Planning Noise Advice Document: Sussex

Consultation Document 2020


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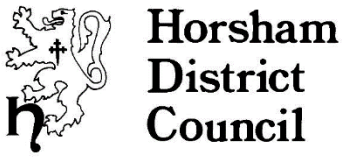
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1.0 Introduction

1.1 Aims and Objectives

1.1.1. This document aims to provide advice for developers and their consultants to assist in making a planning application in East and West Sussex having regard to noise. The term noise includes sound and vibration. The document seeks to complement the Noise Policy Aims set out in the Noise Policy Statement for England (2010). The NPSE aims are to:

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

1.1.2. This is an advice document only, for information on planning policy please refer to National Planning Policy Framework (2019), the National Planning Practice Guidance and the local planning policy in the local authority area in which development is sought.

1.1.3. In particular, the document seeks to:

I. Offer clear and consistent guidance to developers on the level of information that will be required to be submitted with planning applications for noise generating developments or noise sensitive developments, including guidance on when it is appropriate to submit a noise report and the expected contents of such a report.

II. Ensure better regulation by setting out existing standards that should be referred to in undertaking noise assessments, and applying these existing standards consistently in planning decisions.

III. Highlight the points that need to be considered and addressed prior to making a planning application and therefore minimise any potential delays to the decision making process.

1.1.4. This document cannot anticipate or cover all circumstances. Therefore, following advice contained in the National Planning Policy Framework 2019, it is expected that the applicant or their representative will have a pre-application discussion with the Local Planning Authority (LPA) specifically for noise and vibration.

1.1.5. This document will be updated from time to time to take account of any new standards, guidance and policy. Where any standards, guidance and policy referred to in this document have been revised please use the latest version.

1.2 Document Overview

1.2.1. The document initially introduces some basic principles in Chapter 2.0. It starts with reference to good design or, in the context of noise, good acoustic design (section 2.1). Section 2.2 describes the requirements of noise reports. Sections 2.3 to 2.4 outline some general criteria when preparing a report in respect of noise sensitive uses and noise creating uses.

1.2.2. The document then goes on to consider noise impact by potentially noisy sources: Industrial and commercial sounds (Chapter 3.0); entertainment premises (Chapter 4.0); and sites used for sports and recreation (Chapter 5.0).

1.2.3. Noise sensitive developments are discussed in more detail in Chapter 6.0.

1.2.4. Finally, transport schemes are discussed in Chapter 7.0.

1.2.5. For ease, a glossary appears in Annex 1. Where standards and codes of practice are referred to in this document they are fully referenced in Annex 2.

1.2.6. To assist determine which sections of this document are relevant to a development Table 1 below provides a quick guide. For mixed use developments multiple sections apply.

Table 1 New Noise Sensitive Uses – Determining If A Noise Report Is Required.

Type of Development		Noise Report Required	Comments
New residential development and extensions to existing residential dwellings. (C3 & C4 use classes)	Close to a major highway (motorways, A-class and major B roads).	Yes	Noise reports will normally be required for residential development in close proximity to a major road. Pro PG: Planning and Noise – Professional Practice Guidance on Planning and Noise- New Residential Development 2017 shall be followed.
	Near to a railway.	Yes	Noise reports will normally be required for residential development near to a railway. Pro PG: Planning and Noise – Professional Practice Guidance on Planning and Noise- New Residential Development 2017 and Calculation of Railway Noise 1995 shall be followed.
	Within the predicted 54dB contour of an existing or proposed expansion of an airport	Yes	Noise reports will normally be required. Noise exposure contour maps can be found at GOV.UK or on the specific airport's website.
	10+ houses in a rural/suburban environment.	Maybe	In certain circumstances a noise report will be required. Please consult with the Local Planning Authority.
Change of use to residential.		Maybe	Noise report will normally be required, however please consult with the Local Planning Authority.
Hotels, guest houses, etc (C1 uses)		Maybe	Hotels, guest houses and residential institutions can present a new noise source. Consequently, a noise report may be required if close to a noise sensitive receptor. It is the responsibility of the developer to ensure hotel rooms meet appropriate noise standards. However, if the hotel/guest house includes permanent residential accommodation for staff, a noise report is likely to be required.
Residential institutions: C2 uses(care homes, hospitals, nursing homes, residential colleges, etc.) and C2a uses (secure residential institutions including prisons, secure hospitals).		Yes	
Permitted Development (The Town & Country Planning (General Permitted Development) (England) Order 2015.		Maybe	Noise assessment shall be required for some permitted development notifications, for certain change of use classes. More information can be found at http://www.legislation.gov.uk/uksi/2015/596/contents/ Although not always a legal requirement of permitted development, it is advised that all potentially disturbing noise sources are assessed so that they do not adversely impact on the proposed use.

Table 2 New or Additional Sources - Determining If A Noise Report Is Required

Type of development	Noise Report required	Comments
INDUSTRIAL TYPE USES (e.g. B2 general industrial uses, B8 storage or distribution uses, Waste management sites, Minerals development)	YES	Noise report will normally be required. Please consult with LPA if there are no existing noise sensitive premises in close proximity. Includes new development and changes of use. Also includes changes in operations or layout, extensions or new equipment at existing sites.
ENTERTAINMENT/ FOOD & DRINK, ETC (e.g. A3 uses - restaurants/ cafes, A4 - drinking establishments, A5 - hot food takeaways, D2 uses e.g. cinemas, concert halls, swimming baths, sports halls. Also nightclubs, casinos, theatres, amusement centres).	YES	Noise report will normally be required. Please consult with LPA if there are no existing noise sensitive premises in close proximity. Includes new air handling units, extractor fans, air-conditioning and chiller units at existing sites. The noise impact of car parking and deliveries should also be considered.
OUTDOOR SPORTS & RECREATION Including some D2 class uses, also multi-use games areas, motor sports and shooting ranges.	YES	Noise report will normally be required.
COMMERCIAL USES A1 and A2 uses (shops and financial/ professional services, etc)	MAYBE	Noise report will normally be required in the following circumstances: - The application involves the introduction of new uses and the development is greater than small scale (e.g. a new supermarket or shop, a new office block/ industrial estate, a new school/ library), or - The application includes new air handling units, extractor fans, air-conditioning, chiller units, etc, or - The development would involve activities during unsociable hours (including deliveries), or - The development would involve particularly noisy activities (including during construction) or is proposed in particularly close proximity to noise-sensitive premises.
OFFICES, ETC B1 uses (including offices, light industry)	MAYBE	
NON-RESIDENTIAL INSTITUTIONS D1 uses (non-residential institutions, e.g. day centres, schools, libraries, places of worship, training centres)	MAYBE	
OTHER Other Sui Generis uses, e.g. petrol filling stations, launderettes, taxi businesses	MAYBE	
TRANSPORT SCHEMES e.g. new roads, rail, port and airport development, including extensions/ alterations to existing schemes	YES	Early consultation with the Local Planning Authority/Environmental Health Department would be expected.
WIND TURBINES & OTHER RENEWABLE ENERGY SOURCES	MAYBE	Early consultation with the Local Planning Authority/ Environmental Health Department would be expected. Micro wind turbines may not require planning permission, however in some cases they may cause a statutory noise nuisance to neighbours.

