

Imagined Architecture via Material Imagination: A Matter of Trans-Formation

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INTRODUCTION

Creativity in architecture can be based on the process of transformation of matter. This transformation occurs in the realm of perceptive imagination where to generate and develop new ideas means to pre-figure matter in the course of the idea's realization. Two types of imagination can be engaged in this process, a *formal imagination* and a *material*

imagination.¹ Formal causes tend to stem from intuitive and associative image production. These images derive from psychological projections and picturesque forms. They usually provide an analytical reading to create an object. Yet besides these images of form a certain type image is provoked solely and directly from our immediate confrontation, interpretation and manipulation of matter. These images may be assigned category by the eye but only the hand truly reveals them. They depend on visceral readings that are projected through qualities such as mass, material surface or texture, light, space and time. Of course, it is only artificially that we can separate formal and material imagination in the process of making.

Since matter remains itself despite the transformational metamorphosis it undergoes, the meditation upon and manipulation of it tends to cultivate an open imagination. This allows the architect as "maker" to possess an openness for "wonder," prepared for the amazement of unconscious manipulations that give rise to creativity and the art of invention. It is through a sense of wonder that one can initiate a critical beginning to the acquisition of knowledge. Wonder is an action—an impassioned verb. It forces one to think, to go beyond, to ponder in a world of constructive imagination. By seeking cues and wandering through curiosities, one becomes involved in a play of interpretive procedures until paradox becomes intelligible in an image of conception. Through this process of making—a *techné and poesis*—we gain an intuitive knowledge of the structure of the reality within which we dwell.

In the act of making one must engage memory at one end and imagination at the other; memory as the recollection of one's experiences and imagination as the mechanism of transforming seemingly insignificant things into meaningful forms of re-creation. Through this dialectic the formal imagination embraces and transforms the material and allows one to read into shapes, marks, light and colors, a symbolic or representational meaning that is our fundamental form of language. This form of discourse allows the roles of subjectivity and objectivity to freely interrelate in order to discover *new orders* inherent in the active process of material

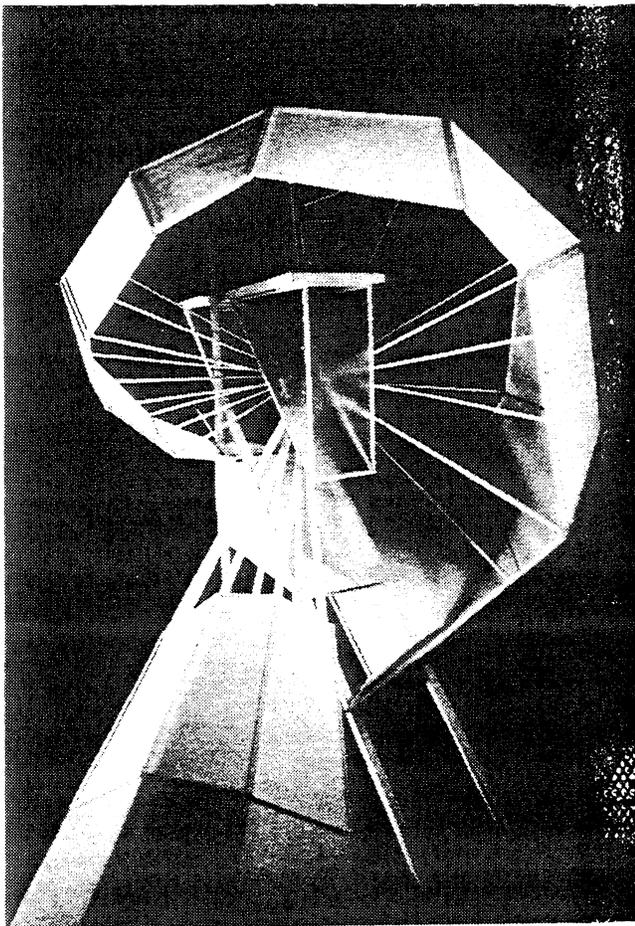


Fig. 1.

