

Basle beats Kyoto. A win for both the environment and the client.

If you want to help to shape the future, you have to start at home.



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136 states have now endorsed the Kyoto Protocol by pledging to cut their greenhouse gas emissions by an average of 5.2% between 2008 and 2012. Many countries have committed to far greater reductions. Other countries – as well as home-owners and industrial firms – will fall short of the agreed standard. By setting an example with its own new industrial building, SAUTER is showing how emissions can be cut by half, one step at a time.

If you preach energy efficiency, you should also practise it. The project planners for SAUTER's new industrial building, which will house production, assembly and administration departments, have set an example by putting this principle into practice. The concept shows not only how energy consumption can be dramatically reduced, but also how the quality of comfort and usage can be substantially increased at the same time – and with no extra costs.

Based on the assumption that production and logistics were to remain at the same premises in Basle, there were four requirements to meet:

1 The old buildings have to be replaced, both as buildings and in terms of working technology. For example, the loading capacity of the ceilings and the fire protection standards no longer meet current requirements.

2 Maintenance costs are constantly rising due to the lack of insulation, and they have to be cut. This requires a complete refurbishment of the shell of the building.

3 A prestigious environment for customers, suppliers and employees must be created in keeping with the company's standing.

4 The transport and goods flow – the logistics – must be optimised and adapted to modern just-in-time processes.

Ultimately, there is sufficient potential for change here to justify thinking about a new building.

Reducing CO₂ emissions by over half within just 10 years.

SAUTER tackled its first in-house assignment in connection with climate protection and energy efficiency four years ago, when the heating system was refurbished and converted to a modern gas heating plant. This investment already cut the CO₂ emission figure by 32% to 34%. Now, SAUTER is preparing for the acid test with its new building in Basle: on completion in 2010, it will achieve significant energy savings and a further reduction of the CO₂ figure to about 55% as compared to the initial value in 2000.



Building to the MINERGIE® standard

In Switzerland, the voluntary MINERGIE® standard allows efficient energy utilisation and extensive use of renewable energies, accompanied by an improvement in quality of life, guaranteed competitiveness and a reduction in environmental pollution. MINERGIE® defines the goal in the form of limit values for energy consumption. There are many ways to achieve this. The important point is that entire buildings are regarded as integral systems: the building shell together with the building technology and services. After reviewing the plans and calculations, it emerged that SAUTER's new building would meet the MINERGIE® standard, so SAUTER will receive the coveted quality label once the building has been completed and occupied.

The conditions:

- Groundwater heat pumping system (using the groundwater to heat and cool the building).
- 100% provision of heating energy by heat pump up to an outside temperature of approx. -2°C.
- Excellent insulation for the building shell.

- Ventilation plant to ensure systematic air renewal (controlled ventilation with heat recovery).

Additional costs for the MINERGIE® standard:

- Virtually no additional costs are incurred for the building shell, because the strict heat conservation certificate for new buildings in Basle is almost equivalent to the MINERGIE® standard.
- The controlled ventilation would also have been required without the MINERGIE® standard, because it meets the minimum hygiene requirements as well as removing some of the thermal loads that arise.
- The selected method of cooling with groundwater is favourable in terms of energy costs. Furthermore, the construction site is favoured with a subterranean groundwater inflow.
- When cooling with groundwater, it is also advisable to use the heat pump to produce heating energy (combined use in summer and winter). Heat recovery units have to be installed for ventilation and air-conditioning systems even if the MINERGIE® standard is not applied.
- The additional MINERGIE® costs for the use of groundwater (well installation, pipes, heat pump, etc.) would be balanced out

by conventional added costs of a similar amount for the use of a chiller with a reverse cooler (but with this design, 100% of the heating energy would be supplied by the existing gas heating system).

Summary

Thanks to a well-insulated building shell and the use of groundwater as a renewable energy source, even more energy costs will be saved and the CO₂ emissions will be cut again, by about 20%, with monitoring and control by SAUTER EY-modulo, the very latest in building automation.

The higher surface temperatures and the renewal of the air will improve the indoor climate, increasing general comfort for users.

Optimising energy usage during operation was already considered in the planning phase. The SAUTER ECO¹⁰ energy-efficiency programme should continue to reduce consumption and operating costs on a sustained basis, one step at a time. In this way, the entire concept will ultimately help to preserve the building's value in the long term.