Table 3 How to find the relevant sections of the document

	Type of development	Relevant section(s) of document
NOISE SENSITIVE USES	Residential	- 2.1 (good acoustic design) - 2.2 (noise reports) - 2.3 (minimum considerations) - 6.0 (new noise sensitive developments)
	Hotels, guest houses, etc	- 2.1 (good acoustic design) - 2.2 (noise reports) - 2.3 (minimum considerations) - 6.0 (new noise sensitive developments)
	Residential Institutions	- 2.1 (good acoustic design) - 2.2 (noise reports) - 2.3 (minimum considerations) - 6.0 (new noise sensitive developments)
POTENTIAL NEW NOISE SOURCES	Industrial type uses (e.g. B2, B8, waste and minerals development)	- 2.1 (good acoustic design) - 2.2 (noise reports) - 2.4 (minimum considerations) - 3.0 (industrial and commercial sound sources)
	Entertainment uses, food and drink, etc (e.g. A3, A4, A5, D2 uses)	- 2.1 (good acoustic design) - 2.2 (noise reports) - 2.4 (minimum considerations) - 4.0 (entertainment premises)
	Outdoor sports and recreation	- 2.1 (good acoustic design) - 2.2 (noise reports) - 2.4 (minimum considerations) - 5.0 (outdoor sports & recreation)
	Commercial uses (e.g. A1 and A2 uses)	- 2.1 (good acoustic design) - 2.2 (noise reports) - 2.4 (minimum considerations) - 3.0 (Chapter: Industrial and Commercial)
	Offices, light industry	- 2.1 (good acoustic design) - 2.2 (noise reports) - 2.4 (minimum considerations) - 3.3 (extraction units, etc)
	Non-residential institutions (e.g. clinics, crèches, day nurseries, day centres, schools, libraries, places of worship)	- 2.1 (good acoustic design) - 2.2 (noise reports) - 2.3 (minimum considerations as a sensitive use) - 2.4 (minimum considerations as a noisy use) - 3.30 (Chapter: Industrial and Commercial)
	Other Sui Generis uses, e.g. petrol filling stations, launderettes, taxi businesses, nightclub	- 2.1 (good acoustic design) - 2.2 (noise reports) - 2.4 (minimum considerations) - 3.0 (Chapter: Industrial and Commercial) - 4.0 (Chapter: Entertainment Premises)-

2.0 Basic Principles

2.1 Good Design

"Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make developments acceptable to communities"

(National Planning Policy Framework 2019, paragraph 124).

"Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of noise pollution"

(National Planning Policy Framework 2019, paragraph 170e).

2.1.1. Applications often do not consider the acoustic design alongside other factors such as visual appearance and this can be to the detriment of the whole scheme of development. A scheme that is properly considered can optimize land use, offer good quality living and recreational space while providing good architectural and environmental solutions.

2.1.2. Any development proposal should follow the basic principles of noise control set out below, which are to separate noise sources from sensitive receptors, then to control the noise at source, attenuate through the use of barriers, and finally to protect the receptor:

I. Separation of noise source from receptor: Any application likely to result in a noise source being located near an existing, permitted or allocated noise sensitive receptor (i.e. a residential area, school or hospital), whether as a result of a proposed new noise source, or a proposed new noise sensitive receptor, will need to demonstrate that there will be no unacceptable noise effect on sensitive receptors, and that all steps have been taken to reduce any adverse effects. If the development is likely to result in adverse noise levels, the developer should first consider whether there are alternative site locations which are more suitable.

II. If no alternative site is available or it can be demonstrated that an alternative location is not practicable then the applicant will need to demonstrate that all reasonable steps have been taken to reduce the impact of the noise. This should include consideration of the most appropriate positioning of the noise source/ sensitive receptor within the chosen site boundary.

III. If all reasonable steps have been taken to reduce the impact of the noise but the development is still likely to lead to adverse effects, then adequate mitigation should be employed. Appropriate mitigation could include changes to the site layout, a noise management plan, the construction of noise barriers, and as a last resort, the insulation of buildings. In the exceptional circumstances where windows are required to be kept closed to achieve an acceptable internal noise climate, then the provision of an alternative form of natural ventilation will be required to aid thermal comfort. If this is impracticable then a MVHR system with fully automated summer bypass may be acceptable. A separate overheating assessment for the development may also be necessary in such circumstances. See: ANC Feb 2018 Draft – Acoustics, Ventilation and Overheating – A Residential Design Guide.

2.1.3. Noise and vibration that could arise from demolition and construction activities should also be considered in developing the proposal and best practice should be adopted at all times, as prescribed in BS 5228-1:2009+A1:2014 Noise and BS5228-2:2009+A1:2014 Vibration.

2.2 Noise Reports

2.2.1. The noise assessment and report is the foundation to understanding the background sound levels and the impact of the development on its surrounds or the effect of the surrounds on the proposed development. Assessments and reports should be used as development tools for good acoustic design.

2.2.2. A poorly conceived report or one that is ontroduced as an after-thought to the design process can result in delay as additional or new information is requested by the LPA which in turn may influence the whole design.

2.2.3. In most circumstances the applicant will be required to supply a noise report in support of their application. This section outlines the basic requirements for such a report and sets out when it will be required. It also details the minimum requirements of the report, depending on the type of development being planned. Some standard assessments such as BS 4142:2014 have their own checklists as to the content of a report. Where this is the case, the criteria listed below should be included in the report in addition to any content referred to in the specific standard.

2.2.4. The noise report should give accurate, clear and relevant information about the existing noise environment, and the likely impact of the proposed development. A report lacking vital information or containing misleading information may ultimately delay the whole planning process whilst clarification or further information is sought.

2.2.5. The table provided in Annex 2 provides a list of appropriate national and

international standards for most types of noise and provides a quick overview of the criteria set out in those documents. This aims to help the developer decide which standards will be most appropriate for each development, but it is recommended that copies of the relevant standards are obtained and referred to in full. You are encouraged to consult with the Local Planning Authority regarding the standards you intend to use and the approach you wish to take at an early stage.

2.2.6. The report should follow recommended methodologies laid out in the appropriate standards. Any departure from those methodologies should be clearly explained, with the reasons clearly stated.

