

Sustainability of the thermal redevelopment of facades of residential buildings - Creation of a CO₂-saving module within the energy performance certificate (applicable for big redevelopments in the context of the promotion model for thermal dwelling rehabilitation)

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Aim of the research project:

The research project should establish - among the calculation of energy indicators - a tool for calculating the reduction of CO₂ emissions.

Summary:

As a part of designing the energy performance certificate, the MA 39 -Testing, Supervision and Certification Body of the City of Vienna works on the creation of software modules to calculate energy indicators. Since the last amendment it is possible to provide renovations of building services, resulting in a reduction of CO₂ emissions, with a promotion. Although this option of redevelopment deserves a special place from an environmental point of view it isn't often applied. Nevertheless the project should lead to the creation of a software module detecting such savings of CO₂ emissions in addition to existing Excel calculation tools.

Since the beginning of the implementation of the Energy Performance of Buildings Directive the MA 39 supported the Austrian Institute of Construction Engineering and the Austrian Standards Institute with the design of Excel tools (often "playful" to use) to calculate the following parameters for residential buildings and natural-conditioned non-residential buildings:

- Heating demand
- Heating demand of hot water
- Energy use for heating systems
- Energy use for heating

These tools help to estimate values for the given parameters very rapidly allthrough the way of developing methods.

CO₂-saving module: Common variants of the thermal redevelopment of facades can be entered customer-friendly and easily into the CO₂-saving module. The module immediately calculates the saving potential in kWh/m² and in kgCO₂/m²a depending on the energy source. A calculation of CO₂ savings only relying on plant-specific changes will be launched after the completion of methods.