Thesis

R.P. Rajchel

A CONFERENCE CENTER FOR FORT WAYNE, INDIANA

College of Architecture and Planning
Ball State University
Muncie, Indiana

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1

A WORD ABOUT THESIS
Architectural thesis is seen as both a point of culmination of five years of learning and a final means of exploration and expression of questions pondered. The former suggests an endpoint in one's architectural training. It underlines and suggests a disparity between our academic and professional lives. In theory, few will refute that learning must continue throughout our professional and non-professional lives. There exists a larger comprehensive experience to which our everyday activities are merely a part.

There exists a necessity to pursue personal answers to the timeless questions that transcend daily existence. They contribute to the formation of the most decisive tool in the creation of architecture: the architect, his personal interests and questions from which grows architectural expressions. The finest architectural expressions evolve from highly personal experiences brought to life through the architects' technical mastery and spatial sensitivity. Both are essential. Lacking the latter, architectural expressions rarely rise above technological emissions. Without the former, architecture remains in poetry, memories, and good intentions: creating a rhetoric far removed from practical application.

What I seek in this thesis is most aptly put by Santayana:

"It is not easy for him to shout or address a crowd; he must be silent for long periods; for he is watching stars that move slowly and in courses that it is possible though difficult to see; and he is crushing all things in his heart as in a winepress, until his life and their secret flow out together."
Pre-Thesis
CHAPTER

LABORATORY OF UNCERTAINTY
(ARCH 401 and ARCH 402)

From September 1982 to May 1983 I studied under the direction of Rodney S. Place and Susan Lewis. My relationship with them has been in an architectural design course and a theory of drawing seminar.

The design course, taught at the fourth year level, offered a unique approach to architectural design thought to which I had not previously been exposed. The course consisted of two parallel pieces of work, both pertaining to a specific activity. Creative writing and architectural drawings were developed and pursued to their own ends, yet unexpected coincidences between them were discovered. These coincidences, when analyzed, provided specifically unique material for the design projects.

The theory of drawing seminar explored differing historical means of expressing intentions and ideas as they related to subject matter, space and time. The discussion of art and the discussion of architecture were given equal emphasis, indeed, they often became the same discussion.

In both courses, the process of investigation was "open-ended". A clearly defined end was not considered, rather a preference was shown for the pursuit of an intriguing idea. This attitude proved valuable in the development of a personal approach to problem solving.

I found these courses to be removed from mainstream attitudes towards archi-
tecture, and herein lie their value. By the nature of the projects I was forced to leave preconceived ideas behind, and trust my own perceptions of the world around us.

The following, from the Architectural Association School of Architecture, closely parallels the attitude encouraged in the Laboratory of Uncertainty.

Architects invent realities.
Every drawing is an invention.
Some invention is a personal discovery, a re-invention.
Every drawing is a conversation held by and with the draughtsman.
Every drawing of a space is an invention of a representation of a space.
Every drawing discovers a space new to the discoverer.
Discovery is tantamount to re-invention.
Discovery is personal invention.
All invention is personal.
Some spaces are invented in drawings.
Some spaces are discovered in drawings.
A drawing is at once itself a reality and a representation of a reality.
Architects invent new realities from their interaction with their environment.
Architects interact through what they perceive and how they perceive it from within themselves.
The progress of the architect's invention is making stories in their representations.
Take a space glimpsed briefly; to draw it well you must invent what you are not sure.
Take the same space seen at length; to draw it well you must discover it through your drawings.
These drawings are different.
The differences indicate the interaction between the environment and the means of perception.
The difference indicates the action of the architect's invention through his personal spatial motifs.
The story of a representation is a way of discovering, or inventing.
The process of inventing a space is the architect's work.
To invent a space from within is the architect's obligation.
To invent a space, translate your motifs through your story.
Invent a reality.
CHAPTER

