

Bella Center

Schneider Electric reduces CO₂ emissions by 1150 tons at the site of the 2009 UN Climate Change Conference



CUSTOMER BENEFITS

- Less temperature fluctuation
- Better air quality
- Permanent lighting regulated according to need and light penetration
- Secure and safe environment
- Energy optimisation pays for a better indoor climate
- Prepared for environmental certification
- Future-proof operational savings
- Enhances environmental and climate-friendly company profile

PROJECT AT A GLANCE

Project Type

Energy, indoor climate and technical facility management

Location

Copenhagen, Denmark

Size of building

122,000 m²

Applications

Lighting

Ventilation

Cooling systems

Circulation pumps

Security & access control systems



Bella Center on target to achieve its own climate objective:

Reduce CO₂ emissions by 20%

The Bella Center—Denmark's premier exhibition and conference venue—has succeeded in cutting its CO₂ emissions prior to the forthcoming UN Climate Change Conference in Copenhagen, scheduled for December 7-18, 2009.

The reduction in CO₂ emissions has an immediate effect on their bottom line, with an estimated annual savings of more than €268,000. The center will recover its €2.4 million investment in green technology in less than 8 years. To put their achievement in perspective, the elimination of 1,150 tonnes of CO₂ emissions is comparable to the emissions produced from driving 7 million km in a car (calculated on the average emissions of new cars in 2006).

The ambitious target is met through a partnership with Schneider Electric, Bella Center's energy management specialist.

"We decided to award the contract to Schneider Electric which, as an ESCO company, specialises in energy optimisation and indoor climate. Following an in-depth analysis of Bella Center's energy consumption, we realised that we needed to prioritise our efforts to enable us to focus on maximising energy savings and, therefore, reduce CO₂ emissions in the most efficient way possible."

Technical Director,
Kristian Ortvig

Kristian Ortvig emphasises that this project is part of their larger long-term environmental strategy aimed at reducing energy consumption and improving the indoor climate for visitors and staff. "At the same time, the project had to be tightly managed with minimal inconvenience to visitors and staff. Schneider Electric, of course, has the necessary experience from other projects," Kristian Ortvig says.

After consulting with Schneider Electric, Bella Center decided to focus on energy consumption. In particular, they upgraded ventilation and cooling systems, replaced circulation pumps and upgraded thousands of light fittings. New fittings and energy-saving light sources are now regulated individually, according to weather and natural light conditions, whereas previously, artificial lighting often competed with the sunlight in the large Center Hall.

Better indoor climate

As the cost of a complete energy solution for the Bella Center's 122,000 m² would amount to approximately €6 to 8 million, it was decided to proceed in stages. This approach enables the Bella Center to continue to service its more than 1 million annual visitors and allow staff to work with minimal disruption.

By December 1, 2009, the project will have eliminated approximately 14% of CO₂ emissions from the Bella Center's buildings and activities. In addition, the energy savings achieved through the staff's focus on environmental issues raises the total reduction in CO₂ emissions to 20%.



Staff are motivated and better informed about environmental issues through the "Bella Center Greening" project, which according to Kristian Ortvig, is crucial in order for the Bella Center to obtain international environmental certification and achieve a 25% reduction in CO₂ emissions by the end of 2025.



"International customers are increasingly asking about our environmental policy before making decisions," Kristian Ortving says. "This is why intelligent control of energy and the indoor climate makes good business sense. At the same time, it's a sound long-term investment because a good indoor climate and maximum comfort is a real sales argument that will apply long after the Climate Summit at the Bella Center in 2009 is over."

The Bella Center's indoor climate is significantly improved, particularly in the large glass-roof exhibition halls, which were previously subject to considerable temperature fluctuations and differences in light intensity. Interior solar film now protects against heat radiation and light in two of the halls. As this reduces the ultra-high temperatures under the roof, lower cooling costs pay for most of the expenses in respect to the improved indoor climate.

The environment is good business

Kristian Ortving sees the Schneider project as part of a general environmental policy, in which a more energy-friendly indoor climate is a significant decision factor for customers when choosing venues for future events.

Financial Results

- Bella Center will achieve annual savings of approximately €268,000
- The Schneider Electric project totals approximately €2.4 million, with an expected cost-recovery period of less than 8 years.
- By installing new permanent lighting, Bella Center will save 300,000 kWh annually.
- The new circulation pumps offer energy savings of between 30-50%.

The solution

Schneider Electric is the appointed turnkey contractor for all technical solutions concerning lighting, ventilation, cooling systems, energy management and the switch to energy-saving circulation pumps.

Lighting

1756 new fittings and 5268 energy-saving lighting tubes plus control systems in three halls and in the Center Hall.

Ventilation

- Motors and ventilators to be replaced.
- Frequency converters to be installed for managing airflow, according to requirements.
- Heat recirculation system.

Pumps

Replacing 107 circulation pumps with energy saving pumps from Grundfos. The replacement will be concurrent with the upgrading project in order to minimize disruption.

Energy management

- LON cards to be installed at all electricity and energy meters for remote reading and control.
- Energy consumption to be monitored by TAC Vista FM (Energi).

Window screening

Interior 3M solar film



The results

By December 2009, Bella Center will have reduced its annual CO₂ emissions by 20%--from 8,542 tonnes (in 2007). This equates to a reduction of 1,150 tonnes CO₂.

Indoor climate

Solar film reduces sun penetration by 66% This reduces energy consumption for cooling, and reduces temperature fluctuations, which in turn, benefits the indoor climate. The ventilation system enhances air quality by recovering heat from catering kitchens, rather than recirculating the air.