A FIELD INVESTIGATION OF HOUSING IN EUROPE, INDIA, THAILAND, AND JAPAN INDICATING SOME CULTURAL EFFECTS UPON THEIR DESIGN

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PREFACE

> . . . And the Hindu King summoned three blind men to his palace to examine the elephant standing in the middle of his court. The first man felt the ear and exclaimed that an elephant must be a large leathery fan! The second man touching the stomach, proclaimed the elephant to be a large bowl. The third man grabbed the tail and said undoubtedly the animal must be shaped like a broom.
>
> -- as told to me by an Indian Brahman on a train to Madras.

We sometimes tend to view another culture as the three blind men viewed the elephant -- in pieces, not the whole. The desire for the beginnings of understanding of other ways of life, different from ours, is the intent of this study.

This thesis is dedicated to Mr. Ronald Charles Eld, without whose undying friendship, patience, understanding and comradeship throughout two years of travel around the world, this work would not have been possible.

This writer's most sincere gratitude and appreciation goes to Mrs. Christine F. Salmon, Associate Professor of Housing and Interior Design; and Dr. Norman N. Durham, Dean of the Graduate College, Oklahoma State University, whose support and direction during the period of the field research the past two years allowed me to become aware of the importance of the "wholeness of the elephant of culture." Through their patience and creative guidance this work has come to fruition.

Indebtedness is also acknowledged to Dr. Florence McKinney, Professor and Head of the Department of Housing and Interior Design; Mr. Harold Sare, Assistant Professorof the Department of Political Science; and Dr. Sidney Brown, Professor of East Asian History, whose searching questions, recommendations, and criticisms--as members of my committee--assisted in strengthening the thesis.

The writer also acknowledges sincere indebtedness to the following people, in order of their meeting, whose sincere love, friendship and understanding permitted him to comprehend more fully the parts of the world where he traveled and studied culture: Mr. and Mrs. John Quinn, Paisley, Scotland; Mr. and Mrs. F. Foley Wright, Brussells, Belgium; Mr. and Mrs. Maurice Haines, Charleroi, Belgium; Msr. Robert Courtoi and family, Charleroi, Belgium; Family Landrot, Poitier, France; Herr Manfred Keller, Duisburg, Germany; Mr. and Mrs. Gerd Moellers, Oberhausen, Germany; Connie Colding, Bonn, Germany; Mr. and Mrs. Dean Osborn, Wiesbaden, Germany; Wolfgang Bruckner, Furstenfeldbruck, Germany; Dr. Renato Cardano and family, Rome, Italy; Miss Raj Bath, New Delhi, India; Mr. Ram Dip Singh, Chona, India; Christopher Ryan, Madras, India; Mr. Raymond Yu, Bangkok, Thailand; Mr. Merwin Shurberg, Bangkok, Thailand; Miss Songsri Rajatawan, Bangkok, Thailand; Lim Cham, Siem Reap, Cambodia; William Ng, Hong Kong; Mr. and Mrs. Tokita Hiroyuki, Osaka, Japan; and Aida Yoichi, Yokahama, Japan.

Further indebtedness goes to my parents, Mr. and Mrs. E. P. Childress, Tulsa, Oklahoma; my grandmother, Mrs. Faye B. Murray, Oklahoma City, Oklahoma; Dr. and Mrs. Frank Soday, Tulsa,

Oklahoma; and Mr. and Mrs. Frank Moskowitz, Tulsa, Oklahoma; without whose constant beliefs in my endeavors this project would have no meaning.

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INTRODUCTION

Upon arriving in Japan the customs official began his stock questioning procedures. "Are you engaged in culture?" Yes, the occupation was that of designer, but never before, in all of the other countries visited, had this question been so bluntly asked. It made me wonder, more than ever, exactly what happens when an ancient cultural society like the Japanese meets with the West, a civilization that has decided to rid itself of most of the past in favor of material progress based upon exacting science and technology; a progress that has allowed us to raise our living standards to heights never before attained in recorded history, but often failing to enlist the emotional loyalties of the very peoples who developed it. It seems Western man, in his desperate attempt to create "material progress," has overlooked the most important value of the inner-world, the world known by the oriental for countless centuries. By comparing the deeper motives of our existence perhaps man can discover what unites, rather than divides us. The physical world has become too small for us to be able to afford arrogance, and ignorance, of each other -- ignorance which inevitably has led us to violence.

Architects and designers sometimes tend to impose on, rather than contribute to, cultural unity. How can he overcome the piecemeal development of the physical surroundings which so often offends?

He must first consider the "whole" which will contain the concepts of design they choose to express.

It has been said by C. M. Deasy

> The basic reason for building or designing anything is to make people more effective. The personal motivations and the relationships with others have far more to do with the level of performance than either physical comfort or visual design quality. Therefore, the true measure of a design is merit performance as a social setting, not its architectural qualities. [1]

Purpose

Increasing developments of communications have diminished our world to an uncomfortable "invasion of space"[2] -- forcing us into a world awareness. Communication, however, has not always increased our understanding. The importance of recognizing and understanding those "other spaces/other people" is the foundation of this study.

In order to design an environment for a society different from ours, an understanding of the subtle inter-play of religion, philosophies of life, and cultural societal pressures is necessary. What appears to us to be "backward or primitive" attitudes toward that cultural environment will then be explored as an introduction to a new dimension of design.

Procedure

Over a two-year period, I visited 28 countries. Six were chosen -- Belgium, Germany, France, India, Thailand and Japan -- for this study.

Each area under consideration will first be discussed geographically, indicating population, area, some social or religious

background, and basic characteristics of the environment. In each country the most significant space in the house, considered by this researcher, -- entry, kitchen, living, dining, bathroom, or bedroom -- will be discussed first, with the other areas following in decreasing importance. The floors, walls, windows and accessories will be discussed under the heading "Additional Design Considerations" immediately following. Original drawings have been incorporated into the written text, with larger figures, floor plans, and details, provided at the end of each country discussed. A map of each geographic area is included with the drawings.

Methodology

This research project was initiated in the summer of 1967 when this writer, with Mr. Ronald C. Eld began to plan a trip around the world, with the purpose of gathering knowledge of various life styles other than our own. Mrs. Christine Salmon assisted with the development of the research design used to guide us throughout the trip. It was decided that we should start the trip with only five dollars in order that we would be forced to work in the various countries. This would allow us an opportunity to observe more closely the cultures we were studying.

On November 26, 1967 we began the trip and by January, 1968, we had saved sufficient money to fly to Scotland from New York, hitchhike through England, and obtain work in Charleroi, Belgium. We worked in Belgium for a period of two months. During this time we studied French, while employed with Sinclair Okl Co., and lived with

a French family, which was helpful in developing attitudes toward a European life style.

Leaving Belgium in April, we hitch-hiked through England, Spain, Portugal, France, Switzerland and Italy, before seeking employment with the Mannesman Steel Company in Huckingen. We began working on May 30, 1968. Two months and many friends later we settled in Wiesbaden, Germany, working for the United States Air Base Commissary. Living free in the maids quarters of the Air Base Housing, under the employ of Mr. and Mrs. Dean Osborn, we managed to save sufficient money to proceed to Thailand, overland through Switzerland, Italy, Yugoslavia, Greece, Turkey, Iran, Afghanistan, Pakistan, India, Ceylon and Burma. This portion of the trip took six months.

Once in Thailand we found employment with Wilber Smith Associates who were in the process of writing a report on Thailand Transportation Systems for the World Bank. During this time we also worked for James S. Lee, a Tailor Shop in Bangkok. Two months of work in Thailand was the maximum allowed by immigration authorities. Our work was terminated September 26, 1969. Cambodia provided a ten day excursion to Angkor Wat, Siem Reap, traveling to the area by bus with the natives. Cambodia, and its people, taught this writer the concepts of Buddhism of the Theravada Little Vehicle. Kindness, common in all areas of Asia, was also exemplified in the Cambodian.

Leaving Cambodia on October 5, 1969, we stopped in Saigon where we lived four days in an Air Force Hotel in the center of the city. Hong Kong was our next stop. We were there for a one week

stay in a Chinese Hotel, which is usually off limits for tourists. Japan was next for a final view of Asia. Nearly four weeks in this country taught me some of the inner-meanings of Zen Buddhism, and the serene emotions of communication with nature. As one friend suggested: "Van, I feel you know the Japanese way of life, without prejudice."

The people of these countries made our visit an educational experience. It has been asked many times "how were you able to become involved with these people of other countries?" Sincerity, not curiosity, was the primary reason for our success. Few days passed when we were without involvement with families. Countless examples could be cited but perhaps the meeting of Ram Dip Singh in the Punjab state of India would serve as a typical experience.

On our second day in India, we were near a small agricultural village named Chona. While waiting for Ron to investigate a palace some two miles away this writer encountered Mr. Singh. He was a Sikh from Jamshedpur, visiting his father residing in this village. Ram Dip introduced himself and we began discussing the trip. He invited me to tea as it was near noon. On our way to his house he mentioned that he was about to take a bath and asked if he would be imposing an invitation. This writer, being anxious to learn the customs of India, agreed to join him. This was my first bath under a village pump. Ram Dip Singhs brother pumped the water while we wrapped in sarongs, changed into pajama trunks, and dunked under the spout.

Reaching his home, Mrs. Singh greeted us in the courtyard. In answer to a question concerning the proper method of greeting her, Ram Dip indicated placing the hands in a clasped position in front of

the face would be acceptable. It was apparent that sincerity, rather than curiosity, was the key to learning the customs of India. The invitation to tea became an invitation to lunch. Through much patience Ram Dip provided instruction on how to wash the hands, sit on the charpoy, eat with the hands, and take turns fanning each other. In questioning Ram Dip about the crowds of children that had gathered aroung our charpoy, watching us eat, he indicated that we were the first people outside the area of India to ever set foot in the village of Chona. It was a compliment. The invitation to tea and lunch was extended to include a stay for the night.

An account of this episode was written to give some indication of how we were able to successfully meet people and experience their way of life during the trip. At no time was there a desire to meet people in order to find a free meal or place to sleep. Hitch-hiking, buses over deserts, and third class train rides through 11,286 kilometers of India, and bicycling through the ruins of Angkor Wat provided ample opportunity to become involved with the people of the world.

All floor plans and drawings in this thesis came from the sketches provided in the logs and a selection of 4,000 color photographs. People of the various countries also assited with suggestions and explanations about certain subjects in order to make our observations as accurate as possible.

Review of Literature

Although an in-depth bibliography included in this study is important for the background of each country, the main body of this thesis has been based on the extensive logs kept daily during the

two-year period, dating from November 26, 1967, to November 4, 1969. The log incorporates over two thousand pages of observations and pen sketches of the 28 countries visited. The natives of each country with whom we came into contact read portions of the logs and assisted in elaborating and correcting their content. A copy of these logs is located in Professor Christine Salmon's office on the Campus of Oklahoma State University.

Literature pertaining to studies of the home in India, and Thailand are sketchy. There seems to be a large void in detailed descriptions of bathing, cooking, and sleeping areas. There are no floor plans of Indian or Thai houses found in any of the writings encountered by this writer. However, background information containing sociological, political, religious and economic descriptions were helpful in obtaining a broader scope and understanding of the living patterns of each particular area.

The continuation of research is needed for a better understanding of the relationship between culture or life styles and design. The Human Relations Area Files, Inc.[3] are providing monographs of various cultures, particularly in Asia and the Middle-East, indicating economic and technological growth. As more Americans develop industries and other private enterprises in these countries, close contact with these other people will increase, and knowledge of their uniqueness will be needed to assist in allowing these people to develop within the framework of their own culture, rather than within the framework of ours.

CHAPTER II

FINDINGS

Three countries -- Belgium, Germany and France -- will be discussed collectively under the heading "Europe," because of their cultural similarities. India, Thailand and Japan will be discussed separately because of their cultural diversities.

Europe

Since the end of World War II Europe has begun a rapid change as a result of economic aid programs, increased communication, and cultural interaction with the United States and other countries. Throughout this time, however, the open markets, Turkish toilets, portable, gas operated hot water units, bidets, wood burning stoves, intricate interlacing train systems, and the desire to continue traditions from the past have remained.

The American method of construction has been chided by the European, "it is obvious they have never had a war on their land,"[4] they have remarked. In contrast, a European house has a substantial wall thickness and a durable tile or wood roof, depending on location and resources. The continuation of tradition by the European lends stability to his environment which seems to change constantly.

Kitchens

The open market, source of fresh produce and meats, is the daily routine of the European woman. Because of this routine the large refrigerator has not become a necessity. The kitchen pantry becomes the storage area for fresh vegetables, home-canned fruits, and beverages. The freezer unit is making a progressive appearance into the modern home, however, and the open market is feeling the competitive efforts of the enclosed, modern, air-conditioned, well-equipped supermarket. Germany has been the leader in this area. As urbanization increases, the traditional market place will decrease in importance.

Because of the desire to retain the loved traditional architecture the European has adjusted the "old" space for new needs. Modular kitchen cabinets in Germany are as advanced as any in the United States. Portable dishwashers tuck neatly into pantries, and because of inadequate space for hot-water heaters the wall hung, gas operated units are the most popular.[5] These units allow cold water to run through gas warmed coils. The volume/pressure depends upon the temperature desired; more volume results in lower temperatures.

Electric rates are high in Europe and the electric range is regarded with suspicion in many areas. The gas range is the most popular and sometimes it is possible to find wood stoves in Bavarian cabins, French countryside restaurants and Belgium hotels.

The garbage disposal, because of inadequate plumbing facilities in the older residences, is a relatively new convenience. The problem of trash disposal is only beginning to become difficult. Grocery

sacks are almost non-existent, hand bags and nets are used to carry parcels. Bottles are still returned, paper cups and plates are often viewed as too informal, and drive-in/take-home establishments have not gained popularity. Germany is perhaps the leader in packaging, with beer cans, plastic cartons, paper sacks. Increasing production of throw-away packaging increases opportunities for litter and over-crowding refuse areas.

Living room

The living room in Europe is the main meeting place of the family. Arrangements vary, as well as decor, but one factor -- the coffee table -- remains a stable item throughout. The American has reduced the height of the table to an uncomfortable 18 to 20 inches. The coffee table in the European home, though found in various forms, remains 26 to 27 inches in height. It is as utilitarian as the dining table for this is where afternoon tea and cakes are served, as well as evening coffee or wine. A guest is never without this hospitality, regardless of the hour. In Germany and Belgium we were often unexpected guests in a home late at night and were served various types of pies, fruit, coffee or other beverages.[6]

The arrangement of the furnishings generally center around the table, with the overall arrangement appearing less formal and stiff than the American interior. One should not be deceived by the informal appearance, however, for formalities do exist as they do in any country or culture.

In the more elaborate home a study or library may exist where the individual family member may retreat for a quiet period for

reading, writing, or general relaxation. It is not usually used for entertaining large numbers of people. The study should not be confused with the American formal living room, or den, though usually used singularly, is a very active and important area of the home.

Dining room

The dining room is the primary eating area for the family. A small table may be found in the kitchen area, where space permits, but this is used primarily for additional mixing and food preparation. The dining area is regarded as the family meeting area and meals are usually long, with much conversation. Courses include after-dinner coffee, wine or schnapps. The evening meal, particularly in France and Belgium, is the most "sacred" and can last for several hours, with each course served on separate plates. The American, in his environment of schedules, meetings and evening engagements, has begun to veer from this tradition, regarding the formal dining room as merely a special holiday entertainment area. The German family is also beginning to feel the effects of this mobility to some extent.

Entry Hall

The entry hall, when provided, offers storage for coats and the inevitable umbrella stand. Europe is damp much of the year and wet clothing must be aired and dried. Coat racks, linen storage closets, dressing mirrors, and durable wall surfaces such as paneling, stone or water resistant wall coverings are common in this area.

Bathrooms

Although modern plumbing facilities for the bathroom are perhaps as advanced in Europe as anywhere in the world, the Turkish toilet may be found in public facilities. Viewing it from a sanitary aspect the Turkish variety may be regarded as the most practical. In many areas of France "outdoor" facilities are in continued use -- in the middle of towns! But, if we remember that most of the cities are hundreds of years old, this "inadequacy" becomes "quaint" rather than backward.

Generally speaking the European is not obsessed with a complete tub bath every day. The "morning bath" may consist of a wash basin of hot water, soap, and a wash cloth. In many older hotels hot water is drawn into a pitcher from a boiling cauldron to be found on the kitchen stove.[7] An appreciation for "necessities" remains.

Bidets are standard equipment in nearly every modern household and come in matching colors with the toilet, wash basin and tub. The floor and wall covering vary, but ceramic tile, in accent patterns and colors, is currently popular. Plaster walls are painted or papered as is common in the United States.

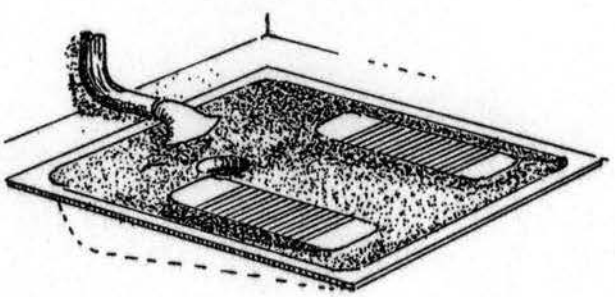

Figure 1.
A Turkish Toilet

Bedrooms

The bedroom remains relatively "conventional." The Armoir, or wardrobe closet/cabinet is the most

utilitarian feature. Even in newly constructed residences the walk-in closet or "built-in" is nearly non-existent. Traditionally the wardrobe cabinet has been a portable item, regarded as a piece of furniture just as the bed, dresser and night stand. Linen storage can usually be found in the hall areas. The down filled comforter can be found throughout Europe, almost without exception, and is usually the gift from the mother of the bride. It is the first item of housekeeping and reduces the need for electric blankets and other sleeping gear. The comforter is also standard equipment in hotels.

Additional Design Considerations

Floor surfaces throughout the home are as varied as the area of the country in which they are found. Terrazzo and parquet flooring are popular, although vinyl coverings are beginning to find general acceptance. Fired tiles and brick are also used. Area carpets with flooring revealed as a border is the generally acceptable treatment in the living room, dining room and entry hall. Bedrooms also have a floor covering although generally not so elaborate a pattern.

Pride is taken with the craftsmanship expended on parquet and terrazzo or hand fired tiles, and to cover it completely with carpet would be regarded as distasteful and an insult to the craftsman. Therefore, the American practice of "wall to wall" carpet is not generally accepted in Europe.

Live plants seem to be another important factor in the European interior. The Belgian drapery casement is usually a full twelve inches above the window sill to allow potted plants to grow in sunlight. The French and Germans also, to some degree, provide windowsill area

for plantings. Shear casements with a heavier fabric for side panels flanking the window is common.

The quantity of accessories in a European home varies with the individual. Family photos are almost without exception displayed in a conspicuous place. Most accessories are viewed from table surfaces or displayed in glass front cabinets.

