

Professing Comprehensive Design Studio

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Abstract

This collaborative teaching effort focuses, clarifies, and advances the nature and role of the Comprehensive Design Studio in architectural education. Because of its central synthetic function in the curriculum, the Comprehensive Design Studio is receiving increased attention by the NAAB, schools of architecture and practitioners alike. Our pedagogic efforts apply a radical strategy that reverses the traditional time allocation for schematic design and design development respectively as well as forcefully engages critical ideology. In order to accomplish this, we employ an initial short schematic design phase formatted as a quick, experimental, and intense workshop combined with a systematic, long and thorough development design phase, both illuminated by a renewed understanding of what it means to profess.

keywords: studio, pedagogy, ideology, practice, integration

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“... initiating an architectural project comes down to specifying what the questions are before any answers can be given.”

Kazuyo Sejima

“... it is not the architectural schools that follow the trends set by the professional firms, but now it is the professional firms that follow the trends set by the architectural schools.”

Rafael Moneo

“The work of students of architecture should not be directed to the solution of problems, but rather to sensing the nature of a thing.”

Louis Kahn

On the Comprehensive Design Studio

The comprehensive design studio is the academic environment that comes the closest to the practice of architectural design in an office. As such, comprehensive design is supposed to cover theoretical as well as practical concerns, technological and programmatic demands, communicational and collaborative pressures, formalist and contextual expectations, at different architectural scales including the urban, the building, the room, and the detail. Although there may be general agreement with this statement, the question of how to accomplish it, is the subject of various interpretations and debate. Based on our experience at three different schools of architecture and visits to other ACSA affiliated schools, we see two challenges that require focused examination.

Challenge 1: Underdeveloped projects due to following traditional pedagogic scheduling and methodologies.

A major challenge for comprehensive design studios is delivering in depth design development. It is quite common to devote 75% of studio time and effort to establish a design parti and then only 25% for developing the building ‘comprehensively.’ As a result, there is minimal time spent on the actual design development of the building. In the rush, off-the shelf details and readymade technological solutions are imported and used without adequate critique or elaboration. Students learn and reinforce a familiar negative stereotype: developing a building is a mostly ‘non-design’ and ‘dreadful’ activity. In large part, the problem also points to the lack of effective pedagogies that instill integration with other curricula into the design studio (i.e., structures, environmental controls, construction technology, digital media, etc.).

Responding to this serious shortcoming demands that we shift the focus of the studio pedagogy toward pursuing design comprehensiveness. In our proposal we alter our teaching attention and effort by inverting the time traditionally allocated to design phases; 20-25% of the time is spent in conceptual and schematic design, allowing 75-80% for design development and technical synthesis. The challenges for this inverse approach consist of: (1) producing strong schematic design schemes in a very short period of time; (2) applying clear, systematic, and open pedagogies that teach students how to develop schematic design to a point of believable constructability; (3) keeping the students interested and excited about their projects throughout the entire process.

Challenge 2: Poor and uneven learning outcomes due to a false dichotomy between theory and practice.

Our diagnosis of contemporary comprehensive design studios also suggests that they tend to get trapped under the force of practice by accepting a lower common denominator for design. This is observed in studio work that is well developed pragmatically, but shows poor or stereotypical solutions due to an uncritical attitude towards site constraints, construction, function, codes and standards. On the other hand, comprehensive design studios too often fall into obscure theoretical, formalistic, or programmatic interests without ever delivering a well-developed building. Escapism of real world concerns is as damaging as an uncritical acceptance of normal practice (Freire 1970).

We seek to avoid both pitfalls by illuminating our pedagogy with a renewed understanding of what it means to *'profess'* by offering a critique of both architectural academia and professional practice.

As Eliot Freidson (1990) argues, the term "profession" suggests two kinds of interpretations. "*First, consonant with the Latin origin of its use in English, it represents a more than ordinary commitment to performing a particular kind of activity--an avowal of a special sort of devotion or dedication.*" In the context of architecture, this interpretation suggests that the professional should be concerned with the well being of the people and the environment one serves. The second interpretation deals with "*the productive labor by which one makes a living, a full-time occupation that entails the use of some sort of specialized skill.*" Paraphrasing Freidson, we say that each of these different understandings cannot be mutually exclusive of each other. It is not good enough if the professional cares for architecture deeply but provides architectural services without possessing and exercising any particularly specialized knowledge and skill. Nor is it sufficient if the professional provides architectural services without caring about their implications beyond technical matters.

