Appendix: Noise and Vibration

ANNEX 3: LEGISLATION, POLICY AND GUIDANCE

National Policy: National Planning Policy Framework

1.1 The National Planning Policy Framework (NPPF) (February 2021) sets out the Government's economic, environmental and social planning policies for England. It attempts to summarise in a single document all previous national planning policy advice. Taken together, these policies articulate the Government's vision of sustainable development, which should be interpreted and applied locally to meet local aspirations.

1.2 Under Section 15; Conserving and enhancing the natural environment, the following is stated in paragraph 174:

> *"Planning policies and decisions should contribute to and enhance the natural and local environment by: …*
>
> *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability…"*

1.3 The NPPF goes on to state in paragraph 185 that:

> *"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 potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*
>
> *mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
>
> *identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason"*

Noise Policy Statement for England, 2010 (NPSE)

1.4 The NPSE seeks to clarify the underlying principles and aims in existing policy documents, legislation and guidance that relate to noise. It also sets out the long-term vision of Government noise policy:

1.5 "To promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development".

1.6 The NPSE clarifies that noise should not be considered in isolation of the wider benefits of a scheme or development, and that the intention is to minimise noise and noise effects as far as is reasonably practicable having regard to the underlying principles of sustainable development.

1.7 The first two aims of the NPSE follow established concepts from toxicology that are applied to noise impacts, for example, by the World Health Organisation. They are:

NOEL – No Observed Effect Level - the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise; and

LOAEL – Lowest Observed Adverse Effect Level - the level above which adverse effects on health and quality of life can be detected.

1.8 The NPSE extends these to the concept of a significant observed adverse effect level.

SOAEL – Significant Observed Adverse Effect Level - The level above which significant adverse effects on health and quality of life occur.

1.9 The NPSE notes:

> *"it is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times".*

Planning Practice Guidance (PPG) – Noise

1.10 The Government's PPG on noise provides guidance on the effects of noise exposure, relating these to people's perception of noise, and linking them to the NOEL and, as exposure increases, the LOAEL and SOAEL.

1.11 As exposure increases above the LOAEL, the noise begins to have an adverse effect and consideration needs to be given to mitigating and minimising those effects, taking account of the economic and social benefits being derived from the activity causing the noise. As the noise exposure increases, it will then at some point cross the SOAEL boundary.

1.12 The LOAEL is described in PPG as the level above which "noise starts to cause small changes in behaviour and / or attitude e.g. turning up the volume of the television, speaking more loudly, or, where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life."

1.13 PPG identifies the SOAEL as the level above which "noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area."

Acoustics Ventilation and Overheating Residential Design Guide

10.1 The Association of Noise Consultants' Acoustics, Ventilation and Overheating (AVO) Group produced the AVO Guide in 2020 for use by acoustics practitioners and those involved in the planning, development, design and commissioning of new dwellings.

10.2 The AVO Guide provides risk categories which can be used to assist designers to adopt an integrated approach to the acoustic design within the context of the ventilation and thermal comfort requirements.

10.3 For overheating, the AVO Guide provides thresholds where there is the potential that the noise causes a 'material change in behaviour'. The AVO Guide does not propose limits or onsets between risk categories though it does present a graphical illustration of the evolution between low, medium and high-risk categories. The AVO guidance levels are implemented as follows:

AVO Risk Category	External Noise Level, $L_{Aeq,T}$ dB	
	Daytime	Night-time
Negligible	< 50	< 45
Low	50 - 57	45 - 51
Medium	58 - 65	51 - 57
High	> 65	> 57

10.4 Based on the guidance, overheating should be considered at least for the medium and high categories. All ventilation across the development should provide adequate airflow, in compliance with Approved Document F.

10.5 Additionally, where windows need to remain closed to achieve the noise criteria they can still be opened for purge or rapid ventilation or indeed at the occupants' discretion.