2.2.7. The noise report should contain some or all of the following. The level of detail required will be proportionate to the development:

I. Details of the author, their qualifications, the noise equipment used and details of latest calibration.

II. A detailed description of the proposal including the layout of the proposed development in relation to the existing neighbourhood. It should highlight the proximity of any noise sources to noise sensitive receptors, giving distances as necessary. This should be illustrated on a scaled plan.

III. Details of the existing noise climate and context in that location prior to development. The size and scale of the background assessment should reflect the nature of the development. The choice of location and duration for measurements should be explained in the report.

IV. The client's brief shall be provided, this should include the scope of the study requested and any limitations imposed. The scope of the noise report should be agreed with the Local Planning Authority. Otherwise there is a risk that a development may incur a delay and/or additional costs later on if the correct information isn't provided to enable the Local Planning Authority to determine a planning application.

V. Calculations and assumptions shall be fully presented and justified. It should be possible for the reader to fully audit all calculations from the data provided.

VI. Modelling can be a useful tool to present calculations and predictions, however, key input assumptions need to be fully disclosed, discussed and justified, such as topography, noise source and receiver height, ground conditions and the source of any data used.

VII. Sound samples should be obtained and made available to support the assessment as appropriate.

2.3 Minimum Considerations for Noise Sensitive Development

2.3.1. For a new noise sensitive development near an existing source of transport noise (road, rail, ports or aircraft) the LAeq (16hr day and 8hr night), or the shortened calculation method, should be measured, as agreed. In addition, suitable shorter term LAeq, LA90, LA10 and LAmax would be expected to give a clearer picture of the existing noise environment.

2.3.2. Where the LAmax sound levels are likely to exceed 60 dB during the night period, overnight monitoring will be necessary rather than a shortened measurement procedure to provide, amongst other things, a specific LAmax risk assessment. This could also apply to extensions/ alterations to existing development.

2.3.3. For a new noise sensitive development next to a commercial noise source, where practical, each existing potential noise source would need to be measured separately and details provided of the hours of operation, the LAeq, the tonality, character, impulsivity and/or intermittency of the noise (see BS4142) and the hours of occurrence. The existing background noise level (LA90) will also have to be measured with and without the commercial noise sources in operation. This could also apply to extensions/ alterations to existing development.

2.3.4. When considering the impact of a commercial or industrial sound using BS4142:2014, consideration of a statutory nuisance is outside the scope of the standard. The prevention of a statutory nuisance is a requirement. Therefore, any report may also need to demonstrate that the generation of a statutory nuisance is not likely.

2.4 Minimum Considerations for New Noise Sources

2.4.1. For a new noise source being introduced near existing noise sensitive premises then an ambient and background noise survey (LA90) should cover the times when the proposed development will be in operation. The expected levels and duration of all the potential noise sources likely to be in operation from the proposed development, whether measured or predicted, should be provided with details of tonality, character, impulsivity and/or intermittency of each noise (e.g. BS4142). This could also apply to extensions/ alterations to existing development.

2.4.2. As BS4142 considers the rated sound level over the representative background level. It is foreseeable that, dependent on the background sound level identified as being representative, the rated sound level may be deemed not have an adverse effect but in reality the development may give rise to a statutory

nuisance. This is possible where the sound is prominent during the reference periods when the background sound level is below the representative level. On these occasions the sound of interest would be audible above the background sound level. Care needs to be taken in the noise assessment to ensure creation of a statutory nuisance is prevented and additional information may be required over and above the BS4142 methodology.

2.4.3. To facilitate analysis of BS 4142 reports, not only should the actual data be presented but the monitored ambient sound, monitored background sound level, and specific sound level should be presented graphically for each of the monitored reference periods. The rated sound level must also be shown on the same graph together with the “representative” background sound level as determined by the report author.

3.0 Industrial and Commercial Sound Sources

3.1 Scope

3.1.1. This section covers sound sources of an industrial and commercial nature. It refers to sound sources which are covered by the British Standard BS4142:2014 + A1: 2019 “Methods for Rating and Assessing Industrial and Commercial Sound”. Appropriate sound sources for assessment under BS4142 are detailed in section 1.1 of the scope of the Standard and include:

- Sound from industrial and manufacturing processes
- Sound from fixed installations, which comprise mechanical and electrical plant
- Sound from loading and unloading goods
- Sound from mobile plant and vehicles that are an intrinsic part of the overall sound emanating from the premises or process e.g. fork-lift truck movements etc.

3.1.2. This section would also be appropriate for some aspects of waste and minerals developments (see Annex 1, of this document, for standards applicable to waste and minerals sites).

3.2 Guidelines and Criteria

3.2.1.The rating level of the industrial or commercial sound source should, where practicable, achieve a level no greater than the representative background sound, when measured in accordance with BS4142. There may be instances, for specific sites, where a rating level below background is deemed appropriate. This can be determined through discussion with the Local Planning Authority (LPA). A rating level below background may be required if there are concerns for potential noise creep, for example in a High Street setting. It is considered that meeting this criterion would avoid adverse noise impacts, in the interests of ensuring a good standard of amenity and protecting human health. Where these criteria are not attainable, the noise report should explain why, and how best practicable means will be implemented to control noise in order to satisfy the LPA that the development is acceptable.

3.3 Information Required to support a Planning Application

3.3.1. New noise generating development may vary greatly in size and scale. Advice should always be sought from the LPA if it is unclear whether the development requires a comprehensive noise report, but as a general rule the following should be considered where sensitive receptors could be affected:

- Larger scale developments or those including potentially noisy mechanical and electrical plant, which are to be located in proximity to noise sensitive receptors will generally require a noise report, following the advice given in section 2.2.

- Small scale developments, such as a single extraction unit or air conditioning unit may not always require a noise report. However in order to help the LPA to decide whether it is likely to conform to an appropriate sound level, the following information should be submitted to the LPA prior to the submission of the formal planning application as this will help it determine whether a full noise report will be required to be submitted with the planning application:

  - The proposed hours and days of operation of any potentially noisy equipment.

  - The sound power levels of the equipment/plant to be installed or sound pressure levels at a specified distance, in decibels dB(A), (which can be obtained from manufacturer's specifications).

  - Details of where the equipment will be placed i.e. within or outside of the building, marked on a scale plan.

  - Details of any noise mitigation measures, for example the fitting of silencers or sound insulation. Predicted noise reduction levels at the noise sensitive receptor to be provided in dB(A).

  - Distance away from noise sensitive receptors and the nature of these premises (e.g. offices, residential etc.).

3.3.2. Whether basic information is deemed to be sufficient or a full noise report is needed, accurate prediction of the impact from the new noise source is vital and therefore robust and realistic data should be used. Manufacturers' data sheets will normally provide the sound power level for new equipment or plant. Data can also be obtained from measurements taken from identical plant at a similar facility. Where there is a degree of uncertainty this should be explained clearly to ensure transparency.

