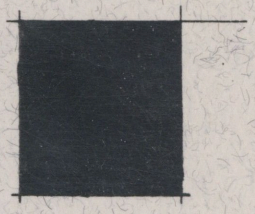
Montana State University Library, Bozeman



P378
.B3875

MONTANA STATE UNIVERSITY
LIBRARY

KIHOLO MAKAI CORPORATE RETREAT

An aplication of oriental theory

Scott Bechtle

A professional paper submitted in partial fulfillment
of the requirements for the degree of

Bachelor of Architecture

Montana State University
School of Architecture
June 1990

Approved by:

Jerry Bancroft, Advisor

Clark Llewellyn, Committee Person

Tom Wood, Director

STATEMENT OF PERMISSION TO COPY

In presenting this proposal in partial fulfillment of the requirements for a Bachelor of Architecture degree at Montana State University, I agree that the library shall make it freely available for inspection and study. I further agree that permission for extensive copying of the document for scholarly purposes may be granted by my major professor or in his/her absence, by the head of the library.

It is understood that any copying of this paper for financial gain shall not be allowed without my written permission.

_____

Scott Bechtle

_____

Date

TABLE OF CONTENTS

Page #	
1-1	**1 INTRODUCTION**
2-1	**2 PROBLEM STATEMENT**
3-1	**3 ORIENTAL THEORY**
4-1	**4 CASE STUDIES**
	5 CONTEXT
	SITE
5-1	Location on Island
5-2	View to site
5-3	Site Map with Topography
	NATURAL FACTORS
5-5	Sun angles
5-6	Rain and Wind Analysis
	Climate Implications
5-7	cooling methods with built form
5-9	cooling methods with landscape
5-10	daylighting concerns
5-12	USER PROFILE
6-1	**6 PROGRAM**
7-1	**7 DESIGN DEVELOPMENT**

1 INTRODUCTION

O highway I travel!
O public road! do you say to me,
Do not leave me? do you say,
Venture not? If you leave me,
you are lost? do you say,
I am already prepared--
I am well-beaten and undenied--
adhere to me?
O public road!
I say back, I am not afraid
to leave you-- yet I love you.

--Walt Whitman

In selecting a topic for my architectural thesis, I asked myself what I felt the thesis should invove. My first intuition said that this would be the last time I could investigate what I wanted to do. At first I decided I wanted to create a resort of some type because I thought I wanted to do resort architecture when I entered the job market. During my internship in Hawaii, I researched existing resorts surounding the area as well as selecting a site in the island I felt appropriate for this resort. While in Hawaii I began to revive my interest in oriental architecture. When I returned from Hawaii I further studied this interest through a study of oriental theory. I needed to know the reasoning behind why a Japanese building or garden was the way it was. I decided that I would do both-- create a resort and investigate oriental theory. It didn't take long to realize that this would not allow me to thouroughly investigate either topic, so I made the decision to investigate oriental theory. The resort was reduced to a corporate retreat that would be sympathetic to the investigation of the oriental theory. The idea that oriental theory professed an introspective approach directed the decision that the retreat would be one focused on small learning seminars, corporate executive and board meetings, and a place to retreat from the corporate chaos of the city. What I have outlined are two principles essentially. The first principle being the transformation of oriental theory into a form suitable for guiding the creation of architecture and the second principle being the creation of a corporate retreat with this set of guidelines.

My book is organized with my goals and aspirations for thesis in my problem statement. Then I present the elements of oriental theory I am interested in addressing. In addition to presenting the theory, I attempted to outline a method and various issues of design that pertain to this theory. The method and the interpretation of the issues may change after investigation because this paper is not an end but a beginning. I then selected case studies to explain/examplify the method and various issues. My section on context was included to present the basic information needed to create the corporate retreat. The functional program follows. The design development phase is the implimentation and testing tool of the method and issues I have defined. At the end of thesis II if sucessful, I will have applied oriental theory towards the creation of a corporate retreat in Hawaii. This final product will be included in the design development section.



2 PROBLEM STATEMENT

PROBLEM STATEMENT

To create a corporate retreat based on oriental theory.

Goals

1. To define what principles of oriental theory I am most interested in studying.

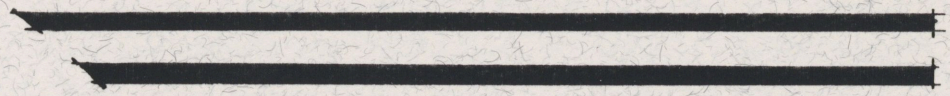
2. To identify a method of design sympathetic to these principles.

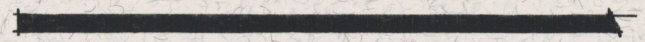
3. To establish guidelines to direct the generation of design addressing these principles.

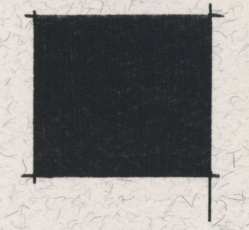
4. To test this method and set of guidelines in the design of a midsized project.

5. To create a quality final product with what I have learned and developed through the application of oriental theory.









3 ORIENTAL THEORY

Teaism is the study of oriental aesthetics with nature as a model.

Nature is the maker, it is the giver of presences. You can have a thought, but a thought has no presence until you call on nature to exercise its powers of order, to make it manifest.

--Louis I. Kahn

1. Simplication

In the investigation of oriental theory I began by looking at the history of its generation. By investigating the history I hoped to find what aspect of oriental interested me. I will brifly describe what I found. In the begining there was the cave defining only space and providing shelter. Then the space developed decoration mainly as a communication tool. Soon this decoration of the interior became decoration for aesthetic value and the emphasis on space became less important. Soon pillars and beams were arranged into buildings and again the emphasis grew stronger to emphasize form. Architecture developed capturing more area and becoming more elaborate as forms. Then the emphasis changed during the feudal period when a strong reform occured in building. This was a type of enlightenment due to a strong movement to understand and live with nature as the Zen religion preaches. In order to guide the aesthetics of art and architecture a new branch of Zen religion was developed called teaism. Teaism developed issues used in directing the design of oriental gardens and teahouses. Zen being the belief that man and nature is is reflected in teaism by using nature as a model creating designs that are harmonious with nature. Nature became the driving factor of teaism and the source where all the answers of life could be found. After an evaluation of past architecturewhile using nature as a model for the new architecture, space once again became the major emphasis of building. Development of space took on an organic approach. Like all things in nature space was to grow from the inside out. Take for instance the tree...It starts as a seed, is nurished and grows roots to build on. Then the seed sprouts to form a what eventually becomes a tree. As it grows it developes another ring, and grows outward from the center. Likewise the hierarchyof space grows from the most important outward to more subordinate -- all required to allow proper function. The tree as it grows develops certain layers: heartwood, sapwood, and bark. So does space develop layers. These layers include the exterior, intermediate, and the interior. The exterior represents the material outside world, unclean and unpure. The intermediate represents the transition from the exterior world to the interior world-- a purifcation period. The interior

represents purity, and protection from the exterior world. After defining these zones for creating space the modifing aesthetic issues for creating the architecture were defined. These issues are general and vague allowing for for personal interpretation. This was intended to encourage creativity in the designer. The founders of this belief were carfull not to create too many rules but yet wanted to provide a strong direction. This is sympathetic with the belief that the right brain should lead the left brain so the left brain does not limit the right.

There are four issues of teaism that I have tried to interpret.

"...the first and supreme principle of Japanese aesthetics consists in stringent simplification by elimination of the insignificant, and consequent emphasis of reality."1

2. Implication

This principle is important for it talks about way of thinking as well as a view of beauty. The way of thinking represents a clear and uncluttered thought such that nothing should distract from that idea. Anything that is not required to realize a purpse or convey an idea should be removed for it detracts from the true purity of the idea. It is the cleaness and purity that is beautiful.



form



space



implication of space with form

"A Japanese may tell you what he knows... but never will he attempt to tell you all he knows... while less would have failed the intended effect, more would have been profane."2

Rather than using many different symbols to communicate an image, a limited pallet should be used. I see the explaination of this issue evident in comparing the difference between english and japanese writing methods. English uses many characters, bound by numerous rules to convey the same meaning as a single japanese character. This simplification can be applied to design such that one uses a conglomeration of elements to create one character rather than using numerous characters to convey the same meaning. Thecharacter must be evident and complete otherwise the purpose will not be realized.

"True beauty could only be discovered by the one who mentally completed the incomplete. The virility of life and art lie in its possibilities of growth."3

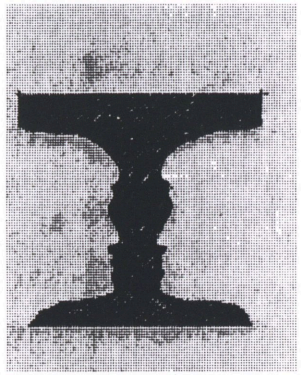
The architecture is to imply or suggest without actually defining every element. This concept of implication reaffirms the Japanese creation of space but also implies that human interaction with spac, and mental stimulation evoked by space, are also important. This also applies to the idea of suggestion. Suggest that the entry is around the next corner, suggest that the alter is at the far end of the church, suggest that which is yet to come. It is the suggestion of space is emphasized rather than the object because there is more chance for the user to complete the incomplete.

"The reality of a room ... was to be found in the vacant space enclosed by the roof and walls, not in the roof and walls themselves."4

By implying a space one allows the user to complete the space in their own mind. This idea is reinforced by the basic elements of design taught in many schools today— figure/ground, balance, and rhythm. Teaism is based on user mental participation and relies on this element to allow the user to be harmonious with thespace.

"In Jiu-jitsu one seeks to draw out and exhaust the enemy's strength by non-resistance, vacuum, while conserving one's own strength for victory in the final struggle. In art the importance of the same principle is illustrated by the value of suggestion. In leaving something unsaid the beholder is given the chance to complete the idea and thus a great masterpiece irresistibly rivets your attention to become actually part of it."5

Remember that teaism is nature based and develops its creation principles by observing nature. Another aspect of implication is that as in nature nothing is symmetrical, everything is asymmetrical and balanced. A good example would be a tree. A tree does not stand perfectly vertical nor does it have a perfect sperical or conical canopy. It usually leans away from the wind and



3. Purpose is essntial for design to be genuinly great.

has more growth on the sunny side, yet it still stands. The human body is a second example. No face is exactly the same on both sides, usually one hand is bigger than the other, and the hair lays differently on one side than the other. Nature has many examples but the point to be made is that no form or space can be defined such that it be symetrical. The form or space should bedefined because there is a functional or artistic purpose.

"Uniformity of design was considered as fatal to the freshness of imagination."6

When a rigid system of symmetry is used, the opportunity of suggestion is eliminated, allowing for no user completion, allowing for no possibilities of growth, creating a stagnant form of art, and eliminating interaction of the user's imagination.

The third principle of Teaism is purpose.

"...Japanese art is structural art... Realization of the primary importance of this element of 'structure' is also the very beginning of real knowledge of design. The word structure is here used to designate an organic form, an organization in a very definite manner of parts or elements into a larger unity — a vital whole. So, in design, that element which we call structure is primarily pure form, an organization in a very definite manner or elements into a larger whole— a vital whole."7

Everything in nature has a structural purpose but it is still represented in a beautiful and artistic manner. One example is the flower. The flower is the perfect example of structure as art. As well as structure, each element serves a function. For example the roots support as well as gather nutrients and water; the stem supports the petals and leaves as well as serving as a nutrient channel; the leaves provide photosynthesis as well as balancing the plant; and the petals allow the ability to reproduce. All these elements are parts organized to complete a unified whole. Like the flower, the structure of the building should not be hidden but when possible made a beautiful part of the space, thereby defining space such that the form does not become the focus.

The fourth principle is contrast.

"One of the cardinal concepts of Oriental thought, from even before the time of confucius; has been the belief that alternating, diametrically opposed forces govern the universe, like day and night. They are called yang and yin in Chinese."8

4. Contrast

The issue of contrast I add here not as a major issue in design and not as a design generating issue but as a minor issue that will exist no matter what one designs. I see this issue in architecture mainly taking the form of light. One could see the issue of contrast as supporting a Le Corbusier view of treating a building on the site. I do not see the building as separated from the land but as a part of the site. I believe this because I feel it must be harmonious with nature. I believe that it is defeating the purpose of teaism to design with contrast for contrast sake. If a space has contrast because it is required to cachieve a desired purpose then it is justified. No matter what space you create the light is going to create contrast. Through the use of different textures and surfaces and the play of light contrast can be created. It is this form of contrast I chose to recognize such that it supports the first three issues.

To recap teaism has four principles: simplification, implication, purpose, and contrast; oriental zoning has three levels: exterior, intermediate, and interior; and interior space developes from the inside to the outside.

As an example to better explain the modern day practice of some of the basic modifying issue I will discuss one Japanese architect and his work--Tado Ando. Tadao Ando's theory can be summed up as a post modern approach to emphasizing the activity nature in a building by the use of walls. Ando believes the connection between nature and human is primarily based on observing the elements of nature-light and weather. Let me clarify that he does not create space by using nature as a model but emphasizes the activity of nature by the practice of these principles. He uses walls to materialize these elements of nature such that the human senses may perceive. In the city this materialization takes the form of an island of nature wrapped by

dominant walls of concrete that serve to screen the city backdrops well as capture light and weather. Kenneth Frampton explains this domain within a domain.

"(Ando emphasizes) boundary, thereby creating an introspective domain within which the homeowner may be granted sufficient 'ground' with which to withstand the alienating no-mans-land of the contemporary city."9

Ando sees this 'private ground' as a space to retreat from the chaotic city. I must note that this introspective domain is principly exemplified in the city for in the city there is much activity to distract from the activity of sensing nature. Primarily Ando's works are in the city because I feel one, that he believes nature is not addressed enough in the city, and second because it allows Ando to use modern materials in a modern setting to convey a traditional and non-modern thought.

