

New regulation on Part F for ventilation is long overdue but by aiming too high, too fast, the government risks leaving the market out in the cold

All too often, Part F, which deals with ventilation in our buildings, is seen as a nuisance, an extra cost to be reduced to its minimum. Few people realise how much we can gain by ventilating our buildings properly. The main reason for this is because developers are striving to build airtight houses by installing better glazing, better insulation and better external fabrics. Instead of relying on natural leakage to bring fresh air inside and to extract stale air, a controlled flow of air must then be created to ensure good indoor air quality (IAQ) for the health of the occupants and maintenance of the structure. If this is not done, a poor IAQ can lead to problems for the occupants, such as headaches, potential breathing difficulties and in terms of the structure, condensation and mould growth will inevitably occur.

There is a growing gap between the technologies available on the market and the current Technical Guidance for ventilation published in 2002. Most other European countries now rely on continuous ventilation systems. There is also a general move, led by the Energy Performance of Buildings Directive (EPBD) at a European level, to save energy in our buildings. This Directive was adopted into Irish law as regulation in 2006 and it has led to several improvements such as the Building Energy Rating or the DEAP software. Attention has now moved to Part F and it has a chance to become one of the front runners of new improvements. The current draft amendment for Part F which ended its consultation period last month is much more detailed than the 2002 version. Its aim is to ventilate our buildings properly whilst achieving definitive energy savings. However, when it comes to implementing the regulation, there are huge discrepancies between the solutions that are recommended.

The first means of ventilation listed is “natural ventilation with specific provision for extract ventilation”. Besides purge ventilation (windows), it relies on general ventilation through background ventilators (air inlets) in all rooms and extraction in wet rooms. Intermittent fans and pressure support ventilation (PSV) – the only systems listed in the 2002 document – fall under this category. It is believed that intermittent fans need extra general ventilation because they are often switched on much less than they should to extract all moisture. On the other hand, PSV associated to humidity sensitive extract grilles is a system which works continuously, based on the height, the internal and external temperature differential and the wind pressure at ridge level. It is not steady, but there is always some extraction. General ventilation does not need to be as high as with intermittent fans, and it would make sense to introduce the airflow in the dwelling from habitable rooms (less polluted) towards wet



Hot air?

rooms (where the pollution is mainly created). To do so, general ventilation should be kept to habitable rooms, perhaps in a slightly increased way. PSV uses no electricity and the humidity sensors automatically limit the heat loss, which is in line with the aim of the draft.

The second means of ventilation listed is “mechanical ventilation with heat recovery” (MVHR). Inclusion of this innovative technology is a welcome move, and it perfectly fits in with the aims of the document. However, it also has some limits in terms of financial implications, namely capital costs, installation and maintenance of the system. One can only wonder how the majority of the builders that are so reluctant to spend money on ventilation are going to switch from intermittent fans to heat recovery. This really is going from one extreme to the other. The absence of an intermediate way may be counter-productive and could globally limit the energy savings.

In most other European countries, whole-house mechanical ventilation is one of the recommended means of ventilation. It is continuous, and works as described above: fresh air coming in from habitable rooms and stale air extracted from wet rooms. Because it is

constant, a limited area of background ventilation is necessary. It is cheaper, easier to install and easy to maintain in comparison with MVRH. It is true that it does not recover heat, but when associated with innovative technologies such as extract units equipped with humidity sensors or PIR, it can drastically reduce heat loss by 30% to 50% based on the condition in each room. It uses constant pressure fans that adapt their speeds to the airflows required at all times. Demand-controlled mechanical ventilation is certainly a third way that should be recommended by the government. In France, it is the standard approach.

In summary, the philosophy of the future Part F is right, but by aiming too high too fast, there is a strong risk of resistance from the market. An intermediate step would ease the evolution and solutions exist that are compatible with its aims. The consultation period has now ended. The new Document should be published and enforced in December. ■

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