

Coop Forum in Karlstad saves energy

Coop Forum in Karlstad is now run in a substantially more energy-efficient way since Konsum Värmland took a number of measures focused on lighting, ventilation and reconstructed entrances. The various solutions led to an energy saving of nearly 1 800 MWh per year.

The Coop Forum superstore in Bergvik (formerly Obs! Bergvik) was a large user of electricity as it was electrically heated. Konsum Värmland wanted to reduce its high consumption of electricity, but as the store is located outside the district heating system in Karlstad it was difficult to improve the situation quickly. The project, which was initiated in 2000 under the Local Investment Programme (LIP) entailed replacing light fittings, installing a new system ceiling, new entrance solutions and CO₂ control of ventilation. The project is a successful example of improved energy efficiency using modern technology. The environmental effects have been better than expected.

POSITIVE ENVIRONMENTAL AND ECONOMIC IMPACTS

The replacement of light fittings with low-energy lamps and the installation of a new system ceiling mean that the lighting is now optimally positioned in relation to the interior of the superstore. It has led to a sharp reduction in the number of light fittings and consequently both an energy saving and a financial saving. The customer entrances were changed from automatic sliding doors to revolving doors and high-speed doors were installed in the warehouse section. As cold outdoor air no longer flows into the store, there is a good energy saving and a clear improvement in the working environment.

Photograph: Konsum Värmland



The CO₂ control of ventilation ensures that air turnover in the store varies according to the number of people present. This optimisation results in a large energy and environmental saving.

- The total energy saving from the actions taken is 1 793 MWh/year
- Lighting 674.6 MWh/year
- Revolving entrance doors 218.7 MWh/year
- CO₂ control 900 MWh/year

Other positive effects of the project are a decrease in the consumption of fluorescent tubes and the fact that the new lighting has a flicker-free light that provides a better working environment.

A new energy centre was built in 2002 and today includes CO₂ control. The new energy centre is operated with ammonia, with cooling and heat taken from nearby rock. As the store was located outside the district heating network, a decision was taken to drill for geothermal heat and consequently stop electric heating. The energy centre has not been financed by LIP grants.

POTENTIAL AND FUTURE BENEFIT

Shops and superstores are a large and growing sector in Europe and globally. There is great potential for energy improvements through collaborative measures for lighting, heating, refrigeration and ventilation.

WHY BEST PRACTICE

The project has led to significant energy savings, equivalent to the energy consumption of around 90 normal detached houses. Modern technology such as carbon dioxide-controlled ventilation has been introduced. The working environment has been improved by both reduced inflow of cold air and flicker-free light. There is significant potential for dissemination.

FOR FURTHER INFORMATION

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Contractors

Värmlands Portservice (high-speed doors),
Siemens (control), Nokalux (light fittings),
Boon Edam (carousel), FläktTeknik (ventilation),
Nordisol (system ceiling), YIT , (electricity)

Further information on Best Practice

www.swedishepa.se/bestpractice
www.naturvardsverket.se/mir

LIP Karlstad 2000

Action 04a. Konsum Värmland OBS
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Grant: SEK 1.2m

