Airtightness Measurement
Before Rehabilitation

Reasons for measuring airtightness in existing buildings

- **Planned energetic rehabilitation**
- **Modifications/extension of an existing building**

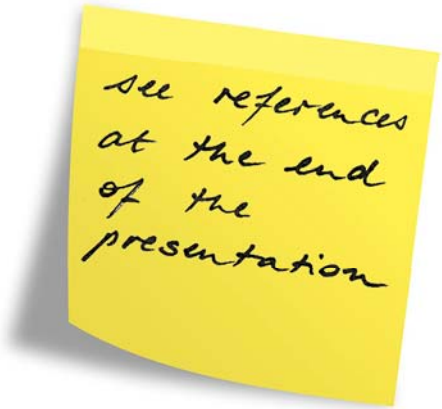
The building airtightness should be taken into account in rehabilitation and/or conversion projects and should be completed or newly planned.

Purpose of the airtightness measurement in existing buildings:

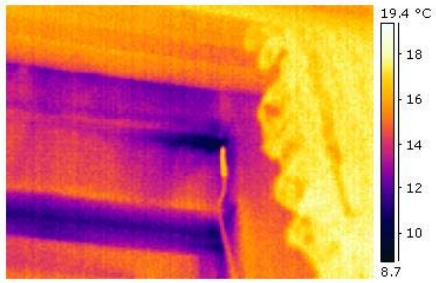
Status analysis before rehabilitation

When planning a modernization (complete or partial rehabilitation) it is of great importance to examine the air permeability of the building envelope **before the remediation process** in order to obtain planning-relevant details.

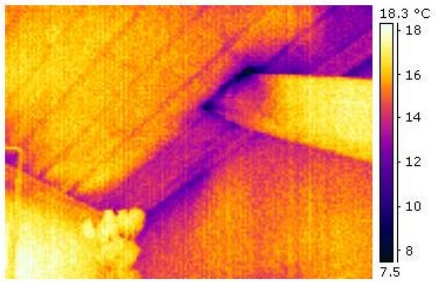
The measurement of the **leakage rate** also serves to determine target and limit values for the object to be remediated and can be carried out simplified as a **one-point measurement** (see WTA-Recommendation 6-11-15 Airtightness of buildings, Part 3: Measuring Procedure).



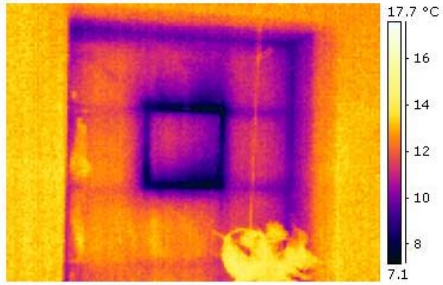
Status analysis with thermography at negative pressure



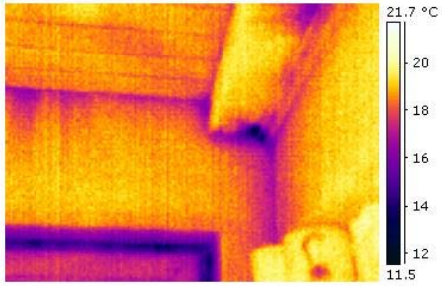
Roller shutter box



Glass bricks,
one can be opened

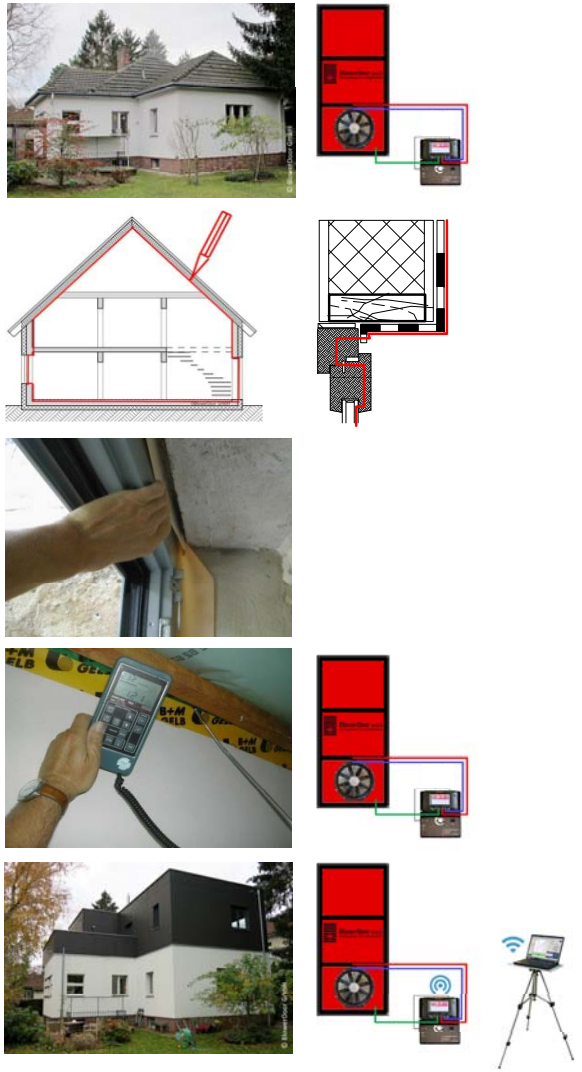


Ceiling
connections



Timing of an airtightness measurement in case of rehabilitation

- **Status analysis of the building (surfaces and connections) incl. determination of the characteristic value before renovation.**
- Establishing a detailed plan of the airtight envelope
- Execution of the remediation measures
- Monitoring the implementation during the remediation measures as long as the air barrier is still accessible
- Conducting a BlowerDoor test after completion of the remediation measures



Airtightness measurement during and after rehabilitation

In WTA-Recommendation 6-11-15 further measurements are recommended in addition to the **airtightness measurement for status analysis prior to rehabilitation**:

Airtightness measurement for **quality control** during the rehabilitation process and a **final measurement** to compare the characteristic values before and after the rehabilitation.

Further presentations in the context of "30 years – 30 applications and testing methods"

Literature and Links

- Wissenschaftlich-Technische Arbeitsgemeinschaft für Bauwerkserhaltung und Denkmalpflege e. V. (WTA), Pfaffenhofen, Germany, a scientific-technical working group for preservation of buildings and historical monuments, offers current articles on building repair in various publications
  - http://wta-international.org
  - WTA-Recommendation for Airtightness of buildings