A Study of Classical Architecture
A Study of Classical Architecture

John S. Edmundson

Ball State University
College of Architecture and Planning
Department of Architecture

Thesis 1988
This Thesis Document is Submitted in Partial fulfillment of the course required for Architectural Thesis ARCH 406 and the requirements for the degree: Bachelor of Architecture.

The Study of Classical Architecture

Thesis Committee Chair-
Professor Alfredo Missair

Thesis Committee Member-
Dr. Gil Smith

Consultants-
Professor Alvin 'Sonny' Palmer
Dr. Jay Chewning

Copyright © 1988 by John S. Edmundson and Ball State University

College of Architecture and Planning.

All rights reserved. No part of this work covered by the copyright heron may be reproduced or used in any form or by means-graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems- without permission of the author or the publisher.

Published by the College of Architecture and Planning
Ball State University
Muncie, Indiana 47306
To my wife, Ariane
who was able to help me through this long tough ordeal,
my thesis year.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis Proposal</td>
<td>ii</td>
</tr>
<tr>
<td>Preface</td>
<td>v</td>
</tr>
<tr>
<td>Introduction</td>
<td>vi</td>
</tr>
<tr>
<td>The Orders</td>
<td>i</td>
</tr>
<tr>
<td>The Functionalization of Architecture</td>
<td>IV</td>
</tr>
<tr>
<td>The Last Project</td>
<td>XI</td>
</tr>
<tr>
<td>Conclusion</td>
<td>XVI</td>
</tr>
<tr>
<td>Portfolio</td>
<td>XVIII</td>
</tr>
<tr>
<td>Sketches</td>
<td>XXX</td>
</tr>
<tr>
<td>Bibliography</td>
<td>LV</td>
</tr>
</tbody>
</table>
Thesis Proposal.
space...form...order...thought

**space** (spās) [Ofr. < L. spatium], 1. the boundless, continuous expanse extending in all directions, within which all material things are contained.

**form** (fōrm), n, [Ofr. < L. forma], 1. the shape or outline of anything; structure, excluding color, texture and density. 2. anything used to give shape to something else.

**order** (ór'der), n, [Ofr. < L. ordo], 1. arrangement of things or events; series. 2. a fixed or definite plan; system. 3. a group set off from others by some quality.

**thought** (thōt), n, [AS. thoht]. 1. the act or process of thinking; reflection; meditation. 2. a result of thinking.

In the last five years, that I have spent at this university, there is something very important that I have never learned. There is an underlying principle, or a philosophy that shapes, guides and acts as a basis for design ideas. What I am talking about is a strong understanding of the Classics of design.

Having spent a considerable amount of my adult life in other countries, being exposed to different ways of thinking and many different styles of architecture, I have seen the overwhelming influence that Classical Architecture has on design. It is also amazing to me the Classical vocabulary that these foreign architects have, something that I have not seen here. They have a solid base from which to explore and expand their ideas about design.

When I say Classics I am not just speaking about the different orders, or the way in which you place elements so as be assembled into the correct sequence. There is more to it than that. There is the existence of a way of thinking.

The first question that I have to ask myself is, "What is classic?". There are many different disciplines in the arts that the word classic has been applied. There are classic books, classic paintings, classic music, classic etc...
"Why are these specific items chosen out the hundreds and thousands of their kinds to be called the classics?"

Another problem I see in the understanding of the Classical design is that we today as people do not think as the creators of these pieces did. This is due to the difference in the society that we live in. It will be very hard to try and understand why a decision was made in the way it was when I can not be in the same situation or life as the person making the decision.

In this school it is hard to find a lot of people with an interest in the classic of design. They exist, but it is not a subject that is greatly taught. From the viewpoint of the student it can sometimes be thought of as moving back in your creative process not forward.

To say this I must study Classic Design on more than one level. I must look at the philosophical meaning behind why the Classics became the classics. I would like my thesis to be "The study of Classical Architecture".

