How to attain our climate objectives for the built environment. Take part!

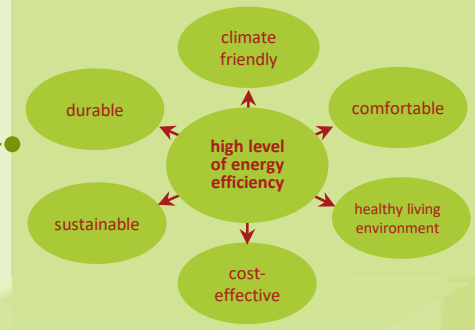
International PASSIVE HOUSE Association iPHA

The Passive House Institute in Germany is an independent research institute that has been carrying out research on highly efficient building construction and renovation for over 25 years.
Based on our years of experience with new construction, retrofits of existing building stock and the latest research findings, we have developed the following “building blocks”. These building blocks are a recommendation for a climate friendly built environment and they can be applied anywhere to contribute to climate protection.

The Passive House and EnerPHit standards provide a clear and proven pathway to meeting our climate goals. Implementing the building blocks described here, will not only lead to climate protection but also provide numerous other advantages.

We are available to answer any queries you my have.

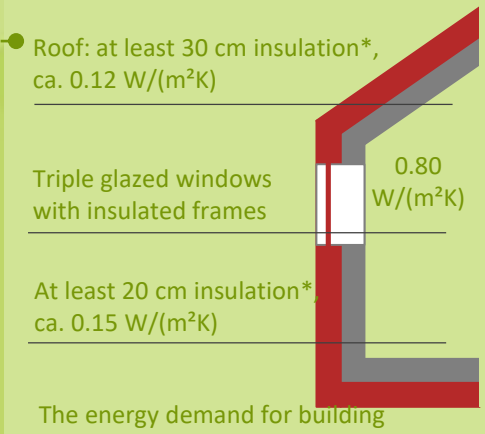
1. The focus of sustainable new builds and retrofits must be on **energy efficiency.** Reducing energy needs is indispensable for achieving climate objectives. That is why retrofitting and new construction should be built to future-proof energy efficiency levels.
   - Achieving an excellent standard of thermal protection for the building envelope is crucial.
   - Installing ventilation systems with heat recovery can further halve the heating demand of a building that already has very good thermal insulation.
   - The hot water heating demand can also be more than halved, for example through well-insulated pipes, efficient fittings, and heat recovery.
   - Highly efficient heat pumps are the recommended technology to provide effective space heating and hot water.



It is not only climate protection that is achieved with highly energy efficient buildings: the living environment is healthier and homes are more comfortable, more sustainable, more durable and also more economically attractive than less efficient buildings.

Ventilation systems ensure a consistent supply of filtered, fresh air. They remove excess humidity, pollution from incoming air and reduce external noise.

Through the use of highly efficient heat pumps, more than three parts of heat can be made available from one part electrical power. This is a great concept since electricity from renewable sources such as solar, wind and hydro power are the future energy resource.

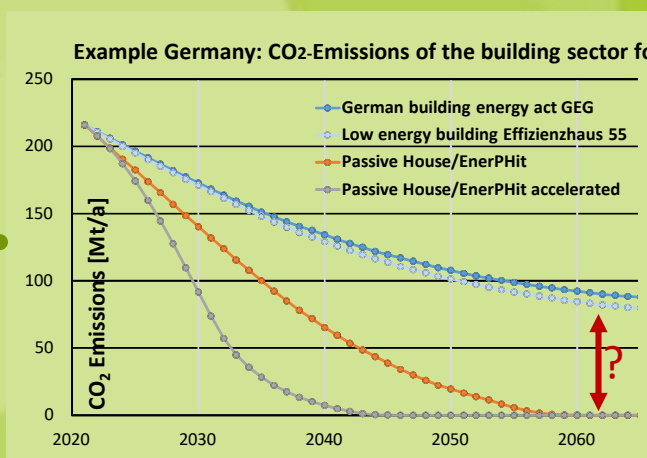


The energy demand for building operation is significantly reduced- through outstanding thermal protection. By choosing suitable building materials, the embodied energy for production can also be reduced.

* Refers to cool temperate climate of Central Europe

2. For the energy transition to be successful, energy efficiency must be combined with the **generation of renewable energy**.
   - If a retrofit or a new construction is being planned, installing a photovoltaic system on suitable surfaces and combining this with a heat pump is highly effective for an energy efficient building. The PV system can also charge an electric car during the daytime.
   - Installing a PV system on actively heated buildings with uninsulated roofs, however, is a missed opportunity for high energy savings and hinders the energy transition.
   - Insulation appropriate for the local climate should be installed at the same time as installing a PV system, providing a pay off in financial and environmental terms.

3. **Political framework conditions** are decisive for successful climate protection.
   - Most building codes are not compatible with national climate objectives. Ambitious approaches for implementing high performance buildings are urgently needed.
   - This makes sense in economic and environmental terms.
   - Financial incentives for highly energy efficient new builds and retrofits will increase industry motivation and uptake.
   - In contrast, subsidies for moderate improvement measures and unsustainable heat generators will slow down necessary adaption measures and prove harmful for the climate.
   - Proven building standards and calculation methods, such as the Passive House standard, which are already available and meet the climate protection requirements should be appropriately recognised and implemented at scale.
   - Comprehensive training and further education for industry professionals is needed in order to support uptake.
   - Targeted campaigns help inform people of the benefit of highly efficient buildings for their health, wallets and future.
   - Fair allocation of the burden and gains from retrofitting measures (e.g. on landlords and tenants) will facilitate better acceptance.



- The current requirements are not adequate.
- The key to achieving climate goals is to implement the highest level of energy efficiency whenever a retrofit measure is carried out.
- Accelerated renovation rates lead to high costs and are difficult to implement in practice.

Passive House Institute

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