

Report

Land off Echo Hill, Royston

Noise Screening Report

For Gladman Developments Ltd

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1 Introduction

1.1 Scope and Background

- 1.1.1 This report describes the potential impact of noise on the proposed residential development (the "Development") the land off Echo Hill, Royston (the 'Site').
- 1.1.2 The Site falls within the administrative boundary of North Hertfordshire District Council (NHDC), and was subject to an outline planning application¹ for residential development in 2020. A noise screening report was submitted with the application in support of the then proposed development, which concluded that the site was suitable for residential development. NHDC's Environmental Health had no objections to the findings of the report and recommended one noise conditions be attached to an approval. The application was refused in 2021 on grounds other than noise. Therefore, the principle of residential development on the site in noise terms has already been established.
- 1.1.3 The assessment has been carried out by Noise Consultants (NCL), part of Logika Group, and has been prepared in accordance with National and local policy and guidance and by reference to relevant acoustics standards and guidance. A glossary of acoustic terminology is provided in **Appendix A1**.

1.2 Existing Site

- 1.2.1 The existing Site a field located in a semi-rural setting located to the southeast of Royston. The site is bounded on the north and east by existing dwellings. The A10 (London Road) is located approximately 260m to the east of the Site.
- 1.2.2 Briary Lane runs along the western boundary and provides access to Heath Farm, dwellings close to Heath Farm, Wicker Hall reservoir and fields to the south and south west of the Site only.
- 1.2.3 **Figure 1-1** presents the Site location application boundary and wider Site context.

1.3 Proposed Development

- 1.3.1 The Development will comprise of up to 86no. dwellings, a children's play area, and associated infrastructure with access from Echo Hill to the north of the Site.
- 1.3.2 The Development will benefit from acoustic screening of road traffic noise on the A10, and any noise from Royston Hospital to the east by existing dwellings to the north and east.
- 1.3.3 The proposed development Framework Plan (DFP) is also shown in **Figure 1-1**.

1.4 Existing baseline

- 1.4.1 Road traffic noise from the A10, is expected to be the main constraint to noise sensitive development on the site. However, as the nearest proposed developable areas is at least 260m from the A10.
- 1.4.2 The precise use of Heath Farm to the north-west of the Site is unknown, but is not anticipated to generate any significant operational noise.
- 1.4.3 Some very faint noise from plant at the Wicker Hall reservoir and Royston Hospital sites may be audible on the Site but and is not expected to be dominant or a significant source of noise.

¹ NHDC planning application ref: 20/00744/OP, refused 13 April 2021. Accessible at: <https://pa2.north-herts.gov.uk/online-applications/caseDetails.do?keyVal=Q847BZLKLJN00&caseType=Application>



Contains OpenStreetMap data © OpenStreetMap contributors.

Figure 1-1: Site Location Plan

1.5 Local Authority

Local Policy and Guidance

- 1.5.1 The Site is located within the administrative boundary of the North Hertfordshire District Council. The North Hertfordshire District Council Local Plan (2011–2031) outlines the district's strategy for sustainable development, including housing, employment, and infrastructure. Whilst the Plan does not outline any specific requirements in relation to noise.
- 1.5.2 Policy D3 (Protecting Living Conditions), is relevant to the proposed Development as it states, 'planning permission will be granted for development proposals which do not cause unacceptable harm to living conditions'.

Consultation

- 1.5.3 NCL contacted NHDC's Environmental Health Department by email to discuss the proposed Development and agree upon the scope of any noise assessment that would need to be submitted in support out an outline application for the proposed Development. To date, no response has been received.

2 Assessment Approach

2.1 Future Baseline Conditions

- 2.1.1 As road traffic is expected to be the main source of noise across the Site, representative future baseline conditions have been determined by reference to DEFRA's calculated Round 4 Strategic Noise Maps², developed as part of implementing the Environmental Noise (England) Regulations 2006. The noise maps cover transportation noise exposure for the daytime (07:00-23:00) and night-time (23:00-07:00) periods

2.2 Assessment Criteria

- 2.2.1 The assessment criteria set out in the following sections have been selected in accordance with the relevant local and national policies and guidance (**Section 1.5** and **Appendix A2**, respectively) and by reference to the appropriate acoustics standards (see **Appendix A3**).

ProPG Stage 1: Site Suitability Assessment

- 2.2.2 The ProPG³ site noise risk classification presented in **Table A3-1** of **Appendix A3** is a sliding scale that does not define precise noise exposure limits to site risk classification. The criteria are intended to characterise risk for both external amenity spaces during the day and internal habitable rooms during the day and night. Importantly, the ProPG site risk assessment is normally carried out for an empty site before the site massing and any mitigation measures are applied.
- 2.2.3 For the purposes of this project, the noise thresholds that have been adopted in order to classify site risk are defined in **Table 2-1** for the daytime and night-time period. These thresholds represent the lowest observed adverse effect level (LOAEL), significant observed adverse effect level (SOAEL) and unacceptable adverse effect level (UAEL) as defined in the national noise policy and guidance in **Appendix A2**.