3

WILLIAM VAN ALEN COMPETITION: EQUATING TIME PRECEDENT WITH IMPORTANCE
SPRING 1983
Spring quarter 1983 was spent producing an entry for the William Van Alen Fellowship Competition. It provided a proving ground for outlooks and writing/drawing techniques used earlier in the studio headed by Rodney Place and Susan Lewis. The competition involved the design of a city surrounding an ancient Buddhist monument on the island of Java. My solution involved the writing of an historically correct myth based on the program. It provided a rationale for the design and placement of the city's elements on the site. In this process, a more recent structure might take precedent over an existing one and impart change upon it. The result reflected distinct periods of time through the use of a variety of materials and methodologies, yet displayed a cohesiveness in its general form and specific detail. This solution referred to and represented a period of several hundreds of years. It explored the effects of these varied elements on each other. Time is the essential element. It allows one to place a structure on a site and then, at a later time, add another.

In following this process, both in the Van Alen Competition and in this thesis, more important structures or architectural elements are given emphasis by the amount of "respect" (i.e., lack of intrusion) shown to it by other structures or elements. In the same manner in which newer structures might avoid older, significant structures. In effect, importance is equated with time precedent.
This outlook has proved to be especially helpful in establishing a philosophical and conceptual basis for dealing with elements already established on the site, such as the existing structure, the high tension wire tower and the river. The following sketches explore the ways in which a man-made structure, such as a dike or a portion of the building itself, may or may not impart change upon an already established river.

During the past five years, I’ve strained to restrict my work to that which I understand. Complexity arises largely from manifestations of simplicity. I choose to utilize simple materials (brick, stone, concrete, wood and glass) to examine the "spatial" relationship of earth, water and air.
In section, water conforms to its container, with its smooth edge on top.

In plan, water's edges are more irregular, its existence defines a horizontal plane depending on the volume. This plane will change & grow wider.

In section, the building conforms to the pipe's form.

The building in effect becomes the container: the pipe, the container.

With the river (the container) melts the building: it becomes the lake (the fulcrum).
Occlusion state

Dike built with respect to the river's form.

Structure built with respect to the river's form.

2 levels: one allowing use of "sheet" during dry months.

Increased speed due to reduced width.

Structure built w/o respect to river's channel.

Structure built w/ respect to river's channel.

No respect is given to the river. The structure blocks completely the natural flow but "allows" the water to flow through it.
Autumn
CHAPTER 4

FULBRIGHT GRANT PROPOSAL
AUTUMN 1983

With the critical assistance and support of professors Harry Eggink, Bruce Meyer and Jack Wyman much of Fall Quarter 1983 was spent preparing a proposal for a Fulbright grant in architecture to Poland. Following is an excerpt from that proposal:

"...following the physical destruction of World War Two, the major cities of Poland...were rebuilt by their citizens and craftsmen. Coordinating the reconstruction, the Polish people's government was torn between two principles: 1) Historicism, to rebuild neglected or destroyed structures to their original condition in response to the user's demands. 2) Anti-Historical Functionalism, to rebuild utilizing current culture and technology as its foundation.

Unequal measures of both principles were applied. First and foremost in the hearts and minds of the Poles was the faithful reconstruction of the major structures and monuments (Historicism) followed by the meeting of their own immediate needs (Anti-Historical Functionalism). Where documentation existed, the literal reproduction of the exteriors was possible. For a large number of structures where accurate documentation did not exist, reconstruction reflected anti-historical functionalism. The warmth and sentiment apparently lost to anti-historical functionalism was balanced by the fervent personalized work of the reconstruction.

The destruction of Polish cities offered people the opportunity to rebuild their cities. As they rebuilt, certain structures appeared more important than others. His-
torical significance was attached to some, such as churches, bridges and monuments. These were the first to be rebuilt, providing the genus loci about which the lesser structures were later organized. The examination of this will determine the social/emotional/sentimental basis for such selective reconstruction."

"Polish cities have already achieved what American cities are just beginning to realize: the social/emotional/sentimental importance of adaptive reuse. Inherent in it is the merger of past form and current function. The existing form satisfies the yearn for nostalgia as the function reflects today's necessities. Thus, these structures have the potential of becoming America's living depositories of the past."

The grant offers complete financial support for a nine-month study in Poland and requires affiliation with a Polish university. Knowledge of the Polish language suitable for the nature of the proposed study is required.

At the time of this writing the proposal has been approved by the National (U.S.) Screening Committee and is now under consideration by the sponsoring agency in Poland.

In addition to the aforementioned professors I am greatly indebted to fellow students offering assistance and support. Also mentioned here are a number of native Poles or recent visitors to Poland who have provided insight of Poland; Professor Stanislaw Mrowzowski, Jolanta Czerwinska, Professor of Foreign Languages Dr. James Brown, Professors of Architecture Jerzy Staniszkis and Henryk Drzewiecki and Mrs. Laurna VanMeter. To you: Dziekuje!
CHAPTER 5

SITE
The site on which this project is based contains an existing structure, a seven story grain storage building of heavy composite concrete/steel structure and brick cladding. Located on Fort Wayne's major north-south traffic artery, it is an imposing structure deeply imbedded in the memory of most who have passed by it.
Before the street was rerouted ten years ago the northbound two lanes of Spy Run ran directly towards the building's south-west face. Motorists were forced to slow considerably to negotiate the corner.

The building is divided into three zones each rising at different heights causing an incongruity between the upper floors' elevations, sometimes as little as 9". A 26' wide, 15'tall former truck corridor pierces the structure among its north-south axis. Columns are set up on an orthogonal grid, yet this is only apparent on the eastern (river) side. At all other facades the columns align on a non-orthogonal pattern. An adjacent structure has been demolished leaving the eastern/river side exposed.

Initial analysis of the existing suggested the emphasis of the hole punched through the building utilizing it as either a pedestrian or automobile artery (or both), ignoring the non-orthogonal geometry and developing towards the river to preserve the view upstream and to insulate quiet areas from the heavy traffic on Spy Run and Clinton.
CHAPTER

6

CONTAINMENT: EARTH, WATER AND AIR
(Arch 405)
In effort to understand the interrelationship between space (architectural) and the forms which enclose it I've examined the natural stratification of earth, water and air. One's existence is a determinant of the others' forms. There is first water resting upon the earth. The form of the bottom of the water is determined by the shape of the earth. Though the water may shape its container, when stable there is nothing between the container (earth) and the contained (water). The form of the top of the water forms due to the effects of gravity.

Resting on both earth and water is the atmosphere who's lower edge, like water on earth, conforms to its container's form yet sometimes may alter it's (the container's) form. Its outer edge reflects its granular quality as it escapes the grasp of gravity reducing its density.

The relation to architecture lies in the manner in which differing materials interact and the specific qualities of those materials and the methods used in their erection.
The bottom edge of the water is determined by the form of the river bed, although the action of the water may impart significant change on its container.

The horizontal upper edge is formed by a force force which exists throughout the earth, but is invisible.

The impact of man's buildings on this system should not be minimal but honest — man has the advantage of knowing or providing for future buildings, unlike earth/water & earth/air contain humans. Humans whose action are higher predictable by natural laws or entitled by their container.

Therefore if buildings were to contain humans as earth contains water?
CHAPTER

7

ADDRESSING THE RIVER
This float serves two functions: 1) as an electric generator and 2) as a "switch" to safely control human movement. The float is attached to shore via two lengths of steel that are allowed to both bend downstream as the river's current exerts pressure on the float and to hinge up and down following the height of the river. On shore, mechanical linkages control floodgates allowing human passage to various dry riverside areas.

