

Case Study

Cooling in summer and saving energy in winter – Amazon relies on MonsterFans (HVLS fans) in the Neu-Ulm (Germany) logistics centre



The company

Amazon, the world's largest internet retailer, has long been concerned not only with growth and profit. Especially in Germany, critical reporting on local working conditions has made the internet giant rethink. Part of the new Amazon mission is to make the company sustainable for employees, customers and regions.

By all means, locations and value chains should become CO2-neutral. With over 2000 logistics centres worldwide and more than 110 logistics centres in Germany, this is a real challenge, especially with regard to building technology. The logistics centre in Neu-Ulm, built in 2019, also had to meet these requirements.



The task

The planning guidelines for the 3,900 square metre logistics centre reflect the new sustainability philosophy. The complete climate concept of the buildings, which are up to 12 metres high, was to be realised with maximum efficiency. The requirement was to avoid the temperature differences that occur in winter due to air layers between the floor and the building ceiling. In the summer months, on the other hand, a natural-looking air movement was to be created in the working areas. The aim of this defined air movement is to increase working comfort by increasing the evaporation principle on the skin surface.

The implementation

The Amazon planning team chose tube heaters as an energy-saving heating system. For destratification and defined air movement in the work areas, they relied on MonsterFans HVLS fans (High Volume, Low Speed) with a diameter of 7.3 metres. In contrast to a complex ventilation system, the MonsterFans can be integrated relatively quickly and inexpensively in new and existing buildings. As the name suggests, HVLS fans move large volumes of air at low speed. Depending on the control stage, up to 783,000 m³/h.

In winter, the fans serve to mix the air layers, whereby the unused heat under the buildings ceiling is returned to the working area (destratification). In the summer months, a gentle, hardly noticeable but extremely effective air movement is achieved by changing the direction of rotation. The evaporation on the skin surface of the employees acts like an air conditioning system of natural origin. This reduces the sensation temperature and increases the working climate.

The conclusion

In addition to the tube heaters, it is precisely the large fans from Schwank that fully meet the requirements of the climate concept. Thanks to the natural cooling effect, working comfort and employee productivity increase considerably, especially in the summer months. The sensory temperature drops by around 5 °C, which is equivalent to the effect of a pleasant air conditioning system.

And the MonsterFans are also convincing in winter. Compared to buildings of the same construction without the use of MonsterFans, there is an energy saving of around 7%. In the case of conventional heating systems with higher temperature differences between the buildings floor and ceiling, HVLS-fans can save up to 20% in energy costs.



High
comfort



High
cost saving



Long
service life



Very
quiet

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