

PEOPLE'S PLACES:
PUBLIC SPATIAL STRUCTURE IN CHINESE VILLAGES

by

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B.S.A.D. Massachusetts Institute of Technology
1977

Submitted in Partial Fulfillment
of the requirements for the
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ABSTRACT

This thesis attempts to present the morphological development and use of the public environment of Chinese vernacular villages as a result of Chinese customs and attitudes. The information is presented in three parts: a description of daily village life in both feudal and modern China; a presentation of documentation of the public environment in six villages in the lower valley of the Chang Jiang River; and, a discussion of the use and development of a variety of public spatial structures in China.

Thesis Supervisor: Shun Kanda
Associate Professor of Architecture

DEDICATION

To my relatives in Shanghai who worked so hard to help me.

ACKNOWLEDGEMENTS

My thanks...

...to the Department of Architecture at Tung Chi University, especially Professor Chen Tsung Chow and Professor Frances Tsu, who helped me while I was in China.

...to Professor Shun Kanda, my thesis advisor, who provided guidance and criticism and who had to plod through many drafts and tangential explorations.

...to Zeng Fanzhi for his information and thesis on villages.

...to John and Mary for their support and editorial assistance.

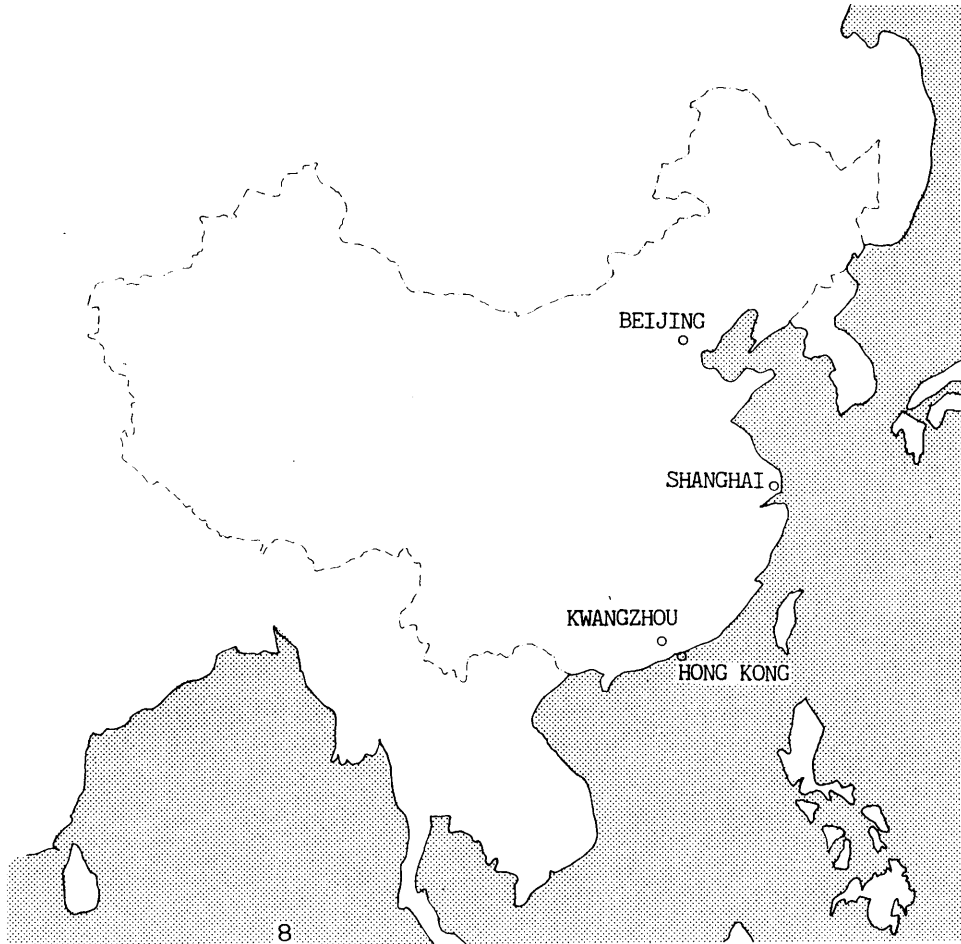
...to my parents for their support not only through this thesis but throughout my education.

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PEOPLE'S PLACES:

Public Spatial Structure in Chinese Villages



Preface

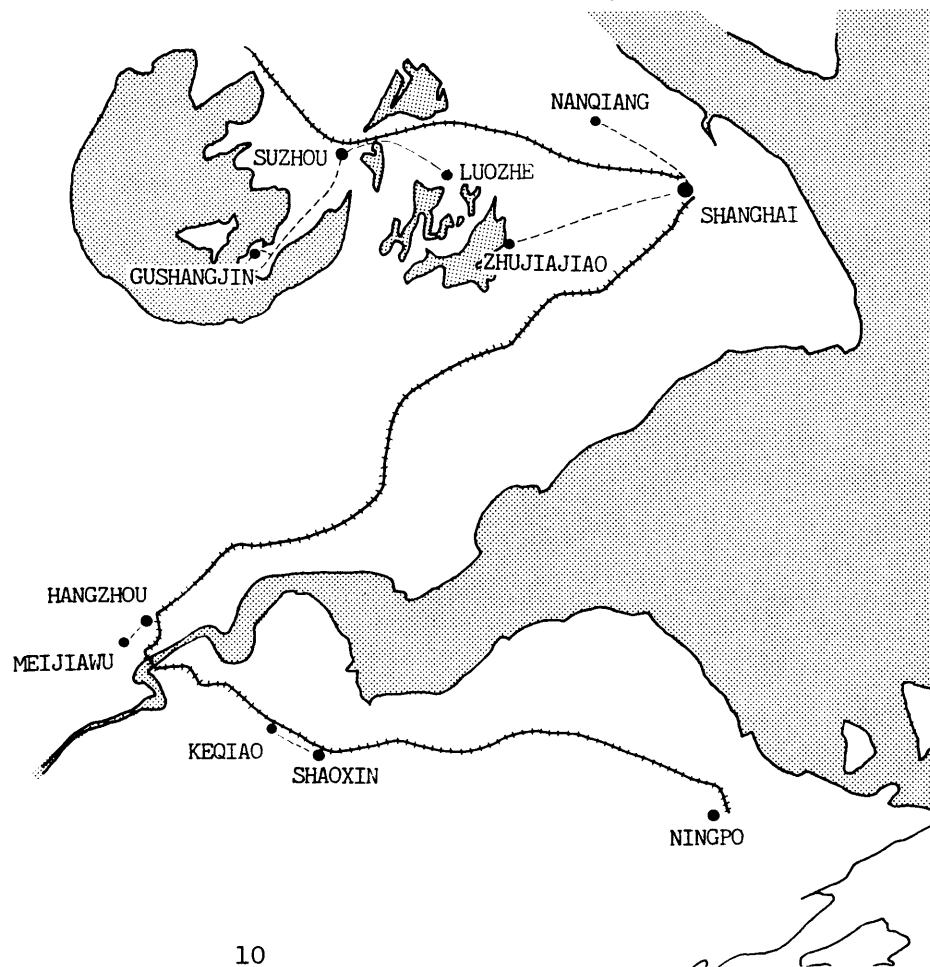
China has always been a nation of villages, yet the western and eastern image of Chinese architecture is comprised of gardens and palaces. To enlarge that image, I add a glimpse of Chinese village architecture south of the Chang Jiang (Yangtze) River.

During the summer and fall term of 1979 I made plans to go to China to write my thesis about architectural observations in Chinese villages. The day after Christmas I flew from New York to Hong Kong and from there to Shanghai. In Shanghai, Professor Chen Tsong Chow of the Department of Architecture at Tung Chi University had made arrangements for me to visit numerous villages around Shanghai, Hangzhou, Suzhou, and Shaoxin. I travelled to these villages with Professor Frances Y.S. Tsu, also affiliated with Tung Chi University and the Shanghai Institute of Design. I felt very fortunate to have seen these villages with her because she provided insight that I never would have under-

stood if I had travelled alone.

I travelled through China on a tourist visa. Tourists in China are entertained and segregated according to their birthplace and background. Waibin, or foreign guests, are given the best accommodations and are usually escorted throughout their visit to the various tourist spots. Hau Chiao, or overseas Chinese like myself, are given second class accommodations. Residents of Hong Kong, Macau and Taiwan are considered Chinese and therefore travel in third class accommodations, which are still more modern than the average hotel for Chinese. Most overseas Chinese have relatives in China and can speak Chinese therefore they travel more freely, often without government guides.

