Are your offices fit for purpose?

Are good acoustics really important in buildings? When we talk about good acoustics this can mean a variety of things. The ability to understand speech as well as hear in train stations and at airports; being able to hear music at a performance such that each instrument is clearly defined, with the room adding to the experience, not taking away; being able to concentrate at school or at work in an open plan environment. All these and others can be classed as ‘good acoustics’, writes Andrew Parkin, Technical Director at RPS Gregory, a member of the Institute of Acoustics’ Building Acoustics Group.

In the case of houses and apartments, we consider good acoustics so important that conditions are strictly controlled by Part E of Building Regulations, ‘Resistance to the passage of sound’. In the very places we eat, sleep, relax and bring our families up, we expect to be able to do all this without being unduly disturbed by our neighbours.

After seeing the irrefutable results of research, we are convinced that good acoustics are critical for our schools too. The DfES (now DCSF) document Building Bulletin 93 is cited as a means of compliance with Approved Document E, making acoustic design of schools mandatory. The reason for this is so that children can understand their lessons and teachers have a good environment to work in.

In healthcare premises, research has shown clear correlations between good acoustics and reduced patient recovery times (having an impact on the cost of patient care and waiting lists) and staff wellbeing (leading to lowered stress levels and lower levels of absenteeism). Whilst not covered by Building Regulations, the NHS and private providers recognise the weight of documents such as Health Technical Memorandum (HTM) 2045 and the recently released HTM 08-01 for acoustic design and expect these to be used in design of healthcare buildings.

But what about other types of buildings? Surely the same principles apply. Children rely on good acoustics to be able to learn effectively and adults need to be able carry out their jobs without being distracted by fellow workers, so what about universities or offices? Well, as children get older, they are less dependent on their environment to be able to learn; it is also assumed that they are more keen to learn and will therefore make extra effort to combat adverse conditions, within reason. And so it is that further and higher education developments are not covered by Building Regulations, but often use BB93 as a best practice design guide.

But despite all the research showing that good acoustics are key to productive working and staff retention, office design often does not include considerations of acoustic conditions. There are a number of office design guides available which include sections on acoustics, normally internal noise levels, reverberation control and sound insulation between cellular spaces. There are two main problems with this, though: firstly, acoustic design for offices is not mandatory; secondly, there are major disagreements between some of the main design documents that are available (ie. BREEAM for Offices, BS 8233: 1999, British Council of Offices design guide, CIBSE documentation). Also, no-one design guidance document is exhaustive, meaning that the best bits have to be pulled from each document to produce a cohesive set of standards.

There are moves afoot to create a new office acoustic design guide. This document would be exhaustive in its inclusion of all the major acoustical factors: services noise, noise break-in, signal to noise ratio, privacy factors, absorptive coverage of internal finishes, speech transmission index etc. It is hoped that the document will be flexible enough to be applied to all types of office/commercial buildings, e.g. when soffits need to be exposed for thermal mass, naturally and mechanically ventilated etc. It is also hoped that the guide will be able to provide staged advice for Category A (shell and core plus ceilings) and enhanced Category B (full fit out).

The question is, should offices and other places where people spend their working lives be subject to mandatory acoustic design? Or is it up to the developer to decide what he spends the development budget on? In a time of economic difficulty, should we be imposing yet more restrictions on development? On the other hand, faced with what we know about the benefits of good acoustics in offices, such as increased staff performance and retention and adding value to workplaces, can we afford not to design our office spaces to have good acoustics?