



Single family houses: in Kirchasch | Photo: G. Vallentin

in Rottenburg-Wurmlingen | Photo: M. Wamsler

in Templin | Photo: THP Architekten

in Ganderkesee | Photo: team 3

The Passive House Versatility

The Passive House Standard, being a quality standard, dictates no particular methods of construction. Whether solid construction, wood or composite – architects can design Passive Houses according to their own preferences. Even manufacturers of prefabricated houses are offering Passive House designs. The versatile Passive House Standard is also increasingly being used in retrofits as well as for non-residential buildings such as schools, administrative buildings, manufacturing plants and hotels. As the Passive House concept is based on physical principles, each building can and should be adapted to its particular climate.

With over 20,000 Passive Houses in use worldwide and 13,500 in Germany alone,¹⁾ the Passive House Standard is gaining popularity. This is not only due to the outstanding advantages it offers, but also due to its flexibility.

1) figures as of early 2009



Title pictures: row of terraced houses in Ulm | Photo: Casa Nova, "living in the Passive House" Photo: Bettina Glaser | Graphic design: M. Blücher, PHI Darmstadt | © PHI, Darmstadt

The Passive House Quality

The Passive House Institute offers quality assurance for Passive Houses, thereby awarding buildings meeting the stringent Passive House criteria the "Quality Approved Passive House" designation. Passive Houses must be very well planned and carefully built so as to ensure a comfortable temperature year round with minimal energy inputs. As such, the Passive House Institute also offers certifications for **Passive House designers**, thus ensuring that carriers of this title possess the knowledge and experience necessary to effectively carry out Passive House projects.

iPHA The International Passive House Association

The International Passive House Association (iPHA) is an independent and objective network of Passive House stakeholders including architects, planners, scientists, suppliers, manufacturers, contractors and property developers. Working to promote the Passive House standard and foster a greater public understanding of its significance, iPHA encourages the exchange of ideas, communicating with the media, the general public and the entire range of construction professionals.

Research, Development, Quality Assurance
Passive House Institute
www.passivehouse.com



Informations-Gemeinschaft Deutschland
www.ig-passivhaus.de

Certified Passive House Designer
www.passivehouse-designer.org



International Passive House Association
www.passivehouse-international.org



The Passive House comfortable, healthy living





Refurbishment: Tevesstraße in Frankfurt | Photo: PHI

Single family houses: in Biburg | Photo: G. Vallentin

in Chemnitz | Photo: Birgit Madreiter

in Krummesse | Photo: Architect Krüger

in Alsfeld Schwabenrod | Photo: T. Weber

with bureau in Ottbergen | Photo: C. Grobe

The Passive House Efficiency at its best

No matter the climate or region, Passive Houses stay at a comfortable temperature year round with minimal energy inputs. Such buildings are heated passively: they make efficient use of the sun, internal heat sources and heat recovery, rendering conventional heating systems unnecessary throughout even the coldest of winters. During warmer months, Passive Houses make use of passive cooling techniques such as strategic shading to keep comfortably cool. Either way, a Passive House's high quality insulation keeps the temperature comfortable, just where it is needed.

○ Sustainability

A Passive House uses up to 90% less energy than the typical central European building, requiring less than 1.5 litres of heating oil per square meter. Vast energy savings have also been demonstrated in warm climates where buildings typically require active cooling. As reductions in energy use lead to reductions in greenhouse gas emissions, the Passive House is a sustainable alternative to conventional construction.

○ Affordability

Passive Houses save money over the long term and are surprisingly affordable to build. The investment in higher quality building components required by the Passive House Standard is mitigated by the elimination of expensive heating and cooling systems. Increasingly available financial support makes building a Passive House all the more feasible.

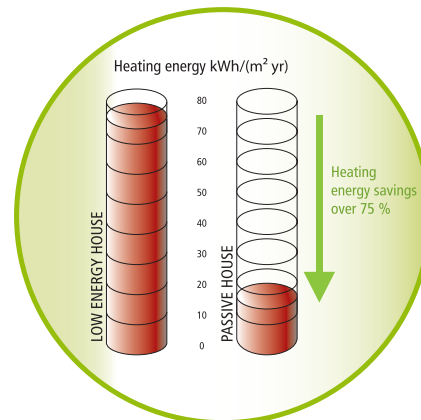
○ Comfort

Passive Houses pair pleasant temperatures with extremely low energy use. Their ventilation systems consistently supply fresh air, making for superior indoor air quality. The mix of consistent temperatures and appropriate air exchange prevents damaging moisture build up.

The Passive House Sustainable affordability

Passive Houses do not require heating and cooling systems on conventional scales, meaning that the money that would have gone towards these expensive systems can be spent instead on higher quality components. Add to this the **long-term energy savings** Passive Houses bring and it becomes clear that Passive Houses are a good investment. Especially in the face of dwindling energy resources and rising energy costs, the Passive House Standard exemplifies sustainable affordability.

Even so, Passive Houses do cost more upfront than their conventional counterparts – typically from 3 to 8% in the German context. This premium is likely higher in countries where Passive House components are not yet readily available, but as their prevalence increases, prices in these other countries will also drop. Financial support for Passive Houses, already available in a number of countries, further reduces their cost. Building a Passive House may thus prove **more cost effective** over the **long term** than building a conventional home.

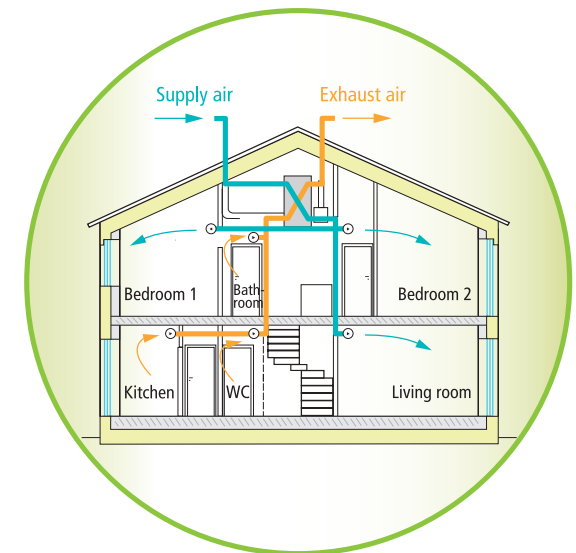


www.passivehouse-international.org
www.passivehouse.com

The Passive House Comfort

Passive Houses offer unparalleled levels of comfort. An extremely well insulated building envelope, triple glazed, low-e windows²⁾ and insulated frames keep the desired warmth in and undesirable heat out. The floor and all interior walls thus stay at the same **pleasant temperature**.

Prized for their **high indoor air quality**, the air in a Passive House never gets stale or stuffy. Passive House ventilation systems provide plentiful fresh, pollen-free and dust-free air – maximising comfort for all.



The pleasant temperatures within Passive Houses and the **quality ventilation** they offer prevent moisture build up, putting a stop to condensation on window frames and even to mould growth³⁾.

²⁾ for warmer climates, double glazing may be sufficient

³⁾ warm, humid climates may benefit from an extra dehumidification system for this purpose