



Architectural & Environmental Consultants
Acoustics | Vibration | Air Quality

Acoustic Assessment

Land East of Walnut Tree, Pirton

Acoustic Assessment

Project: LAND EAST OF WALNUT TREE, PIRTON

Report reference: RP01-25395-R0

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1. EXECUTIVE SUMMARY

- 1.1 Cass Allen has been instructed by Blakeney Estates Limited to assess noise affecting a proposed new residential development at Land East of Walnut Tree, Pirton.
- 1.2 The assessment was carried out in accordance with relevant local and national planning guidance including North Herts District Council's *Local Plan 2011-2031 (May 2019)*.
- 1.3 A noise survey was carried out at the site from 25 to 30 July 2025. Noise levels are dictated by road traffic on Hitchin Road and aircraft associated with Luton Airport.
- 1.4 Noise affecting the development has been assessed in accordance with guidance in ProPG: Planning and Noise for New Residential Development (May 2017). The design of the development is considered to be acceptable subject to the adoption of appropriate glazing and ventilation. 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.
- 1.5 Compliance with noise guidance in Building Regulations Part O has also been assessed. Windows to bedrooms can be assumed to be fully open during the night-time for the purposes of the overheating assessment. This assessment can be finalised in due course.
- 1.6 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.

2. INTRODUCTION

- 2.1 Cass Allen has been instructed by Blakeney Estates Limited to assess noise affecting a proposed new development at Land East of Walnut Tree, Pirton.
- 2.2 The assessment was carried out in accordance with relevant local and national planning guidance including North Herts District Council's *Local Plan 2011-2031 (May 2019)*.
- 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 appropriate 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 is currently an undeveloped land in a residential area which is bounded to the south by the Pirton Sports and Social Club (hereafter Sports Club). Further to the west of site is Walnut Tree Road with Hitchin Road further to the southwest.
- 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.

Noise Policy Statement for England

- 4.2 The Noise Policy Statement for England (NPSE) was published in March 2010 and seeks to clarify the underlying principles and aims in existing policy documents, legislation and guidance that relate to noise. It also 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.

- 4.3 The NPSE clarifies that noise should not be considered in isolation of the wider benefits of a scheme or development, and that the intention is to minimise noise and noise effects as far as is reasonably practicable having regard to the underlying principles of sustainable development.

- 4.4 The explanatory note of NPSE defines the terms used in the NPPF:

2.20: There are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation. They are:

NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

2.21: Extending these concepts for the purpose of this NPSE leads to the concept of a significant observed adverse effect level.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur.

- 4.5 The NPSE does not define the SOAEL numerically, stating in paragraph 2.22:

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.

Noise Planning Practice Guidance

- 4.6 The Noise Planning Practise Guidance (NPPG), as amended on 22 July 2019, provides further guidance on noise and reiterates the guidance within the NPPF and NPSE. It 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.

- 4.7 The NPPG provides advice regarding how to determine the impact of noise, including whether or not a significant adverse effect or adverse effect is occurring or likely to occur and whether or not a good standard of amenity can be achieved.
- 4.8 It provides more descriptive detail for the definitions of NOEL, LOAEL and SOAEL than the NPSE, but does not specify numerical values. A summary of the advice given is reproduced in Table 1 below.

Table 1 Observed Effect Levels due to Noise (NPPG)

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not present	No effect	No Observed Effect	No specific measures required
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

Local Policy

- 4.9 North Herts District Councils *Local Plan 2011-2031 (May 2019)* provides outline guidance on the assessment of noise affecting new developments in the borough. The plan contains the following policy relating to noise:

Policy D3: Protecting living conditions

Planning permission will be granted for development proposals which do not cause unacceptable harm to living conditions.

Where the living conditions of proposed developments would be affected by an existing use or living conditions of an existing development would be affected by a proposed use, the council will consider whether there are mitigation measures that can be taken to mitigate the harm to an acceptable level. If the Council is not satisfied that mitigation proposals would address the identified harm, development proposals will not be permitted.

- 4.10 To address the requirements of the national and local policies, noise affecting habitable areas of the development has been assessed.

