

Carbon Trust retrofits old buildings impressively

Mansel Court in Wimbledon offers a good example of how to involve tenants in the process of lowering a building's carbon emissions

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The UK is known for its historic buildings and period properties, but this comes at a price. Our old housing stock is some of the most energy inefficient in Europe.

It's not just Victorian terraces that are leaking energy: 20th-century offices are also a problem and we seem to be storing up problems for the future. The Carbon Trust predicts that well over half our existing buildings will still be standing by 2050, the same year the UK is legally obliged to have cut its CO² emission by 80%.

Mansel Court was one such inefficient commercial building. Built in the 1960s, it lost a lot of heat due to its single-glazed windows with metal frames and poor seals. It has since been transformed into a state-of-the-art eco building that's over 50% more energy efficient than it was. But what is unusual about this retro-fit is the approaches to using energy efficient technologies and engaging tenants on sustainability issues.

Mansel Court was developed by the Low Carbon Workplace, a partnership made up of the Carbon Trust, an asset manager, Threadneedle, and a developer, Stanhope.

The Carbon Trust has a mission to accelerate the move to a low carbon economy and was growing frustrated at the lack of progress in making commercial buildings energy efficient.

This, it believed, was due to barriers including a lack of knowledge about how to develop and operate low-carbon buildings, skills gaps within the supply chain, and a lack of clarity about whether the landlord or tenants benefit most from environmental investments - and who should therefore pay for them.

Despite these issues, the Carbon Trust was convinced it would be possible to develop a profitable business model for the sustainable renovation of commercial buildings - one that could be replicated. In 2010 it set up the Low Carbon Workplace partnership and in just five years the company has established a portfolio of eight low-carbon commercial buildings, including the six-storey Mansel Court.

Bruno Gardner, managing director of Low Carbon Workplace at Carbon Trust, said: "Ultimate success for the partnership [would be] to make energy efficient, low-carbon developments the industry norm. Low Carbon Workplace's underlying philosophy is

‘better buildings, used better’ and takes a holistic approach to delivering low carbon performance in buildings. A good design means nothing, if the design intent is diluted in development, or if the occupiers use the building poorly.

“By putting low carbon at the heart of our approach to sustainability, we create a common, tangible goal for everyone involved,” he said.

The refurbishment of Mansel Court resulted in air-tightness exceeding building regulations while also offering tenants the use of windows. It was also the first commercial building to have capillary matting embedded in its floors and ceilings. This low-energy system enables cold water to circulate through small plastic tubes to cool the building efficiently.

But the most innovative approach of this development is combining energy efficient technologies with a programme of engaging those using the buildings.

A condition of leasing Mansel Court is that occupiers have to sign a “low carbon workplace charter” to signal their commitment to minimising their emissions. However, they are not expected to do this alone. The leasing agreement offers tenants support from the Carbon Trust with this process.

The first tenants moved in in March 2014 and support began immediately, with the Carbon Trust advising how to make optimal use of the space. This was essential to ensure that the occupiers’ fit-outs complemented the natural ventilation and cooling systems.

The Carbon Trust used smart meters and occupancy sensors for monitoring. Comparing energy consumption with occupancy levels, helps identify opportunities to improve the energy performance of the building. If and when the occupiers of Mansel Court can demonstrate they have met specific criteria, they will be awarded with the Carbon Trust’s “low carbon workplace standard”.

The Guardian judges were impressed, pointing out that: “The redevelopment of old buildings, while not a sexy task, is exactly where more works needs to be done. Old buildings have a big negative impact and the redevelopment of Wimbledon’s Mansel Court, into a low carbon workplace, was considered a project others could learn from and replicate.”

Carbon Trust is the 2015 winner of the innovation award in the built environment category of the Guardian Sustainable Business Awards.