I hope to use these next three quarters to explore the ideas that shape and form Classical Architecture. I find it rather hard to set down a true and fast schedule to something that I have so much to learn about. Through reading and many drawings I intend to teach myself the idea of this architecture. The way I normally approach a project or goal is to start with the simple and work to the complex. Keeping with this idea I intend to start with small projects, perhaps on the scale of a detail or motif, and to end with the application of what I have learned on a large project, be it some form of a public building.

I hope that from my thesis I will gain a much broader understanding of architecture. But, there is also the discovery of what still needs to be learned, both in architecture and in life. I hope that learning will not end when my formal education comes to a close. This is why I am looking for that strong foundation in the design ideas and principles of Classical Architecture.
Preface

This thesis is not presented as an exercise in architectural problem solving. It is rather an investigation into problems in architecture.

Today, theory in any discipline is generally identified with methodology; it has become a specialized set of prescriptive rules concerned with technological values, that is, with process rather than ultimate objectives, a process that seeks maximum efficiency with minimum effort.\(^1\) Contemporary architects find it difficult to reconcile mathematics' demands for invariance, with their conception of architecture as an art rather than a science.\(^2\)

The "functionalization" of architecture should be considered as one of the major causes for the destruction of architectural theory. The genesis for this problem can be found in the middle of the seventeenth century, with the advancements made in mathematics and science. The age of enlightenment, in the eighteenth century, accelerated the systematic destruction of architectural understanding more, with its need to define man's entire world through scientific thought. I am speaking here of the replacement of traditional architectural theories [\textit{mythos}\(^3\)] with the developments in science and mathematics [\textit{logos}\(^4\)].

The distinction between technology and technique and between how and why, is set forth by Jacques Ellul in \textit{The Technological Society}:

"Technology has become a dominating force in the last two centuries, one that has radically determined both thought and action. Its purpose is to subjugate external reality to interests of efficiency, thereby postponing indefinitely the human need for reconciliation. Traditional knowledge and technique, in contrast, have always ultimately been concerned with the most fundamental existential problems".\(^5\)

It is very important to clearly understand this functionalization of architecture that has been taking place. We as architects can look back at the Classical architecture to find the lost qualities of an architecture, that possessed many exciting and positive ideas about how to build for people.  

Abstract to this thesis ...... October 1987

---

\(^3\) a traditional story of unknown authorship, serving usually to explain some phenomenon of nature, the origin of man, or the customs, institutions, etc. of a people.
\(^4\) the science of correct reasoning dealing with the criteria of valid thought.
\(^5\) Pérez-Gómez, p. 4
Introduction

Throughout history, there has been a constant battle between technology and humanism. This can be seen again and again with the advancements, in both of these fields, that have guided whole cultural movements. It is this advancing of one past the other that has brought about new movements in the all the disciplines.

The last large forward move was in technology. It started in the seventeenth century, its name was the Age of Reason. Man has tried since that time to shape all fields, not just Architecture, into a mold of explanation and functionalization. This era is coming to its end.

For purposes of this thesis, I will be referring to the Modern Age, or the Modern Movement, as that period of time from around the middle of seventeenth century until present time.

It was with the beginning of this Modern Movement, that a denial of most beliefs which had been held unquestioned for centuries started. A resulting catalyst factor for this destruction that can also be seen is the speed at which all of this change has taken place. Since the turn of this century more advancements have been made in the sciences than in the preceding three hundred years. In architecture alone we have been exposed to many different styles since the turn of the century, starting with the decline of the Écol des Beaux Arts to the beginning of the Post-Modern movement. The last style being the obsession with bringing details and ornamentation from history to be applied as a hope of saving Modern architecture.

It is my belief that we are currently experiencing another paradigm shift in our design philosophy, the next big advancement. This time it will be the resurgent of the humanist movement. There is a need for use as architects to realize this shifting trend, not to close our eyes to it.
The Orders
**Doric**

The Doric order derived its name because the Athenians first say this style was used in the temples of the state of Dorian. This order was used to represent the man, with all his strength and proportions.

