



## Grange Farm

### Heat pumps temper indoor conditions for upmarket rural homes

Three high-end homes, newly built in a former farmyard near Huntingdon, Cambridgeshire, feature Daikin Altherma monobloc heat pumps to provide heating, cooling and domestic hot water.

The houses are also early adopters of Daikin Altherma wall and floor mounted heat pump convectors to warm or cool the interiors. The ground floors have underfloor heating, also driven by the heat pumps.

The Kingsland Barn development at Grange Farm, Great Raveley, was conceived and implemented by award-winning housebuilder Distinctive Developments, based in Stamford, Lincolnshire.

The company's website says: "We use the latest technology and innovative construction techniques including renewable energy. Our latest developments have featured air source heat pumps to provide sustainable, environmentally friendly and more efficient heating.

Distinctive Development director, Richard Evans says the five-bedroom, 2,800 sq.ft houses were designed to reflect a farmyard theme and the agricultural buildings they have replaced.

"Two are finished in timber cladding in the style of the former farm buildings barns while the third is designed to look like a farmhouse. But they are all offer a similar size of accommodation," he says.

The development was approved as it demonstrated 'betterment' over the pre-existing structures.

Surrounded by open views of mostly flat farmland, the houses are well designed and insulated to withstand cold winters.

Each house has a Daikin Altherma 11 class monobloc heat pump outside to provide an energy efficient and highly effective source of heating and hot water. In hot weather the heat pump operates 'in reverse' to remove excess heat from the interior.

#### Year of installation

› 2023

#### Project requirements

- ☐ LT Split
- ☒ LT Mono
- ☐ HT Split
- ☐ Hybrid
- ☐ Combustion
- ☒ Smart Controls
- ☐ Solar Thermal
- ☐ UFH
- ☒ Heat Pump Convector

#### Installed systems

› Daikin Altherma Systems



The monobloc heat pump transfers heat to – and from – the house directly via the water circuit. This streamlines installation and maintenance, and minimises the amount of refrigerant needed as it is all inside the heat pump. The units at Grange Farm have R32 refrigerant, which has a relatively low global warming potential.

The heat pump convector units indoors are quietly fan-assisted to improve the transfer of heat from water to air – or the opposite in summer. Each unit can be controlled separately.

Daikin heat pump convectors are optimised for new build houses and are available in three models. In addition to the types installed at Great Raveley, Daikin also offers a concealed model for wall mounting. All three types are extremely quiet. They incorporate the latest technologies to reduce electricity consumption: on standby they consume as little as 3W.

The houses each have a 300 litre Daikin unvented cylinder providing hot water for bathrooms and kitchen. Water in the cylinder is normally heated by the heat pump, but there is also a conventional heating element, on standby for periods of particularly heavy demand.



The Daikin systems were installed by Stamford-based J Wilson Plumbing and Heating. Owner Justin Wilson says: "Our customers are looking for cost-efficient ways to stay warm in winter – and given the higher temperatures of recent summers there is also increasing interest in systems that can counter extremes at both ends of the thermometer.

"The systems installed at Great Raveley not only fit this requirement, but will also provide economical comfort for many years to come."

#### Kit list

| Code       | Description                                                 | No of units |
|------------|-------------------------------------------------------------|-------------|
| EBLA11D3V3 | Daikin Altherma Low Temperature Monobloc heat pump          | 1           |
| FWXV-ABT   | Floor mounted heat pump convector                           | 1           |
| FWXV-ABT   | Wall mounted heat pump convector                            | 4           |
| EKHWSU300D | Daikin 300 litre hot water cylinder (with expansion vessel) | 1           |
| BRC1HDDAK  | Madoka controller (black)                                   | 1           |



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