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Vistry Group

Glebe Farm, Steyning

Noise Assessment

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Document Control Sheet

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-	Draft	CM	LD	Draft	23/05/25
-	Final	CM	CM	AS	28/05/25
A	Final	CM	LD	AS	02/10/25
B	Minor updates	CM	LD	AS	07/10/25
C	Updated layout & minor clarifications following on from EHO discussion	CM/LD	CM	AS	31/10/25
D	Minor updates	CM	AS	LD	23/07/26

Distribution

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1. Introduction

1.1. Ardent Consulting Engineers have been instructed by Vistry Group undertake a Noise Assessment for Glebe Farm (hereafter referred to as the development). The proposed development is located to the east of Steyning.

1.2. The development has been granted outline planning permission in 2024 (application reference: DC/21/2233), subject to planning conditions. Conditions 14, 15 and 16 relate to noise and are reproduced below.

***14 Pre-commencement Condition**: No development shall take place on site until a scheme for protecting the proposed development from road traffic noise has been submitted to, and approved in writing by, the Local Planning Authority. The proposed scheme shall achieve the following noise levels:*

i. Internal day time (0700 - 2300) noise levels shall not exceed 35dB LAeq, 16hr for habitable rooms (bedrooms and living rooms with windows open)

ii. Internal night time (2300 - 0700) noise levels shall not exceed 30dB LAeq with individual noise events not exceeding 45dB LAmax (bedrooms and living rooms with windows open).

iii. Garden/external amenity spaces should not exceed 55 dB LAeq, 16hr.

Reason: To preserve the amenity of the future residents of the development in accordance with Policy 33 of the Horsham District Planning Framework (2015).

***15 Pre-commencement (slab level) Condition**: Prior to the commencement above ground floor slab level of the development, a detailed assessment of the acoustic impact on proposed dwellings arising from the operation of adjacent battery energy storage facility shall be provided. The acoustic impact assessment shall be undertaken by a competent person in accordance with BS 4142:2014. The assessment shall be submitted to the Local Planning Authority together with recommendations for a scheme of attenuation measures, including ventilation sufficient to prevent overheating and maintain thermal comfort, to mitigate any adverse impacts identified in the acoustic assessment. The scheme shall be submitted to and approved in writing by the Local Planning Authority.*

Reason: To preserve the amenity of the future residents of the development in accordance with Policy 33 of the Horsham District Planning Framework (2015).

16 Pre-commencement (slab-level) Condition:

i. Prior to the commencement above ground floor slab level of the development, a scheme of attenuation measures, including ventilation sufficient to prevent overheating and maintain thermal comfort, shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall fully implement the recommendations of the acoustic impact assessments required under conditions 14 and 15 above, including performance details and a glazing plan, sufficient to ensure noise levels do not exceed NR30 at night in all bedrooms identified as requiring mitigation in condition 14 above.

ii. Prior to occupation a final verification report of all the works which form part of the scheme approved under a) shall be submitted to and approved in writing by the Local Planning authority. All work must be carried out by suitably qualified person and the approved noise, attenuation and ventilation measures shall thereafter be retained and maintained in working order for the duration of the use of the development in accordance with the approved details.

Reason: To preserve the amenity of the future residents of the development in accordance with Policy 33 of the Horsham District Planning Framework (2015).

1.3. This noise assessment develops on the work undertaken as part of the outline planning permission and provides the required acoustic information set out in conditions 14, 15.

1.4. At an appropriate time during the detailed design of the site, an overheating assessment will be produced in relation to the requirements of condition 16, which will take into account the noise constraints at the site. The ventilation to provide thermal comfort will be designed so that NR30 is not exceeded in bedrooms during the night.

Development Description

1.5. The Development is located in Steyning, to the east is a BESS facility on King's Barn Lane, to the north is an electricity substation and Adur Model Car Club, to the west is the A283 and to the south and west are residential areas. The surrounding area, approximate Development boundary (in red), and the location of the model car club and the BESS are shown in Figure 1-1.



Figure 1-1: Development Boundary and Surrounding Area

Proposed Development

1.6. The development proposals are to construct a total of 265 residential dwellings and associated infrastructure. The site layout is shown in Figure 1-2.

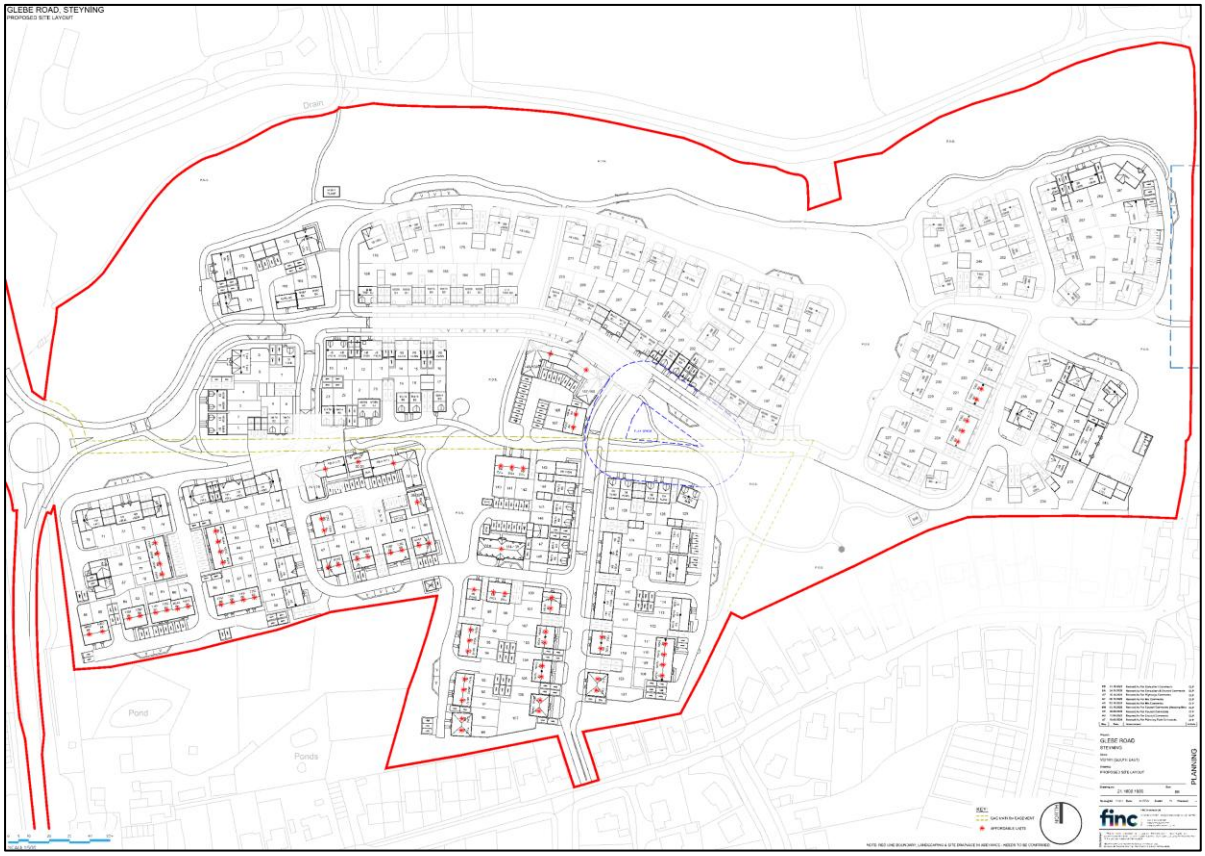


Figure 1-2: Site Layout Plan

2. Local Authority Liaison

2.1. Contact[1] has been made with Environmental Protection Officers at Horsham District Council (HDC). The following was discussed in relation to the assessment criteria and methodology:

- The survey methodology was agreed.
- The assessment will be in accordance with BS8233, and target noise levels would be in line with condition 14;
- Noise associated with the BESS will be considered in accordance with BS4142;
- It was noted that consideration should be given to noise from the Adur Model Car Club during race events.

2.2. Comments were made on the noise assessment by Environmental Protection Officers, mainly in relation to noise from the BESS. An assessment of noise from the proposed substations was also requested. Following these comments, a meeting was held on 23rd October 2025 to provide further clarity on the points raised.

2.3. The noise assessment has considered the assessment criteria and methodology set out above, and comments provided by Environmental Protection Officers.

[1] Email contact on 23/12/24 and 06/01/25

3. Environmental Noise Levels

3.1. An environmental noise survey was undertaken between 5th-12th February 2025. Measurements of an event at Adur Model Car Club were taken on the 23rd February 2025. Measurement positions were selected in order to obtain representative baseline noise levels due to the main observed sources. The measurement positions are shown in Figure 3-1.



Table 3-1: Measurement Positions

3.2. A description of the measurements positions is as follows:

- **Measurement Position 1 (Long Term)** - The microphone was mounted at a height of 1.5m above local ground level with an unobstructed path to the Steyning Bypass.
- **Measurement Position 2 (Long Term)** - The microphone was mounted at a height of 1.5m above local ground level.
- **Measurement Position 3 (Long Term)** – The microphone was mounted at a height of 1.5m above ground level with an unobstructed path to the BESS.

- **Measurement Position 4 (Attended Short Term)** – The microphone was mounted approximately 1.5m above ground level with an unobstructed path to Adur Model Car Club.

3.3. The equipment used for the survey was as follows:

- Norsonic 140 Sound Level Meter x 2 (serial numbers: 1405869, 1405866);
- Norsonic 139 Sound Level Meter (serial number: 1392708);
- Bruel & Kjaer Calibrator (serial number: 2463721).

3.4. All equipment used has been professionally calibrated. Field calibration of the sound level meter (and complete measurement signal chain) was undertaken before and after measurement to ensure no drift of the calibration signal. Weather conditions were generally suitable with a light breeze and no precipitation.

3.5. A summary of the long term measurements are shown in Table 3-1 and time histories of measured noise levels at long term measurement positions are shown in Appendix A.

Monitoring Position	Ambient Sound Level dB $L_{Aeq, T}$ Range (Average)		Background Sound Level dB $L_{A90,T}$ Range (Representative)		Night dB L_{AFmax} Range (generally exceeded fewer than 10 times per night)
	Day	Night	Day	Night	
P1	55-70 **(66)**	23-67 **(40)**	23-65 **(50)**	22-52 **(28)**	30-85 **(80)**
P2	35-64 **(49)**	26-56 **(42)**	26-55 **(42)**	25-49 **(29)**	27-72 **(66)**
P3	38-60 **(48)**	38-56 **(44)**	36-49 **(41)**	37-45 **(39)**	38-75 **(62)**
P4*	46-64 **(60)**	-	35-56 **(49)**	-	-

*Measurements during the day only

Table 3-1: Summary of Measured Noise Levels

3.6. The representative L_{Amax} level is the value which has been exceeded fewer than 10 times in the 8-hour night-time period, i.e. one which can be considered to be 'not normally exceeded' as per the World Health Organisation (WHO) guidelines.

3.7. Representative octave band levels are provided in Table 3-2. Where appropriate, these are used in glazing calculations to ensure a robust assessment of internal noise levels.

		Octave Band Centre Frequency, dB							
		63	125	250	500	1k	2k	4k	8k
P1	$L_{eq,T}$ (day)	65	63	59	58	63	60	53	45
	$L_{eq,T}$ (night)	56	53	51	49	54	52	44	35
	$L_{Fmax,T}$ (night)	76	78	80	76	76	70	63	55
P2	$L_{eq,T}$ (day)	52	48	43	41	45	41	39	37
	$L_{eq,T}$ (night)	45	40	35	35	39	35	27	25
	$L_{Fmax,T}$ (night)	55	51	54	50	54	62	56	58
P3	$L_{eq,T}$ (day)	52	49	48	44	42	39	40	36
	$L_{eq,T}$ (night)	44	43	45	39	35	30	38	33
	$L_{Fmax,T}$ (night)	62	56	57	54	58	57	48	40
P4	$L_{eq,T}$ (day)	56	53	50	55	53	48	45	41

Table 3-2: Octave Band Data for Noise Monitoring Locations

3.8. Based on the noise survey results and the Proposed Development, a 3D computer based environmental noise model has been created using the DataKustik 'CadnaA' Noise Mapping software. The following has been taken in account in the generation of the noise model:

- The noise model was set up to apply the noise prediction methodology set out in ISO 9613-2: Acoustics – Attenuation of Sound propagation outdoors – Part 2: General Method of Calculation;
- The model has been set to include first order reflected noise from solid structures;
- The topography of the Development area and surroundings has been taken into consideration in the assessment;
- Acoustic screening and reflections afforded by nearby buildings, solid structures, and fences/barriers;
- The future road alignment of the Steyning Bypass is included in the model.

- The model has been calibrated and verified using the noise survey data and the traffic flows for the surrounding road network.

3.9. Traffic flows for the site access roads have been derived by Ardent Transport Consultants, shown in Appendix B, which have informed the noise modelling. Noise contours are shown in Appendix B

4. Acoustic Design and Mitigation

4.1. The aim of this section is to discuss the acoustic design considerations and to identify mitigation measures to achieve the criteria of condition 14.

4.2. Screening at the boundary of the BESS and AMCC is not possible due to other design considerations.

4.3. To achieve a low impact in accordance with BS4142 without consideration of façade mitigation measures to control noise from road traffic noise, a standoff of approximately 120m between dwellings and the BESS would be required. The standoff would sterilise a large portion of the site. A full assessment of noise from the BESS is shown in Section 6.

4.4. The wording of condition 14 notes that the criteria needs to be achieved with windows open. If a reduction in noise levels due to a partially open window of up to 15dB is considered, dwellings would need to be located in an areas where ambient noise levels are no greater than 50dB $L_{Aeq,T}$ and 45dB $L_{Aeq,T}$ during the day and night and short term noise events during the night are no greater than 60dB $L_{AF,max}$.

4.5. However as the noise survey and noise modelling of the baseline noise environment demonstrate, similar to the standoff from the BESS, this would sterilise a large portion of the site and lead to the proposed development being unknot viable.

4.6. The site layout is in accordance with the with the approved parameter plans submitted as part of the outline planning application, with some minor adjustments to the layout of dwellings compared to indicative masterplan.

4.7. Good acoustic design principles have influenced the design of the development. Where possible standoffs are introduced between noise sources and dwellings by landscaping, access roads, and parking. The layout includes relatively continuous frontages of dwellings to provide screening, and dwellings are placed between gardens and noise sources, to provide as much screening as possible.

4.8. The design of dwellings (house type Kirdford) closest to the BESS position rooflights associated with Bedroom 1 on the shielded side of buildings, reducing noise levels by as much as practicably possible.

4.9. To achieve suitable internal amenity sound levels there will be some reliance on the design of dwellings to enable residents to keep windows closed and an alternative

means of ventilation will be provided. Background ventilation will be by either trickle ventilation or MVHR, depending on the location of dwellings.

4.10. It is important to note that windows would not be sealed shut and residents will have the choice of opening them, whilst noting noise levels will slightly increase. A markup of the areas where closed windows and alternative ventilation are required is shown in Figure 4-1.

4.11. Noise Levels from the surrounding road network and the site access roads are the noise sources which primarily drive the requirements for closed, but not sealed, windows and alternative ventilation. The internal road network that will be developed as part of the proposals does not yet exist.

4.12. Therefore the distribution of traffic has been provided by the traffic consultants, and this data is used in the acoustic model to calculate A-weighted sound levels. These sound levels are then corrected using the typical spectrum in BS EN 1793-3 *Road traffic noise reducing devices. Test method for determining the acoustic performance - Normalized traffic noise spectrum.* The calculated noise levels are subsequently used in the glazing and ventilation calculations.

4.13. At night, short term noise events (dB L_{AFmax}) on the site internal road network are based on library data from similar roads in similar settings.

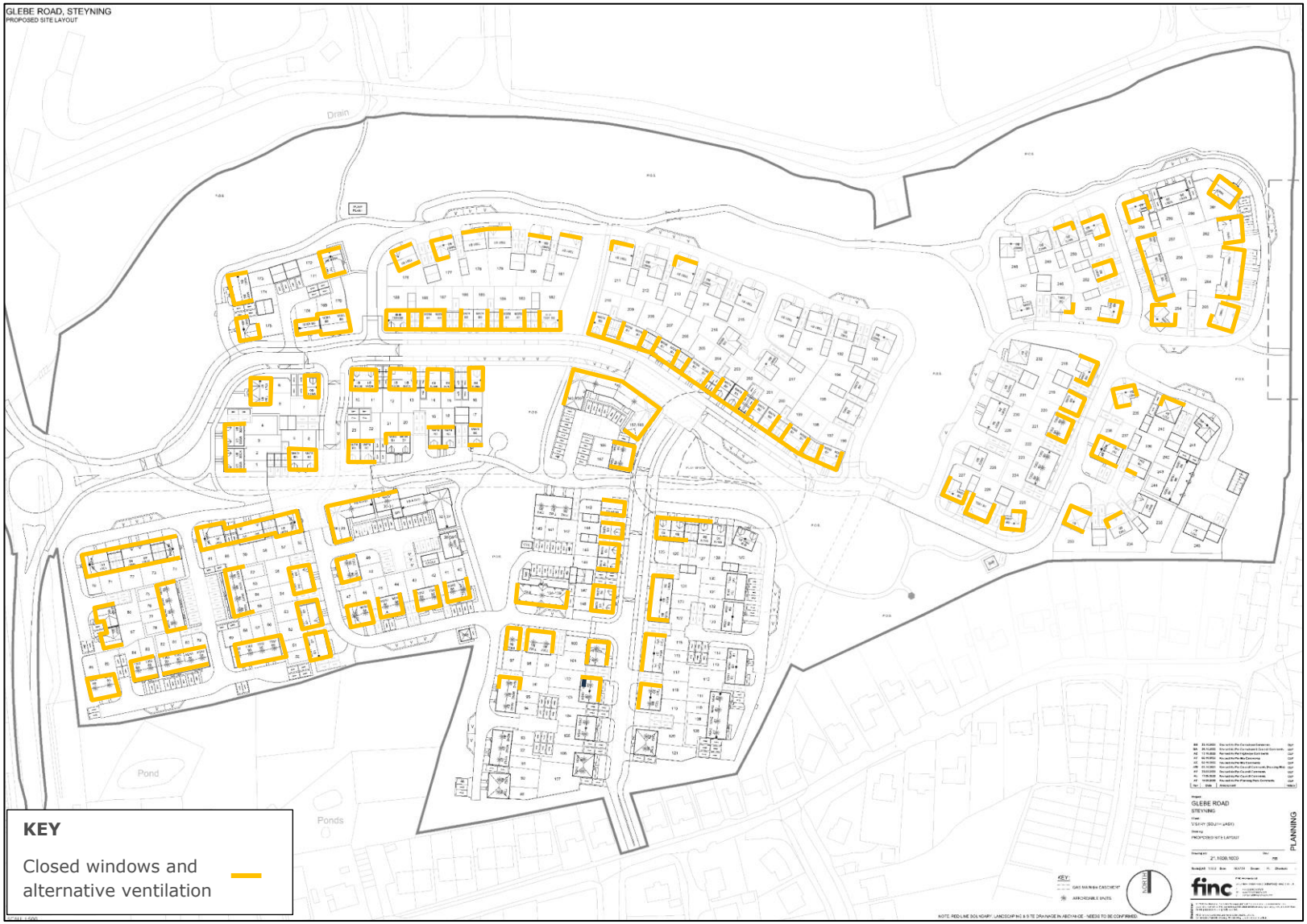


Figure 4-1: Closed Windows and Alternative Ventilation Markup

4.14. Calculations of glazing and ventilation specifications have been conducted based on the measured noise levels, the noise model, and the proposed internal layouts of dwellings. The calculations are presented in Appendix C.

4.15. Where habitable rooms have multiple facades which include glazing, a summary of the combined internal noise levels in the room is presented. Where no summary is presented, rooms only have one façade which includes glazing.

External Building Fabric - Non-Glazed Elements

4.16. Non-glazed external building fabric elements comprise masonry cavity walls or constructions of equivalent acoustic performance. This would typically provide a sound reduction performance of at least the figures shown in Table 4-1 when tested in accordance with BS EN ISO 10140-2:2010[2].

Element	Octave band centre frequency SRI, dB					
	125	250	500	1k	2k	4k
Masonry Cavity Wall	34	43	55	66	77	85

Table 4-1: Non-glazed Elements Sound Reduction Performance

External Building Fabric – Glazing & Ventilation

4.17. Table 4-2 sets out the proposed glazing performance types, these specifications take into account the glass, frame, seals, and associated fittings.

[2] Figures derived from: Representative Values of Airborne SRI for Some Common Structures: Appendix B of Flakt Woods 'Guide to Noise Control'

Glazing	Room Type	Sound Reduction Index, dB R_w	Octave band centre frequency SRI, dB					
			125	250	500	1k	2k	4k
A (No Markup)	All Rooms	31	21	20	26	38	37	39
B	All Rooms	35	24	24	32	37	42	43
C	Bedroom	35	24	24	32	37	42	43
	Living Room	31	21	20	26	38	37	39
D	Bedroom	41	21	30	39	47	50	55
	Living Room	31	21	20	26	38	37	39

Table 4-2: Required Sound Reduction for Glazing

4.18. Table 4-3 sets out the proposed ventilation performance.

Ventilation	Room Type	Element Normalised level difference, D_{new}	Octave band centre frequency SRI, dB					
			125	250	500	1k	2k	4k
A (No Markup)	All Rooms	35	24	24	32	37	42	43
B	Bedroom	43	41	39	38	47	43	46
	Living Room	35	24	24	32	37	42	43
C	All Rooms	MVHR						

Table 4-3: Required Sound Reduction for Ventilation

4.19. Tables 4-2 and 4-3 should be viewed in conjunction with Figures 4-2 and 4-3, which sets out the areas where glazing and ventilation types are required.

4.20. At the majority of dwellings relatively standard thermal glazing and trickle ventilation will provide suitable internal noise levels. For a limited number of dwellings close to the A283, higher performance glazing and trickle ventilation or MVHR will be required.

4.21. There are a few dwellings where a slightly higher performance glazing is required to bedrooms. This is due to bedrooms having relatively small room volumes and relatively high rations of glazing to external walls.

4.22. The required glazing sound reduction at these dwellings can be achieved by relatively standard thermal glazing. To control noise from the BESS, MVHR is proposed to some dwellings at the eastern boundary of the site.



Figure 4-2: Glazing Markup

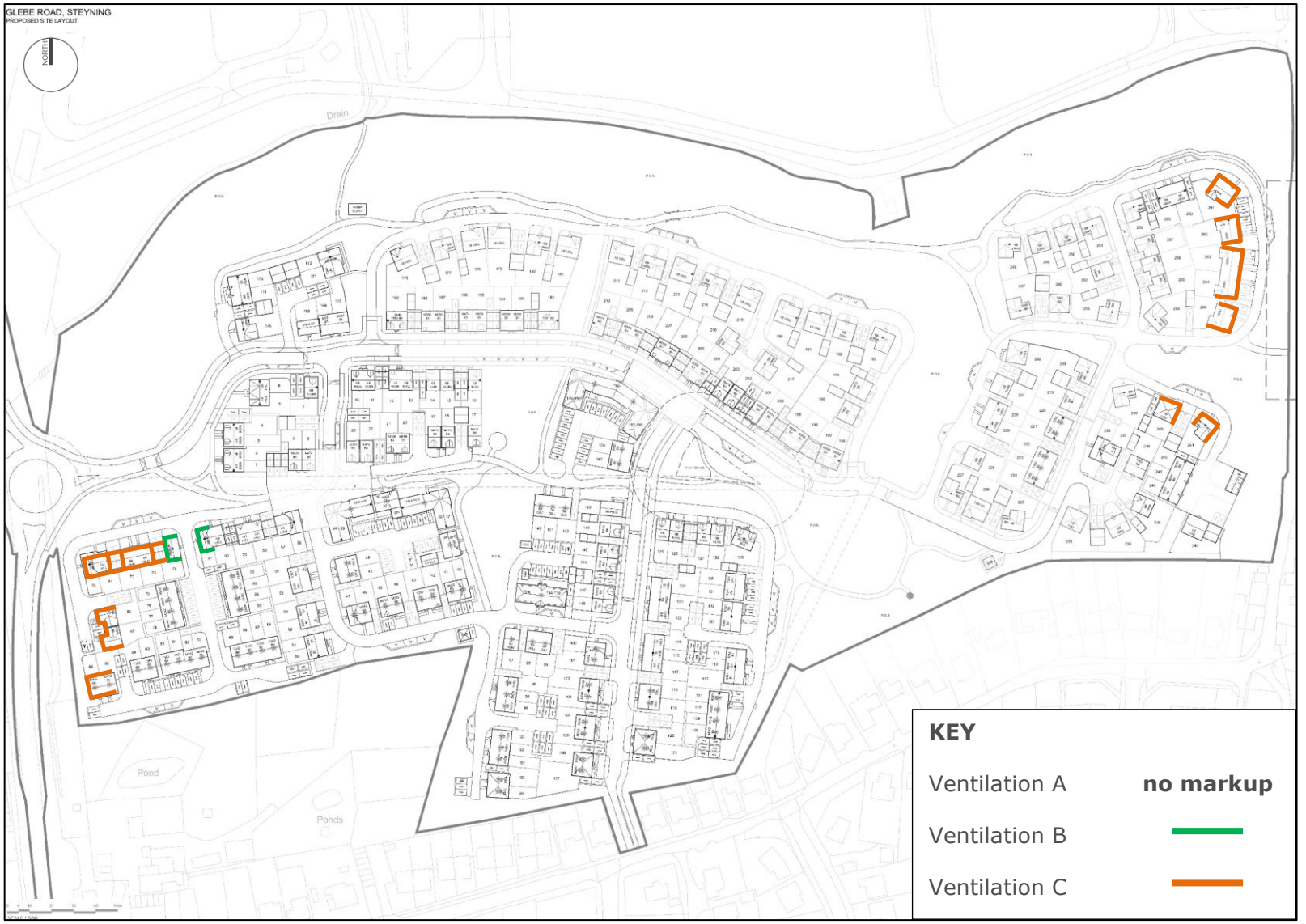


Figure 4-3: Ventilation Markup

4.23. It should be noted that there may be additional considerations for glazing requirements such as overheating, security, thermal performance, and air quality. Alternative glazing could be used assuming the required acoustic performance is met.

Noise from Ventilation Systems

4.24. Where MVHR is specified to meet internal noise levels or provide thermal comfort in dwellings, the systems will be designed so that they do not exceed NR30 within bedrooms, as required by condition 16. Further assessments will be prepared to address condition 16. The criteria which for ventilation systems is set out below:

	Octave Band Centre Frequency, dB							
	63	125	250	500	1k	2k	4k	8k
NR30	59	48	40	34	30	27	25	23

Table 4-4: Criteria for Ventilation Systems in Bedrooms

Overheating

4.25. Thermal comfort has been assessed in accordance with Approved Document O of the Building Regulations and the CIBSE TM59 methodology.

4.26. The assessment has been informed by the noise constraints identified in this report and by the assessment of noise during overheating events against the Approved Document O noise limits[3].

4.27. A ventilation strategy has therefore been developed to provide thermal comfort and suitable internal noise levels for all dwellings. Where required this includes mitigation measures such as mechanical extract ventilation. This strategy will be implemented as part of the construction of dwellings.

External Amenity Areas

4.28. Where possible, private amenity spaces are located on the sheltered side of buildings to provide the maximum reduction in noise levels. All balconies and the large majority of gardens will have external amenity sound levels which meet the requirements of condition 14.

[3] Document Reference: 2407850_A-ACE-XX-00-RP-C-0611 ADO Technical Note

4.29. Increased height 2.4m garden fences are proposed at two dwellings to reduce noise levels by as much as possible whilst also taking other design considerations into account. The location of the increased height fences is shown in Figure 4-4.



Figure 4-4: Increased Height Garden Fences

4.30. The noise modelling of noise levels with the site layout, shown in Appendix B, includes the increased height garden fences. With the increased height fences, all gardens will have external amenity sound levels which meet the requirements of condition 14 across all or part of the space.

5. Noise from Adur Model Car Club

5.1. Whilst noise from the Adur Model Car Club (AMCC) is not a requirement of conditions 14, 15 and 16, it was noted by Officers that noise from the AMCC during race events has the potential to lead to adverse effects.

5.2. Therefore an assessment of noise form the AMCC has been undertaken, informed by the results of the noise survey and the noise modelling. The AMCC is located to the northwest of the site, the nearest dwellings are located approximately 90m from the AMCC. The location of the AMCC is shown in Figure 5-1.



Figure 5-1: Location of Adur Model Car Club

5.3. The AMCC hosts regular weekly events on Sundays, the events occur only during the day. The majority of events use only electric remote control cars, however, the AMCC also hosts off road events which include nitromethane powered remote control cars, normally events using these types of car are held on a monthly basis.

5.4. A noise survey was undertaken during an event using nitromethane powered cars, which occurred on the 23rd February 2025. The main noise sources during the event were noise from amplified speech and noise from the model cars during races.

5.5. The event started at approximately 09:00 and was finished by 14:00, between 14:00-15:00 vehicles left the site. The races were held between approximately 09:10 and 13:30, following which there was an award ceremony which lasted approximately 15 minutes.

5.6. Noise levels at the façade of the nearest dwellings and in the garden have been considered, to provide an assessment of the potential effects of events at the AMCC on both internal and external amenity sound levels.

5.7. The noise level from the entire event at the AMCC is 50dB $L_{Aeq,T}$ at the first floor nearest residential facades, depending on the location of the dwelling. The noise level due to the model car races is 44dB $L_{Aeq,T}$ and the noise level due to amplified voices is 49dB $L_{Aeq,T}$.

5.8. The noise levels from the event at the AMCC are slightly lower in the garden of the dwellings, the overall noise level is 46dB $L_{Aeq,T}$. The noise level due to the model car races is 41dB $L_{Aeq,T}$ and the noise level due to amplified voices is 44dB $L_{Aeq,T}$.

5.9. Noise levels from road traffic noise during the day are 54dB $L_{Aeq,T}$ at the façade and 52dB $L_{Aeq,T}$ at the garden. The noise level from model car races is significantly lower than road traffic noise, therefore noise from model car races would not lead to any adverse effects.

5.10. Noise from amplified voices is most prominent in mid frequencies (500Hz to 2kHz), a comparison of the frequency spectrum between 125Hz and 2kHz of noise form amplified voices at the AMCC and road traffic noise at the nearest dwelling is shown in Table 5-1.

Noise Source	Octave band centre frequency, dB $L_{Aeq,T}$					
	125	250	500	1k	2k	4k
Amplified Voices at AMCC	30	31	48	46	35	18
Road Traffic Noise	50	49	46	51	48	36
Difference	-20	-18	+2	-5	-13	-18

Table 5-1: Spectral Comparison

5.11. The spectral comparison shows that noise levels from amplified voices are lower than road traffic noise across the majority of the frequency spectrum, with a slight excess at 500Hz. For speech to be intelligible, the most important octave band centre

frequencies are 2kHz-4kHz, in these octave bands noise levels are significantly lower than road traffic noise.

5.12. The A-weighted noise level from amplified voices is also significantly lower than road traffic noise. Therefore speech from amplified voices at the AMCC will not be intelligible and will not contribute significantly to the noise environment at the nearest dwellings, which is dominated by road traffic noise. Additionally, the overall noise level from the event at the AMCC is significantly lower than road traffic noise.

5.13. The façade mitigation measures which have been designed to control road traffic, which is the dominant noise source, will also be suitable to control noise from events at the AMCC. Therefore noise from events at the AMCC will not have any adverse effects at the nearest dwellings.

6. Noise from the BESS Facility

6.1. There is a BESS facility to the east of the site, the nearest proposed dwellings are approximately 50m from the BESS facility building. The location in relation to the site is shown in Figure 6-1.



Figure 6-1: Location of BESS Facility

6.2. An assessment of noise from the BESS was undertaken as part of the noise assessment which accompanied the outline planning application for the development (application reference: DC/21/2233).

6.3. The assessment was based on the information which was available at the time when the outline planning application was produced. The detailed site layout and internal layout of dwellings have now been developed, the assessment shown in this section is based on these detailed layouts.

Noise Modelling of the BESS

6.4. Noise modelling of the BESS has been informed by the noise survey data included in the planning assessment reports, publicly available information regarding the BESS

from the HDC planning portal and site observations and measurements undertaken at P3 at the eastern red boundary.

6.5. The BESS received planning permission in 2016 (application reference: DC/16/1648) for the construction of a barn for battery energy storage use for a temporary period not exceeding 25 years.

6.6. It is understood that there is only a single operation and maintenance visit each month, with all other monitoring conducted remotely. It is therefore expected that noise from vehicle movements associated with the BESS facility will not a be a significant source of noise when compared road traffic noise on the surrounding road network.

6.7. Plant associated with the BESS facility includes batteries, transformers and external air condensers. The transformers and external air condensers are located on the eastern façade of the barn, with a 2.5m high acoustic fence enclosing the condensers. The site layout is shown in Figure 6-2.

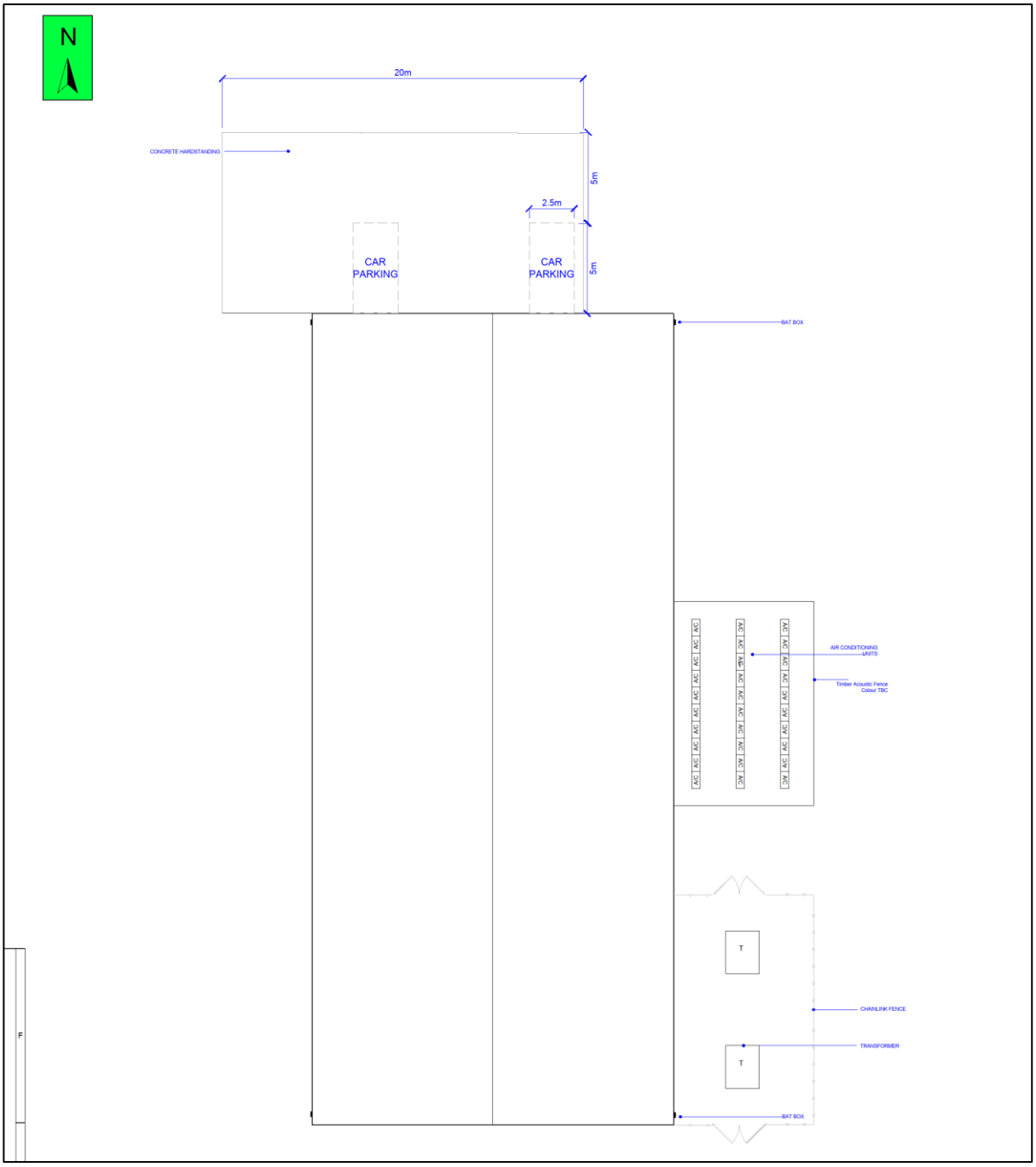


Figure 6-2: BESS Facility Site Plan

6.8. The noise assessment which accompanied the planning application assessed the impact of the BESS facility at the nearest existing dwellings, which are located at Foxhall Farm (approximately 480m away), Kings Barn Lane (approximately 115m away), Northfield Cottage (approximately 89m away), and Sele Priory (approximately 660m away).

6.9. The noise assessment demonstrated that noise from the BESS facility would be of low impact at all receptors when assessed in accordance with BS4142 and therefore

there would be no adverse effect due to noise from the BESS facility. The information set out in the noise assessment has been used to inform the assessment of noise from the BESS facility at the proposed development.

6.10. Measurement position 3 was at the boundary of the site and the BESS, observations were taken during the noise survey in relation to noise from the BESS at this measurement position.

6.11. The noise survey data from measurement position 3 and the predicted noise levels at nearby receptors within the BESS noise assessment were used to calibrate the noise model, which is then used to predict the noise levels at the nearest dwellings on site. Consideration has also been given to the predicted noise levels at the nearest existing receptors (presented in the BESS noise assessment) when calculating the noise model.

BS4142 Assessment

6.12. The representative background sound levels have been derived from statistical analysis of the measured noise levels at position 2, as this position is considered representative of the noise environment at the nearest dwellings in the absence of the BESS.

6.13. The most sensitive periods during the day (20:00-23:00) and night (23:00-01:00 & 06:00-07:00) have been considered. The periods which have been considered during the night are periods when sleep disturbance is most likely to occur just after residents go to sleep and just before they wake up. The residual sound level has also been derived from the measured noise levels at position 2.

6.14. A histogram of the background sound levels is shown in Figure 6-3.

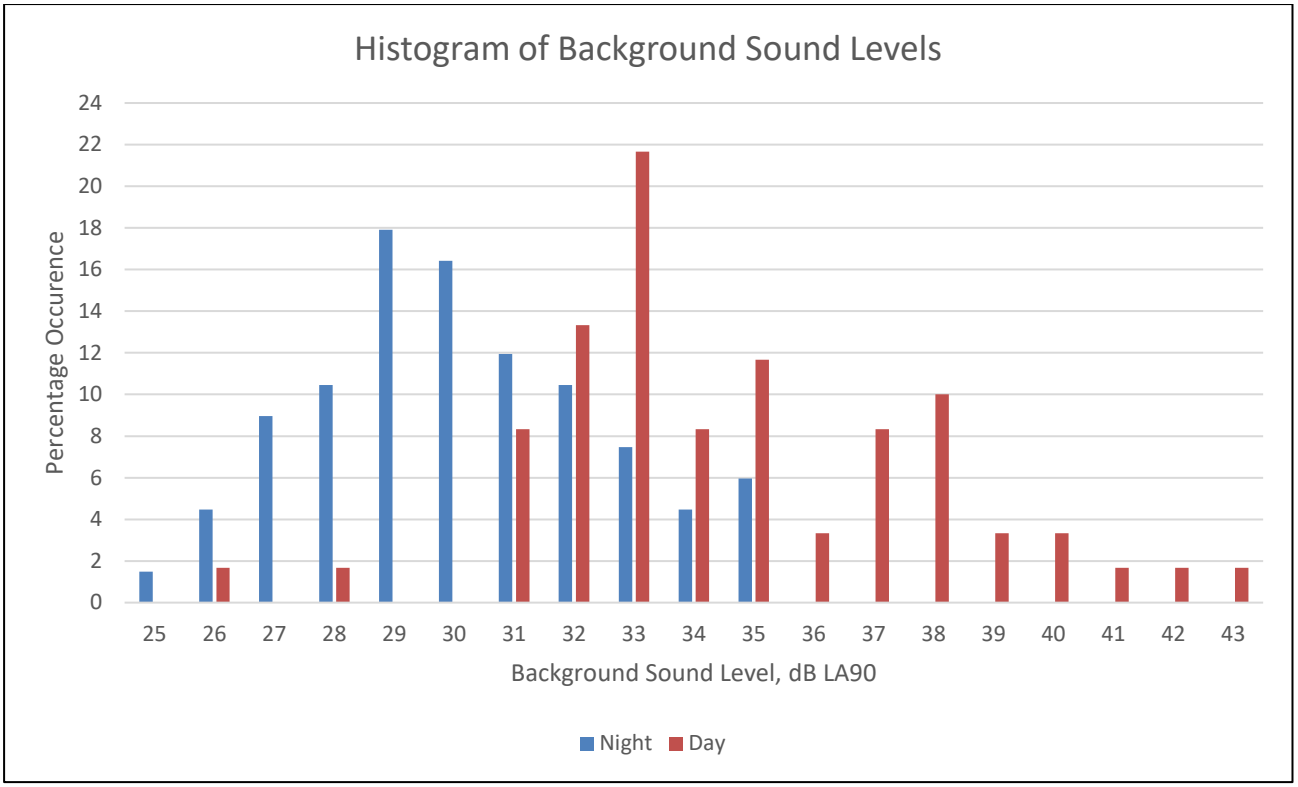


Figure 6-3: Histogram of Background Sound Levels

6.15. The representative background sound levels are 33dB $L_{A90,T}$ and 30dB $L_{A90,T}$ during the day and night.

6.16. BS 4142 provides specific guidance regarding an acoustic feature correction if sound from the operations will contain characteristics that could attract a listener's attention at the noise sensitive receptors.

6.17. The specific sound level is significantly lower than the residual sound level during the day and night, therefore a 2dB and 4dB acoustic feature correction has been applied to account for tonality during the day and night. The initial assessment of likely significance from BESS is shown in Table 6-1.

	Closest Proposed Dwellings	
Initial Assessment	**Day**	**Night**
Residual sound level, dB $L_{Aeq, T}$	44	40
Specific Sound Level dB $L_{Aeq,T}$	37	37
Acoustic Feature Correction, dB	+2	+4
Rating Level, dB $L_{Ar,Tr}$	39	41
Background sound level, dB $L_{A90, T}$	33	30
Excess over background, dB	+6	+11
Initial Assessment	Adverse Impact	Significant Adverse Impact

Table 6-1: BS 4142 Initial Assessment

6.18. The rating level is 6dB and 11dB above the background sound level during the day and night, and 5dB below and 1dB above the residual sound level. The initial assessment shows the impact will be adverse and significant adverse during the day and night when assessed in accordance with BS 4142.

6.19. BS 4142 promotes a flexible assessment methodology that can be modified depending on the context in which a sound source occurs.

6.20. Clause 11, Note 2 of BS 4142 states the following regarding consideration of states the following in relation to the absolute level of sound from a source in relation to the residual acoustic environment:

"…1) The absolute level of sound. For a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low.

Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.

Where residual sound levels are very high, the residual sound might itself result in adverse impacts or significant adverse impacts, and the margin by which the rating

level exceeds the background might simply be an indication of the extent to which the specific sound source is likely to make those impacts worse..."

6.21. The dominant noise source at the site is road traffic noise, predominantly from the Steyning Bypass. Measurement position 2 is located at the centre of the site, significantly set back from the Steyning Bypass, and also not located in close proximity to smaller nearby residential access roads. The residual sound levels at measurement position 2 are therefore considered to be relatively low.

6.22. The specific sound levels from the BESS are significantly lower than the residual sound levels during the day and night, and the rating level is significantly lower than and slightly higher than the residual sound levels. The absolute level of sound from the BESS is therefore considered to be relatively low at the closes proposed dwellings.

6.23. Clause 11, Note 3 of BS 4142 states the following regarding consideration of internal sound levels:

"…Where the initial estimate of the impact needs to be modified due to the context, take all pertinent factors into consideration, including the following….

…3) The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions, such as:

i) facade insulation treatment;

ii) ventilation and/or cooling that will reduce the need to have windows open so as to provide rapid or purge ventilation; and

iii) acoustic screening…"

6.24. Consideration should therefore be given to the proposed façade treatments to dwellings at the site.

6.25. The proposed glazing and ventilation strategy outlined in Section 4 of this report has been designed to mitigate noise associated with local road traffic noise, this includes the provision of closed windows and an alternative means of ventilation. The proposed glazing and ventilation strategy will also be sufficient to reduce noise levels from the BESS, so that suitable internal amenity is achieved.

6.26. Noise from the BESS will have a low impact at the closest proposed residential dwellings when the mitigation measures to dwellings, the residual acoustic environment and absolute level of sound from the BESS are considered.

Assessment of Internal Noise Levels

6.27. An assessment of the internal noise levels due to the BESS has been undertaken which includes the proposed glazing and ventilation set out in Section 4. The calculated internal noise level at the most affected dwellings has been compared to Noise Rating curves to provide an assessment the effect of noise.

6.28. Figures 6-4 and 6-7 show the internal noise levels due to the BESS in the most exposed living room and bedrooms (Plot 262, house type Kirdford) compared to the NR10 to NR25 curves. Details of the internal noise level calculations are shown in Appendix D, which consider the room dimensions of the rooms.

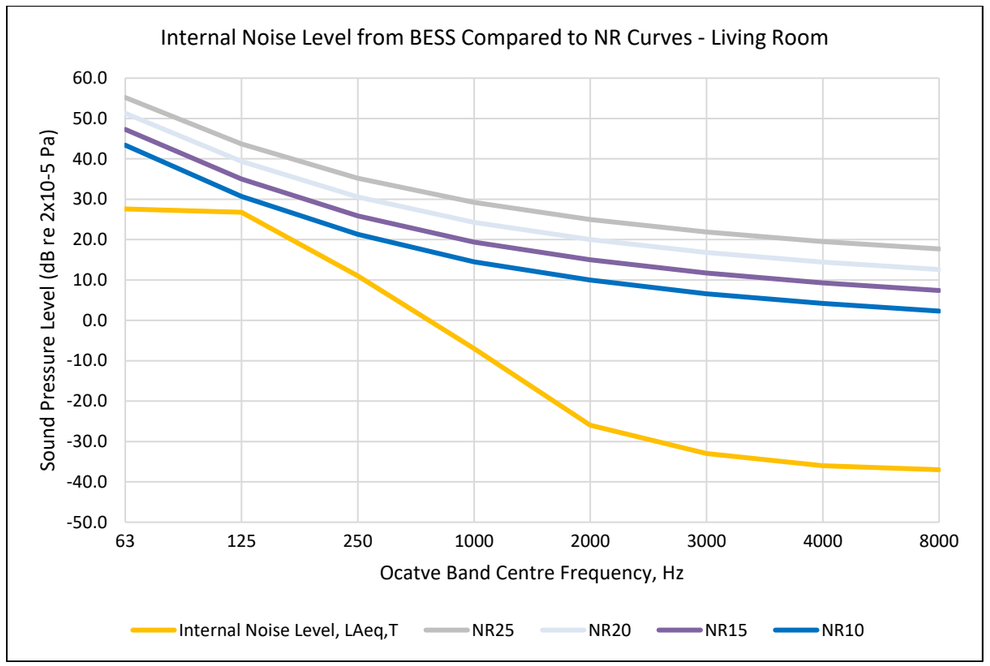


Figure 6-4: BESS Internal Noise Level Assessment – Living Room

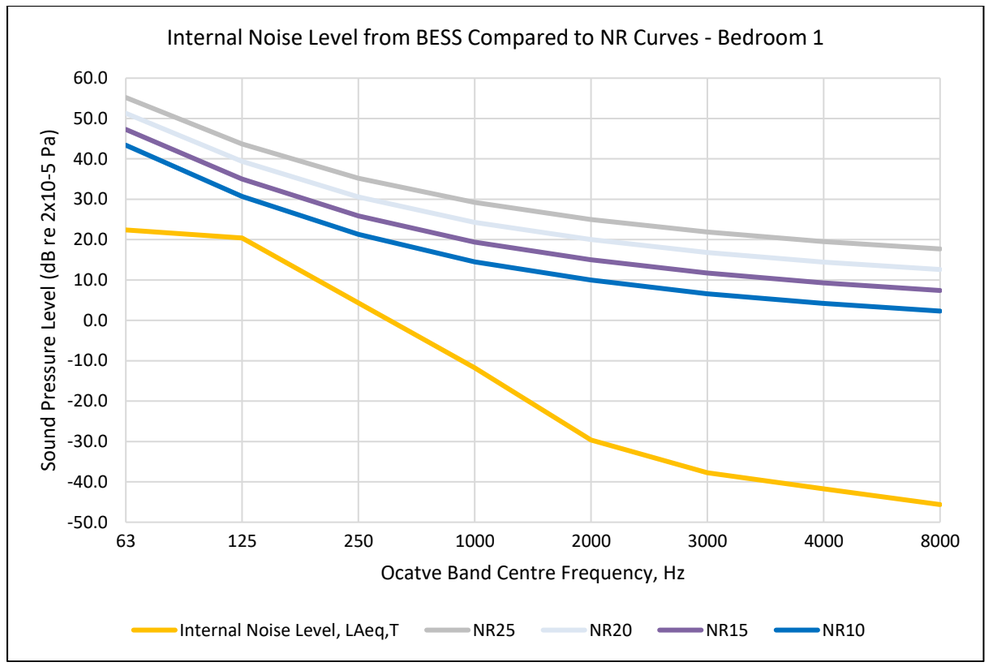


Figure 6-5: BESS Internal Noise Level Assessment – Bedroom 1

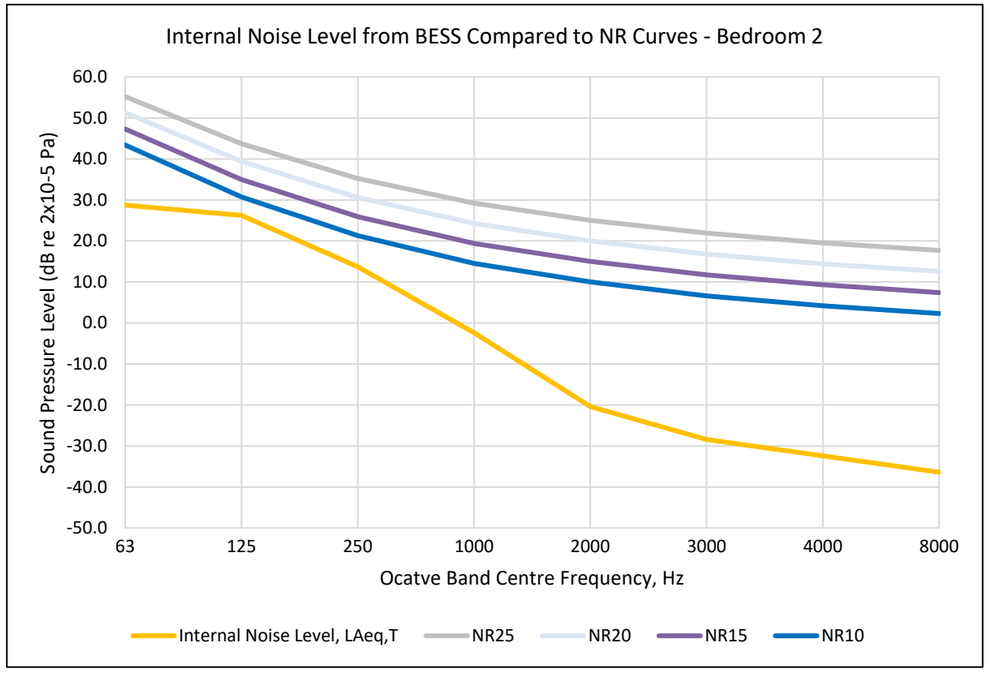


Figure 6-6: BESS Internal Noise Level Assessment – Bedroom 2

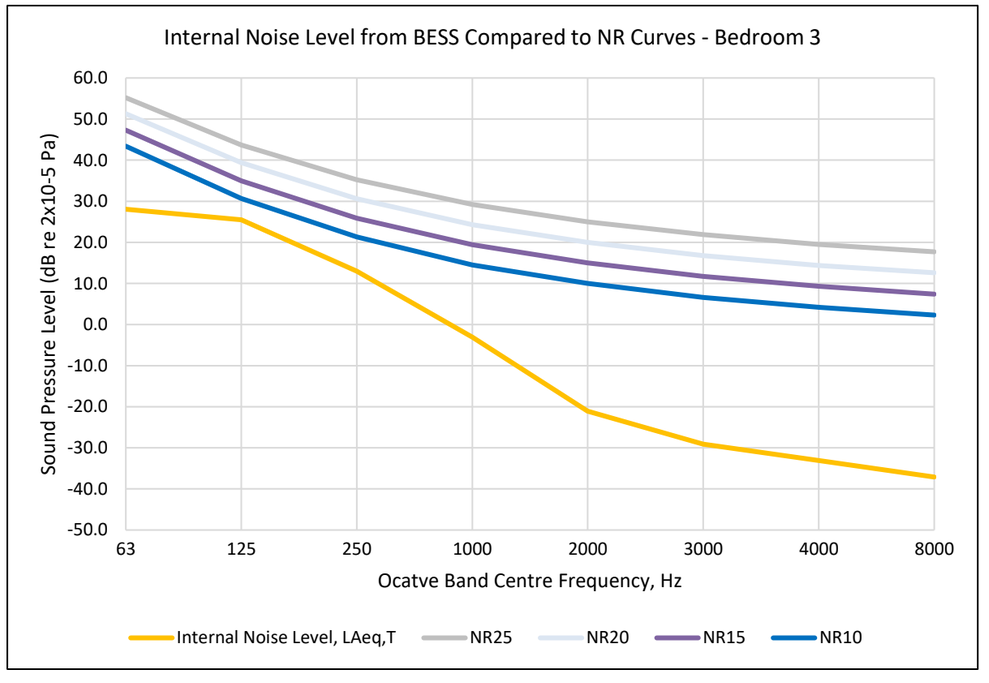


Figure 6-7: BESS Internal Noise Level Assessment – Bedroom 3

6.29. The Figures show that noise levels from the BESS will be lower than the NR10, with the highest noise levels occurring in the 125Hz octave band. In the living room noise levels are at the highest being approximately 3dB lower than NR10 at 125Hz. In bedrooms noise levels are in the range of 5-10dB lower than NR10 at 125Hz.

