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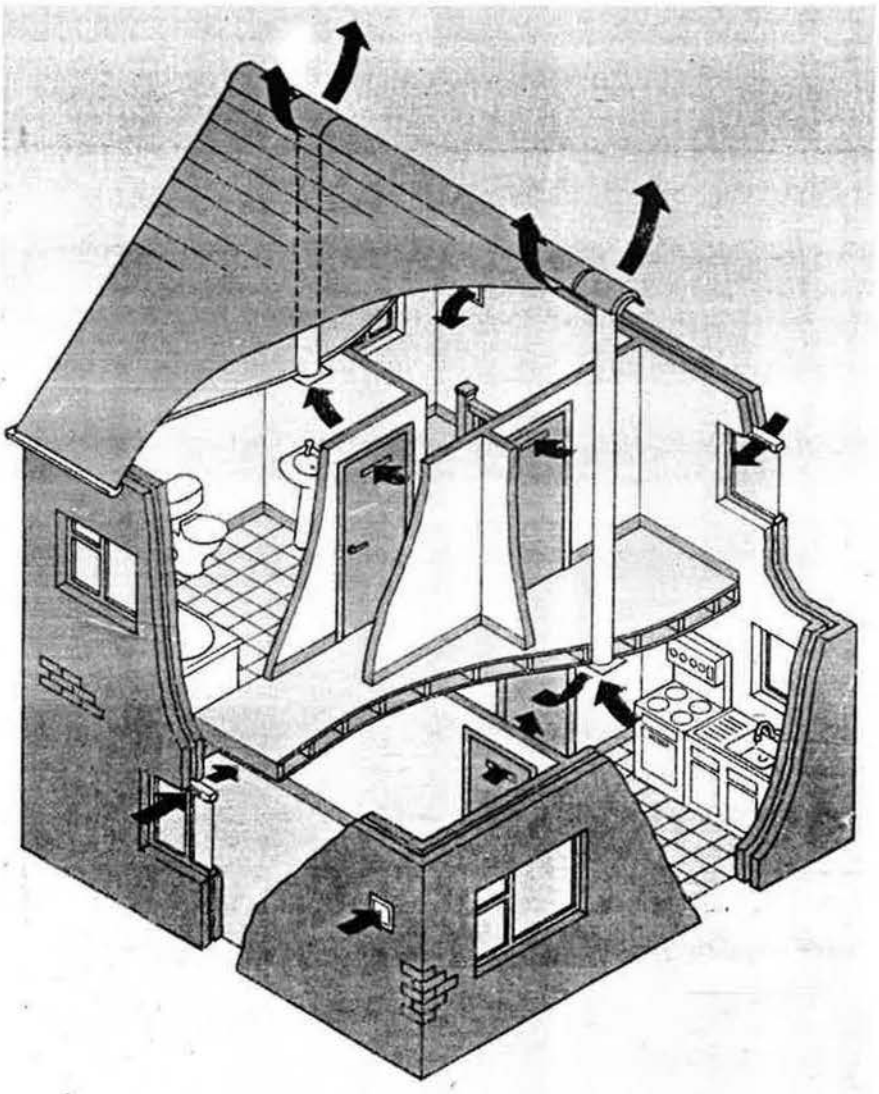
Feature

Whole-House Ventilation Protects and Improves

UNTIL quite recently, domestic ventilation in Britain had been very much a hit and miss affair. Air flow was traditionally fortuitously provided by gaps around windows and doors, joints in suspended timber ground floors and, of course, the once ubiquitous chimney. There were certainly no thoughts of planned air routes.

Today windows and doors are more effectively draught proofed, a flue has become a relatively uncommon feature and ground floors are almost invariably next-to-earth concrete slabs or precast beam and block constructions — neither being particularly prone to air permeability. Add to this the increased levels of insulation brought about by energy cost and conservation considerations, plus the reluctance of householders to open windows and the result is an air-tight building envelope.



Unfortunately these conditions give rise to some unpleasant and unhealthy side effects. The most evident is usually condensation. In fact, according to the 1991 BR report 'Tackling Condensation', it is a problem affecting two million homes severely and another two million to a lesser both nonetheless serious extent.

These figures are not really surprising when modern lifestyles are considered. It is estimated that the average household generates two gallons of water vapour every day by routine tasks like bathing, laundering, cooking . . . and breathing! Without any controlled means of dissipation, ideal conditions are created for the formation of condensation on surfaces cooler than the ambient temperature. This in turn brings with it mould growth, damp patches and generally unpleasant living conditions. A further hazard is the risk of interstitial condensation within the fabric of the building causing structural damage.