True architectural professing demands holding a position, standing for something, and making a vow in the name of a deep seeded passion for architecture, our fellow beings, and the Earth. *Professing wants belief and care.* But that is not enough. Professing also requires the masterful ability to technically and competently respond to architectural challenges. *Professing wants knowledge and skill.* Professing is where belief and knowledge come together in the here and now of present day reality. In this context, uncritically adopting borrowed ideologies, traditionally available solutions, or pre-digested expertise appears superficial and irresponsible. Perhaps as important is the question of how we profess architecture facing *this* reality vs. an unattainable ideal world. Can we truly make a committed and caring act in which we use our architectural skills for the sake of improving whatever is entrusted to us as architects? Can we make a difference? Our *Professing Comprehensive Design Studio* seeks not only to fully develop a building but also to instill a lasting attitude. We are not interested in training cold technocrats but instead educating committed, critical practitioners (Orr 1994, Palmer 2000, Schön 1987, 1983).

General Philosophy of the Professing Comprehensive Design Studio

The studio pedagogy articulates these ideals by means of an evolutionary interpretation of what it means to ‘profess.’ The launching of the studio through readings, and the constant reminder of a theoretical component to the comprehensive design project, establishes a critical mindset that fosters the *ideological dimension* of professing. The breath and depth expected from the design proposals sets up a level of technical competency—the *expertise dimension* of professing. Finally, the attitude and culture of experimentation in the studio instilled by the initial start up phases of the studio is maintained throughout, permitting an *evolutionary dimension* of professing. These three dimensions guarantee a comprehensive development of professing.

The theoretical, technical and experimental facets of professing architecture are engaged and articulated by asking participating students to establish relationships between: different ideologies; different students (teams); different curricula; different faculty; and different media (analog/digital).

Five Teaching Strategies

We employ five related teaching strategies to instill this philosophy of professing in our *Comprehensive Design Studio*. We start with an *intensive design workshop*, making full didactic use of *teamwork*, while pursuing *curricular integration* through a ‘slow approximation’ method, continuously and critically referring back to *ideology*, and providing a full toolbox of *analog-digital media* techniques to support the design inquiry.

(1) Intensive Design Workshop. The studio is jump-started by an intensive, four-day, eight hour per day, stimulating workshop (Neiman & Bermudez 1997) that quickly provides students with a strong work ethic, a design methodology, and an architectural scheme. Accelerating the schematic design phase allows the studio to devote more attention and effort to design development. The iterative nature of the workshop insures quality responses.

(2) Teamwork. All studio activity is conducted in groups in order to provide the necessary critical mass to deliver a comprehensive architectural response. By working in teams, students learn collaborative skills, and mature ideologically and technically through close interaction with others of different backgrounds. The students discover and develop their own strengths as individuals. Learning that successful teamwork comes from a wise management of difference prepares soon-to-graduate students for architectural practice, a cooperative enterprise. A team of instructors who have overlapping and compatible interests teaches the studio. This supportive environment encourages teamwork that is engaged with energy and rigor, while permitting the individual’s voice to find its place.

(3) Curricular integration. A major challenge of the comprehensive design studio is bringing together diverse knowledge spread out across the curriculum. One reason is that such knowledge (usually specific and well developed) comes at a level of definition inappropriate to the fuzzy state of an evolving design. Design teachers tend to overemphasize abstract and formal issues at the expense of balancing the frequently competing demands from each allied discipline. Our *Professing Comprehensive Design Studio* offers a *method of ‘slow approximation’* that demands just-in-time technical solutions but at a ‘resolution’ consistent with the conceptual underpinnings of the team’s project. This avoids unbalancing the design process with unnecessary detail, which in turn, encour-

ages further design exploration and integration. Construction materials, structural and environmental systems, programmatic, and other technical issues are brought in during the process to inform and enhance design decisions. As a result, non-studio curricula become ‘evolutionary’ and intimately embedded into the design schemes. Faculty specialists participate in the studio as guest experts and the studio instructors lead a curricular area of their expertise in addition to design.

