



FOCUS OF RESEARCH

- Energy-efficient house concepts
- Passive use of solar energy
- Detached glass-walled enclosures
- Transparent thermal insulation systems
- Insulation systems of various types
- Wall, window, and roof structures
- Radiator and underfloor heating systems
- Heating systems based on different technologies
- Component and control concepts
- Intelligent control concepts in smart grids
- Demand-based ventilation systems with and without heat recovery
- Sun protection concepts

CONTACT

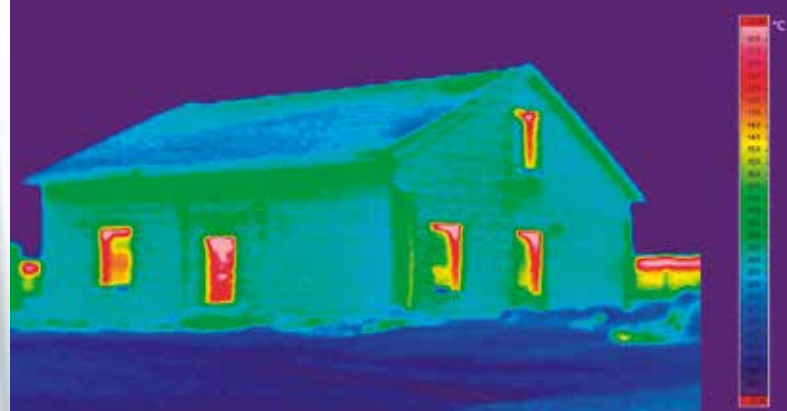
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TWIN HOUSES



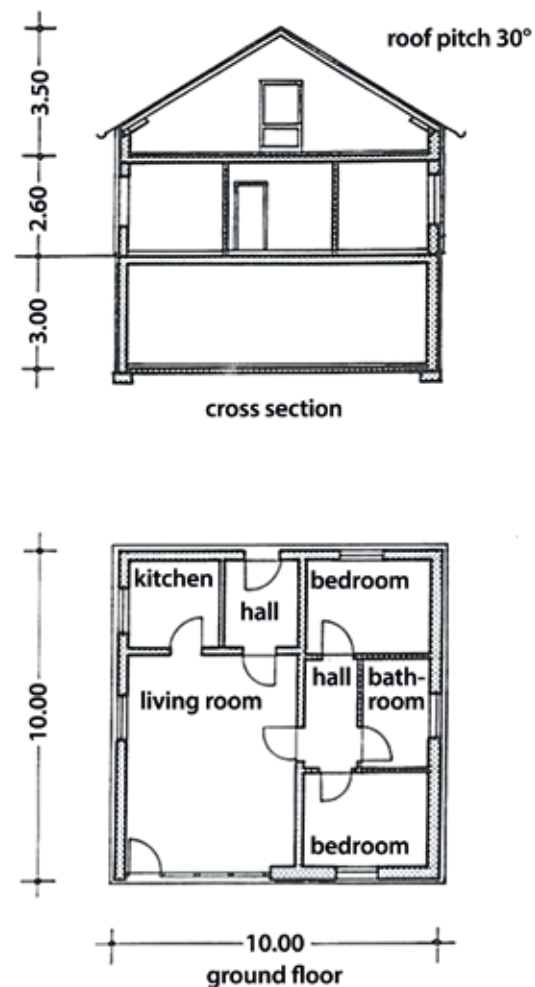


OBJECTIVE AND POSSIBILITIES

Two structurally identical houses stand on the outdoor testing site of the Fraunhofer Institute for Building Physics in Holzkirchen, Bavaria. They are the size of a typical single-family home. These so-called twin houses enable in situ comparative measurements of different building and heating systems under identical climate boundary conditions. The research objectives comprise all issues relating to energy-efficient construction.

These buildings, which date from 1980, are regularly adapted to the prevailing energy standards. All building components can be changed according to the requirements of a particular research objective. The structure of the houses has been engineered to permit complete replacement of the exterior components on the first floor. The adiabatic separation of individual sections of a house from each other is also possible, allowing them to be used for separate testing purposes.

The building service installations consist of a gas condensing boiler, radiator and underfloor heating, as well as ventilation and cooling systems.



ACQUIRING MEASUREMENT DATA

Measurement data is acquired using IMEDAS™, the measurement system developed at Fraunhofer IBP, which also handles communication with the central control system.

- Central measurement data acquisition and storing
- Real-time process visualization of measurement data in a graphical user interface
- Option of password-protected online access to the visualizations (e.g. for trade fair displays or internal presentations)
- Connection between measurement data acquisition and control systems
- All relevant system information is saved in the central measurement database
- High system reliability
- Measurement data can be further processed in other evaluation programs
- Internet-based access via web browser to all functionalities (process visualization, database access, evaluation templates, measurement channel lists, etc.)