One of the biggest problems associated with the Doric order was the placement of the metope and triglyph located in the frieze. The triglyph being the supposed representation of the older wood beams and the metope a blank space left between the triglyph that would be embellished with relief sculpture. For the Greeks who constantly strived for the ultimate perfection in both proportion and symmetry, it seemed reasonable that these elements should correspond to the columns below them. This was of little problem until they reached the corners of their temples. The placement of the triglyph could be either directly over the corner column or placed against the edge of the corner of the frieze. Because neither solution allowed a perfect solution to the stringent rules of the order many variations can be seen in the placement of these elements. It even happened that several times the order of the temple was changed to an Ionic due to the lack of this problem before the construction began.

**Ionic**

From the Ionians, who are credited with first having used this style. This is the feminate style. The style that was reserved for those temples to the female goddess. A very good example of one of these temples can be found on the Acropolis in Athens, the Temple Nike. Unlike the Doric order, which had problems determining the placement of items in the frieze, the Ionic order did away with the structural representation of the past wooden structures and left the area above the columns for free decoration only. Many examples of this order can be seen where the frieze is left bare without relief sculpture.

**Corinthian**

The story of the Corinthian order comes from Vitruvius:

A freeborn maiden of Corinth, just of marriageable age, was attacked by an illness and passed away. After her burial, her nurse, collecting a few little things which used to give the girl pleasure while she was alive, put them in a basket, carried it to the tomb, and laid it...
on top thereof, covering it with a roof tile so that the things might last longer in the open air. This basket happened to be placed just above the root of an acanthus. The acanthus root, pressed down meanwhile though it was by the weight, when springtime came round put forth leaves and stalks in the middle, and the stalks, growing up along the sides of the basket, and pressed out by the corners of the tile through the compulsion of its weight, were forced to bend into volutes at the outer edges.

Just then Callimachus, whom the Athenians who was known for the refinement and delicacy of his artistic work, passed by the tomb and observed the basket with the tender young leaves growing round it. Delighted with the novel style and form, he built some columns after that pattern for the Corinthians, determined their symmetrical proportions, and established from that time forth the rules to be followed in finished works of the Corinthian order.
The Functionalzation of Architecture
The Classical Period

Before the Age of Enlightenment, the mathematical system used for the creation of architecture was Euclidean Geometry. This self-evident proof or honest dissemination of pure mathematical forms on architecture was held in high reverence by the creators of architecture.

The early developments of mathematics can be traced back to the Egyptians. They seem to have been satisfied with accumulating an empirical knowledge of points, lines, and figures which enabled the solving of problems about location of boundary lines and the comparative sizes of fields, as well as problems of architecture design and construction engineering. Their need to develop a form of mathematics resulted from the problem associated with the flooding of the Nile. Each time the Nile flooded its basin, property lines were destroyed. To reestablish these boundaries basic geometry principles had to be developed.

The Greeks learned what the Egyptians could do with mathematics, and became acquainted with their empirical principles. This lead to the concept of *mathesis*. This concept appeared in preclassical Greek culture around the seventh century B.C. It referred to what could be learned: the invariable, the familiar, the accessible; its exemplar was numbers.

To this knowledge of mathematics the Greeks gave the name geometry—that is, earth measurement. Plato (427-347 B.C.) described a vast and elaborate cosmological geometry by means of which divine intelligence regulates all things in the universe in accordance with a system of circles, spheres, squares, cubes, and geometrical progression of a less perfect kind. Plato not only regarded art as dependent upon reason and a knowledge of good and evil; he believed that there is a mystical connection between beauty, virtue, geometry, and the cosmos. *Mathesis* continued to explicitly maintain its symbolic connotation, and the hierarchical structure of the cosmos once again being established by Aristotle (384-322B.C.), a student of Plato.

