

GREEN ROAD, WIVELSFIELD GREEN - NOISE IMPACT ASSESSMENT

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REPORT

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Approval for issue

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17th December 2024

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1 INTRODUCTION

1.1 Green Road

- 1.1.1 The Acoustics Team at RPS has been commissioned by Taylor Wimpey Strategic Land to provide an acoustic assessment in support of an application for outline planning permission in relation to a residential development at Green Road, Wivelsfield Green, RH17 7QL. The proposed development consists of circa 150 residential developments and sits within the administrative boundary of Lewes District Council (LDC) and East Sussex County Council (ESCC).
- 1.1.2 The site is bounded by Green Road and the houses along it to the north, Wivelsfield Primary School and South Road / Hundred Acre Lane to the east, woodlands and fields to the south, and Eastern Road, the houses on Eastern Road and fields to the west. The surrounding area is rural in character with most of the nearby properties being residential, aside from Wivelsfield Primary School.
- 1.1.3 As the predominant sound source affecting the site is road traffic from Green Road and South Road / Hundred Acre Lane, a noise impact assessment has been undertaken in accordance with the guidance contained in 'Professional Practice Guidance on Planning and Noise – New Residential Development' (ProPG).
- 1.1.4 RPS is a member of the Association of Noise Consultants (ANC), the representative body for acoustics consultancies, having demonstrated the necessary demonstrated the necessary professional and technical competence. The assessment has been undertaken with integrity, objectivity and honesty, in accordance with the Code of Conduct of the Institute of Acoustics (IOA) and ethically, professionally and lawfully, in accordance with the Code of Ethics of the ANC.
- 1.1.5 The technical content of this assessment has been provided by the RPS personnel, all of whom are corporate (MIOA) or associate (AMIOA) members of the IOA, the UK's professional body for those working in acoustics, noise and vibration. Personnel and individual qualifications are provided within the Document Status Table at the start of this report. This report has been peer reviewed within the RPS team to ensure that it is technically robust and meets the requirements of our Integrated Management System.

2 PLANNING POLICY, STANDARDS AND GUIDANCE

2.1 Green Road

2.1.1 The policy, standards and guidance used in this report are:

- Professional Practice Guidance on Planning and Noise – New Residential Development (ProPG).
- Noise Policy Statement for England (NSPE).
- National Planning Policy Framework, 2024 (NPPF).
- Planning Policy Guidance – Noise (PPG-N).
- Association of Noise Consultants (ANC) – Acoustics, Ventilation and Overheating (AVO).
- British Standard (BS) 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings'.
- Lewes District Council – Lewes District Local Plan: Part 1 & 2.

2.1.2 A full summary of the planning policy, standards and guidance is contained in Appendix C.

3 BASELINE CHARACTERISATION AND STAGE 1 RISK ASSESSMENT

3.1 Establishing Baseline Conditions

Measurement Locations and Observations

- 3.1.1 To establish the existing levels of environmental sound affecting the proposed development site, an unattended baseline sound survey was carried out at two locations, LT1 and LT2, between 10th July 2024 and 17th July 2024. A plan showing the measurement locations and site boundary can be found on Figure A.1 in 6.1.5 Appendix A
- 3.1.2 The first unattended survey position (LT1) was located on the north-eastern corner of the site, 10 m south of Green Road and 125 m west of South Road. The microphone was installed 1.5 m above local ground level in a free-field position (more than 3.5 m from any reflective surfaces, other than the ground), with an environmental wind shield.
- 3.1.3 At LT1, at the time of deploying the survey, the main sound source on site was road traffic from Green Road to the north. There was also wind sound, aircraft sound, bird song and distant traffic sound from the southeast. On collection, the acoustic environment was similar, with the addition of some insect sound and children from the nearby school.
- 3.1.4 The second unattended survey position (LT2) was located on the south-eastern edge of the site, 8.5 m from South Road and 55 m south of Wivelsfield Primary School. The microphone was set up 1.5 m above local ground level, in a free-field location, with an environmental wind shield.
- 3.1.5 At LT2, at the time of deploying the survey, the main sound source on site was road traffic from South Road to the east. Children at Wivelsfield Primary school, wind sound and bird song were also audible. On collection, the acoustic environment was similar, with road traffic from Green Road also being audible.

Instrumentation

- 3.1.6 All sound level measurements were made using a 'Class 1' Rion NL-52 sound level meter (SLMs) in accordance with BS 7445-2:1991. Calibration of the equipment was carried out before and after measurements using a Rion NC-74 calibrator. No significant drift ($\geq \pm 0.5$ dB) was observed.
- 3.1.7 Details of the instrumentation used during the survey are provided in Table 3.1 below. Calibration certificates of the equipment used are available upon request.

Table 3.1: Equipment Details

Instrument	Make/Model	Serial Number	Last Calibration Date (before survey)	Measurement Location	Calibration Levels dB		
					Reference	Level at Start	Level at End
Sound Level Meter	Rion NL-52	998566	15/03/2024	LT1	94.0	94.3	94.0
Sound Level Meter	Rion NL-52	998567	18/03/2024	LT2	94.0	94.3	94.1
Calibrator	Rion NC-74	34683836	16/11/2023	LT1 / LT2	94.0	N/A	N/A

Weather Conditions

- 3.1.8 A meteorological station was set up alongside the sound monitor at LT1 to monitor the weather conditions throughout the survey. Overall, there were no periods of wind exceeding 5 ms^{-1} . There were a small number of periods of rain, which have been excluded from this dataset.
- 3.1.9 At LT1, on deployment, the temperature was 18°C , 82 % relative humidity, 0.9 ms^{-1} wind from the southwest and 8 oktas of cloud cover. On collection, the temperature was 21°C , 59 % relative humidity, 0.7 ms^{-1} wind from the southwest and 5 oktas of cloud cover.
- 3.1.10 At LT2, on deployment, the temperature was 19°C , 82 % relative humidity, 0.8 ms^{-1} wind from the southwest and 8 oktas of cloud cover. On collection, the temperature was 20°C , 62 % relative humidity, 0.9 ms^{-1} wind from the southwest and 6 oktas of cloud cover.

Sound Measurement Results

- 3.1.11 Time history plots of the unattended survey data are provided in Figure B.1 and Figure B.2 in Appendix B.
- 3.1.12 Data were logged in 1/3 octave band sound pressure levels in 100 ms samples, with the required assessment parameters and measurement periods extracted in post-processing. The sound pressure levels used in this assessment are the arithmetic average of the various measured daytime $L_{Aeq,16hr}$ and night-time $L_{Aeq,8hr}$ levels, which are themselves the logarithmic averages of all the 15-minute sound pressure data for each day and night-time period, respectively.
- 3.1.13 The maximum ($L_{AFmax,T}$) sound levels have been post-processed into 1-minute periods for all the night-time periods. The L_{AFmax} level used in this assessment is the 10th highest $L_{AFmax,1min}$ level from a representative night-time period.
- 3.1.14 Based on the above, Table 3.2 below provides the representative baseline external sound levels used in this assessment.

Table 3.2: Baseline Survey Data

Measurement Location	Average Daytime $L_{Aeq,16hr}$, dB	Average Night-time $L_{Aeq,8hr}$, dB	10 th Highest Night-time $L_{AFmax,1min}$
LT1	55	49	69
LT2	52	51	72

3.2 Initial Site Noise Risk Assessment

- 3.2.1 The daytime measured sound levels range from 52 – 55 dB $L_{Aeq,16hr}$. The night-time sound levels range from 49 – 51 dB $L_{Aeq,8hr}$.
- 3.2.2 Note d of Table C.1 in Appendix C specifies that, to be regarded as a negligible risk, there should be no more than 10 sound events at night (23:00 – 07:00) with L_{AFmax} levels greater than 60 dB L_{AFmax} . The 10th highest L_{AFmax} levels at both measurement locations are above 60 dB, therefore, the site cannot be regarded as subject to negligible risk.
- 3.2.3 On the basis of the above, when assessed against the ProPG initial risk guidance, the site falls into the 'Low Risk' category.
- 3.2.4 Therefore, a 'Stage 2' assessment is required. This entails the preparation of an Acoustic Design Statement (ADS) to demonstrate a good acoustic design process and show how sound impacts will be mitigated and minimised. The ProPG provides the following guidance for sites that fall into the low categories:

Low Risk

‘At low noise levels, the site is likely to be acceptable from a noise perspective, provided that a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised in the finished development.’

3.2.5 It can therefore be seen that the site is likely to be suitable for residential development as long as:

- A good acoustic design process is followed; and
- An acoustic design statement is produced demonstrating how:
 - Significant noise impacts will be avoided; and
 - Adverse noise impacts will be mitigated and minimised.

4 3D NOISE MODELLING

4.1 Introduction

- 4.1.1 To calculate sound levels associated with road traffic affecting the proposed development, a 3D sound model has been built using SoundPLAN v8.2 acoustic modelling software. The input data for the model has been based upon data gathered during the acoustic surveys, information provided by the client and RPS's experience on other similar projects.
- 4.1.2 The model predicts sound levels under light down-wind conditions based on hemispherical sound propagation with corrections for atmospheric absorption, ground effects, screening and directivity based on the procedure detailed in ISO 9613-2:1996 '*Acoustics – Attenuation of Sound Propagation Outdoors – Part 2: General Method of Calculation*'.

