



# CLADE

TRAGO MILLS CASE STUDY //

CO-OP FOOD STORE

NEXT







INTRODUCTION //



During the early part of 2019 Clade Engineering was contacted by Adrian Crowther, the Design and Standards Manager from the Co-op's FM Engineering team.

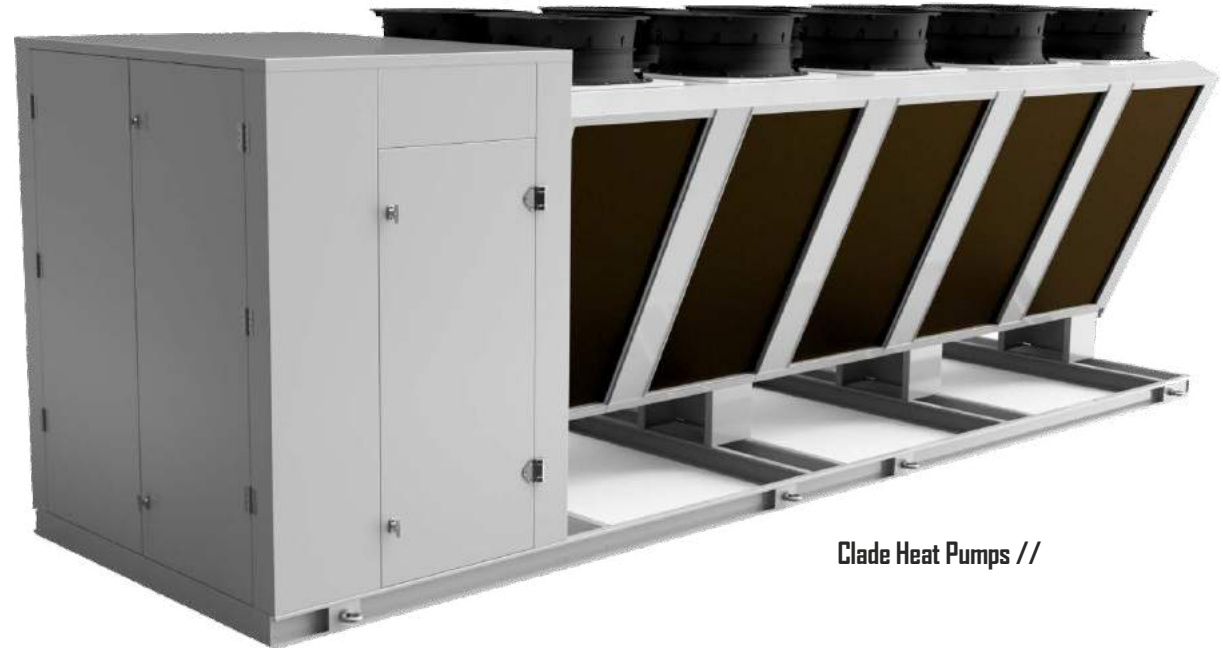
This was with a view to supplying a heat pump for the Trago Mills store in Devon, which at 12,500 square feet was one of Co-op's larger format stores in the portfolio.



## INTRODUCTION //

The store serves a large local community and was earmarked for a refurbishment in 2020. Ahead of this store refit a new heating system would have to be selected, as the existing system which operated on a series of ducted HFC based heat pumps had become dilapidated and was in need of replacement.

After searching companies at home in the UK and in Europe, it was apparent that there was limited scope within the supply chain for non HFC heat pumps operating on CO2 or Hydrocarbons. Mr Crowther was aware of Clade's development of cooling and heating products which used Hydrocarbon as the refrigerant of choice. Clade had in the previous years pioneered a new system using scroll compressors combined with heat recovery, using R290 as the refrigerant of choice, Clade's growing expertise in the area was well known.



Clade Heat Pumps //

**Mr Crowther explained:**

“with the lack of a suitable natural gas supply in the area, coupled with the fact that the Co-op group had switched to the use of natural refrigerants, it was logical that we sourced a heat pump which could meet the duty of 178kw, whilst operating on a natural refrigerant”.



## DEVELOPMENT //

Following the initial approach by Co-op, designs were developed and the project duly costed. The air source heat pump would use Dorin compressors and operate with a plate heat exchanger coupled to a wet system

The wet system in turn was designed with a series of fan coil units making the installation both simple and aesthetically no different to other Co-op stores.

The new fully natural hydrocarbon heat pump was installed in October of 2019, some five months ahead of the planned store refit and has now been operating for over sixteen months.