6.30. As noted in Section 4, MVHR is proposed to the closest dwellings to the BESS to allow residents to keep windows closed and provide suitable internal noise levels. The design of mitigation will be developed to provide thermal comfort as the detailed design of the site is developed.

6.31. The MVHR will be designed so that the requirement of condition 16 for the ventilation to achieve NR30 is met. The noise levels from the BESS will not significantly contribute to the noise levels within habitable rooms and will not lead to an increase in noise levels with the proposed ventilation.

6.32. Therefore noise from the BESS will be controlled so that there are no adverse effects on future residents.

7. Noise from the Proposed Substations

7.1. Two substations are proposed at as part of the development, the closest dwellings to the substations are proposed dwellings on site, specifically Plots 41 and 225, which are 13m and 14m from the substations respectively. The location of the substations and Plots 41 and 225 are shown in Figure 7-1.

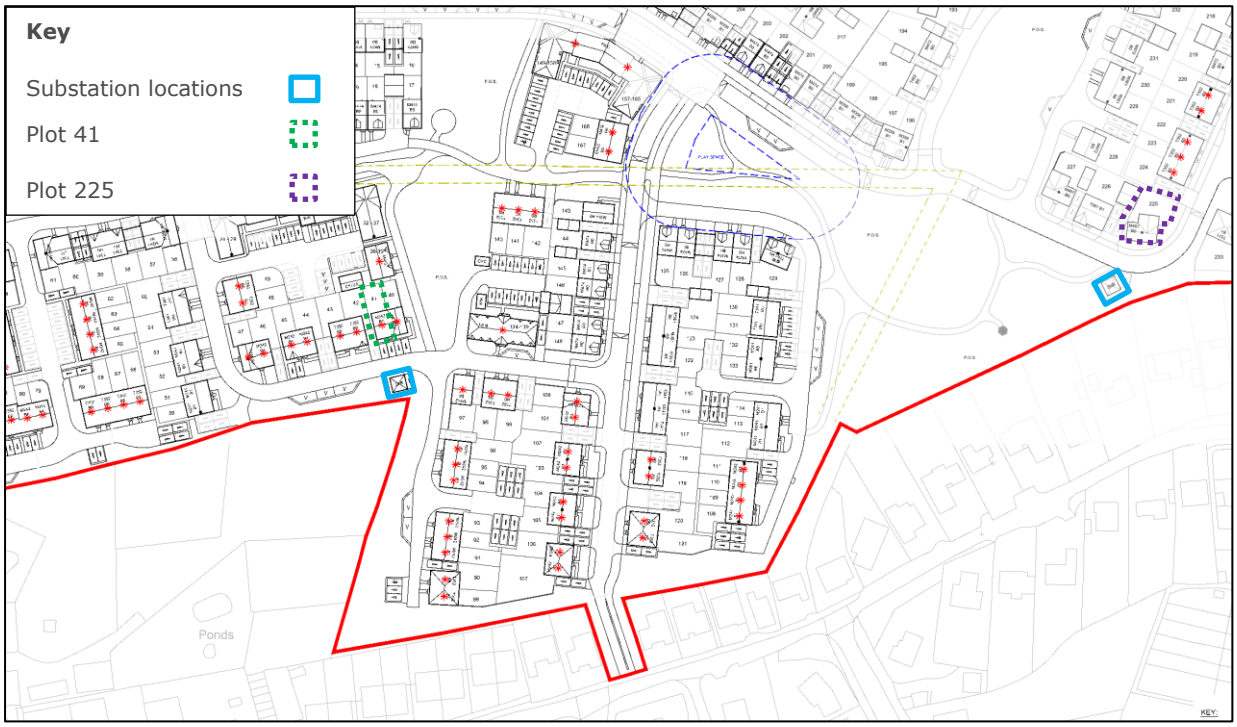


Figure 7-1: Substation Locations

7.2. Details of the substation plant are not currently available, therefore a detailed assessment cannot be undertaken. So that there are no adverse effects at the nearest dwellings noise from the substations should achieve a low impact, i.e., a rating level no greater than the representative background sound levels during the day and night. By achieving the criteria at the nearest proposed dwellings, there will be no adverse effects at any other proposed or existing dwellings.

7.3. The representative background sound levels which are set out in Section 6 have been used to inform the assessment of noise from the substations. Noise from the substations should not exceed a rating level at the nearest receptors of 33dB $L_{Ar,Tr}$ and 30dB $L_{Ar,Tr}$ during the day and night periods respectively.

7.4. The closest existing dwellings to the proposed substations are located on Kings Barn Lane, at a distance of approximately 20m at the closest approach. Based on the derived rating sound level, noise from the substations would result in a rating level

of no greater than 27dB $L_{Ar,Tr}$ and 24dB $L_{Ar,Tr}$ during the day and night periods respectively. The rating level is 6dB below the representative background sound levels during the day and night, which is considered a low impact when assessed in accordance with BS4142.

7.5. Substation plant will be selected, located, oriented, and where required attenuated to achieve the criteria. The substation plant should be designed and selected so that it does not produce distinguishable acoustic characteristics, such as tonal and impulsive characteristics. The above criteria need to be considered on the basis of the configuration of plant and the operational conditions.

7.6. Noise from the proposed substations is expected to be relatively continuous during the day and night and therefore the criteria for the night is likely to drive the selection of plant and mitigation measures.

7.7. Noise from the substations can be controlled through a suitably worded planning condition and further, more detailed, consideration of noise from the substations will be undertaken when the detailed design of the site has been sufficiently developed.

8. Conclusions

8.1. A noise survey has been undertaken, the measured noise levels and results of the noise model have been used to calculate and assess suitable glazing and ventilation specifications, demonstrating the guidance values of the standards can be met.

8.2. Good acoustic design principles have been taken into account within the design of the site to reduce noise levels. These principles include maximising the separation distance between dwellings and noise sources, and the placement of gardens on the shielded side of buildings where possible.

8.3. To achieve suitable internal amenity sound levels there will be some reliance on the design of dwellings to enable residents to keep windows closed. Windows would not be sealed shut and residents will have the choice of opening them, whilst noting noise levels will slightly increase. Background ventilation will be provided by MVHR and trickle ventilation, depending on the location of dwellings.

8.4. All gardens will have external amenity sound levels which meet the requirements of condition 14 across all of the space, with the proposed increased height fences. The mitigation has been designed to reduce noise levels by as much as practicably possible whilst taking other design considerations into account.

8.5. Noise from the AMCC will not lead to any adverse effects at gardens or within dwellings. Noise from the BESS has been assessed and mitigation measures have been proposed. The assessment shows that noise from the BESS will result in low impact at the nearest receptors.

8.6. The mitigation measures to control road traffic noise, which is the dominant noise source, will also control noise from the AMCC and the BESS. MVHR is proposed to some dwellings at the eastern boundary of the site to further reduce noise levels from the BESS.

8.7. A ventilation strategy has been developed to provide thermal comfort and suitable internal noise levels for all dwellings and will be implemented as part of construction of dwellings.

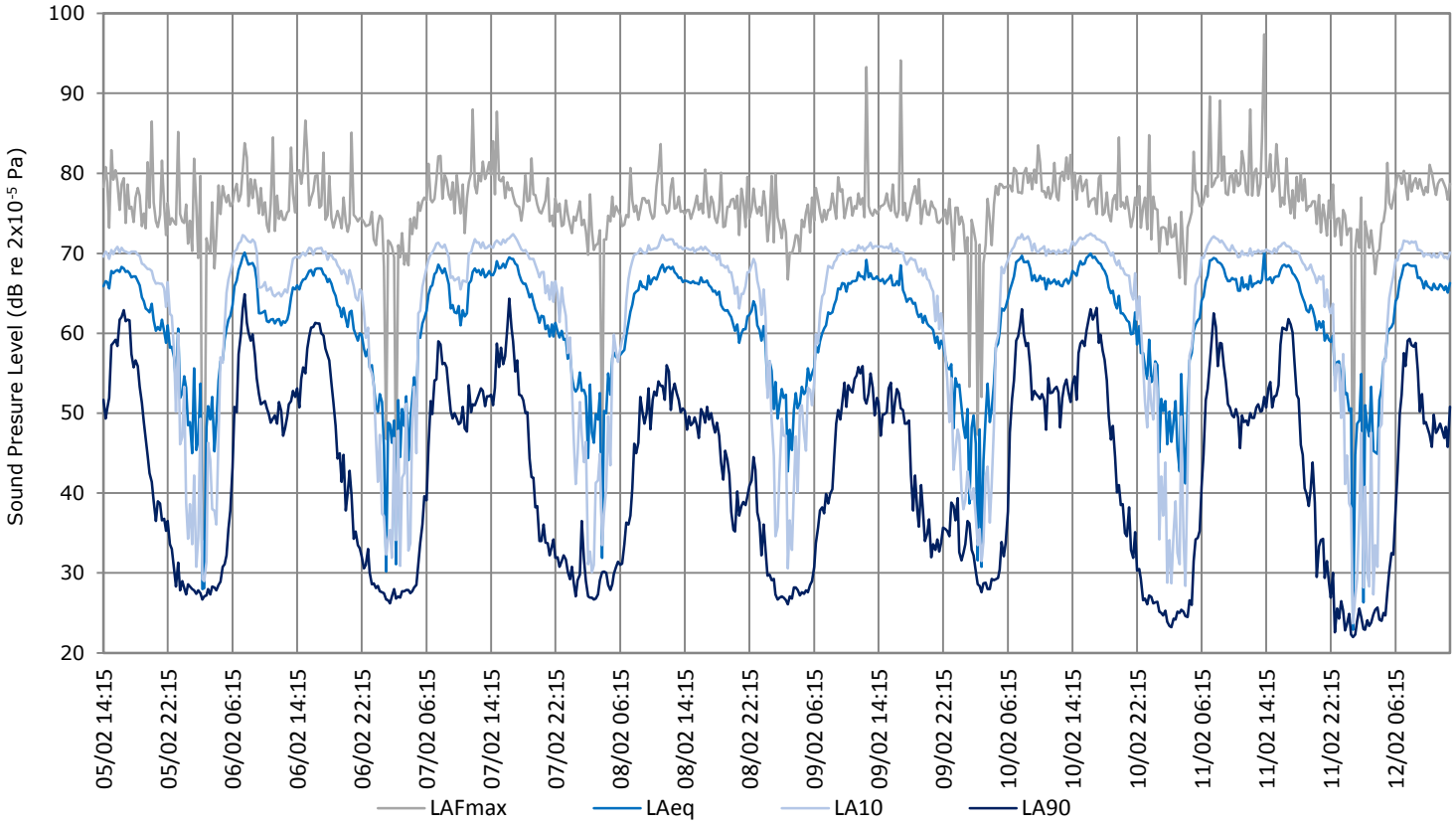
8.8. Rating noise levels for the proposed substations have been provided so that there are no adverse effects at the nearest proposed and existing dwellings. Noise from the substations can be controlled through a suitably worded planning condition and

more detailed, consideration of noise from the substations will be undertaken when details become available.

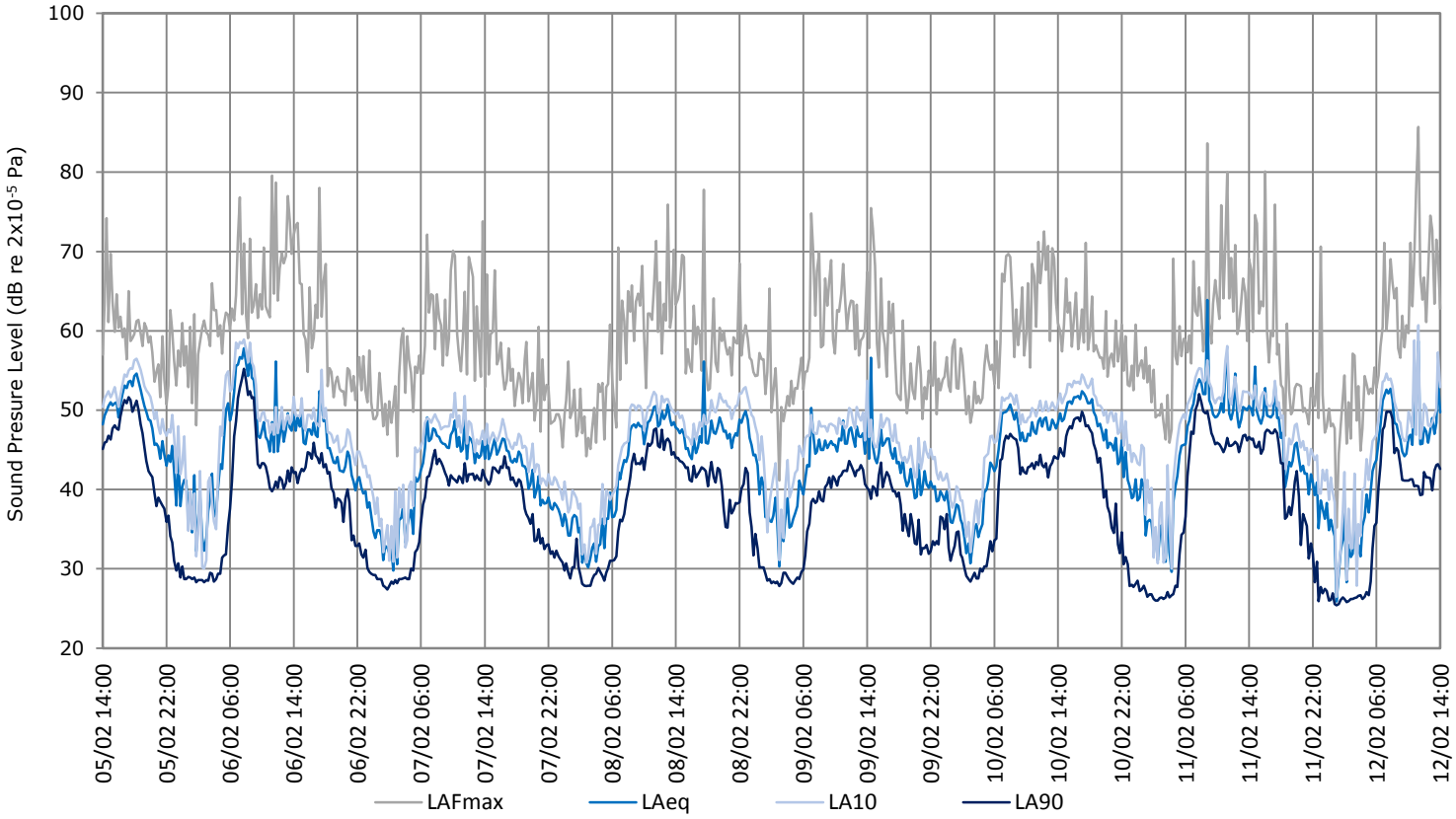
8.9. Subject to the recommendations included in this report, it is considered that the requirements of conditions 14 and 15, and the noise related elements of condition 16, have been met.

APPENDIX A

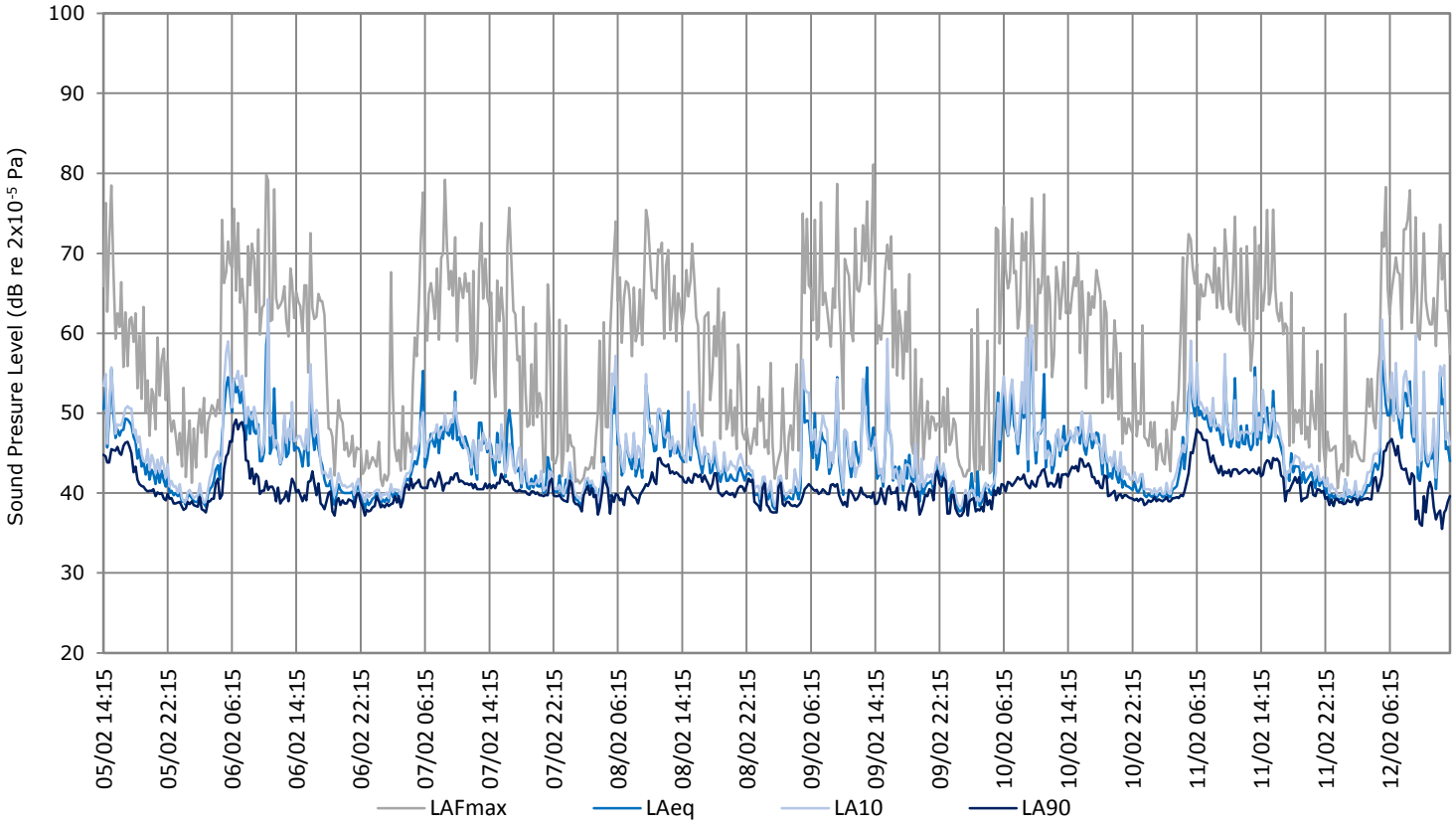
Glebe Farm Measurement Position 1
5th to 12th February 2025



Glebe Farm Measurement Position 2
5th to 12th February 2025



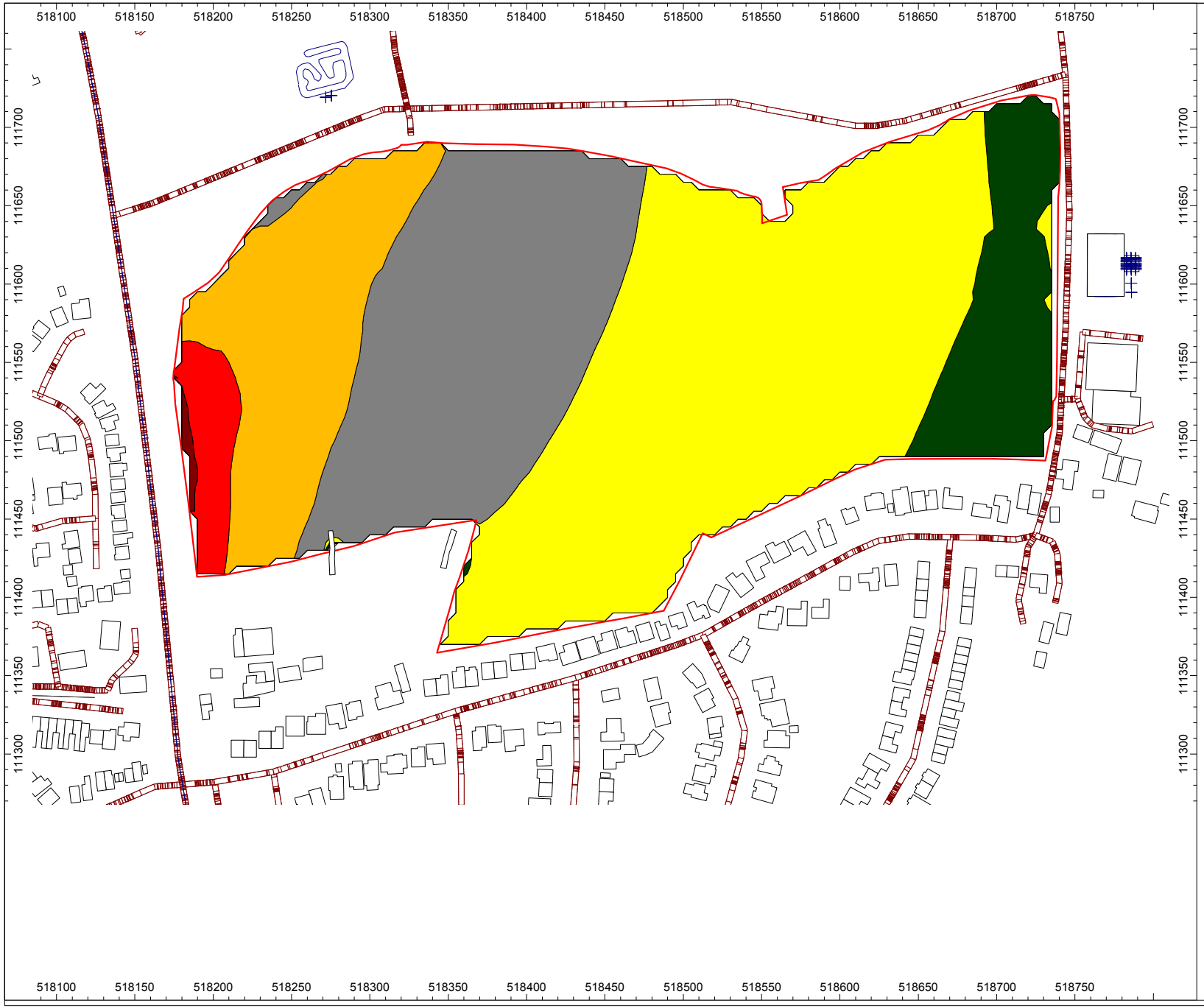
Glebe Farm Measurement Position 3
5th to 12th February 2025



APPENDIX B

Link Number	Road Name	Baseline 2025 (AAWT)			Future Year 2030 + Committed Development (Without Development)			Future Year 2030 + Committed Development + Development (With Development)			Future Year 2045 + Committed Development (Without Development)			Future Year 2045 + Committed Development + Development (With Development)			Development AAWT		
		Lights	HDV	HDV%	Lights	HDV	HDV%	Lights	HDV	HDV%	Lights	HDV	HDV%	Lights	HDV	HDV%	Lights	HDV	HDV%
1	A228 Steyning Bypass (North of Site)	12391	2570	21%	13245	2742	21%	13860	2754	20%	14778	2742	19%	15394	2754	18%	616	12	2%
2	A228 Steyning Bypass (South of Site)	12391	2570	21%	13245	2742	21%	14028	2757	20%	14778	2742	19%	15562	2757	18%	784	16	2%
3	Internal Road 1	-	-	-	-	-	-	1399	28	2%	-	-	-	1399	28	2%	1399	28	2%
4	Internal Road 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	655	13	2%
5	Internal Road 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	628	13	2%
6	Internal Road 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	3	2%
7	Internal Road 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	306	6	2%

APPENDIX C



Client:
Vistry Group

Project:
Glebe Farm, Steyning

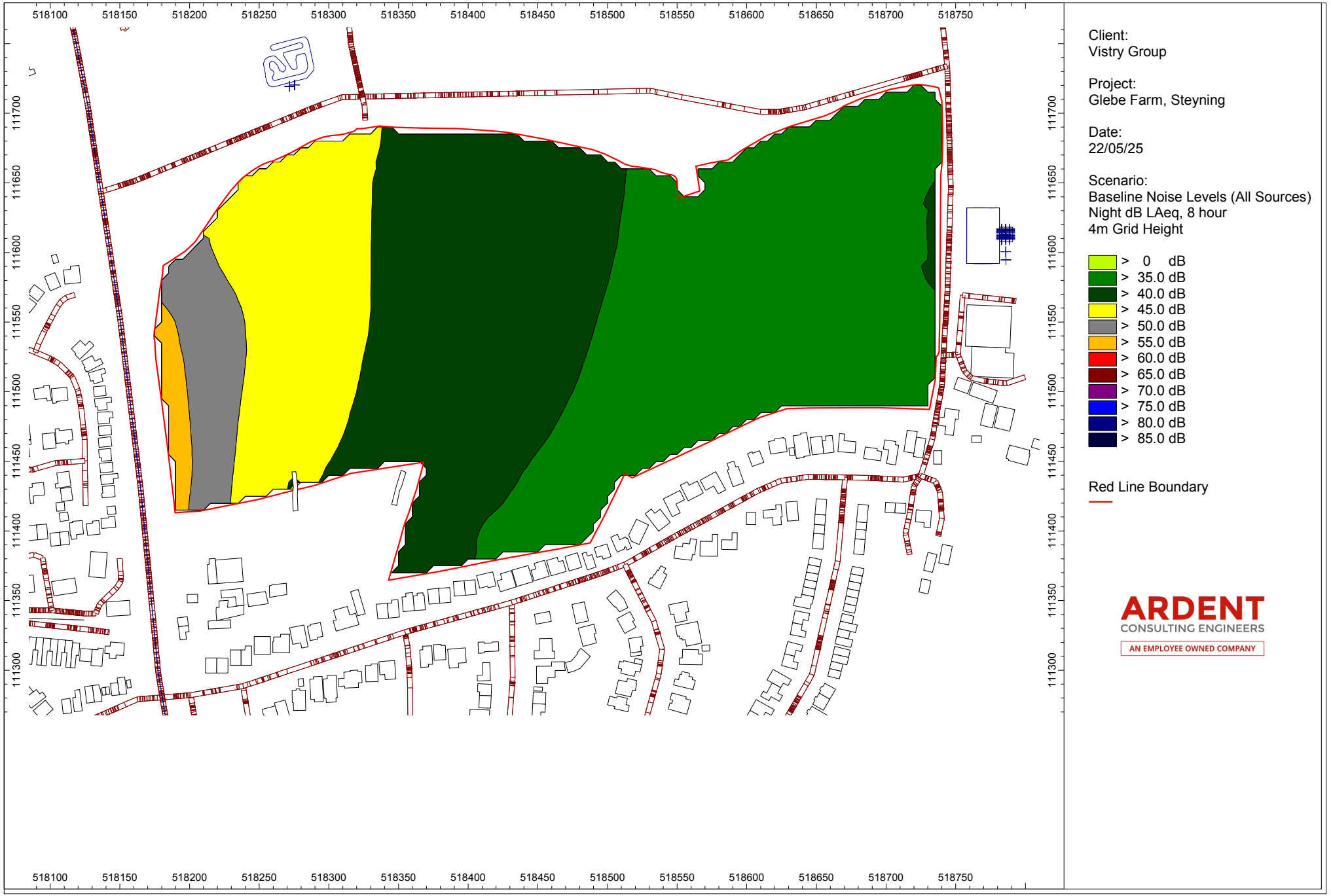
Date:
22/05/25

Scenario:
Baseline Noise Levels (All Sources)
Day dB LAeq, 16 hour
1.5m Grid Height

