Zukunft Bau

SUMMARY REPORT

Title

Title (extended version): „Development of a catalog of requirements for building information models regarding the standardization of the content and depth of details from the point of view of construction“

Cause / Starting Position

Building information models which are generated during the design phase are often not suitable for further use in the construction phase. Thus, construction companies have to either rebuild the models or to add the information they need in a laborious way. The present research project has been applied for and carried out in order to increase the consistency of data transfer continuity in this area of Building Information Modeling.

Subject of the research project

The research project "Digital Building with BIM in Germany: Focus Construction" is part of a higher-level concept with the aim of expediting the standardization efforts of building information models in all life cycle phases. Within the scope of this research project the focus is on the realization phase of buildings.

The first step is to derive a process scenario and develop a method-independent, standardized process flow - the so-called actual process. On the basis of literature research and expert interviews it is analyzed and defined how the individual process steps proceed and when which parties have to deliver which performance and information to whom. The focus is thus on the flow of information between those involved in the life cycle. Organizations, institutions and other stakeholders are provided with an overview of the situation with regard to the exchange of information, thus providing a common understanding of the relevant subject-specific relations.

In a first step, the process model which has been set up for the mapping of the information flow is built-up in a top-down approach from coarser to more detailed levels. In a second step, the corresponding information (information inputs and information outputs) is assigned to the processes in a bottom-up approach from more detailed to coarser levels. These processes which are more detailed than the processes of the research project "BIM-based building in process " are aligned and linked to its higher-level process structure. In this way, a modularly built-up consistent process model is created. These process models are also linked to the process model from the research project "Occupational Safety - Building Information Modeling". The result is a complex overall process model which has been validated with the help of the project partners and the further company network. This provides an essential basis for illustrating the current information flow and for deriving the continuous data transfer information process in the BIM process.

In order to establish the connection between the derived information flow and the working method BIM, an analysis of the status quo of the application of the method BIM in Germany is made parallelly by communication with users. The focus is on the analysis of currently available BIM tools and the current knowledge and application of the BIM method in construction companies. With this information as well as information derived from guidelines from the international market flow into the development of the information flow of the BIM process. The first step is to examine whether the application of the BIM method requires an adaptation of the process model. The considerations refer both to the processes themselves as well as to the technical structure of a process modeling software. It turns out that the flow of information so far has not changed. Only the technical design of the processes is extended in the process model by the method BIM, in order to create the basis for a schema for the process-based generation of a requirement catalog. The generation from the process model allows a specification for concrete projects and companies. In addition, the automated procedure ensures a flexible expandability of the content and takes into account for the fast-paced development in the area of digitalization and BIM.

Conclusion

The result is, on the one hand, a modular and generalized process model for the information flow for the realization phase, which now allows all project participants to have an overview of the necessary information exchange. On the other hand, another result is a schema for the creation of a requirement catalog based on BIM applications, which are integrated into the process model. This provides a schema for deriving requirement catalogs from the process model. For this purpose, however, it is necessary for processes of the BIM applications to be standardized in practice and to be introduced into the process model.

Key data

Short title: Digital building with BIM in Germany: Focus on Construction

Reseacher / Project management: