

Legislation, Policy and Guidance

1. Legislation

1.1 Environmental Protection Act 1990

The Environmental Protection Act 1990 (EPA) provides powers to control noise where a statutory noise nuisance exists. Section 80 of the EPA states that where a statutory nuisance exists, or is likely to occur or reoccur, then the responsible Local Authority shall serve a notice requiring the abatement of the nuisance; or prohibiting its occurrence or reoccurrence, as well as requiring any such steps as may be necessary to abate the nuisance including a specification of the timescales in which to take such action. Section 82 of the EPA provides an individual subject to a statutory nuisance the right to make representations to the courts and for the courts to take such action, as may be appropriate, against the originator of that nuisance such that the nuisance is abated.

1.2 Control of Pollution Act 1974

The Control of Pollution Act 1974 (CoPA) requires that 'Best Practicable Means' (as defined in section 72 of CoPA) are adopted to control construction noise on any given site.

Sections 60 and 61 of the CoPA provide the key legislative provisions regarding noise and vibration from demolition and construction sites. If noise complaints are received, a Section 60 notice may be issued by the Local Authority, with instructions to cease work until specific conditions to reduce noise have been adopted.

Section 61 of the CoPA provides a means for applying for prior consent to carry out noise generating activities during construction. Once prior consent has been agreed under Section 61, a Section 60 notice cannot be served, provided the agreed conditions are complied with.

2. Guidance

2.1 Noise Policy Statement for England (NPSE)

The NPSE advises that noise impacts should be assessed based on adverse and significant adverse effect. The NPSE does not provide any specific guidance on assessment methods or noise limits. However, the concepts summarised in Table 1 are introduced and can be applied when considering the significance of noise impacts.

Table 1: Observed Effect Levels

Effect Level	Description
No Observed Effect Level (NOEL)	This is the noise level below which no effect can be detected. In simple terms, below this level of noise, there is no detectable effect on health and quality of life due to the noise being assessed.
Lowest Observed Adverse Effect Level (LOAEL)	This is the level of noise above which adverse effects on health and quality of life can be detected.
Significant Observed Adverse Effect Level (SOAEL)	This is the level of noise above which significant adverse effects on health and quality of life occur.

2.2 National Planning Policy Framework 2021 (NPPF)

The NPPF sets out the Government's planning policies and how these are expected to be applied. Various references to noise are included and those relevant to non-mineral extraction related activity are described below.

Paragraph 174 of the NPPF states:

'Planning policies and decisions should contribute to and enhance the natural and local environment by:

e) 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'

Paragraph 185 of the NPPF states:

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

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

2.3 Planning Practice Guidance

Online Planning Practice Guidance (PPG) has been published to provide greater details in relation to the relevance of noise to the planning process following the introduction of the National Planning Policy Framework (NPPF) and Noise Policy Statement for England (NPSE).

This guidance states, under the heading 'How can noise impacts be determined?', that the following should be considered by local authorities:

- whether or not a significant adverse effect is occurring or likely to occur;
- whether or not an adverse effect is occurring or likely to occur; and
- whether or not a good standard of amenity can be achieved.

In line with NPSE, this includes identifying where noise exposure is above or below the significant observed adverse effect level and the lowest observed adverse effect level for a given situation, during both construction and operation of the Revised Scheme.

Further guidance on each of the various observed effect levels set out in the NPSE is provided in 'Noise exposure hierarchy table' detailed in the section headed 'How can it be established whether noise is likely to be a concern?' which is reproduced below.

Table 2: Observed Effects

Response	Examples of outcomes	Increasing effect level	Action
No Observed Effect Level			
Not present	No Effect	No Observed Effect	No Specific measures required
No Observed Adverse Effect Level			
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude or other physiological response. 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, attitude or other physiological response, 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 small actual or 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, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

It is important to note that no specific noise parameters are defined in the text or target noise levels provided.

Under the heading 'What factors influence whether noise could be a Concern?', the subjective nature of noise is discussed. It is stated that there is no simple relationship between noise levels and the impact on those affected. This depends on how various factors combine in particular situations, these include:

- the source and absolute level of the noise together with the time of day it occurs. Some types and level of noise will cause a greater adverse effect at night than if they occurred during the day – this is because

people tend to be more sensitive to noise at night as they are trying to sleep. The adverse effect can also be greater simply because there is less background noise at night;

- for a new noise making source, how the noise from it relates to the existing sound environment;
- for non-continuous sources of noise, the number of noise events, and the frequency and pattern of occurrence of the noise;
- the spectral content of the noise (i.e. whether or not the noise contains particular high or low frequency content) and the general character of the noise (i.e. whether or not the noise contains particular tonal characteristics or other particular features), and;
- the local arrangement of buildings, surfaces and green infrastructure, and the extent to which it reflects or absorbs noise

More specific factors to consider when relevant:

- the cumulative impacts of more than one source of noise;
- whether any adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time (and the effect this may have on living conditions). In both cases a suitable alternative means of ventilation is likely to be necessary. Further information on ventilation can be found in the Building Regulations.
- In cases where existing noise sensitive locations already experience high noise levels, a development that is expected to cause even a small increase in the overall noise level may result in a significant adverse effect occurring even though little to no change in behaviour would be likely to occur.
- Noise Action Plans (where these exist), and, in particular the Important Areas identified through the process associated with the Environmental Noise Directive and corresponding regulations should be taken into account. Defra's website has information on Noise Action Plans and Important Areas. Local authority environmental health departments will also be able to provide information about Important Areas.
- the effect of noise on wildlife. Noise can adversely affect wildlife and ecosystems. Particular consideration needs to be given to the potential effects of noisy development on international, national and locally designated sites of importance for biodiversity;
- where external amenity spaces are an intrinsic part of the overall design, the acoustic environment of those spaces should be considered so that they can be enjoyed as intended.
- some commercial developments including restaurants, hot food takeaways, night clubs and public houses can have particular impacts, not least because activities are often at their peak in the evening and late at night. Local planning authorities will wish to bear in mind not only the noise that is generated within the premises but also the noise that may be made by customers in the vicinity.

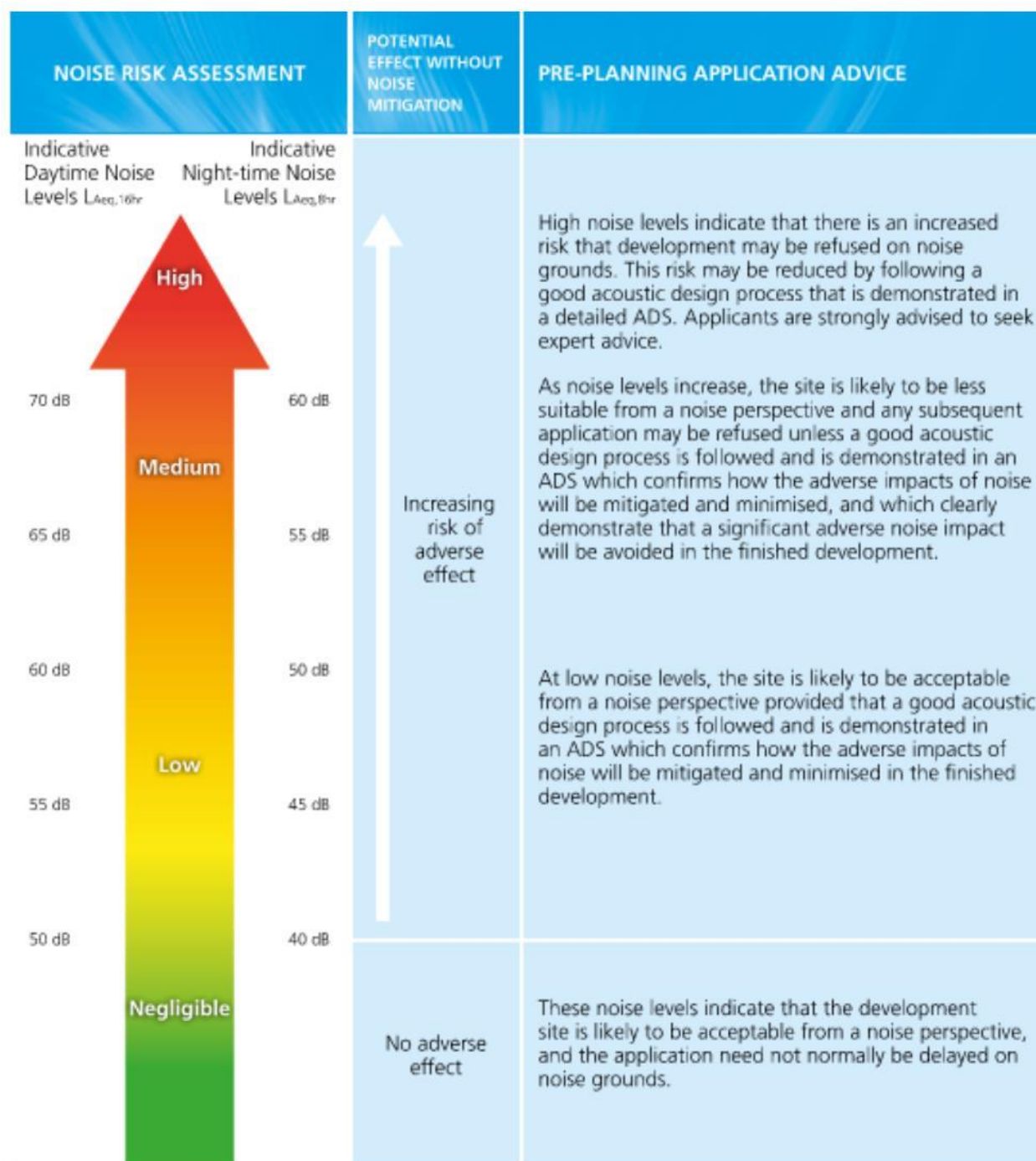
2.4 ProPG Professional Practice Guidance on Planning and Noise

