# Assessing Beginning Design Education: A Heuristic Approach to Foundation Studio

ANDREW CHANDLER, EDWARD GASKIN,
HECTOR LASALA, ROBERT McKINNEY
University of Southwestern Louisiana

This is a submission of our school's pedagogical intentions and accomplishments at the foundation level which is a result of a decade-long effort to develop an effective approach to architectural education which consists of *a viable teaching process* operating within *a comprehensive and coherent studio framework.*

Our foundation program has evolved from the premise that learning depends on the internalization of experiences. Therefore, our main objective has been to provide our beginning design students with a *milieu* which is most conducive for the internalization process to occur, and which *fosters a gradual and expansive student development.* We have found that this is best achieved in an environment which is *heuristic* in nature, that is, studios in which the primary impetus is exploration and discovery. Along with the formulation of *a way to teach* beginning design students, we have constituted a framework which organizes and directs the content and operations of the five-semester studio sequence experience.

As a result of this shift in our educational approach, *there is a spirit of self-reliance and freedom among our students which motivates them* to work hard, practice important skills, and pursue quality in the things they make. Their decisions are insightful and yield works which aspire toward making significant contributions to the search for meaning and delight through architecture.

## HISTORY

### Pedagogical Shift

The search for a change in our pedagogy was initiated by the faculty teaching beginning design studios as a response to the confinement of the prevailing methodology which privileged an acquisition of norms and rules of design rather than exploration and discovery. This approach was identified as a basic obstacle to a more effective way of teaching and learning design. Dissatisfaction with this condition and exposure to the education-as-process theories from John Dewey, Alfred Iiorth Whitehead, Jerome Bruner, Jean Piaget, and Maria Montessori offered the opportunity to suspend the conventional learning paradigm while reformulating an intentional *structure, content* and *conduct* of the beginning design studios. Another fundamental component which directed our search was the belief that the education of creative, intelligent and resourceful architects can best occur in an environment that focuses the program of education at the site of learning: the student.

## STRUCTURE

### Two Halves and Two Dialogues

We first structured the five years of the undergraduate curriculum into two, five semester halves. The first half we identified as the

Foundation, a well-orchestrated set of pivotal experiences which begin in the first year and are concluded after the first half of the third year. We see this Foundation as the simultaneous cultivation of a pair of dialogues. First, a dialogue between the student and her work which is internal and specific to that student and which is oriented toward:

- Discovering a way of working which is personal and effective;
- Acquiring sets of principles on which to base decisions;
- Developing critical judgment through reflective action; and
- Achieving work which demonstrates knowledgeable integration of assigned tasks.

Second, a professional dialogue between the student and the body of knowledge which engenders and nurtures architectural formulations, and brings insight and know-how to the design process. In particular it is aimed toward the acquisition of:

- Semantic frames to construe the actual;
- Generative grammars to order, express, and construct semantic intentions; and
- Information sources from which pertinent data can be accessed as project matures.

## CONTENT

### Curriculum

We conceive the foundation sequence as an exploration of architecture through inquiries that pertain to *architecture and the human condition, architecture as the making of place*, and *architecture and technology.* For us architecture finds its meaning through the actualization of space for life lived in all of its totality. It is this very act of living, the human condition, wherein lies the source and inspiration for our projects.

We also see the fundamental task of architecture being placemaking — the locus around which we conduct the design search. Furthermore, we view architecture as being a technology, irrefutably bound to the process of making. This issue of technology is considered a crucial element and is part of the design investigation from the onset. Such an emphasis promotes in our students the conviction that design and constructing are inseparable components of the architectural act; *construing and constructing being inseparable ( M .*Frascari). This curriculum approach insures that spatial, programmatic, and tectonic issues interact throughout the life of the investigation and resolution.

