

Press Release

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Groundbreaking ceremony for the world's first Passive House hospital: Construction work begins on Frankfurt Höchst's new Passive House hospital building. The ceremony was attended by the Minister for Social Affairs in Hesse, Stefan Grüttner (second from right), as well as Frankfurt's Head of Department for Social Affairs, Rosemarie Heilig (third from right).
Photos (3): Klinikum Frankfurt Höchst

Operation Passive House Clinic

Frankfurt to build world's first hospital to the Passive House Standard

Darmstadt/Frankfurt/M., Germany. Rubber boots and spades stood ready for a special premiere: Work has started on the world's first Passive House hospital in the Höchst district of Frankfurt. The previous clinic will be replaced by a new Passive House building with ten operating theatres and 666 beds planned over six floors. The Passive House Institute has provided comprehensive support throughout the planning phase and will continue to do so during the building's construction.

The energy demands of hospital buildings are significantly higher than other building types due to their 24-hour operation. At the groundbreaking ceremony, Stefan Grüttner, the Minister for Social Affairs of the state of Hesse, mentioned that the state of Hesse incurred annual energy costs of €3350 per hospital bed.



The Passive House Institute investigated how the highly energy efficient Passive House building standard can be applied to a hospital clinic. These findings can also benefit the 2100 other hospitals in Germany.

Optimise procedures, reduce costs

With this new construction, Klinikum Frankfurt Höchst intends to drastically reduce their running costs as well as optimise their internal operational procedures. "The basic intention of the Passive House concept, to significantly reduce the energy demand while providing improved comfort, is particularly worthwhile in the case of a hospital building. But special requirements must also be met", explains Oliver Kah of the Passive House Institute. Among other things, special hygiene-related requirements apply for sensitive areas such as operating theatres. With regard to the room temperatures, patients perceive 23°C as comfortable.

Special requirements for hygiene and comfort

On behalf of the federal government of the state of Hesse, Oliver Kah, together with his colleagues, investigated how the highly energy efficient Passive House construction method can be applied to a hospital clinic. These findings can also benefit the 2100 other hospitals in



To determine the total energy demand for a clinic, all building facilities should be considered, including technical devices.

Germany, many of which are in need of refurbishment. The study showed that the equipment in the hospital has a major influence on the energy demand. In conventional methods of energy balancing only the energy demand for heating, potable water, lighting and cooling is considered. In a clinic however, all building facilities and thus the

demand from medical devices must also be taken into account. "If the building facilities are not considered, then planners will have neglected about half of the total energy demand of the clinic. Efficient devices cut down on energy and reduce the cooling demand at the same time", explains Oliver Kah.

Medical devices must be taken into account

The city of Frankfurt has estimated that €240 million will be needed for the new Klinikum Frankfurt Höchst. The state of Hesse will contribute €46 million. "We will equip this highly complex special-use building with the latest technology and will thus be able to accommodate our objective of becoming a climate-neutral city by the year 2050", states Rosemarie Heilig, Head of the Department for the Environment and Social Affairs in Frankfurt.

Many hospitals need refurbishment

Klinikum Frankfurt Höchst is an institution delivering the highest level of care and is an academic teaching hospital of the Johann Wolfgang Goethe-University. Over 2000 employees care for around 36,000 in-patients and 80,000 out-patients each year. The new Passive House construction is due to be completed in the first half of 2019.

More information under: www.passivehouse.com

Pictures for editorial purpose under www.flickr.com/photos/passive-house-institute

On request we are very happy to send you pictures via e-mail.

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Passive House

A Passive House is a building that due to its excellent design and construction, stays at a comfortable temperature year round with minimal energy inputs, no matter the climate or geographical region. Passive House buildings make efficient use of “passive” sources, such as sun and heat recovery to cover remaining needs, and use similar techniques such as shading to keep them comfortably cool. A Passive House therefore consumes around 90 percent less heating energy than existing buildings and about 75 percent less than an average new build.

Pioneer project

The first Passive House was built 25 years ago in Darmstadt-Kranichstein, Germany. Since the first families moved in in 1991, it has stood as the global pioneer project for the Passive House Standard. In the spring of 2016, building physicists undertook intensive studies on this first building to find the building was still performing as designed and that the low heating energy demand remained.

Passive Houses worldwide

Meanwhile, there are Passive Houses buildings of all types. In addition to residential - and office buildings there are also kindergartens and schools, hospitals, sports halls, swimming pools and factories as Passive House buildings. Worldwide, since 1991 over 60,000 Passive House projects have been built. The interest in Passive House is increasing. Considering the resource consumption of the industrialized countries and the need to reduce greenhouse gas emissions, a new building or retrofit to the Passive House Standard appears increasingly as an attractive alternative for municipalities, businesses and private individuals.

Passive House Institute

The Passive House Institute is an independent research institute that has played an especially crucial role in the development of the Passive House concept - the only internationally recognised, performance-based energy standard in construction. The Passive House Institute is the organizer of the International Passive House Conference and the related exhibition.

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