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Carbon cutting technology – every little helps

There's little doubt that we're in the midst of a Carbon-conscious era, however, what we're not so sure about is exactly how we're going to reach the targets being set.

Massive steps are being taken to ensure that the Carbon emissions of the entire planet are being reduced, and although at times it seems that the contribution made by individual elements is only small, they are, nevertheless, still as important.

Given that the UK's housing stock plays a huge part in the country's carbon emissions, it is not surprising that they too have come under the energy microscope. Of course, a building has many elements all of which contribute, however until recently, if it had been suggested that the ventilation of a building had a significant role to play in terms of reducing the Carbon emissions of a property, you might have been sceptical, why because ventilation is just air. The revision of Part L and part F of the Building Regulations, have however had a considerable impact on the importance of what, in the past, may have been overlooked, and the ventilation industry has been through one of its most exciting periods.

Michelle Sharp, Brand Manager at Greenwood Airvac, suggests that this period looks set to continue and explains the reasons why and how we can all play our part in cutting Carbon emissions.

Single solution?

In essence, there's no single master plan or building design for constructing an energy efficient building, although the Code for Sustainable Homes has started to provide guidance for compliance, but the construction industry will be playing around with new technologies for a while to see how they perform in SAP (standard assessment procedure) and work together. Ventilation has started to have an equally important role to play in cutting Carbon emissions or as the industry will know – DER (dwelling emission rates) and at long last, ventilation is being seriously considered – because it has to be.

The simple fact is, buildings are becoming increasingly air tight, which means now, the energy impact of ventilation is more visible than it's ever been. Yes, ventilation is still required to do its job, but it's not just about a 4 inch bathroom or kitchen fan anymore, it's about ensuring the provision of energy efficient airflow around a dwelling – because after all, ventilation is for and about people and it's in place to help protect people's health indoors. Yes, a breath of fresh air is needed for you and the building!

As easy as SAP

In new build houses, it is Part L that's driving an energy sensible choice. Importantly, ventilation methods are now within SAP, each having a default setting. Some are obviously more favourable than others, but because of the way SAP works, no single product can be benchmarked to give a specific reduction in energy use or dwelling emission rate, say 5% or 10% reduction. Even so, ventilation has already begun to prove its worth in the SAP 'stakes'. The simple fact is that it is a reasonably low cost system to change within the dwelling and, in most instances can help to reduce DER's, it's a fact that ventilation can be considered as Carbon cutting technology.

Appendix Q

Since 2006, the SAP Appendix Q database (www.sap-appendixq.org.uk) has been collectively available. In laymen's terms; it's a list of products that have low specific fan powers (which is what is assessed when it comes to energy performance), and high efficiency heat exchangers in MVHR systems, making them the most efficient in the market. It's not in any way definitive as more products are developed and tested, nor is it a representation of the only ventilation products appropriate for the future.

The point is, for new build developers, designers and SAP assessors, Carbon cutting technology does not have to mean renewable technology. The new SAP Appendix Q mechanism allows specific ventilation product performance to be used within SAP. What has been evident is that in both new build apartments and houses the exploration of utilising continuously running ventilation systems which include heat recovery has meant that significant energy savings can be made, as mentioned, without the need for renewable technology, which can be costly and difficult to manage.

Refurbishment – where does this fit into the plan?

One huge problem with our carbon emission reduction 'plan' is that these new building regulations only cover new build. But with more than 22 million in the UK's current housing stock, surely some of the reduction has to come from this sector?

HIP's which include Energy Certificates are now well on the homeowner's radar and those that will receive an energy rating for their home may now have to start thinking about the impact their dwelling is having on the environment, and their back pocket. Adding insulation, double-glazing and more efficient boilers, allows the efficiency of the building to increase but ventilation is still crucial. Sealing the building up makes ventilation and airflow more important, again for health reasons as we fill our homes with laminated floors, man made furnishings and materials that give off harmful particles into the air. While, currently, it may not be viewed in the same light as a new boiler, the energy impact of ventilation contributes towards the performance of the entire home.

By looking at new, energy saving ventilation methods in new build, we can see how these could be easily incorporated into refurbishment projects or developments. Continuous ventilation is definitely making its mark and may be viewed as a more efficient system in the context of the building, since it works as a whole house system, negatively pressurising the dwelling and drawing in only the required replacement air continuously. Also low energy fans, using more efficient motors could be the answer in your bathroom or kitchen. Whatever the situation, if you want fresh air and a good indoor air quality, you need to push ventilation up the agenda and think about it in a more energy and health conscious way.

But how can fans that are on all of the time be better? Although continuously running, the motors have been designed to be highly energy efficient, some using as little as 2 Watts in operation. You are simply getting much more ventilation for your home, without the energy impact. They're also available as de-centralised systems (like-for-like replacements of existing products) and are designed to provide constant airflow within a dwelling, which is fundamental to good air quality. They still deal effectively with the age-old problem of condensation and mould. In short, these are all contributory factors in terms of having a positive benefit on the maintenance and longevity of the building.

Where do we go from here?

The moral of the story seems clear, even the smallest changes can have a huge impact. By changing the way we look at one of the smaller components of a building's energy efficiency – ventilation – we can still make some difference. The fact remains that there is no choice in Carbon reduction issue, and there's no doubt that the drive towards more energy efficient products can only be a good thing. But moving forward, one other thing is crystal clear - all industries, workers, families and individuals have a role to play in contributing towards the reduction of Carbon emissions, and the old saying 'every little helps' can certainly be said to be true.

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