AVEVA

City of Bremen Cuts Energy Consumption and Consolidates Building Management with AVEVA Solution

City of Bremen, Germany
Industry - Infrastructure

Goals

- Unify more than 1,200 municipal properties under a single, open building management system (BMS)
- Optimize the efficiency of heating systems in the buildings to cut energy consumption

Challenges

- The buildings were running a proprietary BMS from several different vendors
- The properties were managed at six control facilities located around the city under the direction of five geographical districts and regional supervisors

AVEVA Solution

- InTouch® HMI for Terminal Services
- ActiveFactory™
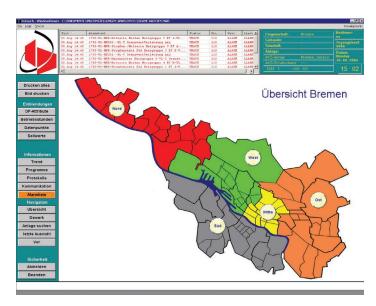- Historian
- Customer FIRST Support

Results

- An open BMS based on the AVEVA solution is in place, centralizing the management of the extensive property list (160 facilities in all)
- Regional supervisors all now have access to the BMS
- Energy consumption is down by 15% to 18%
- Assumed cost saving of more than €30,000 (US$ 43,000) per year
- Adding buildings to the system is simple and more efficient due to the extensibility of the AVEVA software

BREMEN, Germany – When the City of Bremen needed to modernize the heating systems in several of its buildings, it analyzed the project and realized an opportunity to do more. Besides improving energy efficiency, there was the potential to implement a new building management system (BMS) that would bring greater control and provide far-reaching positive effects across the city's extensive portfolio of properties.

"As our regional supervisors can now access all heating systems from a central location, they will be able to successively optimize the systems one by one."
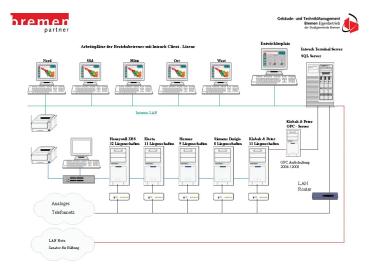
-
Rüdiger Heinenbruch,
Technical Operations Manager, Immobilien Bremen

Übersicht Bremen

Developing a Centralized Concept

With more than 1,200 municipal facilities covering over 1.8 million square meters (nearly 20 million square feet) of floor space, the undertaking was not a small one. At the time, six control stations across the city were running a variety of proprietary building control systems. Reporting and sharing information in a consistent format was a challenge for the five regional supervisors, and employees had to learn to operate each of the different systems. Plus, adding new buildings was complicated and costly.

"Immobilien Bremen, Anstalt des öffentlichen Rechts," the city's property service company, evaluated a number of software possibilities as well as a formal engineering study that analyzed the City of Bremen's current technologies and its roadmap for the future. Immobilien Bremen determined that the AVEVA solution would meet the city's requirements for an open, vendor-agnostic BMS that would consolidate the various existing systems under a single operator interface.

Building the Open BMS

With the decision made, Immobilien Bremen set to work to develop an open BMS that would meet all of the city's needs.

The cornerstone of the new solution is the InTouch® Human Machine Interface (HMI) for Terminal Services which provides a common user interface across the entire City of Bremen BMS. This HMI provides an intuitive overall view of the building control system that can be seen by all operators and supervisors.

Regional supervisors working from any location can log onto the HMI and troubleshoot problems in real time at any of the City of Bremen's buildings. InTouch HMI also sends alerts and alarms to individual workstations, so operators can take swift corrective measures, and supervisors have visibility to their actions.
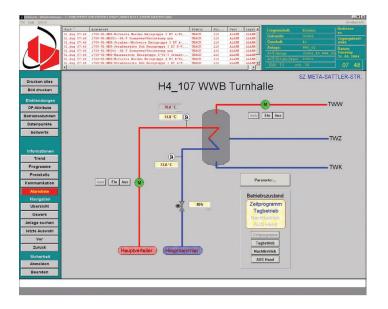
Detailed data about system performance is collected by Historian and stored on the central server. Engineers, managers and other workers can access this archived information to track changes made to the system, which enables them to continually optimize the BMS.

Reporting is made simple by ActiveFactory™. This component of the new BMS provides reports that show trends for each building's performance. Report data can be downloaded and manipulated using Microsoft® Word or Excel® to streamline and simplify communications.

"Optimum efficiency of a heating system is only achieved after a few months of careful adjustments. This level of optimized operation can cut energy consumption by around 15 to 18 percent,"

-

Rüdiger Heinenbruch,
Technical Operations Manager, Immobilien Bremen.

Payoffs in Performance

Soon after deployment, Immobilien Bremen and the City of Bremen began to see positive outcomes from the new BMS. Most importantly, heating systems throughout the facilities require less energy to operate, which was one of the primary objectives for the system.

Cost savings also have been realized because most modifications and extensions are implemented by internal staff rather than outside suppliers, thanks to the AVEVA software's ease of use, standardized tags and repeatability. Moreover, with the AVEVA solution in place across the entire City of Bremen system, engineers only need to learn one software solution, which saves financial and technical resources.

The common user interface with its simple-to-understand visualization of the BMS makes training more efficient and has increased user acceptance of the solution.

Additionally, by using AVEVA software for all reporting, data transfer between the various control facilities is consistent in structure and information is processedmore quickly.

The main proof of success is the continued growth of the AVEVA solution: After an initial pilot phase during which about 50 facilities were integrated, today over 160 facilities are part of the BMS. And Immobilien Bremen and the City of Bremen are making plans for future extensions of the AVEVA solution. They will be able to reap the rewards of their initial investment and continue to experience improved energy efficiency by leveraging the solutions of an international company with worldwide support like AVEVA.