Essential for Protection

It is therefore clear that properly planned and controlled air flow is absolutely essential for comfort, health and the long term protection of buildings. 1990 Building Regulations recognised this need by specifying standards of domestic ventilation for the first time.

The Regulations demand that ventilation, equivalent to a 4,000 sq mm permanent opening be provided in all habitable rooms. In kitchens, where there is a need for the rapid removal of moisture, mechanical extraction should be provided at a rate of 60 litres per second (216 cubic metres per hour). Mechanical extraction is also specified for bathrooms at the lower rate of 15 litres per second (54 cubic metres per hour).

Clause 7.1 states that the requirements can also be satisfied by continuously operated ventilation systems or by following the recommendations of BS-5250 relating to the control of ventilation in buildings. Different methods of achieving these prescribed standards are

illustrated by the three Passivent whole house ventilation systems available from Willan Building Services.

The 'Standard Passive' system utilises the 'stack effect'. This works on the principle that air within a house is generally warmer than that on the outside. As a result, warm stale, moisture laden air rises through extraction diffusers located in the 'wet' kitchen and bathroom areas and is drawn upwards and out of the house through flexible ducting to an outlet on the roof — usually at the ridge. The effect is greatest when the temperature difference is highest, so the system works hardest during the 'heating season' when condensation would normally be a problem. Fresh clean air is introduced into the building by means of permanent wall or window inlets sited in the 'dry' living rooms and bedrooms. Extraction rates can be varied to suit different building volumes by the height and diameter of the ducting arrangement.

Sophisticated Method

Another more sophisticated method of meeting the Regulations also works on the 'stack effect' but has the additional benefit of being 'demand controlled'. This means that the ventilation system activates only when air changes are needed. The Passivent 'Intelligent Passive' system incorporates this by using wall and window inlets and extraction units which are moisture sensitive — automatically adjusting at relative humidity levels of between 40% and 70%. Extraction methods and rates are controlled in exactly the same way as the 'Standard Passive' system so again no powered fans are used.

Low Energy Fan

The third Passivent method of whole-house ventilation — designated the 'Intelligent Assisted' system, like the previously described design, uses humidity sensitive inlets and outlets but extracts by means of a continuously running, low energy fan. In private dwellings, this is normally located in the loft, so it cannot be heard within the home. Extract ducting from the bathroom and kitchen connects into the fan, which exhausts stale air through a roof mounted ventilator. For communal dwellings one fan can serve several accommodation units.

Boosted as Required

Being powered it allows extraction to be boosted as required and ensures uniform performance in all climatic conditions.

Similar passive ventilation systems have been used extensively in Europe for some years. In the UK the initial users were mainly local authorities who saw Passivent as an effective method of improving living standards and protecting housing stock without the need for high maintenance, electronic extraction fans. An increasing number of commercial housebuilders are now fitting Passivent to meet the Building Regulations and, particularly the case of the Intelligent system, to provide an added value feature. □