Mr Crowther explained how pleased he was with the outcome and that, "good temperatures were being experienced in the shop, with a sales floor temperature of between 22° to 24°C being normal, with relatively low external ambient conditions".

The ambient had clearly fallen well below freezing during the winter months in 2020/21 with no adverse effect to the store heating.

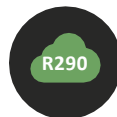
Indeed on a recent Clade revisit to the store, the store manager was interviewed in order to understand how the new Heat Pump was working and to obtain the views of colleagues.



It's what we do

**MATT EVANS, TRAGO MILLS, CO-OP STORE MANAGER EXPLAINS:**

"prior to the new heat pump being installed, the store heating systems had struggled and often colleagues had felt cold and would need to wrap up warmly. Once this became known to Co-op FM the new system was quickly organised and following its installation the store has been much warmer, with colleagues and customers commenting on the difference the new heating system has made".



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## DECARBONISATION //

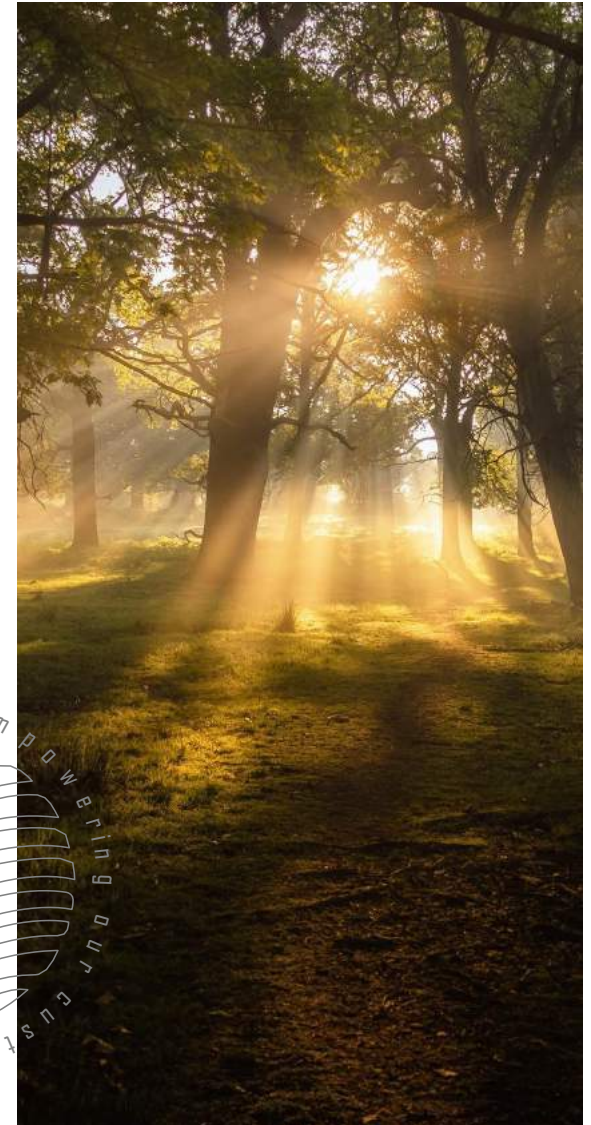
The system is remotely monitored by Clade Engineering and Co-op. This support function allows the maintaining contractor to call on Clade’s expertise should the need arise and has also permitted Clade to further enhance the control of the heat pump in ambient conditions below freezing, thus maintaining an all-year-round natural refrigeration heating solution that the customer has complete confidence in. With decarbonisation at the heart of the Governments build back green planning, alongside its ten-point plan, Clades CO2 and Hydrocarbon heat pump product ranges are well placed to support the Co-op, its supply chain and its customers in the drive to decarbonise.

Co-op Power helps clients access good quality, good value renewable power and help them on the route to zero carbon. Heat pumps using natural refrigerants are a key technology in delivering this for many sectors we work with from schools to food manufacturing as well as Co-op Group stores.

This project helped us de-carbonise heat for this store and demonstrate a clear business case for wider deployment.

Many companies are paying 5-6 times more for power than gas making the business case for heat pumps hard, we found that by buying energy better and avoiding peak prices paybacks already look good.

As energy costs our modelling shows that the value of this flexibility goes up, delivering lower life cycle costs for heat pumps. As companies, like the Co-op, move to internal carbon prices this strengthens the business case further.





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