Ando uses a limited pallet of materials. He believes that simplification and reduction of all extraneous detail such that the form is stripped to its bare bones. This reduces any possible distraction from the emphasis of nature. Ando emphasizes implication of space by usually arranging two cubes separated by a cubical space between. Ando himself adds another reason for his bare bone architecture.

"It should remain silent and let nature in the guise of sunlight and wind to speak."10

Ando has simplified the elements of nature to be considered to the elements of nature existing at the place-- simplification. Ando believes that architecture was the connection of the art of building with the art of living. To understand his buildings in the city then you must understand living in the city. If one looked at nature's role in the city now one would see few elements of dense planting. The elements most evident would be two elements—light and weather. I feel Ando is reflecting nature as it presently exists in the city and for that reason he limits his expression of nature to that of light and weather. Ando through the use of limited modern

materials captures the feeling of traditional architecture. The open cube separating the two closedcubes is sympathetic to the traditional oriental garden. He considers the house as being the entire site and not just the structure, relating the historic sense of the word house.

"...the Japanese word for 'house' referred to not just the building itself but to the entire area(territory) within the boundary walls of the site."11

He uses concrete for the walls because it accepts light in a soft manner such as wood does. He uses glass block to allow translucent light to enter the space. This glass block resembles the shoji screen of traditional oriental architecture even to the point of repeating the mullion pattern of typical rectilinear separations. Ando takes the basic ideology of teaism and represents it how he feels it relates to our time. He represents teaism in an urban setting.

I propose to practice my own interpretation of oriental theory in a non-urban setting. As Ando practices his degree of simplification, implication, purpose, and contrast; so will I do the same. The product is tied to personal interpretation and I know that others will interprete these issues differently than I but as long as I address the issues in my own manner whether any other person believes the same, I have been successful. Now the challange begins!

Oriental theory is a theory that is based on using nature as a model.

Using nature as a model in creating space one must take an organic approach.

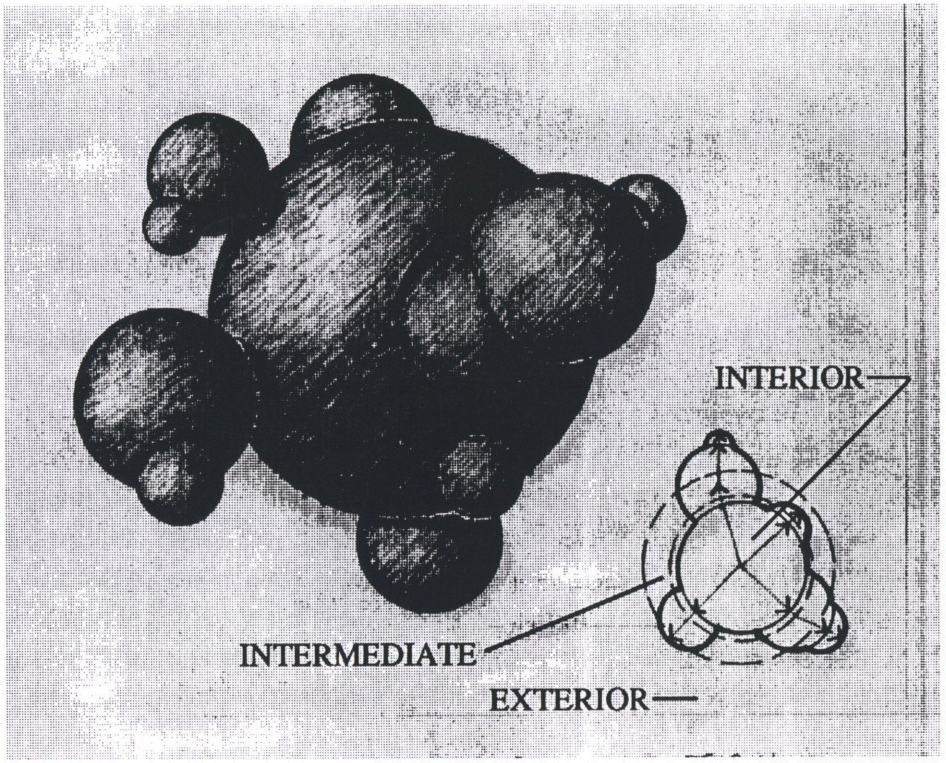
An organic approach talks about growth.

Growth works from the inside out.

Space should grow from the inside out to be sympathetic with this design approach.

All elements in nature have an interior, an exterior, and a space between, or an intermediate area.

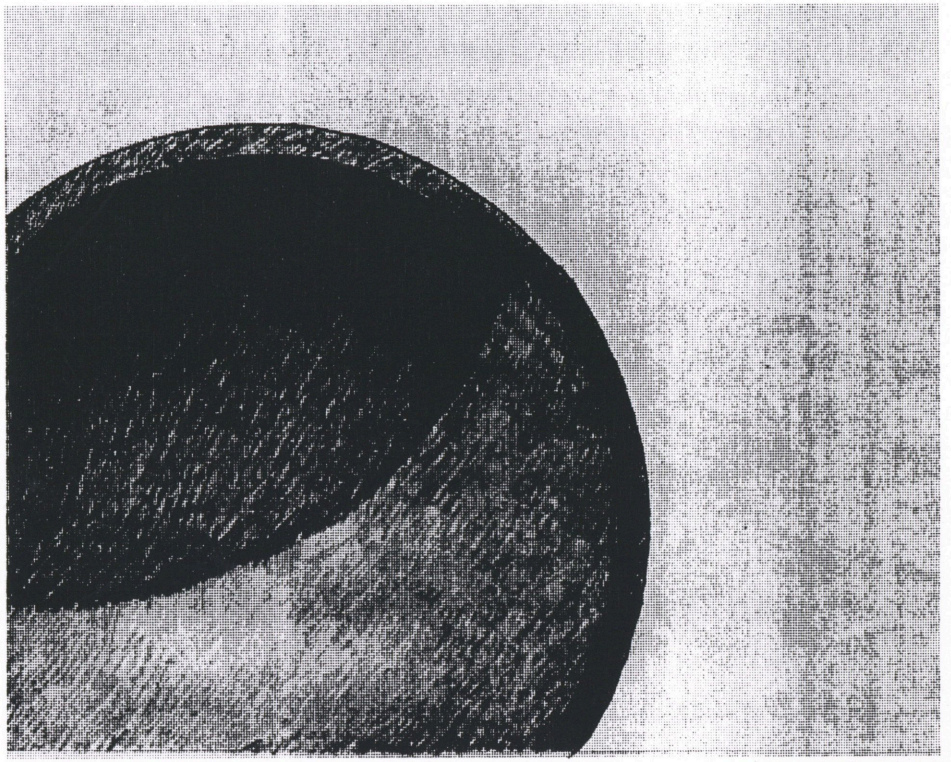
The design should also have an interior, intermediate, and exterior zone.



GROWTH

" The reality of a room ... was to
Be found in the vacant space
enclosed by the roof and walls,
not the roof and walls themselves."

--Kakuzo Okakura
TheBook of Tea



SPACE

In sympathy with the principles of oriental theory the following method of design was established.

The square symbolizes a set begining and end.

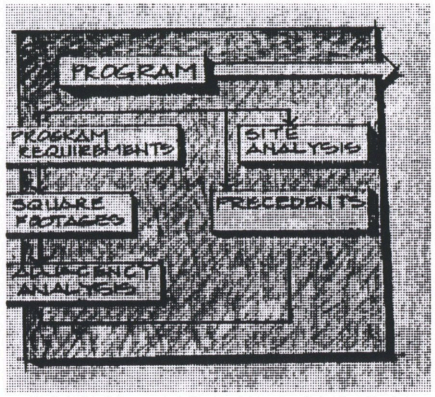
The circle represents a never ending process.

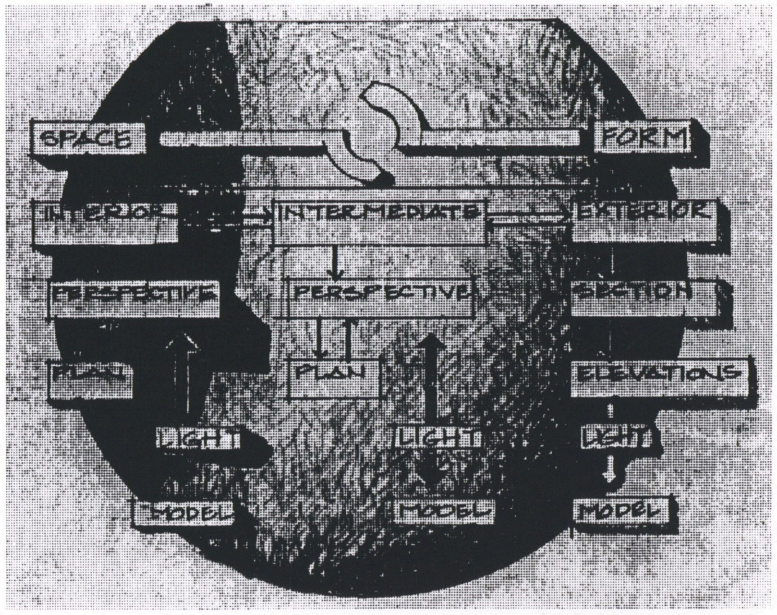
The left side of the sphere represents the space defined by the form --interior.

The right side represents the form defining the space--exterior.

The middle represents the connection between the space and the form, the interior with the exterior, --the intermediate.

All are tied into one element because they cannot be separated.





METHOD

Oriental method of design

This is not an end but a starting point for design . This method outlines a continuing growth process of which the end is only determined when then designer stops. Even after the design process is stopped, the building should be allowed to grow. This process allows for easy expansion and growth.

Space originates from the inside to the outside and grows from the major to the minor.

To achieve this in design I must first design spacially in three dimensions, due to the fact that designing totally in model would be too time consuming, I have chosen designing in perspective using models as a refinement tool.

Step one: INTERIOR

1. Start with major space, focal element, or most important element of the proposed building or complex.
2. Review what qualities and requirements that space has.
3. Layout the rough space in interior perspective grid according to the size you think you will need.
4. Layout the plan relationship to the perspective either above or below the perspective.
5. Start defining the space in perspective and relate the perspective forms created on the plan.
6. Work from perspective to plan maping on the plan the space you form in the perspective.
7. When you reach a space you are comfortable with using your plan set a new station point and continue designing the space with the original perspective as a starting point.
8. Continue until the first space is designed.

Notes:
In developing the perspective consider scale orientation, best possible views from interior, and

structure.

Step two: INTERMEDIATE

1. Determine where best points of entry/ exit are by the perspective.
2. Layout the rough space required for the exit with plan layout below or above.
3. Define space of the exit, mapping the perspective on the plan layout.
4. When you reach a space you are comfortable with using your plan set a new station point and design the enrty space with the original perspective as a starting point.
5. Continue until the entry/ exit is designed.

Notes on steps on and two:
Spaces should be basic and non- detailed. Study models may provide a means of studying how the light enters the space. Once major spaces are designed in steps one and two then goto step three.

Step three: EXTERIOR

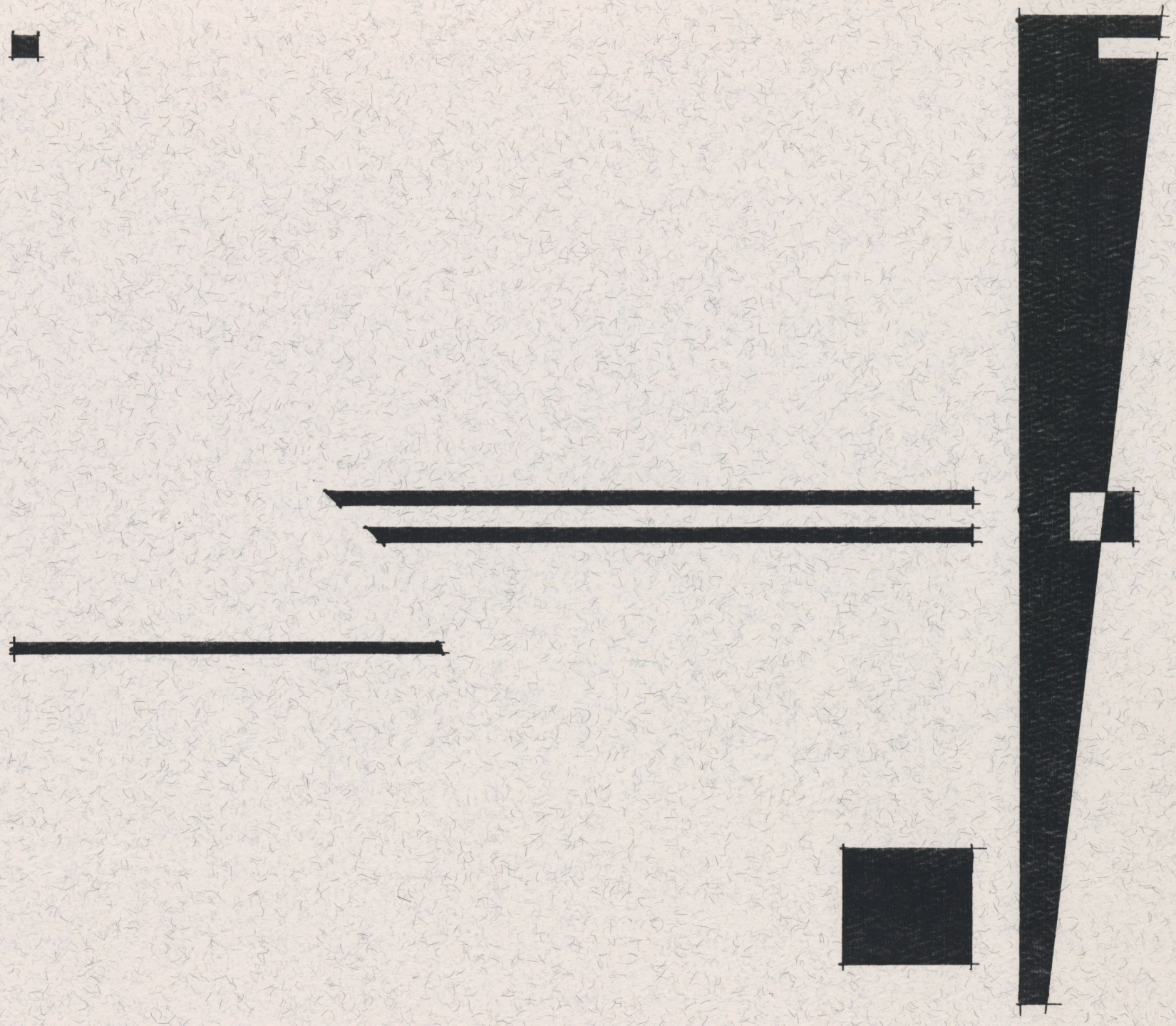
1. Using sections develop what the basic interior to exterior relationship should be.
2. Using the plan and sections develop elevations that reflect the chatacter of the interior space within.
3. Go back to step one or two and reflect any changes in design. (Loop)

NOTES

1. Wright, Frank Lloyd. The Japanese Print. New York: Horizon Press, 1967. p.19.
2. Ibid. p.19.
3. Okakura, Kakuzo. The Book Of Tea. New York: Dover Publications, Inc., 1964. p. 40.
4. Ibid. p24.
5. Ibid. p. 25.
6. Ibid. p. 40.
7. Wright, Frank Lloyd. The Japanese Print. New York: Horizon Press, 1967. p. 15.
8. Okakura, Kakuzo. The Book Of Tea. New York: Dover Publications, Inc., 1964. p. VI
9. Bognar, Botond. Japanese Architecture. New York: London/St. Martin's Press, 1988. P. 6.
10. Ibid. p. 25.
11. Ibid. p. 15.
12. _____. "Minoru Takeyama, Plym Distinguished Professorship in Architecture." Urbana-Champaign: Illinois University Press. 1989.

