

# Innovative Teaching Manual

## PROJECT TITLE

Collaborative Design Over the Internet

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## PROJECT LEVEL

Third and Fourth Years

## ABSTRACT

Recent advances in available computer technology and in mediated communication devices are redefining the practice and the teaching of interior design and suggest new and exciting potentials for both. To this end, the authors collaborated in teaching a long distance, joint design studio which required students to develop familiarity and proficiency with alternative long distance communications media. Further, this studio promoted both interdisciplinary and inter-university collaborative learning.

## OBJECTIVES

1. To gain an increased awareness of available technologies for collaborative design efforts across the internet (i.e. video-conferencing, synchronous 3D design software, e-mail, etc.).
2. To identify and debate potential uses of these technologies within the design workplace.
3. To better understand the opportunities/limitations created by internet communication within the broader spectrum of communication technologies.
4. To increase the understanding of opportunities/ limitations created by working in a distance team environment and to develop strategies for improving communication and problem-solving efficiency.
5. To recognize unique (as well as common) types of knowledge brought to the design process by both interior designers and architects.
6. To gain an increased familiarity with the various financial, tectonic, and programmatic issues relevant to commercial office design.
7. To evaluate possible presentation techniques (and design processes) made more available by computer and the internet in particular.

## CRITERIA

Internet communication is having a profound impact on the practice of interior design. For example, much of the furniture manufacturing industry is now accessible over the internet, and this trend promises to radically redefine the traditional ff& resource library. E-mail is becoming commonplace in practice, as well as within the university and among our students, and it, too, is radically redefining modes of communication and document transfer. Likewise, video-conferencing technology is becoming more common in the workplace and offers much potential for employee training, consultant collaboration, and client presentations. Currently, over 90% of Fortune 500 companies are using some type of video conferencing. Finally, computer-aided design software (e.g. FormZ), coupled with synchronous) software such as Timbuktu and asynchronous design made possible by document transfer, suggest a fundamental redefinition of the design process itself, allowing for collaborative efforts (and collaborative design) with consultants, manufacturers, and even clients.

It is essential, we believe, that these potentials for internet use (especially collaborative design over the internet) be explored within higher education. Our research indicates that little has been done in these areas within interior design education, logically because the technology is new and changing, and some fluency on the part of instructors is required.

Towards this effort, we structured an upper-level design studio project intended to investigate long-distance communication, and co-design in particular, over the internet. Because this had not been done previously within either of our departments, we began planning for the studio almost a year in advance. Grant money was applied for and obtained well in advance of the Spring 1997 time slot for the course. This enabled us to take advantage of our universities' large-group distance learning facilities and to purchase the appropriate video-conferencing software and hardware.

This project paired students from two institutions in teams of four (two from each institution). Students were required to communicate long distance and to explore various avenues for communication. The team structure for the project required that students develop strategies for improving problem-solving efficiency within a team environment. Further, the project was interdisciplinary, pairing Architecture majors from one studio with Interior Design majors from the other studio.

## PROCESS

The specific problem statement involved the renovation of an historic train station into office space for a multi-disciplinary design firm. The focus was largely on the interior of the building. All building documentation was done by one of the studios. Program information was developed and documented by the other studio, necessitating that the two groups share information prior to beginning conceptual design.

[ image 1 ]

Students met each other during the first week of the semester via our universities' large-group distance learning facilities. Once teams were formed, the studio doing building documentation presented photographic images and videos--as well as computer-generated "as-built" drawings--of the train station. Students from the other studio presented program requirements for the project. (Teams were allowed

some latitude in their interpretation of these requirements, which helped them to realize that, as designers, they have a responsibility to critically challenge, and (as necessary) redefine, program requirements generated by clients.)

Subsequent to the initial meeting, the studio doing building documentation developed a web site containing building plans and several scanned photo images. Teams quickly began to develop schematic designs, using video-conferencing, the web-site, and e-mail, as well as the telephone, the fax, and conventional mail. At midpoint during the project, several students even traveled to visit their counterparts for a weekend work session.

