Concrete Modular Systems for High-rise Buildings - the best practice

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Modern methods of construction with offsite manufacturing are advancements from prefabricated technologies that existed for decades in the construction industry and provide platform to integrate various modern disciplines into providing a more holistic solution. Due to the rapid speed of construction, reduced requirement of labour and minimised work on-site, offsite manufacturing and prefabricated building systems are becoming more popular and perhaps a necessity for the future of the global construction industry. The approach to the design and construction of prefab building systems demands a thorough understanding of their unique characteristics.

The applications of prefab modular systems have expanded into tall buildings where the effect of lateral loads, such as wind and earthquake loads, becomes critical. This paper explores how concrete modular structural systems are designed and installed in modern high-rise applications to improve their speed of construction while maintaining and at times improving their structural performance compared to traditional construction. The concepts introduced in this paper will cover all areas of a prefab construction including design, manufacturing, transportation and lifting & handling. These are explained with reference to real world projects and practical applications along with guidance on using them in engineering practice, in design and construction.