



APPENDIX 12.2 STANDARDS AND GUIDANCE

on behalf of

IQ STUDENT ACCOMMODATION LTD

for the site at

ECHO STREET, MANCHESTER

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Appendix 12.2: Standards and Guidance

Noise Policy Statement for England

The Noise Policy Statement for England (NPSE¹), published in March 2010, sets out the long-term vision of Government noise policy. The Noise Policy aims, as presented in this document, are:

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

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

The NPSE makes reference to the concepts of NOEL (No Observed Effect Level) and LOAEL (Lowest Observed Adverse Effect Level) as used in toxicology but applied to noise impacts. It also introduces the concept of SOAEL (Significant Observed Adverse Effect Level) which is described as the level above which significant adverse effects on health and the quality of life occur.

The first aim of the NPSE is to avoid significant adverse effects, taking into account the guiding principles of sustainable development (as referenced in Section 1.8 of the Statement). The second aim seeks to provide guidance on the situation that exists when the potential noise impact falls between the LOAEL and the SOAEL, in which case:

“...all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development”.

Importantly, the NPSE goes on to state:

“This does not mean that such adverse effects cannot occur”.

The Statement does not provide a noise-based measure to define SOAEL, acknowledging that the SOAEL is likely to vary depending on the noise source, the receptor and the time in question. NPSE advises that:

“Not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available”

¹ Noise Policy Statement for England, Defra, March 2010

It is therefore likely that other guidance will need to be referenced when applying objective standards for the assessment of noise, particularly in reference to the SOAEL, whilst also taking into account the specific circumstances of a proposed development.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) states that the planning system should contribute to and enhance the natural and local environment by, (amongst others) *"preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, water or noise pollution or land stability"*.

The NPPF also advises that;

"planning policies and decisions should aim to:

- *Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;*
- *Mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including thorough use of conditions;*
- *Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land use since they were established, and*
- *Identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value"*.

The NPPF document does not refer to any other documents regarding noise other than NPSE.

Planning Practice Guidance – Noise

Planning Practice Guidance - Noise (PPG) provides additional guidance and elaboration on the NPPF. It advises that when plan-making and decision-taking, the Local Planning Authority should consider the acoustic environment in relation to:

- 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 the Explanatory Note of the NPSE, the PPG goes on to reference the LOAEL and SOAEL in relation to noise impact. It also provides examples of outcomes that could be expected for a given perception level of noise, plus actions that may be required to bring about a desired outcome. However, in line with the NPSE, no objective noise levels are provided for LOAEL or SOAEL although the PPG acknowledges that:

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

Examples of these factors include:

- The source and absolute noise level of the source along with the time of day that it occurs;
- Where the noise is non-continuous, the number of noise events and pattern of occurrence;
- The frequency content and acoustic characteristics of the noise;
- The effect of noise on wildlife;
- The acoustic environment of external amenity areas provided as an intrinsic part of the overall design;
- The impact of noise from certain commercial developments such as night clubs and pubs where activities are often at their peak during the evening and night.

The PPG also provides general advice on the typical options available for mitigating noise. It goes on to suggest that Local Plans may include noise standards applicable to proposed developments within the Local Authority's administrative boundary, although it states that *“Care should be taken, however, to avoid these being implemented as fixed thresholds as specific circumstances may justify some variation being allowed”*.

The PPG was amended in December 2014 to clarify guidance on the potential effect of noise from existing businesses on proposed new residential accommodation. Even if existing noise levels are intermittent (for example, from a live music venue), noise will need to be carefully considered and appropriate mitigation measures employed to control noise at the proposed accommodation.

ProPG: Planning and Noise Professional Practice Guidance on Planning & Noise – New Residential Development

This is new guidance with the overall aim of delivering sustainable development by promoting good health and well-being through the effective management of noise. The guidance aims to complement the national planning policy and encourages the use of good acoustic design at the earliest phase of the planning process.

The ProPG guidance is relevant to assess the impact of noise on the proposed residential development rather than determining the assessment of the impact of noise from the development upon the existing area.

The guidance is applicable to new residential development which would be exposed predominantly to noise from existing transport sources. The ProPG advocates a risk based approach to noise with a two stage sequential approach, which is:

- Stage 1 – an initial noise risk assessment of the proposed development site; and

- Stage 2 – a systematic consideration of four key elements –
 - Element 1 – demonstrating a ‘Good Acoustic Design Process’;
 - Element 2 – observing internal ‘Noise Level Guidelines’;
 - Element 3 – undertaking an ‘External Amenity Area Noise Assessment’ and
 - Element 4 – consideration of ‘Other Relevant Issues’.

