

Teaching a Shared Discipline

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The world is a Dancer; it is a Rosary; it is a Torrent; it is a Boat; a Mist; a Spider's Snare; it is what you will; and the metaphor will hold ... Must I call the heaven and earth a maypole and country fair with booths, or an anthill, or an old coat, in order to give you the shock of pleasure which the imagination loves and the sense of spiritual greatness?'

A CRITICAL PEDAGOGY?

As teachers of potential design professionals we are preparing people to contribute to the *form* of the built environment — to act as professionals responsible to a competence. This competence can be in part described by the requirements of the exam we take to become licensed. But it also includes ways of thinking and acting. Such behaviors describe a kind of self-image of the architectural professional that is held in our forms of communication, how we position ourselves in the world, and the ways we recognize our success. Taken together they form a culture of design. (Clearly, this translates into cultures of design, as there are many tribes out there in the design world.) An architectural education can be instrumental in inculcating a designer into this culture, either as an explicit goal or as a by-product of the teaching. This culture is informed by more than knowledge about buildings; it is shaped by the values, social interactions, and methods of working that typify design work. Its affect on the environment is inescapable. While we all recognize that the built environment is the result of many forces and actors, architects contribute by describing environmental problems and bringing intellectual resources to bear upon them. Minimally we represent an architectural competence to the other actors in building the environment. We act upon this competence through a practice in which we locate our methods and values. As teachers we describe this practice to our students through the ways of thinking we offer, the forms of representations we ask them to work with, the criteria we examine them with, and through the significance we find in their designs. The critical aspect of our pedagogy is in looking beyond the task at hand to how this practice unfolds and in being conscious of the culture it entails.

VALUES AND CONTEXT

The paper reports on an attempt to shape a culture by promoting two aspects of design practice. One is that the built-environment is the result of many actions over time — seeing a place as a collaborative design. And two, as a designer you are engaged in a social practice that is shared with colleagues, clients, and inhabitants. These would appear to self-evident propositions, but a survey of periodicals and studio problems reveals that prevailing attitudes run counter to them. The culture of avant-garde appears to hold our attention.² Much effort is made to distinguish an architecture as

discrete from the fabric of which it is a part. Priorities are given to the expression of the conceptual workings of the designer to the point where the invention of personal methods and representations are encouraged. Rather than promoting a shared discourse, the result is often increasingly obscure languages (of the visual and verbal varieties) and a general denigration of the contribution of architecture to the "everyday" environment.³ Buildings are valued for what they represent as discrete artifacts as opposed to the space and articulation they offer a larger fabric of places.

The context for the exploration of these values is an introductory design studio for undergraduates. A beginning design studio is where attention to issues of value and culture are most significant in that here a student is introduced to methods, ideas, explorations, and a discourse which comprise design learning. First impressions are important, and while a design curriculum should be broad and varied, subjects that introduce a discipline have a particular responsibility of instigating this culture and establishing a practice. This paper describes one exercise in which students' individual intentions add up to a "collective" place. This component of the work is approximately 4 weeks out of a 15-week semester.

PLACE THROUGH COLLABORATION

The aspects of design as a social practice and of the collective design place are connected to problems of an urban fabric or built field. Habraken has characterized a design attitude or approach to work on problems of a built field as a cultivation.⁴ Design as a cultivation of the field looks for types, patterns, and systems rather than individual buildings and seeks coherence among buildings within a fabric. Its critical proposition includes an emphasis on what is shared within a practice of a place (a coherence among buildings) and an understanding that incremental actions build up over time and intensify the qualities of the built environment.

Given the educational emphasis on ideas of the individual designer, design as a cultivation is often ignored and methods to explore it within an educational setting are limited. The ways in which contemporary environments are developed limit the articulation of this design, yet places of coherence with rich urban fabrics are often referred to as positive examples worthy of further study and emulation. To design as a cultivation requires sophistication in experience and skill. To ask beginning design students to take on such an "urban design" problem is overly ambitious. But what is possible and important early in a design education is developing ways of "seeing" this process and structure in the environment, understanding cultivation as a position and practice in design. Towards this end, the course exercise provides a setting to explore a shared practice of a place. In particular, issues of pattern, type, system, intensification, and collective frameworks are examined through design as well as through the observations of places.

