

Beyond the Interfacade: Critical Pedagogy for Collaboration in Architecture

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INTRODUCTION

This paper explores a growing practice in architecture, namely, conceptual communication between physically distant architects. We are currently witnessing the fact that architects in practice may be required to, and frequently are choosing to, collaborate across geographic space to realize jointly commissioned buildings or projects. It can be shown that the greatest difficulties in these design processes, however, transcend physical proximity. There is nothing new about architects' needs to communicate concepts to actualize their intentions and realize their work. Establishing a conceptual and critical dialog about architecture, a dialog that potentially leads to designing architecture, is an essential problem here. We seek to understand what can provide an epistemological, cultural, and technological ground for such a dialog.

While the structure of knowledge and the importance of the cultural context have long been important in architecture, information technologies introduce relatively new factors. Electronic media, with rapidly expanding modes of formal modeling, data compilation, and the dissemination of information, are facilitating the need for precise communication. Cyberception, identified by Roy Ascot as "a convergence of conceptual and perceptual processes," suggests that network connections will fundamentally influence the way we conceive of architecture. While much attention is drawn to the excitement of wayfinding in cyberspace, the potential for better communication, and therefore for broader comprehension of design concepts through collaboration, is perhaps the great promise of this technology.

Conventional scholarship in architecture has not promoted collaborative methods, especially in the design studio, in spite of the complex interrelations of professions and crafts that have long existed. Studio pedagogy instead has required independent investigation, a private search for the ideal design solution that is personally represented and publicly reviewed. Creativity is assumed to be the prime determinant of great architecture, and ingenuity presumed to establish sought after transitions from old to new. The

creative process is inherently an ego-centered endeavor, which requires strong will and introspective focus, is culturally conditioned, and must not be constrained out of fear of repression. In fact, an architect's independence is threatened when her or his free will is mediated, compromised, or tinkered with in any way. In this climate, external criticism may be perceived as antagonistic. Herein lies a paradox of the traditional studio method in design education, which polarizes the artist/inventor against the open-minded critical thinker and places competition between individual statements before architectural discourse.

For this project, we are interested in understanding the inherent struggles and possibilities of collaboration in design by attempting an experimental studio pedagogy, one that depends upon communication between unfamiliar counterparts to initiate work, and thereafter implements transmitted viewpoints and dialog as crucial to the design process. This demands a search for common standards, criteria, and goals which are not self-evident. Establishing "ground rules" for discussion and evaluation is necessary, and precedes introducing creative responses to a specific design problem. We want to examine how the design process and the resulting product are effected. Opportunities and tools made available by electronic media make such attempts uniquely possible. Yet the mouse and keyboard also challenge sensibilities, since they feel different than the pencil, pen, and chipboard, and they represent architectural ideas in heretofore unfamiliar ways. Technological media characteristically carry an illusion of distance and simultaneously erase the lag in time and distance in space. It is our project to analyze how technologies of images, spatial manipulation, 3-D modeling, animation, data, and text are influencing architectural design.

However, our investigation is not about technology in itself. Instead, we seek to implement appropriate tools which provide the structure for communication between distant collaborators, as we pursue our primary search for architectural content which is dependent on the historic, cultural, and physical properties of the site. Both standardized and non-rational components of the site are the focus of our investigation including perceivable and experiential "qualities,"

proximities, urban patterns of formal order, architectural scale, regulations, and historic conditions and events. Formalized means of communication will demand rigor in the search while promoting articulate, thoughtful, student-centered criticism. In the conclusion of this paper, we will outline a project to be pursued by ourselves as collaborators along with our design students.

Therefore, it is our objective is to test three aspects of theme, method and device that seem essential for architectural thought and design activity:

- (1) The search for site-specific architectural knowledge;
- (2) The constitution of an architectural discourse that serves processes of design; and
- (3) The exploration of the impact of new communication media on understanding architecture.

By strategizing collaboration and structuring communication requirements, we aim to reframe the roles of creativity and research in the design process. By examining comparable outcomes of student work, we will attempt to evaluate some of the difficulties and benefits of an architectural dialog in the collective network of the information age. Critical pedagogy, the term we use in the title of this paper, expresses our belief that learning and teaching may be understood only through challenging taken-for-granted methods to awaken critical insight. Such insight must involve both initial anticipation and post facto examination of that process. It is most important here to understand the nature of probable pedagogical difficulties and to strategize a response to them. We wish to make visible those factors within a given culture, educational setting, and pedagogical undertaking that will pose the biggest challenges or will create unique educational opportunities. A productive pedagogical strategy must be structured and verified as an evolutionary process wary of the danger of architectural products justifying their method. At this time, our efforts are aimed at identification of what collaboration in architecture, approached as an educational issue, entails.

COLLABORATION AND CRITICAL PEDAGOGY

According to the Webster's Collegiate Dictionary, to collaborate means "to work jointly with others or together, esp. in an intellectual endeavor." To collaborate does not mean the same as to cooperate. An act of cooperation assumes clarity of an objective or a benefit that is common to the cooperating parties and is concerned with efficient ways of accomplishing that objective. To collaborate may just as well mean "to cooperate willingly with an enemy of one's nation." This double play of meaning, that is, (1) cooperation with somebody or toward the objective that promises benefits, and (2) cooperation that threatens the integrity or the identity of cooperating parties, is exactly what makes the term collaboration appropriate for an intellectual endeavor. Collaboration in architecture falls into that category. Designing is the process in which efficiency of operation is less important than conceptual clarity about what and why

something is being created. In architectural collaboration establishing that realm of understanding, the common ground for thoughts, among collaborating architects is essential. It promises the benefit of joined efforts and expertise, but it threatens the center of one's creativity — one's ego. Defining and agreeing on what and why something is being created requires conceptual clarity. However, this agreement limits the unbounded creativity — the freedom of willful justification of a creative act.

Consequently, our general pedagogical objective is to create conditions in which students will experience and thereby understand designing architecture as an effort that is always placed in a complex network of influences and viewpoints. Such an effort is not to be confused with the development of skills and techniques for simultaneous decision-making. Rather, it is a matter of establishing and sharing a discourse — a site-specific or an issue-specific way of thinking about architecture, and deciding what constitutes a responsible way of acting within the realm of such understanding. To that end, architecture students must be willing to acknowledge what is exterior to their will — the complexity of architectural reality that exists and has been selected for them. They must be able to explore, develop, and articulate their particular point of view regarding such complexity. They must also be able to design architecture that represents their viewpoint and interactively addresses viewpoints that have been presented to them. In that way, collaboration among architecture students separated by a physical distance will make it possible to reveal and challenge the closed character of willful creativity. It may also reveal the benefits of negotiation and agreement about architectural sensibilities, values, intentions, and points of view at the origin of a project and before committing to forms and images. Further, it recognizes those aspects of design which are less a matter of generating new ideas, but are more profitably pursued by conceptual discussion and deliberation.

As has been indicated, to transform these pedagogical intentions into a pedagogical strategy requires an analysis of potential difficulties and opportunities. We would like to address three groups of issues here: (1) epistemology, that is, the structure of knowing in architecture; (2) the cultural grounding of knowledge, communication, and creativity in architecture; and (3) the function of information technology in architecture.

