BIM-BASED SCHEDULING OF CONSTRUCTION: A COMPARATIVE ANALYSIS OF PREVAILING AND BIM-BASED SCHEDULING PROCESSES

The potential of BIM is generally recognized in the construction industry, but the practical application of BIM for management purposes is, however, still limited among contractors. The objective of this study is to review the current scheduling process of construction in light of BIM-based scheduling, and to identify how it should be incorporated into current practice. The analysis of the current scheduling processes identifies significant discrepancies between the overall and the detailed levels of scheduling. The overall scheduling process is described as an individual endeavor with limited and unsystematic sharing of knowledge within and between projects. Thus, the reuse of scheduling data and experiences are inadequate, preventing continuous improvements of the overall schedules. Besides, the overall scheduling process suffers from lack of information, caused by uncoordinated and unsynchronized overlap of the design and construction processes. Consequently, the overall scheduling is primarily based on intuition and personal experiences, rather than well founded figures of the specific project. Finally, the overall schedule is comprehensive and complex, and consequently, difficult to overview and communicate. Scheduling on the detailed level, on the other hand, follows a stipulated approach to scheduling, i.e. the Last Planner System (LPS), which is characterized by involvement of all actors in the construction phase. Thus, the major challenge when implementing BIM-based scheduling is to improve overall scheduling, which in turn, can secure a better starting point of the LPS. The study points to the necessity of involving subcontractors and manufactures in the earliest phases of the project in order to create project specific information for the overall schedule. In addition, the design process should be prioritized and coordinated with each craft, a process library should be introduced to promote transfer of knowledge and continuous improvements, and information flow between design and scheduling processes must change from push to pull.

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