

PERFORMANCE ASSESSMENT OF ENERGY EFFICIENT HOUSES THROUGH MONITORING - PASSHOUSE

Goal of the project

The main goal of the project is to conceive and setup a monitoring system through which all the hydrothermal parameters of a building are to be registered. All the recorded parameters are analysed in order to conclude the efficiency of the system. Another important aspect is to validate or improve energy consumption calculation methods, through real, measured data of energy consumption and to provide cost-benefit calculations for investors, architects, constructors and for private people.

Short description of the project

In Dumbravita, (near Timisoara) Timis county, a residential building has already been constructed as a double house. Under these circumstances, constant monitoring of hygro-thermal parameters is being carried out. Based on the data provided by the monitoring system, a detailed evaluation of energetic performance shall be carried out.

In respect with the monitored elements, the equipment can be divided into 10 major groups. Naturally, it can be stated that all the important hygro-thermal and climate parameters will be monitored.



Main activities

- Procurement of monitoring equipment and energy performance certification for PASSHOUSE / research reports / scientific papers.
- Evaluation of energetic performances for the PH using recorded monitoring data, design of the monitoring system, procurement and set-up of equipment and initializing of the monitoring activities.
- Transfer of know-how to interested specialists through workshops and technical meetings.

Results

Expected results of the project as well as end products go hand-in-hand with the appointed objectives of the project. Thus, the main end products are the deliverables, in the form of detailed guidelines, plans and recommendations that shall be drawn up. Documents which attest the build-up the finishing and installation system and Energy certification of the Passive House building using real energy consumption

Recording the comfort parameters of the PASSHOUSE and report charts of monitored parameters. Monthly Monitoring Data Sheets related to the envelope and to indoor and outdoor conditions. The main results consist of exhaustive knowledge and fathom of PASSHOUSE system. However, during implementation of the project is most probable that the research team will achieve important new findings and will generate patents for some subassemblies.

Project implemented by

Project partnership comprising of "Politehnica" University of Timisoara - CCI Department and SolarTech South Plain Nonprofit.

Implementation period

2011-2012

Research centre

Research Centre for Retrofitting of Constructions

Applicability and transferability of the results

Knowledge transfer to people about energy-efficient solutions. The target groups of the project are stakeholders who can do something for sustainable energy consumption.

The topic of the project and the issues that it addresses are of great importance not only for Romania and Europe, but for all of the developed countries in the world which can afford to apply measures for enhancement of energy efficiency.

The most important target groups of individuals, to whom the results and end products of the project will be most interesting, is represented by the scientists and specialists working on energy-consumption projects. Another targeted group of the project are stakeholders who can take real actions for sustainable energy consumption by adjusting the way they approach buildings, both new and existing ones.

All issued documents in the shape of deliverables will assure the transfer of knowledge intra- and inter-disciplinary, generating further know-how for scientific community and for practicing specialists. Furthermore, the guidelines would enable and encourage architects and planners to properly consider the optimal combination of improvements in energy efficiency and use of energy from renewable sources when planning, designing, building facilities.



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Fields of interest

Energy efficiency; Health Monitoring; Passive House; Advancement of energy-efficiency of buildings with all aspects of environmentally, economically and socially sustainable construction sector.

Research team

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