Case Study: Solar Powered Care Homes

PROJECT SUMMARY

This case study provides an overview of an initiative to provide solar electricity to homes for elderly people and people with disabilities, including two 40 bedroom care homes and four 8 bedroom sheltered homes.

The 40kWp roof integrated solar photovoltaic systems installed include:

- Two 10kWp systems at Moorlands Grange and Castle Grange care homes.
- Four 5kWp systems at Elm Grove, Orchard View, Mill Dale and Crescent Dale sheltered homes.

PROJECT AIMS

The project aimed to:

- Reduce fuel bills.
- Supply the homes with power from renewable energy sources.
- Contribute to reaching a target of meeting 10% of the Kirklees district's energy demand from renewable sources by 2010.
- Reduce climate change emissions (over 12 tonnes of carbon dioxide per year).
- Demonstrate that solar PV could be integrated into homes in an appealing way.

WHO WAS INVOLVED?

This initiative was managed by Kirklees Council Environment Unit in partnership with Kirklees Council Social Affairs and Health.

The solar photovoltaic systems were installed by FilSol Solar Limited. The homes were built by Bardsley Construction Ltd and R.H. Fullwood & Co Ltd.

Technical project management, including supervision of the installations, was undertaken by Kirklees Council Design & Property Services.

HOW WAS IT STARTED?

The solar care homes project is part of a European scheme called SunCities. Through this programme Kirklees Council, with partners from the Netherlands and Germany, aimed to install a total of 3.05 MW (megawatts) of solar photovoltaic (PV) systems on several thousand dwellings, including a target of 400kW of PV in Kirklees.

The care homes were chosen as an opportunity to demonstrate roof integrated solar PV and to reduce the homes' fuel bills.

FUNDING AND EXPENDITURE

This project has brought a significant amount of money (more than £200,000) into the Kirklees community, from the following funds:

	Solar PV
Total cost	£316,000
Funding:	
DTI Major PV Programme	£150,000
EU SunCities programme	£60,000
KMC Renewable Energy Fund	£106,000

MEASURING SUCCESS

- Technical. The solar PV systems are being monitored for their performance.
- Social. This project has increased interest in installing renewable energy in future care homes.
- Environmental. This project will save more than 12 tonnes of carbon dioxide every year.
- Awareness raising. Visitors to the care home are able to view the performance of the systems.

Display panel at Elm Grove

TECHNOLOGY

Module type:	Framed poly-crystalline silicone module
Array size	125Wp modules Care Homes: 80 modules Sheltered Homes: 40 modules
Structural integration:	Roof integrated aluminium frame with slide-in module systems
Energy produced each year per home	Care Homes: around 7,000kWh Sheltered Homes: around 3,500kWh
% of home's energy produced	The performance of the systems is being monitored

ACHIEVEMENTS

- The installations were completed in February 2006.
- There has been a positive response from Kirklees Social Affairs and Health who are planning more renewable energy installations in care homes.
- More than £200,000 in external funds has been brought into the Kirklees community.

- The SunCities project was recognised by the prestigious Ashden Awards for excellent local sustainable energy projects in 2006.

LESSONS LEARNED

- Provide information as early as possible to the asset managers about the systems, including energy efficiency advice, any savings to be made, maintenance schedule and costs and who to contact if there are any problems. This will ensure ownership of and care of the systems into the future.
- Involve the care homes manager in the project design. The roof integrated design demonstrated that solar PV could be installed in a way that was sympathetic to the fact that the systems were on peoples' homes and not solely demonstration buildings.
- This project demonstrated that private developers are keen to deliver renewable energy projects, particularly because of the benefits to their organisation such as assistance with meeting EcoHomes standards and early compliance with future policy. These benefits should be highlighted to the developer at an early stage.
- Ensure all parties are committed to grant timeframe deadlines. This is particularly important when managing multiple funding streams.

Installation of one 2.5kWp array at Elm Grove sheltered home

Installation of 5kWp system at Mill Dale sheltered home

PLANS FOR THE FUTURE

Kirklees Social Affairs and Health are planning to integrate renewable energy systems into future care homes.

CONTACT DETAILS

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