(4) Critical Ideology. Ideological discourse is embedded up front into the studio culture, thus permeating the design process from the beginning. Thus, a theoretical position (which is actually where the term *partí* comes from) must be expressed in the building form, program and site, down to the details. Technical competency in each of these areas is ultimately tested in reference to the team’s ideology. In fact, critical ideology is used to determine relevancy when trying to decide among competing disciplinary interests. By making it impossible to avoid this matter, students must confront and learn that architectural expertise and responsibility are intrinsically tied to ideology and theory (Carr & Kemmis 1989). More importantly, it becomes quickly evident that it is not possible to take on a particular ideology without personal and emotional involvement. Intellectual positioning is an internal quest for what students believe, which in turn provides opportunity for the student’s emotional and attitudinal growth in character (Brooks 2001). Most learning theories show that personal involvement is at the root of making a lasting impression and change in students. (Beard 1969, Dewey 1966, 1938, Jonassen 1992, Piaget 1972, 1971).

(5) Analog-Digital Media Migration. Since architectural decision-making is based on representations, media techniques and methods are of outmost importance in supporting and encouraging innovative design comprehensiveness. Thus, the studio’s inquiry is pursued through innovative analog-digital media migrations. The lens of media become vehicles to zoom in, study, and advance architecture through a poetics of representation that while remaining loyal to making pushes the boundaries of what we know (Neiman & Bermudez 1997, Neiman & Do 1999). The importance of media as a synthetic environment to assist continued, personal, and reflective design experimentation cannot be understated.

Studio Phases: Details & Production

Phase One: Pre-Workshop (5%).

A lecture introduces the fundamental aspects of the analog-digital design methodology. The studio is organized into design teams. The teams read, discuss, and write a response to a series of texts addressing the ideological roots of architecture in light of contemporary civilization. The responses are posted to an interactive discussion board on the web. Both faculty and students contribute, arguing and defending each team’s position. The goal is teaching students the need for intellectual arguments to stand by themselves upon the force of reason and logic without any coloring of personality and passion. Simultaneous to this activity, the first design exercise of the studio requires each team to search for unfamiliar found conditions of between-ness within a generalized site location. Using a digital camera or video teams produce context-expanding visual material of the site. The intention of the exercise is to prepare the mind in new ways for seeing and interpreting the real vs. the ordinary (Figure 1).



Fig. 1. Interpretive Site Analysis: Team 03 and Team 12.

Phase Two: Analog-Digital Design Workshop (15%).

After the one-week initiation, the teams are launched into an intensive, improvisational, and conceptual analog-digital design charette. This four-day workshop sets up a productive, systematic and open attitude that is sustained throughout the semester. Within a few hours, a rigorous work ethic is established, and the teams are spontaneously experimenting by means of a dialog between analog-digital media while simultaneously questioning the ideology of their work. The teams create quick, rough physical models, which are digitally photographed. They extract parts of it and investigate its materialization through scanning, video, and image manipulation. The structure of the physical models and images is analyzed via freehand sketching, as a means to take ideological responsibility for the spontaneous actions made as a means to translate them into digital models. Early notions of program and site conditions are embedded into the process. All this is done under a critical eye, simultaneous to intuitive drive and insightful improvisation. The schematic designs produced during the workshop are strong architectural hypotheses that survive a thorough questioning process, thus proving their fitness to move into the next phase (Figures 2 & 3).



Fig. 2. Analog-Digital Workshop: lecturing, discussing, making, scanning, sketching, critiquing, presenting.

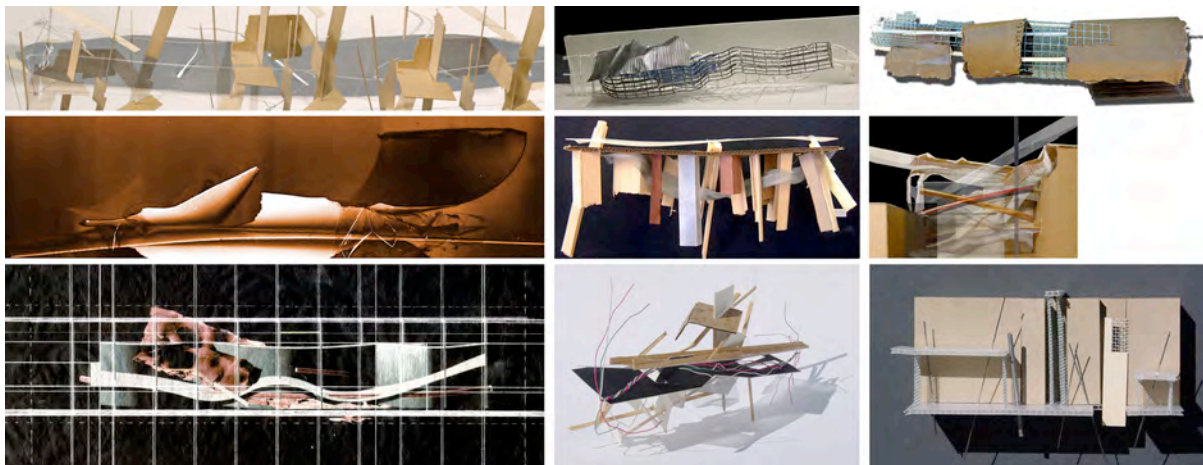


Fig. 3. Schematic Proposals: teams 10, 11, 2 (top row); teams 9, 1, 12 (middle row); teams 8, 4, 6 (bottom row).

Phase Three: Design Development (50%).

This phase develops the rough ‘schematic’ design produced in the analog-digital workshop, examining and adapting it to an actual site and program. Curricular integration of allied architectural issues enters the process and is addressed by means of a “*slow approximation*” design method. At all times, students are consciously reflective in their studies. For instance, the program is examined not just as a “shopping list” of spaces, but also as an ideological statement about the particular institution being built. Similarly, the site is considered not just in its obvious physical dimension but also as a critical intersection of urban, social, environmental, and cultural systems. Environmental controls, life safety, and structural systems continuously enter the process and are addressed within the overall design ideology. As in the *Analog-Digital Workshop*, students use both traditional and digital media in iterative frames allowing for flexible, exploratory, and inquisitive developments to occur (Figures 4-5).



Fig. 4. *Slow Approximation: Team 12 analog and digital development studies*

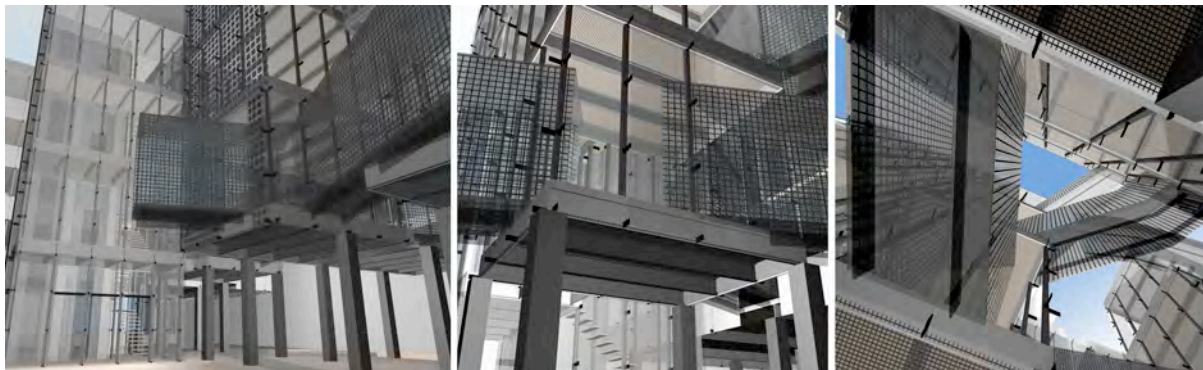


Fig. 5. *Demonstrated Ideology: Team 12 digital design development studies.*

Phase Four: Technical Development and Synthesis (30%)

The final phase involves the thoughtful refinement of the technical building systems, which although already integrated and approved during the mid-term jury (following phase three) are in need of focused technical development. A series of lectures, critiques, references, and eventually a final jury are scheduled to guarantee a mature comprehensive evolution of the already developed design of phase three. The teams are asked to avoid easy stereotypical moves that may betray their design ideology as expressed thus far. The students’ concern is to *profess* a design philosophy all the way down to the details. A large-scale sectional slice model and section detail drawings is required to demonstrate full design development and synthesis. In addition to a final set of plans, elevations, and sections of the building, a series of experiential vignettes are produced, which demonstrates the studio’s close attention to the phenomenological nature of the proposed building (Figures 6-9).

