



## Climate-Responsive Architectural and Urban Design

Guest Editor:

**Prof. Dr. Jose-Manuel  
Almodovar-Melendo**

School of Architecture, University  
of Seville, 41004 Seville, Spain

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### Message from the Guest Editor

Dear Colleagues,

The European Union's commitment to achieving net zero carbon emissions by 2050 is a critical initiative aimed at mitigating climate change. Since the building sector is responsible for one-third of the global energy consumption and a significant portion of carbon emissions, its transformation is essential for reaching this ambitious target of the EU. This Special Issue aims to compile cutting-edge research and technologies that address climate-responsive design, showcasing innovative solutions that can help the building sector to meet net zero carbon emissions. All kinds of integrated approaches and research, both experimental and theoretical, dealing with climate-responsive design at both urban and building scales are welcome: innovative passive systems, net zero carbon emissions, energy efficient buildings, indoor environmental quality, environmental analysis of vernacular architecture, retrofitting of existing buildings, numerical modeling and simulation techniques, environmental measurements and monitoring, and case studies. Innovation and scientific soundness are the basic criteria for the admission of original research papers.





## Editor-in-Chief

### Prof. Dr. David Arditi

Construction Engineering and Management Program,  
Department of Civil,  
Architectural, and Environmental  
Engineering, Illinois Institute of  
Technology, 3201 South  
Dearborn Street, Chicago, IL  
60616, USA

## 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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Buildings Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

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