



RESEARCH OF ENERGY EFFICIENT ALGORITHM FOR BUILDING MANAGEMENT SYSTEM

R. Belinskis, A. Klūga, A. Krūmiņš

*Riga Technical University
Kalku str. 1, LV-1658 Riga – Latvia*

ABSTRACT

This paper investigates building management system (BMS) as a tool for energy consumption decrease in construction store in Latvia. Building management system was renovated in these stores. The energy monitoring was done before and after renovation of BMS.

HVAC (Heating Ventilation Air Condition) systems in buildings must be complemented with a good control scheme to maintain comfort under any load conditions. Efficient HVAC control is often the most cost effective option to improve the energy efficiency of a building. However, HVAC processes are nonlinear, and characteristics change on a seasonal basis so the effect of changing the control strategy is usually difficult to predict.

The use of optimization and adaptation principles in regulation systems permits to construct the most modern automatic climate control systems. However, under different conditions systems can produce different results, so developers face a new challenge – a choice of the most effective adaptation method under certain circumstances.

Results of our investigations are definition of all necessary BMS functions and unit control algorithms. Paper results can be used for installation of new BMS in office and trading centre buildings. The research results show that BMS control algorithms plays significant role in Building energy consumption.

This research main deliverable is the recommendation to the building owner to consider improvements of existing BMS. The recommendations include definition of main BMS functions, its influence on energy consumption, decrease of maintenance costs and payback period.

Keywords: BMS, HVAC, energy consumption