

Land North of Milksey Lane Graveley, Hertfordshire SG4 7LA

Planning Application Noise Impact Assessment

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Issued to

Gade Homes Ltd

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1. INTRODUCTION

Gade Homes are involved in a proposed residential development on land north of Milksey Lane, Graveley, SG4 7LA. The scheme will comprise 24 residential dwellings.

Spectrum Acoustic Consultants has been instructed to carry out a noise impact assessment to submit to the Local Planning Authority as part of the planning application. The assessment considers the impact of noise from road traffic, being the dominant noise sources in the area.

This report provides the information required to inform and satisfy the requirements of the Local Planning Authority, for the purpose of determining the application.

2. SITE DESCRIPTION AND PROPOSALS

The proposed development site is currently an open field located approximately 150m east of the A1(M). The site is bound by a footpath / cycle way to the west, Graveley Lane to the north, High Street (B197) to the east and Milksey Lane to the south.

The proposal is to develop the site for residential use, comprising several plot types of houses (see Appendix A) and an access road from High Street (the B197). The entrance of Milksey Lane will remain as it joins up to part of the national cycle network and owned by Sustrans.

Site location plan and proposed site layout are shown in Figure 1 and Figure 2 respectively.



Figure 1: Site Location Plan



Figure 2: Proposed Site Layout



3. RELEVANT POLICY AND GUIDELINES

3.1 NATIONAL PLANNING POLICY FRAMEWORK (NPPF)

The National Planning Policy Framework (NPPF)¹ sets out the Government's planning policies for England and how these should be applied by establishing a framework within which locally prepared plans for development can be produced.

The NPPF requires (174) that *'planning policies and decisions should contribute to and enhance the natural and local environment by: [...] preventing new and existing development from contribution to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of [...] noise pollution [...].'*

In relation to noise (185) *'Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*

'a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life²;

'b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason'

Planning policies and decisions should also (187) *'ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed'.*

Throughout the NPPF reference is made to other policies, such as the Noise Policy Statement for England (NPSE), which should also be applied as appropriate.

3.2 NOISE POLICY STATEMENT FOR ENGLAND (NPSE)

The Noise Policy Statement for England (NPSE)³ sets out the long term vision of government noise policy which is to *'Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.'*

The aims of the NPSE are to (2.23-2.25):

- avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life

¹ National Planning Policy Framework, MHCLG, December 2023

² See Explanatory Note to the Noise Policy Statement for England, paragraphs 2.23 and 2.24, DEFRA, 15 March 2010.

³ Noise Policy Statement for England (NPSE), DEFRA, 15 March 2010



These aims are developed by reference (2.20-2.21) to the concepts of:

- NOEL (No Observed Effect Level). This is the level below which no effect can be detected.
- LOAEL (Lowest Observed Adverse Effect Level). This is the level above which adverse effects on health and quality of life can be detected.
- SOAEL (Significant Observed Adverse Effect Level). This is the level above which significant adverse effects on health and quality of life occur.

It recognises that there is no universally applicable objective threshold for these concepts. Consequently, the NOEL, LOAEL and SOAEL are likely to be different for different noise sources and receptors and at different times (2.22).

Situations of significant adverse effect (SOAEL) should be avoided (2.23). Where the impact is between LOAEL and SOAEL reasonable steps should be taken to minimise and mitigate adverse effects on health and quality of life, but does not mean that such adverse effects cannot occur (2.24). It is also implied that situations of NOEL would be acceptable in noise terms.

3.3 PLANNING PRACTICE GUIDANCE

Planning Practice Guidance on Noise⁴ (PPG-N) sets out government guidance on ‘*how planning can manage potential noise impacts in new development*’.

Whilst it does advise that noise can override other planning concerns, ‘*where justified*’, it states that ‘*it is important to look at noise in the context of the wider characteristics of a development proposal, its likely users and its surroundings, as these can have an important effect on whether noise is likely to pose a concern.*’ (002)

It also details the hierarchy of noise exposure, including the thresholds LOAEL and SOAEL, based on the likely average response, referred to within NPSE⁵. The noise exposure categories are summarised below.

- No Observed Adverse Effect: Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response.
- Observed Adverse Effect: Noise can be heard and causes small changes in behaviour, attitude or other physiological response.
- Significant Observed Adverse Effect: The noise causes a material change in behaviour, attitude or other physiological response.
- Unacceptable Adverse Effect: Extensive and regular changes in behaviour, attitude or other physiological response, and/or an inability to mitigate effect of noise leading to psychological stress.

The guidance advises, in accordance with the first and second aims of the NPSE, that where there is no observed effect or no observed adverse effect, no specific measures are required to manage the acoustic environment; where there is an observed adverse effect, consideration needs to be given to mitigating and minimising those effects; where there is significant adverse effects, the planning process should be

⁴ PPG - Noise, MHCLG, 22 July 2019

⁵ Explanatory Note to the Noise Policy Statement for England, paragraphs 2.19 and 2.20, DEFRA, 15 March 2010)



used to avoid these effects occurring; where there are unacceptable adverse effects, the situation should be prevented.

In establishing values for LOAELs and SOAELs, which represent the onset levels of adverse effects and significant adverse effects, respectively, the guidance advises because of the subjective nature of noise, there is no simple relationship between noise level and its impact. It will instead depend on a number of factors in a particular situation. These will include:

- The source, its absolute level and the time of day.
- For intermittent sources, the number and duration of events;
- The spectral frequency content of the noise

And also other factors will need to be considered in many cases, which are more fully described and detailed within the full PPG guidance, but include matters such as:

- The cumulative impacts with other sources
- Whether internal effects can be completely removed for example by closing windows (relevant with new residential development subject to ventilation being developed)
- Whether existing noise sensitive locations already experience high noise levels,
- Where Noise Action Plans, and, in particular Important Areas are identified nearby.
- The effect on wildlife especially on nationally designated sites.
- The use of external amenity spaces intrinsic to an overall design and including private gardens.
- The potential effect of a new residential or other sensitive development being located close to an existing noisy business or site, and for noise mitigation to be considered.
- Whether there are nearby areas of tranquility relatively undisturbed by noise from human caused sources that undermine the intrinsic character of the area and likely already valued for their tranquillity.

It should be observed that the PPG guidance does not provide any detail on the how such assessment including these factors, should be carried out. However, reference is made to documents published by other organisations, such as:

- *BS 8233:2014 – Guidance on sound insulation and noise reduction for buildings (British Standards Institute 2014);*
- *Guidelines for Environmental Noise Impact Assessment (Institute of Environmental Management and Assessment, 2014);*
- *ProPG: Planning & Noise – Professional Practice Guidance on Planning & Noise – New Residential Development (Association of Noise Consultants, Institute of Acoustics and Chartered Institute of Environmental Health, May 2017).*

This should not be considered an exhaustive list, however, as reference may also be made to other existing British Standards, where relevant, and to scientific exposure-response studies or reviews relating to noise and its effects on human and, where appropriate, animal populations.



3.4 GUIDELINES FOR COMMUNITY NOISE – WORLD HEALTH ORGANIZATION (WHO), 1999

Guidelines for Community Noise (GCN) was published in 1999 with the aim of informing legislation and guidance produced at the national and regional levels for the purposes of minimising any potential adverse health effects resulting from noise in the community. It presents guideline noise level criteria for the avoidance of adverse effects such as sleep disturbance and annoyance in a range of specific environments. The preface to WHO states that community noise includes road, rail and air traffic, industries, construction and public work, and the neighbourhood.

New guidance from WHO titled Environmental Noise Guidelines for the European Region (ENG) was published in 2018. The document takes a very different approach to guidance set out in the previous document (GCN) by identifying separate thresholds for specific sources rather than for community noise as a whole. Consequently, much of the earlier guidance set out in GCN is now absent from ENG. While ENG was intended to supersede GCN, it recognises this absence and states that *‘indoor guideline values and any values not covered by the current guidelines (such as industrial noise and shopping areas) should remain valid.’*

It is recommended that all WHO guidance should be noted but that it should not be relied upon in assessments without reference to other relevant detailed guidance, especially that in British Standards. These may align better with Planning Practice Guidance⁶ in England.

3.5 BS 8233:2014 GUIDANCE ON SOUND INSULATION AND NOISE REDUCTION FOR BUILDINGS

BS 8233:2014⁷ *‘provides guidance for the control of noise in and around buildings. It is applicable to the design of new buildings, or refurbished buildings undergoing a change of use’. ‘The Standard is not⁸ intended to be used routinely where noise sources are brought to existing noise sensitive buildings’.*

For residential use dwellings (7.7.1), *‘the main considerations, for bedrooms, are the acoustic effect on sleep; and for other rooms, the acoustic effect on resting, listening and communicating’* (7.7.1).

Internal noise criteria are advised relating to sources of external noise *“without a specific character”, previously termed “anonymous noise”. (...). For simplicity, only noise without character is considered. Noise has a specific character if it contains features such as a distinguishable, discrete and continuous tone, is irregular enough to attract attention, or has strong low-frequency content, in which case lower noise limits might be appropriate’.*(7.7.1)

‘For steady external noise sources, it is desirable that the internal ambient noise level does not exceed the guideline values’, which are set out in Table 1.

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

Table 1: BS 8233 guideline noise level limits in dwellings for resting and sleeping

⁶ PPG - Noise, MHCLG, 6 March 2014

⁷ BS 8233:2014 Guidance on sound insulation and noise reduction for buildings

⁸ The word ‘not’ is omitted from the text in the Standard. The Institute of Acoustics advised ‘not’ to be added following a meeting of their London Branch in March 2015.



There are a number of notes to the table. These include:

Note 4: Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$, depending on the character and number of events per night. Sporadic noise events could require separate values.

BS 8233 does not give guidance on what might constitute a guideline value. However, as the standard does cross reference WHO, we suggest that the guideline value of L_{AFmax} 45dB, inside bedrooms, should not be exceeded during the night more than 10-15 times, which reflects the WHO position.

'Note 5: If relying on closed windows to meet the guide values, there needs to be an appropriate alternative ventilation that does not compromise the facade insulation or the resulting noise level. If applicable, any room should have adequate ventilation (e.g. trickle ventilators should be open) during assessment'.

'Note 7: Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved'.