- > 0 dB
- > 35.0 dB
- > 40.0 dB
- > 45.0 dB
- > 50.0 dB
- > 55.0 dB
- > 60.0 dB
- > 65.0 dB
- > 70.0 dB
- > 75.0 dB
- > 80.0 dB
- > 85.0 dB

Red Line Boundary

ARDENT
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AN EMPLOYEE OWNED COMPANY


518100
518150
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111350
111300
Client:
Vistry Group
Project:
Glebe Farm, Steyning
Date:
22/05/25
Scenario:
Baseline Noise Levels (All Sources)
Night dB LAeq, 8 hour
4m Grid Height
> 0 dB
> 35.0 dB
> 40.0 dB
> 45.0 dB
> 50.0 dB
> 55.0 dB
> 60.0 dB
> 65.0 dB
> 70.0 dB
> 75.0 dB
> 80.0 dB
> 85.0 dB
Red Line Boundary
ARDENT
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AN EMPLOYEE OWNED COMPANY



Client:
Vistry Group

Project:
Glebe Farm, Steyning

Date:
29/10/25

Scenario:
Noise Levels with Site
(Road Traffic Noise)
Day dB LAeq, 16 hour
1.5m Grid Height

- > 0 dB
- > 35.0 dB
- > 40.0 dB
- > 45.0 dB
- > 50.0 dB
- > 55.0 dB
- > 60.0 dB
- > 65.0 dB
- > 70.0 dB
- > 75.0 dB
- > 80.0 dB
- > 85.0 dB

Red Line Boundary

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Client:
Vistry Group

Project:
Glebe Farm, Steyning

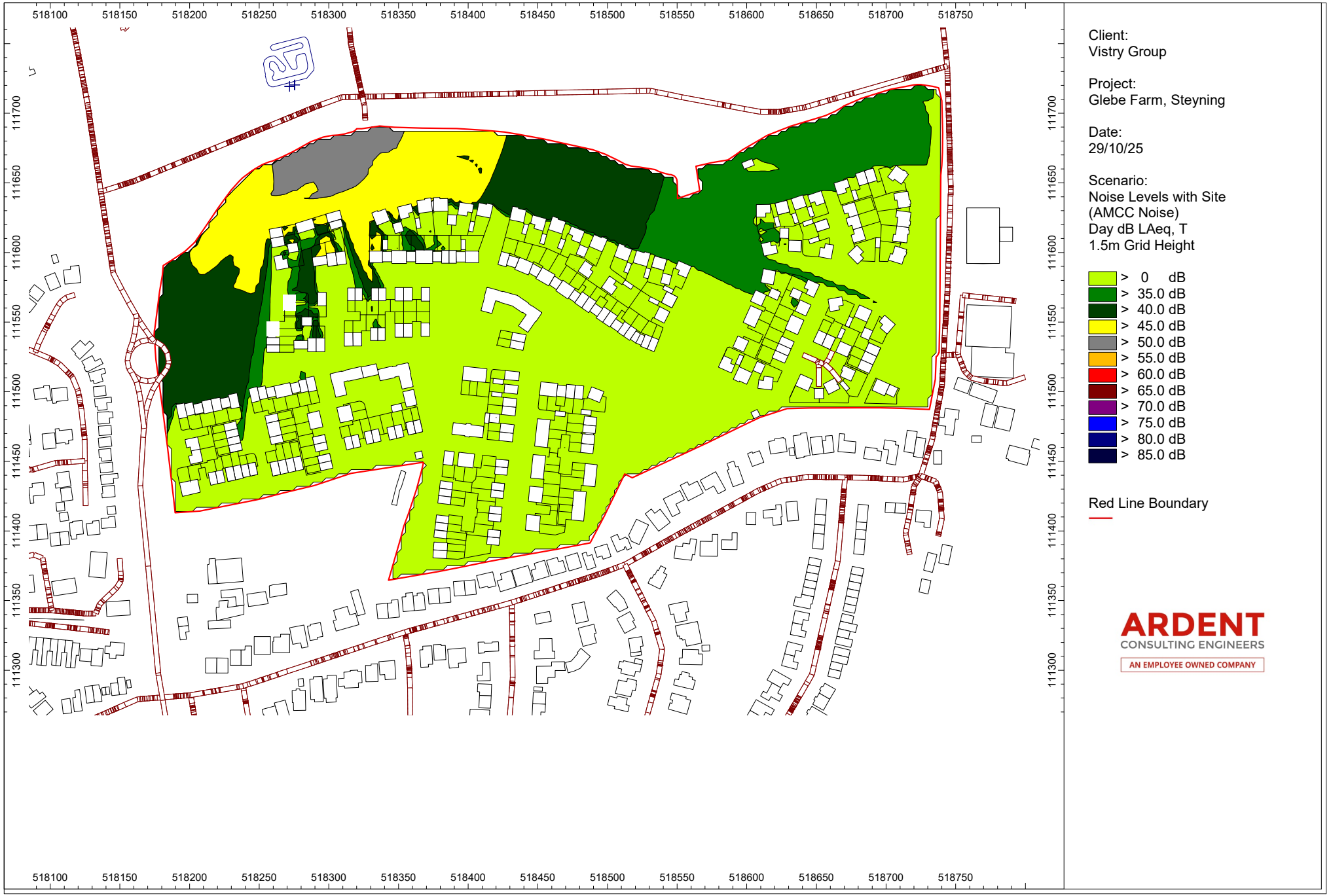
Date:
29/10/25

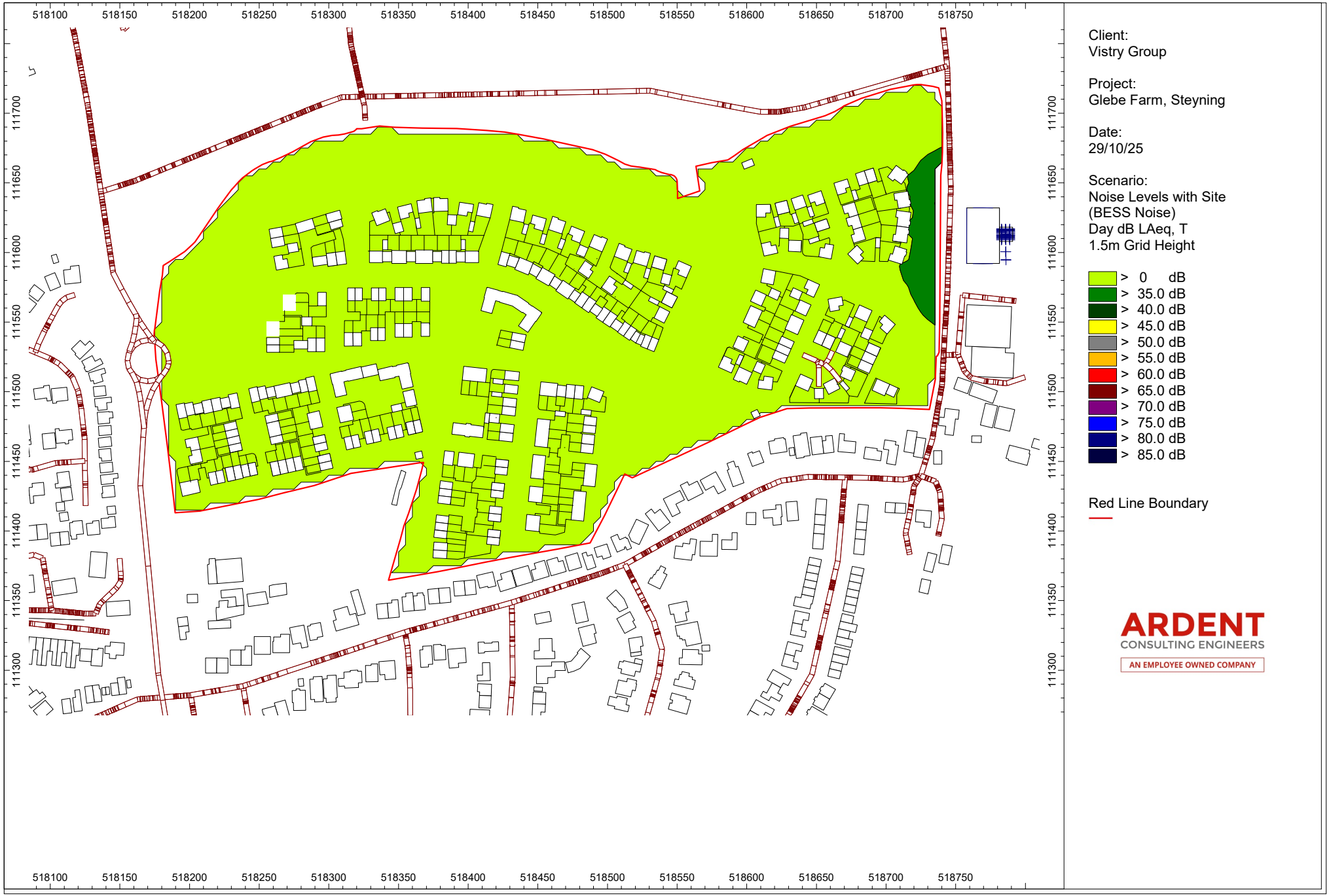
Scenario:
Noise Levels with Site
(Road Traffic Noise)
Night dB LAeq, 8 hour
4m Grid Height

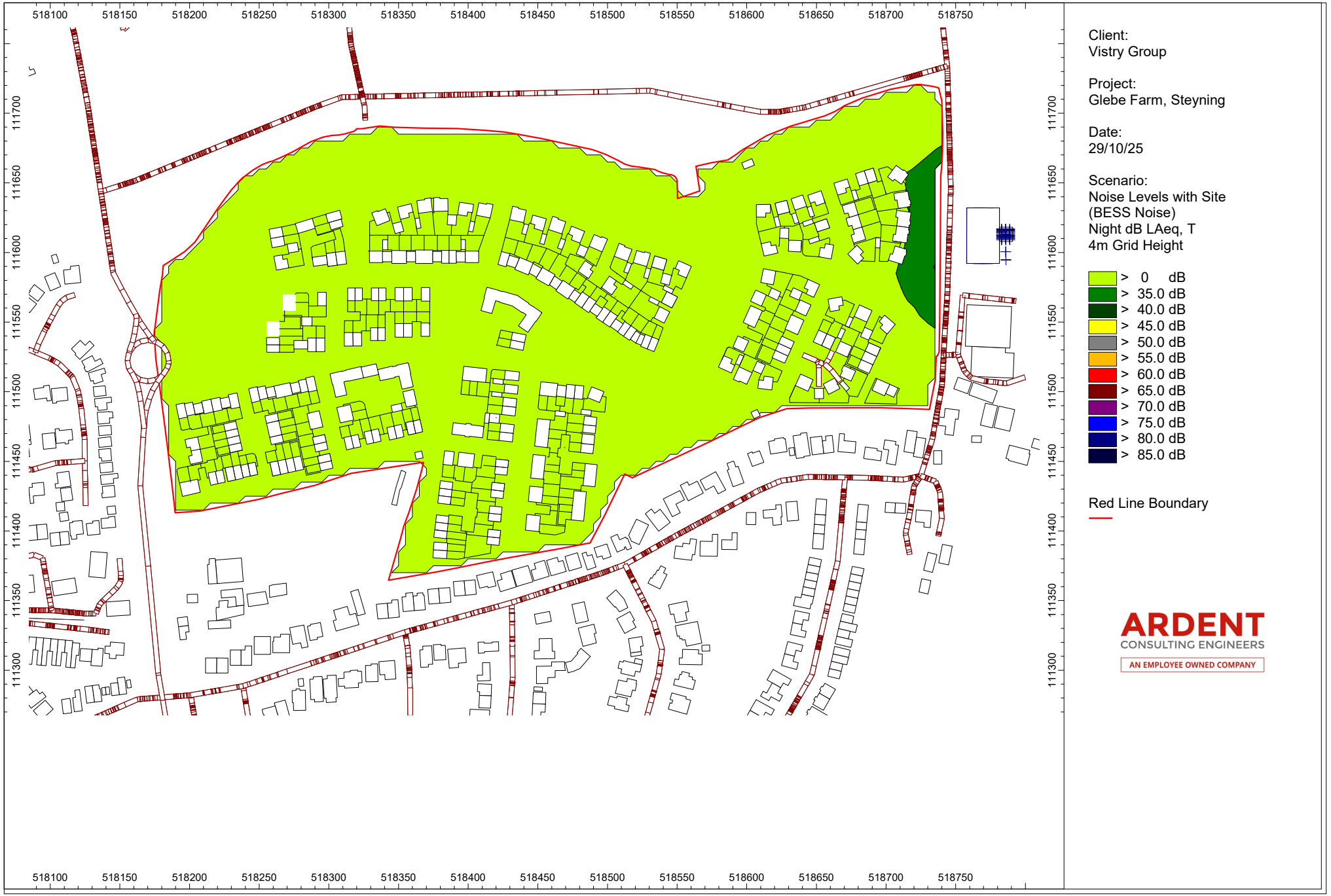
- > 0 dB
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- > 85.0 dB

Red Line Boundary

ARDENT
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AN EMPLOYEE OWNED COMPANY


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111300
Client:
Vistry Group
Project:
Glebe Farm, Steyning
Date:
29/10/25
Scenario:
Noise Levels with Site
(AMCC Noise)
Day dB LAeq, T
1.5m Grid Height
> 0 dB
> 35.0 dB
> 40.0 dB
> 45.0 dB
> 50.0 dB
> 55.0 dB
> 60.0 dB
> 65.0 dB
> 70.0 dB
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> 80.0 dB
> 85.0 dB
Red Line Boundary
ARDENT
CONSULTING ENGINEERS
AN EMPLOYEE OWNED COMPANY


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111350
111300
Client:
Vistry Group
Project:
Glebe Farm, Steyning
Date:
29/10/25
Scenario:
Noise Levels with Site
(BESS Noise)
Day dB LAeq, T
1.5m Grid Height
> 0 dB
> 35.0 dB
> 40.0 dB
> 45.0 dB
> 50.0 dB
> 55.0 dB
> 60.0 dB
> 65.0 dB
> 70.0 dB
> 75.0 dB
> 80.0 dB
> 85.0 dB
Red Line Boundary
ARDENT
CONSULTING ENGINEERS
AN EMPLOYEE OWNED COMPANY


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111400
111350
111300
Client:
Vistry Group
Project:
Glebe Farm, Steyning
Date:
29/10/25
Scenario:
Noise Levels with Site
(BESS Noise)
Night dB LAeq, T
4m Grid Height
> 0 dB
> 35.0 dB
> 40.0 dB
> 45.0 dB
> 50.0 dB
> 55.0 dB
> 60.0 dB
> 65.0 dB
> 70.0 dB
> 75.0 dB
> 80.0 dB
> 85.0 dB
Red Line Boundary
ARDENT
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APPENDIX D

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	24.50
Total Surface area	53.30
Wall façade area	6.30
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	8.19

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	1	1	1	1	1	1	1	1		**- Corection based on noise modelling**
Noise level at façade (Leq)	66	64	60	59	64	61	54	46	67	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004124	0.002139	0.000269	0.000031	0.000005	0.000002	0.000001	0.000000	
Average SRI	24	27	36	45	53	56	61	64	46

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	43.3	38.5	25.5	15.1	12.0	5.8	-6.2	-17.2	25	
Lp (Direct)	42.2	37.3	24.3	14.0	10.8	4.7	-7.4	-18.3	24	**Criteria**
Lp (Rev & Direct)	46	41	28	18	14	8	-4	-15	27	**≤ 35**
BS8233	45	40	27	17	14	8	-4	-15	27	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	24.50
Total Surface area	53.30
Wall façade area	6.30
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	8.19

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	53	51	49	54	52	44	35	57	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	1	1	1	1	1	1	1	1		**- Corection based on noise modelling**
Noise level at façade (Leq)	57	54	52	50	55	53	45	36	58	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004124	0.002139	0.000269	0.000031	0.000005	0.000002	0.000001	0.000000	
Average SRI	24	27	36	45	53	56	61	64	46

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	34.3	28.5	17.5	6.1	3.0	-2.2	-15.2	-27.2	16	
Lp (Direct)	33.2	27.3	16.3	5.0	1.8	-3.3	-16.4	-28.3	14	**Criteria**
Lp (Rev & Direct)	37	31	20	9	5	0	-13	-25	18	**≤ 30**
BS8233	36	30	19	8	5	0	-13	-25	18	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	24.50
Total Surface area	53.30
Wall façade area	6.30
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	8.19

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	1	1	1	1	1	1	1	1	
Noise level at façade (Lmax)	77	79	81	77	77	71	64	56	81

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004124	0.002139	0.000269	0.000031	0.000005	0.000002	0.000001	0.000000	
Average SRI	24	27	36	45	53	56	61	64	46

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	54.3	53.5	46.5	33.1	25.0	15.8	3.8	-7.2	41	
Lp (Direct)	53.2	52.3	45.3	32.0	23.8	14.7	2.6	-8.3	40	**Criteria**
Lp (Rev & Direct)	57	56	49	36	27	18	6	-5	44	**≤ 45**
BS8233	56	55	48	35	27	18	6	-5	43	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	24.50
Total Surface area	53.30
Wall façade area	7.20
Roof façade area	0.00
Glazing area	0.70
Dne Ref Area, A0	-

- MVHR

Total façade area	7.90

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-8	-8	-8	-8	-8	-8	-8	-8		**- Corection based on noise modelling**
Noise level at façade (Leq)	57	55	51	50	55	52	45	37	58	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.002560	0.001067	0.000134	0.000014	0.000002	0.000001	0.000000	0.000000	
Average SRI	26	30	39	49	57	60	65	68	49

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	32.1	26.3	13.3	2.5	-1.0	-7.4	-19.5	-30.4	13	
Lp (Direct)	31.1	25.3	12.3	1.5	-2.0	-8.4	-20.5	-31.4	12	**Criteria**
Lp (Rev & Direct)	35	29	16	5	2	-5	-17	-28	15	**≤ 35**
BS8233	34	28	15	4	1	-5	-17	-28	15	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas		
Room volume	24.50	
Total Surface area	53.30	
Wall façade area	7.20	
Roof façade area	0.00	
Glazing area	0.70	
Dne Ref Area, A0	-	**- MVHR**

Total façade area	7.90

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	53	51	49	54	52	44	35	57	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-8	-8	-8	-8	-8	-8	-8	-8		**- Corection based on noise modelling**
Noise level at façade (Leq)	48	45	43	41	46	44	36	27	49	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.002560	0.001067	0.000134	0.000014	0.000002	0.000001	0.000000	0.000000	
Average SRI	26	30	39	49	57	60	65	68	49

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	23.1	16.3	5.3	-6.5	-10.0	-15.4	-28.5	-40.4	4	
Lp (Direct)	22.1	15.3	4.3	-7.5	-11.0	-16.4	-29.5	-41.4	3	**Criteria**
Lp (Rev & Direct)	26	19	8	-4	-8	-13	-26	-38	6	**≤ 30**
BS8233	25	18	7	-5	-8	-13	-26	-38	6	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	24.50
Total Surface area	53.30
Wall façade area	7.20
Roof façade area	0.00
Glazing area	0.70
Dne Ref Area, A0	-

- MVHR

Total façade area	7.90

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Lmax)	76	78	80	76	76	70	63	55	80

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.002560	0.001067	0.000134	0.000014	0.000002	0.000001	0.000000	0.000000	
Average SRI	26	30	39	49	57	60	65	68	49

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	51.1	49.3	42.3	28.5	20.0	10.6	-1.5	-12.4	37	
Lp (Direct)	50.1	48.3	41.3	27.5	19.0	9.6	-2.5	-13.4	36	**Criteria**
Lp (Rev & Direct)	54	52	45	31	23	13	1	-10	40	**≤ 45**
BS8233	53	51	44	30	22	13	1	-10	39	**≤ 45**

Combined Internal Noise Level in Room, Day dB LAeq,16hr (House Type M354, Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	45	40	27	17	14	8	-4	-15	27

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	34	28	15	4	1	-5	-17	-28	15

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	46	41	28	17	14	8	-4	-15	27	≤ 35

Combined Internal Noise Level in Room, Night dB LAeq,8hr (House Type M354, Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	36	30	19	8	5	0	-13	-25	18

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	25	18	7	-5	-8	-13	-26	-38	6

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	37	31	20	8	5	0	-13	-25	18	≤ 30

Combined Internal Noise Level in Room, Night dB LAmax (House Type M354, Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	56	55	48	35	27	18	6	-5	43

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	53	51	44	30	22	13	1	-10	39

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	58	57	50	36	28	19	7	-4	45	≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 2 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	27.60
Total Surface area	56.60
Wall façade area	7.00
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	8.89

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	
10Log S/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	65	63	59	58	63	60	53	45	66
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	65	63	59	58	63	60	53	45	66

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003924	0.002002	0.000252	0.000029	0.000004	0.000002	0.000001	0.000000	
Average SRI	24	27	36	45	54	57	62	65	47

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	41.9	37.0	24.0	13.7	10.5	4.3	-7.7	-18.7	24	
Lp (Direct)	40.9	36.0	23.0	12.7	9.5	3.3	-8.7	-19.7	23	**Criteria**
Lp (Rev & Direct)	45	40	27	16	13	7	-5	-16	26	**≤ 35**
BS8233	44	39	26	16	12	6	-6	-17	26	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 2 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	27.60
Total Surface area	56.60
Wall façade area	7.00
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	8.89

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	
10Log S/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	56	53	51	49	54	52	44	35	57
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	56	53	51	49	54	52	44	35	57

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003924	0.002002	0.000252	0.000029	0.000004	0.000002	0.000001	0.000000	
Average SRI	24	27	36	45	54	57	62	65	47

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	32.9	27.0	16.0	4.7	1.5	-3.7	-16.7	-28.7	14	
Lp (Direct)	31.9	26.0	15.0	3.7	0.5	-4.7	-17.7	-29.7	13	**Criteria**
Lp (Rev & Direct)	36	30	19	7	4	-1	-14	-26	17	**≤ 30**
BS8233	35	29	18	7	3	-2	-15	-27	16	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 2 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	27.60
Total Surface area	56.60
Wall façade area	7.00
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	8.89

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	
10Log S/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Lmax)	76	78	80	76	76	70	63	55	80

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003924	0.002002	0.000252	0.000029	0.000004	0.000002	0.000001	0.000000	
Average SRI	24	27	36	45	54	57	62	65	47

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	52.9	52.0	45.0	31.7	23.5	14.3	2.3	-8.7	40	
Lp (Direct)	51.9	51.0	44.0	30.7	22.5	13.3	1.3	-9.7	39	**Criteria**
Lp (Rev & Direct)	56	55	48	34	26	17	5	-6	43	**≤ 45**
BS8233	55	54	47	34	25	16	4	-7	42	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 3 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	18.20
Total Surface area	43.80
Wall façade area	4.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	-

- MVHR

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	
10Log S/A	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	65	63	59	58	63	60	53	45	66
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	65	63	59	58	63	60	53	45	66

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004284	0.002249	0.000283	0.000033	0.000005	0.000002	0.000001	0.000000	
Average SRI	24	26	35	45	53	56	61	64	46

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	41.9	37.1	24.1	13.8	10.6	4.5	-7.5	-18.5	24	
Lp (Direct)	41.3	36.5	23.5	13.2	10.1	3.9	-8.1	-19.1	23	**Criteria**
Lp (Rev & Direct)	45	40	27	17	13	7	-5	-16	26	**≤ 35**
BS8233	44	39	26	16	13	6	-6	-17	26	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 3 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	18.20
Total Surface area	43.80
Wall façade area	4.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	-

- MVHR

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	
10Log S/A	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	56	53	51	49	54	52	44	35	57
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	56	53	51	49	54	52	44	35	57

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004284	0.002249	0.000283	0.000033	0.000005	0.000002	0.000001	0.000000	
Average SRI	24	26	35	45	53	56	61	64	46

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	32.9	27.1	16.1	4.8	1.6	-3.5	-16.5	-28.5	14	
Lp (Direct)	32.3	26.5	15.5	4.2	1.1	-4.1	-17.1	-29.1	14	**Criteria**
Lp (Rev & Direct)	36	30	19	8	4	-1	-14	-26	17	**≤ 30**
BS8233	35	29	18	7	4	-2	-15	-27	16	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 3 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	18.20
Total Surface area	43.80
Wall façade area	4.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	-

- MVHR

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	
10Log S/A	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Lmax)	76	78	80	76	76	70	63	55	80

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	21	30	39	47	50	55	58	41
Transmission Coefficient	0.012589	0.007943	0.001000	0.000126	0.000020	0.000010	0.000003	0.000002	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004284	0.002249	0.000283	0.000033	0.000005	0.000002	0.000001	0.000000	
Average SRI	24	26	35	45	53	56	61	64	46

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	52.9	52.1	45.1	31.8	23.6	14.5	2.5	-8.5	40	
Lp (Direct)	52.3	51.5	44.5	31.2	23.1	13.9	1.9	-9.1	39	**Criteria**
Lp (Rev & Direct)	56	55	48	35	26	17	5	-6	43	**≤ 45**
BS8233	55	54	47	34	26	16	4	-7	42	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Living Room (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Living Room**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	45.10
Total Surface area	81.00
Wall façade area	5.70
Roof façade area	0.00
Glazing area	2.40
Dne Ref Area, A0	-

- MVHR

Total façade area	8.10

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	
Total Absorption	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	
10Log S/A	-2.54	-2.54	-2.54	-2.54	-2.54	-2.54	-2.54	-2.54	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	65	63	59	58	63	60	53	45	66
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	65	63	59	58	63	60	53	45	66

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.005811	0.003243	0.004731	0.000472	0.000047	0.000118	0.000047	0.000005	
Average SRI	22	25	23	33	43	39	43	53	36

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	41.1	36.6	34.2	23.2	18.2	19.2	8.2	-9.8	29	
Lp (Direct)	42.6	38.1	35.7	24.7	19.7	20.7	9.7	-8.3	31	**Criteria**
Lp (Rev & Direct)	45	40	38	27	22	23	12	-6	33	**≤ 35**
BS8233	43	39	36	25	20	21	10	-8	31	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Living Room (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Living Room**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	45.10
Total Surface area	81.00
Wall façade area	12.00
Roof façade area	0.00
Glazing area	1.40
Dne Ref Area, A0	-

- MVHR

Total façade area	13.40

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	
Total Absorption	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	
10Log S/A	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	65	63	59	58	63	60	53	45	66
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	65	63	59	58	63	60	53	45	66

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003075	0.001401	0.001701	0.000168	0.000017	0.000042	0.000017	0.000002	
Average SRI	25	29	28	38	48	44	48	58	40

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	40.5	35.1	32.0	20.9	15.9	16.8	5.8	-12.2	27	
Lp (Direct)	39.9	34.5	31.3	20.3	15.2	16.2	5.2	-12.8	26	**Criteria**
Lp (Rev & Direct)	43	38	35	24	19	20	9	-10	30	**≤ 35**
BS8233	43	37	34	23	18	19	8	-10	29	**≤ 35**

Combined Internal Noise Level in Room, Day dB LAeq,16hr (House Type M354, Living Room)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	43	39	36	25	20	21	10	-8	31

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	43	37	34	23	18	19	8	-10	29

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	46	41	38	27	22	23	12	-6	33	≤ 35

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Noise Break-in Calculation - House Type M361 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	56.30
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	-

- MVHR

Total façade area	7.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-3	-3	-3	-3	-3	-3	-3	-3		**- Corection based on noise modelling**
Noise level at façade (Leq)	62	60	56	55	60	57	50	42	63	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004157	0.001236	0.000969	0.000150	0.000047	0.000015	0.000012	0.000004	
Average SRI	24	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	38.5	31.2	26.2	17.1	17.0	9.0	1.0	-12.0	23	
Lp (Direct)	38.2	30.9	25.9	16.8	16.7	8.7	0.7	-12.3	23	**Criteria**
Lp (Rev & Direct)	41	34	29	20	20	12	4	-9	26	**≤ 35**
BS8233	40	33	28	19	19	11	3	-10	25	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M361 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	56.30
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	-

- MVHR

Total façade area	7.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	53	51	49	54	52	44	35	57	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-3	-3	-3	-3	-3	-3	-3	-3		**- Corection based on noise modelling**
Noise level at façade (Leq)	53	50	48	46	51	49	41	32	54	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004157	0.001236	0.000969	0.000150	0.000047	0.000015	0.000012	0.000004	
Average SRI	24	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	29.5	21.2	18.2	8.1	8.0	1.0	-8.0	-22.0	14	
Lp (Direct)	29.2	20.9	17.9	7.8	7.7	0.7	-8.3	-22.3	14	**Criteria**
Lp (Rev & Direct)	32	24	21	11	11	4	-5	-19	17	**≤ 30**
BS8233	31	23	20	10	10	3	-6	-20	16	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M361 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	56.30
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	-

- MVHR

Total façade area	7.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-2	-2	-2	-2	-2	-2	-2	-2	
Noise level at façade (Lmax)	74	76	78	74	74	68	61	53	78

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004157	0.001236	0.000969	0.000150	0.000047	0.000015	0.000012	0.000004	
Average SRI	24	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	50.5	47.2	48.2	36.1	31.0	20.0	12.0	-1.0	41	
Lp (Direct)	50.2	46.9	47.9	35.8	30.7	19.7	11.7	-1.3	41	**Criteria**
Lp (Rev & Direct)	53	50	51	39	34	23	15	2	44	**≤ 45**
BS8233	52	49	50	38	33	22	14	1	43	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M361 Bedroom 2 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	29.60
Total Surface area	61.00
Wall façade area	9.20
Roof façade area	0.00
Glazing area	2.30
Dne Ref Area, A0	-

- MVHR

Total façade area	11.50

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.53	9.53	9.53	9.53	9.53	9.53	9.53	9.53	
10Log S/A	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	60	58	54	53	58	55	48	40	61	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003786	0.001115	0.000836	0.000129	0.000040	0.000013	0.000010	0.000003	
Average SRI	24	30	31	39	44	49	50	55	42

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	37.6	30.3	25.0	15.9	15.8	7.8	-0.2	-13.2	22	
Lp (Direct)	35.8	28.5	23.2	14.1	14.0	6.0	-2.0	-15.0	20	**Criteria**
Lp (Rev & Direct)	40	33	27	18	18	10	2	-11	24	**≤ 35**
BS8233	40	32	27	18	18	10	2	-11	24	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M361 Bedroom 2 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	29.60
Total Surface area	61.00
Wall façade area	9.20
Roof façade area	0.00
Glazing area	2.30
Dne Ref Area, A0	-

- MVHR

Total façade area	11.50

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.53	9.53	9.53	9.53	9.53	9.53	9.53	9.53	
10Log S/A	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	53	51	49	54	52	44	35	57	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	51	48	46	44	49	47	39	30	52	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003786	0.001115	0.000836	0.000129	0.000040	0.000013	0.000010	0.000003	
Average SRI	24	30	31	39	44	49	50	55	42

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	28.6	20.3	17.0	6.9	6.8	-0.2	-9.2	-23.2	13	
Lp (Direct)	26.8	18.5	15.2	5.1	5.0	-2.0	-11.0	-25.0	11	**Criteria**
Lp (Rev & Direct)	31	23	19	9	9	2	-7	-21	15	**≤ 30**
BS8233	31	22	19	9	9	2	-7	-21	15	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M361 Bedroom 2 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	29.60
Total Surface area	61.00
Wall façade area	9.20
Roof façade area	0.00
Glazing area	2.30
Dne Ref Area, A0	-

- MVHR

Total façade area	11.50

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.53	9.53	9.53	9.53	9.53	9.53	9.53	9.53	
10Log S/A	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-6	-6	-6	-6	-6	-6	-6	-6	
Noise level at façade (Lmax)	70	72	74	70	70	64	57	49	74

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003786	0.001115	0.000836	0.000129	0.000040	0.000013	0.000010	0.000003	
Average SRI	24	30	31	39	44	49	50	55	42

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	47.6	44.3	45.0	32.9	27.8	16.8	8.8	-4.2	38	
Lp (Direct)	45.8	42.5	43.2	31.1	26.0	15.0	7.0	-6.0	37	**Criteria**
Lp (Rev & Direct)	50	47	47	35	30	19	11	-2	41	**≤ 45**
BS8233	50	46	47	35	30	19	11	-2	40	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M361 Bedroom 3 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	29.60
Total Surface area	61.00
Wall façade area	9.20
Roof façade area	0.00
Glazing area	2.30
Dne Ref Area, A0	-

- MVHR

Total façade area	11.50

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.53	9.53	9.53	9.53	9.53	9.53	9.53	9.53	
10Log S/A	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	60	58	54	53	58	55	48	40	61	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003786	0.001115	0.000836	0.000129	0.000040	0.000013	0.000010	0.000003	
Average SRI	24	30	31	39	44	49	50	55	42

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	37.6	30.3	25.0	15.9	15.8	7.8	-0.2	-13.2	22	
Lp (Direct)	35.8	28.5	23.2	14.1	14.0	6.0	-2.0	-15.0	20	**Criteria**
Lp (Rev & Direct)	40	33	27	18	18	10	2	-11	24	**≤ 35**
BS8233	40	32	27	18	18	10	2	-11	24	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M361 Bedroom 3 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	29.60
Total Surface area	61.00
Wall façade area	9.20
Roof façade area	0.00
Glazing area	2.30
Dne Ref Area, A0	-

- MVHR

Total façade area	11.50

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.53	9.53	9.53	9.53	9.53	9.53	9.53	9.53	
10Log S/A	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	53	51	49	54	52	44	35	57	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	51	48	46	44	49	47	39	30	52	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003786	0.001115	0.000836	0.000129	0.000040	0.000013	0.000010	0.000003	
Average SRI	24	30	31	39	44	49	50	55	42

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	28.6	20.3	17.0	6.9	6.8	-0.2	-9.2	-23.2	13	
Lp (Direct)	26.8	18.5	15.2	5.1	5.0	-2.0	-11.0	-25.0	11	**Criteria**
Lp (Rev & Direct)	31	23	19	9	9	2	-7	-21	15	**≤ 30**
BS8233	31	22	19	9	9	2	-7	-21	15	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M361 Bedroom 3 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	29.60
Total Surface area	61.00
Wall façade area	9.20
Roof façade area	0.00
Glazing area	2.30
Dne Ref Area, A0	-

- MVHR

Total façade area	11.50

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.53	9.53	9.53	9.53	9.53	9.53	9.53	9.53	
10Log S/A	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-6	-6	-6	-6	-6	-6	-6	-6	
Noise level at façade (Lmax)	70	72	74	70	70	64	57	49	74

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003786	0.001115	0.000836	0.000129	0.000040	0.000013	0.000010	0.000003	
Average SRI	24	30	31	39	44	49	50	55	42

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	47.6	44.3	45.0	32.9	27.8	16.8	8.8	-4.2	38	
Lp (Direct)	45.8	42.5	43.2	31.1	26.0	15.0	7.0	-6.0	37	**Criteria**
Lp (Rev & Direct)	50	47	47	35	30	19	11	-2	41	**≤ 45**
BS8233	50	46	47	35	30	19	11	-2	40	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M361 Living Room (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Living Room**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	32.60
Total Surface area	63.70
Wall façade area	5.60
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	-

- MVHR

Total façade area	7.40

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	
10Log S/A	-1.52	-1.52	-1.52	-1.52	-1.52	-1.52	-1.52	-1.52	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	65	63	59	58	63	60	53	45	66
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-3	-3	-3	-3	-3	-3	-3	-3	
Noise level at façade (Leq)	62	60	56	55	60	57	50	42	63

- Corection based on noise modelling

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.005055	0.002734	0.003893	0.000388	0.000039	0.000097	0.000039	0.000004	
Average SRI	23	26	24	34	44	40	44	54	37

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	38.5	33.8	31.4	20.4	15.4	16.3	5.3	-12.7	26	
Lp (Direct)	39.0	34.4	31.9	20.9	15.9	16.9	5.9	-12.1	27	**Criteria**
Lp (Rev & Direct)	42	37	35	24	19	20	9	-9	30	**≤ 35**
BS8233	41	36	33	22	17	18	7	-11	28	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	36.50
Total Surface area	74.10
Wall façade area	5.10
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	6.99

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75	
10Log S/A	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	1	1	1	1	1	1	1	1		**- Corection based on noise modelling**
Noise level at façade (Leq)	66	64	60	59	64	61	54	46	67	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004560	0.001367	0.001113	0.000173	0.000054	0.000017	0.000014	0.000004	
Average SRI	23	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	41.3	34.1	29.2	20.1	20.1	12.1	4.1	-8.9	26	
Lp (Direct)	42.6	35.4	30.5	21.4	21.3	13.3	5.3	-7.7	27	**Criteria**
Lp (Rev & Direct)	45	38	33	24	24	16	8	-5	30	**≤ 35**
BS8233	43	36	31	22	22	14	6	-7	28	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	36.50
Total Surface area	74.10
Wall façade area	5.10
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	6.99

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75	
10Log S/A	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	53	51	49	54	52	44	35	57	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	1	1	1	1	1	1	1	1		**- Corection based on noise modelling**
Noise level at façade (Leq)	57	54	52	50	55	53	45	36	58	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004560	0.001367	0.001113	0.000173	0.000054	0.000017	0.000014	0.000004	
Average SRI	23	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	32.3	24.1	21.2	11.1	11.1	4.1	-4.9	-18.9	17	
Lp (Direct)	33.6	25.4	22.5	12.4	12.3	5.3	-3.7	-17.7	18	**Criteria**
Lp (Rev & Direct)	36	28	25	15	15	8	-1	-15	21	**≤ 30**
BS8233	34	26	23	13	13	6	-3	-17	19	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	36.50
Total Surface area	74.10
Wall façade area	5.10
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	6.99

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75	
10Log S/A	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	-2.26	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-1	-1	-1	-1	-1	-1	-1	-1	
Noise level at façade (Lmax)	75	77	79	75	75	69	62	54	79

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004560	0.001367	0.001113	0.000173	0.000054	0.000017	0.000014	0.000004	
Average SRI	23	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	50.3	47.1	48.2	36.1	31.1	20.1	12.1	-0.9	42	
Lp (Direct)	51.6	48.4	49.5	37.4	32.3	21.3	13.3	0.3	43	**Criteria**
Lp (Rev & Direct)	54	51	52	40	35	24	16	3	45	**≤ 45**
BS8233	52	49	50	38	33	22	14	1	44	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas		
Room volume	36.50	
Total Surface area	74.10	
Wall façade area	3.30	
Roof façade area	0.00	
Glazing area	0.70	
Dne Ref Area, A0	-	**- MVHR**

Total façade area	4.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75	
10Log S/A	-4.68	-4.68	-4.68	-4.68	-4.68	-4.68	-4.68	-4.68	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-17	-17	-17	-17	-17	-17	-17	-17		**- Corection based on noise modelling**
Noise level at façade (Leq)	48	46	42	41	46	43	36	28	49	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003511	0.001025	0.000738	0.000113	0.000035	0.000011	0.000009	0.000003	
Average SRI	25	30	31	39	45	50	51	56	43

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	19.8	12.4	7.0	-2.1	-2.2	-10.2	-18.2	-31.2	4	
Lp (Direct)	23.5	16.1	10.7	1.5	1.5	-6.6	-14.6	-27.6	8	**Criteria**
Lp (Rev & Direct)	25	18	12	3	3	-5	-13	-26	9	**≤ 35**
BS8233	22	14	9	0	0	-8	-16	-29	6	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas		
Room volume	36.50	
Total Surface area	74.10	
Wall façade area	3.30	
Roof façade area	0.00	
Glazing area	0.70	
Dne Ref Area, A0	-	**- MVHR**

Total façade area	4.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75	
10Log S/A	-4.68	-4.68	-4.68	-4.68	-4.68	-4.68	-4.68	-4.68	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	53	51	49	54	52	44	35	57	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-17	-17	-17	-17	-17	-17	-17	-17		**- Corection based on noise modelling**
Noise level at façade (Leq)	39	36	34	32	37	35	27	18	40	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003511	0.001025	0.000738	0.000113	0.000035	0.000011	0.000009	0.000003	
Average SRI	25	30	31	39	45	50	51	56	43

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	10.8	2.4	-1.0	-11.1	-11.2	-18.2	-27.2	-41.2	-5	
Lp (Direct)	14.5	6.1	2.7	-7.5	-7.5	-14.6	-23.6	-37.6	-1	**Criteria**
Lp (Rev & Direct)	16	8	4	-6	-6	-13	-22	-36	0	**≤ 30**
BS8233	13	4	1	-9	-9	-16	-25	-39	-3	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 1 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	36.50
Total Surface area	74.10
Wall façade area	3.30
Roof façade area	0.00
Glazing area	0.70
Dne Ref Area, A0	-

- MVHR

Total façade area	4.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	11.75	11.75	11.75	11.75	11.75	11.75	11.75	11.75	
10Log S/A	-4.68	-4.68	-4.68	-4.68	-4.68	-4.68	-4.68	-4.68	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-5	-5	-5	-5	-5	-5	-5	-5	
Noise level at façade (Lmax)	71	73	75	71	71	65	58	50	75

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.003511	0.001025	0.000738	0.000113	0.000035	0.000011	0.000009	0.000003	
Average SRI	25	30	31	39	45	50	51	56	43

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	42.8	39.4	40.0	27.9	22.8	11.8	3.8	-9.2	33	
Lp (Direct)	46.5	43.1	43.7	31.5	26.5	15.4	7.4	-5.6	37	**Criteria**
Lp (Rev & Direct)	48	45	45	33	28	17	9	-4	39	**≤ 45**
BS8233	45	41	42	30	25	14	6	-7	35	**≤ 45**

Combined Internal Noise Level in Room, Day dB LAeq,16hr (House Type M364, Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	43	36	31	22	22	14	6	-7	28

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	22	14	9	0	0	-8	-16	-29	6

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	43	36	31	22	22	14	6	-7	28	≤ 35

Combined Internal Noise Level in Room, Night dB LAeq,8hr (House Type M364, Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	34	26	23	13	13	6	-3	-17	19

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	13	4	1	-9	-9	-16	-25	-39	-3

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	34	26	23	13	13	6	-3	-17	19	≤ 30

Combined Internal Noise Level in Room, Night dB LAmax (House Type M364, Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	52	49	50	38	33	22	14	1	44

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	45	41	42	30	25	14	6	-7	35

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	53	50	51	39	34	23	15	2	44	≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 2 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	31.00
Total Surface area	61.80
Wall façade area	5.60
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	7.49

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	
10Log S/A	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	1	1	1	1	1	1	1	1		**- Corection based on noise modelling**
Noise level at façade (Leq)	66	64	60	59	64	61	54	46	67	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004362	0.001302	0.001042	0.000162	0.000051	0.000016	0.000013	0.000004	
Average SRI	24	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	42.1	34.9	29.9	20.8	20.8	12.8	4.8	-8.2	27	
Lp (Direct)	42.4	35.1	30.2	21.1	21.0	13.0	5.0	-8.0	27	**Criteria**
Lp (Rev & Direct)	45	38	33	24	24	16	8	-5	30	**≤ 35**
BS8233	44	37	32	23	23	15	7	-6	29	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 2 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	31.00
Total Surface area	61.80
Wall façade area	5.60
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	7.49

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	
10Log S/A	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	53	51	49	54	52	44	35	57	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	1	1	1	1	1	1	1	1		**- Corection based on noise modelling**
Noise level at façade (Leq)	57	54	52	50	55	53	45	36	58	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004362	0.001302	0.001042	0.000162	0.000051	0.000016	0.000013	0.000004	
Average SRI	24	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	33.1	24.9	21.9	11.8	11.8	4.8	-4.2	-18.2	18	
Lp (Direct)	33.4	25.1	22.2	12.1	12.0	5.0	-4.0	-18.0	18	**Criteria**
Lp (Rev & Direct)	36	28	25	15	15	8	-1	-15	21	**≤ 30**
BS8233	35	27	24	14	14	7	-2	-16	20	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 2 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	31.00
Total Surface area	61.80
Wall façade area	5.60
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	7.49

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	
10Log S/A	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	-1.25	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-1	-1	-1	-1	-1	-1	-1	-1	
Noise level at façade (Lmax)	75	77	79	75	75	69	62	54	79

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004362	0.001302	0.001042	0.000162	0.000051	0.000016	0.000013	0.000004	
Average SRI	24	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	51.1	47.9	48.9	36.8	31.8	20.8	12.8	-0.2	42	
Lp (Direct)	51.4	48.1	49.2	37.1	32.0	21.0	13.0	0.0	43	**Criteria**
Lp (Rev & Direct)	54	51	52	40	35	24	16	3	45	**≤ 45**
BS8233	53	50	51	39	34	23	15	2	44	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 3 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	57.20
Wall façade area	5.60
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	7.49

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.82	-0.82	-0.82	-0.82	-0.82	-0.82	-0.82	-0.82	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-4	-4	-4	-4	-4	-4	-4	-4		**- Corection based on noise modelling**
Noise level at façade (Leq)	61	59	55	54	59	56	49	41	62	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004362	0.001302	0.001042	0.000162	0.000051	0.000016	0.000013	0.000004	
Average SRI	24	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	37.6	30.3	25.4	16.3	16.2	8.2	0.2	-12.8	22	
Lp (Direct)	37.4	30.1	25.2	16.1	16.0	8.0	0.0	-13.0	22	**Criteria**
Lp (Rev & Direct)	41	33	28	19	19	11	3	-10	25	**≤ 35**
BS8233	40	32	27	18	18	10	2	-11	24	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 3 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	57.20
Wall façade area	5.60
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	7.49

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.82	-0.82	-0.82	-0.82	-0.82	-0.82	-0.82	-0.82	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	53	51	49	54	52	44	35	57	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-4	-4	-4	-4	-4	-4	-4	-4		**- Corection based on noise modelling**
Noise level at façade (Leq)	52	49	47	45	50	48	40	31	53	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004362	0.001302	0.001042	0.000162	0.000051	0.000016	0.000013	0.000004	
Average SRI	24	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	28.6	20.3	17.4	7.3	7.2	0.2	-8.8	-22.8	13	
Lp (Direct)	28.4	20.1	17.2	7.1	7.0	0.0	-9.0	-23.0	13	**Criteria**
Lp (Rev & Direct)	32	23	20	10	10	3	-6	-20	16	**≤ 30**
BS8233	31	22	19	9	9	2	-7	-21	15	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M364 Bedroom 3 (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	57.20
Wall façade area	5.60
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	-

- MVHR

Total façade area	7.49

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.82	-0.82	-0.82	-0.82	-0.82	-0.82	-0.82	-0.82	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-3	-3	-3	-3	-3	-3	-3	-3	
Noise level at façade (Lmax)	73	75	77	73	73	67	60	52	77

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004362	0.001302	0.001042	0.000162	0.000051	0.000016	0.000013	0.000004	
Average SRI	24	29	30	38	43	48	49	54	41

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	49.6	46.3	47.4	35.3	30.2	19.2	11.2	-1.8	41	
Lp (Direct)	49.4	46.1	47.2	35.1	30.0	19.0	11.0	-2.0	41	**Criteria**
Lp (Rev & Direct)	53	49	50	38	33	22	14	1	44	**≤ 45**
BS8233	52	48	49	37	32	21	13	0	43	**≤ 45**

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Noise Break-in Calculation - House Type M364 Living Room (close to Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Living Room**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	26.60
Total Surface area	54.40
Wall façade area	5.30
Roof façade area	0.00
Glazing area	2.40
Dne Ref Area, A0	-

- MVHR

Total façade area	7.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	8.57	8.57	8.57	8.57	8.57	8.57	8.57	8.57	
10Log S/A	-0.46	-0.46	-0.46	-0.46	-0.46	-0.46	-0.46	-0.46	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	1	1	1	1	1	1	1	1		**- Corection based on noise modelling**
Noise level at façade (Leq)	66	64	60	59	64	61	54	46	67	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.006031	0.003391	0.004974	0.000496	0.000050	0.000124	0.000049	0.000005	
Average SRI	22	25	23	33	43	39	43	53	36

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	44.3	39.8	37.5	26.5	21.5	22.5	11.5	-6.5	32	
Lp (Direct)	43.8	39.3	37.0	26.0	21.0	21.9	10.9	-7.1	32	**Criteria**
Lp (Rev & Direct)	47	43	40	29	24	25	14	-4	35	**≤ 35**
BS8233	46	42	40	28	23	24	13	-5	34	**≤ 35**

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Noise Break-in Calculation - House Type M354 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	24.50
Total Surface area	53.30
Wall façade area	6.30
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	10.00

Total façade area	8.19

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	60	58	54	53	58	55	48	40	61	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.004895	0.001322	0.001111	0.000342	0.000071	0.000076	0.000042	0.000034	
Average SRI	23	29	30	35	42	41	44	45	39

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	38.1	30.4	25.6	19.5	17.7	15.0	5.4	-3.5	24	
Lp (Direct)	36.9	29.2	24.5	18.3	16.5	13.8	4.3	-4.6	23	**Criteria**
Lp (Rev & Direct)	41	33	28	22	20	17	8	-1	26	**≤ 35**
BS8233	40	32	28	21	20	17	7	-1	26	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	24.50
Total Surface area	53.30
Wall façade area	6.30
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	10.00

Total façade area	8.19

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	63	51	49	54	52	44	35	58	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	51	58	46	44	49	47	39	30	53	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.004895	0.001322	0.001111	0.000342	0.000071	0.000076	0.000042	0.000034	
Average SRI	23	29	30	35	42	41	44	45	39

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	29.1	30.4	17.6	10.5	8.7	7.0	-3.6	-13.5	18	
Lp (Direct)	27.9	29.2	16.5	9.3	7.5	5.8	-4.7	-14.6	16	**Criteria**
Lp (Rev & Direct)	32	33	20	13	11	9	-1	-11	20	**≤ 30**
BS8233	31	32	20	12	11	9	-2	-11	20	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	24.50
Total Surface area	53.30
Wall façade area	6.30
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	10.00

Total façade area	8.19

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-6	-6	-6	-6	-6	-6	-6	-6	
Noise level at façade (Lmax)	70	72	74	70	70	64	57	49	74

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.004895	0.001322	0.001111	0.000342	0.000071	0.000076	0.000042	0.000034	
Average SRI	23	29	30	35	42	41	44	45	39

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	48.1	44.4	45.6	36.5	29.7	24.0	14.4	5.5	40	
Lp (Direct)	46.9	43.2	44.5	35.3	28.5	22.8	13.3	4.4	39	**Criteria**
Lp (Rev & Direct)	51	47	48	39	32	26	17	8	42	**≤ 45**
BS8233	50	46	48	38	32	26	16	8	42	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	24.50
Total Surface area	53.30
Wall façade area	7.20
Roof façade area	0.00
Glazing area	0.70
Dne Ref Area, A0	10.00

Total façade area	7.90

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	60	58	54	53	58	55	48	40	61	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.003359	0.000816	0.000558	0.000259	0.000043	0.000069	0.000036	0.000033	
Average SRI	25	31	33	36	44	42	44	45	40

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	36.3	28.1	22.5	18.1	15.4	14.4	4.6	-3.8	22	
Lp (Direct)	35.3	27.1	21.5	17.1	14.4	13.4	3.6	-4.8	21	**Criteria**
Lp (Rev & Direct)	39	31	25	21	18	17	7	-1	25	**≤ 35**
BS8233	38	30	24	20	17	16	7	-2	24	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	24.50
Total Surface area	53.30
Wall façade area	7.20
Roof façade area	0.00
Glazing area	0.70
Dne Ref Area, A0	10.00

Total façade area	7.90

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	63	51	49	54	52	44	35	58	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	51	58	46	44	49	47	39	30	53	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.003359	0.000816	0.000558	0.000259	0.000043	0.000069	0.000036	0.000033	
Average SRI	25	31	33	36	44	42	44	45	40