### Heuristic Tasks

We hold firm to the opinion that students of architecture must learn at the onset of their design education how to formulate intelligent and ethical positions of their own concerning matters of
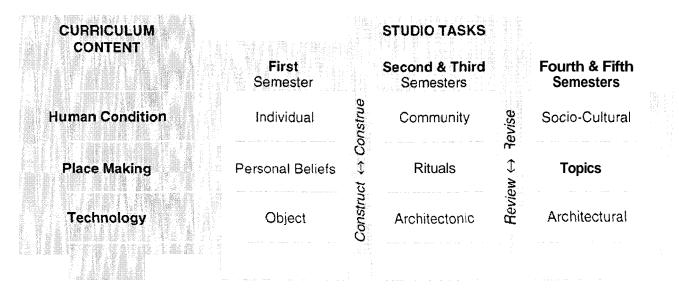
| CURRICULUM CONTENT | First Semester | Construct ↔ Construe | Second & Third Semesters | Review ↔ Revise | Fourth & Fifth Semesters |
|---|---|---|---|---|---|
| Human Condition | Individual | | Community | | Socio-Cultural |
| Place Making | Personal Beliefs | | Rituals | | Topics |
| Technology | Object | | Architectonic | | Architectural |

STUDIO TASKS

Fig. I. Diagram of Thematic and Operational Framework for the Foundation.

significance. This can be accomplished through design projects conceived as heuristic tasks, that is, essentially enigmatic and ambiguous, well-crafted questions. The heuristic process operates as a cyclic and nonlinear network wherein students seek to synthesize whole yet incomplete formulations during all of the phases of a project. It is characteristic of this approach that through-out the entire process, product and content are entwined, interacting continuously. This way of designing works on the following premise: *one must try to design a "thing" in order to know how to design that "thing" or even to know what that "thing" might possibly be.*

## Division of Tasks

The success of the curriculum is directly related to the clarity and specificity of the mission which we assign to each semester in the sequence. The aim has been to create a deliberate sequence of experiences rather than a collection of discrete and detached increments. We have developed an operational framework which we include in diagram form on this page. All faculty who teach in the foundation division share the intentional and operational thrust of the framework. *Each project is formulated so as to introduce and develop very specific programmatic content, frame the scope of issues to be addressed, and determine the scale and sophistication of its intended resolution.*

## Programming

Our project formulations are simple yet germane. Their primary intention is to provide the stimulus and information necessary to initiate the first stage of exploration. Subsequent type, timing, and amount of information supplied is dealt with great care. This is very important since undue complexity and too much information often overwhelm and overload the student's capacity to apprehend, order, and play in the situation being explored. On the other hand, overly reduced content may fail to provoke curiosity and significance. In order to assist and inspire the student, assignments are often associated with a variety of sources, for example: a play, a poem, an art movement, artifacts, a particular ritual, literary works, philosophical issues, everyday events or objects, and our local culture. These become generative sources for tectonic development, process control, and analogical and metaphorical models. They also provide the syntactic and semantic references from which the student can draw information, stimulation, concepts and grammars.

## CONDUCT

### Way of Working

Our aim is to foster conditions under which the student is free and confident to explore, risk, fail, and discover. Fundamental in assisting this objective is to ensure that the benefits of exploration always exceed the risks incurred (J. Bruner). We have displaced the teaching-style which coerces students into a fearful, dependent, and submissive "tell me what you want me to do"-style of learning and replace it with a summons for the student to discover a personal way of working, using their own history and individual ways of comprehending and imagining the world. The task of the faculty in this context is to initiate a dialogue between the student and those domains of knowledge which provoke insight and nurture the development of each student.

### Educational Objectives

We understand that the work designed by our students are by-products of their thought processes. Therefore, our central task is *process development* along with the enhancement of the *skill, knowledge* and *judgment* which are generated by each experience. *Skill* is related to the hand, to making. It is reflective action in which one thinks through the hands about what is being done at that moment. The development of skill is the gradual internalization of the process by which the student generates meaningful responses to a particular situation. Information becomes *knowledge* when the student approaching a matter to be learned begins to structure the implementation of that information. This process makes it possible to understand the general order of a situation and assists the ensuing investigations. *Judgment* results from reflection upon what one has done. It is a sorting out from a previous stage of what is successful and what is not, what is important and what is not.

