Pressinformation

BINE Informationsdienst

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Saving energy for discount stores

Concept combines coolant supply and heating

Customers entering the energy-efficient pilot supermarket will first notice the unusual amount of daylight in the sales area. Behind the scenes, there are many innovative ideas waiting to be discovered in the freezers, heating and ventilation systems and the lights. The BINE Projektinfo brochure “The supermarket of the future saves energy” (06/2013) presents a research project in Rastatt and the experience gathered over two years of operation. The aim of the project is to save one-third of the primary energy used in conventional shops.

A compressor pack with carbon dioxide which has been developed in-house, and which is coupled to borehole heat exchangers, provides cooling for food and a temperature-controlled indoor area. The focus of the project was the cooling system, which supplies all the freezers via a central compressor and which in so doing achieves high degrees of appliance efficiency. Daylight enters the sales areas through skylights in the roof. In order to prevent too strong irradiation of solar heat and light during the summer, which might have a negative impact on the quality of fresh goods, special sun protection patterns have been integrated into the triple glazing of the skylights. The concept also provides efficient ventilation and a well-insulated building envelope. In the third year of operation, the amount of energy consumed is coming close to the target levels.

The Fraunhofer Institute for Solar Energy Systems (ISE) has developed the concept and conducted the monitoring. The project was realised in collaboration with Aldi Süd and other partners. Supermarkets account for around one percent of greenhouse gas emissions in Germany.

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

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