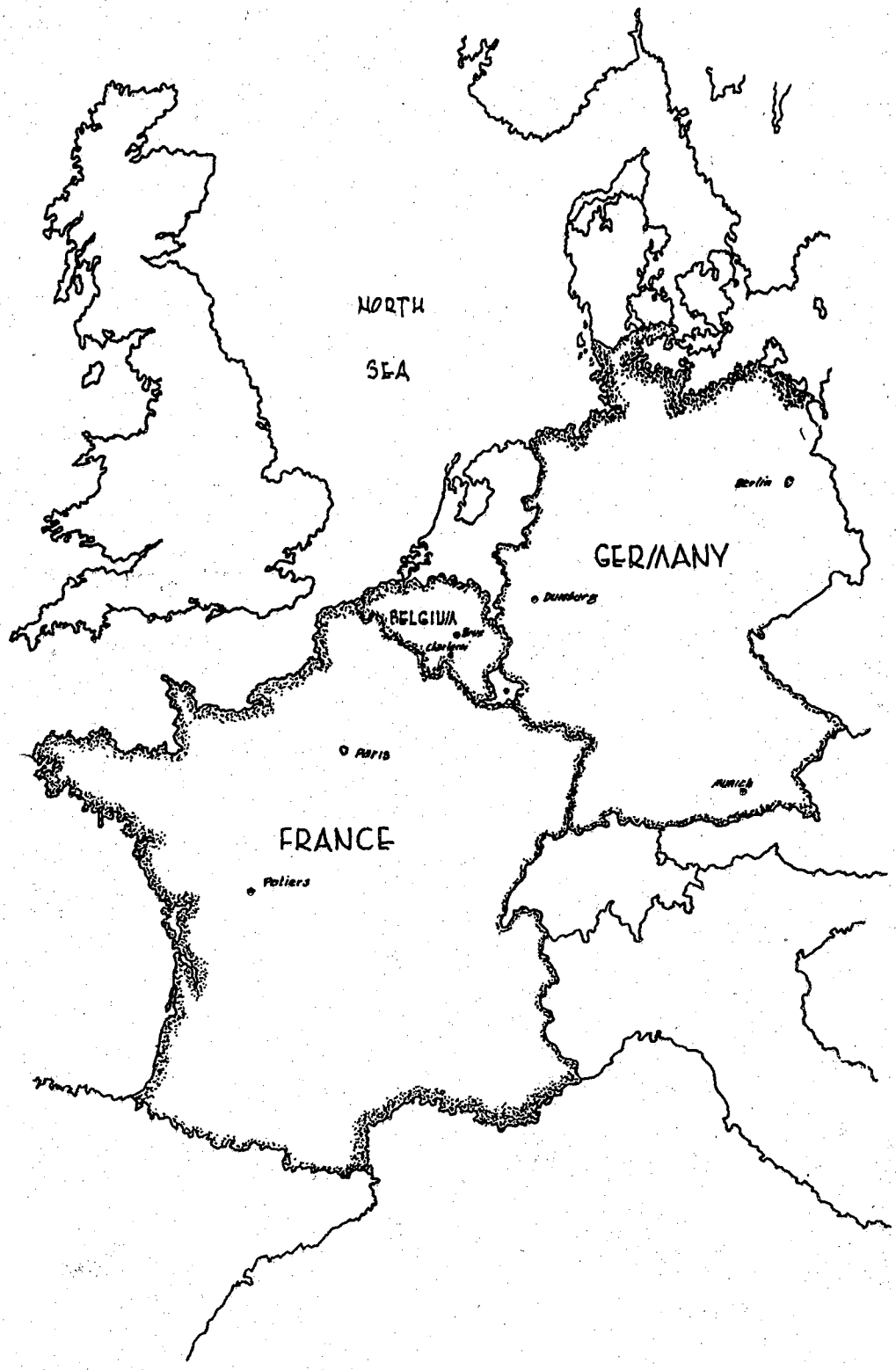

Figure 2.
Map of Belgium, France, Germany

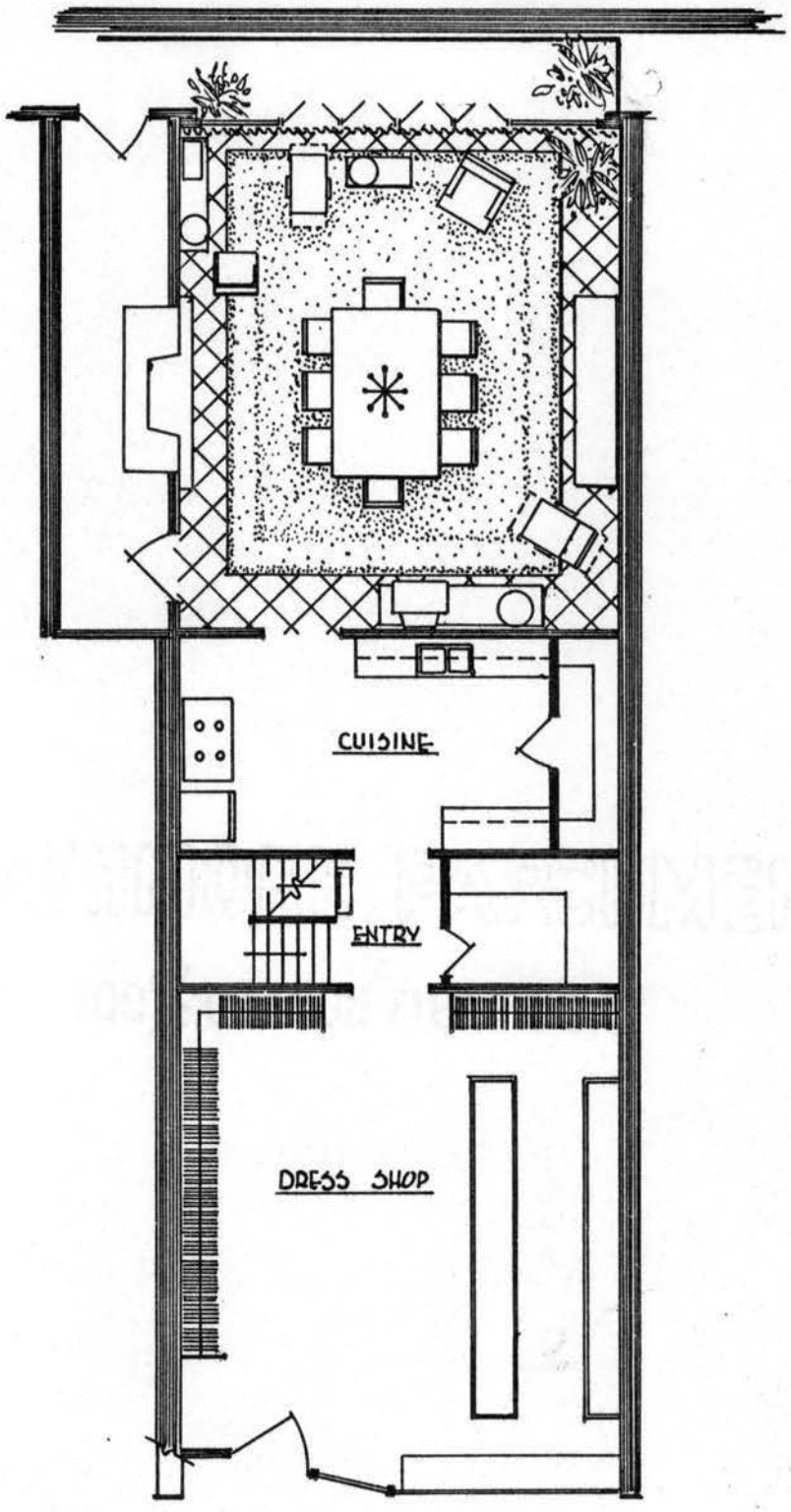

Figure 3.
Paul Brancart Residence, Charleroi, Belgium,
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Three Floors of Bedrooms Above

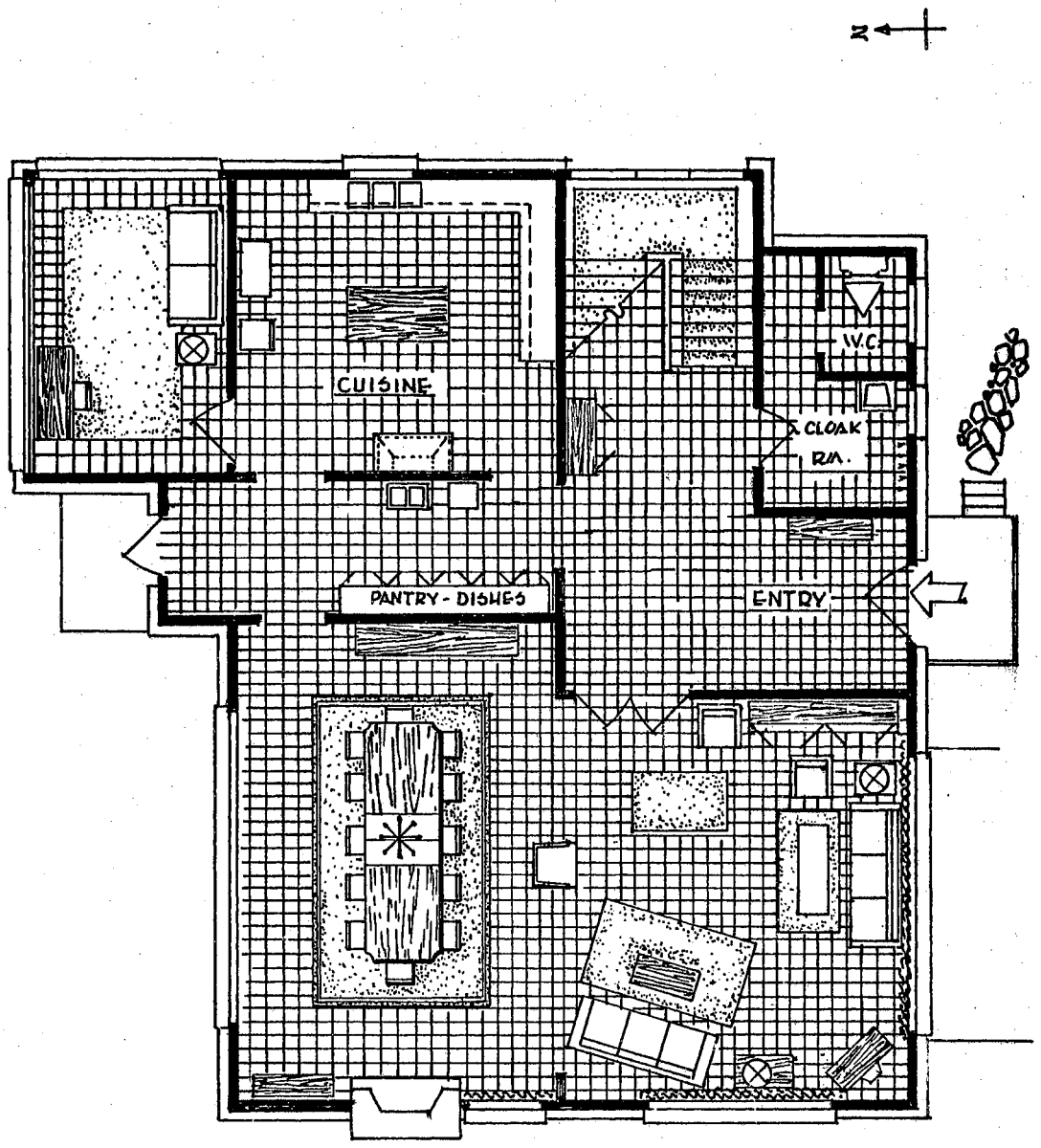

Figure 4.
Robert Courtoi Private Residence,
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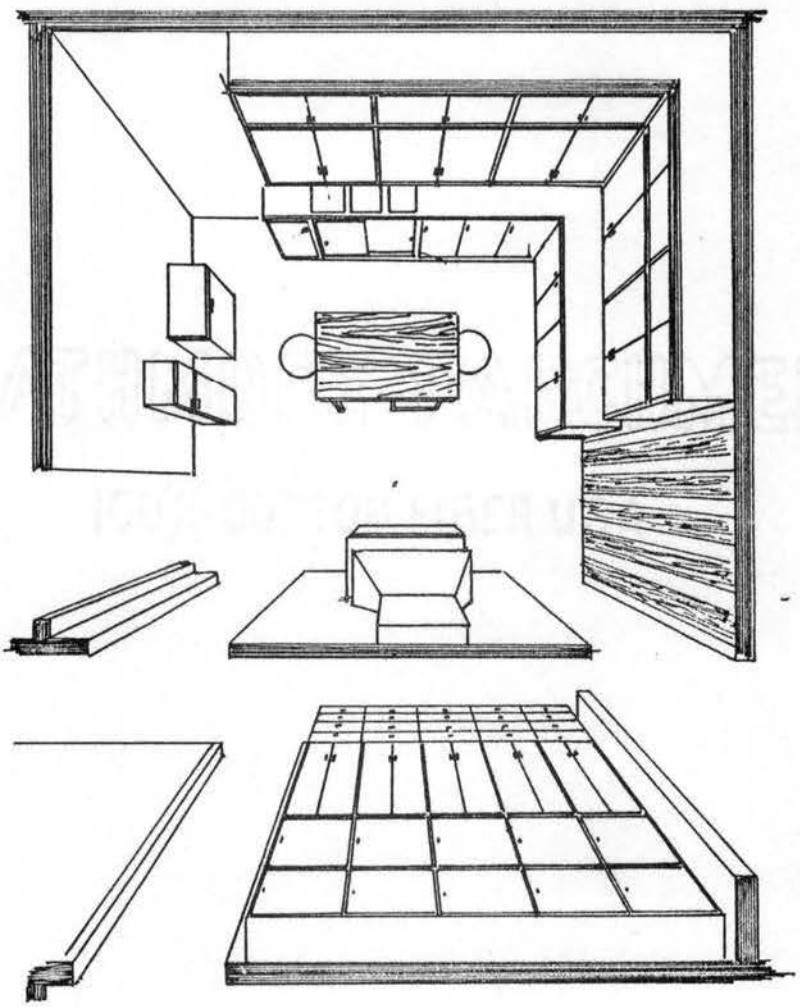
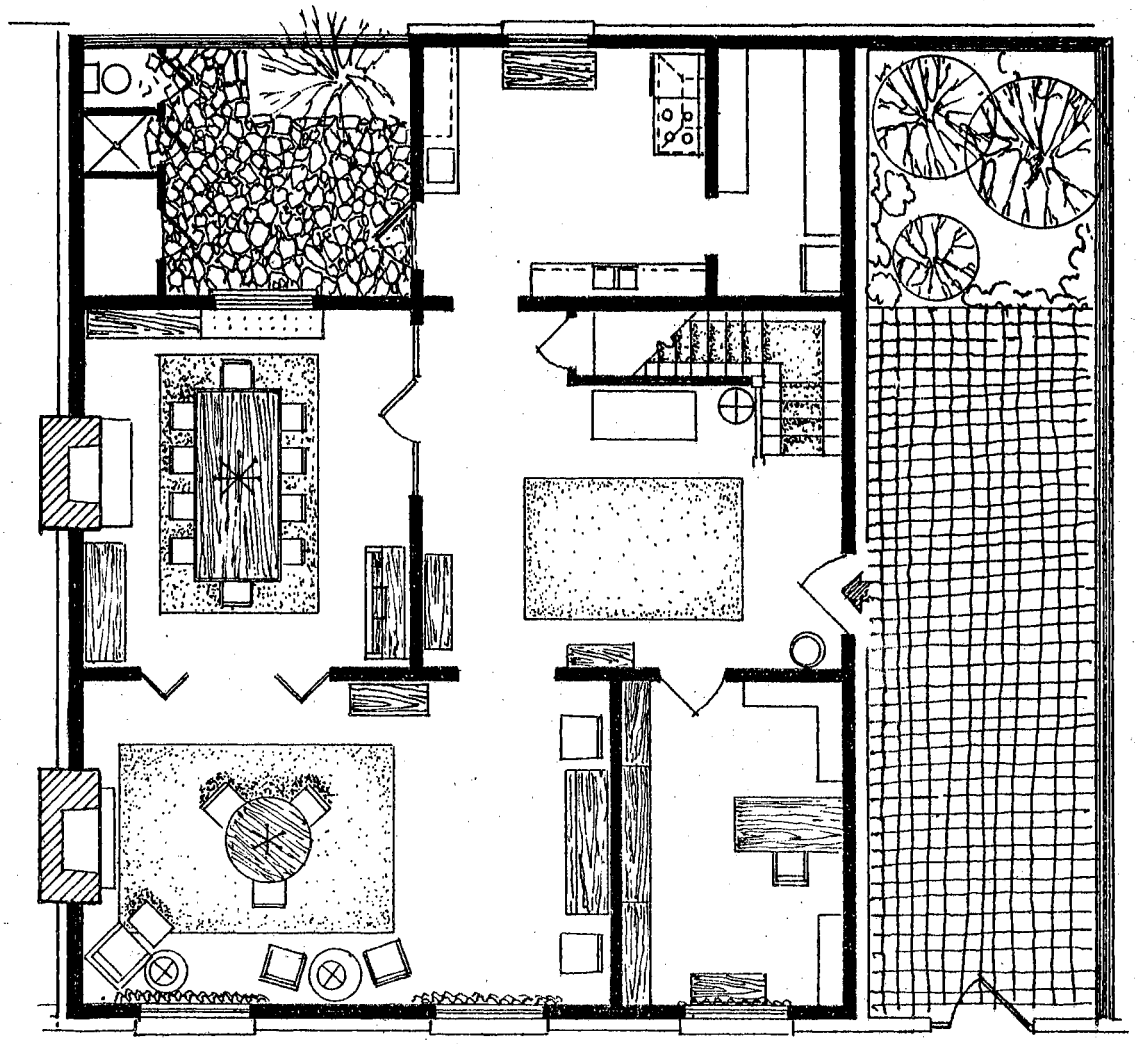


Figure 5.
Kitchen-Pantry Area, Courtoi Residence



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House, Poitiers, France

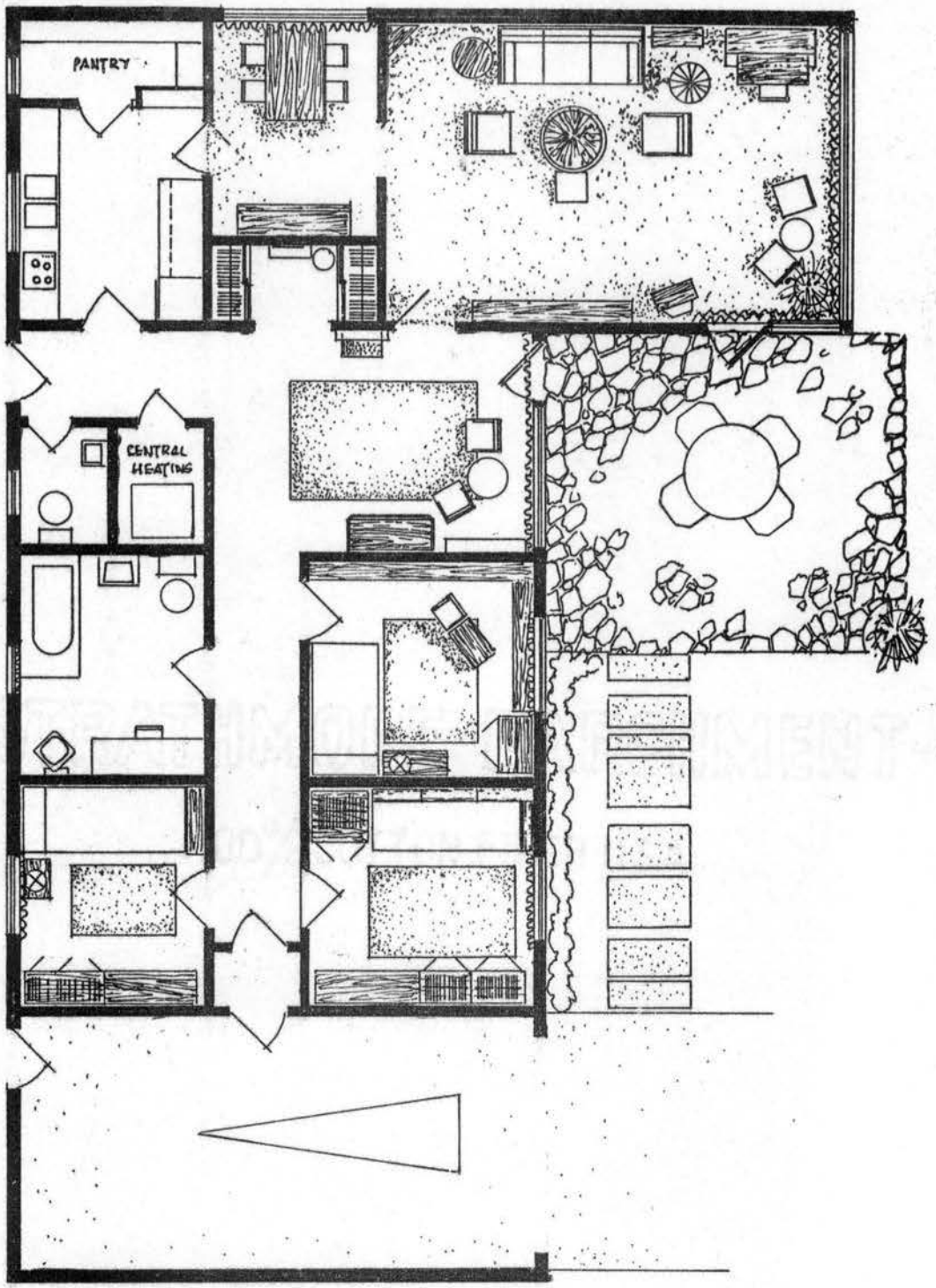


Figure 7.
Bruckner Residence of Pre-Fabricated Construction
Furstenfeldbruck, West Germany