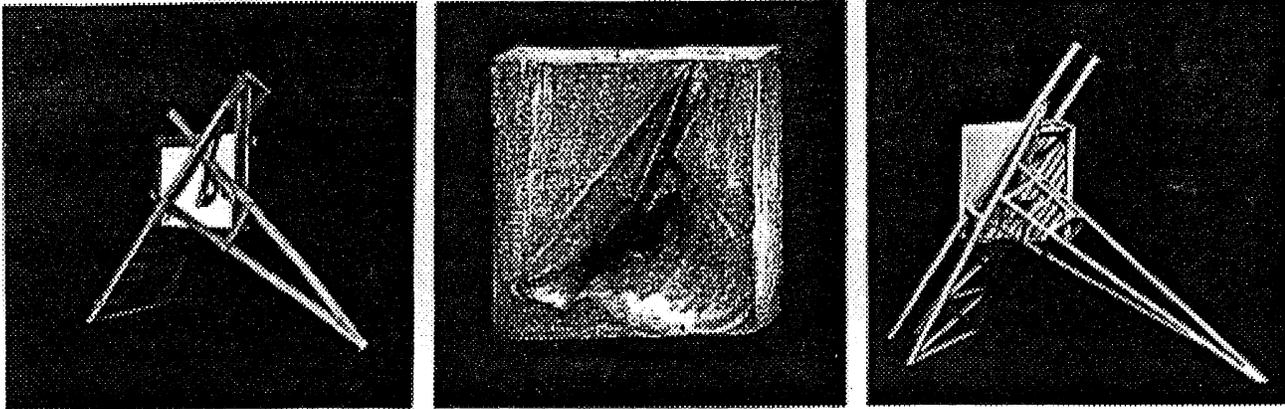


Fig. 2.

transformation. The process starts from a persistent inquiry into the ways of natural creation, the becoming, the functioning and the individual resolution to associate oneself with the matter in which we live. John Locke said that what gives each person his or her personal identity is that person's private store of recollections, and I might add re-creations. "Imagination is not merely a faculty for forming images of reality but it is the faculty for forming images which go beyond reality, which sing reality."²

THE THREE ACTS OF PLAY

The three notions of *form*, *content*, and *function* are bound together as the three important components of architectural design. In the current heterogeneous state of the architectural design studios in academia, these hierarchical prescriptions or sequence of these notions have been freed from the strict boundaries of former theoretical paradigms. As educators we need to delineate optimum design sensibilities for beginning design students, to weave together these sometimes artificially autonomous components in the making of architecture. If we begin to view these components as metaphorical portals that the student opts to pass through, their order becomes particular to the personal design route for the project at hand. Thus one can choose form; via content, via function or via form itself. This becomes a point of departure that frames a particular perspective with which the student can proceed in his or her design process. Dr. Alberto Perez-Gomez calls this theorizing the inventing of an "enabling theory;" it enables the designer *to make*, serving as a rationale for ideation and fabrication.³

"ARTIFICE" AS AN ENABLING THEORY

Normally "artifice" denotes the skill and ingenuity one uses in the making of an artifact, however, there is a second connotation that points toward trickery and craft. These compound notions of *artifice* for this discussion are seen as a means to the articulation of form for the beginning design student; it encompasses skill and ingenuity as well as craft. I will refer to a project called, "A Place for One's Daydreams," to demonstrate *form* generating techniques, arti-

cially divorced from content and function, to be used as initiators in the development of an enabling theory for the final production of an architectural project. This artificial separation of *form* from *content* and *function* provides a portal to design and allows the student to focus primarily on a tangible vocabulary in the manipulation of the constituents of form. These techniques act as vehicles in an architectural pedagogy that open the imagination to formal and material causes and establish orders that will eventually lead to habitable forms of architecture. The artifice is then a device—a particular point of view—to appropriate the functional program and provide meaningful content to an architectural production.