Table 2-1: Site Risk Noise Exposure Thresholds

ProPG Site Risk Category	Noise Exposure Threshold			ProPG Based Pre-Planning Application Advice
	dB LAeq,16hr	dB LAeq,8hr	dB LAfmax	
Negligible (Below LOAEL)	<50	<40	10 th highest <55	Indicates development site is likely to be acceptable from a noise perspective
Low (LOAEL- SOAEL)	50 – 63	40 – 53	10 th highest 55 – 68	Indicates development site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed and demonstrated
Medium (Above SOAEL)	63 – 70	53 – 66	10 th highest 68 – 81	Indicated site is less suitable from a noise perspective. A subsequent application may be refused unless

² Department for the Environment, Farming and Rural Affairs. Road Noise - All Metrics - England Round 4. Available at <https://environment.data.gov.uk/explore/562c9d56-7c2d-4d42-83bb-578d6e97a517> (Accessed 16 March 2025)

³ Professional Practice Guidance on Planning and Noise: New Residential Development (2017). Institute of Acoustics, Association of Noise Consultants, and Chartered Institute of Environmental Health.

ProPG Site Risk Category	Noise Exposure Threshold			ProPG Based Pre-Planning Application Advice
	dB LAeq,16hr	dB LAeq,8hr	dB LAFmax	
				a good acoustic design process is followed and demonstrated
High (UAEL)	>70	>66	10 th highest >81	Indicates an increased risk that the development would be refused on noise grounds.

ProPG Stage 2: Full Assessment

2.2.4 Where the ProPG Stage 1 assessment indicates that the site is at low, medium or high risk of adverse noise effects, a ProPG Stage 2 assessment should be carried out. The following sections outline the relevant internal and external noise guidelines considered in the assessment.

Target Noise Levels

- 2.2.5 Target internal noise levels relate to habitable rooms (bedrooms and living rooms) under whole dwelling ventilation conditions⁴ and are based on the internal noise guidelines set out in BS 8233:2014⁵.
- 2.2.6 There is no requirement, with reference to BS 8233:2014 and the Building Regulations Approved Document F – Ventilation (ADF), for the target internal noise levels to be achieved with open windows.
- 2.2.7 It is assumed that standard double-glazed windows and non-acoustic trickle ventilators provide a sound level difference from outside to inside of approximately 23 dB(A).
- 2.2.8 Target external noise levels relate to private amenity spaces (gardens and balconies) or communal amenity spaces for the sole use of residents of the proposed Development and are based on the guidance set out in BS 8233:2014.
- 2.2.9 The target noise levels are presented in **Table 2-2**.

Table 2-2: Target Noise Levels

Location	Activity	Daytime Noise Level (07:00 – 23:00)	Night-time Noise Level (23:00 – 07:00)
Living Room	Resting	≤ 35 dB LAeq,16hr	-
Dining Room	Dining	≤ 40 dB LAeq,16hr	-
Bedroom	Sleeping (daytime resting)	≤ 35 dB LAeq,16hr	≤ 30 dB LAeq,8hr ≤ 45 dB LAFmax (normally less than 10 times per night)
External Amenity Areas	Resting	≤ 50-55 dB LAeq,16hr	-

⁴ As required by The Building Regulations Approved Document F - Ventilation.

⁵ British Standard 8233:2014 Guidance on sound insulation and noise reduction for buildings.

3 Baseline Conditions

- 3.1.1 Daytime and night-time road traffic noise levels are shown in **Figure 3-1** and **Figure 3-2** respectively.
- 3.1.2 Note that road traffic noise contours are calculated at a height of 4.0m above ground level and may be marginally lower at ground floor level.

