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Behaviour and Safety of Building Structures in Fire

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Message from the Guest Editors

Fire is a great threat to building structures; it can cause serious damages and even the collapse of entire buildings. The behaviour and safety of building structures in fire involve the development of building fires, fire detection and extinction, temperature-dependent material properties, the behaviour of structural elements, and global behaviour and collapse resistance of building frames. In addition, different structural systems behave differently in fire.

This Special Issue welcomes original research articles and review papers related to the behaviour and safety of building structures (e.g. steel structures, composite structures, concrete structures and timber structures) in fire. Topics of interest include (but are not limited to) the following:

- Building fires;
- Temperature-dependent material properties;
- Behaviour of structural elements in fire;
- Global behaviour and collapse resistance of building frames;
- Post-fire behaviour and rehabilitation of building structures;
- Emerging technologies related to the fire safety and structural fire engineering of buildings.

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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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