

P R O C E E D I N G S

Seattle, WA. USA • November 12-14, 1998



the fifth biennial

Participatory Design Conference

Broadening Participation

CoOI Studio: On-line Environment for Collaboration and Participation in Architecture.

Saif-ul- Haq

Ph.D. Program, College of Architecture

Georgia Institute of Technology

Atlanta, GA 30332, USA

404 894 6279

saif.haq@arch.gatech.edu or saif.haq@alum.MIT.EDU

ABSTRACT

This poster presents a recent exercise in architectural collaboration. It was set up in an academic environment which used a new web-based collaborative tool. It made interaction possible between architecture students and geographically scattered reviewers. This has resulted in a multitude of research issues such as on-line protocol and etiquette, software capability vs. user friendliness, screen presentation techniques for architectural collaboration, ownership of domain, security of information etc.

Keywords

World Wide Web, Collaboration Tools, Collaborative Website, Architectural Design, On-line Review, *Swiki*.

INTRODUCTION

The challenge of designing any collaborative tool is that it has to be powerful enough to enable interaction through various media and yet be simple and intuitive enough so that users with only basic computer competence and ordinary equipment may use it.

In this paper we will describe such a tool which runs on the World Wide Web. It is a 'Collaborative Website' called *Swiki*. This computer tool easily permits 'open authoring' on the web; therefore the participants with knowledge of *only four commands* can successfully interact through this media. This was tested in the Winter quarter of 1998, where a graduate architecture design class of Georgia Institute of Technology and a group of allied professionals and stakeholders scattered in distant locations came together to participate in an academic design of a federal courthouse in Atlanta.

PARTICIPATION IN ARCHITECTURE

The inherent social responsibility in architecture and the nature of its practice requires extensive need for interaction. This starts with that between the designers and the stakeholders and continues to that between its various allied disciplines. Throughout the design process too, within group interaction i.e. that between different architects and others in the team is also a very important issue. Compounded with this is the vehicle of communication. Architects use sketches, diagrams, drawings, and pictures. Text is important but drawings are essential.

THE TOOL

A collaborative website is that which supports 'open authoring' on the web, i.e. here, an user is also an author

and designer of the page¹. The basic idea behind this kind of web page is that once set up, it is directly editable by any reader of that page using his/her browser, and through this editing, new pages can be created.

This concept was developed by Ward Cunningham². Mark Guzdail of GeorgiaTech created his own version using a web-server and a tool-kit that he called a 'Pluggable Web Server'. This was based on the work of Georg Gollman and written in Squeak³, a version of the Smalltalk programming language. This collaborative web is called *Swiki*. It is highly portable and runs on Macintosh, Windows (95 and NT), Linux and SunOS. A version of it named 'Collaborative On-line Studio' or 'CoOI Studio' was used in the project that is presented here.

In the display mode, a *Swiki* page looks and acts just like any other web page. It can contain any media or formatting that a traditional web page can have. An essential difference is a link saying 'edit this page'. When a reader chooses to 'edit this page' s/he is taken to 'edit mode' of the same page, which appears as a scrollable page of unformatted text. The reader can change text as desired and then click the 'save' button which will update the page and reflect the changes in the display mode.

Commands are typed in this edit mode. The four basic functions that was mentioned before are : 1. If any text string is put between asterisks (for example, *ABC*), a new page will be created on the server with that name (for example, a page called "ABC"). Subsequently, a link to that page will also be inserted into the current page. 2. To create a link without creating a new page, a complete URL should be put between asterisks. This will create a new link to appear in blue on the current page. 3. If a URL ending in .jpg, .gif, or .jpeg i.e. a link to a picture in the www, is placed between asterisks, then instead of a link, the referenced image will be fetched and displayed on the current page. In the same manner, animations can also be displayed in a *Swiki* page. 4. If four underscore marks are typed in a row, they will be interpreted as a rule extending across the page. *Swiki* pages also accept all HTML tags. As users gain more familiarity they may start putting in their own codes. Alternatively, they may use any HTML editing program (like Microsoft Word) and cut and paste into their pages. As more and more pages are created and edited by a group, a collaborative web transforms into an open ended user-structured collection of web pages.

Although these commands are enough to use *Swiki*, the need for sharing drawings, images and animations demanded that the students learn additional techniques of scanning, retouching, making animations and uploading them to a regular web server.

DISCUSSION

The fascinating part about review of CoOl Studio is not what was intended, but what grew out of all these efforts.

Most users are already familiar with the web and learning three of four additional but easy steps to get to a participatory environment did not seem to be a daunting task. In fact all the external critics, who included senior stakeholders and architects learned it through a single fax which was followed, in some cases, by a phone call. The students too, did not need much help beyond the first few instructions. The flip side of this ease is that Internet access, specially with modems can be excruciatingly slow. More so when high quality images and animations are being downloaded.

Synchronic vs. diachronic interaction

In CoOl Studio students uploaded their concepts and designs in the *Swiki* server and critics responded at a later time when it was suitable for them. They also spent as much time as their schedule allowed. This gave them the possibility to consult relevant materials, talk to colleagues or partners, reflect on issues, and carefully organize their comments before posting them. The critics also had the opportunity to scroll back through previous sections of a presentation and compare the work of multiple students at once.

Of course, this asynchronous format was at the expense of face-to-face interaction. Hence, personality conflicts were not an issue. On the other hand, due to the absence of verbal presentations, the Web pages had to be of sufficient quality to convey all of the designer's intentions. That was not an easy task, especially since preliminary ideas are abstract and typically in need of refinement. On the other hand since architects express best by drawings, this was a very good testing ground.

On-line criticism

On-line criticism was initially envisioned as an ongoing unstructured dialogue between students and critics. Ultimately, this was not achieved due to limitations in both hardware and human interest. Subsequently, structured on-line reviews were held. The tool allowed students and critics to interact despite being separated in space and time. The reviewers also had the unique opportunity to

simultaneously address both individuals and the collective by commenting directly on the students pages and on a separate page respectively. Such a dual podium is unique in any setting, but seems especially relevant in the architectural studio because although students are given the same design problem, they each pursue unique design solutions.

Nature of presentations

CoOl studio provided the opportunity of presenting in a hyper-linked manner, and this can utilize both uploaded resources as well as those already in the World Wide Web. Additionally, it supports personalization. Unfortunately, most student work was 'linear' and to the context. Perhaps they were not motivated enough or their involvement in the studio process left little time for more elaborate web pages.

Miscellaneous

A common complaint in architectural interaction is that it requires high resolution images that a computer screen cannot support. Also web pages have their own limitations and the students were forced to undertake a closer and critical look at their design to find those drawings that were most meaningful.

Everyone was aware that these pages were open to the world internet community. The reviews of the designs were mostly positive, clearly worded and insightful. There were no sharp criticisms. They were . An added interest for the critic was to see what the other reviewers said about the same topic. In this manner even the critics benefited from such collaboration.⁴

ACKNOWLEDGMENTS

Mark Guzdail, College of Computing, Craig Zimring, Sabir Khan and David Craig, College of Architecture, Georgia Institute of Technology.

ENDNOTES

¹ Guzdail, M., Collaboration for Constructionism: Support for an Open Authoring Community on the Web, EduTech Institute, College of Computing, Georgia Institute of Technology, *In Preparation*

² <http://c2.com/cgi-bin/wiki>

³ <http://squeak.cs.uiuc.edu>

⁴ Craig, D (1998) "Supporting Collaborative Design Groups as Design Communities", College of Architecture, Georgia Institute of Technology, *In Preparation*.