



# CLIMATE NEUTRAL BUILDINGS AND CITIES | CBC





## PROFILE

Die Arbeitsgruppe Advanced Thermal Management besitzt ein vertieftes Verständnis in den Bereichen der hochgenauen sowie rückführbaren thermischen und infrarot-optischen Modellierung, Charakterisierung und Materialentwicklung. Dies bildet die notwendige Grundlage für ein innovatives und effizientes thermisches Management von Prozessen und Produkten zur Erhöhung von Energie- und Klimaeffizienz.

>> Excellent research for  
next-generation buildings  
and neighborhoods<<

# SERVICES

## Our equipment

- Test façade and 1:1 twin measurement room pairs for characterising building components under real conditions. Measurement is optionally with user influence or programmable artificial users (dummies)
- Hot-box apparatus for determining the heat transfer coefficient (U-value) of windows, façade elements and greening systems
- Thermal load test rig for glazings
- Spectral and angle-dependent characterisation of all optical properties such as transmittance, reflectance and absorptance of materials and components
- Spectral and temperature-dependent emissivity
- Outdoor measuring stand for determining the total energy transmittance (g-value)
- Indoor solar simulator for determining the total energy transmittance and the thermal behaviour of façade systems
- Laboratory measuring stands for thermal characterisation of building components and systems with phase change materials
- IR cameras for thermal bridge analysis and thermal quality control of heating/ cooling systems and entire façade
- Dynamic building simulation, also in connection with hardware-in-the-loop
- Life Cycle Analysis



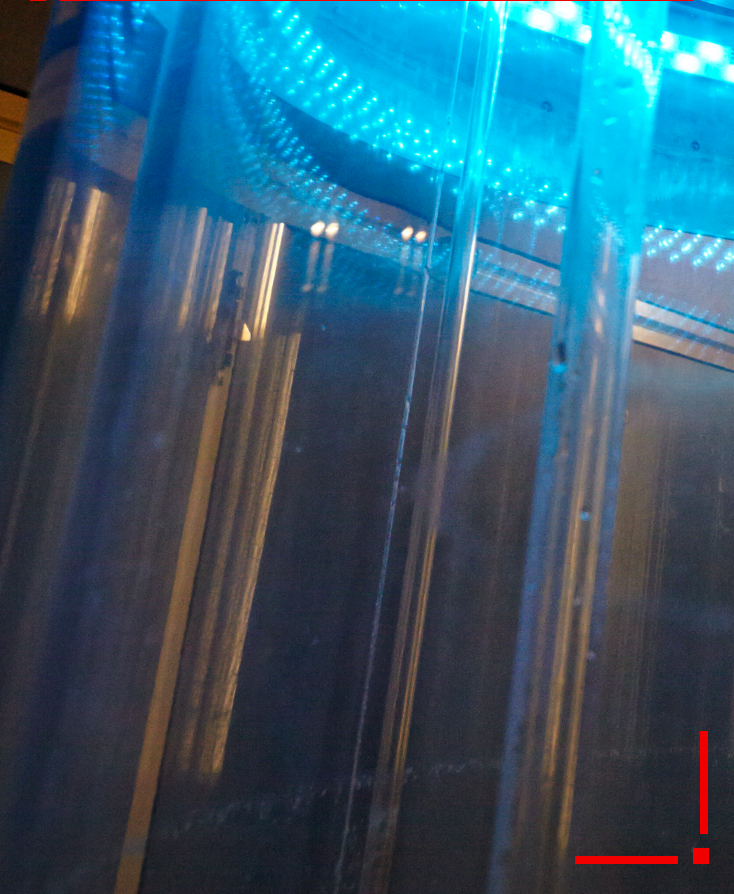
## Project-specific services

- Contract development of measuring equipment (e.g. mobile U-value sensor)
- Software development (e.g. planning tool for neighbourhoods with anergy ring)
- Development and operation of project-specific measuring stations (e.g. green roofs with PV)



## ABOUT US

The Center for Applied Energy Research e.V. (CAE) is a non-profit research institute and aims with its research and development activities to transfer ideas into practice in cooperation with commercial enterprises and other research partners and thus to make the greatest possible contribution to a sustainable, CO<sub>2</sub> emission-free and economical energy system. The CAE acts as a bridge between basic research and market-oriented development.



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