3.4 Prediction Methods/Modelling

3.4.1. There are a range of prediction and modelling tools available for determining the impact from new industrial or commercial sound sources. Where modelling is to be used, the method should be discussed and considered against current standards and practices. Information including details of inputs and calculations used, plus any assumptions made within the modelling/prediction exercise should be explained clearly and uncertainty discussed.

3.4.2. Modelling and predictions should be undertaken in two stages: with and without mitigation. For instance, if particularly noisy plant is likely to be used, then predictions should be made for both the untreated plant and with attenuation measures in place.

3.4.3. The receptors used for the modelling should coincide with background monitoring locations. Where they do not, a detailed rationale should be provided.

3.5 Sound Insulation Between Domestic and Non-Domestic Premises

3.5.1. Building Regulation, Approved Document E, Section 0.8 states “a higher standard of sound insulation may be required between spaces used for normal domestic purposes and communal or non-domestic purposes. In these situations, the appropriate level of sound insulation will depend on the noise generated in the communal or non-domestic space. Specialist advice may be needed to establish if a higher standard of sound insulation is required and, if so, to determine the appropriate level”.

3.5.2. The determination of an “appropriate” level of sound insulation between domestic purposes and non-domestic purposes should always be discussed with the LPA. There may be instances where higher standards of sound insulation are required, for example:

- D1 and D2 uses (such as children’s day nurseries, concert halls, dance halls and gymnasiums etc neighbouring residential premises.
- Licensed premises neighbouring sensitive uses that may include residential or officeaccomodation.
- between neighbouring commercial premises, particularly if there is a variation in the sensitivity of activities taking place.

- Where one façade is highly insulated due to an external noise source such as a road resulting in a quieter internal environment resulting in neighbour noise being more noticeable.

3.5.3. The sound insulation performance of any industrial or commercial use that has the potential to have a detrimental impact upon sensitive receptors should be considered. If in doubt about this requirement, contact should be made with the LPA for advice.

3.5.4. However, demonstrating that a building is capable of achieving the standards required which are above those required by the Building Regulations is relevant to planning as well as constituting good acoustic design.

3.5.5. Sound insulation testing for compliance with Approved Document E is over a limited frequency range, 100Hz to 3150Hz, not accounting for lower frequencies. When the source is likely to give rise to dominant frequencies in the lower ranges, then the predicted acoustic performance of any scheme of sound insulation design should be conducted over a more extensive frequency range. The overall building design acoustic performance shall be demonstrated across the frequency range of at least 31.5Hz to 3150Hz at each $^{1}/_{3}$ octave band.

3.6 Vibration

3.6.1. In some instances, due to the proximity of potentially disturbing vibration sources, such as a railway line or a commercial activity, a Vibration Impact Assessment shall be submitted to the Local Planning Authority.

3.6.2. Consideration should be given to recommended threshold Vibration Dose Values (VDV's), as presented in BS6472-1:2008 "Guide to Evaluation of Human Exposure to Vibration in Buildings". It may be that adequate buffer zones or other appropriate mitigation measures are required so that appropriate threshold values can be met, to provide a "low probability of adverse comment" .

3.6.3. If it is evident that there is the potential for disturbance from short lived episodes of vibration then consideration shall be given to the predicted impact of Peak Particle Velocity (PPV) in accordance with such standards as BS 7385: Part 2 1993 "Evaluation and Measurement for Vibration in Buildings. Guide to Damage Levels from Groundborne Vibration" and BS5228-2:2009+A1:2014 "Code of Practice for Noise and Vibration Control on Construction and Open Sites – Vibration"".

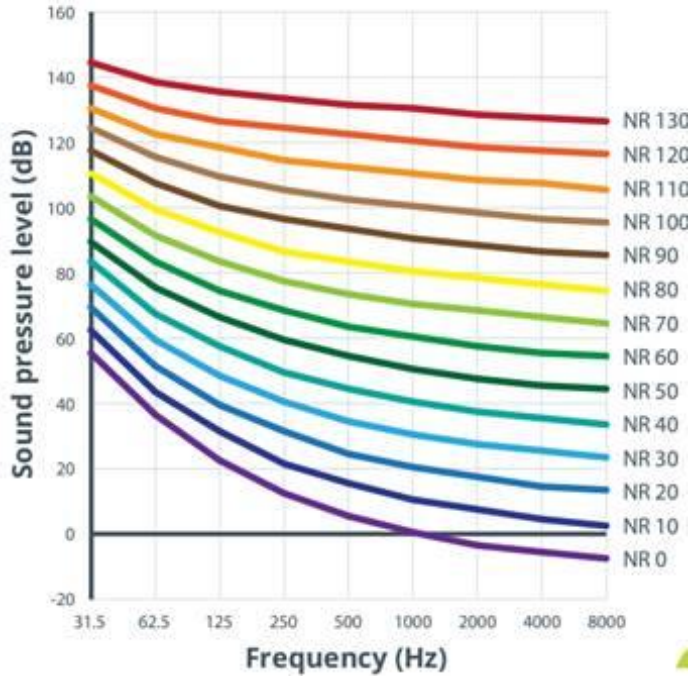
3.7 Noise Rating Curves

3.7.1. Noise Rating Curves (NR Curves) can be used, in certain instances, to specify noise levels in buildings and occupied spaces. The single figure rating takes in to account the frequency content of a noise. NR Curves can be used for controlling noise levels from internally located mechanical ventilation systems and for setting music noise thresholds. Figures 1 and 2 below, illustrate the concept.

Figure 1. Simplified Noise Rating curves table

Noise Rating (NR) curve	Maximum Sound Pressure Level (dB)								
	Octave band mid-frequency (Hz)								
	31.5	62.5	125	250	500	1000	2000	4000	8000
NR 0	55	36	22	12	5	0	-4	-6	-8
NR 10	62	43	31	21	15	10	7	4	2
NR 20	69	51	39	31	24	20	17	14	13
NR 30	76	59	48	40	34	30	27	25	23
NR 40	83	67	57	49	44	40	37	35	33
NR 50	89	75	66	59	54	50	47	45	44
NR 60	96	83	74	68	63	60	57	55	54
NR 70	103	91	83	77	73	70	68	66	64
NR 80	110	99	92	86	83	80	78	76	74
NR 90	117	107	100	96	93	90	88	86	85
NR 100	124	115	109	105	102	100	98	96	95
NR 110	130	122	118	114	112	110	108	107	105
NR 120	137	130	126	124	122	120	118	117	116
NR 130	144	138	135	133	131	130	128	127	126

Figure 2. Simplified Noise Rating curves graph



3.7.2. The appropriateness and level of NR Curve thresholds, should be discussed with the relevant Local Planning Authority.