THE COMMUNICATION OF MEANING THROUGH THE DESIGN OF STRUCTURE

Each student began their individual exploration by deriving their own "enabling theory" through an active process of making an object—what I refer to as "opening an artifice." Through a creative means of playful inquiry the artifice becomes the mediator to guide the student in making conscious and unconscious discoveries in his or her design process. These discoveries then led to analytical and interpretative modes of categorization defining formal and material orders inherent in the newly made artifact. As subsequent questions are imposed an effort is made to find new resolutions that provide ways to interpret the conventions of architecture. By artificially isolating the individual levels of design resolution the student immerses him or herself into the activity of the moment, thus cultivating an open imagination. As each consecutive proposition is given, the previously made artifact becomes active in the form of the new artifice that now actively directs design thought. The design actions take on a conjugational character described semantically by Paul Klee in his *Pedagogical Sketchbook* as *active-medial-passive*.⁴

Early design exercises challenged the students to question the nature of matter through shape, form and value, testing their ability to "see" and react manually to formal cues. They focused on the relationship between mass and light and

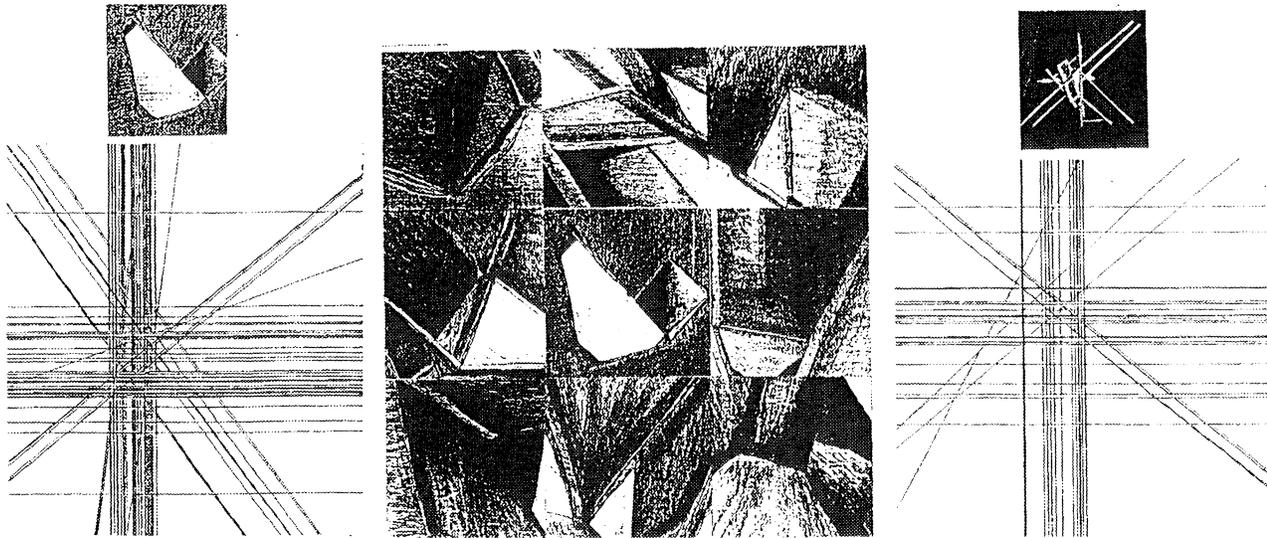


Fig. 3.

incorporated the use of large charcoal analytiques as the visceral and manual means of *seeing*. This exercise acted as the point of departure for the next series of studies dealing with structural transformations into frameworks for the suspension of objects and eventually enclosure systems for the habitation of their body.

To begin, students constructed several plaster casts to act as templates for study in light; each 1" deep by 4"x 4" plaster cast contained the impression of an object. As mass and light studies, these tablets were viewed gesturally through a series of large charcoal drawings to elicit a visceral and material mode of imagination. In these drawings the students were to isolate and focus their vision into small areas (1"x 1") of the cast and enlarge them onto 18"x 24" paper filling the field. This exercise forced them to acutely examine the nuances of light and shadow as a means of articulating form. Simultaneously, through the use of sectional figures of poch, the students produced ink drawings on mylar focusing on formal analytical skills in visual perception. The resulting dialogue generated imaginative pluralities that challenged their perception and manipulation of architectural conventions. Architectural drawings as interpretive texts—palimpsests of geometry in plan and section—established foundational orders in form-making. These maps would lead to 3-D frameworks exploring structural suspensions of objects; scaffolding to explore notions of the “container as contents” versus the “contents as container.” Axonometric drawings were constructed from the orthographic projections in order to inform a structural framework that would support and enclose these plaster casts raised four inches from a ground surface. Through playful experiments in tension and compression, each student wrestled with the forces of gravity to compose a structural framework that amplified the internal void left from the embedded object in their cast while also reflecting the 4"x 4" dimensions of its container. The constructions were derived from direct formal extensions

and material explorations of their initial artifact; the tablet. The tablets became the artifice to explore light and mass, solid and void, and structure and gravity through drawings and models simultaneously—construing and constructing as an act of making. They were now to imagine the solid mass of their plaster tablets as a void or as the container of space.

