

# A green and affordable solar solution

Self build provides the answer to housing needs for wheelchair user.



## SOLAR PANELS

The 1.86kWp array comprises of nine 4mm solar laminates sourced from GB-Sol in South Wales. GB Sol also provided the 'RIS' aluminium framework onto which the laminates are mounted. The nine laminates comprise of six 250W laminates and three smaller 125W laminates. The zinc roofed was supplied and installed by BT Roofing.



**L**ike many before them, Lara and Dieter Smidt found that a self build provided the answer to their specific housing needs at an affordable cost.

Lara, a wheelchair user with a degenerative spinal disorder, needed a house that could provide her with improved accessibility. Unable to make the necessary changes in her existing property and not able to find a new house that could be easily adapted Lara, along with her husband, decided to build a bespoke new home in their own back garden.

Their design brief was to ensure the new build was as sustainable and energy efficient as possible. Specific requirements included a flush 'in roof' solar PV system, mechanical ventilation with heat recovery (MVHR) system and underfloor heating.

Dieter, a chartered accountant, quit his job to build the house himself after receiving expensive estimates from contractors. He engaged the help of two labourers whilst Lara project managed the build and sourced all the suppliers.

Lara and Dieter met Ben Saunders, owner of SogoSolar, at a self build show where he was exhibiting. After several discussions and meetings Saunders designed and installed a unique solar PV system which complements the contemporary style of the property. The innovative flush 'in roof' system uses 4mm thin solar PV laminates rather than conventional framed modules.

The installation is one of the first in the UK to combine a GB Sol Roof Integrated System (RIS) with a zinc roof. The PV system forms the actual weatherproofed, south-facing roof.

Underfloor heating has been installed in the property and is run off the solar panels. Dieter and Lara also installed an MVHR system which supplies and extracts air throughout the property. It provides a balanced low energy ventilation solution and re-uses up to 95 per cent of the heat.

"We love the way the finished roof looks with the integrated solar PV system. Ben has helped us to build our energy efficient dream home," says Lara.

A Solaredge system, which uses a web-based monitoring portal, enables the performance of the panels to be monitored remotely. The projected annual yield for the solar system is estimated to be 1,600kWh. The finished property has achieved an EPC Level B with a rating of 88.

**SogoSolar:** [sogosolar.co.uk](http://sogosolar.co.uk)

**GB-Sol Ltd:** [gb-sol.co.uk](http://gb-sol.co.uk)



## CLEAN AND *green*

For those living in modest-sized homes who like the idea of a real fire but don't have access to a flue or chimney, a bio-ethanol stove may be the answer. The fires are also likely to appeal to those who don't like burning fossil fuels.

Unlike oil, gas and coal, bioethanol is a renewable clean-burning liquid made from certain crops and food waste. It doesn't produce smoke so there is no need for a chimney.

The manufacturers claim that the fires can warm a 25 sqm room as a secondary heat source. This means it would be effective on typical autumn and winter days. And in the right weather ie (not too windy) some models can even be used outside.

### OUR VERDICT

Our test fire got the thumbs up from recent dinner party guests, who had braved the early spring weather to eat in an unheated sun room.

Although not belting out heat like a log burner, the warmth was clearly noticeable, and just took the edge off an early March evening. Our Stow model had the output of an average electric heater.

Aesthetically, the Stow also got two nods of approval. Undoubtedly over-engineered for its heat output, the fire was designed to look like a typical log-burner, albeit with white artificial coals.

There was a slight but noticeable aroma from the fuel which wasn't unpleasant and probably added to the charm of having a fire in the room.

A litre of biofuel lasted just under three hours with the control fully



open in the steel fuel box. This was perfectly long enough for our meal before retiring into the house.

All things considered, what had the potential to be naff or just plain useless turned out to be well received and appreciated, given the time of year.

It is in no danger of replacing our Clearview for winter warmth in our living room but I can see the Stow adding a cosy glow to modern well insulated rooms. (imaginfires.co.uk)

## *Accoya rooflight*

Lumen has developed what it is claiming is the world's most environmentally friendly roof light, the Planus Accoya, made entirely from accoya timber. Accoya is renowned for its durability, stability and sustainability. Available as a fixed casement design or with electric actuation for ventilation, the roof light is designed for use on a flat or low pitch roof and can be supplied with Lumen's



insulated kerb system. The Planus Accoya incorporates argon triple-glazed Pilkington Activ self clean glass. (lumenrooflight.co.uk)