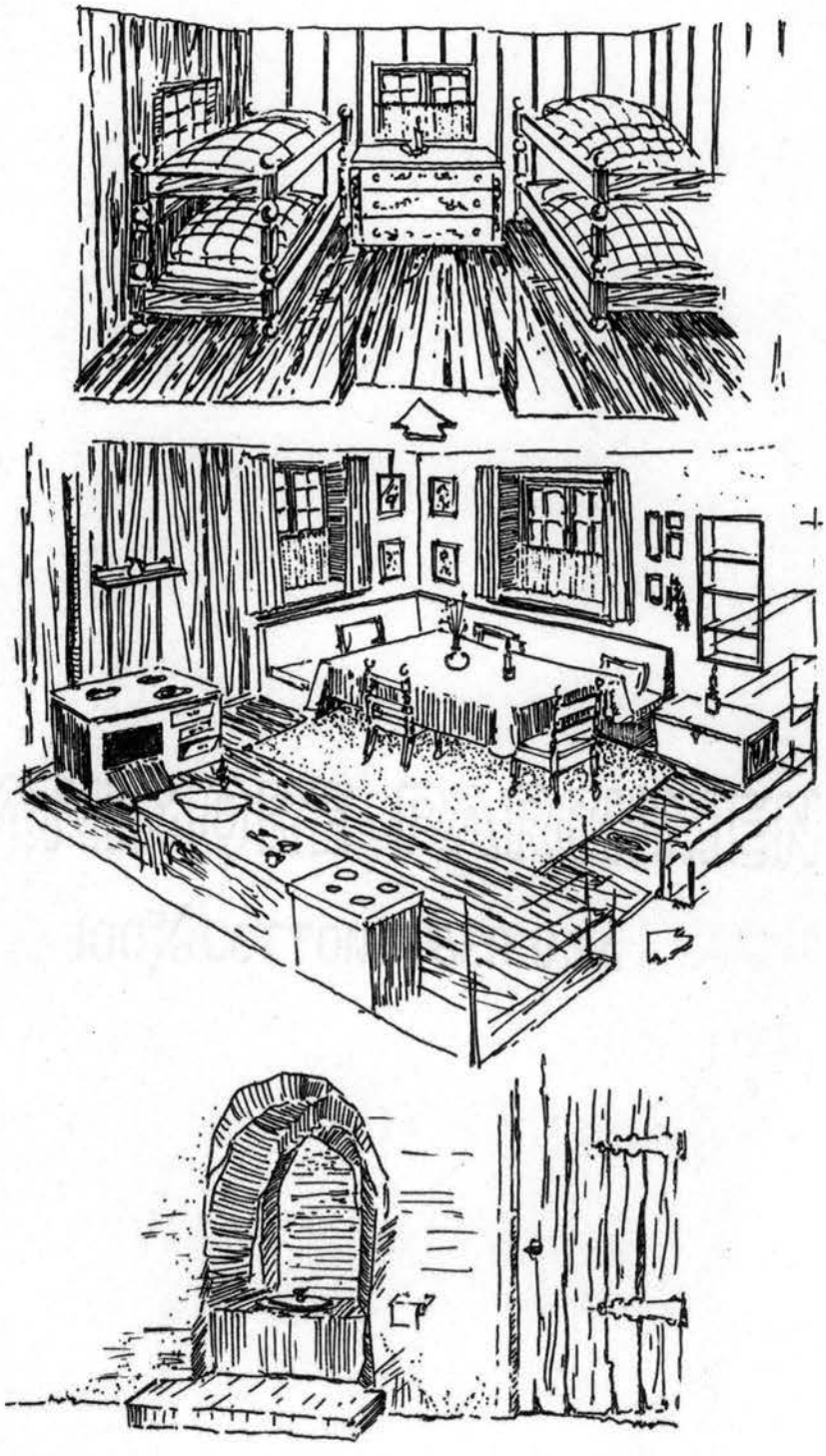


Figure 8.
Interior of 100 Year Old Bavarian
Cabin Near Salzburg Owned
By Bruckner Family

India

Stretching from northern Kashmir, identical in latitude with Norfolk, Virginia, to within 550 miles of the equator, and with altitudes ranging from sea level to over 28,000 feet, India assumes geographical and climatic variety and contrast far greater than can be found even in the continental United States, which is two and one-half times India's size.[8] Great fertile plains, a desert, dense jungles, a number of vast rivers -- including the Ganges, one of the longest in the world -- high, dry, rolling tablelands, low lying tropical coastal plains, and the mightiest mountains in the world: everything, it seems, is there, including a population of over 530 million people.

The diversity of India is confusing to the Western mind. Generalizations cannot be made of this country. Languages vary within city limits, as well as between states, of which there are nineteen at present. There are eighteen officially recognized languages and over 1,500 dialects and variations. Politically, as well as socially, the problems of communication on a grand scale seem almost insurmountable.

The primary religion in India is Hinduism, claiming 85 per cent of the population.[9] Throughout the past 3,000 years Hinduism has survived and managed to absorb every other major religion within India's boundaries. It has been said that "nothing entering India can leave again unchanged." Even the Catholic Church has bent to the strict caste doctrines in seating the congregation in the pews on Sunday.

In a country so vastly diverse as India there is one institution that cuts across religious, regional and class divisions -- the Caste.

It is a ubiquitous institution which is found among Hindus, Sikhs, Jains, Muslims, Christians and Jews.

The educated Indian is under the impression that the caste is dwindling in its importance, that the urbanized and westernized members of the upper classes having already escaped its bonds. Both of these impressions are wrong. The "Jati" today stem from the original Varnas, derived from the Vedas, over 3,000 years ago. The original Varna structure consisted of (1) Brahman - highest caste, (2) Kshatriyas, the warrior caste-rulers, (3) Vaisya, traders and merchants, (4) the Sudras - peasants, artisans and servants. Outside the Varna structure lie the "Untouchables," or Harijans (a term given to them by Gandhi) meaning "children of God."[10]

Villagers consider that an educated man or an official -- in fact, anyone whom they respect -- should not carry a heavy object, let alone do manual labor. Doing manual labor is the symbol of lowly status, just as not doing it is the symbol of high status. The same attitudes are observed in government offices. If a woman becomes faint the station master will summon a boy to fetch a glass of water. Regardless of the waiting time and discomfort of the woman it is below the station master's statue to obtain the water for her.

In the home too, there is a tendency to employ as many servants as possible. This tendency is accentuated by the fact that Indian men are generally illiterate with their hands and also because caste comes in the way of servants doing several kinds of work. The cook will not wash the utensils, the servant will not clean the lavatories, and the "mali" will not sweep the garden. Elaboration here

reveals the deeply ingrained attitudes of hierarchy. They directly affect the subject of design.

Architectural scale of the buildings in Madras, Bombay, Calcutta and New Delhi reflect the grandeur of the British colonization of India -- not the delicately scaled, sensitive Indian himself. This scale can be found in the villages, of which over 700,000 exist today.

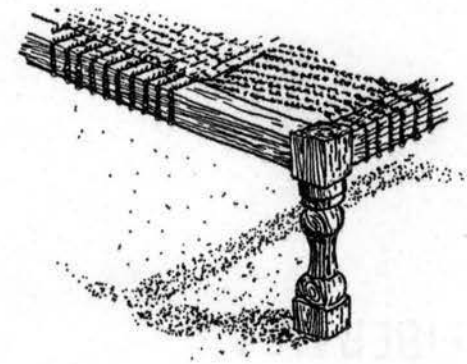


Figure 9.
Indian Charpoy and
Punjab Water
Vessel

The northern Punjab State, said to be the richest agricultural area in India, is the location of the village of Chona, and the residence of Ram Dip Singh, of Sikh religion. Agriculture, accounting for almost half the national income, serves as the means of livelihood for more than 70 per cent of the working population. It was felt, therefore, a farming residence would provide a larger cross-section of Indian housing.

The possessions of a village household tend to be limited to a few bare essentials: brass and earthenware pots for cooking, carrying water, and storing grain; a few cotton quilts or other bedding; a small tin box in which to keep the

few clothes or other valuables; some religious pictures or figures of the gods; and one or more of the charpoys[11] -- cots of woven string, which are used not only as beds but also as tables on which grain may be dried in the sun, as well as for many other purposes. A cloth may be spread over the charpoy, and meals served while sitting on it.

Kitchens

Throughout India the kitchen is notoriously inadequate according to American standards. It would be supposed that large city dwellings would contain kitchens approximating United States or European designs, regarding ranges, porcelain sinks, tile floors and pantries. This is not the case, almost without exception. Servants are usually the only people operating in this area, as food preparation is beneath the higher caste order. There are caste restrictions in reference to food handling and a cook must be of the same caste. Therefore, the owner tends to neglect the importance of the kitchen in relation to design and orientation.

As a result, the kitchen usually consists of a double terrazzo sink, a small storage cabinet, a table for food preparation, perhaps a refrigerator, a double burner range with gas bottle underneath a ledge, similar in design to the American camping stove.[12] A hot water tank may be found only in rare instances. Since the upper class constitutes a small percentage of the Indian population special cases are worthy of little consideration. American styled kitchens may exist in India, but would not be considered the norm.

In village kitchens cow dung mixed with straw is used for fuel. It is prepared during the dry season and stored for use during the

monsoons. This type of fuel burns hot, evenly and efficiently. Trees are at a premium in much of the area of India, making wood an impractical source of fuel. It should be mentioned that climatic temperatures are rarely lower than 60 degrees, with the exception of the Kashmir area, and household heating is not an insurmountable problem.

Bengal

Benares

Madras

Figure 10.
Brass Water Vessels
Indicative of Areas
Indicated

In the city, homes are usually not well vented. The more openings to a dwelling, the more susceptible it is to theft. Barred windows are common, although they usually swing free for an unobstructed view. Village kitchen ventilation varies, as often food is prepared out-of-doors.

In village households, particularly in agricultural areas such as the Punjab State, irrigation ditches are used for washing utensils. Water for cooking and drinking purposes are ported to the house in brass vessels, as in Figure 10. These pots, of various sizes, are also used for preparing food such as rice and tea. The designs are indicative of the regional origin, brass being the primary material for family utensils.[13] Each member of the family is responsible for his own thali -- a brass tray 18 inches in diameter with 2 inch vertical sides -- a brass cup for drinking, and a small cup for "dal", a yellow liquid

preparation, made of dried peas, and eaten with rice. The fingers are generally used for eating, using chapati as a scoop. The chapati, a flat wheat bread similar in shape to a tortilla, is prepared on a heated metal plate. Rice and chapati are not usually served in the same meal, for economic, not religious reasons. Northern India grows wheat, with rice as a secondary crop. Southern India grows rice as a primary crop. Because of difficulty in transporting it to the central market wheat is expensive for the southerner, for much of the year, just as rice is for the Punjabi in the north. At any rate, religious dietary restrictions minimize the complication of food preparation. As one Indian remarked, "We eat to live, not live to eat as it seems the American does!"[14]

Bathrooms

Sikhs, as well as Hindus, require a bath before every meal. Bathing is not particularly ritualized, except in some pilgrimage areas such as Varanasi (Benares) or Rameshwarum. It is merely regarded as duty. The bathroom, however, varies in location. Village homes, almost without exception, lack a bathroom area. The bath is usually taken at the pump, sometimes located several blocks away from the house, or the irrigation canal. Cities provide hydrants about every two blocks for bathing. Indians seem to have a claustrophobic fear of the enclosed shower and when they must construct a shower indoors they prescribe a tremendous amount of space for it, usually without enclosed walls, allowing the water to drain into a corner or across the room to the "Turkish toilet" in the adjoining corner, (figure 15.)

A complaint of the Indian student in America concerns the small tub or shower enclosures built in American homes.

The larger homes in the cities usually have the standare fixtures found in the United States or Europe. Perhaps a cultural shock for the Westerner comes when he discovers that the Indian abstains from the use of toilet tissue, regarding it as heathen. For religious reasons he uses a container of water, which he always carries to the toilet with him, and uses only his left hand. The left hand is used for love making and eliminating only, using the right hand for eating. In the village human elimination occurs in the fields, and several times in the evening we took walks across drainage ditches and canals to defecate.

Washing the hands before the meal may take place on the Charpoy. A container of water is poured over the hands, the excess falling to the floor, while a towel is brought for drying.

Living Area

Ideally the Indian would prefer a separate living and dining area. In actuality, only in a very few instances does this occur. Because of economics, and space, separate rooms are nearly impossible. Usually, in the villages as well as the cities, the living room-dining room also doubles as the bedroom.

Furnishings are at a premium. Since Lord Clive and British Colonialism, India has become an isolationist in trade relations, affecting among other areas, furniture imports. For the upper class this poses little problem as a skilled craftsman can duplicate any design given him. Unfortunately this is for the elite.

The village Panchyat or official may have a table, chairs, and a chest of some type. Generally, however, the charpoy is the most utilitarian item, doubling as the bed, sofa, table, and drying rack. The chest is used for storing clothing and other valuable possessions.

Bedrooms

As discussed earlier the bedroom is relatively non-existent in India for the masses. With millions of families living on the street, any shelter could be considered a luxury. However, with shelter provided, most Indians still prefer to sleep out under the stars, regardless of class or caste. One of my friends who is a city dweller in New Delhi -- an extensive land owner and real estate agent residing in a large home near Connaught Place -- has his bed drawn out into the garden in the evening. His bed substitutes woven cotton webbing two inches wide for the jute string commonly found, but it is still the design characteristic of any Indian Charpoy. Sleeping outside may seem absurd at first, but not when one considers that air circulates through the webbing or string and provides a cool and comfortable rest on warm nights. Air conditioning is at a premium. After a few weeks the westerner will take the webbing over any thick mattress an Indian could provide, and mattresses can be provided for the visitor in any thickness or plushness desired in any of the urban areas.

Entry Hall

The Entry Hall, for all practical purposes, does not exist for the masses. Only with an exceptional income will this space be found. In essence an entry begins with the front gate of a village residence.

The inner court-yard will usually contain a goat to provide milk, a bull for the heavy labor, and perhaps the kitchen and in some instances a hand operated pump.

Additional Design Considerations

Gandhi returned from a tour of Bombay to report to the British on the sanitary conditions of the city and out-lying areas. "All of the houses have been inspected and I am happy to announce that they pass the inspection splendidly. All of the floors have a fresh layer of cow manure spread upon them."[16]

This would probably be the final absurdity to a visiting American. In actuality, cow manure provides a very hard surface, much like plaster, when mixed with water and allowed to dry. This type of floor does not exist extensively in the larger cities today, but it is still common in the villages.

Today concrete or terrazzo is perhaps the most common floor finish. A concrete floor is sometimes left unfinished, allowing the surface to become the pattern and texture. Even the bathroom, when available, can be found to be raw concrete, even when the other rooms are finished in terrazzo.

Indian carpets are some of the most famous in the world. They can be found even in the middle-class home, being one of the most treasured possessions of the family, possibly an heirloom.

India is also noted for some of the most exquisite fabrics to be found anywhere. Silks woven with gold and silver, cotton so fine yet containing a 320 count, silks woven so thin a fifty yard piece can be

drawn through a wedding ring. Even the peasant women wear cotton saris of elegant textures.

As would be expected, these fabrics can be found in the typical home, on windows, thrown over the charpoys, placed on the floor for sitting, or hung on walls. Batiks from Madras State are also popular for wall hanging as well as clothing. Usually, the home is rampant with colored fabrics of reds, orange, navy blue and yellow.

One noticeable omission from the Indian interior is an abundance of wallpaper. The walls are painted plaster, or left bare. The village home is constructed of mud and straw, concrete, or, in southern India, woven mats. Sun dried brick is another popular construction material in the village.

In considering accessories again wealth determines abundance. Temple carvings of rosewood, Czechoslovakian crystal, tiger skin rugs, Indonesian chess sets, drapery trims of gold and silver, as well as brass lamps and oil paintings can be found in a home. Great pride is taken on displaying items procured from voyages in other areas of the world, just as would be expected of an American or European.

One also is aware of the absence of live plants and flowers in the interior of the home. The Indian does not generally display an affinity for plants inside the house as a European does. In place of this void, however, the house exterior is elaborately landscaped when economically feasible. Glass doors expose views of planted courtyards.

