

NOISE GUIDANCE FOR NEW DEVELOPMENTS

1. Introduction

1.1 Unwanted sound can have a significant impact upon environmental quality, public health and amenity (Planning Advice Note 1/2011, Scottish Government, 2011 <http://www.scotland.gov.uk/Resource/Doc/343210/0114180.pdf>). This guidance is to provide developers with information on dealing with the planning process where noise sensitive developments are planned near to existing noise sources, or where potentially noisy developments are introduced into existing noise sensitive areas.

1.2 This guidance has been developed in response to Planning Advice Note 1/2011 (PAN) and should be read in conjunction with this document and the accompanying Technical Advice Note 'Assessment of Noise' (TAN). It takes into account current policy in relation to planning and noise and provides guidance on undertaking noise assessments which may be required for any potential development in determining planning applications.

1.3 Where noise is a consideration in a planning application, planning officers consult with the local authority Environmental Health Officer (EHO). In the first instance, the EHO will advise whether a noise impact assessment (NIA) is required and review any noise information submitted by the applicant. The EHO considers whether the information provided is sufficient to accurately characterise the noise impact of the proposed development.

1.4 The EHO may advise the planning officer that noise is not a significant issue or that mitigation measures will be required. In some cases, the noise impact may be so significant that the EHO will recommend against the granting of planning permission.

1.5 The developer should liaise with the Local Authority's Environmental Health Officer in the early stages of the planning process. Pre-planning application discussions can be very useful to determine the risk of noise being a significant consideration and to identify the supporting information and detail on noise likely to be required. Prior to commencing any noise impact assessment, it is vital the appointed noise consultant contact Environmental Health to agree the relevant noise assessment methodology and establish appropriate noise assessment criteria to avoid unnecessary delay in the planning process.

2. When Noise Should Be Considered in the Planning Process

2.1 There are two types of development for which noise impact assessments will be required. These are:

- i) Proposed Noise Generating Development (NGD) (noise brought to people)
- ii) Proposed Noise Sensitive Development (NSD) (people brought to noise)

2.2 Where it is not possible to separate noisy and noise sensitive land uses, developers will have to incorporate good acoustic design and a sensitive approach to any new development proposals.

2.3 Where areas already have an unacceptable noise level it may not be possible to mitigate the adverse effects of noise. In such circumstances noise sensitive development may not be appropriate; in some cases there is a need to protect existing commerce and industry from complaints from residents of new housing developments.

3. Noise Policy

3.1 Scottish Government Policy on Noise

The Environmental Noise (Scotland) Regulations, 2006 required the production of strategic noise maps for large urban area, transport corridors and large airports within Scotland <http://www.scottishnoisemapping.org> . From these strategic maps, action plans were drawn up which identified areas where residents were likely to be exposed to the highest levels of noise. These areas are known as Noise Management Areas [NMAs]. These action plans also identified areas where individuals were likely to experience relatively low levels of noise and these were known as Quiet Areas [QAs]. The Scottish Government Action Plans aim to identify noise abatement measures designed to manage, avoid, prevent or reduce the harmful effects of noise exposure in NMA's. These Action Plans also aim to maintain and protect environmental noise quality in QAs. Similarly through the planning process Local Authorities are required to ensure that new development does not result in increasing numbers of people exposed to adverse noise impacts in both NMAs and QAs.

3.2 Local Authority Policy and Guidelines

Under the Town and Country Planning (Scotland) Act 1997 (as amended by the Planning etc (Scotland) Act 2006 and its associated regulations <http://www.legislation.gov.uk/asp/2006/17/contents>), local authorities must

produce a local plan, setting out the Council's detailed policies and proposals for the use, development, protection and improvement of land.

4. Noise Assessment and Methodology

4.1 Before undertaking assessment, agreement requires to be reached between developers and the Local Authority on all relevant noise generating sources and noise sensitive receptors (NSRs), methodology of assessment and noise targets. These details should be confirmed in writing.

