

## **Digital Collaborative Studio : 4 years of practice.**

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### **1. Context and objectives**

For the fourth time this year, the University of Liège (BE) and the National school of architecture of Nancy (FR) have organized a distant collaborative architectural workshop, gathering students in architecture and engineering architecture from the two institutions. This workshop consists for teams of 3 to 5 students (composed of students of the two locations) in designing a particular building (given a set of specification) during 3 months, by collaborating remotely. The distant collaboration is supported by several tools: e-mails for asynchronous exchanges, videoconferencing, chat and phone for synchronous collaboration and two original settings : the Virtual Desktop, a collaborative multimodal environment and the CRTI-Web, a document management system specifically dedicated to architecture

### **2. Tools**

The **Virtual Desktop** is an environment aiming at re-creating, at distance, the conditions of copresent meetings. It is composed of an original pen-based device, equipped with a real-time sketch sharing software (SketSha) and completed with a classical videoconferencing system. This environment allows the users to import documents (plans, pictures, sketches,..), to share them at distance and to annotate them in real time with the electronic pen, while discussing and seeing each other (with the videoconference).

The **CRTI-Web** is a shared project space, available for all the participants on a Web platform. It allows the project's members to upload the documents that they produce and to share them with the others. The aim is to centralize the documents and to trace their updates and modifications. Moreover it enables also to notify the users when a document is available, and to assign task (requests), such as validation tasks or reaction demands. The reaction functionality is a real "discussion forum" between project members about a specific document.

### **3. Modalities**

The schedule is each year the following (with variants depending on each year's specific logistics): a first meeting takes place in copresence and is accompanied by a visit of the project site. The groups are constituted and each participant is assigned a specific role in the group (architecture, interior design, energetic issues, accessibility...). The students afterwards work remotely and have a one-hour remote synchronous meeting per group each week (during about 10 weeks), supported by Virtual Desktop. During these meetings, two teachers are present to help the groups in their design and provide them with some feedback. The students have two formal presentations: one in the middle of the process (taking place remotely) and another at the end of the workshop (in copresence), during which they have to present their design as well as a reflection about their way of collaborating.

### **4. Results**

Globally, the outcomes are very satisfying : the productions are quite sophisticated, the tools and environments work efficiently and the whole collaboration seems to be a positive experience for the students. This workshop also highlights some difficulties linked to the distance: poor social link between the students and difficulties to work on a real collective design (but rather on different design assembled in a coherent manner). It also highlights some

needs and difficulties linked to the collaborative environments, which constantly evolve according to those observations.