It was Euclid (c. 300 B.C.) whose book on geometry established and defined the basis for all of mathematics of the Greek Classical

---

2 Albetto Pérez-Gómez, p. 8
3 Stephen Baker, p. 16
5 Edward de Zurko, p. 18
6 Albetto Pérez-Gómez, p. 9
Period, Euclidean geometry. Throughout the Greek and Roman empires, the primacy of perception as the ultimate evidence of knowledge was never questioned. Some Greek philosophers, especially Pythagoras and Plato, regarded geometry as having very great intellectual importance, for because of its purity and abstractness it seemed to them to have a kinship with metaphysics and religion.\textsuperscript{7}

Originally, the knowledge of \textit{mathesis} was confined to the magicians. Only he dares to manipulate numerical entities, affecting the world on a level separate from physical reality.\textsuperscript{8} Wonder, worship, magic, and symbolism were at the inner heart of ancient building. The motive of ours must be human service, intelligible structure, and verifiable science.\textsuperscript{9}

The Greeks clearly saw that architecture sprang out of the needs of the people: personal, civic, and religious; it reached its greatest heights as an expression of public faith and worship.\textsuperscript{10}

An examination of classical Greek architecture shows us the manipulation of the basic forms, stated by Plato. These architectural forms are also built upon the basic ideals that there existed a Divine Reason. This accounts for the mystical qualities that are associated with their architecture. This idea, whether right or wrong, had a great deal of effect on the perception of the built form.

These buildings were created to glorify the gods, not merely to provide shelter. They were held in high reverence to the people of that time. There was also a strong link between man and the understanding they had for these buildings. These buildings represented their basis for life. They were a connection to the power that gave them life.

\textsuperscript{7} Stephen Baker, p.16
\textsuperscript{8} Albeto Pérez-Gómez, p.9
\textsuperscript{9} Willism Lethaby \textit{Architecture Nature & Magic}, New York: George Braziller, Inc., p.16
\textsuperscript{10} Edward de Zurko, p. 20
Birth of Modernism

Functionalism implies a pluralistic, not a monistic, system of values. Functionalist criticism, observed in historical dimensions, manifests a tendency to evaluate historical architecture largely in terms of immediate values such as economy, ease of circulation, sanitary features, ease of maintenance, and good ventilation.¹¹

Alberti maintained that architecture should be "of the greatest convenience to Mankind in all respects," and that a building, which has no other quality than that of functionalism, will be a delight to look upon. "And if a Building be well laid out, and justly finished, who is he that does not view it with the utmost pleasure and delight?"¹²

With the beginning of the Age of Reason, the functionalization or the modernization of architecture also began. This is where the Modern Movement that we are now in had its birth.

During the rise of this Modern Movement, there was a need to ex-
plain all aspects of man's world. It only seemed logical to use this newly developed system of analytical measurement to explain all that had been not questioned for centuries. What soon happened was that the belief in the mystique faded away. Unlike their predecessors, the Greeks and Romans, modern man was in a frenzy to explain his world.

Societies' beliefs in very fundamental questions were not spared. The idea that a Divine Power had handed down these, previously accepted, laws of order was attacked. The belief in a Divine Power was also questioned. Rationalism tended to banish God and the supernatural from the universe. It left only the natural, which the rationalist holds to be ultimately understandable, almost always by what most of know as, methods of scientific investigation.¹⁴

This passage from The Origins of Functionalist Theory reinforces this point:

...thus even the humble creatures of God's kingdom may be seen as beautiful when contemplated from the point of view of exemplifying divine order, an order which is at once good, true, and beautiful. Obviously this is by no means a functionalist aes-

¹¹ Edward de Zurko, p. 232
¹³ The word Modern derives from a late Latin adverb meaning just now, and in English is found in its current sense, contrasted with ancient, as early as the sixteenth century.
thetic, but this and related theological-aesthetic systems provide an almost forgotten foundation for eighteen- and nineteenth-century references to the organic and moral analogies.15

Galileo (1546-1642) had a considerable effect on this new way of thinking. From his works, scientific phenomena came to be regarded not simply as what can be perceived, but primarily as what can be conceived with mathematical clarity. Things became numbers. They were not understood as their Platonic or Pythagorean transcendental essences, but as objective and intelligible forms.

