



Politechnika Krakowska
im. Tadeusza Kościuszki

Cracow University of Technology

Expert leadership in the field

of energy efficient building in Poland

Małopolska Laboratory of Energy Efficient Building

The Małopolska Region Centre for Energy Efficient Building



Contact:

Cracow University of Technology
Ul. Warszawska 24
31-155 Kraków
www.pk.edu.pl

Małopolska Laboratory of Energy Efficient Building
www.mlbe.pk.edu.pl
mlbe@pk.edu.pl

The Małopolska Region Centre for Energy Efficient Building
www.mcbe.pl
broker@mcbe.pl

MAŁOPOLSKA LABORATORY OF ENERGY EFFICIENT BUILDING



The Laboratory is the first place in Poland to do such large-scale research on energy efficient technologies and the comfort of the occupants of low-energy buildings. This interesting project gives the University the leading position in the sector of energy efficient building.



The innovative building is situated on the University campus in Warszawska street. It has 5 floors (built area is 258,41m², utility space is 1039 m², the front elevation is 17,02 m wide and 19,24 m high). It is a slab and column construction with self-supporting external walls and glass elevations.

Owing to this, materials and construction can be changed to meet research needs.

Inside there is **14 climate and energy zones** where researchers study properties of materials and technologies in relation to climate conditions.

The object has an **intelligent control system** and relies on varied systems of heating and ventilation. Energy supply also comes from different sources including renewables.

MAŁOPOLSKA LABORATORY OF ENERGY EFFICIENT BUILDING

All installations such as heating, cooling and ventilation have meters so as to allow current monitoring. The object comprises of 14 thermal zones working independently of one another so as to make their comparative analyses possible.



The laboratory is supplied with specialist research equipment for testing and implementing new technologies, material and construction solutions and installations.

Thermal comfort of the occupants is studied and analyses of air quality are made for the tested technologies.

The laboratory has:

- a chamber for climate testing of building partitions and installations,
- a chamber for studying thermal comfort while using different HVAC installations,
- thermal imaging cameras,
- a 3D scanner,
- thermal manikin,
- a PIV system to examine air flow in relations to the ventilation system used.



The Laboratory building allows research to be carried out in real conditions.

The building is equipped with some 3 thousand sensors placed in the building construction.

THE MAŁOPOLSKA REGION CENTRE FOR ENERGY EFFICIENT BUILDING



The Małopolska Region Centre for Energy Efficient Building is an innovation unit of Cracow University of Technology whose aim is to establish a network of partner collaboration between research and business in the field of energy efficient building. The Centre team supports the Laboratory of Energy Efficient Building. The Centre has well equipped research facilities and provides various services such as: counselling, information, training and promotion in the field of innovation technology transfer, entrepreneurship, innovation projects in energy efficient building.

Services offered by the Małopolska Region Centre for Energy Efficient Building include:

- Research and development as well as implementation
- Expert opinions, analyses, commissions (e.g. energy efficiency analyses, energy audits, energy efficiency characterizations);
- Technical counselling in energy efficiency, heating installation solutions including renewables;
- Laboratory tests using the equipment of the University and partners of the Centre;
- Material and construction solutions to meet research needs;
- Certification assigned by the Centre;
- Support in applying for UE funds for interdisciplinary projects in energy efficient building;
- Training courses, workshops, seminars, conferences and educational activities dealing with energy efficient building;
- Designs of energy efficient buildings with energy efficiency analyses.