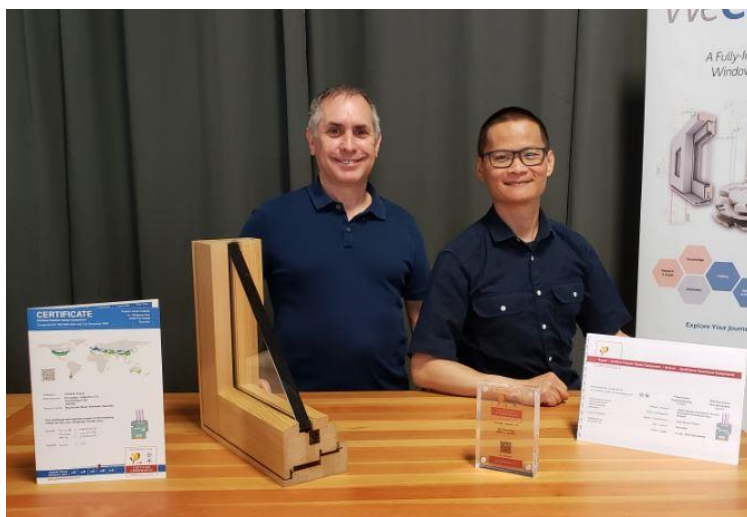


Congratulations for the 1000th certificate

Success story: Number of components for energy efficient construction reaches 1000

Darmstadt, Germany. Another success story from the world of energy efficient construction and renovation: the Passive House Institute has recently issued the 1000th certificate for a Passive House component. There is a great range of quality approved building components now available, and many manufacturers have recognised the potential of certified components for energy efficient buildings. Things



Gregory Godbout (left) and Chris Chan of Rangate in the USA are pleased to receive a component certificate for a wooden window. This happened to be the Passive House Institute's 1000th certificate. © Rangate

looked completely different almost thirty years ago when the first Passive House building in the world was being constructed: the building owners had to specially commission the triple-glazing units and the matching windows from a skeptical carpenter.

The Passive House Institute sent the **certificate** for the wooden window, a wall plaque, and a celebratory sweet greeting from Darmstadt via mail to the West Coast of the USA. In Washington State, Chris Chan and Gregory Godbout of the company Rangate, received the 1000th certificate issued by the Passive House Institute. Rangate developed the

“Big House Wood Window Operable” and had it certified.

Fit for the Passive House standard

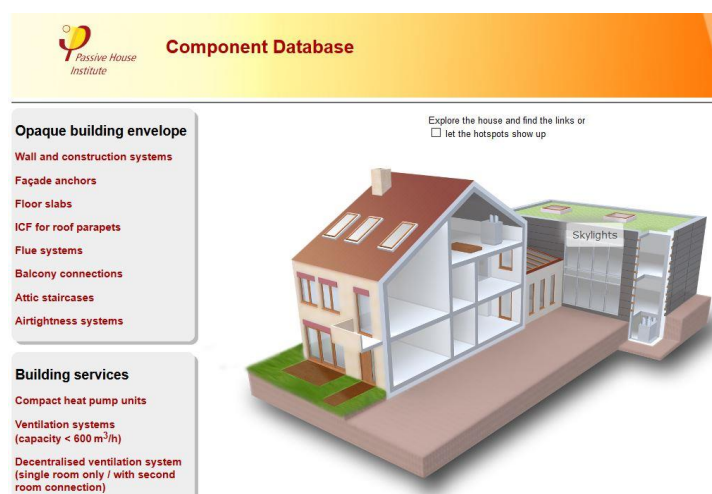
"The product is a classic wooden window frame which we have made fit for the Passive House standard in cooperation with the manufacturer by adding inserts made of cork and the high-performance insulation material Aerogel", explains Adrian Muskatewitz of the Passive House Institute. Muskatewitz supervised the certification of this wooden window frame and congratulated Rangate when awarding the certificate together with Professor Benjamin Krick, Head of Component Certification.

Transparent process

Rangate praised the certification programme for Passive House components which also motivates the industry to manufacture better products. "We are honoured to have achieved a component certification with the collaboration of the Passive House Institute. The commitment shown by the Passive House Institute during the entire transparent process is a proof of the efforts made to increase the availability of high-quality products and to raise awareness regarding these", explains Chris Chan.

