



2

ESSMANN Case Study

Aeration, ventilation and improved utilisation of natural daylight

The extreme temperatures experienced in 2003 prompted Caritas Sozialwerk, a social services organisation, to install an aeration and ventilation system on its factory premises in Leipzig, Germany, and to improve the utilisation of natural daylight in the building. The existing arcade rooflight caused both unwanted dazzling effects and a considerable increase in temperature inside the factory in summer.

By contrast, thermal losses and draughts caused by the roof opening were characteristic of heating periods in winter.

The factory complex has an average height of 5.50 m and a floor area of 800 m².

An arcade rooflight measuring 2.50 m in width was installed in the ridge in 1994.

Since the employees primarily work at fixed stations in the existing premises and little machinery is used, the resulting internal thermal load is low.

ESSMANN complete solution



The old arcade rooflight caused dazzling effects and provided insufficient aeration and ventilation.

→ Project definition

- Reduction of external heat input in summer
- Improvement in ventilation
- Reduction in ventilation and heating costs
- Glare-free, good natural lighting
- Smoke and heat extraction in compliance with DIN EN 12101 part 2

→ ESSMANN Solution

ESSMANN decided to install an ESSMANN arcade rooflight with HDS protection. HDS protection is a special feature of arcade rooflights: A perforated aluminium sheet is mounted on the arcade rooflight to provide fall-through protection, hard roofing, and protection against the sun, hail, vandalism and break-ins.

ESSMANN all-weather finned ventilators ensure both ventilation and smoke and heat extraction, they also comply with all DIN EN 12101 part 2 requirements.

ESSMANN Case Study

Aeration, ventilation and improved utilisation of natural daylight

→ Customer benefits

- **Reduced heating costs**
Installing the new ESSMANN arcade rooflight improved the U value from 3.2 W/m² K to 1.8 W/m² K, generating massive energy savings and a considerable reduction in heating costs.
- **Less ventilation required**
ESSMANN HDS protection for the arcade rooflight reduces the energy input during the summer months by more than 70%. Less ventilation is therefore needed.
- **Aeration and ventilation, regardless of the weather**
ESSMANN all-weather finned ventilators can be used regardless of the weather. Even during heavy summer showers since water cannot enter the side flaps.



Perfect aeration and ventilation and best possible use of natural daylight (top)

Arched ESSMANN arcade rooflight type 940/10 with HDS protection (centre)

ESSMANN all-weather finned ventilators (bottom)

→ Result

Employees now have a bright hall and ergonomically-optimised work environment. The ESSMANN all-weather finned ventilators ensure excellent ventilation, regardless of the season or weather. The combined benefits of all components produce a well-balanced climate and prevent the building from overheating in summer and losing energy in winter. A definite all-round improvement in the energy balance.

Further information can be found at www.essmann.de

ESSMANN GmbH
Im Weingarten 2
D-32107 Bad Salzuflen

Telephone +49 (0) 5222.791-0
Telefax +49 (0) 5222.791-236
E-Mail info@essmann.de

Frankfurt branch office
Kurahessenstrasse 3
D-64546 Mörfelden-Walldorf

Telephone +49 (0) 6105.2090-0
Telefax +49 (0) 6105.2090-20
E-Mail nl-frankfurt@essmann.de

Augsburg branch office
Depotstraße 5 1/2
D-86199 Augsburg

Telephone +49 (0) 821.40805-0
Telefax +49 (0) 821.40805-55
E-Mail nl-augsburg@essmann.de