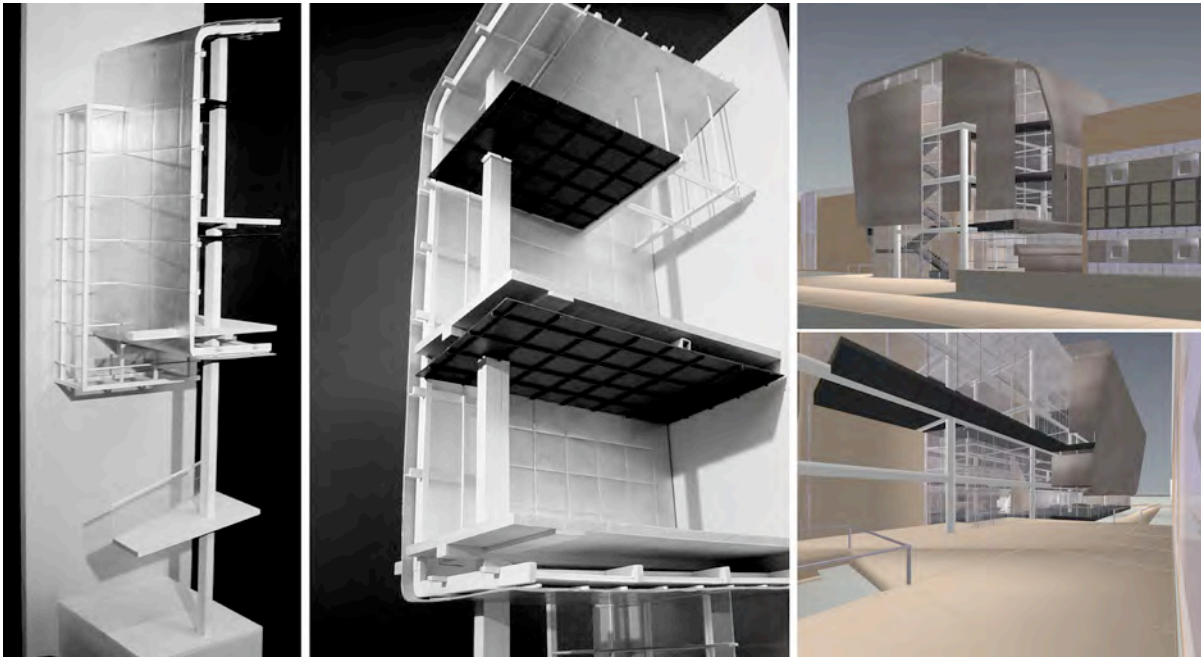


Fig. 6. Technical Synthesis: Team 2 analog slice model and digital vignettes.

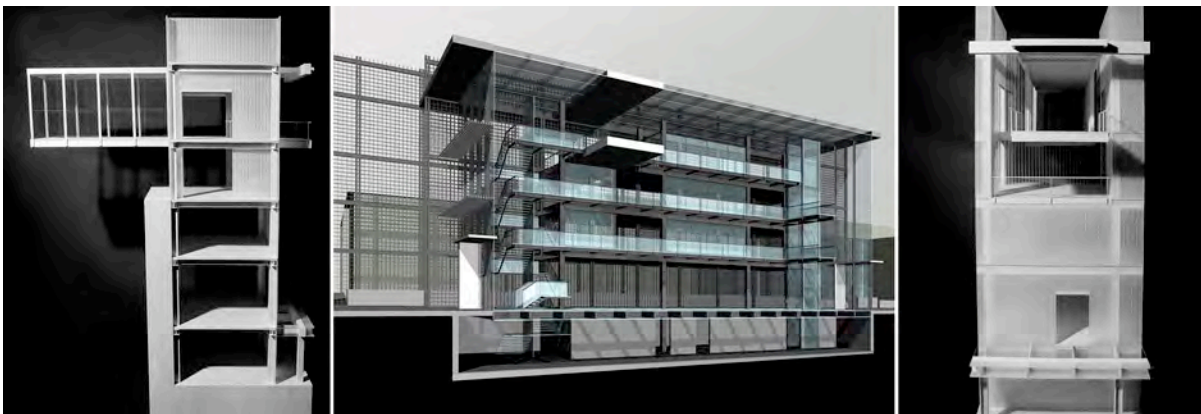


Fig. 7. Technical Synthesis: Team 6 analog slice model and digital building section perspective.