4.0 Entertainment Premises

4.1 Scope

4.1.1. This chapter is a guide to the noise issues associated with premises used for public entertainment, including clubs, pubs, bars, restaurants and other recreational uses such as wedding venues and conference facilities.

4.1.2. Most of these types of premises will also require a Premises Licence in accordance with the Licensing Act 2003. The applicant should approach the Licensing Authority as early as possible to ensure that the proposed final use of the premises complies with their Licensing Policy.

4.1.3. Planning permission, building control approval and licensing regimes are required to be properly separated in order to avoid duplication and inefficiency (See Home Office amended guidance under Section 182 of the Licensing Act 2003). The planning and licensing regimes involve consideration of different (albeit related) matters. Licensing committees are not bound by decisions made by a planning committee, and vice versa.

4.1.4. There may be circumstances when as a condition of planning permission is more stringent than the condition on the licence. In such cases the planning condition prevails, for example, a terminal hour is set for the use of premises for commercial purposes. Where these hours are different to the licensing hours, the applicant must observe the earlier closing time. Premises operating in breach of their planning permission would be liable to prosecution under planning law.

4.2 Design Criteria

4.2.1. People living near to places of entertainment have a right to enjoy reasonable standards of amenity. To protect that amenity, the LPA must be satisfied that the applicant has successfully addressed the issue of noise control.

4.2.2. It is likely that most planning applications for these types of premises will require a noise report. The level of detail required will depend on the location (i.e. the proximity to noise sensitive premises) and the nature of the proposed use. Early consultation with the local authority is strongly recommended.

4.2.3. To satisfy the LPA that the development is acceptable, the applicant should usually be able to demonstrate that the following criteria can be achieved:

- Where regular use of the proposed premises is planned, any amplified sound (including music and speech), should be inaudible within any nearby noise sensitive premises with one or more windows open for reasonable ventilation.

- Any other noise sources associated with the premises, such as patron noise, should also be inaudible inside residential properties with windows open for reasonable ventilation.

- If the noise report indicates that the above criteria would not be achievable, the development may still be considered but subject to restrictions on the hours of operation and/or frequency of use of the premises.

4.3 Considerations

4.3.1. There are likely to be four types of noise source associated with entertainment venues that have the potential to impact amenity:

- Entertainment noise, for example music

- Patrons accessing, using (both internal and external spaces) and leaving the premises. Designated smoking areas can also give rise to noise

- Fixed plant, for example air conditioning or extraction units

- Servicing the premises (deliveries and waste management)

The application will need to address all of the above.

4.3.2. Sound should be contained within the building structure. The premises should be designed and constructed with an adequate level of insulation so that the noise from music or patrons does not materially impact on the amenity of those living in the surrounding properties. The louder the proposed music within the premises, the more robust the structure will need to be. It will normally be necessary to submit appropriate details of the construction to demonstrate that an appropriate reduction in sound is likely. Further testing may be required during construction and post completion to ensure the design standard is achieved.

4.3.3. In addition to good structural containment of sound it is probable that there will need to be physical controls on the actual level of amplified or live music which could include the careful selection and configuration of sound systems to optimise sound levels at specific locations, the use of automatic volume control, noise limiters or other electronic devices.

4.3.4. Where the proposed development shares a party wall or floor or is structurally

connected to adjoining residential dwellings or other noise-sensitive premises, particular attention should be given to structure- borne noise and vibration. Full details of potential impacts and how these have been mitigated should be provided with the planning application.

4.3.5. Doors and windows will often need to be kept closed to prevent the break out of noise from the premises. Therefore alternative forms of ventilation and air-conditioning may be required which in turn may generate noise directly or in the case of ventilation ductwork provide a pathway for the escape of sound from the building.

4.3.6. Noise breakout can occur at the entrance and exits. An acoustic lobby may be required. Proposals for an acoustic lobby would normally be expected as part of an application.

4.3.7. External seating areas and smoking areas in close proximity to neighbouring residents are often a cause for complaint, especially during the evening and night time periods. The location and nature of the premises will dictate the size of any seating area and the hours of use. There will be a need to identify a designated smoking area and provide details of how noise from patrons using that area will be controlled.

4.3.8. Potential impacts arising from the arrival and dispersal of patrons from the premises should also be considered. This could include private vehicles, taxis and mini-cabs and groups of patrons congregating outside the premises, especially late at night.

4.3.9. Details of how and when ancillary activities such as deliveries, waste collections and bottle recycling will be carried out should be supplied, together with an assessment of their relative impact.

4.3.10. The location and use of kitchen extraction systems, air-conditioning units and refrigeration plant will also need to be considered. It is considered that “The Control of Odour and Noise from Commercial Kitchen Exhaust Systems” (EMAQ, September 2018) acts as an appropriate reference document with regard to the control of noise from commercial kitchen extraction systems. Impact shall also be assessed in accordance with BS4142:2014. The predicted noise levels of such plant should be provided together with details of any additional noise attenuation works to ensure the design criteria is achieved for the proposed times.

4.3.11. Noise Management Plans should be submitted as part of the application if noise impacts are likely to arise from the arrival and dispersal of patrons, the use of designated smoking areas and external seating areas, or deliveries and

collections. The plan should clearly state the potential source of the noise and how the activities will be controlled to mitigate noise. Plans may also need to include provision for their review with the local authority.

4.3.12. The obligation for noise control is in addition to and not a replacement of obligations under other legislation for safety, for example the Building Regulations.

5.0 Outdoor Sports and Recreation

5.1 Scope

5.1.1. This section covers sport and leisure activities which take place outside, such as clay target shooting, off road motorcycle sports and model aircraft flying, as well as the use of multi-use games areas (MUGAs), all weather pitches (AWPs) and skate parks.

5.2 Considerations

5.1.2. In some circumstances, the noise levels generated from these types of activities are likely to be higher than would normally be accepted for other development consents, such as industrial processes, because of the characteristics of the noise generated, the controls that are possible, and the pattern of use.

5.1.3. For these activities, the LPA will need to take account of how frequently the noise will be generated and how disturbing it will be. Therefore, clear details of the proposed development are crucial.

5.1.4 It is common for these types of activities to take place in suburban and rural locations, where existing ambient noise levels can be very low and therefore, such activities can greatly impact on surrounding amenity. The selection of suitable sites is very important and care should be taken at an early stage to ensure that the chosen location is appropriate.

5.3 Codes of Practice

5.3.1 Some of the more common recreational activities have associated Codes of Practice. While these Codes of Practice do not have the force of law, they do provide important guidance on likely noise impacts and advice on setting suitable controls.

5.3.2. Any noise report required to assess likely noise impact should properly consider any relevant Codes of Practice.

Current Codes of Practice are listed in Annex 3.