(see detail- next page)
CHAPTER 8

RATIONALIST/CONSTRUCTIVIST, HUMAN/SPATIAL AWARENESS CONFLICT
(ARCH 404)
Research and problem solving deal not with the direct confrontation of the problem alone (building type studies, programmatic manipulation etc.) but with the examination of the problem's perimeter and precedents.

The goal of my research/preparation is to obtain translatable impressions of existing works by examination of the original intent of the work. This investigation will yield the basis for exploration free from the uncertainty the direct interpretation of architecture has.

My approach to problem solving depends on conflict. It is the pushing and pulling of two opposing ideas that resolves itself in a rich, comprehensible, humane architecture.

Working within an opposing philosophy, an architect must reevaluate his own intentions to uncover similarities. Imagine a project involving two architects whose philosophies were diametrically opposed. One would complete a project using the other's philosophy, experiences and intentions as a basis for the project. The exclusion of physical example would necessitate the active subject's own interpretation of the influences that led to the creation of the elements that his own architecture lacks. If Mies were to do a project based on, perhaps, a more vernacular architect, Mies own philosophy, experiences and intentions would provide the other conflicting element in a fresh manifestation of two dichotomous positions of architecture.

This proposition serves example of a more universal architectural and philosophical question: is a humane architecture
possible by rational physical means? Rational architecture interprets some elemental architectural relationships and manifests them through straightforward means and simple geometric forms and materials. The validity of this approach lies in its rational appeal to a more primal intellect. A deficiency is the lack of input of human senses and to a large extent, spatial awareness. From the people emanates both common logic and individual actions. Neither can be denied. The manipulation of those rational elements that we all can comprehend serves the peculiarities of our actions. Though our individuality must be in constant conflict with the rational it remains the "reason" and not the "means".
CHAPTER

10

DEcAY
Exit the building as a wounded animal afrigh. These are wanted to be planned on the parcel. Offerings to be violated to impact a new system within. Utilize with structure & system is m, please please.
CHAPTER

11

STUDY MODELS
(ARCH 404)
Winter
THREE ESSAYS ON SPACE, FORM AND THAT WHICH LIES BETWEEN

(ARCH 405)

ONE

There is a distinct ambiguity involving the consideration of water as both a space capable of being occupied and a form capable of defining space. We may become completely surrounded by water by swimming in it. Because we occupy it, it is accepted as "space", yet when we are above it water's upper surface is capable of defining space. It freezes, and we may walk on its surface, yet we know that when it thaws, we lose that ability.

TWO

Containment; answers to space, form and what lies between through the examination of the production of materials, namely wood forms on concrete or concrete on steel reinforcing bars or if we were to extend the idea, any form that exists in earth's atmosphere's effect on the form or degree of containment of the air particles (air considered as water and form as its container) Why is air considered "space" by virtue of its density and by the ease in which humans may pass through it? Can water not be considered as "space". Can solid form? Though impossible to pass through, what sets it apart from atmospheric space? Is it not a question of density?

THREE

The perimeter of the building is of the greatest importance. Within, barring any substantial alteration, lies the realm of
"spaces" where form's outward expression is delegated to the whole. The individual spaces have no form of their own. The closest one can do is to estimate a form based on the shape of the interior. Beyond the perimeter line, expressions of both form and space must simultaneously be made. But again, under what plan does this manifest? There may be a progression from monolithic form (that is to say largely nonexpressive of the contained spaces) and fragmented space (necessitating the estimation of individual spaces' form by the examination of that space) to the expression of space through form, finally to the dissolution of form completely resulting in space alone, i.e. no enclosure at all.

Within the wall lies the greatest mystery and deception, for it denies us the opportunity to see its inner workings. Our knowledge is limited to an estimation based on what we may perceive from the interior space and the exterior form.

