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Architecture and Engineering: the Challenges - Trends - Achievements

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Message from the Guest Editors

The dynamically changing reality entails the emergence of new design paradigms. There is a new important dimension to the European Union Directives, including, for example, the Directive on the energy performance of buildings, which has introduced the notion itself, and commitment to design and implement nearly zero-energy buildings (nZEB), applicable in particular to new buildings. Close attention is given to operating costs as part of the building life cycle analysis. The pricing formula gives way to the cost formula.

New architectural, functional, and technological solutions are constantly sought for with a view to (inter alia) ensuring a good indoor climate while, at the same time, achieving energy and economic efficiency.

These searches coincide with the paradigms of sustainable development which have not yet become a permanent element of our overall awareness.











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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, 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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