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	27.3	28.1	14.5	9.1	6.4	6.4	-4.4	-13.8	16	
Lp (Direct)	26.3	27.1	13.5	8.1	5.4	5.4	-5.4	-14.8	15	**Criteria**
Lp (Rev & Direct)	30	31	17	12	9	9	-2	-11	18	**≤ 30**
BS8233	29	30	16	11	8	8	-2	-12	18	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	24.50
Total Surface area	53.30
Wall façade area	7.20
Roof façade area	0.00
Glazing area	0.70
Dne Ref Area, A0	10.00

Total façade area	7.90

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.89	7.89	7.89	7.89	7.89	7.89	7.89	7.89	
10Log S/A	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-6	-6	-6	-6	-6	-6	-6	-6	
Noise level at façade (Lmax)	70	72	74	70	70	64	57	49	74

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.003359	0.000816	0.000558	0.000259	0.000043	0.000069	0.000036	0.000033	
Average SRI	25	31	33	36	44	42	44	45	40

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	46.3	42.1	42.5	35.1	27.4	23.4	13.6	5.2	37	
Lp (Direct)	45.3	41.1	41.5	34.1	26.4	22.4	12.6	4.2	36	**Criteria**
Lp (Rev & Direct)	49	45	45	38	30	26	16	8	40	**≤ 45**
BS8233	48	44	44	37	29	25	16	7	39	**≤ 45**

Combined Internal Noise Level in Room, Day dB LAeq,16hr (House Type M354, Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	40	32	28	21	20	17	7	-1	26

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	38	30	24	20	17	16	7	-2	24

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	42	34	29	24	22	20	10	1	28	≤ 35

Combined Internal Noise Level in Room, Night dB LAeq,8hr (House Type M354, Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	31	32	20	12	11	9	-2	-11	20

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	29	30	16	11	8	8	-2	-12	18

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	33	34	21	15	13	12	1	-9	22	≤ 30

Combined Internal Noise Level in Room, Night dB LAmax (House Type M354, Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	50	46	48	38	32	26	16	8	42

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	48	44	44	37	29	25	16	7	39

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	52	48	49	41	34	29	19	10	44	≤ 45

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Noise Break-in Calculation - House Type M354 Bedroom 2 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	27.60
Total Surface area	56.60
Wall façade area	7.00
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	10.00

Total façade area	8.89

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	
10Log S/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	60	58	54	53	58	55	48	40	61	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.004634	0.001249	0.001027	0.000315	0.000065	0.000070	0.000039	0.000032	
Average SRI	23	29	30	35	42	42	44	45	39

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	37.7	30.0	25.1	19.0	17.1	14.4	4.9	-4.0	23	
Lp (Direct)	36.7	29.0	24.1	18.0	16.1	13.4	3.9	-5.0	22	**Criteria**
Lp (Rev & Direct)	40	33	28	22	20	17	7	-2	26	**≤ 35**
BS8233	40	32	27	21	19	16	7	-2	25	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 2 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	27.60
Total Surface area	56.60
Wall façade area	7.00
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	10.00

Total façade area	8.89

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	
10Log S/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	63	51	49	54	52	44	35	58	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	51	58	46	44	49	47	39	30	53	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.004634	0.001249	0.001027	0.000315	0.000065	0.000070	0.000039	0.000032	
Average SRI	23	29	30	35	42	42	44	45	39

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	28.7	30.0	17.1	10.0	8.1	6.4	-4.1	-14.0	17	
Lp (Direct)	27.7	29.0	16.1	9.0	7.1	5.4	-5.1	-15.0	16	**Criteria**
Lp (Rev & Direct)	31	33	20	13	11	9	-2	-12	20	**≤ 30**
BS8233	31	32	19	12	10	8	-2	-12	19	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M354 Bedroom 2 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	27.60
Total Surface area	56.60
Wall façade area	7.00
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	10.00

Total façade area	8.89

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	
10Log S/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-6	-6	-6	-6	-6	-6	-6	-6	
Noise level at façade (Lmax)	70	72	74	70	70	64	57	49	74

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.004634	0.001249	0.001027	0.000315	0.000065	0.000070	0.000039	0.000032	
Average SRI	23	29	30	35	42	42	44	45	39

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
Lp (Reverberant), line source	47.7	44.0	45.1	36.0	29.1	23.4	13.9	5.0	39	
Lp (Direct)	46.7	43.0	44.1	35.0	28.1	22.4	12.9	4.0	38	
Lp (Rev & Direct)	50	47	48	39	32	26	16	8	42	≤ 45
BS8233	50	46	47	38	31	25	16	7	41	≤ 45

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Noise Break-in Calculation - House Type M354 Bedroom 3 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	18.20
Total Surface area	43.80
Wall façade area	4.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	
10Log S/A	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	60	58	54	53	58	55	48	40	61	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.005475	0.001427	0.001252	0.000456	0.000087	0.000110	0.000060	0.000051	
Average SRI	23	28	29	33	41	40	42	43	38

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	37.9	30.1	25.5	20.2	17.9	16.0	6.3	-2.3	24	
Lp (Direct)	37.4	29.5	25.0	19.6	17.4	15.4	5.8	-2.9	24	**Criteria**
Lp (Rev & Direct)	41	33	28	23	21	19	9	0	27	**≤ 35**
BS8233	40	32	28	22	20	18	8	0	26	**≤ 35**

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Noise Break-in Calculation - House Type M354 Bedroom 3 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	18.20
Total Surface area	43.80
Wall façade area	4.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	
10Log S/A	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	63	51	49	54	52	44	35	58	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	51	58	46	44	49	47	39	30	53	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.005475	0.001427	0.001252	0.000456	0.000087	0.000110	0.000060	0.000051	
Average SRI	23	28	29	33	41	40	42	43	38

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	28.9	30.1	17.5	11.2	8.9	8.0	-2.7	-12.3	18	
Lp (Direct)	28.4	29.5	17.0	10.6	8.4	7.4	-3.2	-12.9	17	**Criteria**
Lp (Rev & Direct)	32	33	20	14	12	11	0	-10	20	**≤ 30**
BS8233	31	32	20	13	11	10	-1	-10	20	**≤ 30**

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Noise Break-in Calculation - House Type M354 Bedroom 3 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	18.20
Total Surface area	43.80
Wall façade area	4.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	
10Log S/A	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-6	-6	-6	-6	-6	-6	-6	-6	
Noise level at façade (Lmax)	70	72	74	70	70	64	57	49	74

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	32	41	39	38	47	43	46	46	43
Transmission Coefficient	0.000631	0.000079	0.000126	0.000158	0.000020	0.000050	0.000025	0.000025	
Average Transmission Coeff	0.005475	0.001427	0.001252	0.000456	0.000087	0.000110	0.000060	0.000051	
Average SRI	23	28	29	33	41	40	42	43	38

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	47.9	44.1	45.5	37.2	29.9	25.0	15.3	6.7	40	
Lp (Direct)	47.4	43.5	45.0	36.6	29.4	24.4	14.8	6.1	39	**Criteria**
Lp (Rev & Direct)	51	47	48	40	33	28	18	9	43	**≤ 45**
BS8233	50	46	48	39	32	27	17	9	42	**≤ 45**

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Noise Break-in Calculation - House Type M354 Living Room (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Living Room**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	45.10
Total Surface area	81.00
Wall façade area	5.70
Roof façade area	0.00
Glazing area	2.40
Dne Ref Area, A0	10.00

Total façade area	8.10

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	
Total Absorption	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	
10Log S/A	-2.54	-2.54	-2.54	-2.54	-2.54	-2.54	-2.54	-2.54	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	60	58	54	53	58	55	48	40	61	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005156	0.001770	0.001706	0.001170	0.000551	0.000214	0.000211	0.000200	
Average SRI	23	28	28	29	33	37	37	37	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	35.6	28.9	24.8	22.1	23.9	16.8	9.7	1.5	27	
Lp (Direct)	37.1	30.5	26.3	23.7	25.4	18.3	11.2	3.0	28	**Criteria**
Lp (Rev & Direct)	39	33	29	26	28	21	14	5	31	**≤ 35**
BS8233	38	31	27	24	26	19	12	3	29	**≤ 35**

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Noise Break-in Calculation - House Type M354 Living Room (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Living Room**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	45.10
Total Surface area	81.00
Wall façade area	12.00
Roof façade area	0.00
Glazing area	1.40
Dne Ref Area, A0	10.00

Total façade area	13.40

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	
Total Absorption	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	
10Log S/A	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	-0.35	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Corection based on noise modelling**
Noise level at façade (Leq)	60	58	54	53	58	55	48	40	61	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.002922	0.000960	0.000758	0.000662	0.000318	0.000125	0.000124	0.000120	
Average SRI	25	30	31	32	35	39	39	39	36

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	35.3	28.5	23.4	21.9	23.7	16.6	9.6	1.4	26	
Lp (Direct)	34.7	27.8	22.8	21.2	23.0	16.0	8.9	0.8	26	**Criteria**
Lp (Rev & Direct)	38	31	26	25	26	19	12	4	29	**≤ 35**
BS8233	37	30	25	24	26	19	12	3	28	**≤ 35**

Combined Internal Noise Level in Room, Day dB LAeq,16hr (House Type M354, Living Room)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	38	31	27	24	26	19	12	3	29

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	37	30	25	24	26	19	12	3	28

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	41	34	29	27	29	22	15	7	32	≤ 35

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Noise Break-in Calculation - House Type M241 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	56.30
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	10.00

Total façade area	7.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-6	-6	-6	-6	-6	-6	-6	-6		**- Correction based on noise model**
Noise level at façade (Leq)	59	57	53	52	57	54	47	39	60	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004484	0.001562	0.001486	0.001182	0.000564	0.000221	0.000218	0.000210	
Average SRI	23	28	28	29	32	37	37	37	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	35.8	29.2	25.0	23.0	24.8	17.7	10.7	2.5	28	
Lp (Direct)	35.5	28.9	24.7	22.7	24.5	17.4	10.4	2.2	27	**Criteria**
Lp (Rev & Direct)	39	32	28	26	28	21	14	5	30	**≤ 35**
BS8233	38	31	27	25	27	20	13	5	30	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M241 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	56.30
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	10.00

Total façade area	7.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	63	51	49	54	52	44	35	58	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-6	-6	-6	-6	-6	-6	-6	-6		**- Correction based on noise model**
Noise level at façade (Leq)	50	57	45	43	48	46	38	29	52	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004484	0.001562	0.001486	0.001182	0.000564	0.000221	0.000218	0.000210	
Average SRI	23	28	28	29	32	37	37	37	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	26.8	29.2	17.0	14.0	15.8	9.7	1.7	-7.5	20	
Lp (Direct)	26.5	28.9	16.7	13.7	15.5	9.4	1.4	-7.8	19	**Criteria**
Lp (Rev & Direct)	30	32	20	17	19	13	5	-5	23	**≤ 30**
BS8233	29	31	19	16	18	12	4	-5	22	**≤ 30**

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Noise Break-in Calculation - House Type M241 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	56.30
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	10.00

Total façade area	7.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-8	-8	-8	-8	-8	-8	-8	-8	
Noise level at façade (Lmax)	68	70	72	68	68	62	55	47	72

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004484	0.001562	0.001486	0.001182	0.000564	0.000221	0.000218	0.000210	
Average SRI	23	28	28	29	32	37	37	37	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	44.8	42.2	44.0	39.0	35.8	25.7	18.7	10.5	41	
Lp (Direct)	44.5	41.9	43.7	38.7	35.5	25.4	18.4	10.2	41	**Criteria**
Lp (Rev & Direct)	48	45	47	42	39	29	22	13	44	**≤ 45**
BS8233	47	44	46	41	38	28	21	13	43	**≤ 45**

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Noise Break-in Calculation - House Type M241 Bedroom 2 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	28.60
Total Surface area	61.00
Wall façade area	9.20
Roof façade area	0.00
Glazing area	2.30
Dne Ref Area, A0	10.00

Total façade area	11.50

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	
10Log S/A	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-6	-6	-6	-6	-6	-6	-6	-6		**- Correction based on noise model**
Noise level at façade (Leq)	59	57	53	52	57	54	47	39	60	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004004	0.001333	0.001182	0.000819	0.000386	0.000150	0.000148	0.000141	
Average SRI	24	29	29	31	34	38	38	39	35

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	37.0	30.2	25.7	23.1	24.8	17.7	10.7	2.5	28	
Lp (Direct)	35.0	28.2	23.7	21.1	22.9	15.8	8.7	0.5	26	**Criteria**
Lp (Rev & Direct)	39	32	28	25	27	20	13	5	30	**≤ 35**
BS8233	39	32	28	25	27	20	13	4	30	**≤ 35**

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Noise Break-in Calculation - House Type M241 Bedroom 2 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	28.60
Total Surface area	61.00
Wall façade area	9.20
Roof façade area	0.00
Glazing area	2.30
Dne Ref Area, A0	10.00

Total façade area	11.50

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	
10Log S/A	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	63	51	49	54	52	44	35	58	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-6	-6	-6	-6	-6	-6	-6	-6		**- Correction based on noise model**
Noise level at façade (Leq)	50	57	45	43	48	46	38	29	52	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004004	0.001333	0.001182	0.000819	0.000386	0.000150	0.000148	0.000141	
Average SRI	24	29	29	31	34	38	38	39	35

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	28.0	30.2	17.7	14.1	15.8	9.7	1.7	-7.5	20	
Lp (Direct)	26.0	28.2	15.7	12.1	13.9	7.8	-0.3	-9.5	18	**Criteria**
Lp (Rev & Direct)	30	32	20	16	18	12	4	-5	22	**≤ 30**
BS8233	30	32	20	16	18	12	4	-6	22	**≤ 30**

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Noise Break-in Calculation - House Type M241 Bedroom 2 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	28.60
Total Surface area	61.00
Wall façade area	9.20
Roof façade area	0.00
Glazing area	2.30
Dne Ref Area, A0	10.00

Total façade area	11.50

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	
10Log S/A	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-8	-8	-8	-8	-8	-8	-8	-8	
Noise level at façade (Lmax)	68	70	72	68	68	62	55	47	72

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004004	0.001333	0.001182	0.000819	0.000386	0.000150	0.000148	0.000141	
Average SRI	24	29	29	31	34	38	38	39	35

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	46.0	43.2	44.7	39.1	35.8	25.7	18.7	10.5	41	
Lp (Direct)	44.0	41.2	42.7	37.1	33.9	23.8	16.7	8.5	39	**Criteria**
Lp (Rev & Direct)	48	45	47	41	38	28	21	13	43	**≤ 45**
BS8233	48	45	47	41	38	28	21	12	43	**≤ 45**

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Noise Break-in Calculation - House Type M241 Living Room (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Living Room**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	32.60
Total Surface area	63.70
Wall façade area	5.60
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	10.00

Total façade area	7.40

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	
10Log S/A	-1.52	-1.52	-1.52	-1.52	-1.52	-1.52	-1.52	-1.52	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-6	-6	-6	-6	-6	-6	-6	-6		**- Corection based on noise modelling**
Noise level at façade (Leq)	59	57	53	52	57	54	47	39	60	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005394	0.003073	0.004431	0.001461	0.000577	0.000311	0.000253	0.000218	
Average SRI	23	25	24	28	32	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	35.8	31.4	28.9	23.1	24.1	18.4	10.5	1.9	28	
Lp (Direct)	36.3	31.9	29.5	23.6	24.6	18.9	11.0	2.4	28	**Criteria**
Lp (Rev & Direct)	39	35	32	26	27	22	14	5	31	**≤ 35**
BS8233	38	33	31	25	26	20	13	4	30	**≤ 35**

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Noise Break-in Calculation - House Type T341 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	25.70
Total Surface area	54.30
Wall façade area	5.10
Roof façade area	0.00
Glazing area	1.90
Dne Ref Area, A0	10.00

Total façade area	7.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	8.28	8.28	8.28	8.28	8.28	8.28	8.28	8.28	
10Log S/A	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-6	-6	-6	-6	-6	-6	-6	-6		**- Correction based on noise model**
Noise level at façade (Leq)	59	57	53	52	57	54	47	39	60	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004931	0.001729	0.001686	0.001308	0.000623	0.000244	0.000240	0.000231	
Average SRI	23	28	28	29	32	36	36	36	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	36.2	29.7	25.5	23.4	25.2	18.1	11.1	2.9	28	
Lp (Direct)	35.9	29.4	25.3	23.2	24.9	17.9	10.8	2.6	28	**Criteria**
Lp (Rev & Direct)	39	33	28	26	28	21	14	6	31	**≤ 35**
BS8233	38	32	28	25	27	20	13	5	30	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type T341 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	25.70
Total Surface area	54.30
Wall façade area	5.10
Roof façade area	0.00
Glazing area	1.90
Dne Ref Area, A0	10.00

Total façade area	7.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	8.28	8.28	8.28	8.28	8.28	8.28	8.28	8.28	
10Log S/A	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	63	51	49	54	52	44	35	58	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-6	-6	-6	-6	-6	-6	-6	-6		**- Correction based on noise model**
Noise level at façade (Leq)	50	57	45	43	48	46	38	29	52	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	19	24	24	32	37	42	43	48	35
Transmission Coefficient	0.012589	0.003981	0.003981	0.000631	0.000200	0.000063	0.000050	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004931	0.001729	0.001686	0.001308	0.000623	0.000244	0.000240	0.000231	
Average SRI	23	28	28	29	32	36	36	36	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	27.2	29.7	17.5	14.4	16.2	10.1	2.1	-7.1	20	
Lp (Direct)	26.9	29.4	17.3	14.2	15.9	9.9	1.8	-7.4	20	**Criteria**
Lp (Rev & Direct)	30	33	20	17	19	13	5	-4	23	**≤ 30**
BS8233	29	32	20	16	18	12	4	-5	22	**≤ 30**

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Noise Break-in Calculation - House Type T341 Bedroom 1 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	25.70
Total Surface area	54.30
Wall façade area	5.10
Roof façade area	0.00
Glazing area	1.90
Dne Ref Area, A0	10.00

Total façade area	7.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	8.28	8.28	8.28	8.28	8.28	8.28	8.28	8.28	
10Log S/A	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-11	-11	-11	-11	-11	-11	-11	-11	
Noise level at façade (Lmax)	65	67	69	65	65	59	52	44	69

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005815	0.003363	0.004907	0.001567	0.000612	0.000334	0.000269	0.000231	
Average SRI	22	25	23	28	32	35	36	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	42.9	42.5	46.2	37.2	33.1	24.5	16.6	7.9	41	
Lp (Direct)	42.6	42.3	45.9	37.0	32.9	24.2	16.3	7.6	40	**Criteria**
Lp (Rev & Direct)	46	45	49	40	36	27	20	11	43	**≤ 45**
BS8233	45	45	48	39	35	27	19	10	43	**≤ 45**

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Noise Break-in Calculation - House Type T341 Bedroom 2 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	16.60
Total Surface area	39.70
Wall façade area	4.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	
10Log S/A	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-11	-11	-11	-11	-11	-11	-11	-11		**- Correction based on noise model**
Noise level at façade (Leq)	54	52	48	47	52	49	42	34	55	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005558	0.003227	0.004676	0.001890	0.000790	0.000397	0.000338	0.000303	
Average SRI	23	25	23	27	31	34	35	35	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	32.4	28.1	25.7	20.7	21.9	15.9	8.3	-0.2	25	
Lp (Direct)	31.4	27.1	24.7	19.8	21.0	15.0	7.3	-1.2	24	**Criteria**
Lp (Rev & Direct)	35	31	28	23	25	19	11	2	28	**≤ 35**
BS8233	34	30	28	23	24	18	10	2	27	**≤ 35**

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Noise Break-in Calculation - House Type T341 Bedroom 2 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	16.60
Total Surface area	39.70
Wall façade area	4.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	
10Log S/A	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	63	51	49	54	52	44	35	58	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-11	-11	-11	-11	-11	-11	-11	-11		**- Correction based on noise model**
Noise level at façade (Leq)	45	52	40	38	43	41	33	24	47	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005558	0.003227	0.004676	0.001890	0.000790	0.000397	0.000338	0.000303	
Average SRI	23	25	23	27	31	34	35	35	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	23.4	28.1	17.7	11.7	12.9	7.9	-0.7	-10.2	18	
Lp (Direct)	22.4	27.1	16.7	10.8	12.0	7.0	-1.7	-11.2	17	**Criteria**
Lp (Rev & Direct)	26	31	20	14	16	11	2	-8	20	**≤ 30**
BS8233	25	30	20	14	15	10	1	-8	20	**≤ 30**

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Noise Break-in Calculation - House Type T341 Bedroom 2 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	16.60
Total Surface area	39.70
Wall façade area	4.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.35	5.35	5.35	5.35	5.35	5.35	5.35	5.35	
10Log S/A	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-12	-12	-12	-12	-12	-12	-12	-12	
Noise level at façade (Lmax)	64	66	68	64	64	58	51	43	68

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005558	0.003227	0.004676	0.001890	0.000790	0.000397	0.000338	0.000303	
Average SRI	23	25	23	27	31	34	35	35	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	42.4	42.1	45.7	37.7	33.9	24.9	17.3	8.8	41	
Lp (Direct)	41.4	41.1	44.7	36.8	33.0	24.0	16.3	7.8	40	**Criteria**
Lp (Rev & Direct)	45	45	48	40	37	28	20	11	43	**≤ 45**
BS8233	44	44	48	40	36	27	19	11	43	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type T341 Bedroom 3 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	18.20
Total Surface area	45.70
Wall façade area	4.40
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	5.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	
10Log S/A	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	-0.12	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-11	-11	-11	-11	-11	-11	-11	-11		**- Correction based on noise model**
Noise level at façade (Leq)	54	52	48	47	52	49	42	34	55	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005279	0.003029	0.004352	0.001757	0.000735	0.000369	0.000314	0.000282	
Average SRI	23	25	24	28	31	34	35	36	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	32.1	27.7	25.3	20.3	21.5	15.5	7.9	-0.6	25	
Lp (Direct)	31.2	26.8	24.4	19.4	20.7	14.7	7.0	-1.5	24	**Criteria**
Lp (Rev & Direct)	35	30	28	23	24	18	10	2	28	**≤ 35**
BS8233	34	30	27	22	24	18	10	1	27	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type T341 Bedroom 3 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 8h**

Room Dimensions and Areas	
Room volume	18.20
Total Surface area	43.80
Wall façade area	4.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	
10Log S/A	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	56	63	51	49	54	52	44	35	58	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-11	-11	-11	-11	-11	-11	-11	-11		**- Correction based on noise model**
Noise level at façade (Leq)	45	52	40	38	43	41	33	24	47	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005558	0.003227	0.004676	0.001890	0.000790	0.000397	0.000338	0.000303	
Average SRI	23	25	23	27	31	34	35	35	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	23.0	27.7	17.3	11.3	12.5	7.5	-1.1	-10.6	17	
Lp (Direct)	22.4	27.1	16.7	10.8	12.0	7.0	-1.7	-11.2	17	**Criteria**
Lp (Rev & Direct)	26	30	20	14	15	10	2	-8	20	**≤ 30**
BS8233	25	30	19	13	15	10	1	-9	19	**≤ 30**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type T341 Bedroom 3 (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Bedroom**
Parameter	**Lmax**

Room Dimensions and Areas	
Room volume	18.20
Total Surface area	43.80
Wall façade area	4.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Total Absorption	5.86	5.86	5.86	5.86	5.86	5.86	5.86	5.86	
10Log S/A	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	-0.44	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	76	78	80	76	76	70	63	55	80
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-12	-12	-12	-12	-12	-12	-12	-12	
Noise level at façade (Lmax)	64	66	68	64	64	58	51	43	68

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005558	0.003227	0.004676	0.001890	0.000790	0.000397	0.000338	0.000303	
Average SRI	23	25	23	27	31	34	35	35	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	42.0	41.7	45.3	37.3	33.5	24.5	16.9	8.4	40	
Lp (Direct)	41.4	41.1	44.7	36.8	33.0	24.0	16.3	7.8	40	**Criteria**
Lp (Rev & Direct)	45	44	48	40	36	27	20	11	43	**≤ 45**
BS8233	44	44	47	39	36	27	19	10	42	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type T341 Living Room (setback from Bypass)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm Steyning**
Room Type	**Living Room**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	30.70
Total Surface area	61.80
Wall façade area	6.00
Roof façade area	0.00
Glazing area	2.40
Dne Ref Area, A0	10.00

Total façade area	8.40

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.89	9.89	9.89	9.89	9.89	9.89	9.89	9.89	
10Log S/A	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	65	63	59	58	63	60	53	45	66	
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	-5	-5	-5	-5	-5	-5	-5	-5		**- Correction based on noise model**
Noise level at façade (Leq)	60	58	54	53	58	55	48	40	61	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005959	0.003441	0.005038	0.001401	0.000519	0.000302	0.000234	0.000193	
Average SRI	22	25	23	29	33	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	38.0	33.7	31.3	24.8	25.4	20.1	12.0	3.2	30	
Lp (Direct)	37.8	33.4	31.0	24.5	25.2	19.8	11.7	2.9	29	**Criteria**
Lp (Rev & Direct)	41	37	34	28	28	23	15	6	33	**≤ 35**
BS8233	40	36	33	27	27	22	14	5	32	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	40.10
Total Surface area	75.90
Wall façade area	5.80
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	10.00

Total façade area	7.69

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	
10Log S/A	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	54	52	49	46	46	43	37	34	50	**- Based on typical specturm provided in BS EN 1793-3**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005417	0.003085	0.004451	0.001425	0.000557	0.000304	0.000245	0.000210	
Average SRI	23	25	24	28	33	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	30.1	25.6	24.2	16.3	12.2	6.6	-0.4	-4.0	20	
Lp (Direct)	31.3	26.9	25.5	17.5	13.5	7.8	0.9	-2.8	21	**Criteria**
BS8233	32	28	26	18	14	9	2	-2	22	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	40.10
Total Surface area	75.90
Wall façade area	5.80
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	10.00

Total façade area	7.69

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	
10Log S/A	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	49	47	44	41	41	38	32	29	45
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	49	47	44	41	41	38	32	29	45

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005417	0.003085	0.004451	0.001425	0.000557	0.000304	0.000245	0.000210	
Average SRI	23	25	24	28	33	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	25.1	20.6	19.2	11.3	7.2	1.6	-5.4	-9.0	15
Lp (Direct)	26.3	21.9	20.5	12.5	8.5	2.8	-4.1	-7.8	16
BS8233	27	23	21	13	9	4	-3	-7	17

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	40.10
Total Surface area	75.90
Wall façade area	5.80
Roof façade area	0.00
Glazing area	1.89
Dne Ref Area, A0	10.00

Total façade area	7.69

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	
10Log S/A	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Lmax)	74	63	62	63	70	64	56	49	72

