

## CASE STUDY



Retail Fulfilment Centre

*Belvedere,  
Greater London*



Low Global Warming  
Refrigerant Used



Precision  
Engineering



BRITISH DESIGNED ENGINEERED AND MANUFACTURED IN THE UK.

📍 **European HQ** | Bromsgrove, Worcestershire, UK

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[ecoairbox.com](http://ecoairbox.com)



## INTRODUCTION

**Eco Air Box** is a division of the highly successful **Excool Group of Companies** and are based in Bromsgrove Worcestershire. With over 14,000m<sup>2</sup> of design engineering & manufacturing facilities with over 220 Employees we design, manufacture and install Air Handling and Cooling solutions for retail, construction and industry across the UK & Europe on time and on budget. Eco Air Box are fully committed to designing, developing and installing solutions for the retail industry that reduce the use of carbon with a clear strategy on meeting the net zero target.



## THE PROJECT & CLIENT REQUIREMENTS

The Eco Air Box brief was to design a turnkey air handling solution for use in a retail environment which had the capability to move air in excess of 12.7/m<sup>3</sup> per second of air into a retail & warehouse facility being linked by piped circuits to a chiller system delivering up to 200kW of heating and cooling per chiller to the total area from a closed system along with a requirement for twin circuit Heat Pump Chillers allowing for continuous operation during scheduled maintenance. Specified within the scope of the project were the supply of all expansion and buffer vessels, anti-vibration mounting suited to an external podium installation, along with frost protection and optimised defrost cycle minimising time required to re heat batteries during exceptionally low temperatures whilst also maintaining water temperatures at all times.



## THE ECO AIRBOX SOLUTION

In all of our solutions Eco Airbox sets the standard by using R290 refrigerant which not only achieves the lowest GWP\* on the market but is key to compatibility with heat pump systems by managing low temperature cooling and overall efficiency which results in lower operating costs. In line with the UK's current target to slash emissions by 78% in 2035, Excool new Innovative R290 Heat Pump Chillers are designed to contribute to this by utilising a low GWP refrigerant, incorporating a modulating fridge system to reduce power consumption while it's in operation. Our high COP comes primarily from our ability to vary the water temperature depending on the ambient conditions at any given time, whilst the staged compressors control the water temperature to its optimal level significantly lowering the power consumed whilst maintaining desired space conditions when connected to our Air Handling Units. The system can feature either a single or twin head water pump which is critical for a reduction in maintenance hours as it allows the head to be changed without losing operation of the unit. A system which is mirrored in our R290 fridge system. There are two fridge circuits within the Heat Pump Chiller unit allowing for continuous operation and backup in the event of both scheduled or unscheduled maintenance. Furthermore, our Heat Pump Chillers can communicate with each other whilst in use on the same site allowing for staggered defrost cycles in extreme conditions. All key features within these packaged units are included for and set up prior to commissioning.

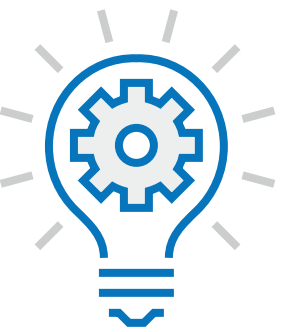


## KEY FACTS

The R290 Chiller is part of a new range of packaged units ideally suited to new build projects which are also suitable in retrofit projects replacing traditional gas fired boiler room systems in any existing building.

The key design advantages of using Excool/Eco Airbox technology are as follows.

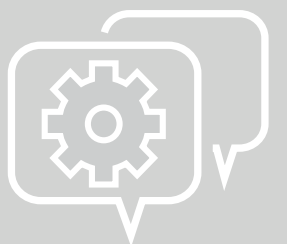
- **VERY LOW GLOBAL WARMING POTENTIAL REFRIGERANT**
- **CLOSED SYSTEM**
- **REPLACES TRADITIONAL BOILER SYSTEM**
- **HIGH COEFFICIENT OF PERFORMANCE OR COP**
- **VARIABLE WATER FLOW/RETURN TEMPERATURES BASED ON CUSTOMER REQUIREMENTS**
- **DESIGNED AND MANUFACTURED IN UNITED KINGDOM**
- **COMPACT MODULAR DESIGN AVAILABLE FOR ROOF MOUNTED OR EXTERNAL APPLICATIONS**
- **24/7 SYSTEM MONITORING WITH SUPPORT**
- **AVAILABLE AS A FULLY BUILT COMMISSIONED UNIT OR IN MODULAR FORM**



## CONTACT OUR TEAM

Did you know that within the **Eco AirBox** range we can offer a 150kW circuit unit up to a 300kW unit at seven degrees normal ambient conditions? Our units can also reverse cycle for both winter and summer conditions and be specified as multiple units across the same site if larger capacity is required for increased adaptability and greater energy savings.

Our team at **Eco Airbox** will be pleased to discuss your enquiry and future requirements and can be contacted at **+44 (0)1527 492770** or email **info@ecoairbox.com**



\* Reference As a refrigerant, r410a has a very high GWP of 2,088 as opposed to r290 which has a GWP of 3.





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