ProPG Planning & Noise is a document aimed at providing practitioners guidance on a recommended approach to the management of noise in the context of the planning system. The document was published jointly by the three professional bodies in the acoustics industry: Acoustics and Noise Consultants (ANC); the Institute of Acoustics (IOA); and the Chartered Institute of Environmental Health (CIEH).

The guide is focussed on new residential development being affected by transport noise. Its primary goal is to assist in the delivery of sustainable development by promoting good health and wellbeing through the effective management of noise. It seeks to do this by encouraging good acoustic design processes in and around proposed new residential development, having particular regard to national policy on planning and noise.

One consideration of the ProPG is that of access to space providing some respite from noise during those times when homes may be noise affected. This may include at least one façade of a home being exposed to lower noise levels, thus allowing windows to be opened on that façade for ventilation purposes in situations where occupants may choose to close windows on a more noise exposed façade. Alternatively, where external amenity directly associated with a property is noise affected, easy access to external amenity space on an acoustically screened side of the property, or indeed to nearby public open space where the noise levels are lower, may both reasonably be considered as contributory mitigating factors.

An initial site noise risk assessment is contained in ProPG as represented below.


Figure 1 Notes:

- Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures.
- 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".
- $L_{Aeq,16hr}$ is for daytime 0700 – 2300, $L_{Aeq,8hr}$ is for night-time 2300 – 0700.
- An indication that there may be more than 10 noise events at night (2300 – 0700) with $L_{Amax,F} > 60$ dB means the site should not be regarded as negligible risk.

2.5 Planning & Noise Technical Guidance

Manchester City Council (MCC) Environmental Protection 'Planning & Noise Technical Guidance – June 2022' (PNTG) is intended to provide help and advice in relation to noise in a planning context to encourage good acoustic design. MCC encourages applicants, developers and acoustic consultants to read this document prior to submitting a planning application.

PNTG outlines the various national policy and guidance available, provides MCC's view on their applicability for noise assessment and prediction and defines MCC's criteria for good acoustic conditions, covering:

- Residential developments;
- Entertainment venues;
- Mixed use developments;
- Construction / demolition phases;
- Industrial / commercial developments;
- Noise and vibration from fixed plant / equipment
- Other potentially noisy activities.

For new residential developments, MCC requires the following noise limits to be demonstrated:

- Bedrooms (night time - 23.00 - 07.00) 30 dB L_{Aeq} (individual noise events should not normally exceed 45 dB $L_{Amax,F}$ by more than 10 times)
- Living Rooms (daytime - 07.00 - 23.00) 35 dB L_{Aeq}
- Gardens and terraces (daytime) 55 dB L_{Aeq}

For new entertainment venues or residential development in close proximity to existing entertainment sources:

- Music noise levels in the 63Hz and 125Hz octave centre frequency bands (L_{eq}) should be controlled so as not to exceed (in habitable rooms) 47dB and 41dB ($L_{eq,5min}$), respectively.

Specific construction / demolition working hours apply for all developments:

- Monday - Friday: 7.30am - 6pm
- Saturday: 8.30am - 2pm
- Sunday / Bank holidays: No work

For new industrial / commercial developments, the following is applicable:

- The development should be designed so as to achieve a rating level of 5dB (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location.

For new fixed plant / equipment:

- Externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5dB (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location.