“Ideas start with sense impressions, and all learning comes from making connections among observations and ideas—Insight is born of analogy.”⁵

THE PLAY OF ARCHITECTURE/ THE ARCHITECTURE OF PLAY

Each student now possessed an armature to support the two acts of play to follow: *function and meaning*. It was only after the completion of these formal and material exercises that I introduced several architectural propositions and asked the students to explore their meaning in relation to their unconventional structures. The students were now challenged to transform their models, through rigorous architectural probing, to function as a habitable space for thought and experience. They were asked to use their working model, as developed to this point, to design “A Space for One’s Daydreams.” This space would be for one person and be derived from the mass/void within the spatial framework of their individual construct (the plaster cast). The architectural conventions of *wall, stair, window, light and gravity* were to be the focus of their next formal transformations. The meaning and function of these elements were to be revealed through an interpretation of their previously built working model and be driven through a personal means of inhabiting their space of daydreaming. The existing model should be viewed as being at 1/4" scale, i.e., 16'x 16'x 4' deep and 16' above the ground. Their final model would be built at 1/2" scale, primarily out of bass wood, to a high level of craft articulating joint and connection details.

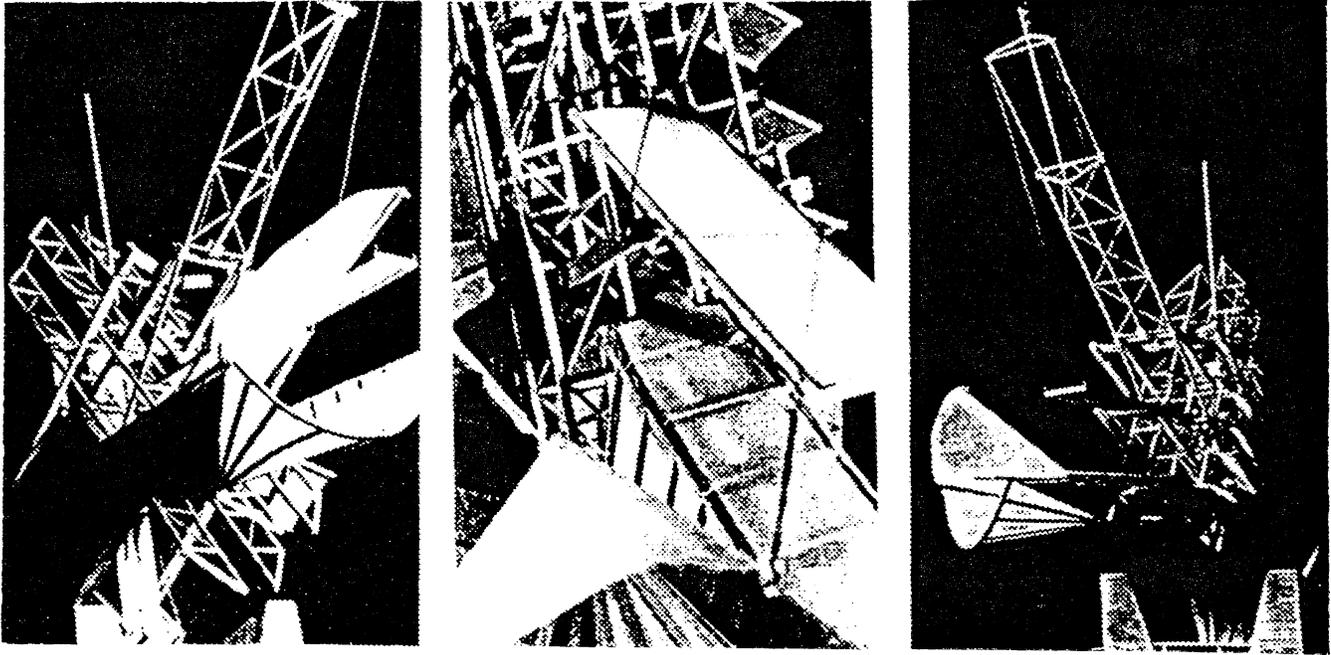


Fig. 4.