To uncover the structure of knowing in architecture we may consider two locations: the typical structure of teaching and the structure of project management. Architectural curricula reflect the assumption that architectural knowledge may be divided into categories established by the nineteenth-century taxonomy of sciences. Each group of courses, for example, history or structural engineering, proceeds within its own logic from fundamentals to advanced levels, maintaining "safe distance" from other sub-fields of architecture. It comes as no surprise that typical design process management follows a similar assumption. Specialization in architecture and affiliated fields follows

that structure of division. Analysis of the existing conditions is fragmented in a similar way. For example, site analysis is separated from programming and from structural analysis of existing buildings. All these fragments are expected to be integrated into design in a "synthetic" effort of an architect. The employment of a consultant, who brings particular expertise to verify the proposed architectural solution, reflects further how design is treated as an assemblage of fragmented knowledge. That knowledge must be presumed to be objective in order to create supposedly unbiased grounds for the architect's decision-making. Efficient cooperation then is based on the division of competency and legal responsibility among cooperating parties.

In a collaboration engaging students from different architecture schools, these presumptions may pose a problem while simultaneously creating a unique opportunity. If collaboration is structured by the way architectural knowledge is fragmented, the only goal that may be accomplished is the training of operational efficiency. On a conceptual or critical level such cooperation from a distance may prove to be damaging to the design process because it forces cooperating parties to rely more on reductive thinking, a tendency built into scientific reasoning. Our proposed collaboration is an attempt to test ways of knowing and communicating while recognizing the inherent complexity of architecture.

We assert that each aspect of a design process embodies a particular point of view that presupposes a set of values and a way of thinking. An exchange of conceptual positions and roles among groups of students will help them to understand the potential value in constantly externalizing their own assumptions while searching for common ground or defending their aim.

Cultural grounding of knowledge, communication, and creativity in architecture is the second issue we would like to consider here. Culture is the environment for thinking about what architecture is. Common culture usually creates the best foundation for communication. At its extreme, what is taken for granted as being shared by two parties from the same culture becomes invisible as a factor in a thinking process. On the other hand, the expression of architectural ideas may appear devoid of subtleties, or altogether obscure, when viewed by someone from a different culture than that which built the work of architecture. How a person positions himself or herself within a cultural context is a very integral part of that culture's constitution. In America, one may observe a strong tendency towards individualism, that is, toward self-centered judgment which assumes the obvious value in one's own point of view. In architecture, that phenomenon often appears as a translation of legal ownership of the physical land into the exclusive ownership and control of architectural ideas expressed on that site. Frequently, the design studio gives us examples of how the "autonomous self" dominates the design process and results in the production of an "expressive form."

The collaboration we propose will provide an opportunity to directly address these issues. First, de-centering or shifting

the ownership of architectural ideas in the process of site analysis will encourage reflection on the limitations and the complexity of factors involved in a design process. Second, collaborative efforts among students will promote critical reflection on what one considers relevant to initiate a design, and will be reinforced by us as faculty collaborators. Preparatory work, site analysis and programming will evolve in an inclusive process of describing complex physical and cultural reality. This part of our pedagogical undertaking will present its full benefits when collaborating students represent different cultures. The students will be required to identify and name what about their physical and cultural reality needs to be described for the members of another culture in order to make the meaning and function of architecture discernible.

The last general issue that needs to be discussed here is the relationship that exists between collaboration in architecture and contemporary information technology. Nowadays, computer networks make it possible to transfer architectural information in a variety of formats: quantitative data, a text, a map, an image, an animation, or a 3D computer model. The speed of electronic connection allows interaction, that is, an immediate response. Information technology is capable of bridging vast physical distances with information in visual and verbal forms. The quality and the accuracy of this transmission and the accessibility of technology will increase rapidly during the coming years. There should be no doubt that advancements in information technology are creating unprecedented opportunities for fast and efficient communication in architecture.

At the same time, in order to critically develop pedagogy, we must consider the potential drawbacks of that technology. Major difficulties may be uncovered on a conceptual level. The problem is embedded in the concept of communicated information itself. Communication may be seen here as analogous to the reductive character of pragmatic cooperation that has been discussed earlier. Communication is an intentional act of discerning, coding, sending, and decoding a message. Such practice involves a sender and a receiver sharing the same language — a code. Coded information must imply univocal interpretation. That is why the concept of information provides a suitable tool for scientific understanding. That is also why the concept of information dictates what may be considered a true elementary statement — a fact.