Other potentially noisy activities may have a necessity for bespoke requirements and should be discussed with MCC Environmental Protection ahead of a planning application submission.

2.6 British Standard (BS) 6472-1

BS 6472-1: 2008 'Human exposure to vibration in building – Vibration sources other than blasting' (BS 6472) describes how to determine the vibration dose value (VDV) from measurements. The VDV is used to estimate the probability of adverse comment from exposure to vibration in buildings. Consideration is given to the time of day and the use of the space. Table 10 below provides the VDV ranges which might result in various probabilities of adverse comment within residential dwellings.

Table 10: VDV for residential dwellings

Time	Low probability of adverse comment, m.s-1.75	Adverse comment possible, m.s-1.75	Adverse comment probable, m.s-1.75
Day (07.00 – 23.00)	0.2 to 0.4	0.4 to 0.8	0.8 to 1.6

Time	Low probability of adverse comment, m.s-1.75	Adverse comment possible, m.s-1.75	Adverse comment probable, m.s-1.75
Night (23.00 – 07.00)	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8

2.7 BS 7445-1

Part 1 (2003) of BS 7445 defines the basic quantities to be used for the description of noise in community environments and describes basic procedures for the determination of these quantities. It includes guidance on:

- Location of outdoor measurements.
- Equipment calibration.
- ‘A’ weighting etc.

2.8 BS 7445-2

Part 2 (1991) of BS 7445 describes methods to be used for measuring and describing environmental noise relevant to general land use. It defines the difference between a ‘façade’ and ‘free-field’ measurement location and an approximate correction for converting between the two parameters. The approximation is that the ‘façade’ measured level is approximately 3dB greater than the ‘free-field’ level.

2.9 British Standard (BS) 5228 Parts 1 and 2

British Standard 5228-1: 2009 +A1: 2014 ‘Code of practice for noise and vibration control on construction and open sites - Part 1: Noise’ provides guidance on a range of considerations relating to construction noise including the legislative framework, general control measures, example methods for estimating construction noise levels and example criteria which may be considered when assessing the significance of any effects.

British Standard 5228-2: 2009 +A1:2014 ‘Code of practice for noise and vibration control on construction and open sites - Part 2: Vibration’ also provides general guidance relating to construction vibration, including the legislative framework, prediction methods, control measures and assessment criteria.

2.10 Transport Research Laboratory Report 429

The Transport Research Laboratory ‘Groundborne vibration caused by mechanised construction works’ report 429 provides a summary of vibration levels from compaction plant across approximately 18 different sites for varying fill thicknesses and distances from the source. These can be used for comparisons or for predictions if ground conditions are known.

2.11 Institute of Acoustics Good Practice Guide

The Good Practice Guide on the Control of Noise from Pubs & Clubs contains an Annex of proposed assessment criteria. The proposed objective criteria are set out to ensure that two conditions are met:

that for premises where entertainment takes place on a regular basis, noise is inaudible inside noise sensitive premises at all times (It is said that the term ‘regular’ needs to be defined locally and with a regard to local expectations)

if entertainment takes place on a less frequent basis, the music should be inaudible inside noise sensitive property between the hours of 2300 and 0700. Noise is considered to be inaudible when it is at a sufficiently low level such that is not recognizable as emanating from the source in question and it does not alter the perception of the ambient noise environment that would prevail in the absence of the source in question. The IOA Annex expresses numerical limits as shown in Table 16 below.

Table 16: IOA guidance limits for music entertainment noise

Venue Where...	Suggested Regulations	Outcome if Criteria Met
Entertainment < 30 times/year*	$L_{Aeq,15mins}$ (EN) should not exceed L_{A90} (WEN) by more than 5dB.	EN will generally be audible but not overly obtrusive inside the noise sensitive property.

Venue Where...	Suggested Regulations	Outcome if Criteria Met
Entertainment > 30 times/year*	L _{Aeq} (EN) should not exceed L _{A90} (WEN) by more than 5dB And the L ₁₀ (EN) should not exceed L ₉₀ (WEN) by more than 5dB in any 1/3 octave band between 40 and 160Hz.	EN will generally be audible but not overly obtrusive inside the noise sensitive property.
Entertainment > once/week or continues beyond 2300hrs	L _{Aeq} (EN) should not exceed L _{A90} (WEN) And L ₁₀ (EN) should not exceed L ₉₀ (WEN) in any 1/3 octave band between 40 and 160Hz.	EN will be virtually inaudible inside noise sensitive property.

