



Superb ventilation at Copenhagen Central Station

Shops and restaurants at Copenhagen Central Station cut power consumption by two-thirds by installing new energy-efficient fans in the old ventilation system.

It takes a good deal of creativity to save energy in a modern shopping centre housed in a 100-year-old concourse such as the Copenhagen Central Station. The job can't be done simply by adding insulation or closing doors.

As a result, the search for energy savings quickly fell on improving the ventilation in the shops and restaurants. Fitting a modern ventilation system into the cramped, old equipment rooms was impossible, thus leading to the decision to modernise the existing ones.

The old AC fans were replaced with ebm-papst EC fans and energy consumption measurements conducted before and after the refitting showed savings equal to what a new facility would have provided – at a lower price. The investment will pay for itself in less than a year.



As good as new

“The ebm-papst solution at the Central Station is superb,” says Property Manager Kim Jensen, who works for the company Steen & Strøm, which operates 16 shopping centres in Denmark, including the Central Station Shopping Centre with its approximately 20 shops and restaurants.

“Suppliers of finished ventilation systems can achieve similar savings, but the limited amount of space in the old equipment rooms under the train station make installing a completely new ventilation system down there impossible,” explains Kim Jensen.

“This is what makes ebm-papst’s solution so brilliant. What’s a ventilation system really made of? Just cabinets – and when you put new fans in the old cabinets, the result is in fact a completely new ventilation system.”

Quick, easy and inexpensive

Five fans were replaced at the Central Station in two days by three workers from the firm Energy & Environmental Engineering, which has done similar rebuilds elsewhere, e.g. in hospitals. Switching from AC to EC fans has led to direct energy savings of 66%, which means the investment will pay for itself in less than a year.

What’s more, an additional 10-15% savings were gained by reviewing and adapting the individual systems to the actual needs: Some were merged and others could be completely removed from use.

With the renovation of the existing ventilation system, combining the old and the new has won yet another battle at the Central Station. The advantages can definitely be felt when it’s time to pay the electricity bill.



FACTS: Accurate pre-and post-measurements for a specific system with 2 fans.
Energy consumption per. week:

Weekly energy consumption:	Before	After
Supply:	651 KW	296 KW
Extract:	631 KW	139 KW
Total:	1282 KW	435 KW

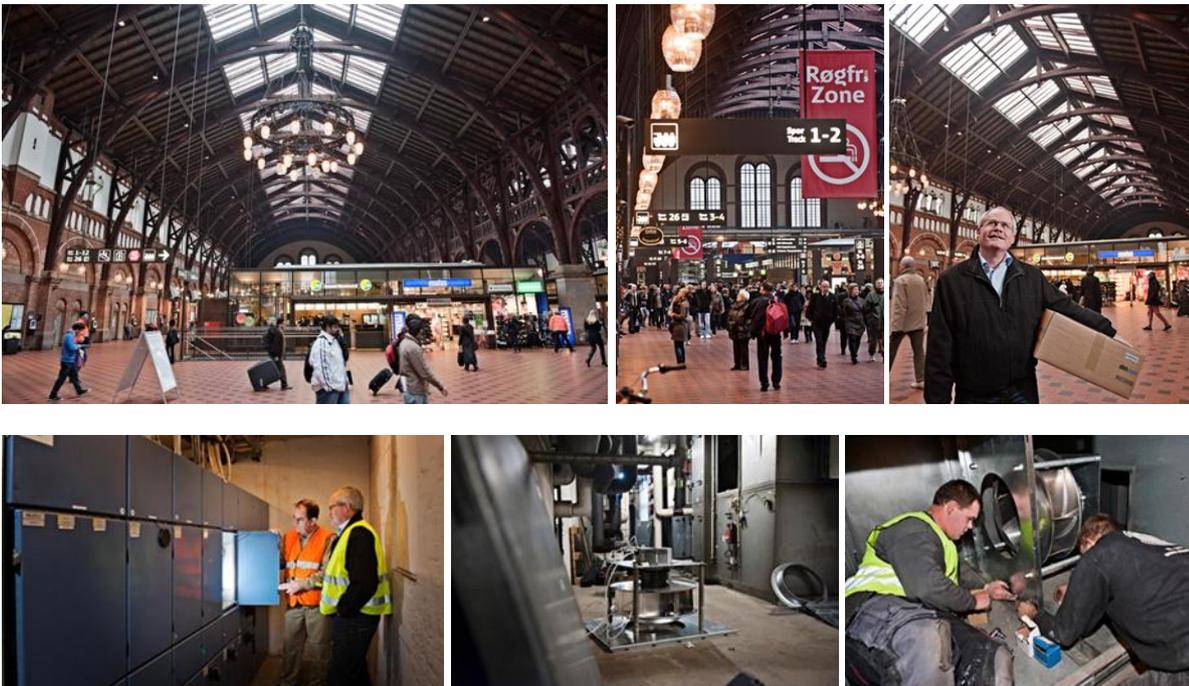
Weekly savings: 847 KW; annual savings: 44.044 KW = 66 %

FACTS: All restaurants and shops are ventilated from 2 equipment rooms.
Rebuilding the ventilation system and tailored adjustments have meant massive savings.
Parts of the existing system were merged or taken completely out of service.

Equipment room 1: Consumption reduced from 8-10000 KW per. month to 1700 KW for a savings of at least 78 %.

Equipment room 2: A total savings of approximately 40 %.

Download pictures in high resolution at www.ebm-papst.dk/?Cases:Hovedbanegaarden



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