4.2 Calculations and Modelling – Roads

- 4.2.1 Predictions have been undertaken of sound levels across the proposed development site due to road traffic sources. The placement of road sources was based on the imported Ordnance Survey data and maps of the surrounding area and were placed in the model as line sources.
- 4.2.2 Only Green Road and South Road / Hundred Acre Lane have been considered in this assessment. The only other local road which could potentially affect the sound climate at the proposed residential dwellings is Eastern Road, which has very little through-traffic compared to the other two and as such has been discounted.
- 4.2.3 The inputs of the road sources are based on the measured data from the acoustic surveys. These road sources have then been calibrated to ensure they produce levels representative of those measured at LT1 and LT2 during the survey. This has been done for both day and night-time $L_{Aeq,T}$ levels as well as night-time $L_{AFmax,1min}$ levels.
- 4.2.4 Details of the results from the sound modelling can be found on Figure A.2, Figure A.3 and Figure A.4 in 6.1.5 Appendix A.

Other Inputs

- 4.2.5 The following assumptions have been incorporated into the sound model:
- The topography of the site and surrounding area has been obtained from openly available 1 m LiDAR data from the Department for Environment, Food & Rural Affairs (DEFRA);
 - The effect of screening from solid structures (buildings) has been incorporated into the modelling process by importing OS Open Data into the sound model;
 - The ground type in the model has been set to soft ($G=1$) for the development site and nearby area.

5 ACOUSTIC DESIGN STATEMENT – STAGE 2

5.1 Acoustic Design Statement

5.1.1 The ProPG recommends that a Stage 2 risk assessment contains the following key elements:

- Demonstration of a good acoustic design statement;
- Assessment of internal noise levels;
- Assessment of external amenity area noise; and
- Assessment of other relevant issues.

5.1.2 The ProPG also states that planning applications for new residential developments should include evidence that the following have been properly considered:

1. Check the feasibility of relocating, or reducing noise levels from relevant sources;
2. Consider options for planning the site or building layouts;
3. Consider the orientation of the proposed building(s);
4. Select construction types and methods for meeting building performance requirements;
5. Examine the effects of noise control measures on ventilation, fire regulation, health and safety cost, CDM (construction, design and management) etc.;
6. Assess the viability of alternative solutions; and
7. Assess external amenity area noise.

5.1.3 The four key elements and above points are considered in the following sections.

5.2 Good Acoustic Design Process

5.2.1 As the main sound source across the site is road traffic sound, it would not be possible to reduce sound levels at source.

5.2.2 Increasing the distance between a sound source and Noise Sensitive Receivers (NSRs), such as residential dwellings, would decrease the sound level experienced at them. However, with reference to the residential areas shown on Figure A.2, Figure A.3 and Figure A.4 located in Appendix A, the proposed location of the residential dwellings is already far away from Green Road and South Road / Hundred Acre Road and it is unlikely that moving the dwellings any further will make a noticeable difference to the acoustic environment. However, as the overall building layout has not been decided yet, it is advised that the dwellings should be placed as far from these roads as possible.

5.2.3 To mitigate sound levels from the main sound sources through internal building layout, sensitive rooms would need to be located away from external façades directly subject to significant sound sources. As such, it would be advisable to locate sound sensitive rooms such as living rooms and bedrooms away from the north and east facing façades wherever possible.

5.3 Internal Noise Level Assessment

5.3.1 With regard to internal sound levels, the ProPG states that design should:

‘... principally aim, through the use of good acoustic design, to achieve the internal noise level guidelines in noise sensitive rooms with windows open. Where internal noise levels are assessed with windows closed the justification for this should be included in the ADS’

and

'Where the LPA accepts that there is a justification that the internal noise levels can only be practically achieved with windows closed, which may be the case in urban areas and at sites adjacent to transportation noise sources, special care must be taken to design the accommodation so that it provides good standards of acoustics, ventilation and thermal comfort without unduly compromising other aspects of the living environment. In such circumstances, internal noise levels can be assessed with windows closed but with any façade openings used to provide "whole dwelling ventilation" in accordance with Building Regulations Approved Document F (e.g., trickle ventilators) in the open position (see Supplementary Document 2). Furthermore, in this scenario, the internal L_{Aeq} target noise levels should not generally be exceeded.'

- 5.3.2 The ProPG Internal Noise Guideline Levels (INGLs) (reproduced in Table C.2 in Appendix C) are based on the guidance contained in BS 8233:2014 '*Guidance on Sound Insulation and Noise Reduction for Buildings*' and suggest that, for desirable internal acoustic conditions, residential dwellings should be designed such that internal sound levels do not exceed 35 dB $L_{Aeq,16hr}$ and 30 dB $L_{Aeq,8hr}$ in habitable rooms for the day and night-time, respectively.
- 5.3.3 In relation to internal sound levels from maximum sound events, the ProPG INGLs note 4 states:
- 'In most circumstances in noise-sensitive rooms at night (e.g., bedrooms) good acoustic design can be used is that individual noise events do not normally exceed 45 dB L_{AFmax} more than 10 times a night. However, where it is not reasonably practicable to achieve this guideline then the judgement of acceptability will depend not only on the maximum noise levels but also on factors such as the source, number, distribution, predictability and regularity of noise events.'
- 5.3.4 With reference to the current government planning policies, these levels are generally considered to represent the Lowest Observed Adverse Effect Level (LOAEL) (as detailed in Appendix C) for transportation sound, and therefore by achieving these levels no adverse effects from sound would be expected.
- 5.3.5 To calculate the internal sound levels, detailed plans of the individual dwellings is required. However, in accordance with the ANC's 'Acoustic, Ventilation and Overheating' (AVO) guidance, a standard, lowest-specification façade with a window open for ventilation provides up to 13 dB of attenuation of external sound levels. As such, this can be considered the lowest possible façade attenuation.
- 5.3.6 Therefore, to meet the ProPG INGLs without additional façade treatment, external sound levels incident on the façades of the proposed development need to not exceed 48 dB $L_{Aeq,16hr}$ during the day, 43 dB $L_{Aeq,8hr}$ at night and experience a 10th highest $L_{AFmax,1min}$ event not exceeding 58 dB.
- 5.3.7 As can be seen on Figure A.2, Figure A.3 and Figure A.4, the whole of the proposed development area experiences daytime $L_{Aeq,16hr}$ levels of 38 dB or below, night-time $L_{Aeq,8hr}$ levels of 35 dB or below and 10th highest $L_{AFmax,1min}$ levels of 50 dB or below.
- 5.3.8 Therefore, regardless of the façade construction, internal sound levels will be below the ProPG INGLs, and therefore below the LOEAL for transportation sound.

5.4 Ventilation and Overheating

- 5.4.1 It is a requirement of Building Regulations Part F that the following types of ventilation are provided:

- Whole dwelling ventilation (previously referred to as 'background' ventilation);
- Extract ventilation (in kitchens and bathrooms);
- Purge ventilation.

- 5.4.2 The likely acoustic impact of each type of ventilation is discussed in the following sections.

Whole Dwelling Ventilation

- 5.4.3 Due to the relatively low external sound levels, open windows can be used to provide whole dwelling ventilation.

Extract Ventilation

- 5.4.4 Extract ventilation is required in rooms where most pollutants or water vapour are generated, i.e., kitchens (cooker hoods, etc.) and bathrooms (bathroom fans). These spaces are not considered habitable rooms, and the method used to provide ventilation is unlikely to reduce the sound insulation of the façade. Therefore, it is unlikely that providing extract ventilation in these spaces will result in adverse sound impacts.

Purge Ventilation

- 5.4.5 Purge ventilation is required to allow rapid removal of pollutants released from occasional activities (e.g., burning toast or whilst painting) and is normally provided by open windows. It is generally accepted that, as purge ventilation is only required occasionally and for short periods, increases in sound level during the purge ventilation condition (e.g., when windows are opened) will not result in adverse sound impacts.

- 5.4.6 In summary, the above paragraphs shows that the ventilation requirements of the Building Regulations can be provided whilst still meeting the ProPG / BS 8233:2014 internal sound level criteria.

Overheating

- 5.4.7 The normal method of providing relief from overheating is to open windows. When windows are open to provide thermal comfort, it is likely that internal sound levels will increase. As discussed above, the use of open windows will not result in internal sound levels exceeding the ProPG INGLs. To ensure that using open windows to control overheating is appropriate, an assessment in line with the ANCs AVO guidance has been conducted and is detailed below.

5.5 Acoustics, Ventilation & Overheating Assessment

- 5.5.1 A Level 1 AVO Assessment has been carried out in accordance with the guidance detailed in Section C.5. This assessment uses the predicted sound levels at the residential dwellings on site, as detailed on Figure A.2, Figure A.3 and Figure A.4 in conjunction with the AVO Level 1 Risk Assessment Tool in Table C.4 in Appendix C.

- 5.5.2 This assessment shows that day and night-time levels fall into the 'negligible' risk category. This risk category implies that the use of opening windows as a primary means of mitigating overheating is not likely to result in an adverse acoustic impact and that a further, Level 2 Risk assessment is not required.

- 5.5.3 Note 4 of the AVO Level 1 Risk Assessment Tool states:

'Where 78 dB L_{AFmax} is normally exceeded during the night-time period (23:00 – 07:00), a Level 2 Assessment is recommended.'

- 5.5.4 As this is not the case, the development remains in the 'negligible' risk category and there is no need, from a noise perspective, for a Level 2 AVO Risk Assessment.

