Brandon Court

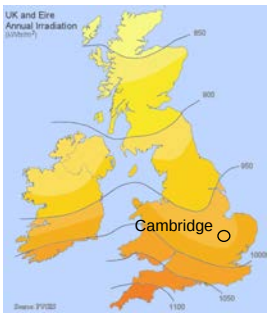
building type
sheltered apartments

solar pv
28.5 kWp

annual energy generation
23,543 kWh

annual CO_2 reduction
12.3 tonnes

location



client

CAMBRIDGE CITY COUNCIL

Cambridge City Council seeks to lead by example in sustainability and energy efficiency. The refurishment of a 1970s sheltered housing scheme was an ideal opportunity to show how it should be done.

Background

Brandon Court is a development of housing for the over 60s and under the management of Cambridge City Council. Originally built in 1976, the scheme was to be converted from bedsits into 30 self-contained one and two bed flats as part of a programme of refurbishment of the council's sheltered housing stock.

The works also included the following improvements to environmental sustainability of the building:

- 28.58 kWp solar PV installation of Viridian Solar Clearline PV panels
- 50mm internal wall insulation to all external walls
- LED lighting with motion sensors for communal areas
- Upgraded communal heating system
- A-rated condensing gas boilers
- New heating controls throughout whole building
- Loft insulation upgraded to 300mm
- Grey water recycling system

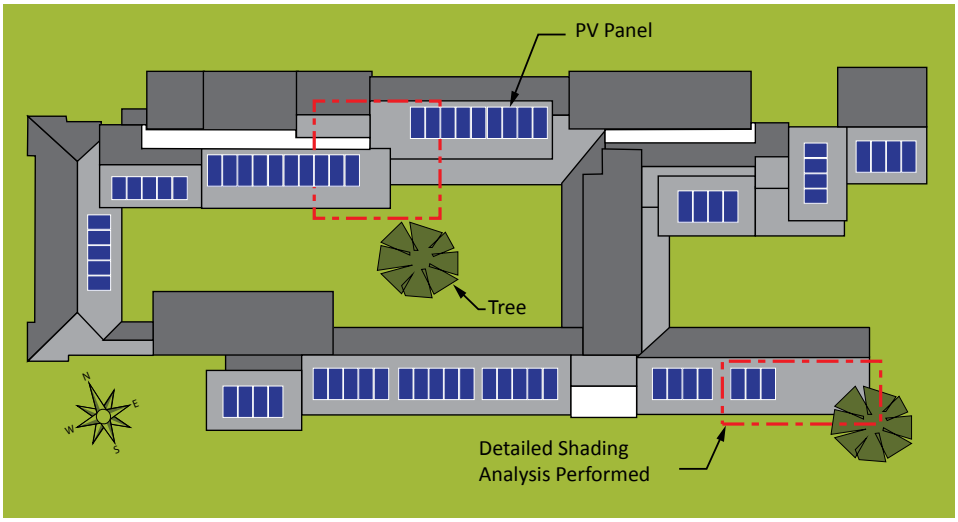
In addition, the slate roof coverings were to be renewed, making this an ideal opportunity to install solar photovoltaic renewable energy.

System Design

Viridian Solar's technical design team worked together with the architect to develop a roofing layout that balanced the achievement of the highest energy yield against the requirement to produce a good looking building with an attractive roofline. Low profile Clearline PV integrated solar photovoltaic panels installed in broken runs has given the refurbished building a harmonious roof layout with pleasing symmetry.

The panel layout also needed to take into account the presence of mature trees as well as a complex roof layout in which some roof areas are affected by shade cast from other roofs. (See diagram, left.)

Detailed shading analysis and energy simulations were undertaken by Viridian Solar to ensured that panels were located to minimise the effect of shade and maintain the annual solar yield.



Roof Layout at Brandon Court

continues...

View from the courtyard showing discreet Clearline PV panels neatly integrated with the refurbished slate roofs.

"We would highly recommend using Viridian Solar wherever possible"

Sam Griggs,
Home Energy Officer
Cambridge City Council

Installation

The solar photovoltaic panels were integrated into the roof covering by the roofing contractor as part of their works to renew the slate covering. Electrical connections were passed through into the roof space for later connection by electricians.

String inverters were installed in accessible cupboards on the upper floors, and AC connections routed to a plant room on the ground floor from where power for communal areas such as day rooms, corridors and stairwells is provided by the solar panels. Any excess electricity is exported to the grid for nearby buildings to use.

Results

"Cambridge City Council is extremely pleased with the performance of the panels. The visual appearance is excellent and we would highly recommend using Viridian Solar wherever possible," said Sam Griggs, Home Energy Officer at Cambridge City Council. "They were always on call during the installation and have been extremely helpful since completion. "

Twelve months since commissioning 23,543 kWh of solar electricity has been generated. This, combined with the other efficiency measures has significantly reduced energy costs at the building compared to those before the refurbishment.

Close up of the slate roof integrated Clearline PV solar panels

Relax, your energy bills are under control...

Viridian Solar
Atlas Building,
68 Stirling Way,
Papworth,
Cambridge UK
CB23 3GY

Tel +44 (0)1480 831501
info@viridiansolar.co.uk
www.viridiansolar.co.uk