CASE STUDY:

Modernising Critical Air Handling Infrastructure

SERVICE: DESIGN & INSTALLATION

PROJECT: Upgrade of existing fresh air handling unit serving occupied office space

CLIENT: Eastern Electricity

DURATION: 3 Weeks

BUDGET: £105,000

ASSETS AT-A-GLANCE:

1 × VES Fresh Air Handling Unit

Duty: 2.3 m³/s @ 400 Pa

EC plug fans with 0–10 V speed control

Heating and conditioning components

Frost protection coil and Cooling coil: 40.5 kW

Reheat coil: 59 kW (LTHW), to be served by ASHP

Controls and sensors

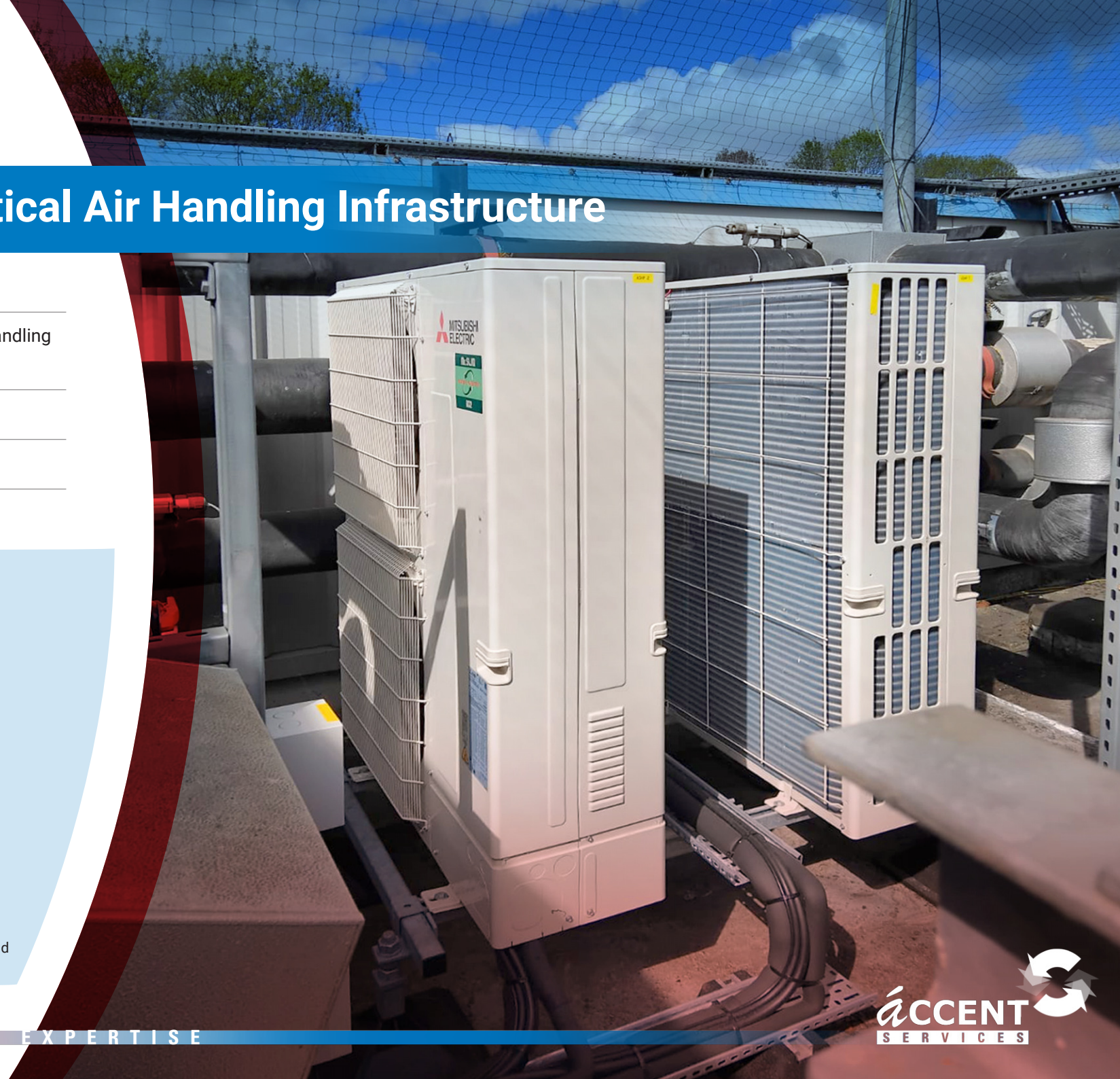
Dedicated AHU control panel

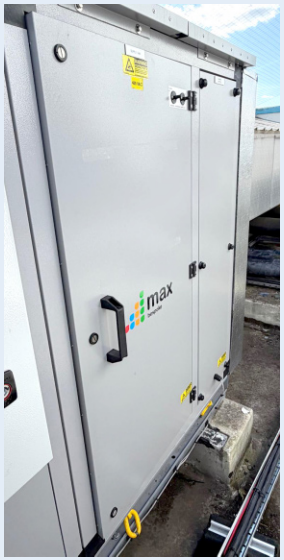
Air quality space sensor for demand-controlled ventilation

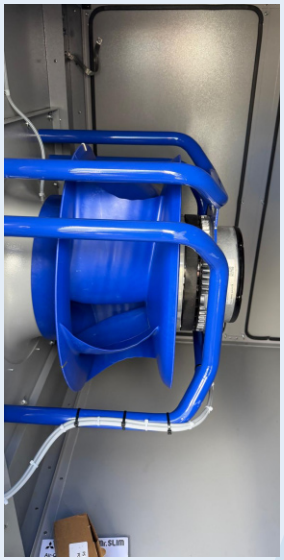
BMS interface for enable and fault feedback

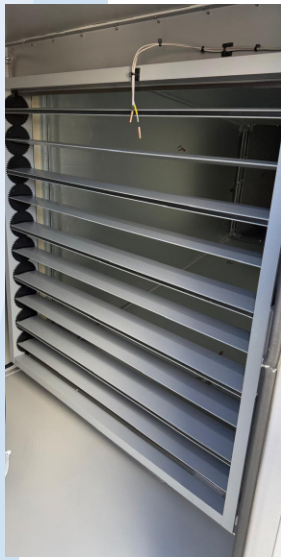
Low-carbon plant

Air source heat pump condenser and associated ASHP heating coil serving the 59 kW LTHW demand









Acting on behalf of Eastern Electricity, Accent Services delivered a full upgrade of an existing fresh air handling unit (AHU) serving occupied office space. The project formed part of a wider estate strategy focused on improving operational efficiency, resilience, and long-term carbon performance while minimising disruption to day-to-day operations.

The existing AHU installation had limited verified performance data, with little current information available regarding air distribution, system balancing, or BMS integration. Eastern Electricity required a modern, energy-efficient replacement that would improve indoor air quality, support decarbonisation objectives, and provide greater operational visibility and control.

Delivering a fully validated AHU upgrade

Accent Services were appointed on a design-and-validate basis to manage the complete replacement of the existing fresh air handling system. The project began with a comprehensive validation exercise, including electrical and BMS surveys, CAD drawings, and detailed system schematics. Existing air volumes were reviewed and assessed against current BCO guidance to confirm compliance with modern fresh air provision standards.

