commercial uses.

Stage 1 – Noise survey and initial assessment

- 5.4 A noise survey was carried out at the site between 6 and 13 August 2025 to assess existing noise levels in the area. The full methodology and results of the noise survey are provided in Appendix 2.
- 5.5 Average noise levels (LAeq) across the site were generally dictated by road traffic on the B4014 and the A429.

- 5.6 Maximum noise levels (LA_{max}) at the north of the site were largely dictated by fast car passes along the B4014 and the A429.
- 5.7 Background noise levels (LA₉₀) across the site were dictated by constant road traffic noise from the B4014 and the B429. Along the eastern boundary of the site background noise levels were affected by mechanical plant within substations associated with the water tower
- 5.8 Noise was also identified from aircraft movements; however, noise from aircraft was generally insignificant when compared with noise from road traffic.
- 5.9 During the noise survey, no noise from the adjacent commercial uses was observed that was significant compared to road traffic noise levels across the site and thus is not discussed further within this report.
- 5.10 Areas of the development at the eastern edge of the site will be subject to the highest noise levels. The noise survey results show that noise levels at these positions are as follows:
- Eastern edge of the site facing the A429:
 - Average noise levels during the daytime - 54 dB LA_{eq},0700-2300hrs
 - Average noise levels during the night-time - 47 dB LA_{eq},2300-0700hrs
 - Typical maximum noise levels during the night-time – 65-66 dB LA_{max}
- 5.11 Based on the results of the site noise survey, a 3D computer noise model was developed to predict and assess the noise levels that will exist across the entire development.
- 5.12 The 3D noise model was developed using Cadna/A v2025 environmental noise modelling software. Cadna/A incorporates the calculation methodology outlined in the Department of Transport Welsh Office - Calculation of Road Traffic Noise (CRTN) for the assessment of road traffic noise propagation.
- 5.13 The layout of the development and surrounding area was input into the model. To calculate the spread of noise levels around the site, day-time average noise levels were input for the surrounding roads (e.g. the B4014 and the A429) and calibrated to the results of the on-site noise measurements.
- 5.14 The methodology and results of the noise modelling are provided in Appendix 3. It can be seen from the modelling results that road traffic noise levels will be highest on facades of the development facing the A429 and lowest on facades at the rear of the site.
- 5.15 The measured noise levels can be compared with Figure 3 below to assess the 'noise risk' of the site. Where the noise risk is high, significant acoustic design measures may be required to achieve acceptable noise levels in the development. Where the noise risk is low, acceptable noise levels may be achievable with no specific acoustic design measures.

Figure 3 Noise Risk Assessment (Adaption of Figure 1 from ProPG)



It can be seen from a comparison of the measured noise levels in paragraph 5.10 above Figure 3 that the site is 'Low' risk in relation to daytime noise levels and 'Low' risk in relation to night-time noise levels. Therefore, ProPG requires that a more detailed 'Stage 2' assessment is carried out.

Stage 2 – Element 1 – Overall acoustic design of the site

5.16 The acoustic design of development has been reviewed in relation to the measured noise levels at the site. The layout of the development is considered to represent good acoustic design for the following reasons:

- the layout positions sensitive areas of the residential properties away from the noise sources
- gardens are positioned behind dwellings so that they will be acoustically screened from the noise sources
- raised fencing within gardens facing mechanical plant to reduce noise levels as much as practicably possible

Stage 2 – Element 2 - Internal noise levels

5.17 Appropriate design criteria for acceptable noise levels in acoustically sensitive areas of new developments are given in BS8233:2014 '*Guidance on sound insulation and noise reduction for buildings*'.

5.18 Relevant BS8233 design criteria are summarised in Table 1 below.

Table 1 BS8233:2014 Internal Noise Criteria

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 dB LAeq,16hour	-
Dining	Dining room/area	40 dB LAeq,16hour	-
Sleeping (daytime resting)	Bedroom	35 dB LAeq,16hour	30 dB LAeq,8hour

- 5.19 Full construction details for the development have not been finalised as the project is at an early design stage. It has therefore been assumed that the external walls of the development will be constructed using a standard masonry construction (e.g. 102mm brick, 100mm insulated cavity, 100mm concrete block) or a light-weight construction designed to achieve a similar level of sound insulation (this is technically achievable subject to detailed design).
- 5.20 The ventilation strategy for the development has not yet been confirmed and therefore it is assumed that background ventilation will be provided via trickle ventilators in the building facade. This is a 'worst case' assumption from an acoustic perspective as trickle ventilators are often an acoustic weak point in the facade.
- 5.21 Calculations were carried out using facade modelling software in accordance with the methodology given in BS8233:2014 to calculate the sound insulation performance required of the glazing and ventilation to achieve the nominated internal noise criteria in the 'worst-case' habitable rooms of the development (i.e. the habitable rooms that will be subject to the highest external noise levels). The calculations included a 3 dBA design margin.
- 5.22 If acceptable internal noise levels can be achieved in 'worst case' habitable rooms then it follows that acceptable internal noise levels can be achieved in all other habitable rooms of the development using similar glazing and ventilator types.
- 5.23 The calculations were carried out based on the following typical dimensions/details for facade elements:
- glazing – 1.5m² for bedrooms and 2.5m² for living rooms
 - external walls – 8m² for bedrooms and 15m² for living rooms
 - 2 in-frame trickle ventilators in bedrooms and 3 in-frame trickle ventilators in living rooms
- 5.24 The results of the calculations are shown in Appendix 4 and are summarised in Table 2 below.

Table 2 Acoustic Requirements for 'Worst Case' Habitable Rooms

'Worst Case' Rooms	Glazing Performance Requirements (inc. Frames)	Ventilator Performance Requirements (in Open Position)
Bedrooms on A429 facade	27 dB Rw+Ctr	31 dB Dne,w + Ctr
Living rooms on A429 facade		
Note The requirements given are approximate only and should be confirmed at the detailed design stage when full design details are available.		

- 5.25 The required sound insulation performance values in Table 2 could typically be achieved by the glazing and ventilator types shown in Table 3.

Table 3 Typical Glazing / Ventilator Acoustic Performances

Glazing (in Good Quality Sealed Frames)	Typical Weighted Sound Reduction (Rw + Ctr)
4/16/4mm standard thermal double glazing	27
Ventilators	Typical Acoustic Performance (Dnew + Ctr)
Standard 'hit & miss' in-frame trickle ventilator	31

Note The acoustic performance of the glazing systems (including frames) should always be confirmed with the manufacturer before selection for installation on site.

5.26 It can be seen from the above that acceptable internal noise levels will be achievable in the development subject to the specification of standard thermal double glazing and standard 'hit & miss' ventilation systems that don't require any acoustical enhancement. It is our view therefore that the proposed development is, in principle, acceptable with regards to the noise levels that will exist within the habitable rooms.

5.27 The above ProPG assessment for planning purposes is based on internal noise levels with windows closed (assumed to be "normal" circumstances). However, it is anticipated that residents will open their windows at times for thermal comfort (e.g. to prevent overheating in warmer months). Noise levels in the rooms will increase under these circumstances.

5.28 The development will be subject to Part O of the Building Regulations (Approved Document O), which came into effect on 15 June 2022. Section 3.2 of Approved Document O (ADO) states:

In locations where external noise may be an issue (for example, where the local planning authority considered external noise to be an issue at the planning stage), the overheating mitigation strategy should take account of the likelihood that windows will be closed during sleeping hours (11pm to 7am).

Windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following limits.

a. 40dB LAeq,T, averaged over 8 hours (between 11pm and 7am).

b. 55dB LAFmax, more than 10 times a night (between 11pm and 7am).

5.29 It is important to note that the Part O requirements only apply to bedrooms at night. There are no requirements for other habitable rooms (living rooms, dining rooms, etc).

5.30 The noise levels in bedrooms at night with the windows open will vary based on the external night-time noise levels and the size and extent of window opening required to control overheating. The wider the window needs to be open, the lower the sound insulation performance. The following indicative “outside to inside” reduction values have been adopted for the assessment based on current industry guidance¹:

- ~4 dB when the window is fully open
- ~9 dB when the window is open to around ~0.4m²
- 13 dB when the window is partially open to ~0.2m².

5.31 Therefore, it is possible to rely on a larger window opening to control overheating on quieter facades. The relationship between external noise levels and window openings for compliance with Part O is summarised in Table 4.

Table 4 External Part O Noise Criteria and Allowable Window Opening for Overheating

External Noise Levels outside Bedrooms at Night		Allowable night-time window opening to control overheating
Average Noise Levels (LAeq,8hrs)	Maximum Noise Levels (LAmax) – see Note 1	
≤44 dB	≤59 dB	Fully open (to achieve 13% of the floor area which is typically ~1.3m ²). Ventilators fully open.
≤49 dB	≤64 dB	Open (~4% of floor area e.g. ~0.4m ²) – see Note 2. Ventilators fully open.
≤53 dB	≤68 dB	Partially open (~2% of floor area e.g. ~0.2m ²). Ventilators fully open.
≥54 dB	≥69 dB	Windows to be assumed to be fully closed during the night for the purposes of Part O compliance. Ventilators fully open.

Note 1 Not exceeded more than 10 times per night (between 11pm and 7am)

Note 2 An opening of 4% of the floor area would comply with the ‘simplified method’ for Part O compliance, if targeted, as the site is in a ‘medium risk’ area.

5.32 The criteria in Table 4 above have been applied to the predicted night-time noise levels from the model to show where open windows can be relied upon for the control of overheating and Part O compliance. The results are shown in Appendix 5.

5.33 It can be seen from Appendix 5 that windows to bedrooms facing the A429 and the B4014 will need to be assumed to be partially openable during the night-time for the purposes of the overheating assessment due to the higher external noise levels. Open windows can be used to help address overheating in all other bedrooms across the rest of the site.

¹ These values are taken from guidance published in the document “Guide to Demonstrating Compliance with the Noise Requirements of Approved Document O” Version 1.1 November 2024, by the Association of Noise Consultants. The values are based on a floor area of 10m² and a room height of 2.4m.

- 5.34 The information in Appendix 5 can be provided to the project Energy Assessor to inform the overheating assessment and demonstrate compliance with Part O.

Stage 2 – Element 3 – Noise levels in external amenity areas

- 5.35 BS8233 states that it is desirable that noise levels in external amenity areas of residential developments do not exceed 50 dB LAeq and that 55 dB LAeq,T should be regarded as an upper guideline value. However, BS8233 recognises that these guideline values will not always be achievable in city centres or urban areas adjoining main roads or other transport sources. In these cases, BS8233 states that the development should be designed to achieve the lowest practicable noise levels in the amenity spaces.
- 5.36 The noise survey results indicate that noise levels in external amenity areas are predicted to generally achieve the BS8233 recommended levels. However, this is not true in the gardens next to the water tower due to mechanical plant noise generated from the substations.
- 5.37 After holding discussions with the design team about mitigation options, it was agreed that a fence of elevated height, to be 2.4m, is to be installed along the eastern boundary of the gardens overlooking these substations so that mechanical plant noise is reduced to 9 dB below the ambient noise level within the garden. This is seen as acceptable as the mechanical plant noise has been reduced as far as practicably possible in these gardens with the 2.4m high fencing.

Stage 2 – Element 4 – Other relevant issues

- 5.38 In our view the design and acoustic approach outlined above is in line with both local and national noise policy. It is common for residential properties to be situated near to main roads and this is an acceptable scenario provided that the properties are acoustically upgraded where necessary to achieve acceptable noise levels in habitable areas.

Recommendation to decision maker

- 5.39 It is our view that planning permission may be granted in relation to noise affecting habitable areas of the development subject to the imposition of suitable planning conditions to ensure that acceptable noise levels are achieved in the finished development.

6. PLANT NOISE IMPACT ASSESSMENT

Design criteria – Mechanical plant noise

6.1 BS4142:2014+A1:2019 – *Methods for rating and assessing industrial and commercial sound* (hereafter BS4142) can be used to assess the impact of noise from external industrial and/or commercial noise sources on nearby sensitive receptors.

6.2 The BS4142 assessment methodology can be summarised as follows:

1. Measure the existing background noise levels (LA90,T dB) at the locations of nearby noise sensitive receptors during the quietest periods when the noise source(s) under investigation will operate
2. Predict or measure the noise emissions (LAeq,T dB) from the noise source(s) under investigation at the location(s) of the nearby sensitive receptors, and add corrections for any distinguishable acoustic features (e.g. tones, whines, screeches, hisses etc)
3. Subtract the measured background noise levels (Item 1 above) with the measured or predicted rating noise levels (Item 2 above) at each sensitive receptor. BS4142 states that:

a) Typically, the greater this difference, the greater the magnitude of the impact.

b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.

c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.

d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

NOTE Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact.

6.3 Within the Wiltshire Councils Core Strategy (2015) it states that developments should:

With regard to the compatibility of adjoining buildings and uses, the impact on the amenities of existing occupants and ensuring that appropriate levels of amenity are achievable within the development itself...

6.4 Given the guidance shown above, the mechanical plant noise limits have been adopted to be equal to the measured background noise level during the noise survey shown in Appendix 2.

- 6.5 Background noise levels (LA90) at the site were measured as part of the site noise survey outlined in Appendix 2. The measured background noise levels have been used to develop limits for plant noise emissions from the new development at the positions of the surrounding residential properties in accordance with the BS4142 assessment methodology. The limits are shown in Table 5 below.

Table 5 BS4142 Noise Limits - Free-field Levels

Location	Period	
	Day-time/Evening (0700-2300hrs)	Night-time (2300-0700hrs)
Nearest residential properties to development	47 dB LAr,Tr	31 dB LAr,Tr

Note 1 The above limits are 'rated' noise levels. Any mechanical plant noise emissions should have appropriate corrections for the character of the noise applied and still meet these limits.

Proposed mechanical plant design

- 6.6 Detailed design information is not yet available for external mechanical plant for the development, and therefore noise emissions from external mechanical plant cannot be accurately predicted at the positions of nearby residential properties at this stage.
- 6.7 The selection and design of external mechanical plant will be reviewed as project information becomes available to ensure that the project BS4142:2014 noise limits given in Table 5 are achieved.
- 6.8 It is expected that it will be straightforward to achieve the BS4142 noise limits. Compliance with the limits could be secured through the imposition of a suitable planning condition if deemed necessary by the Local Planning Authority.