5.4 Multi Use Games Areas (MUGAs)

5.4.1. Currently, there are no Codes of Practice for controlling noise from MUGAs.

5.4.2. Planning applications for such facilities can give rise to a range of amenity concerns, especially noise, particularly where they are proposed in residential neighbourhoods. Noise impacts from MUGAs can vary depending on a number of factors including the location, design, and size of the facility and the level of use. Consequently, early guidance should be sought from the LPA. It's recommended that a Noise Management Plan is submitted with planning applications for MUGAs, covering issues such as community liaison, complaints procedures, student briefings and preventing unauthorised use.

5.4.3. On flat terrain sites, landscaping, mounding and noise barriers can be used to mitigate noise breakout and floodlight spillage.

5.4.4. In noise sensitive locations, the materials chosen and the design should be strongly influenced by noise reduction considerations. Fences should be fixed to support posts to prevent excessive movement of fencing, and rubber damping pads could be considered.

5.4.5. Consideration of the above points is vital as controlling noise levels from the use of such developments can be difficult. It is therefore important to provide as much information of the proposed use and expected noise impact on the neighbouring noise sensitive premises (both indoors and outdoors). Short and long term LAeq, LAmax, LA90 and LA10 would be appropriate indices for this purpose.

5.4.6. Sport England guidance on the design and construction of MUGAs is available on Sport England's website. https://www.sportengland.org.

6.0 New Noise Sensitive Developments

6.1 Scope

6.1.1. The guidance in this chapter relates to residential developments only. Schools and hospitals should be judged against appropriate existing standards such as Building Bulletin 93: Acoustic Design of Schools, A Design Guide and Department of Health, Health Technical Memorandum 08-01; Acoustics. (2008).

6.2 Determining Site Suitability

6.2.1. In determining the suitability of the chosen site and the layout and design of the development, the applicant should have regard to the basic principles detailed in Section 2.1 of this document. The developer should be aware of, and where appropriate, have regard to the Environmental Noise Directive (END).

6.2.2. As with all planning applications, regard should be had to the relevant policies of the Local Development Plan and other material considerations such as Noise Policy Statement England, National Planning Policy Framework and the National Noise Planning Guidance in developing the proposal. The LPA will be able to provide information about any relevant locally set noise limits or standards for new noise-sensitive development.

6.3 Criteria for requiring a Noise Assessment

6.3.1. Where new noise sensitive premises are proposed on a site which is likely to experience noise from transport sources or other sources, such as industrial development (see section 6.6), the LPA is likely to require a noise assessment. As a guide, this is likely to include all sites located near to a motorway, dual carriageway, major A road, some B roads and urban routes, railway lines, air fields, airports or sea ports.

6.3.2. It is important to note that this is only a guide and other locations may also need to be considered. For example, town centre development that may be affected by the night time economy, some B roads may have a higher than average traffic load and could generate high levels of road noise. These will need to be considered on a case by case basis and early discussions are recommended.

6.3.3. The noise assessment should be carried out to help determine the suitability of the site, the number of units and the type of accommodation to be built, as well as the final layout and design of the units.

6.3.4. It is important, therefore, that wherever possible, the noise assessment is carried out at the pre-application stage and used to inform the site design and layout,

which should be discussed with the LPA.

6.3.5 Sites exposed to high levels of noise may require acoustic bunding or other physical features that constrain available development area or design features that increase costs or both. By establishing what is likely to be needed early on it is possible to reflect the additional costs in the value of the land before purchase.

6.4 Assessment Methodology

6.4.1. The methodology for carrying out the assessment should follow the advice set out in Section 2.3 along with the following considerations.

6.4.2. Development affected by transportation noise sources shall use the recommended acoustic approach set out in Pro PG: Planning and Noise – Professional Practice Guidance on Planning and Noise- New Residential Development 2017.

6.4.3. When assessing the impact of transportation noise, be that from road, rail or air, then an Acoustic Design Statement shall be provided following the principles set out in ProPG:Planning and Noise (2017) “Professional Planning Guidance on Planning and Noise – New Residential Development. A Good Acoustic Design process shall be followed to achieve appropriate internal and external acoustic conditions.

6.4.4. Development affected by railway noise shall use the Calculation of Rail Noise (CRN) guidance.

6.4.5. The size of the development and proximity to the noise source will determine the preferred methodology and length of monitoring required.

6.4.6. Where major developments impact on existing residential property. For instance where transport assessments demonstrate increase traffic flows. Noise calculations should be made against future road traffic predictions, as well as current levels (See Calculation of Road Traffic Noise). Additional shorter term LAeqs would be appropriate to identify noisier periods when the impact from noise will be greater.

6.4.7. Night time noise monitoring will be expected as:

- Night time periods can see an increase in HGV movements on roads, which can affect the expected drop in dB levels.

- Consideration should be had to the influence of individual LA max levels which can only be obtained by measurement using short 5 minute periods.
- Road texture, speed and gradient, plus existing noise barriers and land topography can greatly influence the noise levels.

6.4.8. Therefore, the prediction of night time noise levels using calculation methods only will normally be rejected unless strong evidence is provided to show the method is robust and accurate.

6.4.9. Appropriate computer models showing noise contours across the entire site and the proposed facades should be provided.

6.4.10. Predictions and calculations shall also be carried out for all storeys of a multi-storey building where appropriate. This needs to be considered alongside appropriate ventilation, notably in areas where the air quality is poor.

6.5 Design Criteria for Noise Sensitive Development

6.5.1. Where the noise assessment has shown that habitable rooms will be exposed to noise levels likely to give rise to any adverse impact, noise mitigation will be required.

6.5.2. Design control measures should aim to meet the recommended standards set out in table 4 of BS 8233:2014 and regular night time noise events such as scheduled aircraft or passing trains which can cause sleep disturbance shall be minimized and assessed as (LAmax,F), as recommended in the WHO's Night Noise Guidelines for Europe (2009), unless there are particular reasons why this is not considered appropriate. In such cases, a clear explanation of the reasons should be provided.

6.5.3. As the standards for BS8233:2014 and the W.H.O. relate only to anonymous noise, eg distant road traffic and noise without characteristics such as impulsivity, low frequency content or tones then, if these are present, additional discussion will be required with the LPA for the purpose of establishing suitable assessment techniques and standards to be achieved.

6.5.4. While it is acknowledged that noise mitigation measures can be used in a lot of cases to achieve suitable internal levels, it is important that preference is given to criteria based on windows being partially open. If it is not possible to achieve suitable internal levels with the windows opened then details of alternative ventilation must be supplied.

