



**CLADE**

**BEECH RANGE //**

600KW+ CO<sub>2</sub> AIR SOURCE HEAT PUMPS

May 22 //



THE BEECH //



# LOW CARBON HEATING TECHNOLOGY

Clade CO<sub>2</sub> heat pumps will reduce carbon emissions whilst maximising efficiency. The Beech range is our large capacity heat pumps and are individually engineered for your project

Flow temperatures up to 90°C

Return temperatures 30°C to 35°C for highest COP





## PROJECT SUPPORT SERVICES



### Heat pump projects with a capacity over 600KW

The Clade Beech heat pump is supplied as a series of major component parts; compressor station, controls, evaporator and specialist pipework. It must be installed and inspected by competent people who are experienced in this work under the Pressure Equipment Directive.

Clade are here to support your project, we offer;

- Project assessment and specification assistance
- Design services for plant and application
- Bespoke manufacture of all component assemblies in our technology centre
- On site installation teams, inspection and commissioning
- Aftercare and service packages



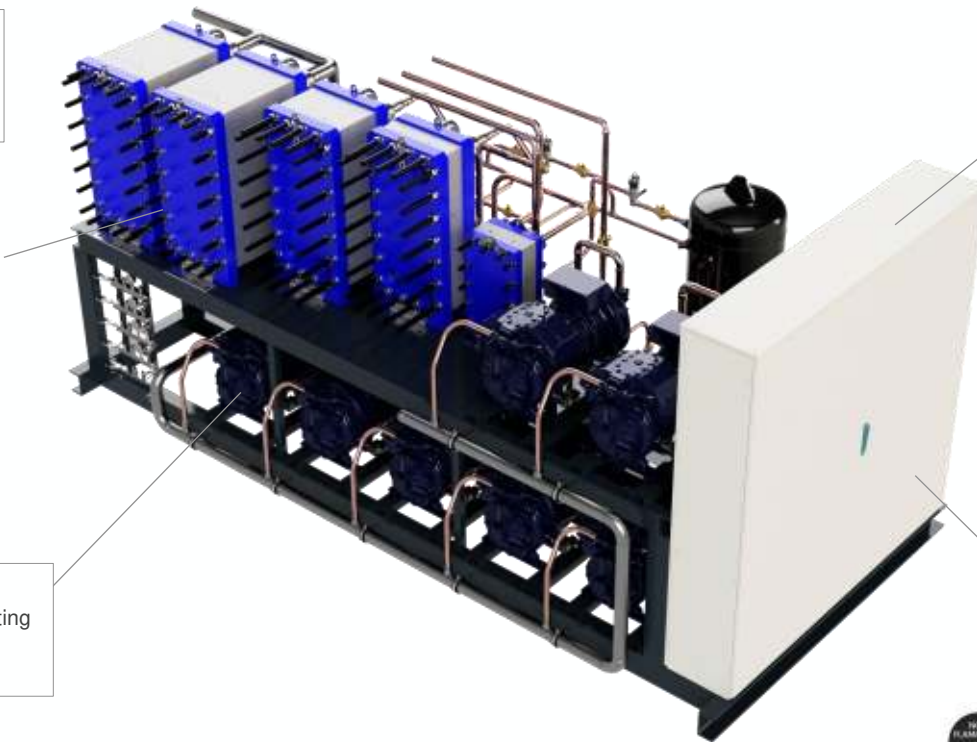


## BENEFITS OF THE CLADE BEECH CO<sub>2</sub> RANGE //

Up to 1.2MW of thermal capacity in a single unit. Ground, air or water source energy models are available.

Full mechanical service integration, incorporating pumps for simplified installation.

Compressor inverter drive to control compressor speed, enabling smoother running in low load conditions, whilst minimising electrical input.



Specialist compressors provide a greater operating temperature range and increased COP.

Integrated electrical control panel to work seamlessly alongside client selected BMS system.





## BENEFITS OF THE CLADE BEECH RANGE //

Multi Megawatts of heating capacity in modular format

Low noise weather proof housing as an option ensures low noise levels as expected by local Environmental Health Authorities.

Separate evaporator fan units connected via glycol or gas circuits and designed for low noise in sensitive environments.



Gas cooler plate heat exchanger transfers heat from refrigerant to water.

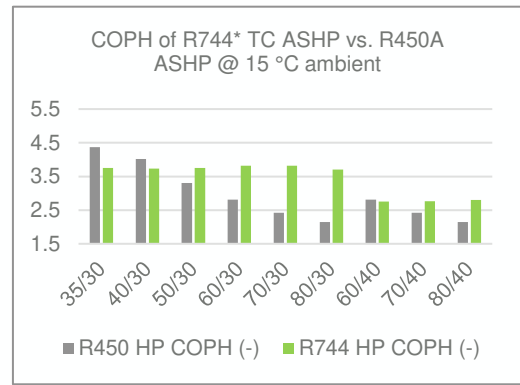
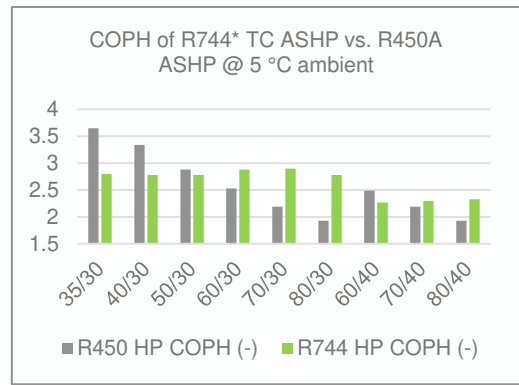
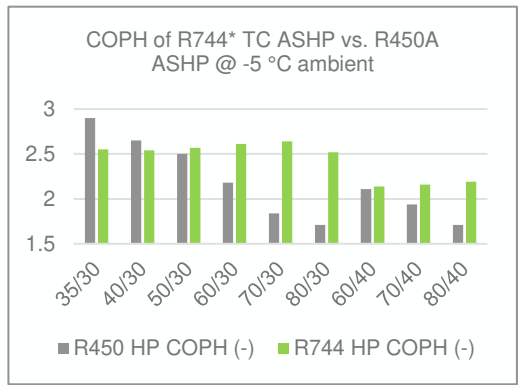
Space and clearance provided for safe and efficient component servicing and maintenance

