leanWOOD

Innovative lean processes and cooperation models for planning, production and maintenance of urban timber buildings

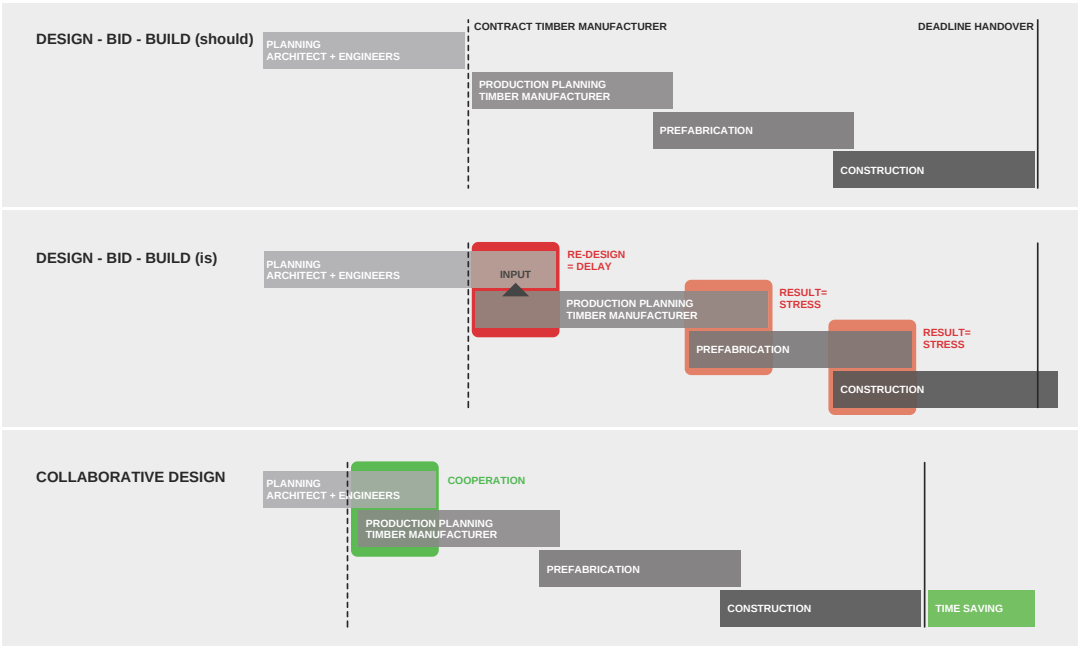
leanWOOD - a short description of the project

Modern timber architecture is associated with industrialized production of construction elements that involve a high level of prefabrication.

Prefabrication is essential to ensure quality and efficiency. Each planning stage is complex, with prefabrication of off-site building elements, transport and assembling logistics increasing in order to save time during on-site assembly. The traditional way of building, which mainly focuses on on-site production has shaped the framework of organization and legislation for centuries. This process presents a significant barrier for a wider usage of timber within construction.

Specialist knowledge of timber construction and its production facilities is missing in early planning stages because timber manufacturers and/or timber construction engineers' involvement in projects happens too late within the process. Significant expenses are incurred if a project stage is late and results in a 're-design phase'. This will often cause missed deadlines and eventual cost overrun. Furthermore architects and engineers are depending on consultancy by timber specialists due to the multifarious requirements and different types of timber constructions. Best conditions are given if future building projects are planned right from the start by a team of architects, engineers and timber construction specialists working together.

