

paper title :

Planing relevant survey of buildings – starting point in the revitalization process of existing buildings
– requirements, concepts, prototypes and visions

author names :

F.Petzold, T.Thurow, D.Donath

proposed presenter :

D.Donath

affiliation:

Bauhaus-Universität Weimar, Germany
Faculty of architecture
Chair Computer Science in Architecture

mailing address:

petzold@fossi.uni-weimar.de

phone, fax, email of authors:

phone: +49 3643-584201

fax: +49 3643-584202

email :

Donath: donath@archit.uni-weimar.de

Petzold: petzold@fossi.uni-weimar.de

Thurow: torsten.thurow@informatik.uni-weimar.de

suggestion for type of presentation

oral presentation

abstract:

Future tasks for the building trade in Germany will be more and more a combination of the fields of revitalization and new building projects. Prerequisite for computer-aided planing for existing buildings is both, the use of onsite computer-aided measurement and the integration of all specialists involved in the building process. Existing approaches for this problem are not yet satisfying.

The aim of this research project is twofold: to design a practice-relevant software concept and to develop various prototypic systems, for a structured way of capturing and organizing building-related information about existing buildings in digital form. The research is oriented towards existing buildings, in particular residential and commercial buildings.

This project is a special branch of SFB524. The project is founded by "Deutsche Forschungsgesellschaft (DFG)".

The built environment is registered by surveying a series of geometrical and building-relevant information broken down into different levels of abstraction. The recorded data consists of a variety of geometric, multimedia and verbal - less structured - pieces of information.

The starting point for developing such a system is both an analysis and reworking of the methods used in architectural surveying, and the evaluation and use of current techniques and tools in the field of CAAD and geodesy.

In this article we describe a concept of a building information system based on a planning related surveying system, support of planning processes via adequate information representation, and information-technical comparison of the retrieved data and the existing building substance. Thereby, we specifically seek for the integration of both, building measurement and survey within a digital building information system for improving and supporting planning processes.

1. Deriving a room and building element structure for "on-site" building-surveying
2. Specific properties of objects provided for later use in the planning process (geometric description and relevant characteristics of a building)
3. Abstraction levels of geometric data corresponding to the phases in architectural practice
4. Conception of surveying methods and development of prototypes based on an combination of different surveying techniques, like hand measured, Tachometry and Photogrammetry
5. Integration of augmented and virtual reality techniques in the field of surveying

We conclude the article with a description of several prototypes and an outlook of future work.