A SPACE FOR ONE'S DAYDREAMS

"... the house shelters daydreams, the house protects the dreamer, the house allows one to dream in peace. Thought and experience are not the only things that sanction human values. The values that belong to daydreaming mark humanity in its depths. Daydreaming even has a privilege of autovalorization. It derives direct pleasure from its own being. Therefore, the places in which we have experienced daydreaming reconstitute themselves in a new daydream, and it is because our memories of former dwelling-places are relived as daydreams that these dwelling-places of the past remain in us for all time."

Gaston Bachelard⁶

The content or meaning of the project would come in the form of a phenomenal proposition. Gaston Bachelard poetically describes the phenomenology of the daydream as being a place that "can untangle the complex of memory and imagination. . . for in daydreaming we are revisiting a memory in the present and through the power of our imagination engraving a newly formed image—an imagined recollection."⁷ Bachelard assigns this place to the oneric house that constitutes a body of images and gives oneself proofs or illusions of stability—a place of constant re-imagining of its own reality. Although this theme was very abstractly, stated the students were to work hard to recognize its psychologically concrete nature. Through their specific use of the functional and spatial architectural elements assigned, each student confronted the challenge of making an architectural machine "that transports the

dreamer outside the immediate world to a world that bears the mark of infinity."⁸

Each student aggressively imposed their individual identities upon their constructions through a constant dialogue between the individual space-images of the world within their daydream, or one's *core-space*, and the natural space-images of the world without as a *shell-space*. In order to start their design development, it was important for them to inhabit their construct. Through steadfastly engaging each of the assigned architectural elements (*wall, stair, window, light and gravity*) as related to their structure and appropriating their meaning as an extension of their body, geometrically as well as phenomenologically, these architectural conventions were each allowed to generate new and informative roles in the development of an idea. As stated by Alberto Perez-Gomez, each architectural element became a mechanism "to identify poetic intention with architectural means."⁹ A window became a watchful eye, a stair a way to transcend into a world apart, light a cosmological projection of time or the protagonist to gravity. The products of these imagined realities were real, buildable architectural constructions in a concrete language of architectural elements. Affording the freedom to interpret the phenomenal proposition within the stricter constraints of the architectural program proved to convince each student that they could build almost anything they could constructively imagine. It allowed for memory and imagination to playfully intertwine affording individual interpretations and inventive applications of some basic architectural conventions. Through a play of architecture, one was freed to examine, to interpret and to re-configure the basic

