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Hotel utilises decentralised heat generation

Room-based micro-heat pumps reduce the risk of Legionella

Hotels spend a lot of energy in order to offer their guests the expected amount of comfort. Energy costs therefore account for five to ten per cent of the turnover. In order to combine high comfort with low operating costs, the developers relied on an unusual building services technology concept when converting a building in Munich to become a hotel. The new BINE-Projektinfo brochure entitled “New building services technology concept tested in hotel” (15/2017) presents the technical concept, the results of the monitoring and a survey of the hotel guests. What triggered the concept was the search for energy-efficient protection against Legionella.

The new technology concept therefore relies on decentralised micro-heat pumps that provide room-by-room space and domestic hot water heating for the hotel guests. All rooms are interconnected by a twin-pipe chilled water network. This balances out the heat and cold surplus between the rooms and serves as a heat source for the heat pumps. In a survey, the hotel guests rated the overall comfort as good. The new concept has proven itself, as evidenced by the high thermal performance factors between the system level and useful energy. However, in order to increase the competitiveness of the concept for future applications, the power consumption for the circulation pumps and ventilation systems needs to be further reduced.

The final energy demand of the building is low due to the well-insulated building envelope, which almost achieves the passive house standard. The hotel is located in a former residential building in the centre of Munich, which was renovated in 2011. It has 43 hotel rooms divided over six floors.

Rosenheim University of Applied Sciences was responsible for managing the monitoring and supporting the operational optimisation.

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 additional image material can also be downloaded from this web portal in the press section.

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