

Air Source Heat Pump Installation and Solar Photovoltaic (PV) Installation for a new build property, Powys



Boughrood is a tiny village just outside of the Brecon Beacons National Park with a friendly “everyone knows everyone” atmosphere and is a nice quiet place to retire to.

The owners of this new build property planned to do just that after building their ideal home upon the large plot of land they had acquired.

The Problem:

WDS Green Energy were contacted by the architects of this new build property to discuss how to heat the well-insulated property in a clean and environmentally friendly manner. Initially requesting a Zehnder heat pump it was discovered after a full site survey and detailed heat loss calculations that the property would require a 16kW heat pump and the largest size Zehnder manufacturer was a 10kW heat pump.

The Solution:

After much discussion WDS Green Energy offered the architects a bespoke design for a **16kW Daikin air source heat pump** coupled with an **underfloor heating system** throughout and a **4kW solar photovoltaic array** for one of the lean-to garage roofs to provide green electricity for the property.

The Daikin air source heat pump system consists of two units the outdoor unit which houses the heat pump and components and the indoor ‘hydro-box’ unit which consists of another compressor, the heat pump controls and a domestic hot water cylinder.

This system means the outdoor unit is fairly compact and so in this case the unit fits away from the wall but still neatly under the building eaves.

The Benefits:

This new build property will benefit from both the feed-in tariff scheme, which will pay per unit of electricity generated by the **solar photovoltaic panel array** upon the roof regardless of whether said electricity is then used by the heat pump or for other domestic activities and from the renewable Heat Incentive which is due to begin in early 2014 and much like the feed in tariff scheme will pay per unit of heat generated by the **16kW Daikin air source heat pump**.

The owners of the property also benefit from lower energy bills as heat pumps are some 50% cheaper to operate and run compared to their oil or LPG counterparts.

Finally there is also a grant incentive scheme called the RHP (Renewable Heat Premium payment) which will provide some £1,300 towards the costs of the initial installation.