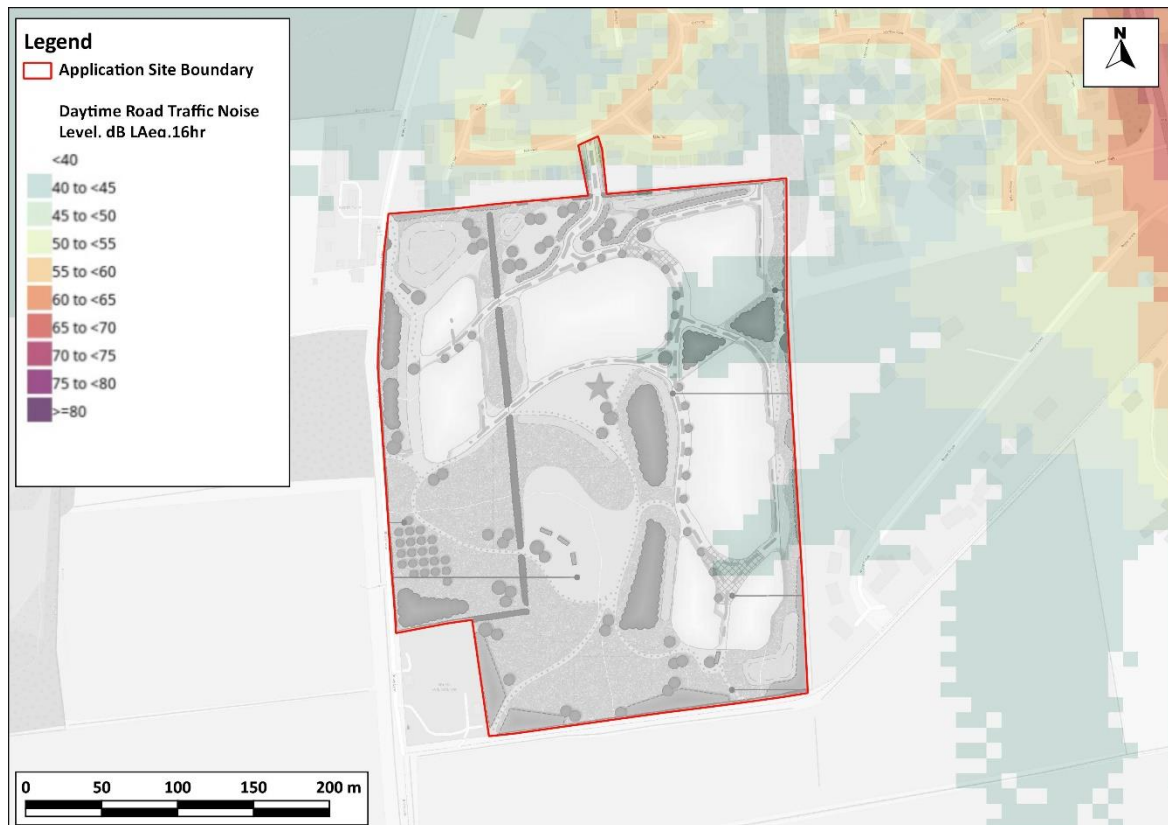


Figure 3-1: DEFRA Round 4 Daytime Road Traffic Noise Contours (dB LAeq,16hr)

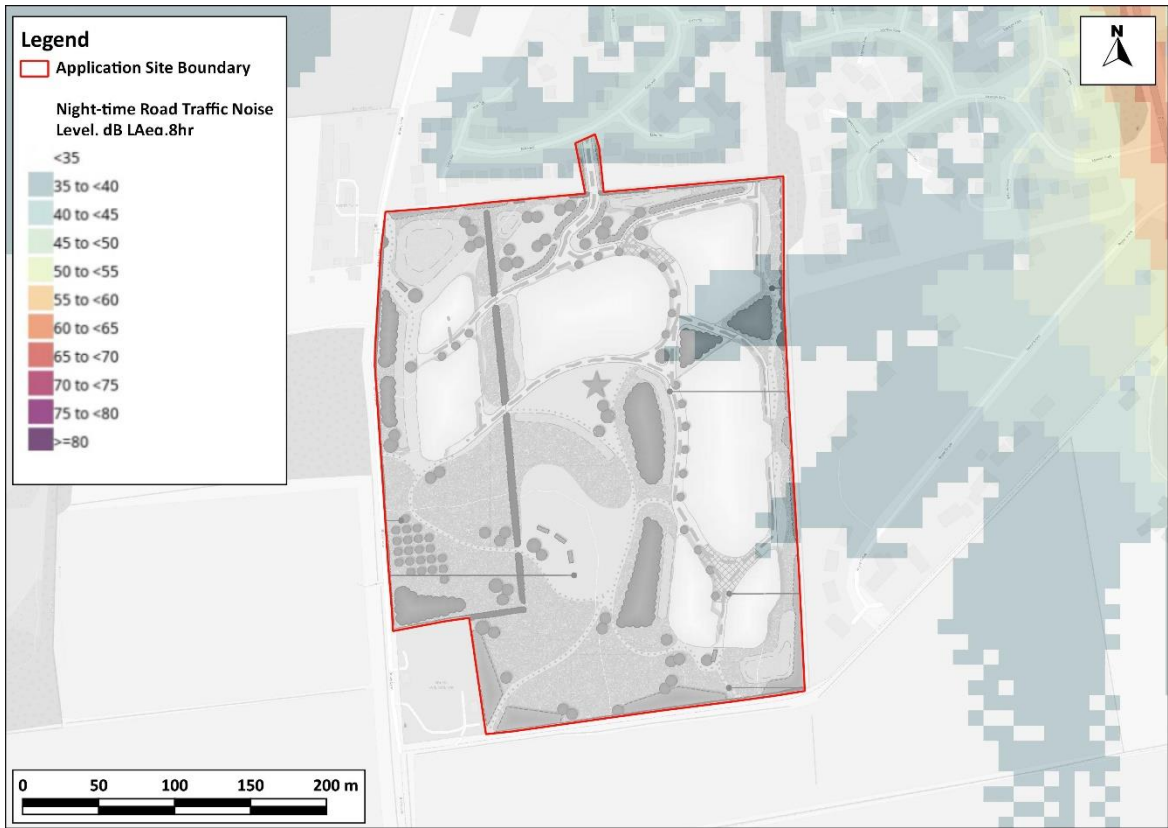


Figure 3-2: Defra Round 4 Night-time Road Traffic Noise Contours (dB LAeq,8hr)

