

Future Construction

STRUCTURE / FORMATION SUMMARY REPORT

Title

Long-term title: „Development of an idealtypic target process chain for the application of the method BIM in the life cycle of structures“

Occasion/ initial situation

brief description of the problem and the solution approach

The present research project was applied to establish the method BIM and to promote the digital change. In particular, there is a lack of standards and a uniform understanding of the BIM process and the resulting changes in the construction and real estate sectors.

Subject of the research project

Description of the work steps and the solution path

The research project "BIM-based building in process" is intended to set the framework for a long-term major project. The aim is to promote the standardization efforts of building data models in all phases of the building life cycle. By legal and standard conformity, this will contribute to the transparency of the BIM method for those involved in the lifecycle of real estate.

Within the scope of this project an ideal-type target process chain is developed, based on an actual process analysis using the BIM method along the life cycle of a building. The standardized life-cycle process is intended to show in concrete terms the necessary steps to implement BIM projects from the point of view of building owners. Based on this, information and communication interfaces can be identified, analyzes of changing performance requirements of the parties involved and open questions such as e.g. legal issues can be further elaborated or dealt with. The research project is thus oriented across the entire life cycle of the building through various phases and covers the processes from project development to the dismantling of a property. Partial sections are also considered in depth, within a number of research projects from the BUW, which are conducted parallel or which are in preparation. For this purpose, the research project is divided into the two work packages.

In the first work package, a process scenario is derived and a process-independent, standardized process flow is developed- the so-called actual process. There will be a consideration of the communication and exchange interfaces with the project participants in all life cycle phases of a building project, which are essential from the point of view of the building owner, from the phase of planning to execution and use to dismantling or demolition. Based on literature research and expert interviews, it will be analyzed and determined how the individual process steps are carried out and which parties need to deliver which work and information to which participant, in order to fulfill the building owner's requirements which is a successfully constructed and managed building. The focus is thus on the exchange of information between those involved in the life cycle. Practical companies, institutions and other stakeholders are thus given an overview of the situation in relation to the exchange of information, so that a common understanding of the relevant professional contexts is given. A validation of the information processes took place by realizing expert workshops.

Starting from the information process of work package 1 "who needs which information from whom when and for whom", the ideal-type BIM process sequence will be created. For this purpose, the information management process for the application of the BIM method "who has to do something so that information can be generated and made loss-free available" is developed as part of the work package 2. This development is carried out on the one hand by the analysis of BIM guides, guidelines, standards, as well as the participation in various committees, and on the other hand by the accompaniment of practical projects and support for the implementation of BIM projects of specialized companies. Subsequently, the information management process is assigned to the information process. The combination of both processes results in the specialized process flow of the ideal-type BIM target process chain. Its implementation was created by using Business Process Modelling and a developed process model for the integration of all process-oriented intern research projects, so that the main focus of the analysis of the processes and, in particular, of the information flows over the life cycle of a property, between different project participants was built referenced on each other
In addition, an online survey on "Status Quo - Digital Planning, Building and Operation" was conducted based on and in collaboration with a survey carried out in 2011 by the Karlsruhe Institute of Technology

Conclusion

Description of the planned aims and reached results

As a result, a life-cycle-comprehensive information process was developed to answer the question "who needs which information from whom when and for whom", as well as an information management process that answers the question "who has to do what so that information can be generated and made available". The combination of both types of processes results in the professional process flow for the application of the BIM method, which forms a basis for further research projects and serves the basic standardization. For practical implementation, a guide was compiled for building owners to apply the BIM method and a methodology for the BIM-goal-oriented query was developed.

Key data

Short title: BIM based building in the process

Researcher/ project management:

Total costs: 254.757,00 euro

federal grant: 154.605,00 €

Project duration: 27 months

PICTURES:

5 - 7 Druckbare Bilddaten als **eigene Datei** (*.tif, *.bmp, ...) mit der Auflösung von mind. 300 dpi in der Abbildungsgröße (z.B. Breite 10 - 20cm). Bilder frei von Rechten Dritter.

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