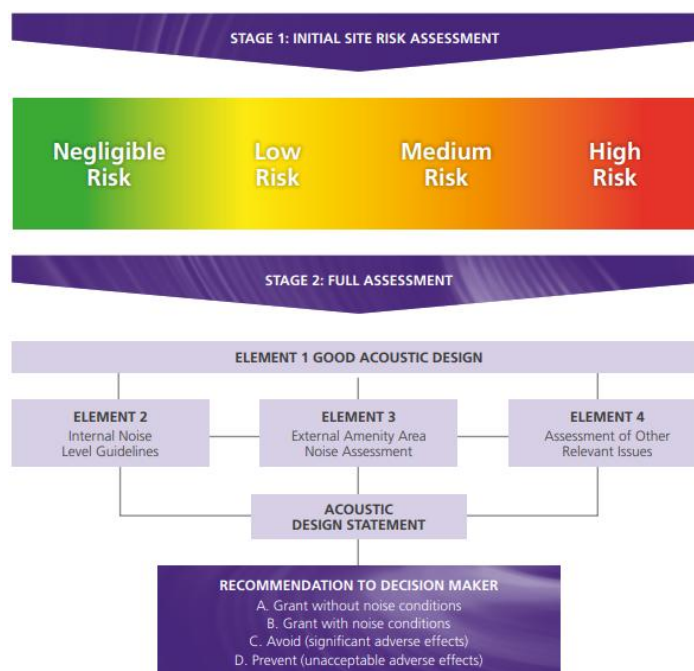
5. NOISE AFFECTING THE DEVELOPMENT

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 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 Stage 4 – Element 4 in relation to noise from the Sports Club activity.

Stage 1 – Noise survey and initial assessment

- 5.4 A noise survey was carried out at the site from 25 to 30 July 2025 to investigate 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 primarily dictated by road traffic on the Hitchin Road and Aircraft movements associated with Luton Airport. Noise was identified from road traffic on Walnut Tree Road however it was generally insignificant compared to other noise sources.
- 5.6 Noise was also identified associated with the maintaining of the Sports Club grounds (i.e. tractors mowing the playing field) as well as Sports Club Patron noise (i.e. shouting, cars parking) associated with an event for the European Championship football finals on the 27 July. However, this noise increase was minimal (i.e 3-5 dB) and over a short period. This is assessed in more detail in Stage 2 – Element 4.
- 5.7 Night-time maximum noise levels (LAmax) at the were largely dictated by aircraft movements associated with Luton Airport. Night-time maximum noise levels at the westerns edges of the site were also dictated by individual car passes on the Walnut Tree Road.
- 5.8 Background noise levels (LA90) across the site were dictated by constant road traffic noise from Hitchin Road.
- 5.9 The 'worst-case' noise levels were observed to be at the southern edge of site. The noise survey and data analysis of the results in line with the above show that noise levels at this position IS as follows:
- Average noise levels during the daytime - 47 dB LAeq,0700-2300hrs.
 - Average noise levels during the night-time - 41 dB LAeq,2300-0700hrs.
 - Typical maximum noise levels during the night-time - 59 dB LAmax.
- 5.10 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)



- 5.11 It can be seen from a comparison of the measured noise levels in paragraph 5.9 above with Figure 3 that the site is 'negligible-low' risk in relation to daytime noise levels and 'Low' risk in relation to night-time noise levels. However, it is our view given the presence of aircraft in the area, that it is appropriate to proceed with a Stage 2 assessment.

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

- 5.12 The acoustic design of the 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 given that the site is mostly screened from nearby roads (i.e. Walnut Tree Road) by existing residences with up to approx. 15-20m buffer zone between the closest proposed residences and the edges of the site.

Stage 2 – Element 2 - Internal noise levels

- 5.13 ProPG provides criteria for noise levels in new residential developments, summarised in Table 2 below.

Table 2 ProPG 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 45 dB L _{Amax} , 5 mins ¹

Note 1 ProPG states: "In most circumstances in noise-sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45 dB L_{Amax}, F more than 10 times a night"

- 5.14 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).

- 5.15 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.
- 5.16 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 3dB design margin.
- 5.17 If compliant 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.
- 5.18 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. If more ventilators are used, a higher acoustic performance may be required.
- 5.19 The results of the calculations are shown in Appendix 3 and are summarised in Table 3 below.

Table 3 Acoustic Requirements for 'Worst Case' Habitable Rooms

'Worst Case' Rooms	Glazing Performance Requirements (inc. Frames)	Ventilator Performance Requirements (in Open Position)
Bedrooms to the south of site	27 dB Rw+Ctr	31 dB Dne,w + Ctr
Living rooms to the south of site	27 dB Rw+Ctr	31 dB Dne,w + Ctr

Note The requirements given are approximate only and should be confirmed at the detailed design stage when full design details are available.

- 5.20 The required sound insulation performance values in Table 3 could typically be achieved by the glazing and ventilator types shown in Table 4.

Table 4 Example Glazing / Ventilator Acoustic Performances

Example Glazing (in Good Quality Sealed Frames)	Typical Weighted Sound Reduction (Rw + Ctr)
4/16/4mm standard thermal double glazing	27
Example 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.

5.21 It can be seen from the above that compliant internal noise levels will be achievable in the development subject to the installation of suitable glazing and ventilation systems at the detailed design stage. It is our view therefore that the proposed development is, in principle, acceptable regarding the noise levels that will exist within the habitable rooms.

5.22 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.

5.23 The development will be subject to Part O of the Building Regulations (Approved Document O). 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).

5.24 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) or to bedrooms during the day.

5.25 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 used to control overheating. The wider the window is assumed 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.

5.26 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 5.