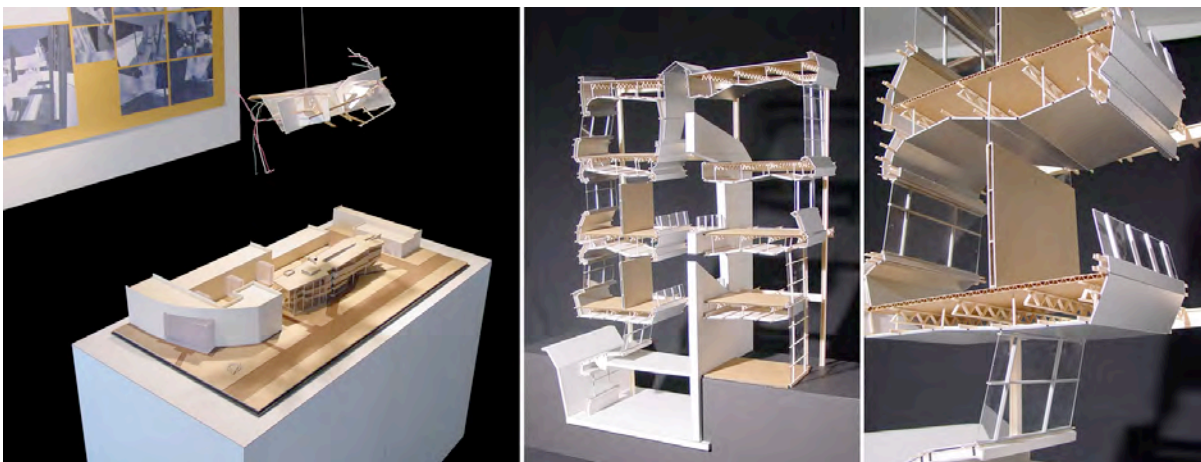


Fig. 8. Technical Synthesis: Team 4 schematic model (hanging), final model, and analog slice model.



Fig. 9. *Technical Synthesis: Team 12 at final review and Team 4 final exhibit.*

Conclusion: Professing Education

We believe that the *Professing Comprehensive Design Studio* successfully tests its two main premises to improve comprehensive building design. First, it shifts the pedagogic focus, time and effort from schematic to design development. Second, it offers an insightful balance between theory and practice. This is possible because of a good combination of an intensive initial workshop that dramatically jump-starts the design process along with the use of team dynamics to encourage high levels of intellectual and technical production.

By offering a thorough pedagogy based on a wide view of professing, the studio instills in students a conduct of professing that while solidly grounded in technical competency also includes its essential ideological component along with tools for its continue updating through critical experimentation. This is done by fully engaging reality. We use a “real” site, program, and materials. The exercise is not an esoteric avoidance of architectural making. The message to students is clear: reality is not boring or constraining but rather the opposite: true novelty is unleashed by facing (not avoiding) the real. By pursuing an enlightened way of looking and acting upon the real, we prepare students for a committed practice (Freire 1970).

We believe that the architectural design work produced in the *Professing Comprehensive Design Studio* speaks for itself. The students’ final projects offer strong schemes that challenge normative practice while exhibiting impressive levels of design development with believable constructability. Their heightened sense of detailing acuity, precision, and subtlety is matched by a careful attention to how the building appears in experience. As important, the students are capable of intellectually holding their ground against any ideological or theoretical critique. This is a powerful combination that reaches the highest expectations of professional graduate education in architecture.

Using the teamwork teaching strategy, along with requiring students to interact between often competing situations, results in another significant outcome of the studio. Less skilled students manage to achieve high levels of performance measured not only through their team’s work, but also as their personal contribution to that effort.

Another reason for the studio's positive outcome may be found in a fruitful teaching collaboration among the faculty. The studio is lead by faculty at different career stages (e.g., junior, mid-career, and senior), with different backgrounds, disciplinary interests, and roles, but with an uncompromising commitment to design excellence, and a versatile understanding and command of digital technologies in the design studio.

In the *Professing Comprehensive Design Studio*, media representations (analog or digital) are integrated in a manner that attains a blended sense of team individuality. We interpret such 'blending' to be a sign of the larger unifying synthesis taking place in the studio through its curricular integration. In this sense, it validates the natural, but seldom practiced method of 'slow design approximation' to foster cross-disciplinary fusion.

The student response to this studio is enlightening (Figure 10). For the first time, as many students confess, they find not just the time to develop a building design, but more importantly, they understand and enjoy the process of *professing* a comprehensive design project. The students realize that comprehensive design does not ultimately come exclusively from adopted external ideologies, a given knowledge base, or instructor authority. Rather it comes from within each individual, the particular situation, and in relationship with others (teamwork). In learning how to become aware of their own inherent passion, and then honestly and carefully allowing it to be expressed, the students learn the meaning, power, and responsibility of *professing* architecture. Students begin to recognize their own voice and in so doing know who they really are and why they do what they do, and how they do it. We trust that this is the goal of *professing* education.



Fig. 10. *Professing Comprehensive Design: students presenting and discussing.*

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