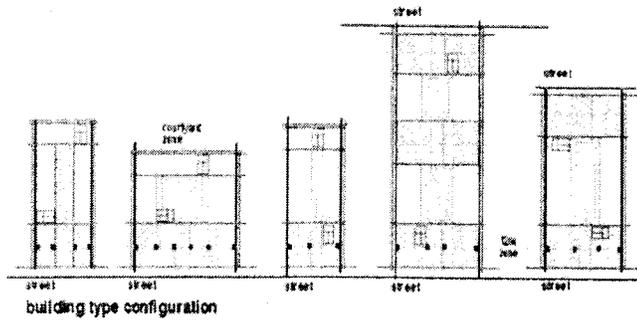


Fig. 1. Courtyards of Budapest used as illustration of type leading to variations.

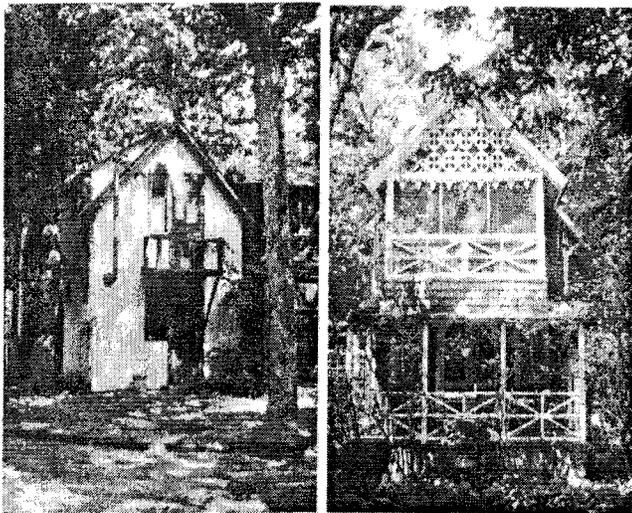


Fig. 2 and 3. Oak Bluffs on Martha's Vineyard



Fig. 4 and 5. Budapest courtyards

Type and pattern are offered as ways to generalize about the design structure of a built field. This structure gives rise to variations and is used by a practice to generate designs. It articulates design knowledge shared by the practice.¹ A type can be a spatial organization as seen in the 19th century urban fabric of Budapest where a courtyard pattern is repeated as a type for apartment buildings. Within an urban structure, the type has been expressed in a wide set of variations (see fig. 1). A type can also be a building type as in the cottages of Oak Bluffs on Martha's Vineyard. Here the form of the building is a simple gable roof house with a range of elaboration from the modest to the grand (see figs. 2, 3).

As variations give rise to coherent and complex environments, it is the systems that allow for variations. Architectural vocabularies emerge from systems as a technology, a set of parts, or elements that