Table 5 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 (L _{Amax}) – 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)

5.27 It can be seen from survey data in Appendix 2 and guidance given in Table 5 that windows to bedrooms can be allowed to be fully open during the night-time for the purposes of the overheating assessment.

5.28 This information can be provided to the project Energy Assessor to inform the overheating assessment and then fully assessed during the detailed design stage to demonstrate compliance with Part O.

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

ProPG reiterates BS8233 guidance which 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. The noise survey results indicate that noise levels in external amenity areas are predicted to generally achieve the ProPG recommended levels. The

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.

proposed development is therefore also considered to be acceptable based on noise levels in external amenity areas.

Stage 2 – Element 4 – Other relevant issues

- 5.29 Noise was also identified from the Sports Club to the south of site associated with the maintenance of the grounds (i.e. tractors mowing the playing field) as well as patron noise (i.e. shouting, cars parking) during an event for the European Championship football final on Sunday 27 July between 4:30-7:30 pm. These noise levels were assessed and found to marginally increase ambient levels in the area by up to 5 dB over a 'worst-case' period of an hour. It is understood from Condition 10 of the planning consent for Sports Club (Decision notice 24/00207/FP) that the latest the club operates is to 12pm on Friday and Saturdays and 11pm the rest of the week to protect nearby residential amenity. Given the size of the venue and the restrictions outlined above it is our view that the levels measured during the European final event are 'worst-case' and unlikely to increase during similar events.
- 5.30 Hence, given that the proposed houses are at a similar distance from the Sports Club as the preexisting residences and that the primary character of the noise sources (i.e. vehicles, lawnmowing) is unlikely to have an impact on proposed residents at this level, noise levels from the Sports club would correspond to the following NPPG guidance;

Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.

- 5.31 Hence in line with NPPG guidance it is our view that noise from the Sports Club is below the lowest observed adverse effect level (LOAEL) therefore requires no specific mitigation

Recommendation to decision maker

- 5.32 It is our view the acoustic design and approach outlined above is in line with local and national guidance and hence planning permission may be granted in relation to noise affecting habitable areas of the development.

6. CONCLUSIONS

- 6.1 Cass Allen has been instructed by Blakeney Estates Limited to assess noise affecting a proposed new residential development at Land East of Walnut Tree, Pirton.
- 6.2 The assessment was carried out in accordance with relevant local and national planning guidance including North Herts District Council's *Local Plan 2011-2031 (May 2019)*.
- 6.3 A noise survey was carried out at the site from 25 to 30 July 2025. Noise levels are dictated by road traffic on Hitchin Road and aircraft associated with Luton Airport.
- 6.4 Noise affecting the development has been assessed in accordance with guidance in ProPG: Planning and Noise for New Residential Development (May 2017). The design of the development is considered to be acceptable subject to the adoption of appropriate glazing and ventilation. 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.
- 6.5 Compliance with noise guidance in Building Regulations Part O has also been assessed. Windows to bedrooms can be assumed to be fully open during the night-time for the purposes of the overheating assessment. This can be assessed further in due course.
- 6.6 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.

Appendix 1 Site Layout



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 Hitchin Road and aircraft movements associated with Luton Airport.

Survey Period:

25/07/2025 to 30/07/2025

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	00482672
Sound level meter ¹ (noise logger)	Rion	NL-32	00251125
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.

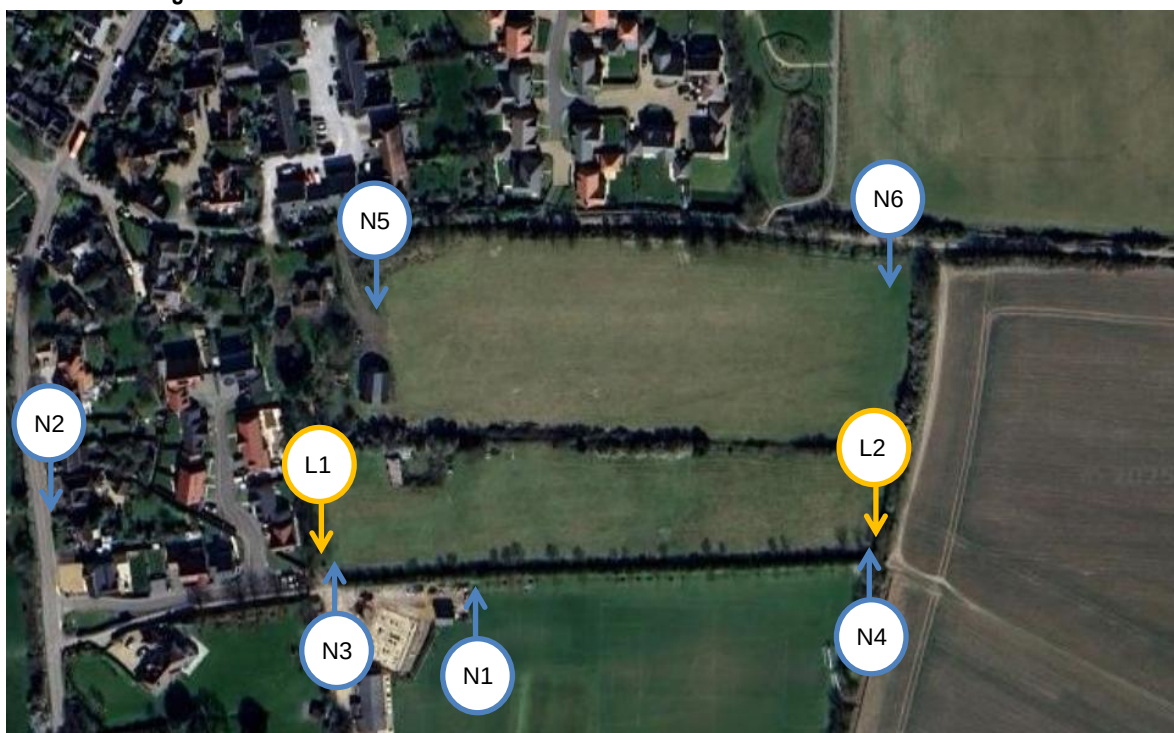
Measurement Positions:

