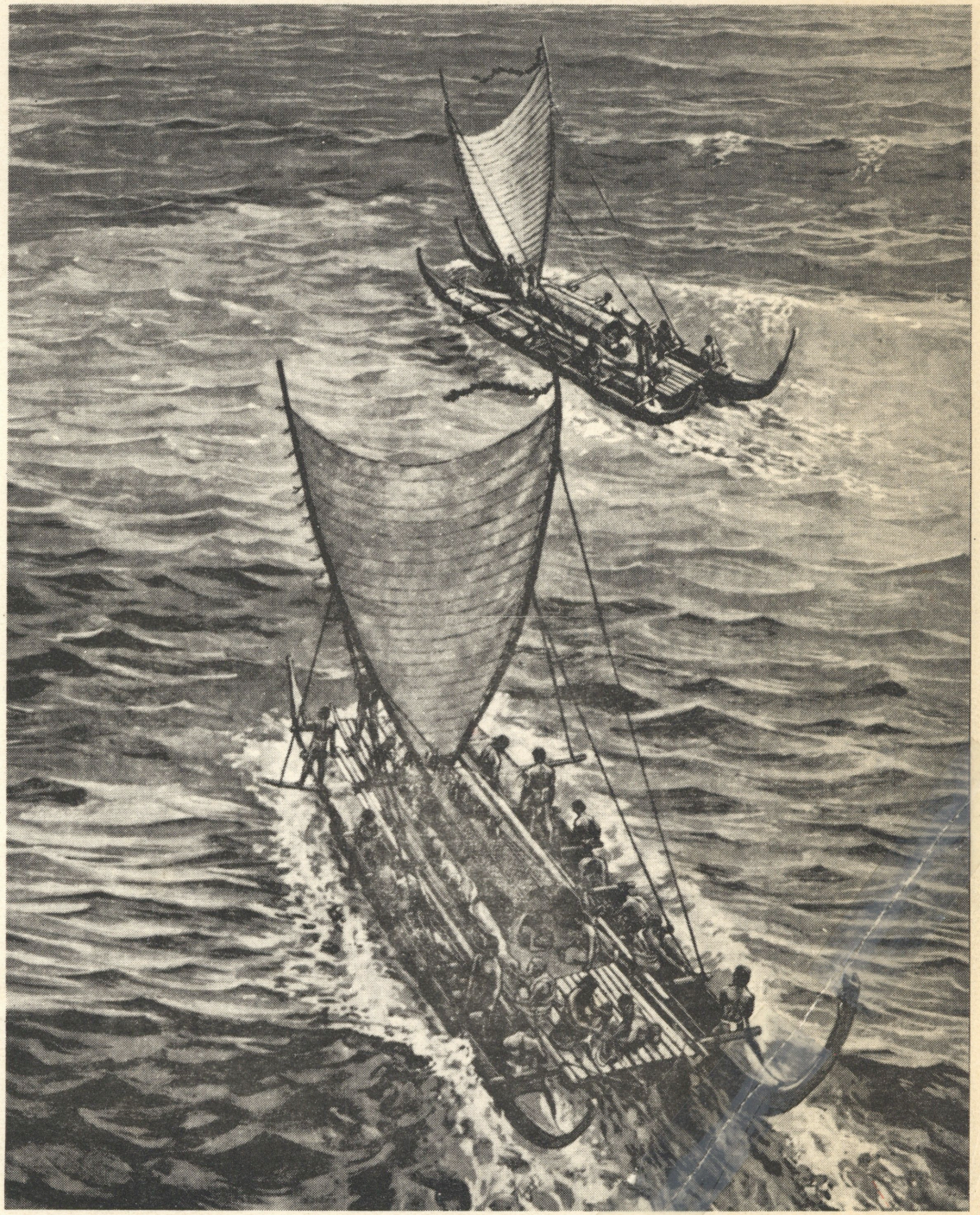
A Cultural and Recreational Center for the West Hawaii Region of Kona



by Berry Yamashita

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A Cultural and Recreational Center for the West Hawaii Region of Kona :

a study involving the relationship between the aspect of culture and the design of public oriented spaces

by Berry Yamashita

A thesis submitted in partial fulfillment
of the requirements for the degree

of

BACHELOR OF ARCHITECTURE

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Bozeman, Montana
June, 1980

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Thesis Statement

The primary goal in planning and developing public oriented spaces is to respect the culture of the people for whom the space is designed, and to design under the influence of that particular culture.

Dedication

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I wish to dedicate this thesis to my mother, Fujino Yamashita, for without her understanding and whole-hearted support, this thesis undertaking would not have been possible. Her generosity, patience and encouragement will be remembered always. My appreciation for her support cannot be fully expressed by this mere ornamented thank you, but it is a beginning.

Also to my close friends which I have met in Montana, without them life would be meaningless. The "Aloha spirit" does not exist only in Hawaii, for in my four years of existence here I have found out that it also exists in wonderful Montana.

Table of Contents

Introduction	1
Philosophy: form through culture	3
History: a brief overlook at Hawaii	12
Ancient Hawaiian Culture	15
Site Analysis	23
Programming	28
Design Process: preliminaries	36
Design	44
Appendix	52
Bibliography and Credits	53

Introduction

Since cultures change with time, building forms and environments of that particular culture also change with respect to time. In respect to architecture, the designer must be sensitive and knowledgeable about that certain culture before undertaking a project which deals with a theme of historical precedence. The designer must acquire enough information about that culture to make both objective and subjective decisions relating to the subject matter.

In this case, the subject matter is culture and the many definitions which are derived from various fields of study. Most of the accepted definitions are related to anthropology, the study which seems to be the most logical of fields for this type of study. For example, the American Heritage Dictionary defines culture as "The totality of socially transmitted behavior patterns, arts, beliefs, institutions, and all other products of human work and thought characteristics of a community or population".1 An anthropologist by the name of John J. Honigmann defines culture as "a way of life belonging to a designated aggregate of people, designating man-made artifacts, activities people perform, and ideas and feelings".2 Amos Rapaport,

one of the most renowned researchers on culture and the built environment defines culture as "a group of people who share a world view, beliefs, values, etc. which are learned and transmitted."3

For the purpose of this thesis project the definition of culture will acquire the essence of the definition by Rapaport because of its relationship to beliefs and values being "learned and transmitted".4 The essence of culture is in the procedural process of attaining knowledge of values and beliefs. Therefore the definition of culture by Rapaport will be used in context to this thesis project.

The term public oriented spaces will be used in reference to the definition supplied by the American Heritage Dictionary which is spaces that are "maintained for and used by the people or community".5 Also, a clause by the committee for the State Capitol building in Hawaii will strongly be considered because of its emphasis on designing public buildings that are sympathetic towards culture. The clause supplied by the committee for a new state capitol reads, "To the sensitive and imaginative designer, the commission will be an invitation to give serious study to local conditions of climate and site, to understand and sympathize with local customs and people, and to grasp the historical meaning of the environment in which the new building must be set."6 With this clause in mind the goals for this thesis project will be based on trying to create a public facility which will enhance the historical meaning of the site and its region.

Philosophy: form through culture

Man's cherished forms are derived from cultural ideals, ideals synthesized from beliefs relating back to that particular civilization's lifestyle. His system of dealing with the elements of form (space, mass, surface) is due to the strong belief in some cosmic order transplanted through that civilization's existence. The idea of relating built environment to the existing natural environment comes about through the development of "choice". Form is generated through choice, a derivative end of a culture's activities, lifestyles and values.

A person's lifestyle is controlled by his activities and through these activities a person formulates a pattern in which he does things. He creates a patterned value system consisting of two decisive conclusions of opposites, a right and a wrong, or more directly the concept of Yin and Yang. Man's system of memory enables him to develop a system of choice, which then leads to a lifestyle and the forming of a culture. Activities are the primary and specific aspects of culture and by these activities, man has created his cherished built forms. He has also placed certain values on activities which eventually teach him to be opinionated toward other entities, creating

a regulated foundation used in observing and judging the world around him.

Activities are the primary elements of culture and primitive civilizations develop their activities through religious satisfaction. These civilizations believed that life was controlled by the cosmos and developed activities, which in essence, evolved from religious related rituals. Many primitive forms were direct influences of religious relics and ritual practices.

The Great Pyramids of Egypt and the Ziggurats of Ur were forms symbolic of honor toward the dieties. The Ziggurats of Ur served its people as temples and lookouts and still maintained a high degree of symbolism, as no one could gain access on to a Ziggurat unless he was the ruler. It was believed by the culture that the Ziggurats were the linking elements which link man and god.7 The Egyptian Pyramids were sanctuaries for the departed royalty and this form was believed to direct the spirit of the ruler toward the sanctions of the gods. These forms were symbolically powerful and evolved through the interjection of religious views into an existing lifestyle.

As man evolved through time, his building forms had developed to a higher more technical attitude, but the dominant features of religion and symbolism were still evident. Idols of gods were placed on pedestals and temples were raised on platforms signifying their importance and value to its people. During this period, the new culture was the result of changing activities, lifestyles, and choice criteria of a certain civilization.

A major change in lifestyle and activities during the industrial age led to a new culture, one which was able to cope with the changes due to the technological shock. This kind of cultural shock changed the attitudes of the people in general, and organized a new culture based on machined products and technological processes. New values originating during this period affected the concept of choice in such a way as to rearrange the goals and perceivability of the world views so as to create a new culture.

The introduction of the automobile was a significant factor in deciding the outcome of the built environment. The industrial revolu-

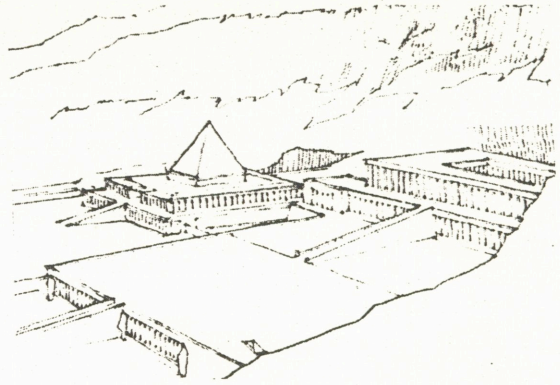


Fig. 1 Senmut Der el Bahari, Thebes, Temple of Queen Hatshepsut, 1511-1480 B.C.

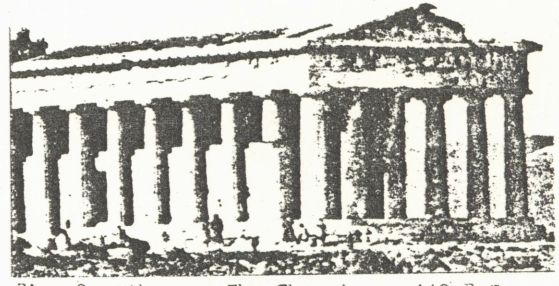


Fig. 2 Athens, The Theseion, 449 B.C.

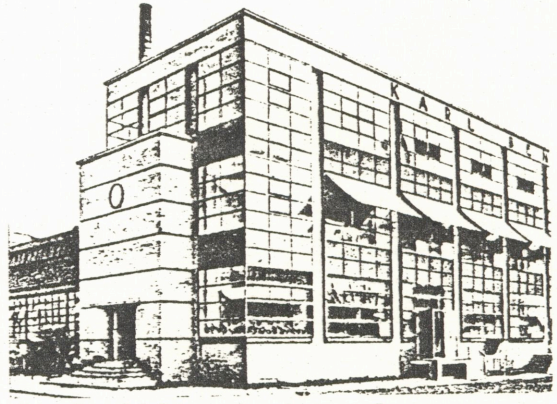


Fig. 3 Alfeld an der leine, Faguswerke, 1911.

tion led to built forms which conformed to the needs of the automobile society. Eventually the automobile became a symbol of prestige and established the average man's ultimate goal being "two cars in every garage." The importance of the automobile is indicated by the drastic changes in the built environment as suburban shopping centers and malls began attracting customers due to their adequate supply of parking. The customers, on the other hand, accepted the implied invitation to shop there for their convenience and ease.

In the residential sector, the automobile is treated as a family member and is accommodated with its own shelter. When families grow, the need for another car is usually unavoidable and brings the need for more space to house the new addition to the household. Value placed on the automobile has become so important that the average three bedroom house consists of garage area which is about a third the area required for the residence. The cultures created by the dominating era of the automobile has taken on a fast paced lifestyle, leading to individualism and people becoming impersonal.

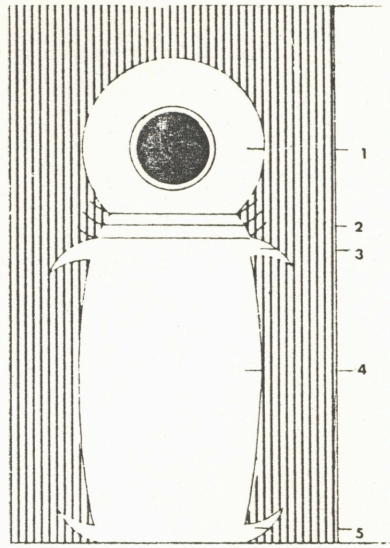


Fig. 4 Cameroon, Fali granary with parts depicting 1)head, 2)neck, 3) arms, 4)trunk, 5)feet.

The day to day lifestyle of a particular civilization also affects the generation of building form because "lifestyle" consists of manners, rules, choice, and role identification as elements which distinguish a relationship between man and built environment. Current influences manipulate the lifestyle of a certain civilization and a change in that particular lifestyle automatically transforms into a new culture. The changes in lifestyles are also influenced by geographic restraints as different civilizations isolate or expand their scope of self perception in relation to the world around them. For example, form generation cannot be predicted due to geographic regions and climatic conditions. Women actually do not dress practically in the middle east countries, instead they are bound to their dress type because of religious laws which forbids them to expose their bodies. In other words, lifestyles are dependent on values shared by that particular culture and these values were derived from judgement of activities relating to that culture.

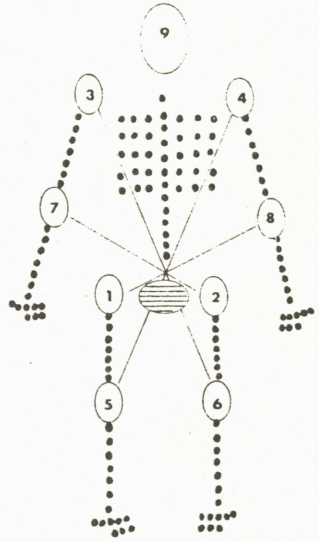


Fig. 5 Mali, Dogan organizational principle of society; 1-4)four primodial male ancestors, 5-8)four primodial female ancestors, 9)territorial order.

Symbols are generated from the tradition and values which a culture possesses. "Symbolism is not merely a visual analogy, but is integral with the conceptual idea of the built environment. People do not build symbols, but instead build structures of which symbolism

is the generator and essence."8 The structured use of symbols, combined with shelter elements, create a conceptual framework that leads to the choice of forms by different cultures. These symbols and factors leading to decisions are based on the image which that particular form presents, a meaning of identification which is achieved by meeting three basic criteria:

1) is there a sign or symbol available?
2) is that sign or symbol relaying any message?
3) is that message being interpreted by another person?

If these three basic questions are answered positively a message is relayed and the symbol has served its purpose as a medium of transmitting an idea image. Man symbolizes all experiences, ideas, dreams and later reacts to these symbols as if they were the initial stimuli. It is reflective of a system relating to an image-recall-reaction process which precedes the concept of choice. Symbols play an important role in forming the essence of a culture and serve as a communicative language system adopted by a specific culture. Along with imagery and values, symbols are primary elements which lead to a specific typological building environment. "If the shaping of the built environment is, indeed, related to images, values, and symbols and if the environment acts on people partly through communication and code legibility, then it must be infinitely linked with culture."9 Symbolism must also be looked upon as an entity relating to primitive cultures as well as technological cultures, for "the cultural symbol is not necessarily an aesthetic symbol, nor is the aesthetic symbol necessarily a part of a high culture."10

Along with symbolism, aesthetics seems to have an effect on certain cultural civilizations. Aesthetic values shared by a particular culture tend to be based on previous decisions relating to elements that affect the culture's lifestyle. These elements affecting the values of aesthetic perception are due to the influences of religion, econimics, history, politics, and communication. These issues are conceived, stored, and constantly analyzed in order to have a reference to which one may recall a past stimulation and comparatively make decisive conclusions of the subject's aesthetic qualities. Aesthetic values are dependent upon a culture's view of itself and the compatible elements which surround it as well as aesthetics influences

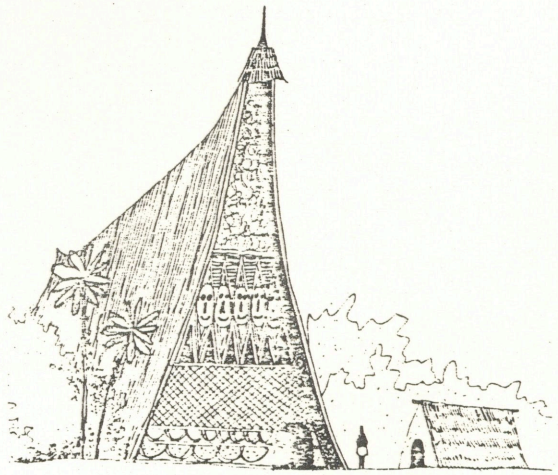


Fig. 6 New Guinea, Men's cerimonial great house and woman's dwelling of the Kalaba tribe.

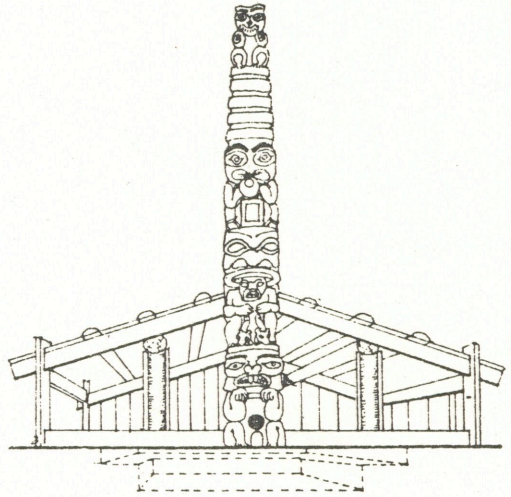


Fig. 7 British Columbia, Haida structural diagram of house with symbolic Totem pole.

activities and lifestyles. Sometimes, after a period of time, certain symbolic ideas generated by an object tend to lose their ability to be understood, but a well organized relation between social and cultural elements will "continue giving expression to its forms."11

Man develops a system of relating and comparing himself in relation to the community and the world surrounding him. He develops reference points and tries to implement himself on the perceived scale of hierarchal existance. For example, his main goals would be to reach an ultimate position in his devised scale of life, which in most cases would be attaining the status of a god or dominant figure. In order to attain his goal man sets certain guidelines or values which must be adhered to in order to suffice the needs of that particular culture. In relation to building form generation, man perceives himself with respect to his relationships with the surrounding environment, guidelines reflecting back to a specific culture's activities and values.

The development of imagery within a culture serves as an important element which leads to form generation of a built environment. Throughout man's existence on the earth, his development of religious traditions and rituals were primary sources of creating images. As stated before, the lifestyles of civilizations are reflective of their activities and serve as one element which organizes form. Images derived from a culture's activities and lifestyle become a setting for form. These images are representations serving as physical documents of that culture's basic ideals and beliefs. In most cases images are communicated as symbols which translate into a story presented in a certain language format. Imagery serves as a recording device, relaying messages and graphically representing the values of a particular culture. Many forms in man's built environment utilize the concept of imagery and express the full meaning behind a dveloped form.

Form generation of a built environment is also affected by economics in that a poverty strickened culture would not have as an elaborate a built environment as compared to a wealthy culture. The poverty strickened culture would be purely functional in developing values for the built form, while a wealthy culture could develop a

built form on an entirely new concept. A wealthy culture would have much more freedom in developing a built environment because of its exposure to new building techniques, materials, and other modifying factors.

The built environment is also affected by the involvement of that culture in any defensive measure. Depending on the ideals, goals, and values of that particular culture, form generation of the built environment will take on a fortress effect or a passive effect. A hostile society involved in countless battles would most likely be in possession of a built environment which took on the concept of security. Whereas a peaceable culture would not need all of the fortification necessary for protection. A built environment utilizes the idea of form generation through defense measures as a secondary element of importance.

