



Hadleigh Court

Bringing renewable heat energy to Hadleigh Court

Residents at Two Castles Housing Association's Hadleigh Court apartments in Houghton Le Spring, Tyne and Wear, have cheaper and more efficient hot water and heating thanks to a new renewable heating system from Daikin UK.

Two Castles Housing Association wished to carry out a heating upgrade in Hadleigh Court, a sheltered accommodation scheme to give residents cheaper and more efficient heating and hot water. The 24 residents' apartments in the two storey building were previously heated by electric storage heaters, which are inefficient and costly to run, with hot water provided by a district system.

Working with building services engineer, James Houghton of Avoca Consulting Engineers Ltd, Two Castles Housing Association chose Daikin UK's Altherma Flex Type air-to-water heat pump system to provide both heating and hot water for the apartments and for heating two communal areas.

Daikin Altherma Flex Type is a modular system perfect for multi-occupancy domestic buildings allowing individual control and billing of heating and hot water when configured in a decentralised layout. In this arrangement each apartment has its own indoor unit (hydrobox) connected to shared outdoor air-to-water units.

The system can also be configured in a centralised layout, suitable for buildings such as schools or commercial properties. This offers complete flexibility to integrate air-water heat pump technology to meet the heating and hot water

needs of the entire building and on a much greater scale than is typically feasible using an individual heat pump system.

Daikin Altherma Flex Type is a high temperature system, which delivers heating flow temperatures up to 80°C, making it ideal for refurbishment projects with existing radiator systems. Hot water temperatures of up to 75°C for bathrooms and kitchens are also possible without using additional supplementary heaters.





Since the outdoor and indoor units are connected using small diameter refrigerant piping (as opposed to larger water pipes used in other systems), only a small service shaft is needed to accommodate the system's flow and return refrigerant connections from the outdoor unit. This means the system can be retrofitted into buildings with existing service ducts or old shared boiler flue shafts.

Hadleigh Court has a very low ceiling void, little or no space for plant in each apartment and only a very small plant room. Four outdoor units were installed, each connected to up to seven apartments. Each has its own hydrobox which can be operated independently to give individual control of heating and hot water. The apartments were also fitted with separate domestic hot water tanks, which stack on top of the hydroboxes giving a footprint of less than 0.6 square metres.

Installation was carried out by Durham Air Conditioning Ltd in four phases, to minimise disruption to residents.

"Hot water cylinders and storage heaters were removed and the new system, including radiators, was installed without residents having to leave their homes. In all the project took just 12 weeks," explains Durham Air Conditioning Managing Director Keith Dunnill.

"The installation went very smoothly," he adds. "Despite the tight programme, we managed to keep disruption to a minimum and residents have reported that they are very impressed with the new system."

With up to two thirds of the heat generated from the outside air, Daikin Altherma Flex Type typically generates 3kW of energy for every 1kW of electricity used. So the system provides an energy efficient solution to the issue of increasing energy costs and the high environmental impact of conventional heating systems such as oil boilers.

