C21 solar tiles & slates

Solar Electric
Roof Tiles & Slates

Designed & Built in the UK

solarcentury | intelligent generation™

Solar tiles...

For housing developers looking to meet the Code for Sustainable Homes and Self Builders designing their dream home, solar tiles offer a simple, cost effective solution.

Easy to install using traditional roofing techniques and fully integrated into a home's roof, solar electric roof tiles & slates provide an unobtrusive way to generate renewable energy without compromising architectural design.

With pre-engineered all inclusive systems available for installation by existing contractors, installing solar has never been simpler.
Systems can be selected to meet specific levels of the Code for Sustainable Homes or to meet a building's electrical energy requirements.

Solar electric roof tiles & slates have also been shown to add significant value to a home* and help protect the owner against rises in energy prices.

*Energy Saving Trust *'Green Homes are hot property'* 27/03/06

...simple renewable energy

The demand for 'green', energy efficient 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.

Solar Electricity

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

• No moving parts
Neither solar tiles, solar slates or the inverter contain any moving parts, making photovoltaics a very reliable form of renewable energy.

• No maintenance
A simple periodic visual inspection is sufficient to check the installation.

• No delays
Solar tiles & slates 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 CO_2 emissions.

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, in 2006, 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 can fit in with your build programme using your existing contractors.

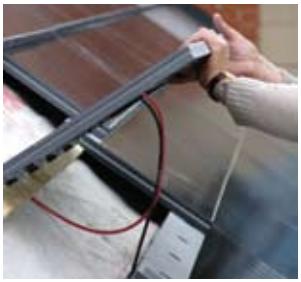
C21e solar electric slates are fixed in accordance with conventional slating practice and are easily fitted by a professional slater following our one day training programme.

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. Push-fit 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

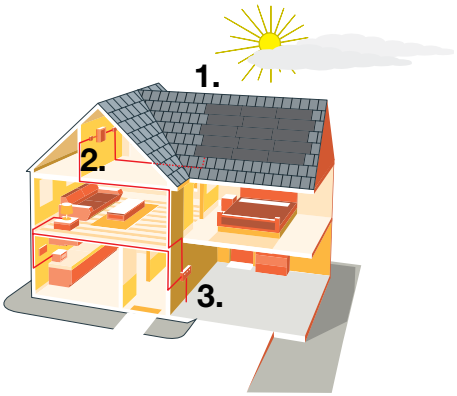
The nib of each tile hooks onto the roof batten in exactly the same way as conventional tiles. C21e is designed to interlock directly with additional solar tiles or regular roof tiles, without the need for any flashings.

4. Simple 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?



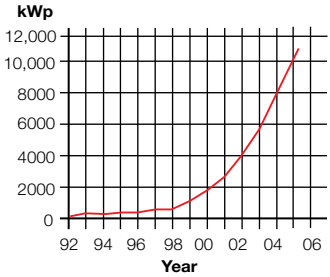
1. Daylight hits the photovoltaic cells and is converted to clean electricity.

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 & slates 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 (using 2000kWh/yr) electricity needs from solar PV.
This graph shows the increasing rate of solar installation in the UK.



UK cumulative installed solar PV capacity (kWpeak)

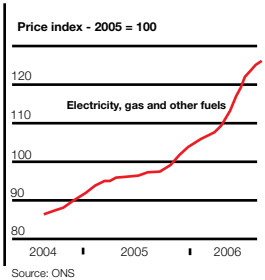
source: IEA/DTI

Does the system need batteries?

No, the system is connected to the national grid. At night, when the tiles & slates are not generating energy, electricity is bought from the utility company in the normal way. Excess electricity generated during the day, for example when you are at work, can be 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 and slates come in a range of pre-engineered system sizes. Please visit our website for a full range of system sizes, layout options and order codes.

No. of C21e Solar Tiles or Slates	Electricity per year in units [1]	CO_2 Offset per year [2]	kWp [3]
18	777	441kg	0.94
24	1036	588kg	1.25
36	1554	883kg	1.87
42	1813	1030kg	2.18
48	2072	1177kg	2.50
54	2331	1324kg	2.80
60	2590	1471kg	3.12
72	3108	1765kg	3.74

[1] For a south facing roof, generating 830 units (kilowatt hours - kWh) per 7.8m^2 of solar tiles
[2] Using SAP calculation method for grid displaced electricity - 0.568kg per kilowatt hour
[3] Please refer to the C21e datasheet for performance specifications at www.solarcentury.com

Roof Tile & Slate Compatibility

Tile:

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

Slate:

Natural slate - 600 x 300, 500 x 300
500 x 250, 320 x 220, 300 x 200
Marley Eternit fibre cement:
Rivendale - 600 x 300
Garsdale - 600 x 300 & 500 x 300
Birkdale - 600 x 300
Thrutone - 600 x 300

Warranty

The tiles have a power warranty of 25 years and are expected to provide power for the lifetime of your roof.

To order, please contact your local supplier, on 0800 077 8965.

For training email: training@solarcentury.com

Greenworks
St Gobain House
Binley Business Park
Binley
Coventry
CV3 2TT

www.solarcentury.com/roofing

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