Climate can also be classified as a secondary element affecting the forms of a built environment. The effects of climate on a specific environment have been studied extensively and in many cases, have shown to have an influence on form generation on certain built environments. Many primitive cultures have developed their built environment based on the effects from the sun, wind, rain, temperature, and humidity. They have utilized the system of "choice" (relating to culture) and decided to control the effects of the physical environment as compared to meeting the criteria of the culture's activities. In this fashion of designing a built environment the activities of a certain culture are controlled by the climatic conditions, molding its lifestyle around the physical environment patterns. Victor Olgay in "Design With Climate" expresses the importance of designing built environments which are controlled by climatic conditions. He strongly believes that man should design his environment with respect to a specific microclimate which serves as the determining factor towards a culture's built environment. Many cultures have designed their built environment in accordance to their specific microclimate as being the significant element which determines the resulting built environment. For example, people living in colder climates tend to create a built environment that minimizes the effects from the extreme cold weather. This is accomplished by the utilization of design practices such as minimizing the amount of glazing on the

north facade of the building, gaining as much southern exposure as possible to promote heat gain during winter months, and the use of high pitched gable roofs that prevent an over-accumilation of snow.

On the other hand people living in the hot-humid climates tend to build structures that are open and free flowing. This type of building is advantageous to the climatic region because it induces thermal comfort through shading and the introduction of cool breezes. Many cultures have evolved into a built environment that is based primarily on a specific microclimate, but there are still other factors which become much more important when choosing a specific type of built form.

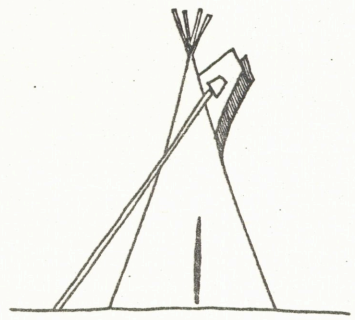


Fig. 8 Teepee, useful for cultures that were nomadic.

Olgay dominates his studies with unbalanced and biased statements that lead to his concept of designing primarily with respect to climatic conditions. The cultural background of a particular civilization outweights climate oriented factors when deciding on a type of built environment. Most primitive cultures design their built environment with respect to religious beliefs because it was believed that man's existence was due to the acts of their ancestrial gods. It was believed by these cultures that climatic conditions were the result of actions showing signs of approval or disapproval by the dieties.

An example which illustrates what was discussed in the previous paragraph is a housing project that was done for the Egyptian government. A western firm was contracted to design a housing complex for the government of Egypt and in doing so the architect had designed a modern complex which proved to be incompatible to the social needs of its users. The use of modern materials and building techniques were acceptable, but the encroachment on the people's sociocultural activities were the downfall for the particular project. One problem, which affected the women in particular, was the installation of piped water into the building. This modern convenience had instigated a revolution among the women of that culture because the traditional practice of getting water from the public well had for centuries been the only time a woman could get out of the house and interact with the others. The voice of disapproval was most loudly heard on this issue because it meant that the only free activity for women in this male dominant society was about to be abolished by a modern fixture

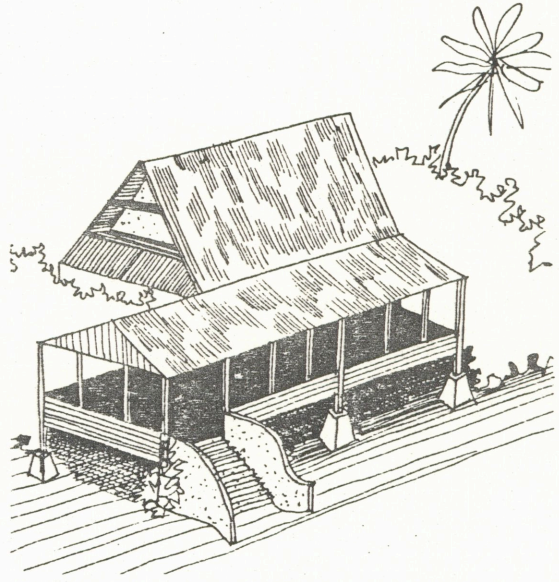


Fig. 9 Malaysia, Malay house with its climatic adaptations.

which some architect had assumed would be a convenience for the user.

Another problem which stemmed from this project was the promotion of isolationism and self-centeredness. In simple terms, the architect was inadvertently molding this culture into a culture that he is familiar with. It is inevitable to "freeze a culture from changes and if so attempted, one may aid in the destruction of that particular culture."12 Therefore, the designer must be sensitive towards the present status of the culture and use extreme caution when introducing modern amenities.

Form generation of built environments are also affected by site and topography, much in the same sense as does climate. For one thing the form of a built environment becomes restrictive when the topography of the site becomes too irratic. Site choice is also influenced by the values a culture possesses, especially a system of values molded by religious and traditional influences. Many primitive cultures obtained sites for their built environment by means of observing and performing ritual ceremonies, while others used other criteria such as climatic conditions, defensive measures, and economic motives. Much of the social factors dealing with site selection are related to transmitted values through generations of people, of that certain culture. In a sense, the effect of a site is cultural rather than physical, reflecting back to cultural ideals and the development of a choice criteria.

Certain factors of form which modify the built environment are materials, new construction techniques, and technology and revolutionary trends toward the built environment. The first factor, materials, affect the built form as do climate and culture, but only as a modifying factor. Throughout history man has created built form that was dependent on available materials. Primitive cultures held religious significance toward chosen materials and creating a built form. Some cultures cerimoniously collect their materials and build their specific structures, following all rituals and insuring proper erection procedures. Indigenous materials are also used frequently to reflect the building's response to regionalism, but with modern methods of transporting materials the problem of introducing new materials into an area has been solved.

Construction methods and techniques also affect the manifestation of a built form. Traditional methods of construction and materials seem to be the major factor in limiting oneself to specific building forms. Primitive tools also affect the outcome of building form because new shapes cannot be accomplished with older, restrictive tools. There is a limit to what primitive construction methods can turn out in relation to form. Also we again see how economics, defense, and politics affect construction.

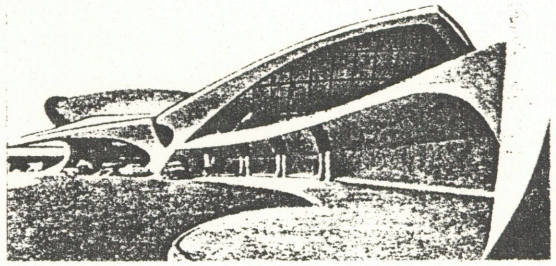


Fig. 10 New York, TWA Building, JFK Airport, 1956-1962.

Technology and trends are elements which help create a new culture, as previously seen in the evolution of cultural determinants and its effects during the industrialization period. Technology and trends introduce new ideas. The main effect of technology is to break isolation barriers of secluded cultures, for without being knowledgeable of new technological innovations and trends a primitive culture would not advance. Technology modifies the forms of built environments and works in conjunction with the concept which was generated through cultural ideas.

This project is not restricted to the notion of designing by culture-specific terms. Instead it serves as an overview to illustrate the importance of relating one's design criteria toward the idea of culture.

Amos Rapaport notes that "cultures change and that to freeze them in space and time (even if that were possible) may be as wrong as to destroy them."13 This project is not intended to freeze cultural change, but instead it is an effort at trying to attain an atmosphere which would serve as an educational environment, an environment where one could feel the restrictions, activities and lifestyles of the ancient Hawaiian culture without risking the negative feelings from the present culture.

History: a brief overlook at hawaii

The ancient Hawaiian culture is a descendant of the Polynesian race, of the South Pacific. Although the Hawaiian Islands were not well populated until 500 A.D., the exploring Polynesians sailed the Pacific and discovered many islands, covering a triangulated area which stretches as far east as Easter Island, south past New Zealand, and as far north as the Hawaiian Islands.

Archeological evidence and many hypotheses lead us to believe that the initial settlers were from the Marquesas and Society Islands. Then contact with Tahiti continued for some time, but later ceased before the discovery of the islands by the Europeans.

The ancient Hawaiian culture adopted the Tahitian language, religious practices, and governmental system and evolved it into a culture of their own. Many traditions and elements of the Polynesian lifestyle were modified or borrowed and carried on. Cultivation of staple food products and raising animals for both food and sacrifice were both practiced, as did skillful craftsmanship with wood, bone, and other available material. Being isolated by their past culture,

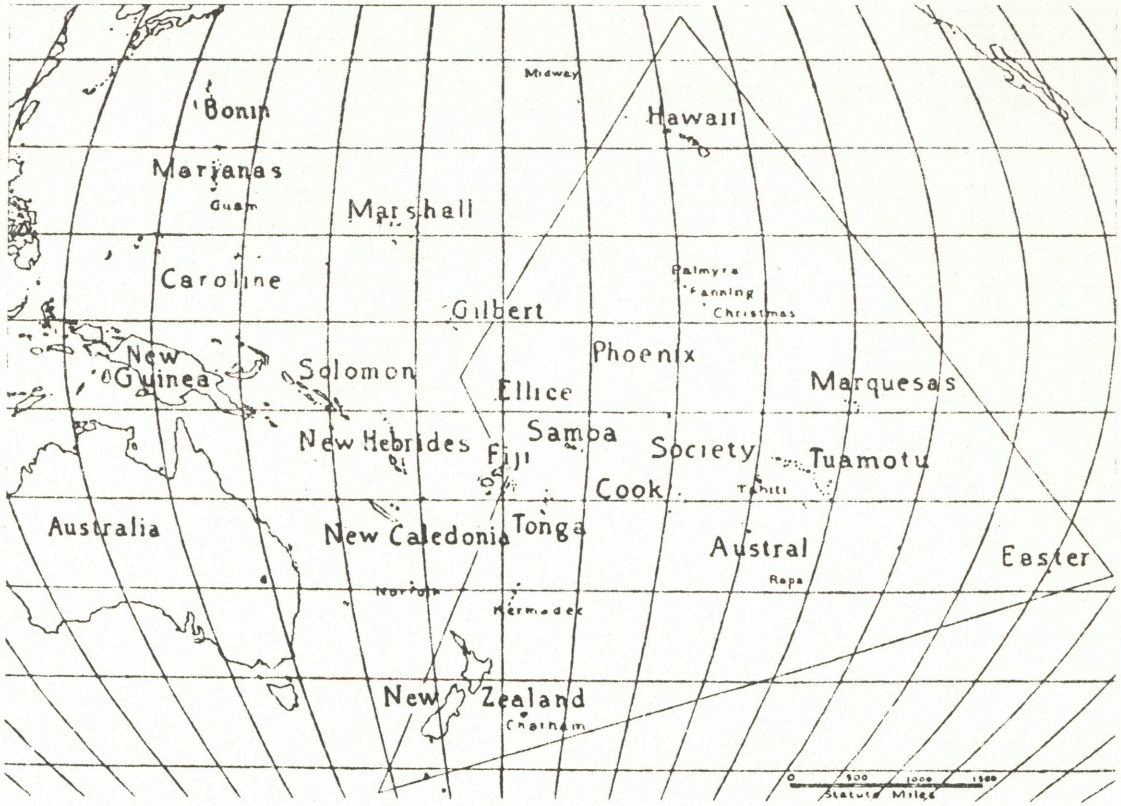


Fig. 11 Boundaries of Polynesia.

the Hawaiians evolved individual styles and aesthetic values which resulted in the creation of sculptures that were boldest and most vigorous of all the Polynesian race.14

In 1778 Captain James Cook arrived on the Island of Hawaii and was mistaken, by the people, for the god Lono (the humane god which cared for crops, health, nutrition and other life sustaining elements). Cook was treated royally by the people until his ship's crew started destroying large sculptural figures of dieties called tikis, and started using them for necessary ship repairs. Cook was later killed furing a scuffle with the islanders and this was all attributed to lack of cultural knowledge by Cook and his crew.

Later during this 1800 period Kamehameha I created an army and conquered all other rulers of the other islands, making him supreme ruler of the Hawaiian Islands. Kamehameha I was well known for his successful efforts at uniting the islands and making it possible for Hawaii to be as it is today. Also during this period was the start of the monarchy. Various family members held the throne until there was a take over of the government system by the white minority, which later totally abolished the monarchy system of government.

As the state became a market for people seeking jobs, immigrants from all over the world started drifting in toward the new job market. Immigrants from the Far East, the United States, and even from Europe. Everyone came looking for work and eventually stayed, becoming the new population of the Hawaiian Islands, a population which motivated many cultural changes. Many compromises had to be developed so the immigrants could communicate with one another. These were the island's work force, the total economic structure of this paradise.

The incoming foreigners enriched Hawaii's economy by introducing such items as iron, cattle, horses, geese, and mangoes. But coming in caontact with the rest of the world had its mixed effects, as the immigrants brought more than just a labor force and new items. They had brought with them such diseases as smallpox, measles, and leprosy, to which the people had to immunity. The net result amounted to a decrease in the native population from about 300,000 in 1778 to about 135,000 in 1819.



Fig. 12 The Alii Kaneena as seen by Capt. Cook and his crew.

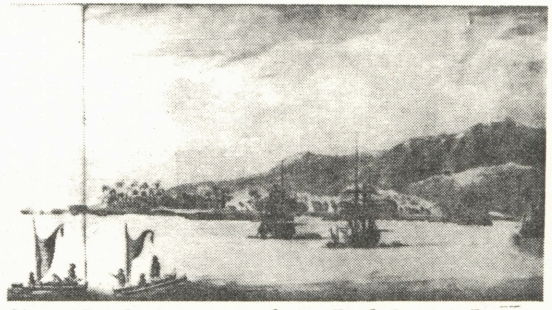


Fig. 13 Cook anchored in Kealakekua Bay.

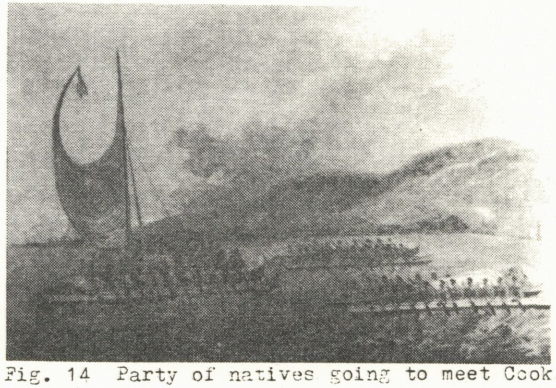


Fig. 14 Party of natives going to meet Cook.

Until the death of Kamehameha III in 1854, the islands were dominated by the American missionaries. These christian missionaries noticed the chance for them to convert many of the local natives into christian followers because of the demoralizing state of being after Kamehameha II abolished the "kapu" system. By 1850 the native population had dwindled to a mere 85,000.

In 1900 President McKinley recognized Hawaii as a territory because of its perceived strategic importance as a mid-Pacific stronghold, a steppingstone which linked North America and Asia. This perceived idea became a truth on December 7, 1941, as the Japanese attacked the U.S. naval base at Pearl Harbor, creating a drastic change affecting the Hawaiian culture.

After the war, Hawaii once again prospered and relied on sugar and pineapple as their main crops to sustain its economy. Later the Hawaiian economy boomed as a third industry entered the economic market. Tourism, now the major industry, had constantly flourished and expanded the income coming into the islands until in 1960 income from tourism had surpassed both incomes from sugar and pineapple. Statehood was finally achieved on August 21, 1959, as President Eisenhower officially announced that Hawaii was to be the Fiftieth State.

Today, Hawaii is considered as the "melting pot" of the Pacific, as people from practically all cultures in the work now reside in this tropical paradise. Culture in Hawaii has changed drastically and today it seems to be the most unique culture in the world. The present Hawaiian culture is distinguishable by the various acitivites involved, activities which come from all other cultures, and shared by everyone. Today's Hawaiian culture consists of values, lifestyles, and activities shared by everyone through inter-racial marriages.

Trying to design, on the basis of my thesis statement, for such a culture would be rather difficult. Therefore, I will concentrate on investigating the relationship of built form and the ancient Hawaiian culture; the activities of the ancient people and their lifestyles which led them to a certain built environment.

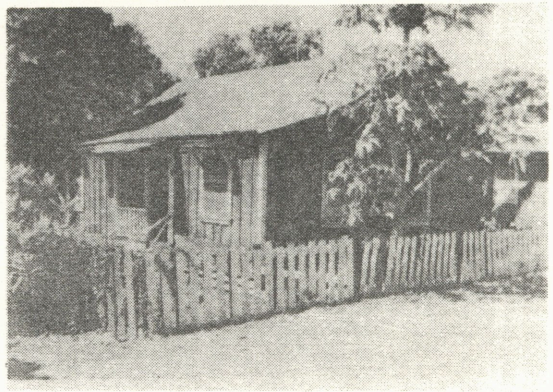


Fig. 15 Residences of the immigrants on the islands.

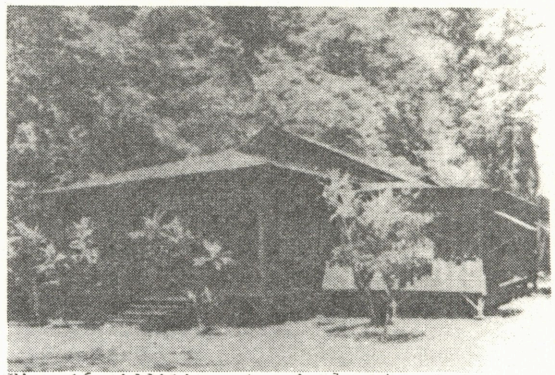


Fig. 16 Additions to simple structures evident in many homes as cultures changed.

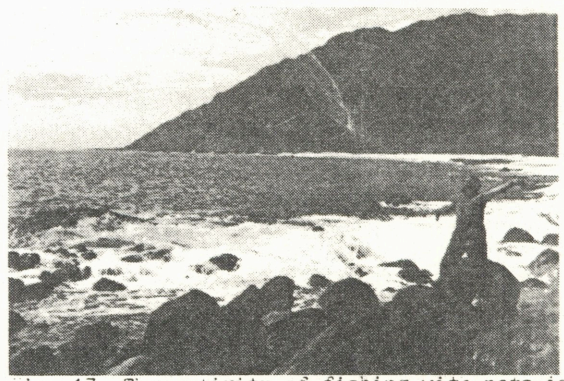


Fig. 17 The activity of fishing with nets is still practiced today, but it is an activity done by all races today.

Ancient Hawaiian Culture

The first settlers responsible for colonizing the Hawaiian Islands brought with them their inherited culture, a culture formulated on religious beliefs and traditional values. Pinpointing the origins of the first settlers is very difficult, but archeologists believe that the first settlers were from Polynesia. Although evidence seem to reinforce this hypothesis, isolation played a major role in deciding what primitive culture influenced the development of the ancient Hawaiian culture. Most of the ancient Hawaiian values and traditions were the result of interventions by Tahiti on isolated islands, resulting in the adoption of the Tahitian language, religious practices, such as temple ceremonies and the Kahuna (Priest) system, and the establishment of political and economic control by sanctioned chiefs. Much of their lifestyle was kept to a minimum because of the similarities in physical environment.

As did their ancestors, the Hawaiian culture regulated itself by adhering to rules set down by religious connotations. Their lifestyles were organized around the concept of the cosmos and every aspect of life was the result of actions taken by the gods. Religion was the formulating component of government, the organizing element

of the household, and the development of form, which in this case includes built form, spatial form, and symbolic form.

The ancient Hawaiians had a traditional belief in a mysterious power called "mana", which can be roughly translated as "a mystical power".15 It was with this mystical power that the alii or ruling class possessed in order to be an effective ruler, a power transmitted through heredity and believed to be the descendant power of their devine ancestor. The concept of mana was protected by a system of forbidden acts called taboos or kapu, a religious law. Anyone ignoring or violating taboos or kapus were either severely punished, banished from the village, or put to death, depending on the kapu broken. The kapu system maintains an order which keeps a ruling chief's domain well defined by formulating a lifestyle for its people. "The concept of rank and mana reinforced the class divisions by creating a kind of avoidance between persons of extreme rank difference."16 This order is a major factor in a culture's form generating techniques, as mana, religion, and tradition dictate the decisions made by an alii.



Fig. 18 Kukailimoku, the war god, had the major effect of expressing "mana."

Primitive cultures, as existed in Polynesia, tended to relate to a hierarchial system of government generated by religion and tradition. The government of the ancient Hawaiian culture adopted a type of government which divided its people into three major hereditary classes:

1) Aliis - nobility class
2) Maka' Ainana - commoners
3) Kauwa - outcasts

These three classes of people were all under the rule of a supreme monarchy system originated by Kamehameha I.

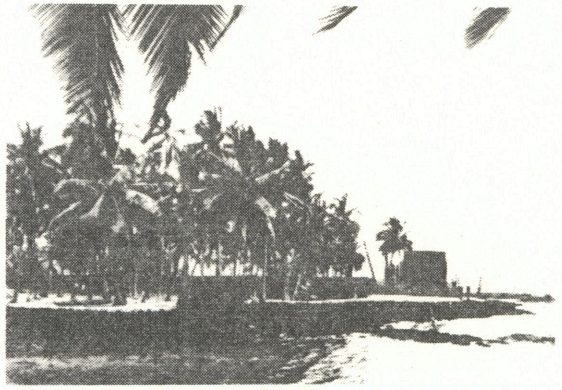


Fig. 19 Kona, City of Refuge National Park shows how the temple building and heiau symbolizing an image of the particular domicile.

