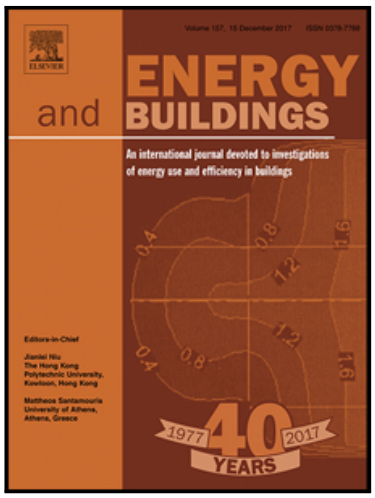

An Object-Oriented Model for Construction Method Selection in Buildings Using Fuzzy Information

M. Ebrahiminejad , E. Shakeri , A. Ardeshir , MH Zarandi

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An Object-Oriented Model for Construction Method Selection in Buildings Using Fuzzy Information

M. Ebrahiminejad[a], E. Shakeri[a,*] , A. Ardeshir[a,b], MH Zarandi[c]

[a] Department of Civil and Environmental Engineering
[b] Environmental Research Center
[c] Department of Industrial Engineering & Management Systems
Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran

Abstract:

A critical decision to be made once a building project is defined is the selection of a convenient construction method (CM) for various building elements. To deal with varied decision criteria and the classified nature of building elements, this paper implements the decision-making process in an object-oriented model, in which each building element is modeled as a class with various possible alternative construction methods as subclasses. Although the subclasses inherit all the main class attributes, each subclass is specified by additional attributes. The uncertainty and vagueness of expert knowledge on the performance of each construction method regarding the attributes are mapped with fuzzy numbers in this multi-criteria-decision-making problem to deal with the inherent imprecision of subjective judgment. To demonstrate the use and capability of the model, a case study is presented.

Keywords:

Building, Construction method, object-oriented modeling, fuzzy, decision-making

* Corresponding Author
Email: eshakeri@aut.ac.ir