

# THE USE OF TIMBER IN HIGH-RISE BUILDING STRUCTURES

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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 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	Due to the expected increase of population in urban communities the development of new construction technologies using timber is essential in order to achieve more environmentally friendly and sustainable cities. The growing interest in including timber in high-rise buildings has consequently demanded an evolution of new timber and hybrid structural systems. These have not yet been comprehensively researched or used in practice to a greater extent. This issue is even more profound in Slovenia, where the development and construction of such buildings is not as rapid as in some other countries. This may be due to several reasons, such as the limitations of building regulations, technological (un)development, inadequate qualification of building contractors, support of local communities etc. Several new policies have already been or are still being implemented in Slovenia in order to encourage the use of timber in building construction and this could lead to a revolutionary change in the housing industry
Solutions - Methods / Results - Findings	In the presentation, the advantages / disadvantages and feasibility of using timber and timber-based materials as an alternative solution in the construction of mid and high-rise buildings in Slovenia will be presented. Various structural systems will be considered, where a review of already existing timber and hybrid buildings in Slovenia and worldwide will be shown. Descriptive methods will be used in order to recognize the qualities of already constructed timber and hybrid buildings that are essential for their design. The research will try to identify the potential of high-rise timber/hybrid buildings in Slovenia.
Novelty - Value / Relevance to ...	The research will contribute to new knowledge about sustainable design of high-rise timber and hybrid buildings by considering a comprehensive review of such structural systems and by discussing how these buildings fit in the Slovenian local environment and how they perform in terms of their sustainability.
Forum statement	Considering wood as a structural material for the primary structural elements would increase the use of renewable resources in high-rise buildings.

**Keywords:** (up to 5 keywords)

high-rise timber and hybrid buildings; sustainability; environmental impact, economic impact, social impact

**Graphics:** (please use the gray area below for representative graphics or graphical summary: select the gray area below and paste your graphics)

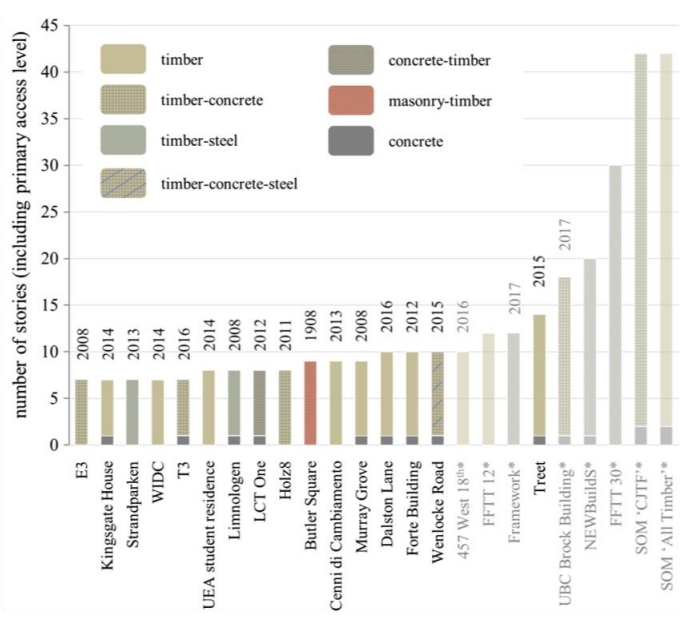


Chart based on: Foster et al., 2016, J. Struct. Eng.