4.2 Where a noise impact assessment is required, it must be undertaken by a suitably qualified and competent person. Noise reports must be comprehensive and contain sufficient information for the Local Authority to assess the likely noise impact of the proposed development. Failure to produce sufficient detail with regard to methodology and calculations will result in a delay in the planning process. Noise measurements will generally be required to establish the noise environment at the site of proposed development. Noise monitoring should be conducted in accordance with BS7445-1:2003.

4.3 Any assumptions used in the prediction of noise levels must be clearly stated in the noise report. The submitted report must also provide a sample calculation in order to demonstrate how the noise figures have been attained. Detailed raw data must be made available upon request.

4.4 Wind turbine noise is not covered by this guidance.

4.5 The following table outlines the relevant assessment methodology and target noise levels for the most common noise sources. See TAN appendix 1 for more comprehensive information on further technical standards and codes of practice.

Table 1 Main Noise Targets and Methodology

Noise Sources	Relevant Standard for Assessment	Target Levels	Standard from which target levels are derived
Road Traffic	Calculation of Road Traffic Noise 1998 [CTRN] Design Manual for Roads and Bridges 2012 http://www.dft.gov.uk/ha/standards/dmrb	External Day time: $L_{Aeq[16hours]}=50$ dB	World Health Organisation Guidelines for Community Noise 1999 BS8233:2014 Sound insulation and noise reduction for buildings
Rail Traffic	Calculation of Railway Noise 1995 [CRN] http://www.chiltern-evergreen3.co.uk/uploads/09Sep2010/5.12.pdf	Internal Night time: $L_{Aeq[8hours]}=30$ dB $L_{Amax}=42$ dB	WHO night noise guidelines for Europe 2009. (NNGE)
Industrial or Commercial Noise	BS4142:1997 is a method of rating industrial and commercial noise.	Rating Level - Background Noise Level [LA90] < 5dB	BS4142:1997 Method for rating industrial noise affecting mixed residential and industrial areas
Construction/ Demolition Sites	The Control of Pollution Act 1974 http://www.legislation.gov.uk/ukpga/1974/40 BS5228:Code of practice for noise and vibration control	Construction site noise may be controlled by restricting the hours of operation of the site and/or by setting acceptable noise levels described in Annex E of the code of practice.	BS5228:2009Code of practice for noise and vibration control
Fan, air conditioning units, ventilation systems etc.	Noise Rating Curves	Internal Noise levels: Appropriate NR for area and time of day	BS8233:2014 Sound insulation and noise reduction for buildings

Note:

1. *Noise monitoring should be conducted in accordance with BS7445-1:2003.*
2. *New commercial developments where amplified music or any broadcasting is a likely activity should be designed to ensure that this noise is contained within the development boundary.*

4.6 In the case of NSD brought to an existing noise source developers will need to demonstrate that all mitigation methods have been considered to achieve both satisfactory internal noise levels within any noise sensitive property and protect external amenity areas.

4.7 Only in exceptional circumstances should satisfactory internal noise levels only be achievable with windows closed and other means of ventilation provided. Predictions of internal noise levels within noise sensitive premises must be calculated based on an open window scenario. The degree of sound reduction afforded by a partially open window should be taken as 13dB (as calculated from the façade level).

For the purposes of this guidance exceptional circumstances are considered to be proposals which aim to promote sustainable development and transport within the Local Authority area and which would provide benefits such as:

- (a) reducing urban sprawl
- (b) reducing uptake of greenfield sites
- (c) promoting higher levels of density near transport hubs, town and local centres
- (d) meeting specific needs identified in the local development plan

Exceptional circumstances will, therefore, generally apply only to sites, which are small to medium in scale, within urban areas. This may include sites in established residential areas; brownfield sites; town and village centres, and sites near public transport hubs.