Understanding and designing architectural reality must go beyond the limitations imposed by that which can be universally agreed upon, that which we will define as information. In the analysis of existing and proposed physical form, representation better serves architectural cognition. To represent may be defined here as a process of establishing complex relationships between a sign and the real. These visual relationships function as an integral part of any culture. Historically, representation constituted an essential human effort to symbolically connote reality. Representations, similar to the meanings of architecture, function

within complex networks of associations and references. Architecture itself represents rather than communicates. What is conveyed by a building reaches beyond the information contained in its graphic signage. Meanings of architectural reality reveal themselves in the process of directing thoughts in one's interaction with experiential phenomena and symbolic forms. The challenge of the collaborative effort we propose is to elevate and maintain a mutual dialog among distant partners that affords profound comprehension of architectural ideas.

THE COLLABORATIVE STUDIO: A PROPOSAL

Two groups will be selected, one from the University of Minnesota and one from Ohio State. Each group will include 10-12 graduate students of architecture. Since both institutions' calendars have coincident 10-week quarters, we will work during one term, structuring the available time for site analysis, coincident design problems, collaborative evaluation of student designs, and reflection and evaluation of the results of this experimental studio problem.

We have addressed the relevance of a common culture of architecture as the context within which communication can most readily occur. We assume cultural similarity for these two groups of graduate design students. Part of our investigation will be to assess whether students who currently live and work in midwestern cities share knowledge and values beyond those expressed by a common architectural language, and whether they share commonalities of a broader culture learned by living in specific social neighborhoods, belonging to certain political parties or spiritual communities, or by being of a certain race or gender; and whether any of this bears relevance.

This project will require Internet/Telnet connections established at each school accessible to the student groups through computer accounts. "Mosaic," the most appropriate Internet interface for graphic and multimedia transfers, will facilitate the transmission of images and information. Communicating the represented analyses and the discussions to follow will require various means of interaction between individual students and groups, including those methods providing maximum clarity of photographic and three dimensional representation and those offering speed and efficiency, like e-mail. A location will be identified through NSCA in the Telnet network with coded access for students to place and retrieve visual models. It is not our assumption that all or even the majority of design study will occur using CAAD tools. Handcrafted drawings, images, and models will also be transmitted back and forth.

Our experiment initially focuses on communication of the complexity of the architecture of the site. Related sites will be chosen within the regions of each campus with consideration for three criteria: 1) that each embodies some aspect of the cultural characteristics of its geographic location; 2) that each is representative of the physical character of its landscape; and 3) that each is considered urban and has a built

legacy. For example, the "Gopher" site could be located in F. Scott Fitzgerald's neighborhood in St. Paul, while the "Buckeye" site could be located in James Thurber's Columbus neighborhood. Similarly, the first European settlements in each region, the Franklinton settlement on the Scioto River near downtown Columbus and Fort Snelling on the Mississippi near St. Paul, could provide comparative historical sites for joint investigation.

Since the names Gophers and Buckeyes would imply intercollegiate competition and rivalry, we will identify the two teams instead as the "superiors" and the "eries," each named for their respective frontage on the waters of the ultimately connected Great Lakes. To begin the quarter each group will systematically investigate and analyze the locally chosen site as an open-ended analysis exercise. After visiting their respective sites, and following thorough research, a series of graphic and written documents will be produced including:

I. INFORMATION:

- A) Text—a written summary that will provide
 1. An historic overview of the micro and macro site, including noteworthy landmarks, patterns and incidence of change, cultural and social characteristics of the community, ecological status;
 2. A description of the physical site, including orientations and views, sight lines, access, egress, runoff, etc.;
 3. Zoning data
- B) Drawings and images according to graphic standards, including
 1. A series of figure/ground plans at 1:100 showing change over time (insurance maps);
 2. A topographic map at 1:40;
 3. Site sections at 1:40;
 4. Photographic documentation, including black & white montage and color slides appropriately noted in plan;
 5. Aerial photographs

