AirCraft
Air Handling

PROJECT CASE STUDY

# HEAT RECOVERY AHUS FOR A MULTI-STOREY OFFICE COMPLEX

There are countless numbers of multi-storey buildings where plant room access is limited to a single opening. This is exactly the case for a large five-storey plus basement administration building in Central London.

During the early part of 2025, AirCraft Air Handling was approached by the contractor responsible for the building services to discuss the requirements for four new fresh air heat recovery AHUs. The units were to replace four existing units that were installed inside a plant room several decades ago.

Each unit delivered 14 cubic meters per second using a combination of recycled air from within the building and externally sourced fresh air. Apart from the end-of-life viability of the units, the building owner wanted to ensure none of the stale air from within the building was recirculated, which is important to avoid the circulation of viruses through the air supply ducts.

The inclusion of a heat recovery run around coil system pre heats the incoming air. The process can capture up to 68% of the heat from the exhaust air, providing significant energy savings by comparison to standard or legacy units.

After visiting the site, it became clear that the new AHUs would have to be delivered in component form for on-site assembly due to restricted access via the single plant room door, which had an opening of 2.5m high and 750mm wide. Additionally, to avoid any disturbance to the hundreds of employees working in the building, the decision was made not to use the building's passenger lifts to help move the AHU components but to hire a mobile crane to lift the equipment to the roof level. This was to be carried out over a weekend to minimalize disruption.

With the information gained during our site visit and several conversations with the commissioning contractor, AirCraft Air Handling submitted a detailed proposal covering both costs and time frames for manufacturing. Shortly after our submission, we were given instructions to manufacture, the first to be delivered in component form in May 2025.

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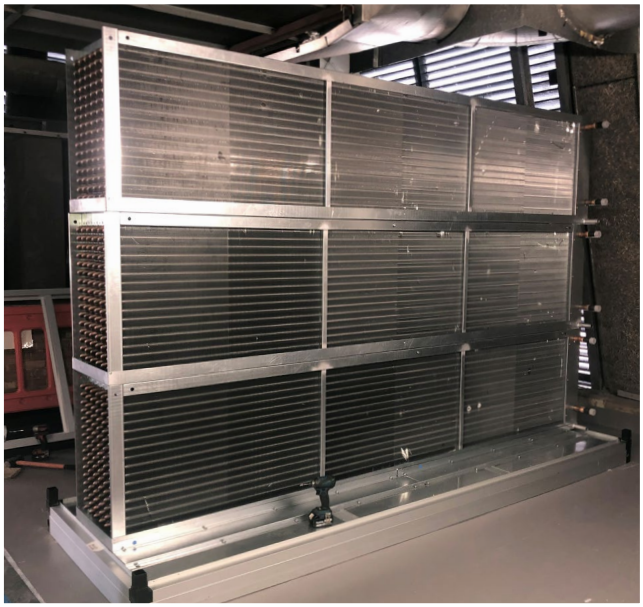
Specifications for the new supply and extract heat recovery AHUs include; supply and exhaust shut- off dampers, run round coils, high efficiency filtration, chilled water cooling, LPHW heating, and EC plug fans.

Design, manufacture, assembly and pre-delivery quality checks of the AHU were undertaken at our premises in Stafford. Once site logistics, including crane hire, were confirmed, we broke the assembled unit down into small enough components to allow for passage through the single 750mm wide, plant room entrance. Due to access restrictions the recovery coils were supplied in 6 sections, each section weighing 400kgs.

AirCraft Air Handling delivered the palleted AHU components along with heat recovery coils to the site, where our installation team completed the re-assembly process over 4 days. Once assembled, we handed over the new AHU to our customer, who then carried out the remainder of the installation project by connecting the AHU to the building's management system and ducting.



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