



Canopy Housing LEEDS IMS Heat Pumps



Ambitious, sustainable retrofit housing project sees Ariston NIMBUS heat pump installed.

An Ariston NIMBUS Pocket air source heat pump has been supplied and fitted in a recently completed retrofit project in Leeds managed by IMS Heat Pumps and Canopy Housing.

Project overview

Canopy Housing is a grassroots, community retrofit and homelessness charity eco-renovating Victorian terraces in Leeds. It runs a volunteering programme that offers opportunities for the local community to learn retrofit skills and build professional relationships with a diverse group of people also living in the community. 'Self-help' is a key principle of the organisation, whereby those who are homeless, or at risk of homelessness, are given the opportunity to renovate their new home. IMS Heat Pumps is a specialist installer of both ground and air source heat pumps, covering Scotland, the North and the Midlands. Working together on sustainable heating options for the 3 bed, mid-terrace property, the Ariston NIMBUS Pocket 5kW ASHP was picked by IMS and Canopy Housing as the heat pump of choice against a series of considerations.

KEY DATA

Client:	Canopy Housing
Sector:	Housing
Project:	Replace existing gas heating system
Year:	2024
Technology:	Air source heat pumps
Product:	NIMBUS Pocket M NET R32

Comment

“ The Ariston Nimbus range has a very favourable Seasonal Coefficient of Performance (SCOP) of 4.08 with a predicted heat output of 4.08kWh from 1kWh of electricity to run the heat pump.

The system installation cost was also a key factor and the Ariston range is competitive when compared to many other options available. ”

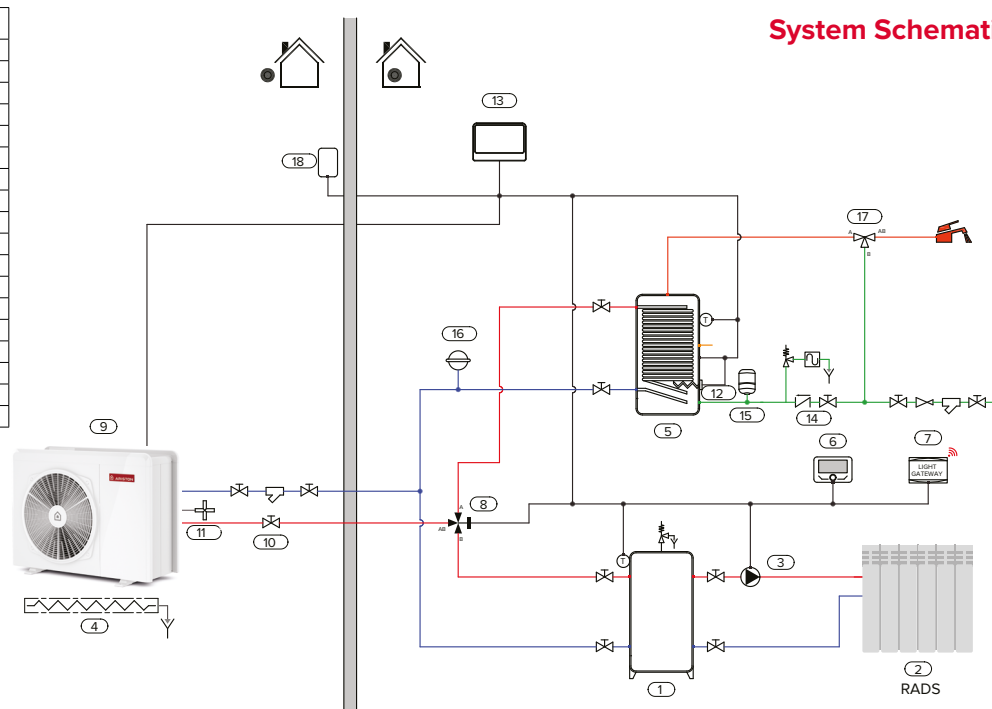
Dave Richards,
Technical Consultant,
IMS Heat Pumps Ltd