In Shanghai I applied for visas to visit Hanzhou, Suzhou and Shaoxin. After I arrived at each of these major cities I again had to apply for written permission to visit the villages in the countryside. Because there was no precedent for the kind of work I wanted to



do, the local government officials were reluctant to let me visit the village, but they would never tell me that I could not visit a village, for to forbid a guest contradicted the Chinese sense of politeness and reserve, instead they would tell me that the road to the village was in a state of disrepair. If I insisted that I had hosts awaiting my visit, the official sometimes gave in, other times I gave in.

I travelled by train to the major cities and by automobile to the countryside. The train system is inexpensive, punctual and very comfortable, if you have a ticket for a ran che, or a "soft car." These cars with cushioned seats are used exclusively by foreigners but also are open to be used by Chinese with special permission. Ying che, or "hard cars," have straight-backed wooden seats and are used by Chinese travellers.

To visit the countryside, I hired a driver and a car because the government required that I return to a hotel in a major city every night. (Car rent-

al services are unavailable in China.) Travelling by car proved to be beneficial because any village could be visited if it was along the route to the town for which I had permission to visit.

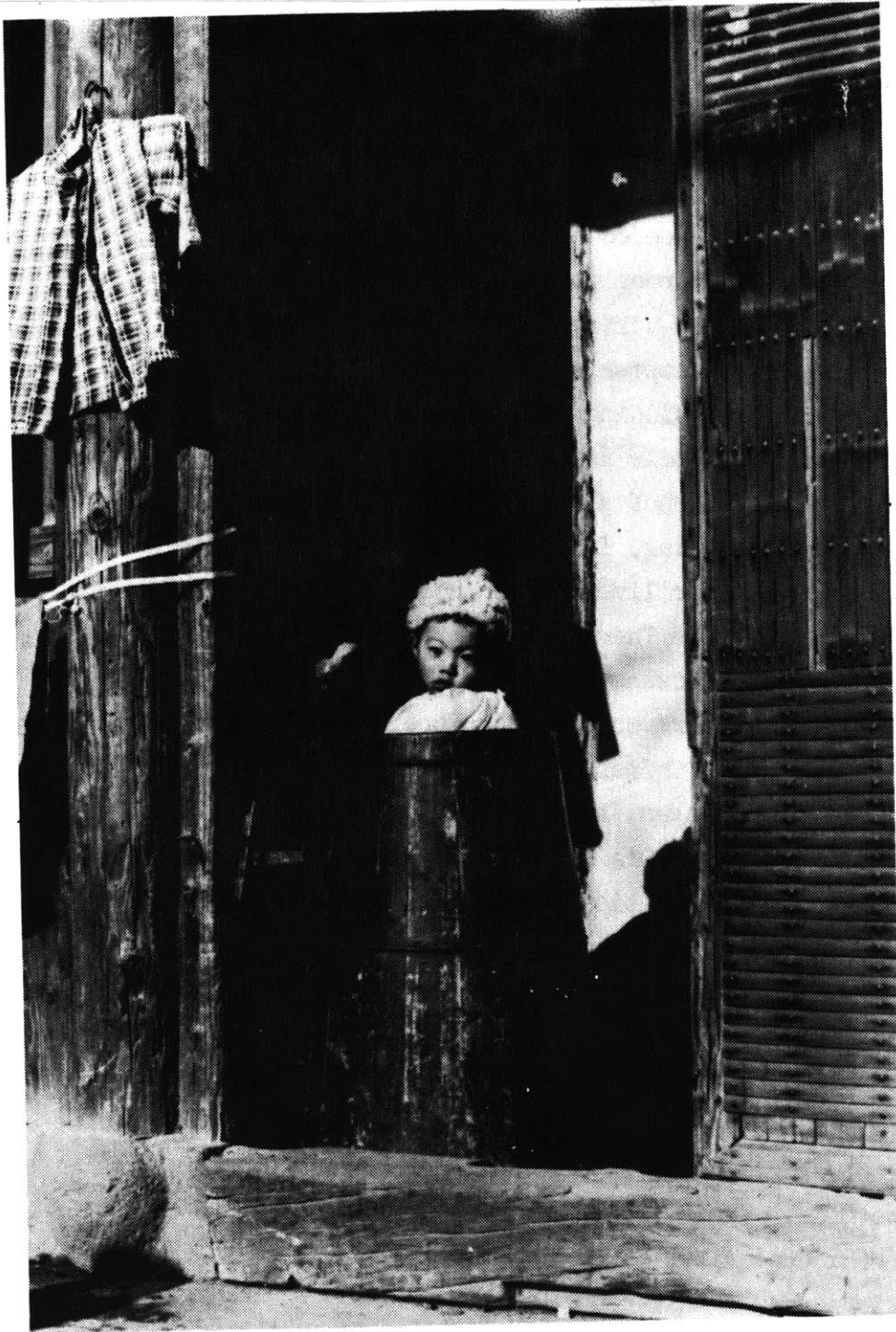
The equipment used to document each village consisted of two cameras, one with black and white film, the other with color; three lenses, 28 mm, 55 mm, and 128 mm; and two optical rangefinders, which allowed one person to quickly and accurately measure distances. The short distance rangefinder measures between six feet and 100 feet, the long distance rangefinder measures between 50 feet and 600 feet. For distances less than six feet, I used a fold-out rule, painted in one foot intervals so that it could also be used as a scale in photographs. I also carried many small items such as a compass, a flashlight, pens and pencils.

In a chosen area of each village, I drew a roof plan, ground plan and critical sections, dimensioned all of the drawings and recorded vegetation, building materials and street furniture.

I found I needed to take two sets of photographs in order to both show the character of the villages and construct drawings. The latter set required two views of each building elevation. Photo locations and their sequences were indicated on the roof plan.

While working, I learned about the villagers, their lives, their homes and their children. There were many people to talk with because adults and children followed me wherever I went. Foreign tourists, even Chinese tourists, rarely visit the villages, so any visit becomes an event. Drawing and surveying were clumsy activities. If I stood still, the local residents would crowd around me, feeling my clothes and studying my camera, paper and pencil. Sometimes a newcomer to the crowd tried to push in to see the show, and the entire crowd, including myself, were jostled from side to side. Their crowding was friendly and frank curiosity. They answered my questions, and I answered theirs.

The more I travelled and spoke to 11



village residents, the more interested I became in the daily activities and less interested in the theories about spatial structure. With my return home to the writing of this thesis, I return to the intellectual exercise that I had originally proposed, but I will include a description of day-to-day life and its influence on village form.

Introduction

Presentations of vernacular architecture recall the picturesque but omit the difficulty of daily living. How does one describe the life of an individual within a community and how is that life reflected in and supported by the physical environment?

The first part of this thesis "China: Day to Day" describes daily life in feudal China when most villages in this thesis were settled and daily village life today. In both feudal and modern China, the individual is considered a member of a family, so I begin my discussion with the family, then neighborhood organizations, then village organizations and beyond. That order emphasizes the importance of the family in the day-to-day activities of an individual. Since I have only briefly been an observer of village life, my description is a preliminary attempt at understanding daily life.

From the broad spectrum of daily activity, I have chosen to explore activities that might be shared by members of

the community and the environment in which those activities take place. A public environment is the physical expression of agreements made between individuals with regards to the needs of the community. Therefore, it is also the link between the family and the community. The exploration is appropriate in China because the housing situation is very overcrowded, so private activities often expand into the public environment. The second part of this thesis "Images: Chinese Villages" presents documentation of the physical form of the public environment of six villages. The last part of the thesis: "Observations: Public Spatial Structure" begins to analyze and categorize my observations of the organization, form and use of the public environment as influenced by a Chinese cultural setting. It is the combination of social agreements about use and physical attributes, such as organization form, dimensions and materials, that I have chosen to call public spatial structure.

Reproduced from
The Face of China
Photographs 1860-1912



The relationship of a particular cultural setting to physical form is fairly unique in China: the Chinese social, political and economic bases have undergone drastic change due to the Communist revolution in 1949, therefore the set of social agreements as to the use of the public spatial structure has changed, but the physical attributes have remained the same. The last part of the thesis also discusses those activities and uses that have changed as a result of the transformation of the Chinese lifestyle.

China: Day to Day



"Confucius' ideals, in contrast with Mao's, honored stability, not revolution. The ideal world, it was said, was arranged to accommodate the fundamental inequality of people. Therefore, a class system that clearly identified the gentleman scholar, the peasant farmer, the merchant and so on was a contribution to the ordering of human affairs. Distinctions were assigned to place in the family: age over youth, males over females." (Gernet - Daily Life in China)

"Character of State: The People's Republic of China is a socialist state where the dictatorship of the proletariat is led by the working class and based on the alliance of workers and peasants."
(China - A General Survey)

This section is not a historical essay discussing the events that led to the Communist Revolution, but instead it is a discussion about some key changes that have taken place since liberation in 1949, events that influenced and shaped the lives of villagers and their environment.