Fig. 6. Casares

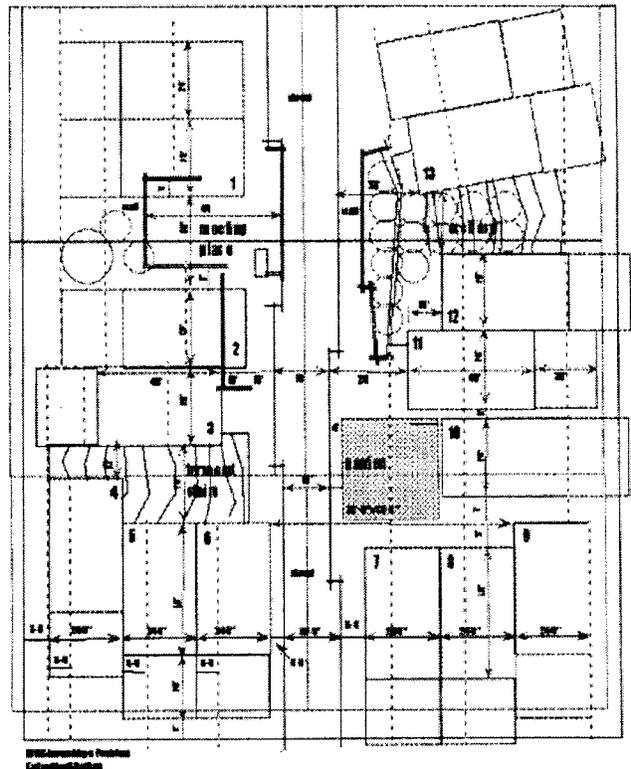


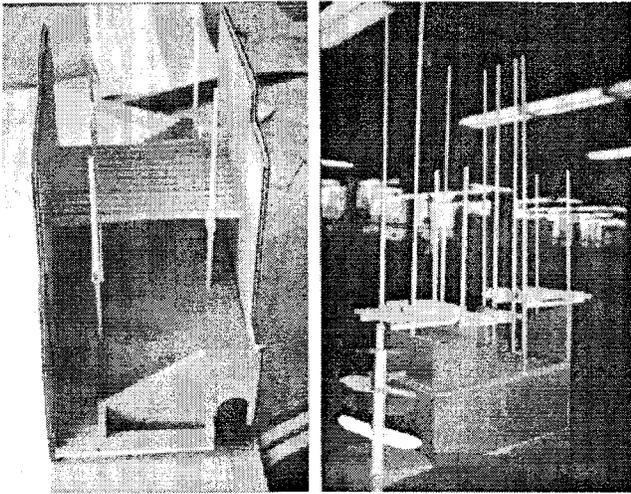
Fig. 7

are used again and again in different combinations. Each different combination produces a variation, which in turn expands the knowledge of what is possible within the system. Use of architectural elements as a system can be seen in the Oak Bluffs example where different combinations of manufactured millwork produce variations. A consistent building system operating throughout a fabric contributes to the collective architectural form of a place and allows for particular expressions of a shared language.

As such places are built and added to over time, qualities are extended and developed. Each new layer of building is understood in relationship to the experience of what is there and the design intensifies those qualities. In Budapest there is a pattern of access to dwellings via a courtyard balcony. This balcony also provides a porch-like place for the apartments it serves. As this type was built and used, the corner of this balcony system was articulated as a diagonal adding more space for its use and intensifying its form (see figs. 4, 5). In Casares, Spain, the overall organization of the village



Fig. 8. Collective place model in the studio.



Figs. 9 and 10. Initial footprint model

is shaped by a hill with each added dwelling furthering an intensification of the landscape form (see fig. 6).

Seeing design as a collaborative effort to build a place often entails acting to extend and develop a collective framework. Extending a collective framework requires that the design contributes to its space and participates in the articulation of its form. In Oak Bluffs, the cottage porches offer an example of such a framework. The town was originally established as a religious retreat, and many of the cottages are arranged around a large commons containing a pavilion-like tabernacle structure. The porches face this common. But, in addition, they are positioned so that when sitting in one, you are in a horizontal space that connects them all. Designing in this place requires practices to share a type, a system, and a framework for organizing a collective space. And designing as cultivation extends and intensifies the experience of all three.

THE DESIGN PROBLEM

To explore these issues, studio sections of 15 students each (the class is typically made up of five sections), are given a site plan with a corresponding number of building "footprints." A street, path, and four collective places or frameworks structure the site—a garden, an orchard, a meeting place, and a stair (see figure 7). The building "footprint" constitutes the shared type of a 24' row house form initially organized into zones of 4 ft., 12 ft., and 8 ft. across the width of the plan. The footprint is incomplete with a set of zones at the front edge describing areas of optional building as well as territory that requires articulation as part of public space.