The concept of imagery played a major role in the Hawaiian culture as it dictated the lifestyles of the three classes of people. For example, imagery and symbolism were the primary weapons for the allis, (nobility) as they presented themselves to their enemies as a descendant of a more powerful diety. Clothing worn by the alii was one symbol of authority and rank. Capes and cloaks were symbols of

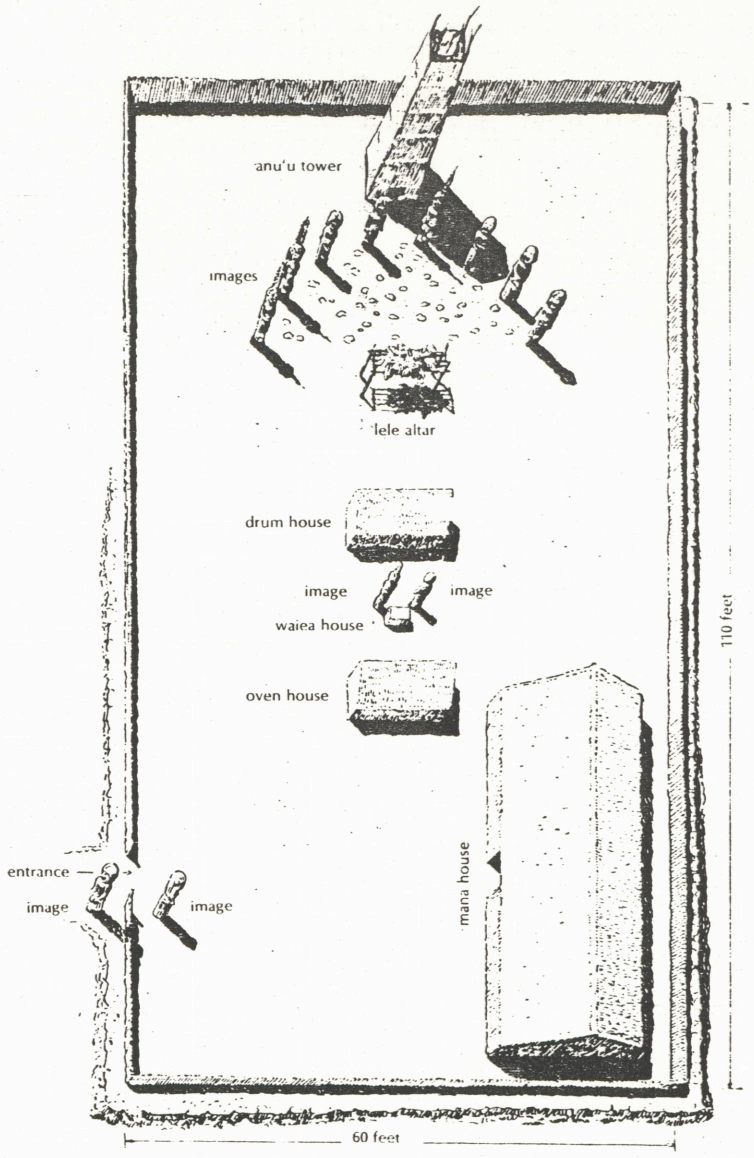


Fig. 20 Layout of temple area.

nobility color and length noted ranks in class, as did necklaces and helmets. For example, red and black were colors symbolic of nobility rank having more mana or systical powers. These apparels were usually made from feathers of native birds because of its symbolic quality in the Polynesian culture. "The proper kind of feather used in the right way was believed to hold the very essence of sacredness."17

Imagery through form was usually done by carving statues and idols of certain dieties. Sculpture also had a symbolic connotation relating to the dieties' existence in physical form. For instance, wood was a primary element of these sculptures and represents man in a solid, physical entity, while feathers represents sacredness and fiber cordage represents the spiritual lifeline of man, the umbilical cord connecting man and the gods.18 It was believed that the source of "mana" was in the head, therefore careful attention was given to the head of the wooden sculptures. "Interpreted symbolically in the sculpture, the helmet, hair, facial features, especially the eyes, conveyed the special meaning appropriate to the gods."19 Their sculptures tend to overwhelm the viewer with manifestations of mana, as the images are reflective of attitudes and meanings. "The combination of realism, through the expressions and gestures, and the distortion, increases the vitality of the sculpture and enriches its sense of life."20 These transmitted images are the result of attitudes and meanings which exemplify tradition.

Imagery was also utilized in the built environment of a culture. The residence for a noble usually expressed mana through scale, expression, and ornamentation. The heiau or idol house was the most significant physical evidence of the alii's power. Size and shape were significant traits that distinguish the spiritual, economic, and political control the alii had. For example, the alii's residence was much larger, taller, and consisted of more buildings than the common man's domain. The houses of nobles were also surrounded by verandas, and had its entrance situated on the east wall, signifying the home of Kane, the supreme god. The average domain consisted of the following units:

1) Heiau - idol house (housed idols of worship)
2) Mau - eating house for males
3) Hale Noa - house of the woman

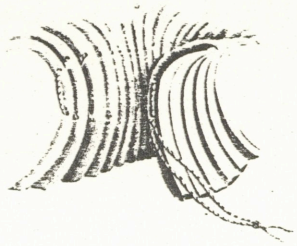


Fig. 21 Bracelet of bones and boar's tusk presented an image of power and domination.

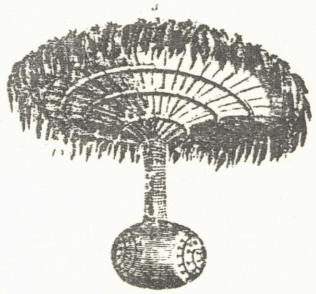


Fig. 22 A musical instrument similar to the Mexican morracas.

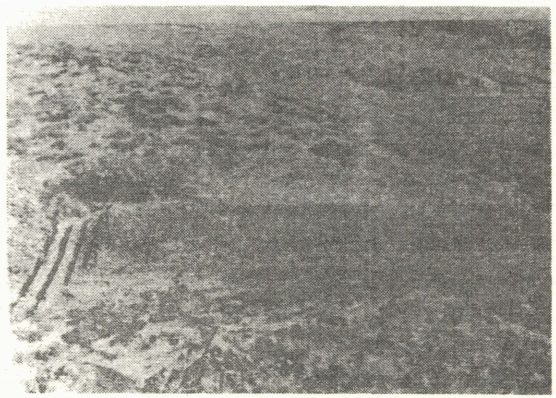


Fig. 23 Terraced heiau or temple platform.

4) Hale Aina - eating house for the wife
5) Kua - wife's working house
6) Hale Pea - wife's nursery

The organizational pattern of these elements are symbols of rank and class, power and authority. The heiaus or idol house were usually wall-d enclosures which surrounded a platform made of stone. These platforms were terraced and accommodated with compartments and usually a house, each of which attributed to a certain ritual. The heiaus were usually erected by perogative of the alii because of their strong ideals toward honoring the descendants of their ancestors. "The temple worship was a form of ancestral worship, since the gods were looked upon as also being direct ancestors of the aliis and progenitors of all Hawaiians".21

The "common" class of people constituted the majority of the ancient Hawaiian population. This class of people were subjects of the nobles and catered to the needs of the upper class. In return the nobles served as a link between man and his dieties. Believed to be a descendent of a diety, the noble performed rituals which were necessary for good fortune and protection from any harm. "The ceremonies were accomplished with theatrical precision, for perfect execution of the sacred chants and dances was as necessary as were the rites themselves."22 Decisions by the nobles were carried out, for they were the decisions obtained from the primary god of that certain cult. Because of this strong hierarchial system, commoners accepted any restrictions on built form that was the decision of the god.

Hierarchial system also affects the culture's restrictions and freedom between the masculine and feminine environments. For example, a man and woman cannot eat in the same house because "women were considered in some aspects unclean, hence men and women prepare and ate their food separately."23 Also male households had a shrine dedicated to the god Lono and was kapu to women; women had their own shrine dedicated to the god Hina, a female diety which had associations with the moon. In a sense, the male race was always represented by primary symbols such as the sun and the women were represented with secondary symbols such as the moon.

The Kauwas or outcasts were a small group of settlers believed

to be the first descendents on the island and looked upon as parasites that lived with and served commoners, often becoming prime subjects for sacrifices. The Kauwas were unaccepted because of their differences in language, physical appearance, and characteristic mannerisms. These people would live wherever possible and would strive for their mere survival. This hierarchial system of the Hawaiian culture implies that values shared by that particular culture resulted in organizational patterns of that built environment.

Although primitive cultures rely on religion and traditional values, the organization of space and the development of form are affected also by a secondary element, mainly climatic conditions of a particular region. The region in which the Hawaiian Islands is situated, is known as the tropical belt and it exhibits a hot-humid climatic condition. The island of Hawaii, the largest island in the Hawaiian chain, covers an area of 4035 sq. mi. and within these boundaries are major climate differences which break the island into distinct regions. The region consisting of Puna, South Hilo, and North Hilo are covered with a dense vegetation and tropical rain forests. On the other hand, a dryer climate may be experienced in the region consisting of the Kau, North and South Kona, Kohala, and Hamakua districts. These areas are well known for their annual drought seasons and water in these areas become an important commodity. The characteristics of this region is a dryer area at lower elevations and a more tropical condition at higher elevations.

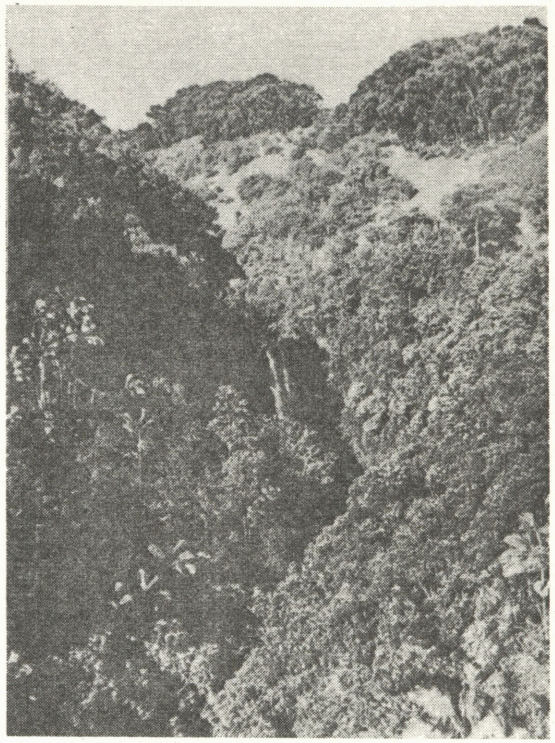


Fig. 24 Windward side of the island with tropical forests.

The unique significance of the relationship between climate and form is the similarity of the buildings found in both regions previously discussed. The building environment of the ancient Hawaiians were the typical stereotyped grass shack. These structures were the primary form of the built environment whether its purpose was for a dwelling, a canoe shelter, an idol house, or the eating house for the wife. "The buildings were built of a wood frame consisting of four main corner posts, twelve intermediate uprights, four horizontal plates, rafters as required, and a ridge pole, all lashed together with vines and a layer of sheathing consisting of grass."24



Fig. 25 Dryer more desolate landscape on the leeward side of the island.

There were no openings in the building other than the small

entry which, through tradition, always faced east. In the case of the ancient Hawaiians, climatic conditions attributed to form generation with minimum result because their built environment of grass shacks was the outcome of transmitted traditional values from their ancestors. These grass shacks were hot and stuffy most of the time, but it kept the rains out efficiently. The choice of such a built environment is due to the traditional values which form a context to which the ancient Hawaiians were used to.

Their lifestyles also reinforced the choice of structure because the majority of time one spent in the house was fractional as compared to the time spent outside doing various activities.

According to Victor Olgay, a building for this particular climate should be open, flexible, and well ventilated. Olgay also expresses the practice of raising the building up on stilts to create more draft, enabling the building to stay cooler. Olgay discusses the use of these practices as being the primary reasoning in creating form. On the other hand I am doing my study on the premise that culture is the primary factor in creating form and climate becomes a secondary element of culture.

The selection of a site by the ancient Hawaiian culture was based on traditional and religious values. Many of the first settlers picked sights which were prime canoe landing sights, as these were people which were great seamen as well as explorers. The Hawaiian culture is very dependent on the sea and settlements were close to the coastline for easy fishing access. The size of the Hawaiian communities depended largely upon the amount of arable land available, the quality of fishing areas, the size of the land division, and the dominance of the ruling alii. Many sites were usually chosen by the commoner and later approved and blessed by priests or the chief of the Ahupuaa (land division). A commoner could not build a residence unless the grounds had been blessed.

In 1890 the ruling monarchy of the Kamehameha family had devised a system of dividing land called "the Great Mahele". Their system of dividing the land consisted of appointing strips of land which stretched from the ocean, up into the forested area of the

mountain. Each land division is managed by an appointed chief of alii and aliis are devoted to the ruling monarch. The great majority of the aliis were very loyal to the monarchy because they were either relatives of the monarch or close allies who helped gain rule over the entire island chain.

The Hawaiian culture, being primitive, had a simple system of trading articles and services for work done. The only evident economic base of this culture dealt with class hierarchies and service to the nobles by special craftsmen. An image of wealth and power was symbolized by a person's dwelling, clothing, and as with many primitive cultures, the amount of animals in one's possession. The Hawaiian monarchy is very similar to the many feudal systems around the world, where once born into a class, a person cannot progress into the next class unless there are extreme reasons. The culture is very critical about intermarriages between classes and if extremes of kapus or taboos are reached both parties or the lower classed person is put to death due to religious law.

Form generation of the Hawaiian culture was barely affected by building for defensive measures. Many of the skirmishes were usually between neighboring settlements and were usually the result of some taboo broken. The only extensive battle were those which involved Kamehameha in his efforts to unite the Hawaiian islands. Therefore defensive strategies have not influenced settlements or built forms. Also because the settlements were close to the sea any intruder could be easily sited as they tried to land their canoes. Due to the cultural ideals and religious precedence, most battles were very ceremonious and the opponent usually lets the defender know his presence.

Indigenous materials and traditional building techniques are factors which affect the building form. Many of the primitive structures were built of a stone foundation or floor, usually collected from adjacent sites, and a wood framed grass shack. Materials for framing were obtained from the forested hills and the grass from surrounding meadows. The new settler had also used traditional construction techniques for creating different forms of buildings. The traditional and religious restrictions placed in erecting a building varied with the building's purpose and owner. New technology and tools were introduced by explorers and missionaries, but previous



Fig. 26 Warriors in full dress going to battle; leader carrying the family diety, a symbolic gesture of power.

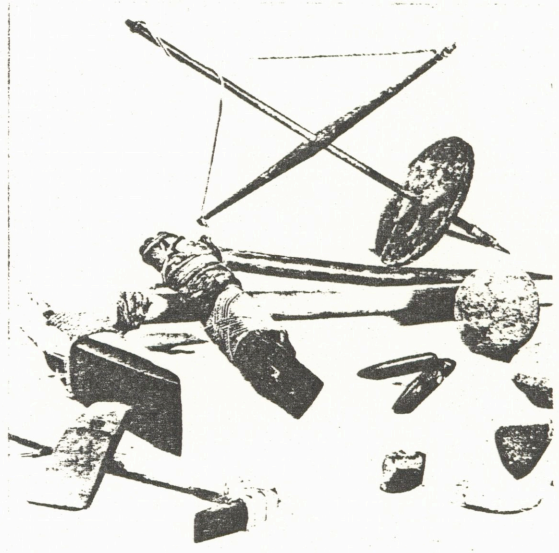


Fig. 27 Some primitive tools used by the Hawaiians.

to this all new innovations were accidental in nature. The ancient Hawaiian culture very highly talented and educated about things which dealt with travelling roads and engineering amenities. Most of their tools, weapons, and luxuries were very much primitive until the introduction of influences by the explorers. Although missionaries and new settlers brought in new technological innovations, the Hawaiian culture has kept its values based under the monarchy until the Western government started intervening into the monarchy structure.

Site Analysis

The Ahupuaa or land division Kealakehe consists of a total property area of 1,664 acres which includes 1.1 miles of coastline and slope changes ranging from sea level to approximately 750 feet. The site is located on the west coast of the big island, three (3) miles north of Kailua, and exhibits some unique qualities in regional climatic characteristics. Because of the regions uneven topography, localized climatic conditions vary from place to place. For example, the annual average precipitation varies with the changes in elevation, from 20" at sea level, to 100" at higher elevations, and 15" at the "saddle" and mountain areas. The temperature ranges from an annual high of 85 degrees F to an annual low of 67 degrees F, with winter climate actually being dryer, cooler, and generally more pleasant than summer.25

Natural land masses protect the area from strong northeasterly winds which accounts for its dependable mild climate, bright sunshine, and steady gentle breezes. The Kona coast has an alternating convection system which occurs because of the differential heating and cooling of the land and water masses. These thermally induced breezes

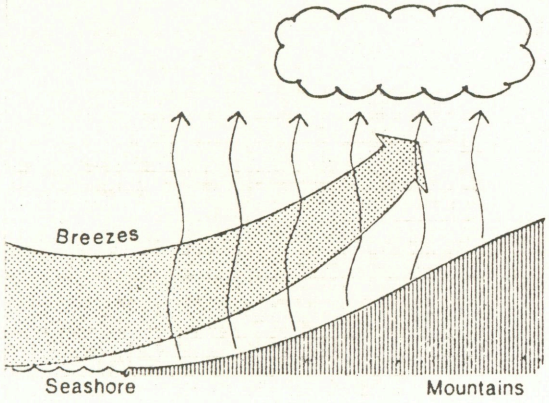


Fig. 28 Thermally induced on-shore breezes during the day.

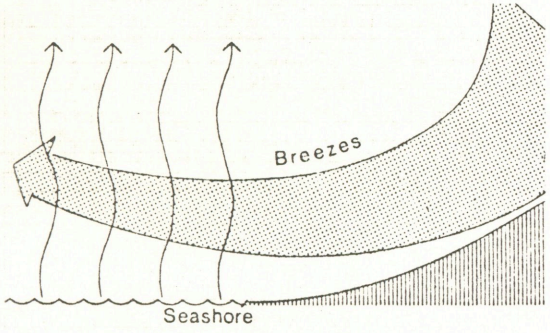


Fig. 29 Thermally induced off-shore breezes at night.

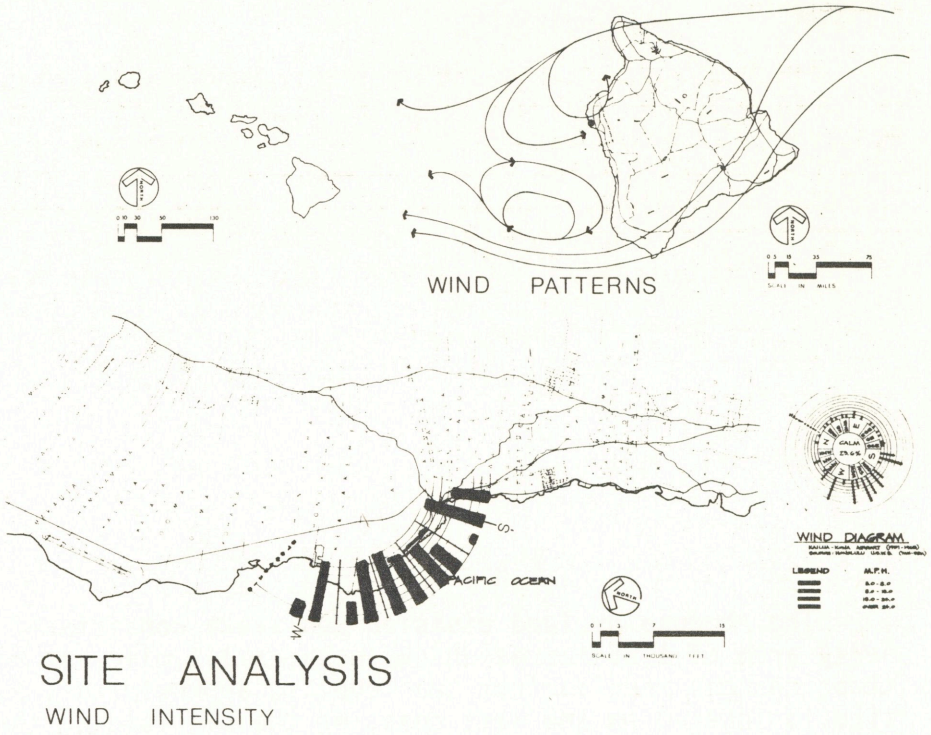


Fig. 30 Site analysis.

result in frequent convective storms normally occurring at the higher elevations.

