Fraunhofer IBP

FRAUNHOFER INSTITUTE FOR BUILDING PHYSICS IBP

PRESS RELEASE

25 years of the WUFI® program family

In the 1990s, avoidable structural damage was discovered in numerous buildings. The Fraunhofer Institute for Building Physics IBP responded to this by developing the WUFI® program family, which has since become internationally established. This year the building software is celebrating its 25th anniversary.

If the moisture content in buildings is too high, heat loss increases. Conversely, temperature conditions affect the transport of moisture in building components. The WUFI® program family - the abbreviation for "**W**ärme **U**nd **F**euchte **I**nstationär" (transient heat and moisture) - from Fraunhofer IBP can be used not only to study this interdependence but also to define standards. Which transport processes take place in building components? What basic principles and interactions apply to the transfer of heat and moisture from building components? WUFI® makes all these aspects transparent and provides planners, architects and engineers with indispensable decision-making aids to assure damage-free construction and renovation work, as well as proof of serviceability in accordance with applicable standards.

WUFI® celebrates its 25th anniversary

This software family has now been established in the professional world for 25 years and is internationally recognized – planners, building product manufacturers, construction companies and experts from more than 100 countries use the various products of the WUFI® family. The programs are also implemented for research and teaching purposes at numerous educational institutions and universities. Which WUFI® software products exist? How can moisture in buildings be evaluated in practice? What are the basic principles behind hygrothermal simulation, what input data are required and how can the results be evaluated? In this jubilee year, Dr. Simon Schmidt, head of the Department of Hygrothermics at Fraunhofer IBP, will be addressing these questions in various weekly training videos. The Institute will makes the videos available on the YouTube channel. The logo has also been revised to mark the occasion of the anniversary. All further information about the anniversary will also be prominently presented on a landing page.

WUFI® – a 25-year success story

In the 1990s, the economic losses caused by avoidable structural damage to private and public buildings ran into billions – according to estimates by the Germany's Federal Minister of Building Construction at the time. Judging by the 1987 building damage report, the main causes were the botched construction of new buildings, damage resulting from inadequate renovation measures on old buildings, and uncontrollable

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environmental influences. Fraunhofer IBP responded to this situation by developing the WUFI® program. The aim: to assist planners, architects and building contractors in their daily work. The implemented models were scientifically substantiated through field and laboratory measurements carried out at the worldwide unique field test site at Fraunhofer IBP's branch in Holzkirchen. Ever since, the researchers have been comparing the measured and calculated data in order to continually improve calculations with WUFI®.

Over the years, the WUFI® family has grown to comprise four programs with which all aspects of hygrothermal building component and building simulations can be represented. The program versions WUFI® Pro and WUFI® 2D determine the absence of damage at standard cross-sections as well as at critical points, such as where different building structures meet. WUFI® Plus and WUFI® Passive, on the other hand, are devoted to building simulation, taking indoor hygiene and comfort into account at the same time. Not only are users of the WUFI® program family internationally positioned, but also sales. "We have cooperation and sales partners in numerous countries," explains Sabine Giglmeier, Business Development Manager of Fraunhofer IBP's Department of Hygrothermics. "We are currently working on modernizing and expanding this network and on attracting cooperation partners in other countries."

The success of the products is also reflected in a current development in the WUFI® Plus range; in addition to the existing desktop versions, the Fraunhofer spin-off company C3RROlutions GmbH with its brand C3RRO (pronounced ze-ro) optimally complements and extends the range of products based on the WUFI® technology. The young company wants to press ahead with the development of the next generation of hygrothermal simulation programs and to evaluate business models, technologies and markets. The plan is to offer web-based applications to plan sustainable and energy-efficient buildings in a fast and cost-effective way. The spin-off thus provides the most advanced building physics simulation models, as well as the respective expertise in simulating building energy, comfort and sustainability. To achieve this, it uses the latest technologies. In future, both cooperation partners – C3RROlutions GmbH and Fraunhofer IBP – will work together on WUFI® Plus calculations, further developments and research.

More information about the WUFI® program family: https://wufi.de/en/
Anniversary landing page (will gradually be extended):
https://www.ibp.fraunhofer.de/en/expertise/hygrothermics/wufi-anniversary.html

Anniversary logo of the WUFI® program family.

The primary focus of the work carried out by the **Fraunhofer Institute for Building Physics IBP** is on research & development, testing, demonstration and consulting in the various areas of building physics. These include, for example, noise control and sound insulation measures in buildings, optimizing acoustics in rooms, measures to increase energy efficiency, optimizing lighting conditions, aspects relating to indoor climate, hygiene, health protection and emissions from building materials, as well as aspects relating to protection against heat, moisture and weathering, building fabric conservation and monument preservation. Products, processes and services are analyzed from the ecological, social and technical perspective by means of life cycle assessments in order to evaluate sustainability, the sustainable optimization and advance of innovation processes. The research fields of environment, hygiene and sensor technology as well as inorganic materials and material recycling complete the institute's range of services in the field of building physics.

Further contact partners
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