

Press Release

13 October 2020

24th International Passive House Conference



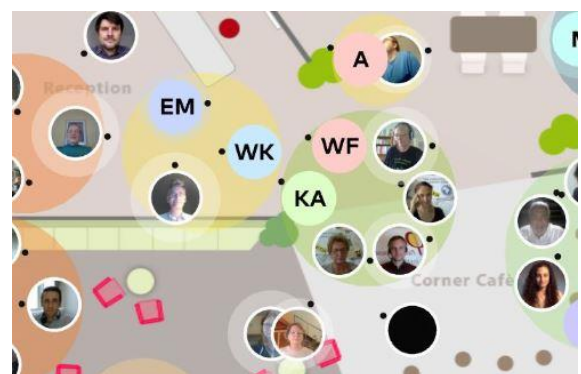
Individual Passive House projects: a production facility in Ontario, Canada, with offices, a cafeteria and a hothouse (l., © Greg West Building Services), a retrofit of a historic hotel to the EnerPHit standard in the Spanish town of Asturias (m., © DuqueyZamora) and a serially implemented and thus cost-effective retrofit of twelve housing units in Hameln (l., © Ecoworks).

Build better than required by code!

Great praise for first ever online format – the 2021 conference in Wuppertal

Darmstadt, Germany. This year the final applause was shared in the chat window: the participants expressed their appreciation for the 24th International Passive House Conference, which was held as an online event for the first time on account of the COVID-19 pandemic. Over the past three weeks, more than 800 participants around the world tuned in and listened to the lectures on energy efficient construction and retrofit solutions from their own screens. The virtual Passive House Café was open 24/7 for international networking. The conference conveyed two important messages, amongst other topics: deep energy retrofits need to be carried out on a broader scale, and construction practices must exceed the mostly inadequate code requirements for energy efficiency. At the conclusion of the conference, the Passive House Institute announced that the 25th International Passive House Conference will be held in autumn 2021 in the German city of Wuppertal.

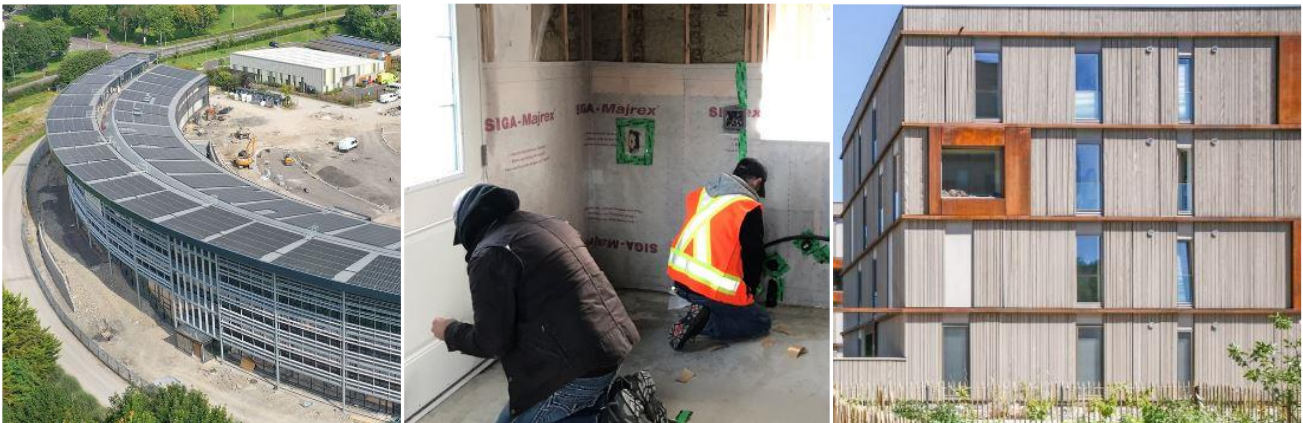
"Congratulations on this amazing conference and our warmest thanks to all those who have made this possible. We have received so much valuable input for the coming months!" Like this participant, many others also confirmed that the 24th International Passive House Conference had a lot of substance and was a great success. As one participant put it, the virtual version had taken its conference offerings to the next level. This includes the fact that it is possible to watch the recordings afterwards.



Participants enjoyed the networking in the virtual Passive House Café. © Passive House Institute

Climate protection and healthy living environment

The relevance of the Passive House standard for climate protection was illustrated by Professor Wolfgang Feist. He built the world's first Passive House building in Darmstadt exactly 30 years ago, in the autumn of 1990. Feist explained that "due to their low energy demand, Passive House buildings are a basic prerequisite for supplying buildings entirely with renewable energy. With this, the energy transition in the building sector can be successful. A healthy living environment is an added major advantage for occupants of a Passive House building". A workshop emphasized that the Passive House standard should play a more prominent role in social housing construction. Projects from Tyrol, Darmstadt, Hamburg and Berlin have proven that with the Passive House standard, social housing construction can be realised in a cost-effective, energy efficient manner that can also be visually attractive.