4 Noise Assessment

4.1 Initial Site Noise Risk Assessment (ProPG Stage 1)

Road Traffic Noise

- 4.1.1 An initial site noise risk assessment has been undertaken to provide an indication of the likely risk of adverse effects and the suitability of the Site for residential development, excluding any subsequent mitigation measures which may be included as part of the development proposals.
- 4.1.2 Whilst the results of the DEFRA Round 4 strategic noise maps are no substitute for baseline noise monitoring, the road traffic noise contours reproduced **Figure 3-1** and **Figure 3-2** clearly indicate that road traffic noise exposure within the developable areas of the Site is low.
- 4.1.3 Upon inspection of the DEFRA noise maps, the predicted daytime noise levels in developable areas of the Site closest and most exposed to road traffic noise on the A10 are:
- ≤ 41 dB $L_{Aeq,16hr}$ during the daytime and,
 - ≤ 35 dB $L_{Aeq,8hr}$ during the night-time.
- 4.1.4 When comparing these levels to the adopted ProPG⁶, site noise risk classification presented in **Table 2-1**, it can be seen that the developable areas of the Site are at 'negligible risk' of adverse effects of noise.
- 4.1.5 Consequently, for the DFP considered in this assessment, acceptable internal and external noise levels are likely achievable without any specific noise mitigation measures, ProPG does not require a Stage 2 Assessment to be carried out.

Other Potential Environmental Noise Sources

- 4.1.6 Given the separation distance between the proposed developable areas, Heath Farm and Royston Hospital, any noise from these land uses is expected to be very low, infrequent and limited to the daytime period.
- 4.1.7 Similarly, any noise from plant at Wicker Hall reservoir is also expected to be very low, and not a constraint to residential development on the Site.
- 4.1.8 Consequently, whilst operational noise from these nearby land uses use may at times be audible on the open Site at low levels, their contribution to the underlying noise climate is not expected to be significant, nor therefore, a constraint to the proposed Development.
- 4.1.9 Notably, existing dwellings are located adjacent to Heath Farm and Royston Hospital. Therefore, the potential noise constraints upon these land uses will remain unchanged, and not be affected by the proposed Development.

⁶ Professional Practice Guidance on Planning and Noise: New Residential Development (2017). Institute of Acoustics, Association of Noise Consultants, and Chartered Institute of Environmental Health.

4.2 Assessment of Noise Impacts (ProPG Stage 2)

- 4.2.1 This Acoustic Design Statement is based upon the proposed Development as shown in **Figure 1-1**. Should any layout be brought forward for the Development with noise-sensitive buildings or receptors located closer to the assessed noise sources, new advice may be required.

Good Acoustic Design

- 4.2.2 As the design of the Development progresses, opportunities for the following good acoustic design measures should be explored:
- Maximising the distance between dwellings and sources of noise.
 - Using the building massing to shield external amenity spaces (i.e. rear gardens) and other buildings from sources of noise; and,
 - Orienting non-habitable rooms towards sources of noise and orienting habitable rooms away from sources noise.

5 Conclusions

- 5.1.1 This report describes the potential impact of noise on the proposed, Royston residential development (the "Development") at Land off Echo Hill (the "Site"). The assessment has been carried out by Noise Consultants (NCL), part of Logika Group.

Existing Site

- 5.1.1 The existing Site is a field located in a semi-rural setting located to the southeast of Royston. The site is bounded on the north and east by existing dwellings. The A10 (London Road) is located approximately 260m to the east of the Site.
- 5.1.2 Briary Lane runs along the western boundary and provides access to fields to open fields to the south and south west of the Site, and Wicker Hall Reservoir to the south-west corner of the Site only.
- 5.1.3 A previous outline application for residential development on the site was refused on grounds other than noise. Therefore, the principle of residential development on the site has already been established.

Proposed Development

- 5.1.4 The Development will comprise of up to 86 no. dwellings, a children's play area, and associated infrastructure with access from Echo Hill to the north of the Site. The Development will benefit from acoustic screening of road traffic noise on the A10, and any noise from Royston Hospital to the east by existing dwellings to the north and east.