The Hawaiian Islands are very susceptible to storms and tsunamis or tidal waves, creating a "run-up" area which is the areas affected by waves of certain heights. Run-up can be defined as a maximum vertical height reached by a wave above the normal water level. Tides for the island range from about 2'-0". There are five general types of waves which affect the Hawaiian Islands, each occurring at various times of the year and with varying intensities. The Kealakehe site is protected from ocean disturbances from the north, but is totally unprotected from the waves approaching from the south or southeast. Honokohau Bay is exposed to waves generated from the northwest, west and southwest directions.

The topography and geologic conditions of North Kona were the result of three volcanic systems, Mt. Hualalai (8,251 feet), Mauna Loa (13,620 feet), and Mauna Kea (13,784 feet). The latest lava flow in that particular area was in 1801 and the volcanic discharge consisted of both Aa and pahoehoe types of lava flows. As is a volcanic discharge which is course crumbly and moves very slowly, while the pahoehoe lava is a liquified, smoother textured lava flow which forms lacey textures when cooled. The majority of the site consists of the Aa type of lava which is very pourous and permeable, reducing the chances of flood control problems. Earthquakes are also frequent on this island due to the many active volcanoes, but the majority of the earthquake activities are minimal and usually become a frequent occurence which presents no apparent danger.

Vegetation on the site is sparse and mainly of scrub growth at the coastline which eventually leads up to a denser forested area at higher elevations. Much of the vegetation on the site is either Haole Koa, Kiawe, or Ilima, all of which are pioneering plants commonly found in similar areas.

Utilities in the general area are facilitated or planned with adequate supply lines for future growth in the area. There are presently 12 and 16 inch water transmission lines running parallel to the Queen Kaahumanu Highway and being supplied by the Kahuluu reservoir.

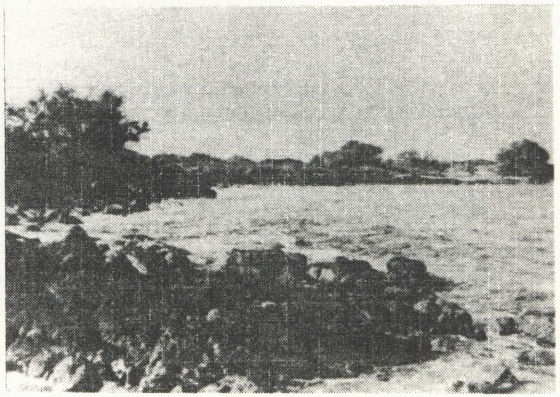


Fig. 31 Rocky shoreline.

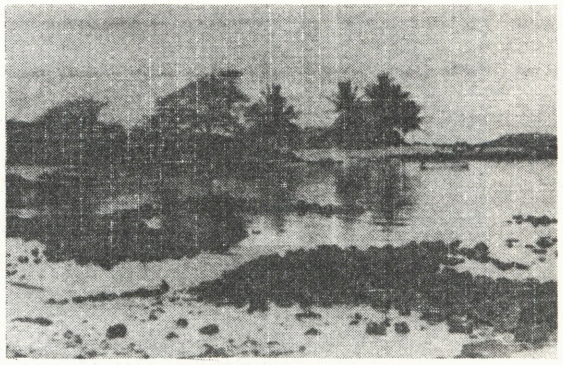


Fig. 32 Old Honokohau settlement.

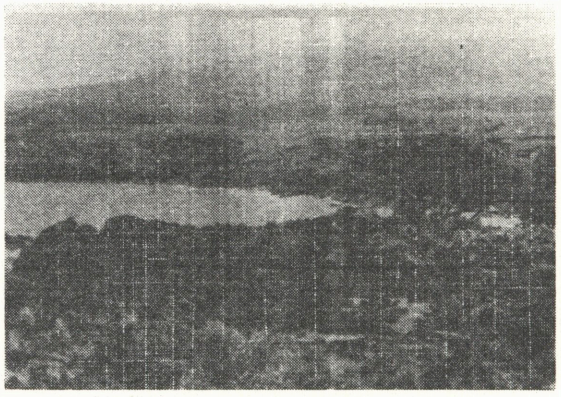


Fig. 33 Honokohau Bay.



Fig. 34 Honokohau Bay.

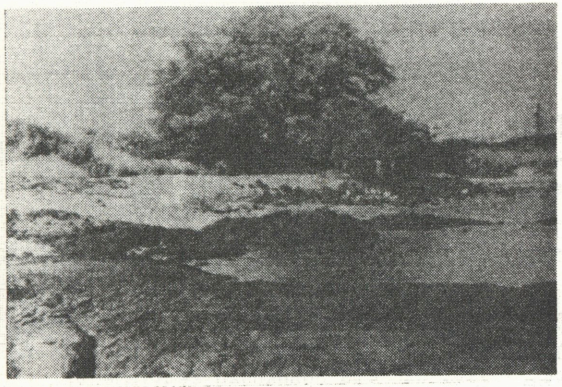


Fig. 35 Sparse vegetation on the site.

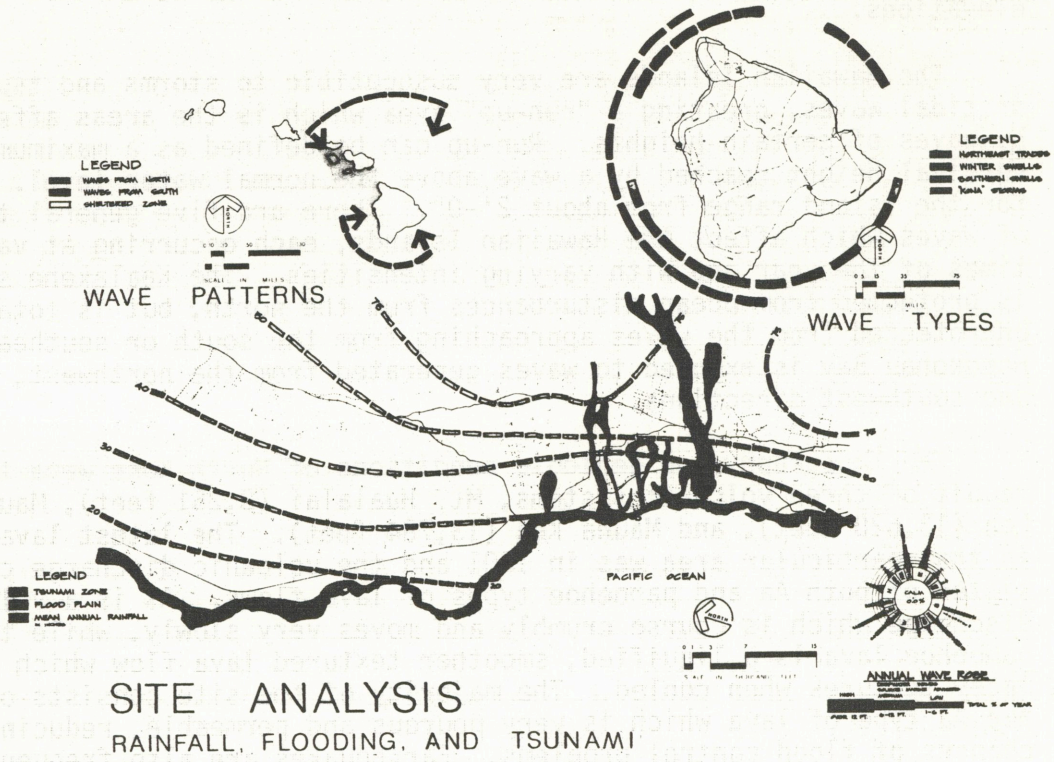


Fig. 36 Environmental Hazards.

The sanitary sewerage system for the Kailua area is presently located near the old airport and is approximately two miles from the Ahupuaa Kealakehe. This facility is operating at or beyond its capacity level, but cannot be of service to any new development. A study done by R. M. Towill Corporation has concluded that a three phase plan can be utilized to accommodate any new development in the general area. This three phased plan calls for:

1) a waste water treatment plant (WWTP) located on the Makai (toward the sea) side of the Queen Kaahumanu Highway. This will be a collector system which will accommodate sewerage from the new subdivisions, the proposed cultural center/ recreational complex, and any access from the growing population in Kailua.

2) phase 2 and 3 will develop another WWTP just south of the new Keahole Airport which will accommodate the subdivisions above the Highway. Filtered material from the WWTP will be considered as a source for irrigating vegetated areas of the proposed complex.26

Electricity and powerlines have been supplied past the site due to the existing developments of the Keahole Airport and the FAA Vortex Station of Kona. Presently there is a Hawaiian Electric Light Company (HELCO) substation north of the present access road to the Kailua landfill site.

Drainage is no apparent problem in the area due to specific rock formations and contours, but considerations are being taken to insure against any future problems. The high permeability of the existing geology and the infrequent rainstorms help in reducing drainage needs. Rainfall records show that the annual average precipitation in the Kailua area is approximately 25" and that much of the known areas of flooding and well defined drainageways are located toward the south section of the North Kona district. The site lies adjacent to the North/South division of the districts and possesses characteristics of the north district, except it has slightly higher rainfall.

Ancient Hawaiian villages usually originated around the island coastline due to reasons pertaining to security, access to the sea,



Fig. 37 Small beach on site.



Fig. 38 Kaimu black sand beach was also used as a canoe landing site.

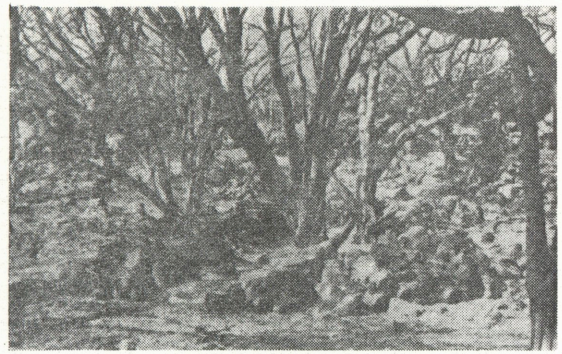


Fig. 39 Remains of canoe shed.

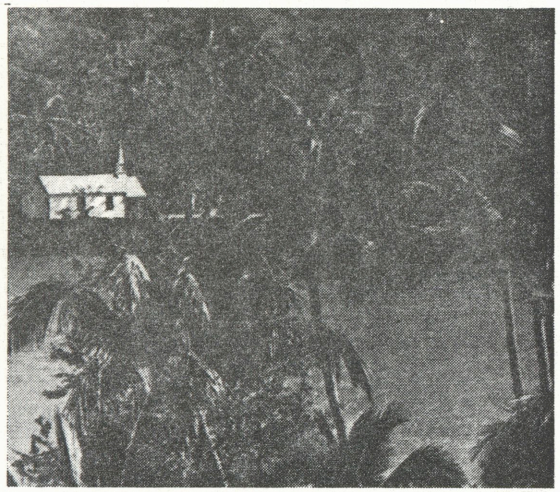


Fig. 40 Old historic catholic church in the region.

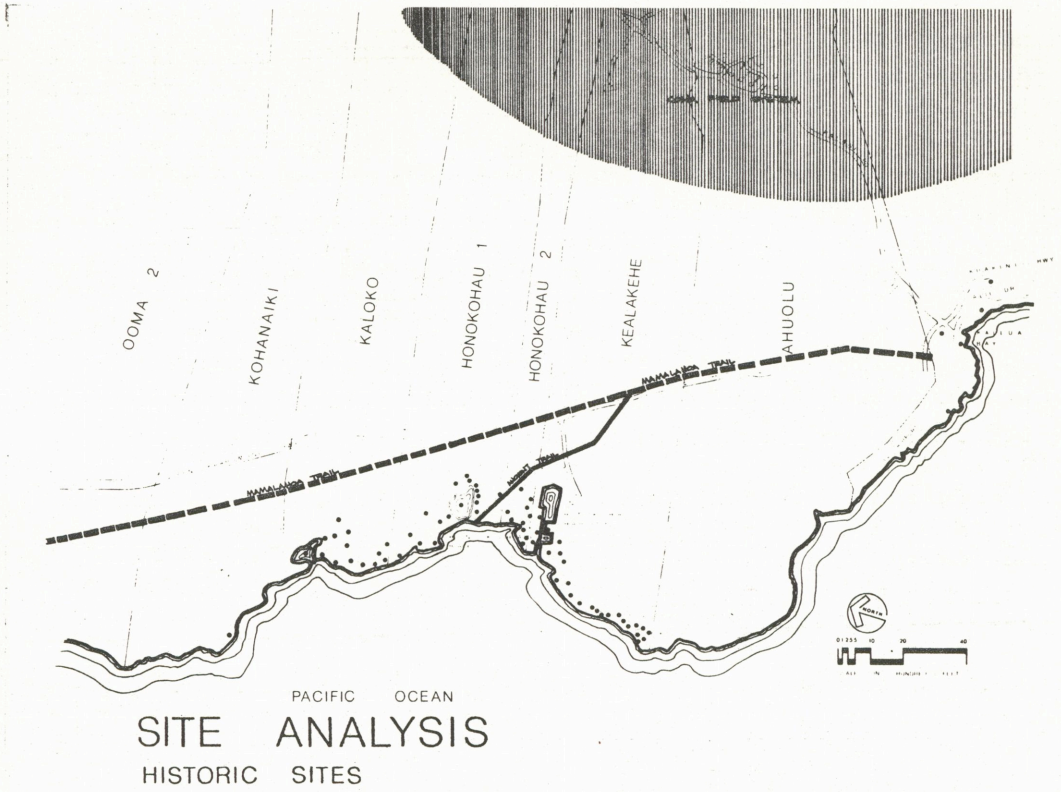


Fig. 41 Historic sites survey.

and other traditional values. The area surrounding the chosen site is rich in hsitoric significance and consists of various fishponds which were designated for the royal family. The Ahupuaa or land division Honokohau II (Iki) was set aside for Leleiohoku, the husband of princess Ruth Keelikolani, great granddaughter of Kamehameha I. Honokohau I (Nui) was set aside for Kekauonohi, counsin of Kamehameha V and granddaughter to Kamehameha I. The Ahupuaa Kaloko was set aside for Kamehameha V, grandson of Kamehameha I, while the Ahupuaa Kealakehe was set aside for the kingdom, making it a public space.27

The Polynesians were well known for their dependence on the sea, therefore easy access to the sea was an important factor which led to site selection. Boat landings served as culture inducing elements, as lifestyles and activities were organized around the boat landings. These sheltered landings were a lifeline for the Hawaiian people because the majority of travel done was over water and the majority of food consumed came from the sea. Therefore villages developed around circulation paths that related to ocean travel.

The entire region of West Hawaii is spotted with old Hawaiian settlements and historical sites which helped develop the Hawaiian culture. Some of the well known and significant sites include The City of Refuge National Park, Kailua Bay, where the International Billfish Tournament is held annually, Kealakekua Bay, where Capt. James Cook first landed on Hawaii and later died there, and the Kaloko fishpond, one of the most well known fishponds. These sites and many more along the coast consist of varied types of historical structures ranging from small homesteads and campsites to religious structures and villages. Whatever the case, these historic sites play an important role in studying and obtaining the essence of the Hawaiian culture.

The Kealakehe site holds special concessions towards the preservation of historical sites and the ancient Hawaiian culture. Archeological studies have uncovered numerous sites of historical significance, the main one being the Honokohau Settlement. Located on the Honokohau Bay, this 250 acre division of land, presently owned jointly by the State of Hawaii, Frank B. Greenwell, and the Springer, Oliver, Holt Trust, was once the reserved property of the ruling



Fig. 42 Existing heiau on the site.



Fig. 43 Possible foundation wall of a house.

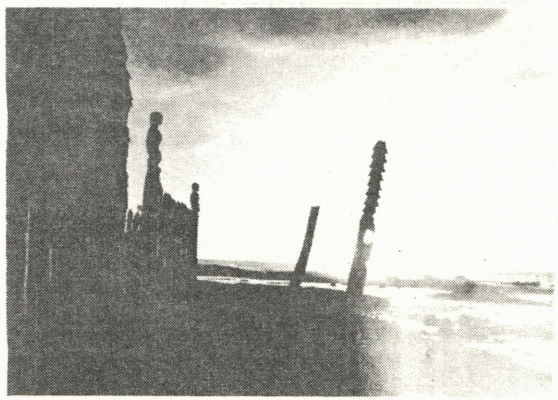


Fig. 44 City of Refuge National Park; a historic park.

monarchy. The great Mahele of 1848 had reserved these plots of lands for the sole use by members of the monarchy as a simple vacation spot. People inhabited the site until 1920, when isolation resulted in the abandonment of the settlement. Today the settlement is still used from time to time as a shelter for fishermen. The Honokohau settlement is virtually a catalog of historic data which date back some 200 or more years. The settlement consists of many homesteads, fishponds, a canoe landing, and areas with symbolic petroglyphs.

Programming

The western region of Hawaii (The Big Island) has long been in need of a regional recreational facility and cultural center that could be used by the general public for various community and regional activities. Presently facilities of this type are limited to the Hilo area and existing facilities for West Hawaii are either inadequate or are components of the state educational institutions. Public facilities for West Hawaii are inadequate for accommodating large public activities. Likewise the introduction of the proposed facility to this region would induce community involvement and its potential of attracting more visitors to the area through a diversity of activities.

The community is strongly in favor of obtaining such a facility to increase their potentials of sponsoring major recreational events and to improve community interaction through the arts. The facility will work in conjunction with the proposed Honokohau Historic Park and serve a dual purpose of a community center and as a prelude to the proposed historic park.

This thesis project will be based on the assumptions that:

1) The historic park will be one similar to the City of Refuge National Park and will take on an ancient hawaiian village setting. The recommendations for the plans submitted in 1975 include those for:

   a) Preservation of fishponds in the area sites, and structures of the early hawaiian settlements, hawaiian burial sites, and the areas remnant hawaiian ecosystems, including monitoring of the offshore water quality as well as that in fishponds.

   b) Interpretation provided for both the hawaiian people, local residents, and visitors of past hawaiian culture including hawaiian language, fish culture, chants, dances, crafts, use of land and sea, and all other aspects of hawaiian culture.

   c) A special management program that included areas with authentic hawaiian live-in-accommodations for "Hawaiians who wished to actively participate in in-depth cultural pursuits" and hiring of native hawaiians in all forms and levels of park management.28

2) There is a major resort development on the Ahupuaa Ahuolu.

3) The project is divided into 3 phases, and phase I and II have already been implemented. Phase III will be the major portion of concern for this thesis, the cultural center and marina facility.

Along with these assumptions the project is intended to relay some implication of the ancient hawaiian lifestyle and cultural effects on built form.

The members of the Hawaii County Council have approved the appropriation of funds for the third and final phase for the West Hawaii Regional Recreation and Cultural Center. The total grants funded for the project will complete the three phased project which includes athletic facilities for sporting events such as football, track, base-

ball, and volleyball; and for facilities expressing the arts such as concert halls, meeting rooms, informative classes, and social gatherings, and marina facilities to accommodate boats that are currently docked at the existing Honokohau Small Boat Harbor.

