

CASE STUDY

Aerospace Industry

Precision climate control for 3000m² cleanroom

DencoHappel Solutions



The Consultation



THE BUSINESS ISSUE

This internationally known UK manufacturer of military helicopters had a requirement to refurbish a 3000m² cleanroom, whilst simultaneously maintaining full production capabilities.

An investment of £2 million was made to replace and upgrade the existing facilities, and to ensure they would be capable of meeting future manufacturing needs.

Why this was important?

The existing cleanroom had an ageing heating and cooling infrastructure, which was no longer 100% reliable. When occasional heating and cooling faults resulted in the stringent temperature and humidity tolerances for the cleanroom production environment being exceeded, production could potentially be stopped. This was at great cost and inconvenience to the client.

Capabilities

DencoHappel engineering and technical teams worked with the client throughout the design, planning, and on-site project management phases.

Design: DencoHappel Engineers designed heating and cooling requirements for the refurbished cleanroom, with the capability to maintain temperature tolerances of 21°C +/- 3°C and 45% +/- 15% humidity and provide cooling capacity to the blade presses to allow heat rejection to the atmosphere of 800 kW.

Planning: The client requirements for heating and cooling were met by converting the existing air supply to low level displacement diffusers and integrating pressure independent control valves with the existing pipework system (with inverter pump systems installed accordingly). Replacing the old cooling tower; cooling water, chilled water and low pressure hot water pumpsets and pipework; water cooled chillers and two air handling units as well as delivering environmental building control capabilities for the client.

Project Management: DencoHappel worked with the client and other trades (eg those replacing the suspended ceiling and installing LED lighting), to produce an installation plan that would ensure continuous production facilities throughout the project. On site, a DencoHappel Project Manager worked alongside the client PM and installation teams to ensure the seamless execution of this plan.

The Solution

DencoHappel products used

DencoHappel **Polacel Towers** were used to replace the old cooling tower. These modular towers were made to client's bespoke needs and custom-installed on-site. DencoHappel cooling towers deliver water savings and substantially lower climate cooling costs. This was particularly important to the client, who prides itself on saving energy wherever possible.

DencoHappel **Cair+ Air Handling Units** replaced the old units, delivering specified and controlled air temperature and air quality to meet the needs of the cleanroom environment.

DencoHappel **Water-Cooled Chillers**, in which heat exchangers were used as condensers and evaporators.

Outcome for the client

The cleanroom replacement and upgrade was delivered on time, in accordance with the 12-month project plan schedule. Full production was maintained throughout.

The cleanroom continued to meet ISO 8 cleanroom standards and tolerances for temperature, humidity and particle counts throughout the refurbishment period.

The systems and new infrastructure enabled the client to have greater environmental climate control for the cleanroom. In the unlikely case of a failure in any part of the system, the client now has a more diverse range of control options to be able to resolve any issues without the need to shut down production.

The use of DencoHappel products continues to deliver the client an estimated annual reduction in energy costs of £64,000.



To find out more



Sales



Service



Excellence



Inspiration



Global



DencoHappel are global providers of precision climate control

Our consulting and service teams in your area will be happy to work with you to develop solutions - with expertise and creativity.

