Environmentally friendly lighting in Härnösand

At Härnösand Hospital, existing lighting has been replaced with new energy-efficient lighting technology, and the quality of light has been improved at the same time. The result shows better environmental effects than expected. Västernorrland County Council now provides lighting that is both more environmentally friendly and cost-effective.

The Västernorrland County Council project Electrically Efficient Lighting in County Council Premises is a successful example of energy efficiency improvements by simple means. The project was concerned with improving and renewing the lighting in county council premises, for example culverts and departments at Härnösand Hospital, the county council offices and healthcare centres.

By replacing the old lighting with more energy-efficient lighting and installing occupancy control which is activated by people moving around in the premises, success has been achieved in reducing the energy consumption of lighting by around 60–70 per cent. As the new lighting also generated less heat, the cooling need has also been reduced in summertime. The project was implemented in 1998 and contained technology that was new at the time with new types of fluorescent tube (T5). The project took around six months from the start of planning until all the lighting had been dealt with.

The effects of the measures include reduced flicker, elimination of visible flashing and stroboscopic effects, lower harmonic currents and a weaker magnetic field. Nor do the fluorescent tubes need to be replaced as often, which requires less labour and is cost-effective.

**POSITIVE ENVIRONMENTAL AND ECONOMIC IMPACTS**

- Decrease in energy consumption of 450 MWh/year
- Reduced CO₂ emissions
- Reduced need for cooling in the summer
IMPLEMENTATION

When the work was initiated it was something of a pilot project. Västernorrland County Council tested what at the time was unproven technology with new types of fluorescent tubes. It involved taking a risk, as it was not known how long the technology would last. However, the result shows that the new fluorescent tubes have a far longer life than the suppliers guaranteed, which has also meant reduced costs in terms of working time and materials for tube replacement.

An important lesson learnt is that the planning takes time and that plans have to be endorsed by staff who spend time in the environment concerned every day. A dialogue is required in which patterns of movement are examined, for example how night staff work and move around the premises. This principally applied to the control of lighting. Lighting controls have sometimes had to be adapted afterwards when something has not worked optimally. Thorough preliminary work is of the greatest importance to save both time and money at the stage of implementation.

POTENTIAL AND FUTURE BENEFIT

There is an extensive and clear need globally to improve the energy efficiency of indoor lighting. The fact that many countries are starting to phase out filament bulbs and other energy-guzzling lighting is driving a shift in technology in the area of lighting. This project has been a pilot project that has already been emulated elsewhere. The project’s experiences of implementation aspects such as planning and studies prior to the replacement of light fittings can in all probability be generalised to other similar projects.

WHY BEST PRACTICE

As well as significant direct energy savings, the project has led to indirect positive environmental effects through lower cooling needs and a better working environment. The financial outcome has been better than expected. The project has already been emulated elsewhere. There is great potential to create similar projects that involve not just modified lighting technology but also information activity, user studies and lighting planning.

FOR FURTHER INFORMATION

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