'For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited'. (7.7.3.2)

3.6 BUILDING REGULATIONS APPROVED DOCUMENT O

The primary requirements for noise as they relate to overheating are set out in the Building Regulations Approved Document O (ADO). Therefore, this is not inherently an issue for consideration at planning application stage. However, it is helpful to set out acoustic constraints on overheating mitigation, as the mitigation strategy, usually developed at Building Regulation stage, may have planning implications.

To mitigate overheating, ADO sets out several strategies for limiting solar gains (e.g. shading devices and glazing design) and for removing excess heat (e.g. passive/mechanical ventilation and mechanical cooling). The strategy chosen to remove excess heat will typically be constrained by the external noise environment and in many cases, it will not be possible to rely on open windows.

ADO advises that:

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

- a. 40dB $L_{Aeq,T}$, averaged over 8 hours (between 11pm and 7am).*
- b. 55dB L_{AFmax} , more than 10 times a night (between 11pm and 7am).'*



The reduction to noise ingress provided by an open window will depend on various factors, such as:

- the Acoustic Open Area of the window;
- the geometric volume of the bedroom;
- the reverberation time in the bedroom.

Therefore, whether or not the ADO noise thresholds are exceeded will depend on the external noise level and how far the window is open. A limit on how far a window can be open while ensuring ADO noise thresholds are met is first determined by the acoustician and this limit can then be shared with the overheating assessor and used as an input in their assessment.

The ventilative performance of an open window is described by a term called the Equivalent Area (EA), as defined in ADO. By contrast, the Acoustic Open Area (AcOA) of an open window is not well defined and depends on several complex interactions between the external sound field and the geometry and type of window. However, empirical evidence suggests that the sound reduction of an open window calculated on the basis of AcOA and EA results in a similar degree of uncertainty. Therefore, limiting values of AcOA can be interpreted by the overheating assessor as limiting values of EA.

ADO provides a simplified method for demonstrating compliance with requirement O1. A number of criteria must be met for compliance, one of which relates to the minimum required free area of openings in bedrooms for ventilative cooling. For bedrooms in locations with a high risk of overheating, the minimum free area must be 13% of the bedroom floor area. In moderate risk locations, it must be 4% of the bedroom floor area. If external noise levels result in a free area limit that is lower than the minimum free area required for ventilation, the simplified method fails, and dynamic thermal modelling is required.

This leads to the external compliance limits set out in Table 2.

AcOA as a percentage of floor area (%)	Noise level difference (dB)	Incident noise level limit outside bedroom windows at night for ADO compliance (dB)		Comment
		$L_{Aeq,8hr}$	L_{AFmax}	
0%	n/a	> 50	> 65	Assume windows will need to be closed.
4%	10	50	65	If levels exceeded in moderate risk area, simplified method cannot be used.
13%	5	45	60	If levels exceeded in high risk area, simplified method cannot be used.

Table 2: Maximum allowable acoustic open area of window for compliance with ADO noise thresholds

It must be noted that the ADO related advice set out in this report relates only to the acoustic constraints on the use of open windows during overheating. Any comments made on the wider (non-acoustic) issues of ADO are intended as guidance only and are based on our understanding. However, we are not specialists in the mitigation of overheating and cannot take responsibility for, or give advice on, the wider compliance of the scheme with ADO.



4. AMBIENT NOISE SURVEY

4.1 SURVEY DETAILS

Measurements were completed over the period Thursday 8th to Wednesday 14th August 2024. This included a weekend. There was no recorded rainfall throughout the measurement period, the survey was conducted during dry conditions, with scattered light winds.

Continuous automated two-minute noise measurements were carried out at three monitoring locations (MP1 – MP3 – see next section). Noise measurement parameters consisted of equivalent continuous noise levels (L_{Aeq}) and maximum noise levels (L_{Amax}), as well as statistical noise levels (termed L_n , where n is the percentage of time the level is exceeded during the measurement period). Both overall and 1/1 octave band measurements were stored for later analysis.

4.2 MEASUREMENT LOCATIONS

Noise measurements were carried out at the following locations:

- **Measurement Position 1 (MP 1)** – approx. 7m from the edge of the hard shoulder of the A1(M); the microphone was extended to a height of 2m above ground level.
- **Measurement Position 2 (MP 2)** – approx. 10m from the edge of High Street (the B197). The microphone pole was extended to 3m above ground height, the site terrain level is roughly 5m above the road level.
- **Measurement Position 3 (MP 3)** – East of public cycle path access on Graveley Lane, approx. 4m from edge of the road. The microphone was extended to a height of 2m above ground level.

Weather measurements were carried out:

- **Measurement Position 4 (MP 4)** – a central position of the proposed site.

All above measurement positions were free-field and away from any reflective surfaces or building façades. The measurement positions are indicated on the site aerial image in Figure 3.



Figure 3: Measurement positions



4.3 SURVEY INSTRUMENTATION

The following instrumentation was used during the measurement survey:

Measurement Position 1 (MP1):

- Bruel & Kjaer Type 2250 Sound Level Meter s/n 3010857
- Bruel & Kjaer Type 4189 Microphone s/n 3060877
- Bruel & Kjaer Type 4231 Acoustic Calibrator s/n 2291483

Measurement Position 2 (MP2):

- Bruel & Kjaer Type 2250 Sound Level Meter s/n 3023840
- Bruel & Kjaer Type 4189 Microphone s/n 3130623
- Bruel & Kjaer Type 4231 Acoustic Calibrator s/n 3030524

Measurement Position 3 (MP3):

- Bruel & Kjaer Type 2250 Sound Level Meter s/n 3024396
- Bruel & Kjaer Type 4189 Microphone s/n 3349664
- Bruel & Kjaer Type 4231 Acoustic Calibrator s/n 3021281

Measurement Position 4 (MP4):

- Davis Vantage Pro 2 Weather Station

Before and after the survey, the sound level meters were field-calibrated in accordance with the manufacturer's guidelines, and no significant drift was observed. The meters, microphones and field calibrators are laboratory calibrated biennially in accordance with UKAS procedures or to traceable National Standards.

4.4 SURVEY RESULTS

Noise levels in the environment around the development site are controlled by local and distant road traffic movement during both the day and night time periods, primarily from the A1(M). The measured noise profiles at the noise monitoring locations are shown in the charts in Appendix B.

For the purpose of establishing the noise impact on the site, a summary of the measured noise data from MP1-3 over the daytime (07:00-23:00) and night-time (23:00-07:00) periods is included in Table 3. The overall $L_{Aeq,16\text{ hour}}$ and $L_{Aeq,8\text{ hour}}$ has been taken from the average of all of the full daytime and night-time noise measurements.

World Health Organisation (WHO) guidelines for community noise, define regular as not more than 10-15 events per night. Therefore, the L_{Amax} levels measured during the night-time periods have been sorted from highest to lowest. It is then possible to read off the 10-15th highest L_{Amax} levels during each of the nighttime periods which are regarded as being typical. The typical L_{Amax} values for each of the night-time periods obtained in this survey are included in Table 3.



Measurement Position (MP)	Date	Ambient noise levels L_{Aeq} (dB)		Night typical L_{AFmax} (dB)
		Day	Night	
Measurement Position 1 (MP1) Close to A1(M)	Thursday 08.08.2024	-	75	87
	Friday 09.08.2024	80	74	86
	Saturday 10.08.2023	80	73	86
	Sunday 11.08.2024	79	75	86
	Monday 12.08.2024	79	75	87
	Tuesday 13.08.2024	79	75	87
	Wednesday 14.08.2024	79	-	-
	Overall	79	75	86
Measurement Position 2 (MP2) Close to High Street	Thursday 08.08.2024	-	62	77
	Friday 09.08.2024	66	62	77
	Saturday 10.08.2023	64	56	74
	Sunday 11.08.2024	60	54	74
	Monday 12.08.2024	62	58	74
	Tuesday 13.08.2024	63	56	75
	Wednesday 14.08.2024	62	-	-
	Overall	64	59	75
Measurement Position 3 (MP3) Close to Graveley Lane	Thursday 08.08.2024	-	56	82
	Friday 09.08.2024	65	57	83
	Saturday 10.08.2023	63	53	79
	Sunday 11.08.2024	61	54	82
	Monday 12.08.2024	64	56	82
	Tuesday 13.08.2024	64	55	82
	Wednesday 14.08.2024	65	-	-
	Overall	64	55	82

Table 3: Summary of results of ambient noise survey

Note: 1 The L_{Amax} data is only relevant to the night-time period. The “overall” figure used is the typical (10th highest) measured.
 2 Then night period referred to is the period that starts at 2300 on the date given.



5. PREDICTION OF NOISE PROPAGATION ACROSS THE SITE

The particular prediction model that has been used for this analysis is DGMR's iNoise software. This acoustic model implements the procedures set out in ISO 9613-2:1996 "Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation to determine noise levels", and is Quality Assured to all parts of ISO 17534:2015 "Acoustics – Software for the calculation of sound outdoors". The model takes account of the following features in its calculation procedure:

- Source sound power level (for point, line and area sources)
- Reflection from nearby structures and source directivity
- Distance from noise source (geometric spreading)
- Atmospheric absorption
- Acoustic screening of intervening structures and topography
- Ground absorption
- Ground effects (which includes the height of ground relative to the noise source)

Detailed noise calculations are then computed of the contribution of each individual noise source to combined noise levels at the receptor location.

In order to calculate the day and night-time L_{Aeq} and L_{AFmax} levels across the site, road traffic sources have been included within the model of the existing site and attributed sound power levels based on the results of the noise measurement survey. The model has been validated by comparing the results of an initial model simulation with the measured survey results. Where necessary, small adjustments are made to the model such that the modelled results are within 1dB of the measured results. The model is then considered validated and suitable for accurately predicting noise propagation across the site.

Once validated, the model is updated to include the proposed development such that noise can be calculated at each dwelling façade and within external amenity spaces.

The results of the model are presented in Appendix C.

6. ASSESSMENT

6.1 NOISE INGRESS TO HABITABLE ROOMS

Calculations of the noise intrusion have been carried out for representative plots using the methodology set out in Annex G2.1 of *BS 8233:2014 Guidance on sound insulation and noise reduction for buildings*.

Incident noise levels have been taken from the results of the noise model.

It is assumed the houses will have traditional brick and block external walls. Sound insulation data for the external walls has been taken from BS 8233. Sound insulation data for glazing and ventilators has been taken from manufacturers' data for typical systems. It is also assumed that the first floor bedrooms throughout the plots will have plasterboard ceilings and insulated loft space directly above.