CRITERIA SYMBOLS

ACOUSTICS
- L LOUD
- M MID-RANGE
- Q QUIET

ILLUMINATION
- T TASK
- S SECURITY
- G GENERAL

MECHANICAL
- C CONTROLLED
- N NATURAL

ELECTRICAL
- 220 220
- 110 110

ATMOSPHERE
- C CONTROLLED
- N NATURAL

VIEWS
- C CONTROLLED
- N NATURAL

ACTIVITY
- Ⓐ ACTIVE
- Ⓟ PASSIVE

ACCESSABILITY
- ● PRIVATE
- ● PUBLIC

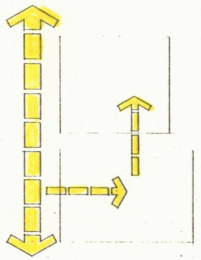
COLOR DESIGNATION
- CIRCULATION
- VIEW
- SERVICE

zone: CULTURAL CENTER
space: THEATER FACILITY
function: A CULTURAL FACILITY WHICH WOULD BROADEN THE COMMUNITY'S INTERESTS AND REFLECT BACK TO THE LIFESTYLE OF A PAST CULTURE.

	acoustics	illumination	mechanical	electrical	atmosphere	views	capacity	activity	accessability	remarks
PARKING	M	G	N	110	N	N	500	○		●	CIRCULATION BASE
LOBBY	M	G	C	220	N	N	100	○		●	ASSEMBLY
BOX OFFICE	M	T	C	110	C	N	2	○	●		SECURITY
BUSINESS OFFICE	M	G	C	220	N	N		○	●		MANAGEMENT
TOILET FACILITIES	M	G	C	110	C	C			○	●	ACCESSABILITY
AUDITORIUM	M	T/G	N	220	N	C	1500	○		●	ACOUSTIC QUALITY
STAGE	Q	T/G	C	220	N	C		○	●		VISIBILITY
BACKSTAGE	M	T	C	220	C	C		○	●		CIRCULATION
DRESSING ROOM	M	T/G	C	110	C	C	6	○	●		FLEXIBILITY
CHANGE/LOCKER	M	G	C	110	C	C	12	○	●		SERVICE
COSTUME SHOP	L	G	C	220	C	C	4	○	●		SERVICE
SCENE SHOP	L	G	C	220	C	C	4	○	●		SERVICE
OFFICES	M	G	C	110	C	C	1	○	●		ORGANIZATION
CUSTODIAN/STO.	M	T	C	220	C	C	3	○	●		SERVICE
LIGHT. EQUIP.	Q	T/G	C	220	C	C	2		○	●	CONTROL

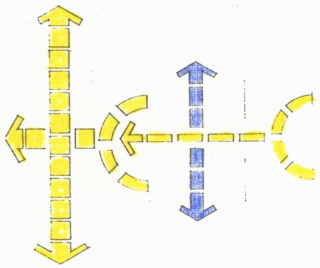
req. area: 32,240 SQ.FT.
comments:

area: PARKING
sq. footage: 200,000 SQ.FT.
adjacecy: LOBBY, PUBLIC ACCESS



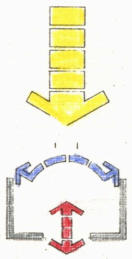
misc.: EASY ACCESS AFTER PERFORMANCE. ACCOMODATE FOR LIGHTS & NOISE FROM LATE ARRIVALS.

area: LOBBY
sq. footage: 4500 SQ. FT.
adjacecy: PARKING, BOX OFFICE, AUDITORIUM



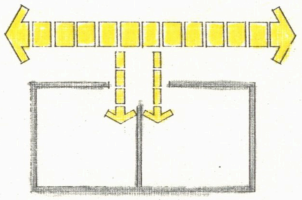
misc.: DISPLAY AREA, SEATING, PUBLIC PHONES, SOCIAL INTERACTION AREA

area: BOX OFFICE
sq. footage: 40 SQ. FT.
adjacecy: LOBBY, AUDITORIUM, PUBLIC FACILITIES



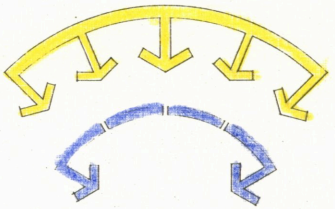
misc.: PROTECTED FROM ELEMENTS & NEAR TO PUBLIC & SERVICE FACILITIES MAY BE ADJOINED TO OFFICE.

area: TOILET ROOMS
sq. footage: 600 SQ. FT. (MEN & WOMEN)
adjacecy: LOBBY, CUSTODIAN/STORAGE



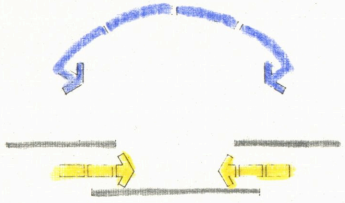
misc.: SERVICE FACILITY FOR GENERAL AREA

area: AUDITORIUM
sq. footage: 20,000 SQ.FT. (SEATING)
adjacecy: LOBBY, STAGE



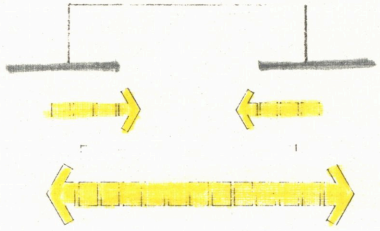
misc.: GOOD CIRCULATION WITH 3 AISLES RECOMENDED. GOOD SIGHTLINE & ACOUSTICS REQUIRED.

area : STAGE
sq. footage : 2,000 SQ. FT.
adjacecy : SEATING, BACKSTAGE, FACILITIES



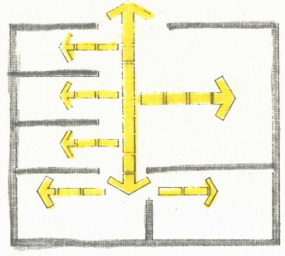
misc.: STAGE 3'-0" ABOVE FLOOR, 70' PROCENIUM, 40' DEPTH, 16'-18' HEIGHT

area : BACKSTAGE
sq. footage : 1800 SQ. FT.
adjacecy : MAINSTAGE, THEATER FACILITIES



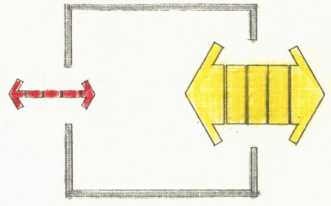
misc.: CIRCULATION SPACE, STORAGE, UNDERGROUND WIRING & SPECIAL ILLUMINATION.

area : DRESSING ROOM FACILITIES
sq. footage : 1500 SQ. FT.
adjacecy : BACKSTAGE, SERVICE ENTRY



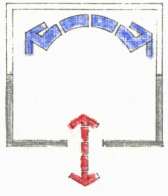
misc.: MAKE-UP AREA, SHOWER, TOILETS, PRIVATE FACILITIES, GROUP FACILITIES

area : SHOP AND STORAGE
sq. footage : 1200 SQ. FT.
adjacecy : DRESSING ROOM, BACKSTAGE,



misc.: SERVICE FACILITY FOR COSTUME AND PROPS STORAGE & CONSTRUCTION.

area : LIGHTING & EQUIPMENT CONTROL
sq. footage : 600 SQ. FT.
adjacecy : PROJECTION AREA, SPOTLIGHTS



misc.: LIGHT CONTROLS, A.V. EQUIPMENT SOUND CONTROL

zone: CULTURAL CENTER
space: MULTIPURPOSE ROOM
function: TO HANDLE ANY COMMUNITY ACTIVITY AND TO ENCOURAGE COMMUNITY INTERACTION IN NEAR ACTIVITIES.

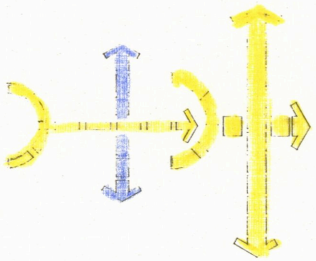
| | | |

zone: RECREATIONAL FACILITY
space: MARINA
function: TO ACCOMODATE ACTIVITIES GENERATED FROM THE EXISTING HARBOR. AND THE WEST HAWAII LIFESTYLE.

	acoustics	illumination	mechanical	electrical	atmosphere	views	capacity	activity	accessability	remarks
LOBBY	M	◐	C	20	N	N	◎	◎	●	COLLECTOR/DISBURSE.
LOUNGE	M	T	C	20	C	N		○	●	RELAXATION
DINING ROOM	M	⅓	C	10	N	N		○	●	RELAXATION/SERVICE.
KITCHEN	M	◐	C	20	C	C	◎	●		SERVICE
FOOD PREP.	M	◐	C	10	C	C	◎	●		SERVICE.
DISHWASHING/STO.	M	◐	C	20	C	C	◎	●		FUNCTION
OFFICE/RECEP.	M	⅓	C	20	C	C	◎		●	DIRECTION/ORDER.
TOILET	M	◐	C	10	C	C		◎		FUNCTION
SHOWER/LOCKERS	M	◐	C	10	C	C	◎	●		FUNCTION
SHOPS	M	⅓	C	20	C	N	◎	●		ACTIVITY
OBSERVATION DECK	M	T	WA	20	N	N		◎	●	OBSERVATION
WATCHMAN'S BOOTH	M	◐	C	20	C	N	◎	◎		OBSERVATION/SECURE.
PARKING	M	⅓	WA	HN	N	N	◎		●	CIRC. TAKES
CURB SIDE/STO.	M	T	C	20	C	C	◎	●		SERVICE

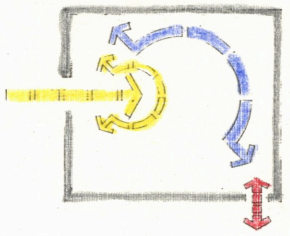
req. area: 7550 SQ. FT.
comments: AREA TO MEET CODES.

area: LOBBY
sq. footage: 800 SQ. FT.
adjacecy: EXTERIOR, ACTIVITY AREAS



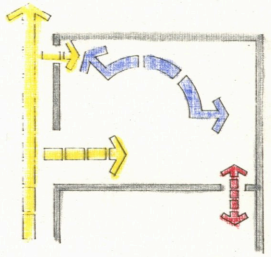
misc.: INFORMATION DESK, DISPLAY AREA PUBLIC SEATING, PUBLIC PHONES

area: LOUNGE/BAR
sq. footage: 1200 SQ. FT.
adjacecy: EXTERIOR, LOBBY, DINING ROOM



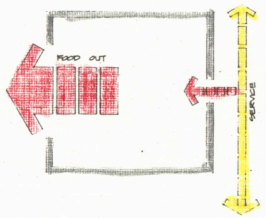
misc.: BAR, DECK, SERVICE, SPACE AT 12 SQ. FT. PER PERSON

area: DINING ROOM
sq. footage: 1000 SQ. FT.
adjacecy: EXTERIOR, LOUNGE, FOOD PREP.



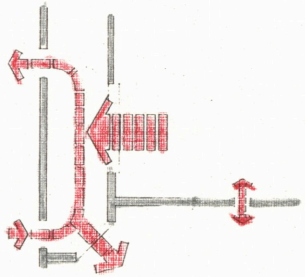
misc.: SEATING FOR 50 WITH 10% CIRCULATION, DECK, PRIVACY

area: KITCHEN
sq. footage: 550 SQ. FT.
adjacecy: FOOD PREP., SERVICE, STORAGE



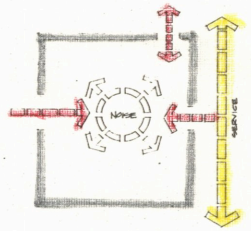
misc.: FOOD MANAGER'S OFFICE, COLD STORAGE, SERVICE, APPROX. 7 SQ. FT. KITCHEN SPACE PER MEAL.

area: FOOD PREPARATION
sq. footage: 200 SQ. FT.
adjacecy: DINING AREA, KITCHEN, DISHROOM



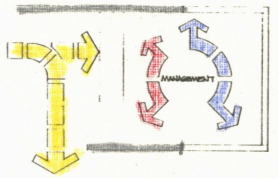
misc.: LARGE COUNTER, STRICT CIRCULATION PATTERN,

area: DISHWASHING/STORAGE
sq. footage: 300 SQ. FT.
adjacecy: KITCHEN, FOOD PREPARATION



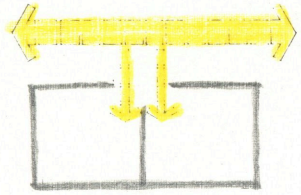
misc.: CLEANING SUPPLIES, ISOLATE SOUND FROM DINING AREA, MIN. 40 SQ. FT. POT & PAN SPACE.

area: OFFICE/RECEPTION
sq. footage: 400 SQ. FT.
adjacecy: LOBBY, ACTIVITIES, EXTERIOR VIEW



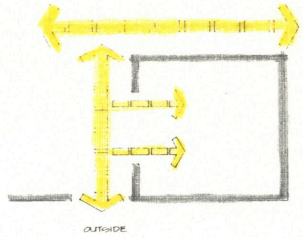
misc.: RECEPTION DESK, DECK, FURNITURE INFORMATION & SERVICE AREA

area : TOILET ROOM
sq. footage : 600 SQ. FT.
adjacecy : LOBBY, PUBLIC SPACE



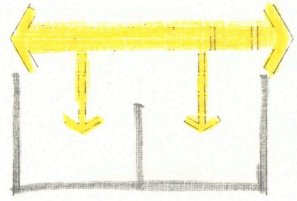
misc. : ADEQUATE FIXTURES & ACCESS FOR THE HANDICAPPED

area : LOCKER ROOM & SHOWERS
sq. footage : 1000 SQ. FT. MEN, 500 SQ. FT. WOMEN
adjacecy : EXTERIOR, KITCHEN, OFFICE



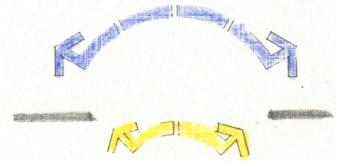
misc. : SHOWERS, TOILETS, LOCKERS

area : SPECIALTY SHOPS
sq. footage : 600 SQ. FT.
adjacecy : SHOPS, CIRCULATION, LOBBY



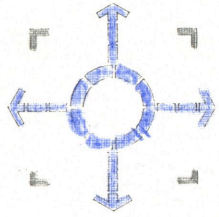
misc. : SERVICE FOR SUPPLIES, BAIT SHOP, SMALL PARTS SHOP, SMALL STORE.

area : OBSERVATION DECK
sq. footage : OPEN
adjacecy : LOBBY, LOUNGE, DINING ROOM



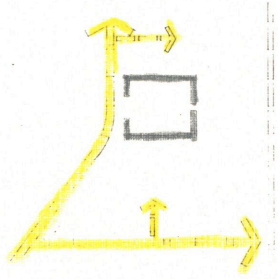
misc. : LOUNGE CHAIRS, EXTERIOR DINING FURNITURE, SUN ANGLES IMPORTANT

area : WATCHMAN'S BOOTH
sq. footage : 200 SQ. FT.
adjacecy : DOCK AREA, TRAILER PARKING



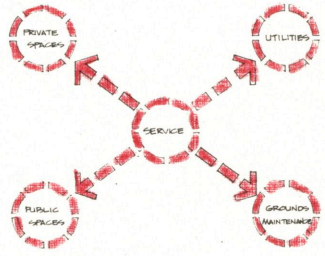
misc. : COMMUNICATION SYSTEM, VIEW OF DOCK, RAMP, & PARKING

area : PARKING
sq. footage : 32,500 SQ. FT.
adjacecy : HARBOR, MARINA FACILITY



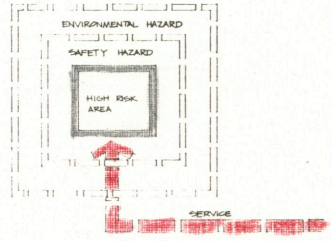
misc. : CIRCULATION OF CARS & PEDESTRIANS PARKING FOR BOAT TRAILERS

area : CUSTODIAN / STORAGE
sq. footage : 200 SQ. FT.
adjacecy : FOOD SERVICE, LOBBY, SHOWERS



misc. : SUPPLY & SERVICE TO ALL AREAS

area : FUEL PUMP HOUSE
sq. footage : 200 SQ. FT.
adjacecy : DOCK AREA OF SAFETY

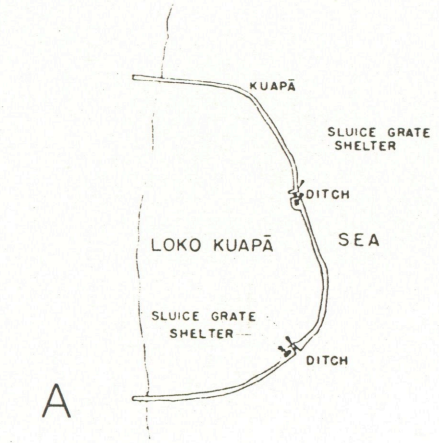


misc. : MUST CONFORM TO FIRE PROTECTION STANDARDS, SAFE AREA AWAY FROM MASS PUBLIC

Design Process

The historic evolution of mankind has developed many distinguishable idiosyncrasies which can be incorporated into a single concept referred to as culture. The term culture is one of the most difficult to define because of its various contexts in which it can be interpreted. Culture is one of the most important aspects of our lives, being that without it, our existence in the world would be limited to a specified period, a period of time which is dependent upon knowledge attained during that lifetime. The importance of a culture is infinite in reason, for without a specific cultural background one would be void of values, ideals, and goals, all three things which are essential to life.

The design process of the Kealakehe Cultural and Recreational Complex was based on the research findings presented in this thesis report. Conclusions from this study were used as reinforcing elements in making design decisions. The main concern of this project involves the duality between culture and the built form. The project takes on a historical precedence and generates problems of reestablishing past lifestyles and reconstructing an atmosphere of a specific time period. The Hawaiian culture has gone through many



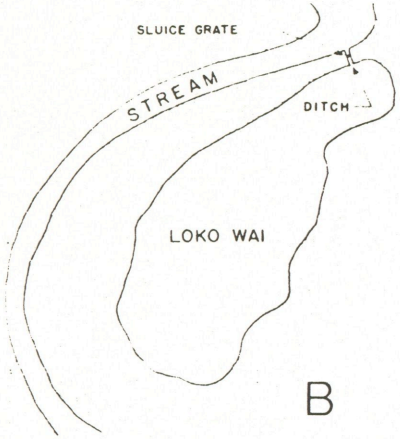


Fig. 45 Fishpond types. A)the loko kuapa, or two ditches and a seawall isolating a coastal body of water; and B)the loko wai a natural lake artificially connected to a stream by a ditch.

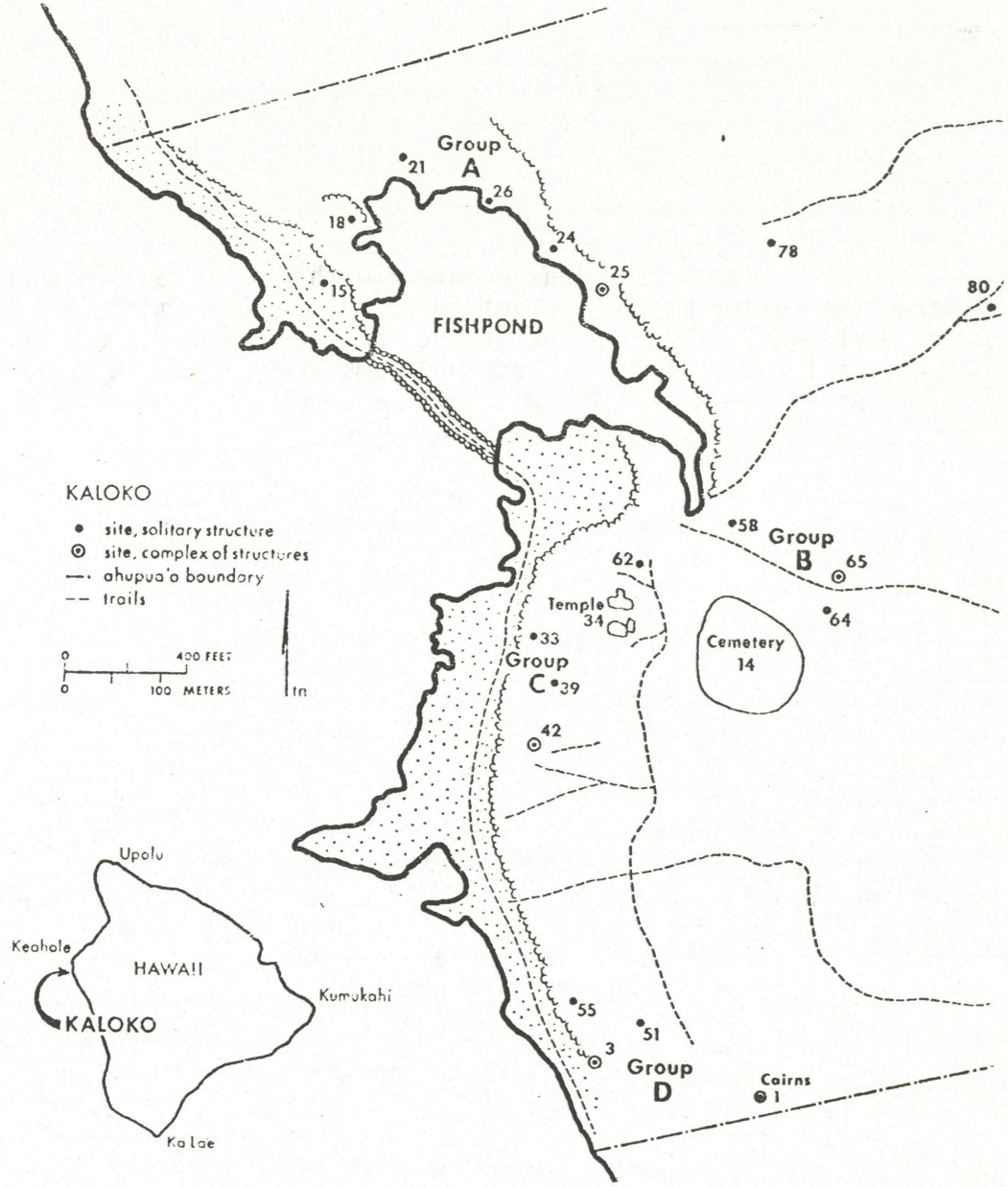


Fig. 46 The Kaloko fishpond and the settlements organized around it. (loko kuapa type)

changes in a short period of time and designing for the present culture presents a problem of making the right decision for that particular mixture of people. Therefore the subject matter of this thesis project has been limited to the ancient Hawaiian culture mainly because the heritage and cultural values of the Hawaiian people must be preserved.