7. CONCLUSIONS

- 7.1 Cass Allen was instructed by Gleeson Land Ltd to assess noise affecting the development.
- 7.2 The assessment was carried out in accordance with relevant local and national planning guidance.
- 7.3 Noise levels at the site are dictated by road traffic noise emissions from the A429 and the B4014. Noise levels due to the adjacent commercial uses (Whychurch Farm, QTS and TR Auto Servicing & Repairs) was insignificant compared to road traffic noise.
- 7.4 A noise model was used to calculate road traffic noise levels at all facades of the development.
- 7.5 Noise affecting the development has been assessed in accordance with ProPG guidance. The design of the development is considered to be acceptable subject to the adoption of acoustically upgraded glazing and ventilation and acoustic screening around gardens. This can be investigated further at the detailed design stage and may be secured by the imposition of a noise related planning condition by the Local Planning Authority.
- 7.6 Compliance with noise criteria in Building Regulations Part O has also been assessed. Some bedrooms will need to be designed so that windows can remain closed at night without the rooms overheating. This can be assessed further in due course.
- 7.7 Appropriate limits for noise from mechanical plant have been calculated based on measured noise levels at the site and guidance given in BS4142. It is envisaged that it will be straightforward to achieve the plant noise limits. This will be investigated further at the detailed design stage and may be secured by the imposition of a noise related planning condition if deemed necessary by the Local Planning Authority.
- 7.8 It is our view that the site is suitable for the development in terms of noise levels and that planning permission should be granted subject to the imposition of suitable planning conditions, if necessary.

Appendix 1 Development Layout



Romsey T: 01794 367703
Portishead T: 01275 407000
London T: 01794 367703

www.thrivearchitects.co.uk

This drawing is the copyright of Thrive Architects Ltd ©. All rights reserved. Ordnance Survey Data © Crown Copyright. All rights reserved. Licence No. 100007359. Permission is granted to scale from this drawing for the purposes of Local Authority Planning Applications only. For all other purposes DO NOT scale from this drawing. Contractors, Sub-Contractors and suppliers are to check all relevant dimensions and levels of the site and building before commencing any shop drawings or building work. Any discrepancies should be recorded to the Architect. Where applicable this drawing is to be read in conjunction with the Consultants' drawings / Clients' Construction Specification.

Rev	Description
A	Issued for planning
B	Boundary updated
C	Layout updated
D	Addition of 3m shared cycleway through site
E	Addition of acoustic fence to eastern boundary

Date	Au	Ch
24.02.25	NJ/TM	NJ
04.03.25	LC	NJ
20.11.25	LC	TM
16.01.26	TM	RP
28.01.26	TM	RP

Project Land north of Whychurch Farm and west of Crudwell Road
Drawing Illustrative Masterplan

Client	Gleeson Strategic Land		Date	31.01.25
Job no.	GLEE240917		Rev.	E
Dwg no.	IMP.02		Scale	1:1250@A2
Author	NJ/TM	Checked	NJ	Office
Status	PLANNING		Office	Portishead
Client ref.	-			



Appendix 2 Survey Results

Survey Summary:

The survey comprised short-term operator attended noise measurements and longer-term unattended noise monitoring at the site. Noise levels at the site were generally dictated by road traffic on surrounding roads.

Due to a lack of a suitable available noise monitoring position to assess road traffic noise emissions from the B4014, noise from this source was measured and assessed in accordance with the “shortened” measurement procedure given in the Department of Transport Welsh Office document “*Calculation of Road Traffic Noise*” (1998) and converted to LAeq,0700-2300 and LAeq,2300-0700 in accordance with the DEFRA/TRL document “*Method for converting the UK road traffic noise index LA10,18h to the EU noise indices for road noise mapping*” (2006).

Survey Period:

06/08/2025 to 13/08/2025

Survey Objectives:

- To identify noise sources that contribute to ambient noise levels at the site;
- To measure noise levels around the site over a typical day and night-time period.

Equipment Used:

Type	Manufacturer	Model	Serial Number
Sound level meter ¹	NTi Audio	XL2	A2A-24252-E1
Calibrator	Larson Davis	Type CAL200	15011
Sound level meter ¹ (noise logger)	Rion	NL-32	00272007
Sound level meter ¹ (noise logger)	Rion	NL-32	01213688
Calibrator	Rion	NC-74	34551703

Note 1: All sound level meters were calibrated before and after measurement periods and no significant drift in calibration was found to have occurred. The results of the measurements are therefore considered to be representative.

Weather Conditions:

The observed weather conditions were acceptable for acoustic measurement throughout the attended survey periods (low-medium wind speeds and no rain). Weather records for the area confirmed that weather conditions were also generally acceptable for acoustic measurement during the unattended monitoring. Any periods of unattended monitoring that may have been adversely affected by weather conditions have been excluded from the data analysis.

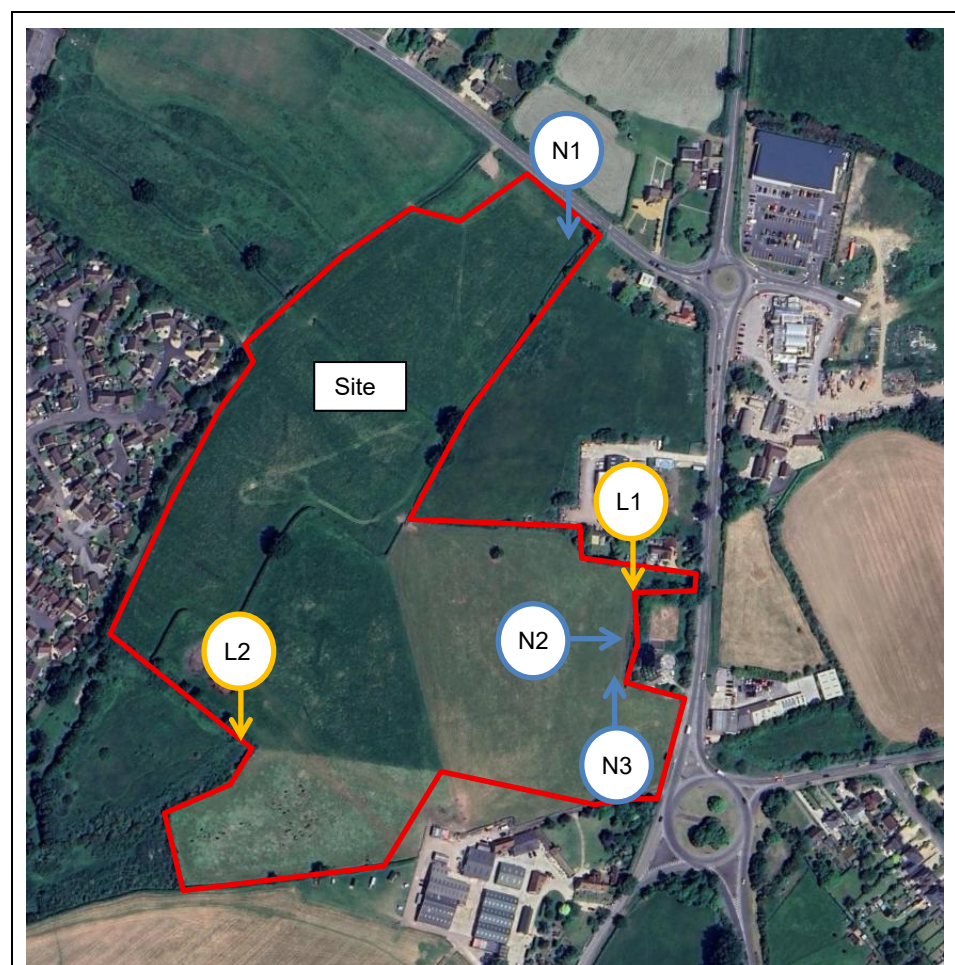
Measurement Positions:

Position (refer plan below)	Description
N1	Attended noise monitoring position. 1.5m above ground. Free-field. Direct line of sight to nearby roads

Measurement Positions:

Position (refer plan below)	Description
N2	Attended noise monitoring position. 1.5m above ground. Free-field. Direct line of sight to nearby roads
N3	Attended noise monitoring position. 1.5m above ground. Free-field. Direct line of sight to nearby roads
L1	Unattended noise logging position. 3m above ground level. Free-field. Direct line of sight to nearby roads
L2	Unattended noise logging position. 1.5m above ground level. Free-field. Direct line of sight to nearby roads

Site Plan showing Measurement Positions:



Attended Noise Monitoring Results:

Date	Position	Time	Meas. Length	LAeq, dB	LAmix, dB	LA90, dB	Observations
06/08/2025	N1	12:45	15 mins	54	70	45	Noise dictated by road traffic from B4014
06/08/2025	N1	12:45	15 mins	54	68	46	

Attended Noise Monitoring Results:

Date	Position	Time	Meas. Length	LAeq, dB	LAmix, dB	LA90, dB	Observations
06/08/2025	N1	12:45	15 mins	55	72	44	
06/08/2025	N2	12:45	10 secs	52	54	51	Noise dictated by mechanical plant associated with water tower
06/08/2025	N3	12:45	10 secs	51	54	49	Noise dictated by different mechanical plant associated with the water tower

Shortened CRTN Calculation Summary:

Date	Position	LA10,1hr dB			LA10,18hr dB	Daytime LAeq,16hr dB	Night-time LAeq,8hr dB
		1100 – 1200 hrs	1200 – 1300 hrs	1300 – 1400 hrs			
06/08/2025	L1	70	72	72	71	68	60

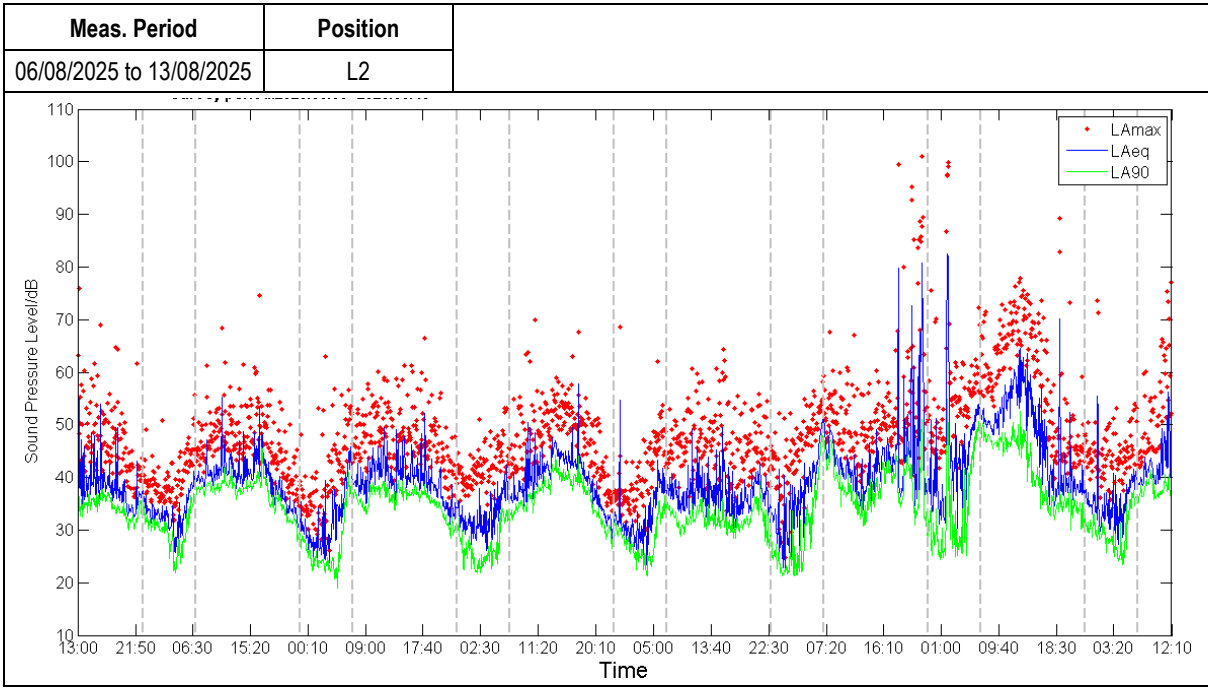
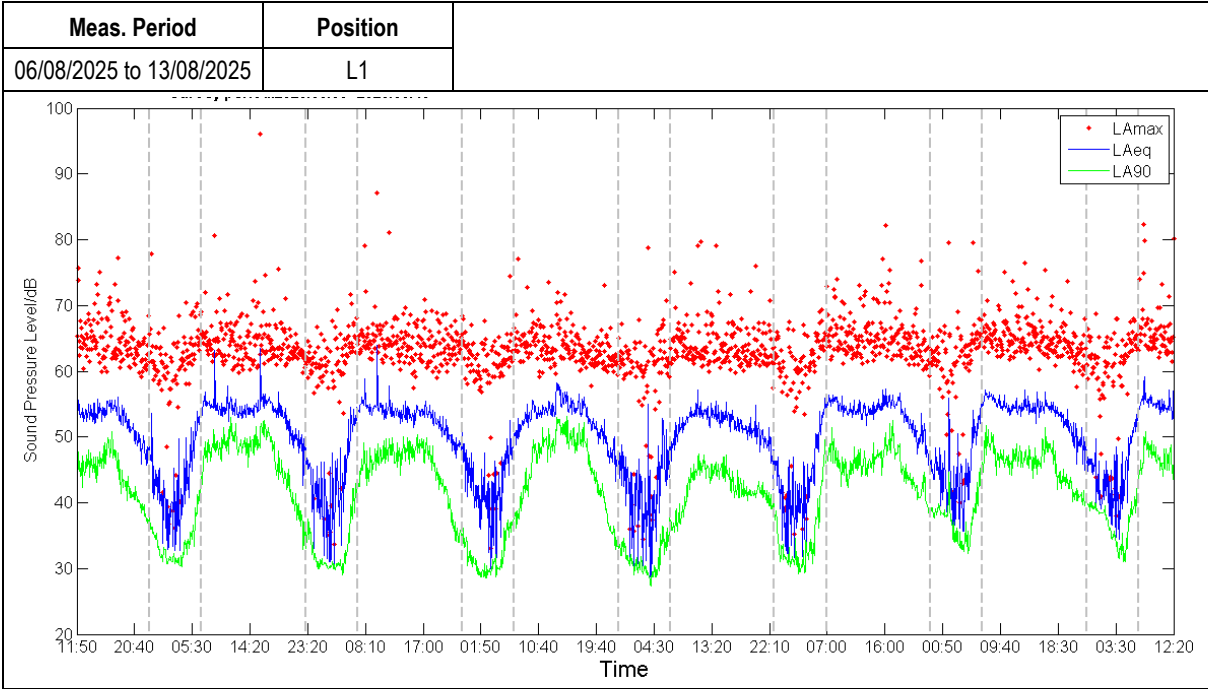
Unattended Noise Monitoring Results:

Meas. Period	Position	Daytime (0700-2300hrs)		Night-time (2300-0700hrs)		
		LAeq,16hr, dB	LA90,1hr dB ¹	LAeq,8hr, dB	LA90,5mins, dB ¹	LAmix, dB ²
06/08/2025 to 13/08/2025	L1	54	47	47	31	65-66
06/08/2025 to 13/08/2025	L2	42	37	38	33	49-51

Note 1: Typical lowest measured during the period shown.

