

In My Opinion ...

Ciaron King



Over the last decade there has been a huge emphasis on increasing the thermal efficiency in buildings, in particular homes. We now have draught-free, well-insulated buildings. This has brought with it a whole set of new problems, most notably poor air quality, writes Ciaron King, Managing Director, MTD-Solutions, and formerly of the Ventac Group.

There is a significant increase in the number of people suffering from asthma and other respiratory problems, all of which are aggravated by poor air quality. The dust particles, mites and bacteria in the air are not visible to us. Any doctor will tell you that fresh clean water and fresh clean air are vital to maintain good health. Even if you are not a sufferer of a respiratory ailment, there are other symptoms of poor air quality such as dozziness, aggravated sinus, headache, eye irritation, skin irritation and a general lethargic feeling.

The most effective way to combat this is to mechanically ventilate the building by way of a balanced ventilation system bringing in an equal amount of air to that which is being extracted from the building. Ideally, the fresh air being brought into the building should be "warmed" and filtered. Air vents, as used in most buildings, are NOT a solution.

Legislation was responsible for making buildings better thermally insulated and legislation will, over the coming years, be responsible for making balanced mechanical ventilation compulsory in new buildings.

Noise is a form of pollution that most people in the world, certainly those living in built up areas, have to deal with on a daily basis. Noise can have very negative effects on health — it can cause stress, headache, nausea and much more. The new construction materials and methods used to improve the thermal insulation of a building has had a positive knock-on effect for noise control. Legislation states the minimum noise levels for transmission of noise through walls and floors which must be achieved by the builder. The problem with these legislative noise levels is people assume they are buying sound-proofed houses — this is not the case. However, the levels are universally accepted.

The second and probably the biggest problem with noise is that

it is subjective. People's ability to hear within certain sound ranges varies with age and the condition of each person's ear. A person attending a concert where the sound power level is extremely high thinks the noise level is acceptable. However, the individual who lives in the apartment 1km away and can still here the concert feels differently about it.

What we aim to do at MTD-Solutions is to help individuals, property developers, councils and consultants to achieve an optimum sound quality. What is sound quality? Improving the sound quality of a building comes from analysing all aspects of the building and its surroundings, and obviously its use.

Good sound quality in a home, for example, should allow residents to hear certain "non objectional" sounds as no one wants to live in a vacuum. It is acceptable in an apartment block or semi-detached house to hear traces of your neighbour being home. What is unacceptable is hearing your neighbours phone ringing and the conversation that follows.

At research and development stage Lexus achieved such a high level of sound-proofing in their cars that test drivers were no longer able to hear sounds which their brains translated into road condition, speed, etc. Ironically, this made the drive very uncomfortable, almost unnatural. It is all about balance — we do not want sound-proofing ... we want good sound quality.

Good sound quality is relatively easy to achieve with good planning. There are a lot of products on the market that afford simple, cost-effective, practical solutions. It is important to point out that, although it is possible to retro-fit acoustic solutions, it is considerably more expensive and often constrained by existing design. Far better to factor in the solution during design and construction.