Designing a built environment with respect to the ancient Hawaiian culture presents various problems with making decisions when reconstructing ruins, siting elements within the environment, the use of appropriate materials, and the effects of the new built form on religious traditions. Most of these problems are evident on the site and solutions to these problems will become special considerations which will reinforce the design decisions made.

The site selection and planning procedure of the project was the result of conforming to religious and historical elements found on the site and general climatic conditions in the area. For example, fishponds and sources of water were very important in the ancient culture. Wittfogel and Sahlins both have bome to the conclusion that "the bureaucracy in the Hawaiian Islands resulted in part from the control of water resources".29 The fishponds in the area are also associated with activity and lifestyles of the people because it furnishes its people with food and serves as a generator of growth as canoe sheds, net drying areas, home sites, and burial platforms were organized around the pond. Yet, the growth of settlements around the pond was controlled to insure against poaching, noise, and sewage pollution.30 Therefore according to Kikuchi, settlements were discouraged and we as designers must be considerate and sympathetic when introducing a modern facility on a delicate site. Other reasons for choosing the site was due to its favorable climate, its topographical adequacy, and the use of the existing small boat harbor as a potential recreational ammenity. The harbor area was also considered because of its importance to the people of West Hawaii and because of its historical significance toward defining the ancient lifestyle. The relationship between man and the sea is till the most important factor which unifies the ancient and the present culture of West Hawaii and becomes a primary element in organizing the facilities for this complex.

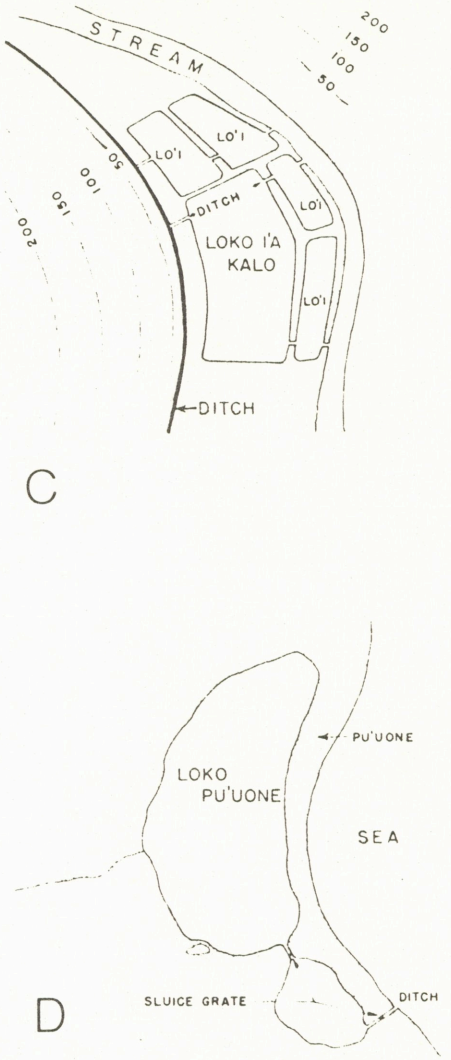


Fig. 47 Fishpond types. C)the loko i'a kalo, located in an inland area: and D) the loko pu'uone ponds created by coastal barrier beaches, artificially connected to each other, and drained by a ditch.

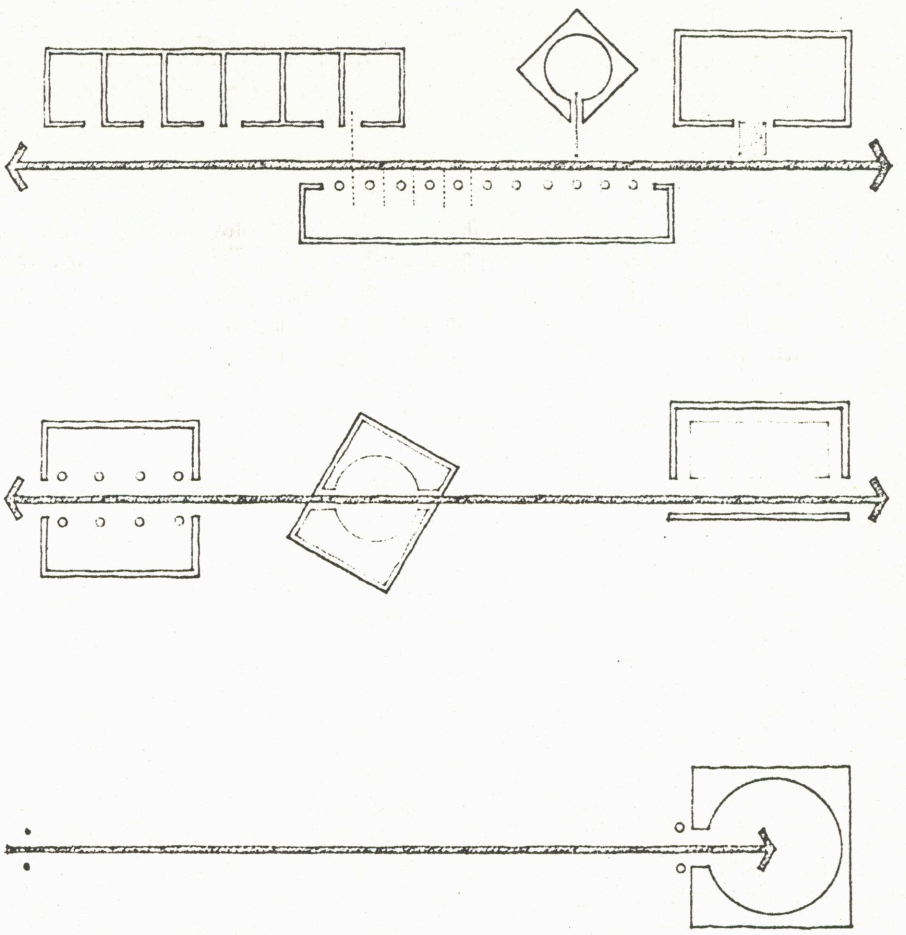


Fig. 48 Path-space relationships. A)pass by spaces; B)pass through spaces; C) terminating in a space.

Another element which will be considered in the design process is the use of objects and materials which expresses the idea of entrance. The ancient Hawaiian culture strongly expresses entry by placement of idols and openings with respect to religious values. Restricted and accessible areas are designated by special materials, symbols, and color; all of which relays the image of mana or mystical power to the viewer.

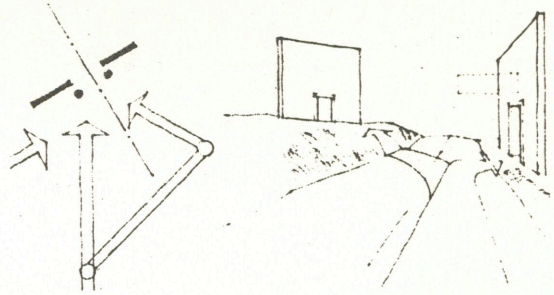


Fig. 49 An oblique approach enhances the effect of perspective on a building's front facade and form.

A strong organizational element found in many primitive cultures was the use of circulation patterns and its reflected associations toward the lifestyle of the people. The Hawaiian culture was governed by a strong hierarchical system of government and some of these values of ordering should be used when designing spaces that occur along a circulation line. The main circulation elements that will be dealt with in this project include; 1) building approach, 2) building entrance, 3) configuration of path, 4) path-space relationship. All of these elements must be carefully looked upon to insure the achievement of the set goals.

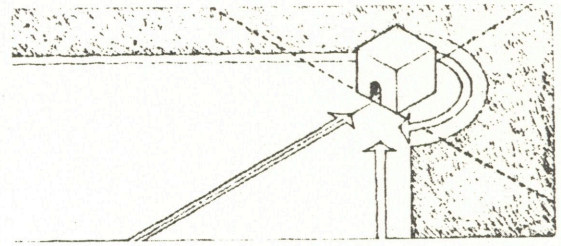


Fig. 50 Building approaches.

Building form and materials are key elements which reflect the cultural imagery necessary in creating a preferred setting. In the case of this project, the size and scale of the facilities being designed cannot be done with natural materials that were used for "grasshuts" because of structual and code limitations. The basic building form may be duplicated, but special care must be taken to insure against the loss of character due to scale. One way of accomplishing this task is to utilize an open, free flowing plan which is flexible, conforms to cultural values, and utilizes climatic conditions. Platforms will also be used to express authority and the importance of certain areas. Materials may be used to enhance the feeling perceived from the building, but like building form, special care must be taken against problems of scale and material availability. For this project, natural rock will be used as a texture giving element representing the foundation wall of the old structures and metal roofing with wide corrigations will represent the thatched roof. The wide corrigated metal roofing will also reinforce the vertical lines of the building.

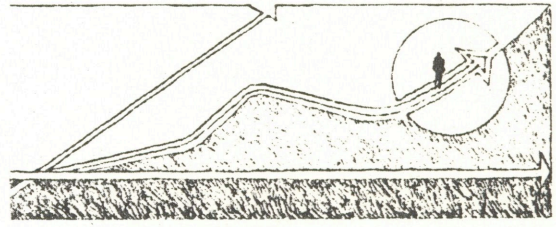


Fig. 51 Configuration of the path and experiencing the sequence of space.

Landscaping will be used extensively to create the desired spaces

and help control activity areas. It may be used as barriers, wind breaks, shaded picnic areas, and visual control elements. Careful choices of planting and maintenance procedures should be considered because of the harsh coastal environment. Mature plant material may be used to help speed up the creation of areas necessary for immediate occupation.

The main goal for this project is to organize and develop a cultural center and marina facility for the people of the West Hawaii region. The complex will promote community interaction and interest in the arts and to accommodate the prople of the area with public facilities which were never before made available to them. Still the facility should correspond to the past culture and help people visualize and experience the environment of the past. If this can be achieved without going back into time, then I feel that the designer has met his goal and was very compassionate to the dying culture and its dwindling values.

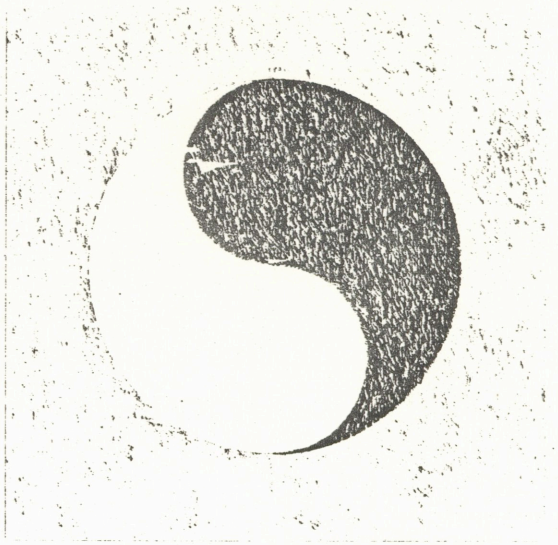


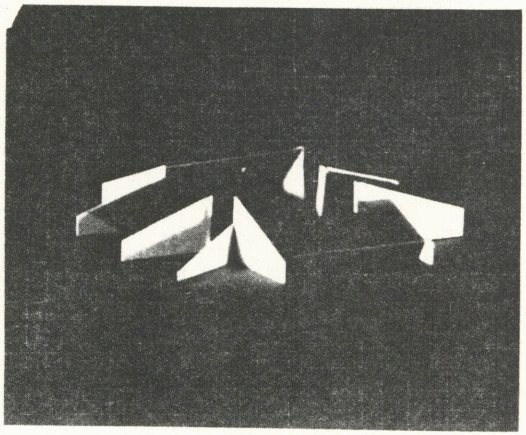
Fig. 52 The concept of Yin and Yang.

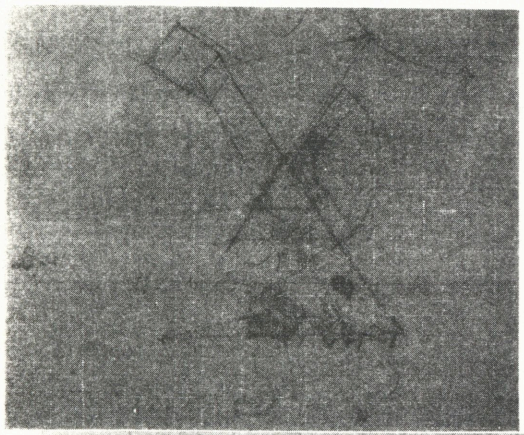
In conclusion, public oriented buildings as well as residences must be designed with respect to cultural values and ideals. In actuality there is no correct answer for this problem because the word culture has more than one meaning. Using culture as the basis of design for the project seemed to be appropriate, but in other cases it might be quite inferior. Todays values have again changed culture and environmental considerations may be the main element for a design. In any case one should not be treated without the other, everything must be treated as a whole. The concept of duality is explained by Laotse, which translates;

"We put thirty spokes together and call it a wheel;
But it is on the space where there is nothing that the utility of the wheel depends.
We turn clay to make a vessel;
But it is on the space where there is nothing that the utility of the vessel depends.
We pierce doors and windows to make a house;
and it is on these spaces where there is nothing that the utility of the house depends.
Therefore, just as we take advantage of what is, we should recognize the utility of what is not."31