V-block, vertical or flat arrangements of fans to suit design space constraints





# CO<sub>2</sub> HEAT PUMPS PERFORMANCE //



AT HIGHER FLOW TEMPERATURES THE CO<sub>2</sub> HEAT PUMP DELIVERS SIGNIFICANTLY BETTER PERFORMANCE

\* R744 is CO<sub>2</sub>, R450A is a typical HFO



## CLADE PERFORMANCE //



Customer benefits from full Clade services offering

- **100% decarbonization**
- **20% electricity price reduction**
- **5% energy reduction**
- **Low refrigerant legacy**
- **20% reduced cost to maintain**
- **Performance guarantee**





## COMPLETE TECHNICAL SUPPORT BASED IN UK //



Clade offer full technical support from our Leeds Technology Centre.

- **Design assistance** – we have an in house design team who are experts in heat pump system design.
- **Product** – our products are developed by our selves from metal frames to the digital controls. Our experts are on hand to assist with any issues or adaptations required.
- **Installation support** – Our full service installation team can arrange delivery, install and carry out specialist services to ensure a successful project.
- **Commissioning** – Our own commissioning Engineers will set up, test and handover your heat pumps. Our team are some of the UK's leading experts in this field.
- **Aftercare** – All servicing and repairs are taken care of, we use online tools and field technicians to ensure maximum availability and reliability.







## CLADE INDUSTRIAL CONTROLS //

The future value of heat pumps will largely depend on rewards for providing grid flexibility and on optimal efficiency in all conditions.



Clade heat pumps are fitted with high specification PLC controls that are networked to cloud services. Delivering multiple benefits

**The Clade digital platform enables continuous operational improvements and lower service and maintenance costs.**

- Data is captured, analysed and insights generated to improve performance
- Alerts and alarms can be raised automatically
- Online diagnostics save call out time and charges

**The Clade digital platform provides dispatch services via pre-built access to the flexibility market or time of day tariff control.**

- Time and control of thermal storage for tariff and timing optimisation
- Access to grid flexibility platforms
- Safe operation of the heat pump in response to market signals that maintains warranty
- Performance and data analytics, reporting in multiple formats

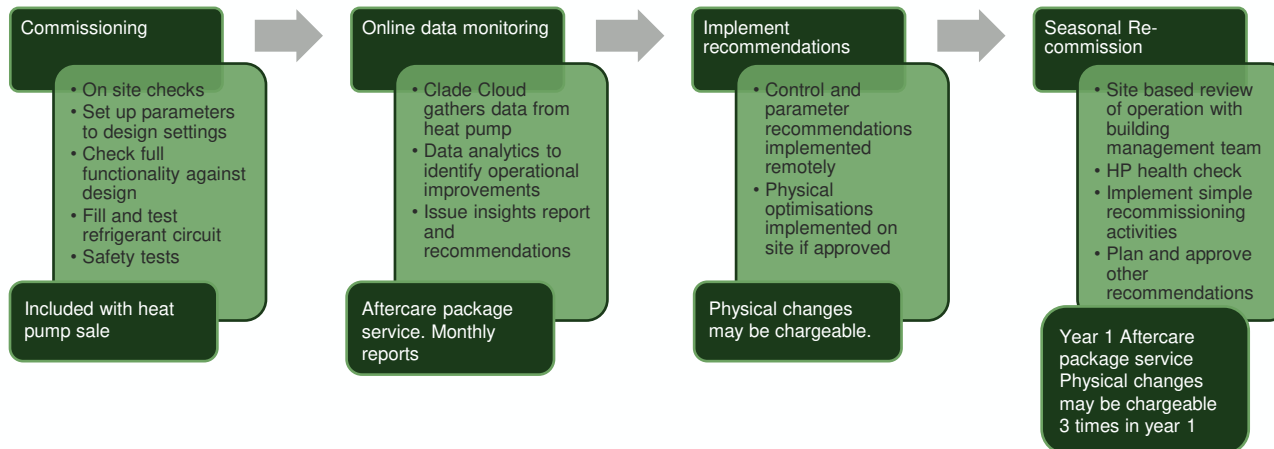


## AFTERCARE OPTIMISATION SERVICES //

Heat pump performance is dependent on four major sets of variables; the ambient conditions, the demand conditions, the physical health of the heat pump and the controls.

The ambient and demand conditions are variable across the day, week, season and year. This means that optimal year round performance is only achieved over a period of time.

Clade Aftercare package provides the basic maintenance services which maintain the physical health of the heat pump and a series of services that optimise heat pump operation over time. These optimisation services are provided by Clades expert Engineers who are on hand to analyse and assist improvements throughout the contract.





# ABOUT CLADE //



- UK based
- 35 years of engineering experience
- Leeds manufacturing division
- Committed to sustainable business and sustainable products
- Investing in people, diversity & inclusion
- Non leveraged, owner operated

**ACCREDITATIONS**  
 ISO 9001: 2015  
 ISO14001: 2015  
 OHSAS ISO 18001: 2007

**CERTIFICATIONS**  
 Altius Assured Vendor Award  
 Altius CDM Vendor Award  
 CHAS  
 Sales Contractor



THANK YOU //

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