BIBLIOGRAPHY

Bognar, Botond. Japanese Architecture. New York: London/St. Martin's Press, 1988.
Inoue, Mitsuo. Space In Japanese Architecture. Tokyo: Weatherhill,1985.
Okakura, Kakuzo. The Book Of Tea. New York: Dover Publications, Inc., 1964.
Wright, Frank Lloyd. The Japanese Print. New York: Horizon Press, 1967.
_____. "Minoru Takeyama, Plym Distinguished Porfessorship in Architecture." Urbana-Champaign: Illinois University Press. 1989.



4 CASE STUDIES

The following case studies are not examples of previous corporate retreat centers or conference centers, but are case studies that serve to explain the concepts discussed in the previous section --oriental theory. Three points were brought to attention as issues guiding design. They were simplification, implication, and purpose. A fourth issue, contrast, was mensioned as a modifying issue and is present in all the studies.

Each teaism issue has specific design issue implications that are briefly listed below :

SIMPLIFICATION

1. Eliminate extraneous elements not required to achieve the intended quality and function of the space or form.
2. Minimize combinations of different materials.
3. Reduce the necessary parts of the building and room separations to a minimum.

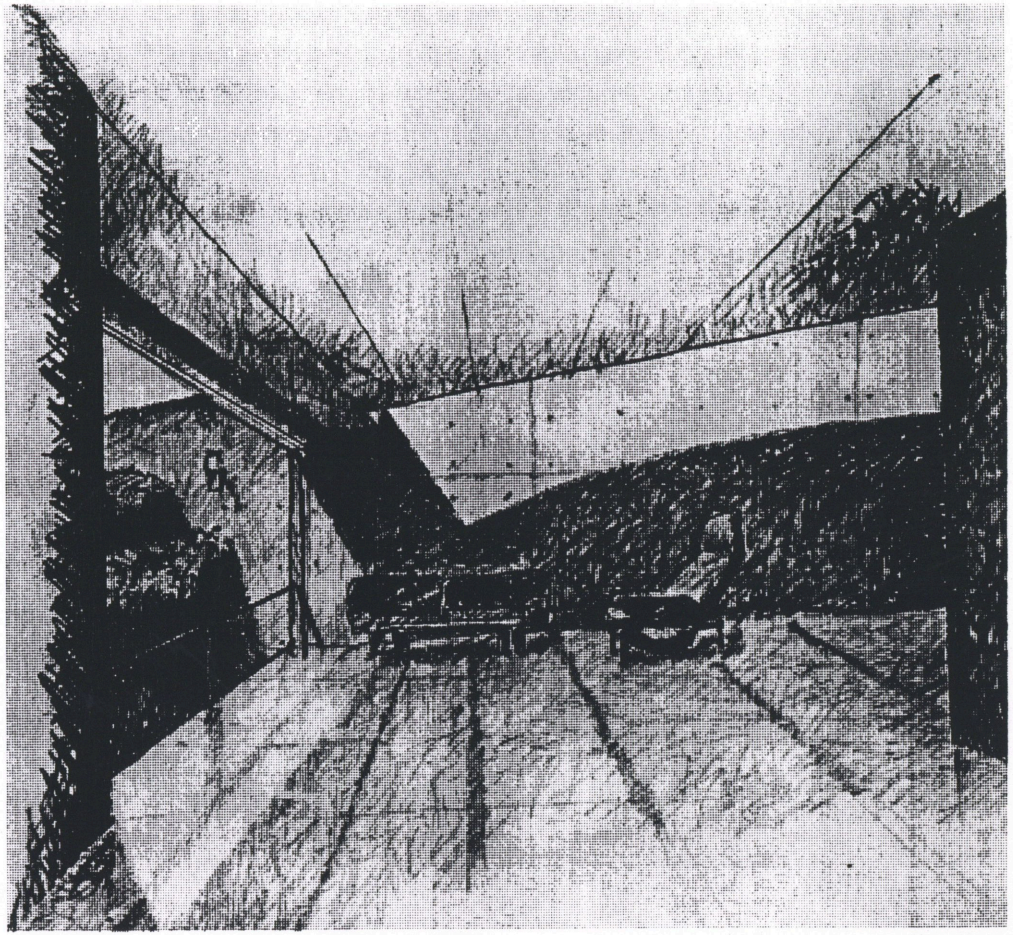
IMPLICATION

1. Use form to imply space.
2. Eliminate symmetry as a design organizer.
3. Hint what is to come. Do not totally display a space to the viewer. Use selected views to set up the viewer for the final element.
4. Imply on the outside what is to be on the inside.
5. Extend space from the outside to the inside.

PURPOSE

1. Space originates due to the desired quality and function.
2. Different purposes have a different space/form relationships but similar characters.
3. Selected structural and mechanical are emphasized.

Tadao Ando's residence interior clearly represents an example of simplification. The walls and ceiling are constructed of concrete and limit there decoration to snap-tie reliefs and control joint patterns. The floor made of wood contains a slight color differentiation that create a banding. The window continues from the ceiling to the floor with a simple-looking connection. The space is open with little separation and light is used to highlight structural elements.

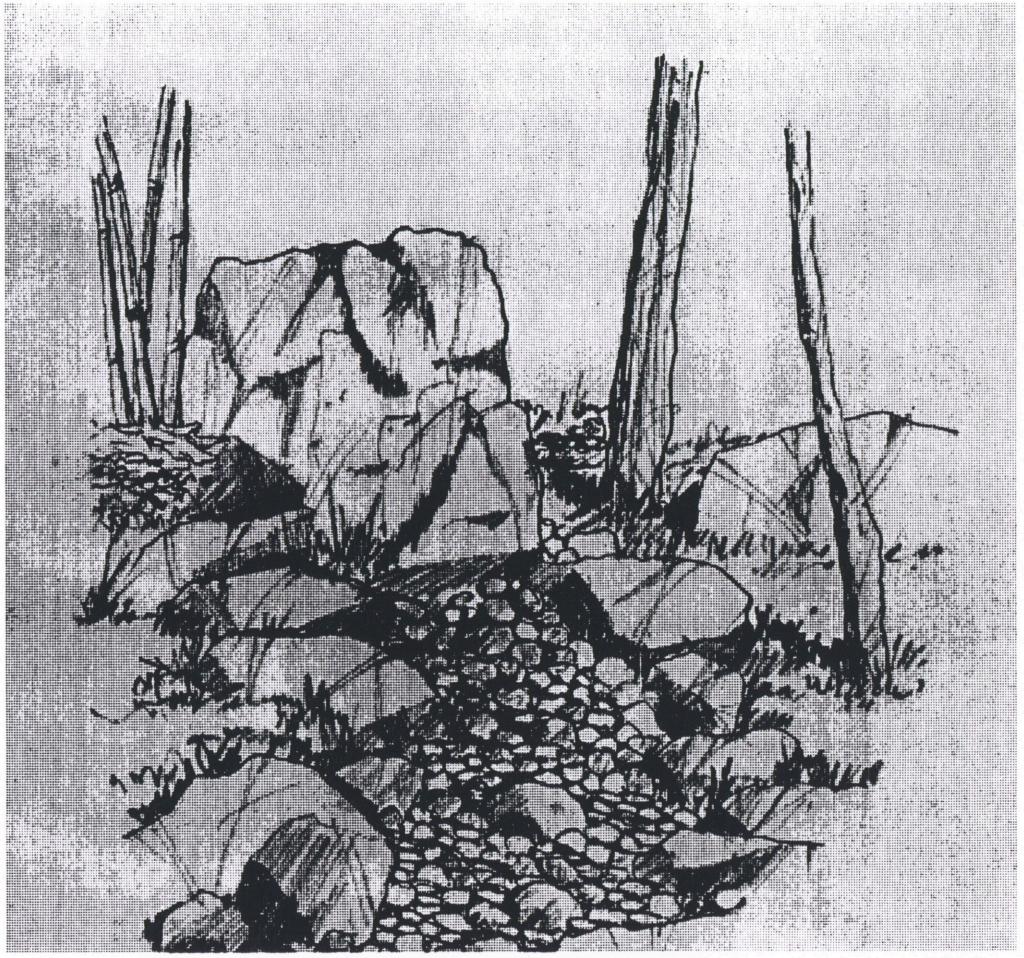


SIMPLIFICATION

Kidosaki Residence, Tadao Ando

The oriental garden designer wanted to create the feeling of water so he/she implied the creek with pebbles and rocks as it would be seen in a moving creek with water.

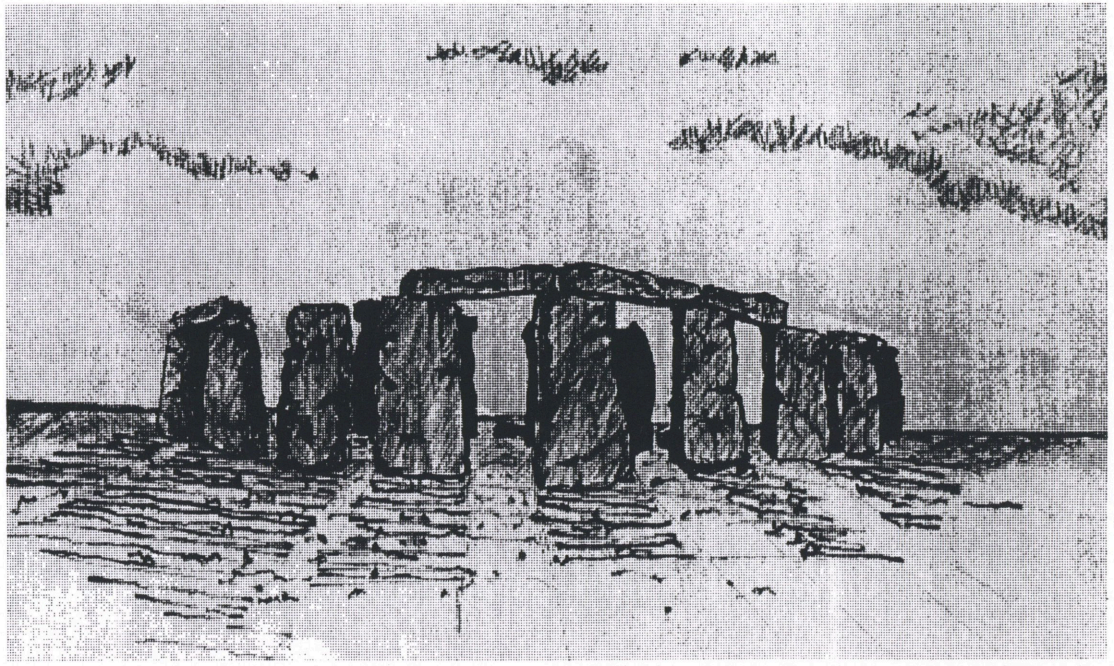
Although there is no water in the garden the implication of water triggers your mind to think there is water.



IMPLICATION

Oriental Garden Stone River

The significance of Stonehenge is the way it defines space. Rather than completing a circle it implies a circle with columns and lintles implying a roof level.



