

Building for the energy revolution

Meeting our energy needs sustainably into the future requires nothing short of an energy revolution. For the built environment, our greatest opportunity lies in the promotion of an "energy efficiency first" approach to building, supplemented by renewable energies.

Passive House and renewables

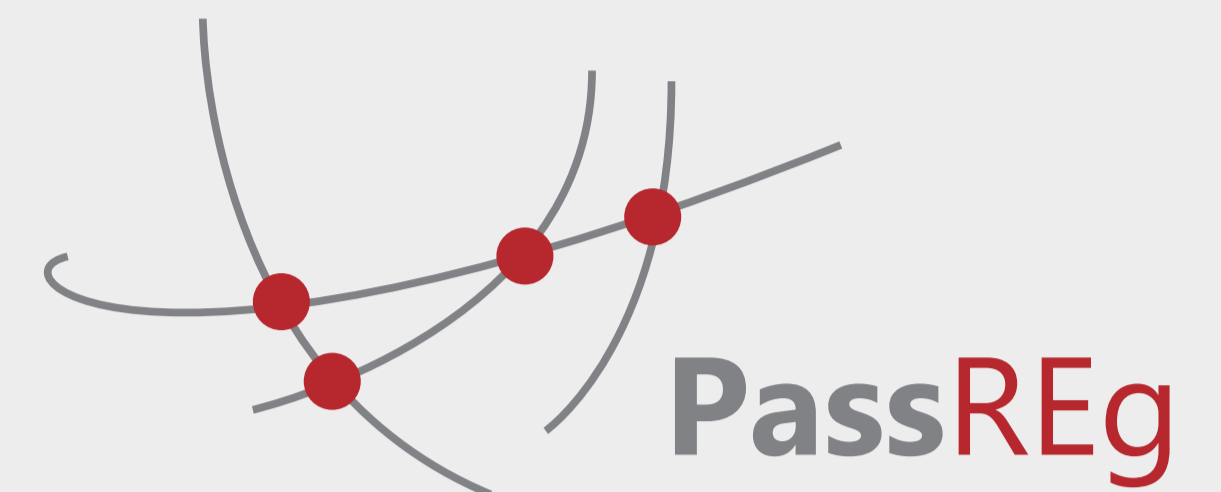
An internationally recognised building energy standard, Passive House combines maximal comfort with minimal energy use and life cycle costs. Through a focus on careful planning paired with quality building components, Passive House buildings use up to 90 % less energy for heating and cooling than typical building stock. The high levels of energy efficiency reached by Passive Houses mean that the low energy demand that remains can be covered, economically, by a wide variety of renewable energy sources.

Local authorities take action

The EU has set ambitious goals for energy performance in buildings. To meet these goals by the 2020 deadline, many are looking to the Passive House Standard. Regions and municipalities are in an ideal position to drive large scale transitions toward more sustainable building practices on the basis of Passive House, and several regions, which already successfully support this approach, are leading the way towards a sustainable future. Many more are following their lead and getting on board.

Many of these regions are part of the EU-funded project known as PassREg (Passive House with renewable energies) and are featured in this exhibition.

