

A Complete Green Solution in Llanmadoc



This new home sited on the Gower peninsula with spectacular views over the Loughor Estuary is one of the most eco-friendly homes built in the UK achieving an A rating on the energy performance Certificate and on its Carbon emissions and reaching Code 5 status under the national standard for sustainable design.

The owners of this large plot of land received planning permission for a large scale remodelling and refurbishment of their property that entailed not only conversion of existing outbuildings into more useful buildings, such as a gym and a study, but included the demolition and replacement of the existing dwelling, building of new structures, such as a bin and refuse storage area and major landscaping and re-profiling of the surrounding land. The owners decided that this was a good opportunity to explore green solutions and turned to WDS Green Energy for advice.

The Problem:

The Owners of this bespoke architectural design is an enthusiast of renewable technologies and wished his home to have a low carbon footprint and the minimum of running costs.

The aesthetic beauty of the area was an important consideration in the design process and this in turn extended to no equipment such as solar photovoltaic panels to be visible upon the roof space.

The Solution:

WDS Green energy worked very closely with the owners to find a solution that was ideal for them. A **Dimplex SI 30 TE ground source heat pump** was installed to provide the property with all the heating and hot water they would require. Upon the flat roof **2No Dimplex Solar thermal panels** were installed which are connected to the heat pump system to provide pre-heated water, thus supplementing the hot water generation on site. **30No 250w Phonosolar Solar Photovoltaic panels** rounded off the installation and they will provide electricity for the property and offset the running cost of the heat pump.

A plant room was created within the house to house the heat pump, hot water cylinders and other 'unsightly' equipment and the panels upon the roof, (both solar thermal and solar photovoltaic) were set at an angle of only 10°. Whilst this is not the optimum angle for the generation of electricity and/or hot water it ensured that the panels were not visible upon the roof from the ground level thus the aesthetics of the property were retained.

The Benefits:

The Owners of this new build property managed to achieve level 5 in the code for sustainable homes with the help of WDS Green Energy. The **solar photovoltaic array** upon the roof is eligible for payments under the Feed in Tariff scheme (FITs) and both the **solar thermal system** and the **ground source heat pump system** will be eligible for Renewable Heat Incentive (RHI) payments once the scheme begins in early 2014, providing the Owners with even more of a return upon their investment.



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