The works included the safe isolation and removal of the existing AHU, rooftop lifting operations, reinstatement works, and the installation of a new VES fresh air handling unit complete with EC fans, heating coils, controls, and environmental sensors.

Mechanical, electrical, and BMS integration works were also undertaken to retain enable and fault monitoring functionality within the existing building management system. Full commissioning, balancing, and system optimisation ensured the new plant operated efficiently from day one.

Supporting smarter building performance

A key driver behind the upgrade was the need for improved indoor environmental control. The new AHU incorporates demand-based ventilation strategies, allowing fresh air delivery to respond dynamically to occupancy and indoor air quality conditions. Moisture control measures were also incorporated to help protect sensitive equipment within the building environment.

The result is a more responsive and energy-efficient ventilation system capable of supporting occupant comfort while reducing unnecessary energy consumption.

Decarbonisation

As part of the project, Accent Services also assessed an optional decarbonisation strategy to remove reliance on traditional gas heating. The proposed solution replaced the gas-fired LTHW reheat system with an air source heat pump (ASHP) serving the 59kW heating coil.

Electrifying the heating source offers significant operational and environmental benefits, including reduced carbon emissions, improved energy efficiency, and alignment with evolving ESG and low-carbon building requirements. By removing gas from the air handling plant, the installation also benefits from simplified maintenance, reduced safety obligations, and improved long-term resilience against energy market volatility.

The completed upgrade provides Eastern Electricity with a future-ready ventilation solution that supports both operational performance and wider sustainability objectives.