



Solar Electric Roof Tiles



C21e

Best Overall Product,

Interbuild New Product Awards 2006



solarcentury

Add value

Consumer demand for 'green' homes is increasing.

"Our research has shown that more people would like to customise their home with Solar Hot Water and Photovoltaic tiles more than any other environmental or energy saving feature"


Gerry McCormack, St James Homes.

Housing developers can add significant value and differentiate their projects by including solar roof tiles, without delaying their build programmes.

Planning policies and the Code for Sustainable Homes now require the use of on-site renewables to reduce carbon dioxide emissions. Solar photovoltaic and thermal roof tiles provide a practical and easy way to meet this legislation.



Stay ahead



As the Code for Sustainable Homes evolves and developers are required to meet level 3 and above, incorporating renewable energy into developments will become essential.

Developers with experience of these technologies will be in a better position to meet legislative requirements and customers' expectations.

Solar Electricity

Solar photovoltaic (PV) roof tiles are one of the simplest renewable energy solutions available:

- **No moving parts**

From the solar tiles to the inverter, there are no moving parts in any element of a solar photovoltaic system.

- **No maintenance**

A simple periodic visual inspection is sufficient to check the installation.

- **No build hold ups**

Solar tiles are installed as part of the standard build process, with no specialist skills required.

- **Easy for your customer**

The tiles are 'fit and forget', the homeowner simply gets reduced bills and the satisfaction of reduced CO₂ emissions.

- **Carbon reductions you can prove**

Every C21e solar tile installation comes with a display meter that shows the amount of energy generated and the CO₂ saved.



Case Study: The Merrill Family

Walking into the Merrill's family home in Somerset, it all seems very normal.

The only evidence that the Merrill's home is powered by C21e solar tiles is the small display unit on the kitchen table showing how much energy is being generated.

"It's hard to remember the solar tiles are there sometimes" says Dad, David Merrill. "But it's a great feeling to know that we're generating our own power."

When David had the home re-valued he was pleased to find it had increased in value by 6% because of the tiles alone.



Case Study: Gleeson Homes



Gleeson chose to offer homebuyers the choice of Solarcentury's C21e solar electric roof tiles on two homes at their Norfolk Park development.

Gleeson Homes analysed homebuyers' interest in the C21e homes against an otherwise identical, conventional townhouse.

The three-bed townhouses with C21e solar tiles sold at a premium of 8.6%.

The results confirm the findings from the Energy Saving Trust that there is significant demand from homebuyers for homes with lower energy bills.

Easy Installation

C21e solar electric tiles take the place of four conventional tiles, fixing to standard roof battens with regular screw fixings. The solar tile installation fits with your build programme and uses existing contractors.



1. Fast to Install

C21e tiles are as fast to install as conventional tiles. Each unit can be carried onto the roof by one person and is easily moved into position.



2. Simple Connections

The solar tiles connect together with simple push-fit connectors. Each tile in the installation is connected to the next, as the tiles are laid onto the batten.



3. Standard Battens

The nib of each tile hooks onto the roof batten in exactly the same way as conventional tiles. C21e is designed to interlock directly with additional solar tiles or regular roof tiles, without the need for any flashings.



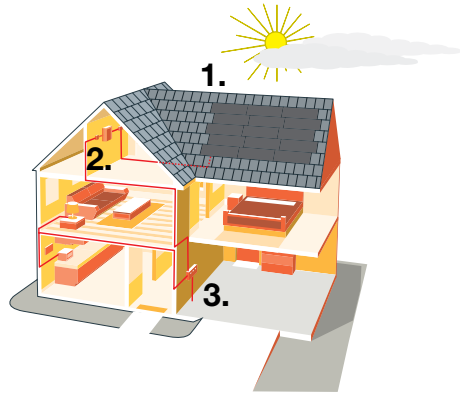
4. Easy Fixings

Each tile is fixed to the roof with standard screw fixings. When all of the solar tiles are installed, the leads from the tiles at each end of the roof are passed through into the roof space, ready for the electrician to finalise the installation.

Your Questions Answered

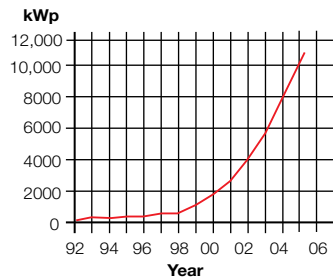
How does the system work?

1. Daylight hits the photovoltaic cells and is converted to clean electricity.
2. The inverter converts the electricity from direct to alternating current, for use in the home.
3. When the solar PV system is producing more energy than is needed, power is exported to the grid. At night, power is imported from the grid in the normal way.



Does it really work in the UK?

Yes. The cells in the tiles only require daylight to work, and will even generate energy on cloudy days. In the UK it is possible to generate all of an energy efficient home's electricity needs from solar PV. This graph shows the increasing rate of solar installation in the UK.



UK cumulative installed solar PV capacity (kWp)

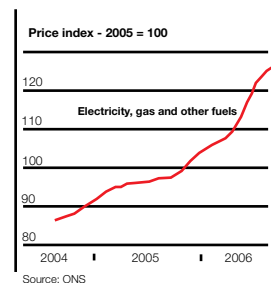
source: IEA/DTI

Does the system need batteries?

No, the system is connected to the national grid. At night, when the tiles are not generating energy, electricity is bought from the utility company in the normal way. Any excess electricity generated during the day, for example when you are at work, is sold back to the utility company.

How much will I save?

Direct payback from your solar tiles is hard to calculate because of uncertain future energy prices. This graph shows energy price rises over the last three years. In comparison, the energy generated by a solar energy system will never go up in price.



Source: ONS

System Sizes

C21e solar tiles come in five pre-engineered system sizes.

No. of C21e Solar Tiles	Default Layout: courses x columns	C21e tiled area (m ² approx)	Total roof area required (min. m ₂ approx) ¹	Electricity per year in units ²	CO ₂ Offset per year ³	Product Code
18	6 x 3	7	9.3	777	441kg	10215-02
24	6 x 4	9.3	12.5	1036	588kg	10215-03
36	9 x 4	14	17.1	1554	883kg	10215-04
48	8 x 6	18.7	23.4	2072	1177kg	10215-05
60	10 x 6	23.4	28.0	2590	1471kg	10215-06

[1] Based on 90mm headlap

[2] For a south facing roof, generating 830 units (kilowatt hours - kWh) per 7.8m² of solar tiles

[3] Using SAP calculation method for grid displaced electricity - 0.568kg per kilowatt hour

As an example, a 36 tile system, requiring 17 m² of roof space, could provide over 45% of the electricity demand for a typical three bedroom home, (based on Energy Savings Trust figures of 3,300 kWh per year) or all the electricity for an energy efficient home.

Roof Tile Compatibility

Cemex (Russell)	Grampian, Highland
Northstone	Slemish Mk 2
Redland (Lafarge)	Mini Stonewold
Lagan	Flat Tile
Marley (Eternit)	Modern, Duo Modern
Quinn	Western slate
Sandtoft	Calderdale, Calderdale Dual

Warranty

The tiles have a power warranty of 25 years and are expected to provide generation for at least fifty.

**To order, please contact your local supplier.
If you have any questions about the C21e solar roof tile please call our roofing support team on 020 7803 0258.**



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www.solarcentury.com/roofing