The calculations assume typical internal finishes for habitable rooms, based on reverberation times that Spectrum have measured in a range of occupied dwellings at other sites, and on the room geometry and volumes taken from the floor plans and elevation drawings in Appendix A.



A scheme of façade sound insulation has been developed to ensure acceptable internal ambient noise levels are achieved at the site. The scheme separates the dwellings into two groups that each require a different level of mitigation: Scheme 1 and Scheme 2.

A sample of the detailed calculations for the most noise exposed plots within each group is presented in Appendix D and summarised in Table 4.

Sample room	Period	External noise levels (dB)		Internal noise levels (dB)	
		Incident L_{Aeq}	Typical incident L_{Amax}	L_{Aeq}	Typical L_{Amax}
Plot 12 (corner plot closes to A1M and Graveley Lane)					
Lounge	Day	67	-	32	-
Dining	Day	67		35	
Bedroom 1	Day	67	-	31	-
Bedroom 1	Night	63	64	28	32
Plot 24 (corner plot with facades to Graveley Lane and High Street)					
Lounge	Day	58	-	27	-
Dining	Day	60		31	
Bedroom 1	Day	58	-	25	-
Bedroom 1	Night	58	61	25	30
Bedroom 3	Day	55	-	26	-
Bedroom 3	Night	52	68	23	41
Plot 2 (closes to High Street)					
Lounge	Day	60	-	30	-
Dining	Day	60	-	33	-
Bedroom 1	Day	60	-	27	-
Bedroom 1	Night	57	70	24	42

Table 4: Calculated indoor ambient noise levels

The results of the calculations indicate that the desirable noise criteria set out in BS 8233 will be achieved at this site with the proposed scheme of mitigation installed.

The proposed scheme of mitigation is set out in Table 5 and Appendix E.



	Glazing		Ventilation	
	$R_w / R_w + C_{tr}$ (dB)	Example unit	$D_{n,e,w} / D_{n,e,w} + C_{tr}$ (dB)	Example unit
Scheme 1 – plots closest to A1(M) – Orange shaded area in Appendix E				
Living/Kitchen/Dining	29 / 25	Pilkington 4/6-16/4	42 / 38	Greenwood 5000EAW.AC2 (Acoustic trickle)
Bedrooms	29 / 25	Pilkington 4/6-16/4	39 / 37	Greenwood 5000EAW.AC1 (Acoustic trickle)
Scheme 2 – all other plots – unmarked in Appendix E				
Living/Kitchen/Dining	29 / 25	Pilkington 4/6-16/4	39 / 37	Greenwood 5000EAW.AC1 (Acoustic trickle)
Bedrooms	29 / 25	Pilkington 4/6-16/4	39 / 37	Greenwood 5000EAW.AC1 (Acoustic trickle)

Table 5: Mitigation to external facades

Glazing is specified using the weighted sound reduction index, R_w , with a correction applied to account for the acoustic character of road traffic noise, C_{tr} . Vents are specified using the normalised element weighted sound level difference, $D_{n,e,w}$, also corrected for traffic noise, C_{tr} . The acoustic specifications should be met both with and without the traffic noise correction term.

Additionally, the glazing acoustic specification should apply to the window set, as a whole, not just the glazing. For many windows, the influence of the frame materials on the composite sound reduction of the window set is largely negligible. However, for windows that must achieve R_w 40dB and $R_w + C_{tr}$ 34dB, or more, the influence of the frame becomes increasingly significant and must be taken into account. In these cases, it is recommended that compliance is demonstrated by comparing the results of supplier test data with the required specifications.

In this analysis we have assumed that there are 2 (window / wall) vents in bedrooms and 4 (window) vents in living rooms. The precise number is to be determined by the mechanical consultant for the project. It is important to note that the noise levels experienced in the rooms is affected by the number of vents. If the number of vents that is installed is higher than we have assumed, then the vent acoustic specification will need to be increased to ensure that the indoor noise target is still achieved.



6.2 NOISE IN EXTERNAL AMENITY AREAS

As set out in Section 3.5, BS 8233 suggests guidelines for noise levels in external spaces that are used for amenity, such as gardens and patios.

'For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited'. (7.7.3.2)

The site by definition adjoins the strategic road network. The results of the daytime noise model indicate that with standard 1.8m high solid panel⁹ garden screening, noise levels in gardens will be as follows:

- Plot 24 L_{Aeq} 61dB
- Plots 3, 18 and 19 $L_{Aeq} \leq 55$ dB
- All remaining plots L_{Aeq} 56-60dB

6.3 ACOUSTICS AND OVERHEATING

As described in Section 3.6, above, the primary requirements for noise as they relate to overheating are set out in the Building Regulations Approved Document O (ADO). Environmental noise will often place constraints on the use of open windows for the mitigation of overheating. Therefore, any overheating assessment (carried out by others) will need to consider these constraints. Although Building Regulation compliance is not an issue to be considered under planning, noise can influence the overheating mitigation strategy, potentially resulting in design changes that would be planning issues. The noise constraints as they relate to overheating at this site are therefore set out within this report.

The noise model has been analysed to determine the incident night-time L_{Aeq} and L_{AFmax} noise levels at each plot.

The results indicate that the night-time L_{Aeq} noise levels across the site exceed 50dB(A), which means the ADO internal noise limits will not be achieved if windows are open at night and so cooling will need to be provided by other means.

⁹ To be effective, acoustic screening must comprise a solid continuous screen, without penetrations, with a minimum mass per unit area of 10kg/m², which must be maintained for the life of the screen. A closed boarded timber fence should be able to meet these criteria.

7. CONCLUSIONS

Gade Homes have commissioned Spectrum Acoustic Consultants to complete a planning noise assessment for the proposed development of their site at Milksey Lane, Graveley.

Ambient daytime and night-time noise levels in the environment around the proposed development site are controlled by road traffic on A1(M), High Road and Graveley Lane.

A noise survey on the site has been completed, and the data from the survey used to inform a noise mitigation strategy.

Acoustic insulation for the façade to control noise ingress has been assessed and noise levels in gardens have been evaluated.

Acoustic performance specifications have been set for the glazed elements and ventilators to achieve noise levels in accordance with guidelines set out in BS 8233 and WHO Guidelines for Community Noise.

Noise constraints on the use of open windows as mitigation for overheating has also been reviewed for the purpose of informing any subsequent overheating assessment.



APPENDIX A

Proposed Scheme and Elevations



FRONT ELEVATION



SIDE ELEVATION



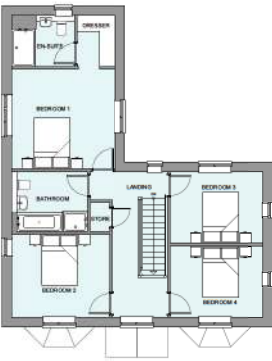
SIDE ELEVATION



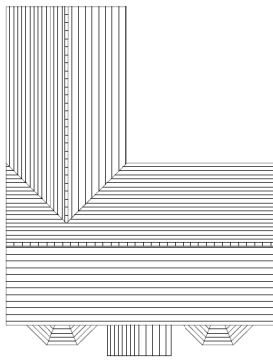
REAR ELEVATION



GROUND FLOOR PLAN
GIA: 78.3m² / 821ft²
TOTAL GIA: 150.3m² / 1,618 ft²



FIRST FLOOR PLAN
GIA: 74m² / 796 ft²



ROOF PLAN

A 15-12-24 AMENDED TO CLIENT COMMENTS CT			
Rev	Date	Amendment	Issued

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN
Client:
GADE HOMES
Drawing:
PROPOSED PLANS & ELEVATIONS
PLOTS 1 & 9

Drawing no: 24.2039.4000 Rev: A

Scale: 1:100 Date: NOV '24 Drawn: EBC Checked: -

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FRONT ELEVATION



SIDE ELEVATION



SIDE ELEVATION



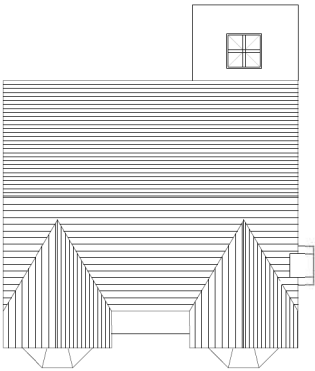
REAR ELEVATION



GROUND FLOOR PLAN
GIA: 104.5m² / 1,125ft²
TOTAL GIA: 197.5m² / 2,128ft²



FIRST FLOOR PLAN
GIA: 93m² / 1,001ft²



ROOF PLAN

A	20-12-24	AMENDED TO CLIENT COMMENTS	CT
Rev	Date	Amendment	Issued

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN
Client:
GADE HOMES
Drawing:
PROPOSED PLANS & ELEVATIONS
PLOT 2

Drawing no: 24.2039.4010 Rev: A

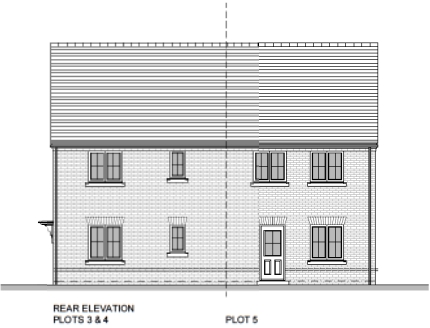
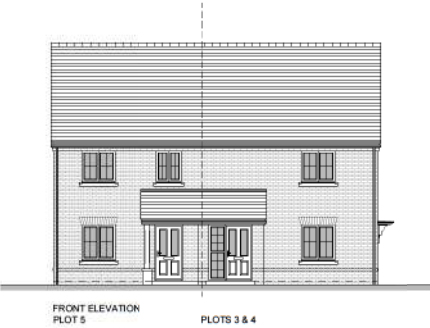
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DRAFT ISSUE

LAND ADJACENT TO HIGH STREET, GRAVELEY
PROPOSED PLANS & ELEVATIONS - PLOTS 3-5



GROUND FLOOR PLAN
PLOT 5
GIA: 47.3m² / 509ft²
TOTAL GIA: 94.6m² / 1,019ft²



FIRST FLOOR PLAN
PLOT 5
GIA: 47.3m² / 509ft²



ROOF PLAN



Rev	Date	Amendment	CT
			Initials

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN
Client:
GADE HOMES
Drawing:
PROPOSED PLANS & ELEVATIONS
PLOTS 3-5

