

Reduced consumption of electricity at Sundsvall hospital

New light fittings at the hospital have contributed to reduced electricity consumption, a better working environment and a better hospital stay for the patients.

With support from the Local Investment Programme (LIP), Västernorrland County Council implemented two energy-saving projects over the period 1998–2002. Among other things, light-efficient and electricity-efficient fittings were installed at Sundsvall Hospital and in other county council properties in Sundsvall. Altogether nearly 10 000 fittings were replaced by more environmentally friendly fittings, and electricity consumption decreased by 3 482 MWh/year. These projects are successful examples of measures that have reduced energy consumption and improved patient comfort and the working environment. In addition, the need for cooling during the summer months has decreased.

POSITIVE ENVIRONMENTAL AND ECONOMIC IMPACTS

- Decrease in energy consumption of 3 482 MWh/year.
- Reduced emissions of carbon dioxide and sulphur dioxide.
- Reduced need for cooling in the summer.
- Weaker magnetic fields from fittings.
- Disseminated knowledge on environmentally friendly lighting.

Photograph: Mona Andersson



IMPLEMENTATION

Light-efficient and electricity-efficient fittings with HF ballasts and occupancy control have been installed in the project. A total of 9 795 fittings, mostly two-tube fittings, have been replaced by 6 650 new electricity-efficient single-tube fittings at Sundsvall Hospital.

The aim of the energy efficiency improvement was to save 2 690 MWh of electrical energy annually. The target has been met, in addition to which the fittings last around 2.5 times longer, generate 80 per cent lower harmonics and produce half as large magnetic fields.

Replacing the light fittings, combined with the use of occupancy control, was an unproven technique that has now become an established standard for projects in the county council. The county council is still taking measures for electricity-efficient lighting, and many study visits have taken place. As a result of the project, time is now spent on analysing operational needs. Different levels of lighting may be needed, for example, depending on occupancy, activity and time of the day.

POTENTIAL AND FUTURE BENEFIT

There is a large and obvious need globally to improve the energy efficiency of indoor lighting. The fact that many countries are phasing out incandescent light bulbs and other energy-guzzling lighting systems is driving the shift in technology in the area of lighting, along with the introduction of various kinds of demand-based control. There is great potential for similar projects and this potential is transferrable to other county councils, municipalities or countries.

WHY BEST PRACTICE

As well as direct energy savings, the project has led to indirect positive environmental effects through lower cooling needs and a better working environment. The project has additionally meant reduced emissions of carbon dioxide and sulphur dioxide and that previously unproven good environmental technology has become the normal choice of technology in a large organisation.

FOR FURTHER INFORMATION

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The project on the Internet:
www.lvn.se/energyfactor2

Project planner:
Ramböll elteknik AB in Sundsvall

For further information on Best Practice
www.swedishepa.se/bestpractice
www.naturvarvsverket.se/mir

FACTS
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