www.passreg.eu



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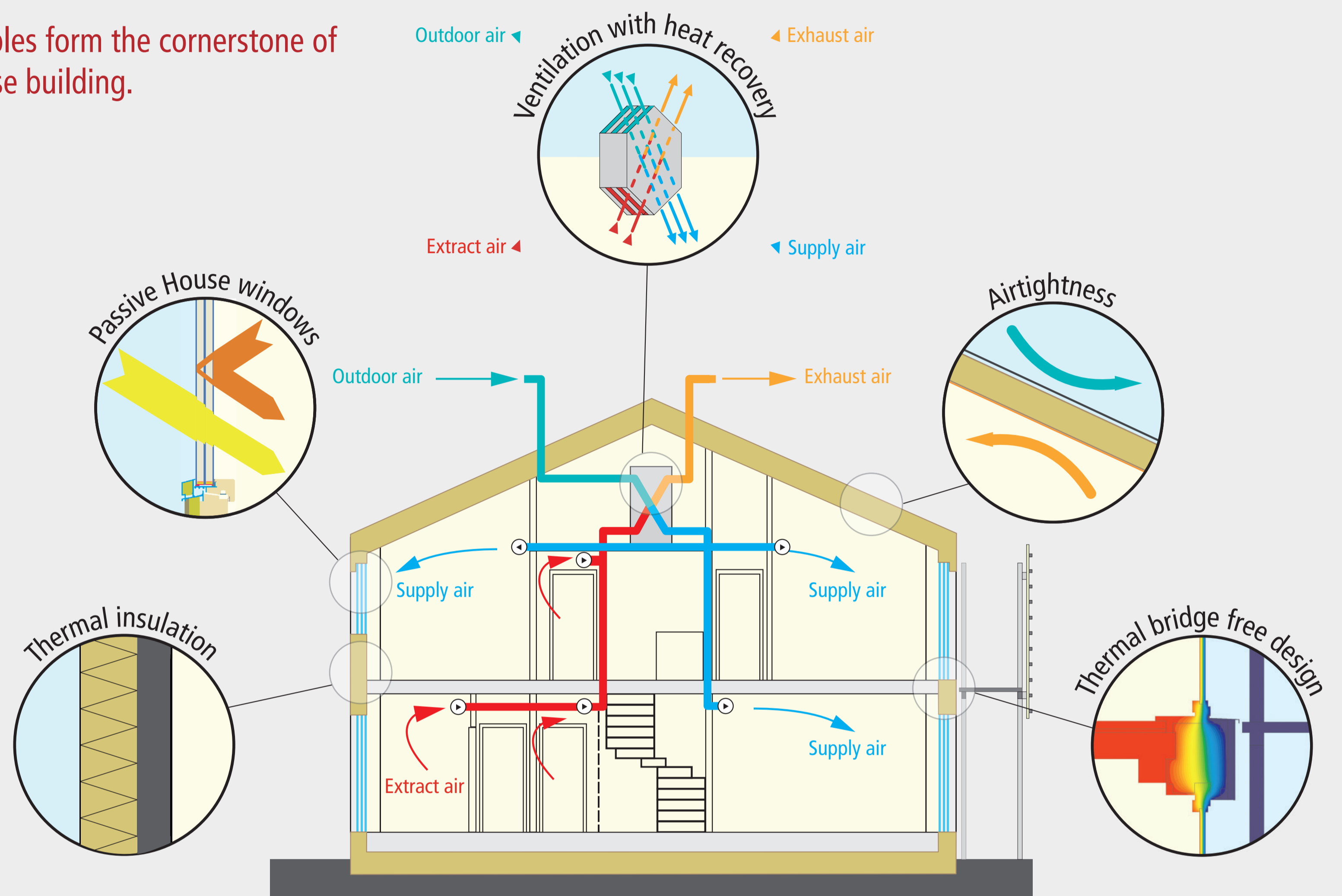
on the basis of a decision
by the German Bundestag

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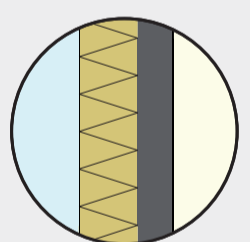


5 The five basic Passive House principles

Five basic principles form the cornerstone of any Passive House building.

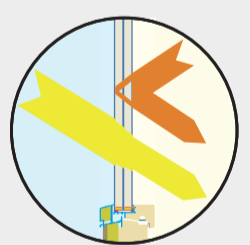


The difference is in the details:



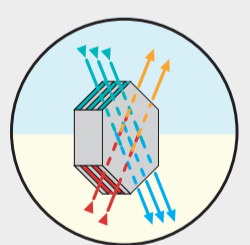
Thermal insulation

High levels of insulation executed in an especially high quality manner reduce energy losses.



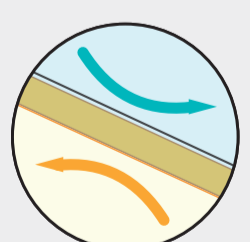
Passive House windows

Insulated glazing with well-insulated frames make the most of the sun's energy and keep extreme temperatures outdoors. In cool temperate climates, this means quality, triple-paned windows.



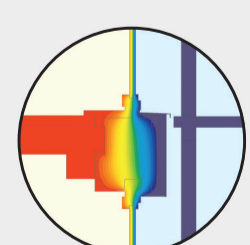
Heat recovery ventilation

A heat recovery ventilation system ensures plentiful fresh air and consistently good indoor air quality. Through an efficient heat exchanger, over 80 % of the warmth can be recovered.



Airtightness

An airtight building envelope reduces energy losses and protects the building from structural damage.



Thermal bridge free design

Thermal bridges lead to unnecessary energy losses. In Passive Houses, details designed without thermal bridging are the norm.