



Topic of joint research:

Knowledge and BIM based Construction Safety Management for Assembly Processes

Occupational health and safety forms one of the basic elements in the design and execution of construction projects. Caused by the fact, that more than 60.000 fatal accidents happen worldwide on construction sites every year, there is a strong need to develop concepts for accident prevention. During the last decade, there has been a strong collaboration between the Research Institute of Project Administration & Management (RIPAM), Tongji University Shanghai (Prof. Dr.-Ing. Ding Shizhao and Prof. Dr. Chen Jianguo) and the Institute of Construction Technologies and Management at Technische Universität Darmstadt (Univ.-Prof. Dr.-Ing. Christoph Motzko), visible i. a. through Summer Schools and Conferences.

The idea of a joint research project was born and the result is documented by the doctoral thesis of M.Sc. Xiufeng Xue “Knowledge and BIM based Construction Safety Management for Assembly Processes”. This doctoral thesis forms an interesting and really invaluable contribution to the research field of occupational health and safety combined with the application of new work methods and technologies. Ms. Xue integrates the basic concepts of knowledge management with BIM-methodology and interlinks these with the regulations of health and safety protection. On the basis of the by herself created “Construction Safety Ontology” she develops a software system which is applicable. This system should support site managers as well as blue collar employees on construction sites during instructions and development of measures for work system risk prevention.

At the same time the software system serves as a construction safety learning system. The universal approach is given due to the comparison of the conditions in Germany and P.R. China. Furthermore Ms. Xue has examined the application of the system on the basis of the regulations of the provinces Hubei and Jiangsu. The thesis obtains therefore a theoretical as well as a practical relevance.

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