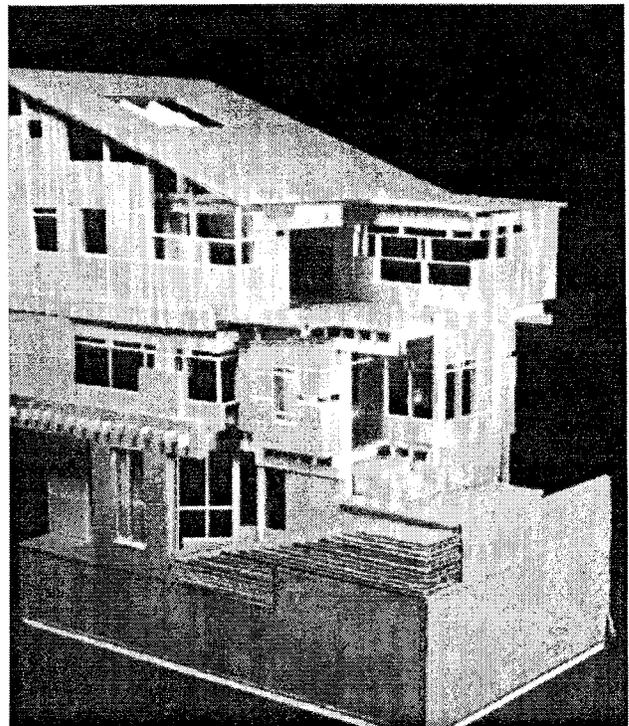


Fig. 11. Walls with framing system added

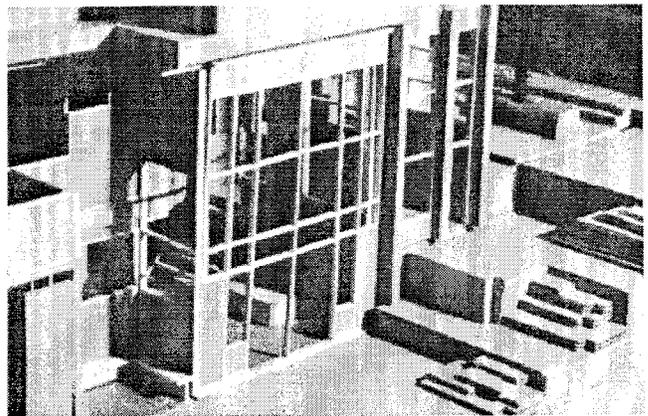


Fig. 12. Intensifying a path.

Each student is given one program from a set of rudimentary uses — as in a shop with a workspace, a shop with a dwelling above, a dwelling, or a workspace with a dwelling. They are also each given a pattern to accommodate in the public edge of their buildings. The design of the four collective frameworks is the responsibility of designers adjacent to them.

Students are required to work with a building system consisting of masonry walls, a post and beam wood framing system, and a panel infill and closure system. The form and direction of the roof is established in the type, but its elaboration and relationship to light is left open. A schematic section is given organizing the position of floors and roof within a set of optional zones. The students work with a large context model (6 ft. x 6 ft.) from which their individual models can be removed.

The process is organized around the building systems. Each week the students are asked to work with one of the systems in a sequential and additive fashion, working directly in model to design from their footprint. They begin with the masonry system and construct a set of

