



SLICING ICE RINK OPERATING COSTS FOR BOTTOM-LINE BENEFITS

CASE: HERNING ICE RINK

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Adsorption dehumidification rolls back ice rink operating costs

WATCHING EXPENDITURE

The Kvik Hockey Arena in Herning in the west of Denmark is a powerhouse in Danish ice hockey. It is the home of many-time Danish champions and medal-winners the Blue Foxes, and their ice rink has to provide top-quality facilities at all times. A key part of this is controlling the humidity of the air inside the arena, which houses both the main rink and a training rink – each with its own dehumidifier.

As a professionally run business unit, the arena also has to keep a constant eye on all forms of expenditure.

FOCUS ON COSTS

As part of this focus on operating costs, the arena owners called in experts – Cotes and a company of energy consultants – to take a critical look at energy consumption in the arena's two separate rinks.

One of the key findings was that the existing dehumidifier system was run-

ning solely on electrical power, which in Denmark is the most expensive form of energy. Furthermore, the dehumidifier in the main rink was running non-stop round the clock – regardless of requirements.

The big conclusion was that a radical re-think of the humidity management systems would provide the largest possible savings in the arena's overall operating costs.

RECYCLING INSTEAD OF CONSUMING

Cotes had previously supplied a smaller dehumidifier for the Blue Foxes' training rink, and was able to point out that an ideal alternative source of energy was available – at virtually no cost. The waste heat from the compressors in the ice freezing systems could easily be recycled to power state-of-the-art humidity management systems.

Rink manager Jørgen Poulsen was now able to see an opening for major savings in his annual operating budgets.

REPLACING AND REFURBISHING

Experts from Cotes proposed a two-fold solution – replacing the expensive-to-run old dehumidifier in the main rink with a Cotes CRT9000EV unit, and rebuilding the existing Cotes CRT9000E unit in the training rink.

The new Cotes CRT9000EV dehumidifier is built to use waste thermal energy recovered from the main heating and cooling plant. Cotes calculations show the dehumidifier is unlikely ever to operate with loads in excess of 60% of its total capacity, which means it will only use this cheapest possible source of energy, and not need to use expensive electricity for air regeneration. The new Cotes unit uses sensors to determine the dew point at ice level, and is fitted with a special DH50 controller for ice rinks, designed to make operation supremely easy.

The arena's existing CRT9000E has been rebuilt so it too is controlled by dew point and not relative humidity. Even more

importantly, it too will now use waste energy from the rink cooling plant for air regeneration.

SERVICE MAKES A DIFFERENCE

According to Jørgen Poulsen, one of the big drawbacks of the previous installation in the main rink was that there was no service contract, which meant no post-installation follow-up.

This changed completely with the new Cotes installations. Once a year, a Cotes technician replaces the filters, and checks and adjusts both dehumidifiers, making completely sure the Kvik Arena provides the exact conditions the Blue Foxes want. When the dew point is properly adjusted, the arena now makes big savings on one of the biggest expenditure items on its budget.

MAJOR COST SAVINGS

The new installations were brought on line in the summer of 2010, and Jørgen Poulsen already reports savings of up to

€6,700 a month on the arena's energy costs. Cotes calculations indicate likely overall savings on direct operating costs of close to €32,600 a year.

A building management system from another supplier gives Jørgen Poulsen a constantly updated picture of the new system's energy consumption. For him, this translates directly into savings on the operating budget for this high-profile Danish ice rink.

SPOT-ON RESULTS

In Jørgen Poulsen's opinion, the dehumidification results are spot on. "The dew point and levels of humidity are exactly as we want, and it only takes me a few seconds to undertake any small manual adjustments needed, based on my experience of hall conditions and event expectations."

He reports no condensation on windows or any of the arena's structures – which also bodes well for maintenance and repair budgets.

"For us, this has been a real success story," he says.

RECYCLING ENERGY GIVES NEW OPPORTUNITIES

The Blue Foxes have seen what is possible with Cotes humidity management systems using recovered thermal energy to control the indoor humidity environment.

The major savings that this makes possible open up for ways to improve the facilities, service and comfort the arena can provide for users – and their families and other ice hockey supporters.

When heat is available virtually free of charge, there are big opportunities for reducing both operating costs and service quality in modern ice rinks and other leisure facilities.





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