Interim critiques were scheduled periodically, sometimes using video-conferencing and involving all members of the team, and sometimes using conventional pin-up and/or computer presentations and involving only local members of the team. Final presentations were again scheduled for the universities' distance learning facilities, allowing for a wide variety of presentation media (see below).

[ image 2 and 3 ]

The project was critiqued constantly, at many levels, throughout its duration and upon its completion. We discussed the design process and the various technologies and methods of communication selected by each group to solve the problem. Strengths and weaknesses of each of these methods were evaluated, as was the potential for use of each of these methods in the workplace.

Team dynamics was a constant topic of discussion. Cooperative design is difficult enough when partners are face-to-face; adding two more team members at a remote location compounds the problem further. All groups completed the project with clear ideas of how group interaction could be improved if the project were to be undertaken a second time.

Finally, much discussion centered around expectations and understandings of the two majors (Architecture and Interior Design) and the two programs. Stereotypes were necessarily dealt with, and the responsibilities of each discipline (within the project and within the workplace) were better clarified. Further, this project made apparent the differences in philosophy, background, skills, etc. that necessarily exist between two programs. The more successful groups learned to recognize and take advantage of these diverse skills and ideas.

In summation, we found this to be an especially successful project as evidenced by our own observations and by feedback from students. As a primary objective, students gained a much increased familiarity with communication and co-design over the internet. Additionally, they were able to evaluate opportunities and limitations inherent in group projects, and they were able to work specifically within an interdisciplinary and inter-university setting.

## PRESENTATION

Specific presentation requirements for each group included the following:

Site plan	Interior elevations, sections, details
Rendered floorplan/furniture plan	Interior 3D drawings
Conceptual lighting plan	Architectural colors and materials

Exterior elevations/3D drawings

Furniture, furnishings, and finishes

Final presentations occurred via both universities' distance learning classrooms. Students decided how best to present the project concurrently to two locations over 500 miles apart. Some chose a conventional pin-up presentation. Others presented via the computer. Several used a combination of media to present ideas. A follow-up discussion of presentation techniques concluded that some of the above requirements are presented quite effectively over the internet while others are less effective over the internet. For example, "colors and materials" and "finishes" may be more effectively communicated via conventional color and materials boards.

[ image 4 and 5 ]

#### EVALUATION

At the completion of the project, students participated in the grading process by both helping to prioritize evaluation criteria and by providing written and verbal feedback on peer projects. Selected criteria for project grading included the following.

cohesiveness of team presentation  
contribution as a team member  
conceptual design strength  
design development  
functional resolution  
technical resolution  
contextual appropriateness  
strength of graphic presentation

strength/clarity of oral presentation  
completeness of presentation  
process development  
attendance/effort/attitude  
improvement  
participation in peer critique  
participation in seminar work

#### PROJECT LENGTH

Project length was approximately seven weeks. Several related seminar activities were scheduled concurrently with the studio problem.

#### RESOURCES

Selected resources included:

Wojtowics, Jerzy (1995). Learning and Teaching the Virtual Design Studio (Panel Session 95 ACADIA). ACADIA Quarterly, Volume 15, #1.

Hasell, Mary Joyce, and Scott, Suzanne C. (1996). Interior Design Visionaries' Explorations of Emerging Trends. Journal of Interior Design, Volume 22 #2.

Jones, Kay Bea, and Piotrowski, Andrzej (1995). Beyond the Interfacade: Critical Pedagogy for Collaboration in Architecture. Proceedings from the Association of Collegiate Schools of Architecture Annual Meeting.