China is a rural country and agricultural production is its survival. The

agricultural environment has changed dramatically. Prior to liberation, land was privately owned by several generations of a family. Land ownership was the foundation of a family, it provided family members with a sense of security, independence and social status. Agricultural land was divided into small plots and a family owned many plots scattered throughout an area. The family did not live on their property but in a village. Today, the state, and therefore the people, owns the agricultural lands. Villages communally farm the land rather than as individual families. Once barren lands are now carefully irrigated and planted. Streets and railroad tracks are lined by trees.

Feudal life in China revolved around the ideal conception of an extended family as the primary social group. An extended family consisted of several generations - grandparents, parents, married sons, grandchildren, and servants - living together in a compound.

Wealthier families lived in compounds of successive courtyards and houses and grew by adding another courtyard and house. Poorer families lived in single rectangular buildings and added lean-tos when more space was required. The following description of a family compound was written by Martin Yang in A Chinese Village:

"The main house, or north house, called the cheng wu, is usually composed of three to five rooms, while the house on the left or the right side of the court generally contains two or three rooms. The width of a main house in the wealthy first group may measure about twelve feet; the length varies greatly. The floors in all kinds of houses are of beaten earth. The walls are papered. The windows are pasted over the thin white paper (sometimes oiled), which usually admits sufficient light and sunshine. The rooms are crowded by the big brick beds and wooden beds, the tables, bureaus, cabinets, and numerous personal belongings. As the kitchen is connected with the bedrooms and the stoves are attached to the tunnels inside the brick beds, the house is kept warm in the winter, but in the summer it sometimes becomes insufferably hot. Temporary kitchens may then be built in the court or in an empty house.

Feudal
Village
Life

"In the house of a well-to-do family one or two rooms are specially furnished and kept for guests. An average family, however, uses the parents' bedroom as a guest room. Guests are almost always relatives so that there is no embarrassment on either side. The parents' bedroom also serves as the dining room for the whole family and their guests in the winter. The large brick bed is covered with a thick layer of straw above the which a neat, smooth mat of stripped skins of kaoliang stalks is laid. During the winter when the nights are long and it is cold outside, the family usually gathers in the parents' bedroom to work or talk. Neighbors also come and sit on the same bed. Thus, the parents bedroom is really the center of family life.

"A married son and his young wife live in the room across from the kitchen. The door of this room is always kept closed, for the interior should not be seen by the father or by any man who is not of the family. The grown-up daughters always live in the room back of the parents' room so that no one can enter it except by first passing through the parents' room. When male guests or male neighbors are present, the daughters of the house must leave their room beforehand or remain there quietly until the guest or neighbors have gone. Grown-up children do not sleep in the same room as their parents. If the family has enough houses, there is no difficulty
18 in assigning separate rooms to the

children, but if they do not, the grown-up boys may sleep at a neighbor's or with the hired laborers. Grown-up girls may live together in one room. A married son must have his own room. The father of a family that had a two-room house went to sleep in a neighbor's barn when his son was married. Fortunately, he had but one son."

Beyond the extended family there were other social groupings within a village. The clan, or group of extended families of the same descent was very important because of the emphasis the Chinese place on kinship. The neighborhood, or associations established through physical proximity, was an informal tie between families. Often neighbors were also clan members. Neighborly ties over-rode the clan relationship in informal gatherings. Other village groupings were based on similar social and economic status, religious affiliation, or support of a school. Stratification according to status was temporary because family status changed within a few generations.

There was no overall social or economic organization in the feudal village, no organized recreation, no village-wide social group, and no community means for cleaning the street or supplying pure water for drinking. There were no parks or squares where large groups of people could congregate. Disputes and crimes were settled through private mediation backed by the force of public opinion rather than through enforcement of a village legal code. The occasional community action was not for the betterment of life in the village, but for the prevention of evils, such as village wide defense programs. Even in this case, wealthy families chose to hide and defend their wealth independent of the rest of the village by building walls around their house compounds.

Beyond the feudal village, rural life consisted of relations between the village and the market town and relations between the village and neighboring villages in the same market area. The following description about the feudal

market town is also from A Chinese Village:

"On market days the business life of the town is in full swing. On the evening before the market opens, the professional traders begin to pour in with their wares; early in the morning come the village butchers with their dressed hogs; the country merchants with their bags of wheat flour, cans of petroleum, bales of spun cotton yarn; and the carpenters with their homemade furniture and farm implements. Later come the traders who deal in dried foodstuffs, fish and seafood, fruits, pottery, chinaware, and scores of other merchandise. Then the farmers begin streaming in from the surrounding villages with their loads of grains, beans, fresh vegetables and fruits, animal feed, and firewood. Some also drive in livestock which they hope to sell or exchange. Later come the people who have nothing to sell but only want to buy. Some member from almost every household in the village is in the town on market day. In the morning every road leading to the town is crowded with people. Very few women go to market, with the exception of some old women from poor families who carry eggs, or chickens, or baskets of seafood for sale, or some of their handiwork which they hope to exchange for a little money.

"All the available space in the town is crowded with booths, counters, and plat-

forms heaped with merchandise. Traders dealing in similar commodities occupy the same section, thus forming more or less specialized markets. The livestock market and the fuel market are located outside the town on the riverbank. People crowd the streets, shouting, bargaining, greeting friends, yelling, and swearing. The excitement reaches its peak at noon and then begins to decline. Soon the roads are filled once more with homeward-bound villagers, but the marketing continues until late.

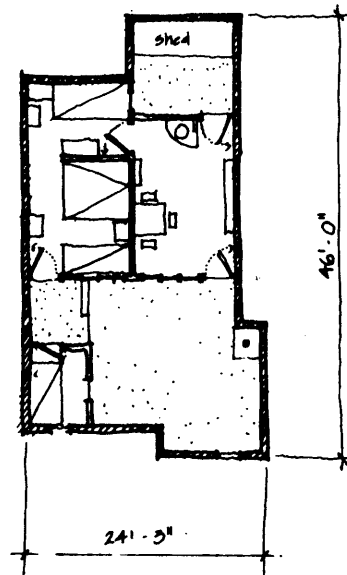
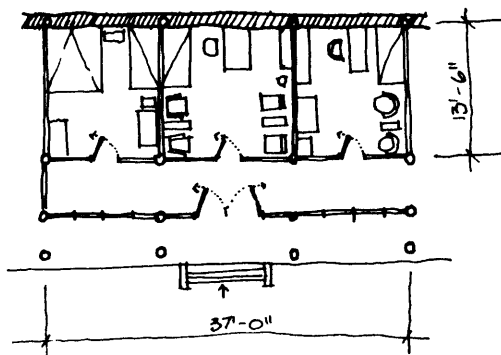
"The market town provides opportunities for farmers from different villages to meet one another, and is in fact one of the few places where they can meet. Chinese farmers always have friends and relatives in other villages and these meetings in the market take the place of visits, which would be more expensive. When the farmers return home they report to the whole family what they have seen and heard and, in this way people are kept informed about one another."

"Chinese society was a collection of small groups without any means for larger collective action toward achieving objectives not decreed by the past." (Genet - Daily Life in China)

Although the theoretical organization of the P.R.C. now emphasizes the national interest, then the commune, the brigade, the village and lastly the nuclear family, the villager is aware of the opposite order from day-to-day life begins before dawn for many. Food shopping at open markets is still a daily chore. On the streets, the patios and the frontyards for the cramped workers, mothers braid their daughters' hair in time for school, sisters hang out wet laundry on poles, grandmothers mold patties of coal dust and mud, fuel for the evening meal.

China has experienced an exceptionally high national growth rate: in 1953 the Chinese population was 602 million people, in 1968 it was 712 million. Estimates for 1980 predict that there are now one billion people living in China, 80% in villages. Large extended families are no longer the ideal. The nuclear family - parents and children - has become a social norm though it is still common to find three generations living

"If Chunking was noisy, as all Chinese cities are noisy, the village, as most villages, was silent, the somber brooding silence of countryside which I later came to realize as the sound of emotionless vacuum. Nothing happened in these villages; people grew up, lived and died in their villages, lashed to the seasons, to the fields, to the crops, their lives empty of any information except gossip, any excitement except fear." (Theodore White: In Search of History)



together. Most families rent one to three rooms from the government at very reasonable rents. A family living in one room will eat, sleep, cook and entertain there, but the family cannot rent more space because housing is scarce due to overcrowding.

The compounds of the extended families have been divided, room by room, and non-related families share the courtyards. Informally, families of a courtyard are the new neighborhood groupings although the actual interaction of the people is not always friendly.

Village-wide organization has changed most drastically since liberation. Many services have been provided for the betterment of the life of the community. Temples and private gardens have become public parks, recreational fields and schools have been built at the outskirts of the villages, and cooperative medical services are provided in the larger villages. Small markets exist within every

village, so each family no longer needs to send a member to the market town. These markets are supplied with local produce as well as with goods from many parts of the country.

No longer is the villager "lashed to the seasons, to the fields," because each village no longer needs to be self-sufficient. The village is linked to a larger commune network to which a village provides the specialties of its area in exchange for other necessities and comforts. The slow distribution of goods and transportation by canals and rivers has been improved by the addition of vehicular and railroad transportation. Limited amounts of electricity have been introduced to a majority of villages.

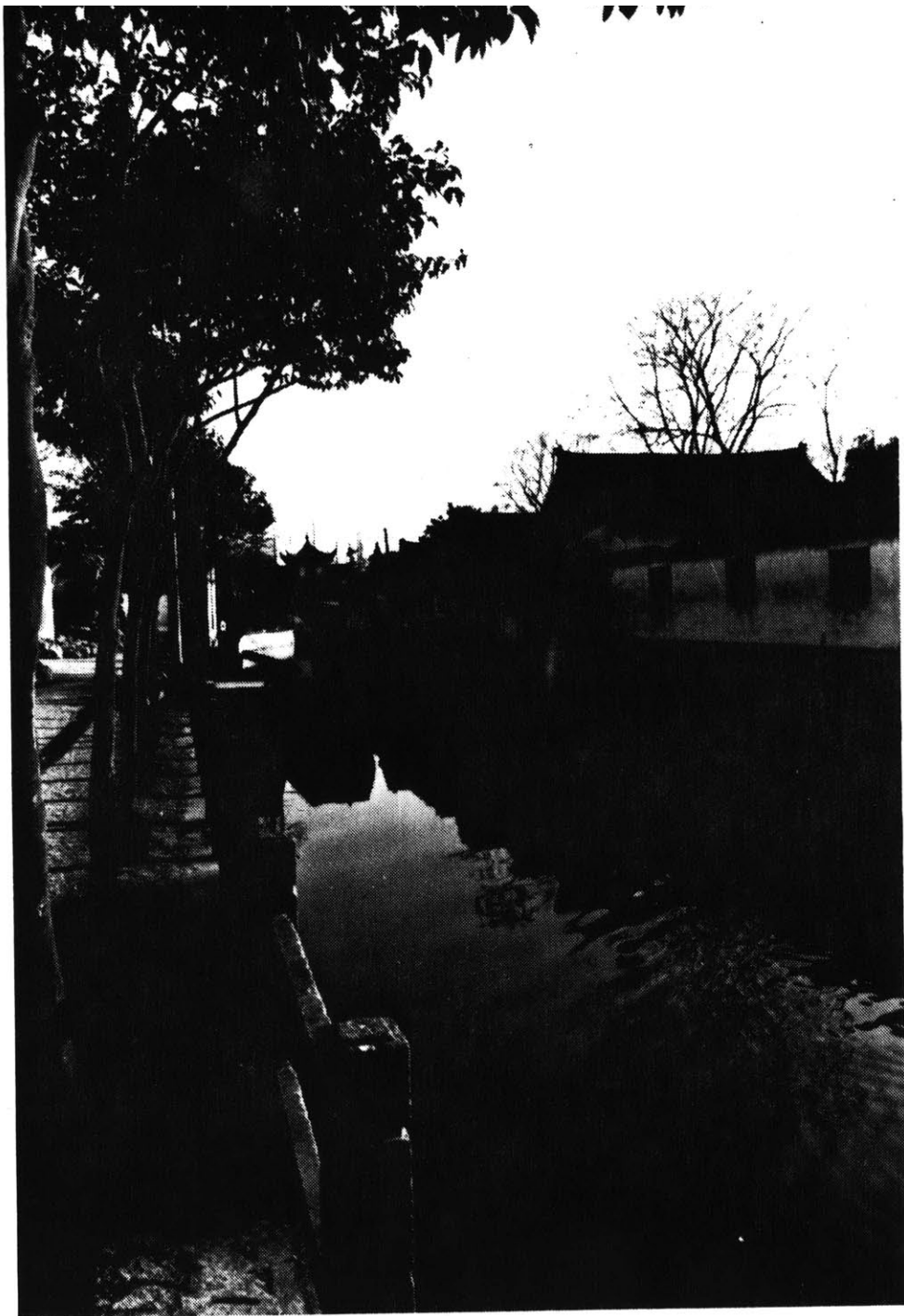
The following description about the Sung Family was written by Ruth Sidel in her book, Families of Fensheng:

"Sung Kwang is a 54-year-old woman with a long thin oval face. She and her husband, her 76-year-old mother-in-law, her 17-year-old daughter, her married daughter, son-in-law, and three-and-a-half-year-

old-grandson live in their small three room house in a courtyard of the Fengsheng Neighborhood. The front room of the house is decorated with plants and lace curtains at the windows, a map of China on one wall, pictures of the family on another. Sitting in this simple room with its whitewashed walls and stone floors, Comrade Sung tells about her life. 'Before liberation we were very poor. My husband's father worked for a landlord in Hupei province. He died at the age of 26, leaving two children both very young, one a year old and the other, my husband, just a few months old. My mother-in-law took care of the children, but when they became 13, they had to find work. It was very difficult to find work at the time, and my husband did not have enough to eat.

'After Liberation people were able to get work regularly, and my husband started working in a factory here in Peking 23 years ago. I came to Peking to be with him 18 years ago and worked in a factory until recently when I stopped because of ill health....Before we were so poor, and now we have a sewing machine, a radio, and every member of the family who works has a watch.'

"The family is crowded in its small house: Comrade Sung's mother-in-law, her small grandson, and her 17-year-old daughter, a teacher in primary school, share one bedroom; she and her husband share a second bedroom, and her daughter, thirty, a salesman in a local shop, and her son-

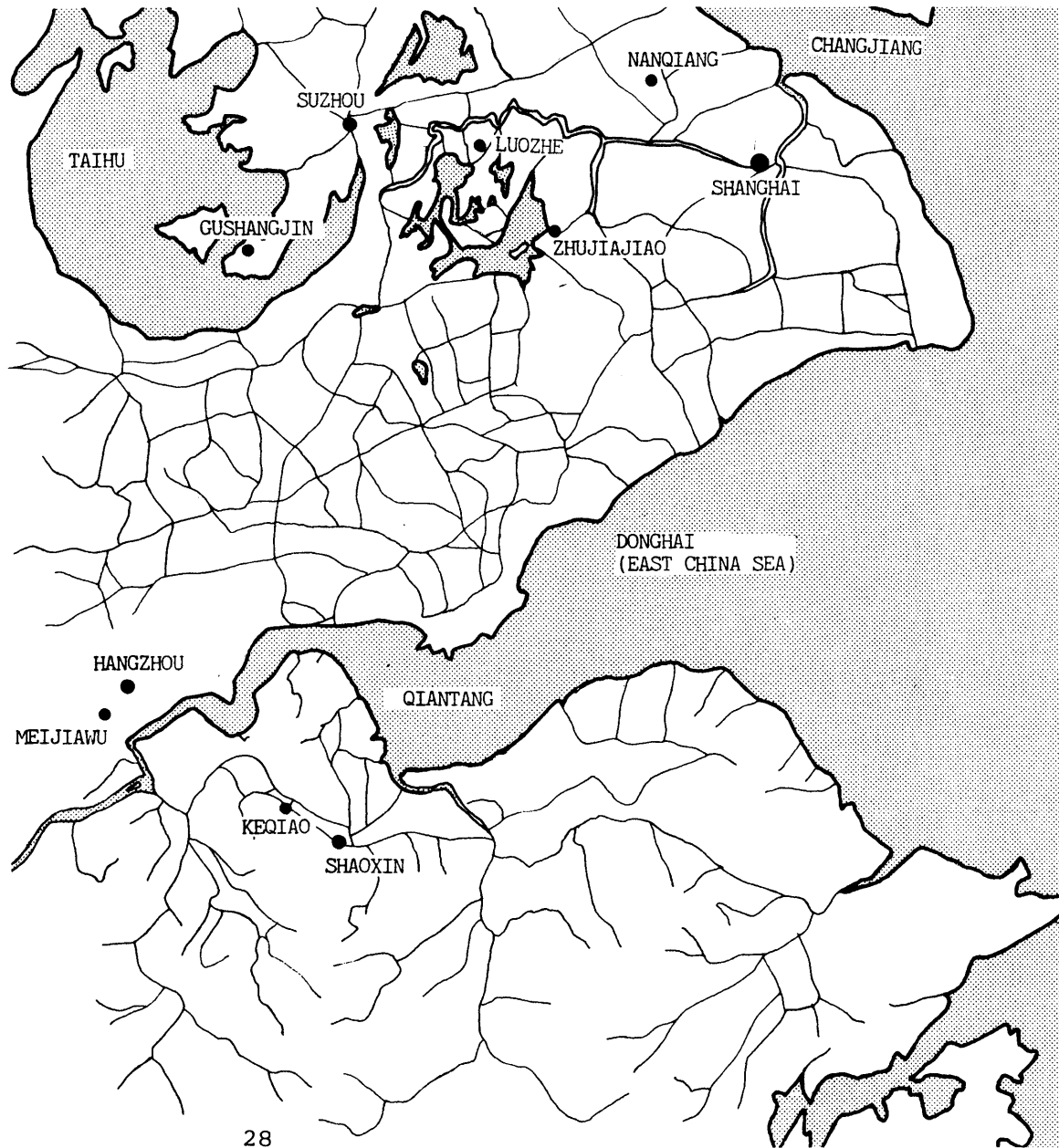


in-law, a factory worker in another district near Peking, share the third bedroom. They have two other children who are not living at home, a son, 26, a factory worker in another city, and a daughter, 21, who is also a factory worker and lives in a dormitory in Peking.

