Special Issue

Lightweight and Large-Span Structures: Innovative Structural Forms and Computational Methods

Message from the Guest Editors

This Special Issue focuses on advancing the knowledge and application of innovative structural solutions for large-span architectural and engineering projects. Key topics include (but are not limited to) new structural systems and components, new numerical computational methods for structure complex behavior analysis, new design methods using optimization strategies and AI-based generative algorithms, robotically assisted construction and deconstruction, and intelligent maintenance.

We welcome contributions that present original research, case studies, or reviews promoting the latest developments in this dynamic field. Of particular interest are methodologies that integrate advanced computational techniques, simulation technologies, and real-world applications. This Special Issue aims to provide a platform for academics, researchers, and professionals to share knowledge, inspire future advancements, and foster a deeper understanding of how innovative structural and computational strategies can reshape the possibilities for lightweight and large-span buildings.

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About the Journal

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.

Editor-in-Chief

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