

In-situ Layout Optimization of Prefabricated Structural Members in Offsite Construction

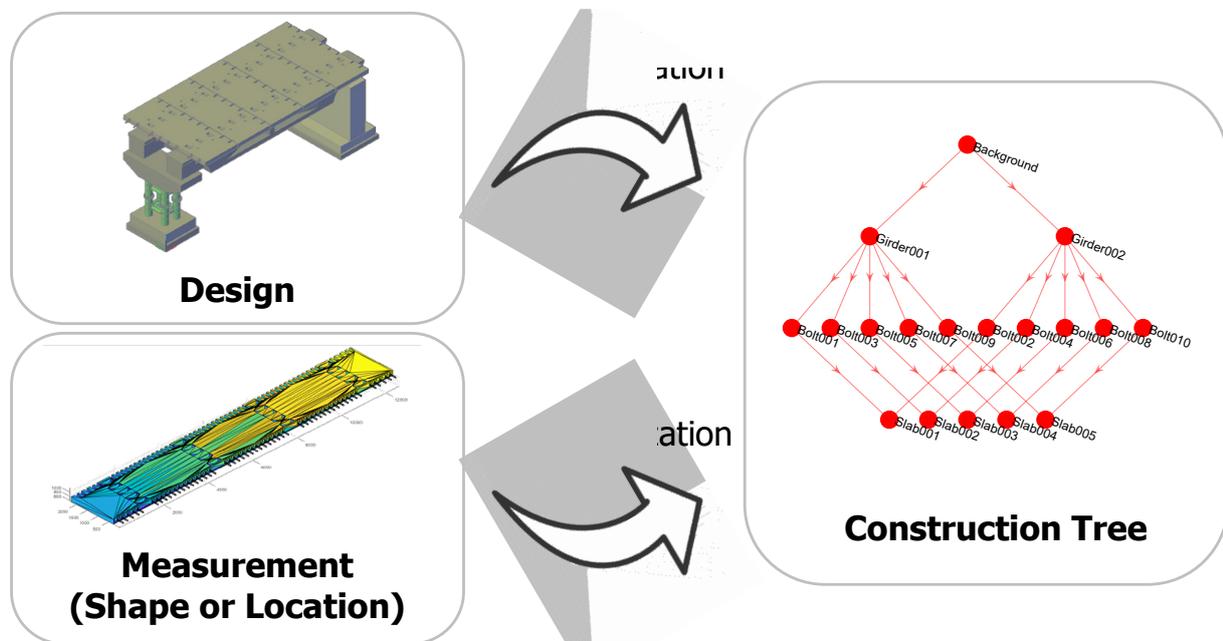
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ABSTRACT

Assembly of prefabricated structural members is an essential procedure for the offsite construction. To ensure that the prefabricated members mesh together, the layout for each member is precisely designed for the offsite construction. However, the construction error during the manufacture or assembly often causes mismatches between the to-be-built members and the built structure, eventually resulting in a construction delay and the structural degradation. Placement position of the to-be-built members needs to be updated to avoid the assembly failure. This study proposes an in-situ layout optimization of the prefabricated members for the offsite construction based on the geometric measurement of the built structure.



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Fig. 1 Overview of the proposed layout optimization