



The Salthouse Hotel, Northern Ireland



Nature-powered heat pumps play key role at pioneering eco-hotel.

Five 16kW Daikin Altherma high temperature heat pumps – powered entirely by natural energy – comfortably meet the heating and hot water needs of Northern Ireland’s first eco-hotel.

The 24-bedroom Salthouse Hotel, newly built on a hillside behind the town of Ballycastle, is a monument to renewable energy – reflecting its owners’ strong commitment to sustainability wherever possible.

It combines heat energy from the atmosphere with electricity generated from wind and sunlight to set a high ‘green’ standard and make it one of the most sustainable and smartest hotels in the UK.

Welcoming its first guests just ahead of the 2019 Open golf at nearby Royal Portrush, the Salthouse provides four-star accommodation, with facilities including restaurant-bar and spa. With its elevated position, the hotel offers sea views across to Rathlin Island to the north and the Mull of Kintyre to the north east.

Its name is a nod to the now mostly forgotten Ballycastle salt industry that flourished in the 17th century.

The hotel is built on part of the McHenry family’s 50-acre farm, and represents a further diversification of the family business interests – which, apart from agriculture, include building contracting, property development and renewable energy consulting, sales and installation.

All electricity for the hotel – as well as seven high-end holiday chalets built earlier and further up the hill, plus other facilities on the farm – comes from a 225kW wind turbine and a 150kW solar photovoltaic installation. Both systems run all year, but the larger capacity turbine taps the winds from October to March, while the PV system peaks in the summer sun.

Year of installation

› 2019

Project requirements

- Air conditioning
- Air curtain
- Air purification
- Control
- Heating
- Hot water
- Refrigeration
- Ventilation

Installed systems

- › Daikin Altherma HT Outdoor unit
- › Daikin Altherma HT Indoor unit



The three-phase Daikin Altherma HT heat pumps installed at the Salhouse deliver water at 80°C without electrical heating. This is achieved through a two-stage compression process: there are R410A refrigerant circuits in the outdoor units and R134A circuits in the corresponding indoor units.

The Daikin units run as necessary to maintain the set temperature in a 5,000 litre buffer tank, from which water is pumped continuously round the hotel's 5-inch ring main, containing a further 2,000 litres.

The ring main supplies underfloor heating arrays in public areas, radiators in guest rooms and individual heat interface units that deliver domestic hot water on demand to bathrooms. It also provides heat to the spa.

Emergency backup for the heating circuit is available from a 200kW gas boiler and a separate 2,000 litre buffer tank.

The Daikin systems were installed by Belfast-based Daikin specialist Tri-Power Environmental Energy.

Wayne Hutton, Director for Tri-Power says:

“The heat pump installation is designed to meet the heaviest demands on the heating water circuit. Early results were good, and we are confident that it will perform well during winter.”

Equally confident is Pearse McHenry, who heads the family's renewables activities. He says: “With the combination of technology, insulation and capital allowances, the investment in sustainability at the Salhouse could pay for itself within five years.

“Our energy performance certificate for the hotel came out at minus 18 – so we are better than carbon neutral. I'd be 99.9% sure that we are the most sustainable hotel in Europe.”

He's made the overall installation ultra-smart, with sensors throughout the system enabling him to diagnose issues and control the electrical and heating systems via an online dashboard.

And there's more to come. There's already a charging point for electric vehicles at the chalets, and three more are being installed at the hotel. “By using power that is 100% renewably sourced, the electric car really comes into its own as a sustainable means of transport,” says Pearse McHenry.

There are also plans for a storage battery installation – “Just in case.”



Kit list

Code	Description	No of units
ERRQ-AY1	Daikin Altherma HT Outdoor Unit	5
EKHBRD-ADY1	Daikin Altherma HT Indoor Unit	5