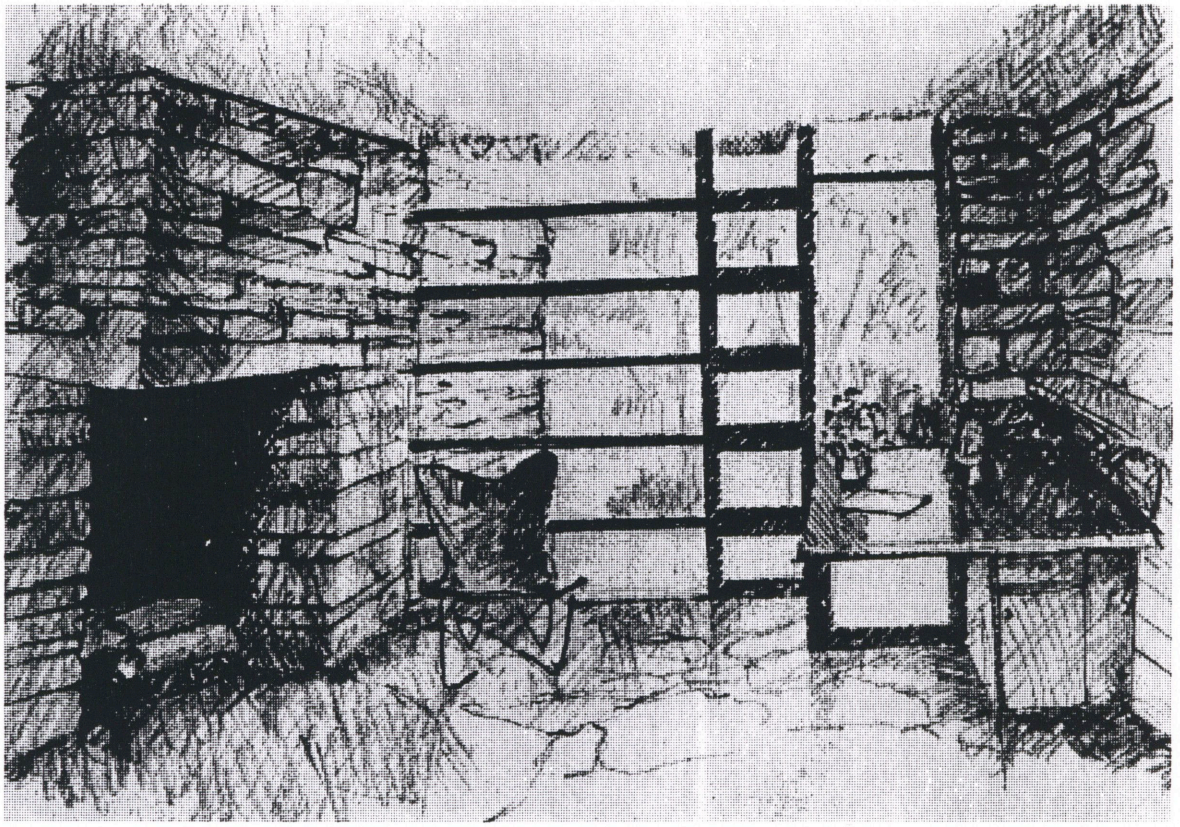
IMPLICATION

Stonehenge

Wright practices implication by implying that the space extends from the inside to the outside.

Wright uses a limited pallat of matterials suggesting simplification.

Wright uses thin layers of stone in the building to imply the layering of the natural cliffs surounding the area.



IMPLICATION

" Fallingwater " Frank Lloyd Wright

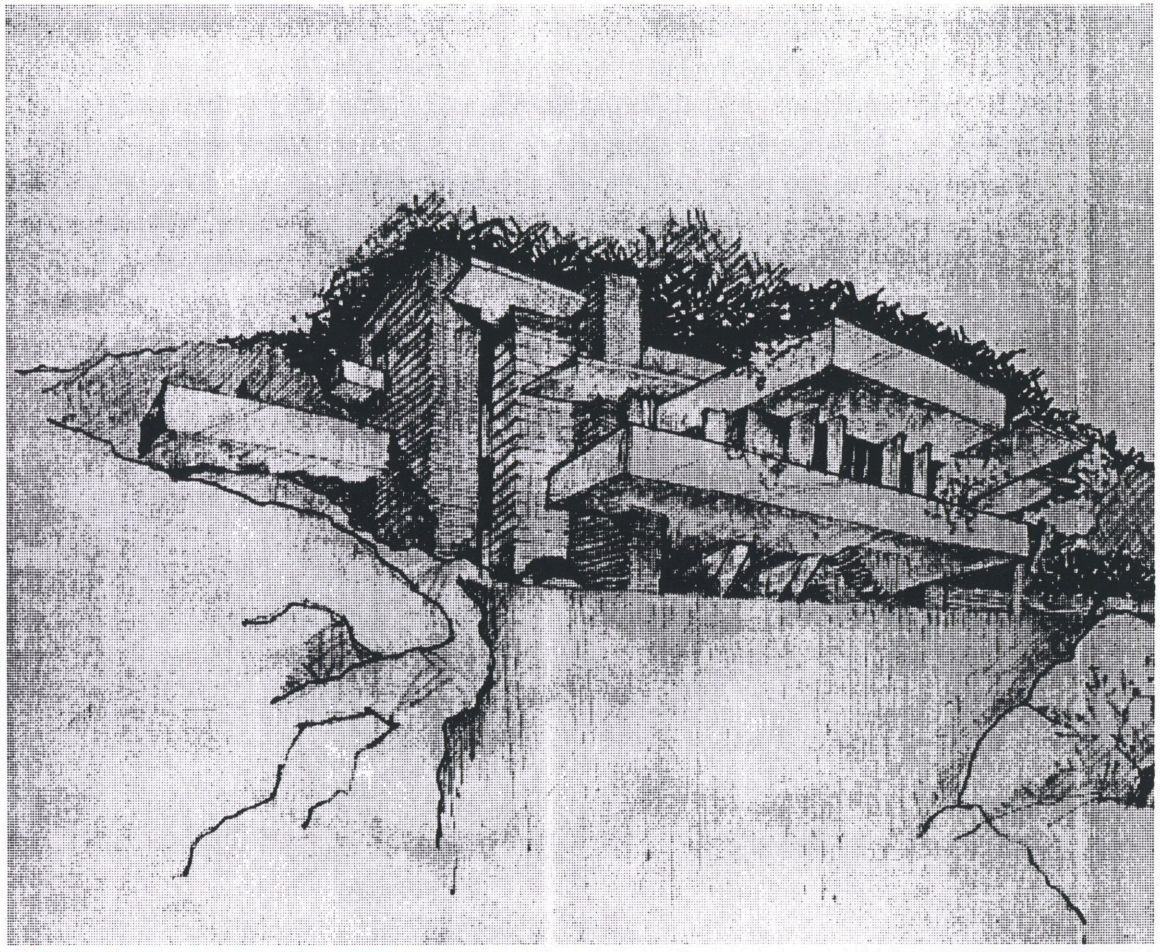
Elements of the building extend from the exterior to the interior.

Wright implies that the building grows from the site.

The forms imply a continuation of the natural cliff.

The approach implies where the entry is located but does not completely show the entry.

The exterior implies what is interior.



IMPLICATION

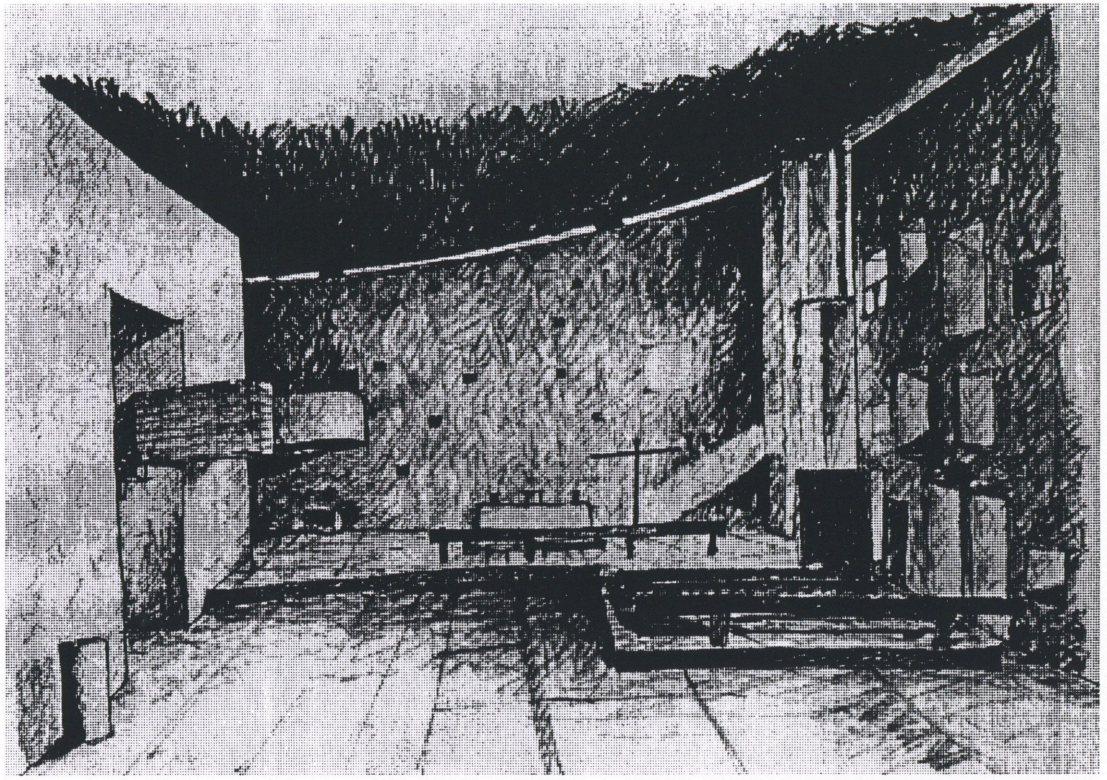
" Fallingwater " Frank Lloyd Wright

The space on the interior is implied on the exterior.

Hierarchy of space is implied by a change in floor level.

The roof seems to be floating above.

Simplification is evident by the basic walls with only punched openings to give decoration.

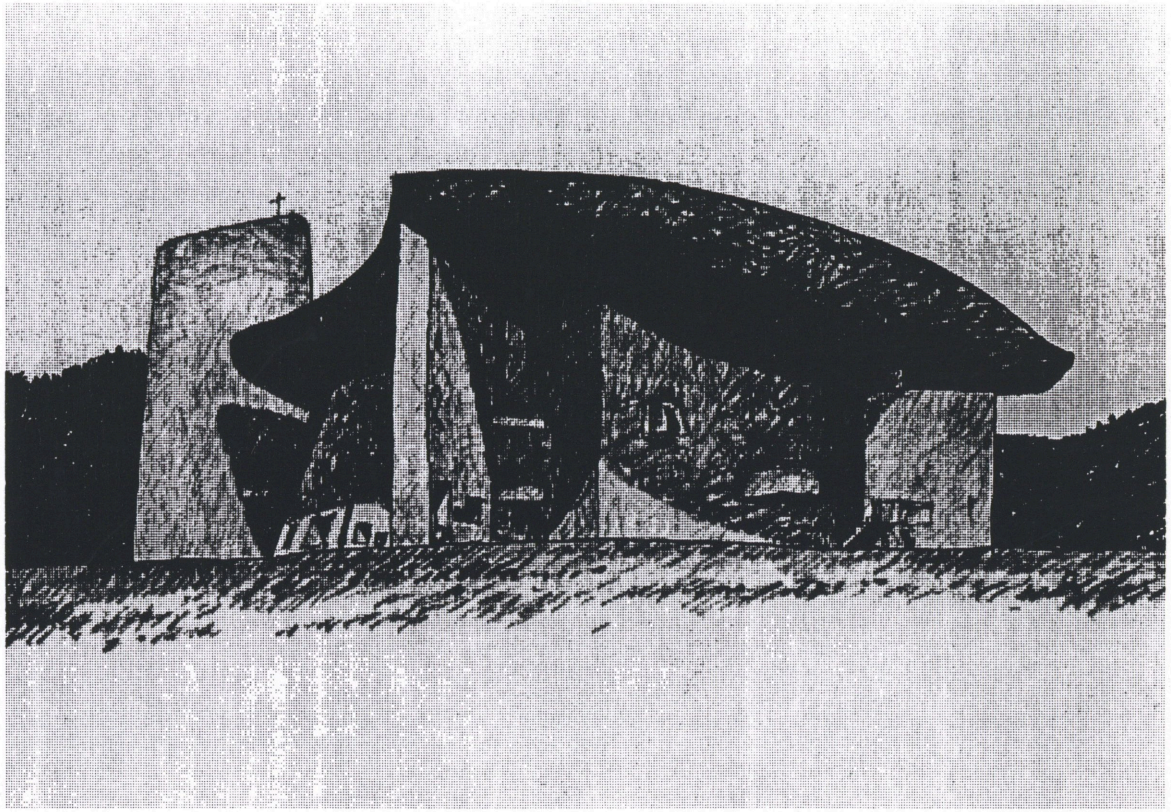


IMPLICATION

" Ronchamp " interior Le Corbusier

The exterior reflects that which is on the interior. It hints to what is on the interior.

The exterior has a similar character but does not mimic the interior. The exterior has a different form because it has a different purpose.