5.6 External Noise Levels in Amenity Areas

- 5.6.1 With regard to the assessment of external amenity areas, the ProPG refers to the design ranges in BS 8233:2014 with respect to the assessment of external amenity. The ProPG also refers to guidance in the PPG-N. Based on these two documents, the following guidance is provided with respect to the assessment of sound in external amenity areas:

3(ii) “The acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed and noise levels should ideally not be above the range 50 – 55 dB $L_{Aeq,16hr}$.”

- 5.6.2 As shown on Figure A.2, all of the residential areas will experience daytime sound levels below 50 dB $L_{Aeq,16hr}$. Therefore, the requirements for sound levels in external amenity areas of the ProPG will be met.

5.7 Assessment Summary

- 5.7.1 As detailed in the assessment above, the majority of the proposed development area (and all of the proposed development area set aside for residential dwellings) experiences sound levels that will induce internal sound levels below the ProPG guideline levels for daytime $L_{Aeq,16hr}$, night-time $L_{Aeq,8hr}$ and night-time L_{AFmax} . All of the proposed residential areas fall below these levels regardless of design. As such, it is unlikely that sound from transportation sources will cause an adverse impact on the future residents of the proposed development.

5.8 Compliance with National and Local Policy

ProPG

- 5.8.1 The assessment detailed above shows internal sound levels due to road traffic sound will meet the guideline values contained within the ProPG with standard façade treatment for all dwellings. External levels due to road traffic sources in outdoor amenity areas will not exceed either the lower or upper ProPG guideline values.
- 5.8.2 The ProPG gives four potential recommendations to be made to the decision maker based on the findings of the assessment process. These recommendations are:
- Planning consent may be granted without any need for noise conditions;
 - Planning consent may be granted subject to the inclusion of suitable noise conditions;
 - Planning consent should be refused on noise grounds in order to avoid significant adverse effects (“avoid”); or
 - Planning consent should be refused on noise grounds in order to prevent unacceptable adverse effects.
- 5.8.3 Therefore, as the assessment has shown that internal and external noise levels due to transportation will be within acceptable levels without the need for remedial measures, it is recommended that planning permission be granted without noise conditions.

Planning Practice Guidance – Noise (PPGN)

- 5.8.4 The Planning Practice Guidance – Noise (PPGN) forms part of the National Planning Policy Framework (NPPF). It draws on the general guidance in the NPPF, the National Policy Statement for England (NSPE) and various British Standards and gives guidance on the planning best practice with regards to noise.
- 5.8.5 The PPGN provides a relationship between various perceptions of noise, effect level and required action in accordance with the NPPF. This is shown in Appendix C. The main source of noise at the development site is from road traffic sources. Road traffic noise is low across the site and will not cause change in behaviour or any physiological response from future residents. It could potentially slightly affect the acoustic character of the area but not such that there would be a change in quality of life.

- 5.8.6 As such, this would be below the 'Lowest Observed Adverse Effect Level' (LOAEL) detailed in Table C.3. There would therefore be no observed adverse effect, and no specific measures are required to mitigate noise levels.

Local Planning Policy

- 5.8.7 The 'Lewes District Local Plan' (LDLP) details planning requirements for developments within the administrative boundaries of Lewes District Council.
- 5.8.8 Policy DM23: Noise in the Lewes District Local Plan: Part 2 '*Site Allocations and Development Management Policies*' states the acoustic requirements for proposed developments. The section relative to residential development states:
- 'Residential and other noise sensitive development will be only permitted where it can be demonstrated that users of the development will not be exposed to unacceptable noise disturbance from existing or future uses'.
- 5.8.9 As demonstrated above, road traffic is the only noise source affecting the proposed development site. The existing noise levels at the developable areas of the site are low, and subsequently internal and external noise guideline levels will be achieved without the need for additional mitigation. As such, the requirements of Policy DM23 will be met.
- 5.8.10 Consequently, from an acoustic perspective, the proposal is compliant with National Planning Policy, the NPSE and NPPF, the ProPG and local planning policy (Lewes District Council – Lewes District Local Plan: Part 1 & 2). Therefore, there is no reason, from an acoustic perspective, that planning permission should be refused.

6 SUMMARY AND CONCLUSIONS

6.1 Green Road

- 6.1.1 The RPS Acoustics Team has been commissioned by Taylor Wimpey Strategic Land to undertake a noise impact assessment to support a planning application for a residential development at Green Road, Wivelsfield Green, RH17 7QL. The proposed development consists of circa 150 residential dwellings and sits within the administrative boundary of Lewes District Council (LDC) and East Sussex County Council (ESCC).
- 6.1.2 An assessment of potential sound impacts from transportation sound in line with guidance contained in the ProPG was undertaken and showed that internal daytime $L_{Aeq,16hr}$, night-time $L_{Aeq,8hr}$ and night-time L_{AFmax} levels will be below the guideline levels for all of the proposed residential dwellings with open windows and a standard façade treatment. Sound levels in external amenity areas will also be below the upper and lower ProPG guideline levels.
- 6.1.3 An assessment of sound impacts in relation to overheating shows that open windows will be adequate to control overheating and no further assessments of overheating in relation to sound is required.
- 6.1.4 Consequently, from an acoustic perspective, the proposal is compliant with both national policy and guidance (the 'Noise Policy Statement for England', the 'National Planning Policy Framework', the 'ProPG' and BS 8233:2014) and local planning policy ('Lewes District Council – Lewes Core Strategy: Local Plan Part 1 & 2').
- 6.1.5 On this basis, there are no reasons, with regards to sound, why planning permission should not be granted.