EN = Entertainment noise level, WEN = Representative background noise level without the entertainment noise, both measured 1m from the façade of the noise-sensitive premises.

* Not more than once a week and ends by 2300hrs.

2.12 Approved Document E

Approved Document E (ADE) provides guidance on the control of sound transfer between residential properties and between non-domestic uses and residential properties. It is divided into four main sections:

- E1 Protection against sound from other parts of the building and adjoining buildings
- E2 Protection against sound within a dwelling house etc
- E3 Reverberation in the common internal parts of buildings containing flats or rooms for residential purposes
- E4 Acoustic conditions in schools

Only section E1 is relevant to the separation required between non-domestic uses and residential uses. It is advised in ADE that the separation selected during the detailed design process should be greater than the minimum separation guidance to account for the magnitude of noise expected in the non-domestic use.

ADE will apply to all mixed-use buildings containing residential properties.

2.13 Approved Document F Volume 1

Approved Document F (ADF) Volume 1 provides guidance on the adequate provision of ventilation to dwellings. It states a requirement that there shall be adequate means of ventilation provided for people in the building, except for parts of the dwelling where people do not normally go, storage areas and garages linked to a single dwelling. The requirement covers a means of ventilation that:

- Extracts water vapour and indoor air pollutants from areas where they are produced in significant quantities (e.g. kitchens, utility rooms and bathrooms) before they spread through the building;
- Supplies a minimum level of outdoor air for occupants' health;
- Rapidly dilutes indoor air pollutants, and disperses water vapour when necessary in habitable Rooms (purge ventilation);
- Minimises the entry of external air pollutants;
- Produces low levels of noise;
- Offers easy access for maintenance; and
- Provides protection from cold draughts.

2.14 Approved Document O

Approved Document O (ADO) provides guidance on the control of overheating in different types of new residential buildings. It states a requirement that reasonable provision must be made in respect of a dwelling, institution or any other building containing one or more rooms for residential purposes, other than a room in a hotel to limit unwanted solar gains in summer and provide an adequate means to remove heat from the indoor environment.

2.15 British Standard (BS) 8233

BS 8233: 2014 (BS 8233) provides guidance for the control of noise in and around buildings, and suggests appropriate criteria and limits for different situations. The criteria and limits are primarily intended to guide the design of new or refurbished buildings undergoing a change of use.

Table 4 within BS 8233 provides desirable internal ambient noise levels for spaces in residential dwellings when they are unoccupied. This is reproduced below in Table 17.

Table 17: Indoor ambient noise levels for dwellings

Activity	Location	Day (07.00 to 23.00)	Night (23.00 to 07.00)
Resting	Living room	35 dB $L_{Aeq, 16\text{hour}}$	-
Dining	Dining room / area	40 dB $L_{Aeq, 16\text{hour}}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq, 16\text{hour}}$	30 dB $L_{Aeq, 8\text{hour}}$

Supplementary Note 2, Note 4 and Note 7 to Table 4 within BS 8233 are copied below for reference:

'NOTE 2 - the levels shown in Table 4 are based on the existing guidelines issued by the WHO...

NOTE 4 - regular individual noise events (for example, schedule aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,T}$ depending on the character and number of events per night.

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

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

2.16 The 'Agent of Change' Principle

The 'Agent of Change' principle is important for the protection of existing lawful business uses. The following is common guidance for the implementation in practice:

- The 'Agent of Change' principle places the responsibility for mitigating impacts from existing noise and other nuisance-generating activities or uses on the proposed new noise-sensitive development;
- The development should be designed to ensure that established noise and other nuisance-generating uses remain viable and can continue or grow without unreasonable restrictions being placed on them, however, it should not be construed as offering a licence to existing operators and occupiers for the unfettered intensification of disturbance generating activity or other unreasonable behaviour;
- New noise and other nuisance generating development proposed close to residential and other noise-sensitive uses should put in place measures to mitigate and manage any noise impacts for neighbouring residents and businesses;
- New development proposals should manage noise and other potential nuisances by:
 - a. ensuring good design mitigates and minimises existing and potential nuisances generated by existing uses and activities located in the area;
 - b. exploring mitigation measures early in the design stage, with necessary and appropriate provisions including ongoing and future management of mitigation measures secured through planning obligations; and

