



SIEMENS

Solutions for Hospitals

St. Joseph Hospital, Berlin-Tempelhof

Modernizing energy systems for a green hospital –
financed through efficient Energy Saving Performance Contracting.

St. Joseph Hospital, operated by Katholische Wohltätigkeitsanstalt zur heiligen Elisabeth, a Catholic charity, is a high performance, innovative medical center for central priority care with 475 beds, a staff of approximately 1,100 and 60,000 m² of space. To ensure the best patient care possible, the hospital trust continuously adapts the facility to the latest requirements of modern medicine.

Investing in new technologies, financed through savings

The Katholische Wohltätigkeitsanstalt zur heiligen Elisabeth, in its capacity as trustee of the St. Joseph Hospital in Berlin-Tempelhof, hired Gegenbauer Health Care Services (GHC) in 2007 to manage the operation of the building technology installations. According to GHC estimates, more than € 3 million were needed to overhaul the existing installations and cut both energy consumption and CO₂ emissions. To ease budgetary pressure, the hospital trust decided to go with Siemens' modernization and financing concept known as Energy Saving Performance Contracting.

Energy Saving Performance Contracting from Siemens

The winning arguments of this concept were primarily its interdisciplinary approach, numerous references with over 1,000 Energy Saving Performance Contracting projects worldwide as well as a financing scheme tailored to the customer's

specific needs, and a highly customizable contract. The building technology installations at St. Joseph Hospital are currently being upgraded under a 15-year contract using energy-efficient components, solutions, and control concepts:

- Contractually stipulated energy savings target per year: € 325,000 or 24% less energy consumption than in 2007 (baseline)
- Guaranteed energy savings: more than € 4.8 million over the term of the contract, based on energy prices in 2008 (heating oil) and 2009 (electricity)

Improved image as an additional benefit

Once all work has been completed, solid savings have been achieved and BUND certification as an energy-efficient hospital (Energiesparendes Krankenhaus) has been attained, the hospital trust's sustainability requirements will be documented publicly, thereby adding climate protection to St. Joseph Hospital's reputation for excellent medical and patient care.

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Reliable execution – one partner for all services, offering a high level of expertise and many years of experience with comparable projects.



Contractually defined measures

To safeguard the contractual energy saving goal, the following tasks were specified:

- Modernize the drinking water heating installation and optimization of the hydraulic system
- Optimize the ventilation installations by installing a high-efficiency heat recovery register in the central exhaust air system; replace the ventilator motor (preventilator) with a high-efficiency motor; and install a digital power controller with impeller fixing at top efficiency
- Replace three old refrigeration machines with a turbo liquid cooling set as a refrigeration-only machine
- Shut down the central refrigeration network during the heating period; supply the needs of year-round refrigeration consumers (CT, ORs) from decentralized cooling units
- Hydraulically balance the different heating networks, install high-efficiency recirculation pumps and replace old thermostat valves with differential pressure-controlled mini combi valves
- Optimize the compressed air supply

- Replace the old control system by setting up the new DESIGO™ building automation and control system with approximately 2,500 data points; many cables, sensors, and actuators of the old installation will be reused
- Add 300 water, heat, and power meters to the building automation system for energy monitoring and energy controlling
- Lighting: upgrade or replace the conventional ballasts and T8 lamps with high-efficiency T5 technology from Osram

Save through selective control – without sacrificing comfort

GHC and Siemens work hand in hand to implement professional monitoring and controlling. This means that GHC handles technical building management and provides Siemens with data for energy management. All energy readings are structured and documented via the EMC (Energy Monitoring & Controlling) system and evaluated by operating personnel. Deviations from normal consumption, leaks, and defective components are identified immediately – and can therefore be corrected quickly. The EMC data is also used for ongoing process optimization.

Highlights

- Secure financing through guaranteed savings of more than € 4.8 million and a defined annual savings goal of 24% over baseline
- Active climate protection by reducing CO₂ emissions by approximately 1,300 tons per year
- Siemens' involvement in the certification process to achieve the BUND seal of quality for energy-efficient hospitals (Energiesparendes Krankenhaus) and the EU GreenBuilding initiative

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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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