



Heathcotes Group Care Homes

Building type:

12 new build, residential care homes

Technology used:

15kW aroTHERM heat pumps

VRC 700 controls

300 litre uniSTOR cylinders

Installer:

John Ryan Developments Ltd.

Project background

- Renewable technology solution installed at twelve care homes located at four separate sites
- Sustainable solution for locations which are off mains gas
- Low cost heating and domestic hot water alternative to traditional boiler system
- Heat loss calculation and commissioning assistance provided by Vaillant

System specification

Vaillant has worked in partnership with Nottingham based John Ryan Developments (JRD) Ltd on a renewable heating and domestic hot water solution for 12 new care homes. Each care home was developed for residential care home provider, Heathcotes Group, and the sites are split across four locations in Hucknall, Morley, Wakefield and Chesterfield.

JRD specified Vaillant's aroTHERM air-to-water heat pump units, which eliminates the need of for mains gas to the site, whilst enhancing the EPC ratings of each property and reducing the overall carbon footprint. This

system specification also included Vaillant's VRC 700 control and 300 litre uniSTOR cylinder at each site.

Vaillant assisted JRD throughout the specification stages and carried out full room-by-room heat loss calculations for each eight-bedroomed building, as well as providing mechanical and electrical schematics. The final specification consisted of two 15kW aroTHERM air-to-water heat pumps, installed in cascade at each site. The renewable solution will comfortably deliver the appropriate levels of heating and domestic hot water required for the residents and staff at each care home.



The aroTHERM air-to-water heat pump range is available in 5kW, 8kW, 11kW and 15kW options. The aroTHERM is both compact in size for easy siting and also Quiet Mark accredited, thanks to its exceptionally quiet operation. It generates heat by using energy from the outside air, which helps protect users from fluctuations in fuel prices that are usually seen with other heating technologies. In addition, aroTHERM is also MCS accredited so is eligible for government funding via the Renewable Heating Incentive (RHI).

Installation

Members of the JRD team attended the Centre of Excellence at Vaillant's headquarters in Belper, for training on air-to-water heat pump installations and commissioning. Vaillant has also provided system commissioning assistance across all four sites as construction has progressed.

The aroTHERM air-to-water heat pump system, which is carbon neutral at the point of use, has been successfully installed at all 12 care home locations. Build costs have been minimised despite the absence of a gas infrastructure at each site, whilst maximising efficiencies through system design based on low flow temperatures for underfloor heating. Each aroTHERM unit was installed within a concealed fenced storage area, which provides adequate air flow for the system to operate effectively.

Outcome

While a renewable heating and domestic water solution was required by Heathcotes Group, sustainability was also a key driver for the project, with a number of environmental benefits already being realised. Furthermore, the aroTHERM heat pump is set to reduce each care home's carbon emissions by up to 1078kg CO₂ per year.

Heathcotes Group will also take advantage of the Commercial RHI, which will provide a healthy return on investment via government payments for the next 20 years. This is in addition to aroTHERM providing exceptional efficiencies that significantly reduce the environmental impact of providing heating and domestic hot water, when compared to traditional boiler systems.



Why Vaillant?

John Ryan
John Ryan Developments Ltd,

"Having used other systems, I decided to move to Vaillant for this type of renewable solution because the company offers both a broad product range, and access to invaluable technical resources, to help with system design and commissioning.

"The 15kW aroTHERM heat pump was the ideal solution for the care

homes we were constructing. With no mains gas, we needed to think of an alternative energy source and we are delighted with the sustainability, reliability and running cost benefits that aroTHERM provides. In addition, attending the training courses on offer at Vaillant's Centre of Excellence has been invaluable for my team as we learn more about the system, its capabilities and its best use."