Initial Site Noise Risk Assessment

- 5.1.5 The Development will benefit from acoustic screening of road traffic noise on the A10, and any noise from Royston Hospital to the east by existing dwellings to the north and east.
- 5.1.6 The assessment indicates that road traffic noise across the Site during both the daytime and night-time periods is low. In respect of ProPG, the risk of adverse noise impact on the amenity of future residents of the Development has been determined as being 'negligible'.
- 5.1.7 With respect to the NPPF's agent of change principle, noise attributable to operations at Heath Farm to the north and Royston Hospital to the east is expected to be low and infrequent, if audible at all. Similarly, any noise from plant at Wicker Hall reservoir is also expected to be very low. Overall, potential noise from these land uses is not considered to be a constraint to residential development on the Site. Notably, existing dwellings are located closer to Heath Farm and Royston Hospital than proposed developable areas. Therefore, the noise constraints upon these land uses will remain unchanged, and the Development does not place any new or unreasonable restrictions upon them.

Conclusions

- 5.1.8 On the basis of this assessment, the Site is low risk with respect to ProPG, and the development is not considered to give rise to a significant adverse impact on health and quality of life in relation to noise, in accordance with paragraphs 187, 198 and 200 (agent of change principle) of the NPPF and Policy D3 of the North Hertfordshire District Council Local Plan.
- 5.1.9 Furthermore, the principle of residential development on the site in noise terms has also already been established.
- 5.1.10 Therefore, whilst noise is a material consideration in the planning process, it is not considered to be a material constraint to residential development on the Site and should not be a determining factor in the outline planning application.

6 Appendices

A1 Glossary

Term	Definition
dB	Decibel. The logarithmically scaled measurement unit of sound.
A-weighting	Frequency weighting applied to measured sound in order to account for the relative loudness perceived by the human ear.

A2 National Policy and Guidance

A2.1 Noise Policy Statement for England (NPSE, 2010)

A2.1.1 The Noise Policy Statement for England (NPSE, 2010) sets out the Government's Noise Policy Vision 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".

A2.1.2 The aims of the policy are "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
- Where possible, contribute to the improvement of health and quality of life."

A2.1.3 With respect to 'significant adverse' and 'adverse' impacts in line with the three aims of NPSE, the policy statement notes that "there are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organization. They are:

- NOEL – No Observed Effect Level: This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise
- LOAEL – Lowest Observed Adverse Effect Level: This is the level above which adverse effects on health and quality of life can be detected.
- Extending these concepts for the purpose of this NPSE leads to the concept of a significant observed negative effect level.
- SOAEL – Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur."

A2.1.4 In respect of observed effect levels, the policy recognises that:

"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".

A2.1.5 The document advises that "the first aim of the NPSE states that significant adverse effects on health and quality of life should be avoided while also taking into account the guiding principles of sustainable development". Whilst not explicitly stated in NPSE this is taken to align with noise exposure above SOAEL.

A2.1.6 The policy also states:

"The second aim of the NPSE refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise negative effects on health and quality of life while also taking into account the guiding principles of sustainable development (paragraph 1.8). This does not mean that such negative effects cannot occur."

- A2.1.7 And finally, the third aim “seeks, where possible, to positively improve health and quality of life through the pro-active management of noise while also taking into account the guiding principles of sustainable development, recognising that there will be opportunities for such measures to be taken and that they will deliver potential benefits to society. The protection of quiet places and quiet times as well as the enhancement of the acoustic environment will assist with delivering this aim”.

A2.2 National Planning Policy Framework (NPPF, 2025)

- A2.2.1 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied. The Planning Practice Guidance (PPG) provides further context to the NPPF, and it is intended that the two documents should be read in conjunction. Planning Practice Guidance – Noise (PPG-N, 2019) is discussed in detail in **Section A2.3**.

- A2.2.2 NPPF provides policies to promote sustainable development and sets out that the purpose of the planning system is to contribute to the achievement of sustainable development. Sustainable development includes three dimensions: economic, social, and environmental, and thus, when planning decisions are made to increase capacity, the process requires weighing the relative balance of these three factors.

- A2.2.3 The NPPF provides a framework within which locally prepared plans for housing and other development can be produced. Planning law requires that applications for planning permission must be determined in accordance with the development plan, unless material considerations indicate otherwise. Planning policies and decisions must reflect and where appropriate promote relevant obligations and statutory requirements.

- A2.2.4 In relation to noise, it states:

“187. Planning policies and decisions should contribute to and enhance the natural local environment by: ...

- preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and...”

- A2.2.5 The NPPF includes policy which makes reference to “significant adverse impacts on health and quality of life”, as per the NPSE. NPPF policy states:

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

- 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 life;
- 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...”

- A2.2.6 NPPF has also recently introduced the agent of change principle as follows:

“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."

A2.3 Planning Practice Guidance – Noise (PPG-N, 2019)

A2.3.1 The National Planning Practice Guidance (PPG), which supplements the NPPF, incorporates Planning Practice Guidance – Noise (PPG-N). PPG-N, most recently updated in 2019, advises how the planning system can manage potential noise impacts in new development and draws upon the principles advocated in the NPSE.