Drawing no: 24.2039.4020
Scale: A1: 1/100 Date: NOV '24 Drawn: EBC Checked: -

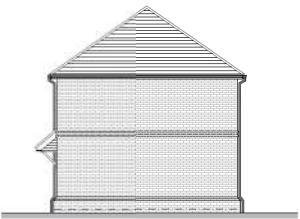
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Checked by: EBC
Date: 24.11.24
Project: LAND Adj. HIGH STREET
Drawing: PROPOSED PLANS & ELEVATIONS
PLOTS 3-5

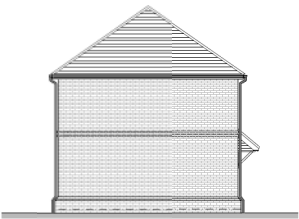
PLANNING



FRONT ELEVATION



SIDE ELEVATION



SIDE ELEVATION



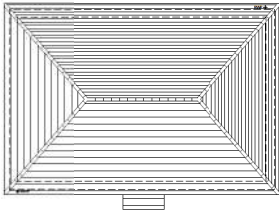
REAR ELEVATION



GROUND FLOOR PLAN
GIA: 56.3m² / 606ft²
TOTAL GIA: 112.6m² / 1,212ft²



FIRST FLOOR PLAN
GIA: 53.6m² / 606ft²



ROOF PLAN

A	15-10-24	AMENDED TO CLIENTS COMMENTS	CT
Rev	Date	Amendment	Issued

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN
Client:
GADE HOMES
Drawing:
PROPOSED PLANS & ELEVATIONS
PLOT 8

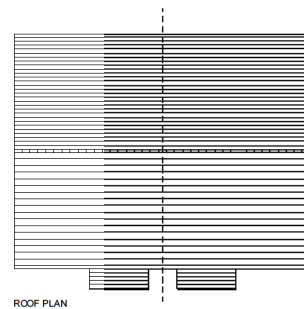
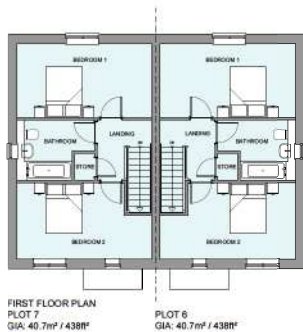
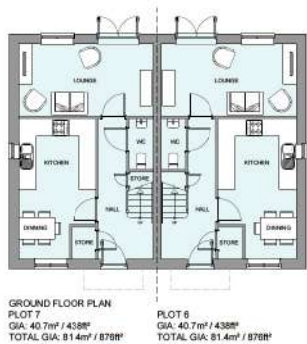
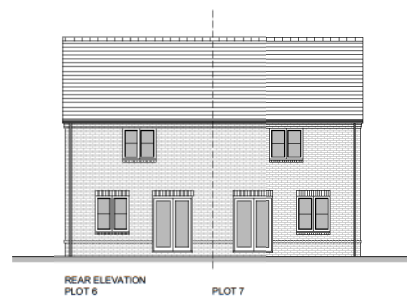
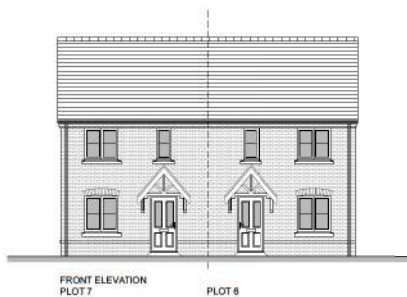
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LAND ADJACENT TO HIGH STREET, GRAVELEY
PROPOSED PLANS & ELEVATIONS - PLOTS 6-7



A	10/12/24	AREAS UPDATED	CT
Rev	Date	Amendment	Initials

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN

Client:
GADE HOMES

Drawing:
PROPOSED PLANS & ELEVATIONS
Plots 6-7

Drawing no. 24.2039.4030

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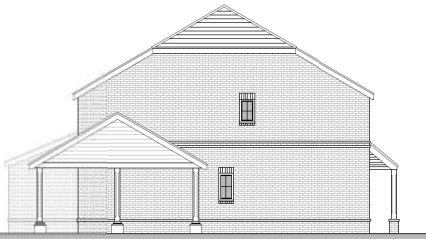
PLANNING



LAND ADJACENT TO HIGH STREET, GRAVELEY
PROPOSED PLANS & ELEVATIONS - PLOTS 10-11 & 17-18



FRONT ELEVATION
PLOTS 11 & 17
PLOTS 10 & 18



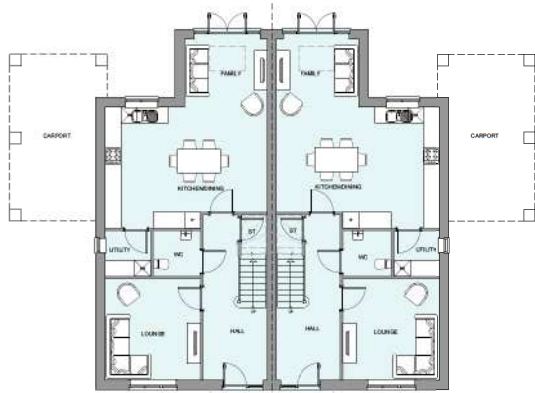
SIDE ELEVATION
PLOTS 11 & 17



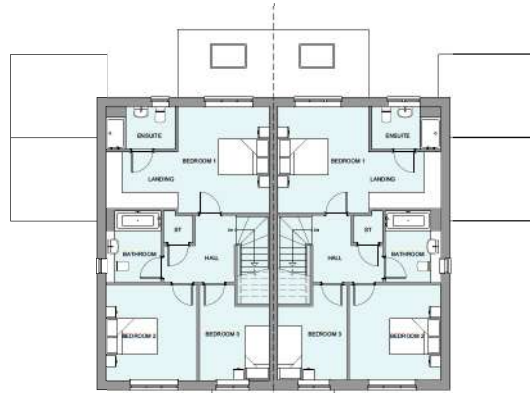
SIDE ELEVATION
PLOTS 10 & 18



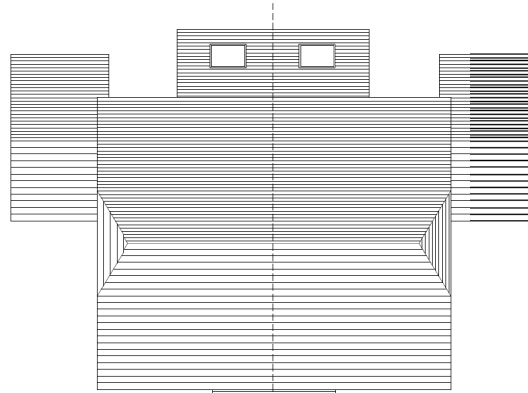
REAR ELEVATION
PLOTS 10 & 18
PLOTS 11 & 17



GROUND FLOOR PLAN
PLOTS 11 & 17
GIA: 70.2m² / 755 Sqft
TOTAL GIA: 132.8m² / 1,429 Sqft
PLOTS 10 & 18
GIA: 70.2m² / 755 Sqft
TOTAL GIA: 132.8m² / 1,429 Sqft



FIRST FLOOR PLAN
PLOTS 11 & 17
GIA: 62.6m² / 674 Sqft
PLOTS 10 & 18
GIA: 62.6m² / 674 Sqft



ROOF PLAN

A	19-12-24	AMENDED TO CLIENT COMMENTS	CT
Rev	Date	Amendment	Issued

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN
Client:
GADE HOMES
Drawing:
PROPOSED PLANS & ELEVATIONS
PLOTS 10-11 & 17-18

Drawing no: 24.2039.4050
Rev: A

Scale: 1:100
Date: NOV '24
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PLANNING

0 1 2 3 4 5 10m
SCALE 1:100



FRONT ELEVATION



SIDE ELEVATION



SIDE ELEVATION



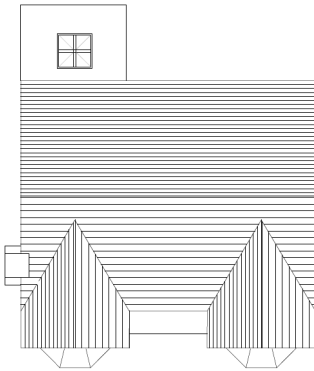
REAR ELEVATION



GROUND FLOOR PLAN
GIA: 104.5m² / 1125ft²
TOTAL GIA: 197.5m² / 2,126ft²



FIRST FLOOR PLAN
GIA: 93m² / 1,001ft²



ROOF PLAN

A 15-12-24 AMENDED TO CLIENT COMMENTS			CT
Rev	Date	Amendment	Initials

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN
Client:
GADE HOMES
Drawing:
PROPOSED PLANS & ELEVATIONS
PLOT 12

Drawing no: 24.2039.4060 Rev: A

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PLANNING



FRONT ELEVATION



SIDE ELEVATION



SIDE ELEVATION



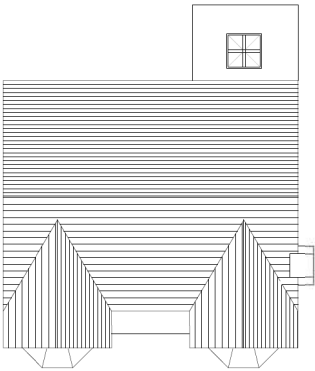
REAR ELEVATION



GROUND FLOOR PLAN
GIA: 104.5m² / 11258ft²
TOTAL GIA: 197.5m² / 21288ft²



FIRST FLOOR PLAN
GIA: 93m² / 1,0018ft²



ROOF PLAN

A 15-12-24 AMENDED TO CLIENT COMMENTS			CT
Rev	Date	Amendment	Initials

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN
Client:
GADE HOMES
Drawing:
PROPOSED PLANS & ELEVATIONS
PLOT 13

Drawing no: 24.2039.4070

Scale: 1:100 Date: NOV '24 Drawn: EBC Checked: -

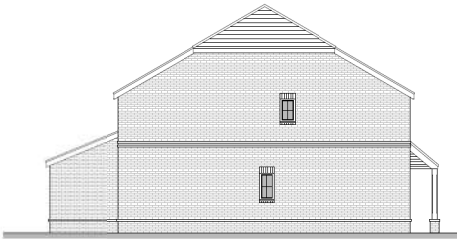
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LAND ADJACENT TO HIGH STREET, GRAVELEY
PROPOSED PLANS & ELEVATIONS - PLOTS 14 & 15



