



Experimental and Theoretical Studies on Steel and Concrete Structures

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Message from the Guest Editors

Dear Colleagues,

Steel and concrete are commonly used in structural engineering. Steel has the characteristics of high strength, lightweight, and aesthetic appeal, widely used in large-span engineering applications like cable-stayed bridges. Concrete is widely used in column and arch structures due to its economic feasibility, durability, and strong compressive properties. Steel-concrete composite structures can fully utilize the advantages of steel and concrete, and through integrated design can create safer, more stable buildings and infrastructure. Evaluating the mechanical performance of new structures, ensuring durability during service life, and enhancing resilience against extreme loads are key to maintaining excellent structural performance. Topics relevant to this Special Issue include:

- Mechanical performance of new steel and concrete structures;
- Composite structures with UHPC and other high-performance materials;
- Temperature action, wind and rain load, and other environmental impacts;
- Long-term performance of steel and concrete structures;
- The toughness of steel and concrete structures under extreme loads;
- Refined numerical simulation methods.



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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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