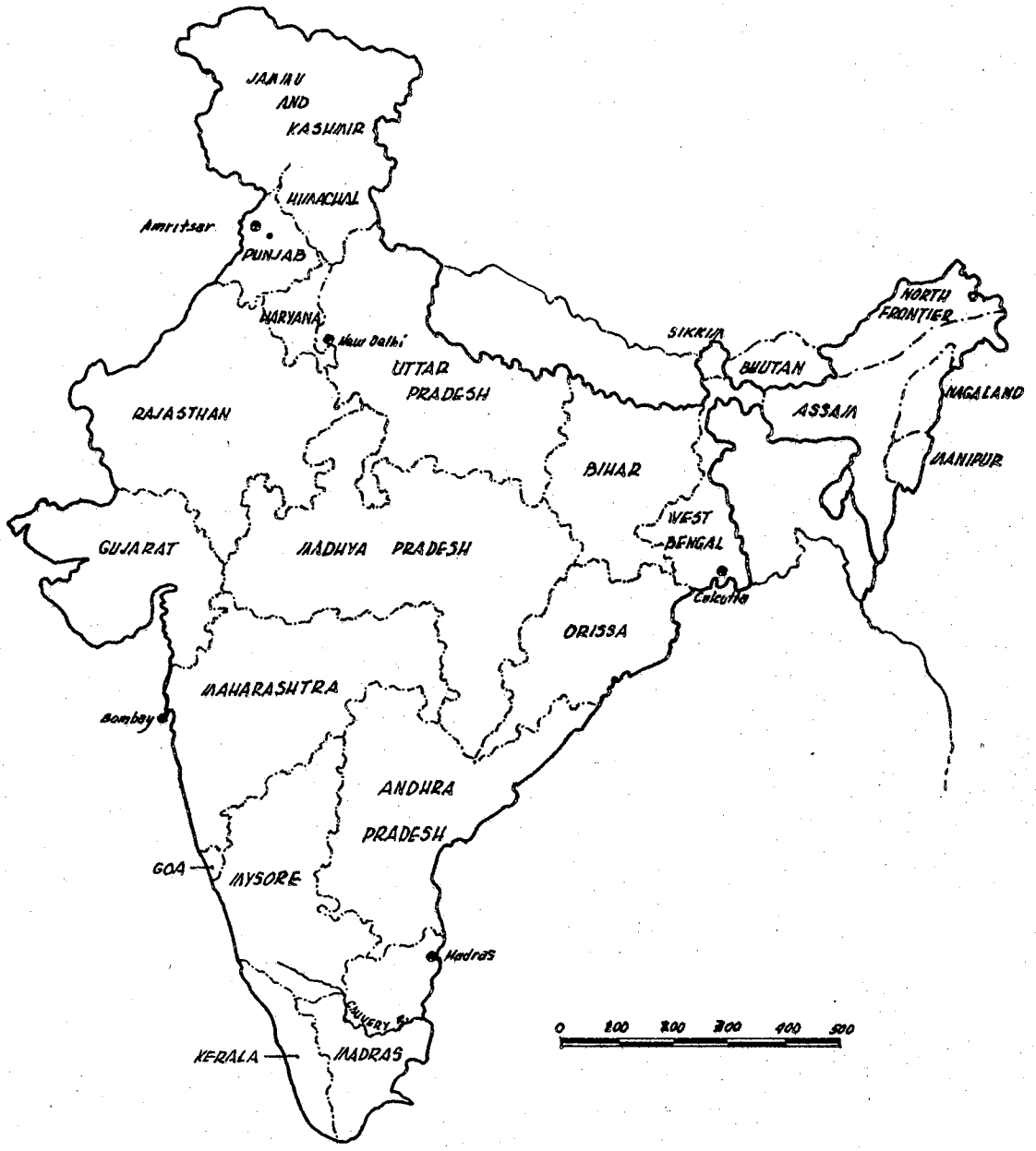


Figure 11.
Map of India With States Indicated

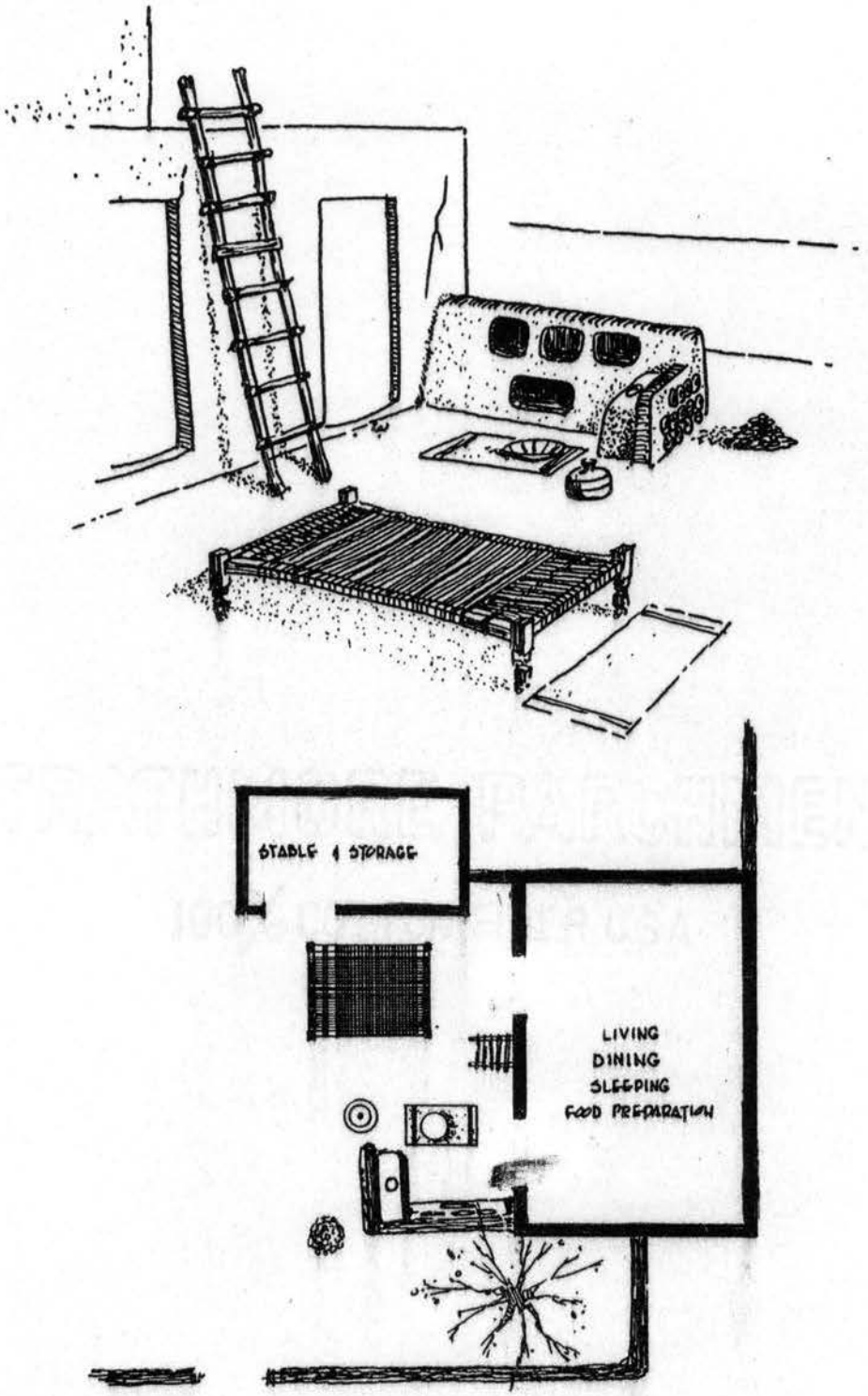


Figure 12.
Ram Dip Singh Residence, Chona, India With
Kitchen in Court Area, and Cow Dung
Fuel Being Dried in Sun
On Stove Wall

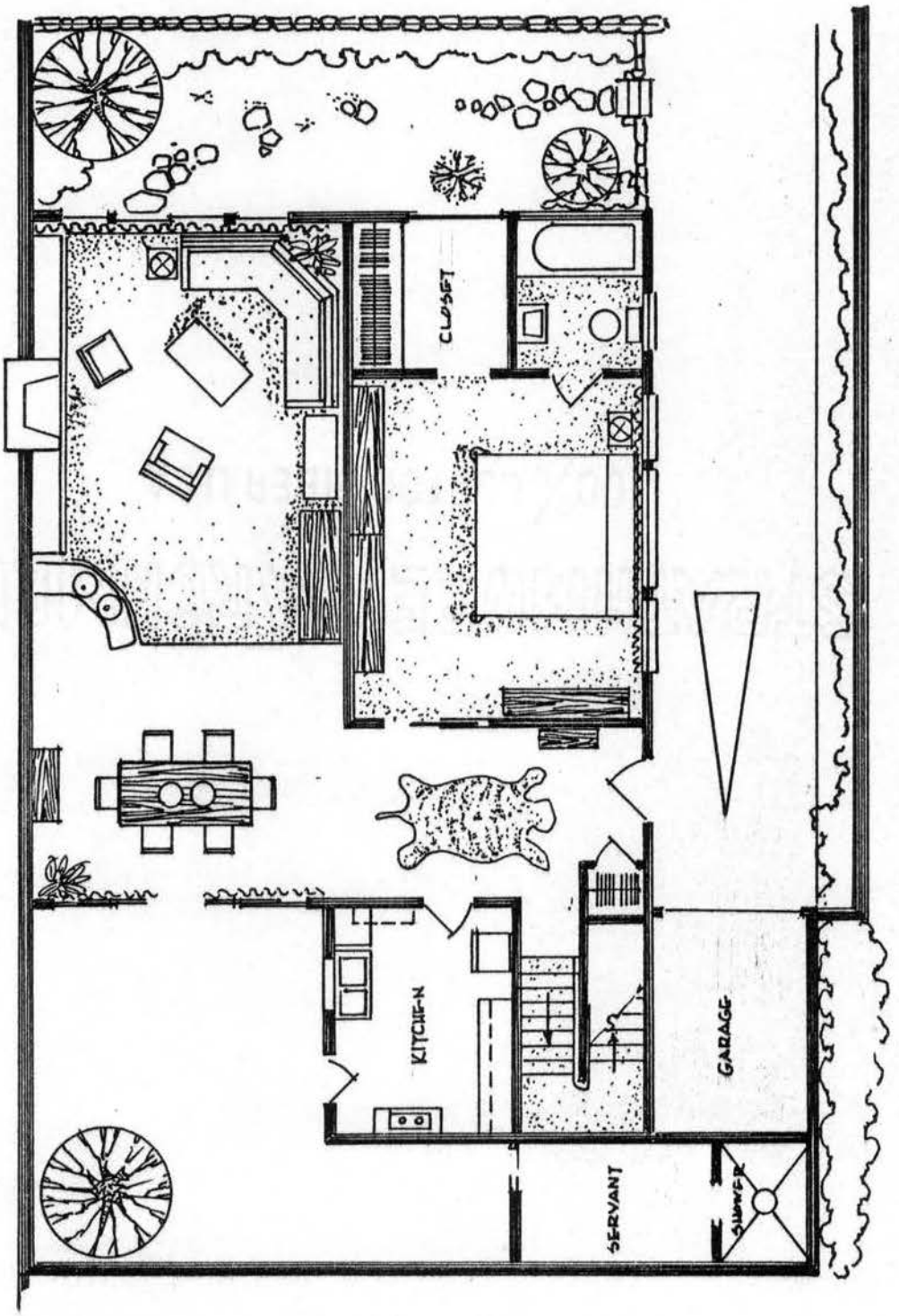


Figure 13.
Raj Bath Residence, New Delhi, India as an
Example of Upper Caste Home

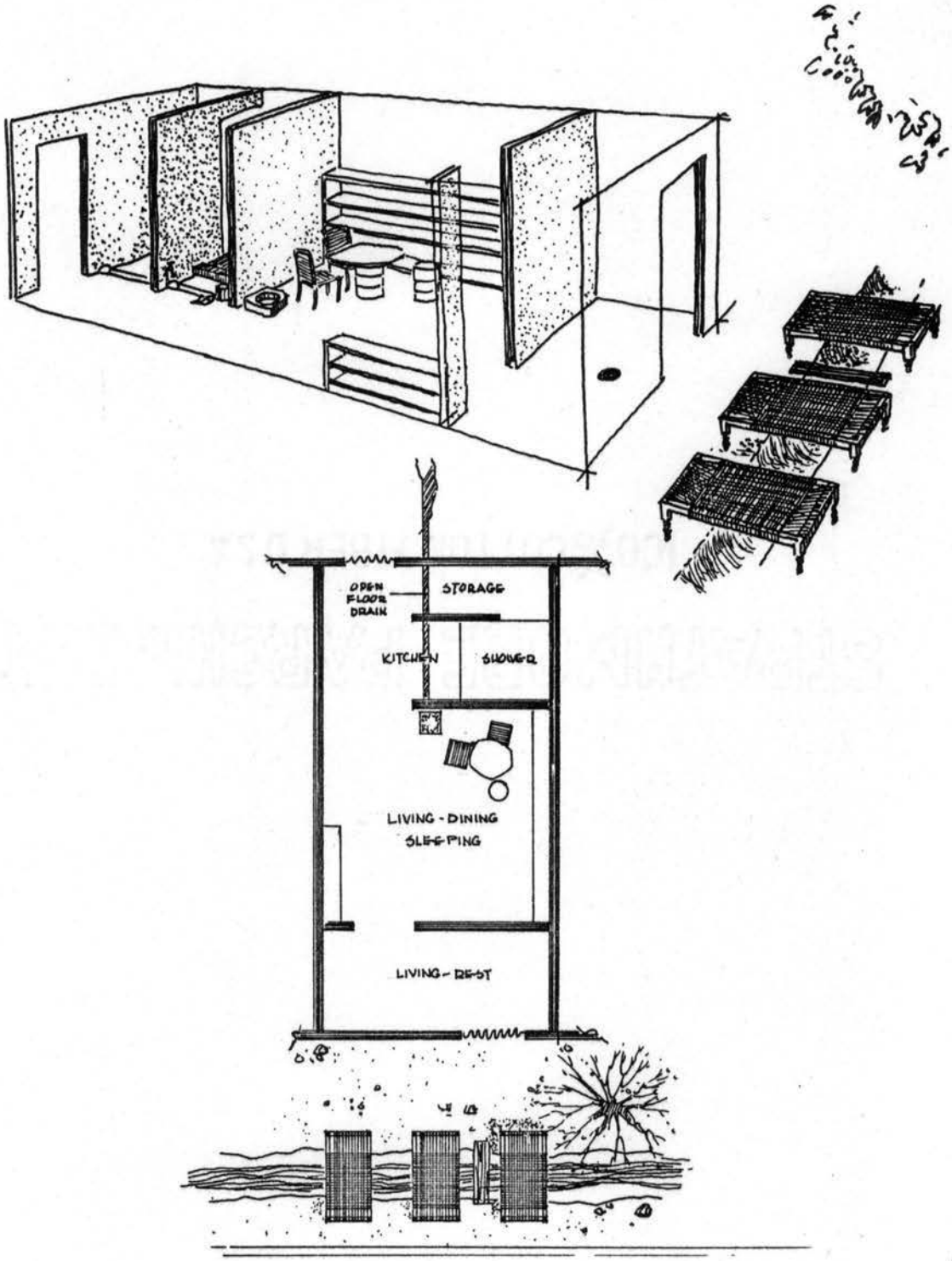


Figure 14.
Mr. Sharma Residence, New Delhi, India as
Typical City Dwelling With Charpoys
Outside For Sleeping

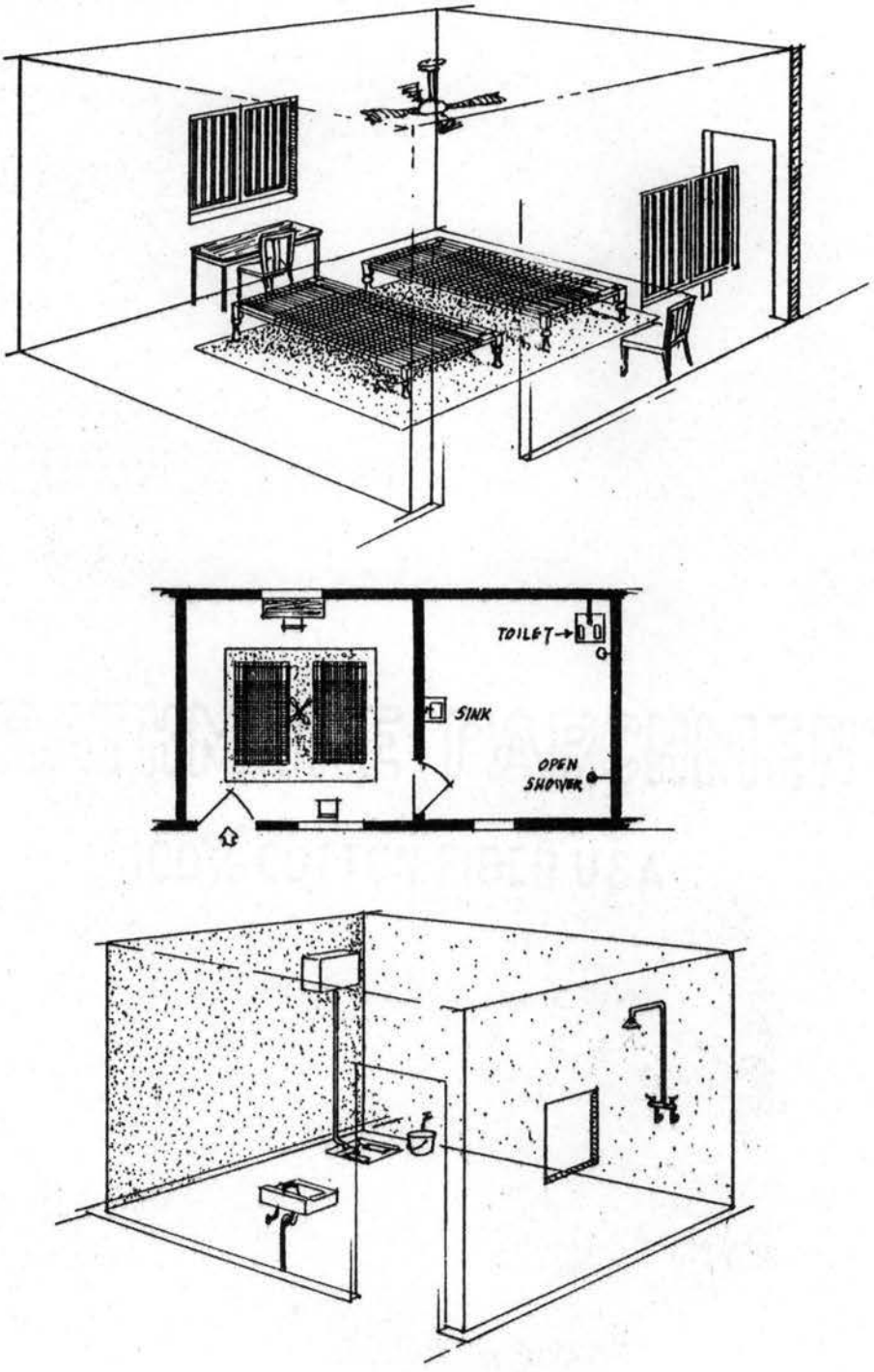


Figure 15.
Room in a Tourist Bungalow, Benares, India;
Showing Relationship of Areas in
Bathroom and Bedroom

Thailand

Thailand, heartland of Southeast Asia, is bound on the west and northwest by Burma, on the east and northeast by Laos, on the south by Cambodia, and by Malyasia on the southern peninsula. Over 23 million people live in an area of approximately 198,000 square miles -- an area known as the "rice bowl of Asia." After rice, teak is the most important export from this country. The popularity and economic export importance of this wood has begun to influence the construction of the Thai house, its primary building material derived from teak logs. The price of teak has gone beyond the attainability of the average peasant Thai, and is now a wood used only by the wealthy.[17]

Climatically Thailand varies in temperatures from approximately 60 degrees in the winter to 90 degrees in the summer, before the monsoons begin in June. In the northern reaches of the country, in the high mountain ranges, temperatures for those hill tribes may drop to near freezing for the extreme.

The Thai are the dominant ethnic group, accounting for nearly 70 per cent of the population. The Chinese are second in population percentage, but in Bangkok -- the capital of Thailand -- they control nearly 90 per cent of the private business enterprises, from the "noodle shops" to clothing stores. The Urban Thai is mainly concerned with acquiring employment in the Civil Service. In the rural areas he is content to grow paddy and exist in a relatively high living standard for the Asian continent.

Buddhism, the Theravada "Little Vehicle," is practiced by nearly 90 per cent of Thailand's population, and has had an infinitely complex effect upon the life style of the common man. Derived

ultimately from very ancient Indian sources but largely received from the Khmer, the Theravada form of Buddhism not only gives man his place within the universe but also dictates his course of action through life.[18] It is desired that at least one son in the family becomes a monk, for at least a three month period, usually during Buddhist Lent beginning at the end of July. The Monk is considered the highest station of life in Thailand. Almost without exception government officials have been monks. The present King, Bhumibol, was born in the United States and educated in Switzerland, but before becoming the country's King he had to assume the role of "monk" for three months, walking the streets in the early morning hours with his rice bowl, begging for food.

The effect of religion upon architecture has been considerable. Until the middle eighteen hundreds, and the coming of King Mongkut -- whom Hollywood portrayed in "The King and I" -- the gods alone had the right to live in houses of stone or brick. The sovereigns themselves lived in pavilions of wood.[19] Today, however, with the advent of westernization, any building material is acceptable including corrugated iron for roofs, although the Thai peasants continue to use palm and teak for their rural housing.

One of the most notable examples of the existence of spirits is the Phra Phum, (see figure 21) the guardian of the house. Near every house, compound, or house boat landing in Thailand a "spirit dwelling" is placed, perched atop a pole or elaborate wooden base. Owning two spirit houses brings bad luck. The Phra Phum is offered flowers, incense, and candles every evening. He is consulted during every family crisis and it is usually necessary for a visitor to worship the

Phra Phum, to request his permission to say overnight, and to ask him for a safe journey. In Bangkok progress has affected even the traditional spirit house. It has been electrified with small bulbs, and the intricately designed house itself can be purchased from shops resembling garden statuary establishments. The fine hand-crafted spirit house has been replaced by the mass produced ferro-concrete replicas.

Money itself is unimportant to the Thai and wealth is not a measure of status or prestige. Despite the inflitration of modern commerce and communications into the lives ot the Thai farmers, attitudes toward money do not appear to have changed in the rural areas. There is, however, some evidence that wealth may be becoming increasingly important to the Thai in Bangkok. The American influence upon material possessions may be changing that traditional viewpoint. Until recently the primary purpose of life was that of attaining merit.[21] Merit making is a Buddhist concept taking precedence over all other aspects of living, for by doing good, without misgivings, the Buddhist will attain a higher status in the next life.

There are two distinct areas of housing in Thailand; rural and urban. The rural dwelling varies from the ground-level huts of the subsistence level itinerant farmer, to the elaborately carved teak dwelling of the wealthy peasant. Since owning a house on stilts is a point of social pride, the itinerants are shunned.

One general house, disregarding the ground hut, is basic to all rural groups. Bamboo and woven palm mats are used for its walls, palm leaves for the roof, and ill-fitting wood slats for the floor. Through the holes and cracks in the floor dirt and refuse fall into the animal compound below. A prosperous farmer may employ a Chinese

carpenter to make teak doors and window frames. Regardless of the material used, the style of the house is basically the same: a large central room, and small plain bedrooms. The kitchen is usually detached from the main house, or occasionally the central court, veranda, or compound area under the stilted house may be used. Building the house is a family affair, whether rural or urban.

Thailand's capital, Bangkok, has acquired the title of "Venice of the Orient" because of the intricate interlacing klongs (canals) within the city. Surrounded on three sides by the Chao Phya river, the klongs provide efficient transportation routes for the Thai merchants who peddle their produce and wares at the floating markets. The klong resident purchases daily supplies from the passing boats and taxis -- long canopy covered boats powered by Chrysler engines with propellers at the end of a long movable shaft -- run continually from sunrise to sunset.[21] Taxis provide transportation from town center to the outlying districts nearly 30 miles into the countryside for a maximum cost of five or six baht. One baht equals five cents in the United States.