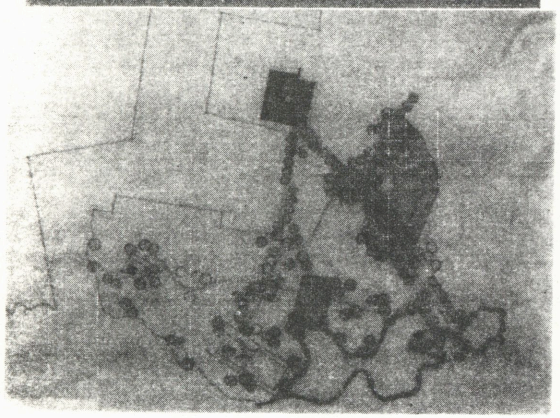
site/study model

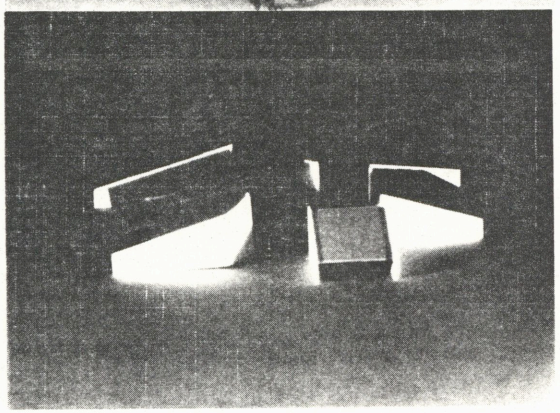




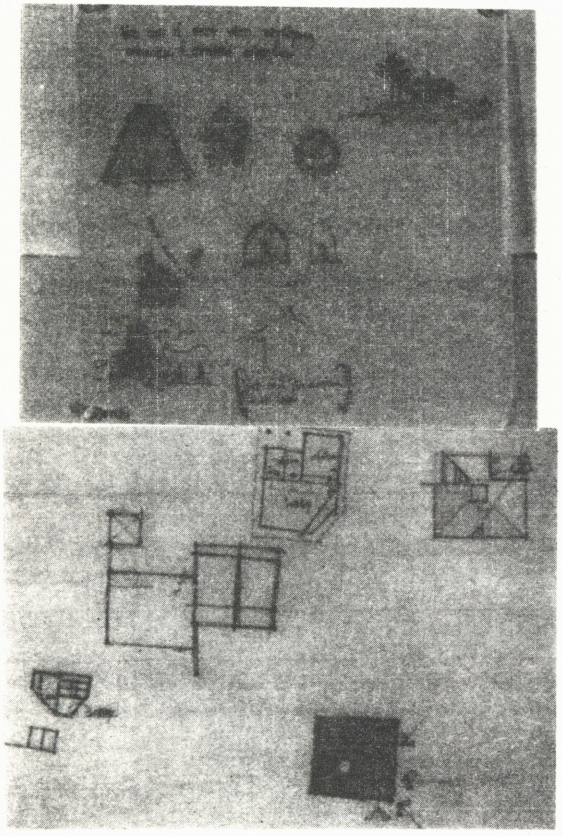


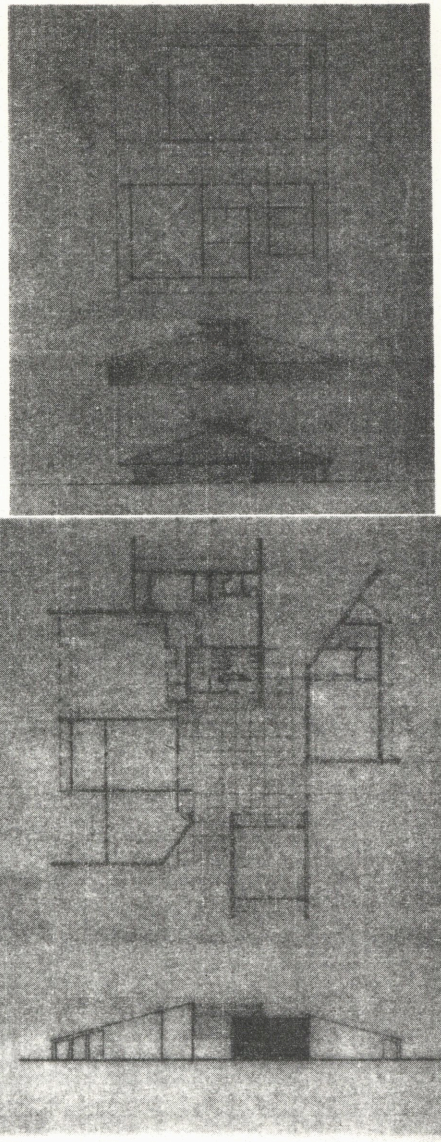


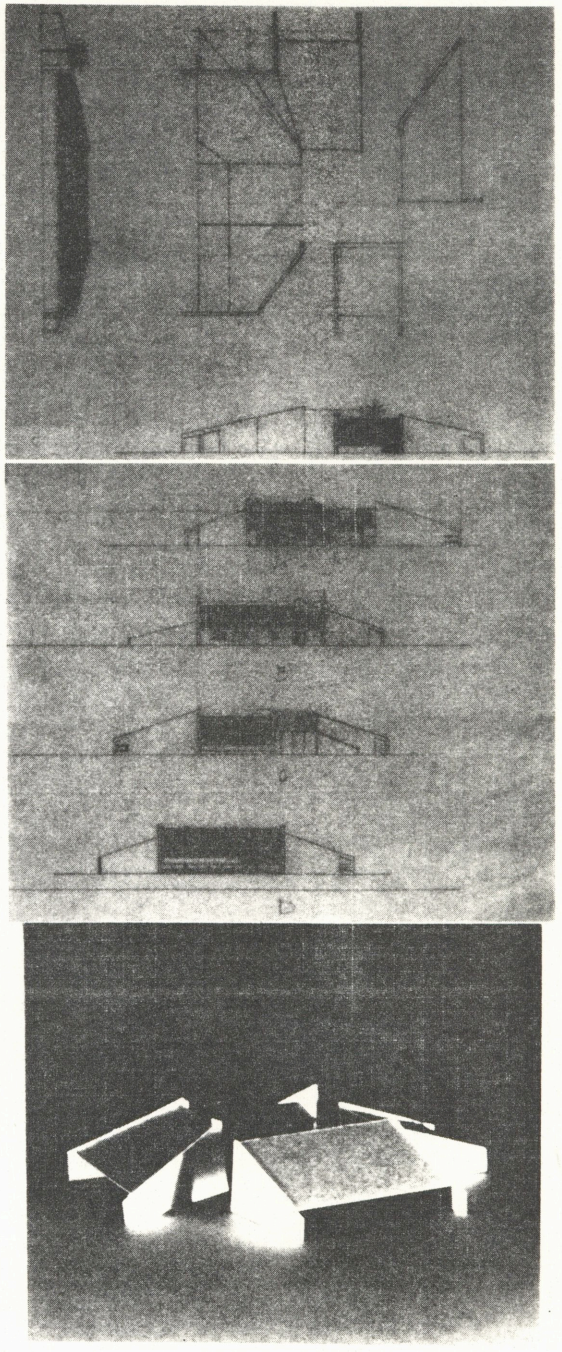




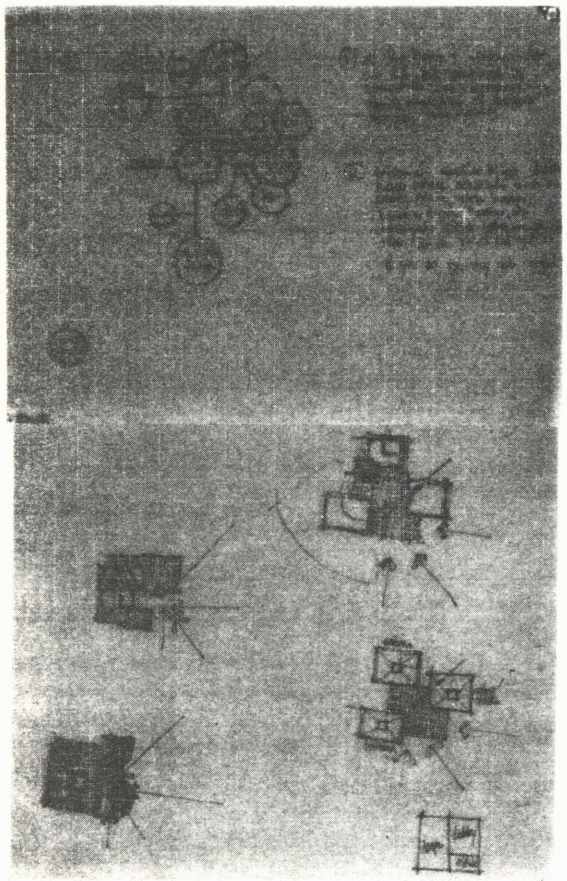
cultural center

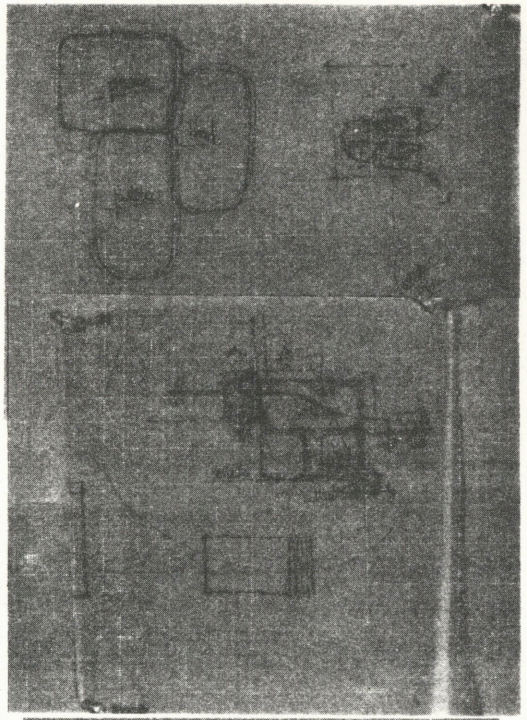


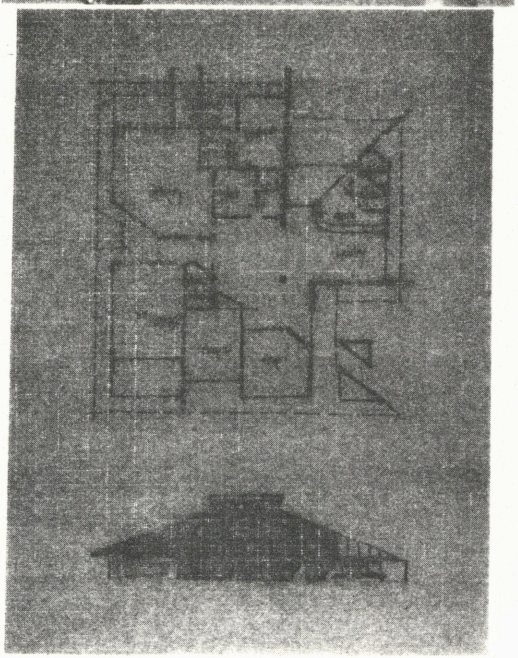


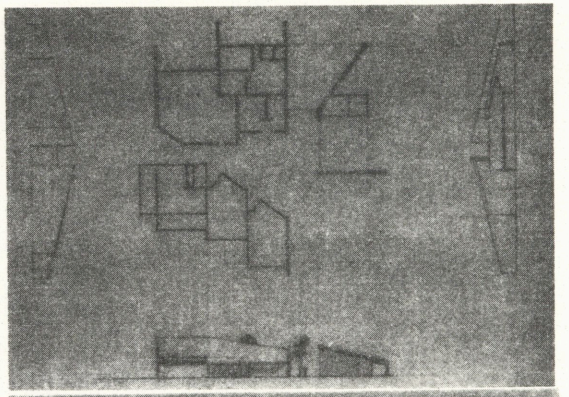


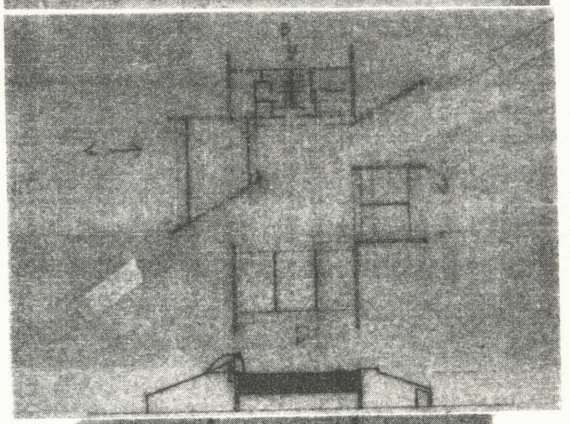
marina

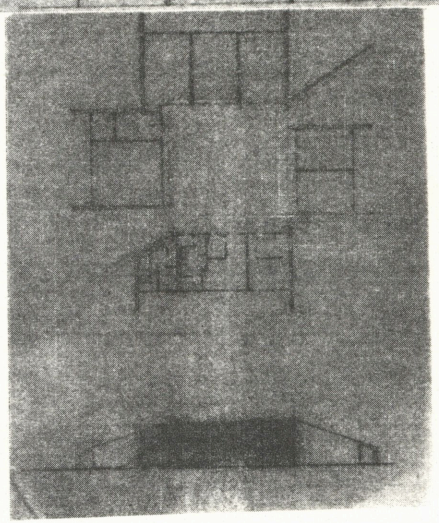




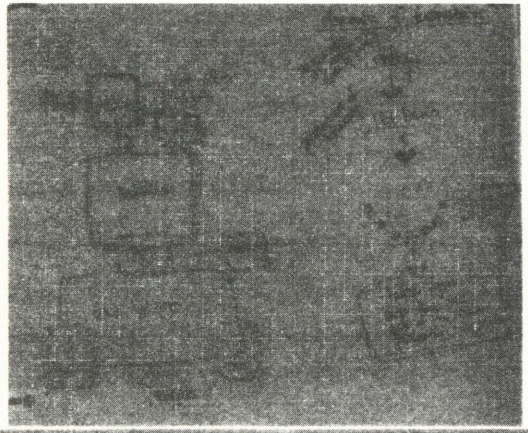


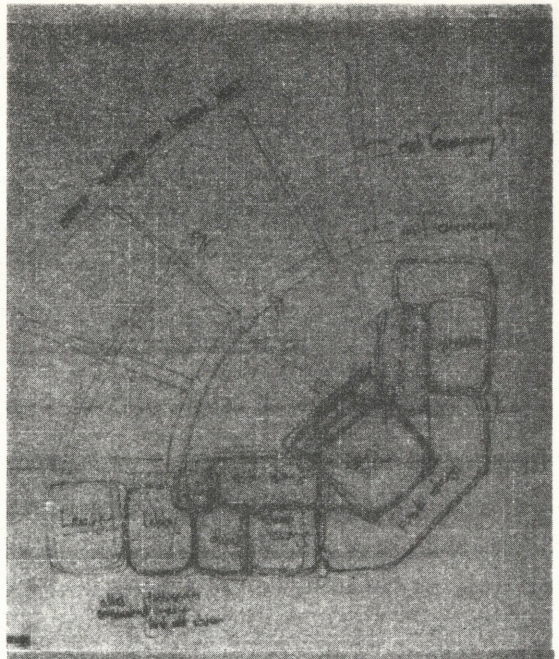


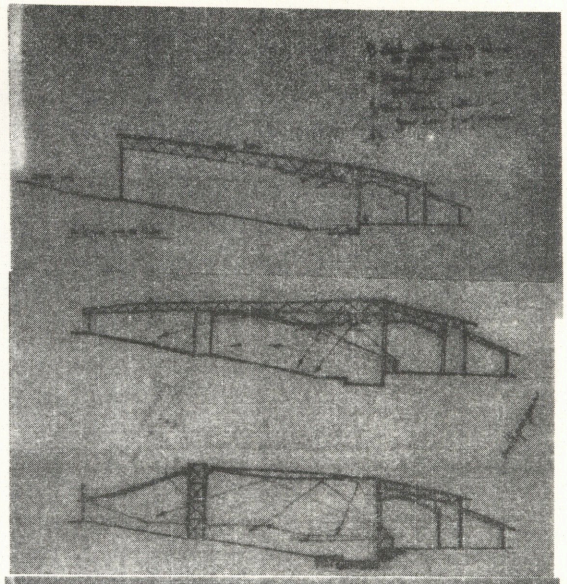


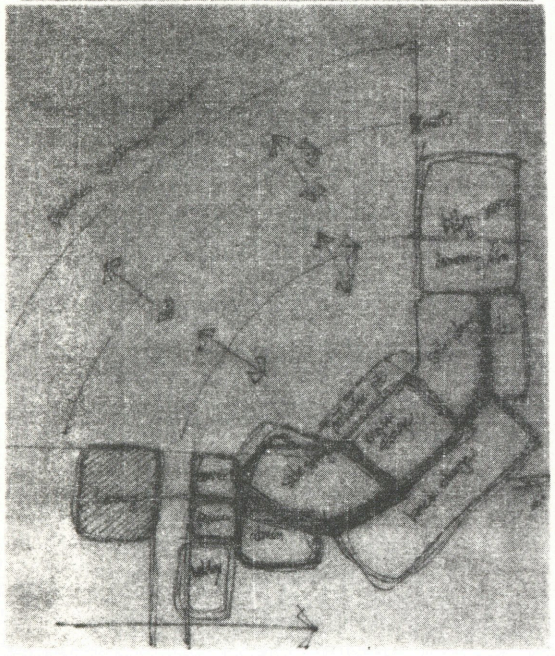


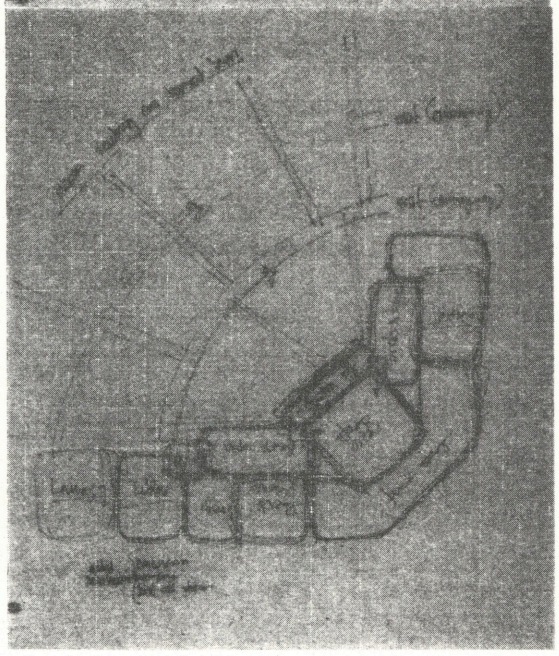
amphitheater

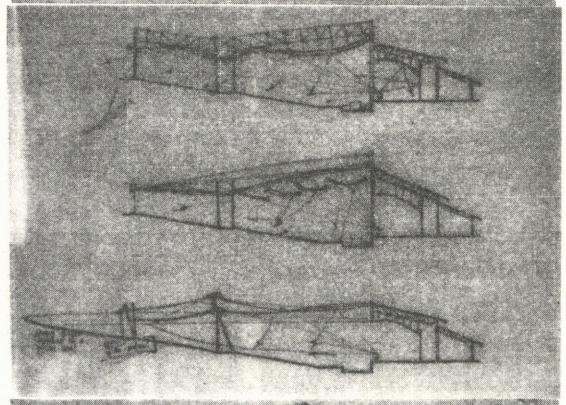


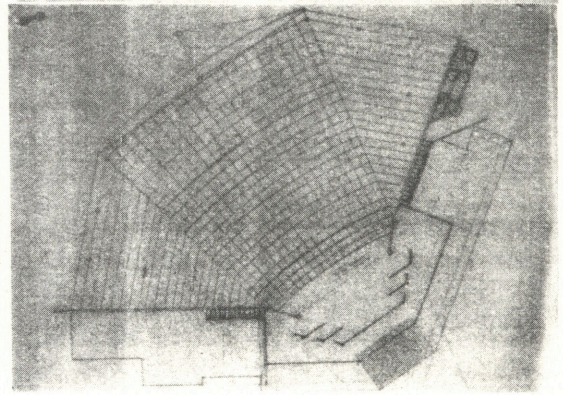












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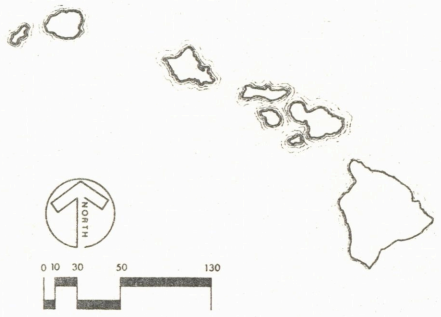
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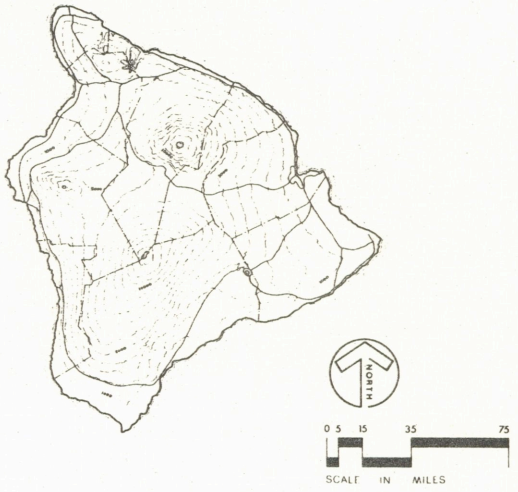
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SCALE IN MILES


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KALAOA 2
OOMA 1
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KOHANAIKI
KALOKO
HONOKAHAU
KEALAKEHE
AHUOU
NORTH
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SCALE IN THOUSAND FEET


Sports Facility
Queen Kaahumanu Highway
Proposed National Historic Park
Proposed Golf Course
Private Property
Honokohau Harbor
Proposed Facility
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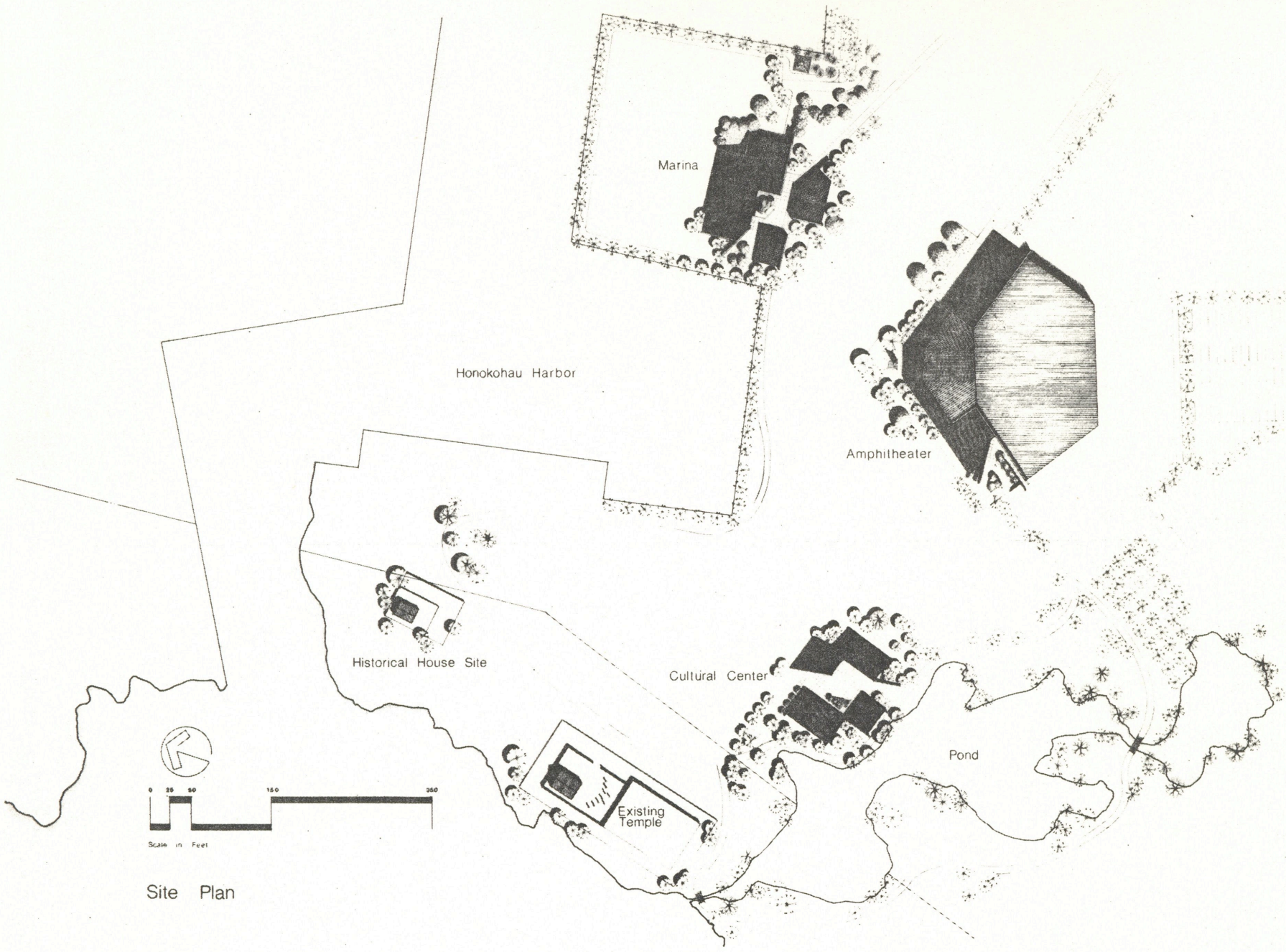
Scale in Feet

Contextual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Cultural Center
Pond
Existing Temple
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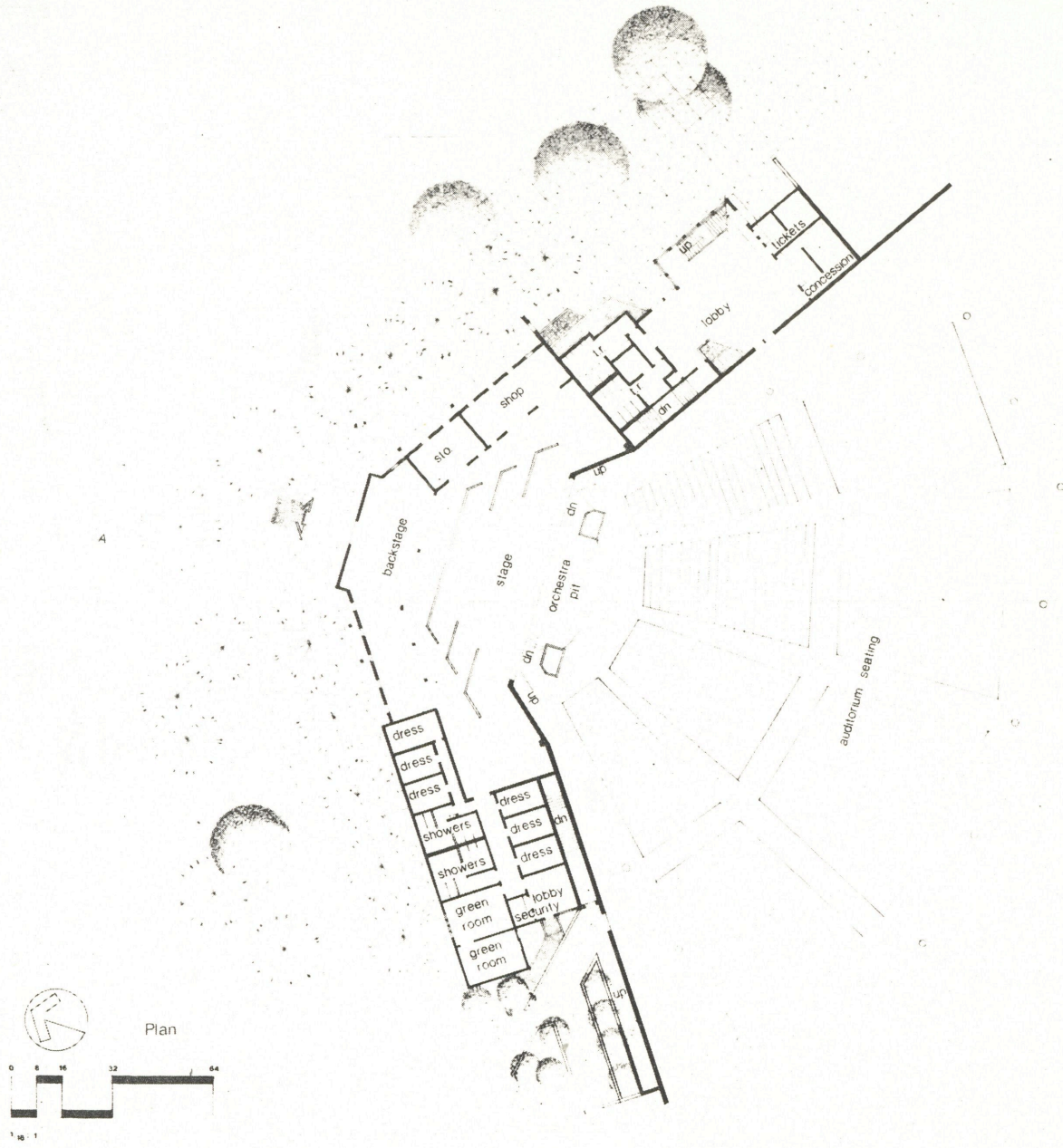
Scale in Feet