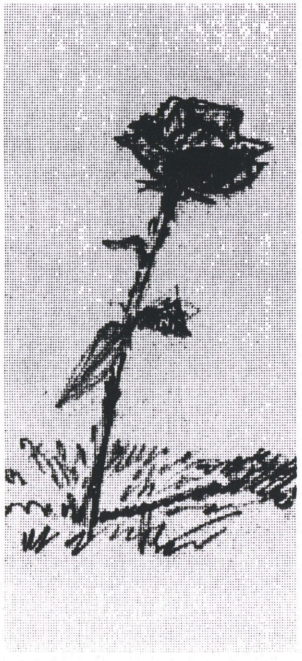
IMPLICATION

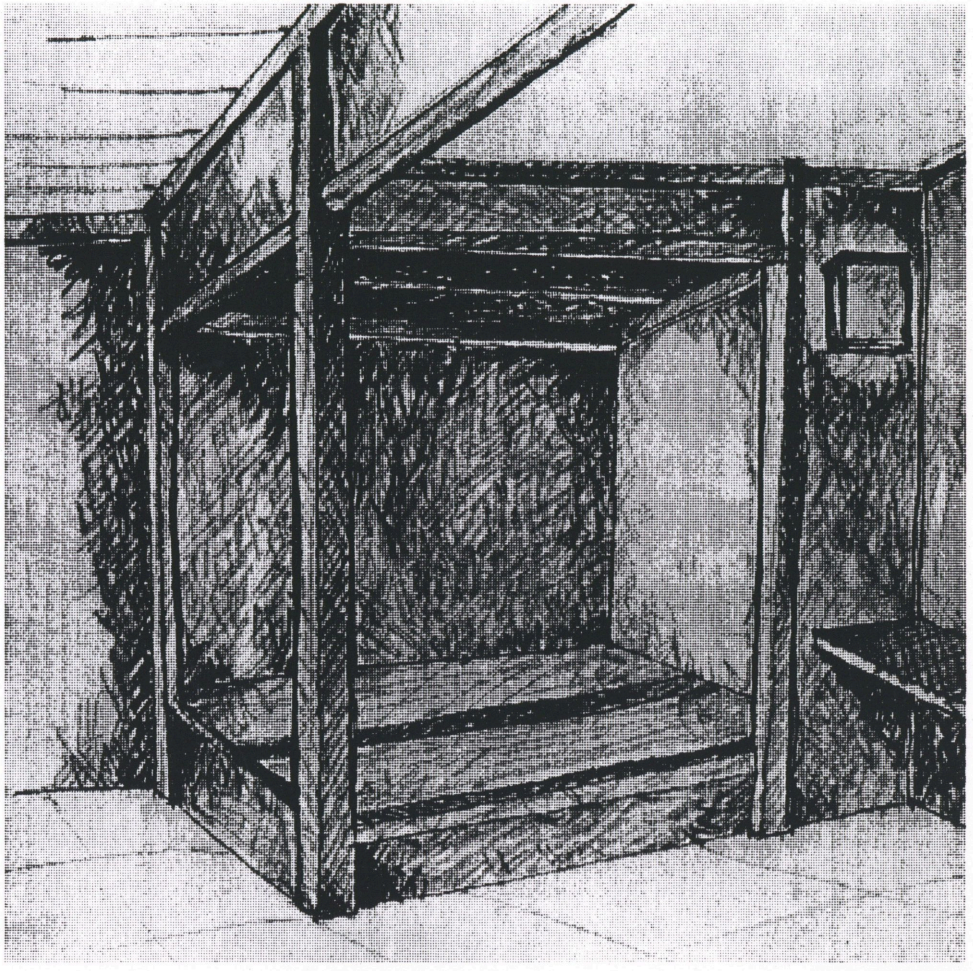
" Ronchamp " exterior Le Corbusier

This is a meditation area in a Japanese residence. Since it has a different purpose it is defined differently yet still has the same character as the rest of theresidence.

The structure is emphasized but still retains a simple character.

The flower is structural yet also beautiful and simple. Architecture should strive for this quality.



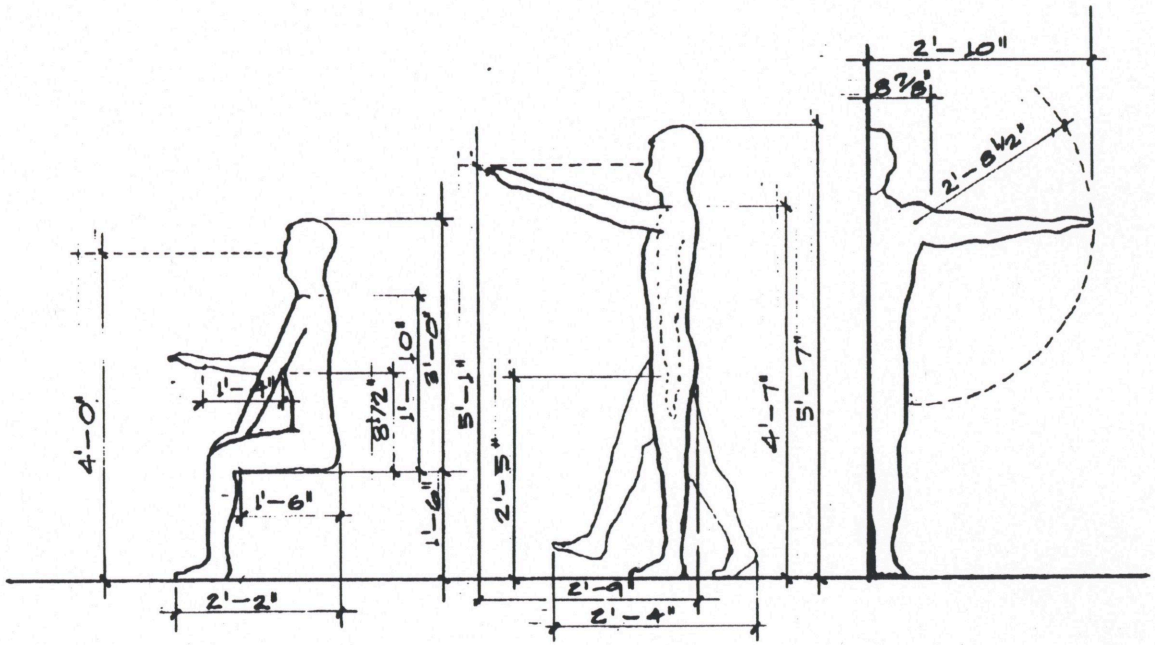


PURPOSE

Takonoma "Horai" Atami Shizuoka

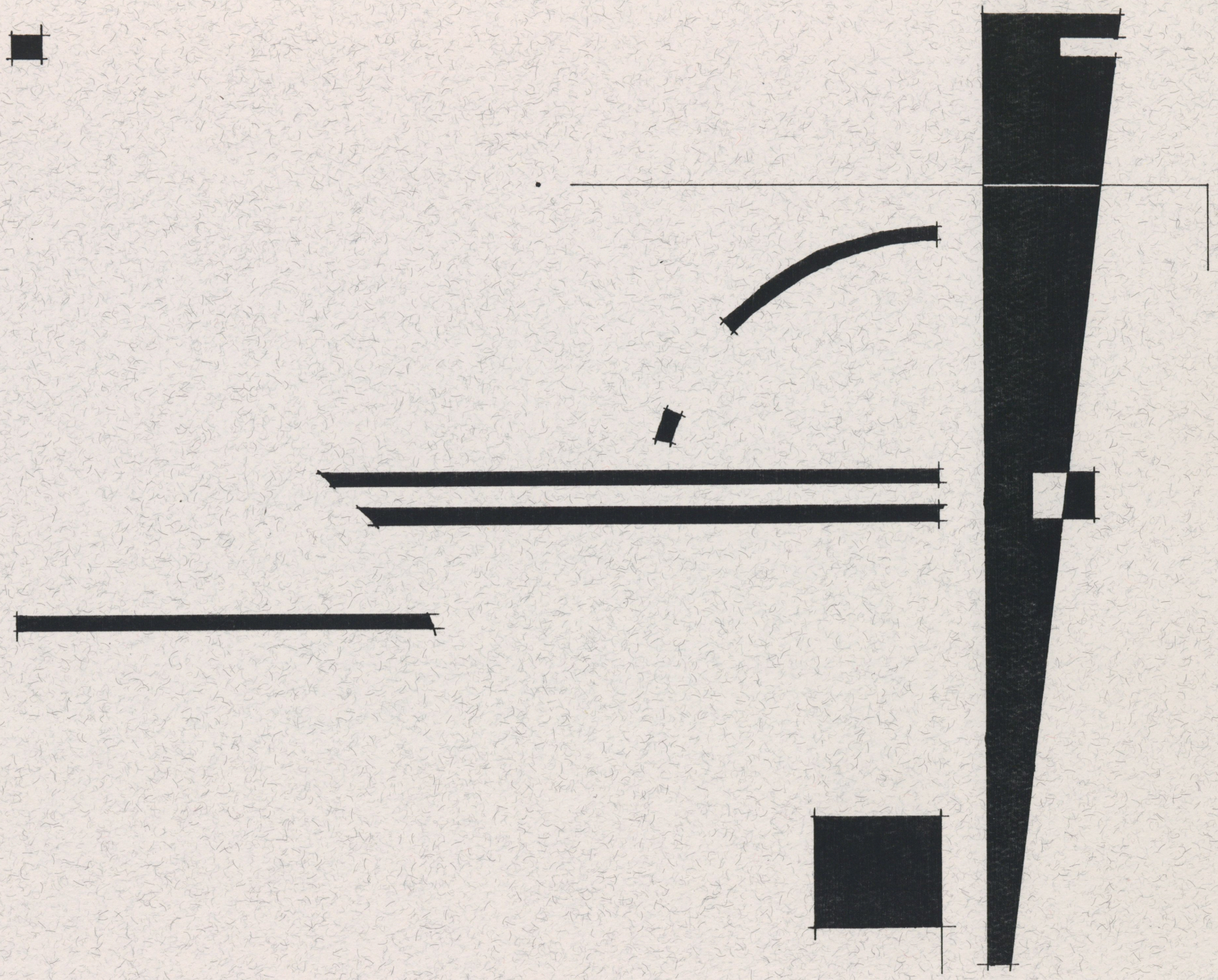
The architecture must serve its function to the user.

A space may feel right, but may not function. If it does not both function and also feel right then all the designer fell short of creating architecture.

