



Wheeldon Trees Farm - District Heating System

The challenge

Deborah and Martin Hofman were keen to get away from the inefficient system of electric night storage heaters and individual hot water cylinders in their holiday cottage development, by introducing a cost-effective and environmentally friendly solution.

After researching numerous technologies, they decided that a ground source heat pump would give them the answer they were looking for.

Additionally, they had identified that an individually controlled heating system for each cottage would improve guest comfort, energy efficiency and further reduce their carbon footprint.

Finding a supplier that could meet these highly specific requirements resulted in a series of discussions with specifiers, architects and a call to Retherm.



The solution

Initial discussions gave a direction to the project and an understanding of the clients' very specific requirements.

Retherm carried out a technical site survey which confirmed the client was correct in their choice of technology. The property had plenty of land and a three phase electricity supply was already available.

Since there was no 'wet heating' in place, we designed a system for each of the eight cottages, consisting of underfloor heating on the ground level and radiators upstairs, all driven by a single, powerful and very economic, NIBE heat pump.

"The system works beautifully and provides constant heating and plenty of hot water for our guests – ideal for a shower at the end of a day's walking."

Deborah Hofman

Retherm designed a unique series of valves and sensors to cope with the fluctuating demands of each cottage. The inclusion of controls in each building gives guests the pleasure of heating their accommodation exactly as they wish. This method of 'district

heating' is common in Europe but not within the UK. Retherm executed all work including a secondary return to provide each cottage with instant hot water.

The technology employed and how it was fitted had to be as discreet as possible as we helped to bring this 18th century dairy and hayloft into the 21st century.

"Retherm has helped us a great deal towards achieving our vision of running a sustainable holiday cottage business."

Martin Hofman

As with all of the other work commissioned at Wheeldon Trees, the quality of finish had to be to the highest standard and specification that the client so rightfully demanded.

We found this project to be a particularly enjoyable and testing one – the clients' satisfaction proving to be so great that we were later commissioned to extend the design to the Hofmans' own home, an adjoining holiday cottage and the on-site games room.

www.wheeldontreesfarm.co.uk

Specification

Location:

Earl Sterndale, near Buxton, Derbyshire.

Heat Pump:

NIBE Fighter 1330 30kW - 3 Phase

Source:

1800m MDPE ground collector

Heat distribution:

Traditional wall-mounted radiators and overlay underfloor system

Accumulator:

2 x NIBE VPA 300/450

Funding:

Low Carbon Buildings Grant

Results

Running costs prior to installation:

All-electric storage and immersion.

New installation running costs:

Phase 1 approximately £300 per month

Phase 2 approximately £130 per month

All NIBE equipment was supplied by NIBE Energy Systems Ltd, Chesterfield, and manufactured by the parent company in Sweden.