"Comrade Sung proudly told of how the family is now able to save money in the bank. The total income is 206 yuan per month (\$130 U.S.) for the entire family, food costs 150 yuan for the entire family, and rent, electricity and water together come to 12 yuan per month...."

It is my observation that the farmers and peasants day-to-day routine has not changed, nor have the houses of these people. It is the collective agreements made about the use of the public spaces in the village that has been altered. The villages have undergone tremendous social, economic and political transitions since the Liberation in 1949. Most importantly, an individual no longer needs to be self-sufficient. During feudal times, the manpower of a large extended family was needed for survival. Today, there is a much larger network from which one can obtain basic necessities. In exchange for that security, the government had to impose new regulations which people have willingly or unwillingly accepted as their new set of collective agreements. The effects of the change in collective agreements on the architecture of the village is discussed in Part 3 of this thesis.

Images: Chinese Villages



中國

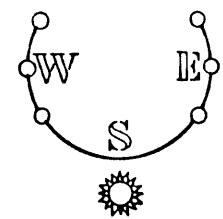
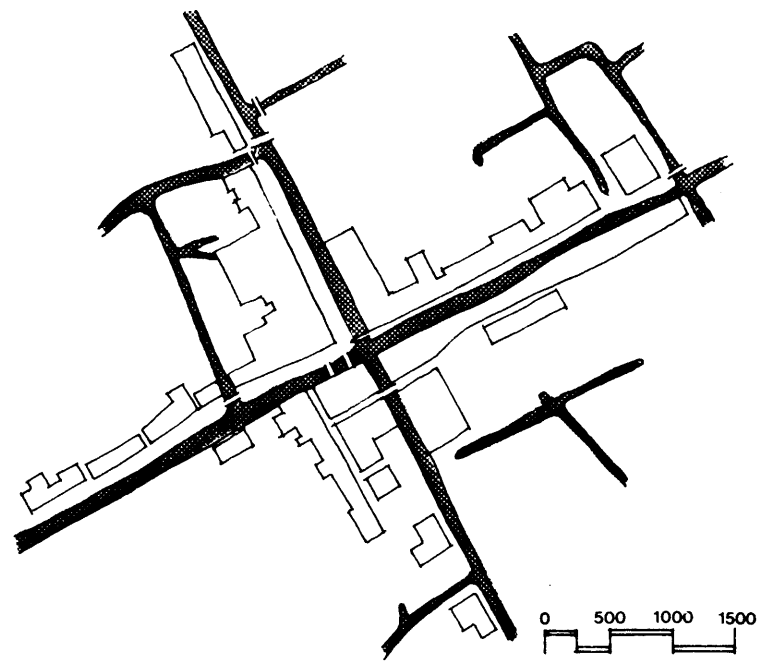
The six villages documented in this section are all located in Zhejiang and Jiangsu Provinces on the east coast of China in the lower valley of the Chang Jiang (Yangtze) River. This area has always been more economically developed and densely populated than the rest of China. The climate is mild and moist; the yearly average temperature ranges between 16° - 19°C, the coldest temperatures around 0°C, the hottest temperatures around 35° - 40°C. The annual average rainfall is between 1500 - 2000 mm.

This area is densely populated because its lands are the most arable. In China large bodies of water surround the study area; to the east is the East

China Sea, to the south the Qiantang River, to the west the Tai Hu (Tai Lake), and to the north the Chang Jiang River. Lakes and ponds compose 10% of the land area. Connecting these large bodies of water is an intricate web-like water system used for irrigation and transportation. Every piece of land is intensely cultivated, even the few mountains and hills are carefully terraced for tea bushes and orange trees.

Most of the villages documented were settled during the Ming and Qing dynasties, about 100 - 200 years ago and have continually changed and grown until present day.

