

Press Release

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Monitoring confirms energy efficiency of Passive House city district

Report on measurements in Heidelberg's Bahnstadt project now available online

Darmstadt, Germany. The Passive House district of Bahnstadt in Heidelberg (Germany) has passed the test: according to a report on recent measurements, the values being strived for in relation to energy efficiency were met in full. In 2014, the average consumption of 1260 housing units with a total living area of more than 75 000 m² was 14.9 kWh/(m²a). Compared with conventional constructions, savings of around 80 % were achieved. The statistically high number of residential projects built by different property developers and architects convincingly shows that a successful large-scale implementation of the Passive House Standard is possible. The full report is now [available online](#).

"The evaluation of the consumption data proves that the efforts made by the City of Heidelberg to design an entire city district to a high standard in terms of energy efficiency based on future-oriented specifications and corresponding quality assurance have been tremendously successful," says Søren Peper of the Passive House Institute, who was in charge of the monitoring project. The measurements were carried out on the basis of monthly meter readings of the total heat consumption in several blocks with over a hundred apartments in each. An average heating energy consumption lower than the Passive House limit value of 15 kWh/(m²a) was measured in the process.

The heating demand of a building is calculated mathematically. The actual consumption depends on many additional factors such as user behaviour and the weather. In the case of the present study, it must be kept in mind that these measurements were predominantly performed during the first year of operation, in which consumption is usually higher than in subsequent years, due to work relating to tenants moving in and necessary adjustments. But even with these adverse influences, the Passive House buildings in Bahnstadt already function faultlessly. The consumption data showed consistently high conformity with the demand calculated in advance using the Passive House Planning Package (PHPP).

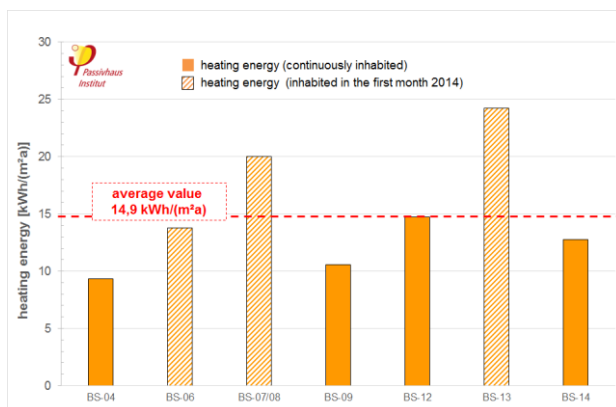
"The monitoring carried out in Heidelberg doesn't just prove the reliability of calculations using the PHPP planning tool," says Dr Wolfgang Feist, Director of the Passive House

Institute. "The slight differences between the calculated balance and the actual measured values show that the Passive House Standard demonstrably and reproducibly results in extremely high savings of heating energy and thus, of course, also of costs. The much heard of 'performance gap', a divergence between expectations and reality, does not exist with the Passive House Standard". Further examples of consumption measurements in residential Passive House developments have been compiled in an article on the online resource [Passipedia](#).

In terms of size, Bahnstadt is probably the most significant Passive House project at the moment: an entire city district built completely to the Passive House Standard has been created on premises which were previously used as a freight railway station – a vibrant mix of residential and commercial buildings is emerging on an area covering 116 hectares. Hundreds of Heidelberg citizens have already found a new home in the Bahnstadt district. Several office buildings and institutes have opened as well as a kindergarten; a school, shops, a community centre and a cinema complex are currently being planned. Once it is entirely developed, up to 12 000 people will be living and working in the new city district. In 2014, this future-oriented project received the [Passive House Award](#).



Hundreds of Heidelberg citizens have already found a new home in the Bahnstadt. *Photo: Passive House Institute*



The annual demand of heating energy in the studied residential buildings. *Illustration: Passive House Institute*

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