CASE STUDY

ARISTON
The home of sustainable comfort

R A BROWN HEATING SERVICES Ltd

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NORWICH

Delivering more energy efficient and environmentally friendly heating installations thanks to Ariston's NIMBUS NET heat pump range.

R A Brown Heating Services Ltd has used a NIMBUS air source heat pump from Ariston to replace a gas heating system in Hethersett, Norfolk. It is the first time R A Brown Heating Services has used Ariston heat pumps.

Project overview

The project involved a three-bedroom terraced house serving as a family home, which initially relied on a gas warm air heating system. The client opted for an upgrade to improve energy efficiency and overall comfort within the home.

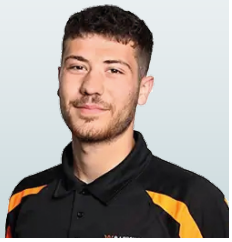
There were no specific targets for emission reduction on this project. The primary reason for replacing the old gas warm air heating system was to transition to a more efficient and modern heating solution. The new system aimed to provide better temperature control and reduce operating costs.

KEY DATA	
Client:	R A Brown Heating Services Ltd
Sector:	Housing
Project:	Replace existing gas heating system
Year:	2024
Technology:	Air source heat pumps
Product:	NIMBUS Pocket M NET R32

Comment

"The installation of the Ariston NIMBUS heat pump was simple. I think the NIMBUS ASHP represents good quality equipment and I would definitely feel comfortable installing an Ariston heat pump again."

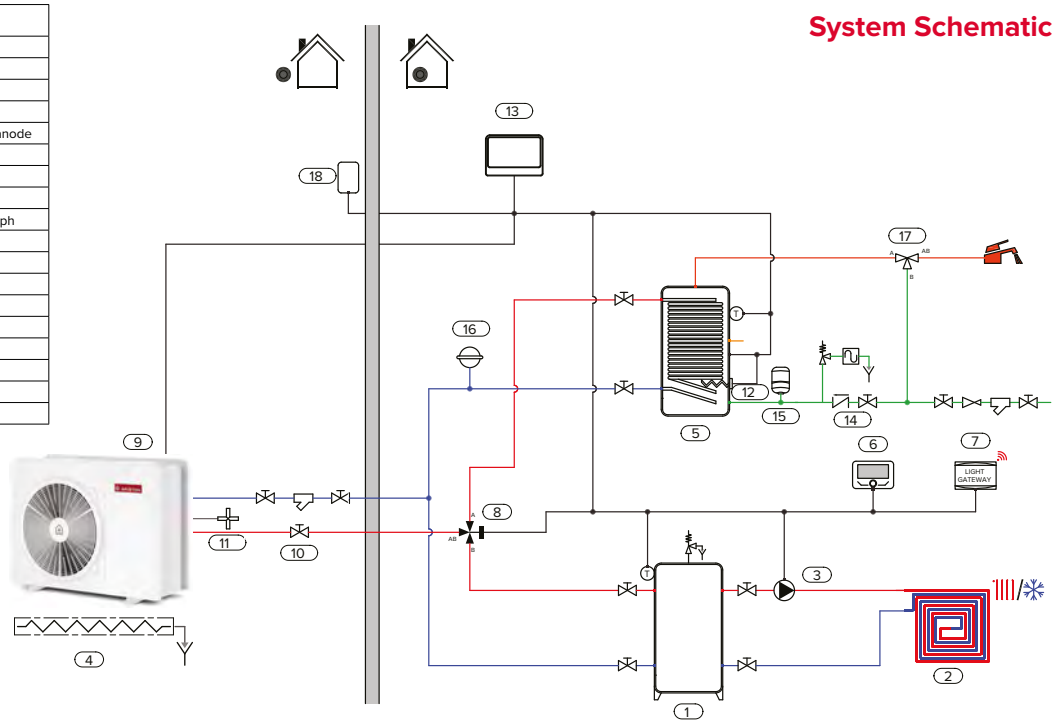
Alex Little,
Heating Engineer,
R. A. Brown Heating Services Ltd



System Schematic

Pos.	Description
1	Buffer tank 4 attacks with T probe
2	Under floor heating-cooling
3	Circulator generic - 3 wires
4	HEe 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.



Installation

The installation marked R A Brown Heating Services' first experience with an Ariston Air Source Heat Pump (ASHP). The process went smoothly, with the existing infrastructure integrating well with the new system.

The house now maintains a more consistent and comfortable temperature due to the renewable heating source and new heat emitters being fitted in each room. The previous system cost £1,301 annually. While the new system's costs are pending final analysis, they are expected to be lower.

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 22/50L 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

Potential savings

With this new project, details of actual savings are not yet available. However, using the Hybrid System Wizard tool, it is possible to run a simulation of a similar sized property in the East of England region to assess potential savings. The tool is designed to help consultant engineers and D&B contractors to better understand the options open to them and their customers when it comes to choosing a heat pump only or hybrid system. Crucially, it gives a clear indication of the trade-off between potential carbon and cost savings when implementing different plant options by leveraging accurate weather data for a better understanding of the requirements on weather compensated systems. The software offers state of art reports covering running costs, CO_2 emissions and energy usage and allows for step-by-step analysis of the heating system's parameters.

In a simulation to compare a boiler running on natural gas and the Nimbus M 80 heat pump, in a similar property type, the heat pump shows a seasonal performance factor of 438% against 80% for the boiler. The boiler consumes 17.0MWh at a cost of £848 to produce the 13.6MWh required for the property and produces 3.1T of CO_2. In comparison, the heat pump consumes only 3.1MWh at a cost of £823. It produces just 0.5T of CO_2, saving 2.6T over the course of the year.

Whilst the cost savings look small, they are expected to rise over time as the cost to produce electricity falls and gas prices rise. Similarly, as more electricity is produced by renewable sources, the CO_2 savings will also increase.

Comparison table

		NIMBUS M 80 Heat Pump		OLD BOILER SYSTEM
YEARLY	CO_2 EMISSIONS	0.5T		3.1T
	RUNNING COST	£823		£848
	ENERGY REQUIREMENT OF PROPERTY	13.6MWh	VS	13.6MWh
	ENERGY CONSUMPTION	3.1 MWh		17.0 MWh
	EFFICIENCY	438%		80%

Source: Simulation output from Ariston Group Hybrid System Wizard tool

Summary

This project underscores the efficiency and effectiveness of transitioning to modern heating solutions using sustainable technology like that offered by the Ariston Nimbus Pocket ASHP. It highlights significant improvements that are possible in home comfort and potential for cost and carbon savings.

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ARISTON RENEWABLES

/ **Developed with Professionals** - Simplify your job

/ **Maximum Flexibility** - Endless choices

/ **Excellent Reliability** - Enhanced Quality

/ **Sustainable Performance** - A more energy-conscious home

/ **On-board Connectivity** - Ariston Net

Find out **more**
Ariston.com

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