Special Issue

Engineering and Technological Heritage in the Digital Era: Documentation, Preservation, Interpretation and Futures

Message from the Guest Editors

Engineering and technological heritage represents the critical legacies of human innovation, including massive structures like bridges, railways, canals, factories, vessels, aerospace facilities, and large-scale infrastructures. Unlike conventional architectural heritage, these sites are defined by their functional complexity, immense scale, and technical integration, imposing unique challenges for documentation, conservation, and interpretation. In the digital era, advances in reality capture (e.g., laser scanning, photogrammetry, UAV-based surveying), modeling (e.g., HBIM, digital twins, memory twins), AI-driven analysis, and communication (e.g., immersive visualization) are providing powerful tools to record, analyze, and communicate this heritage. These methods address significant technical and conservation challenges while opening up new opportunities for structural diagnosis, asset management, technical storytelling, and public engagement. We invite scholars and practitioners to share their innovative research, case studies, reviews, and interdisciplinary perspectives that advance our understanding and the future of engineering and technological heritage in the digital age.

Guest Editors

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Prof. Dr. María Viñals

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About the Journal

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.

Editor-in-Chief

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