Abstract of the Master Thesis

Master's Degree
International Project Management
(Building, Real Estate and Infrastructure)

A BIM Delivery Framework for IPD Healthcare Projects
during the Design Phase

Submitted by: Ozan Bircan
Student Matriculation No.810704

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Supervisors: Prof. Dr.-Ing. Steffen Feirabend
University of Applied Sciences
Stuttgart, Germany

Dipl.-Ing. (FH) Architekt Herbert Klein
HWP Planungsgesellschaft
Stuttgart, Germany
Abstract

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Construction industry lacks predictability of schedule, cost and quality standards. In order to cope with such challenges AEC industry has been in search of alternative ways to develop its project delivery methods. For a successful performance in execution of a construction project, different types of project delivery models are employed in the AEC industry all around the world. One of the proposed solutions was Integrated Project Delivery which is a type of relational contracting.

IPD is a type of relational contracting which was founded in 2005 in the United States. It was primarily developed to construct large scale healthcare facility projects to help the project parties to reduce waste and to manage costs. IPD emphasizes trust and informal control mechanisms in the project in contrast to typical transactional types. One of the main principles of IPD concept is the enhanced collaboration and accessibility through Building Information Modeling.

Exchange and distribution of the information can be done effectively through BIM tools. BIM is one of the main tools used in IPD context. However, considering the variety of environments in use of IPD, and expanding implementation aspects of BIM from practitioners’ side remains unclear.

Clarifying when and what type of data should be exchanged within this specific delivery context is the main target of the framework. This research aims to develop and illustrate a framework for the workflow of BIM in IPD context. As an answer to the research question, this thesis aims to create a visual guideline for stakeholders and project managers to enhance the performance and transparency principle for an IPD Healthcare Project during design phase.
The author’s research question derived from his own practical experiences faced as an architect in an international IPD hospital project.

Given this background, the research question is formed as follows:

“How to create efficient BIM structures to complement collaboration within IPD healthcare projects during the design phase?”

To achieve this aim, the following objectives are considered:

1. Defining the concept of IPD and how the structure is created to preform projects differently.
2. Exploring the types of collaborations during design phase in IPD healthcare facility projects
3. Describing the concept of BIM: structure, origins, advantages, challenges and its adoptions during the design phase.
4. Exploring the principles of healthcare facility design and the direction it is taking in future and explaining what it means for a BIM delivery network in an IPD based project.
5. Developing a visual guide for the owners, project managers and BIM experts to help them with creating a BIM workflow plan for a collaborative environment that IPD suggests.

The first four objectives have been achieved by critically reviewing the literature and conducting interviews with IPD practitioners, healthcare design consultants and BIM experts to get a deeper understanding of the topics. As a result of the data collected through semi-structured interviews, a visual framework was developed by the through the inputs of the healthcare design experts in Germany, UK, US and Canada. Accordingly, further research possibilities were discussed in the topic of BIM and IPD.