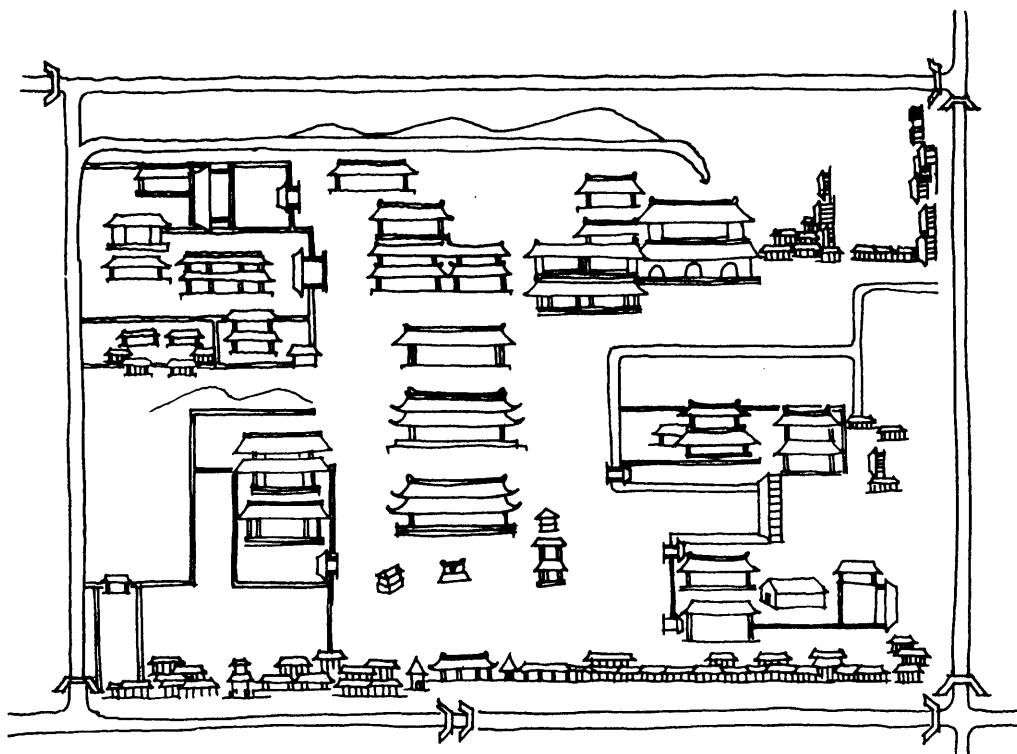
南翔

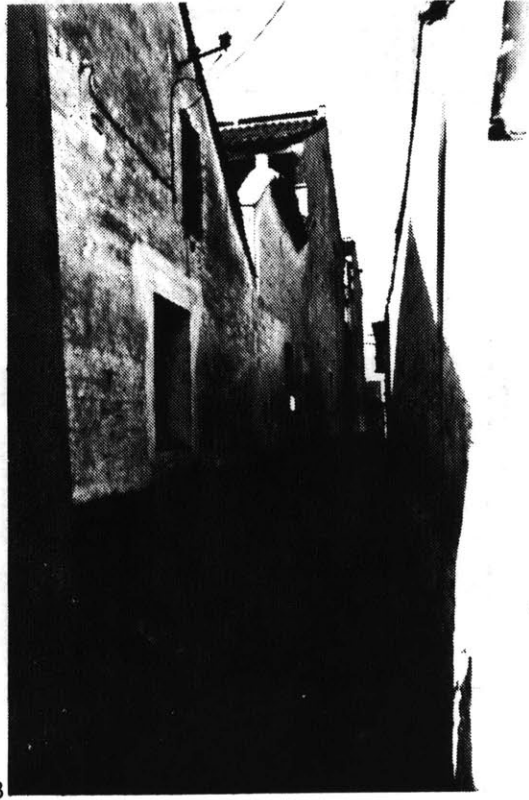
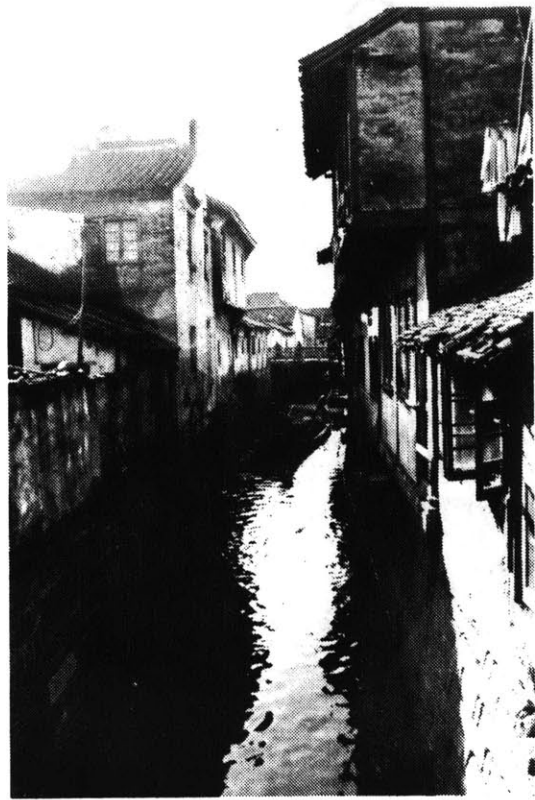
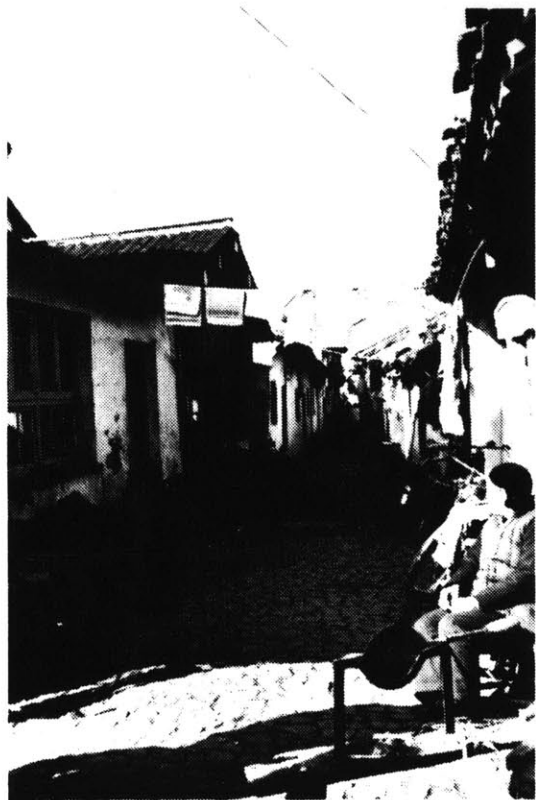


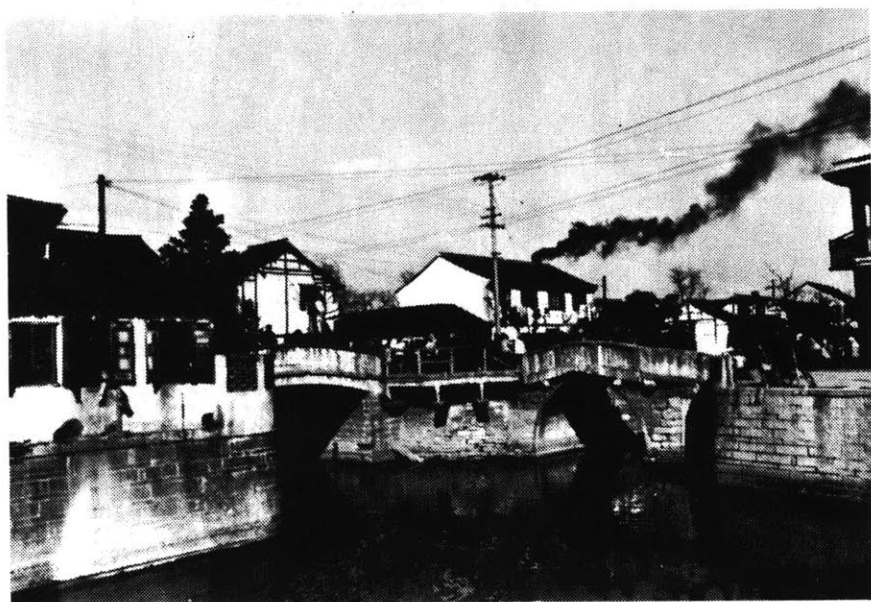
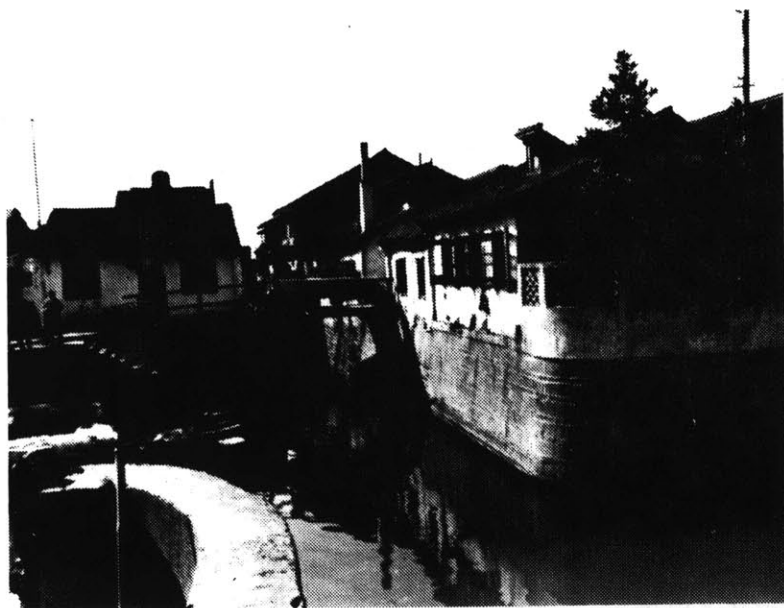
NANQIANG

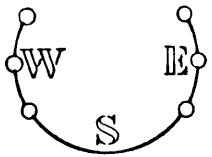
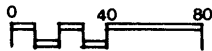
North of Shanghai is Nanqiang, quickly becoming the industrial and economic center of the area. Population statistics reflect the physical growth of the area: in 1949, 6,000 people lived in Nanqiang; today 30,000 people live there. New housing has been built around the center of the city where the historic fabric exists unchanged.

According to legend, the peasants of Nanqiang, while digging in the fields, discovered a rock nearly ten-feet long. During their annual migration, two cranes stopped on the rock. The town residents considered the cranes' visit a good omen, therefore a monk, Deqi, and his disciples built a temple which they called Baihe, or "white crane." Year after year, the cranes returned to the rock, but eventually they failed to return. The monk inscribed a poem on the rock, "Why, crane, have you flown to the south? Why are you gone, never to return?" The temple was renamed Nanqiang, or "Flying South."