By necessity, the connection must, in terms of space vs. form, be ambiguous. First, there is space (enclosed atmosphere) whose boundaries are solid and monolithic; the purest expression possible. One drawback is that the form's form is determined, utilizing conventional techniques, by a third and non-present material: formwork. For the purest possible expression, the spatial definer must be self-expressive and therefore creating a one-to-one relationship between the spatial definer (form) and the spatial defined (space). From this point, the direct connection between the defined space and that which defines it becomes ambiguous.
CHAPTER
13

SKETCHES
(ARCH 405)
Architecture exists for humanity populated. There exists a unique structure & internalized within that are elements within portions from the interior of this as well as anti-structure.

New forms within but exclusive of structure.

Formulations of spaces sympathetic to original geometry.

New structure formulated from structural system and form.

Form may be based on the internal systems of the existing, or be continuous of it.

Form may pass through the shell.

Forms may emanate from it.
CHAPTER
14

STRUCTURAL STUDY MODEL
(ARCH 405 and ARCH 406)
CHAPTER
15

SKETCH PROBLEMS
(ARCH 405)
SKETCH PROBLEM (ARCH 405) THEATER

This sketch problem offered the opportunity for further explorations into the primal precedents for the Rationalist/Constructivist ideology. In an effort to push a given technology and kit of materials to their greatest usefulness low technology and inventiveness was a necessity.
MX MISSILE SILO/ELEVATOR SHAFT
CHAPTER

16

LOUIS KAHN'S ARCH

(ARCH 405 and ARCH 425)
These drawings and an associated research paper (ARCH 425) represent an exploration of the historical and philosophical significance of the concrete tied brick arch used extensively by architect Louis I. Kahn. Kahn uses the lintel to control the outward thrust of the arch. The structural dynamics are directly equated with its visual interpretation. By assigning new roles to the ancient Roman parti, he invented an externally stable method of spanning a bearing wall opening through internal resolution of horizontal thrust.
Spring
CHAPTER
17

SKETCHES
(ARCF 406)
CHAPTER

18

FINAL DRAWINGS
(ARCH 406)
CHAPTER

19

ENVIRONMENTAL GRAPHICS
(Arch 498)
Using a domestic item of personal interest as a point of departure Art Schaller's Environmental Graphics sought meanings in familiar objects. The roller window blind served as the vehicle of my explorations. Analysis of its function revealed a direct correlation between two events: 1) the user's desire to have more or less light in the space he occupies and 2) the actual admittance of varying amounts of light into that space. My project attempts to replicate both events but not the means traditionally employed to do such. Initially my solution utilized a smoke-filled chamber through which laser generated light pierces to various lengths. The device can be best described by the following transcript:

"The 'laser shade' is made up of three components: 1) the laser generator (I) that emits light down through a slit opening into an air-tight, smoke-filled chamber (c). The laser light strikes plane (z) when it hinges (in response to the user pulling the cord) between x₁ and x₂, varying its degree from vertical from 0 to 15°, thus the (laser light's) angle of incidence also increases therefore increasing the amount of light entering the space. The spring loaded plate (z) moves as a result of the user pulling the ring from r₁ to r₂. The string travels over a pulley (p₁) and is attached to pulley (p₂) having a radius of 7.5". p₂ is attached to p₃ having a radius of 1.2". p₁: p₂ = 3.75":0.5" or 7.5:1, the same ratio of the distance r₁-r₂ to x₁-x₂. A second string is attached to p₃, runs over p₄ and attaches to the bottom of plate (z). Therefore, in the plate's movement from x₁ to x₂ it results correspondingly in an increase of the laser's visible length, and reduces its angle of incidence (thus reducing the amount of light entering the room)."
Gaston Bachelard. *The Poetics of Space.*
Balzac. *Eugenie Grandet.*
Denise Scott Brown. "A Worm's eye view of Recent Architectural History."
Cmorzynska. *The Isms of Art in Russia: 1907-1930.*
J.B. Jackson. "A New Kind of Space."
Ruskin. *The Seven Lamps of Architecture.*
Santayana. *Selected Writings.*
J.P. Sartre. *No Exit.*
Valéry. *Selected Poetry.*