Urban dwellings in the Thai capital range between great extremes of "squalor" and luxury. One other form of housing exists in the urban area where thousands of families live in seemingly confined quarters: the house boat. It is seldom realized, however, that several members of an extended family own individual boats. In the evening they group together, one boat serving as the kitchen area, another the dining/living room area, and perhaps two more become the sleeping rooms. So, in actuality, the "close confines" of a single house boat becomes a large "fluid society" worthy of a mobility social study of its own.

Housing for the poorest families in Bangkok is called "Hang Tao." Resembling rows of shed with meandering and connecting wood walk-ways leading over open klong ditches, the Hang Tao is a one level unit made of scrap lumber, packing boxes and corrugated iron and set on short wooden pylons. The largest rooms measure approximately ten feet square, with the basic floor plan following that of the rural areas.

Another form of housing is the "Row Compound." Located behind hotels and front street businesses, these two story buildings contain five or more family units each. Lower middle-class Thai families are found in this particular style home. The compound is constructed entirely of wood with a wide roof overhang on the upper story and a partial over-hang on the first story. The ground level contains the veranda, living area, bath and cooking area, while the second floor is used for sleeping and simple entertaining.

For the middle-class family there is virtually no housing problem, although the quality of better housing varies considerably. The Chinese population operate their shops on the ground floor with living accommodations on the second levels. Apartment rent ranges from $30 to $500 per month. The presence of American military personnel in Thailand has increased the need for units renting between $250 and $500 per month. Typically American facilities are provided, including floor plans that could be found anywhere in the United States.

The Living room/Dining room

Because of the sociability of the Thai the living room may be considered one of the more important areas of the home. Many social

customs and taboos exist including utmost respect for status and station of family, relatives, government officials, and Buddhist monks. The Thai is extremely personable and in the course of a brief conversation of a new acquaintance a barage of personal questions will ensue pertaining to income, residence status, or family life.[22] He considers this a high form of flattery, for it he were not interested in you as a friend the personal line of questioning would not occur.

Therefore, it is important to note that one of the most important forms of entertainment is the conversational gambit. The second media is that of television. These activities affect the furnishings of the living room. The Thai has been influenced by the television medium, and desires western designs in furniture. Although he prefers not to be burdened by an over-extension of material possessions the urban Thai will forego the rice mat, he would normally sit on, for a comfortable chair.

Whenever economically feasible, furniture for the living room is of major importance. In contrast to the Chinese, however, the Thai seems to place little emphasis on an orderly arrangement, a less static placement being preferred. Typical furnishings to be found include a table, a few straight backed chairs, and a small teak cabinet used for storing eating utensils. The television is next. It has been influential in stimulating educational and political interests and education for the young urban Thai is of prime importance. Therefore, the television is beginning to be considered a necessity rather than a luxury, and even the houseboat may display an occasional antenna. Walking along the maze of connecting wood paths between the hang taos I have noticed children from the neighborhood gathered on the living

room floor watching Saturday morning cartoons, an almost identical social pattern found in middle-class America.

The living room doubles as the dining area, food being served on the community table, or in a seated position on straw mats. In the rural peasant home, as well as the middle-class urban dwelling, a small room may be provided on the second floor or other area of the house for intimate conversations and dining, furnished in the Thai tradition of a low teak table on straw mats.

Kitchens

The kitchen is frequently detached from the main part of the home, partly because of the character of the fuels available and partly because of social tradition stemming originally from Hindu influence of the caste found in the early beginning of Thailand. Also, the kitchen heat passing back into the living areas of the house is not considered polite. The location does not, however, infer the unimportance of the meal, for traditionally the woman takes great pride in her cooking. The Thai diet, based on rice and dried fish, is not so expansive as the Chinese household, where possibly 30 varities of dishes may be served at one evening meal.[23]

Fuels for cooking include: wood, charcoal, kerosene, paraffin, gas, electricity or dung mixed with straw. The fuels used in the rural areas are dung, charcoal, paraffin -- to a limited extend today -- or wood. The urban areas use charcoal, bottle gas, or electricity. Generally there are three basic stoves, excluding the electric range. (1) the rectangular box using dung, charcoal or wood, (2) the Brazier employing charcoal or wood only, and (3) the gas burner using the

bottle gas. The last two are commonly found in the Bangkok area.

Limited diet indicates limited utensils. The wok, a Chinese innovation, is a large shallow steel pan used for frying foods and preparing the major portion of the Thai diet. The other universally used utensil is the large aluminum drum in which rice is prepared. Eating and cooking utensils consist of chopsticks, supplemented with a small shallow spoon used for eating soups. The Thai chopstick is about twice the length of the Japanese variety and generally made of bamboo, unlacquered. Utensils and dishes are washed in a shallow pan of water drawn from a community well or from the large clay jars found in every residence near the entry or back area of the corridor or veranda. Community water hydrants exist throughout the city of Bangkok.

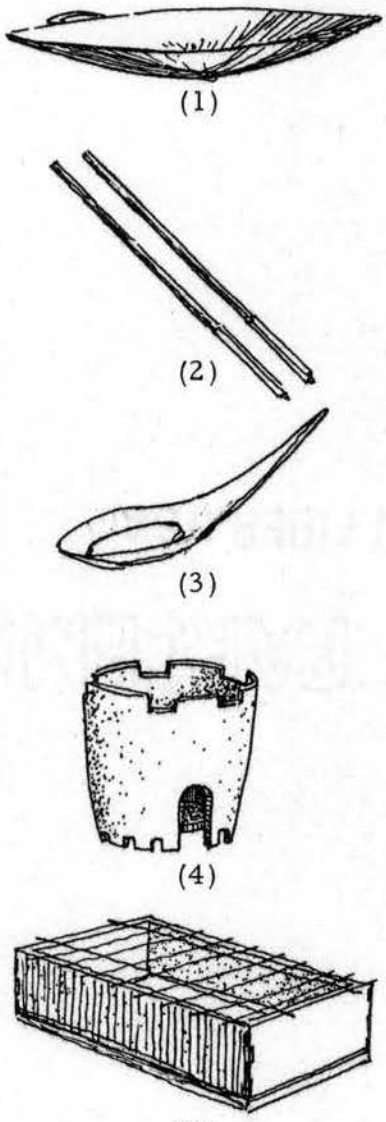


Figure 16.
(1) Wok, (2) Chopsticks
(3) Spoon, (4) Charcoal Brazier, (5) Fire Box

Bathrooms

The bathing stigma attached to Hinduism does not exist in Thailand, although cleanliness is admired by the Buddhist. Because of the temperature and humidity in Southeast Asia the bath is required merely as a pleasurable indulgence, at

least twice a day. In the rural areas an indoor bathroom is not usually provided. The bath is taken from fresh water stored in the large pottery jars. A dipper or porcelain pan is used to wash and rinse the body.

Urban life provides additional problems. The Bangkok area is located at sea level, making sewage drainage difficult. In the spring, when the water level of the canal drops below normal, epidemics along the klong are rampant.

The klong dweller usually uses the canal for swimming, washing clothing on the veranda, taking his bath from the large jars stationed near the ladder rising from the water, or for eliminating. If his bathroom should be enclosed, it is located in the furthest corner away from the living room. The bathroom flooring in a Hang Tao is usually of wood; those found in a two story row compound are of concrete. The toilet in either house consists of a small concrete slab, with a hole approximately 11 inches in diameter, set flush with the floor. Beneath the slab is a large concrete or stone cistern necessitating periodic removal of sewage. There is no division or separation between the toilet and wash area. There may be a shower nozzle protruding from the wall but generally the wash area consists of a small corner of the room built up 42 inches with tile to provide a storage area for water, and filled with a tap protruding from the wall above it. The Hang Tao may simply have another pottery jar housed here. A small pan is used for dipping the water and rinsing the body. Laundry is also done in the bathroom area.

The bathroom possesses little imagination in decoration. In a middle-class residence tile walls five feet high with plaster above may

be found. This area of the residence is not always vented with a window. In the Hang Tao, however, the cracks in the flooring provide some circulation of air.

The Entry

The first rung of the ladder leading to the principal veranda of the stilted house begins the first impression of a Thai residence. Near the ladder may be found a stone or pottery jar containing fresh water drawn either from a well or community hydrant. In larger, wealthier residences a gate may be found at the top of the ladder providing a theatrical approach as well as security to the house, (see Figure 24). The veranda is used for receiving guests and from there they may be led into the living room area, or the veranda itself may be used for entertaining during much of the year. No closet is provided for rain apparel, the only type of protective clothing needed in Thailand. Usually the coats, umbrellas and other paraphernalia are hung on wooden pegs outside the exterior wall of the living room, protected by the wide roof.

Figure 17.
Fresh Water Vessels Near Staircase of a Hang Tao, Bangkok, Thailand

Bedrooms

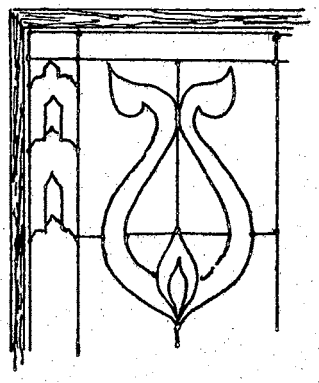
Unlike India, every effort is made to provide a bedroom area separate from the other rooms of the house. A large cabinet is usually found in this area, similar to the ones in Europe, for the storing of clothing. Clothes are a very important status in Thailand, the more clothing owned the higher the status, and therefore careful consideration must be made for their storage. These cabinets must be well ventilated to prevent mildew and rot common in the humid tropical climate.

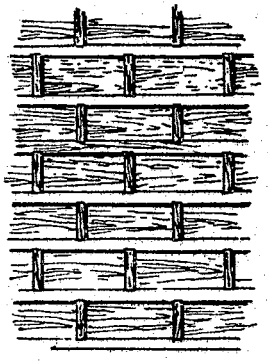
A bed of woven cotton webbing with thin pad, the clothing cabinet, and a small chest for storage of valuables are the only furnishings in this area. The bed may consist of a pad -- without the frame, -- placed directly on the floor.

The wood flooring of the bedroom is unfinished. Walls are of unpainted wood and decorative wallpapers are never used, due to the problems of mildew. Westernized homes of the middle and upper income groups used painted plaster for wall surfaces.

Additional Design Considerations

Mildew and moths are a constant menace in Southeast Asia and special design considerations must be observed. Ventilation of the house is of primary importance. With the advent of air conditioning, equipped with dehumidifiers, mildew has become less a problem for the upper class homes. However, the Hang Tao, Row Compound and all rural peasant dwellings must keep a constant vigilance against the tropical rot.





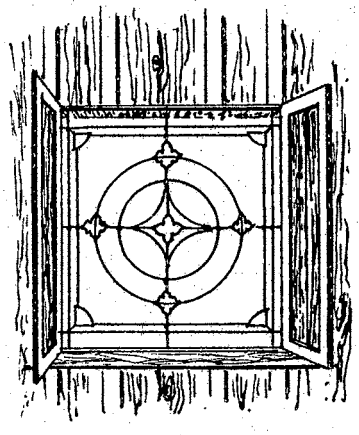


Figure 18,
Monestary Window Grill;
Wood Panel Design; and
Window Grill in a
Hang Tao

Cross ventilation at roof level is necessary. This is provided by vertical grills surrounding the entire upper wall area, allowing air to circulate into and throughout the entire house. Wide roof over-hangs allow shade from the tropical sun and aid in cooling the interior. Location of windows is important, providing cross ventilation, particularly necessary in the sleeping areas of the house. Windows are completely open with no glass. Privacy is obtained by use of wooden shutters. The opening may contain decorative grill work, as in Figure 18, made of wire or occasionally of wood.

Walls of wealthy peasant homes, and urban residences, are made of teak inset panels, unfinished, Figure 18. Gables of the house are also of the same pattern as well as some doors. The doors are sometimes made of hinged panels and pulled across the entire face of the house when the owner is away.

Flooring of wood is also unfinished, allowing sitting, sleeping, scrubbing, washing, and the ironing of clothes to work a soft patina into the grain.

Regardless of the condition of a Hang Tao, the floors are never without a soft glow. Concrete is another popular flooring, commonly found in the Row Compound. Terrazzo is used extensively throughout the middle and upper class residences.

Mildew attacks the fiber in carpeting and draperies, therefore these decorative attributes are avoided in dwellings without air conditioning. Thailand, however, is noted for its silk and cotton fabrics which may be found in upper class dwellings of the urban Bangkok area.

Accessories are not abundant in the Hang Tao or Row Compound, however Buddhist religious scriptures pened by a monk will exist in every Thai home in rural as well as urban areas. These messages protect the home from evil spirits, along with the Phra Phum found on the exterior of the premises.

American insurgence into Thailand has brought with it an increasing desire for Western goods. Cars, television, furniture, Foremost Ice Cream and elaborate shopping centers have all made their appearance in the capital city in the past eight years. With an influx of R and R, military personnel, tourism, and the American dollar, this trend will continue. The face of Thai tradition cannot help but change drastically within the next few years.[24]

