

# Acoustic Services

The Centre has over 30 years' experience in building and environmental acoustics and offers a comprehensive range of acoustic design and modelling services. Our expertise can help designers and architects meet a wide range of environmental and legislative requirements.



# Acoustic Services



- **Schools and Building Bulletin 93 (BB93)**

The acoustic performance of schools is at the forefront of the Centre's activities. Competing demands in educational spaces can make effective acoustic design complicated. We understand the need to balance the complex demands of school design and can provide advice and consultancy from the early stages of development right through to completion and post-occupancy

- **Healthcare Buildings (HTM 08-01)**

The role of good acoustic design in hospitals and other healthcare establishments is becoming more widely recognised. Recent studies have shown that a good acoustic environment can significantly reduce patient recovery times. The Centre can provide design advice and consultancy to help achieve the best possible acoustic environment for patients and staff.

- **Approved Document E**

In England and Wales building regulations require that all new residential buildings and schools must provide reasonable resistance to sound from other parts of the same building and from adjoining buildings. The Centre has extensive knowledge of the regulations and their implications for different building types and can give guidance and support to architects and designers to meet the requirements

- **The Acoustics of Large Spaces**

The acoustic behaviour of large spaces can represent a substantial challenge to acoustic designers. The Centre is experienced in the design of auditoria, theatres and school halls and provides modelling and design services to optimise acoustic conditions.

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## Environmental and Planning Assessments

New building developments have a number of acoustic requirements to meet. These may be required to satisfy local planning authorities or form part of a larger environmental impact assessment.

- **Noise Mapping**

The Centre has the capability to model and predict noise propagation in a wide variety of urban and non-urban topographies

- **Wind Turbine Noise**

There has been a large increase in the number of wind turbine developments as a result of the Feed-In Tariffs Scheme. Wind turbines at all scales require planning consent which will only be granted if criteria relating to visual impact, safety, electrical interference, vibration and noise can be met. The Centre can provide consultancy and make assessments of noise impact as required

- **Road and Rail noise**

Planning Policy Guidance 24 is designed to advise local authorities in England on the use of planning powers to minimise the adverse effects of noise. It is often used when railways, roads and flight paths are likely to be situated close to residential areas. The Centre can provide assessments for the purposes of planning and also provides advice on suitable noise reduction regimes.

- **Industrial Noise in Residential Areas**

Industrial noise assessments are most often required in situations where residential areas are affected. The most widely used UK standard for the assessment of environmental noise is BS4142. The methodology for BS4142 is complex and evolving and requires up to date knowledge of the latest amendments. The Centre is equipped to make the necessary measurements and provide advice on noise reduction strategies.

# Case Study

## Bideford College Acoustics

The Centre was asked by Devon County Council to provide some advice for the new Bideford College. It is the first pathfinder project which aspires to achieving both BREEAM 'excellent' and zero-carbon in use. The Centre worked with the design team to advise on balancing acoustic requirements with high sustainability credentials

### The Problem

To achieve the low energy requirements Bideford College was designed with a high thermal mass which acts as a heat store and helps the building maintain an even internal temperature. Normally this would require a building to have exposed concrete soffits which can cause rooms to become overly reverberant or "echoey".

### The Solution

To solve the problem a ceiling absorption strategy was developed that allowed air to pass freely between the classroom and concrete soffit above, but provided enough acoustic absorption to limit the reverberation time. The floating raft system was designed by the Centre to absorb sound on both sides and could therefore be made smaller while allowing air to pass unimpeded to the soffit above. The completed design was tested and met the acoustic requirements without compromising the thermal performance.





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