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Energy efficient chilled beams and ceilings

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Flexibility of chilled beams and ceilings provides cost effective solution for letting agents looking for a more energy efficient HVAC system, says CBCA chairman Andrew Gaskell.

With energy prices continuing to rise and energy efficiency becoming more important as the UK aims to hit its net zero by 2050 target, the Chilled Beams and Ceilings Association (CBCA) has issued a reminder to commercial letting agents and FMs about the financial and environmental benefits of chilled beam technology.

Chilled beams and chilled ceilings may not be the most appropriate system for every building project – no HVAC system is the best solution as one size doesn't fit all. However, there are a growing number of applications where chilled beam technology is ideal – particularly in commercial office developments, hotels, universities and hospitals, given the high energy efficiency, long life expectancy and low maintenance and optimum in thermal comfort.

The CBCA believes there is a common misconception, particularly in the UK, about their lack of flexibility, and that commercial letting agents are potentially missing out on significant savings by overlooking chilled beams as an energy-efficient HVAC system.

Chairman Andrew Gaskell said: "Flexibility can be designed into the system solution for future cellularization to a pre-agreed planning grid as tight as 1.5m x 1.5m and most often designed to cater for a 3m x 3m partitioning grid availability. At a time when sustainability is higher up the building engineer's agenda than ever, a system that uses minimal energy to achieve excellent comfort conditions, involveno moving parts, has a long lifecycle and is designed for decommissioning with 100 per cent recyclable components ticks almost every box."

In recent years, multiservice chilled beams (MSCBs) have become increasingly popular in commercial

settings as they can incorporate a full range of other services to meet specific user requirements, such as heating and cooling, ventilation, lighting, and even AV equipment, fire alarms and public address systems.

Other advantages include the fact that chilled beams operate above dew point, so there is no condensation drains or pans which can harbour bacteria and mould, meaning not only less maintenance, but also a much healthier environment for occupants, as Mr Gaskell added: “Chilled beams can provide demand control ventilation (DCV) without needing moving parts on the beam itself, so during the building concept design stage the chilled beams can be selected to provide future flexibility to enable the end user to reconfigure the occupied space to cater for changes in use.

“Ever more innovative designs, including the use of ground source heat pumps in tandem with chilled beams and radiant chilled ceilings, are improving the sustainability of building services systems by reducing the amount of energy needed to heat or cool water – a primary source of building-related greenhouse gas emissions.”

He concluded: “The technology has still not achieved its full potential and is often overlooked for projects where it would be the best suitable system. This is largely due to a lack of knowledge and understanding across the building sector and has flagged up the need for a better flow of information between suppliers, consulting engineers, architects and contractors.”

For further information about the CBCA click here