### Constructs

Initially rough approximations or *constructs* are developed from major elements, themes, issues, expressive languages, and constrains which have been discovered and engaged by the student. Even in its beginning stages the construct is considered a whole thing. Its value in the embryonic stage is to enable each student to identify, however vaguely, the primary factors at the heart of the task. Based on the agenda the construct sets up, the ensuing explo-

rations by the student expands and amplifies the programmatic intentions as well as the clarity, complexity and rigor of the executions. This cycle is repeated and elaborated throughout the life of the project, each time benefiting from a more informed base. A sense of *progress is viewed in terms of iterative understanding of the intentions being sought and developed.* The conclusion of a project is never rushed arbitrarily but allowed to mature; long-range due dates are abolished. Each student's process is fragile and it should not be damaged for the sake of either keeping capricious due dates, or maintaining a homogenous and calculated progress throughout the studio (whereby the most competent students in the early stages dictate the speed of a project for everyone else). Instead, students are required to bring new and updated work each time the class meets. This approach inhibits procrastination and ensures that a work discipline is acquired by the student, one which is consistent and which addresses issues and questions in a timely manner.

## Media

At the beginning of our students' design activity, we have found that model-making and full-scale constructions in our wood shop are the most effective media to explore, simulate, and communicate their formulations. Drawing is introduced next as a means to expand the findings of the model. By the end of the five-semester sequence the students have been offered ample opportunities through studio workshops and support courses to acquire a variety of drawing skills. At this stage of their development design investigations partake equally of model making and drawing.

## Faculty

This educational strategy requires that instructors accept and participate in the unique development of each student in the studio. It implies a sensitive openness to the way in which each project unfolds. Our task is also to reach through temporary discord and naiveté, and identify what merits further development. Also, we have discovered that team teaching and periodic group reviews are the best venue to properly establish a dynamic which fosters a more dialogical and constructive exchange of ideas from all the participants. This approach amplifies the scope of the project due to the diversity and intensity of the questioning, and the ensuing argumentation by students and faculty. The faculty's success as they participate in this process is dependent upon the appropriate provision of the following:

- Project formulations that progressively inform and challenge the intellectual capacity, design skills, and technical know-how of each of our students;

- Critical and respectful dialogues that are intentional yet open to particular interpretations; and
- Resources from which students can draw information to further clarify their intentions

## EVALUATION

### Process and Product

The products and process of each student are evaluated constantly throughout the semester but graded only once. At the end of the semester all students document the full semester process and all of their work via photography and display it for the purpose of assigning a grade. This grading is directed by their progressive growth in skill, knowledge, and judgment. These are identified by an increase in the students':

- Capacity to deal with complexity;
- Ability to generate alternatives;
- Clarity of their understanding;
- Ability to ask pertinent questions of their work:
- Ability to access pertinent information at the proper moment;
- Capacity to communicate with themselves and others;
- Speed, efficiency, and comprehensiveness of their process;
- Ability to respond to constrained situations in a flexible way;
- Ability to take advantage of fortuitous circumstances;
- Ability to make sense out of contradictory or ambiguous information;
- Ability to recognize the relative importance of different elements of a situation; and
- Ability to synthesize new concepts by taking old ones and putting them together in new ways.