System Schematic

Pos.	Description
1	Buffer tank 4 attacks with T probe
2	Radiators
3	Circulator generic - 3 wires
4	HE kit below odu + drain pan
5	DHW tank hhp 1-coil with T probe and anode
6	System interface
7	Light gateway
8	Heating-dhw 3-way valve
9	External unit hhp - Monobloc 1-ph or 3-ph
10	Kit valves and filter
11	Kit anti-freeze
12	Kit he idu fs 2 kw
13	Lightbox
14	Safety group
15	Expansion vessel - DHW
16	Expansion vessel - heating
17	Thermostatic mixing valve
18	External probe

- This schematic has to be considered as example of the system functionality only and does not replace design by a qualified technician;
- The final schematic must be prepared respecting all the laws, norms and decrees in force, in order to facilitate a correct installation in compliance with the rule of the art;
- For the proper functioning of all system components, follow the instructions in the design, installation and user manuals provided by the manufacturer;
- This outline may be amended by the Ariston Group at any time without prior notice.



Designed by macrovector: www.freepik.com

Sustainability and cost

As a charitable organisation working with people who are often living in fuel poverty, Matilda Wallis at Canopy Housing said, “Staff have to balance sustainable heating options with eventual running costs. Currently, electricity tariffs are more costly than gas but ASHPs run on electricity meaning the most sustainable option isn’t always the cheapest to run.”

Dave Richards, Technical Consultant with IMS explained why Canopy Housing and IMS agreed that NIMBUS was a good choice in this respect: “The Ariston Nimbus range has a very favourable Seasonal Coefficient of Performance (SCOP) of 4.08 with a predicted heat output of 4.08kWh from 1kWh of electricity to run the heat pump. This level of efficiency matched well with other heat pumps available which was an important consideration for Canopy Housing where a key consideration is in ensuring running costs are as low as possible for customers. The system installation cost was also a key factor and the Ariston range is competitive when compared to many other options available.”

Featured product:

NIMBUS Pocket M NET R32

The Ariston Nimbus Pocket ASHP was selected based on heat loss calculations and design parameters. It was installed alongside a 200 litre hot water cylinder for the provision of domestic hot water.

This new heat pump is a cutting-edge solution for heating and cooling with high efficiency and low environmental footprint. Its design is the result of thorough consultation with professionals and is characterised by a number of innovative features that will make installation, set-up and maintenance easier than ever.

Nimbus NET R32 is available in a large choice of configurations and sizes to meet diverse installation needs.

- / Eco Refrigerant R32 / COP up to 5.1
- / Low noise levels up to 53 dB(A)
- / Power range between 1.7 to 17.7kW
- / Modern and innovative design
- / Sensys NET HD system interface and external heat regulation sensor included as standard
- / Remote management with the Ariston NET app
- / Completely installable outdoor
- / PV function



Installation

Luke Begley, IMS Installation Manager for the project commented on some of the other considerations that were taken into account when choosing the heat pump for this project. Issues for installation were quite complex as the NIMBUS Pocket was to be sited at a mid-terrace property where available space was tight. Luke said, "It was necessary to find a location for the heat pump that passed the MCS 020 Sound Assessment test. This required the heat pump to be fitted as close as possible to steps down from the kitchen door to ensure the sound level at the neighbour's window was below the 42dBa level required by permitted development rules. With airflow requirements of 150mm the Ariston unit compared favourably to most heat pumps available. It is also very compact at just 1016mm wide meaning it could be fitted exactly in the desired location."

Dave Richards added, "The use of R32 refrigerant in the NIMBUS range was also an advantage in this case. Used by many manufacturers, R290 is a propane-based flammable refrigerant meaning larger safety clearances are required around the heat pump. In this installation with the tight spaces

at play, the NIMBUS R32 heat pump was ideal."

Luke then continued, "The design of the system was based on low operating temperatures that can be readily matched by the Ariston unit with radiators installed with a 41 to 45 C flow temperature and 50 to 55 C DHW temperature. New radiators were installed to IMS specifications to ensure room temperatures can be maintained as required."

