

Passivhaus Passive House

First inspired by the U.S. energy crisis.

Inspired by the OPEC oil embargo of the 1970s, modern "Passive House" design began in North America. Further research was conducted in Scandinavia and Germany.

Did you know?

> A house built to Passive House standards in the U.S. uses between 75% and 95% less energy for heating and cooling than houses built to current energy efficiency codes.

The Passivhaus Standard

- > The Passivhaus Standard originated in 1988 with a conversation between Dr. Wolfgang Feist, a German physicist, and Dr. Bo Adamson, a Swedish scientist.
- > To be certified, thermal comfort must be met for all living areas year-round with not more than 10% of the hours in any given year over 25°C (75°F).
- > The houses are oriented to the south to take advantage of passive solar heat.
- > Originally developed in Germany for houses and low-rise multi-unit residential buildings, the Passive House Standard is now being applied to schools, office buildings, and even high-rises.



Designed by Stephan Tanner at Intep in 2005, the Waldsee BioHaus in Bemidji, Minnesota, is the first certified Passive House building in North America. Photo: Cal Rice Photography

"The surprise and delight of Passive House is not just in the incredible comfort and low energy bills but also in the daylighting and quietness it provides." --Passive House owner

- > The Standard has few mandatory requirements, providing flexibility for the architect. The focus is on reducing energy consumption through superinsulation and airtightness.
- > Passive House principles can be applied to nearly every building type, anywhere in the world.



The **5** basic principles

- **1** Thermal insulation
- **2** Passive House windows
- **3** Ventilation with heat recovery
- **4** Airtightness
- **5** Thermal bridge free design





UN Sustainable Development Goal