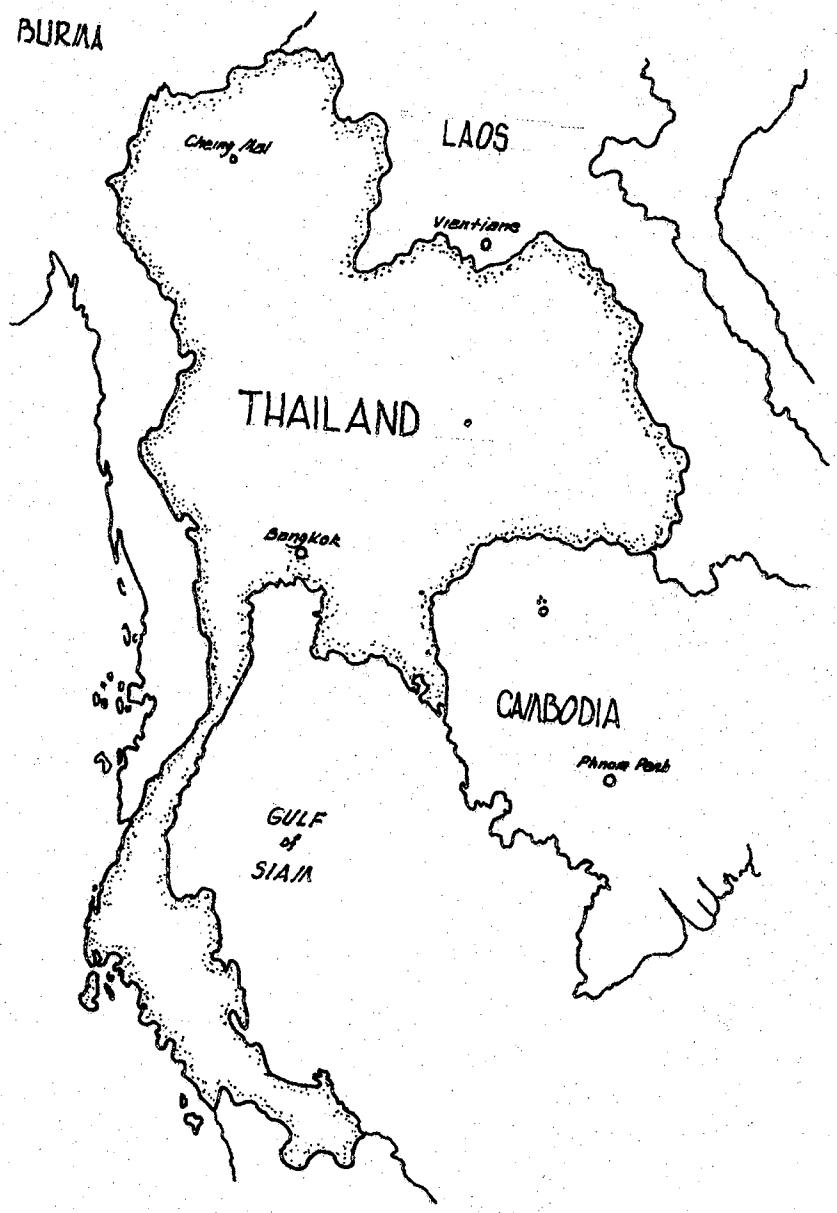


Figure 19.
Map of Thailand

Figure 20.
Theravada Monk, Bangkok, Thailand

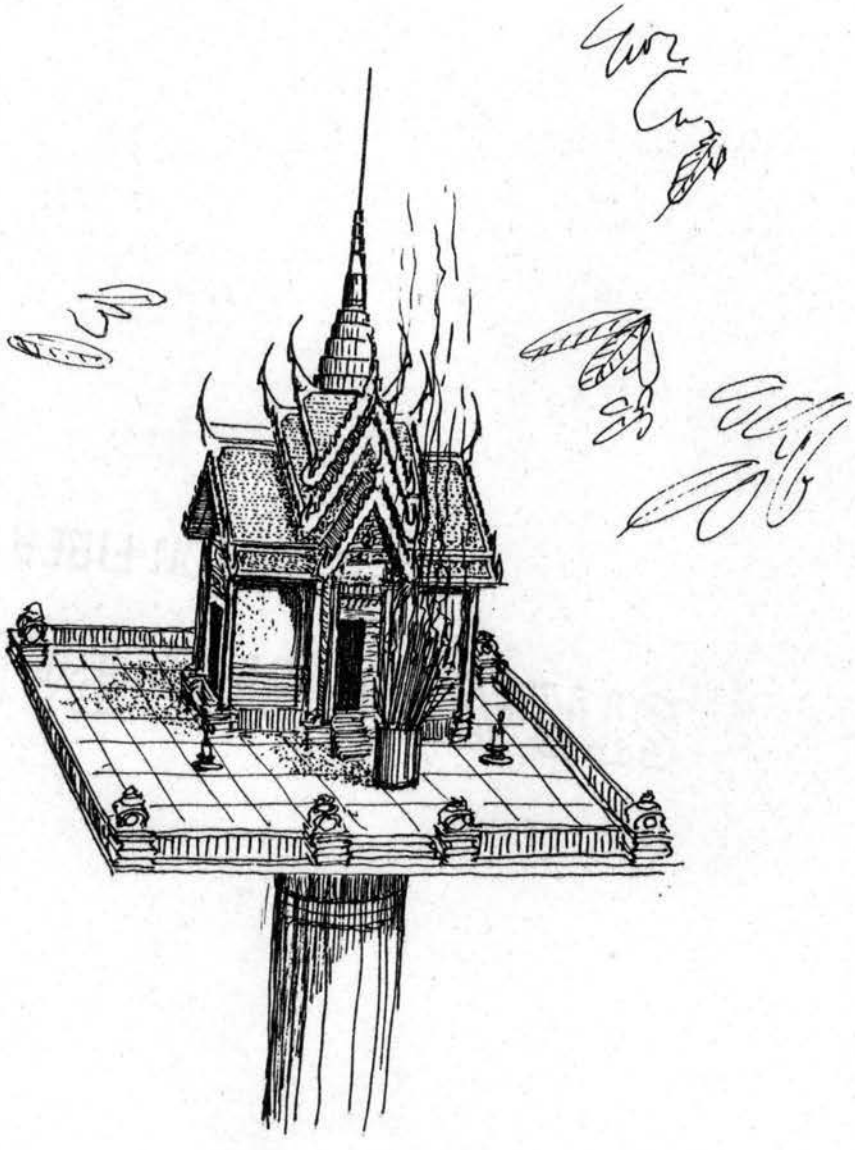


Figure 21.
Typical Phra Phum Spirit House,
Bangkok, Thailand

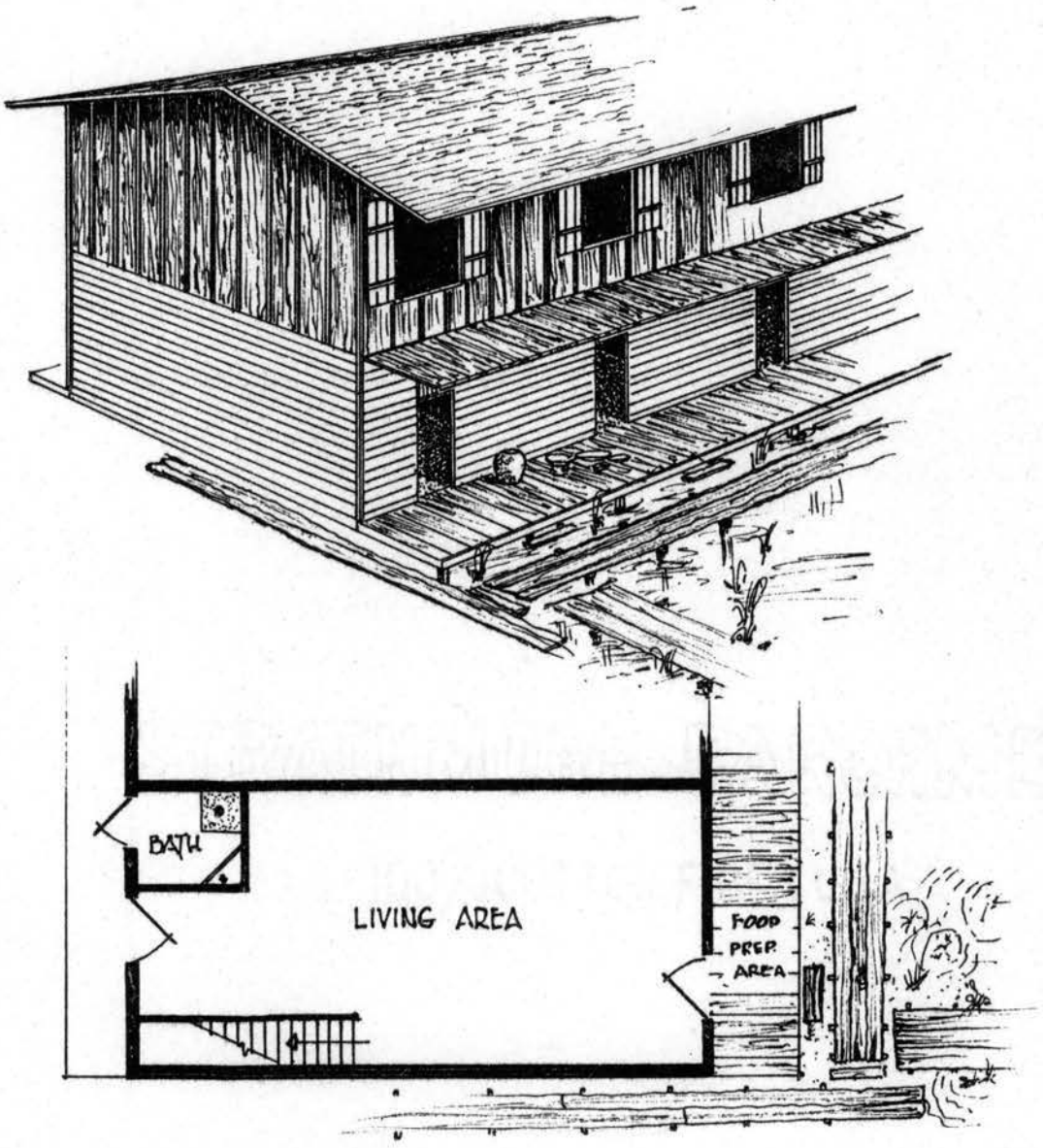


Figure 22.
Row Compound House, Bangkok, Thailand

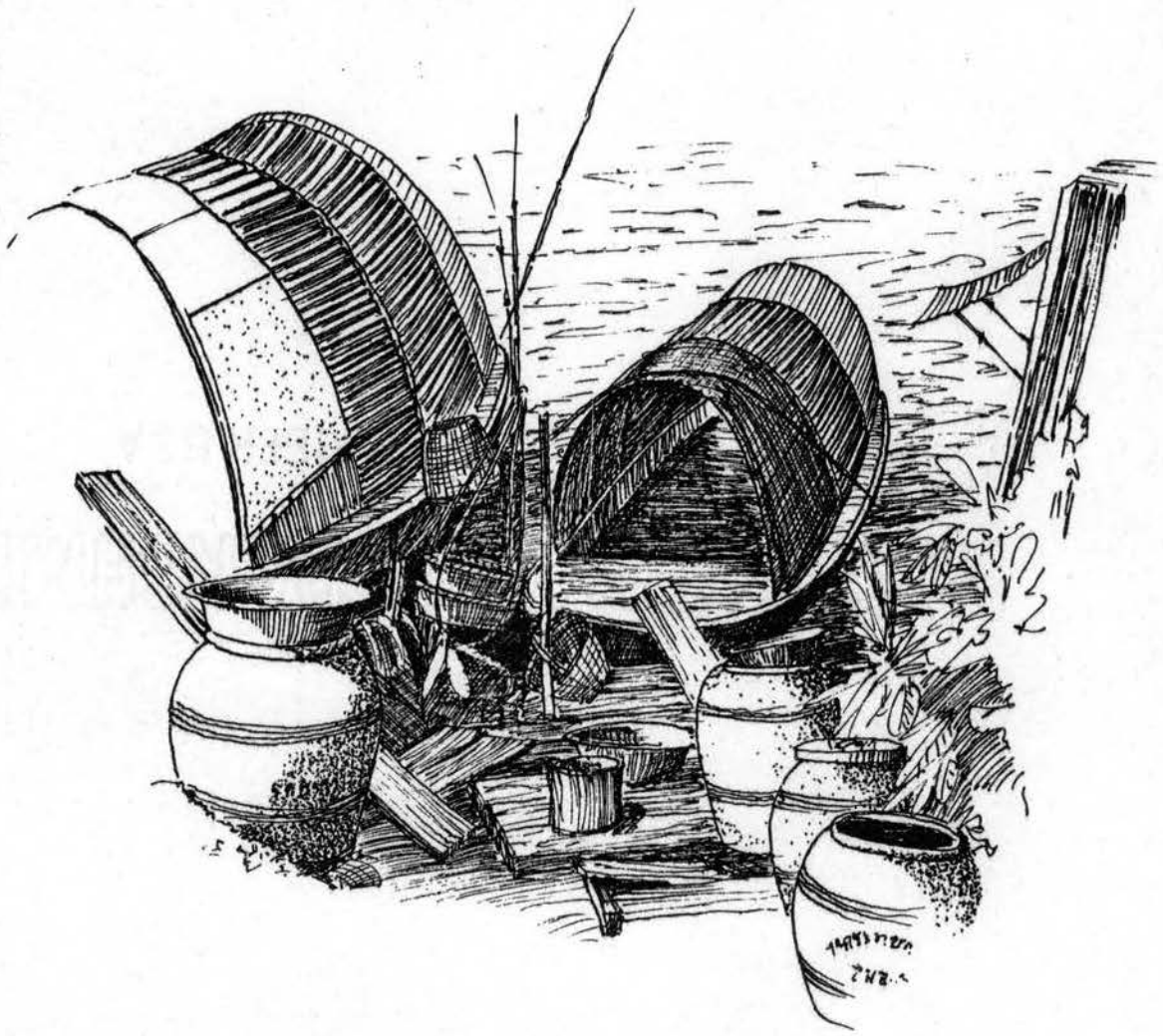


Figure 23.
House Boat Residence, Bangkok, Thailand

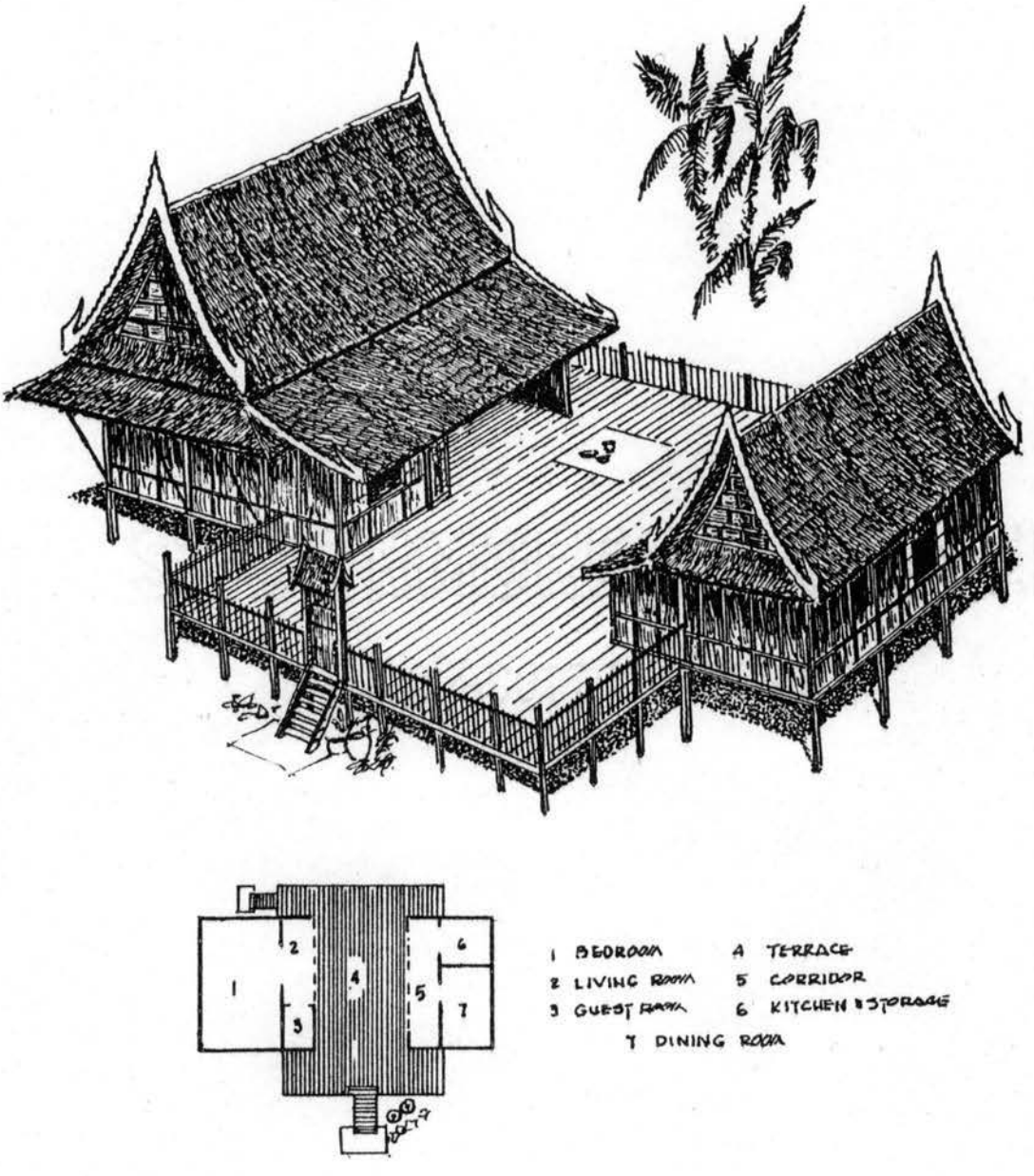


Figure 24.
Typical Wealthy Peasant Residence in the
Rural Area of Thailand

Figure 25.
Rural Thai Residence on Klongs Near Bangkok

Japan

Land of the Shibuii, nature, and the ultimate in aesthetic adventure, the East Asian island chain of Japan rests in the Pacific not far from Korea and the Chinese mainland. In an area of 142,800 square miles, much of which is mountainous, there is a population of over 100 million people. This compares with the State of California's 158,693 square miles with a population of approximately 20 million. Japan consists of four main islands: Honshu, the main land mass; Hokkaido in the north and Kyushu and Shikoku in the south.

The climate of four distinct seasons compares with that found in Oklahoma and Kansas. With wet, humid summers and dry, cold winters, the weather plays an integral part in the design of a Japanese dwelling.

Since 1945 Japan has proved to be one of the most rapidly developing industrial nations in the world. The renowned miniaturization in the field of electronics is but one area of progress. The urban areas of Tokyo, Osaka and Yokohama contain architectural wonders such as the department stores owned by the large macro corporations of Mitsubishi, Hankyu and others. These companies own baseball teams, elevator manufacturing plants, pencil companies, ship yards; build highways, subways and assist in government supported endeavors, and regard their employees as part of a large corporate family. They provide housing, hospitalization, schooling for the children and pay for the employees daily subway fare. The subways and bullet trains are also acclaimed engineering masterpieces.

Education is held in ultimate esteem, and the student is highly revered by his family and peers. Through hardships of a poorly

illuminated study area, drafty classrooms, and possibly baby sitting with his brother on his back while attending class lectures, the student helped Japan achieve a 97.9% literacy rate, one of the highest in the world.[25]

Through all of this progress the traditional Japanese house has remained intact. Zen Buddhism, the garden, tatami mat, scalding community baths, and shoeless occupants of the house continue to play an integrated role in the carefully structured Japanese society.

The Zen Buddhist way of life has taught the Japanese to adapt man to nature, rather than the reverse. He has learned to communicate with nature, allowing it to become an integral part of his life. The house is regarded as an extension of nature, and God. It approximates the dream of organic architecture, its materials made from the soil. It is the sum of all of its parts, a spiritual liaison between man and the supreme being. Imagine the human body without an eye to see, or the toe to balance, or the arm socket to bend. All parts become the "whole," each unable to function fully without the others. Just as the body becomes more beautiful with age, so does the Japanese house. The natural, untreated or unpainted materials are allowed to weather gracefully, improving and mellowing with age. The war, and ultimate destruction of their house caused little sadness to the people of Japan. Only when the occupation troops painted their structures did they begin to weep bitter tears.[26]

The Garden

In the Zen garden of Ryoanji in Kyoto a tall pine was pulled down to a 45 degree angle over 150 years ago. To the unknowledgeable

tourist it seems odd. However, careful observation reveals the pine tree is now perpendicular to the rising mountain behind in the misty distance.[27] It is the Zen way of saying "it is not nature who is out of tune with life, but man himself." In the highly mechanized urban society of Japan the garden is viewed meditatively. It is the aspirin for the hurried pace of progress.

The Japanese house is seldom found exposed to the street, but rather behind a wooden fence and gate. The wall becomes the barrier from the street and the back-drop to the entrance garden. The house entry is never directly across from the gate -- for privacy reasons -- but requires taking a curved or meandering path of carefully patterned and textured stones or gravel.[28]

Figure 26.
Stone Water Basin,
Kyoto, Japan

The landscape character of the garden has its aim of imitating nature, in contrast to the European tendency to create symmetry and geometric designs. Pine, evergreen, bamboo, magnolia, and Rhodedendron varieties are among the many plants found in the garden.

The garden has its practical aspects as well as its artistic ones. The stone water-basin, used for washing hands, is always found here. The bathroom area usually leads into the garden and the basin is used the same as the European or American lavatory. Occasionally a fresh spring will be tapped, allowing clear water to pour into the basin through a bamboo spout.

Entry

It is the custom to remove the shoes before entering a Japanese house. Soil from the street may be brought in, soiling the natural fiber of the Tatami mat, the flooring used throughout most of the house.

The Tatami is made of rice-straw sewn in multiple layers, covered with a tightly woven rush called "J" grass. The mats are standard dimensions of three feet by six feet by two inches thick. These mats are the floor, not a type of carpeting, and are very resilient. When they are first installed they are green in color, but mellow with age to a pale gold tone. House rent is derived from the number of tatami mats in the house. Room sizes are given in tatami: a five tatami room is 90 square feet.

The tatami is a poor conductor of heat and is therefore very comfortable to sit on for great lengths of time. The Japanese custom of sitting on the knees would be disasterous on hard-wood floors. The mats can be lifted out of the floor and taken outside to be cleaned by beating when necessary. The borders around each mat can be washed with soap and water.

The floor of the entry is rock, pebbled concrete, or it may be moss or dirt. The house is raised above ground level at least 12 inches to allow circulation of air throughout, preventing mildew. A large stone in the entry provides the step up from the ground level to the house level.

A cabinet is provided in the entry for storage of shoes, not only for guests but also for regular house members. Street shoes with hard soles may damage the tatami. They are traded for a soft slipper worn extensively in the house. Other shoes are found in the bathroom

and kitchen areas which are changed into for use in these rooms. The garden steps provide rubber thongs for use outside. By changing shoes in various areas of the house, garden dust and dirt can be minimized.

The Living Room

In the smaller homes the living room doubles as the sleeping area. In larger residences each member of the family has his own room. The living room usually has a veranda and is always equipped with a wall cupboard, the Tokonoma, and usually the Tana -- a recess with wall-shelves. The Tokonoma is standard in all homes, large or small.

The Tonkonoma originated with Buddhist tea room ceremony, being an area where scriptures were hung. There are many designs but the Hondoko is the standard, (see figure 27). It consists of a raised rectangular platform four inches above the floor, the width of one mat from the wall, between wooden uprights. Over it, and somewhat above door height there is a cross-beam, called "Otoshigake."[29] This beam, along with the upright supports form the frame of the Tokonoma. The floor consists of the tatami or wooden boards.

The Tokonoma is the focal point of the room and must never be entered. The low design forces the view from the floor level, not from a chair height. It dictates the order and arrangement of the room. Within the alcove a small vase of flowers is set on the floor and a scroll of simple content is hung on the back wall. The simplistic art of floral arrangement and the Bonsai has attained a very high level and is an integral part of daily life.

The floral arrangement within the Tokonoma changes with the season and special festivals influence the subject matter. Mums and squash plants were used while this writer was in Japan during October and November.

The Tokonoma is nearest to the garden wall. A window on the partition next to the Tana illuminates the area during daylight hours. The Tana serves no particular purpose other than to lend style to the room by arranging shelves in various ways. It is not used as the primary storage area. Small items may be places in the Tana area; the Sumi ink dish, brush box, lacquer trays or small boxes are common.

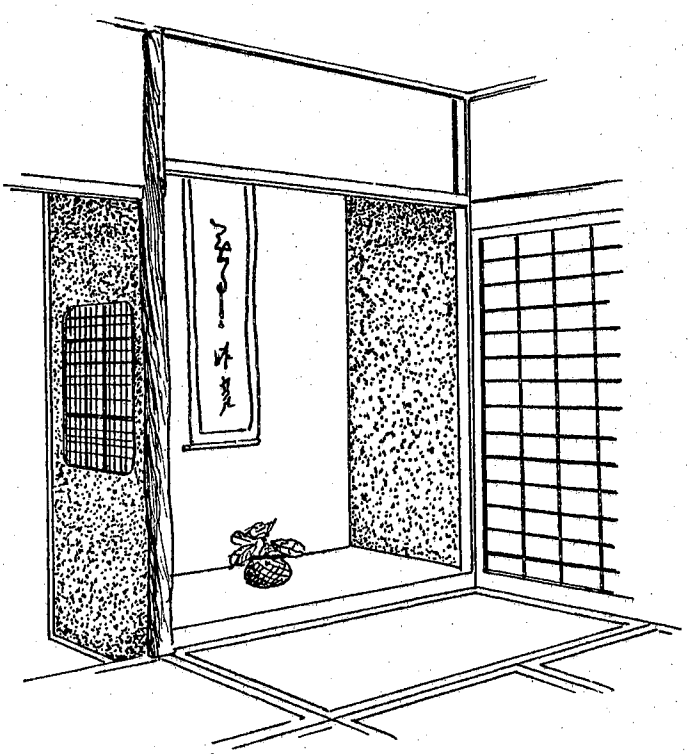


Figure 27.
Tokonoma, Plant, Scroll With Shitagi-Mado Window On Left Side

Bed linen and other items in daily use are stored in wall cupboards in the living room. They usually conform to the tatami dimension in depth. Closets behind a shoji door of paper also house bedding pads and the larger blankets. Many variations to the cupboard may be found. These chests are usually the only furniture other than perhaps a small low table, in the

living room. A chest may be the only furniture other than perhaps a small table in this room.

The rooms of a Japanese house appear austere to the westerner. Cushions for seating, ash trays for smoking, and games are all stored until ready for use. The room, however, is never without a view and shoji screens open, revealing the full view of the garden. The ultimate effect of this area is a serene quite, which is very enjoyable after a tiring day at the office. The room frames the garden as the focal point and the effect is similar to that found in Japanese screen paintings.

Dining room

The room, the Chanoma, may provide an Irori -- floor hearth -- in which some foods may be prepared over a small hibachi in the center, (see figure 36). The area may also be covered by a low table over which a blanket has been spread. Sitting on the edge with legs under the blanket and extended into the pit, warmth may be provided during cold winter evenings while the meals are taken. Conversation around the brazier during this time of year is similar to the activities around the fireplace in the "den" area of an American home during the cold months of the year.

Because the Japanese is accustomed to sitting on the floor he sometimes finds sitting upright in a western styled chair very fatiguing. Even sitting on the ledge of the irori may be uncomfortable for long duration. The Japanese offices in some areas still use the tatami mats and after sitting in a desk chair for some hours a rest follows with tea served on the tatami floor. The government offices at the Imperial Palace in Kyoto employ this "tatami tea break" system.