The ProPG approach is underpinned by the preparation and delivery of an ‘Acoustic Design Statement’ (ADS), whereby the higher the risk the site, the more detailed the ADS. The ADS should address the following issues:

- Present the initial site noise risk assessment, including the pre-development acoustic conditions prior to development;
- Describe the external noise levels that occur across the site both before and after mitigation measures. The external post mitigation noise assessment should use an informed judgement of typical worst case conditions;
- Demonstrate how good acoustic design is integrated into the overall design and how the proposed acoustic design responds to specific circumstances of the site;
- Confirm how the internal noise level guidelines will be achieved, including full details of the design measures and building envelope specifications;
- A detailed assessment of the potential impact on occupants should be undertaken where individual noise events are expected to exceed 45 dB LAFmax more than 10 times a night inside bedrooms;
- Priority should be given to enable the use of openable windows where practical across the development. Where this is not practical to achieve the internal noise level guidelines with windows open, then full details of the proposed ventilation and thermal comfort arrangements must be provided;
- Present the findings of the external amenity area noise assessment;
- Present findings of the assessment of other relevant issues;
- Confirm for a low risk site, however adverse impacts of noise will be mitigated and minimised;
- Confirm for a medium or high noise risk site how adverse impacts of noise will be mitigated and minimised and clearly demonstrate that a significant adverse noise impact has been avoided.

Standards

BS 7445-1: 2003 Description and measurement of environmental noise - Part 1: Guide to quantities and procedures

This part of British Standard (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. The methods and procedures described in this British Standard are intended to be applicable to sounds from all sources, individually and in combination, which contribute to the total noise at a site.

BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings

This standard provides recommended guideline values for internal noise levels within dwellings which are similar in scope to guideline values contained within the World Health Organisation (WHO) document, Guidelines for Community Noise (1999). These guideline noise levels are shown in Table A12.2.1.

Table A12.2.1: BS 8233: 2014 guideline indoor ambient noise levels for dwellings

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

BS 8233:2014 advises that “regular individual noise events can cause sleep disturbance. A guideline value may be set in terms of Single Event Level (SEL) or L_{AFmax} depending on the character and number of events per night. Sporadic noise events could require separate values”.

BS 8233:2014 adopts guideline external noise values provided in WHO for external amenity areas such as gardens and patios. The standard states that it is “desirable” that the external noise does not exceed 50 dB $L_{Aeq,T}$ with an upper guideline value of 55 dB $L_{Aeq,T}$ whilst recognising that development in higher noise areas such as urban areas or those close to the transport network may require a compromise between elevated noise levels and other factors that determine if development in such areas is warranted. In such circumstances, the development should be designed to achieve the lowest practicable noise levels in external amenity areas.

World Health Organisation Guidelines for Community Noise 1999

WHO recommends that to avoid sleep disturbance, indoor night-time guideline noise values of 30 dB $L_{Aeq,T}$ for continuous noise and 45 dB $L_{Amax,F}$ for individual noise events should be applicable. It is to be noted that the WHO Night Noise Guidelines for Europe 2009 makes reference to research that indicates sleep disturbance from noise events at indoor levels as low as 42 dB L_{AFmax} . The number of individual noise events should also be taken into account and the WHO guidelines suggest that

indoor noise levels from such events should not exceed approximately 45 dB L_{AFmax} more than 10 – 15 times per night.

The WHO document recommends that steady, continuous noise levels should not exceed 55 dB $L_{Aeq,T}$ on balconies, terraces and outdoor living areas. It goes on to state that to protect the majority of individuals from moderate annoyance, external noise levels should not exceed 50 dB $L_{Aeq,T}$.

BS 4142:2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound

BS 4142:2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound (BS 4142) provides guidance on the assessment of the likelihood of complaints relating to sound from industrial and manufacturing processes and commercial sources such as; loading and unloading of goods, mobile plant such as forklift trucks and fixed plant and equipment. The standard is not intended for use with recreational activities, music, construction and demolition, public address systems or people noise. The key aspects of the Standard are summarised below.

The Specific Noise Level - the noise level produced by the source in question at the assessment location - is determined and a correction applied for certain undesirable acoustic features such as tonality, impulsivity or intermittency. The corrected Specific Noise Level is referred to as the Rating Level.

The standard presents a method of assessing potential noise impact by comparing the Rating Level with that of the existing background sound level at the nearest noise sensitive receiver in the absence of the source (the Background Sound Level).

The standard states the following:

- Typically, the greater this difference, the greater the magnitude of the impact.
- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
- The lower the Rating Level is relative to the measured Background Sound Level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the Rating Level does not exceed the Background Sound Level, this is an indication of the specific sound source having a low impact, depending on the context.
- In addition to the margin by which the Rating Level of the specific sound source exceeds the Background Sound Level, the 2014 edition places emphasis upon an appreciation of the context, as follows:

“An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.”

Guidance

Institute of Environmental Management and Assessment – Guidelines for Environmental Noise Impact Assessment

The Institute of Environmental Management and Assessment (IEMA) – Guidelines for Environmental Noise Impact Assessment provides a methodology for noise impact assessment which achieves integration with the Environmental Impact Assessment (EIA) process. The guidelines cover:

- how to scope a noise assessment;
- issues to be considered when defining the baseline noise environment;
- prediction of changes in noise levels as a result of implementing development proposals; and
- definition and evaluation of the significance of the effect of changes in noise levels.