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005417	0.003085	0.004451	0.001425	0.000557	0.000304	0.000245	0.000210	
Average SRI	23	25	24	28	33	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	49.9	36.6	37.6	32.9	36.2	27.1	18.6	11.3	39
Lp (Direct)	51.1	37.9	38.9	34.1	37.5	28.3	19.9	12.5	40
BS8233	52	39	40	35	38	29	21	13	41

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	40.10
Total Surface area	75.90
Wall façade area	6.20
Roof façade area	0.00
Glazing area	0.74
Dne Ref Area, A0	10.00

Total façade area	6.94

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	
10Log S/A	-2.70	-2.70	-2.70	-2.70	-2.70	-2.70	-2.70	-2.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	54	52	49	46	46	43	37	34	50
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.003468	0.001784	0.002308	0.001316	0.000591	0.000271	0.000245	0.000230	
Average SRI	25	27	26	29	32	36	36	36	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	27.7	22.8	20.9	15.5	12.0	5.6	-0.8	-4.1	18
Lp (Direct)	29.4	24.5	22.6	17.2	13.7	7.3	0.9	-2.4	20
BS8233	30	25	23	17	14	8	1	-2	20

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	40.10
Total Surface area	75.90
Wall façade area	6.20
Roof façade area	0.00
Glazing area	0.74
Dne Ref Area, A0	10.00

Total façade area	6.94

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	
10Log S/A	-2.70	-2.70	-2.70	-2.70	-2.70	-2.70	-2.70	-2.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	49	47	44	41	41	38	32	29	45
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	49	47	44	41	41	38	32	29	45

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.003468	0.001784	0.002308	0.001316	0.000591	0.000271	0.000245	0.000230	
Average SRI	25	27	26	29	32	36	36	36	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	22.7	17.8	15.9	10.5	7.0	0.6	-5.8	-9.1	13
Lp (Direct)	24.4	19.5	17.6	12.2	8.7	2.3	-4.1	-7.4	15
BS8233	25	20	18	12	9	3	-4	-7	15

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	40.10
Total Surface area	75.90
Wall façade area	6.20
Roof façade area	0.00
Glazing area	0.74
Dne Ref Area, A0	10.00

Total façade area	6.94

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	12.91	12.91	12.91	12.91	12.91	12.91	12.91	12.91	
10Log S/A	-2.70	-2.70	-2.70	-2.70	-2.70	-2.70	-2.70	-2.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Lmax)	74	63	62	63	70	64	56	49	72

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.003468	0.001784	0.002308	0.001316	0.000591	0.000271	0.000245	0.000230	
Average SRI	25	27	26	29	32	36	36	36	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	47.5	33.8	34.3	32.1	36.0	26.1	18.2	11.2	38
Lp (Direct)	49.2	35.5	36.0	33.8	37.7	27.8	19.9	12.9	40
BS8233	50	36	36	34	38	28	20	13	40

Criteria

≤ 45

Combined Internal Noise Level in Room, Day dB LAeq,16hr (House Type M467, Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	32	28	26	18	14	9	2	-2	22

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	30	25	23	17	14	8	1	-2	20

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	34	30	28	21	17	11	4	1	24	≤ 35

Combined Internal Noise Level in Room, Night dB LAeq,8hr (House Type M467, Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	27	23	21	13	9	4	-3	-7	17

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	25	20	18	12	9	3	-4	-7	15

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	29	25	23	16	12	6	-1	-4	19	≤ 30

Combined Internal Noise Level in Room, Night dB LAmax (House Type M467 Bedroom 1)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	52	39	40	35	38	29	21	13	41

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	50	36	36	34	38	28	20	13	40

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	54	41	41	38	41	32	23	16	43	≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	34.10
Total Surface area	67.30
Wall façade area	6.30
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	10.00

Total façade area	8.10

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	
10Log S/A	-1.32	-1.32	-1.32	-1.32	-1.32	-1.32	-1.32	-1.32	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	54	52	49	46	46	43	37	34	50
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005065	0.002842	0.004052	0.001335	0.000527	0.000284	0.000231	0.000199	
Average SRI	23	25	24	29	33	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	30.7	26.2	24.8	16.9	12.9	7.2	0.3	-3.3	20
Lp (Direct)	31.0	26.5	25.1	17.3	13.2	7.5	0.6	-3.0	21
BS8233	33	28	27	19	15	9	2	-1	22

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	34.10
Total Surface area	67.30
Wall façade area	6.30
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	10.00

Total façade area	8.10

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	
10Log S/A	-1.32	-1.32	-1.32	-1.32	-1.32	-1.32	-1.32	-1.32	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	49	47	44	41	41	38	32	29	45
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	49	47	44	41	41	38	32	29	45

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005065	0.002842	0.004052	0.001335	0.000527	0.000284	0.000231	0.000199	
Average SRI	23	25	24	29	33	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	25.7	21.2	19.8	11.9	7.9	2.2	-4.7	-8.3	15
Lp (Direct)	26.0	21.5	20.1	12.3	8.2	2.5	-4.4	-8.0	16
BS8233	28	23	22	14	10	4	-3	-6	17

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	34.10
Total Surface area	67.30
Wall façade area	6.30
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	10.00

Total façade area	8.10

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	
10Log S/A	-1.32	-1.32	-1.32	-1.32	-1.32	-1.32	-1.32	-1.32	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Lmax)	74	63	62	63	70	64	56	49	72

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005065	0.002842	0.004052	0.001335	0.000527	0.000284	0.000231	0.000199	
Average SRI	23	25	24	29	33	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	50.5	37.2	38.2	33.5	36.9	27.7	19.3	12.0	39
Lp (Direct)	50.8	37.5	38.5	33.9	37.2	28.0	19.6	12.3	39
BS8233	53	39	40	36	39	30	21	14	41

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	34.10
Total Surface area	67.30
Wall façade area	6.90
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	8.20

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	
10Log S/A	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	54	52	49	46	46	43	37	34	50
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004153	0.002227	0.003040	0.001223	0.000511	0.000256	0.000218	0.000196	
Average SRI	24	27	25	29	33	36	37	37	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	29.9	25.2	23.6	16.6	12.8	6.8	0.1	-3.3	20
Lp (Direct)	30.2	25.5	23.8	16.9	13.1	7.1	0.4	-3.1	20
BS8233	32	27	26	19	15	9	2	-1	22

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	34.10
Total Surface area	67.30
Wall façade area	6.90
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	8.20

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	
10Log S/A	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	49	47	44	41	41	38	32	29	45
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	49	47	44	41	41	38	32	29	45

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004153	0.002227	0.003040	0.001223	0.000511	0.000256	0.000218	0.000196	
Average SRI	24	27	25	29	33	36	37	37	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	24.9	20.2	18.6	11.6	7.8	1.8	-4.9	-8.3	15
Lp (Direct)	25.2	20.5	18.8	11.9	8.1	2.1	-4.6	-8.1	15
BS8233	27	22	21	14	10	4	-3	-6	17

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	34.10
Total Surface area	67.30
Wall façade area	6.90
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	8.20

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.98	10.98	10.98	10.98	10.98	10.98	10.98	10.98	
10Log S/A	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Lmax)	74	63	62	63	70	64	56	49	72

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004153	0.002227	0.003040	0.001223	0.000511	0.000256	0.000218	0.000196	
Average SRI	24	27	25	29	33	36	37	37	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	49.7	36.2	37.0	33.2	36.8	27.3	19.1	12.0	39	
Lp (Direct)	50.0	36.5	37.2	33.5	37.1	27.6	19.4	12.2	39	**Criteria**
BS8233	52	38	39	35	39	29	21	14	41	**≤ 45**

Combined Internal Noise Level in Room, Day dB LAeq,16hr (House Type M467, Bedroom 2)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	33	28	27	19	15	9	2	-1	22

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	32	27	26	19	15	9	2	-1	22

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	35	31	29	22	18	12	5	2	25	≤ 35

Combined Internal Noise Level in Room, Night dB LAeq,8hr (House Type M467, Bedroom 2)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	28	23	22	14	10	4	-3	-6	17

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	27	22	21	14	10	4	-3	-6	17

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	30	26	24	17	13	7	0	-3	20	≤ 30

Combined Internal Noise Level in Room, Night dB LAmax (House Type M467 Bedroom 2)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	53	39	40	36	39	30	21	14	41

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	52	38	39	35	39	29	21	14	41

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	55	42	43	38	42	33	24	17	44	≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 3 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	22.10
Total Surface area	47.70
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	7.20

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	
10Log S/A	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	54	52	49	46	46	43	37	34	50
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004509	0.002481	0.003456	0.001392	0.000582	0.000292	0.000249	0.000223	
Average SRI	23	26	25	29	32	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	31.6	27.0	25.4	18.5	14.7	8.7	2.0	-1.5	22
Lp (Direct)	30.5	25.9	24.4	17.4	13.6	7.7	1.0	-2.5	20
BS8233	34	29	27	20	17	11	4	1	24

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 3 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	22.10
Total Surface area	47.70
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	7.20

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	
10Log S/A	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	49	47	44	41	41	38	32	29	45
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	49	47	44	41	41	38	32	29	45

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004509	0.002481	0.003456	0.001392	0.000582	0.000292	0.000249	0.000223	
Average SRI	23	26	25	29	32	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	26.6	22.0	20.4	13.5	9.7	3.7	-3.0	-6.5	17
Lp (Direct)	25.5	20.9	19.4	12.4	8.6	2.7	-4.0	-7.5	15
BS8233	29	24	22	15	12	6	-1	-4	19

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 3 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	22.10
Total Surface area	47.70
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	7.20

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	7.12	7.12	7.12	7.12	7.12	7.12	7.12	7.12	
10Log S/A	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-10	-10	-10	-10	-10	-10	-10	-10	
Noise level at façade (Lmax)	64	53	52	53	60	54	46	39	62

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004509	0.002481	0.003456	0.001392	0.000582	0.000292	0.000249	0.000223	
Average SRI	23	26	25	29	32	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	41.4	28.0	28.8	25.1	28.7	19.2	11.0	3.8	31
Lp (Direct)	40.3	26.9	27.8	24.0	27.6	18.2	10.0	2.8	30
BS8233	43	30	31	27	31	21	13	6	33

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 4 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	18.00
Total Surface area	41.20
Wall façade area	5.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	6.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
Total Absorption	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	
10Log S/A	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	54	52	49	46	46	43	37	34	50	**- Based on typical specturm provided in BS EN 1793-3**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004927	0.002778	0.003942	0.001590	0.000665	0.000334	0.000284	0.000255	
Average SRI	23	26	24	28	32	35	35	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	32.3	27.8	26.3	19.4	15.6	9.6	2.9	-0.6	22	
Lp (Direct)	30.9	26.4	25.0	18.0	14.2	8.2	1.5	-1.9	21	**Criteria**
BS8233	34	30	28	21	18	12	5	1	24	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 4 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	18.00
Total Surface area	41.20
Wall façade area	5.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	6.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
Total Absorption	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	
10Log S/A	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	49	47	44	41	41	38	32	29	45
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	49	47	44	41	41	38	32	29	45

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004927	0.002778	0.003942	0.001590	0.000665	0.000334	0.000284	0.000255	
Average SRI	23	26	24	28	32	35	35	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	27.3	22.8	21.3	14.4	10.6	4.6	-2.1	-5.6	17
Lp (Direct)	25.9	21.4	20.0	13.0	9.2	3.2	-3.5	-6.9	16
BS8233	29	25	23	16	13	7	0	-4	19

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Bedroom 4 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	18.00
Total Surface area	41.20
Wall façade area	5.00
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	6.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
Total Absorption	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	
10Log S/A	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-10	-10	-10	-10	-10	-10	-10	-10	
Noise level at façade (Lmax)	64	53	52	53	60	54	46	39	62

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004927	0.002778	0.003942	0.001590	0.000665	0.000334	0.000284	0.000255	
Average SRI	23	26	24	28	32	35	35	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	42.1	28.8	29.7	26.0	29.6	20.1	11.9	4.7	32	
Lp (Direct)	40.7	27.4	28.4	24.6	28.2	18.7	10.5	3.4	30	**Criteria**
BS8233	44	31	32	28	32	22	14	7	34	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Living Room (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	43.40
Total Surface area	78.20
Wall façade area	5.00
Roof façade area	0.00
Glazing area	2.43
Dne Ref Area, A0	10.00

Total façade area	7.43

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	
Total Absorption	13.97	13.97	13.97	13.97	13.97	13.97	13.97	13.97	
10Log S/A	-2.74	-2.74	-2.74	-2.74	-2.74	-2.74	-2.74	-2.74	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	54	52	49	46	46	43	37	50	50	**- Based on typical specturm provided in BS EN 1793-3**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	54	52	49	46	46	43	37	50	53	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.006588	0.003204	0.003840	0.001893	0.000588	0.000279	0.000254	0.000226	
Average SRI	22	25	24	27	32	36	36	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	30.4	25.3	23.1	17.0	11.9	5.7	-0.7	11.8	20	
Lp (Direct)	32.2	27.1	24.8	18.8	13.7	7.4	1.1	13.5	22	**Criteria**
BS8233	32	27	25	19	14	8	1	14	22	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M467 Living Room (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	43.40
Total Surface area	78.20
Wall façade area	3.00
Roof façade area	0.00
Glazing area	4.00
Dne Ref Area, A0	10.00

Total façade area	7.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	
Total Absorption	13.97	13.97	13.97	13.97	13.97	13.97	13.97	13.97	
10Log S/A	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	54	52	49	46	46	43	37	34	50	**- Based on typical specturm provided in BS EN 1793-3**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.010095	0.005068	0.006304	0.002571	0.000659	0.000340	0.000298	0.000249	
Average SRI	20	23	22	26	32	35	35	36	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	32.0	27.0	25.0	18.1	12.2	6.3	-0.3	-4.0	21	
Lp (Direct)	34.0	29.0	27.0	20.1	14.2	8.3	1.7	-2.0	23	**Criteria**
BS8233	34	29	27	20	14	8	2	-2	23	**≤ 35**

Combined Internal Noise Level in Room, Day dB LAeq,16hr (House Type M467, Living Room)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	32	27	25	19	14	8	1	14	22

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	34	29	27	20	14	8	2	-2	23

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	36	31	29	23	17	11	5	14	25	≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M356 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	34.60
Total Surface area	66.00
Wall façade area	5.70
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	7.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	
10Log S/A	-2.02	-2.02	-2.02	-2.02	-2.02	-2.02	-2.02	-2.02	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	54	52	49	46	46	43	37	34	50	**- Based on typical specturm provided in BS EN 1793-3**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004593	0.002540	0.003553	0.001432	0.000598	0.000300	0.000256	0.000229	
Average SRI	23	26	24	28	32	35	36	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	29.6	25.0	23.5	16.5	12.8	6.8	0.1	-3.4	20	
Lp (Direct)	30.6	26.0	24.5	17.6	13.8	7.8	1.1	-2.4	21	**Criteria**
BS8233	32	27	25	19	15	9	2	-1	22	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M356 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	34.60
Total Surface area	66.00
Wall façade area	5.70
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	7.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	
10Log S/A	-2.02	-2.02	-2.02	-2.02	-2.02	-2.02	-2.02	-2.02	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	49	47	44	41	41	38	32	29	45
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	49	47	44	41	41	38	32	29	45

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004593	0.002540	0.003553	0.001432	0.000598	0.000300	0.000256	0.000229	
Average SRI	23	26	24	28	32	35	36	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	24.6	20.0	18.5	11.5	7.8	1.8	-4.9	-8.4	15
Lp (Direct)	25.6	21.0	19.5	12.6	8.8	2.8	-3.9	-7.4	16
BS8233	27	22	20	14	10	4	-3	-6	17

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M356 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	34.60
Total Surface area	66.00
Wall façade area	5.70
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	7.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	11.14	11.14	11.14	11.14	11.14	11.14	11.14	11.14	
10Log S/A	-2.02	-2.02	-2.02	-2.02	-2.02	-2.02	-2.02	-2.02	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-2	-2	-2	-2	-2	-2	-2	-2	
Noise level at façade (Lmax)	72	61	60	61	68	62	54	47	70

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004593	0.002540	0.003553	0.001432	0.000598	0.000300	0.000256	0.000229	
Average SRI	23	26	24	28	32	35	36	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	47.4	34.0	34.9	31.1	34.8	25.3	17.1	9.9	37
Lp (Direct)	48.4	35.0	35.9	32.2	35.8	26.3	18.1	10.9	38
BS8233	49	36	37	33	37	27	19	12	39

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M356 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	32.40
Total Surface area	67.10
Wall façade area	13.40
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	14.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.43	10.43	10.43	10.43	10.43	10.43	10.43	10.43	
10Log S/A	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	54	52	49	46	46	43	37	34	50
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.003017	0.001418	0.001718	0.000683	0.000285	0.000143	0.000122	0.000109	
Average SRI	25	28	28	32	35	38	39	40	35

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	31.3	26.0	23.8	16.8	13.0	7.0	0.3	-3.1	20
Lp (Direct)	28.8	23.5	21.4	14.3	10.5	4.6	-2.1	-5.6	17
BS8233	33	28	26	19	15	9	2	-1	22

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M356 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	32.40
Total Surface area	67.10
Wall façade area	13.40
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	14.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.43	10.43	10.43	10.43	10.43	10.43	10.43	10.43	
10Log S/A	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	49	47	44	41	41	38	32	29	45
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	49	47	44	41	41	38	32	29	45

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.003017	0.001418	0.001718	0.000683	0.000285	0.000143	0.000122	0.000109	
Average SRI	25	28	28	32	35	38	39	40	35

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	26.3	21.0	18.8	11.8	8.0	2.0	-4.7	-8.1	15
Lp (Direct)	23.8	18.5	16.4	9.3	5.5	-0.4	-7.1	-10.6	12
BS8233	28	23	21	14	10	4	-3	-6	17

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M356 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	32.40
Total Surface area	67.10
Wall façade area	13.40
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	14.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.43	10.43	10.43	10.43	10.43	10.43	10.43	10.43	
10Log S/A	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-2	-2	-2	-2	-2	-2	-2	-2	
Noise level at façade (Lmax)	72	61	60	61	68	62	54	47	70

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.003017	0.001418	0.001718	0.000683	0.000285	0.000143	0.000122	0.000109	
Average SRI	25	28	28	32	35	38	39	40	35

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	49.1	35.0	35.2	31.4	35.0	25.5	17.3	10.2	37
Lp (Direct)	46.6	32.5	32.8	28.9	32.5	23.1	14.9	7.7	35
BS8233	51	37	37	33	37	28	19	12	39

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M356 Bedroom 3 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	18.00
Total Surface area	41.60
Wall façade area	4.70
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	6.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
Total Absorption	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	
10Log S/A	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	54	52	49	46	46	43	37	34	50
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005094	0.002897	0.004137	0.001670	0.000698	0.000350	0.000298	0.000268	
Average SRI	23	25	24	28	32	35	35	36	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	32.2	27.8	26.3	19.4	15.6	9.6	2.9	-0.6	22
Lp (Direct)	31.1	26.6	25.2	18.2	14.4	8.4	1.7	-1.7	21
BS8233	34	30	28	21	18	12	5	1	24

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M356 Bedroom 3 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	18.00
Total Surface area	41.60
Wall façade area	4.70
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	6.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
Total Absorption	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	
10Log S/A	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	54	52	49	46	46	43	37	34	50
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005094	0.002897	0.004137	0.001670	0.000698	0.000350	0.000298	0.000268	
Average SRI	23	25	24	28	32	35	35	36	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	32.2	27.8	26.3	19.4	15.6	9.6	2.9	-0.6	22
Lp (Direct)	31.1	26.6	25.2	18.2	14.4	8.4	1.7	-1.7	21
BS8233	34	30	28	21	18	12	5	1	24

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M356 Bedroom 3 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	18.00
Total Surface area	41.60
Wall façade area	4.70
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	6.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
Total Absorption	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	
10Log S/A	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-2	-2	-2	-2	-2	-2	-2	-2	
Noise level at façade (Lmax)	72	61	60	61	68	62	54	47	70

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005094	0.002897	0.004137	0.001670	0.000698	0.000350	0.000298	0.000268	
Average SRI	23	25	24	28	32	35	35	36	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	50.0	36.8	37.7	34.0	37.6	28.1	19.9	12.7	40
Lp (Direct)	48.9	35.6	36.6	32.8	36.4	26.9	18.7	11.6	38
BS8233	52	39	40	36	40	30	22	15	42

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M356 Living Room (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	31.20
Total Surface area	62.20
Wall façade area	5.70
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	7.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.05	10.05	10.05	10.05	10.05	10.05	10.05	10.05	
10Log S/A	-1.57	-1.57	-1.57	-1.57	-1.57	-1.57	-1.57	-1.57	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	54	52	49	46	46	43	37	34	50
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	54	52	49	46	46	43	37	34	50

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004593	0.002158	0.002467	0.001604	0.000598	0.000263	0.000250	0.000234	
Average SRI	23	27	26	28	32	36	36	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	30.1	24.8	22.4	17.5	13.2	6.6	0.4	-2.9	20
Lp (Direct)	30.6	25.3	22.9	18.1	13.8	7.2	1.0	-2.3	20
BS8233	32	27	24	19	15	9	2	-1	22

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M241 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	56.30
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	10.00

Total façade area	7.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	59	57	54	51	51	48	42	39	55	**- Based on typical specturm provided in BS EN 1793-3**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	59	57	54	51	51	48	42	39	55	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005246	0.002969	0.004260	0.001405	0.000554	0.000299	0.000243	0.000210	
Average SRI	23	25	24	29	33	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	36.5	32.0	30.6	22.8	18.7	13.1	6.2	2.5	26	
Lp (Direct)	36.2	31.7	30.3	22.5	18.4	12.8	5.9	2.2	26	**Criteria**
BS8233	38	34	33	25	21	15	8	5	28	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M241 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	56.30
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	10.00

Total façade area	7.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	52	50	47	44	44	41	35	32	48
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	52	50	47	44	44	41	35	32	48

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005246	0.002969	0.004260	0.001405	0.000554	0.000299	0.000243	0.000210	
Average SRI	23	25	24	29	33	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	29.5	25.0	23.6	15.8	11.7	6.1	-0.8	-4.5	19
Lp (Direct)	29.2	24.7	23.3	15.5	11.4	5.8	-1.1	-4.8	19
BS8233	31	27	26	18	14	8	1	-2	21

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M241 Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	56.30
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	10.00

Total façade area	7.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	1	1	1	1	1	1	1	1	
Noise level at façade (Lmax)	75	64	63	64	71	65	57	50	73

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005246	0.002969	0.004260	0.001405	0.000554	0.000299	0.000243	0.000210	
Average SRI	23	25	24	29	33	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	52.3	39.0	40.0	35.4	38.7	29.6	21.2	13.8	41	
Lp (Direct)	52.0	38.7	39.7	35.1	38.4	29.3	20.9	13.5	41	**Criteria**
BS8233	54	41	42	37	41	32	23	16	43	**≤ 45**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M241 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	28.60
Total Surface area	61.00
Wall façade area	9.20
Roof façade area	0.00
Glazing area	1.80
Dne Ref Area, A0	10.00

Total façade area	11.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	
Total Absorption	9.21	9.21	9.21	9.21	9.21	9.21	9.21	9.21	
10Log S/A	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	57	55	52	49	49	46	40	37	53	**- Based on typical specturm provided in BS EN 1793-3**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	57	55	52	49	49	46	40	37	53	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004147	0.002198	0.002997	0.000984	0.000388	0.000209	0.000170	0.000147	
Average SRI	24	27	25	30	34	37	38	38	34

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	34.9	30.2	28.5	20.7	16.7	11.0	4.1	0.4	24	
Lp (Direct)	33.2	28.4	26.8	18.9	14.9	9.2	2.3	-1.3	22	**Criteria**
BS8233	37	32	31	23	19	13	6	2	26	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M241 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	31.00
Total Surface area	61.60
Wall façade area	9.70
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	11.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	
10Log S/A	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	51	49	46	43	43	40	34	31	47
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	51	49	46	43	43	40	34	31	47

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.003499	0.001761	0.002279	0.000912	0.000381	0.000191	0.000163	0.000146	
Average SRI	25	28	26	30	34	37	38	38	34

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	27.9	22.9	21.0	14.0	10.2	4.2	-2.5	-5.9	17
Lp (Direct)	26.4	21.5	19.6	12.6	8.8	2.8	-3.9	-7.4	16
BS8233	30	25	23	16	12	6	0	-4	19

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M241 Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	31.00
Total Surface area	61.60
Wall façade area	9.70
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	11.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	
10Log S/A	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.42	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	1	1	1	1	1	1	1	1	
Noise level at façade (Lmax)	75	64	63	64	71	65	57	50	73

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.003499	0.001761	0.002279	0.000912	0.000381	0.000191	0.000163	0.000146	
Average SRI	25	28	26	30	34	37	38	38	34

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	51.7	37.9	38.4	34.6	38.2	28.7	20.5	13.4	40
Lp (Direct)	50.2	36.5	37.0	33.2	36.8	27.3	19.1	11.9	39
BS8233	54	40	40	37	40	31	23	15	42

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	56.40
Total Surface area	96.90
Wall façade area	0.00
Roof façade area	9.80
Glazing area	1.90
Dne Ref Area, A0	10.00

Total façade area	11.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	
Total Absorption	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16	
10Log S/A	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	52	50	47	44	44	41	35	32	48	**- Based on typical specturm provided in BS EN 1793-3**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	52	50	47	44	44	41	35	32	48	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.006986	0.003609	0.002006	0.001092	0.000367	0.000168	0.000156	0.000142	
Average SRI	22	24	27	30	34	38	38	38	34

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	29.5	24.7	19.1	13.5	8.7	2.3	-4.0	-7.4	16	
Lp (Direct)	30.4	25.6	20.0	14.4	9.6	3.3	-3.1	-6.5	17	**Criteria**
BS8233	32	27	21	15	11	4	-2	-5	18	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	56.40
Total Surface area	96.90
Wall façade area	0.00
Roof façade area	9.80
Glazing area	1.90
Dne Ref Area, A0	10.00

Total façade area	11.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	
Total Absorption	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16	
10Log S/A	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	45	43	40	37	37	34	28	25	41
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	45	43	40	37	37	34	28	25	41

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.006986	0.003609	0.002006	0.001092	0.000367	0.000168	0.000156	0.000142	
Average SRI	22	24	27	30	34	38	38	38	34

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	22.5	17.7	12.1	6.5	1.7	-4.7	-11.0	-14.4	9
Lp (Direct)	23.4	18.6	13.0	7.4	2.6	-3.7	-10.1	-13.5	10
BS8233	25	20	14	8	4	-3	-9	-12	11

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	56.40
Total Surface area	96.90
Wall façade area	0.00
Roof façade area	9.80
Glazing area	1.90
Dne Ref Area, A0	10.00

Total façade area	11.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	
Total Absorption	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16	
10Log S/A	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	3	3	3	3	3	3	3	3	
Noise level at façade (Lmax)	77	66	65	66	73	67	59	52	75