Appendix A Figures

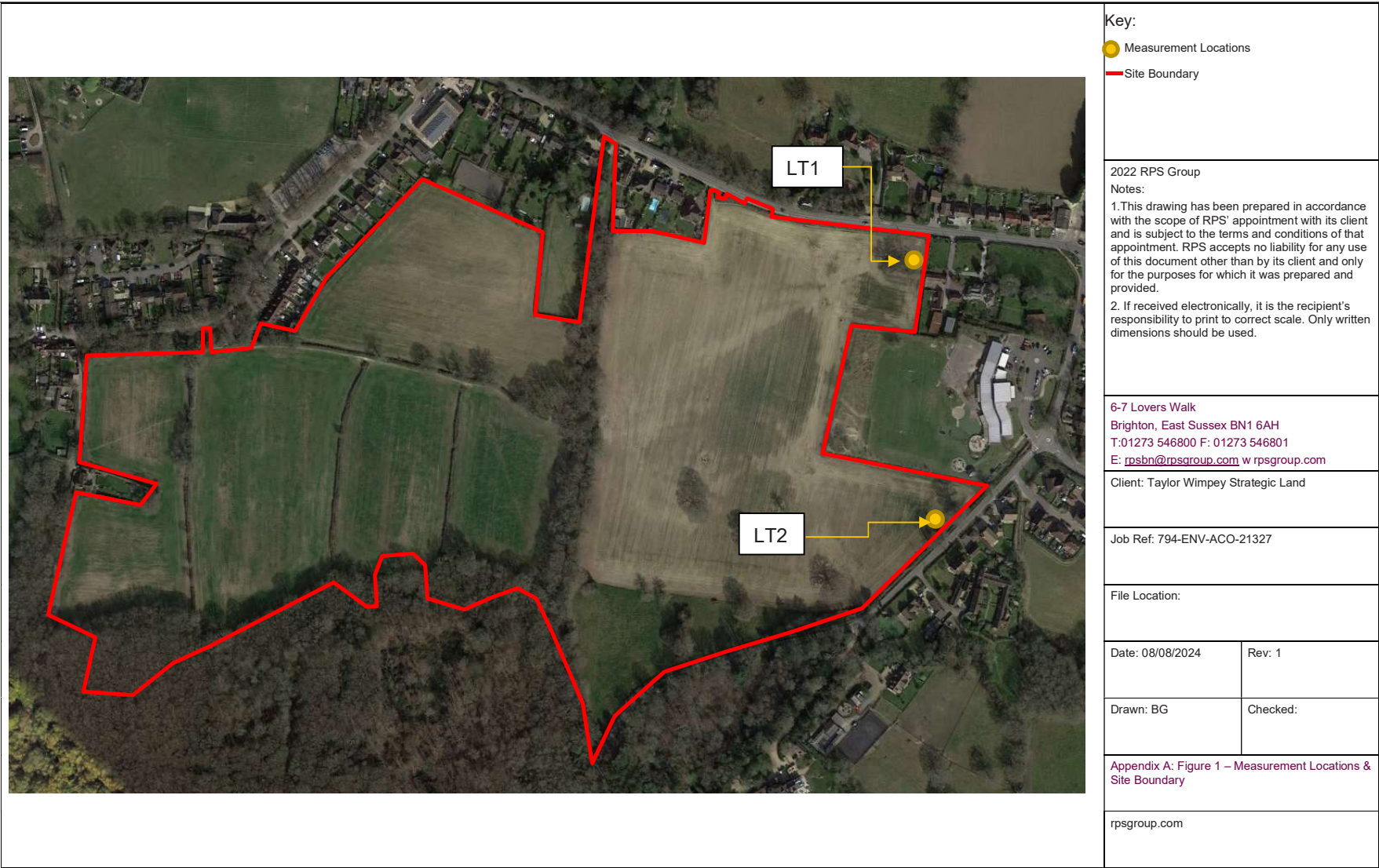


Figure A.1 Proposed Development Site

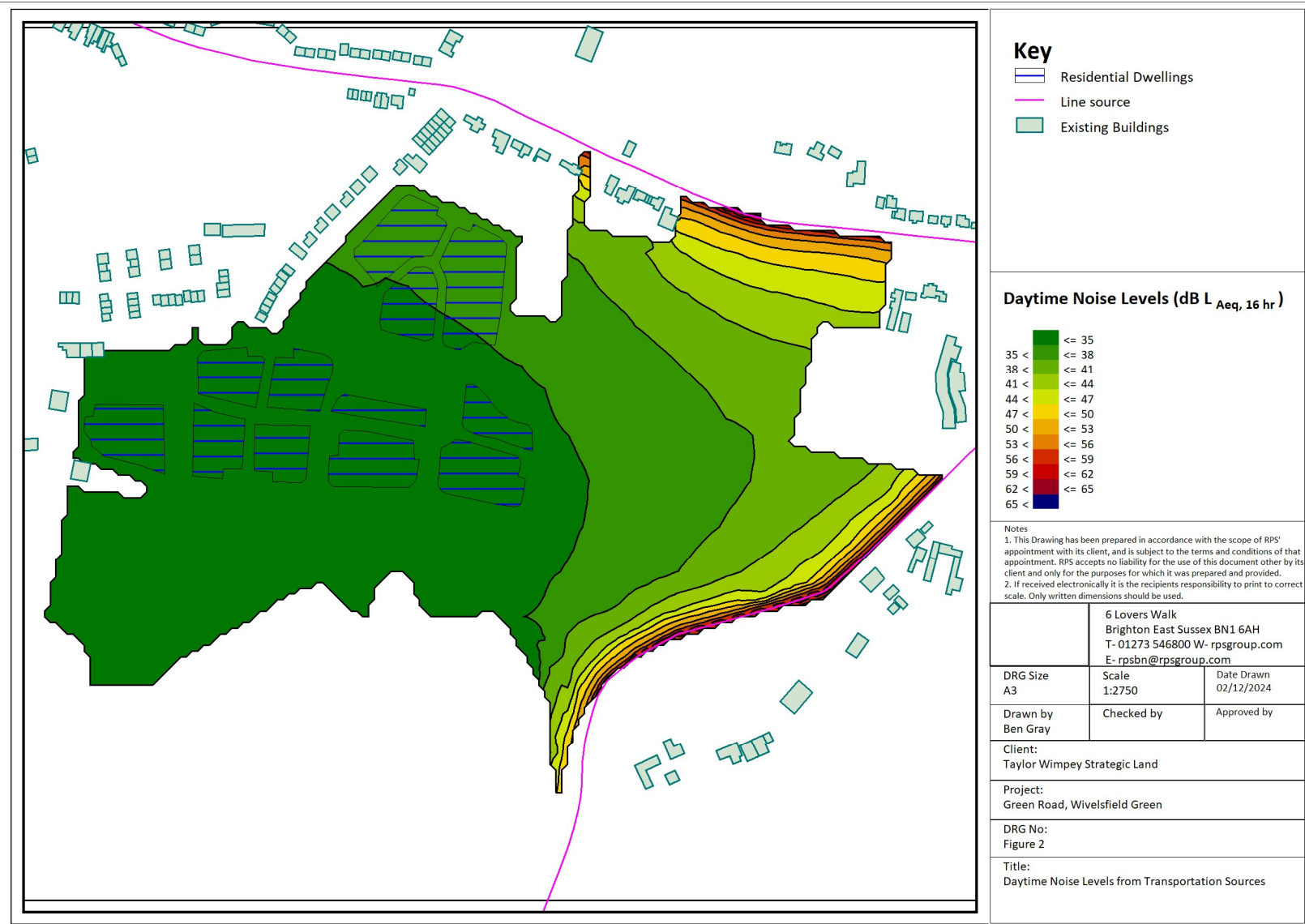


Figure A.2 Daytime Noise Levels

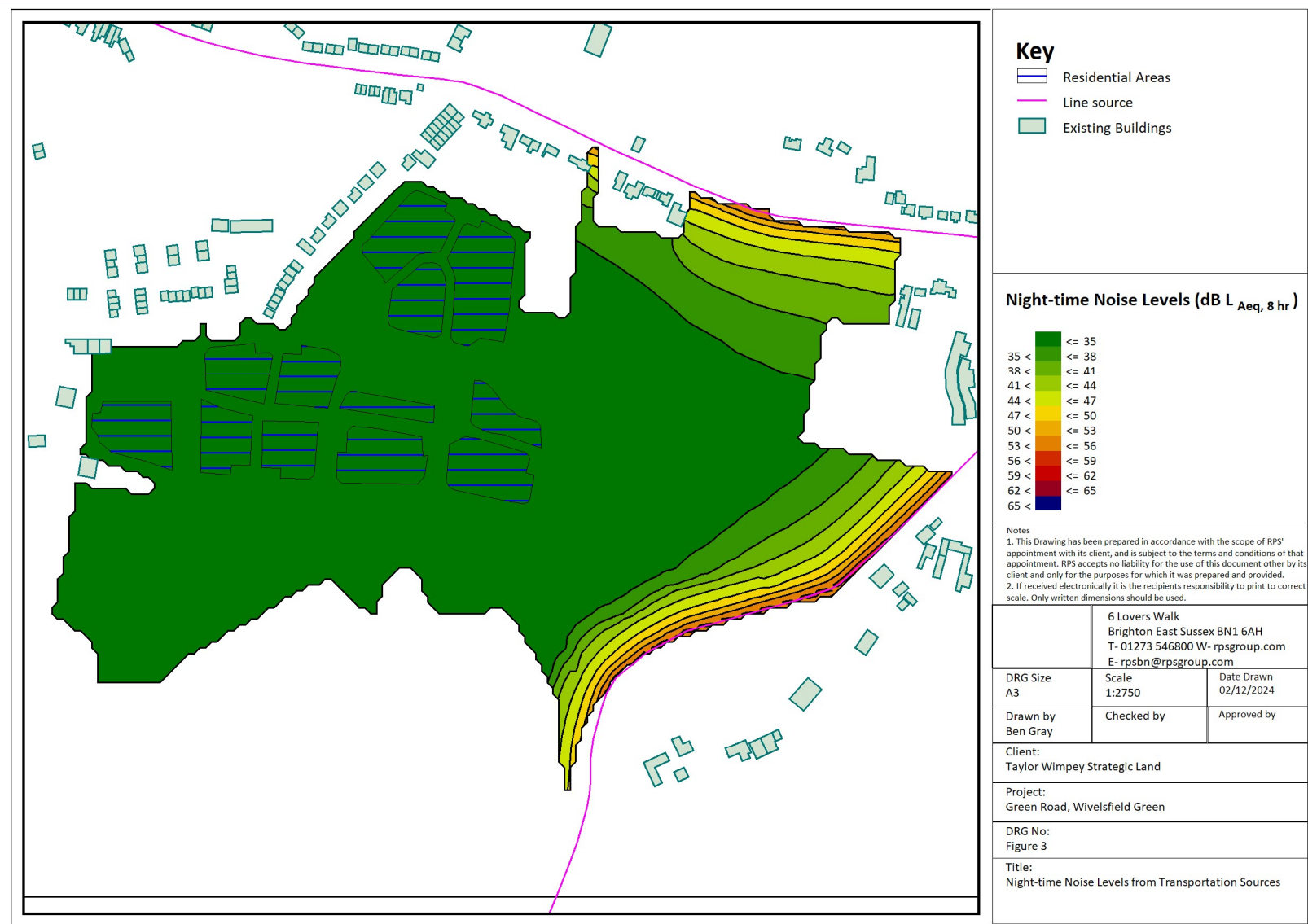


Figure A.3 Night-Time Noise Levels

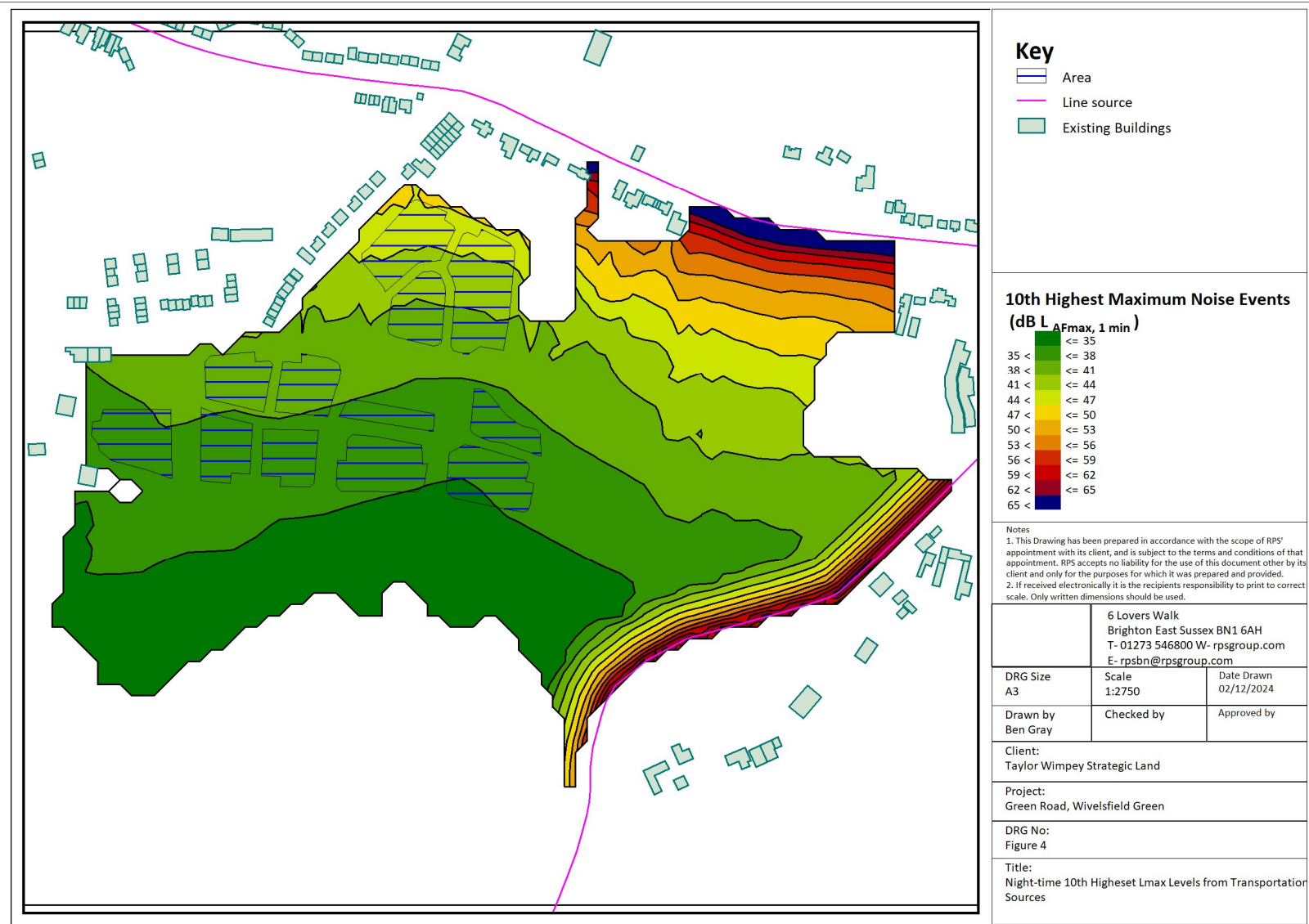


Figure A.4 Maximum Night-Time Noise Levels

Appendix B Survey Data



Measured Noise Levels at LT1, 10 to 17 July 2024

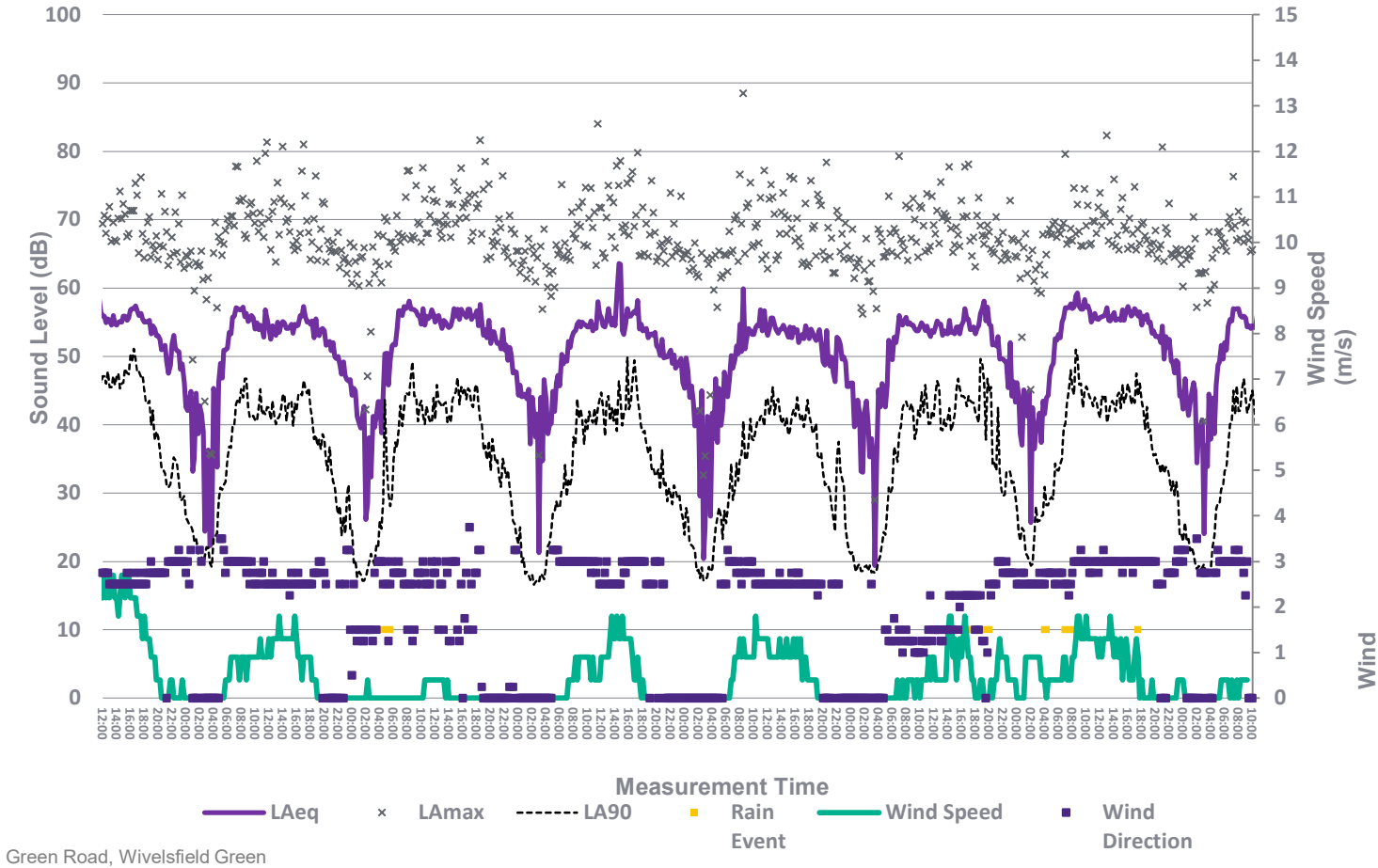


Figure B.1 Survey Data - Day

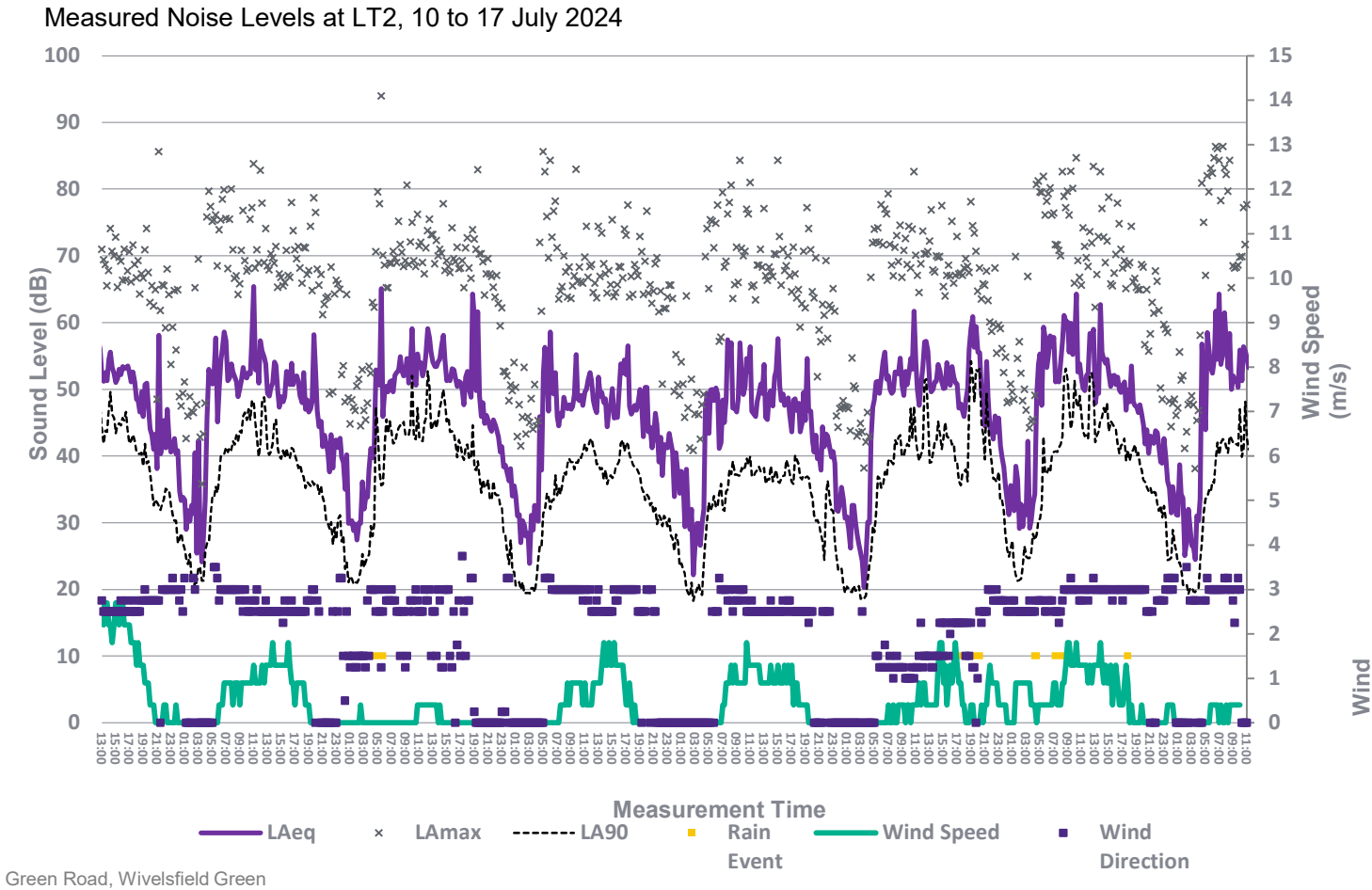


Figure B.2 Survey Data - Day

Appendix C Planning and Legislation

C.1 ProPG Planning and Noise – New Residential Development

- C.1.1 The Professional Practice Guidance on Planning and Noise - New Residential Development (ProPG) [i] provides practitioners with guidance on a recommended approach to the management of noise within the planning system in England for new residential development. The guidance has been produced by the ANC, IOA and Chartered Institute of Environmental Health (CIEH) and is expected to be widely adopted by planning authorities as best practice when considering noise affecting new residential development. The scope of the ProPG is restricted to the consideration of new residential development that will be exposed predominantly to airborne noise from transport sources, though it is considered appropriate to incorporate other sources of noise where they are present but not dominant.