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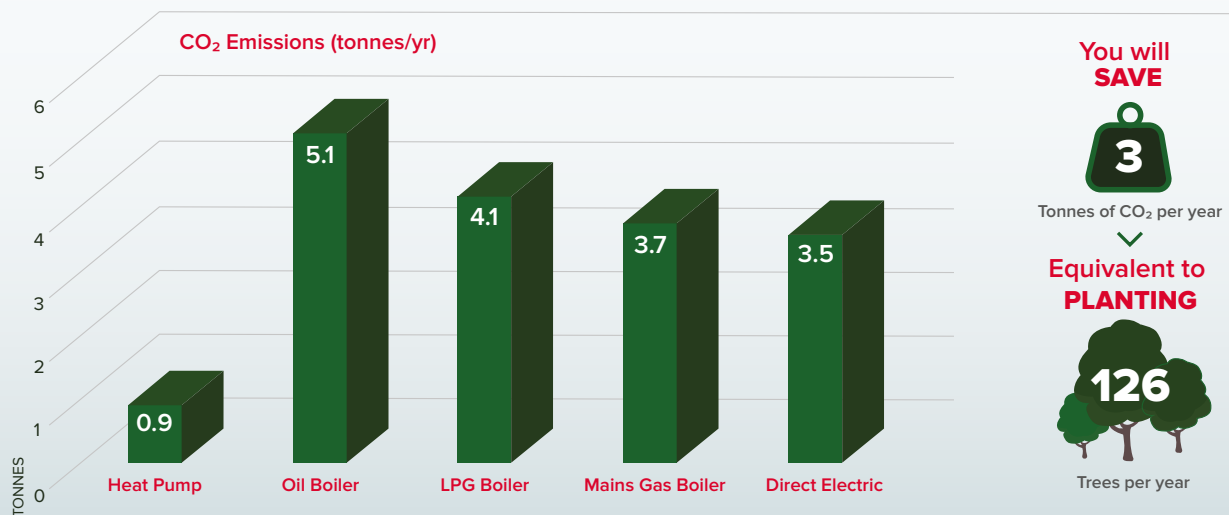
Carbon savings

Matilda Wallis commented, “Canopy Housing is currently retrofitting empty homes in Leeds using wood fibre insulation and limestone plaster to provide a low-carbon, breathable solution to infamously damp and cold housing. We are experimenting with providing low-carbon energy for our tenants by installing solar panels and air source heat pumps in our properties in a bid to ensure low-cost heating and electricity to our tenants, reduce the risk of fuel poverty, and improve the local air quality in Leeds”.

In an estimate of CO₂ emissions completed by IMS Heat Pumps, the results show that the Ariston NIMBUS Pocket heat pump is expected to account

for 0.9 tonnes of CO₂ per year against 3.7 tonnes for the previous gas boiler, a saving of almost 3 tonnes per year. This carbon saving is predicted to increase over time as more UK electricity is produced from renewable sources leading to a greatly decarbonised electricity grid. For Canopy Housing, this along with a predicted rebalancing between gas and electricity pricing, is an important consideration in their energy redress projects using ASHPs as funding can be difficult to obtain. So, a future with a decarbonised energy supply and lower electricity pricing will hopefully lead to more heat pump projects being feasible.

Annual Carbon Dioxide Emission Comparison



Estimation provided by IMS Heat Pumps

More information

This installation and the work that Canopy Housing does was featured as part of a BBC Morning Live programme (29.08.2024) on the importance of improving energy efficiency in retrofit housing projects to hit UK 2050 Net Zero targets. It is available to watch on BBC iPlayer until 28.08.2025.

For more information visit the [Ariston](https://www.ariston.com/en-uk), [IMS Heat Pumps](https://www.imsheatpumps.co.uk) and [Canopy Housing](https://www.canopyhousing.org) websites:



[ariston.com/en-uk](https://www.ariston.com/en-uk)



[imsheatpumps.co.uk](https://www.imsheatpumps.co.uk)



[canopyhousing.org](https://www.canopyhousing.org)

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