The new book of nature was written in mathematical terms, and man began to think that he could manipulate and dominate effectively this objective external reality. This Galilean revolution represented the end of an understanding by which man had always held a privileged position in nature, while at the same time being subordinated to the discipline of the cosmos as a whole.16

Galilean science thus constitutes the first step in the process of geometrization of lived space; it was the beginning of the dissolution of the traditional cosmos.17

---

15 Edward de Zurko, p.34
16 Albeto Pérez-Gómez, p. 166
17 Albeto Pérez-Gómez, p.19
Decline of Modernism

In her book on *Art and Ritual* Miss Jane Harrison observed:

-- 'It is easy to see that as the beliefs in magic declines, what was once an intense desire, issuing in the making of or being of a thing, becomes mere copying of it; the mime, the maker, sinks to be in our modern sense th mimicry, a sort of child's-play.'

The age of magic crafts has passed and the only mysteries left to the building are the true mystery of reality and the other strange mystery. Directors of building can be so silly as to practise sham styles and whim-works of architecture. How long are we to go on with perverted skill and inverted eminence? To set up idle rather than idol columns, once magical symbols, to bedizen an advertisement shop, or to simulate mediaeval details to trick out a church,* are not justifiable means of architectural creation.

I am not going to try in this section to destroy the idea that I believe all modern architecture is wrong. On the contrary there exists today a great amount of modern architecture that is very responsive to human needs. It is although, that the leading forces in architecture today are not in harmony with to the best design for people.

One example that I can site is one that can be found in our modern cities today. There is an architectural blanket that is being draped over the possibility of regions developing their own architectural response to natural needs. We have become so myopic towards the language of the want. that we have forgotten the idea of responsive design in favor of redundant design. Technology in building construction has advanced rapidly without a noticeable widespread improvement in architectural design.19

Have we gone wrong in these last few centuries? Since the decline of the Écol des Beaux Arts style on architecture (c. 1910), we have seen our buildings quickly become nothing but steel and glass cages. This is such an accelerated end to this era of architecture.

Since the beginning of the Modern Movement, man has gained an incredible amount of knowledge in the different aspects of how pieces of the world come together. We have defined almost everything in our lives in modern parameters. In the same notion we have explored and exploited materials to the point where we, as builders, can construct about any form we desire. Then why, with

---

18 William Lethaby, p.145.
19 Edward de Zurko, p.240
all this accumulated knowledge are we creating architecture that is not responsive to the basic human needs, and why are so many people asking these same questions today?

Could it be that we have lost sight of what space is supposed to be? Have we let this thing called technology lead us in a directions that are not acceptable to "good architecture"?
The Last Project

Introduction

In this section I will present you with a look at my final project. I have divided the project up into the different areas of the design. I will be talking about the major ones and trying to show you the reason for why my design turned out the way it did.

My final project is the bringing together of all the elements that I had worked with throughout the year. It was asked of me to place my design, so I chose a location close to my surroundings. The project is located on Prairie Creek Reservoir in Delaware county, Indiana. Several aspects were addressed when I started the design. First I wanted there to be an anchor that would allow all the other elements to grow from. This was accomplished with the South-Pavilion. This pavilion’s design grew out of my studies from the first
quarter of my thesis. It is a pure example of classical proportions and canons used by the Greeks to produce their temples. I did not want this building to be the dominate structure on the island, thus it was place on the end of one of my two axes. It does however give the island a connection to the main intention that I had studied throughout year.

Both axes end when they come in touch with the water. In the center of the island there is a built-up platform echoing back to the idea of the Greek acropolis. It is here on my acropolis that I have applied man's hand on the nature of the island. All the other elements are fitted into the landscape.