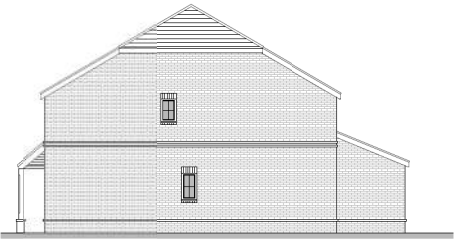
FRONT ELEVATION
PLOT 14



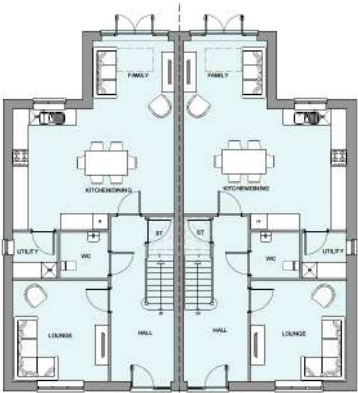
SIDE ELEVATION
PLOT 14



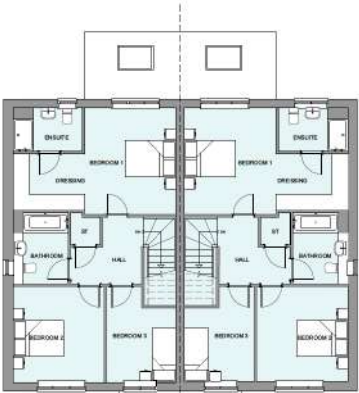
REAR ELEVATION
PLOT 15



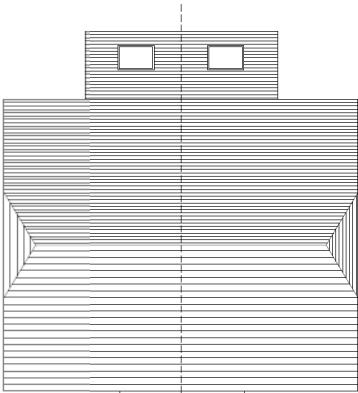
SIDE ELEVATION
PLOT 15



GROUND FLOOR PLAN
PLOT 14
GIA: 70.2m² / 755 Sqft
TOTAL GIA: 132.8m² / 1,429 Sqft



FIRST FLOOR PLAN
PLOT 14
GIA: 62.6m² / 674 Sqft



ROOF PLAN

Rev	Date	Amendment	CT
			Initials

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN
Client:
GADE HOMES
Drawing:
PROPOSED PLANS & ELEVATIONS
PLOTS 14 & 15

Drawing no: 24.2039.4080 Rev: A

Scale: 1:100 Date: NOV/24 Drawn: EBC Checked: -

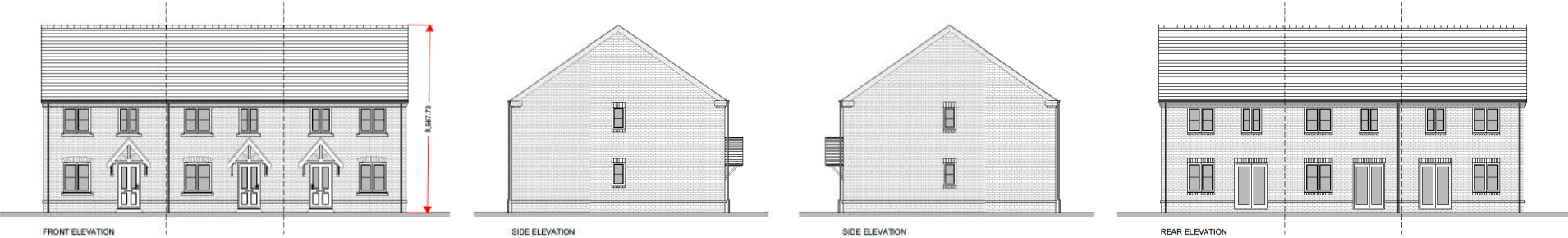
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0 1 2 3 4 5 10m
SCALE 1:100

PLANNING

LAND ADJACENT TO HIGH STREET, GRAVELEY
PROPOSED PLANS & ELEVATIONS - PLOTS 20-22



GROUND FLOOR PLAN
PLOT 20
GIA: 45.8m² / 493ft²
TOTAL GIA: 91.6m² / 986ft²

PLOT 21
GIA: 45.8m² / 493ft²
TOTAL GIA: 91.6m² / 986ft²

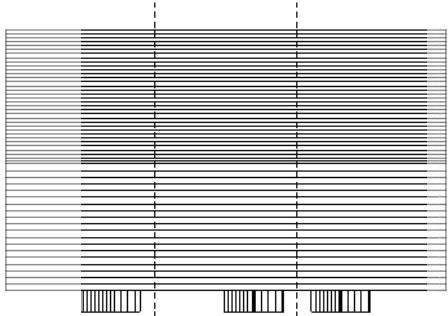
PLOT 22
GIA: 45.8m² / 493ft²
TOTAL GIA: 91.6m² / 986ft²



FIRST FLOOR PLAN
PLOT 20
GIA: 45.8m² / 493ft²

PLOT 21
GIA: 45.8m² / 493ft²

PLOT 22
GIA: 45.8m² / 493ft²



ROOF PLAN



A 18/12/24 FLOOR AREAS UPDATED			CT
Rev	Date	Amendment	Notes

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN

Client:
GADE HOMES

Drawing:
PROPOSED PLANS & ELEVATIONS
PLOTS 20-22

Drawing no: 24.2039.4100 Rev: A

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PLANNING



FRONT ELEVATION



SIDE ELEVATION



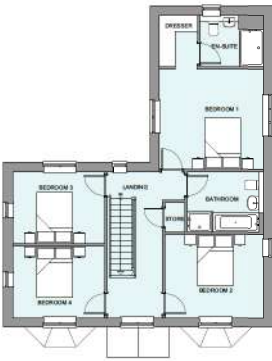
SIDE ELEVATION



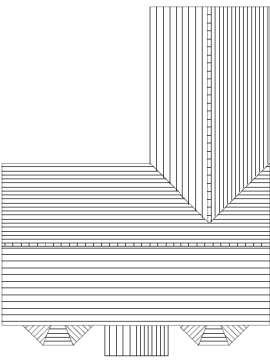
REAR ELEVATION



GROUND FLOOR PLAN
GIA: 76.3m² / 821ft²
TOTAL GIA: 150.3m² / 1,618 ft²



FIRST FLOOR PLAN
GIA: 74m² / 796 ft²



ROOF PLAN

A 18/12/24 AMENDED TO CLIENT COMMENTS				CT
Rev	Date	Amendment	Rev	Notes

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN

Client:
GADE HOMES

Drawing:
PROPOSED PLANS & ELEVATIONS
PLOTS 16 & 19

Drawing no: 24.2039.4090 Rev: A

Scale: 1:100 Date: NOV '24 Drawn: EBC Checked: -

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FRONT ELEVATION



SIDE ELEVATION



SIDE ELEVATION



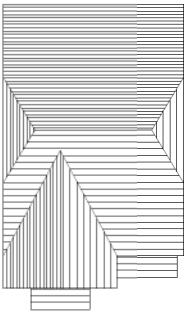
REAR ELEVATION



GROUND FLOOR PLAN
GIA: 62.2m² / 669ft²
TOTAL GIA: 123.1m² / 1,325ft²



FIRST FLOOR PLAN
GIA: 60.9m² / 659ft²



ROOF PLAN

A	15-12-24	AMENDED TO CLIENT COMMENTS	CT
Rev	Date	Amendment	Initials

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN
Client:
GADE HOMES
Drawing:
PROPOSED PLANS & ELEVATIONS
PLOT 24

