

ANC | ACOUSTICS &
NOISE
CONSULTANTS

GUIDE TO ACOUSTICS FOR HOUSEBUILDERS & DEVELOPERS



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GUIDE TO ACOUSTICS FOR HOUSEBUILDERS & DEVELOPERS

Good acoustics can do much to improve and enhance society overall, creating a comfortable environment which aids enjoyment and supports wellbeing.

Excessive, unwanted noise on the other hand can have a profoundly negative effect. It can ultimately impact on people and communities and has been cited as contributing to a range of issues including stress, depression and an increased risk of heart disease.

According to the World Health Organisation, exposure to noise presents the second largest health risk to the population of Western Europe, second only to poor air quality.

Noise is a serious issue, but housebuilders and developers can play a key role in its management.

By ensuring good acoustic performance there are a number of significant benefits, including the opportunity to make people happy with their home, the property more desirable - and potentially more valuable.

This guide has been produced by the Association of Noise Consultants (ANC) to give an overview of the most common acoustic requirements and considerations that affect new residential developments.

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REQUIREMENTS & REGULATIONS

The acoustic requirements housebuilders and developers usually have to meet can be divided into three main categories:

- 1 • Planning Requirements or Conditions if set by the Local Planning Authority
- 2 • Building Regulations Approved Document E (ADE), which usually applies to all residential developments
- 3 • Contractual requirements or those set by the end client, if applicable

BREEAM Assessments might also be relevant, as well as the Home Quality Mark from BRE; further details on this are covered in the 'Sustainability' section.

PLANNING

The Local Planning Authority may require acoustic surveys and details of mitigation schemes prior to determining an application or as part of conditions when permission has been granted.

Sometimes developers buy a site with an inherited acoustic report and/or planning conditions. ANC members can help to interpret them and translate into construction proposals or conduct further survey work as needed to ensure that the recommendations are up to date and appropriate for the final site design.

ANC members can also help with the specification of buildings, ensure that the development exhibits good acoustic design, and liaise with Environmental Health.

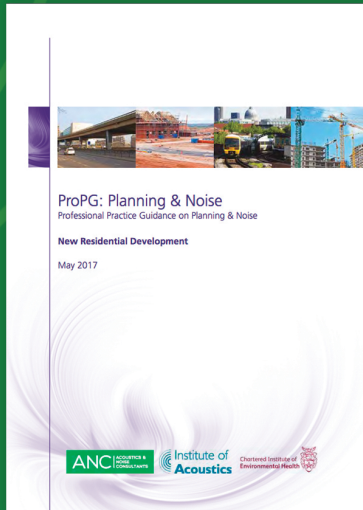
Accurate survey work at detailed planning stage can help to ensure that the commercial sustainability of a development is maximised while adhering to the relevant acceptance criteria or conditions. If the acoustic design is under or over specified, it can prove a costly issue for a housebuilder or developer.

Sometimes validation tests are required before handover of a development. This can be as a result of planning conditions, or due to a BREEAM assessment or client requirements.



ProPG

Current Government guidance on planning and noise for new residential developments is found in the National Planning Policy Framework (NPPF). One of the strengths of the NPPF is that it sets clear objectives.



However, the Institute of Acoustics, ANC and Chartered Institute of Environmental Health felt there was insufficient technical guidance to practitioners and developers on how to deliver the Government's objectives to build more homes.

In response to this, ProPG guidance was launched in 2017 by a consortium of all three parties. This landmark Guidance complements the UK Government's National Planning Policy Framework and Guidance to provide practitioners with an industry-recommended approach for new residential developments.

ProPG outlines what should be taken into account in deciding planning applications for new noise-sensitive developments, improves understanding of how to determine the extent of potential noise impacts and effects, and assists the delivery of sustainable development through good acoustic design.

More details about ProPG can be found on the ANC website:
www.theanc.co.uk

ProPG:

- allows rapid identification of sites that are very unlikely to be suitable for new residential developments due to noise, saving developers time and unnecessary costs;
- provides quantitative guidance for proposed new residential developments affected by existing sources;
- can potentially help to speed up decision making on proposed residential development sites where noise is not an issue; and
- helps to reduce the harmful impact of noise on those moving into the properties and the surrounding communities.

BUILDING REGULATIONS APPROVED DOCUMENT E (ADE)

The Building Regulations Approved Document E governs the internal sound insulation of new residential developments and those formed by material change of use.

ANC Members can provide advice and design assistance throughout the project to ensure that the requirements of ADE are met. Drawing Analysis, investigation of sound transmission paths within an existing building and attendance at design team meetings can be offered where required.

Sometimes value can be added to a project by ensuring that the acoustic specification is not overly onerous.

