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Customer
Deutsche Bahn AG, DB Immobilien
City
Hamburg and Frankfurt

H44, Hamburg
Area
307,848 sq. ft.

Equipment
Single-room control, air handling units, radiant heating and cooling panels, radiators, chiller

Savings
HVAC energy costs 37 percent

Payback
18 months

Silver tower, Frankfurt
Area
628,182 sq. ft.

Equipment
Single-room control, air handling units, radiant heating and cooling panels

Savings
HVAC energy costs 19 percent

Payback
16 months

Make way for MeteoViva

Two very different office buildings owned by Deutsche Bahn. Both equipped with state-of-the-art building technology. Are energy cost reductions still possible without compromising tenant comfort? And can this be achieved exclusively with the help of smart data technology? There was strong skepticism at the beginning. But MeteoViva was able to convince the building managers at H44 in Hamburg and Silver Tower in Frankfurt. Now, additional office buildings managed by DB Immobilien will follow.

Project

H44 is a modern, six-story office and administration building in Hammerbrook, Hamburg. It offers work space for more than 950 employees of several subsidiaries of Deutsche Bahn. Among others, the DB Zentrale Nord as well as the administration of Hamburg's subway are located at Hammerbrookstraße 44. Built in 2013, the complex provides 307,848 square feet of office space.

DB Group's internal IT service provider DB Systel GmbH resides in the Silver Tower in Frankfurt. The building was completely renovated in 2011. With its 36 stories, the skyscraper has a total floor area of 628,182 square feet. Deutsche Bahn AG, DB Immobilien is responsible for the operation and management of both buildings and had selected them together with DB Immobilien Nord and DB Immobilien Region Mitte to pilot the MeteoViva technology.



"Only afterwards we realized how much CO₂ we had saved with MeteoViva. And it's so easy – without any loss of comfort."

Olaf Teichmann,
Deutsche Bahn AG
DB Immobilien
Customer Team Office



Assignment

Deutsche Bahn AG, DB Immobilien, is one of the largest property managers in Germany. Searching for future-proof energy management solutions Olaf Teichmann from the customer team office came across MeteoViva. He was promptly convinced that he found the right technology to save energy and ensure a comfortable working environment. And that without

the need to upgrade the existing building technology. As a property manager Deutsche Bahn AG, DB Immobilien is also interested in reducing the wear and tear of the technical equipment. To show that all this is achievable at the same time, MeteoViva was tested in Hamburg and Frankfurt. In Silver Tower, the predictive control is exclusively operated on the 24 office floors.

Implementation

The first task was to educate the project team. Initially, some project members had concerns about a new software-based technology. In addition, there was some general skepticism if the operation of a building equipped with state-of-the-art equipment and controls could be further optimized at all. MeteoViva was finally able to overcome all reservations through

many personal discussions. The actual implementation (installation, connection and commissioning) was then carried out within just a few weeks during ongoing operations. The quick implementation time was the result of efficient collaboration with the property management and BMS provider.

Conclusion

With the help of MeteoViva Climate Deutsche Bahn AG, DB Immobilien was able to reduce the energy costs for heating, ventilation and air conditioning in building H44 by 37% in the first year of operation. One main reason for reduced energy costs was preventing the radiant heating and cooling panels from working against each other. This was a result of MeteoViva Climate's predictive operation of the building equipment which continuously monitors current weather data and the predicted heat load. In addition, the smooth operation generated less wear and tear on the technical equipment. The target climate band of 20 to 23 degrees Celsius was met at over 95 percent.

The optimized operation with MeteoViva also reduced the energy costs at the Silver Tower in Frankfurt – by a total of 19 percent. The cooling consumption alone fell by 29 percent. At the same time, the electricity consumption for air handling units and pumps dropped

by 19 percent. Among other reasons, MeteoViva achieved the savings through a zoning that accounts for its weather impacts. As a self-learning solution, the smart control system optimized the heat-up and cool-down times before occupied hours.

The automated adjustments and monitoring of the technical equipment also facilitates the work of the energy managers on site in Hamburg and Frankfurt. In the MeteoViva Cockpit, they can monitor the equipment operation via their screens at any time, detect faults at an early stage and review the historical and predicted trend of the indoor climate.

However, the biggest surprise for both the building managers and the users was the high CO₂ savings: In Hamburg, the CO₂ emissions were reduced by 444 tons per year, in Frankfurt by 412 tons per year. Everyone was very proud of this achievement.