Position (refer plan below)	Description
N1	Attended noise monitoring position. 1.5m above ground. Free-field. 10m from tractor.
N2	Attended noise monitoring position. 1.5m above ground. Free-field. Direct line of sight to Walnut Tree Road.
N3	Attended noise monitoring position. 1.5m above ground. Free-field. Direct line of sight to nearby Walnut Tree Road approx. 120m away
N4	Attended noise monitoring position. 1.5m above ground. Free-field. Measurement position used to determine noise levels at the southern edge of site away from the road

Measurement Positions:

Position (refer plan below)	Description
N5	Attended noise monitoring position. 1.5m above ground. Free-field. Measurement position used to determine noise levels at northern edge of site closest to Walnut Tree Road.
N6	Attended noise monitoring position. 1.5m above ground. Free-field. Measurement position used to determine noise levels at northern edge of site furthest from Walnut Tree Road.
L1	Unattended noise logging position. 3m above ground level. Free-field. Direct line of sight to nearby Walnut Tree Road approx. 120m away
L2	Unattended noise logging position. 3m above ground level. Free-field. Measurement position used to determine noise levels at the southern edge of site away from the road

Site Plan showing Measurement Positions:



Attended Noise Monitoring Results:

Date	Position	Time	Meas. Length	LAeq, dB	LAm _{ax} , dB	LA90, dB	Observations
25/07/2025	N1	11:12	1 min	62	68	-	Measurement used to determine spectrum of a tractor.
		11:26	1 min	53	57	-	
01/08/2025	N2	10:14	5 mins	58	76	34	
		10:24	5 mins	56	77	35	

Attended Noise Monitoring Results:

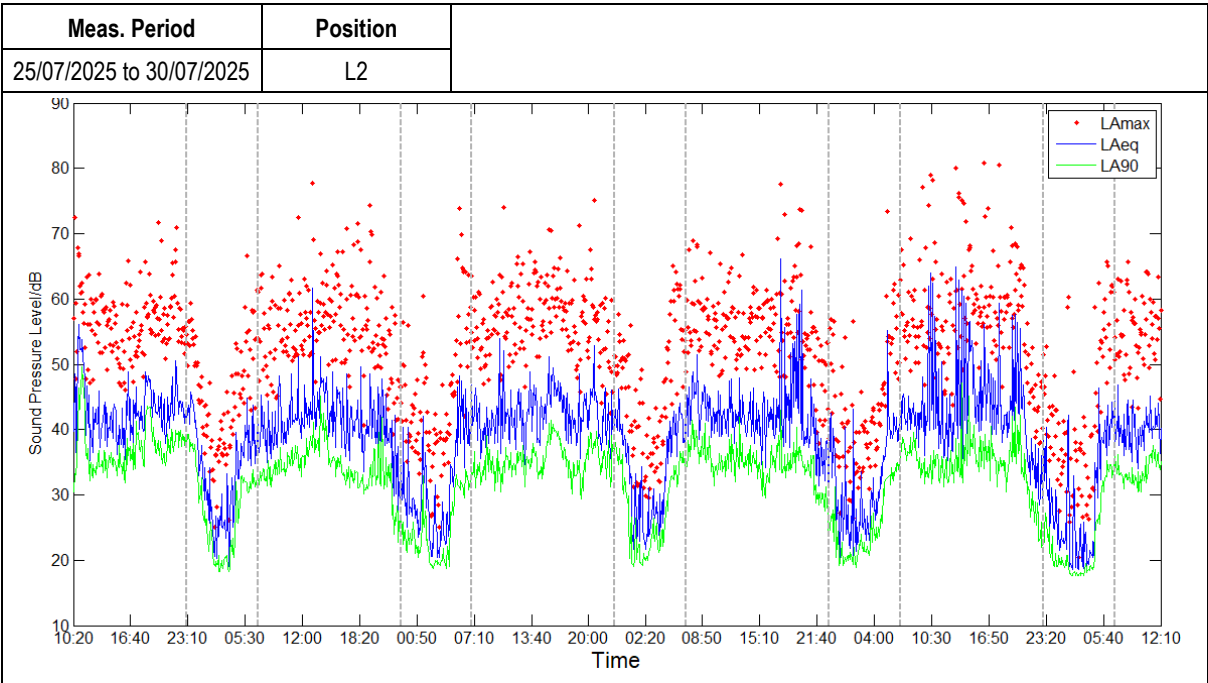
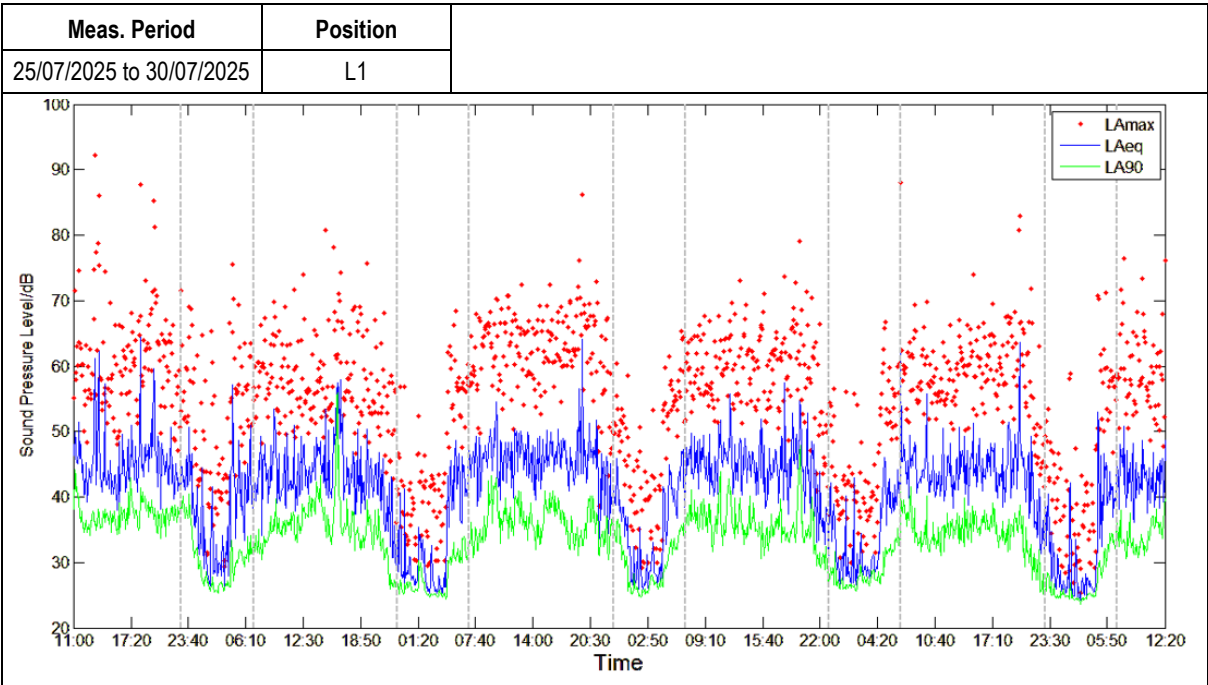
Date	Position	Time	Meas. Length	LAeq, dB	LAmx, dB	LA90, dB	Observations
		11:49	5 mins	56	74	36	Noise levels dictated by road traffic on Pirton Road. Maximum noise levels dictated by individual car passes on Pirton Road.
		11:54	5 mins	57	72	36	
	N3	10:26	5 mins	44	59	33	Noise levels dictated by road traffic on Pirton Road and Hitchin Road as well as aircraft movements associated with Luton Airport. Maximum noise levels dictated by individual aircraft passes associated with Luton Airport.
		10:32	5 mins	42	61	32	
	N4	10:40	5 mins	38	57	32	Noise levels dictated by road traffic on Hitchin Road as well as aircraft movements associated with Luton Airport. Maximum noise levels dictated by individual aircraft passes associated with Luton Airport.
		10:48	5 mins	41	61	34	
		10:56	12 secs	43	48	-	Measurement used to determine spectrum of Luton aircraft passes.
		10:57	37 secs	50	57	-	
	N5	11:10	5 mins	37	54	32	Noise levels dictated by road traffic on Pirton Road and Hitchin Road as well as aircraft movements associated with Luton Airport. Maximum noise levels dictated by individual aircraft passes associated with Luton Airport.
		11:19	5 mins	37	56	31	
	N6	11:36	5 mins	42	55	36	Noise levels dictated by road traffic on Pirton Road and Hitchin Road as well as aircraft movements associated with Luton Airport. Maximum noise levels dictated by individual aircraft passes associated with Luton Airport.
		11:41	5 mins	39	55	34	

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	LAmaz, dB ²
25/07/2025 to 30/07/2025	L1	47	35	41	25	59
	L2	46	35	37	19	58

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).