II. REPRESENTATIONS:

It should be understood that the way in which each site is represented will be discovered in the studio through exploratory visualization, questioning, and evaluation. A list cannot be formulated in advance. Representations will be built upon information collected including:

- A) Text—a written description of the significance and architectural value of the information uncovered in part I with emphasis on the qualities of the site that ought be observed by the new design;
- B) Graphic and visual representations composed to communicate fundamental interpretations of the sites. Plan, section, and researched photographic documentation will be employed using computational tools (Form-Z, Upfront, Photoshop, Electric Image, Freehand, Canvas, etc.) and other exploratory methods to,

first, identify essential characteristics, then map out understanding of the site as a complex experiential and cultural reality.

All of the aforementioned will be collectively researched and prepared by each studio group during WEEKS 1-3 of the term. During WEEK 4, this body of information and representations will be transmitted to the corresponding studio at the other school. Analyses will be judged for comprehension and discussed or disputed via electronic Internet/Telnet and e-mail connections. A lottery will assign pairs in each studio to be partnered with distant pairs for correspondence in the communication of site analysis and design review and critique. That is, two superiors will correspond with two eries throughout the duration of the design studio. At each school, half of the studio participants will be assigned to design for the home site, and half will work on the distant site. Pairing students on each site at each school will allow for shared responsibilities in response to site analysis queries and design criticism. Further, it increases the likelihood that home-based partners will jointly consider a response to incoming requests before responding, and will provide support for decisions in general. Students will design individual projects for their respective site.

During WEEKS 5-7, half of the superiors and half of the eries will design preliminary ideas for each site based upon information and representations provided for the respective sites. For each of the two coincident design problems, of course, half of the participants will NOT have the opportunity to visit the site. Site specificity of the planned program will encourage the maximum contact between designer and site, which will require maximum communication with the site interpreters. While program function and scale will be similar for both projects, programs may differ slightly, as they will be prepared specifically for each site. To maximize site dependency, the design problem will likely be infill or addition designs and include adaptation of existing structures. (An example would be redesigning an existing single family dwelling as co-housing.) It is important that students require a maximum of physical and social information about the location for which they are working, and therefore

perceive the need for clear and efficient communication throughout the process. Individual projects at this phase will be jointly reviewed by each studio at each school on consecutive days. In Minnesota, at the northern site review, superiors working on that site will present and be reviewed. Superiors working on the southern site will present the designs of their erie partners proposing solutions for the northern site. Simultaneously in Ohio, the proposals by eries working on the local southern site will be reviewed along with those projects by superior for that site which will be defended by their erie partners. Reverse presentations for each site will occur on the following day. Discussions will be videotaped and exchanged.

Design development in response to the preceding criticisms and discussions will take place during WEEKS 8-9 as projects are brought to completion. Both groups will convene during WEEK 10 at a site to be determined to review final proposals in face-to-face presentations. By this point, students will be knowledgeable about both sites and the architectural issues of each location and problem. Each student will be evaluated individually for his/her participation in every phase of collaboration, as well as for his/her own design proposal.

We, the collaborating instructors, will review and evaluate the whole experiment as we conduct it. Our criteria for determining success will be much the same as for any design studio problem. However, the final product doesn't alone reveal learning in the process. We will also judge the methods of interaction on a group and individual basis looking for specific cause and effect relationships. That is, we will identify when a student made a particular design decision because of communication or information dependent upon this method. Students will be asked to evaluate the design process with respect to past work. If the first studio is successful, it is our plan to reconfigure the collaborative studio, isolating specific architectural criteria and seeking additional collaborating groups at other North American and foreign schools of architecture. We actively seek your insights and participation in the development of this collaborative studio.