A2.3.2 The document advises how the effects of noise can be described in terms of perception and outcomes aligned to increasing effect levels. In addition, the PPG-N introduces a fourth unacceptable adverse effect levels (UAEL), which is described as a level at which:

"noise exposure would cause extensive and sustained adverse changes in behaviour and / or health without an ability to mitigate the effect of the noise. The impacts on health and quality of life are such that regardless of the benefits of the activity causing the noise, this situation should be avoided."

A2.3.3 **Table A2-1** presents the noise exposure hierarchy described in PPG-N.

A2.3.4 The Guidance advises that due to the subjective nature of noise, *"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 situation"*.

Table A2-1: Planning Practice Guidance – Noise Exposure Hierarchy

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

A2.3.5 PPG-N also provides guidance in terms of what factors may influence whether noise could become a concern. To mitigate conflicts between new developments and existing businesses or facilities, the agent of change (typically the developer) is responsible for assessing and addressing potential

nuisances that could affect future residents or users. These nuisances may include noise, dust, odours, vibration, and other environmental pollutants generated by existing businesses, community facilities, or industrial operations. The assessment should consider not only current activities but also those permitted under existing planning consents, even if they are not actively taking place at the time of the application.

- A2.3.6 The agent of change must propose and implement appropriate mitigation measures, which could include enhanced acoustic insulation, mechanical ventilation systems to allow windows to remain closed, reconfiguration of site layouts to create buffer zones, or other design interventions aimed at minimizing exposure to potential nuisances.
- A2.3.7 While such measures cannot entirely prevent complaints from new occupants, they can help ensure that the development achieves an acceptable standard of amenity in line with planning policy and reduces the risk of statutory nuisance claims.
- A2.3.8 Taking a proactive approach in identifying, mitigating, and communicating these risks will not only help secure planning approval but also foster long-term compatibility between new developments and established businesses or facilities.
- A2.3.9 PPG-N also provides guidance on how adverse effects of noise can be mitigated. Examples of mitigation provided include:
- *“engineering: reducing the noise generated at source and/or containing the noise generated;*
 - *layout: where possible, optimising the distance between the source and noise-sensitive receptors and/or incorporating good design to minimise noise transmission through the use of screening by natural or purpose built barriers, or other buildings;*
 - *using planning conditions/obligations to restrict activities allowed on the site at certain times and/or specifying permissible noise levels differentiating as appropriate between different times of day, such as evenings and late at night, and;*
 - *mitigating the impact on areas likely to be affected by noise including through noise insulation when the impact is on a building”.*
- A2.3.10 In the case of new residential development, PPG-N also states that the impact of noise can be “partially off-set” if occupants have access to:
- *“a relatively quiet façade (containing windows to habitable rooms) as part of their dwelling, and/or;*
 - *a relatively quiet external amenity space for their sole use, (e.g. a garden or balcony). Although the existence of a garden or balcony is generally desirable, the intended benefits will be reduced with increasing noise exposure and could be such that significant adverse effects occur, 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, external publicly accessible amenity space (e.g. a public park or a local green space designated because of its tranquillity) that is nearby (e.g. within 5 minutes walking distance)”.*

A3 Assessment Guidance

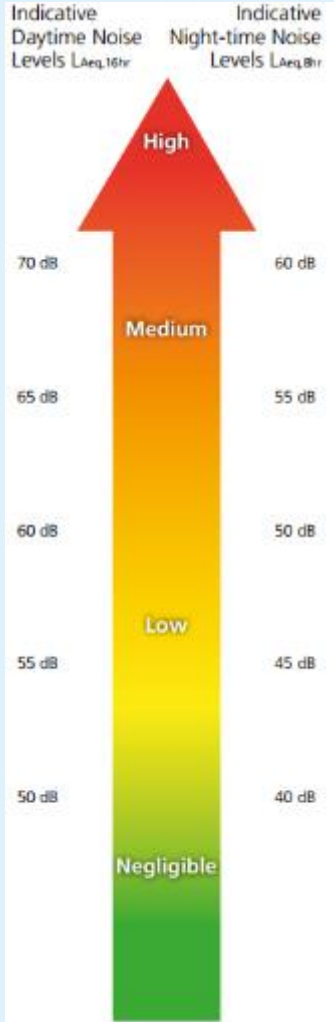
A3.1 Professional Practice Guidance (ProPG, 2017) on Planning & Noise – ‘New Residential Development’