Drawing no: 24.2039.4120 Rev: A

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FRONT ELEVATION



SIDE ELEVATION



SIDE ELEVATION



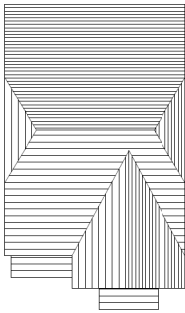
REAR ELEVATION



GROUND FLOOR PLAN
GIA: 62.2m² / 669ft²
TOTAL GIA: 123.1m² / 1,325ft²



FIRST FLOOR PLAN
GIA: 60.9m² / 659ft²



ROOF PLAN



A	15-12-24	AMENDED TO CLIENTS COMMENTS	CT
Rev	Date	Amendment	Initials

Project:
LAND Adj. HIGH STREET
GRAVELEY, HITCHIN

Client:
GADE HOMES

Drawing:
PROPOSED PLANS & ELEVATIONS
PLOT 23

Drawing no: 24.2039.4110 Rev: A

Scale: 1:100 Date: NOV '24 Drawn: EBC Checked: -

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PLANNING



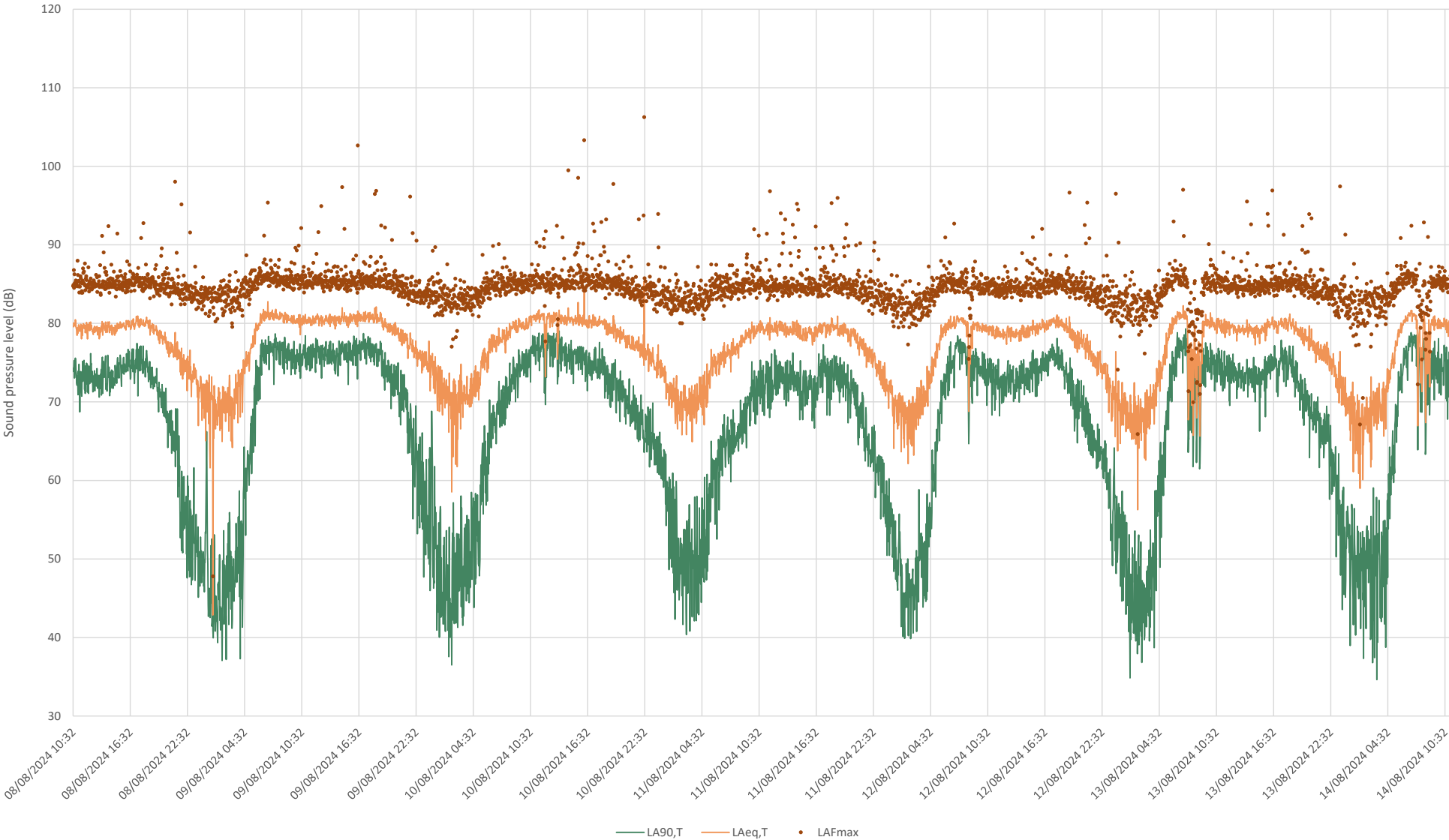
APPENDIX B

Noise Survey Results

MP1 - Nearest to the A1(M)



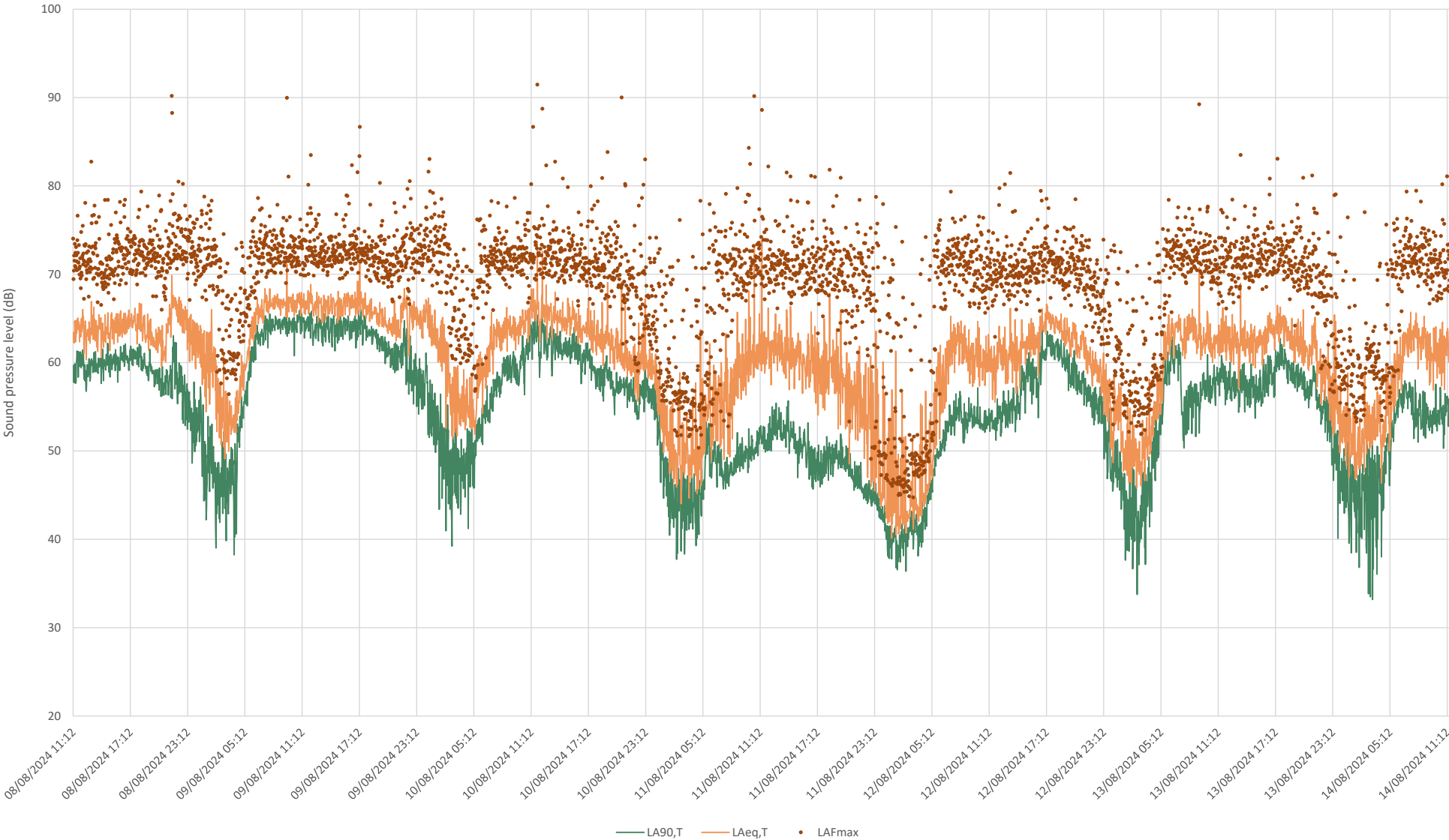
Measured sound level (T = 5min)



MP2 - Nearest to High Street



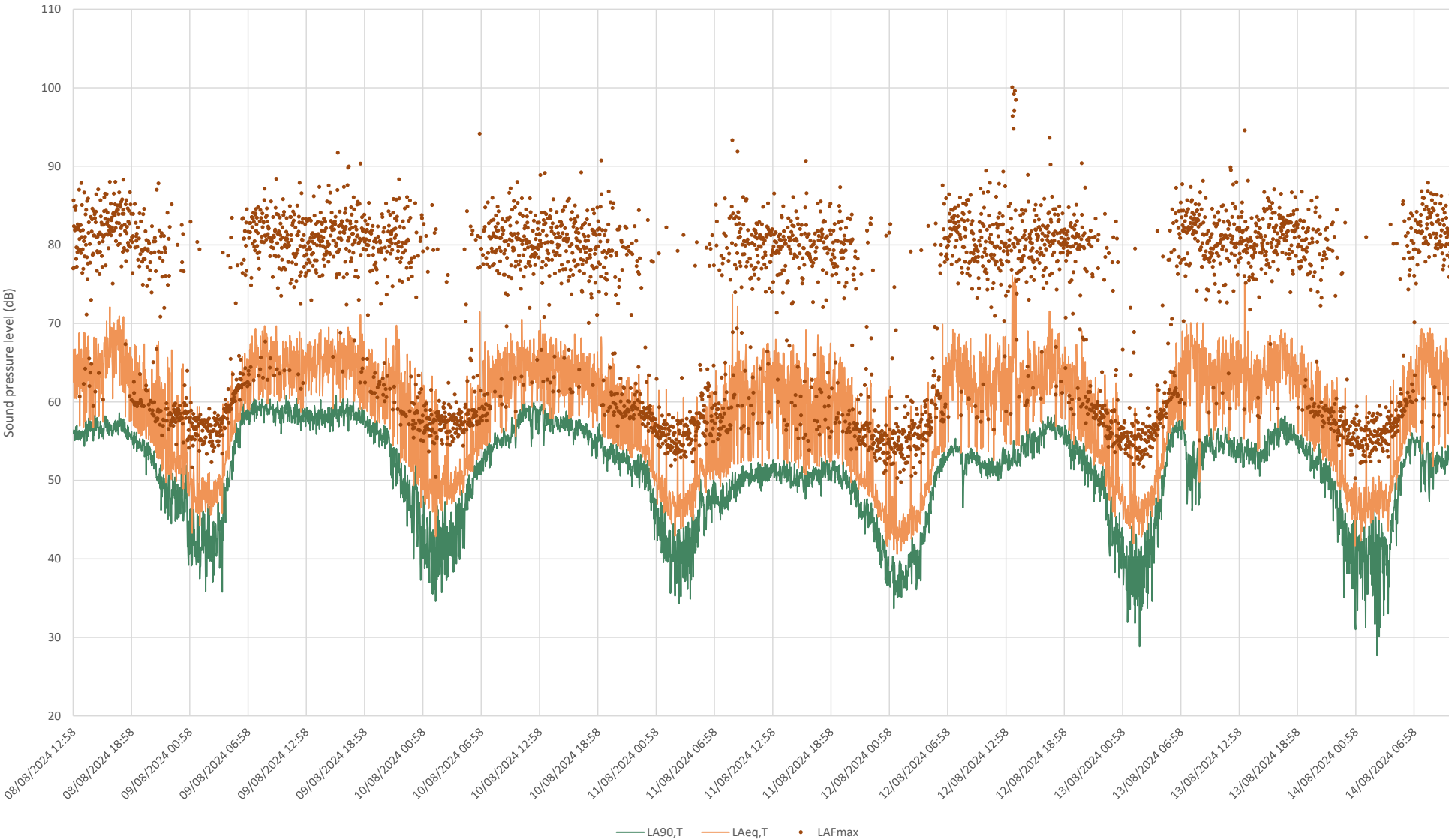
Measured sound level (T = 5min)