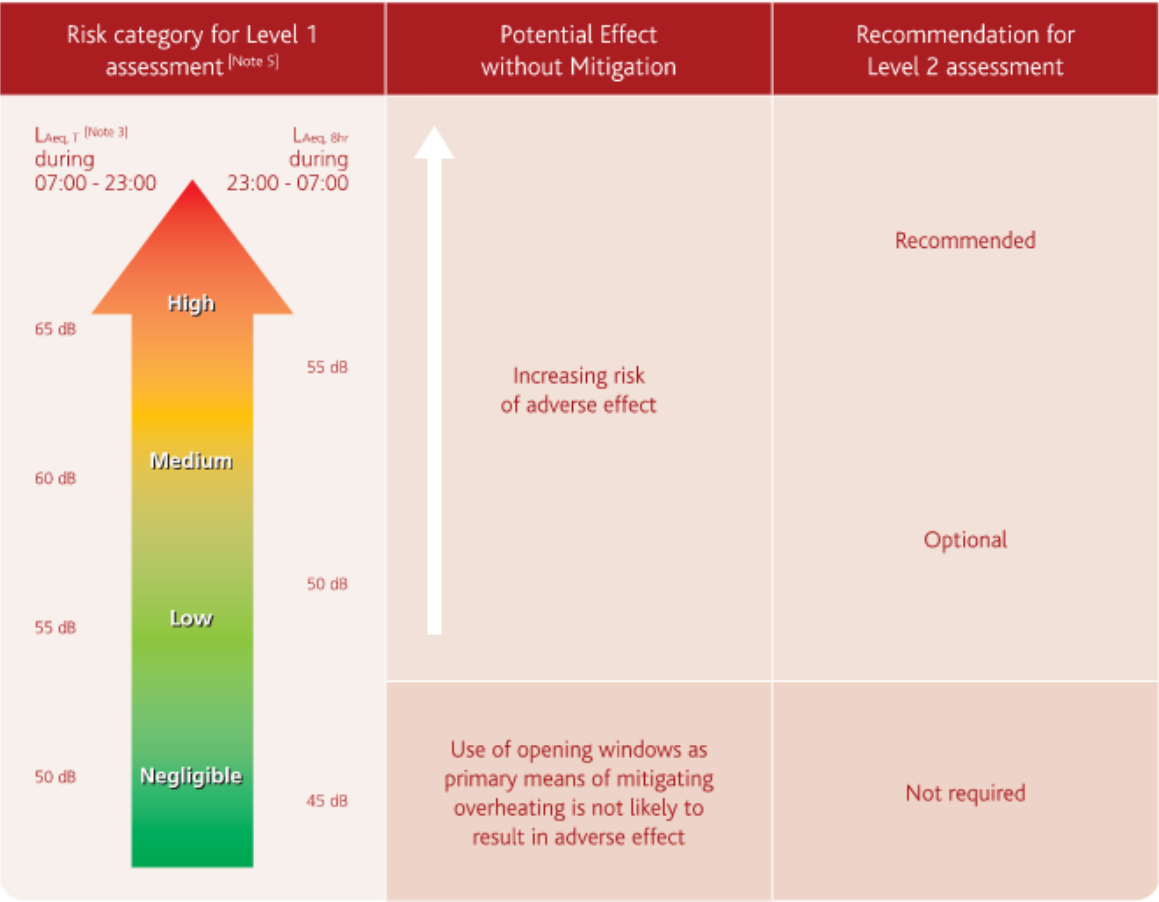
- c. separating new noise-sensitive development where possible from existing noise-generating businesses and uses through distance, screening, internal layout, sound-proofing, insulation and other acoustic design measures.

2.17 Acoustics Ventilation and Overheating Residential Design Guide

Acoustics Ventilation and Overheating, Residential Design Guide was published in January 2020 by the Association of Noise Consultants and the Institute of Acoustics. It recommends an approach to acoustic assessments for new residential development that take due regard of the interdependence of provisions for acoustics, ventilation, and overheating.

Environmental noise ingress is assessed using a two-level assessment procedure for the overheating condition. The first level (Level 1) is a site risk assessment based on external noise levels and the assumption that opening windows are the primary means of mitigating overheating. The second level (Level 2) assessment considers the potential for adverse effect on occupants based on internal ambient noise level.

For the purposes of the Level 1 assessment, it is assumed that a partially open window will provide an outside-to-inside level difference of 13dB. This level difference is considered representative of typical domestic rooms with simple façade openings of around 2% of the floor area. The Level 1 assessment is undertaken against the following guide.



The Level 2 assessment suggests that assessment of the adverse effect from noise exposure should include an estimate of how frequently and for what duration the overheating condition occurs. Internal noise levels from mechanical forms of ventilation provision are also included in the guidance.