- A3.1.1 ProPG is a joint publication by the Chartered Institute of Environmental Health (CIEH), the Association of Noise Consultants (ANC) and the Institute of Acoustics (IoA).
- A3.1.2 The primary goal of ProPG is “to assist the delivery of sustainable development by promoting good health and wellbeing through the effective management of noise”.
- A3.1.3 The guidance has been produced to assist practitioners in matters relating to noise and new residential development. It focuses on existing transportation noise sources and has been developed to consider the Government's overarching noise policy, planning policy and policy guidance. It has also been developed to take into account other authoritative sources of guidance such as British Standard 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings (BS 8233:2014).
- A3.1.4 The guidance provides advice for Local Planning Authorities (LPAs) and developers, and practitioners. ProPG aims to:
- Advocate the full consideration of the acoustic environment from the earliest possible stage of the development control process;
 - Promote and encourage the process of good acoustic design in and around new residential developments;
 - Set out the considerations which should be taken into account in deciding planning applications for new noise-sensitive developments;
 - Promoting the use of appropriate noise exposure standards and policies in assessment; and
 - Provide assistance in the delivery of sustainable development.
- A3.1.5 ProPG advocates a two-stage assessment approach:
- **Stage 1** – an initial noise risk assessment of the proposed development site; and
 - **Stage 2** – a systematic assessment considering four key elements.
- A3.1.6 ProPG is underpinned by the preparation and delivery of an Acoustic Design Statement (ADS).

Stage 1 – Initial Risk Assessment

- A3.1.7 Stage 1 of ProPG provides guidance to practitioners as to whether the site poses a risk in terms of noise for any future site occupants. To identify this, ProPG sets out a number of considerations for inclusion within an ‘initial risk assessment’. **Table A3-1** reproduces Figure 1 from ProPG, which describes the initial site risk assessment.

Table A3-1: ProPG Stage 1 Initial Site Risk Assessment

Noise Risk Assessment	Potential Effect Without Noise Mitigation	Pre-Planning Application Advice
	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 07:00 – 23:00, $L_{Aeq,8hr}$ is for night-time 23:00 – 07:00. d. An indication that there may be more than 10 noise events at night (23:00 – 07:00) with $L_{Amax,F} > 60$ dB means the site should not be regarded as negligible risk.		

A3.1.8 ProPG is clear that an Acoustic Design Statement should be included as part of a planning application where the risk is anything above 'negligible'.

Stage 2 – Full Assessment

A3.1.9 Stage 2 of ProPG describes four elements required for a full assessment. These are:

- **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** – the consideration of “Other Relevant Issues”.

A3.1.10 A summary of the considerations required in each of the four elements is provided in **Table A3-2**.

Table A3-2: ProPG Stage 2 – Summary of Four Key Elements

Element	Potential Effect Without Noise Mitigation
Element 1 Good Acoustic Design Process	Considerations include: • Good acoustic design is not just compliance with recommended internal and external noise exposure standards. Good acoustic design should provide an integrated solution whereby the optimum acoustic outcome is achieved, without design compromises that will adversely affect living conditions and the quality of life of the inhabitants or other sustainable design objectives and requirements. • Using fixed unopenable glazing for sound insulation purposes is generally unsatisfactory and should be avoided. Any reliance upon building envelope insulation with closed windows should be justified in supporting documents. The Planning Application MUST: • 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.
Element 2 Internal Noise Level Guidelines	Considerations include: • Reference to BS 8233:2014 ‘Guidance on Sound Insulation and Noise Reduction for Buildings’ for internal noise level guidelines. • Most residents value the ability to open windows at will, for a variety of reasons, and LPAs should therefore normally request that designers 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. In the case of sites exposed to industrial and/or commercial noise: • Where industrial and/or commercial noise is present on the site and is considered to be ‘dominant’ (i.e. where the impact would be rated as adverse or greater (subject to context)) then this is outside the scope of this ProPG and regard should be had to the guidance in BS 4142:2014. • In the special case where industrial and/or commercial noise is present on the site but is ‘not dominant’ (i.e. where the impact would be rated as lower than adverse (subject to context) if a BS 4142:2014 assessment was to be carried out), its contribution may be included in the noise level used to establish the degree of risk in Stage 1 and may also be included in the consideration of Stage 2 Element 2 Internal Noise Level Guidelines (and if included, this should be clearly stated).

Element	Potential Effect Without Noise Mitigation
Element 3 External Amenity Area Noise Assessment	The assessment must provide and demonstrate: • Full details of the external amenity area noise assessment should be included in an Acoustic Design Statement. • The term 'assessment' is deliberately used because this element concerns more than just the level of noise outside. • ProPG external amenity area noise assessment reflects and extends the advice contained in BS 8233:2014 and the current Government guidance in PPG-N. In the case of sites exposed to industrial and/or commercial noise: • Where external amenity areas are exposed to 'dominant' industrial and/or commercial noise, the impact of the noise should be assessed in accordance with BS 4142:2014 over the time period that the amenity area is likely to be used. In the special case where industrial and/or commercial noise is present on the site but is "not dominant", its contribution may be included in the noise level used to establish the degree of risk in Stage 1 and may also be included in the consideration of Stage 2 Element 3 External Amenity Area Noise Assessment (and if included, this should be clearly stated).
Element 4 Assessment of Other Relevant Issues	Consideration should be given to: • Compliance with relevant national and local policy: i.e., NPSE, PPG-N and The Environmental Noise Regulations. • Magnitude and extent of compliance with ProPG. • Likely occupants of the development. • Acoustic design vs unintended adverse consequences: Examples include sealed up balconies that result in a lack of connection with the external environment, roadside barriers that remove views or prevent crossing roads, sealed facades that affect personal control over the internal environment etc. Wherever possible, such unintended adverse consequences should be obviated by good acoustic design. • Acoustic design vs wider planning objectives.