Appendix 3 Facade Calculations

FACSIM V2.7.10 - MODELLING OF FACADE ACOUSTIC INSULATION TO BS12354-3 and BS8233

PROJECT: Land East of Walnut Tree Road, Pirton
ROOM: Bedroom using typical dimensions and #No Ventilators
VARIANT: Worst-case daytime average noise levels (LAeq,16 hr)
NOTES: Transportation source (Car and Aircraft Passes)

Room Dimensions [m] W 3.0 X L 4.0 X H 2.4
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 >>> []

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) 47.0
Reference spectrum
28.8 32.9 36.4 39.8 43.0 40.2 35.0

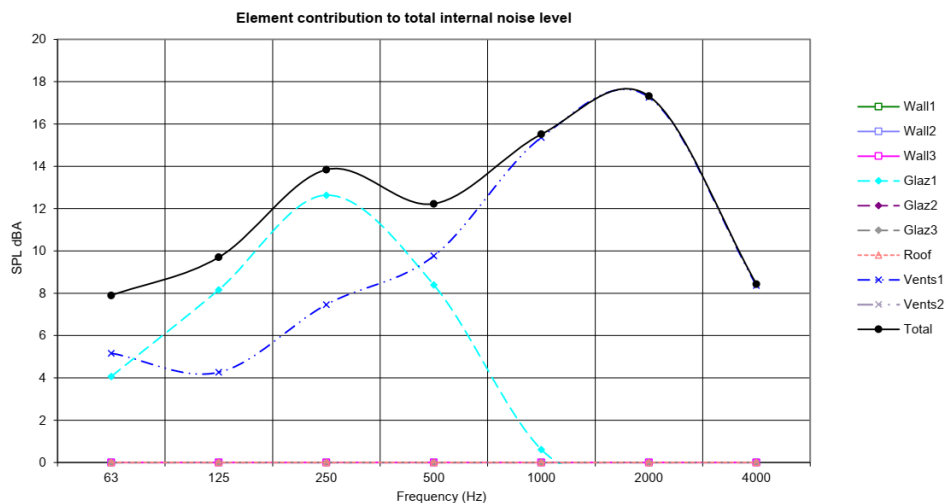
REVERBERATION TIME
DIRECT INPUT ----> [] No data
EQUAL RT for all bands ----> [] Default - RT set to 0.5s
0.5 0.5 0.5 0.5 0.5 0.5 0.5

Façade Element	Area [m2]	SRI dB to BS EN ISO 140-3:1995							Rw	C	Ctr	
Wall 1 Typical - 102mm brick/50mm cavity/100mm block ATTENUATION	8.0	36	45	44	47	57	67	77	1%	54	0	-4
Wall 2 ATTENUATION		0	0	0	0	0	0	0	0%			
Wall 3 ATTENUATION		0	0	0	0	0	0	0	0%			
Glazing 1 27 dB Rw + Ctr - Standard Thermal Double Glazing ATTENUATION	1.5	20	20	19	27	38	37	40	23%	27 (Inc Ctr)	-	-
Glazing 2 ATTENUATION		0	0	0	0	0	0	0	0%			
Glazing 3 ATTENUATION		0	0	0	0	0	0	0	0%			
Roof ATTENUATION		0	0	0	0	0	0	0	0%			
Resultant composite Façade SRI		27	28	27	34	45	45	48				
Resultant SPL inside room excluding ventilators dB		15.7	5	8	13	9	1	-2	-9	24%		

Ventilator Type	Num	D _{ne} dB to BS EN 20140-10:1992							Dnew	C	Ctr	
Ventilation Hik and miss trickle (4000mm²) e.g. Titan Tricklevent XS13 ATTENUATION	2	30	35	35	36	34	29	33	73%	32	0	-1
Ventilation ATTENUATION		0	0	0	0	0	0	0	0%			
Resultant SPL inside room through ventilators dB		20.6	5	4	7	10	15	17	8	76%		

Total SPL inside room
21.8 8 10 14 12 16 17 8

NOTES:



FACSIM V2.7.10 - MODELLING OF FACADE ACOUSTIC INSULATION TO BS12354-3 and BS8233

PROJECT: Land East of Walnut Tree Road, Pirton
 ROOM: Bedroom using typical dimensions and #No Ventilators
 VARIANT: Worst-Case night-time average noise levels (LAeq, 8 hr)
 NOTES: Transportation sources (i.e. Car and Aircraft Passes)

Room Dimensions [m] W 3.0 X L 4.0 X H 2.4
 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 >>> [Green Box]

NOTES:

EXTERNAL SPECTRUM (A weighted)

dBA	63	125	250	500	1000	2000	4000
Direct input - Free Field SPL (A weighted octave bands) dB ----->	-	-	-	-	-	-	-
Road traffic spectrum (according to BS 8233:1999 section 6)	41.0	-	-	-	-	-	-
	22.8	26.9	30.4	33.8	37.0	34.2	29.0

Reference spectrum

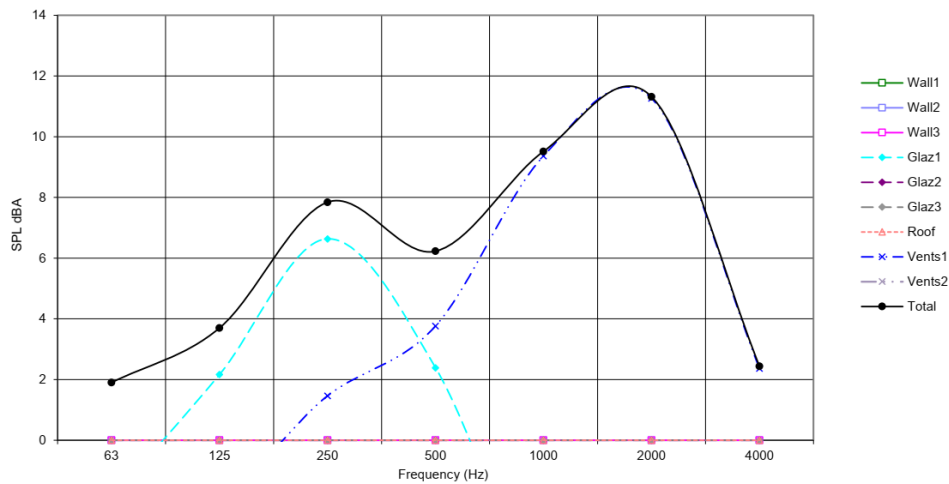
REVERBERATION TIME

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 [m2]	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	2%	54	0	-4	
	ATTENUATION													
Wall 2			0	0	0	0	0	0	0	0%				
	ATTENUATION													
Wall 3			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	21%				
	ATTENUATION										27 (inc Ctr)	-	-	
Glazing 2			0	0	0	0	0	0	0	0%				
	ATTENUATION													
Glazing 3			0	0	0	0	0	0	0	0%				
	ATTENUATION													
Roof			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			9.7	-1	2	7	3	-5	-8	-15	24%			

Ventilator Type		Num	D _{n,e} dB to BS EN 20140-10:1992									Dnew	C	Ctr
Ventilation	Hit and miss trickle (4000mm ²) e.g. Tiron Trimvent XS13	2	30	35	35	36	34	29	33	66%	32	0	-1	
ATTENUATION														
Ventilation			0	0	0	0	0	0	0	0%				
ATTENUATION														
Resultant SPL inside room through ventilators dB		14.6	-1	-2	1	4	9	11	2	76%				
Total SPL inside room		15.8	2	4	8	6	10	11	2					

Element contribution to total internal noise level



FACSIM V2.7.10 - MODELLING OF FACADE ACOUSTIC INSULATION TO BS12354-3 and BS8233

PROJECT: Land East of Walnut Tree Road, Pirton
 ROOM: Bedroom using typical dimensions and #No Ventilators
 VARIANT: Worst-case night-time maximum noise levels average noise levels (L_{max})
 NOTES: Transportation source (Aircraft Passes)

Room Dimensions [m] W 3.0 X L 4.0 X H 2.4

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 >>> ☐ Free Field SPL ☒ Façade SPL

NOTES:

EXTERNAL SPECTRUM (A weighted)

dBA	63	125	250	500	1000	2000	4000
Direct input - Free Field SPL (A weighted octave bands) dB	59.0	34.2	42.9	52.5	55.6	53.0	45.2
Road traffic spectrum (according to BS 8233:1999 section 6)							
	34.2	42.9	52.5	55.6	53.0	45.2	36.8

Direct input

REVERBERATION TIME

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

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		0	0	0	0	0	0	0	0%			
ATTENUATION												
Wall 3		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	48%	27 (inc Ctr)	-	-
ATTENUATION												
Glazing 2		0	0	0	0	0	0	0	0%			
ATTENUATION												
Glazing 3		0	0	0	0	0	0	0	0%			
ATTENUATION												
Roof		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	30.5	10	18	29	24	11	3

50%

Ventilator Type	Num	D _{sn} dB to BS EN 20140-10:1992								Dnew	C	Ctr
Ventilation Hit and miss trickle (4000mm ²) e.g. Titon Trimvent XS13	2	30	35	35	36	34	29	33	50%	32	0	-1
ATTENUATION												
Ventilation		0	0	0	0	0	0	0	0%			
ATTENUATION												

