COLLABORATIVE DESIGN PLATFORM

Topics summersemester 2018

**Topic**
Using a computer in order to realize creative design tasks is still cumbersome and inefficient. Both single and multiuser scenarios are affected by it. One of the most challenging problems is the inadequate Human-Computer Interaction of most of the current computer systems.

Within an interdisciplinary project at the Chair for Architectural Informatics (Prof. Dr.-Ing. Frank Petzold) together with the Chair of Augmented Reality (Prof. Gudrun Klinker) and the Leibniz Supercomputer Center (Prof. Dr. Dieter Kranzlmüller) a collaborative design platform has been developed on a scale of 1:1. Based on the architectural requirements during the early design stages and the challenge to link the digital and analogue world new interaction methods should be studied and analyzed. Based on this prototype has been realized on a 1:1 scale, in order to make the creative design phase on the computer more efficient and more intuitive.

The students can either realize this work as a Diploma thesis or Master thesis or as an interdisciplinary project and will work in teams together with computer scientists as well as architects.

**Tasks**
In this context, different IDP-Topics are available. A short overview:

- Virtual Reality Application via. a HTC Vive
- Augmented Reality via. Microsoft HoloLens
- Improvement of the plugin-wrapper incl. overlapping different plugins
- Implementation of an infopanel to visualize design-relevant information
- Further development of the On-Top Projection. Digital content in physical models
- Further development of the AR On-Site Application. Interactive simulations in an augmented view
- Evaluation of interaction
- Implementation of 3D-gesture recognition
- ...