



LOCATION: DUMFRIES



## The project

When Chris Kirk, his wife and two children moved into the 126m<sup>2</sup> Cargenbridge house, they wanted the space it offered – compared to their old home – but not its outdated and inefficient electric storage radiators and the immersion heater hot water system.

The family opted for a Daikin Altherma Hybrid heat pump. Developed to meet the need for gas boiler replacement, the Daikin Altherma Hybrid is an efficient and advanced new heating solution for customers replacing mains gas or LPG combi boilers. As one of the first Daikin Altherma Hybrid installations, the Kirks' was included in an independent metering and monitoring project in the 11 months to 31 March 2015.

## PROPERTY

THREE BEDROOMS  
SEMI-DETACHED FAMILY HOME  
SIZE: 126m<sup>2</sup>

## PREVIOUS FUEL

ELECTRIC STORAGE HEATERS AND IMMERSION HOT WATER SYSTEM

## TECHNOLOGIES

HYBRID AIR SOURCE HEAT PUMP	✓
HEAT EMITTERS	✓
COMBI BOILER	✓
HEATING CONTROLS	✓
GAS GRID CONNECTION	✓

## Specification

An 8kW Daikin Altherma Hybrid system with the air-to-water heat pump was installed at the side of the Kirk's house, and the combi boiler with combined Hydrobox, wall mounted in a utility room. Previously not on the gas grid, the house was connected to supply the combi boiler.

New radiators were fitted throughout and the redundant domestic hot water tank was removed to provide additional space. The new system has a design flow temperature of 50°C at -3.4°C.

## Benefits

Results of the monitoring project show the heat pump achieved an annual Seasonal Performance Factor of 4.0 and was able to provide 80% of the space heating requirements – 8,448kWh of the 10,610kWh total. Primary energy efficiency of the whole system was 131%. Running costs for space heating were £292 – against an estimated £405 if only a gas boiler was used instead. This translates to a running cost saving of 28%.

In addition to blending renewable energy with intelligent use of natural gas, the Daikin Altherma Hybrid uses smart logic that automatically selects the most energy efficient and cost-effective mode of operation, based on the user's energy tariff.



*"It was an old heating and hot water system, due for replacement. The heat was patchy and you could only ever run half a bath. We were always cold: wanted a gas central heating system, like we'd had before. With the Hybrid you don't have to feed it fuel – it just sits there and does its job for you. It's all computerised and works in the background to give us constant heating throughout the house, and keep the costs down." Chris Kirk, Owner.*