CO_2 REDUCTION
ENERGY SAVINGS OF MORE THAN 50% AT THE ODENSE UNIVERSITY HOSPITAL

AN INITIAL 35 FANS REPLACED

The 280,000 m^2 floor space makes the Odense University Hospital one of the largest heated areas of the Danish hospital service. The total energy consumption for electricity, water, and heating is above 100 mill. kroner per year. Within this, the expenses for ventilation are by far the largest expenditure item in the energy field.

This has led to the completion of the first stage of replacing the old fans. So far 35 fans have been replaced. These new fans still work in conjunction with the older ventilation systems that were installed in the 1950s and 1960s – yet the savings have been significant and immediate.

"In our experience the ROI is shorter the bigger the fan is, and we have seen that the ROI is down to less than one year for our ZerAx fans," says Jørgen Søfeldt, who is the functional manager of plumbing and HVAC at the Odense University Hospital.

- 9% of Denmark's total electricity consumption is used for ventilation
- ZerAx® fans may save 1,000,000,000 kWh a year
- Possible reduction of 449,000 tonnes of CO_2 emission

EFFICIENCY RATES OF ABOUT 90%

The old fans have had efficiency rates of as little as about 40%, while the new fans offer around 90%.

They are also so silent that it has been possible to remove the noise locks on the ventilation system, which has reduced the resistance further.

"On paper there are fans that are cheaper to purchase than Novenco's. But if one calculates the total consumption for the entire period, during which we expect to use them, it looks completely different. We have said that we want the product that offers the best efficiency rate. This means, that apart from the energy saving, we also want to be able to incorporate the fans in our existing ventilation system without problems, and service and production guarantees are also important," says Jørgen Søfeldt.

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FACTS:

- 34% REDUCTION OF THE ENERGY CONSUMPTION
- 402 TONS REDUCED CO_2 EMISSION PER YEAR
- ROI OF DOWN TO 1 YEAR

CONTINUOUSLY INCREASING DEMAND

The ventilation system of the old university hospital was an on-demand system. For example a surgical department used far less ventilation than offices and the demand was very different for summer and winter.

Generally, the demand was continuously increasing because the capacity of the hospital has been continuously increased over the years. This has put the 60 year old ventilation system under huge pressure, but the pressure and the risk of breakdowns has been reduced significantly with the far more energy-efficient fans.

SAVINGS WITH SHORT ROI

Like many others, the Odense University Hospital makes use of the possibility of converting the CO_2 reduction into money through the energy companies. Instead of receiving cash money the company has, however, decided to spend the money for energy consultants, who give advice on how to obtain further savings on the budget.

There are several indications that further replacement of fans will be prioritised due to the short ROI.

"Knowing that we are moving to a new university hospital in 2018 we are wary of making investments that are too long-term and have too long ROI," says Jørgen Søfeldt.

"We have noted that with each fan we replace the electricity consumption drops significantly – sometimes with more than 50% for the individual plant" says Jørgen Søfeldt.

Old fans installed in the 1950s and 1960s

ZerAx fans installed at the Odense University Hospital