Case Study

Maintaining adequate indoor air quality becomes cost effective for UFlex

Background

Established in 1983, UFlex is India's largest flexible packaging company and an emerging global player. U-flex has a formidable market presence in more than 85 countries, a multi-billion dollar turnover, with state-of-the-art manufacturing facilities in India, Dubai and other locations around the world.

Challenges

A cool, solvent-free environment, with positive pressure in the department, is critical for any print and packaging related industries. These conditions can only be maintained by 100% fresh-air systems.

One of UFlex's Indian plants is situated at Noida, Uttar Pradesh. The temperature inside the plant can shoot up to 50°C in the summer, if not controlled properly. This in turn can lead to high rejection rate of food packaging material. Spread over an area of 100,000 square feet, the plant was equipped with air washers since its inception. But the air washers failed to meet fully the requirements. The cooling was not adequate and air washer added a too much moisture in the factory space. The solvent retention on shop floor droped drastically, which was not in line with the food industry

The management then replaced all their existing systems with a centrally air-conditioned system for the entire plant with a total capacity of 800 TR. The power consumption of the air conditioning system added substantially to the already huge operating cost of the plant. Also, for energy efficiency reasons, the air conditioning system recirculated the same air over and over again. Hence the fumes generated in the printing processes were recirculated too without an escape route, resulting in severe deterioration in the Indoor Air Quality (IAQ).

Solution

Dissatisfied with both the above systems, the management decided to look at other alternatives that give the appropriate amount of cooling, a dust free environment, maintain adequate positive pressure, minimise solvent loses on shop floor, and are economical at the same time. This is why they approached HMX for a solution based on HMX's much-sought after Indirect Direct Evaporative Cooling based technology.

Based on the heat load calculations and process requirements, HMX installed 14 IDEC units, with a combined capacity able to deliver 420,000 CFM into UFlex's process area. This processing area includes: rotor gravure printing machines, solvent based lamination machines, extrusion coating line machines ,slitting machines, and poaching machines.

Result

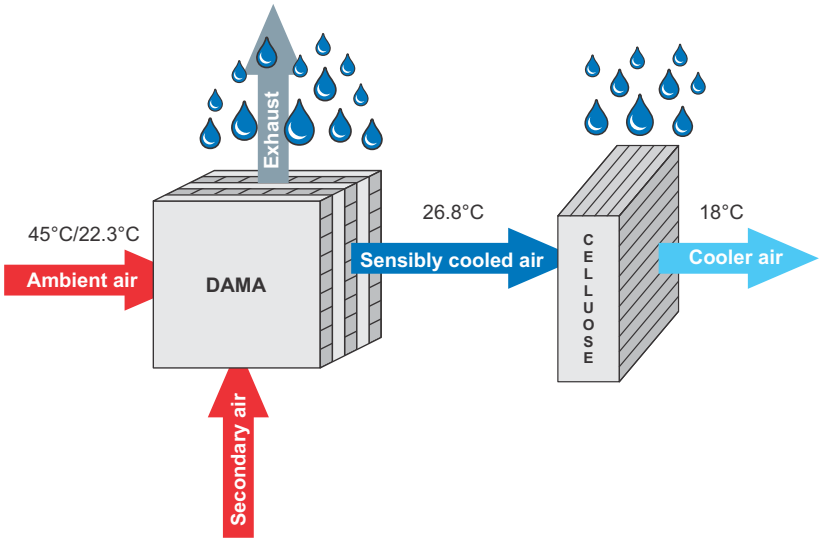
The HMX-IDEC proved to be the perfect solution for UFlex. The installation met the requirements of adequate cooling, maintaining a dust-free environment with positive pressure in the company's printing area, and did so very economically. HMX's Ambiators also add significantly less moisture as compared to a conventional air washer system, thereby increasing process efficiency.

The HMX-Ambiators provided 100% fresh air, yet were able to save 70% of the energy of the previously installed 800 TR water-cooled chiller.

Equipment	Capacity	Power consumed (kW)
Air conditioning system (screw type water cooled)	800 TR	880
HMX-IDEC	420,000 CFM	252

The HMX solution not only continuously saves operating expenditure, but also costs considerably less when compared to a central air-conditioning system. The staff is also very pleased with the good IAQ and improved safety standards provided to them.

The management is proud to be using an eco-friendly product, and is so happy with the performance of the IDEC systems that it is now replacing all their legacy systems with HMX's evaporative cooling systems across India.



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