## FOUNDATION

### Student Work

The last few years that we have experimented with this approach have resulted in a significant development of the educational experience of the beginning design student as well as their faculty. Comparatively speaking, we have found that our students' design skills, work habits, and the quality of their works have improved dramatically. Moreover, their products exhibit a remarkable sophistication of concerns and execution as the examples we are presenting can attest. Due to format requirements, we are submitting illustrations from only three of the five semester sequence. A limited amount of text has been added to define the content of each project and its sequence.
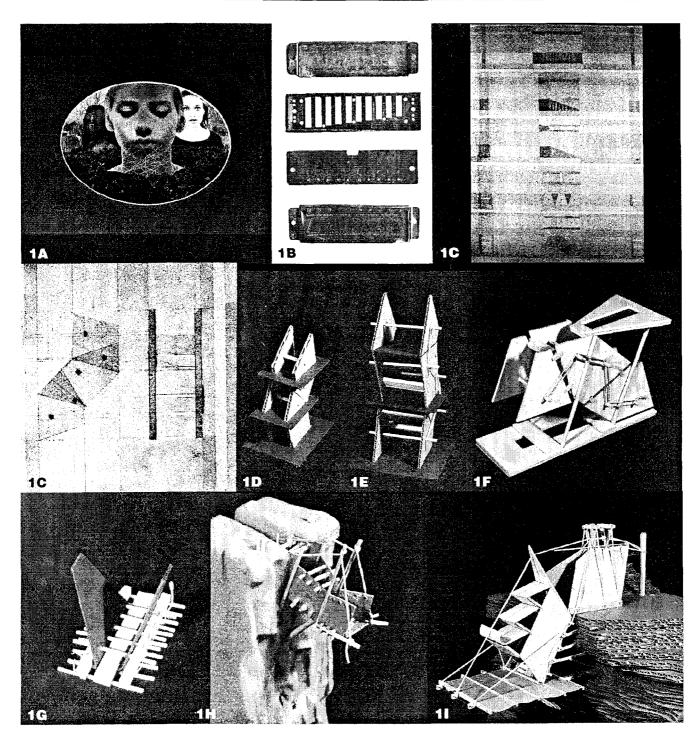
Fig. 2. **Semester** Two: **Year** One: The Place of Ritual — This studio provides the students with their first architectonic esperience. Themes from literary and artistic sources orient the initial phase of the project and continue to expand as the project advances. As in the first semester, thematic development proceeds by exploring its semantic and organizational potential through a variety of media. From these explorations students identify a significant character and/or ritual around which spatial expressions and architectonic systems participate with a given site.

Echo's **Retreat**
1A: Graphic interpretation of Eleemosynary, a play.
1B: Harmonica chosen as subject of drawing esercise.
1C: Harmonica transformed via series of operations.
1D: hlodel translation of harmonica transformation.
1E-G: Development of tectonic system.
1H: Scheme on site, preliminary spatial organization,
1I: Final model in context. A writing retreat for Echo, a major character in the play.
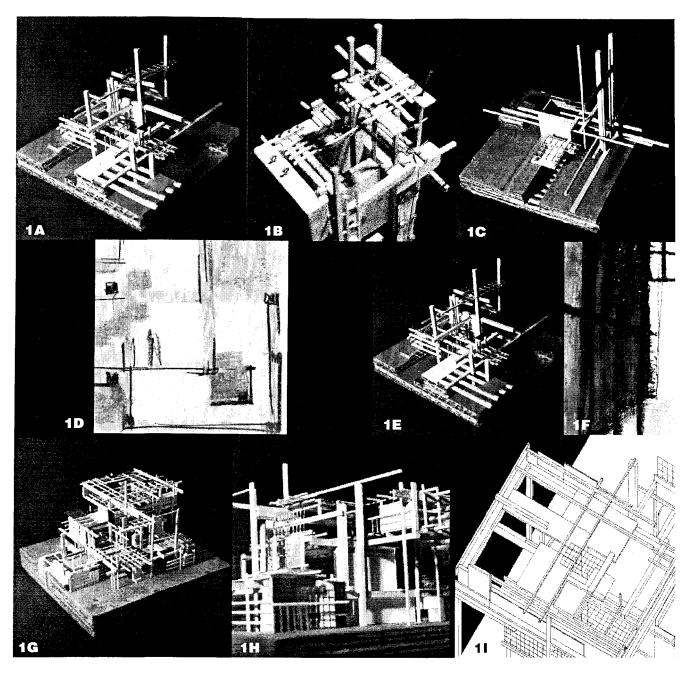
Fig. 3. Semester Three: Year Two: Site Based Tectonic — Third semester studio focuses on the transformation of a construct into a site-based tectonic. The project is semester long with three phases. the construct. the transformation to site, and subsequent development. The program is approached as ritual based. focusing on a public/private dialogue. Creation and development of an architectonic language with an emerging spatial sensibility is the overriding concern. Complexity and density of a hierarchical tectonic system is developed in response to community and ritual exploration. Focus is placed on the pursuit of partial wholes in lieu of completed projects.

A House and Furniture Shop in a Small Town
1A-B: Constructs — Emergence of a tectonic language.
1C: Initial move to site — Transformation of construct.
1D: Plan details emerge — Drawing becomes mode of inquiry
1E: Spatial framework — Building complexity from program.
1F: Emergence of experiential sensibility.
1G-H: Architectonic: Dense. Hierarchical, Spatial.
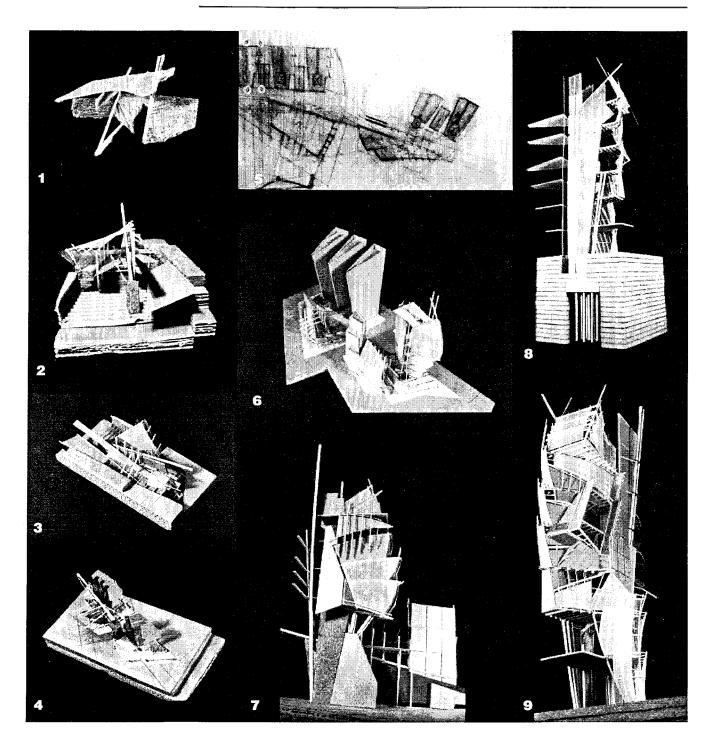1I: Axo detail — Formalizing a partial whole.

Fig. 4. Semester Five: Tear Two: Educating Proactive Architects — In the fifth semester studio the program for each project is initiated and advanced by the student. Faculty select relevant socio-cultural topics. The student is responsible to consider how architecture can make a significant contribution to that aspect of the human condition framed by the topic. Equal to this expansion in content, context ir enlarged to the urban scale. Final resolution is expected to reach detailed constructional stage. Program development is oriented by the conviction that the making of relevant architecture is the result of creatively engaging the "mundane" aspects within the program.

Linking the University to Downtown.
1-4: Initial construct models and site exploration.
5-6: Scheme development, plan exploration; Dormitories, galleries and studios for students in the College of the Arts.
7: Tectonic exploration and development.
8-9: Significant fragment exhibiting character of place and constructional detailing.