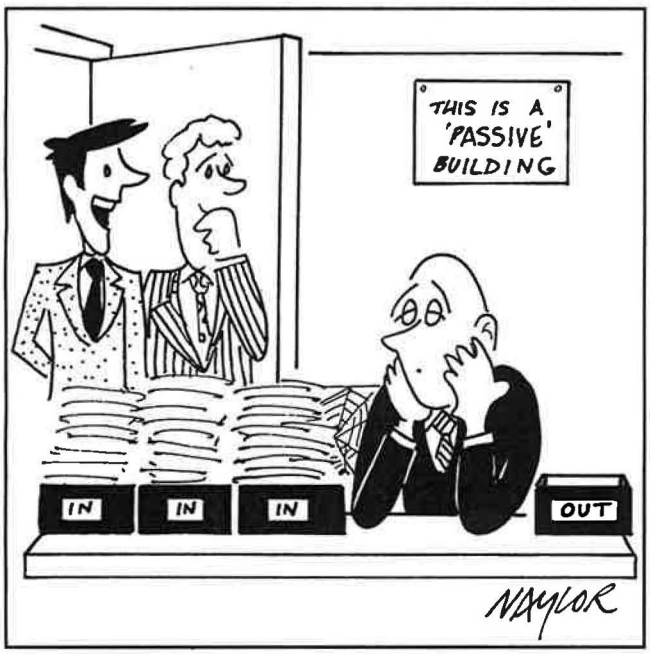
Sustainable building services



'Actually he's the ideal employee for this building'

While sustainable buildings may employ passive techniques, engineers will play a very active role — as Tom Smerdon explains.

The challenge of sustainable development is one which affects us all in both our personal and professional lives. Those of us working in the building-services industry are no exception, and indeed the opportunities for building-services professionals in the drive to make buildings more sustainable are significant.

BSRIA is currently involved in an international research project into sustainable construction, in which we are investigating what may be required to bring about a more sustainable (or less unsustainable) construction industry in the UK. To do this, BSRIA has sought the views of a number of people working in construction and related industries on what may be required in terms of building types, standards, incentives and skills. Even at this early stage, a number of suggestions have been made which directly relate to building services, although further work is needed to determine whether or not these will in reality bring improvements.

Opportunities

Perhaps the most obvious impact on the building-services industry is likely to arise from a move towards more passive ventilation, heating and lighting systems in buildings. This may at first look bad for both manufacturers of equipment and design engineers who are paid on a percentage basis. However, it also opens up opportunities. 'Passive' buildings rely heavily on the performance of façades and windows, and manufacturers of traditional building-services equipment may find themselves developing sophisticated control technologies, along with computer-based modelling tools, for assessing the performance of their products in 'passive' buildings. This may also lead on to product redesign or diversification.

"Moving away from the percentage fee basis is the key to allowing the building-services profession to

which increase the life of buildings and their components will be necessary. One method of achieving this is through much greater standardisation of components. This will allow components to be more easily reused or reconditioned, making buildings themselves more flexible and refurbishment more sustainable. In addition, it is likely that autonomous servicing of buildings will become more common. Photovoltaic modules which can be incorporated into the façades of buildings are available and have been used both abroad and to a lesser extent in the UK. Their cost is currently high (but falling), and increasing uptake of photovoltaics is likely to contribute to this.

"Demand for more sustainable buildings will continue to rise"

Increased independence is also likely to be a feature of water supply and drainage. For buildings of a residential nature such as hotels and dwellings, greywater recycling is likely to become increasingly common. Rainwater can also be used to reduce mains-water demands in buildings. These and other related techniques will require the development of new proprietary systems, available in standardised packages and independently approved, to increase confidence in their performance.

More sustainable

Demand for more sustainable buildings will continue to rise. Opportunities for the building-services industry are significant. For organisations which recognise the benefit of investigating and developing more sustainable technologies BSRIA can offer valuable advice and information. One means of accessing

Three refrigerants in one combats ozone depletion

A refrigerant that is being promoted as a replacement for most R22, R502 and R12 applications is rapidly receiving acceptance. Greencool R411b from Gu Thermal Technology is said to have a minimal ozone-depletion potential and low global-warming potential. Its efficiency in an installation is also said to achieve an exceptionally low total equivalent warming impact.

A monitored installation at McDonald's in Horsham indicates a 25% reduction in running costs compared

were needed when the 270 kW Trane water chiller was converted from R22 to R411b, and the monitoring revealed a 25% reduction in energy consumption. The payback on conversion costs is six to nine months, depending on ambient weather conditions.

Contractor EAC Planned Maintenance has featured R411b in a mail shot, explaining that it enables smaller plant to be used or for more capacity to be obtained from existing plant retrofitted with this refrigerant.

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