Background Ventilation in Non-Domestic Buildings

In 1995, Building Regulations introduced the need for background ventilation in non-domestic buildings for the first time. At the same time, the requirements for domestic ventilation were increased.

Since then, the new domestic ventilation requirements have been universally adopted. However, the non-domestic requirement has only been adopted on a limited scale. The reason for this anomaly is not clear.

The increase in domestic ventilation requirements reflects the need for greater condensation control in tightly constructed, well-insulated housing. The non-domestic requirement, in contrast, primarily aims to provide a comfortable working environment.

Like housing, offices and shops are being built with improved insulation and air-tightness. At the same time, the use of heat-producing equipment such as computers and photocopiers is increasing. These factors add up to a hotter, stuffier working environment that is not conducive to productivity or health.

For occupiable rooms in non-domestic buildings, Building Regulations Fl can be satisfied by having openable windows and providing specified levels of background ventilation (4000mm² for rooms up to lOm² and 400mm² per m² for rooms over lOm²).

Introducing fresh air into a building in this way helps to avoid stuffiness and promotes a healthier air quality by diluting pollutants such as cleaning chemicals and tobacco smoke. It also combats condensation by removing moisture from the air.

The requirement for background ventilation could be met simply by providing enough openable windows. But open windows often present problems in a working environment. Noise and pollution drift in from nearby roads. Draughts blow papers around. And windows accidentally left open overnight pose a real security risk - the Approved Document recommends that openable windows are not used at all on ground floors.

Window trickle ventilators have none of these problems associated with them. They are an effective means of providing natural background ventilation in occupied areas. All vents should be adjustable and designed to avoid draughts and prevent rain ingress. The most effective products are those which can be controlled by the occupants, such as with a cord control.

Vents are available for use with timber, plastic or aluminium windows. Manufacturers have responded to claims that trickle ventilators are visually intrusive by designing vents that appear an integral part of the window. Coloured ventilators are also available, individually matched to coloured window frames so that the ventilators blend in unobtrusively.

For noisy environments, such as near major roads, railways or airports, acoustically treated ventilators are available. These can often avoid the need for complex and expensive acoustic protection.

It is important to remember that BS6375 Part 1 for weather tightness applies to the whole window, including the vent. Trickle ventilators should be driving-rain tested to exceed the worst-case requirements. Some manufacturers offer a free weatherability calculation service to advise specifiers of the level of performance that a window and vent must meet to comply with BS6375. Parameters include geographic location, building dimensions and landscape.