Press Release

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Certificate for first Passive House supermarket in Germany

Innovative project in Hanover's zero-emissions residential area *zero:e park*

Darmstadt/Hanover, Germany. Although fresh food needs continuous refrigeration, achieving a low energy demand is still possible. This has been demonstrated by the first Passive House supermarket in Germany: In the pilot project, highly efficient equipment reduces energy consumption as much as possible while a well-insulated building envelope ensures that the waste heat generated by the refrigeration system is enough to cover space heating needs. Altogether, this Passive House supermarket promises 30 % in energy savings as compared to conventional supermarkets. The certificate attesting to achievement of Passive House criteria was presented on Saturday, at a conference of the Rewe Group in Hanover.

The new Passive House supermarket in Hanover, Germany. Photo: PHI

"This supermarket is exemplary," remarked Dr. Jürgen Schnieders of the Passive House Institute while presenting the certificate. Not only is it proof of the versatility of the Passive House Standard, but it also highlights the importance of building-use specific demands. In contrast to residential buildings, heating plays a relatively minor role in the energy balance of supermarkets. In such buildings, about 60 % of energy consumption results from cooling needs while another 20 % percent is due to lighting; the greatest potential for energy savings thus lies in these areas.

In Hanover, a priority was placed on technical devices with maximum energy efficiency. Many of the freezers and refrigeration units were specially developed for the new market in the *zero:e park* zero-emissions residential area. Compared to conventional supermarket lighting systems, the lighting system in this pilot project consumes only half as much energy while providing the same light output. Superior insulation makes active heating unnecessary in the winter and a rotary heat exchanger inside the ventilation system ensures heat recovery. In the summer, excessive waste heat is effectively channelled away from the building.

"All in all, grocery stores normally consume an extremely large amount of energy; in many cases, the costs for energy equal the net profit generated through sales," says researcher Schnieders, who consulted on the pilot project in the southwest of Hanover. Building to Passive House level results in a drastic reduction of energy consumption and is therefore an extremely attractive option for this type of building. Details on the subject will be presented by Schnieders and his colleague Laszlo Lepp at the International Passive House Conference to be held from 25 - 26. April in Aachen, Germany.

With a heating demand of only 12 kWh/(m²a), the Rewe supermarket, realised by the housing and property developers Meravis Wohnungsbau- und Immobilien GmbH, easily fulfils the criteria of the Passive House Standard. The supermarket, which first opened just over a year ago, is also an outstanding advertisement for the new *zero:e park*. The impressive building with its natural timber facade was designed by Hamburg-based architects, Spengler and Wiescholek. The ETH University in Zürich and Chalmers University in Gothenburg supported the development of the efficiency requirements for the individual components while Ostermeyer Architects played a role in the quality assurance process.

The pilot project was made possible through funding by the Hanover-based enercity-Fonds proKlima. The *zero:e park* zero-emissions residential area, in addition to the Passive House supermarket, will boast around 330 residential buildings also being built to the Passive House Standard. This district thus stands as one of the Beacon Regions in the EU project PassREg (*Passive House Regions with Renewable Energies*).

The new supermarket is part of a zero-emissions residential area. Photo: PHI

Entrance area of the building with its natural timber facade. Photo: PHI

Presentation of the Passive House certificate on 24 February 2014. Photo: PHI

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