

Guest Editors:

Dr. Jin Ouk Choi, University of Nevada, Las Vegas (jinouk.choi@unlv.edu)

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Call for Papers

Special Collection on Modularization and Standardization Strategies in the Construction Industry



Aims and Scope:

Recently, renowned agencies, organizations, and companies have highlighted the importance of modularization (transferring stick-built construction efforts from a jobsite to fabrication shops/yards) and standardization (developing and using consistent designs in system or project levels) strategies as promising methods to innovate the construction industry. However, the construction industry's robust implementation of modularization or standardization strategies remains elusive. Many practitioners are still unfamiliar with modularization or standardization and resist changing from a traditional stick-built / customization approach to new approaches. The modular projects are often failed; the implementations have been limited to lower levels of modularization (prefabrication, 2D, non-volumetric) and standardization (equipment, materials, subsystems), and lower extents of modularization (i.e., 5~15% of site-based works are exported to the fab shops/yard) and standardization. In this regard, the industry urgently needs help on planning and managing their modular projects successfully and obtaining all the full benefits of modularization.

The past studies were somehow limited to identifying or examining success factors, advantages, disadvantages, barriers, challenges, risks, enablers, lower levels of modularization (i.e., prefabrication) / standardization, and others. It is inevitable to promote new initiatives for these strategies by encouraging more rigorous research and evidence-based practices to help the industry achieve higher levels of modularization and standardization and obtain the full benefits of these two strategies.

To fill this critical gap and address the underlying problem, this Special Collection seeks fundamental and broad contributions that establish the scholarly foundations for Modularization and Standardization Strategies in the construction industry. In particular, this Special Collection will focus on the realms of managerial insights and management in engineering implications. The guest editors welcome all the types of modular projects in the construction industry, including, but not limited to, *modular buildings, modular plants/facilities, and accelerated bridges*. With the help of modular subject-matter experts from the industry, the guest editors have identified the topics where the practitioners need the help most.

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Aims and Scope continued:

Accordingly, the guest editors invite the following research areas **with respect to MODULARIZATION or / and STANDARDIZATION** (and will consider related topics outside these areas):

- Business Case / Business Development / Program Management for Standardized Projects
- Planning Techniques – Collaborative / Interactive / Effective Interfacing / Lean / Last Planner / Advanced Work Packaging (AWP) / Engineering Work Packaging (EWP) / Module Work Packaging (MWP) / Standardization Work Packaging (SWP)
- New Technology (Blockchain / Digital Twins / Building Information Modeling / Generative Design / Artificial Intelligence) Framework
- Environmental, Social, and Governance (ESG) / Sustainability / Net-zero Carbon & Climate Change / Corporate and Public Policy
- Ideal Contract and Project Delivery Strategy (Integrated Project Delivery)
- Transportation and Logistics Strategy (Path of Construction and Module Sequencing)
- Metrics to Convert Soft Benefits (Safety, Quality, and Productivity) to Hard Numbers (\$)
- Pretesting / Factory Acceptance Testing (FAT) / Pre-Commissioning
- Globalization in the Modular Buildings Sector (as the industrial sector)
- Advanced Planning and Management for High-rise & Complex Modular Buildings
- Legislative and Regulatory Issues / Tariffs

Submission Information:

Authors wishing to submit papers should contact the Guest Editors (by email) to submit extended abstracts (maximum 800 words) summarizing their proposed submissions. To be considered for the special collection, authors should submit extended abstracts at least by **December 15, 2022**. The Guest Editors will review submitted proposals and contact authors with invitations to submit full-length articles. All submitted papers will go through a regular peer review process for JME. However, the authors can submit the abstract/full paper before the deadline as well if they wish. The paper will be published as soon as it is accepted for publication, without waiting for other papers to be published.