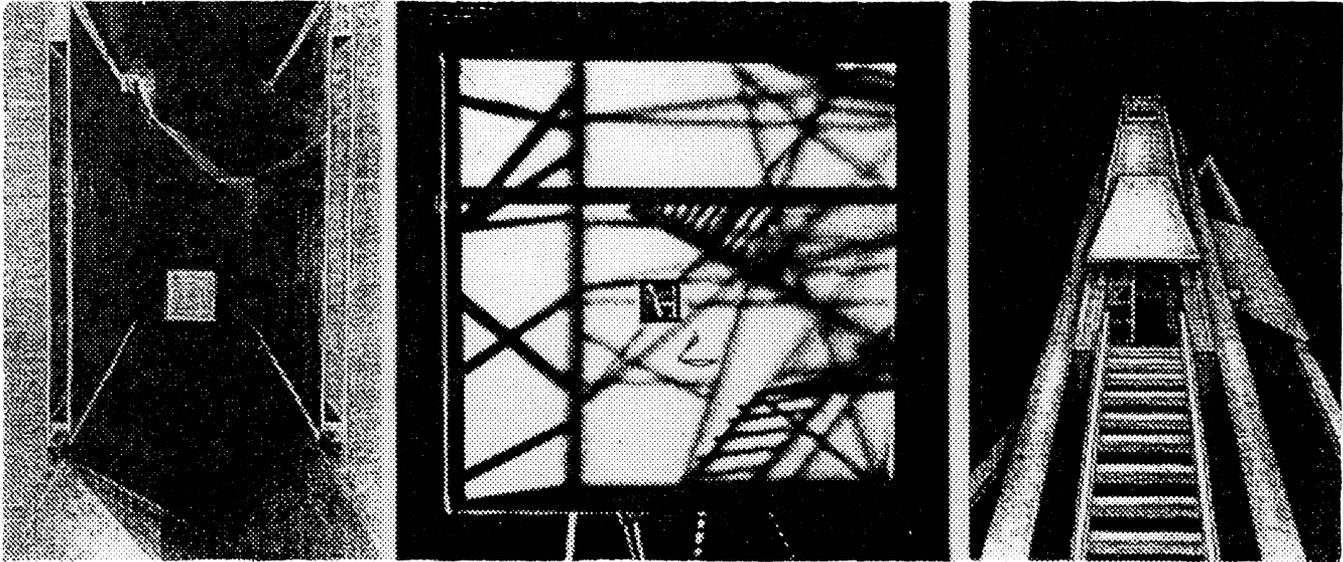


Fig. 5.

constituents of architectural design and order them into imagined recollections—or daydreams.

THE DESIGN OF MEANING THROUGH THE COMMUNICATION OF STRUCTURE

The nature and goal of these design lab experiments were to explore two divergent paths of inquiry: beginning with the communication of meaning through the design of structure and concluding with the design of meaning through the communication of structure. The paradoxical nature of this affirmation became clearer as the students accounted for the ways in which they had been asked to construe and construct. Phase two of this experimental studio attempted to form a conclusion that could produce a negotiation between the reading of an object to design meaning (the plaster tablets) verses using a reading to design an object. Their previous imaginative constructs had enough constituents to say that

they are “architectural,” but what makes it architecture? Their former constructions were now viewed as “conceptual models” that would direct analysis, interpretation and the appropriation of a new architectural project. The students were to build upon their previous architectural discoveries and allow them to act as the catalyst for the design of more conventional building tasks. They would endeavor to elicit and transform the complex ideas, techniques and situations of their previous architectural design project, architectonically into conventional building tasks, complete with site, program and parti.

The following projects cited are from two different programmatic directives. The first, “A Community School for Dance and Photography,” was a direct continuation of the “Daydream Machines” described earlier in this paper. A second series of projects were the result of a similar opening artifice. However, these projects were manifested in a different program—to design a space to observe and

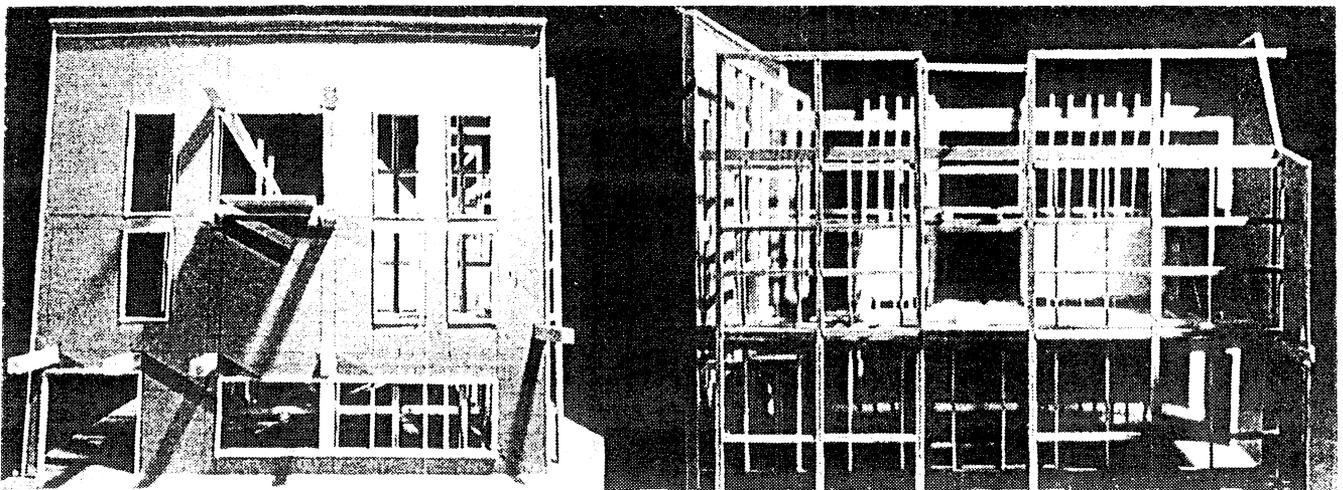


Fig. 6.