MP3 - Nearet to Graveley Lane



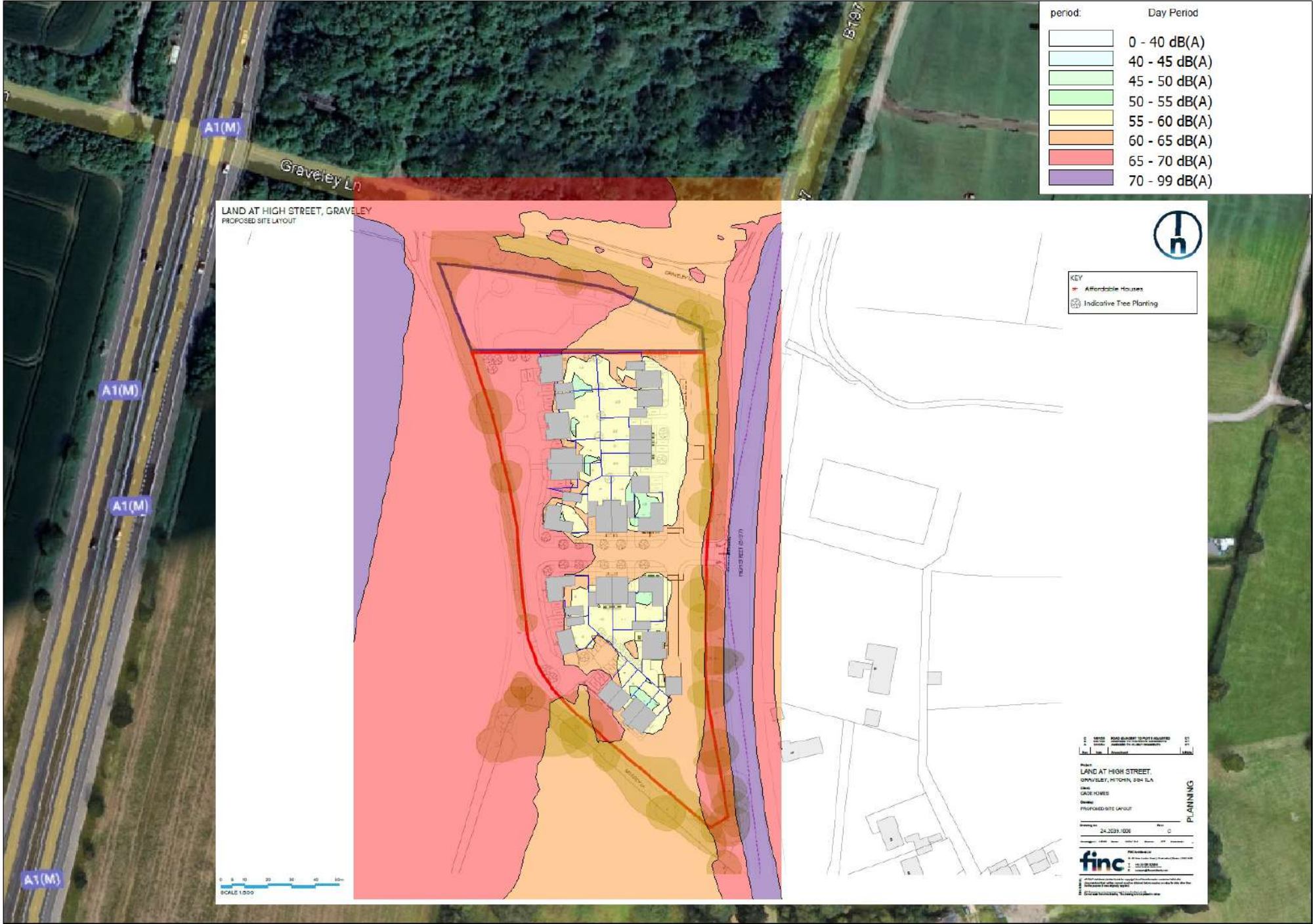
Measured sound level (T = 5min)





APPENDIX C

Noise Model Results







A P P E N D I X D

Intrusive Noise Calculations / Noise Ingress Calculations

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 12
Room:	Lounge

Daytime ($L_{Aeq,16hr}$)				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	$L_{eq,1}$	64	57	47	51	65	60	41	14	$L_{Aeq,1}$	67 dB	
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	$L_{eq,ff}$	64	57	47	51	65	60	41	14	$L_{Aeq,ff}$	67 dB	
ROOM DATA															
Room description and reverberation time	Volume	52	Living Room	RT60	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3		s	
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	5.11	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36	Rw / Rw+Ctr	29 / 25 dB	
Wall	Area	15.05	Brick and block external wall	Rw	34	40	44	45	51	56	60	63	Rw / Rw+Ctr	50 / 47 dB	
Vent	No. off.	4	Greenwood 5000EAW.AC2 (Acoustic trickle)	Dn,e	32	40	37	32	47	53	48	45	Dn,e,w / Dn,e,w+Ctr	42 / 38 dB	
None			--												
RESULTS															
Total calculated indoor noise level				$L_{eq,2}$	45	35	28	28	29	21	7	-	$L_{Aeq,2}$	32 dB	

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 12
Room:	Dining

Daytime (<i>L</i> _{Aeq,16hr})				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	<i>L</i> _{eq,1}	64	57	47	51	65	60	41	14	<i>L</i> _{Aeq,1}	67 dB	
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	<i>L</i> _{eq,ff}	64	57	47	51	65	60	41	14	<i>L</i> _{Aeq,ff}	67 dB	
ROOM DATA															
Room description and reverberation time	Volume	37	Kitchen/Dining Room	RT60	0.6	0.6	0.7	0.7	0.8	0.8	0.7	0.6		s	
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	4	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36	Rw / Rw+Ctr	29 / 25 dB	
Wall	Area	8.96	Brick and block external wall	Rw	34	40	44	45	51	56	60	63	Rw / Rw+Ctr	50 / 47 dB	
Vent	No. off.	4	Greenwood 5000EAW.AC2 (Acoustic trickle)	Dn,e	32	40	37	32	47	53	48	45	Dn,e,w / Dn,e,w+Ctr	42 / 38 dB	
None			--												
RESULTS															
Total calculated indoor noise level				<i>L</i> _{eq,2}	46	36	30	31	33	24	10	-	<i>L</i> _{Aeq,2}	35 dB	

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 12
Room:	Bedroom 1

Daytime (<i>L</i> _{Aeq,16hr})				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	<i>L</i> _{eq,1}	64	57	47	51	65	60	41	14		<i>L</i> _{Aeq,1}	67 dB
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	<i>L</i> _{eq,ff}	64	57	47	51	65	60	41	14		<i>L</i> _{Aeq,ff}	67 dB
ROOM DATA															
Room description and reverberation time	Volume	36	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.44	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	16.80	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40		Dn,e,w / Dn,e,w+Ctr	39 / 37 dB
Roof	Area	15	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60		Rw / Rw+Ctr	46 / 39 dB
RESULTS															
Total calculated indoor noise level				<i>L</i> _{eq,2}	47	36	24	26	28	21	6	-		<i>L</i> _{Aeq,2}	31 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 12
Room:	Bedroom 1

Night time ($L_{Aeq,8hr}$)				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	$L_{eq,1}$	61	53	48	51	61	56	38	12		$L_{Aeq,1}$	63 dB
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	$L_{eq,ff}$	61	53	48	51	61	56	38	12		$L_{Aeq,ff}$	63 dB
ROOM DATA															
Room description and reverberation time	Volume	36	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.44	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	16.80	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40	Dn,e,w / Dn,e,w+Ctr		39 / 37 dB
Roof	Area	15	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60		Rw / Rw+Ctr	46 / 39 dB
RESULTS															
Total calculated indoor noise level				$L_{eq,2}$	44	32	25	26	24	17	3	-		$L_{Aeq,2}$	28 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 12
Room:	Bedroom 1

Night time ($L_{A\text{Max}}$)				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	$L_{\text{Max},1}$	66	56	53	57	62	57	44	19		$L_{A\text{Max},1}$	64 dB
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	$L_{\text{Max},\text{ff}}$	66	56	53	57	62	57	44	19		$L_{A\text{Max},\text{ff}}$	64 dB
ROOM DATA															
Room description and reverberation time	Volume	36	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.44	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	16.80	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40	Dn,e,w / Dn,e,w+Ctr	39 / 37 dB	
Roof	Area	15	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60		Rw / Rw+Ctr	46 / 39 dB
RESULTS															
Total calculated indoor noise level				$L_{\text{Max},2}$	49	35	30	32	25	18	9	-		$L_{A\text{Max},2}$	32 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 24
Room:	Lounge

Daytime (<i>L</i> _{Aeq,16hr})				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	<i>L</i> _{eq,1}	58	50	45	48	57	50	30	4	<i>L</i> _{Aeq,1}	58 dB	
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	<i>L</i> _{eq,ff}	58	50	45	48	57	50	30	4	<i>L</i> _{Aeq,ff}	58 dB	
ROOM DATA															
Room description and reverberation time	Volume	36	Living Room	RT60	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3		s	
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	2.76	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36	Rw / Rw+Ctr	29 / 25 dB	
Wall	Area	16.91	Brick and block external wall	Rw	34	40	44	45	51	56	60	63	Rw / Rw+Ctr	50 / 47 dB	
Vent	No. off.	4	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40	Dn,e,w / Dn,e,w+Ctr	39 / 37 dB	
None			--												
RESULTS															
Total calculated indoor noise level				<i>L</i> _{eq,2}	39	28	25	27	23	15	-	-	<i>L</i> _{Aeq,2}	27 dB	

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 24
Room:	Dining

Daytime (<i>L</i> _{Aeq,16hr})				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	<i>L</i> _{eq,1}	60	52	47	50	59	52	32	6	<i>L</i> _{Aeq,1}	60 dB	
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	<i>L</i> _{eq,ff}	60	52	47	50	59	52	32	6	<i>L</i> _{Aeq,ff}	60 dB	
ROOM DATA															
Room description and reverberation time	Volume	54	Kitchen/Dining Room	RT60	0.6	0.6	0.7	0.7	0.8	0.8	0.7	0.6		s	
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	6	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36	Rw / Rw+Ctr	29 / 25 dB	
Wall	Area	30	Brick and block external wall	Rw	34	40	44	45	51	56	60	63	Rw / Rw+Ctr	50 / 47 dB	
Vent	No. off.	4	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40	Dn,e,w / Dn,e,w+Ctr	39 / 37 dB	
None			--												
RESULTS															
Total calculated indoor noise level				<i>L</i> _{eq,2}	41	31	30	29	28	20	3	-	<i>L</i> _{Aeq,2}	31 dB	