Overview

- C.1.2 The ProPG advocates a systematic, proportionate, risk based, 2-stage, approach. This encourages early consideration of noise issues, facilitates straightforward accelerated decision making for lower risk sites and assists proper consideration of noise issues where the acoustic environment is challenging. The two sequential stages of the overall approach are:
- Stage 1 – an initial noise risk assessment of the proposed development site; and
 - Stage 2 – a systematic consideration of four key elements.
- C.1.3 The four key elements to be undertaken in parallel during Stage 2 of the recommended approach are listed below, with further details in the following sections:
- Element 1 – demonstrating a “Good Acoustic Design Process”;
 - Element 2 – observing “Internal Noise Level Guidelines”;
 - Element 3 – undertaking an “External Amenity Area Noise Assessment”; and
 - Element 4 – consideration of “Other Relevant Issues”.
- C.1.4 The approach is underpinned by the preparation and delivery of an Acoustic Design Statement (ADS). An ADS for a site assessed as high risk should be more detailed than for a site assessed as low risk. An ADS should not be necessary for a site assessed as negligible risk.

Stage 1 Risk Assessment

- C.1.5 Table C.1 summarises the Stage 1 Initial Site Noise Risk Assessment that is provided in Figure 1 of ProPG. The indicative noise levels are intended to provide a sense of the noise challenge at a potential residential development site and should be interpreted flexibly having regard to the locality, the project and the wider context. In the final column, the initial noise risk assessment is aligned with pre-planning application guidance that highlights the increasing importance of good acoustic design as the noise risk increases.

Table C.1: Initial Site Noise Risk Assessment

Noise Risk Assessment	Potential Effect Without Noise Mitigation	Pre-planning Application Advice
Indicative Daytime Noise Levels $L_{Aeq,16hr}$ Indicative Night-time Noise Levels $L_{Aeq,8hr}$ High Medium Low Negligible 70 dB 65 dB 60 dB 55 dB 50 dB 60 dB 55 dB 50 dB 45 dB 40 dB	Increasing risk of adverse effect	High noise levels indicate that there is an increased risk that development may be refused on noise grounds. This risk may be reduced by following a good acoustic design process that is demonstrated in a detailed ADS. Applicants are strongly advised to seek expert advice. As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development. At low noise levels, the site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised in the finished development.
	No adverse effect	These noise levels indicate that the development site is likely to be acceptable from a noise perspective, and the application need not normally be delayed on noise grounds.
Notes: a. Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures. b. Indicative noise levels are the combined free-field noise level from all sources of transport noise and may also include industrial/commercial noise where this is present but is "not dominant". c. $L_{Aeq,16hr}$ is for daytime 0700 – 2300, $L_{Aeq,8hr}$ is for night-time 2300 – 0700. d. An indication that there may be more than 10 noise events at night (2300 – 0700) with $L_{Amax,F} > 60$ dB means the site should not be regarded as negligible risk.		

Stage 2 Element 1 - Good Acoustic Design Process

C.1.6 The ProPG states that planning applications for new residential development should include evidence that the following have been properly considered:

- Check the feasibility of relocating or reducing noise levels from relevant sources.
- Consider options for planning the site or building layout.
- Consider the orientation of proposed building(s).
- Select construction types and methods for meeting building performance requirements.
- Examine the effects of noise control measures on ventilation, fire regulation, health and safety, cost, CDM (construction, design and management) etc.

- Assess the viability of alternative solutions.
- Assess external amenity area noise.

Stage 2 Element 2 – Internal Noise Level Guidelines

C.1.7 The internal noise level guidelines provided under Element 2 above in Figure 2 of ProPG are provided in Table C.2 below. These are based upon the guidance in BS 8233:2014: ‘Guidance on sound insulation and noise reduction for buildings’ [ii].

Table C.2: Internal Noise Guideline Levels

Activity	Location	07:00 – 23:00 hrs	23:00 – 07:00 hrs
Resting	Living room	35 dB L _{Aeq,16r}	-
Dining	Dining room / area	40 dB L _{Aeq,16r}	-
Sleeping (daytime resting)	Bedroom	35 dB L_{Aeq,16r}	30 dB L_{Aeq,16r} 45 dB L_{Amax,F}^(Note 4)

Accompanying Note 4, 5, 6 & 7 from Figure 2 of ProPG states the following:

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. In most circumstances in noise sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45 dB L_{Amax,F} more than 10 times a night. However, where it is not reasonably practicable to achieve this guideline then the judgement of acceptability will depend not only on the maximum noise levels but also on factors such as the source, number, distribution, predictability and regularity of noise events (see Appendix A).

NOTE 5 Designing the site layout and the dwellings so that the internal target levels can be achieved with open windows in as many properties as possible demonstrates good acoustic design. Where it is not possible to meet internal target levels with windows open, internal noise levels can be assessed with windows closed, however any façade openings used to provide whole dwelling ventilation (e.g. trickle ventilators) should be assessed in the “open” position and, in this scenario, the internal L_{Aeq} target levels should not normally be exceeded, subject to the further advice in Note 7.

NOTE 6 Attention is drawn to the requirements of the Building Regulations.

NOTE 7 Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal L_{Aeq} target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved. The more often internal L_{Aeq} levels start to exceed the internal L_{Aeq} target levels by more than 5 dB, the more that most people are likely to regard them as “unreasonable”. Where such exceedances are predicted, applicants should be required to show how the relevant number of rooms affected has been kept to a minimum. Once internal L_{Aeq} levels exceed the target levels by more than 10 dB, they are highly likely to be regarded as “unacceptable” by most people, particularly if such levels occur more than occasionally. Every effort should be made to avoid relevant rooms experiencing “unacceptable” noise levels at all and where such levels are likely to occur frequently, the development should be prevented in its proposed form (see Section 3.D).

Paragraphs 2.34 to 2.36 of ProPG contain guidance regarding the use of open windows in relation to ventilation and overheating:

C.1.8 Where the LPA accepts that there is a justification that the internal target noise levels can only be practically achieved with windows closed, which may be the case in urban areas and at sites adjacent to transportation noise sources, special care must be taken to design the accommodation

so that it provides good standards of acoustics, ventilation and thermal comfort without unduly compromising other aspects of the living environment. In such circumstances, internal noise levels can be assessed with windows closed but with any façade openings used to provide “whole dwelling ventilation” in accordance with Building Regulations Approved Document F [iii] (e.g. trickle ventilators) in the open position (see Supplementary Document 2). Furthermore, in this scenario the internal L_{Aeq} target noise levels should not generally be exceeded.

- C.1.9 It should also be noted that the internal noise level guidelines are generally not applicable under “purge ventilation” conditions as defined by Building Regulations Approved Document F, as this should only occur occasionally (e.g. to remove odour from painting and decorating or from burnt food).
- C.1.10 In addition to providing purge ventilation, open windows can also be used to mitigate overheating. Therefore, should the LPA accept a scheme is to be assessed with windows closed, but this scheme is reliant on open windows to mitigate overheating, it is also necessary to consider the potential noise impact during the overheating condition. In this case a more detailed assessment of the potential impact on occupants should be provided in the ADS. It should be noted that overheating issues will vary across the country and any specific design solutions will need to be developed alongside advice from energy consultants.
- C.1.11 Paragraph 2.38 of ProPG states the following with respect to mechanical service plant:
- ‘Where mechanical services are used as part of the ventilation or thermal comfort strategy for the scheme, the impact of noise generated by these systems on occupants should also be assessed’.