document “A Day in A Life.” The concluding phase of this studio differed in that specific design criteria for each student’s individual building type was established from a particular reading of his or her previous imaginative construct to respond to its unique nature and design methodology.

“A COMMUNITY SCHOOL FOR DANCE AND PHOTOGRAPHY”—STRUCTURING STRATEGIES

In this studio all the students were given the same building task and program to design “A Community School for Dance and Photography.” The site was a vacant lot sandwiched between two buildings on the fringe of the university campus in the south side of Bethlehem. Each student was to derive a structuring strategy from the reading of their previous models, once again defining the architectural conventions of “wall,” “aperture,” “roof,” “ceiling,” “floor,” and “skin” to form structural systems or composites that could be used to convey the context and meaning of the new project. These conventions were analyzed formally through projections in section to explore notions of mass, line, plane, volume, rhythm and proportion. New formal orders were derived through extension, projection and multiplication of sectional readings in poch to form column and beam assemblies and structural bay configurations. These new architectural frameworks were developed into structural strategies to serve as the conceptual and functional armature for the program development. The students explored phenomenally the same architectural conventions via light, weight, color, shadow, transparency, reflection, and other sensorial characteristics. This was done through perspective projections and detail studies in charcoal and pencil. Concurrently, they analyzed the building site analogous to the way they defined the “plaster casts” in their earlier study. Just as the plaster tablet had a perimeter geometry of the container and an interior geometry of their insertion, the building site had a confining geometry of the city block to contrast with formal characteristics of their particular architectural intervention. These studies were done to investigate the site as the city’s container in plan and in elevation to analyze the impact the neighboring buildings exerted upon the situation. Similar analytical drawings to the “tablet” study were generated but

this time the contents and the container were the place and the city at one scale and the architectural intervention and its site at the other. This exercise provided an analogous opportunity to understand the architectural application of the many figure/ground studies performed in earlier studios and projects. The program of dance and photography were once again to direct attention to *light & shadow* and *time and movement* (both of the sun and of the body in space). A community school focused concentration on the multileveled relationship between the differing acts and activities going on within their building project, as well as, the unique role this particular building type would exert on the social and physical fabric of this south side city neighborhood.

In the second studio, titled “A Day in A Life,” the objective of the transformation process would be to understand more fully the conventions and conventional tools of architecture. However, in this case, each student would be in charge of deciding precisely *how, why, and under what conditions* these conventions and tools are to be put into practice in relation to the specificity of their former site machine, now viewed as a conceptual model. This would necessitate serious reflection on the formulation and application of a building theory. Each individual must justify how, why, and under what conditions the practical issues such as “wall,” “floor,” “roof,” “aperture,” and “stair” address the communication of meaning in their project. In both studios the exercises of the first half of the semester produced several “tangible” products. The exercises were cumulative, in the sense that each built upon cues from its predecessor and transformed simple issues of form into complex readings of situations. The next phase of this studios’ project required a transformation and distillation of the abundance of tectonic and semiotic causes and effects represented in their conceptual model into specific design criteria for individual building types that responded to the specific nature of the conceptual model and the design methodology initiated in order to construct it.

