

Building & Industry

NOVENCO

SCHAKO Group

Aarhus Concert Hall – more than 170 tons less CO₂ each year

The Aarhus Concert Hall now reduces its environmental impact with more than 170 tons of CO₂ annually thanks to its upgraded ventilation systems from NOVENCO®.

History of the concert hall

The Aarhus Concert Hall opened in August 1982 and expanded in 2007 with an additional 17.000 m². Today, the building covers more than 33.000 m² and includes 500 rooms. Each year, it welcomes 700,000 visitors and hosts more than 1,000 events.

Reducing energy consumption

With the air handling unit type Climaster ZerAx®, the concert hall cuts energy expenses by more than 67,000 Euros and reduces CO₂ emissions by 170 tons/year.

NOVENCO delivered more than 12 air handling units during the 2011 summer retrofit. The delivery formed part of a major energy upgrade where NOVENCO designed the Climaster ZerAx specifically for the project. The ZerAx fan plays

a key role in reducing energy use significantly compared to similar products.



NOVENCO ZerAx inside – delivering quiet, efficient and reliable air handling



Aarhus Concert Hall, Denmark

Minimum energy consumption and improved indoor climate

The major energy saving comes from replacing the original 12 ventilation systems. Since 1982, the old units have operated at full capacity during events with an air change of 150,000 m³/h. The Grand Hall alone received six full air changes per hour.

The previous systems had two settings — On or Off — meaning they used the same power whether the hall held 400 or 1,600 people. This resulted in decades of wasted energy.

The new systems eliminate this waste. Equipped with motor-speed regulators, air-quality sensors, and a rotor heat exchanger, they adjust airflow as needed.

Advantages of the new solution

The new ventilation systems circulate and renew the same air volume as the old ones, but with major improvements for both the audience and the energy performance of the building.

The system includes sensors and frequency control based on Climaster ZerAx, which features the NOVENCO ZerAx fan with fan efficiencies above 90%. Air quality is monitored continuously, allowing the system to supply fresh air only when needed — whether the hall is full or less populated. This reduces energy consumption.



Fresh air on demand with continuous air quality monitoring

Facts:

- 50% lower energy consumption per fan
- 50% lower energy consumption for all units combined
- CO₂ reductions of 170 tons/year
- Significantly lower sound levels