



Building type:

Retrofit for residential detached property

Requirement:

More efficient heating and hot water system

Technology used:

1 x flexoTHERM 8kW ground source heat pump

1 x flexoTHERM 11kW ground source heat pump

500 litre buffer tank

300 litre heat pump cylinder

Installer: Go Eco Renewables

Project background

- Ageing oil boiler to be replaced with renewable heat pump solution
- To deliver sustainable heating and hot water to a large residential property
- Aim to provide the most efficient and cost-effective solution

System specification

In the picturesque village of Aldwark in Yorkshire, the owners of a large four-bedroom detached residential property were looking to replace their ageing oil-fired boiler.

Having already installed solar panels on their property, they were keen to explore retrofitting a heat pump solution for their heating and hot water requirements.

They also required a solution that would power their underfloor heating throughout the ground floor of the property.

As the oil tank needed replacing, in addition to their 20 year-old boiler, it was the ideal opportunity to move to a heating solution that was no longer reliant on fossil fuels. The owners were looking to reduce their energy bills, remove the need for fuel deliveries to their property and ultimately reduce their carbon footprint.

Renewable technology installers, Go Eco Renewables, carried out a full detailed survey of the property and calculated the heat loss requirement, took measurements of the garden and made the recommendation

to specify the Vaillant flexoTHERM ground source heat pumps as the ideal solution.

The property was already well insulated, however, the heating and hot water requirements were large enough to warrant two heat pumps to be installed. The demand would be too high for a single ground source heat pump. Go Eco Renewables designed a system where one of the heat pumps is programmed to be the primary source of heating but if the temperature becomes too low for the primary heat pump to cope, the other unit will give a boost to reach the required internal temperature.

The ground source heat pump system required 5 x 200mm collector pipes to be installed in the garden of the property. These were then connected to the property via a sub-terrain manifold and header pipes.

The heat pumps themselves were installed in the garage of the property so they are easily accessible for maintenance and servicing.



Outcome

The installation took place over a three week period without any disruption to the daily lives of the homeowners. The challenge of installing the technology within an older property was handled seamlessly by skilled Go Eco Renewables engineers, and the heat pump system immediately provided the energy required for the property's general heating, underfloor heating and domestic hot water needs.

The integration of underfloor heating also means that lower flow temperatures are required to heat the home compared to traditional radiators, resulting in less demand on the heat pumps, achieving optimum system efficiency and assisting in reducing energy bills.

Quiet Mark approved, flexoTHERM is exceptionally quiet with noise levels as low as a modern refrigerator, meaning no noise disruption.

The homeowners were advised that the installation was eligible for Renewable Heating Incentive (RHI) payments and as a result RHI is scheduled to contribute £5,000 per annum for the next seven years. In addition, the flexoTHERM is forecast to reduce the owners' energy bill substantially over its lifetime, with predictions that this will be at least 50%.



Why Vaillant?

Chris Delaney, Commercial Director, Go Eco Renewables, says: "With over 80% of our renewable installations based upon Vaillant technology solutions, we are entirely confident about the performance and reliability characteristics of Vaillant's products."

"The flexoTHERM heat pump solution was ideal for this installation, offering sustainable energy efficiency the owners were seeking and drastically reducing their energy costs at the same time."

RHI eligibility was another welcome benefit that will contribute tangible funds for the next seven years. The clients are extremely happy with the outcome of the retrofit installation and are even recommending it as a great heating solution to be considered by their friends."