The Island

This site was chosen due to its close proximity and the fact that it does not compete with the local culture. I wanted to be able to design a place in its entirety without the need to worry about contextual demands. I also wanted to create a space, a new place that completely absorbs a person with its location and design.

The island design is made up of two major axes that intersect at the main house, with a pavilion at the two extremes of the North-South axis.

The Bridge

A connection to the island becomes a very important element. The design for this bridge evolved over many months of sketching and exploring different ideas. The original idea came from a competition, which involved a bridge for Japan. The bridge was supposed to be more than a transportation connection, but a symbol for the idea of movement and people.

My bridge consists of two elements, the cube building acting as a transition point along the path of the bridge, and the open span hung instead of arched, but maintaining the
The Platform

Using the same ideal that the Greeks had with their acropolis, I chose to elevate the center portion of the island to allow for the creation of a unique zone. The top of my platform is man's hand on the natural surroundings, it is the area where I have controlled the environment. I feel that this has a direct connection to the idea of classical architecture. It is true that the Greek were very sympathetic to the existing conditions, but there is also a definite "built" quality to any Greek or Roman area. I believe there exists a strong contrast between the area around and the area contained within the built area. Keeping with this idea my island, uses the platform sensitively to develop a zone on the island that can be understood as man built and a non-intervention in the rest of the island to remind anyone who is there that the island is of a natural origin.

The half spherical platform is divided into halves on the North-South axis. The eastern portion being a labyrinth leading to the edge where one can view the water. The other western half, the path ways that provide access to the guest houses.

The main assent to the platform is from the western side. Below is provided an area for vehicular traffic, with parking under the main house area. The large stairs bring you up on to the East-West axis.

The skewed angle of the north veranda is in response to the difference between true-north and the axis of the island from my North Pavilion to the South Pavilion.

The Main House
Laid out on the North-South axis, the main house becomes the center-point of the platform.

The basis for the design was the nine-square-grid. I had done several other designs using the nine-square-grid earlier in the year, including the registration exam design that we did right before Christmas.

After studying many of Palladio’s design solutions of the nine-square-grid theme, I tried to incorporate both an open feeling to the center cross and a strength to the interior partitions.

Unlike the Platform stairs, where they all correspond to the axes, the house violates this by forcing one to leave the axis to mount or move around them.

The Guest Houses

Another part of the project was the guest houses. I wanted them to be removed from the main house complex to give both a sense of privacy and a removal from the center of the complex. I guess one would have to have the opinion that guests are nice, but not nice if they stay too long. For this reason the houses are not as lavish as the main house and are removed form it.

The guest houses are of a very simple nature contrasting the main house with just the basic living conditions provided. They are not rooted on the platform instead they have their main entrances below the level of the platform, and well below that of the elevated main house. There is a small arched bridge that functions as a path way, bringing you up to the level of the platform and slowly exposing the main house to your view. In turn I decided to elevate the sleeping chambers above the platform level so that a good view could be had of the complex, but a person would still be faced with the ritual of descending below it and then reappearing in a homage type fashion to reach it.
The South Pavilion

This is the structure that serves as the anchor or basis for my island design. I tried as accurately as possible to derive this small temple following the classical Greek proportions. I felt it was important in this project to show a range of design solutions and to include at least one example for the reason I started this whole study of Classical Architecture.

I chose to place this temple at the southern end of the main axis. I didn’t want this temple to over power the island design, but be placed so that it could be viewed and reached from the main area of the island.

It was also my intention to have this temple be of a smaller scale, using the Ionic order to circumvent the problems faced with the Doric order (i.e., triglyphs and metope placement).

The North Pavilion

This small temple is of a very abstract and simple nature. It was not my intention to bring a style or order to this structure, but to simply try and respond to the function that it would have.

There is a small counter-point, East-West axis, on the North end of the island, and this structure serves as both the beginning and the terminus for it.