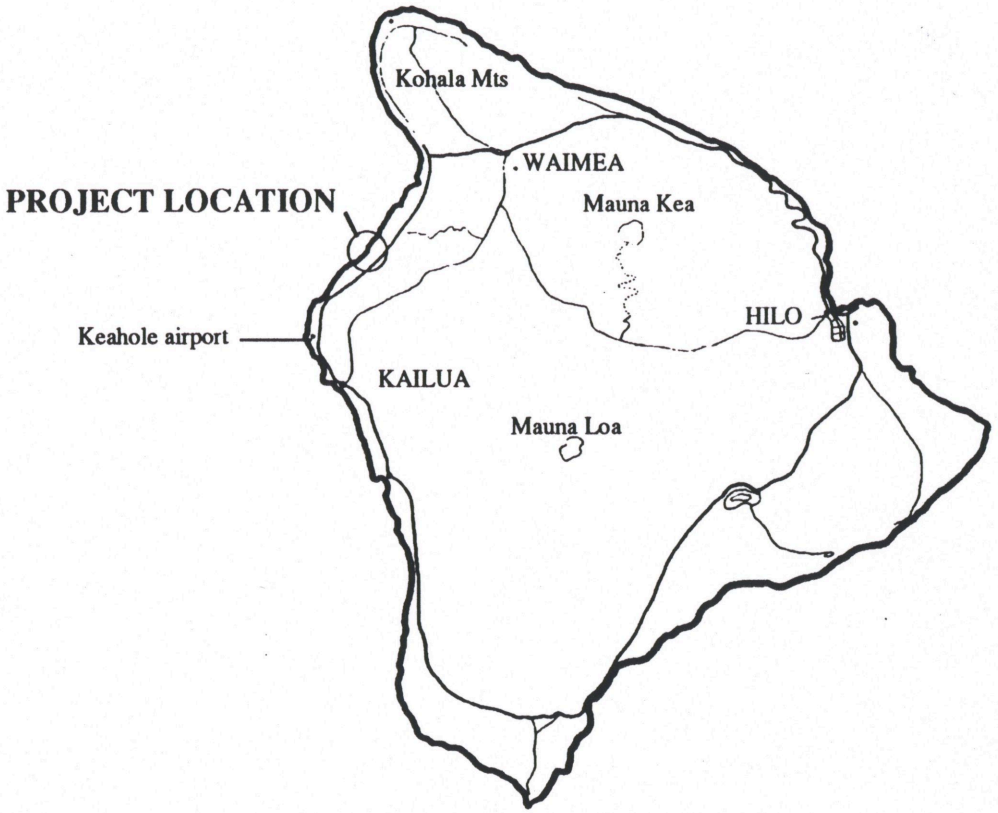


PURPOSE

Anthropomorfic dimensions

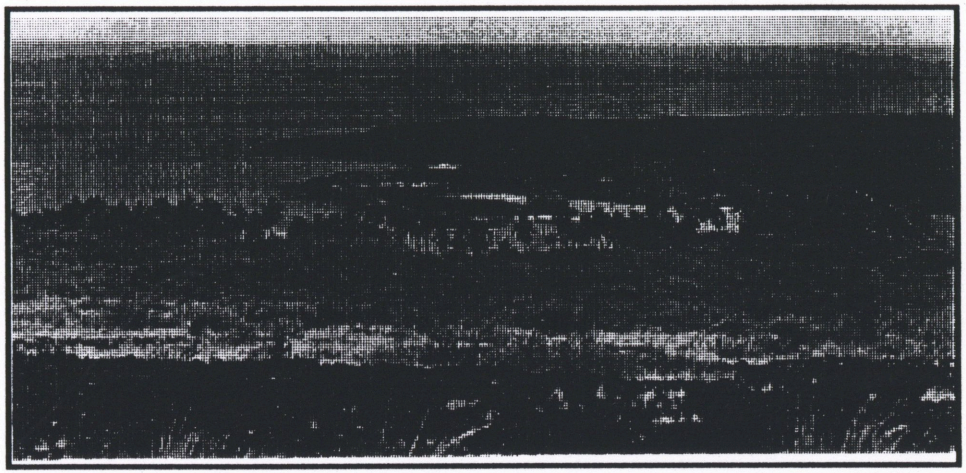


SITE
Location on Island



HAWAII ISLAND

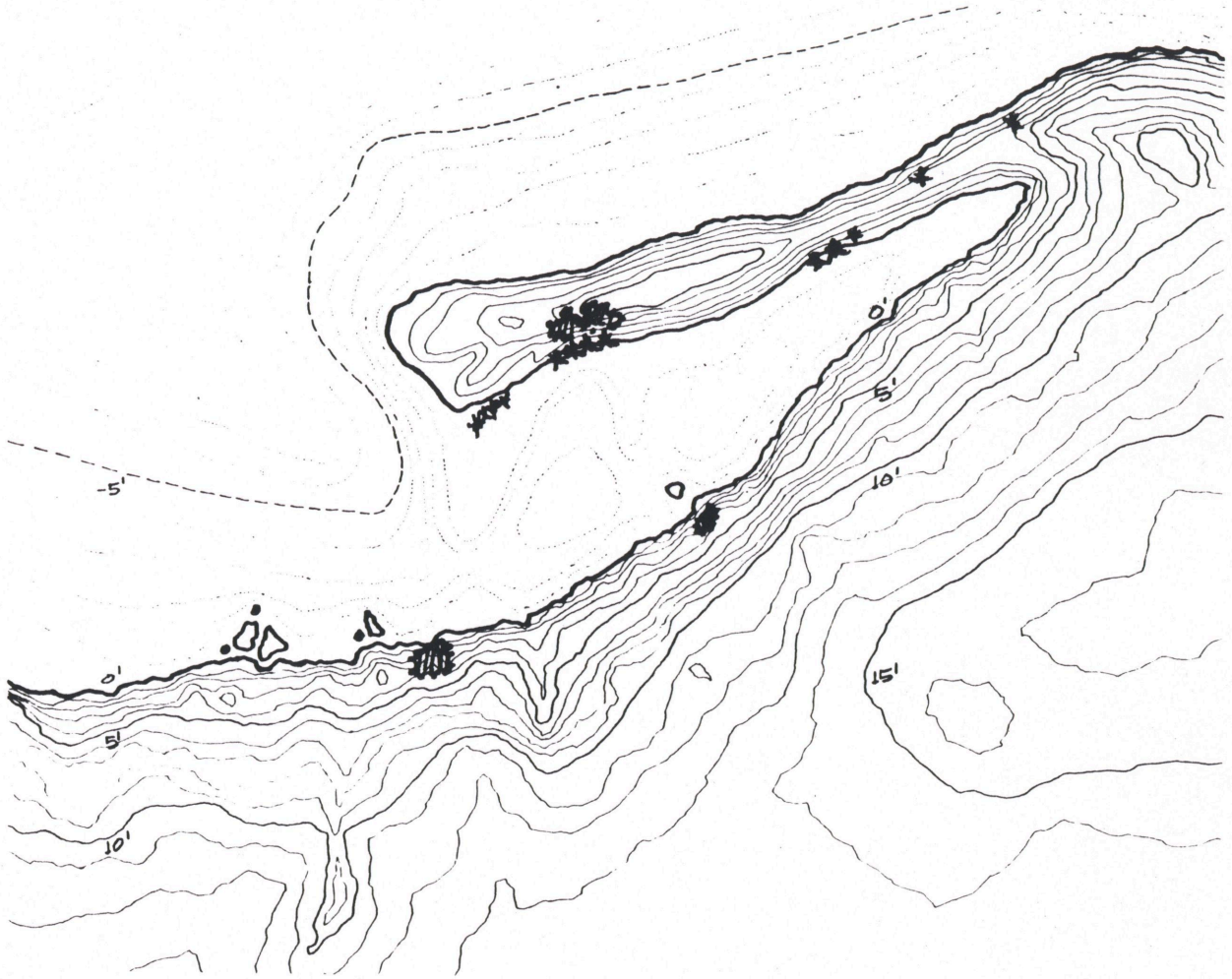
SITE
View from highway



SITE

The view from the highway looking north shows a lush pocket of tropical planting circled by a dark black lava flow. The site to be developed sits mainly on this lava flow and will require much sitelandscaping but provides an excellent base for building. The peninsula is mainly composed of a lava rock and black sand base. The bay it encloses contains a black sand bottom and is a shallow depth of three to six feet. This would need to be dredged for any boat use. The ocean side of the peninsula serves as a refuge and feeding area for many varieties of tropical fish but is too rocky for people access. Removing some of the large polished rocks would allow pedestrian access without disturbing the fish habitat and losing the natural amenity. More palm trees and vegitation may want to be introduced to reduce the heat. Lava rock can become too hot to touch without some shading. Golf courses have been used north of this site at various other larger scale resorts to reduce the amount of exposed lava as well as to provide recreation. Overall this is a very visable and attractive site for a retreat.

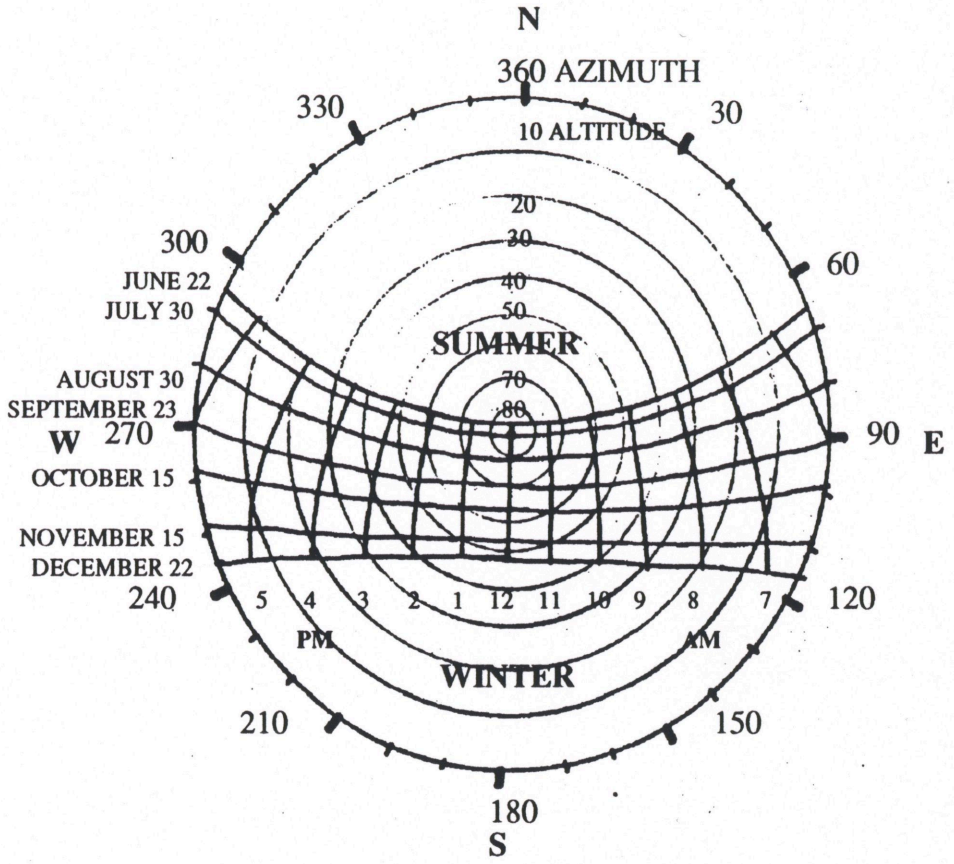
SITE
Site Map with Topography



NORTH

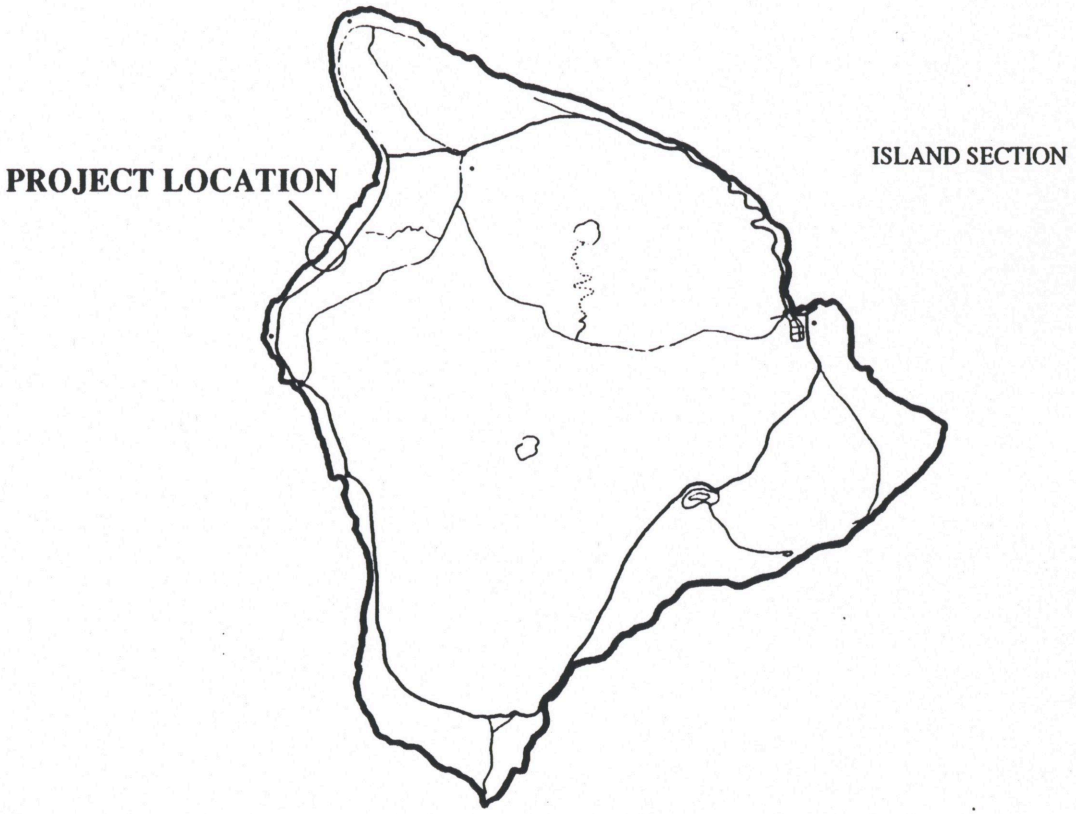
1" ≐ 120'

SITE PLAN



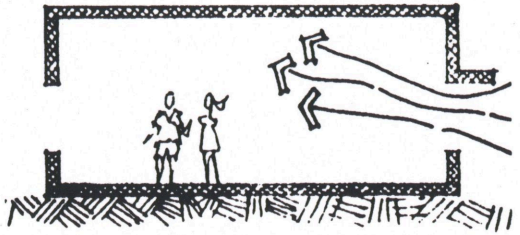
SUN PATH CHART

20* - 0" LATITUDE

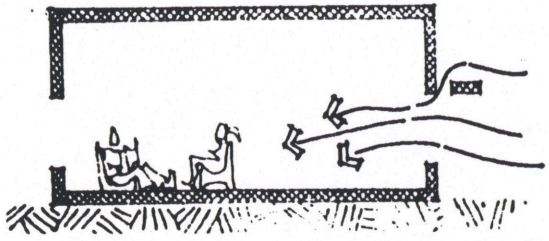


ISLAND WIND PATTERNS

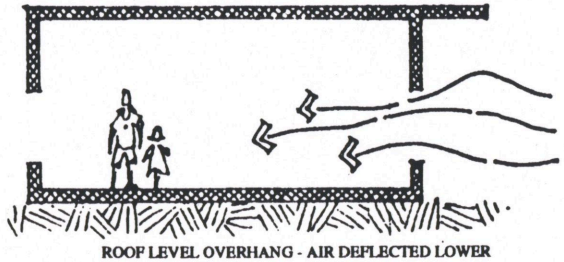
NATURAL FORCES
Climate Implications
Cooling methods with built form



EYEBROW ORVERHANG - AIR MOVES UPWARD

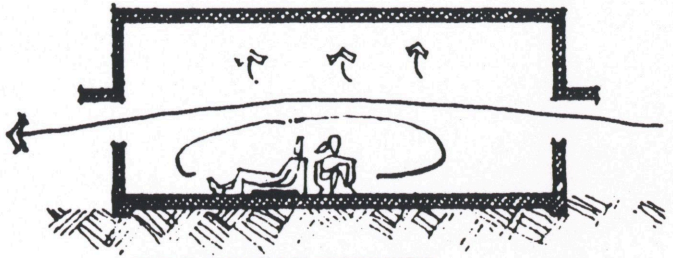


SLOT OR LOUVER OVERHANG - AIR DEFLECTED LOWER



ROOF LEVEL OVERHANG - AIR DEFLECTED LOWER

OVERHANGS



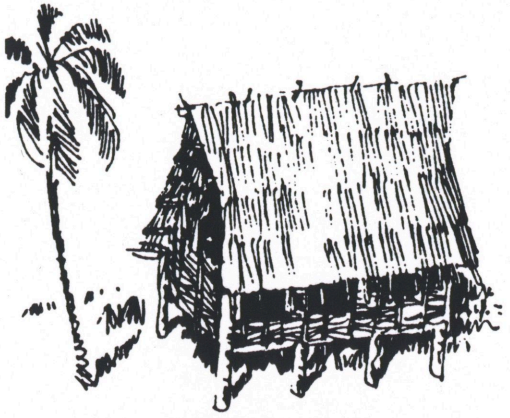
HOT AIR IS UNABLE TO BE EXHAUSTED
VENTILATION IS INADEQUATE CREATING
A POCKET OF STALE AIR



HOT AIR IS EXHAUSTED
ADDITIONAL OPENINGS ON LEEWARD
SIDE WILL INCREASE WIND VELOCITY
THROUGH STRUCTURE

OPENINGS

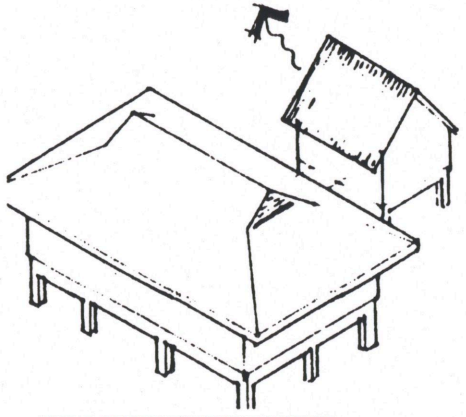
NATURAL FORCES
Climate Implications
Cooling methods with built form