Note 2: Highest typical maximum noise level during the night-time (not exceeded more than 10-15 times per night).

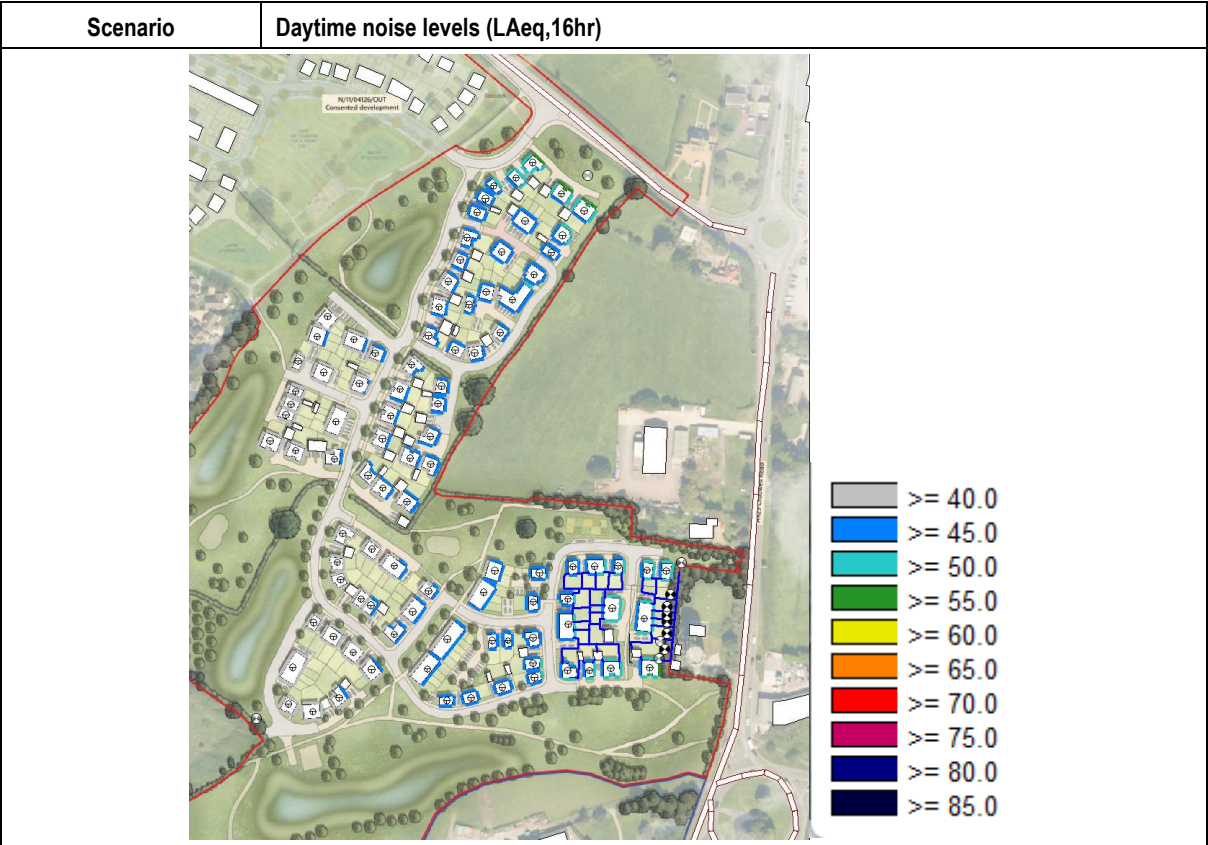
Unattended Noise Monitoring Results:

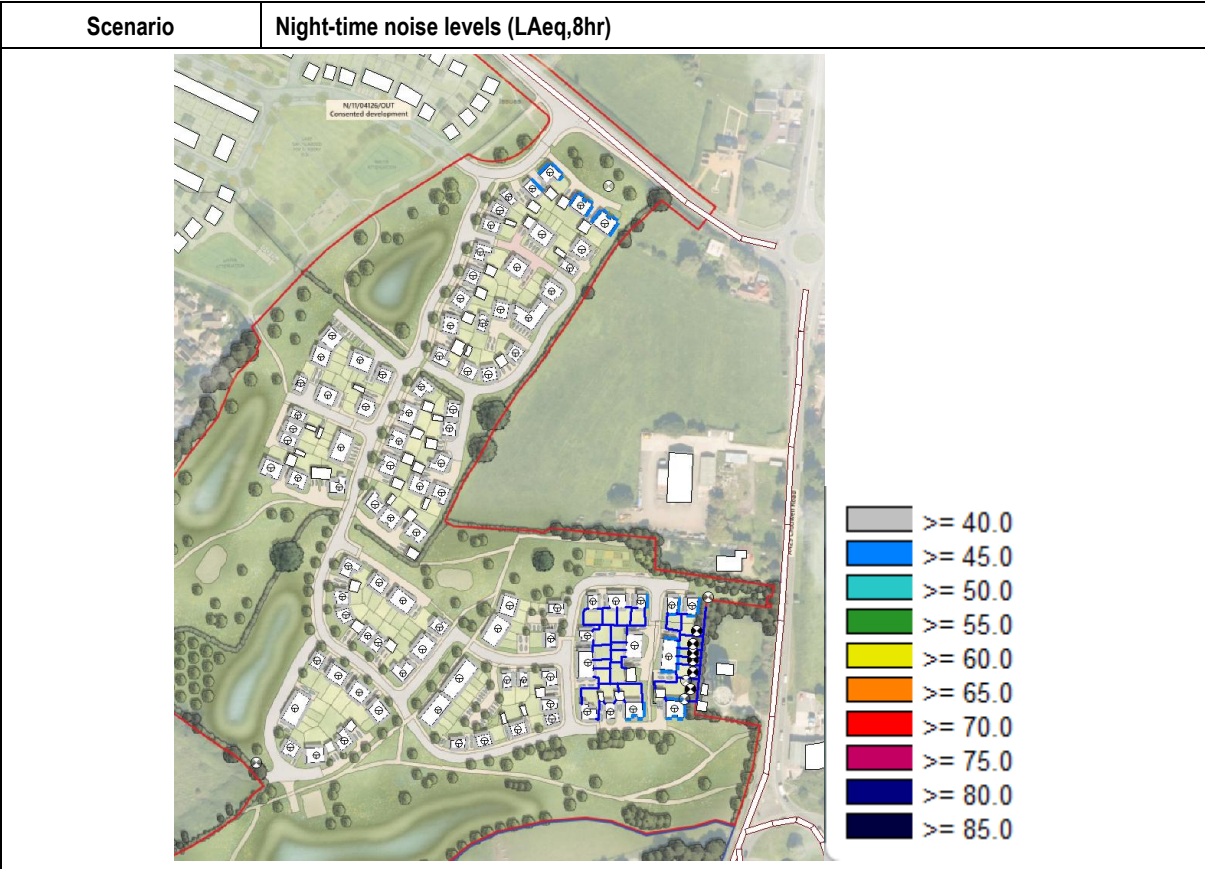


Appendix 3 Modelling Results

Modelling Software:	CADNA/A Version 2025
Modelled Scenarios:	Day and night-time average noise levels across the site
Data inputs:	- Noise survey results - Topographical data for the site - Development layout
Calculation Algorithms Used:	- Calculation of Road Traffic Noise 1988 – Department of Transport - ISO 9613-1:1993 Acoustics-Attenuation of sound during propagation outdoors – Part 1: Calculation of the absorption of sound by the atmosphere - ISO 9613-2:2024 Acoustics-Attenuation of sound during propagation outdoors – Part 2: Engineering method for the prediction of sound pressure levels outdoors

Modelling Printout:





Appendix 4 Façade Calculations

PROJECT: Land North of Whychurch Farm
 ROOM: Bedroom
 VARIANT: Worst-Case Average Noise Level (LAeq)
 NOTES: Typical assumptions used for ext. wall & glazing dimensions, and no. ventilators.