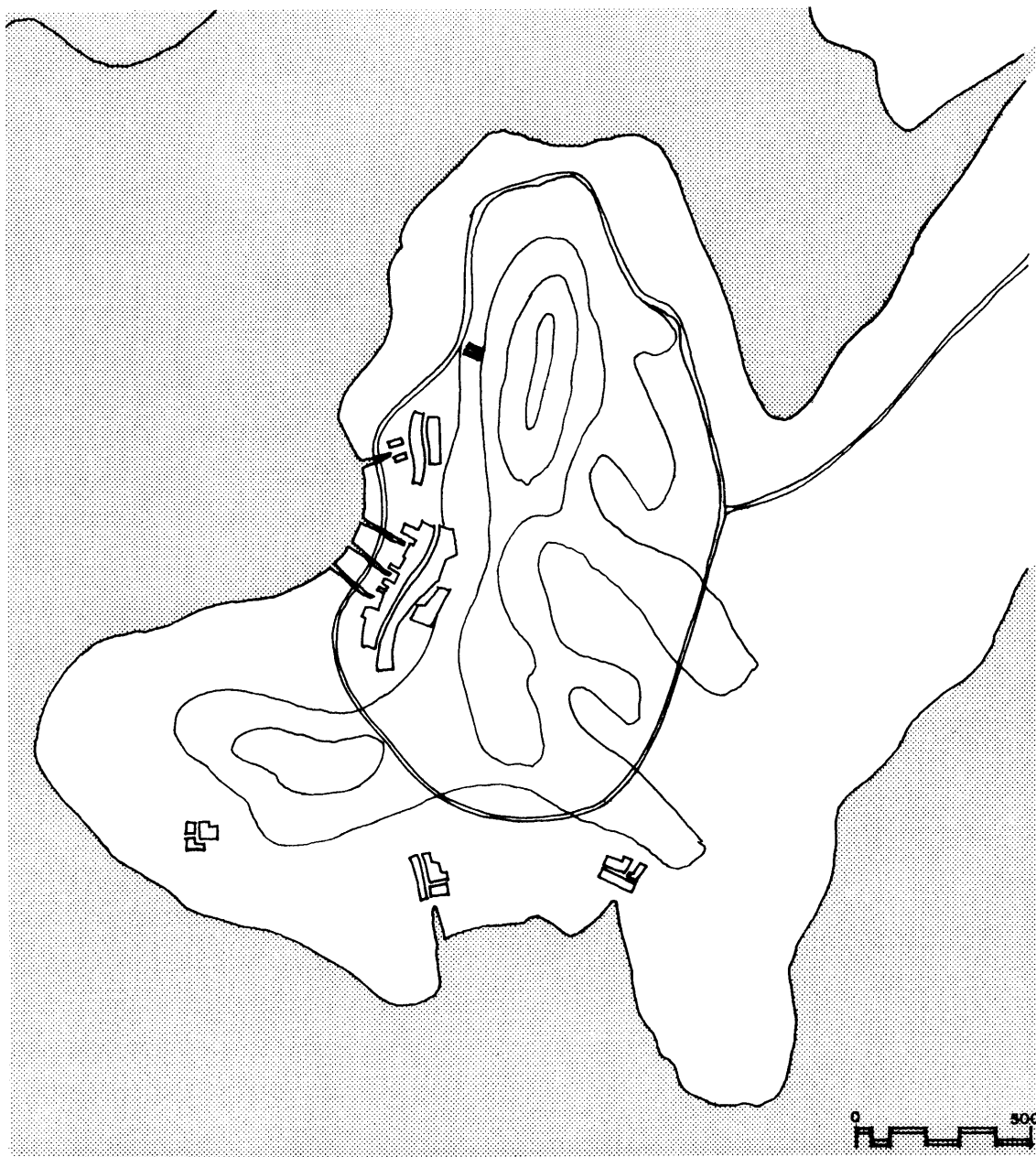




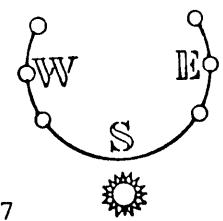




古尚錦



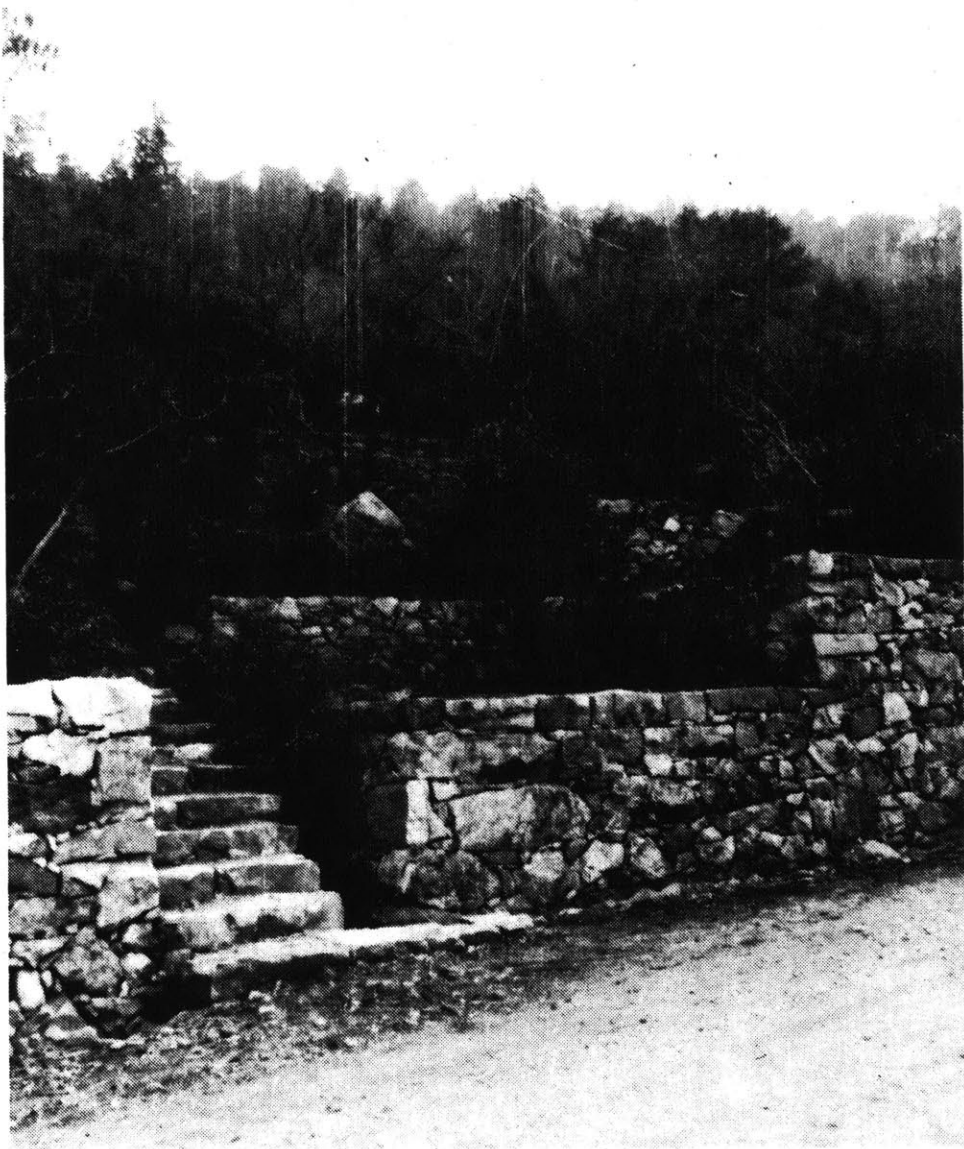
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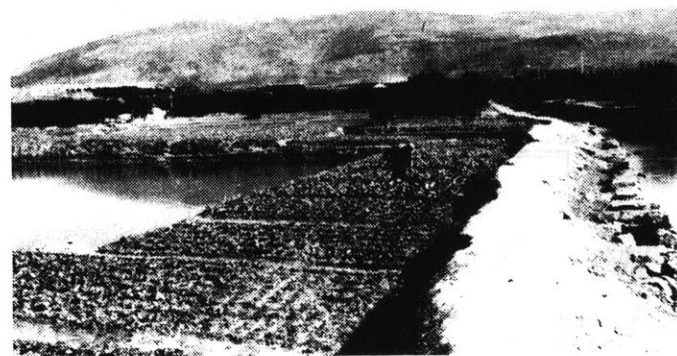
GUSHANGJIN

