

Beaconsfield Motorway Services (M40 Junt. 2)

A big break for SolarWall®



Project Type:

New Build

Scope:

New Motorway Services

Location:

Beaconsfield (M40 Junt.2)

Client:

Extra MSA Services Ltd

Architect:

Design Group 3

Consulting Engineers:

Ramboll Whitbybird Ltd

Main Contractor:

Carillion Regional Building

Cladding Contractor:

Sterling Building Systems

System Manufacturer:

CA Building Products

System:

SolarWall® perforated Transpired Solar Collector (pTSC.) 255m² installed using Colorcoat HPS200 Ultra® in Merlin Grey.

Energy Savings:

99,235 kWh

CO₂ Savings:

25 tonnes per year

CA Group has recently supplied a SolarWall® perforated Transpired Solar Collector (pTSC) as part of Britain's largest new motorway services, near Beaconsfield.

The 255m² SolarWall® was installed vertically laid using Colorcoat HPS200 Ultra® in Merlin Grey supplied by Corus, after consulting engineers Ramboll Whitbybird Ltd recommended the system to the project architects.

The principle of SolarWall® is simple. Installed as an additional skin to a building's southerly facing elevation, the system consists of a pre-finished steel sheet with thousands of tiny perforations uniformly spaced across the full face of the collector.

As solar radiation strikes the surface of the SolarWall® it is absorbed. Solar heat conducts to the thermal boundary layer of air which lines the outer surface of the panel. The heated boundary layer of air is then drawn through the perforations into an air cavity which is created between the SolarWall® and the original elevation behind.

From the air cavity, the fresh, solar heated air can then be used directly as building ventilation air, or if required utilised as a pre-heater for the building's main heating system, thereby reducing the amount of energy required to heat the building and the resulting CO₂ emissions.

Andrew Brewster SolarWall® design engineer at CA Group comments "This project was the first in the UK to utilise the CA Arc 50 profile for a SolarWall®. By fixing the profile vertically, the SolarWall® (pTSC) not only meets the architect's aesthetic vision for the development but also the client's brief to specify innovative and sustainable building materials."

The bespoke SolarWall® has been designed to act as a pre-heater to two of the building's air handling units which supply free fresh heated air into the food court and toilet areas of the building.

The SolarWall® system is estimated to save the motorway services more than 99,235kWh in energy and 25 tonnes of CO₂ per year.