6.5.5. The advice set out in the BRE document ‘Sound Control for Homes’ (1993) should be considered.

6.5.6. Specific points for consideration include:

- Provide appropriate distances between noise sensitive developments and noise sources;
- Land zoning to separate noisy uses from noise sensitive uses, for example, avoiding the siting of children’s playing areas next to accommodation for the elderly;
- Careful orientation of building layout, such as at right angles to the noise source;
- Introduction of single aspect buildings;
- Internal layout of dwellings, through the location of non-habitable rooms such as bathrooms, kitchens and circulation areas as buffers between the noise source and habitable rooms;
- Screening by non-noise sensitive structures or barrier blocks such as garages and walls;
- The introduction of acoustic screening such as bunding/embankments, fencing and walling;
- Protection of external residential amenity areas by positioning them towards the centre of the development sites.

6.5.7. The submission of details of layout and design should be supported by a scheme showing details of mitigation techniques. Computer modelling which shows the impact of the design measures should be produced. See 3.4 for information on prediction methods and modelling.

6.6 New Noise Sensitive Developments near to existing Industrial/Commercial noise sources

6.6.1. Careful consideration will need to be given to proposals that are likely to site new noise sensitive developments near to existing industrial, commercial, entertainment premises, airfields air ports and sea ports.

6.6.2. The 'agent of change' principle, the principle by which a person or business introducing a new land use is responsible for managing the impact of that change, will apply. The National Planning Policy Framework 2019 Para 182

states: “Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities.”

6.6.3. There is no protection offered in law to existing premises from nuisance complaints made by new residents. This may result in formal action being taken against these premises if a statutory nuisance is established or civil action at common law for nuisance.

6.6.4. Where it is apparent to the LPA that existing noise from an existing industrial, commercial, entertainment premises, places of worship, sports clubs, airfields, airports and sea ports is likely to cause disturbance or a statutory nuisance to new residents, the development is unlikely to be supported unless the applicant (or ‘agent of change’) provides clear evidence that adequate noise attenuation to the existing noise sources can and will be provided. The applicant (or 'agent of change') will be required to provide a detailed noise mitigation plan with their acoustic assessment.

6.6.5. In some circumstances, legal agreements can be entered into, whereby the developers provide the necessary measures to attenuate the existing noise through appropriate techniques including re-engineering the source to reduce emissions, sound proofing adequate sound proofing or re-locating the noise source.

7.0 Transport Schemes

7.1 Scope

7.1.1. This section covers noise from additional vehicle movements likely to be generated by new development (eg. new commercial and industrial sites, entertainment premises and large scale residential developments etc. on), and stand-alone transport schemes (eg. traffic calming measures and new road, rail, port or airport developments).

7.2 Guidelines and criteria

7.2.2. The Department for Transport's Design Manual for Roads and Bridges (DMRB) Volume 11 Section 3 sets out a method for evaluating both the immediate and long term impact of changes in the 18-hour traffic flow (06.00 – 24.00) on noise sensitive receptors and the information to be provided for different types of schemes. It also sets out the noise criteria to consider, namely whether there is likely to be a change in:

- Noise level of 1dB $LA_{10,18h}$ or more in the short term or 3dB $LA_{10,\ 18h}$ in the long term at any sensitive receptor within the study area.
- Noise level of 3dB $L_{night\ outside}$ or more in the long term of any sensitive receptor within the study area where an $L_{\ night\ outside}$ greater than 55dB is predicted.

7.3 Information required to support a planning application

7.3.1. The DMRB sets out the indices to use, the way to assess predicted noise levels, the effect of mitigation measures, and the information to be provided for different levels of noise assessments. Always check the Department for Transport's website for the most up-to-date guidance (see:

http://dft.gov.uk/ha/standards/dmrb/vol11/section3.htm).

Annex 1 – Glossary of Terms

Ambient Noise	Totally encompassing sound in a given situation at a given time composed of sound from all sources near and far.
Background Noise	Sometimes referred to as the background sound level, this is the ambient noise, in the absence of the noise under investigation, measured using time weighting "F", that is equaled or exceeded for 90% of the measurement time interval. Expressed as LA90,T, where "T" refers to the measurement time interval in minutes.
dB(A)	The noise level in decibels, a measure including a correction for the sensitivity of the human ear defined in the International standard IEC61672:2003 and various national standards relating to the measurement of sound level. Measurements in dB(A) broadly agree with people's assessment of loudness. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound. The background noise level in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A).
LA90, T	This is the noise level exceeded for 90% of the measurement period. Often referred to as the background noise level.
LAmax, T	This is the maximum recorded sound pressure level within the relevant time interval (t).
LAeq, T	This is the equivalent continuous A weighted sound pressure level and is the level of a notional steady sound which has the same acoustic energy as the fluctuating sound over a given time period. It often used as a measurement of environmental noise.
LA10, T	This is the noise level exceeded for 10% of the measurement period.

Local Planning Authority (LPA)	A local planning authority is the local authority (usually the District, Borough or City Council) that is empowered by law to exercise statutory town planning functions for a particular area of the United Kingdom. In Sussex, the two County Councils are the Planning Authorities for waste and minerals planning applications for their areas. The South Downs National Park Authority is the Planning Authority for its area.
Modelling	The process of generating abstract, conceptual, graphical and/or mathematical models.
Noise	This was defined in the Wilson report published in 1963 as 'unwanted sound'. Noise includes vibration, except where the context indicates otherwise. Sound is a periodic fluctuation in pressure, typically in air. Noise is classified as a pollutant in the European Directive on Integrated Pollution Prevention and Control.
Noise climate	General description of existing noise levels in respect to a particular area.
Noise generating	A development that has the potential to create a negative noise impact on sensitive receptors.
Noise sensitive receptor	Any dwelling, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity, which may be susceptible to noise.
Rating Level	The noise level of an industrial noise source which includes an adjustment for the character of the noise. Used in BS4142: 2014.
Tonality	Whilst tonality can be judged subjectively, it is often useful to measure it. This can be achieved through 1/3rd octave band or by narrow band analysis. The level differences between adjacent one third octave bands that identify a tone are: • 15 dB in the low frequency one third octave bands (25Hz to 125 Hz); • 8 dB in the middle frequency one third octave bands (160 Hz to 400 Hz); • 5 dB in the high frequency one third octave bands (500 Hz to 10,000 Hz).

The Standard used within an objective method for assessing the audibility of tones in BS4142: 2014 is “ISO 1996 Acoustics – Description, measurement and assessment of environmental noise – Part 2: Determination of environmental noise levels”.

Annex 2 – Relevant Standards

Summary of key information from relevant national and international standards and guidance.

The following national and international documents provide further technical advice and guidance which should be referred to when making your application.

