

ARTICLE

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**Window ventilation – a theme at the FENSTERBAU  
FRONTALE 2020**

For energy-saving new builds or renovations to improve energy efficiency, a more air-tight building envelope is a must. This necessitates a modification of ventilation characteristics that can be achieved most effectively by an autonomous (user-independent) ventilation system or integral window ventilation.

There are two systems on the market. Passive ventilation systems use the natural pressure differences between indoor and outdoor air for air exchange. In this case the air is controlled by small flaps that reduce air flow to avoid draughts, particularly in the event of high wind speeds.

Active ventilation systems use one or more fans to extract the used indoor air and bring in fresh air, often with an air preheater i.e. an integrated heat exchanger. Active systems frequently come fitted with filters to protect against particulates, pollen and insects and are therefore ideal for allergy-sufferers. However, for reasons of hygiene these filters do need to be serviced at prescribed intervals.\*

These kinds of ventilation systems are available from various leading window manufacturers or third party vendors and are either built into new windows in the factory or retrofitted by specialists during renovation projects. Passive systems can often be integrated into existing window frames with minimal time and effort.

**Some examples from current suppliers:**

[Schüco](#) offers an active system that meets stricter hygiene requirements and can therefore also be used in hospitals. This manufacturer also has other systems in its range that can be integrated into various window models as well as Schüco façade systems. Schüco at FENSTERBAU FRONTALE 2020: Hall 7 / 7-503.

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At FENSTERBAU FRONTALE 2018, Engelbert König, Head of Product Development at [Internorm International GmbH](#), Austria, was asked whether the decentralised in-window ventilation system exhibited by his company represented an important current and future trend. His response was: “The use of such systems will become more widespread and we still have the potential to increase sales in this segment. The applicable regulations originate from the central ventilation system environment and should be adapted for single room ventilation. This is a very topical issue for us and we also intend to adapt this technology to our other systems in future, because at the moment integrated ventilation is only available for PVC windows. We believe that every wet room should have mechanical ventilation that does not need to be part of an overarching ventilation concept, so the window is a suitable place for it. There is also no need for calculations and concepts for these kinds of individual ventilation functions; their essential purpose is simply to remove the damp air. This is an issue that receives far too little attention.” Internorm at FENSTERBAU FRONTALE 2020: Hall 5 / 5-123

Swiss company [Fentech](#) was showcasing its active window ventilation system as far back as FENSTERBAU FRONTALE 2006. With a heat recovery rate of 85%, the system is even suitable for use in passive houses. The module is installed to the side of the window and is in daily use in several hundred rental apartments belonging to a Zurich housing association. In 2010 the University of Lucerne confirmed that the device, which is fitted with a CO<sub>2</sub> sensor, has a noise level of just 25 dB. Fentech at FENSTERBAU FRONTALE 2020: Hall 7 / 7-307.

[Siegenia](#) offers a passive ventilator that is controlled by the humidity in the room. According to the manufacturer, it can be upgraded with optional sound insulation modules and uses the existing installation space so that there is no need to modify manufacturing processes for windows or lift and slide doors. Siegenia at FENSTERBAU FRONTALE 2020: Hall 4 / 4-215

[Regel-air](#) offers window rebate vents as fresh air inlets that can also be retrofitted to various window systems. The company's product range also includes manually adjustable sash overlap vents to increase air flow volume. Regel-air at FENSTERBAU FRONTALE 2020: Hall 6 / 6-419.

When asked whether the window is a suitable place for controlled ventilation, Peter Schober, Head of the Construction Engineering Department and Windows Unit at [Holzforschung Austria](#) (Austrian Forest Products Research Society), said: “I believe that a central ventilation system of the kind currently standard in the passive house is a practicable approach, but certainly not the only one. Decentralised systems offer advantages if they are controlled intelligently. But in many cases this intelligence is still lacking. Many years ago, the word was that if window manufacturers did not resolve the issue of integral ventilation in windows then the solution would come from the manufacturers of the air ducts. Unfortunately that is now what has happened, to the detriment of the window industry. Despite the fact that ventilation is actually the function of the window, the window industry has missed out on this opportunity. Window manufacturers have still not understood that they can add value, and set themselves apart from the competition, by providing a ventilation function in the window itself.”

The title of the block of presentations at the FENSTERBAU FRONTALE FORUM in Hall 3A on Wednesday 18.3.2020 from 10:30-14:00 is: “Ventilation, comfortable living and age-appropriate housing”. Information on the individual presentations will be available on the website from December: [www.frontale.de/en](http://www.frontale.de/en)

\*Automatic window openers are also available but are not covered here.



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