

A Dual Air Source Heat Pump system for Domestic Property, Woore



Woore is a village in the north of Shropshire, England with a population of fewer than 1,500. The name Woore means boundary in ancient Celtic which fits well with the fact that it is on the boundary with the two counties Cheshire and Staffordshire.

Just north-east of this prosperous little village, a prestigious 740 square metre property is being built. This dream home boasts its own gym and stunning orangery together with six large bedrooms each with their own en-suite bathroom.

The Problem:

The lack of a mains gas line meant that, despite excellent insulation, the property would be expensive to heat owing to the size of the property.

Needing a load of over 40kW, the next size of heat pump from 40kW would be a 60kW system which would be far too large for the property.

The Solution:

WDS Green Energy installed a system comprising of two external air source heat pumps which would run in parallel, with a 500 litre buffer tank and two 500 litre hot water cylinders.

A **Dimplex LA 40 TU air source heat pump** would provide the main heating requirements of this large house down to a temperature of +8°C, with a **Dimplex LA 17 PS high temperature air source heat pump** providing instant hot water and supplementing the heating for the larger heat pump in the very worst cold weather. This would ensure the house stays nice and warm throughout the year even if outside temperatures drop to -20°C.

To reduce the energy costs of heating two large 500 litre cylinders of water continuously, an electric solenoid valve and switch has been fitted which will allow one of the 500 litre cylinders to be isolated if required.

The Benefits:

This leviathan system will be at least 60% more cost effective than an equivalent oil or LPG boiler, and will provide comfortable low grade heat through an under-floor heating system to keep the whole house warm in all weathers.

The controllers shown opposite are housed in the garage within easy access of the main house.

The system will be eligible for the Government's renewable energy initiative scheme, The Renewable Heat Incentive which will come into force in the spring of 2014.

As the property is a self-build, the owner of the property will be paid for the heat they produce, bringing down the payback time for the system to only a few years.

