

THE INTEGRATED DESIGN STUDIO: A VIEW BEHIND THE SCENES

Liquid Campus 3

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1. LARGE SCALE MODELLING

Over 10 months ending in July 2005, architecture students from Aachen, Karlsruhe and Weimar took part in a design studio that differed significantly from other studios in that the result of the studio was a 1:1 realisation of the design. This is part of an evolution of the virtual faculty of architecture “Liquid Campus”, founded in 2001, which has seen the complexity of the projects steadily rise and this continued in the Project “Ein Fest: Ein Dach”.

The integrated studio is arranged to encourage an active, economic and transparent learning process, which encompasses design, communication and cooperation issues. The stated goal at the beginning of the two-semester process is to build and although only a few of the ideas are realised, all participants are involved in the realisation. In this case, the project was to create “roofs” for an open-air concert for 200,000 people in Karlsruhe, Germany. The planning was carried out using the Netzentwurf platform, with which the authors have several years experience. (Elger et al, 2003)

2. TIMELINE

The Project was divided into three phases. The first phase encompassed a competition for ideas where the students presented as groups of one to three students. The second phase saw a regrouping of the students in order to plan the winning entries. Parallel to the planning, the financing and sponsorship of

the projects had to be secured. In the third phase, the projects that had obtained financing AND a building permit were erected for the festival.

The first phase was similar to a standard design studio, although the knowledge that one or more of the solutions would be realised did influence some of the design propositions. The second phase is where the students had to adapt their concept of what a design studio is. In effect, the four winning entries had to form an office structure where participants took on different roles and tasks. Other aspects such as structural calculations, laws and permit processes, sponsoring, finance, and decision-making became suddenly relevant to the design. As well, the process of consultation with the city, the client and within the group itself was new to almost all the students.

The third phase involved the most stress in that the festival had set dates and so the projects had to be ready on time. As a result, the end of the second phase as well as the third in its entirety became a crash course in logistics and crisis management.

2.1. CONCEPT AND REALISATION

The project “TheLight” serves as a good example of how the project actually ran. Initially, TheLight was conceived of as a tower atop a small hill on the site. The tower consisted of essentially three 12-meter poles stayed by wires. This project was chosen by the Client to be built. After a short time in the second phase, it became clear that the project was unbuildable on the site in that form. After a rethink, TheLight was conceived as a Pneumatic Tower consisting of 10 fire hoses under 8 Atmospheres of pressure. Due to the experimental nature of the construction technique, the original use as a refreshment stand was changed to that of a sculpture.

The original concept allowed for sponsorship (banners or ads could be hung) whereas the new version from TheLight could not use banners due to wind loads on the structure. This meant it was buildable, but without a budget. As well, the constant communication between Weimar, Karlsruhe and Aachen drew out the decision processes and all the while, the deadlines approached.

On the site, the actual conditions meant that the foundation had to be redesigned, approved, financed and implemented and that additional safety measures had to be in place: some just a few hours before the opening of the festival.

3. MARKETS IN ARCHITECTURE

TheLight owes part of its existence to another project called “Cube Dispenser Deluxe” This project consisted of three 4 x 4 x 7 meter towers, which served as dispensers and repositories for foam cubes, which the visitors could use to sit on. The enormous presence of the towers as well as the foam cubes (which

were covered with a plastic fabric) meant that the Dispensers were attractive to sponsors. As a result, the three towers financed not only their own budgets, but helped to finance part of the other projects as well as the general project fund.

The third project consisted of a geodesic dome made of almost 20,000 1.5 litre PET cola bottles. Naturally, this project was attractive Coca-Cola, which donated the bottles and part of the sales from within the “Bottle Bubble” to help to finance the project. In total, the three projects cost over 70,000 Euros and the project (partly to our amazement) broke even.

TEACHING BUILDING

The students were able to realise their designs. Although this was a laudable achievement, the real value lies in the learning process itself. The pressure to have the projects erected on time brought home to many students the value of aspects that are sometimes seen as less spectacular within the curriculum.

This has been a longstanding principle behind the Netzentwurf concept. Many aspects of the architect’s job are not easily taught; they must be trained. What is more, the focus on building made the importance of aspects such as data management, information flows and decision process clear, particularly due to the dispersed nature of the teams.

The Netzentwurf platform helped to alleviate some of these problems, but certainly not all of them. Despite the presence of a Content Management System on the platform, all the groups eventually established their own “office infrastructure”. This is seen as a positive development in that the teams were able to decide for themselves how they best functioned.

The authors maintain that these kinds of projects are essential to the architectural curriculum. Tendencies to overinflate the value of “Design” in the education of architects can occlude the reality that only about a tenth of the architect’s work involves designing.

Put another way, the entire process of design involves much more than producing pretty pictures or elegant drawings. Architects need to manage all aspects of the project and take responsibility for it. Thus, it is important that the tutors have the experience to coach the students and, if necessary, to make decisions for them. In the end, the projects are buildings and making buildings is serious stuff. On the other hand, the project does have a definite “fun-factor” and balancing the fun with responsibility is never easy.

Architectural Information Management is the term used to describe what was essentially taught in the project. This may simply be a new name for that which architects have always done. However, this name makes it explicitly

clear that the question, "Who says what with which media to whom with which consequences?" (Lasswell 1948) is one that architects must answer.

Finally, the actual work and sweat in solving the last design problems on site and on time represents a rare chance for the students to be able to see appreciate and reflect on their own built project. The case is made that Projects like 'Liquid Campus 3' offer the students a unique learning environment. They allow a unique view to the 'informational landscape of building and construction'.

References

- Harold D. Lasswell, H. D.: 1948, *The Structure and Function of Communication in Society*, in Lyman Bryson, ed, *The Communication of Ideas*, Institute for Religious and Social Studies, New York.
- Elger, D., Russell, P. and Stachelhaus, T.: 2003 *CSNCW: Computer Supported Non-Cooperative Work: Barriers to Successful Virtual Design Studios*, Digital Design [21st eCAADe Conference Proceedings , Graz (Austria), pp. 59-66