



## Architectural Design Based on the Influence of Indoor and Outdoor Environments

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### Message from the Guest Editors

More than 40% of world energy consumption, and one-third of global carbon emissions, are produced in the construction sector. Furthermore, it is estimated that energy consumption in buildings can increase around 50% by 2050 due to the rapid growth in population and energy demand in emerging countries. Taking into account that the architectural design has a decisive impact on the energy demand of buildings during all their lifetime, this Special Issue is focused on cutting-edge research and technologies addressing climate-responsive design, based on the interaction between the indoor and outdoor environments. The main goal is to reduce the energy demand and carbon emissions in buildings, as well as increase the environmental comfort of the users. All types of integrated perspectives and research, both experimental and theoretical, addressing the problem of designing with climate are welcome: case studies, effective design guidelines, new design approaches, scientific analysis of historical precedents, retrofitting of existing buildings, solar design, and innovative passive systems.





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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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