4.7 It must be noted that the Scottish Environmental Protection Agency (SEPA) regulate noise from certain prescribed industrial processes. Despite this regulatory role by SEPA, the Local Authority will determine whether any noise impact on residential developments from such industrial processes is significant. Liaison between SEPA and the Local Authority must be undertaken

5 Determining the Magnitude of Noise Impact

5.1 For steady continuous noise The World Health Organisation document 'Guidelines for Community Noise' (1999) recommends an indoor guideline value for bedrooms of 30dB $L_{Aeq (8h)}$, to prevent sleep disturbance and 45 dB L_{Amax} for

single sound event. However, WHO NNGE 2009, which is an extension of the aforementioned guidelines recommends that the single event noise level, the noise level below which there are no observed effects, is reduced to 42 dB L_{Amax} to protect occupants from sleep disturbance. WHO 'Guidelines for Community Noise' further recommends a daytime level below 50 dB $L_{Aeq(16h)}$ on balconies, terraces and outdoor living areas to protect receptors from moderate annoyance. WHO also indicates that at an outdoor, daytime level below 55 dB $L_{Aeq(16h)}$ will protect the majority of people from being seriously annoyed. Therefore levels predicted to be above 55 dB $L_{Aeq(16h)}$ are likely to have a major impact.

Table 2: Examples of the use of these target noise levels to determine the magnitude of noise impact, as described in PAN 1/2011/TAN

Noise Sources	Target Levels	Change in Noise Level [predicted/existing noise - target]	Magnitude of Impact
Road Traffic	External Day time: $L_{Aeq[16hours]} = 50$ dB Internal Night time: $L_{Aeq[8hours]} = 30$ dB	> 5	Major Adverse
		≤ 5 but ≥ 3	Moderate Adverse
		<3 but ≥ 1	Minor Adverse
		<1 but ≥ 0	Negligible Adverse
		0	No Change
Rail Traffic	External Day time: $L_{Aeq[16hours]} = 50$ dB Internal Night time: $L_{Aeq[8hours]} = 30$ dB	> 5	Major Adverse
		≤ 5 but ≥ 3	Moderate Adverse
		<3 but ≥ 1	Minor Adverse
		<1 but ≥ 0	Negligible Adverse
		0	No Change
Industrial or Commercial Noise	Rating Level(L_{Ar})- Background Noise Level [LA90] < 5	> 10	Major Adverse
		≤ 10 but ≥ 5	Moderate Adverse
		<5 but ≥ 3	Minor Adverse
		<3 but ≥ 0	Negligible Adverse
		0	No Change

Notes:

External levels are free field noise measurements.

6. Qualitative Assessment

6.1 Following the quantitative determination of the magnitude of noise impact, a qualitative assessment should be undertaken to assess the effect on the amenity value of the existing or proposed noise sensitive receptor. The qualitative assessment will either confirm the quantitative assessment or indicate that additional factors need to be taken into account when describing the magnitude of impact. The additional factors to be taken into account will depend on the type of the noise sensitive receptor e.g. the potential for sleep disturbance, effects on ability to relax,

concentrate or converse or use of outdoor space. Examples of descriptors for qualitative impact of noise are given in Table 2.5 of Technical Advice Note: Assessment of Noise.

6.2 Once the magnitude of noise impact has been appropriately described, the level of significance of the impact can be determined. The significance of the impact will depend on the sensitivity of the existing or proposed noise receptor(s). TAN advises that noise assessments should include a Summary Table of Significance to show the number of NSRs likely to be subjected to significant noise impacts. Although the overall number of NSRs which will be affected is obviously important, the EHO reviewing the noise assessment will also pay heed to the effect on individual NSRs. A large negative noise impact on any one individual NSR will be of concern to the EHO and this will be reflected in the advice the EHO gives to the planning officer.