- A3.1.11 Additionally, ProPG states that "once internal L_{Aeq} noise 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". This principle has helped inform the derivation of UAEL values.

Acoustic Design Statement (ADS)

- A3.1.12 ProPG requires that the Acoustic Design Statement (ADS) provides sufficient evidence that the ProPG Stage 1 and Stage 2 Elements 1 – 4 have been followed. It also advises that the ADS should be proportionate to the scale of the development and the degree of noise risk at the proposed development site. In this context, ProPG states that the level of detail to be provided within the ADS should increase with the increasing level of risk.

Supporting Decision-Makers

- A3.1.13 ProPG also provides advice and support to decision-makers when taking into account noise and new residential development. These recommendations are aligned to the outcomes of Stage 1 and Stage 2 of the assessment along with the considerations made within the Acoustic Design Statement. Section 3 of ProPG details the recommendations to decision-makers.

Sites Exposed to Industrial and/or Commercial Noise

- A3.1.14 In the case of sites exposed to industrial and/or commercial noise, ProPG states that if the industrial and/or commercial noise is present but not dominant, then its contribution may be included in the noise level used to establish the degree of risk.

- A3.1.15 If the industrial and/or commercial noise is considered to be dominant, then the risk assessment should not be applied to the industrial or commercial noise and instead the assessment should follow the methodology and guidance provided in BS 4142.
- A3.1.16 ProPG states that “[t]he judgement on whether or not to undertake a BS 4142:2014 assessment to determine dominance should be proportionate to the level of risk. In low-risk cases a subjective judgement of dominance, based on audibility, would normally be sufficient.”

A3.2 British Standard 8233:2014 ‘Guidance on Sound Insulation and Noise Reduction for Buildings’

- A3.2.1 BS 8233:2014 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.
- A3.2.2 BS 8233:2014 provides noise guidance for buildings of different uses, however in respect to dwellings and habitable residential spaces, Table 4 of BS 8233:2014 provides guideline values that it is desirable not to exceed during daytime and night-time periods. These guideline values are reproduced in **Table A3-3** and:
- Apply to noise “without character” that excludes features such as “a distinguishable, discrete and continuous tone...irregular enough to attract attention, or has strong low-frequency content, in which case lower noise limits might be appropriate”;
 - Apply to overall noise levels (i.e. the sum of all noise);
 - Include normal diurnal fluctuations in external noise (shorter time periods may otherwise be used);
 - Do not have to be achieved in all circumstances (such as seasonal / occasional events); and,
 - Excludes noise from new mechanical ventilation equipment.

Table A3-3: Indoor Ambient Noise Levels for Residential Dwellings

Activity	Location	Daytime Guideline (07:00 – 23:00)	Night-time Guideline (23:00 – 07:00)
Resting	Living Room	35 dB LAeq,16hr	-
Dining	Dining Room / Area	40 dB LAeq,16hr	-
Sleeping (Daytime Resting)	Bedroom	35 dB LAeq,16hr	30 dB LAeq,8hr

Internal Noise

- A3.2.3 The internal noise requirements are not intended to be met with open windows, although BS 8223:2014 states that the internal noise levels should take account of the proposed ventilation strategy.
- A3.2.4 BS 8233:2014 also notes that: “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

A3.2.5 *and reasonable internal conditions still achieved*". This sentence refers to the World Health Organization 'Guidelines for Community Noise' (WHO GCN, 1999). This statement is also reiterated in ProPG.

A3.2.6 BS 8233:2014 does not provide specific guidance on noise levels for regular individual noise events, such as passing trains, which can cause sleep disturbance. Guidance on suitable noise levels for individual events is provided in ProPG, which states:

"In most circumstances in noise-sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45 dB $L_{Amax,F}$ more than 10 times a night. 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 source, number, distribution, predictability and regularity of noise events."

A3.2.7 On this basis, it is considered appropriate to adopt the 10th highest $L_{Amax,F}$ noise event occurring in the night time period for the purposes of the assessment.

External Amenity

A3.2.8 With respect to external amenity spaces, BS 8233:2014 states that *"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"*.

A3.2.9 BS 8233:2014 also states that it will not always be possible to achieve these guideline values for all circumstances where development may be desirable, and that development in higher noise areas, such as urban areas adjoining the strategic transport network or city centres, may warrant a compromise between elevated noise levels and other factors (for example the convenience of living in these locations). In these situations, BS 8233:2014 states that *"development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited"*. This approach is also advocated in PPG-N.



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