Site Plan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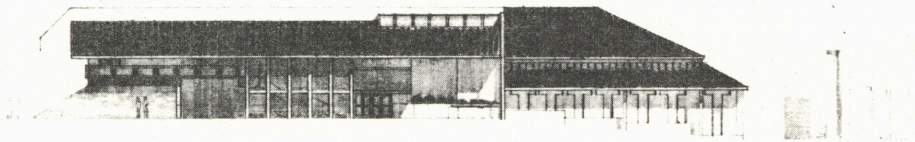

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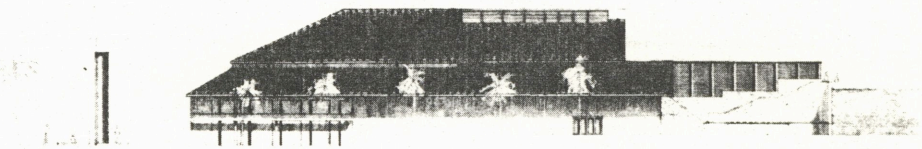

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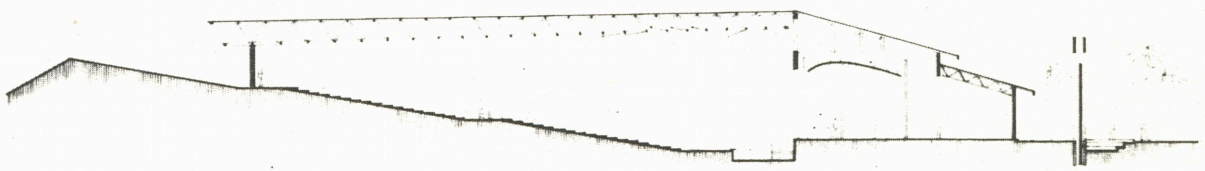

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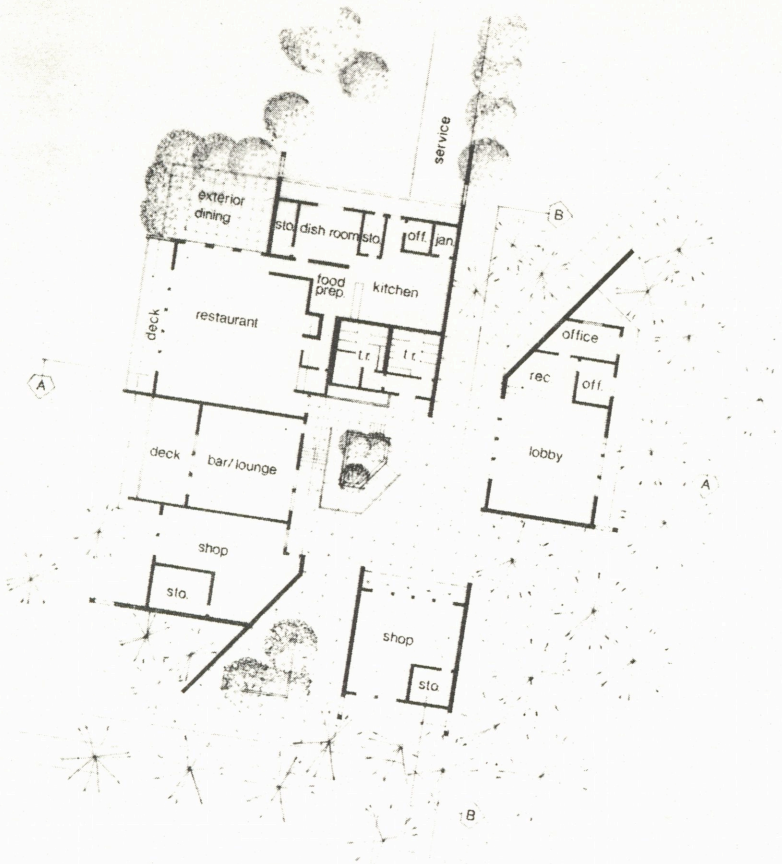

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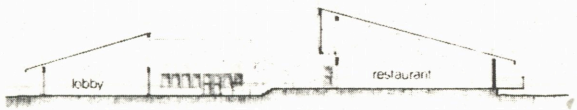

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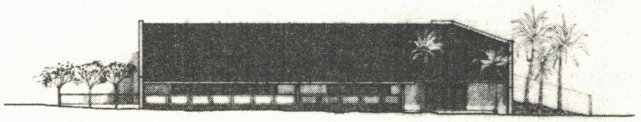

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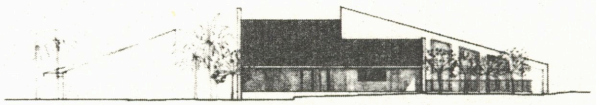
South Elevation



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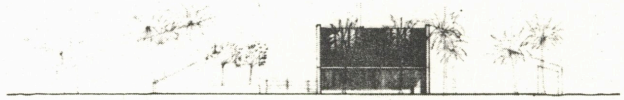

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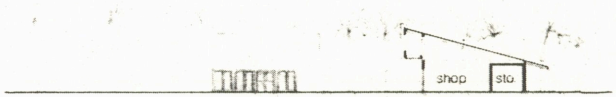

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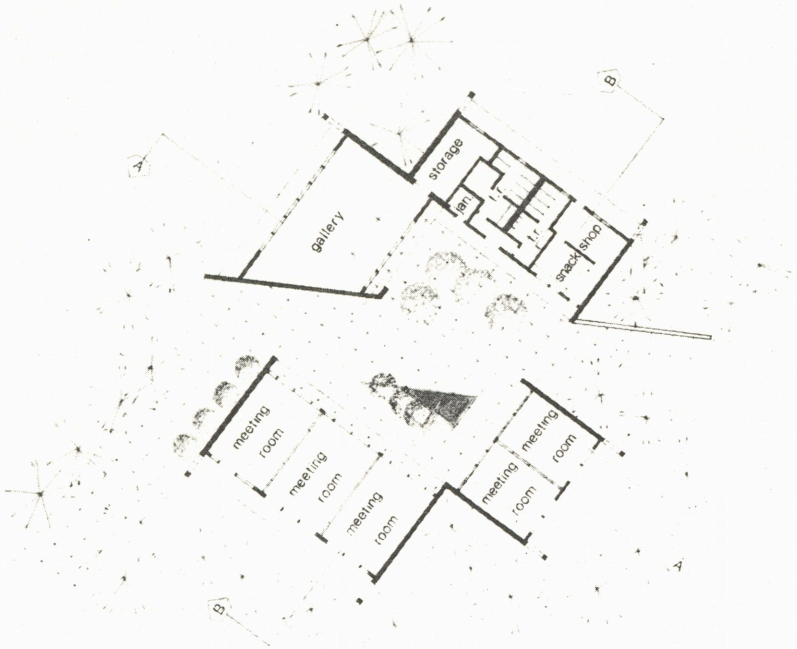

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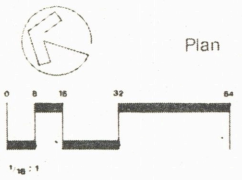

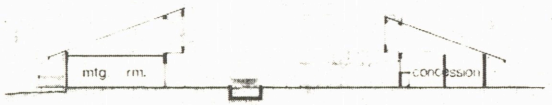

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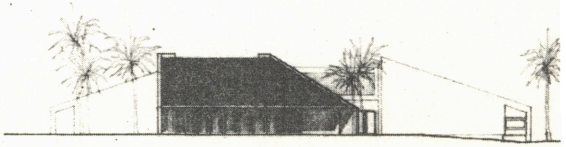

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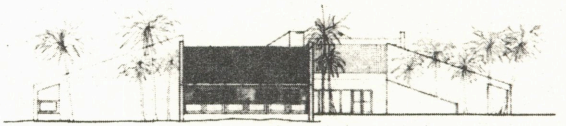

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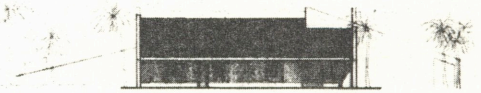

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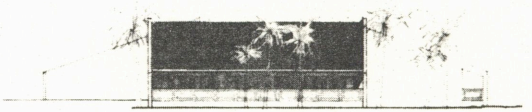

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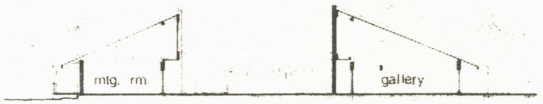

Section B-B

Appendix

Bibliography

Baumgart, Fritz. A History of Architectural Styles. Trans. Edith Kustner and J. A. Underwood, New York: Praeger Publishers, 1970.

Beaglehole, J. C. (Ed.). The Journals of Captain James Cook on His Voyages of Discovery. Vol. 3, Great Britain: University Press, 1967.

Belt, Lemmon, Lo Architects and Engineers. A Capitol For the State of Hawaii. Honolulu: Belt, Lemmon, Lo, 1961.

Buck, Peter H. Vikings of the Pacific. Chicago: University of Chicago Press, 1959.

Catanese, Anthony J. Introduction to Urban Planning. New York: McGraw-Hill Book Company, 1979.

Cook, James. Voyages of Discovery. London: Ward, Look, Bowden, and Co., 1728-1779. (Captain's Journal With Assistance by Dr. Hawkesley)

Cox, J. Halley and Davenport, William H. Hawaiian Sculptures. Honolulu: The Univesity Press of Hawaii, 1974.

Guidoni, Enrico. Primitive Architecture. Trans. Robert Erich Wolf, New York: Harry N. Abrams, Inc., Publishers, 1978.

Forman, Werner and Syme, Ronald. The Travels of Captain Cook. New York: McGraw-Hill Book Company, 1971.

Fraser, Douglas. Village Planning in the Primitive World. New York: George Braziller, 1968.

Greene, Herb. Mind and Image: An essay on art and architecture. Kentucky: University Press of Kentucky, 1976.

Hall, Edward T. The Hidden Dimension. New York: Anchor Books, 1969.

Honigman, John J. Understanding Culture. New York: Harper and Row Publishers, 19

Kikuchi, William K. "Prehistoric Hawaiian Fishponds" Science. Vol. 193 Issue 4250, July 23, 1976.

Krell, Dorothy (ed.) Beautiful Hawaii. California: Lane Magazine and Book Company, 1972.

Kroeber, A. L. Style and Civilizations. New York: Cornell University Press, 1957.

Kukreja, C. P. Tropical Architecture. India: McGraw-Hill Publishing Company Ltd., 1978.

Lynch, Kevin. Site Planning. Mass.: MIT Press, 1962.

Martienssen, Heather. The Shapes of Structure. Oxford: Oxford University Press, 1976.

Moore, Charles. "Creating fo Place" Image 4. John McRae ed., vol. 4 Texas: University of Texas School of Architecture, 1966.

Moore, Charles, Allen, Gerald, and Lyndon, Donlyn. The Place of Houses. New York: Holt Rinehart, and Winston, 1974.

Olgyay, Victor. Design With Climate. New Jersey: Princton University Press, 1963.

Oliver, Paul. Shelter, Sign and Symbol. New York: The Overlook Press, 1977.

Preiser, Wolfgang F. E. Facility Programming: methods and application. Pennsylvania: Dowden, Hutchinson, and Ross Inc., 1978.

Rapoport, Amos. House Form and Culture. New Jersey: Prentice Hall, Inc. 1969.

Rapoport, Amos. The Mutual Interaction of People and Their Built Environment: a cross-cultural perspective. Paris: Mouton Publishers, 1976.

Raskin, Eugene. Architecture and People. New Jersey: Prentice Hall, Inc., 1974

Summers, Catherine C. Molokai: a site survey. Honolulu: Bishop Museum, 1971.

Tainter, Joseph A. and Cordy, Ross H. "An Archaeological Analysis of Social Ranking and Residence Groups in Prehistoric Hawaii". World Archaeology, Vol. 9 No. 1 (1977).

Terazaki, T. David. Architectural Climatology and Environmental Design in Hawaii. Honolulu: University of Hawaii Press, 1973.

Towill, R. N. Corporation. Kealakehe Regional Sports Complex. Honolulu: R. N. Towill Corp., 1976.

Wolbrink, Donald and Assoc. Kona Community Development Plan. Honolulu: Donald Wolbrink and Assoc., 1975.

Yoon, Charles and Associates. Kealakehe Development Plan. Honolulu: Charles Yoon and Assoc., 1968.

Footnotes

1. William Morris, ed. The American Heritage Dictionary of the English Language (Boston: American Heritage Publishing Co., Inc. and Houghton Mifflin Co., 1973), p. 321.

2. John J. Honigmann, Understanding Culture (New York: Harper & Row Publishing), p. 3.

3. Amos Rapoport, ed. The Mutual Interaction of People and Their Built Environment (Paris: Mouton Publishers, 1976), p. 25.

4. Ibid.

5. William Morris, ed. The American Heritage Dictionary of the English Language (Boston: American Heritage Publishing Co., Inc. and Houghton Mifflin Co., 1973), p. 1056.

6. Belt, Lemmon, and Lo, Arch. and Engineers, A Capitol For the State of Hawaii (Honolulu: Belt, Lemmon, and Lo) p.

7. Anthony J. Catanese, Introduction to Urban Planning (New York: McGraw-Hill Book Co., 197), p.4-5.

8. Paul Oliver, Shelter, Sign, and Symbol (New York: The Overlook Press, 1977), p. 116.

9. Amos Rapoport, ed. The Mutual Interaction of People and Their Built Environment (Paris: Mouton Publishers, 1976) p. 24.

10. Paul Oliver, Shelter, Sign, and Symbol (New York: The Overlook Press, 1977), p. 23.

11. Ibid., p. 116.

12. Amos Rapoport, ed. The Mutual Interaction of People and Their Built Environment (Paris: Mouton Publishers, 1976), p. 31.

13. Ibid.

14. J. Halley Cox and William H. Davenport, Hawaiian Sculpture (Honolulu: University Press of Hawaii, 1974), p. 104.

15. Ibid., p. 9.

16. Ibid., p. 36.

17. Ibid., p. 83.

18. Ibid., p. 36.

19. Ibid., p. 95

20. Ibid., p. 17.

21. Ibid., p. 19.

22. Ibid., p. 12.

23. Dorothy Krell, ed. Beautiful Hawaii (California: Lane Magazine and Book Co., 1972), p. 8.

24. R. M. Towill Corporation, Kealakehe Regional Sports Complex (Honolulu: R. N. Towill Corp., 1976), p. 21.

25. Charles Yoon and Assoc. Inc., Kealakehe Development Plan (Honolulu: Charles Yoon and Assoc., Inc., 1968), pp. 11-40 prepared for the State of Hawaii Department of Land and Natural Resources.

26. R. M. Towill Corporation, Kealakehe Regional Sports Complex (Honolulu: R. M. Towill Corp., 1976), p. 33.

27. An Archaeological Survey of the Seaward Portion of Honokohau #1 and #2 North Kona, Hawaii (Honolulu:

28. Charles Yoon and Assoc., Inc., Kealakehe Development Plan (Honolulu: Charles Yoon and Assoc., Inc., 1968), p. 65.

29. William K. Kikuchi, Prehistoric Hawaiian Fishponds, Science Magazine, Vol. 193, p. 295.

30. Ibid., O. 298.

31. Francis D. K. Ching, Architecture: Form, Space and Order (New York: Van Nostrand Reinhold Co., 1979), p. 106.

Illustrations

Fig. 1 Francis D. K. Ching. Architecture: Form, Space, and Order. Van Nostrand Reinhold, 1979.

Fig. 2 Fritz Baumgart. A History of Architectural Styles. Praeger Publishers, 1970.

Fig. 3 Ibid.

Fig. 4 Enrico Guidoni. Primitive Architecture. Harry N. Abrams, Inc., 1975.

Fig. 5 Ibid.

Fig. 6 Amos Rapoport. House Form and Culture. Prentice Hall, Inc., 1969.

Fig. 7 Enrico Guidoni. Primitive Architecture. Harry N. Abrams, Inc., 1975.

Fig. 8 Amos Rapoport. House Form and Culture, Prentice Hall, Inc., 1969.

Fig. 9 Ibid.

Fig. 10 Fritz Baumgart. A History of Architectural Styles. Praeger Publishers, 1970.

Fig. 11 Peter H. Buck. Vikings of the Pacific. Univ. of Chicago Press, 1959.

Fig. 12 James Cook. Voyages of Discovery. Ward, Look, Bowden and Co., 1728-1779.

Fig. 13 J. C. Beaglehole. The Journals of Captain James Cook on his Voyages of Discovery. University Press, 1967.

Fig. 14 Ibid.

Fig. 15 Historic Buildings Task Force. Old Honolulu. Historic Buildings Task Force, 1970.

Fig. 16 Ibid.

Fig. 17 Dorothy Krell. Beautiful Hawaii. Lane Magazine and Book Co., 1972.

Fig. 18 J. Halley Cox and William H. Davenport. Hawaiian Sculptures. The University Press of Hawaii, 1974.

Fig. 19 Dorothy Krell. Beautiful Hawaii. Lane Magazine and Book Co., 1972.

Fig. 20 J. Halley Cox and William H. Davenport. Hawaiian Sculptures. The University Press of Hawaii, 1974.

Fig. 21 Ibid.

Fig. 22 Ibid.

Fig. 23 Catherine C. Summers. Molokai. Bishop Museum, 1971.

Fig. 24 Dorothy Krell. Beautiful Hawaii. Lane Magazine and Book Co., 1972.

Fig. 25 Charles Yoon and Assoc. Kealakehe Development Plan. Charles Yoon and Assoc., 1968.

Fig. 26 James Cook. Voyages of Discovery. Ward, Look, Bowden, and Co., 1728-1779.

Fig. 27 J. Halley Cox and William H. Davenport. Hawaiian Sculptures. The University Press of Hawaii, 1974.

Fig. 28 R. N. Towill Corp. Kealakehe Regional Sports Complex. Rn. N. Towill Corp., 1976.

Fig. 29 Ibid.

Fig. 31 Charles Yoon and Assoc. Kealakehe Development Plan. Charles Yoon and Assoc., 1968.

Fig. 32 Ibid.

Fig. 33 Ibid.

Fig. 34 Ibid.

Fig. 35 Ibid.

Fig. 37 Ibid.

Fig. 38 Dorothy Krell. Beautiful Hawaii. Lane Magazine and Book Co., 1972.

Fig. 39 Catherine C. Summers. Molokai. Bishop Museum, 1971.

Fig. 40 Dorothy Krell. Beautiful Hawaii. Lane Magazine and Book Co., 1972.

Fig. 42 Charles Yoon and Assoc. Kealakehe Development Plan. Charles Yoon and Assoc., 1968.

Fig. 43 Catherine C. Summers. Molokai. Bishop Museum, 1971.

Fig. 45 William K. Kikuchi. "Prehistoric Hawaiian Fishponds". Science, Vol. 193 Issue 4250, July, 1976.

Fig. 46 Joseph A. Tainter and Ross H. Cordy. "An Archaeological Analysis of Social Ranking and Residence Groups in Prehistoric Hawaii". World Archaeology, Vol. 9, No. 1, 1977.

Fig. 47 William K. Kikuchi. "Prehistoric Hawaiian Fishponds." Science, Vol. 193, Issue 4250, July, 1976.

Fig. 48 Francis D. K. Ching. Architecture: Form, Space and Order. Van Nostrand Reinhold, 1979.

Fig. 49 Ibid.

Fig. 50 Ibid.

Fig. 51 Ibid.

Fig. 52 Ibid.

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