My intention here was to create an area that comes into contact with the water and provides a sheltered view from the rest of the island. A spot where one can remove oneself from the main section of all the island structures.
Conclusion
For me, this thesis year has been a very strong learning experience. I believe that I have started to do what I stated in my initial thesis proposal. As I have studied this thing called Classical Architecture so many more doors have been presented to me.

I must express my happiness with the fact that the future can only bring a more clear understanding of what I have started.

I have always had a very difficult time with this idea called design. I see many different approached to it throughout the school, but I have not found one that I am in understanding with or able to emulate myself.

I must reiterate my belief that all architects and architecture students need a good working knowledge of the Greco/Roman classics. We are being very short sighted in our belief that modern architecture will provide sufficient basis for future design. As a side commentary, I found it rather disturbing the number of professors that openly admitted a lack of knowledge in the classics.

The remainder of this book is a selection of my work of this year. First there will be the final project, consisting of eleven pages which are the scaled down version of my boards. Then a group of my sketches that led to most of my designs for this year. A complete collection, of my thesis work, my be seen in the slide portfolio that was also submitted.
Portfolio
The Island
The Bridge
The Platform
The Main House
The Main House
The South Pavilion
The Views
The Guest Houses
The Views
The Pool
The North Pavilion
Sketches
\[ \sqrt{2} - 1 = \frac{\sqrt{2}}{2} \]

```
MY USE OF ALGEBRA IS ONLY A WEAKNESS!
```

```
TYPE A
```

```
TYPE B
```

- THERE ARE NO OTHER PROPER WAYS.
- CLASSICAL ARCHITECTURE CONTAINED ONLY
  THOSE ELEMENTS WHICH WERE REQUIRED.
  NO EXTRAS WERE ADDED.
- ALL WALLS WERE LOAD BEARING, SINCE ALL
  WALLS WERE WALLS.
QA
681
EULIDEAN GEOMETRY

NA2500.5737
Thesis Stuff

Paul Talks  People Listen  Trent Sleeps

We Decided

Design  Design  Design  Design

#  O  ⬡  □
THEESIS:  1 DEC 87

WE MUST ALL MEET WITH ALFREDO
BEFORE CHRISTMAS.

RESEARCH

PRODUCED NEW FACTS.

PROGRAM 11 KW

ORGANIZED EXISTING FACTS.

THE 11 X 11 SQUARE GRID.
RESEARCH

PROTOTYPING

DESIGN

- Schematic procedure
- Logical order
- Interpretation
- CAVE effect
- Observation
- Interview's experiment matrix
ABSTRACT WILL REFAINIZE YOU.
WHAT ABOUT THE LIFE?


Crema, Luigi, 1905- Significato della architettura romana nei suoi sviluppi e nella sua posizione nella storia dell'arte antica. [Roma, 1960]


Dumbarton Oaks Colloquium on the History of Landscape Architecture (7th: 1979)


Georgiou, John. Greek architecture and planning: John Georgiou, Michael Hugo-Brunt.
Monticello, Ill.: Vance Bibliographies, 1980.


Newcomb, Rexford, 1886- *Ceramic art among the Greeks and Romans*, by Rexford Newcomb. Beaver Falls, Pa., Associated tile manufacturers, c1926.


Rider, Bertha Carr *The Greek house; its history and development from the Neolithic period to the Hellenistic age.* [Cambridge, Eng.] Cambridge University Press, 1965.


*Rudiments of ancient architecture* [microform :] containing an historic account of the five orders ; with their proportions, and examples of each from antiques ; also extracts from Vitruvius, Pliny &c. relative to the buildings of the ancients ... ; with a dictionary of terms ... 3rd ed., enl. London : Printed for J. Taylor, 1804.


LIX
Bibliography and Selected Further Reading


*The Rudiments of Ancient Architecture* [Microform ...] Containing an historical account of the five orders, with their proportions and examples of each from the antiques; also Vitruvius on the temples and intercolumniations, &c. of the ancients ... With a dictionary of terms ... London, Printed for I. & J. Taylor, 1789.


LX