

Event:

ENERGY in BUILDINGS 2025


Date:

Saturday, February 22, 2025

Place:

Thessaloniki, Macedonia, Hellas



#	<div>Marko Ignjatović, PhD</div> <div>Mechanical Engineer</div>	
Title:	Associate professor University in Niš, Faculty of Mechanical Engineering in Niš, Serbia	
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Presentation title:	The Impact of Surrounding Structures on Energy Performance Simulation of a Primary School in Niš	
<p>This presentation investigates the influence of surrounding structures on the energy performance of a primary school in Niš, focusing on their impact on energy consumption and shading. The study uses a reference energy consumption value of 177 kWh/m², established in prior research, as a benchmark to assess the changes introduced by nearby buildings. The primary aim is to understand how these structures affect the building's energy efficiency, particularly the thermal envelope, and to identify potential errors in the energy assessment process.</p> <p>Comprehensive simulations are conducted to evaluate the effects of surrounding buildings on the school's energy balance, considering factors such as shading, light reflection, and airflow. The study also examines how these structures contribute to the overall sustainability and energy stability of the building, providing insights into optimizing energy efficiency in dense urban areas. Several scenarios are modeled to identify the most effective strategies for reducing energy consumption, tailored to the specific climate and urban characteristics of Niš.</p> <p>The findings from this research will offer valuable guidelines for improving architectural designs and urban planning, with an emphasis on reducing energy usage in similar settings. Additionally, this study highlights the importance of refining simulation models in complex urban contexts to ensure accurate predictions of energy performance. The results may serve as a foundation for further exploration into building energy efficiency and have practical implications for sustainable city development.</p>		

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CV:

Marko Ignjatović, lives in Niš, Serbia.

After graduating in 2004 at Faculty of Mechanical Engineering in Niš, he was employed by Faculty as the best student of his generation, where, at the moment, holds the title of associate professor. During his teaching career he was involved in subjects related to HVAC&R, district heating, building energy efficiency, building energy performance modeling and simulation.

He participated in numerous international and national scientific and commercial project related to energy efficiency in buildings and industry, RES utilization, energy auditing. He is highly involved in building energy modelling and building energy performance simulation. Author and co-author of many peer-reviewed papers, training programs and guidelines considering energy audits in buildings and software solutions.

Very active in Serbian HVAC&R Society (SMEITS-Društvo za KGH Srbije) where currently serves on the Board of Governors. Also very active in ASHRAE through ASHRAE Danube Chapter and ASHRAE Region XIV (Regional Nominating Alternate). Member of IBPSA (International Building Performance Simulation Association).