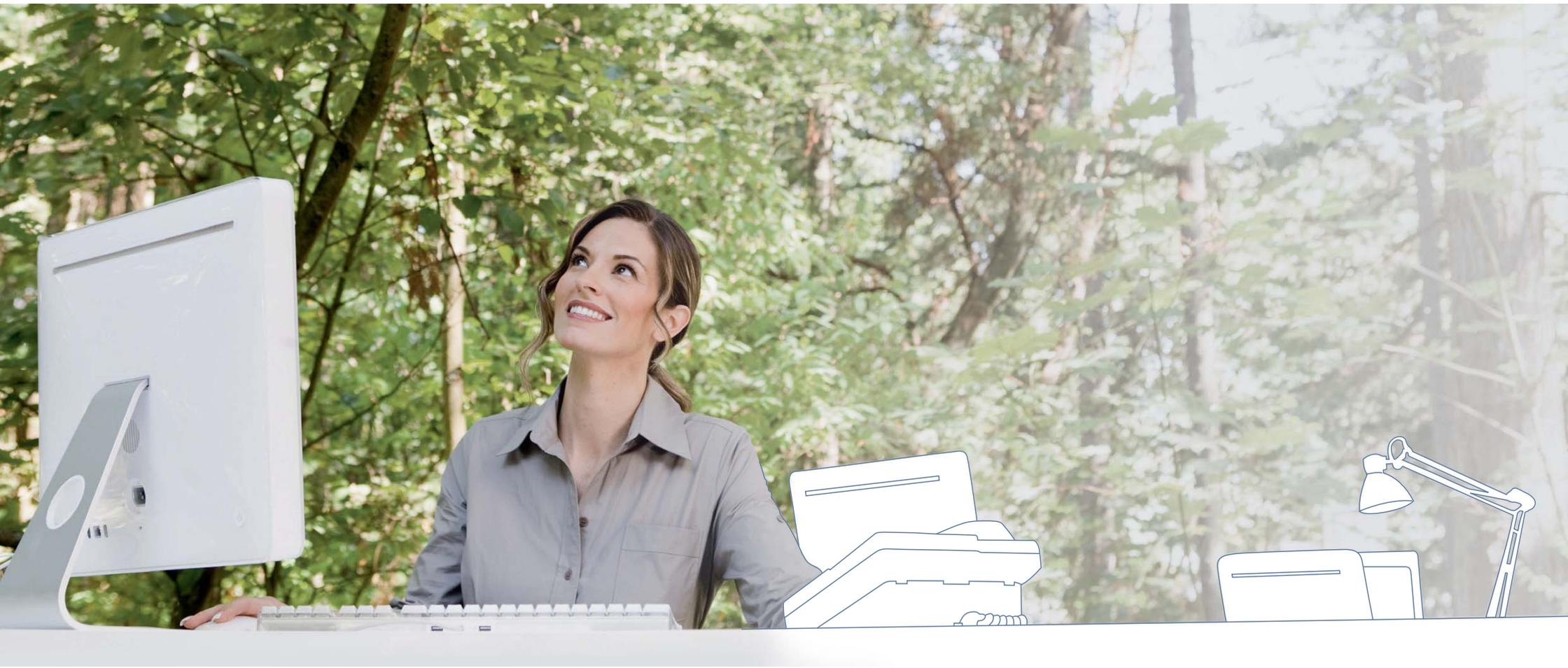


NATURAL VENTILATION IDEAL FOR PEOPLE AND THE ENVIRONMENT





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- 1 Ceiling diffuser in a ventilation system
- 2 Inside view of a supply air duct
- 3 Employee of a ventilation and air conditioning system maintenance company



MECHANICAL VENTILATION: ENERGY-INTENSIVE, HARMFUL TO THE ENVIRONMENT AND UNHEALTHY

Mechanical ventilation and air conditioning systems are widely used. Unlike controlled, natural ventilation, however, there are numerous drawbacks.

The systems require a lot of space, have a high energy consumption, and are therefore very expensive to sustain, especially in times of rising electricity rates – not to mention the high acquisition costs. The high energy consumption also has a negative impact on the environment – **almost 50 % of the worldwide primary energy demand is used to air condition buildings, producing the respective CO₂ emissions.**

For many people, the dry air in fully air conditioned rooms already creates health problems such as mucous irritation, respiratory problems, headaches, fatigue and a general reduction in performance – **the so-called Sick Building Syndrome.**

If the complex maintenance of ventilation and air conditioning systems is not performed regularly and properly on top of that this promotes the formation of germs, mould and other pollutants. These will then spread throughout the closed air conditioning circuit, are constantly inhaled and can result in serious health hazards.

INSPIRED BY NATURE INTEGRATED INTO THE BUILDING ENVELOPE

NATURAL VENTILATION: ENERGY EFFICIENT, ENVIRONMENTALLY FRIENDLY AND COMFORTABLE

Controlled natural ventilation uses natural, disposable resources and thermal effects. The high energy efficiency with the associated low CO₂ emission ensure a positive climate balance and high sustainability.

Inspired by nature and consequently integrated into the building envelope by us, the efficient, natural ventilation concept demonstrably allows for energy savings and increased comfort. Carefully planned controlled and natural ventilation creates an optimal indoor climate year round, and by contrast with mechanical ventilation systems only involves minimal investment- and operating costs.

Based on the smaller space requirement the entire system can be harmoniously integrated into the building architecture, thus also offering visual benefits.

Last but not least, natural ventilation also has a positive effect on our health. **It prevents the formation of mould and germs, thus minimising the risk of health impacts.**

Detailed information on the fundamentals of natural ventilation is also available from the "natural ventilation" expert group within ZVEI.



Climate change, diminishing resources, and rising energy prices are the challenges of the future. The solution lies in facades and roofs equipped with intelligent ventilation and smoke extraction systems.

Architects and facade planners for modern facade construction further prefer cleverly equipped, **puristic profile generations without visible distracting mounting- or drive components.**

This high standard is also a reason for us to continue to advance our technologies, setting a new generation of electric motor window drives into motion, which can easily be fully integrated into various facade designs and profile types whilst being virtually invisible.



USER PARTICIPATION



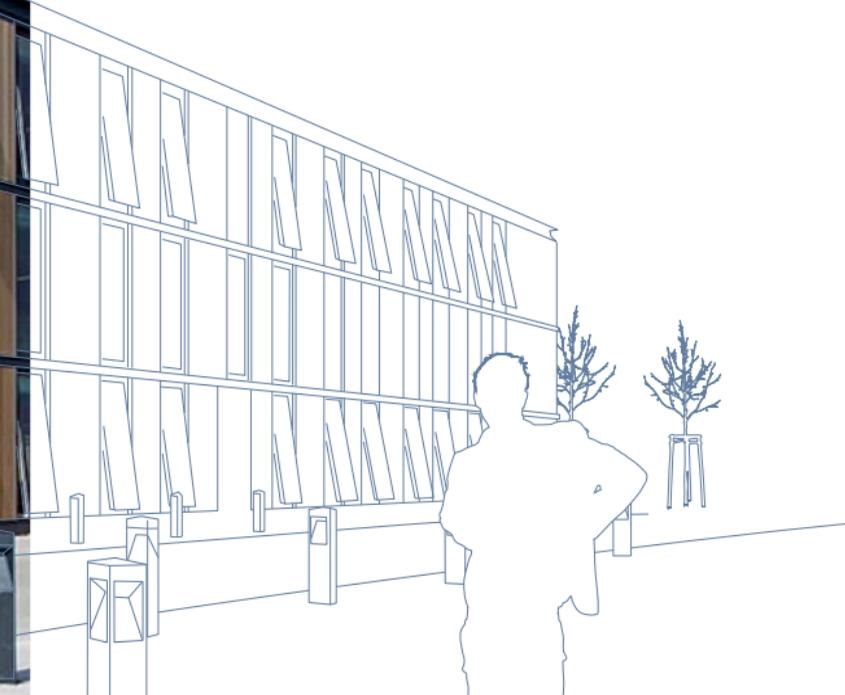
1 B&Q Headquarter, Southampton



NATURAL VENTILATION IN ADMINISTRATIVE BUILDINGS

The builder's and owner's economic interests are priority when constructing office buildings. Short construction times, low investment- and operating costs, and the effective reduction of energy consumption are key arguments.

Controlled natural ventilation is an important component in energy-efficient building air condition. **The human being as the user is the centre of attention, while the technologies have a supportive function.** For an optimal, natural ventilation concept, architects and expert planners should work closely with manufacturers already in the planning process.



AS LITTLE AUTOMATION AS POSSIBLE
BUT AS MUCH AS NECESSARY

1 Shopping centre El Corte Inglés, Barcelona

NATURAL VENTILATION IN SHOPPING CENTRES

Natural ventilation of buildings now ranks high in climate concepts targeting low energy consumption and high environmental compatibility. Even investors and operators of shopping centres bank more and more on controlled, natural ventilation for reasons of energy efficiency and a comfortable indoor climate. Hence saving approx. 200,000 kWh of electricity per year.

Controlled natural ventilation is also very effective in high outdoor temperatures. Optimised natural post-cooling is jointly responsible for a stable indoor temperature.



- 1 LGB administrative building, Landshut
- 2 Head office of Helsana-Gruppe, Zurich Stettbach
- 3 Klimahaus 8° Ost, Bremerhaven

PROJECT PARTNERS FROM THE BEGINNING

For more than 30 years we have been developing, projecting and producing system solutions for intelligent facade automation as well as smoke- and heat extraction systems and controlled natural ventilation. Meanwhile, we have implemented more than 1,000 different projects worldwide.

Intelligent building technology is key in climate concepts targeted at low energy consumption and high environmental compatibility. We offer an extensive reserve of competences and further combine traditional product development with integral systems and services. **The focus is on facade automation.**

Our microprocessor-controlled window drives manually or automatically open and close all windows in a building

through special controls and sensor elements based on needs. These interactive facades can respond to the situation inside the building as well as outside environmental effects, and even adapt to the individual user requirements. **Workers in spaces with natural ventilation feel more independent by controlling and co-determining their indoor climate.**

We will provide you with a customised and sustainable solution that guarantees the highest level of reliability and safety - after all, safety drives us.

STG-BEIKIRCH Industrieelektronik & Sicherheitstechnik GmbH & Co. KG

Trifte 89

32657 Lemgo

Germany

Tel.: +49 52 61 96 58-0

Fax: +49 52 61 96 58-66

E-mail: info@stg-beikirch.de

www.STG-BEIKIRCH.de

www.naturalvent.net

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