



Building on
knowledge



Sustainability and Environmental Protection



Housing Standards, Living and Working Standards 2.0



Energy Saving and Resource Conservation



Digitization and Industry 4.0

Building physics – the basis for building in a sustainable and climate-friendly way

The principles of building physics in their practical application form the basis of research and development work at the Fraunhofer Institute for Building Physics IBP. In addition to the classical topics like acoustics, energy efficiency, indoor climate, hygiene and sensor technology as well as recycling building materials and hygrothermics, the institute is involved in a wide range of projects of major social relevance. For example, we aim to design schools or work rooms as part of an integral system, make flying more environmentally friendly and explore the energy potential of entire cities. Further cornerstones of our work include the analysis of products, processes and services

under ecological, economic, social and technical aspects, as well as under the aspect of life cycle engineering.

Thanks to excellent laboratories and testing facilities as well as the largest renowned open-air testing grounds at our branch in Holzkirchen, we are able to investigate highly complex building physics issues. With state-of-the-art measurement technology in our laboratories and our calculation methods, we optimize building products for practical use. Studies in model rooms, in test facilities and on the object in question enable us to test the building physics properties of components and complete systems for new buildings as well as for renovation projects.

The building physics knowledge we gain flows into buildings and components; it also promotes the development of systems and equipment and extends the application of building physics expertise to related fields in the automotive and aviation industries. At the same time, our connection to the local industry ensures the maximum availability of the necessary expertise.

Fraunhofer IBP is a recognized center for testing, monitoring and certifying building products and construction types in Germany and Europe. Five of the institute's test laboratories are flexibly accredited according to DIN EN/ISO/IEC 17025 of the German Accreditation Body GmbH (DAkkS). This gives them the right to develop new test methods or to modify existing ones. The accredited certification center is an independent unit within Fraunhofer IBP. Within the framework of the German state building regulations, the Building Products Act or the building directive, it monitors and certifies a wide range of building products. These include products used for windows, thermal insulation, fireplaces and exhaust systems.

The Institute for Acoustics and Building Physics (IABP) at the University of Stuttgart and the Chair of Building Physics of the Technical University of Munich ensure a constant exchange of research and theoretical knowledge.

Areas of expertise

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Urbanization and Megacities



Mobility and Transport



Internationalization and Globalization

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