

BIM and LEAN - the perfect match

Sustainability, digitalization, artificial intelligence - never before have these topics moved the global economy so strongly. The construction industry is also addressing the global megatrends. A major opportunity for the design and construction of future-oriented buildings lies in the linking of the Building Information Modeling (BIM) and Lean Construction (LEAN) approaches.

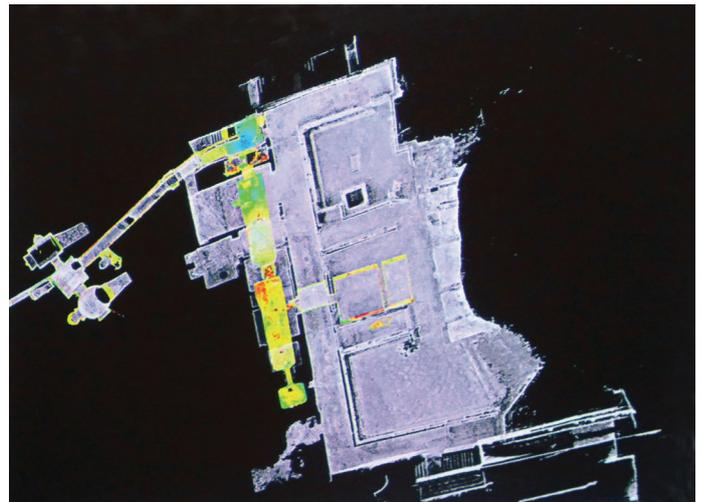
Construction is becoming increasingly complex. Legal requirements, project-specific requirements, and a multitude of actors must be orchestrated for the best possible result. Conventional working methods and control methods are reaching their limits here. An enormous opportunity for planning and construction lies in digitization and thus in the combination of the BIM and LEAN methods. This combination can be regarded as the supreme discipline and forms one of the leading themes at Light + Building.

BIM reflects the megatrend of digitization in the construction industry and is not simply a digital 3D model: In the sense of a data-focused process flow, all relevant building data is digitally recorded, modeled and made usable in the complete life cycle of a building. LEAN stands for lean planning and construction - with the clear goal of continuously improving processes and minimizing, or at best eliminating, waste. Dreams of the future? Not at all: BIM and LEAN are already being used successfully today - especially for the benefit of building owners.

A look at the practice

The intelligent combination of BIM and LEAN offers added value for all parties involved in a construction project. This is illustrated by Generic's new headquarters as a current practical example. A new working environment is being built in Karlsruhe for the IT service company using an advanced timber hybrid construction method. The office building has been designed to be energy-efficient and is being built to the passive house standard.

At the beginning, the project team defined the needs and goals of the new building together with the client and incorporated them into a 3D model. Already in the early design and planning



Fotos: Schneider Electric

phase, Open BIM was consistently used. The basis was the Industry Foundation Classes data exchange format from buildingS-MART. In the early design process, the 3D model was shared with the design and construction parties via a collaboration platform. Whereas in the past the same building had to be modeled several times and painstakingly updated in the event of changes, the BIM model was digitally evaluated in real time, its parameters compared and continuously updated in a data-consistent manner - from the design and approval planning to the execution planning.

With the help of LEAN, the project team divided the execution and work planning for all planning and construction participants into individual daily and weekly work packages. This significantly reduced the complexity of the project. The flow-oriented dovetailing of planning and execution led to a fruitful cooperation that had not previously existed in conventional construction. The best prerequisites for achieving an optimal result.

BIM and LEAN optimize the planning and construction process

The case study shows: BIM and LEAN are linked to optimize the planning and construction process and thus have a positive impact on quality, time and costs. By working with BIM, building owners and planners also gain decision-making security and can consciously and fact-based determine the big points in the project already in the early performance phases.

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