Common pitfalls can be avoided on site with early advice from an acoustic consultant, for example flanking transmission exacerbated by dot and dab plasterboard, failures due to insufficient mass in separating walls or floors and lack of acoustic isolation or separation.

Sound Insulation Tests

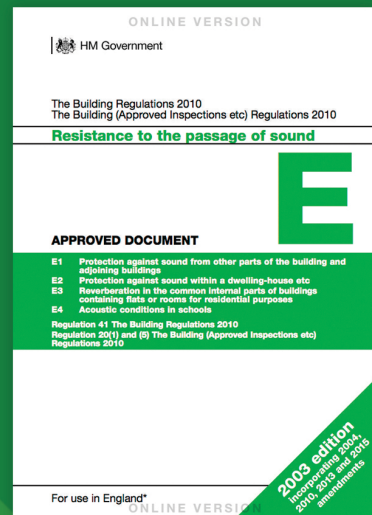
Sound Insulation Tests are quantitative; there is a defined pass mark and so the result is either pass or fail. The test organisation should be accredited to either the ANC or UKAS.

Online Accreditation

Building Control Officers can check the result of ANC registered tests online. Plots are divided into groups or subgroups depending on their construction. One set of tests is usually required per ten dwellings, flats or rooms for residential purposes in any group or subgroup. A checklist is available covering site conditions required for these end stage tests.

Reverberation

The Building Regulations gives guidance on the control of reverberation and provision of sound absorption in communal areas. There is a straight forward method in section 7 of ADE (Method A) and also a more detailed method (Method B) for bespoke solutions where the simple method doesn't fit with the construction proposals or clients preferences. ANC members can assist with meeting this requirement of ADE.



Doorsets

The Building Regulations Approved Document E stipulates a minimum sound insulation for doorsets and walls within a single dwelling based on laboratory measurements. There is no onsite test requirement. ANC members can provide advice on whether construction proposals meet these requirements based on laboratory test data.



SUSTAINABILITY

Excessive, unwanted noise is often referred to as a pollutant, but ANC members can help deliver good acoustic performance to tackle the issue. There are a number of ways acoustics can be considered in line with sustainability. This can include BREEAM assessments and consideration of ventilation and overheating, which is of increasing importance due to climate change and the desire for energy efficient homes with little air leakage. Acoustics will also play a part in the proposed BRE Home Quality Mark Scheme and ANC will report on this in due course.

BREEAM

Under the BREEAM assessment system, up to four credits are available for multi-residential and other, residential institution building types.

ANC members can advise on the requirements, assist with acoustic design and conduct test work to prove compliance before handover.

Early assistance from members can help to achieve the BREEAM credits with the minimum impact on build cost and time.

Ventilation & Overheating

The issue of noise, ventilation and overheating is an important one, particularly in light of the changing climate patterns and drive towards more energy efficient homes.

The ANC has formed a dedicated Acoustics Ventilation and Overheating (AVO) group to advise on factors including health and wellbeing risks for occupants, design risks for consultants and legal risks for developers.

The AVO group has considered acoustic criteria and guidance relating to different ventilation and overheating conditions. Environmental noise ingress and building services noise must be considered, so that living and sleeping amenity is preserved under all typical weather conditions.

The work of the AVO group is intended to contribute to the practice of good acoustic design, as emphasised in the Professional Practice Guidance on Planning and Noise (ProPG), discussed above. An AVO Guide will be available from the ANC in late 2018.



CLIENT REQUIREMENTS

Some Housing Associations and private end clients may have their own acoustic criteria.

Members can help with the acoustic design and test work needed to prove compliance with specific requirements.



ABOUT THE ANC

The Association of Noise Consultants (ANC) is the voice of professional consultancy in acoustics, noise and vibration in the UK.

The ANC's purpose is to;

- Lead the way to improve acoustics for the whole of society
- Promote high standards and good practice in acoustics
- Highlight the challenging, exciting and rewarding career opportunities available in acoustics, which utilise science, technology, engineering and mathematics (STEM)

For housebuilders and developers, ANC members can offer assistance at all stages of the development process from site feasibility and planning through to validation tests to prove compliance on hand over.

Good acoustic design and advice can help to find the most cost effective solution that meets the acoustic requirements for a site. Assistance can be given at design team meetings to ensure that any decisions or considerations discussed will also meet the acoustic requirements.

If improvements are needed to the acoustic design of a development, they are generally easier to incorporate early in project rather than later.

CONTACT US

The ANC website features information of relevance to housebuilders and developers, also a search function to help find ANC member companies with the expertise required for your project.

More details at
www.theanc.co.uk



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