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.006986	0.003609	0.002006	0.001092	0.000367	0.000168	0.000156	0.000142	
Average SRI	22	24	27	30	34	38	38	38	34

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	54.3	40.7	37.5	35.1	37.7	27.8	20.0	12.9	40
Lp (Direct)	55.2	41.6	38.4	36.0	38.6	28.8	20.9	13.8	41
BS8233	56	43	40	37	40	30	22	15	42

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	33.80
Total Surface area	65.20
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.98
Dne Ref Area, A0	10.00

Total façade area	7.88

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	10.88	10.88	10.88	10.88	10.88	10.88	10.88	10.88	
10Log S/A	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	49	47	44	41	41	38	32	29	45
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	49	47	44	41	41	38	32	29	45

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005488	0.002613	0.003055	0.001642	0.000545	0.000251	0.000233	0.000211	
Average SRI	23	26	25	28	33	36	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	26.0	20.8	18.4	12.8	8.0	1.6	-4.7	-8.2	15
Lp (Direct)	26.4	21.2	18.9	13.2	8.4	2.0	-4.3	-7.8	15
BS8233	28	23	20	15	10	4	-3	-6	17

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	33.80
Total Surface area	65.20
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.98
Dne Ref Area, A0	10.00

Total façade area	7.88

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	10.88	10.88	10.88	10.88	10.88	10.88	10.88	10.88	
10Log S/A	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	45	43	40	37	37	34	28	25	41
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	45	43	40	37	37	34	28	25	41

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005488	0.002613	0.003055	0.001642	0.000545	0.000251	0.000233	0.000211	
Average SRI	23	26	25	28	33	36	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	22.0	16.8	14.4	8.8	4.0	-2.4	-8.7	-12.2	11
Lp (Direct)	22.4	17.2	14.9	9.2	4.4	-2.0	-8.3	-11.8	11
BS8233	24	19	16	11	6	0	-7	-10	13

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	33.80
Total Surface area	65.20
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.98
Dne Ref Area, A0	10.00

Total façade area	7.88

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	10.88	10.88	10.88	10.88	10.88	10.88	10.88	10.88	
10Log S/A	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-6	-6	-6	-6	-6	-6	-6	-6	
Noise level at façade (Lmax)	68	57	56	57	64	58	50	43	66

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005488	0.002613	0.003055	0.001642	0.000545	0.000251	0.000233	0.000211	
Average SRI	23	26	25	28	33	36	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	44.8	30.8	30.8	28.4	31.0	21.1	13.3	6.1	33
Lp (Direct)	45.2	31.2	31.3	28.8	31.4	21.5	13.7	6.5	34
BS8233	47	33	33	30	33	23	15	8	35

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 3 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	57.50
Wall façade area	4.30
Roof façade area	0.00
Glazing area	1.40
Dne Ref Area, A0	10.00

Total façade area	5.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	49	47	44	41	41	38	32	29	45
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	49	47	44	41	41	38	32	29	45

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005529	0.002692	0.003192	0.002013	0.000738	0.000327	0.000309	0.000288	
Average SRI	23	26	25	27	31	35	35	35	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	25.4	20.3	18.0	13.0	8.7	2.1	-4.1	-7.4	15
Lp (Direct)	26.4	21.3	19.0	14.0	9.7	3.1	-3.1	-6.4	16
BS8233	27	22	20	15	11	4	-2	-5	17

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 3 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	57.50
Wall façade area	4.30
Roof façade area	0.00
Glazing area	1.40
Dne Ref Area, A0	10.00

Total façade area	5.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	45	43	40	37	37	34	28	25	41
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	45	43	40	37	37	34	28	25	41

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005529	0.002692	0.003192	0.002013	0.000738	0.000327	0.000309	0.000288	
Average SRI	23	26	25	27	31	35	35	35	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	21.4	16.3	14.0	9.0	4.7	-1.9	-8.1	-11.4	11
Lp (Direct)	22.4	17.3	15.0	10.0	5.7	-0.9	-7.1	-10.4	12
BS8233	23	18	16	11	7	0	-6	-9	13

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 3 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	57.50
Wall façade area	4.30
Roof façade area	0.00
Glazing area	1.40
Dne Ref Area, A0	10.00

Total façade area	5.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	-6	-6	-6	-6	-6	-6	-6	-6	
Noise level at façade (Lmax)	68	57	56	57	64	58	50	43	66

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005529	0.002692	0.003192	0.002013	0.000738	0.000327	0.000309	0.000288	
Average SRI	23	26	25	27	31	35	35	35	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	44.2	30.3	30.4	28.6	31.7	21.6	13.9	6.9	34
Lp (Direct)	45.2	31.3	31.4	29.6	32.7	22.6	14.9	7.9	35
BS8233	46	32	32	31	34	24	16	9	36

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Living Room (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	85.00
Total Surface area	133.40
Wall façade area	3.30
Roof façade area	0.00
Glazing area	2.00
Dne Ref Area, A0	10.00

Total façade area	5.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	
Total Absorption	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	
10Log S/A	-7.13	-7.13	-7.13	-7.13	-7.13	-7.13	-7.13	-7.13	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	51	49	46	43	43	40	34	31	47
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	51	49	46	43	43	40	34	31	47

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.007441	0.003719	0.004556	0.002449	0.000811	0.000374	0.000347	0.000314	
Average SRI	21	24	23	26	31	34	35	35	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	23.6	18.6	16.5	10.8	6.0	-0.4	-6.7	-10.2	13
Lp (Direct)	29.7	24.7	22.6	16.9	12.1	5.7	-0.6	-4.0	19
BS8233	26	21	18	13	8	2	-5	-8	15

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Living Room (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	85.00
Total Surface area	133.40
Wall façade area	3.30
Roof façade area	0.00
Glazing area	1.70
Dne Ref Area, A0	10.00

Total façade area	5.00

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	
Total Absorption	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	
10Log S/A	-7.38	-7.38	-7.38	-7.38	-7.38	-7.38	-7.38	-7.38	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	49	47	44	41	41	38	32	29	45
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	49	47	44	41	41	38	32	29	45

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.006937	0.003466	0.004229	0.002445	0.000850	0.000385	0.000360	0.000331	
Average SRI	22	25	24	26	31	34	34	35	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	21.0	16.0	13.9	8.5	3.9	-2.5	-8.8	-12.2	11
Lp (Direct)	27.4	22.4	20.3	14.9	10.3	3.9	-2.4	-5.8	17
BS8233	23	18	16	10	6	-1	-7	-10	13

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Living Room (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	85.00
Total Surface area	133.40
Wall façade area	3.30
Roof façade area	0.00
Glazing area	6.10
Dne Ref Area, A0	10.00

Total façade area	9.40

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	
Total Absorption	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	
10Log S/A	-4.64	-4.64	-4.64	-4.64	-4.64	-4.64	-4.64	-4.64	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	42	40	37	34	34	31	25	22	38
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	42	40	37	34	34	31	25	22	38

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.011109	0.005562	0.006930	0.002476	0.000526	0.000298	0.000250	0.000194	
Average SRI	20	23	22	26	33	35	36	37	31

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	18.8	13.8	11.8	4.3	-2.4	-7.9	-14.7	-18.8	7
Lp (Direct)	22.5	17.5	15.4	7.9	1.2	-4.3	-11.0	-15.1	11
BS8233	21	16	14	6	0	-6	-13	-17	9

Criteria

≤ 35

Combined Internal Noise Level in Room, Day dB LAeq,16hr (House Type Kirdford, Living Room)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	26	21	18	13	8	2	-5	-8	15

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	23	18	16	10	6	-1	-7	-10	13

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	21	16	14	6	0	-6	-13	-17	9

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	28	23	21	15	10	4	-2	-6	18	≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type M241 Living Room (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	32.60
Total Surface area	63.70
Wall façade area	5.60
Roof façade area	0.00
Glazing area	2.30
Dne Ref Area, A0	10.00

Total façade area	7.90

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	
10Log S/A	-1.23	-1.23	-1.23	-1.23	-1.23	-1.23	-1.23	-1.23	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	59	57	54	51	51	48	42	39	55
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	59	57	54	51	51	48	42	39	55

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.006056	0.002913	0.003451	0.001739	0.000550	0.000259	0.000237	0.000212	
Average SRI	22	25	25	28	33	36	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	36.6	31.4	29.1	23.2	18.2	11.9	5.5	2.0	25
Lp (Direct)	36.8	31.6	29.4	23.4	18.4	12.1	5.8	2.3	26
BS8233	39	33	31	25	20	14	8	4	27

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - Apartment Block B Bed 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	27.10
Total Surface area	55.70
Wall façade area	1.90
Roof façade area	0.00
Glazing area	1.40
Dne Ref Area, A0	10.00

Total façade area	3.30

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	8.73	8.73	8.73	8.73	8.73	8.73	8.73	8.73	
10Log S/A	-4.22	-4.22	-4.22	-4.22	-4.22	-4.22	-4.22	-4.22	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	59	57	54	51	51	48	42	39	55	**- Based on typical specturm provided in BS EN 1793-3**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	59	57	54	51	51	48	42	39	55	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.008397	0.005233	0.007959	0.003081	0.001274	0.000649	0.000548	0.000487	
Average SRI	21	23	21	25	29	32	33	33	29

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	35.0	31.0	29.8	22.7	18.8	12.9	6.2	2.7	26	
Lp (Direct)	38.2	34.2	33.0	25.9	22.1	16.1	9.4	5.9	29	**Criteria**
BS8233	37	33	32	25	21	15	8	5	28	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - Apartment Block B Bed 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	31.00
Total Surface area	61.60
Wall façade area	5.40
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	6.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	
10Log S/A	-1.73	-1.73	-1.73	-1.73	-1.73	-1.73	-1.73	-1.73	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	52	50	47	44	44	41	35	32	48
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	52	50	47	44	44	41	35	32	48

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004727	0.002636	0.003710	0.001496	0.000625	0.000314	0.000267	0.000240	
Average SRI	23	26	24	28	32	35	36	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	28.0	23.5	22.0	15.0	11.2	5.2	-1.5	-4.9	18
Lp (Direct)	28.7	24.2	22.7	15.7	12.0	6.0	-0.7	-4.2	19
BS8233	30	25	24	17	13	7	1	-3	20

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - Apartment Block B Bed 1 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	31.00
Total Surface area	61.60
Wall façade area	5.40
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	6.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.98	9.98	9.98	9.98	9.98	9.98	9.98	9.98	
10Log S/A	-1.73	-1.73	-1.73	-1.73	-1.73	-1.73	-1.73	-1.73	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	1	1	1	1	1	1	1	1	
Noise level at façade (Lmax)	75	64	63	64	71	65	57	50	73

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004727	0.002636	0.003710	0.001496	0.000625	0.000314	0.000267	0.000240	
Average SRI	23	26	24	28	32	35	36	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	50.8	37.5	38.4	34.6	38.2	28.7	20.5	13.4	40
Lp (Direct)	51.5	38.2	39.1	35.3	39.0	29.5	21.3	14.1	41
BS8233	53	39	40	37	40	31	23	15	42

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - Apartment Block B Bed 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	18.00
Total Surface area	41.40
Wall façade area	6.10
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	7.40

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
Total Absorption	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	
10Log S/A	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	59	57	54	51	51	48	42	39	55
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	59	57	54	51	51	48	42	39	55

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004430	0.002424	0.003364	0.001354	0.000566	0.000284	0.000242	0.000217	
Average SRI	24	26	25	29	32	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	37.5	32.9	31.3	24.4	20.6	14.6	7.9	4.4	27
Lp (Direct)	35.5	30.8	29.3	22.3	18.5	12.5	5.8	2.4	25
BS8233	40	35	33	26	23	17	10	6	29

Criteria

≤ 35

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - Apartment Block B Bed 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAeq, 8h**

Room Dimensions and Areas	
Room volume	18.00
Total Surface area	41.40
Wall façade area	6.10
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	7.40

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
Total Absorption	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	
10Log S/A	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	52	50	47	44	44	41	35	32	48
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	0	0	0	0	0	0	0	0	
Noise level at façade (Leq)	52	50	47	44	44	41	35	32	48

- Based on typical specturm provided in BS EN 1793-3

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004430	0.002424	0.003364	0.001354	0.000566	0.000284	0.000242	0.000217	
Average SRI	24	26	25	29	32	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	30.5	25.9	24.3	17.4	13.6	7.6	0.9	-2.6	20
Lp (Direct)	28.5	23.8	22.3	15.3	11.5	5.5	-1.2	-4.6	18
BS8233	33	28	26	19	16	10	3	-1	22

Criteria

≤ 30

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - Apartment Block B Bed 2 (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**LAmax**

Room Dimensions and Areas	
Room volume	18.00
Total Surface area	41.40
Wall façade area	6.10
Roof façade area	0.00
Glazing area	1.30
Dne Ref Area, A0	10.00

Total façade area	7.40

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	
Total Absorption	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	
10Log S/A	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	

Façade level	63	125	250	500	1000	2000	4000	8000	A
Measured Noise Level	74	63	62	63	70	64	56	49	72
Façade to free field	0	0	0	0	0	0	0	0	
Angle of view	0	0	0	0	0	0	0	0	
Screening (Maekewa)	0	0	0	0	0	0	0	0	
Distance correction	0	0	0	0	0	0	0	0	
Other	1	1	1	1	1	1	1	1	
Noise level at façade (Lmax)	75	64	63	64	71	65	57	50	73

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	20	18	28	38	34	38	48	31
Transmission Coefficient	0.015849	0.010000	0.015849	0.001585	0.000158	0.000398	0.000158	0.000016	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.004430	0.002424	0.003364	0.001354	0.000566	0.000284	0.000242	0.000217	
Average SRI	24	26	25	29	32	35	36	37	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	53.3	39.9	40.7	37.0	40.6	31.1	22.9	15.7	43
Lp (Direct)	51.3	37.8	38.7	34.9	38.5	29.0	20.8	13.7	41
BS8233	55	42	43	39	43	33	25	18	45

Criteria

≤ 45

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - Apartment Block B LR (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Living Room**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	30.50
Total Surface area	60.70
Wall façade area	5.00
Roof façade area	0.00
Glazing area	1.70
Dne Ref Area, A0	10.00

Total façade area	6.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.82	9.82	9.82	9.82	9.82	9.82	9.82	9.82	
10Log S/A	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	60	58	55	52	52	49	43	40	56	**- Based on typical specturm provided in BS EN 1793-3**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	60	58	55	52	52	49	43	40	56	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005579	0.002687	0.003169	0.001825	0.000635	0.000287	0.000268	0.000247	
Average SRI	23	26	25	27	32	35	36	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	36.8	31.6	29.3	24.0	19.4	12.9	6.6	3.3	26	
Lp (Direct)	37.5	32.3	30.0	24.6	20.0	13.6	7.3	3.9	27	**Criteria**
BS8233	39	34	31	26	21	15	9	5	28	**≤ 35**

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - Apartment Block B LR (close to site access)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Living Room**
Parameter	**Leq, 16h**

Room Dimensions and Areas	
Room volume	30.50
Total Surface area	60.70
Wall façade area	5.00
Roof façade area	0.00
Glazing area	1.70
Dne Ref Area, A0	10.00

Total façade area	6.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.82	9.82	9.82	9.82	9.82	9.82	9.82	9.82	
10Log S/A	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	-1.66	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Measured Noise Level	60	58	55	52	52	49	43	40	56	**- Based on typical specturm provided in BS EN 1793-3**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	60	58	55	52	52	49	43	40	56	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Ventilation, Dne	36	36	34	31	34	38	38	38	35
Transmission Coefficient	0.000251	0.000251	0.000398	0.000794	0.000398	0.000158	0.000158	0.000158	
Average Transmission Coeff	0.005579	0.002687	0.003169	0.001825	0.000635	0.000287	0.000268	0.000247	
Average SRI	23	26	25	27	32	35	36	36	32

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	
Lp (Reverberant), line source	36.8	31.6	29.3	24.0	19.4	12.9	6.6	3.3	26	
Lp (Direct)	37.5	32.3	30.0	24.6	20.0	13.6	7.3	3.9	27	**Criteria**
BS8233	39	34	31	26	21	15	9	5	28	**≤ 35**

Combined Internal Noise Level in Room, Day dB LAeq,16hr (Apartment Block B, Living Room)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	39	34	31	26	21	15	9	5	28

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	39	34	31	26	21	15	9	5	28

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A	Criteria
BS8233	42	37	34	29	24	18	12	8	31	≤ 35

APPENDIX E

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 1 (Noise from BESS)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, T**

Room Dimensions and Areas	
Room volume	56.40
Total Surface area	96.90
Wall façade area	0.00
Roof façade area	9.80
Glazing area	1.90
Dne Ref Area, A0	-

- MVHR

Total façade area	11.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	
Total Absorption	18.16	18.16	18.16	18.16	18.16	18.16	18.16	18.16	
10Log S/A	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	-1.91	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Calculated Noise Level	42	45	29	17	10	2	1	5	30	**- Based on noise model**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	42	45	29	17	10	2	1	5	30	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.006772	0.003394	0.001666	0.000413	0.000027	0.000033	0.000021	0.000007	
Average SRI	22	25	28	34	46	45	47	52	39

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	19.4	19.4	0.3	-17.7	-36.7	-43.8	-46.7	-47.6	4
Lp (Direct)	20.3	20.3	1.2	-16.8	-35.8	-42.9	-45.8	-46.7	5
BS8233	21	21	2	-16	-35	-42	-45	-46	6

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 2 (Noise from BESS)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, T**

Room Dimensions and Areas	
Room volume	33.80
Total Surface area	65.20
Wall façade area	5.90
Roof façade area	0.00
Glazing area	1.98
Dne Ref Area, A0	-

- MVHR

Total façade area	7.88

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	
Total Absorption	10.88	10.88	10.88	10.88	10.88	10.88	10.88	10.88	
10Log S/A	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Calculated Noise Level	50	51	38	28	22	13	11	12	37	**- Based on noise model**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	50	51	38	28	22	13	11	12	37	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.005169	0.002294	0.002550	0.000634	0.000040	0.000050	0.000032	0.000010	
Average SRI	23	26	26	32	44	43	45	50	37

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	26.7	24.2	11.7	-4.4	-22.4	-30.4	-34.4	-38.4	10
Lp (Direct)	27.1	24.6	12.1	-4.0	-22.0	-30.0	-34.0	-38.0	10
BS8233	29	26	14	-2	-20	-28	-32	-36	12

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Bedroom 3 (Noise from BESS)

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Bedroom**
Parameter	**Leq, T**

Room Dimensions and Areas	
Room volume	28.10
Total Surface area	57.50
Wall façade area	4.30
Roof façade area	0.00
Glazing area	1.40
Dne Ref Area, A0	-

- MVHR

Total façade area	5.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	
Total Absorption	9.05	9.05	9.05	9.05	9.05	9.05	9.05	9.05	
10Log S/A	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	-2.01	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Calculated Noise Level	50	51	38	28	22	13	11	12	37	**- Based on noise model**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	50	51	38	28	22	13	11	12	37	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.005088	0.002251	0.002494	0.000619	0.000039	0.000049	0.000031	0.000010	
Average SRI	23	26	26	32	44	43	45	50	37

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	26.1	23.5	11.0	-5.1	-23.1	-31.1	-35.1	-39.1	9
Lp (Direct)	27.1	24.5	12.0	-4.1	-22.1	-30.1	-34.1	-38.1	10
BS8233	28	26	13	-3	-21	-29	-33	-37	11

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Living Room (Noise from BESS) Façade 1

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Living Room**
Parameter	**Leq, T**

Room Dimensions and Areas		
Room volume	85.00	
Total Surface area	133.40	
Wall façade area	6.74	
Roof façade area	0.00	
Glazing area	2.00	
Dne Ref Area, A0	-	**- MVHR**

Total façade area	8.74

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	
Total Absorption	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	
10Log S/A	-4.96	-4.96	-4.96	-4.96	-4.96	-4.96	-4.96	-4.96	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Calculated Noise Level	49	52	36	24	17	9	8	12	37	**- Based on noise model**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	49	52	36	24	17	9	8	12	37	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.004849	0.002125	0.002327	0.000577	0.000036	0.000046	0.000029	0.000009	
Average SRI	23	27	26	32	44	43	45	50	37

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	21.9	21.3	5.7	-12.3	-31.3	-38.4	-41.4	-42.4	6
Lp (Direct)	25.9	25.3	9.7	-8.4	-27.4	-34.4	-37.4	-38.4	10
BS8233	24	23	8	-10	-29	-36	-39	-40	8

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Living Room (Noise from BESS) Façade 2

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Living Room**
Parameter	**Leq, T**

Room Dimensions and Areas	
Room volume	85.00
Total Surface area	133.40
Wall façade area	19.00
Roof façade area	0.00
Glazing area	1.70
Dne Ref Area, A0	-

- MVHR

Total façade area	20.70

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	
Total Absorption	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	
10Log S/A	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	-1.21	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Calculated Noise Level	47	50	34	22	15	7	6	10	35	**- Based on noise model**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	47	50	34	22	15	7	6	10	35	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.002756	0.001018	0.000867	0.000209	0.000013	0.000016	0.000010	0.000003	
Average SRI	26	30	31	37	49	48	50	55	42

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	21.2	19.9	3.2	-15.0	-34.0	-41.1	-44.1	-45.1	5
Lp (Direct)	21.4	20.1	3.4	-14.8	-33.8	-40.9	-43.9	-44.9	5
BS8233	23	22	5	-13	-32	-39	-42	-43	7

ARDENT CONSULTING ENGINEERS

Noise Break-in Calculation - House Type Kirdford Living Room (Noise from BESS) Façade 3

Description	
Ardent CE Project No.	**2407850**
Property Address	**Glebe Farm, Steyning**
Room Type	**Living Room**
Parameter	**Leq, T**

Room Dimensions and Areas		
Room volume	85.00	
Total Surface area	133.40	
Wall façade area	2.64	
Roof façade area	0.00	
Glazing area	6.10	
Dne Ref Area, A0	-	**- MVHR**

Total façade area	8.74

Room Absorption Calcuation	63	125	250	500	1000	2000	4000	8000	
Estimated Reverberation time	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Alpha bar	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	
Total Absorption	27.37	27.37	27.37	27.37	27.37	27.37	27.37	27.37	
10Log S/A	-4.96	-4.96	-4.96	-4.96	-4.96	-4.96	-4.96	-4.96	

Façade level	63	125	250	500	1000	2000	4000	8000	A	
Calculated Noise Level	42	45	29	17	10	2	1	5	30	**- Based on noise model**
Façade to free field	0	0	0	0	0	0	0	0		
Angle of view	0	0	0	0	0	0	0	0		
Screening (Maekewa)	0	0	0	0	0	0	0	0		
Distance correction	0	0	0	0	0	0	0	0		
Other	0	0	0	0	0	0	0	0		
Noise level at façade (Leq)	42	45	29	17	10	2	1	5	30	

Composite SRI	63	125	250	500	1000	2000	4000	8000	Rw
Glazing SRI	18	21	20	26	38	37	39	44	31
Transmission Coefficient	0.015849	0.007943	0.010000	0.002512	0.000158	0.000200	0.000126	0.000040	
Wall SRI	28	34	43	55	66	77	85	85	55
Transmission Coefficient	0.001585	0.000398	0.000050	0.000003	0.000000	0.000000	0.000000	0.000000	
Roof SRI	23	26	43	52	60	65	65	65	51
Transmission Coefficient	0.005012	0.002512	0.000050	0.000006	0.000001	0.000000	0.000000	0.000000	
Average Transmission Coeff	0.011540	0.005664	0.006995	0.001754	0.000111	0.000139	0.000088	0.000028	
Average SRI	19	22	22	28	40	39	41	46	33

Calculated Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
Lp (Reverberant), line source	18.7	18.6	3.5	-14.5	-33.5	-40.5	-43.5	-44.5	4
Lp (Direct)	22.6	22.5	7.4	-10.6	-29.6	-36.6	-39.6	-40.6	8
BS8233	21	21	5	-13	-32	-39	-42	-43	6

Combined Internal Noise Level in Room, Day dB LAeq,T (House Type Kirdford, Living Room)

Calculated Internal Noise Level, dB (Façade 1)	63	125	250	500	1000	2000	4000	8000	A
BS8233	24	23	8	-10	-29	-36	-39	-40	8

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	23	22	5	-13	-32	-39	-42	-43	7

Calculated Internal Noise Level, dB (Façade 2)	63	125	250	500	1000	2000	4000	8000	A
BS8233	21	21	5	-13	-32	-39	-42	-43	6

Combined Internal Noise Level, dB	63	125	250	500	1000	2000	4000	8000	A
BS8233	28	27	11	-7	-26	-33	-36	-37	12

APPENDIX F

ACOUSTIC TERMINOLOGY

The effects of noise on human beings may be expressed in terms of physiological damage and annoyance. It is, however, only the annoyance impacts that need to be considered in detail when addressing environmental noise impacts. Annoyance also includes the immediate effects of activity interference, for example sleep disturbance and speech interference.

The practice has become to measure sound levels in decibels (dB). The decibel scale is logarithmic rather than linear and it is useful to bear in mind that a noise level change of 3dB would be equivalent to doubling the energy level (for example doubling the volume of traffic) and that an increase of 10 dB is perceived, subjectively, as a doubling of loudness. The human ear responds differently to sounds of different frequency. The ear perceives high frequency sound of a given sound pressure level more loudly than a low frequency sound at the same level. The A-weighted sound level, dB(A), takes this response into consideration and is commonly used for measurement of environmental noise in UK. It thus indicates the subjective human response to sound.

Environmental noise levels vary continuously from second to second, it is clearly impractical to specify the sound level continuously and thus time averaging is required. In practice human response has been related to various units which include allowance for the fluctuating nature of sound with time. For the purpose of this report these include:

LAeq,T : the equivalent A-weighted continuous sound level.

This unit relates to the equivalent level of continuous sound for a specific time period T, for example 16 hours for daytime noise. It contains all the sound energy of the varying sound levels over the same time period and expresses it as a continuous sound level over that period.

LA10,T : the A-weighted level of sound exceeded for 10% of the time period T.

This unit is used for traffic noise measurement and is the preferred unit for prediction of traffic noise in the publication, 'Calculation of Road Traffic Noise'.

LA90,T : the A-weighted level of sound exceeded for 90% of the time period T.

This unit is commonly used to represent the background noise and is used in assessing the effects of industrial noise in UK.

LAmax : the maximum A-weighted level of sound over a period of measurement.

LAr,T : the rating level.

The specific Noise plus any adjustments for the characteristic features of the noise. Used for comparison between background levels with the noise source off.

SEL : the Sound Exposure Level.

Sound exposure level abbreviated as SEL and LAE, is the total noise energy produced from a single noise event condensed into a 1 second time period.

Rw : weighted sound reduction index.

A laboratory-measured value as defined in ISO717 Part 1.

DnTw :

The equivalent of Rw, but measured onsite as oppose to in a laboratory