

Recent Advancements and Trends on the Design of “Timber Composite” Solutions for Enhanced Buildings

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Message from the Guest Editor

Timber is a fundamental material for the design of buildings and structural systems in general. Although it is such a consolidated constructional material that it has been in use since antiquity, wood is frequently used in combination with other traditional (steel, concrete, etc.) or innovative constructional solutions (composite fibers, structural glass, etc.) to obtain structurally efficient systems. This is the case with new constructions—where innovative design concepts are applied—as well as existing structural systems—where the optimal combination of wood and other constructional materials can be taken into account for building retrofit purposes.

In both cases, careful consideration and knowledge are necessary not only for the intrinsic features of the combined materials, but especially to understand their reciprocal interaction. Hence, dedicated studies and specific design regulations are required.



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Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

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