

Tŷ Gwydd, St. Fagan's National History Museum, Cardiff



The open-air museum at St Fagan's is situated on the outskirts of Cardiff. The museum houses a collection of buildings including an 11th Century church and 17th Century farmhouse as well as a 19th Century row of worker's cottages and 20th Century pre-fab.

The diverse range of buildings has been sourced from all over Wales, carefully dismantled and painstakingly rebuilt and restored in the magnificent grounds of St Fagan's Castle.

Tŷ Gwydd, The House of the Future

Tŷ Gwydd, translated as 'Green House' was erected a decade ago to showcase tomorrow's green technologies. From microwave ovens and sheep's wool insulation the house was designed and built to second-guess the features and fittings future houses would contain.

As well as demonstrating the then unusual practice of recycling, **solar photovoltaic panels** and **solar thermal panels** were installed on the roof and originally a **ground source heat pump** was installed.

The Problem:

"The original ground source heat pump that had served the house well for 13 years was in need of repair," Says Danielle Cowell from St Fagans: National History Museum, *"in discussion with local engineers we were advised that an air source heat pump would be a cost effective way to heat the house whilst keeping our carbon emissions low"*.

The Solution:

WDS Green Energy was brought in to supply and install an air source heat pump for Tŷ Gwydd. *"Now the house has a very nice ambient temperature which is perfect for keeping the house warm during the winter"* says Danielle. *"Our visitors are really impressed that it can take heat from the air even when the temperature outside is as low as minus 15 degrees Celsius"*.

Easy to install and with no emissions, this cost effective heating system is most likely to be the face of the future.

The Benefits:

This modern **Dimplex air source heat pump** has evolved into a highly efficient form of heating. Visitors to the museum can see the **10kW heat pump** in action and hear how quiet it is when in operation. Walking through the house they can feel the benefits of low-grade heat through an under-floor heating system at the same time as taking a glimpse into the future.