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 24
Room:	Bedroom 1

Daytime (<i>L</i> _{Aeq,16hr})				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	<i>L</i> _{eq,1}	58	50	45	48	57	50	30	4		<i>L</i> _{Aeq,1}	58 dB
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	<i>L</i> _{eq,ff}	58	50	45	48	57	50	30	4		<i>L</i> _{Aeq,ff}	58 dB
ROOM DATA															
Room description and reverberation time	Volume	36	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	2.16	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	18.00	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40	Dn,e,w / Dn,e,w+Ctr	39 / 37 dB	
Roof	Area	15	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60		Rw / Rw+Ctr	46 / 39 dB
RESULTS															
Total calculated indoor noise level				<i>L</i> _{eq,2}	41	30	23	23	20	12	-	-		<i>L</i> _{Aeq,2}	25 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 24
Room:	Bedroom 1

Night time ($L_{Aeq,8hr}$)				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	$L_{eq,1}$	57	49	46	48	56	51	31	2		$L_{Aeq,1}$	58 dB
Façade correction factor				C	0	0	0	0	0	0	0	0	0		
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	$L_{eq,ff}$	57	49	46	48	56	51	31	2		$L_{Aeq,ff}$	58 dB
ROOM DATA															
Room description and reverberation time	Volume	36	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	2.16	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	18.00	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40		Dn,e,w / Dn,e,w+Ctr	39 / 37 dB
Roof	Area	15	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60		Rw / Rw+Ctr	46 / 39 dB
RESULTS															
Total calculated indoor noise level				$L_{eq,2}$	40	29	24	23	19	13	-	-		$L_{Aeq,2}$	25 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 24
Room:	Bedroom 1

Night time ($L_{A\text{Max}}$)				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	$L_{\text{Max},1}$	59	51	51	55	59	55	40	12		$L_{A\text{Max},1}$	61 dB
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	$L_{\text{Max},\text{ff}}$	59	51	51	55	59	55	40	12		$L_{A\text{Max},\text{ff}}$	61 dB
ROOM DATA															
Room description and reverberation time	Volume	36	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	2.16	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	18.00	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40		Dn,e,w / Dn,e,w+Ctr	39 / 37 dB
Roof	Area	15	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60		Rw / Rw+Ctr	46 / 39 dB
RESULTS															
Total calculated indoor noise level				$L_{\text{Max},2}$	42	31	29	30	22	17	6	-		$L_{A\text{Max},2}$	30 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 24
Room:	Bedroom 3

Daytime (<i>L</i> _{Aeq,16hr})				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	<i>L</i> _{eq,1}	55	47	47	50	54	45	32	21		<i>L</i> _{Aeq,1}	55 dB
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	<i>L</i> _{eq,ff}	55	47	47	50	54	45	32	21		<i>L</i> _{Aeq,ff}	55 dB
ROOM DATA															
Room description and reverberation time	Volume	19	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.2	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	11.45	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40	Dn,e,w / Dn,e,w+Ctr	39 / 37 dB	
Roof	Area	7.98	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60		Rw / Rw+Ctr	46 / 39 dB
RESULTS															
Total calculated indoor noise level				<i>L</i> _{eq,2}	38	27	25	27	19	9	-	-		<i>L</i> _{Aeq,2}	26 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 24
Room:	Bedroom 3

Night time ($L_{Aeq,8hr}$)				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	$L_{eq,1}$	57	50	45	45	50	44	32	22		$L_{Aeq,1}$	52 dB
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	$L_{eq,ff}$	57	50	45	45	50	44	32	22		$L_{Aeq,ff}$	52 dB
ROOM DATA															
Room description and reverberation time	Volume	19	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.2	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	11.45	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40		Dn,e,w / Dn,e,w+Ctr	39 / 37 dB
Roof	Area	7.98	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60		Rw / Rw+Ctr	46 / 39 dB
RESULTS															
Total calculated indoor noise level				$L_{eq,2}$	40	30	23	22	15	8	-	-		$L_{Aeq,2}$	23 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 24
Room:	Bedroom 3

Night time ($L_{A\text{Max}}$)				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	$L_{\text{Max},1}$	71	62	60	66	64	58	50	38		$L_{A\text{Max},1}$	68 dB
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	$L_{\text{Max},\text{ff}}$	71	62	60	66	64	58	50	38		$L_{A\text{Max},\text{ff}}$	68 dB
ROOM DATA															
Room description and reverberation time	Volume	19	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.2	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	11.45	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40		Dn,e,w / Dn,e,w+Ctr	39 / 37 dB
Roof	Area	7.98	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60		Rw / Rw+Ctr	46 / 39 dB
RESULTS															
Total calculated indoor noise level				$L_{\text{Max},2}$	54	42	38	43	29	22	18	3		$L_{A\text{Max},2}$	41 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 2
Room:	Lounge

Daytime (<i>L</i> _{Aeq,16hr})				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	<i>L</i> _{eq,1}	58	51	50	52	59	51	39	31	<i>L</i> _{Aeq,1}	60 dB	
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	<i>L</i> _{eq,ff}	58	51	50	52	59	51	39	31	<i>L</i> _{Aeq,ff}	60 dB	
ROOM DATA															
Room description and reverberation time	Volume	52	Living Room	RT60	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3		s	
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	5.11	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36	Rw / Rw+Ctr	29 / 25 dB	
Wall	Area	15.05	Brick and block external wall	Rw	34	40	44	45	51	56	60	63	Rw / Rw+Ctr	50 / 47 dB	
Vent	No. off.	4	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40	Dn,e,w / Dn,e,w+Ctr	39 / 37 dB	
None			--												
RESULTS															
Total calculated indoor noise level				<i>L</i> _{eq,2}	39	29	31	30	24	15	8	-	<i>L</i> _{Aeq,2}	30 dB	

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 2
Room:	Dining

Daytime (<i>L</i> _{Aeq,16hr})				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	<i>L</i> _{eq,1}	58	51	50	52	59	51	39	31	<i>L</i> _{Aeq,1}	60 dB	
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	<i>L</i> _{eq,ff}	58	51	50	52	59	51	39	31	<i>L</i> _{Aeq,ff}	60 dB	
ROOM DATA															
Room description and reverberation time	Volume	37	Kitchen/Dining Room	RT60	0.6	0.6	0.7	0.7	0.8	0.8	0.7	0.6		s	
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	4	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36	Rw / Rw+Ctr	29 / 25 dB	
Wall	Area	8.96	Brick and block external wall	Rw	34	40	44	45	51	56	60	63	Rw / Rw+Ctr	50 / 47 dB	
Vent	No. off.	4	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40	Dn,e,w / Dn,e,w+Ctr	39 / 37 dB	
None			--												
RESULTS															
Total calculated indoor noise level				<i>L</i> _{eq,2}	40	30	33	32	28	20	11	1	<i>L</i> _{Aeq,2}	33 dB	

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 2
Room:	Bedroom 1

Daytime (<i>L</i> _{Aeq,16hr})				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	<i>L</i> _{eq,1}	58	51	50	52	59	51	39	31	<i>L</i> _{Aeq,1}	60 dB	
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	<i>L</i> _{eq,ff}	58	51	50	52	59	51	39	31	<i>L</i> _{Aeq,ff}	60 dB	
ROOM DATA															
Room description and reverberation time	Volume	36	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2		s	
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.44	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36	Rw / Rw+Ctr	29 / 25 dB	
Wall	Area	16.80	Brick and block external wall	Rw	34	40	44	45	51	56	60	63	Rw / Rw+Ctr	50 / 47 dB	
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40	Dn,e,w / Dn,e,w+Ctr	39 / 37 dB	
Roof	Area	15	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60	Rw / Rw+Ctr	46 / 39 dB	
RESULTS															
Total calculated indoor noise level				<i>L</i> _{eq,2}	41	30	27	27	22	12	4	-	<i>L</i> _{Aeq,2}	27 dB	

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 2
Room:	Bedroom 1

Night time ($L_{Aeq,8hr}$)				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	$L_{eq,1}$	57	49	45	47	56	50	29	12	$L_{Aeq,1}$	57 dB	
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	$L_{eq,ff}$	57	49	45	47	56	50	29	12	$L_{Aeq,ff}$	57 dB	
ROOM DATA															
Room description and reverberation time	Volume	36	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2		s	
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.44	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36	Rw / Rw+Ctr	29 / 25 dB	
Wall	Area	16.80	Brick and block external wall	Rw	34	40	44	45	51	56	60	63	Rw / Rw+Ctr	50 / 47 dB	
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40	Dn,e,w / Dn,e,w+Ctr	39 / 37 dB	
Roof	Area	15	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60	Rw / Rw+Ctr	46 / 39 dB	
RESULTS															
Total calculated indoor noise level				$L_{eq,2}$	40	28	22	22	19	11	-	-	$L_{Aeq,2}$	24 dB	

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Land North of Milksey Lane
Project number:	24255
Date:	06/03/2025

Plot:	Plot 2
Room:	Bedroom 1

Night time ($L_{A\text{Max}}$)				Octave band centre frequency											
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term		
EXTERNAL NOISE LEVEL															
External noise level			Façade 1	$L_{\text{Max},1}$	73	65	63	69	66	60	53	42		$L_{A\text{Max},1}$	70 dB
Façade correction factor				C	0	0	0	0	0	0	0	0			
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level			Façade 1	$L_{\text{Max},\text{ff}}$	73	65	63	69	66	60	53	42		$L_{A\text{Max},\text{ff}}$	70 dB
ROOM DATA															
Room description and reverberation time	Volume	36	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.44	Generic 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	16.80	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 5000EAW.AC1 (Acoustic trickle)	Dn,e	32	38	37	31	43	43	40	40		Dn,e,w / Dn,e,w+Ctr	39 / 37 dB
Roof	Area	15	Tile/slate 12.5mm plbd ceiling absorbing layer	Rw	22	27	37	43	48	52	56	60		Rw / Rw+Ctr	46 / 39 dB
RESULTS															
Total calculated indoor noise level				$L_{\text{Max},2}$	56	44	40	44	29	21	18	4		$L_{A\text{Max},2}$	42 dB



APPENDIX E

Façade Acoustic Requirements / Scheme of Acoustic Façade Insulation

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