

Case Study

Landmark enjoys fresh cool air during harsh Saudi summer, thanks to HMX!

Background

Landmark Group is a multinational conglomerate based in Dubai. Its businesses focus on retail in several sectors - apparel, footwear, consumer electronics, cosmetics, furniture, and the like. It has several in-house brands and also works with other brands. As a retailer, Landmark currently operates over 2300 outlets, covering over 30 million square feet across 22 countries.

To serve its stores worldwide, Landmark has created full-fledged logistics and distribution infrastructure.. Warehouses have been established close to all the towns where Landmark operates. Its total warehouse space exceeds 9.3 million square feet.

Challenges

Landmark recently set up its first fully functional automated distribution centre at Sudair, Saudi Arabia. This automated warehouse features state-of-the-art AGVs (automated guided vehicles) that operate in conjunction with an automated conveyor system. This 450,000 square feet facility is currently being used for the storage of home furniture.

Sudair, being located in the centre of Saudi Arabia, experiences hot and dry weather for 8 to 9 months in a year, during which months the temperatures are often in the range between 40°C and 50°C. These extremely high temperatures not only affect the shelf life of the products stored, but also make it very uncomfortable for the employees in the warehouse. Further, the automated warehouse infrastructure requires that the indoor temperature should not go above 28°C.

Landmark dropped the option of using an air conditioning system for the complete space as it would incur huge operating expenses given the harsh temperatures during the summer. The management needed an alternative cooling solution to maintain the indoor temperature below 28°C and relative humidity not exceeding 70% throughout the year. With this in mind, they approached HMX.

Solution

After a detailed study of the plant, ambient conditions, and the heat load of the warehouse, HMX proposed the use of its IDEC (indirect direct evaporative cooling) units which use 100% fresh air to cool large spaces. A total of 18 HMX-Ambiator (based on Indirect Direct Evaporative Cooling technology) units of 30,000 CFM capacity each were proposed to meet the desired indoor conditions.

Given the hot and dry climatic conditions of the region, HMX was confident that the performance of its patented IDEC technology would be at par with a refrigerant based conventional air conditioning system, at a lower opex.



Machine installed at Landmark Group



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Result

In the month of October, with the ambient temperatures hovering over 40°C, HMX's IDEC units were supplying air at a temperature as low as 16.5°C inside the warehouse. This, in turn, maintained pleasant conditions in the warehouse with an average indoor temperature of 25°C.

An added advantage was that HMX-Ambiator units helped create a dust-free environment. This, coupled with the 100% fresh air output by HMX's IDEC systems, means there is a significant improvement in the Indoor Air Quality (IAQ) in the warehouse, and also prevention of contamination of the goods stored therein. HMX's IDEC units do all this while consuming less than half of the energy of an equivalent conventional air conditioning system.

The Landmark management is happy with the performance of the HMX-Ambiator units and is now unworried about the peak summer season, due to their confidence in their HMX sustainable cooling solution.