



Building
BMW Group IT Zentrum

Customer
BMW Group

Location
Munich

Building Size
639,376 sq. ft

Equipment
Fully air-conditioned, AHU, concrete core tempering, radiant floor heating, radiators, radiant ceiling panels, sun shading, 27 zones, 463 data points

Savings
District heating costs 25%

Payback on Cash Invested
Immediate

Technological Innovators

Always one step ahead and blazing new trails. BMW turned to MeteoViva's smart data solution to reduce energy consumption at the corporate IT center. The deployment was supported by an intelligent energy-savings contract which eliminated the usual up-front investment, and left BMW with an immediate reduction of its operating budget.

The Project

Located north of Munich, the BMW Group Information Technology Center (ITZ) services all of the company's IT needs under one roof. Inaugurated in 2009, the building is a modern office and infrastructure complex in every respect. It features individual and team workspaces, dedicated meeting spaces, as well as technical, multi-functional, and laboratory rooms. The building itself meets all current standards. It is equipped with extensive, resource-efficient building technology such a green roof, and a lighting system that maximizes the use of daylight. As a leading edge building, BMW's ITZ was ideal to test MeteoViva Climate.

"MeteoViva has proven to be a smart decision in a number of ways. Not only were we able to reduce energy consumption without adversely impacting the indoor climate, but we also benefit from its ability to detect faults early, allowing for quick remediation."

Dr. Rainer Angerhöfer,
BMW Group Energy Operations

Assignment

Making a lasting positive contribution to the economic and ecological success of the company was the goal of the project. And the expectations placed on MeteoViva were high. The ITZ is a 640,000 square feet building, relying on district heating and electricity

to condition the space. The solution was designed to reduce both heating and electricity consumption while, reducing the operating budget. And most importantly, maintain or improve the quality of the indoor climate.

Implementation

MeteoViva engineers first identified all key parameters and divided the 5-story building into a total of 27 zones. Within the model, each zone was assigned its own climate profile. A total 463 data points were defined: 115 to track the system state, 198 to track room conditions, and 150 to control the equipment. MeteoViva Climate automatically and continuously communicates the control data to the BMW Building Management System via an interface, so no manual intervention is necessary. In addition, MeteoViva Climate also obtains feedback from the building via the same interface. The on-going comparison of what is expected by the model with actual measurements allows the system to detect equipment faults at an early stage and provide relevant messages to the technician on site.

The smart data solution was implemented without interrupting operations. In order to establish a reference or baseline to calculate the savings a weekly alternating operation took place during the first year. Mid-2016, after reviewing the performance results, BMW management decided to turn MeteoViva Climate into continuous operation.

To finance the project, BMW and MeteoViva structured a customized energy-savings contract where the Jülich-based company financed the installation. BMW pays this investment back through a fee based on the achieved energy cost savings. In addition, an energy savings guarantee eliminated all financial risk for BMW.

Conclusion

Extrapolated to one year of operation, the heating consumption was reduced by 25%. At the same time, room temperatures in the individual zones remained within the specified bands.

While summer cooling costs saw only a small reduction, comfort improved noticeably.

MeteoViva also functions as an early warning system. Faults in the equipment's operation have been detected early on, helping facility management be more responsive to the equipment. BMW is now looking to apply the MeteoViva solution to other buildings. Next is the 1 million square feet project house of the Research and Innovation Center.