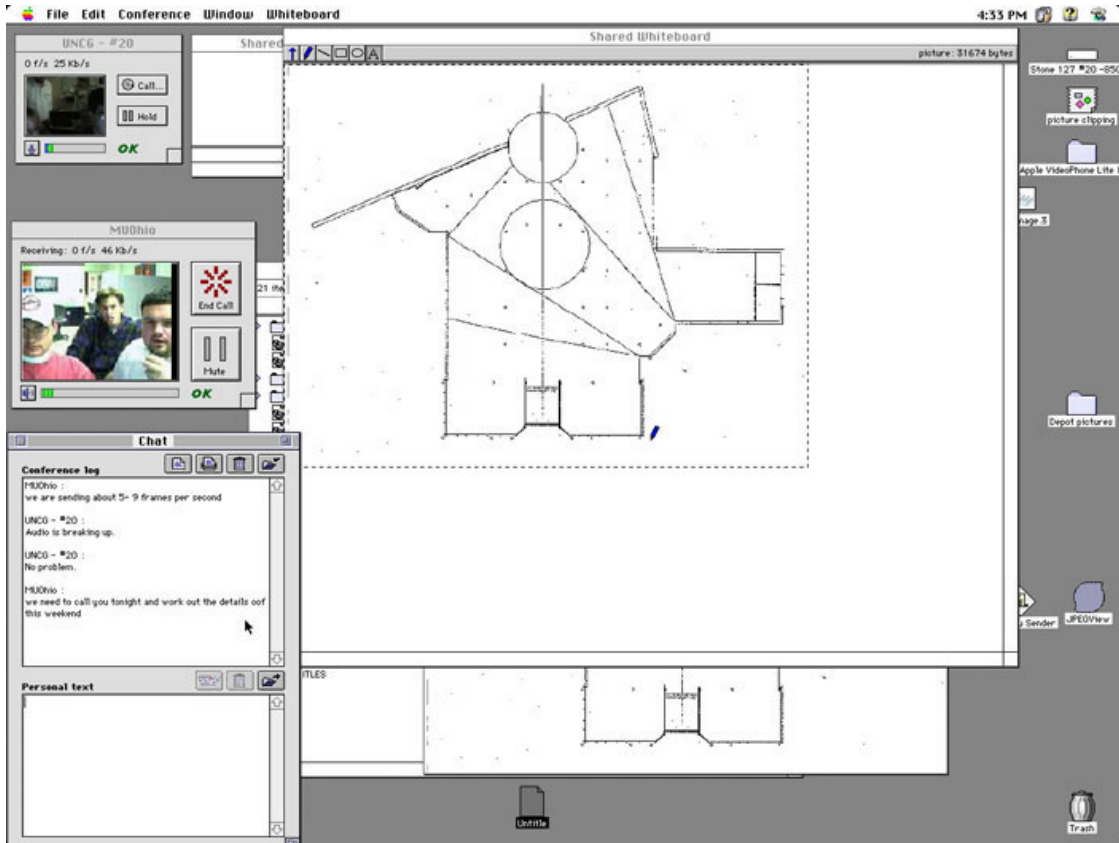
#### CREDITS

Assistance on this project was provided by technical personnel at both universities. This occurred both within our respective computer labs and while utilizing our universities' distance learning facilities.