Stage 2 Element 3 – External Amenity Area Noise Assessment

- C.1.12 The ProPG refers to the design ranges in BS 8233:2014 with respect to the assessment of external amenity, as well as guidance in the PPG-N. Based on these two documents the following guidance is provided with respect to the assessment of noise in external amenity areas:

3(i) *“If external amenity spaces are an intrinsic part of the overall design, the acoustic environment of those spaces should be considered so that they can be enjoyed as intended”.*

3(ii) *“The acoustic environment of external amenity areas that are an intrinsic part of the overall design should always be assessed and noise levels should ideally not be above the range 50 – 55 dB $L_{Aeq, 16hr}$.”*

3(iii) *“These guideline values may not be achievable in all circumstances where development might be desirable. In such a situation, development should be designed to achieve the lowest practicable noise levels in these external amenity spaces.”*

3(iv) *“Whether or not external amenity spaces are an intrinsic part of the overall design, consideration of the need to provide access to a quiet or relatively quiet external amenity space forms part of a good acoustic design process.”*

3(v) *“Where, despite following a good acoustic design process, significant adverse noise impacts remain on any private external amenity space (e.g. garden or balcony) then that impact may be partially off-set if the residents are provided, through the design of the development or the planning process, with access to:*

- *a relatively quiet facade (containing openable windows to habitable rooms) or a relatively quiet externally ventilated space (i.e. an enclosed balcony) as part of their dwelling; and/or*

- *a relatively quiet alternative or additional external amenity space for sole use by a household, (e.g. a garden, roof garden or large open balcony in a different, protected, location); and/or*
- *a relatively quiet, protected, nearby, external amenity space for sole use by a limited group of residents as part of the amenity of their dwellings; and/or*
- *a relatively quiet, protected, publically accessible, external amenity space (e.g. a public park or a local green space designated because of its tranquillity) that is nearby (e.g. within a 5 minutes walking distance)."*

Stage 2 Element 4 – Other Relevant Issues

C.1.13 The ProPG states that the following other relevant issues, should be considered, where appropriate:

- 4(i) compliance with relevant national and local policy
- 4(ii) magnitude and extent of compliance with the ProPG criteria
- 4(iii) likely occupants of the development
- 4(iv) acoustic design v unintended adverse consequences
- 4(v) acoustic design v wider planning

Planning Recommendations

C.1.14 Having followed this approach to its end, it is envisaged that noise practitioners will then have a choice of one of four possible recommendations to present to the decision maker. In simple terms, the choice of recommendations are as follows:

- grant without conditions;
- grant with conditions;
- "avoid" significant adverse effects (corresponding to SOAEL within national planning policy); or
- "prevent" unacceptable adverse effects (corresponding to the UAEL within national planning policy).

C.2 Noise Policy Statement for England

C.2.1 The Noise Policy Statement for England (NPSE) [iv], published in March 2010 by Defra, aims to provide clarity regarding current policies and practices to enable noise management decisions to be made within the wider context, at the most appropriate level, in a cost-effective manner and in a timely fashion.

C.2.2 Paragraph 1.6 of the NPSE sets out the long-term vision and aims of Government noise policy:

"Noise Policy Vision

Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.”

“Noise Policy Aims

Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- 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.”

C.2.3 The aims require that all reasonable steps should be taken to avoid, mitigate and minimise adverse effects on health and quality of life whilst also taking into account the guiding principles of sustainable development, which include social, economic, environmental and health considerations.

C.2.4 With regard to the terms ‘significant adverse’ and ‘adverse’ included in the ‘Noise Policy Aims’, these are explained further in the ‘Explanatory Note’ as relating to established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation which are:

‘NOEL – No Observed Effect Level

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

LOAEL – Lowest Observed Adverse Effect Level

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

C.2.5 Defra has then extended these concepts for the purpose of the NPSE to introduce the concept of:

‘SOAEL – Significant Observed Adverse Effect Level

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

C.2.6 The accompanying explanation states:

‘It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available’.

C.2.7 With regard to ‘further evidence’, Defra has commissioned research to try and identify the levels at which the above effects occur. However, this research has been largely inconclusive and varies with source. On this basis, and until further guidance becomes available, and given that there is no specific guidance in the NPPF on noise, there is no justification to vary assessment methods and criteria from those previously adopted from British Standards etc.

C.3 National Planning Policy Framework, 2024

C.3.1 The National Planning Policy Framework (NPPF) [v] sets out the Government’s planning policies for England and how these are expected to be applied. The emphasis of the Framework is to allow development to proceed where it can be demonstrated to be sustainable. In relation to noise, Paragraph 198 of the Framework states:

“Planning policies and decisions should 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 the development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and*
- c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.'*

C.3.2 The point 'a)' refers to 'significant adverse impacts' which relates to the 'significant observed adverse effect level' (SOAEL) in the Noise Policy Statement for England (NPSE), although the term 'effect' is used instead of the term 'impact'. However, these have been deemed to be interchangeable in this context. Therefore, given the comments above on the NPSE with regard to assessment methods and criteria, the current content of the NPPF does not require any change in previously adopted approaches.

C.4 Planning Practice Guidance - Noise (PPGN)

C.4.1 The Government has published Planning Practice Guidance on a range of subjects including noise [v]. The guidance forms part of the NPPF and provides advice on how to deliver its policies. The PPGN reiterates general guidance on noise policy and assessment methods provided in the NPPF, NPSE and British Standards (BSs) and contains examples of acoustic environments commensurate with various effect levels. Paragraph 006 of the PPGN explains that:

'The subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation.'

C.4.2 According to the PPGN, factors that can influence whether noise could be of concern include:

- "the source and absolute level of the noise together with the time of day it occurs. Some types and level of noise will cause a greater adverse effect at night than if they occurred during the day – this is because people tend to be more sensitive at night as they are trying to sleep. The adverse effect can also be greater simply because there is less background noise at night;
- for a new noise making source, how the noise from it relates to the existing sound environment;
- for non-continuous sources of noise, the number of noise events, and the frequency and pattern of occurrence of the noise;
- the spectral content of the noise (i.e. whether or not the noise contains particular high or low frequency content) and the general character of the noise i.e. whether or not the noise contains particular tonal characteristics or other particular features); and
- the local arrangement of buildings, surfaces and green infrastructure, and the extent to which it reflects or absorbs noise.

More specific factors to consider when relevant include:

- the cumulative impacts of more than one source;
- whether adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time (and the effect this may have on living conditions). In both cases a suitable alternative means of ventilation is likely to be necessary. Further information on ventilation can be found in the [Building Regulations](#).

- in cases where existing noise sensitive locations already experience high noise levels, a development that is expected to cause even a small increase in the overall noise level may result in a significant adverse effect occurring even though little to no change in behaviour would be likely to occur;
 - Noise Action Plans (where they exist), and, in particular the Important Areas identified through the process associated with the Environmental Noise Directive and corresponding regulations should be taken into account. Defra's website has information on [Noise Action Plans and Important Areas](#). Local authority environmental health departments will also be able to provide information about Important Areas.
 - *the effect of [noise on wildlife](#). Noise can adversely affect wildlife and ecosystems. Particular consideration needs to be given to the potential effects of noisy development on international, national and locally designated sites of importance for biodiversity;*
 - where external amenity spaces are an intrinsic part of the overall design, the acoustic environment of those spaces should be considered so that they can be enjoyed as intended.
 - some commercial developments including restaurants, hot food takeaways, night clubs and public houses can have particular impacts, not least because activities are often at their peak in the evening and late at night. Local planning authorities will wish to bear in mind not only the noise that is generated within the premises but also the noise that may be made by customers in the vicinity."
- C.4.3 Note that the NPPF was revised in December 2024 such that the third bullet of paragraph 123 of the NPPF is now contained within paragraph 200 of the NPPF. This now states:

'200. Planning policies and decisions should 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.'

- C.4.4 The PPGN provides a relationship between various perceptions of noise, effect level and required action in accordance with the NPPF. This is reproduced in the table below.

Table C.3: Noise Exposure Hierarchy Based on the Likely Average Response

Response	Examples of outcomes	Increasing effect level	Action
No Observed Effect Level			
Not present	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more	Observed Adverse Effect	Mitigate and reduce to a minimum

	loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.		
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

- C.4.5 The PPGN describes sound that is not noticeable to be at levels below the NOEL. It describes exposures that are noticeable but not to the extent there is a perceived change in quality of life as below the LOAEL and need no mitigation. With reference to the definition of noise in the NPSE, such emissions are 'sound' and not 'noise'. On this basis, the audibility of sound from a development is not, in itself, a criterion to judge noise effects that is commensurate with national planning policy.
- C.4.6 The PPGN suggests that noise exposures above the LOAEL cause small changes in behaviour. Examples of noise exposures above the LOAEL provided in the PPGN is having to turn up the volume on the television; needing to speak more loudly to be heard; where there is no alternative ventilation, closing windows for some of the time because of the noise; or, a potential for some reported sleep disturbance. In line with the NPPF and NPSE, the PPGN states that consideration needs to be given to mitigating and minimising effects above the LOAEL but taking account of the economic and social benefits being derived from the activity causing the noise.
- C.4.7 The PPGN suggests that noise exposures above the SOAEL cause material changes in behaviour. Examples of noise exposures above the SOAEL provided in the PPGN are, where there is no alternative ventilation, keeping windows closed for most of the time or avoiding certain activities during periods when the noise is present; and/or there is a potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. In line with the NPPF and NPSE, the PPGN states that effects above the SOAEL should be avoided and that whilst the economic and social benefits being derived from the activity causing the noise must be taken into account, such exposures are undesirable.
- C.4.8 The PPGN suggests that a noise impact may be partially offset if the residents of affected dwellings have access to a relatively quiet part of their dwelling, private external amenity area and/or external public or private amenity space nearby.

C.5 Acoustics, Ventilation & Overheating (AVO)

- C.5.1 The typical method of providing relief from overheating the use of open windows which likely results in an increase in the internal noise levels. The resulting impacts depend on two factors:
- The level of noise inside the habitable rooms; and
 - The frequency with which open windows are required and the occupants are exposed to higher noise levels.
- C.5.2 The proposed dwellings, where possible, should be designed to reduce the duration and frequency that windows are required to be opened to remove excess heat and thus minimise the adverse noise impacts.
- C.5.3 The Acoustics, Ventilation and Overheating Guide (AVO)¹ provides a means of assessing the potential adverse impacts due to noise if open windows are relied upon to control overheating. This guidance contributes to the practice of good acoustic design as described in ProPG.
- C.5.4 A Level 1 assessment assesses the risks based upon the external levels at the proposed façade. The following guidance is provided to assess the potential impacts due to noise if open windows are proposed for overheating control.