The Kitchen

The kitchen is located near a street entrance, thereby eliminating porting foods through the house from the market. A boy makes early daily rounds, taking grocery orders for delivery later that morning. This method was noticed while living in a Youth Hostel in Osaka. It was first thought to be a special service for the Hostel but it was later discovered to be common practice throughout Japan.

The floor of the kitchen area is concrete recessed two inches lower than the tatami mats, and then covered with a series of wooden grates which can be removed for purposes of cleaning and airing. Under a section of the flooring may be found a box, recessed into the concrete, where wine, fruit or cooking charcoal may be stored. The refrigerator is an accepted convenience but the small box continues to be used in most areas of the country.

The kitchen equipment is simple. The most important item is the sink, consisting of a long wooden box lined with copper or zinc. This box is waist high and contains a porcelain pan in which the utensils are washed. A cupboard area overhead, or underneath the box, is provided for storing the eating utensils. The large rice pan usually stands on the cooking hearth or gas burner. The large cooking ranges common in America and Europe are not usually found in Japan, unless it is needed for commercial use. Portable stoves fueled with bottle gas are used in place of the charcoal hibachi only in the urban areas of Japan. The hibachi is prefered for slow cooking which is typical of Japanese cuisine.

Eating utensils consist of a nest of bowls used for rice, clear soups, fish, eggs, et cetera. Meats are served on plates or trays.

The chopstick is of shorter design in Japan than found in Southeast Asia and Hong Kong. They are lacquered as well as plastic. The plastic variety is difficult to use, therefore the wood or bamboo is the most preferable. Soups are drunk from the bowls and therefore spoons are not normally used. They are available, however. Another utility piece is the wooden rice bucket, using a wooden paddle to scoop the rice into the bowls. For morning breakfast a raw egg is poured into the hot rice and mixed into a paste, allowing the mixture to be easily eaten with chopsticks. Meat is picked up as an entire unit, if not cut into smaller pieces before hand, and eaten by taking bites from it.

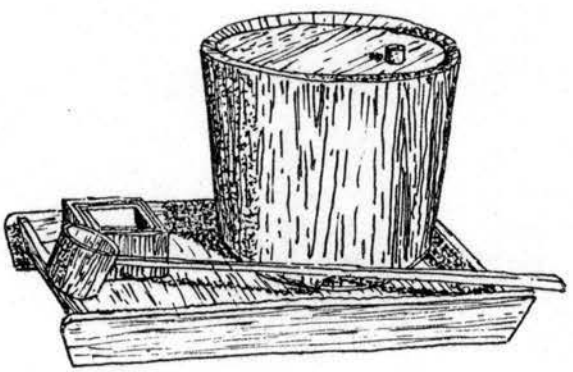


Figure 28.
Wooden Rice Bucket, Bowls,
Scoop and Service Tray,
Nikko, Japan

Bedrooms

As indicated earlier, the bedroom is not normally separated from the living room unless the home is sufficiently large enough. A small study area may exist which would be converted into a bedroom at night for the parents. Normally this is found in most middle-class homes.

Bathrooms

Perhaps the most misunderstood custom of Japan is the bath,

the method being peculiar to the uninitiated. It is much more important for the Japanese than the European or American. In America the bath is regarded as merely a process of cleaning ourselves from sweat and dirt. In Japan the bath is a meditative process of rejuvenation at the end of a day, whether it be taken communaly or in the privacy of the home.

The communal bath is used by most everyone in Japan, since smaller more modest dwellings have no facilities for bathing. A communal bath will usually be located near every home. Just as Americans may stop by a bar for a drink after work, the Japanese stop by a bath to catch up on the local news while soaking in water near 112 degrees Farenheit.

Because of religious connotations, the Japanese prefer to have a view of the garden while bathing. The view allows an opportunity to meditate on nature while soaking. This does not normally occur in the community baths, therefore, for further discussion the private bath will be elaborated upon.

Different from the European or American baths, the Japanese wash in an area outside the tub first. Sitting on a small bench near the hot and cold water faucet he soaps a cloth and scrubbs the body vigorously, rinsing thoroughly afterward. He then enters the tub for a soak. The bath is so hot that movement is difficult, and entering the water requires skill without suffering discomfort. While soaking, the wash cloth is rolled up and placed atop the head. If in a communal bath the cloth is used as a modesty panel to shield the genitals before entering the water.[30]

The tub varies in design but in most cases the wooden variety is prefered over the metal or tile ones. See Figure 37. There is a tactile envolvement with a tub made of Hinoki, and the aromatic quality of the wood is a pleasurable experience. The tubs contain their own heater, filter, and re-circulating equipment. Either charcoal or gas is used for fuel today.

Another attribute of the Japanese bath comes in the winter. The body is super-heated and will remain warm for several hours, thus minimizing heating the house during the evening hours. The writer has taken a bath, retired to his room in a robe, written letters and slept under light covers, all in chilled air, without suffering any discomfort.

The bath area, architecturally, is similar to the kitchen, consisting of a concrete floor with wooden grates covering it. A small room outside the bathing area provides racks containing baskets for storing clothing. There may also be, if space is ample, a small make-up chest with mirror for use by women, while viewing the garden.

The privy is located in the furthest corner of the house, usually at the opposite end of the garden from the bath. It is, admittedly, un-hygenic, but far from un-artistics. The urinal and privy are separated by a partition, the urinal area becoming a small ante-room. Ventilation is important in this area and is provided for by a low window at floor level, and an open grill work in the upper portion of the wall. The lower window allows sunlight to flood onto the floor, providing a sanitization effect. It also allows for the removal of dirt from this area. The privy is flat for use in a crouching position. The

sewage has to be removed; it is collected in a stone vat buried in the ground, or in a concrete pit, which is emptied from time to time. In rural areas the sewage is used for fertilizer.

Additional Design Considerations

The Japanese house, to the casual observer, appears to be a simple structure of wood and paper. This could not be further from the truth. Aside from the planning involved in developing the proper orientation to the house, obtaining maximum sunlight in the winter and maximum shade in the summer, the materials of the house are hand selected as though a piece of crafted furniture were in the making. Lumber mills catalogue every board for its grain, coloring, age and polish. Since unseasoned and unpainted wood is used extensively, these characteristics are important. The types of wood commonly found include cypress, Hinoki wood, Hemlock, cedar and pine.

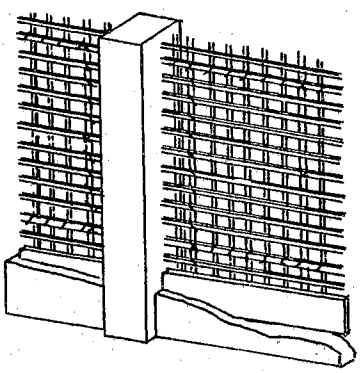


Figure 29.
Bamboo Lath Section
Before Application
Of Mud Plaster,
Kameoka, Japan

Wood is joined by complex notches, grooves and tongues, allowing expansion in the summer, contraction in the winter and elasticity during earthquakes. See figure 38 for some of the more common wood joining techniques used in present day construction of houses.

The walls of the house are of bamboo lath and mud plaster. During the first stages of construction a large pond of mud and straw

is built and allowed to "ferment." Meanwhile, the foundations, beams, headers, and door frames are mitered together like an interlocking puzzle, using a minimum of nails. Bamboo lath and vine latice are notched into the verticle and horizontal columns of the building where a solid wall is desired. After the roof of tile is installed the mud plaster is applied. All wood beams and posts are covered with paper during this process, for protection, then later removed after the wall has had its final sand finish.[31]

The Japanese door/window is distinctive from the American style because of its shape -- usually long and wide -- and its material and construction. There are three basic types of doors, but without exception they all slide in tracks set in the ceiling and floor.

The most common door used between the living room and veranda is the Shoji, made principally of wood latice set into a frame and covered on one side with translucent paper. Paper is prefered rather than glass because of its light-diffusing qualities. The Shoji material may be replaced or repaired easily since the paper comes in standard rolls. It is glued on one side only, usually the exterior, giving the outside of the house an appearance of solid white panels. Today the shoji screen may be found in front of a sliding glass door to retain the diffusing qualities of the paper while allowing the glass to retain the heating or air-conditioning.

The second type of door, used as partitions between rooms, cupboard, or closet doors is the Fusuma. The fusuma frame is covered on both sides with a non-transparent paper decorated in gold leaf, ink brush work, or simply allowing the soft color of the paper to remain. They are not sound-proof, nor do they have locks.

The Amado is the third basic type. It is a sliding wooden shutter used to close the house from the outside, allowing protection against winds, rains, typhoons and for security against theft. It consists of wooden frames, stiffened by transverse battens to which small wooden boards are nailed. Ventilating devices for the humid summers are provided in the upper top of the door. During the day the Amado is kept in a wooden compartment called Tobukuro which is fixed at the sides of the door and window openings. The clear width and height of the compartment corresponds to the dimensions of the Amado itself. It is heavy and noisy to put up and take down but it is the only method found to make the home secure.

The bamboo curtain, used on the exterior veranda, provides shade during the summer months. Thin, transparent curtain panels may also replace the shoji during the summer, allowing air to circulate but still provide privacy.

Small decorative windows called Shitaji-mado allow visual relief to a wall area, as well as interesting texture and ventillation. These windows are covered with bamboo latice and are derived from the tea-room or house. They achieve a rustic affect and can be found also in one wall of the Tokonoma. See figure 27.

Ventillation of the Japanese house, as indicated previously, is very necessary for the occupant. Air changes in a room nearly four times as rapidly as in an average American house, due to the openess of design.

Heating is provided by the hibachi, the irori; or the bath which super-heats the body by soaking. The kimono, worn around the house during the winter, serves as effective combatant against cold drafts.

Few accessories are found exposed in a room, although plants may be in abundance. The Tana usually contain the extent of the accessories. Photos of family and friends are, however, popularly found in bedroom areas, as well as the Tana.

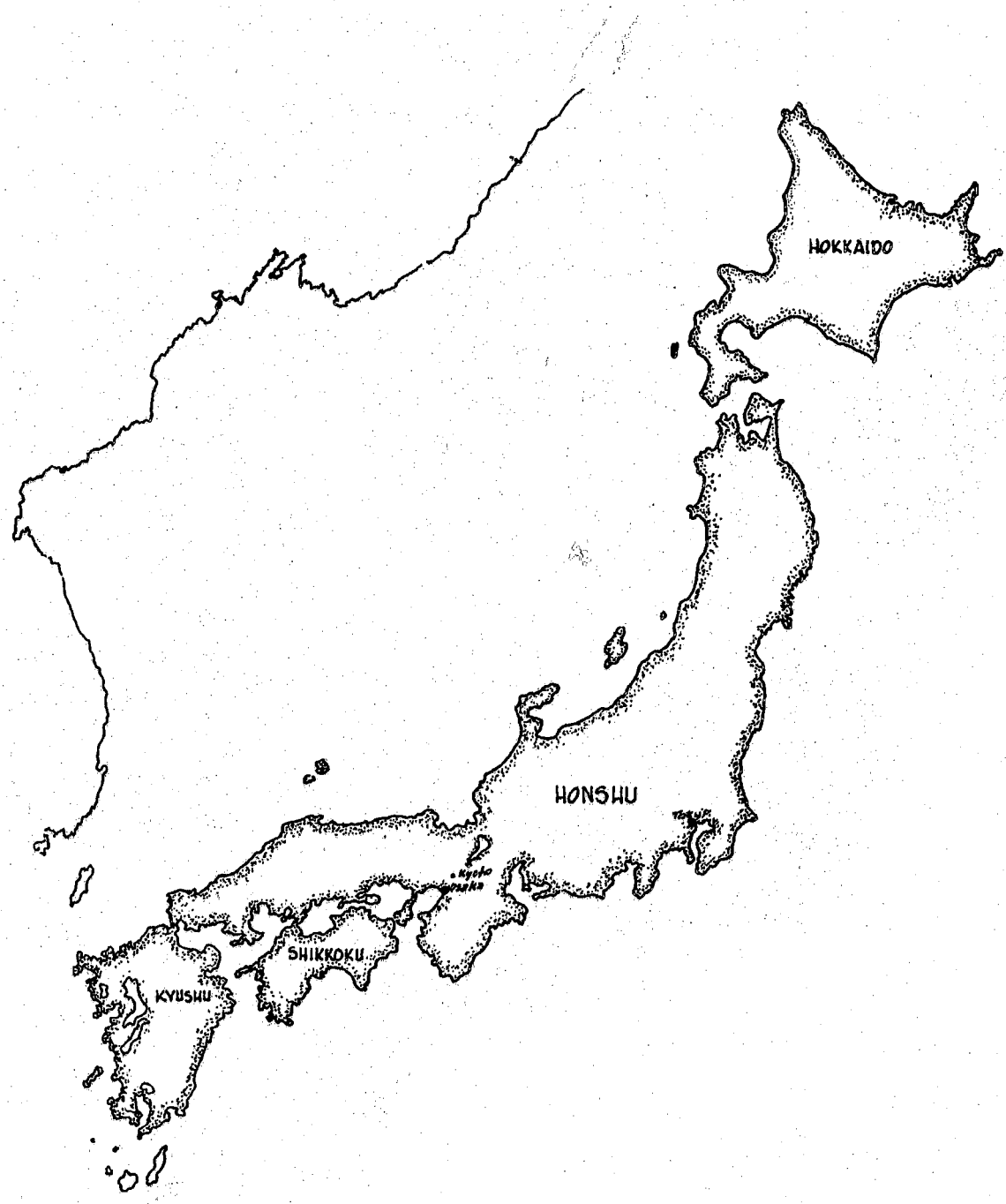
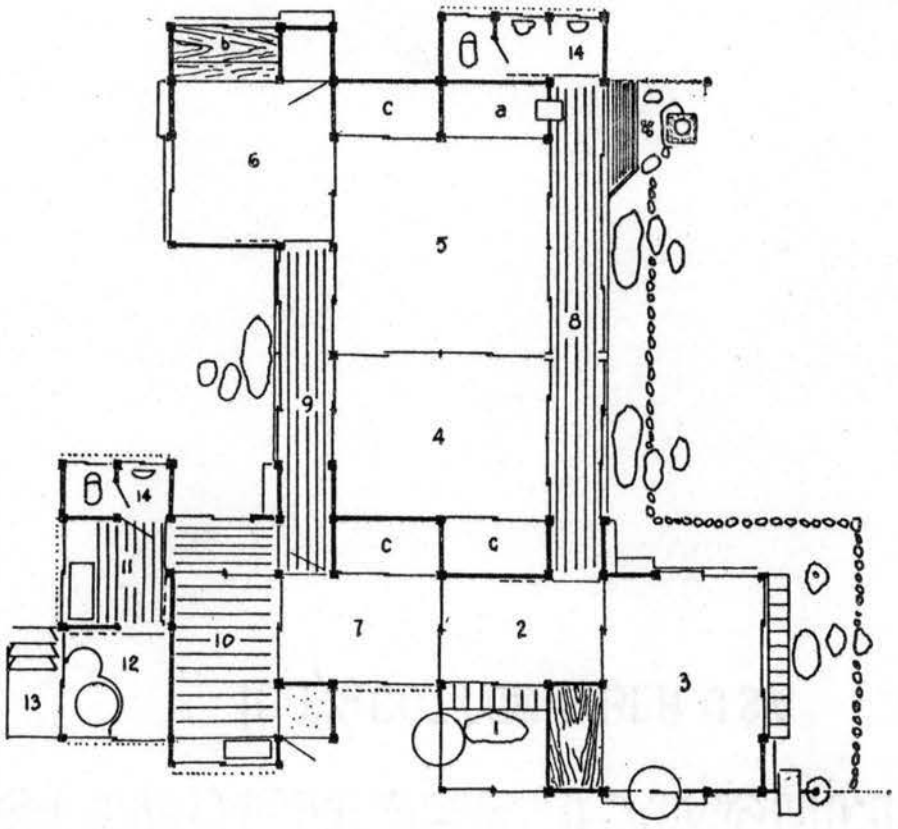


Figure 30.
Map of Japan

Figure 31.
Education At Any Expense



1. ENTRANCE HALL
2. ANTE-ROOM - 3 MATS
3. RECEPTION ROOM - 6 MATS
4. DINING ROOM - 6 MATS
5. LIVING ROOM - 8 MATS
6. NURSERY - 4.5 MATS
7. ROOM - 3 MATS
8. VERANDA
9. CORRIDOR
10. KITCHEN
11. DRESSING ROOM
12. BATHROOM
13. HEATING
14. PRIVY

