PRODUCT | **CASE HISTORY**

COOLSTREAM R

PROJECT:
Colt's own factory

LOCATION:
Kleve, Germany

REQUIREMENTS:
Refurbishment of existing HVAC scheme to improve working conditions and lower running costs

SOLUTION:
A CoolStream R rooftop heating, ventilation and cooling system with Cortiva controls

Colt Kleve factory experiences first hand evaporative cooling made easy

Our factory in Kleve, Germany, replaced its outdated heating system with a CoolStream R rooftop heating, ventilation and cooling system fitted with Cortiva controls.

Four CoolStream R units with built-in 100 kW gas heaters provide heating, cooling, fresh air, ventilation and filtration. The Facilities Manager can easily monitor and control the system on their tablet, smartphone and PC with Colt Cortiva controls.

Seasonal operation
In winter, the CoolStream R heats and recirculates the warm air, which is pushed down through the air distribution system.

In spring and autumn, inside and outside air is mixed to achieve a pleasant temperature in the building and the fan speed is reduced for smooth operation.

In the summer, the system only uses outside air, which undergoes evaporative cooling and brought in through the air socks without creating draughts. The fan runs as fast as is needed to maintain the room temperature at the desired level. The heat is extracted from the room through the natural ventilators.

Easy installation and commissioning
Since all devices are contained inside the CoolStream R unit, and since the unit was ready for hoisting, the system could be installed while the production was in full operation. Also the commissioning took just a day, because of the standardized and pre-tested controls and software.

Cortiva takes care of everything
The Facilities Manager only needs to set the desired minimum and maximum temperatures and week schedule. Cortiva takes care to run the system to match all the criteria set by the Facilities Manager while maximizing energy efficiency. It also changes the operational mode every season automatically.

Visual feedback
The LED-illuminated textile air socks show the building's users what the system is doing. The LEDs turn blue when it is cooling, green when ventilating and red when heating.

30% savings on heating costs
Our team in Kleve made a cost assessment comparing the heating costs of the CoolStream R system compared to warm air heaters. The latter, although cheaper, do not evenly distribute the air nor push it down from high level. They have local thermostats only, thus the heating is uneven and the heating is on for longer periods than needed. The CoolStream R, on the other hand, benefits from modulating operation and the optimized system control provided by Cortiva. The result is an estimated 30% sliced off the annual heating bill!

In addition, the CoolStream R has an estimated electricity consumption of 9,600 kWh/a. Compared to 24,000 kWh/a consumption of the warm air heaters, it is expected to save an extra €3,000 a year.

So, as in many cases, a bigger initial expenditure results in much lower operating costs and in the long run this turns out to be the more cost effective solution.

"The CoolStream R system is fantastically comfortable while being energy-efficient. The cooling is virtually for free! All is automatically minutely modulated to suit the desired conditions within a specific area. Air exhaust and de-stratification fans are also operated by the Cortiva control system.

"Our people are more comfortable and also benefit from fresh air and better air quality arising from the fact that the incoming air is filtered. The noise level is really low, even at full fan performance.

"Finally, I can very easily monitor and control the system on a conventional tablet. I only need to set the desired minimum and maximum temperatures and week schedule. The Cortiva does the rest."

Christine Schallach, Facilities Manager

Cortiva controls
Colt has developed Cortiva to control CoolStream R system. It's easy-to-use interface is available via a tablet PC or a smart phone, and it requires no special knowledge to configure the HVAC system or to make changes to the individual parameters. Its fine control routines can result in significant cost savings.

Showing the interface for operation and monitoring of the system