Growing interest

The Passive House Institute has noticed a growing interest from international manufacturers in having the quality of their products for climate-friendly construction tested and certified. These certified products strengthen the steadily growing market for energy efficient construction. "It's great that a lot of manufacturers are making the decision to certify with us. The 1000th certificate is a clear indication of this. Ultimately, it is quality approved and thermally optimised products which make energy efficient buildings possible in the first place and contribute essentially to climate protection", explains Professor Benjamin Krick. There are now building components from 25 different categories registered in the **Component Database** of the Passive House Institute, including exhaust air systems, glazing spacers, floor slabs, windows, doors, roller shutters, and wall and building systems.



Contribution to climate protection

For the construction of the world's first Passive House building in Darmstadt 1991, the building owners did not have access to products that are now easily available; there were no components for energy efficient construction available at the time. Professor Wolfgang Feist was also one of the building owners of this terraced housing complex in Darmstadt. The building physicist had developed the Passive House concept in the 1980s, and put theory into practice with this pilot project. In an **interview**, Feist talks about the challenge of obtaining the building components that were necessary for energy efficient construction.

Self-evident today

In those days, the building owners had to specially commission triple glazing and the matching windows from a wary carpenter. He immediately refused to offer a guarantee for the performance of the requested windows with the three glass panes instead of the usual two. The ventilation system for the first Passive House building was developed by Feist with colleagues in a laboratory: they single-handedly equipped central ventilation units with newly developed direct current fans and an air quality control device. Today, these features are taken for granted when it comes to modern ventilation systems.

General Information

Passive House buildings

With the Passive House concept the heat loss that typically takes place in buildings through the walls, roof and windows is drastically reduced. With the five basic principles – high-quality thermal insulation, windows with triple glazing, avoidance of thermal bridges, an airtight building envelope, and a ventilation system with heat recovery – a Passive House building needs very little energy. Passive House buildings can therefore dispense with *classic* building heating systems. Such buildings are called "passive houses" because a major part of their heating demand is met through "passive" sources such as solar radiation or the heat emitted by occupants and technical appliances.

In a Passive House building the heat is retained for 10 to 14 days because it escapes very slowly. For this reason, active heating is needed only during extremely cold days and only a small amount of energy is required for providing this remaining heating. A Passive House building also offers an advantage in the summer: the excellent level of insulation ensures that the heat stays outside, therefore active cooling usually isn't necessary in residential buildings. Due to the low energy costs in Passive House buildings, the utility costs are predictable - a fundamental principle for affordable homes and social housing. A Passive House building thus consumes about 90 percent less heating energy than an existing building and 75 percent less energy than an average new construction.

Passive House & NZEB

The Passive House Standard already meets the EU requirements for Nearly Zero Energy Buildings. According to the European Buildings Directive *EPBD*, all member states must specify requirements for so-called NZEBs in their national building regulations. These came into effect in January 2019 for public buildings and will apply for all other buildings from the year 2021.

Pioneer project

The first Passive House in the world was built in Darmstadt-Kranichstein (Germany) 29 years ago by four private homeowners. Dr Wolfgang Feist was one of them. Ever since the homeowners moved in with their families in 1991, these terraced houses have been regarded as a pioneer project for the Passive House Standard. With its newly installed photovoltaic system, this flagship Passive House now utilises renewable energy and received the Passive House Plus certificate for this reason.



Passive House and renewable energy

The Passive House Standard can be combined well with on-site renewable energy generation. Since April 2015, the new building classes "Passive House Plus" and "Passive House Premium" have been available for this supply concept.

The world's first Passive House building in Darmstadt-Kranichstein.
© Peter Cook

Passive Houses worldwide

Passive Houses buildings for all types of uses now exist everywhere. In addition to residential and office buildings there are also kindergartens and schools, sports halls, swimming pools and factories built as Passive House buildings. The first Passive House hospital in the world is currently being built in Frankfurt am Main. Interest in Passive House is growing. In view of the consumption of resources in industrialised countries and climate protection, municipalities, businesses and private people are increasingly implementing new constructions or retrofits to the Passive House Standard.

Passive House Institute

The Passive House Institute with its headquarters in Darmstadt (Germany) is an independent research institute for highly efficient use of energy in buildings. The Institute founded by Dr. Wolfgang Feist holds a leading position internationally with regard to research and development in the field of energy efficient construction. Among other things, Dr. Wolfgang Feist was awarded the DBU Environmental Prize in 2001 for developing the Passive House concept.



Prof. Wolfgang Feist. © Peter Cook

International Passive House Conference

The 24th International Passive House Conference will take place from 20 September till 8 October 2020 in the form of an online event. www.passivehouseconference.de

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