¹ The Association of Noise Consultants (ANC), Institute of Acoustics (2020), '*Acoustics, Ventilation and Overheating Residential Design Guide, Version 1.1*'

Table C.4: Level 1 AVO Risk Assessment

Risk Category – Level 1 Assessment	Potential Effect Without Noise Mitigation	Recommendation for Level 2 Assessment
The diagram illustrates the Level 1 AVO Risk Assessment process. It features a vertical color gradient bar on the left, transitioning from green at the bottom to red at the top. This bar is divided into four risk categories: Negligible (green, 45-50 dB), Low (light green, 50-55 dB), Medium (yellow, 55-60 dB), and High (orange/red, 60-65 dB). To the left of the bar, noise levels are indicated as $L_{Aeq, T}$ [Note 3] during 07:00 - 23:00. To the right, they are indicated as $L_{Aeq, 8hr}$ during 23:00 - 07:00. A large purple arrow points upwards, labeled 'Increasing risk of adverse effect'. To the right of the bar, a horizontal line separates the 'Recommended' section (High risk) from the 'Optional' section (Medium and Low risk). Below the 'Optional' section, another horizontal line separates it from the 'Not required' section (Negligible risk). Text descriptions for each risk category are provided in the 'Potential Effect Without Noise Mitigation' column.		
High	Increasing risk of adverse effect	Recommended
Medium		Optional
Low		
Negligible	Use of open windows as primary means of mitigating overheating not likely to result in adverse effect.	Not required

Note 1 The noise levels suggested assumes a steady road traffic noise source but may be adapted for other types of transport. All levels are external free-field noise levels.

Note 2 The values presented in this table should not be regarded as fixed thresholds and reference can also be made to relevant dose-response relationships.

Note 3 A decision must be made regarding the appropriate averaging period to use. The averaging period should reflect the nature of the noise source, the occupancy profile and time s at which overheating might be likely to occur. Further guidance can be found in the IEMA Guidelines.

Note 4 Where 78 dB $L_{AF, max}$ is normally exceeded during the night-time period (2300-0700), a Level 2 assessment is recommended.

Note 5 The risk of adverse effect occurring will also depend on how frequently and for what duration the overheating condition occurs.

Note 6 To evaluate the risk category for a dwelling, all three aspects of external noise exposure (i.e. daytime, night-time and individual noise events) should be evaluated. The highest risk category for any of the three aspects applies.

C.5.5 Following a Level 1 assessment, sites with areas that are deemed to be at high risk of adverse effect due to noise should be subject to a Level 2 assessment which is dependent upon the internal noise level and the frequency and duration that the site is likely to overheat, the latter of which requires an overheating assessment by a suitably qualified engineer.

C.6 British Standard 8233:2014 ‘Guidance on sound insulation and noise reduction for buildings’

C.6.1 BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' [vii] provides guideline values for internal ambient noise levels in spaces when they are unoccupied. A summary of the levels recommended in paragraph 7.7.1 of subclause 7.7 and Table 4 of BS 8233 for rooms used for resting, dining and sleeping is provided in Table A.1 below. The guideline values in Table A.1 are annual average values and do not have to be achieved in all circumstances.

C.6.2 The guidance in paragraph 7.7.1 of Section 7.7 of BS 8233 applies to external noise as it affects the internal acoustic environment from sources without a specific character. The paragraph states, including the accompanying note:

“... Occupants are usually more tolerant of noise without a specific character than, for example, that from neighbours which can trigger complex emotional reactions. ...”

“NOTE 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.”

Table C.5: BS 8233:2014 Design Ranges

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

C.6.3 Note 7 of the following text states the following:

“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.”

C.6.4 In relation to external noise levels, the second paragraph of 7.7.3.2 states that:

"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.

Other locations, such as balconies, roof gardens and terraces, are also important in residential buildings where normal external amenity space might be limited or not available, i.e. in flats, apartment blocks, etc. In these locations, specification of noise limits is not necessarily appropriate. Small balconies may be included for uses such as drying washing or growing pot plants, and noise limits should not be necessary for these uses. However, the general guidance on noise in amenity space is still appropriate for larger balconies, roof gardens and terraces, which might be intended to be used for relaxation. In high-noise areas, consideration should be given to protecting these areas by screening or building design to achieve the lowest practicable levels. Achieving levels of 55 dB $L_{Aeq,T}$ or less might not be possible at the outer edge of these areas, but should be achievable in some areas of the space."

- C.6.5 Clause 7.7.4 and Table 6 of BS 8233 suggest ambient noise levels within non-domestic buildings that should not normally be exceeded. The design ranges provided in Table 6 are reproduced in Table C.6 below.

Table C.6: BS 8233:2014 Non-Domestic Building Design Ranges

Activity	Location	Design range $L_{Aeq,T}$ (dB)
Speech or telephone communications	Department store, cafeteria, canteen, kitchen	50 - 55
	Concourse, corridor, circulation	45 - 55
Study and work requiring concentration	Library, gallery, museum	40 - 50
	Staff/meeting room, training room	35 - 45
	Executive office	35 - 40
Listening	Place of worship, counselling, meditation, relaxation	30 - 35

- C.6.6 At paragraph 6.5.2, BS 8233 states that "Where industrial noise affects residential or mixed residential areas, the methods for rating noise in BS 4142 should be applied". However, the assessment contained within BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' [viii] requires consideration of the absolute levels of sound emissions at NSRs. This is required for the consideration of the context of the specific sound in the BS 4142 assessment and comparison with the 'examples of outcomes' described in the Planning Practice Guidance on Noise (PPGN) [ix] (e.g. whether certain activities are likely to be avoided within dwellings during periods of intrusion).
- C.6.7 Sound of an industrial nature may include features such as a distinguishable, discrete and continuous tone, be irregular enough to attract attention, or strong low-frequency content. In which case and with reference to the accompanying note to paragraph 7.7.1, lower noise limits than those in subclause 7.7 of the Standard might be appropriate. BS 4142 provides guidance on methods for assessing the audibility of tones in sound or the prominence of impulsive sounds.
- C.6.8 NB - BS 8233 should not be used for the purpose of assessing the effects of a new noise source on existing noise sensitive development contrary to what the Standard states in the Introduction. The committee chairman has indicated that a 'not' is missing from the note in the Introduction although this issue is confused by the last paragraph in Clause 5.1.

C.7 Lewes Local Plan: Part 1 & 2

- C.7.1 The Lewes Local Plan contains the following policies relating to noise:

Policy DM20: Pollution Management

C.7.2 Development that may potentially contribute to, or be adversely affected by, unacceptable levels of soil, air, water, noise or light pollution will only be permitted where it can be demonstrated that:

- 1) Its location is appropriate in terms of land use in relation to the uses in the surrounding area;
- 2) The development will not have an unacceptable impact on health, the natural environment or general amenity;
- 3) The development will not have an adverse impact on the use of other land;
- 4) Where relevant, the appropriate after-use of land can be secured.

Policy DM23: Noise

C.7.3 Residential development and other noise sensitive development will only be permitted where it can be demonstrated that users of the development will not be exposed to unacceptable noise disturbance from existing or future uses.

C.7.4 Noise-generating development will only be permitted where it can be demonstrated that nearby noise sensitive uses (existing or planned) will not be exposed to noise impact that will adversely affect the amenity of existing or future users. Where appropriate, proposals will be required to mitigate noise impacts through careful planning, layout and design. In assessing mitigation proposals, account will be taken of:

- 1) The location, layout and design of the proposed development;
- 2) Existing levels of background noise;
- 3) Measures to reduce or contain generated noise;
- 4) Hours of operation and servicing.

C.7.5 Where noise sensitive uses are likely to be exposed to significant or unacceptable noise disturbance, the Council will require that applications are supported by a Noise Impact Assessment prepared in accordance with the Planning Noise Advice Document: Sussex (July 2015) or any subsequent updated document. Development that would expose noise sensitive uses to unacceptable noise levels will not be permitted.

Policy DM 25: Design

C.7.6 Development which contributes towards local character and distinctiveness through high quality design will be permitted where the following criteria are met:

...

- 7) There will be no unacceptable adverse impact on the amenities of neighbouring properties in terms of privacy, outlook, daylight, sunlight, noise, odour, light intrusion, or activity levels.

References

- i Association of Noise Consultants, Institute of Acoustics and Chartered Institute of Environmental Health Professional Practice Guidance on Planning and Noise - New Residential Development. May 2017.
- ii British Standards Institution. British Standard 8233:2014 Guidance on sound insulation and noise reduction for buildings.
- iii The Building Regulations 2010. Approved Document F: Ventilation. Office of the Deputy Prime Minister. 2010.
- iv Department for Environment, Food and Rural Affairs. Noise Policy Statement for England. Defra. 2010.
- v Ministry of Housing, Communities and Local Government. National Planning Policy Framework: HMSO. 2024.
- vi Ministry of Housing, Communities and Local Government. National Planning Practice Guidance – Noise. 2024
- vii British Standards Institution. British Standard 8233:2014 Guidance on sound insulation and noise reduction for buildings.
- viii British Standards Institution. British Standard 4142:2014+A1:2019. Methods for rating and assessing industrial and commercial sound.
- ix Ministry of Housing, Communities and Local Government. National Planning Practice Guidance – Noise. March 2019