Title: Renovation of existing glass facade in order to implement energy efficiency and media facade

Authors: Jasna Čikić Tovarović, Jelena Ivanović-Šekularac, Nenad Šekularac

PII: S0378-7788(17)30589-3
Reference: ENB 7789

To appear in: ENB

Received date: 18-2-2017
Revised date: 7-6-2017
Accepted date: 16-7-2017

Please cite this article as: Jasna Čikić Tovarović, Jelena Ivanović-Šekularac, Nenad Šekularac, Renovation of existing glass facade in order to implement energy efficiency and media facade, Energy and Buildings http://dx.doi.org/10.1016/j.enbuild.2017.07.049

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.
Renovation of existing glass facade in order to implement energy efficiency and media facade

Jasna Čikić Tovarović, Ph.D. MSc. B.Sc. Arch. Assistant Professor,
Faculty of Architecture University of Belgrade, 11000 Belgrade, Bulevar kralja Aleksandra 73/II, Serbia,
e-mail: cikic.tovarovic@gmail.com, (Corresponding author),

Jelena Ivanović-Šekularac, Ph.D. MSc. B.Sc. Arch. Full Professor,
Faculty of Architecture University of Belgrade, 11000 Belgrade, Bulevar kralja Aleksandra 73/II, Serbia,
e-mail: jelenais@orion.rs,

Nenad Šekularac, Ph.D. MSc. B.Sc. Arch. Associate Professor,
Faculty of Architecture University of Belgrade, 11000 Belgrade, Bulevar kralja Aleksandra 73/II, Serbia,
e-mail: nseki@orion.rs

Abstract

Modern cities and their architectural structures undergo significant functional and physical changes. In recent years, the interventions on building envelopes have increased. Therefore, it is necessary to analyze potential remodeling of glass facades, along with applying the concept of smart technologies, in order to increase energy efficiency of the existing buildings. This paper analyzes the modernization process of devastated glass facade of the tall Slavija hotel, built in 1960s in Belgrade, Serbia, taking into consideration some positive examples of transformation and reskinning of buildings, where the aspect of medialization is an active part of urban renewal. The subject of this paper is the analysis of research findings about the improved thermal comfort of this building, after performing the replacement of its glass facade and converting the hotel building into a office building. Special attention was paid to the implementation of media technologies and final effects on energy balance of the newly designed facade.

The proposed solution is supposed to evaluate the improved thermal comfort that was achieved by a radical renovation of the facade and by replacing the existing facade with a new single facade (double and triple glazed units), with media elements as well as without them. The research results are presented as proposals for improving EE public buildings by implementing the latest system of curtain walls in order to increase the value of the buildings. One of the most important criteria included in the process of energy refurbishment is technological improvement of the existing buildings, along with the presentation of media facades. The case study is based on EnergyPlus simulations.

Keywords: media technologies, façade modernization, energy efficiency increase, energy refurbishment, energy simulation
دریافت فوری متن کامل مقاله

امکان دانلود نسخه تمام متن مقالات انگلیسی
امکان دانلود نسخه ترجمه شده مقالات
پذیرش سفارش ترجمه تخصصی
امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
امکان دانلود رایگان 2 صفحه اول هر مقاله
امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
دانلود فوری مقاله پس از پرداخت آنلاین
پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات