

Smart systems for energy consumption management in green buildings and its economic evaluation in Iran

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ABSTRACT:

The combination of physical world with computer capabilities would develop a new world which is able to think with a computer mind. In this research, we will investigate smart systems and review a number of cases which have utilized them. This paper attempts to answer the following questions: “Are smart systems able to manage energy consumption?”, “Given the considerable cost of smart systems, can one propose a cheaper alternative with the same efficiency at least for residential buildings?”, and “Which building groups best suit smart systems? The results of this study confirmed that the use of smart systems is cost effective for general, industrial and office buildings thanks to return on investment. With regard to residential buildings, however, one can minimize the waste of energy without suffering the costs of purchase and maintenance of smart systems, by using climatic design solutions such as selection of optimal building direction, optimization of ducts, adoption of efficient building design, and the utilization of appropriate attachments.

Keywords:

Smart control system, Green building, Energy, Residential architecture.