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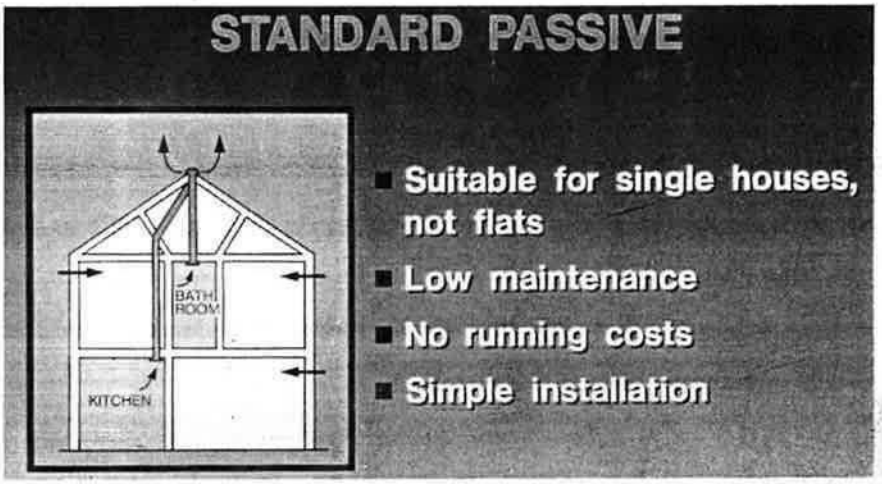
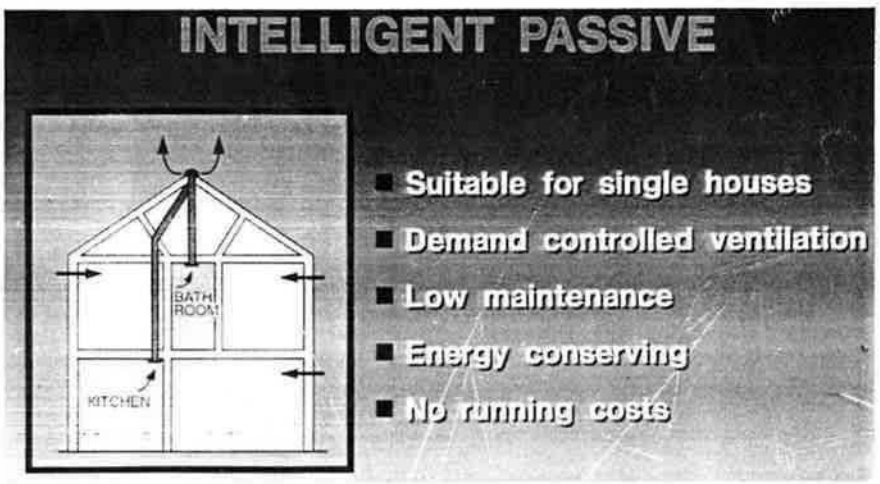
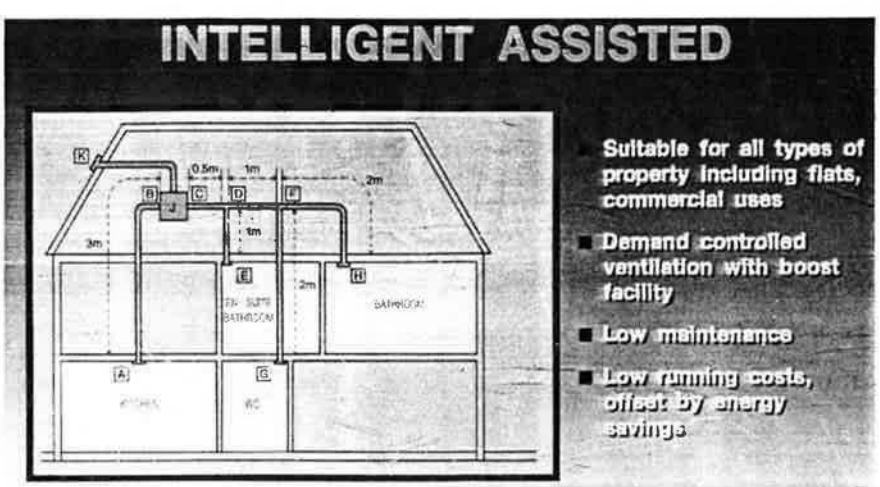
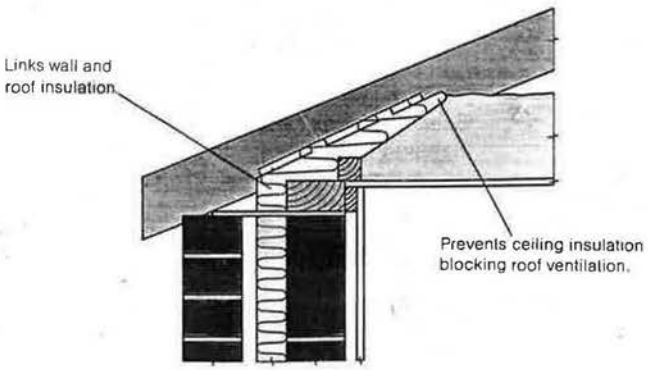






Invented to help lofts breathe more easily

and to prevent cold bridging.



The Insulink Eaves Ventilator from Jablite is a unique new EPS device with two major advantages. Firstly, it eliminates the problem caused by excess mineral wool rammed into the space provided for air flow: a loft that can't breathe properly. Secondly, it prevents a cold bridge forming when the installer pulls back the mineral wool too far, creating an air gap that's just too wide.

How does it work? By being foolproof to install. The Insulink Eaves Ventilator makes it impossible to put mineral wool where it's not supposed to be. And, because it's made of EPS, it also adds some valuable extra insulation.

Ventilation with insulation – and foolproof installation. The genius is in the simplicity.

VR Jablite® Insulink®

THE FIRST INSULATING EAVES VENTILATOR

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