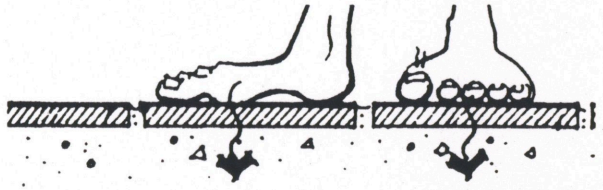
ORIENTATE BUILDINGS TO ACHIEVE
MAXIMUM WIND UTILIZATION



ELEVATED FLOOR PROVIDES BETTER VENTILATION
STEEP ROOFS ALLOWS HEAT TO BE SEPARATED FROM
MAJOR FUNCTIONS

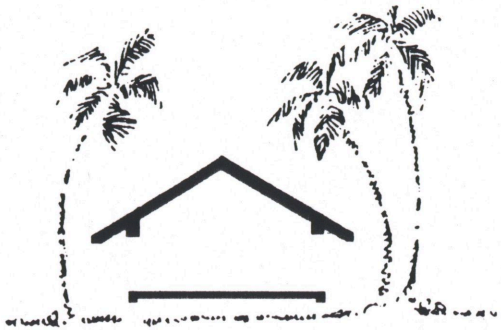


SEPARATE FUNCTIONS THAT CREATE
HEAT FROM THE REST OF THE STRUCTURE
IF POSSIBLE

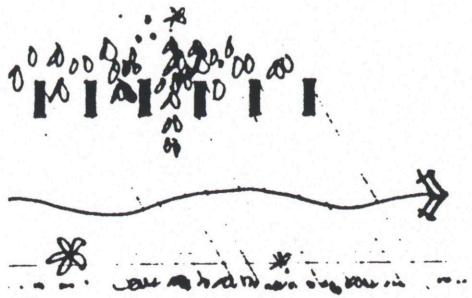


TAKE ADVANTAGE OF CONDUCTION COOLING
METHODS WHERE POSSIBLE

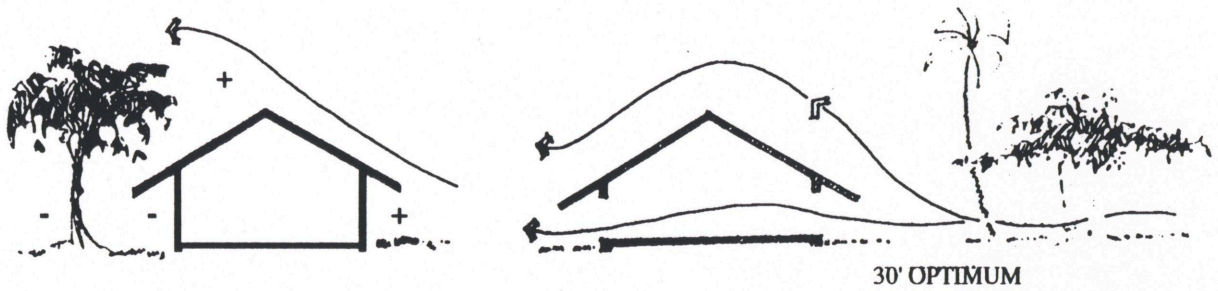
STRUCTURE



HIGH PLANTINGS ON SOUTH SIDE REDUCE ROOF HEAT GAIN



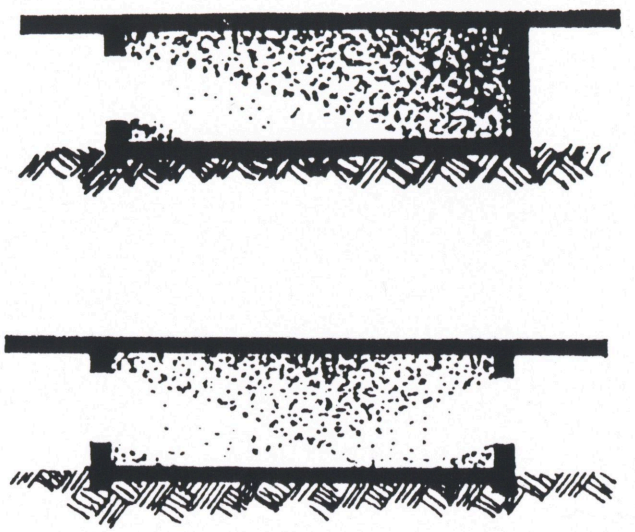
A PLANT COVERED TRELLIS COOLS THE BREEZE AND PROVIDES SHADE



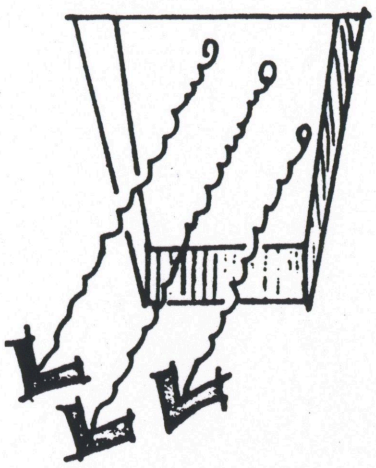
LANDSCAPING CAN INDUCE WIND SPEED AND CHANNEL WIND INTO THE BUILDING

LANDSCAPE

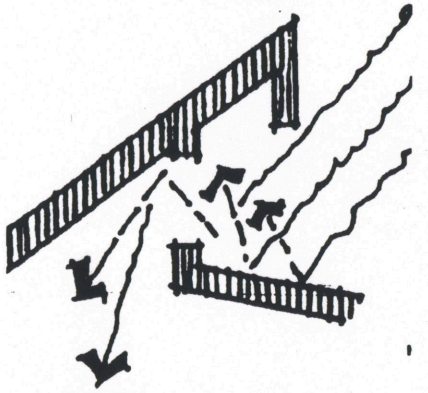
NATURAL FORCES
Climate Implications
Daylighting concerns



WINDOW POSITIONING



SKYLIGHTS MUST BE WELL-PLANNED, SHOULD BE SHADED, CONTAIN INSULATED TRANSLUCENT GLASS, OR CONTAIN SHADING DEVICES WITHIN THE GLASS. SKYLIGHTS ALLOW FOR AN OPERTUNITY TO PROVIDE ADDED VENTILATION



WHERE SKYLIGHTS ARE NOT DESIRED - CLERESTORY LIGHTING CAN PROVIDE DIFFUSED LIGHT WITHOUT DIRECT SUNLIGHT

DAYLIGHTING

You have arrived at the Kona airport in Hawaii and a dark colored man escorts you to a waiting bus. The bus takes you to a large sail boat that you board. It is hot and you can't wait to get that three piece suit off. Everyone is aboard and the boat sets sail. The man gives you a drink and you go into the airconditioned cabin. The boat travels for about an hour when you feel the boat slowwing. You peak your head above deck to see your destination. The place is a secluded resort lush with gardens. After the boat docks the man helps you off the boat welcomes you to the island of Hawaii. You are taken to the retreat center for a brief orientation then escorted to your cabana. You change into some shorts and a shirt, and walk out to the back deck.

The warm sunlight cascades down your face while the smell of tropical plants and salt water float in the air around you. Coconut palms rustle above in the warm tropical breeze and the soothing sound of echoing waves wash away memories of the corporate headaches and urban chaos that haunted you just hours ago. Surrounded by cool Japanese gardens and quiet meditation ponds you experience a calm that you have rarely experienced. Similar cabanas embrace the curving Kiholo coast layered with tropical vegetation and white sand beach. Ahead are three days of study and relaxation— a management seminar at the Kiholo Makai Corporate Retreat.

What I have described is the experience of one visitor's experience as he or she arrives at the retreat. There is more than just one visitor at this retreat so to best provide an efficient retreat identifying these visitor types and any implications that may derive from their needs is essential. Furthermore there must be a support staff that insures proper function of the retreat. The support staff offer implications that are derived from particular needs.

VISITORS

The visitors are a mix of men and women each requiring separate services in a large facility. Open

grates or cobblestone paving patterns may be discouraged due to problems with high heeled shoes. Separate rooms should be provided men and women visitors. A separate sink and bathroom area as well as an extra mirror with electrical outlets outside the bathroom area is encouraged. In an eating establishment, booths should be discouraged to allow for easy seating. Larger towels should be provided as well as robes and shower caps. These visitors may be international so the meal selections should be flexible if not catered to the group. Some guests may be Japanese whose culture believes in cleanliness. The toilet should not be combined with the shower area but enclosed in a separate area or partitioned. A place at the entry of private spaces such as living quarters should be provided for shoe removal and slipper changing. This suggests a seating area and storage.

STAFF

Besides being men and women these individuals are also involved with a large corporation. The positions people may hold range from a manager in training to the president of a firm. For the most part these individuals are upper income motivated people who appreciate quality and luxury. The budget is not a concern when entertaining these people during there stay. These people want to be taken care of and become irritated at inefficiency and lack of professionalism. These people require communication to their companies as well as an update to current events that may affect their business. Possibly a news stand or service any be provided. Phones should not be provided within the living quarters but should be provided in a central location with comfortable seating, a table, and a note pad and pen. All outside calls should be patched through a central phone operator and serve as a message center. The respective spaces as determined required for communication will be serviced by an inter-retreat communication system. Some of the visitors may emphasize physical fitness so an activity center should be provided to satisfy this need. A running/walking path should also be included and integrated within the grounds. Golf is a favorite pastime as well as a form of exercise so a small nine hole course or accessibility to a neighboring golf course should be provided. The stay ranges from 1 1/2 days to 3 days for

meetings, conferences and seminars, and roughly a week for extended stays. Activities outside the retreat will be either provided by staff or limited to extended stay visits only, so visitor transportation will be limited to two four wheel drive vehicles stored with staff vehicles and supplied to visitors upon request and approval. The visitors would be conducting meetings and seminars and would require comfortable seating, variable lighting, audio/ video supplies and equipment, and conference call systems. The meeting rooms must provide acoustical balance and separations and must not distract from the presentations. Limited openings are recommended. Meeting attendance will comprise of an average of 28 people for board meetings, 26 for committee meetings, 22 for marketing meetings, and 92 for conferences, seminars, and workshops. Possibly this could take the form of two differently scaled rooms with the larger providing furniture storage to allow for a multipurpose space. Meetings will occur during the day with break periods. An outside pool, small bar, and seating/shading should be provided. Possibly a low-key recreation room could be provided for poor weather conditions and those who have absorbed too many ultraviolet rays.

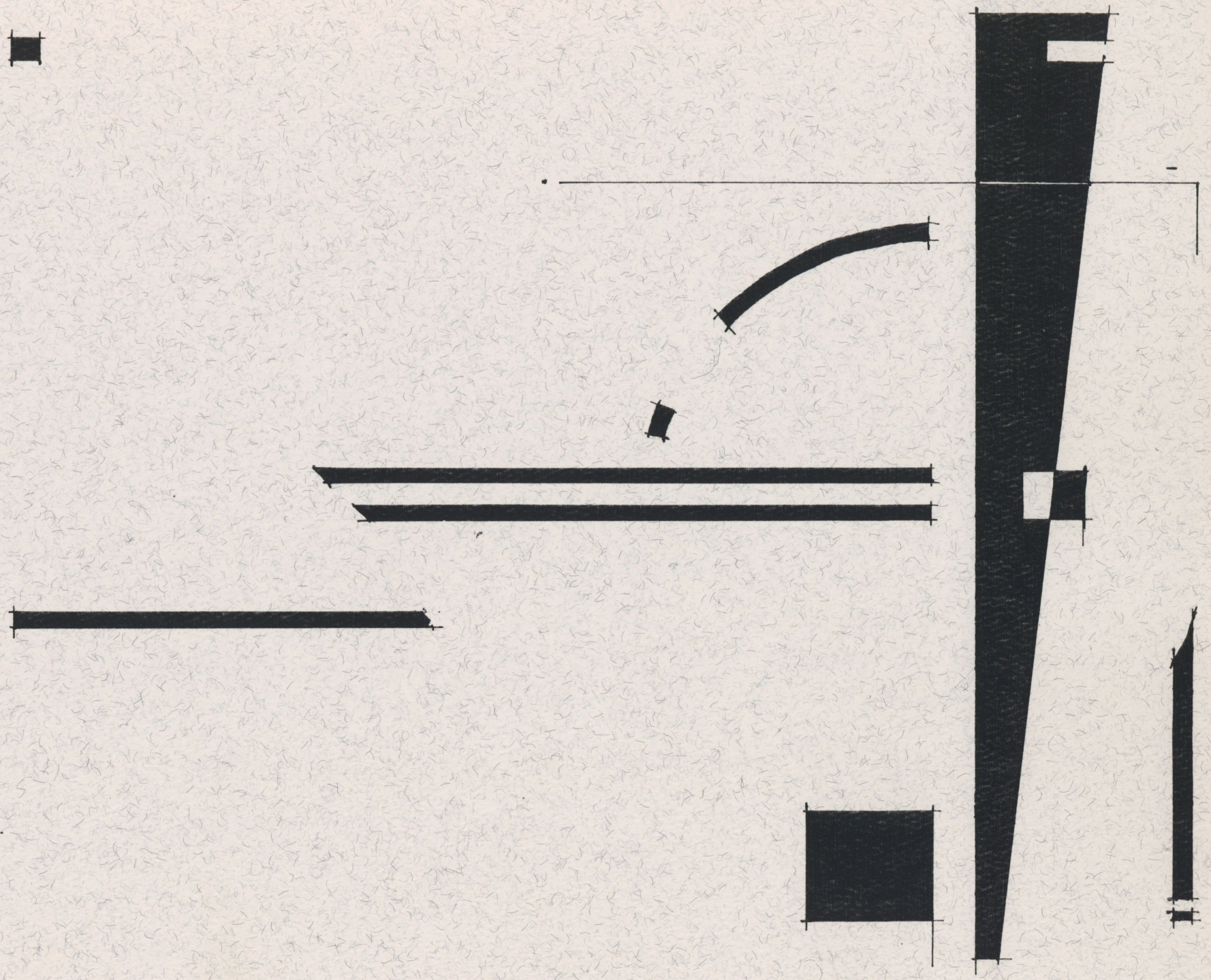
To allow proper operation of the retreat a support staff is required. This staff would include an retreat manager, secretary, accountant, security manager, security personnel, activity manager, two concierges, master chef and three chef aids, janitor and maintenance person, maid, grounds keeper, and two bartenders.

