



RENEWABLE SOLUTION
PROVIDED

Renewable,
communal heating
and hot water
system

HOUSING TRUST SELECTS ENERGY EFFICIENT, SUSTAINABLE HEATING FOR LOW COST COMFORT

Hunters Gate is a development of 36, two-bedroomed apartments built by Peaks & Plains Housing Trust to offer affordable new homes in Handforth, Cheshire.

The £3.7million project forms part of a commitment by the Trust to build over 200 reasonably-priced homes over the next three years.



Air Conditioning | Heating
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ecodan
Renewable Heating Technology

Constructed to exacting standards the apartments have achieved Level 4 of the Code for Sustainable Homes, a Government initiative that measures the sustainability of a property, including its energy use and CO₂ emissions.

The Trust was extremely concerned that the homes should be cost-effective and affordable for their tenants not only in terms of rent, but also energy bills.

“Keeping a home warm and comfortable with a ready supply of hot water can take a big slice of the household budget these days,” said Loveday Gimson, Housing Officer for Peaks & Plains Housing Trust. “And when you are already struggling to make ends meet, any increase in the bills can put a major strain on the family. With energy costs on the rise one of our top priorities was to develop homes that were fuel efficient to help our tenants avoid falling into the fuel poverty trap.

“We are also very aware of the effect that carbon emissions have on the environment, and as a Trust we are keen to reduce the output from our properties to a minimum. With the new development in Wilmslow, we are confident that we have managed to do just that.”

In order to find the perfect system for the apartments, Peaks & Plains Housing Trust called in Manchester-based, EDP Design Consultants, specialists in the design of building services.



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Heating

Case Study

Hunters Gate May 2013

Making a
World of
Difference



Ecodan CAHV monobloc systems are suitable for projects of any size and can work independently, or in conjunction with other technologies

Having looked at the possible options for Hunters Gate the Consultancy designed and specified a communal heating system using renewable technology that would fit the Trust's requirements and help it to achieve level 4 of the Code for Sustainable Homes.

Level 4 requires that the apartments demonstrate a 44% reduction in carbon emissions over the levels required by the 2006 Part L building regulations," said Ian Foden, Design Engineer with EDP. "Biomass boilers were simply too expensive and the orientation of the apartments' roofs didn't lend themselves to the combination of photovoltaics and gas boilers. But the units are very well insulated which offered us another option of designing a communal heating system using air source heat pumps.

"Although this type of system is still a little new to some developers we're all well aware at the Consultancy that heat pumps are extremely efficient when specified and installed correctly. In fact, using this method we were able to achieve not just a 44% drop, but a reduction of nearly 60%."

The original site held a number of old people's flats and a large communal hall. Having demolished the flats to build the new apartments the developers were able to save time and costs by adapting part of the existing hall to provide an ideal housing for the air source heat pumps.



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The stylish apartments benefit from low carbon renewable heating via a communal, underfloor system.

Ecodan CAHV heat pumps are efficient, versatile and specifically designed for commercial projects of any size, whether it is a new build or a refurbishment. Multiple unit systems benefit from an ability to cascade the units on and off to optimise performance and deliver peak efficiency. It also ensures an even wear and tear throughout the unit's operating life.

The scalability of Ecodan CAHV monobloc systems means that they are suitable for projects of any size and their ability to work independently, or in conjunction with other technologies, offers developers complete flexibility when designing and specifying building services. It also provides them with a viable and renewable alternative to traditional heating systems.

The new Ecodan CAHV units have been sited in a central housing from where they extract renewable energy from the outdoor air and upgrade it to deliver underfloor heating to the apartments via a wet system.

Mitsubishi Electric's Ecodan CAHV system is designed to cope with the dynamic heating loads required by a community heating system and allows the capacity to increase in 0.5kW increments, from 18kW right up to 688kW, a level of modulation that is unprecedented within the heating industry.

The new system will be easy to maintain and although it uses less energy than some other forms of heating, it will not compromise on performance.



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Two separate refrigerant circuits operate within each unit guaranteeing a 50% back up in performance, whilst offering the benefit of low on-site refrigerant volume. The heat pumps will work at outside temperatures as low as -20°C, so tenants will stay warm and comfortable, whatever the weather.

"We are incredibly proud of Hunters Gate and what we have been able to achieve with the development," said Miss Gimson. "I have no doubt that our tenants will be very happy here and part of the reason for that will be the peace of mind that comes from knowing you can afford the necessities of life, such as a roof over your head and warmth when you need it."

A full energy monitoring package has been installed on site to monitor the system and report live data remotely. This enables the Trust to keep a check on how the system is performing for their tenants.

Mitsubishi Electric's Ecodan CAHV systems are eligible for financial incentives under the Microgeneration Certification Scheme (MCS) an internationally recognised quality assurance scheme, supported by the Department of Energy and Climate Change.

For further information on Peaks & Plains Housing Trust visit www.peaksplains.org

For further information on EDP Design Consultants visit www.edp-uk.com

For further information on Mitsubishi Electric's Community Heating Schemes visit www.heating.mitsubishielectric.co.uk

Installation Summary

Application type:

Community heating system for residential development

Product:

5 x 43kW Ecodan CAHV air source heat pumps

System capacity:

200kW heating to 36 apartments

Heat delivery method:

Underfloor heating via wet system



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