

Accepted Manuscript

Title: Methodology to Define Cost-Optimal Level of Architectural Measures for Energy Efficient Retrofits of Existing Detached Buildings in Turkey

Author: Touraj Ashrafian A. Zerrin Yilmaz Stefano P. Corgnati Nazanin Moazzen



PII: S0378-7788(16)30230-4
DOI: <http://dx.doi.org/doi:10.1016/j.enbuild.2016.03.074>
Reference: ENB 6547

To appear in: *ENB*

Received date: 6-11-2015
Revised date: 3-3-2016
Accepted date: 28-3-2016

Please cite this article as: Touraj Ashrafian, A.Zerrin Yilmaz, Stefano P.Corgnati, Nazanin Moazzen, Methodology to Define Cost-Optimal Level of Architectural Measures for Energy Efficient Retrofits of Existing Detached Buildings in Turkey, Energy and Buildings <http://dx.doi.org/10.1016/j.enbuild.2016.03.074>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Methodology to Define Cost-Optimal Level of Architectural Measures for Energy Efficient Retrofits of Existing Detached Buildings in Turkey

Touraj Ashrafian¹, A.Zerrin Yilmaz², Stefano P. Corgnati³, Nazanin Moazzen¹

¹Graduate School of Science, Engineering and Technology, Istanbul Technical University
ITU Ayazaga Campus, Maslak, Istanbul, Turkey

²Faculty of Architecture, Istanbul Technical University, Taskisla, Istanbul, Turkey

³Dipartimento di Energia (DENERG), Politecnico di Torino, Torino, Italy

Highlights

- A methodology to define applicable and feasible retrofit measures for existing residential buildings is defined,
- Application of staged retrofits and its procedure is analysed,
- Cost optimal graph for the case buildings in Turkey are drawn,
- Energy performance, global cost, CO₂ emission and payback period of different retrofit measures are defined,
- Retrofits of residential buildings in cold climate of Turkey has priority to other climates' buildings,
- Energy performance of buildings after retrofit is not solely important for taking optimum retrofit measures.

Abstract

Building stock is playing a crucial role in the energy policy of every society. Number and area of residential buildings in every country provide a priority for this typology of building in large scale decision making. Uncertainties in users' behaviours make it difficult to have a proper assumption in residential buildings. In Turkey, buildings are responsible for a large amount of energy consumption and have tremendous energy saving potential. It is necessary to have more accurate results and consider different aspects of any retrofit action before application. To increase yearly retrofit rate, owners should involve in the actions as financiers otherwise the amount of governmental

Download English Version:

<https://daneshyari.com/en/article/6730142>

Download Persian Version:

<https://daneshyari.com/article/6730142>

[Daneshyari.com](https://daneshyari.com)