Room Dimensions [m] $\begin{matrix} W \\ 3.0 \end{matrix} \times \begin{matrix} L \\ 4.0 \end{matrix} \times \begin{matrix} H \\ 2.4 \end{matrix}$
 Room Volume = 28.8 m³
 Partition Area = 9.5 m²
 Ventilation ref area = 10.0 m²
 Free Field SPL K = 3 dB

SELECT Free Field or Façade SPL for model input >>> ☐

NOTES: _____

EXTERNAL SPECTRUM (A weighted)

EXTERNAL SPECTRUM (A weighted)		dBA	63	125	250	500	1000	2000	4000	
Direct input - Free Field SPL (A weighted octave bands) dB ---->		-								No data
Road traffic spectrum (according to BS 8233:1999 section 6)		56.0								
			37.8	41.9	45.4	48.8	52.0	49.2	44.0	Reference spectrum

REVERBERATION TIME

DIRECT INPUT ----->								No data
EQUAL RT for all bands ----->	0.5	0.5	0.5	0.5	0.5	0.5	0.5	Default - RT set to 0.5s

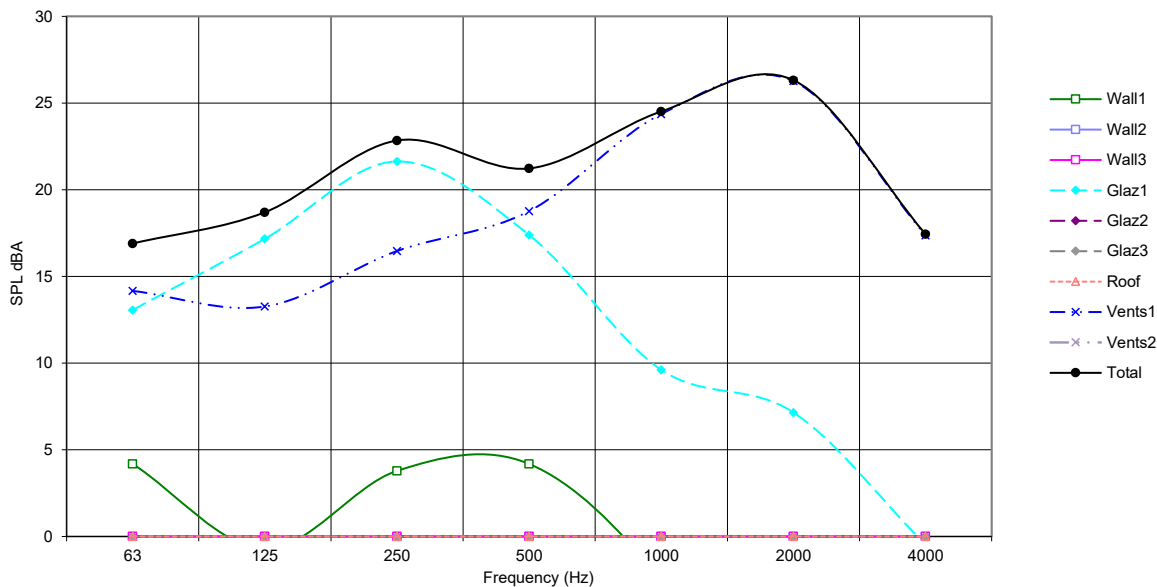
Façade Element	Area [m ²]	SRI dB to BS EN ISO 140-3:1995								Rw	C	Ctr
Wall 1 Typical - 102mm brick/50mm cavity/100mm block	8.0	36	45	44	47	57	67	77	1%	54	0	-4
ATTENUATION												
Wall 2 WALLS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Wall 3 WALLS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Glazing 1 27 dB Rw + Ctr - Standard Thermal Double Glazing	1.5	20	20	19	27	38	37	40	24%	27 (inc Ctr)	-	-
ATTENUATION												
Glazing 2 GLAZING		0	0	0	0	0	0	0	0%			
ATTENUATION												
Glazing 3 GLAZING		0	0	0	0	0	0	0	0%			
ATTENUATION												
Roof ROOF / FLOOR		0	0	0	0	0	0	0	0%			
ATTENUATION												
Resultant composite Façade SRI		27	28	27	34	45	45	48				
Resultant SPL inside room excluding ventilators dB	24.7	14	17	22	18	10	7	0	24%			

Ventilator Type	Num	D _{n,e} dB to BS EN 20140-10:1992								D _{nw}	C	Ctr
Ventilation Hit and miss trickle (4000mm ²) e.g. Titon Trimvent XS13	2	30	35	35	36	34	29	33	75%	32	0	-1
ATTENUATION												
Ventilation VENTS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Resultant SPL inside room through ventilators dB	29.6	14	13	16	19	24	26	17	76%			

Total SPL inside room

30.8	17	19	23	21	25	26	17
------	----	----	----	----	----	----	----

Element contribution to total internal noise level



PROJECT: Land North of Whychurch Farm
 ROOM: Bedroom
 VARIANT: Worst-Case Average Noise Level (LAeq)
 NOTES: Typical assumptions used for ext. wall & glazing dimensions, and no. ventilators.

Room Dimensions [m] $\begin{matrix} W \\ 3.0 \end{matrix}$ X $\begin{matrix} L \\ 4.0 \end{matrix}$ X $\begin{matrix} H \\ 2.4 \end{matrix}$
 Room Volume = 28.8 m³
 Partition Area = 9.5 m²
 Ventilation ref area = 10.0 m²
 Free Field SPL K = 3 dB

SELECT Free Field or Façade SPL for model input >>> ☐

NOTES: _____

EXTERNAL SPECTRUM (A weighted)

EXTERNAL SPECTRUM (A weighted)		dBA	63	125	250	500	1000	2000	4000	
Direct input - Free Field SPL (A weighted octave bands) dB ----->		-								No data
Road traffic spectrum (according to BS 8233:1999 section 6)		49.0								
			30.8	34.9	38.4	41.8	45.0	42.2	37.0	Reference spectrum

