

3rd International Conference on Research in Applied Science

06-08 November 2020

Munich, Germany

Evaluation Of The Applicability The Adaptive Building Facade Systems In Turkey

Selin Öztürk Demirkıran

Department of Architecture, Gebze Technical University, , Kocaeli, Turkey

Abstract

It is seen that the changes in the living conditions with the development of industrialization and technology, machine technology and changes in the built environment have rapidly increased energy consumption over time. However, it is known that about fifty per cent of energy consumption is the energy consumed in the construction and operation of buildings (ventilation-heating-cooling systems). This has led the designers to design systems that can react to environmental changes, which can be integrated into building elements. One of these systems is adaptive façade systems. The main purpose of adaptive façade systems is to improve the environmental performance of buildings and respond to user comfort conditions by acting in accordance with environmental conditions. Adaptive façade systems have various applications in the world. On the other hand, any application was not found in Turkey at the researches from this point. It is seen that the studies being done is theoretical or partially sustained in the intelligent façades. Therefore, it is aimed to evaluate the applicability of the adaptive façade systems in Turkey by revising the adaptive façade system applications and analyzing the details of these applications in this research. In this sense, primarily in this study, adaptive facade systems are conceptually considered. Later, performance analysis of the system details was attempted from the world through examples. Finally, the applicability of the data obtained in Turkey was assessed. As a result of the study, it is considered that adaptive façade systems will generate data in terms of applications in Turkey in the future. However, it is expected that it will be a guide for future studies.

Keywords: Adaptive façade systems, intelligent building façades, sustainability.