

Siemens helps Bremerhaven Clinic reduce energy use by 25 percent

Cost-saving enhancements keep clinic up to date



The Bremerhaven Clinic in Reinkenheide, Germany lowered energy costs by 520,000 euros a year

Competitively bid Energy Saving Performance Contract guarantees annual savings that help fund upgrades

■ **Improvements implemented during normal operations of hospital**

The Bremerhaven Clinic in Reinkenheide, Germany, with more than 700 beds, was the most modern of its kind when it opened in Bremen in 1976. While it continued to enhance its position as a leading maximum care hospital over the years, the efficiency of its building systems declined, particularly in terms of energy consumption. By 2004, the hospital's primary energy costs had reached more than 2.1 million euros a year. Extensive refurbishment and upgrading were needed in light of increasing energy costs and new demands for profitability resulting from health reform and intensifying competition.

To make the necessary system upgrades possible without new capital funding, hospital leadership

decided to pursue energy performance contracting. The city-owned Bremerhaven Clinic launched a European Union-wide bidding process in Spring 2005, assisted by the Bremen Energy Consensus climate protection agency.

Siemens conducted an initial review of the hospital and submitted a bid guaranteeing a 25 percent reduction in annual energy consumption. The savings would be used to fund the costs of the upgrades.

"We opted for an Energy Saving Performance Contract with Siemens...and it more than met our expectations. We not only received modern system technology, but we also reduced more than 4,100 tons of CO₂ emissions into the environment," said Jurgen Breuer, technical director of Bremerhaven-Reinkenheide Clinic.



The Bremerhaven Clinic in Reinkenheide helps meet new health reform demands for profitability with energy-efficiency savings

Working together, the hospital technical staff and Siemens energy-efficiency experts defined 120 measures whose implementation during the normal operations of the hospital led to guaranteed energy savings of 25 percent each year. The improvements also lowered energy costs by almost 520,000 euros a year, said Gunnar Liehr, Head of Energy & Environmental Solutions Global for Siemens.

■ **“Impressive results” include annual 4,130-ton CO₂ reduction**

New building automation, air conditioning and ventilation systems were installed and the heating systems were optimized. Energy-efficiency improvements were made to the steam and water supply, dishwashers, medical compressed-air supply, low-voltage supply, and steam sterilizers, among others. More than 70 air-conditioning systems were completely rebuilt to state of the art with DESIGO™ PX, a Siemens BAC-net based building automation systems.

The results are impressive, according to Mr. Breuer, the hospital’s technical director. Power required for steam supplies for air conditioning, cooking and sterilization, for example, was reduced by 6,200 MWh, or 72 percent. This is equivalent to the thermal energy consumption of about 350 single-family houses. Air conditioning systems for areas other than operating or intensive-care units now start heating only when outdoor temperatures are 2° C. However, before then, a new heat-recovery system has extracted enough energy from the exhaust air that additional heat generation is unnecessary.

Load-demand heat supply represents a further major source of energy savings. New highly efficient circulating pumps enable some 50 MWh of electricity to be saved annually. Upgrades to the heating circuit control system enable lower temperatures in rooms not used at night, saving about 5,000 MWh, or 50 percent of previous levels. This is equivalent to the energy consumption of about 280 houses.

The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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Highlights

- Customized 5.2 million euros modernization of building technology equipment and automation technology without the need to invest capital
- Guaranteed energy savings of 520,000 euros annually during the entire contract period
- Energy services with monitoring and controlling to ensure the guaranteed energy savings
- Contribution to climate protection by reducing polluting CO₂ emissions by 4,130 tons
- Savings of more than 25 percent of primary energy earned the hospital the 2008 “BUND Gutesiegel” award.