REVERBERATION TIME

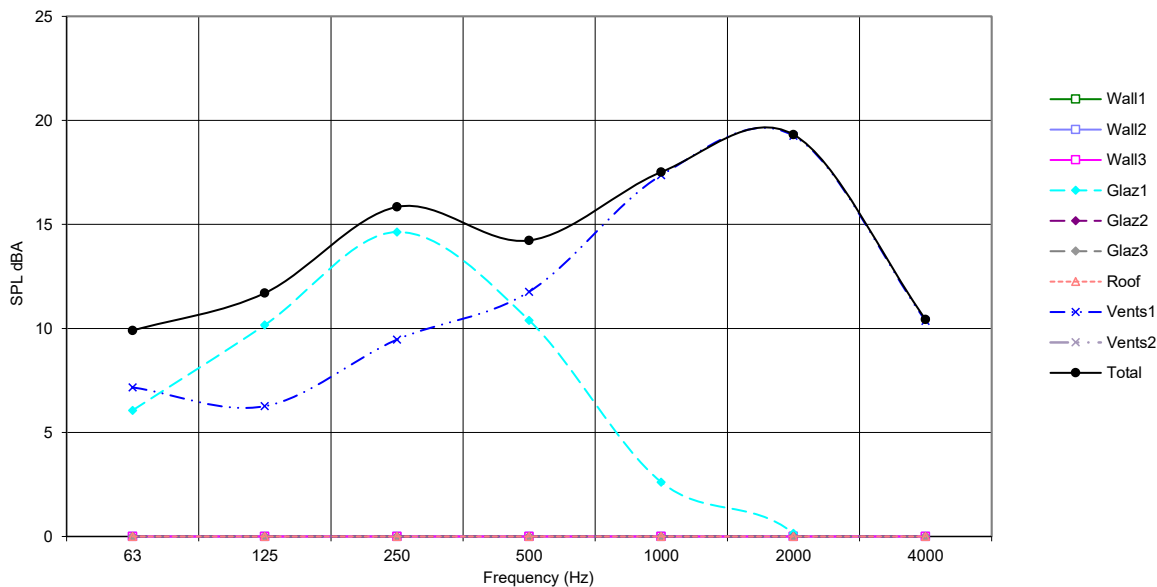
DIRECT INPUT ----->								No data
EQUAL RT for all bands ----->	0.5	0.5	0.5	0.5	0.5	0.5	0.5	Default - RT set to 0.5s

Façade Element	Area [m ²]	SRI dB to BS EN ISO 140-3:1995								Rw	C	Ctr
Wall 1 Typical - 102mm brick/50mm cavity/100mm block	8.0	36	45	44	47	57	67	77	0%	54	0	-4
ATTENUATION												
Wall 2 WALLS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Wall 3 WALLS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Glazing 1 27 dB Rw + Ctr - Standard Thermal Double Glazing	1.5	20	20	19	27	38	37	40	23%	27 (inc Ctr)	-	-
ATTENUATION												
Glazing 2 GLAZING		0	0	0	0	0	0	0	0%			
ATTENUATION												
Glazing 3 GLAZING		0	0	0	0	0	0	0	0%			
ATTENUATION												
Roof ROOF / FLOOR		0	0	0	0	0	0	0	0%			
ATTENUATION												
Resultant composite Façade SRI		27	28	27	34	45	45	48				
Resultant SPL inside room excluding ventilators dB	17.7	7	10	15	11	3	0	-7	24%			

Ventilator Type	Num	D _{n,e} dB to BS EN 20140-10:1992								D _{nw}	C	Ctr
Ventilation Hit and miss trickle (4000mm ²) e.g. Titon Trimvent XS13	2	30	35	35	36	34	29	33	74%	32	0	-1
ATTENUATION												
Ventilation VENTS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Resultant SPL inside room through ventilators dB	22.6	7	6	9	12	17	19	10	76%			

Total SPL inside room **23.8** **10** **12** **16** **14** **18** **19** **10**

Element contribution to total internal noise level



PROJECT: Land North of Whychurch Farm
 ROOM: Bedroom
 VARIANT: Worst-Case Maximum Noise Level (LAmax)
 NOTES: Typical assumptions used for ext. wall & glazing dimensions, and no. ventilators.

Room Dimensions [m] $\begin{matrix} W \\ 3.0 \end{matrix} \times \begin{matrix} L \\ 4.0 \end{matrix} \times \begin{matrix} H \\ 2.4 \end{matrix}$
 Room Volume = 28.8 m³
 Partition Area = 9.5 m²
 Ventilation ref area = 10.0 m²
 Free Field SPL K = 3 dB

SELECT Free Field or Façade SPL for model input >>> ☐

NOTES:

EXTERNAL SPECTRUM (A weighted)

Direct input - Free Field SPL (A weighted octave bands) dB ----->	-							No data
Road traffic spectrum (according to BS 8233:1999 section 6)	67.0							
		48.8	52.9	56.4	59.8	63.0	60.2	55.0
								Reference spectrum

REVERBERATION TIME

DIRECT INPUT ----->								No data
EQUAL RT for all bands ----->	0.5	0.5	0.5	0.5	0.5	0.5	0.5	Default - RT set to 0.5s

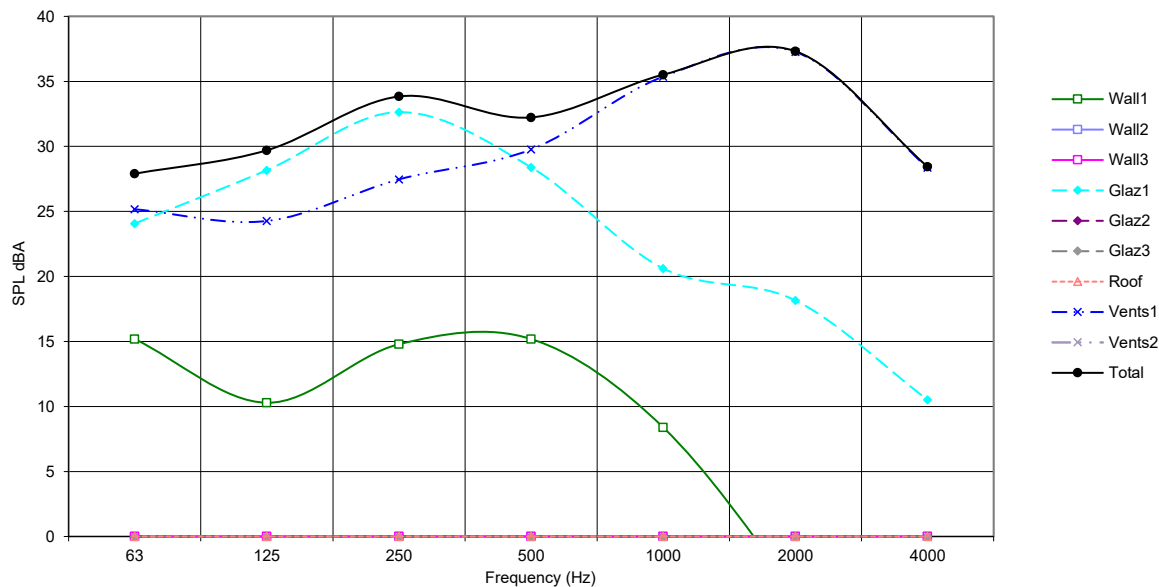
Façade Element	Area [m ²]	SRI dB to BS EN ISO 140-3:1995								Rw	C	Ctr
Wall 1 Typical - 102mm brick/50mm cavity/100mm block	8.0	36	45	44	47	57	67	77	1%	54	0	-4
ATTENUATION												
Wall 2 WALLS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Wall 3 WALLS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Glazing 1 27 dB Rw + Ctr - Standard Thermal Double Glazing	1.5	20	20	19	27	38	37	40	24%	27 (inc Ctr)	-	-
ATTENUATION												
Glazing 2 GLAZING		0	0	0	0	0	0	0	0%			
ATTENUATION												
Glazing 3 GLAZING		0	0	0	0	0	0	0	0%			
ATTENUATION												
Roof ROOF / FLOOR		0	0	0	0	0	0	0	0%			
ATTENUATION												
Resultant composite Façade SRI		27	28	27	34	45	45	48				
Resultant SPL inside room excluding ventilators dB	35.7	25	28	33	29	21	18	11	24%			

Ventilator Type	Num	D _{n,e} dB to BS EN 20140-10:1992								D _{nw}	C	Ctr
Ventilation Hit and miss trickle (4000mm ²) e.g. Titon Trimvent XS13	2	30	35	35	36	34	29	33	76%	32	0	-1
ATTENUATION												
Ventilation VENTS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Resultant SPL inside room through ventilators dB	40.6	25	24	27	30	35	37	28	76%			

Total SPL inside room

41.8	28	30	34	32	36	37	28
------	----	----	----	----	----	----	----

Element contribution to total internal noise level



PROJECT: Land North of Whychurch Farm
 ROOM: Living Room
 VARIANT: Worst-Case Average Noise Level (LAeq)
 NOTES: Typical assumptions used for ext. wall & glazing dimensions, and no. ventilators.