Topics of the 24th International Passive House Conference: The newly built Passive House Premium Erne Campus in Northern Ireland (l., © South West College), air tightness training in the First Nations territory of the Heiltsuk in Canada (m., © Marcel Studer), Passive Houses in the ecological quarter Prinz-Eugen-Park in Munich, Germany (r., © Jakob Kanzleiter).

Passive House works everywhere

In terms of content, the lectures on energy efficient construction and retrofits spanned the entire globe. The participants learned about impressive Passive House projects in Germany and Europe, North America, Australia and New Zealand as well as in China, Thailand, India and Saudi Arabia. Virtual guided tours invited visitors to view many buildings. "Passive House buildings can be built in all climates. They function well at minus 45 degrees Celsius in the polar regions and at 37 degrees Celsius in Bangkok. Every participant could get to know a large range of projects, this was surely an advantage of this virtual conference. We are pleased that it worked so well", says Jan Steiger, a member of the executive board of the Passive House Institute.

Intensified retrofitting

The 24th International Passive House Conference conveyed two critical messages. The first: construction activities at the international level need to be placed even more strongly on energy efficient retrofits. Many speakers, including some from Tyrol, Glasgow, Vancouver and the US state of Washington pointed out that new builds are now only possible to a limited extent due to the shortage of building land. Connected to this, they presented numerous retrofit projects which had drastically reduced their energy demand with renovation to the EnerPHit standard. For Monte Paulsen, a Passive House expert in the Canadian Province of British Columbia, "swift refurbishment of existing buildings in the industrialized nations is among the top priorities for survival of civilization on this planet".

Drastic savings

"The savings of heating energy naturally depend on the respective building, especially on its previous consumption. In a typical case, about 75 percent energy can be saved after a complete retrofit to the EnerPHit standard, in some buildings, savings of more than 90 percent may be achieved", explained Professor Wolfgang Feist, founder of the Passive House Institute. In this regard, serial retrofits using prefabricated building components are receiving increased attention. These allow time-saving and cost-effective modernization. The architect Stefan Oehler from Berlin presented a future-oriented concept based on the serial retrofit of 12 housing units from the 1930s in Hameln, Germany. The installation of a large insulating element for the façade only took 20 minutes to complete.



Energy efficient and cost-effective: social housing built by the housing group Neue Heimat Tirol in Kufstein, Austria. © Neue Heimat Tirol

Serial implementation and made-to-order

Made-to-order solutions for energy efficient construction are also possible, as Marcel Studer and Monte Paulsen from Canada pointed out. For the First Nations residents in the remote territory of the Heiltsuk, they designed a residential Passive House building for the local clinic staff. To optimise the building standard for residential buildings in general, they now provide energy efficiency training to the residents, also in the area of airtightness.



In China, many big projects are being built to the Passive House standard: kindergarten X88 in Peking with more than 21 rooms for more than 600 children. © Yulin Liu

Building better than code

The second key message of the conference was that the political framework conditions for energy efficient and climate-friendly construction need to be more stringent. This was also demonstrated by the specifications of the European Union relating to nearly zero-energy building (NZEBs). A building constructed to the

Passive House standard may save around four times more energy than the respective latest national specifications. With climate protection and a healthy living environment in mind, those wishing to construct or retrofit buildings should therefore go significantly beyond the code requirements, according to the keynote speakers. For the urgently needed energy transition in the building sector, training and further education should be intensified, both in the area of the trades and at the university level.

Specialists' exhibition positively received

Following the series of lectures, the more than 800 conference participants had the option of meeting each other in the virtual Passive House Café. Increasing numbers of participants took this opportunity during the conference to meet old acquaintances again or to make new contacts. The virtual version of the specialists' exhibition was also a new feature: here, over 40 exhibitors presented their components for energy efficient construction and retrofits. The exhibition was rated exceptionally well. Additionally, the Passive House Institute offered guided tours through the exhibition in various languages.



Next year in Wuppertal

As is customary, at the conclusion, the Passive House Institute announced the venue for next year's conference. In cooperation with the EnergieAgentur.NRW the Passive House Institute is inviting everyone to Wuppertal in 2021. The 25th International Passive House Conference will take place under the auspices of Professor Dr Andreas Pinkwart, the State Minister for Economic Affairs and Energy of North Rhine-Westphalia. The Passive House Award 2021 will also be presented at this conference; contributions for this can be submitted until 1 June 2021.

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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 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) 28 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.



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

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.

Passive Houses worldwide

Passive House 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 Prof Wolfgang Feist holds a leading position internationally with regard to research and development in the field of energy efficient construction. Among other things, Prof Wolfgang Feist was awarded the DBU Environmental Prize in 2001 for developing the Passive House concept.



Prof Wolfgang Feist.
© Peter Cook

Contact: Katrin Krämer / Press Officer / Passive House Institute / www.passiv.de /

Email: presse@passiv.de / Tel: +49 (0)6151 / 826 99-25