

## MARKS & SPENCER, CASTLE DONINGTON C A GROUP LIMITED



Approximately 40 per cent of the UK's energy demand results from the heating of offices, factories and warehouse facilities, according to figures from the Department for Energy and Climate Change (DECC). With increasing pressure on businesses to become more energy efficient – financially and environmentally – effectively addressing this 'space heating' requirement through the use of renewable technologies, has become a priority.

To that end many companies are looking towards highly efficient, holistic heating solutions which incorporate established renewable technologies, as part of their sustainable building strategy.

When retail giant Marks & Spencer, was planning its newly opened distribution centre in Castle Donington, the company's Plan A initiative was the driving force in determining how the building would run with maximum efficiency.

The 80,000 square metre carbon-neutral facility which is set to become the UK's largest dedicated e-commerce warehouse – distributing two million clothing and home products a week direct to customers – features an enormous south facing elevation. This fact made it a prime candidate for the SolarWall<sup>®</sup>, Transpired Solar Collector (TSC) technology from building envelope specialist, CA Group Limited.

Designed for the specific purpose of heating large spaces, active solar technologies such as the Transpired Solar Collector (TSC) can transform the fabric of a building's southerly elevation into a giant solar collector by capturing the sun's energy which is then used to pre-heat fresh, outside air before it is drawn into the building's heating system, considerably reducing the building's reliance on fossil fuels.

The SolarWall<sup>®</sup> which CA Group has installed for Marks & Spencer in Castle Donington is the largest example on a single building in the world. Measuring almost 4,500 square metres – the equivalent of more than 16 tennis courts – it is expected to reduce the building's heating requirement by somewhere in the region of 30 per cent by generating more than 1,135,000kWh and saving over 256 tonnes of CO<sub>2</sub> per annum.

Solar air heating is easy to install, 100 per cent renewable and has the effect of dramatically reducing a building's overall heating requirement, providing significant savings in energy consumption and carbon emissions.

In addition to the use of CA Group's TSC technology, a number of other sustainable measures were adopted in the delivery of the project for Marks & Spencer at Castle Donington.

CA Group's Twin-Therm<sup>®</sup> built up roof and wall system was selected due to the fact that it provides a fully-walkable cost effective solution which offers a high degree of flexibility

and exceptional air tightness levels. Twin-Therm® is delivered as a carbon neutral envelope and uses man-made mineral fibre insulation, which is non-flammable and complies with the United Nations Environmental Programme (UNEP) environmental recommendations against the use of CFCs, HFCs, HCFCs or VOCs.

The exterior of the building features pre-finished steel, which has been optimised to provide maximum corrosion resistance and comes with a 25-year guarantee.

Adopting a long-term view enabled the project team to ensure that the benefits would continue to resonate even after the building reaches the end of its useful life, through the use of materials which do not deliver any unforeseen disposal costs for the owner – a significant problem facing many building owners today.

The new distribution centre has been rated Excellent by BREEAM and recognised with an EPC A certification.



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