

CHALLENGES FOR BETTER ACCEPTANCE OF NZEBs IN SLOVENIA

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Forum topics	<input checked="" type="checkbox"/> Energy in 21st Century	<input type="checkbox"/> Cultural Heritage in Digital World
	<input type="checkbox"/> Engineering Capacity Building	<input type="checkbox"/> Disaster Risk Management & Governance for Resilient Communities
	<input type="checkbox"/> Construction 4.0	<input checked="" type="checkbox"/> BIM Lifecycle, Facility & Asset Management

Abstract: (250 to 500 words: for each heading use the bullet points or narrative - the submission including graphics should not exceed one page)

Problems - Issues / Challenges-Needs	<p>By the year 2020 Nearly Zero Energy Buildings (NZEBs) will become obligatory for all new projects. Slovenia encouraged the construction of “early” NZEBs in order to make the construction sector, developers and end-users ready for advanced energy efficient technologies and for on-site production of energy from renewable energy sources.</p> <p>In spite of good experiences with single family NZEBs in Slovenian real-estate market, the construction of large apartment buildings in NZEB standard revealed many new challenges, like:</p> <ul style="list-style-type: none"> -the need for experienced designers, skilled construction teams and specialized control; -to integrate NZEB quality assurance in construction process and in all stages of the building life cycle; -to reduce NZEB investment costs in order to make NZEBs cost effective and even cost optimal energy concept; -to increase the end-users’ acceptance of (large) NZEBs by explaining them the benefits of living in such buildings, by offering them appropriate trainings, by providing them simplified and focused information on technologies in NZEBs and by understanding the tenants’ and owners’ prejudices; -to provide feed-back to policy makers regarding user-friendly NZEB building regulation.
Solutions - Methods / Results - Findings	<p>In the paper the analysis of recent NZEB investments of Housing Fund of The Republic of Slovenia will be presented and the main characteristics of Slovenian early NZEB apartment buildings will be compared with main findings from other countries of H2020 CONZEBs projects consortium (Denmark, Germany, Italy). Thus the national NZEB minimum requirements, typical energy efficiency and RES technologies used and the corresponding costs of NZEBs will be presented and Slovenian national options to reduce investment costs in NZEBs by eventual simplification of the building energy concept will be discussed.</p> <p>Moreover, a survey of current (7) and future (90) NZEB end-users opinion on living in NZEB was done in order to reveal the expectations and eventual fears of tenants and building owners regarding living in NZEBs. Slovenian end-users. Respondents in Slovenia seem well informed about NZEBs. They value good thermal comfort, fresh air in the apartments and good access to daylight. However, they exposed some concerns, especially regarding technical buildings systems in NZEBs and the reliability of their performance.</p>
Novelty - Value / Relevance to ...	<p>The Project CoNZEBs (Solution sets for the cost reduction of new Nearly Zero-Energy Buildings) (2017 - 2019) is funded by the European Commission in the framework of the Horizon 2020 Program under the Grant Agreement No. 754046.</p>
Forum statement	<p>Early NZEBs allowed the study of life cycle costs and technological solutions to reduce the construction costs of new multi-family houses and thus to increase the acceptance of NZEBs.</p>

Keywords:

NZEB, life-cycle costs; reduction of investment costs, end-users’ acceptance

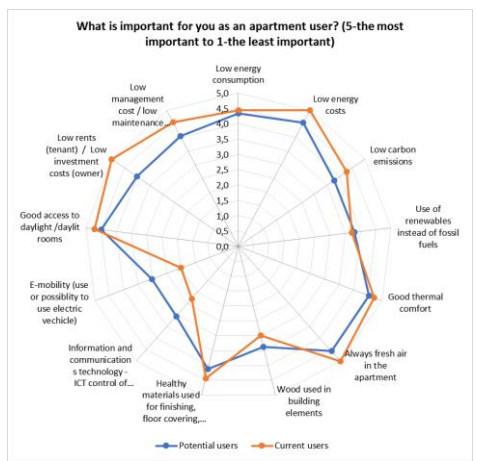


Figure 1: Importance of topics related to living in NZEBs for current and potential future NZEB users in Slovenia)