



PROJECT CASE STUDY

THREE BESPOKE AIR HANDLING UNITS FOR CHESTER ZOO'S NEW VISITOR ATTRACTION THE RESERVE

Chester Zoo is the most visited zoo and wildlife attraction in England, welcoming over 1.9 million visitors every year. In August 2025, the zoo is opening a new safari-style reserve that incorporates 51 luxury lodges for overnight stays, some of which overlook the reserve's lake. There is also a savannah-style open-air enclosure, where giraffes are free to roam and can be watched by some of those who stay in a lodge. The reserve also includes a new visitor centre and restaurant.

In 2024 AirCraft Air Handling was approached by the zoo's appointed contractor to help with the budget costs, design and manufacture of three bespoke AHUs. The AHUs were all being installed at the reserve's new visitor centre, which has a kitchen, bar and restaurant.

After confirmation of budgets, we manufactured one bespoke supply-only AHU for the reserve's new kitchen and two heat recovery, supply and extract units for the visitor centre's entrance, restaurant, bar and upper floor.



The supply-only AHU was designed to comply with the Food Standards Agency (FSA) requirements for ventilation in commercial kitchens. The two bespoke heat recovery AHUs were designed and chosen for their overall energy efficiency, something Chester Zoo very much wanted as they are committed to improving energy efficiency and sustainability.

The heat recovery AHUs were fitted with plate recuperators to recover the residual heat in the extracted air to assist in warming the intake of fresh air into the ventilation system, thus helping reduce energy consumption. The AHUs will also filter the inbound air and, when needed, chill the air supply to ensure consistent air temperature in the visitor centre. Each of the heat recovery AHUs was provided with BMS-compatible onboard control systems maintaining the air quality via Co² sensors.

All three units were fully assembled prior to site delivery during the early part of 2025, and subsequently AirCraft Air Handling engineers undertook on-site testing and commissioning of the controls in advance of the units being put into service.