ONE OF THE PROJECTS HYPOTHESES: COLLABORATIVE DESIGN TEAM SOLUTIONS HAVE A BIG POTENTIAL TO REDUCE THE PROCESS TIME AND THE WASTE OF HUMAN RESOURCES

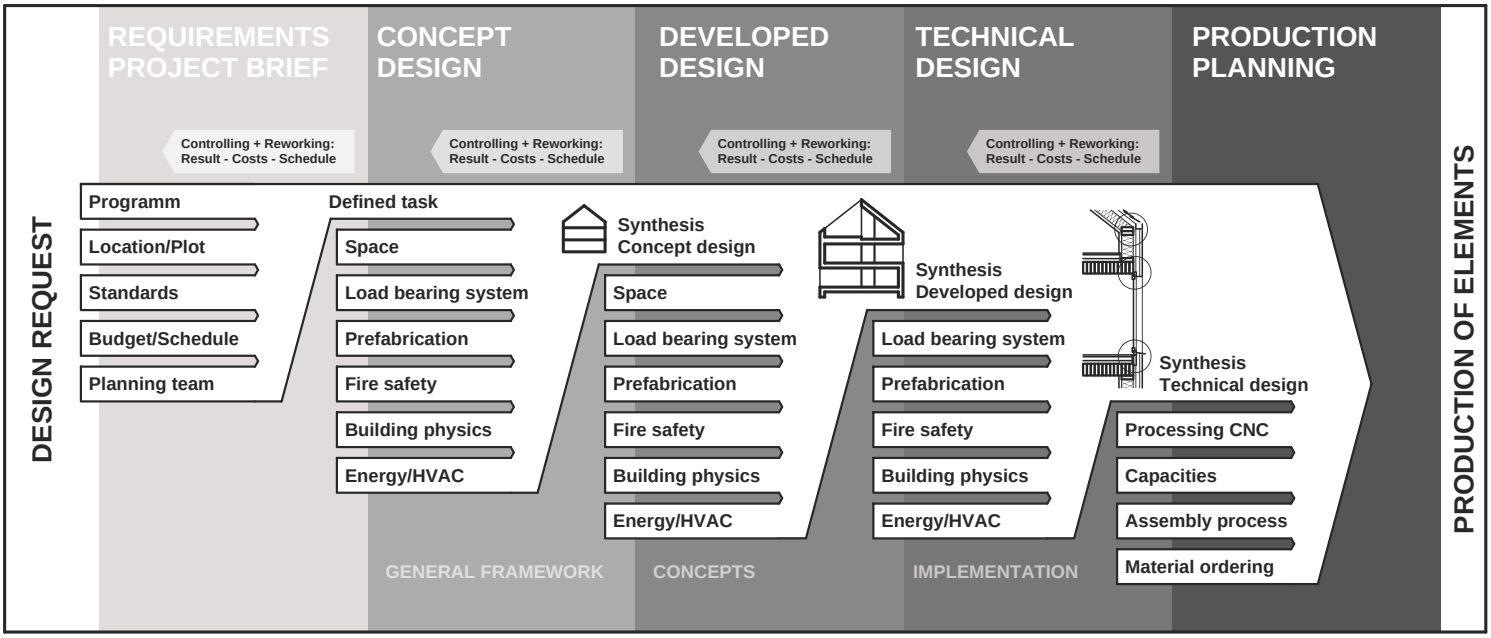


This is where leanWOOD starts to work! The main goal is to develop new cooperation and process models for prefabricated timber construction. “lean” represents the lean handling of processes and the efficient and effective coordination of all participants. This could be the significant collaboration needed to improve productivity in industrialized timber construction.

leanWOOD refers to the basic principles of lean management- a feature of the added-value chain applied successfully in several industry sectors since 1980, with the premise here being customer focus, waste reduction and the prevention of rejects. Despite the fact that companies in the production sector have been applying the methods of lean management for a long time, these techniques and values have so far been rarely adopted by the building sector.

leanWOOD develops model solutions for the optimized workflow of cooperative planning and implementation processes in timber construction. The goal is to apply the main features of lean management to the complete planning and building process added-value chain. Based on research and analysis of existing built “best- practice“ examples and work methods of other highly developed industrial sectors, for instance ship building and automotive engineering, leanWOOD demonstrates possibilities for optimized processes and goal-orientation as well as higher value-added cooperation of project teams.

Methods and models for the optimal transition from planning to production phases are achieved through collaboration between architects and engineers alongside the planning input of manufacturers.



PLANNING PROCESS - PROJECT STAGES AND MAIN TOPICS

Duration:
May 2014 – April 2017

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