Each student was asked to reflect on the communitive opportunities of “meaning” that are implicit in their concept model as well as the formal and spatial characteristics they possessed. As a class we tried to isolate the potentials for design strategies that would simultaneously encapsulate both content (meaning) and container (building). This resulted in thirteen individual project statements to be devel-

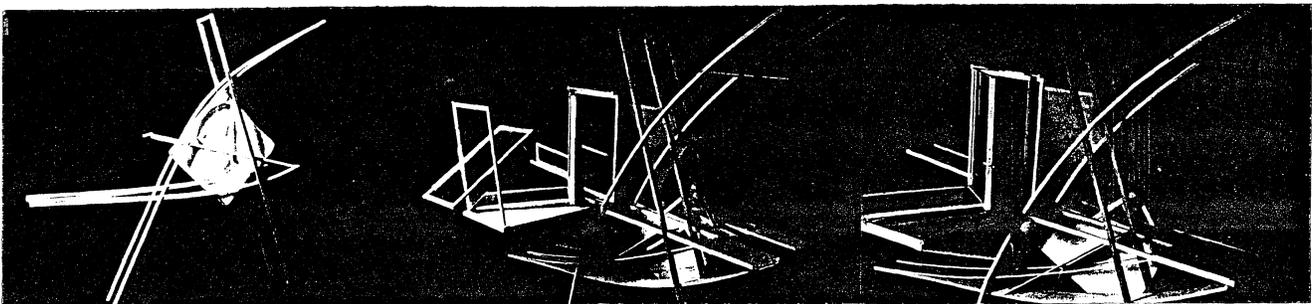


Fig. 7.

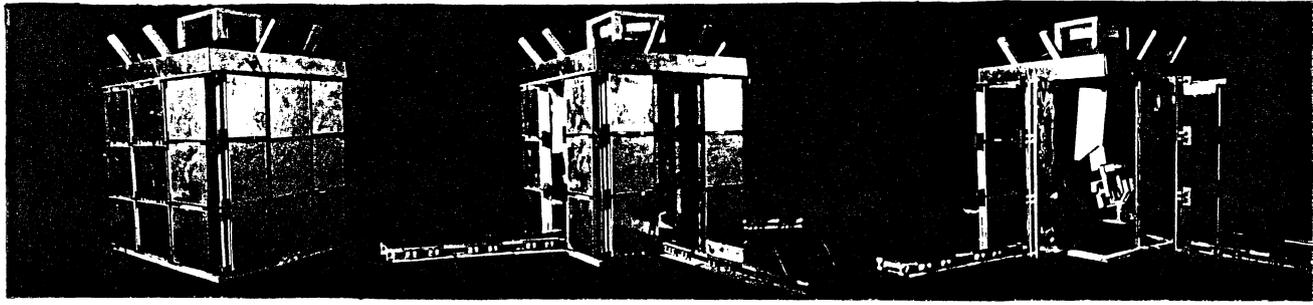


Fig. 8

oped architectonically into a building, complete with program and parti. Each project had a “project title” or name, a “building task” or functional frame, historical or literary references if applicable, and a series of specific questions for the student to ponder in their design process.

“The primary meanings of architecture are sought in making, in bringing into being things, places, sensations, perceptions; not in symbolizing meanings originating elsewhere, or in the responsive product of requirements. We work with wall, window, stair, light and gravity, in order to identify poetic intention with architectural means, but without accepting any type or a priori order.

“The uncertainties lying between high-sounding intention and beautiful work are freely admitted; that is what the struggle, panic and thrill are about.”¹⁰

NOTES

- ¹ Bachelard, Gaston. *Water and Dreams*, Introduction: “Imagination and Matter.” The Pegasus Foundation, (Dallas: 1983) 1.
- ² Bachelard, *Water and Dreams* 16.
- ³ The articulation of the notion of ‘artifice as enabling theory’ was developed through a series of dialogues with a former student of mine, Kristopher Takacs, following a lecture by Alberto Perez-Gomez at The University of Pennsylvania.
- ⁴ Klee, Paul. *Pedagogical Sketchbook*, Frederick A. Praeger. (New York: 1953) 16-20.
- ⁵ Moore, Kathleen Dean. *Riverwalking*, “Winter Creek.” (New York: Harcourt Brace & Co., 1996) 36.
- ⁶ Bachelard, Gaston. *The Poetics of Space*. (Boston: Beacon Press, 1969) 6.
- ⁷ Bachelard, *The Poetics of Space* 26.
- ⁸ Bachelard, *The Poetics of Space* 183.
- ⁹ Perez-Gomez, Alberto. Carleton University Catalogue, 1983, Introduction.