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Editorial

Complexity of Construction Mega Infrastructure Project

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Mega infrastructure projects are large-scale engineering facilities providing fundamental public services for social production, economic development, and people's life, such as large-scale hydropower projects, high-speed railways, expressway networks, gas pipeline projects, and long-span bridges. Many mega infrastructure projects have been or are being built around the world, such as Hong Kong–Zhuhai–Macao bridge, The Su-Tong Yangtz River bridge, high-speed railway in China, and Darwin Impex LNG plant.

Traditional project management is based on three-dimensional life cycle approach where the project manager is to seek to optimize the cost, quality, and design. Different from traditional construction project management, construction of mega infrastructure projects exhibits high complexity, such as task complexity, structural and directional complexity, technical complexity, and organization complexity. Due to their complexities, many of mega infrastructure projects suffer from overbudget, overtime, and low investment return. To address these challenges, many researchers have conducted extensive research on relevant topics recently, such as construction and site management, mega project supply chain and logistics management, risk management, and organization management.

The aim of this special issue is to collect cutting-edge research in the life cycle of construction mega infrastructure projects with emphasis on current developments and future directions in new models and computational algorithms. Among about 50 submissions, 29 papers are accepted after thorough review process in this special issue. Seventeen of them are dedicated to make use of new technology and advanced mathematical computation to improve mega-projects construction, including dam, large bridges, and tunnels. Four of them are on how to make use of advanced control method for system control and fault diagnosis. Another 4 are on stakeholder engagement and risk management. The rest are on supply chain management and construction scheduling optimization.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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