



Energy performance class A in building automation

Impressive energy savings and lower CO₂ emissions thanks to intelligent applications in the supply of heating and cooling energy.



Considerable energy cost savings were achieved in this building – within an attractive payback period, by installing a DESIGO™ building automation and control system with energy performance class A.

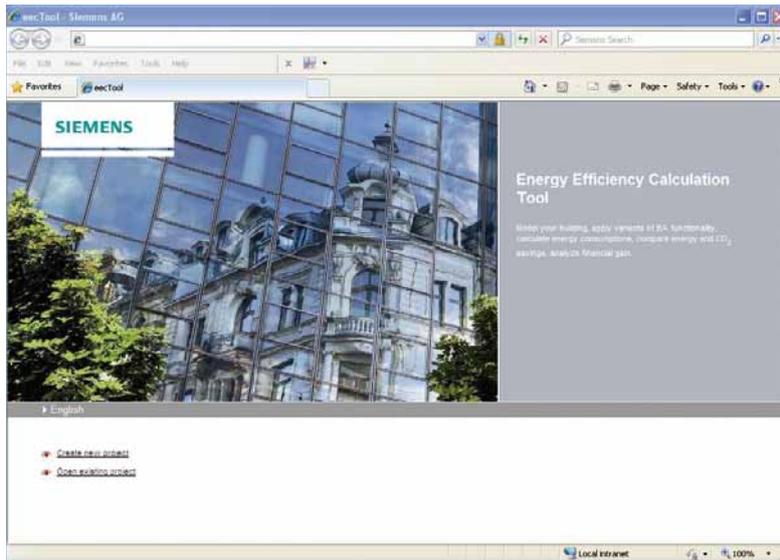
■ The building

The office building was constructed 25 years ago and has 6 floors. With a length of 67 meters and a width of 21 meters, this represents a total energy reference area of 7,700 m². The main front of the building faces south. The double-glazed windows cover 35% of the building's front. Energy consumption amounts to 39,150 liters of fuel oil for space heating plus 79,000 kWh for cooling and auxiliary energy.

■ Energy-efficient applications

The proven individual room controllers RXL with presence detectors, window switches, and time schedules are networked with the primary automation stations and now offer the following extra functions:

- Optimized start/stop control
- Consistent demand control
- Pump control with variable speeds
- Complete interlocking of heating/cooling
- Optimized control of heat and cooling generation plus recooling



■ Validation

In a first step, the current energy consumption of the building was determined. Additional calculations made with Siemens' EEC Tool (Energy Efficiency Calculation Tool) delivered the following energy consumption figures for an energy-optimum solution:

Fuel oil consumption	11,200 liter
Electricity	38,000 kWh

This represents a reduction in consumption of 32%, resulting in cost savings of 12,800 EUR on the basis of present energy prices.

■ Payback period

The building's energy infrastructure was upgraded together with the renovation of the interior spaces. This means that installation and connection of the individual room controllers including their networking with the new primary stations were an easy job. The investment costs were as follows:

Automation components	43,000 EUR
Installation and wiring	14,000 EUR
Commissioning (su/wi)	11,000 EUR
Total costs	68,000 EUR

The payback period without deduction of accrued interest and without inflation is ca. 5 years.

■ Optimized operation

Since the plant was commissioned during summer- and wintertime, it was possible to create a solid basis for sustained energy savings. To ensure long-term energy efficiency, the building's facility manager received in-depth training, enabling him to make full use of the available building automation functions such as setpoint and time schedule readjustments and energy evaluations.

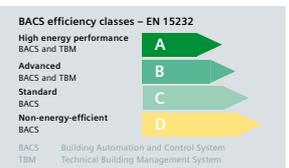
■ All parties involved fully satisfied

The savings predicted according to EN 15232 and calculated with Siemens' EEC Tool were fully confirmed.

Thanks to a continuous and detailed flow of information plus the distribution of an energy efficiency guideline, the building users fully accepted the approach. Also, the owner of the building is very pleased that this measure pays off in such a short time.

Highlights

- Instant energy savings and reduction of CO₂ emissions
- Short payback period thanks to significant cost savings
- Very satisfied building users thanks to demand-related control
- Energy saving functions and eu.bac-certified control loops for comprehensive energy efficiency
- Ease of operation and sustained system operation



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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