Abstract:
Lean thinking is an example that shows how innovation in the manufacturing industry also leads to improvements in the construction industry. Modular product design is common in mechanical engineering, enabling companies to reduce costs and development time. Various methods and tools exist to design modular products. Modular design is not new to the construction industry, but a conducted literature survey reveals that the number of available methods and tools is limited in comparison with mechanical engineering. Therefore, this paper systematically searches for learning opportunities between both industries in terms of modularization. Firstly, the two sectors are compared on a high-level basis. Following this, the objectives for modularization are compared. Finally, existing methodologies are analyzed. Overall the findings indicate that the construction industry would benefit from process models that help to systematically modularize buildings based on different module drivers. Additional research is required.
to develop a modelling approach for the various dependencies and flows in buildings. The paper proposes further research steps to push modular design in construction.

Stichworte:
Design methods, Product architecture, Product structuring, Complexity, Construction industry

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