a. TOKONOMA b. TANA C. WALL-CUPBOARD/STORAGE

Figure 32.
Floor Plan of Japanese Residence

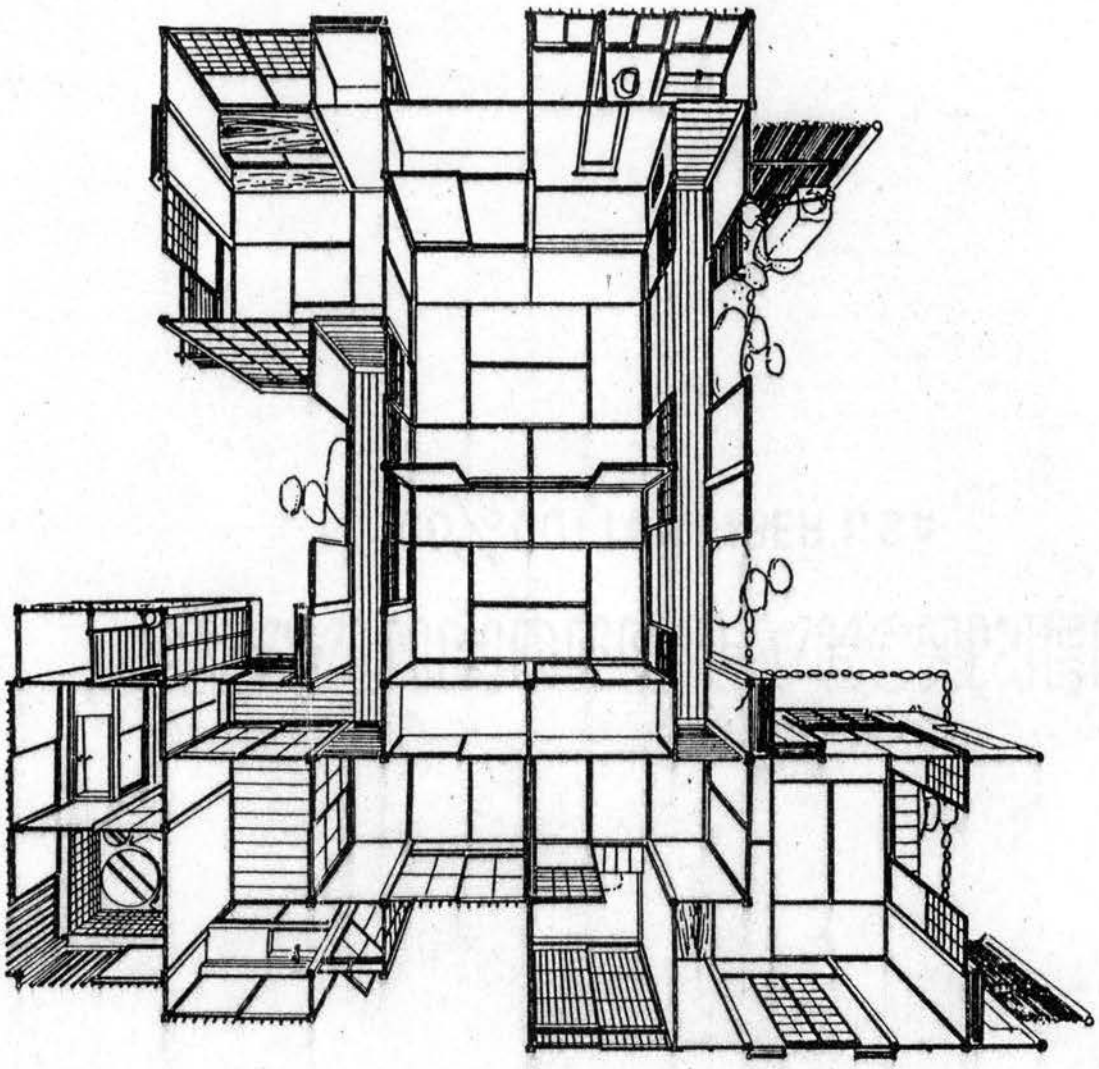


Figure 33.
Perspective of Japanese Floor Plan in Figure 32

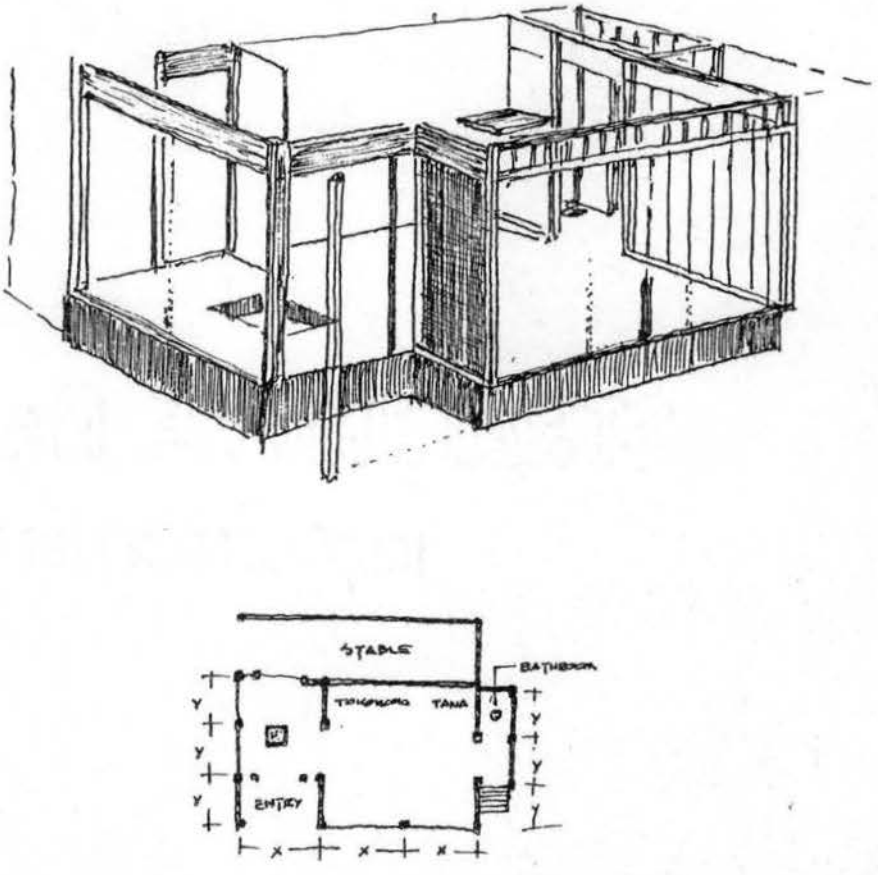


Figure 34.
Rural Dwelling in Ruins Near Nikko

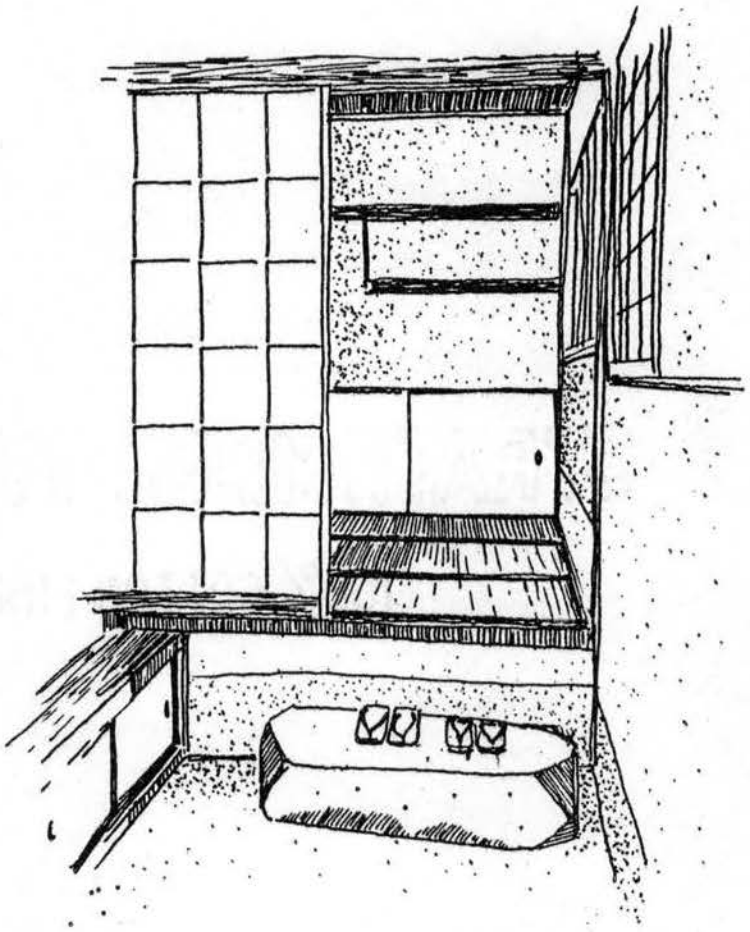


Figure 35.
Typical Japanese Entry

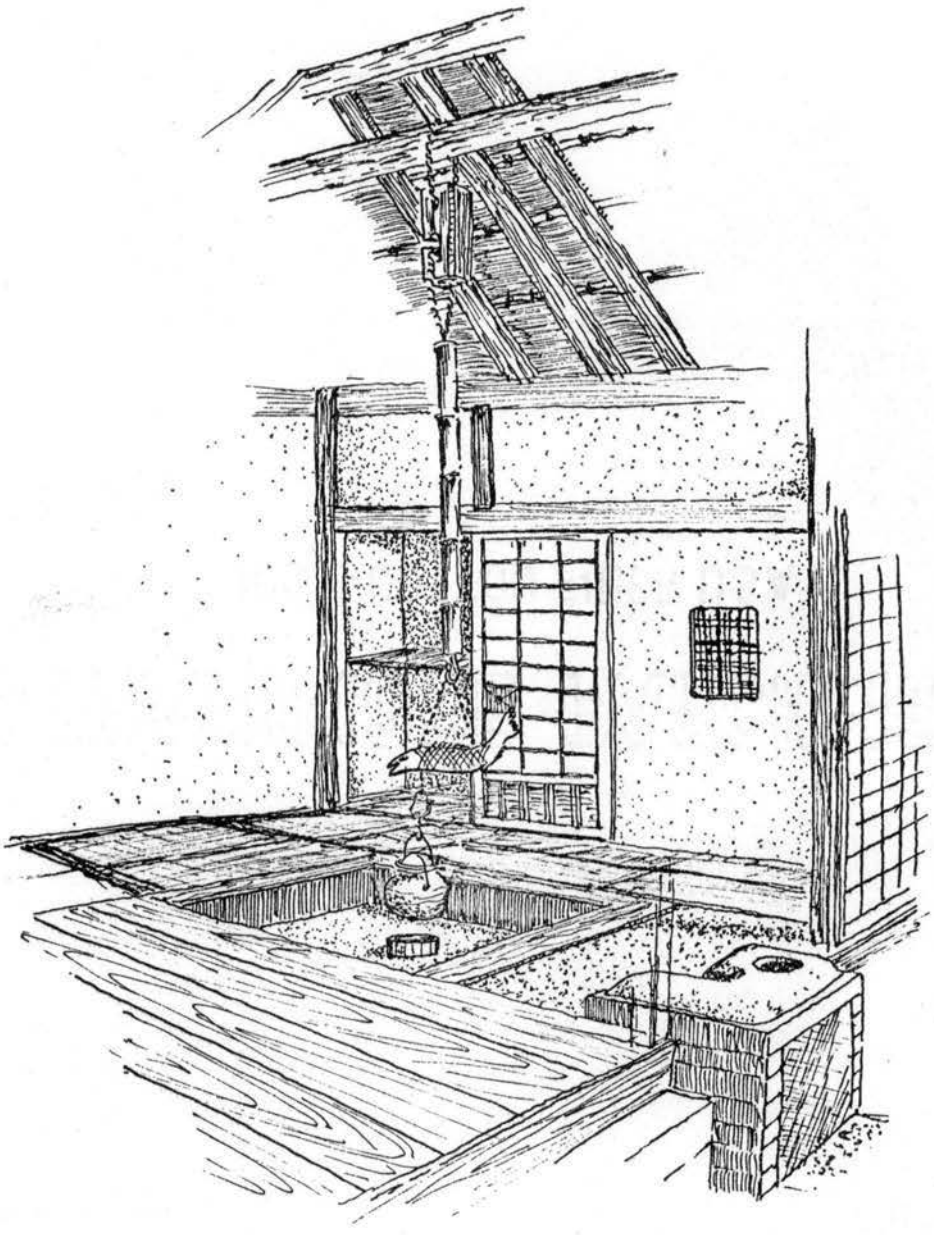


Figure 36.
An Irori Area in a Japanese
Residence, Osaka, Japan

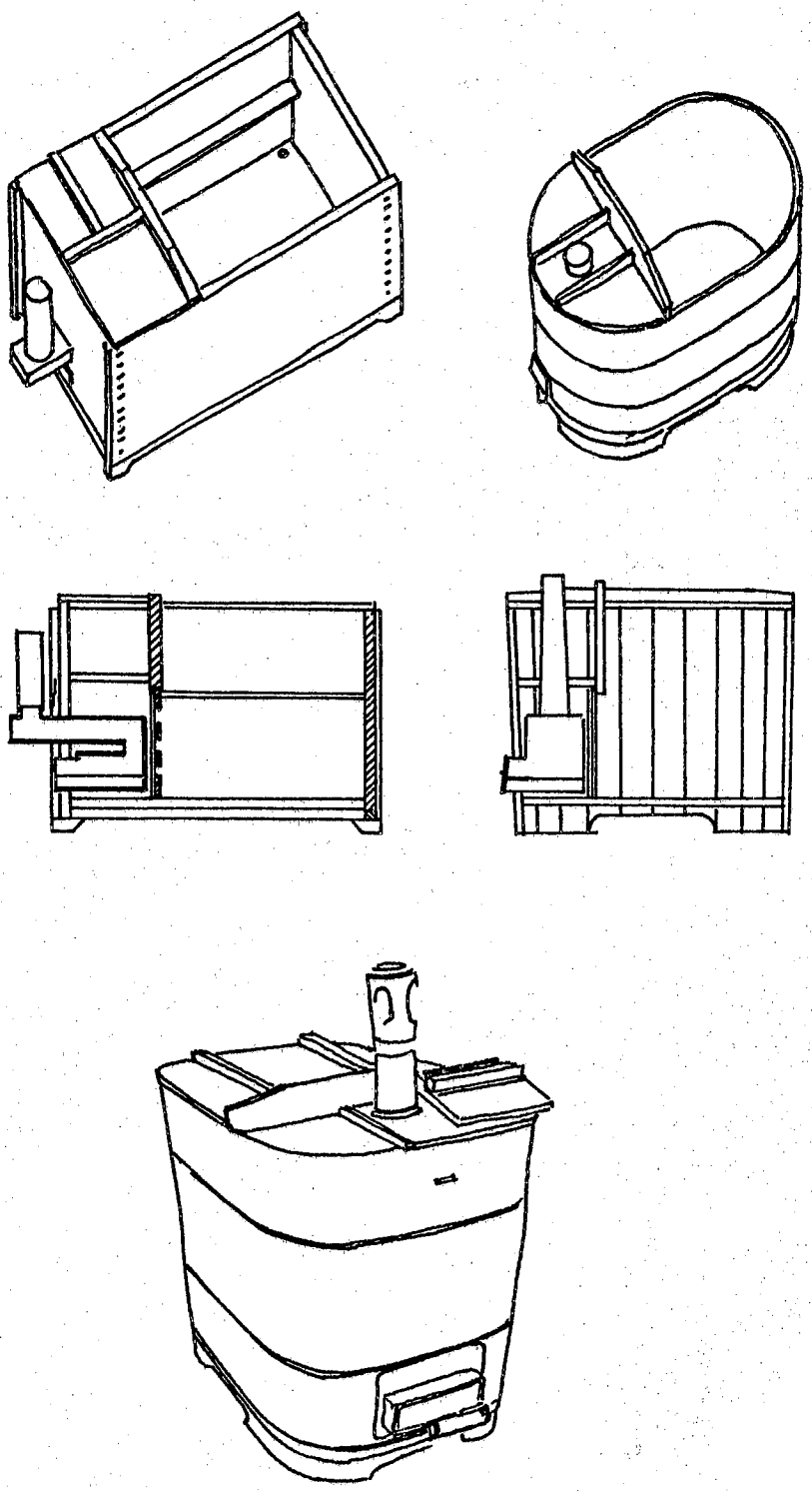


Figure 37.
Two Basic Types of Hinoki Wood Bath Tubs

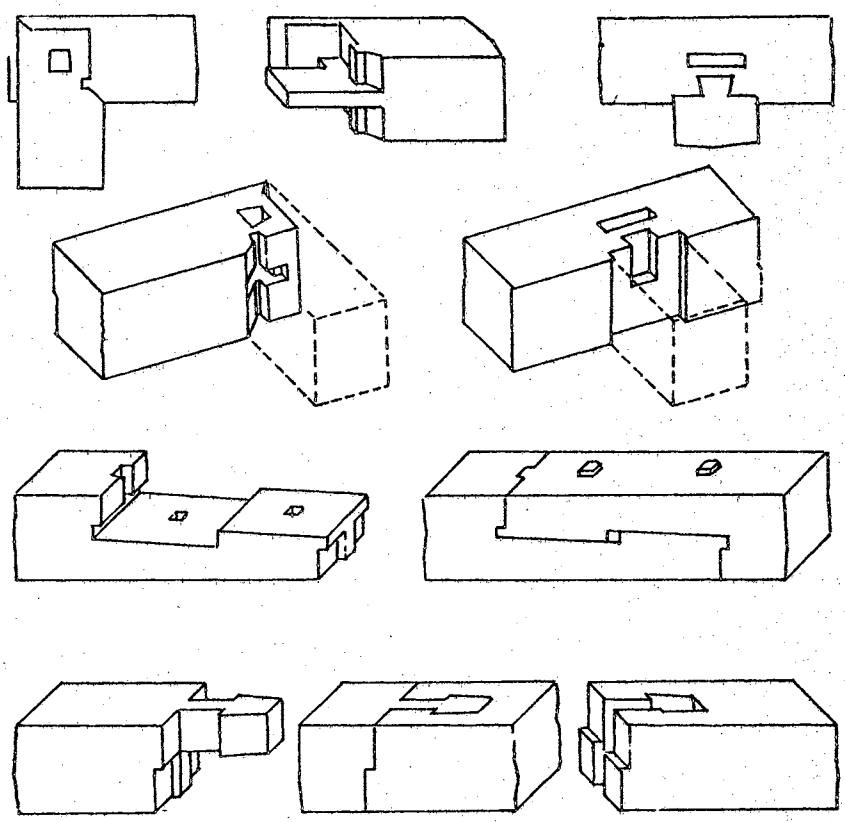


Figure 38.
Some Typical Wood Joinings Found
In Japanese Dwellings

CHAPTER III

SUMMARY AND CONCLUSIONS

The purpose of this study was to gather and compile data pertaining to housing in various countries visited in a two year expedition, from November, 1967 to November, 1969. Similarities and differences of six countries have been recorded.

Europe, tradition bound with existing housing, re-conditions them for needs of today. The damp, cool climate, and the desire for the home to be secure, is indicated by sturdy construction of brick, stucco and concrete. There are definite assignments of space within a European house, as in America. The kitchen, bath, living room and bed rooms are defined areas, their utility seldom is changed. Economic prosperity has enabled the European to advance in modern furnishings, plumbing facilities and designs, and modular kitchens. He is constantly improving his environment, while attempting to retain tradition.

The dry, warm temperatures of India have made the mud and straw house a practical construction material in the state of Punjab. A less structured assignment of space, coupled with economic and religious influences, has produced a very different, but functional, approach to housing. Scarcity of wood makes the cow dung and straw fuel the most practical. Bathing is an unabashed necessity and facilities can be found anywhere. Because of sewage and plumbing

difficulties in most areas, out-door facilities are used. Religious restrictions on diet has created a less complex kitchen area. The living room may double as a dining room and bedroom, not uncommon anywhere in Asia.

Thailands tropical climate necessitates a ventilated, stilted house. Open grill and lattice work for the window area is common. Monsoons and dampness have dictated the construction materials; wood, straw and palm allow maximum ventilation. The klong life provides the Hang Tao and the house boat to exist in Thailand. When bath facilities are within the house there is no separation between the washing area and the privy. The house is unstructured in room assignments, with the exception of the bedroom which is separate from the utility and entertainment areas.

Zen Buddhism in Japan has heavily influenced the life style and design of the Japanese house. The seemingly stark interior allows the garden to be the focal point. Earthquakes and variations of temperatures and humidity have created a house of intricately joined wood, well ventilated with floor to ceiling shoji doors of rice paper. The flooring is the versatile and non-conductive tatami mat, dictating much of the interior style of the home. The house is structured in assignments of space for the kitchen and bath area. The bath is located at opposite ends of the house from the privy, separated by the garden. The bath is regarded not only as a process of cleanliness but also rejuvenation and meditation with the garden as the focal point.

Conclusion

It seems western man, in his desperate attempt to creat "material progress," has overlooked the most important value of his

inner-world, the world known by the oriental for countless centuries. By comparing the deeper motives of our existence perhaps we can discover what unites rather than divides us. The physical world has become too small, through travel and communication, for us to tolerate arrogance, and the ignorance upon which it is based -- the ignorance which inevitably has contributed to violence.

In order to design an environment that will enhance a society an understanding of the subtle inter-play of religion, philosophies of life, and cultural societal pressures is necessary.

Recommendations

The summary of the two-year field project points to the necessity for future study, continued travel, additional logs, sketches and research; to more nearly comprehend the similarities and differences in social customs and their reflections in the physical home.

As mans space decreases this hypothesis becomes increasingly significant. The peculiarities, as well as the commonalities, need to be further studied.

FOOTNOTES

[1]C. M. Deasy, "When Architects Consult People", Psychology Today, (March, 1970), pp. 54-55

[2]For additional reading consult: Edward T. Hall, The Hidden Dimension, (New York, 1966), pp. 95-173

[3]Wendell Blanchard, Thailand: Its People; Its Society; Its Culture, (1958), provides an example of monographs produced by the Human Relations Area Files, Inc.

[4]Consult Logs, June, 1968

[5]Ibid. March, 1968

[6]Ibid. March, 1968; June, 1968; July, 1968

[7]Ibid. February, 1968

[8]Beatrice Lamb, India: A World In Transition, (New York, 1968), p. 7

[9]Ibid. p. 101

[10]For further readings regarding the Caste System of India consult: Mohandas Gandhi, Autobiography: The Story of my Experiments With Truth, (Washington, 1954); Lamb, pp. 134-161; and Phillip Mason, India and Ceylon: Unity and Diversity, pp. 151-181.

[11]Lamb, p. 164

[12]Consult Logs, June, 1969

[13]Ibid. July 25, 1969

[14]Ibid. June 16, 1969

[15]Mason, p

[16]Gandhi, p. 211

[17]Howard Kaufman, Bangkhuad: A Community Study in Thailand, (New York, 1960) p. 19

[18]For further elaboration on Buddhism read: Christmas Humphreys, Buddhism, (England, 1951).

[19]George Coedes, Angkor: An Introduction, (Hong Kong, 1967), p. 7

[20]Blanchard, p. 7

[21]Consult Logs, September, 1969

[22]For additional insight into the Thai Personality read: Herbert Phillips, Thai Peasant Personality, (California, 1966); and Kaufman,

[23]Consult Logs, September 1969

[24]F. C. Darling, "America and Thailand," Asian Studies (April, 1967), pp. 213-225

[25]Hidetoshi Kato, Japanese Popular Culture, (Tokyo, 1959), p. 217

[26]Bernard Rudofsky, The Kimono Mind, (New York, 1965), pp. 133-151 for further reference to the Japanese method of bathing.

[27]Consult Logs, October, 1969

[28]Kenzo Tange, Katsura, (New Haven, 1960); and Norman F. Carver, Form and Space of Japanese Architecture, (Tokyo, 1955); provides, pictorially, many textures of pathways, garden in relation to the wood structures, found at Katsura Imperial Villa in Kyoto, Japan

[29]Tetsuro Yoshida, The Japanese House and Garden, (New York, 1956), p. 90

[30]Consult Lobs, October, 1969

[31]Ibid.

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