

Special Issue

Quantum and AI Technologies in Engineering and Construction Projects: Design Challenges and Opportunities

Message from the Guest Editors

The rapid development of emerging technologies is transforming the engineering and construction (E&C) industry. As modern E&C projects become more complex and data-driven, traditional design approaches face challenges in optimization, decision-making, and sustainable development. This Special Issue focuses on the application of Quantum Computing and Artificial Intelligence (AI) in E&C project design, exploring how advanced computational methods, machine learning, digital twins, and data-driven technologies can improve design efficiency, accuracy, and resilience. We invite researchers, engineers, and industry professionals to contribute innovative studies on topics including:

- Quantum computing and quantum–AI approaches for design optimization;
- AI, machine learning, and deep learning for intelligent design and prediction;
- Digital twins, BIM, and data-driven design frameworks;
- Generative design and AI-assisted decision-making;
- ...

This Special Issue aims to promote innovative research and collaboration toward the future of intelligent, sustainable, and technology-driven engineering and construction design.

Guest Editors

Dr. Siddra Qayyum

Faculty of Society & Design, Bond University, Gold Coast, QLD 4229, Australia

Dr. Mumtaz Ali

UniSQ College, University of Southern Queensland, Brisbane, QLD 4305, Australia

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Editorial Office

MDPI, Grosspeteranlage 5

4052 Basel, Switzerland

Tel: +41 61 683 77 34

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About the Journal

Message from the Editor-in-Chief

Designs (ISSN 2411-9660) is a peer-reviewed and open access journal which provides a unifying research framework for a wide range of engineering designs of disciplines and industrial applications, including mechanical engineering, electrical engineering, civil engineering, mechatronics, aerospace engineering, bioengineering, energy engineering, industrial engineering and manufacturing systems are of interest. We would like to invite you to contribute to the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Joshua M. Pearce

Department of Electrical & Computer Engineering, Western University,
London, ON N6A 3K7, Canada

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 19.5 days after submission; acceptance to publication is undertaken in 4.9 days (median values for papers published in this journal in the first half of 2026).