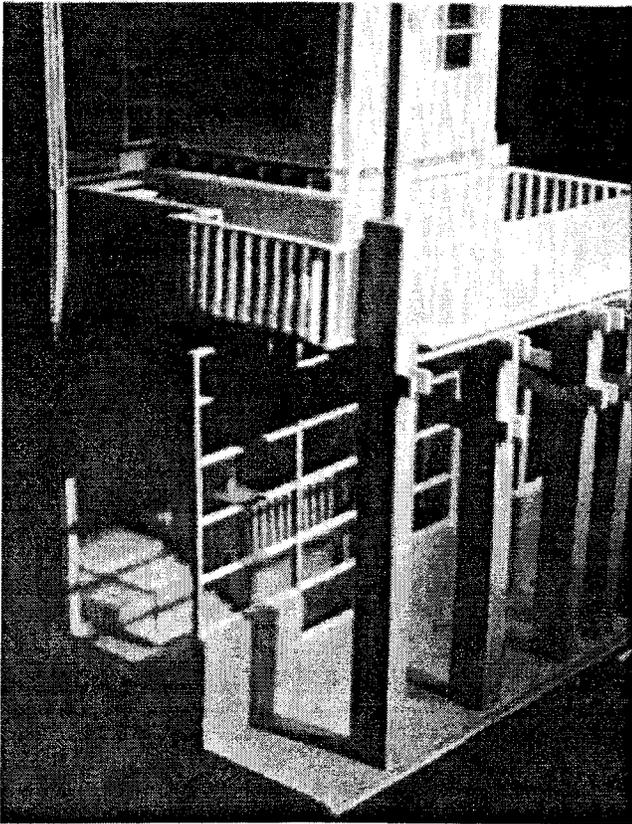
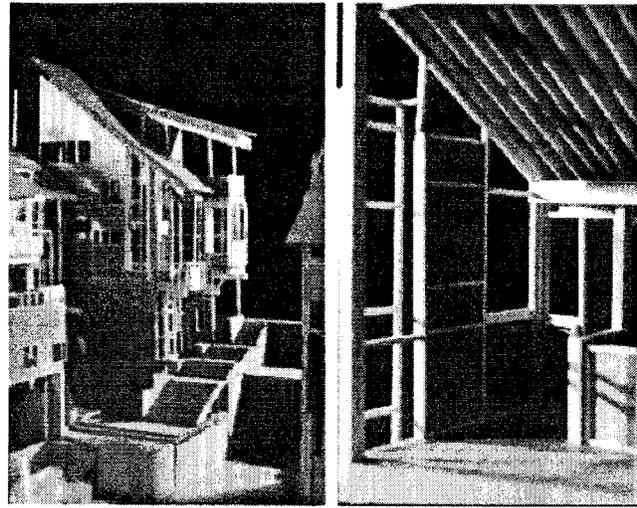


Fig. 13. Definition of the public edge.

walls as their initial design moves on the site. In the following week they are allowed to add the wood framing system to their set of design actions and in the next week can begin to add panels to their design process. Editing of the models (the model is both a process and final representation) is kept to a minimum due to the constraints of time. The sequential addition of the systems allows the consideration of each system's characteristics to the form and language of the emerging place and forces the assessment of their interaction to each other. Questions of the kind of space provided by walls versus the wood frame, as well as how they work together to organize a territory become transparent in this process. This produces a certain amount of tension or "noise" in the form of the architecture, as not every decision is coordinated. But at the same time, working with the systems in a separate fashion encourages exploration as students are allowed to channel their considerations through the introduction of form making systems (walls, frames, and panels) as opposed to producing a design and then locating the materials within it. This exploration encourages the development of a vocabulary based on the inherent quality of material system as opposed to invented forms and provides a shared ground for the development of an architecture.

A LEARNING METHOD

The process described above is not a design method; rather it is a method of learning through design. The lessons include learning how a vocabulary emerges from a discipline of materials, how to build up the context from a range of scales, how individual design actions contribute to a collective environment, and how to negotiate with neighbors. Much of this learning takes place through the student's observation of the work of others in the section. Adjacent projects must negotiate the configuration of the edge and therefore designers need to minimally pay attention to the decisions of their neighbors. Emerging architectural elements are treated as discoveries and are critically discussed by the class. Students are encouraged



Figs. 14 and 15. Stair as a collective framework. Panel system filtering light (right).

to borrow vocabulary in a principled way, furthering the understanding of a pattern's potential.