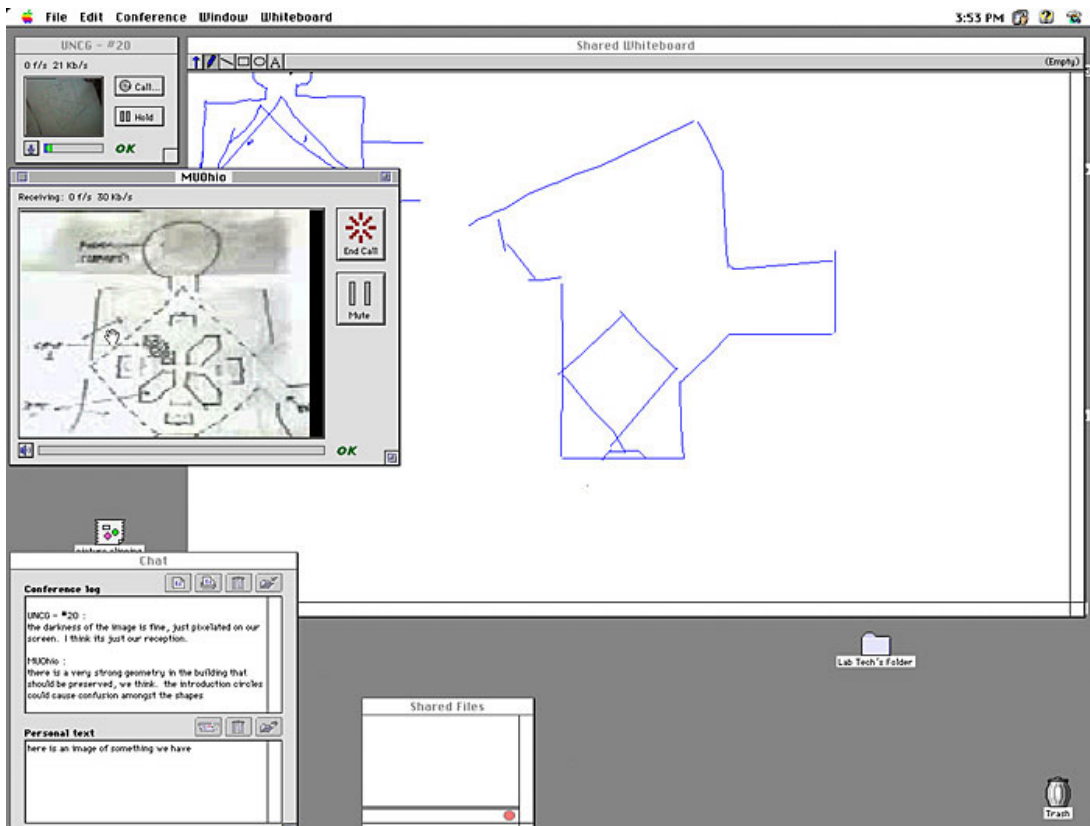
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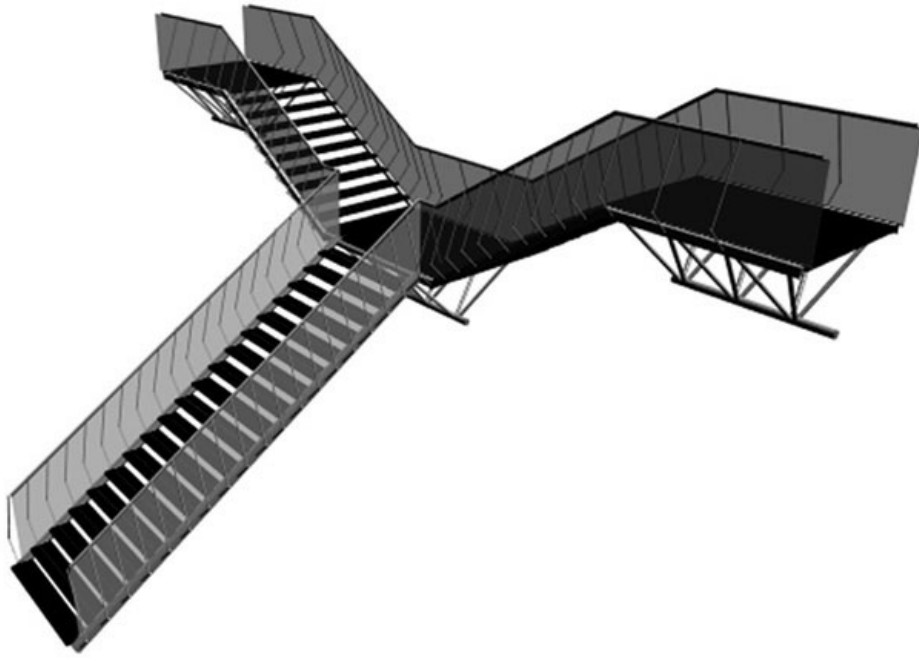
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[ image 4 ]



[ image 5 ]