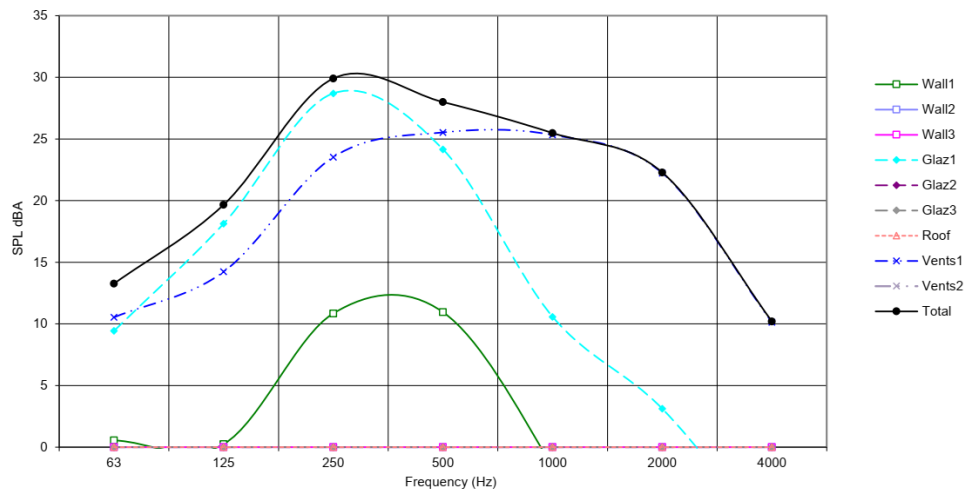
Resultant SPL inside room through ventilators dB	30.6	11	14	24	26	25	22
--	------	----	----	----	----	----	----

50%

Total SPL inside room	33.5	13	20	30	28	25	22
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10

Element contribution to total internal noise level



FACSIM V2.7.10 - MODELLING OF FACADE ACOUSTIC INSULATION TO BS12354-3 and BS8233

PROJECT:	Land East of Walnut Tree Road	Room Dimensions [m]	W	X	L	X	H
ROOM:	Living Room using typical dimensions and #No. Ventilators		4.0		5.0		2.4
VARIANT:	Worst-case daytime average noise levels (LAeq,16 hr)						
NOTES:	Transportation source (Car and Aircraft Passes)						

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 ----->	63	125	250	500	1000	2000	4000	
	-	-	-	-	-	-	-	No data
Road traffic spectrum (according to BS 8233:1999 section 6)	47.0							

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 [m2]	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			0	0	0	0	0	0	0	0%				
	ATTENUATION													
Wall 3			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	25%	27 (inc Ctr)	-	-	
	ATTENUATION													
Glazing 2			0	0	0	0	0	0	0	0%				
	ATTENUATION													
Glazing 3			0	0	0	0	0	0	0	0%				
	ATTENUATION													
Roof			0	0	0	0	0	0	0	0%				
	ATTENUATION													

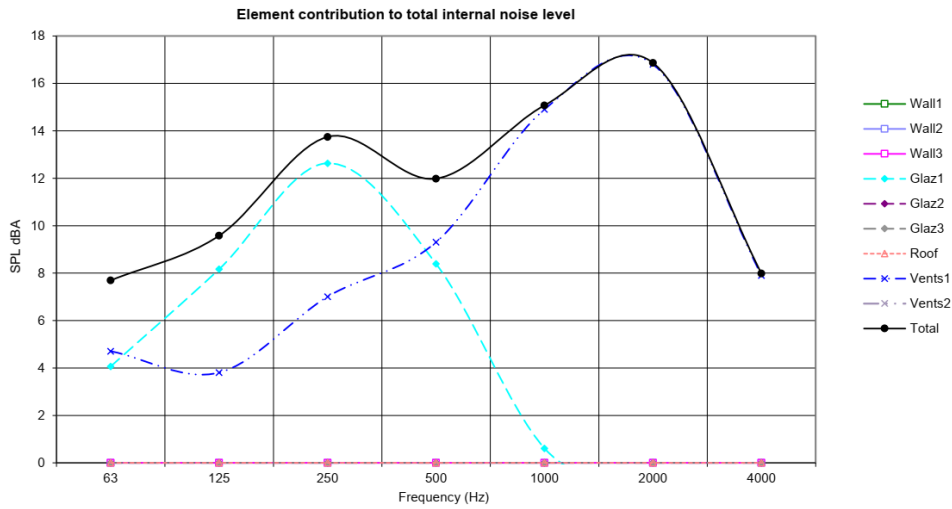
Resultant composite Façade SRI

Resultant SPL inside room excluding ventilators dB

Ventilator Type		Num	D _{n,e} dB to BS EN 20140-10:1992									Dnew	C	Ctr
Ventilation	Hit and miss trickle (4000mm ²) e.g. Titan Trimvent XS13	3	30	35	35	36	34	29	33	71%	32	0	-1	
	ATTENUATION													
Ventilation			0	0	0	0	0	0	0	0%				
	ATTENUATION													

Resultant SPL inside room through ventilators dB

Total SPL inside room





Architectural & Environmental Consultants

Acoustics | Vibration | Air Quality

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