The footprint as a simple type is initially viewed as overly restrictive, but as the designs proceed, the observation is that the agreements about its organization are too minimal. Decisions about access change the perceptions of the dimensioned zones in the plan and the students' interpretations of the type and the accompanying variations are seen in relationship to public space of the street.

Working sequentially and incrementally with the material systems allows for an experience of the system and its combinations to enter into the design process. The discipline afforded by the construction systems allows for a language to develop in response to an intended character of the place. The shift is from a diagrammatic proposition about a space to a direct consideration of the physical quality of the design. Very quickly students learn that a system gives rise to variation as the concern shifts from generating form to editing the vocabulary.

As a structure of places is developed in the collective model, students read its patterns and work to intensify that reading through their designs. A definition of a path is intensified through the actions of the edge of a building. A place to sit is offered by a retaining wall making a public space more inhabitable. An opening is expanded and positioned to afford a greater connection between a shared garden and an interior space. In all cases the design decision is adding another layer of intensity or richness to an existing experience.

As the collective places are developed, the students learn about the responsibilities of contributing to the articulation of a public space. Decisions about priorities and hierarchical controls on their form making become self-evident as the designer works at making the public edge with a private space. They also discover the gift such frameworks offer as they draw contextual qualities from a shared place. That a building engages and benefits from the fabric of which it is part becomes a clear lesson.

CONCLUSION

Assessing the learning going on in a design studio is problematic at best. What is struggled with in a studio setting may not be fully internalized and learned for years. Studio teaching is an enterprise concerned with the long-term development of the designer and resists casual or rote evaluation. But in the case of this pedagogy, there has been an unexpected observation. Initially this exercise was developed to teach students about building systems in a design process. But after a couple times of teaching it, it became clear that

its unexpected benefit was to the culture of design. Typically this problem received the most enthusiastic effort of the semester. And students consistently put in the most time and hardest work on this component of the course. It energized them and by the own account was the most educationally rewarding of all the problems.

Our critical assessment of the experience revealed that by working on a collective place they became collaborators to each other. And by seeing the development of the built field as a goal, they could contribute to a common objective through their own designs. This avoids certain pitfalls of collaboration as typically taught in a design studio. In order to collaborate on a design, students are asked to act explicitly, even though they are just learning what it means to design. Also, by introducing the building system as the method of generating form, a shared practice of the place was established. Individual design explorations could be critically assessed by all and discoveries could be shared and exchanged. While the design struggles were personal, the discipline was not. And because there was a shared discipline there was a common discourse.

As was stated in the opening paragraph of this paper, the critical aspect of our pedagogy is in looking beyond the task at hand to how a practice unfolds and being conscious of the culture it entails. Towards this end the conclusions from this teaching are optimistic. It is hard to imagine that we, as an educational enterprise, can sustain the culture of the avant-garde for much longer. There is always something in the nature of architectural design about the discovery

of new possibilities, of changing sensibilities of time, and of personal interpretations which create a "leading" or evolving edge of architecture. But its meaning as an evolving practice is dependent on the recognition that we are part of shared discipline participating with others to build a shared environment. Dwelling on obscure and personal design methods has troubling implications for the everyday environment. It teaches us that quality is dependent on our ideas alone, not on our competence. To make the ordinary extraordinary requires a robust and deep architectural competence and understanding on how to share and expand it. As teachers it becomes our responsibility to foster an architectural culture that recognizes its shared discipline and seeks to find its collaborations in the on-going design of the environment.

NOTES

¹ Ralph Waldo Emerson, *Journals of Ralph Waldo Emerson*, with annotations, Edward Waldo Emerson, and Waldo Emerson Forbes, ed. (Boston: Houghton Mifflin, 1909-14).

² N. John Habraken, "Around the Black Hole," *Plan*. J. Cruikshank ed, MIT School of Architecture and Planning (1980)

³ *Ibid.*

⁴ N. John Habraken, "Cultivation of the Field," *Places* 9:1 (1994) D. Schon, "Designing: Rules, Types and World," *Design Studies* 9:3 (1988): 181-190.