Development Category	**Type of development**	**Relevant standards (See reference list below for full details)**	**Recommended noise thresholds at the most sensitive noise receptors.**
All types of development	This standard is relevant to all categories of noise assessment.	ISO 1996 Parts 1, 2 & 3	N/A
Construction sites	All construction sites	BS5228 -1 2009 + A1:2014 Noise BS5228 -2 2009 + A1:2014 Vibration	When setting appropriate thresholds refer to Annex E for BS5228 -1 2009 + A1:2014 Noise and Table B1 for BS5228 -2 2009 + A1:2014 Vibration.
Entertainment premises	Clubs, pubs bars, places of entertainment and other recreational uses	Relevant Local Authority licensing policy . CoP on Control of Noise from Pubs and Clubs: IOA 2003.	Any amplified sound (to include music and speech) will be inaudible within any noise sensitive premises with or without one or more windows open.
Medical sites	New build or extensions that require planning permission.	DoH. Specialist Services – Health Technical Memorandum 08-01; Acoustics. (2008)	Refer to the specific criteria recommended in the memorandum.
Industrial and commercial sites and plant	Factories, industrial premises, fixed installations, or sources of an industrial nature in commercial premises.	BS4142:2014 + A1:2019. BS8233:2014. WHO (2009). WHO (2018) DMRB (2011). EMAQ (2018).	1 The rating level of plant, where practicable, shall be no greater that the existing background sound levels, when measured in accordance with BS4142. 2 Where background sound levels are low, discussions shall be had with the LPA to agree an objective. 3 Apply the indoor ambient noise levels in Tables 4 and 6 of BS8233. 4 Apply the WHO 2009 Community Noise guidelines for outdoor amenity areas.

Development Category	Type of development	Relevant standards (See reference list below for full details)	Recommended noise thresholds at the most sensitive noise receptors.
Mineral sites	All mineral extraction sites	BS4142:2014 + A1: 2019. WHO (2009)	1 The rating level of plant, where practicable, shall be no greater that the existing background sound levels, when measured in accordance with BS4142. 2 Where background sound levels are low, discussions shall be had with the LPA to agree an objective.
Residential development	New houses, extensions, flats, and house conversions that require planning permission.	BS8233:2014. WHO (2009). ProPG (2017) Building Regulations 2010 Approved Document E.	1 Apply the indoor ambient noise levels in Tables 4 and 6 of BS8233. 2 Apply the WHO 2009 Community Noise guidelines for outdoor amenity areas.
Schools and residential care homes	New build, extensions or change of use that require planning permission.	BS8233:2014. WHO (2009). BS4142:2014. ProPG (2017) BB93. IOA: Acoustics of Schools: A design guide, 2015.	For schools refer to BB93 and apply the IOA acoustics for schools guidance for external areas. For residential care homes apply the indoor ambient noise levels in Tables 4 and 6 of BS8233. Also apply the WHO 2009 Community Noise guidelines for outdoor amenity areas.
Outdoor sports and recreational facilities	Multi-use games areas, all weather pitches, stadia, leisure centres, clay target shooting, skate parks and off road motor sports.	BS8233:2014. WHO (2009). BS4142:2014. Sport England Design Guidance Note - Acoustics 2015. CIEH Clay Target Shooting, guidance on the control of noise 2003. COP Noise Council 1994. COP NSCA 1996.	Refer to the specific criteria recommended in the relevant guidance.

Development Category	**Type of development**	**Relevant standards (See reference list below for full details)**	**Recommended noise thresholds at the most sensitive noise receptors.**
Transport	Road (new and improved roads) Rail	DMRB, The Noise Insulation Regulations 1975 (as amended 1988). ProPG (2017)	Apply the requirements of the Regulations and WHO's night noise guideline (NNG) of 40dB Lnight,outside.
	Ports Airports	BS8233:2014. WHO (2009) (2018) ProPG (2017)	For residential care homes apply the indoor ambient noise levels in Tables 4 and 6 of BS8233. Also apply the WHO 2009 Community Noise guidelines for outdoor amenity areas.
Waste sites	All waste sites, including waste water treatment sites.	BS8233:2014. WHO (2009). BS4142:2014. DMRB. IPPC H3 (Part 2).	
Wind Turbines (NB. Due to concerns with ETSU-R-(& please discuss appropriate thresholds with the LPA as early as possible).	Single turbines	ETSU-R-97 WHO (2009) IOA (2013)	35 dBL90, 10 mins (free-field)
	Wind farms		1a. Daytime (07:00 – 23:00): <5dB above background. 1b. Daytime (07:00 – 23:00) in low noise environments (taken as below 30 dB): 35 dB L90, 10 mins (free-field). 2. night (23:00 – 07:00): 43 dBL90, 10 mins (free-field).

Annex 3 - References

1	ISO 1996 Parts 1,2 & 3 - Description, measurement and assessment of environmental noise.
2	BS 5228-1:2009 + A1:2014 - Code of practice for noise and vibration control on construction and open sites - Noise
3	BS 5228-2:2009 + A1:2014 - Code of practice for noise and vibration control on construction and open sites - Vibration
4	BS 7385 Part 2 1993 – Guide to damage levels from ground borne vibration
5	BS 6472:2008: Parts 1 & 2 – Guide to evaluation of human exposure to vibration.
6	BS 8233:2014: Guidance on sound insulation and noise reduction for buildings – Code of practice.
7	WHO (2009): World Health Organisation – Night noise guidelines for Europe.
8	BS 4142:2014 + A1:2019- Method for rating and assessing industrial and commercial sound.
9	DMRB: Design Manual for Roads & Bridges, Volume 11, Section 3, Part 7, HD 213/11 – revision 1 (November 2011).
10	The Control of odour and noise from commercial kitchen exhaust systems. EMAQ, September 2018
11	The National Planning Policy Framework (2019).
12	The National Planning Practice Guidance – Noise
13	The Noise Insulation Regulations 1975 (as amended 1988).
14	IPPC H3 (Part 2): Horizontal Guidance Note, Integrated Pollution Prevention & Control (IPPC), Part 2 – Noise Assessment & Control (2004).
15	ETSU-R-97 (2006): The assessment of rating of noise from wind farms.
16	A Good Practice Guide to the Application of ETSU-R-97 (Institute of Acoustics, 2013).
17	Department for Education, Building Bulletin 93 – Acoustic Design for schools-Performance Standards 2015
18	Acoustic of Schools – A design guide. IOA and ANC 2015
19	ProPG (2017): Planning Noise – Professional Practice Guidance on Planning and Noise – New Residential Development

Codes of Practice

- CoP Environmental Noise Control at Concerts; Noise Council 1995 (under review)
- CoP on Noise from Model Aircraft, DoE, 1982.
- CoP on Control of Noise from Pubs and Clubs: IOA 2003
- Clay Target Shooting - Guidance on the control of noise, CIEH 2003
- CoP on noise from organised off-road motorcycle sport, Noise Council 1984
- CoP on Powerboat Racing and Water-Ski racing, British Water Skiing Federation 1999
- CoP for Control of noise from Oval Motor racing Circuits, NSCA 1996.