

# Manchester community heating scheme meets environmental and budget targets with Ecodan



A brand new residential development in Manchester is meeting its environmental planning requirements thanks to an Ecodan system providing community heating to 105 new homes.



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## Case Study

One of the key features included in the design was the use of a heat pump system in order to achieve strict carbon reduction targets (**more than 35% above Standard Assessment Procedure**) to gain planning permission.

## The Aaben, Leaf Street, Manchester

The Aaben is a modern development of 105 homes, all available for market rent, on Leaf Street in Hulme. Located just south of Manchester's city centre, Hulme boasts a creative art scene, independent restaurants and cafes and a thriving local community.

The development itself is named after an old building dating back to the 1920s which was situated close by until it was knocked down in 1993. For decades before it had served as a community cinema and, for a short time, a bingo hall.

The new Aaben is a mixture of 1, 2 and 3-bedroom apartments set around communal, external space, and 3-bedroom town houses with private gardens. Many of the living rooms benefit from direct sunlight and a shared public garden sits at the centre of the development for the wider community to enjoy.

Designed with quality, comfort and energy efficiency in mind, the homes include a range of features that will benefit the environment and reduce residents' energy bills.

The original design was based on a ground source heat pump (GSHP) but the cost proved beyond the required budget, so design consultant Engineering Design Partnership (EDP) was tasked with value engineering the scheme.

This led to Mitsubishi Electric's involvement, as Dan Martell, Design Engineer at EDP, explained: **"Following the successful installation of a Mitsubishi Electric air source heat pump (ASHP) system on a previous residential scheme we recommended the Ecodan ASHP system as we felt it would be a well performing, cost-efficient solution ideal for The Aaben."**



The Aaben was completed in the autumn of 2017 and thanks to the Ecodan system is eligible to benefit from the non-domestic Renewable Heat Incentive (RHI).

Building work began in November 2016 and Proline Mechanical was the installation company assigned to the project.

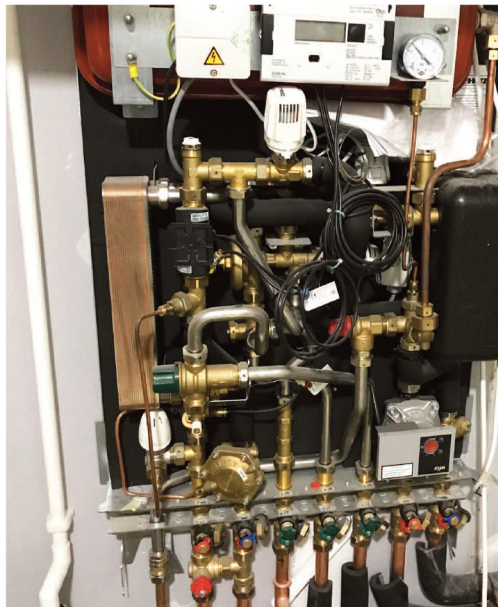
Proline is one of the UK's leading building services engineering and maintenance contractors specialising in detailed revit design, thermal dynamic modelling, BIM, engineering installation and commissioning of mechanical and electrical services.

Proline installed a multiple unit Ecodan system on the main roof of the development. Consisting of 8 x CAHV-P500YA units, the community heating system provides hot water to a heat interface unit located within each dwelling for hot water and heating within that dwelling. Each tenant is charged accordingly via a heat meter measuring how much heat energy is taken from the network.

Proline's Project Manager, Paul Gledhill, said:

**"The Ecodan system was perfect for this project as the ASHP units are designed to meet the heating and domestic hot water (DHW) requirements for all dwellings via a district heating system. As the system is located on the main roof very near to dwellings there were some sound issues to overcome but these were easily resolved with the erection of an acoustic wall to prevent sound breaching the plant area."**

The ASHP system boasts a capacity of 344KW and can operate at sufficiently high temperature to provide heating and DHW, and a 6,000 litre buffer enables the system to store energy for short peak demand periods.



## Installation Summary



- 8 x CAHV-P500YA Monobloc Air Source Heat Pump Units providing individual heating and hot water to 105 apartments
- Industry-leading technology guarantees performance down to -10°C
- The system utilises a 6,000 litre buffer tank to store thermal energy for short peak demands
- Each apartment has a localised heat interface unit and heat meter to allow for individual billing



CAHV-P500 YA HPB

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Note: The fuse rating is for guidance only. Please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air-conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A(GWP:2088), R32(GWP:675), R407C (GWP:1774) or R134a (GWP:1430). \*These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No 626/2011 from IPCC 3rd edition, these are as follows: R410A(GWP:1975), R32(GWP: 650), R407C (GWP:1650) or R134a (GWP:1300).



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