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Data centre heats offices

Lighting plays crucial role in the energy balance

The extension of Züblin's central office meets high structural and energy efficiency standards. The construction group was awarded the certificate in Gold by the German Sustainable Building Council (DGNB) for the extension. The BINE Projektinfo 6/2017 "Servers heat office buildings" presents the energy concept along with monitoring results for the new five-storey building.

The office building has low heat requirements, which are almost entirely covered by waste heat from the data centre. When this supply does not suffice, a combined heat and power plant in the neighbouring building provides the required thermal energy. With an average U-value of 0.4 W/m²K, the building envelope of the reinforced concrete structure reaches the level of a passive house. The exterior walls consist of prefabricated timber frame elements, which were transported to the construction site with pre-installed windows, solar shading and a sheet metal covering, and were installed there.

Lighting often plays an important role in the energy balance of highly insulated office buildings. This also applies to the Züblin building: the lighting sometimes consumed three times as much as assumed. Floor lamps at the workplaces were largely responsible for this. As soon as an office is occupied, it causes a base load of about 30 W. The final energy consumption for heating and cooling was slightly lower than previously calculated. Online surveys showed that the users were very satisfied with the thermal comfort and light conditions regardless of the season.

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 are also available for download on this web portal in the press section.

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