The manager will need housing and will probably have a family since he/she will live at the retreat year-round.

A vehicle will be designated for manager use. The manager will be the only person who will live at the retreat. All other personnel will live 20-25 min. south in Kailua-Kona or at the new subdivision to the north 25-30 min., Waikaloa Estates. The kitchen staff will have food and supplies storage facilities sufficient for two weeks of stores. Anything not available in Kailua will be shipped in via the airport from Honolulu (Oahu), a 10 min drive south. Kitchen staff will transport the goods from the airport in a utility van. The two concierges will have access to two passenger vans for transporting visitors. Any group too large to be transported by the two vans will be sent a bus rented from one of the two large resorts north of the site. Vehicular

transportation would only be used if the weather is poor, the group is too large for the boat escort, and for guests that have problems with sea sickness. All other staff will provide their own transportation and will park in the designated staff parking. Changing rooms, showers, a small kitchen, and lounge will be provided for staff use. A manager's office with space for a secretary and phone switchboard, a security office and land-side entry post, an activity booth/office, maintenance shop, grounds storage, and central laundry service.

The program was developed and extended from these implications derived from the needs of the users.



ZONE

PROGRAM SUMMARY

SQUARE FOOTAGE	SPACE AND DESCRIPTION
7630	RETREAT CENTER
480	POOL AND JACUZZI
1890	MANAGER'S HOUSE
1325 X 20 = 26500	UNIT 1
1750 X 5 = 8750	UNIT 2
2950 X 3 = 8850	UNIT 3
2430	ACTIVITY CENTER
47468	**TOTAL SQUARE FOOTAGE**

ZONE

RETREAT CENTER

SQUARE FOOTAGE	SPACE AND DESCRIPTION
200	**ENTRY** Approach to be a transition from the exterior to the intermediate. Entry to have low light and to convey a passage from intermediate space to interior space. Nature elements should be carried allong the entry procession to the interior.
900	**LOBBY** Should display a soft light filtering down from above. Should serve to draw the user into the innermost garden, quiet, containing a view of the mountain as well as the ocean i f possible. Open to nature. Seating coves. Landscape lights. Water feature. Ceremonial.
40	**CHECK-IN** Should be readily visible and well lit.
600	**GIFT SHOP** Make more visible to those leaving than entering. Contains some retreat memorabilia but mainly serves as a convenience store and high priced gallery.
1500	**MEETING HALL** Various lighting combinations, designed with sound video projection system. Flexibility. limit exterior view on the ocean. Hall may be devided into two parts. Storage for seating. Audio/visual control booth.
300	**MEETING ROOM** Same as above but smaller scale and limited seating with a grand table. Seats 12-18.
300	**RESTARAUNT** **KITCHEN** Should be able to see cooks cook. Bar style grill with master chef at bar. Clean image. Emphasis on seafood and oriental foods. Limited traditional food available.
1100	**DINING** Nautical theme. Low lighting with bar grill highlighted. Screen from bar. Open air by the sea if possible. Sounds of gentle waves. Provide canopy for rain protection. Take advantage of lighthouse view and setting sun to the north-westand west. Table lighting.
900	**BAR** Low lighting at night to emphasize exterior. Split level to allow two types of seating at bar. Water view with protection against storms. Use daylighting to reduce glare of the bright sun. Nautical theme to match restaraunt character.

SQUARE FOOTAGE	SPACE AND DESCRIPTION
	STORAGE
75	COLD
	To contain perishable foods other than beverages.
75	DRY
	To contain all dry goods, canned goods, kitchen and bar supplies
75	BEVERAGE
	To contain all non-alchoholic beverages.
40	LINEN
	To contain all napkins, placemats, tablecloths, dish towels, aprons, hats, and uniforms.
50	CHINA
	To contain all china, glasses, place settings, table ornament and candels
50	LIQUOR
	To contain all alcoholic beverages and a wine celler
25	SAFE
	To contain retreat emergency funds, valuables, and service guests.
	STAFF
250	BREAK ROOM
	To provide a place for employees to retreat from the customer. No acsess by customer. Possible outside deck area, wet bar, small kitchen, entertainment center. Well lit to prevent gloominess. Accustical separation. Quality home-like space.
300	MEN'S DRESSING
	Shower, bathroom, and closets for storage. Prep-room.
300	WOMENS DRESSING
	Shower, bathroom, and closets for storage. Prep-room.
150	LAUNDRY
	Area where all kitchen and bed linen washing occurs. Counter space required. Laundry bin storage area.

ZONE

RETREAT CENTER

SQUARE FOOTAGE	SPACE AND DESCRIPTION
100	JANITOR Cleaning supplies, cleaning equipment, and toiletries.
200	GARDENER STORAGE Gardening equipment, mowers, fertilizers, etc.
100	GARBAGE STORAGE A well sealed and ventilated room to prevent bug buildup. Trash compactor. Site down wind and separate.
7630	

ZONE

POOL AND JACUZZI

SQUARE FOOTAGE	SPACE AND DESCRIPTION
300	MECHANICAL ROOM/ SUPPLY ROOM To house all mechanical equipment riquired to maintain and operate pool and jacuzzi, as well as basic supplies needed for the outdoor bar. To store poolside equipment when retreat is not in use.
80	OUTDOOR BAR A small poolside bar to serve pool patrons. Should maintain an open feeling and be lit for night use. Should extend the image of the inside retreat bar.
50	MEN'S ROOM To service pool and jacuzzi patrons. Provide daylighting as well as night lighting. Should be well lit and easily cleaned
50	WOMEN'S ROOM Same as above.
480	

ZONE	MANAGER'S HOUSE

SQUARE FOOTAGE	SPACE AND DESCRIPTION
400	2 BEDROOMS
80	BATHROOM
150	KITCHEN
20	CLOSET
300	OFFICE
60	LAUNDRY
200	STORAGE
520	GARAGE
80	SHOP
80	PANTRY
1890	

ZONE	UNIT 1

SQUARE FOOTAGE	SPACE AND DESCRIPTION
400	2 BEDROOMS
150	KITCHEN
80	PANTRY
375	LIVINGROOM
200	DINING ROOM
40	CLOSETS
80	BATHROOM
1325	

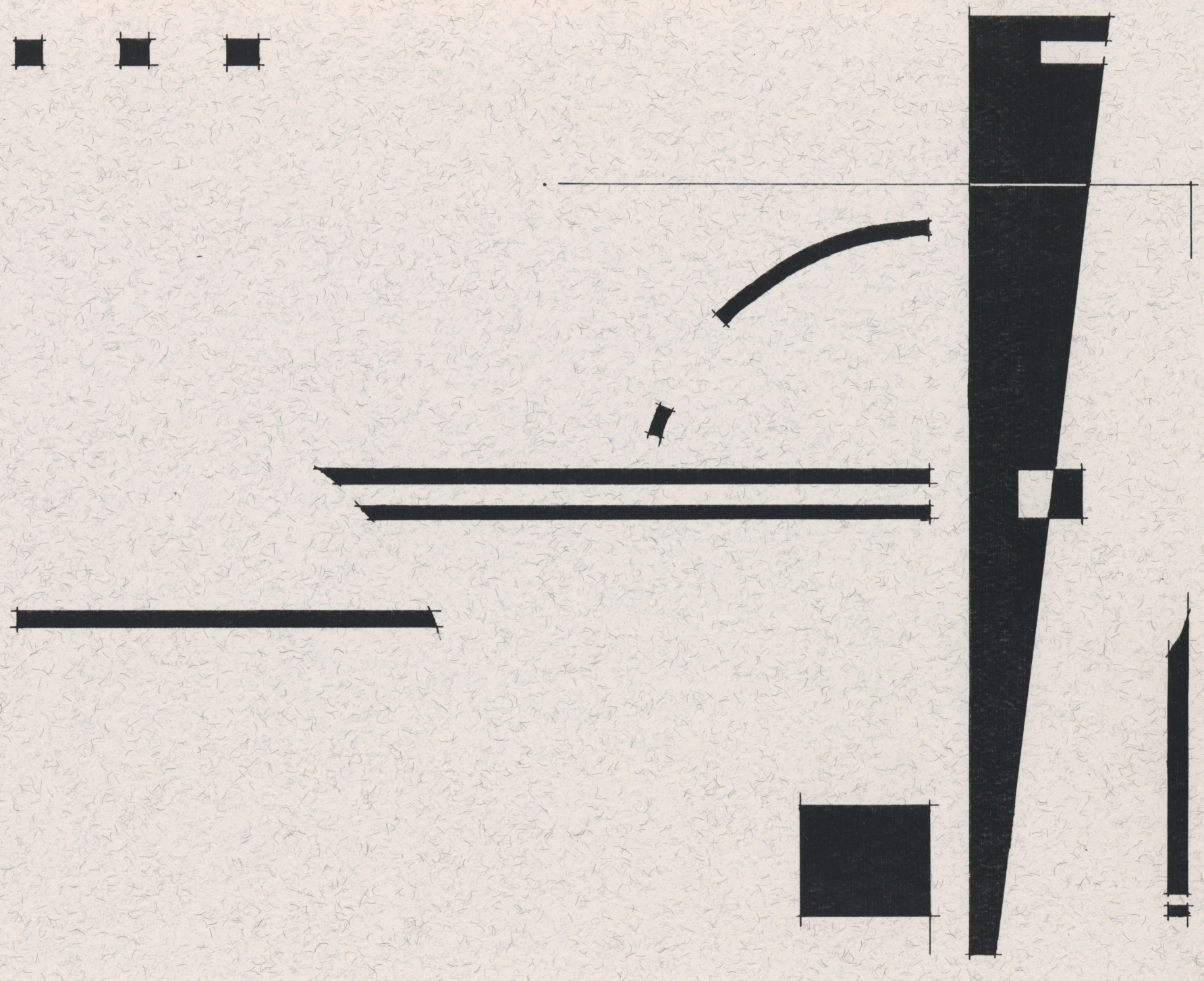
ZONE	UNIT 2

SQUARE FOOTAGE	SPACE AND DESCRIPTION
600	3 BEDROOMS
160	2 BATHROOMS
150	KITCHEN
80	PANTRY
500	LIVINGROOM
60	3 CLOSETS
200	DINING ROOM
1750	

ZONE	UNIT 3

SQUARE FOOTAGE	SPACE AND DESCRIPTION
1000	5 BEDROOMS
240	3 BATHROOMS
300	1 KITCHENS
160	PANTRY
750	1 LIVINGROOM
100	5 CLOSETS
400	DINING ROOM
2950	

ZONE	ACTIVITY CENTER
SQUARE FOOTAGE	**SPACE AND DESCRIPTION**
150	ACTIVITY OFFICE
600	WEIGHT ROOM
	STORAGE
80	SUPPLIES
1300	BOAT
300	DOCK
2430	



7 DESIGN DEVELOPMENT

During the course of thesis 2 my process changed. Due to the time consuming nature of designing entirely in perspective, I investigated alternate methods of design. These methods included perspective sketch to plan, elevation to plan, axonometric design, and study model design. The process that worked best and most suited to oriental theory was the use of an initial sketch to capture the quality of the space, then using a study model to define the rough space, with the plan and elevations derived from the study model.

The program was original set to incompass a series of dwelling units and a single structure defining the center core. I created a single cabana unit to show an example of one way to incorporate oriental theory in designing a small unit. It would be appropriate to have designed a series of units rather than only having one unit type but time did not allow. The cabana emphasizes interior space defined by form, simplication, implication of inside/outside relationship, and oriental zoning on a small scale. The central core broke down into a cluster of buildings to emphasize the point of exterior space defined by form. This cluster also applies the same principles of oriental theory to a larger scale but I feel was less successful. The macro scale was developed to show how large scale planning could follow these principles. The macro scale was least developed and requires more design, while I feel the cabana successfully exemplifies the principles of oriental theory under investigation.

REVISED PROGRAM	**59716 S.F.**
ADMINISTRATION	**2056 S.F.**
Retreat manager office	150 S. F.
Cashier	120
Safe	20
Security	120
Copy room	32
Secretary	120
Lobby	1078
Main desk	196
Phones	140
Men's room	40
Women's room	40
RESTAURANT / BAR	**3940 S. F.**
Kitchen / storage	1300 S. F.
Dining	1800
Lounge	320
Bar	2000
Men's room	160
Women's room	160

MEETING HALL	**3248 S. F.**
Meeting room	2760 S. F.
Storage/ mechanical	220
Storage	60
Men's room	104
Women's room	104
SEMINAR HALL	**460 S. F. x 3= 1380 S. F.**
Seminar room with wet bar	325
Projector room	60
Bathroom	30
Storage	45
CABANA	**1360 S. F. x 34 = 46240 S. F.**
Kitchen	176 S.F.
Livingroom	408
Bathroom	30
Bedroom 1	170
Bathroom 1	92
Bedroom 2	165
Bathroom 2	90
Bedroom 3	165
Bathroom 3	54
Mechanical	10

ACTIVITY CENTER		**2630 S.F.**
Office		150 S. F.
Weight room		600
Bar/lounge		500
Storage		80
Boat storage		1300
STAFF HALL		**1420 S.F.**
Lounge		400 S.F.
Men's dressing with lockers and showers		350
Women's dressing with lockers and showers		350
Men's room		160
Women's room		160
SERVICE HALL		**1350 S. F.**
Laundry		300 S. F.
Shop		200
Loading dock		250
Storage		600
GOLF CART STORAGE		**700 S. F.**
PARKING		**48000 S.F.**
Staff	(30 stalls x 300)	9000 S.F.
Vallet	(130 stalls x 300)	39000 S.F.

MONTANA STATE UNIVERSITY LIBRARIES
3 1762 10094317 2