Room Dimensions [m] $\begin{matrix} W \\ 4.0 \end{matrix}$ X $\begin{matrix} L \\ 5.0 \end{matrix}$ X $\begin{matrix} H \\ 2.4 \end{matrix}$

Room Volume = 48.0 m³
 Partition Area = 17.5 m²
 Ventilation ref area = 10.0 m²
 Free Field SPL K = 3 dB

SELECT Free Field or Façade SPL for model input >>> ☐

EXTERNAL SPECTRUM (A weighted)

Direct input - Free Field SPL (A weighted octave bands) dB ---->	-							No data
Road traffic spectrum (according to BS 8233:1999 section 6)	56.0							
		37.8	41.9	45.4	48.8	52.0	49.2	44.0
								Reference spectrum

REVERBERATION TIME

DIRECT INPUT ----->								No data
EQUAL RT for all bands ----->	0.5	0.5	0.5	0.5	0.5	0.5	0.5	Default - RT set to 0.5s

NOTES:

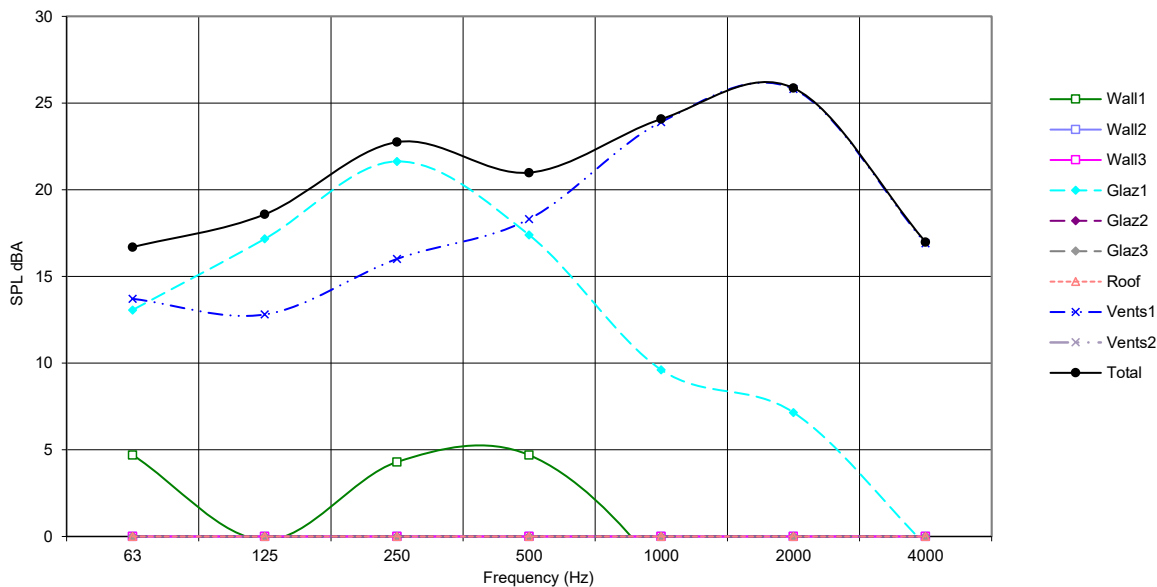
Façade Element	Area [m ²]	SRI dB to BS EN ISO 140-3:1995								Rw	C	Ctr
Wall 1 Typical - 102mm brick/50mm cavity/100mm block	15.0	36	45	44	47	57	67	77	1%	54	0	-4
ATTENUATION												
Wall 2 WALLS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Wall 3 WALLS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Glazing 1 27 dB Rw + Ctr - Standard Thermal Double Glazing	2.5	20	20	19	27	38	37	40	26%	27 (inc Ctr)	-	-
ATTENUATION												
Glazing 2 GLAZING		0	0	0	0	0	0	0	0%			
ATTENUATION												
Glazing 3 GLAZING		0	0	0	0	0	0	0	0%			
ATTENUATION												
Roof ROOF / FLOOR		0	0	0	0	0	0	0	0%			
ATTENUATION												
Resultant composite Façade SRI		28	28	27	35	46	46	48				
Resultant SPL inside room excluding ventilators dB	24.7	14	17	22	18	10	7	0	27%			

Ventilator Type	Num	D _{n,e} dB to BS EN 20140-10:1992								D _{nw}	C	Ctr
Ventilation Hit and miss trickle (4000mm ²) e.g. Titon Trimvent XS13	3	30	35	35	36	34	29	33	73%	32	0	-1
ATTENUATION												
Ventilation VENTS		0	0	0	0	0	0	0	0%			
ATTENUATION												
Resultant SPL inside room through ventilators dB	29.2	14	13	16	18	24	26	17	73%			

Total SPL inside room

30.5	17	19	23	21	24	26	17
------	----	----	----	----	----	----	----

Element contribution to total internal noise level



Appendix 5 Part O Acoustic Requirements for Bedrooms at Night



Ref.	Colour	Outside-to-inside noise reduction requirement	Part O Requirement for Bedrooms
ADO01	Green	4 dB	Energy assessment (e.g. TM59) to show that bedrooms will not overheat at night with windows fully open (e.g. 13% of floor area, which is typically around 1.3m ²) and ventilators fully open.
ADO02	Yellow	9 dB	Energy assessment (e.g. TM59) to show that bedrooms will not overheat at night with windows open (e.g. 4% of floor area, which is typically around 0.4m ²) and ventilators fully open.
ADO03	Orange	13 dB	Energy assessment (e.g. TM59) to show that bedrooms will not overheat at night with windows partially open (e.g. ~2% of floor area, which is typically around 0.2m ²) and ventilators fully open.
ADO04	Red	>13 dB	Energy assessment (e.g. TM59) to show that bedrooms on these facades will not overheat at night with windows fully closed and ventilators fully open.

Note 1 ADO requirements only apply to bedrooms during night-time hours (23:00-07:00)
Note 2 The window open area is specified above as an actual open area, not 'equivalent open area' and the values may therefore need to be converted as part of the overheating assessment.



Architectural & Environmental Consultants
Acoustics | Vibration | Air Quality

This report has been prepared by Cass Allen Associates Ltd in accordance with the CDM regulations with all reasonable skill, care and diligence, and taking account of the resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid at the time of collection. This report is for the exclusive use of the client named above; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from Cass Allen Associates Ltd. Cass Allen Associates Ltd disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of work.



If you have any queries
with this report, please
click here to send us an
email and we will call you
back to discuss