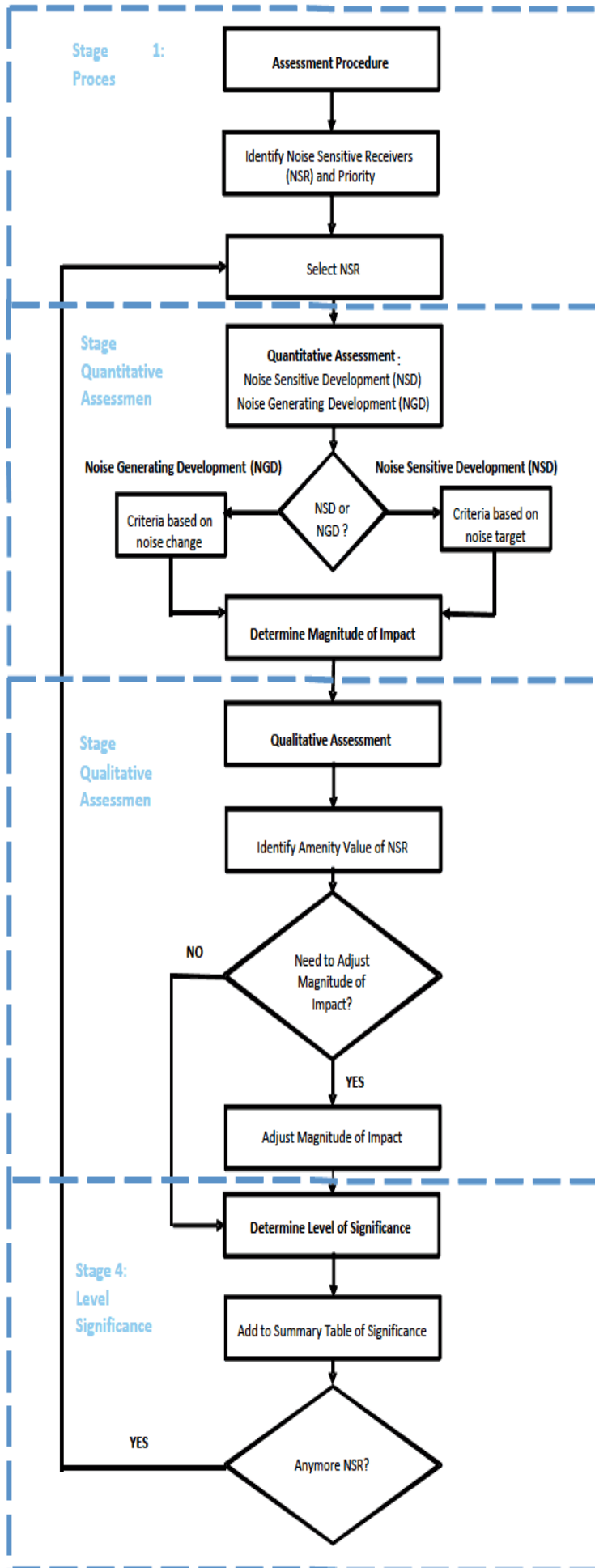
6.3 In some circumstances, it may also be appropriate to consider the cumulative impact of the proposed development. Such circumstances may arise where other developments in the surrounding area have received consent but have not yet been completed. The developer or their noise consultant should discuss this with the EHO/planning officer during the pre-application discussions.

6.4 The noise assessment should detail any mitigation measures necessary to achieve satisfactory target noise levels.

7. Summary

7.1 PAN 1/2011 introduced a new approach to the assessment of noise. It is strongly recommended that developers and/or their noise consultants contact the local authority prior to conducting any noise assessment to agree the assessment methodology and relevant noise sensitive receptors. The local authority will also advise on the relevant noise targets.

7.2 Only in exceptional circumstances will it be acceptable for satisfactory internal noise levels only to be achievable with the windows closed.



CHECKLIST

1. Contact Planning/Environmental Health
2. Identify [NSR]
3. Where (NIA) required instruct a suitably qualified and competent person.
4. Determine NSR and NGD in area and agree in writing with Environmental Health.
5. In consultation with Environmental Health determine appropriate noise criteria and targets for assessment.
6. Carry out assessment in adherence with BS7445 and other relevant standards as determined by noise criteria agreed for assessment.
7. Determine Magnitude of Noise Impact using table 2.
8. Carry out qualitative assessment.
9. Determine level of significance
10. Mitigations measures if required to meet target levels