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Good air quality in schools

Realising energy efficiency and a comfortable indoor environment

Once a school building is intended to be modernised or newly built, the issue of ventilation dominates the discussion. What strategies and which systems are recommended for the respective schools? The BINE Themeninfo brochure "Ventilation in schools" (I/2015) provides an overview of the structural requirements, the various technologies, their optimal design and the energy balance. The acoustic situation in the rooms is another important aspect.

A class of 30 students produces about 2.5 kWh of heat and 500 litres of carbon dioxide (CO₂) per hour. These internal loads have to be removed by ventilation to prevent overheating and a poor air quality. Despite their considerable importance, studies show that knowledge about ventilation systems for school buildings has not yet sufficiently arrived in practice. This relates not only to the technology but also the communication between all stakeholders. The early integration of teachers and students in the planning process has a positive effect on the successful implementation of the ventilation technology.

The authors of the BINE Themeninfo brochure are Professor Runa Hellwig and Martina Hackl, who for many years have been respectively investigating ventilation concepts for schools at the University of Augsburg and the Fraunhofer Institute for Building Physics (IBP). The chapter on acoustic requirements was written by Dr Christian Nocke from Akustikbüro Oldenburg.

The BINE Projektinfo brochure, which can be obtained free of charge from the BINE Information Service at FIZ Karlsruhe, is available online at www.bine.info or by calling +49 (0)228 92379-0. The brochure cover and an additional image can also be downloaded from the press section in this web portal.

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