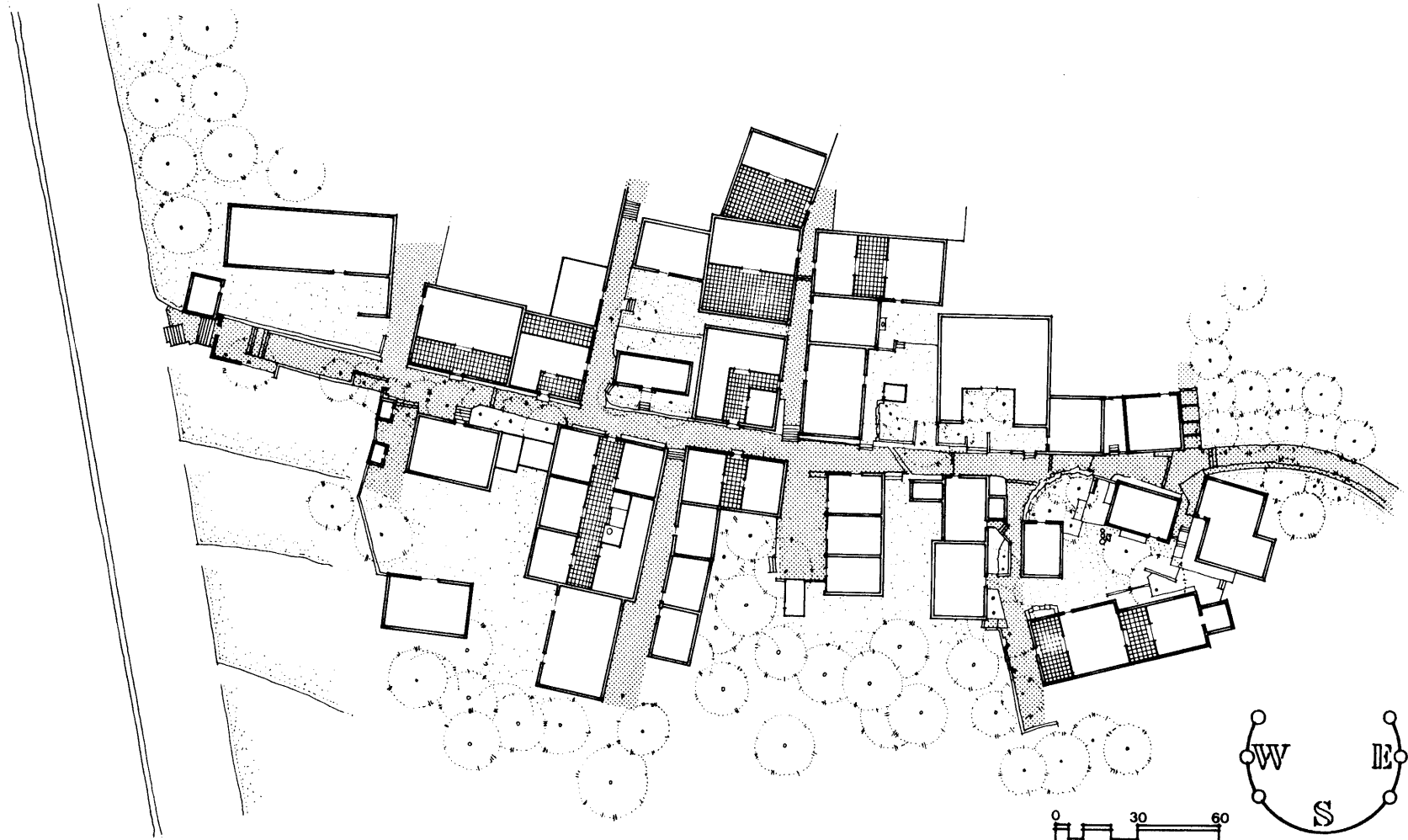
Gushangjin is a village in the Tung Ting mountains that overlook the Taihu (Tai Lake). The mountains have been carefully terraced and the terraces walled with orange colored stones. Planted on these terraces are rows of orange trees. Nestled in the trees is the village of Gushangjin. From the road, one enters through the village gate and follows a house-lined path up the hill to the orange groves where there are three new houses being constructed by the men of the village. Further up the path, the orange trees grow more densely, but where one expects silence there is instead the steady drone of music and news projected from the village's new audio system.

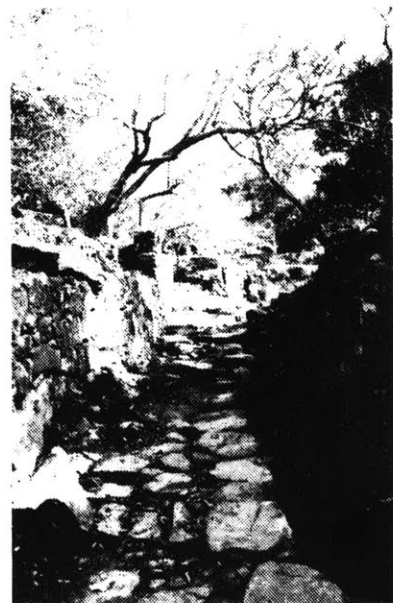
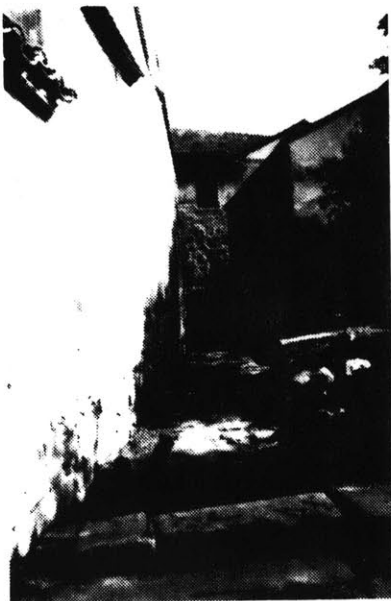
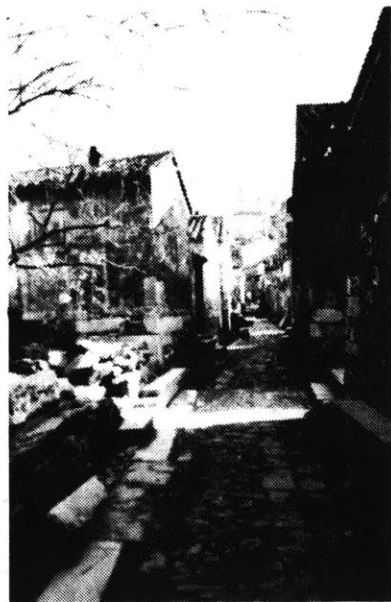
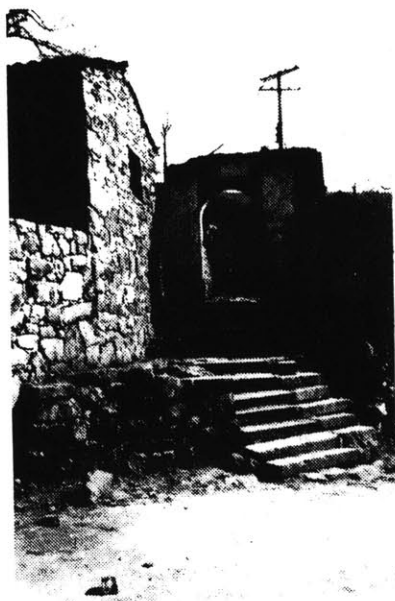
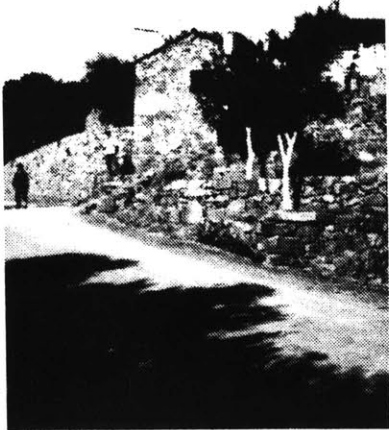


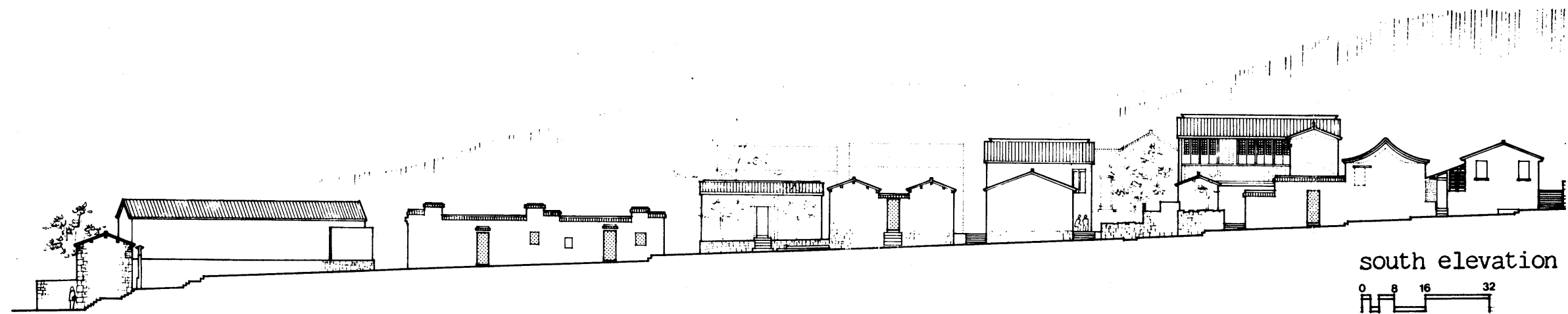


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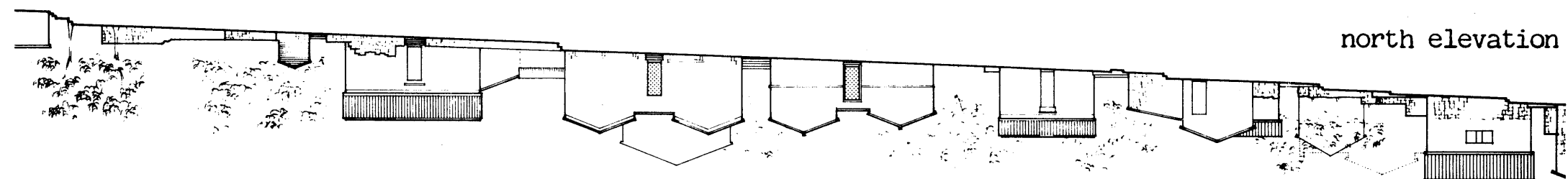
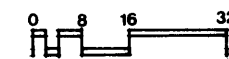






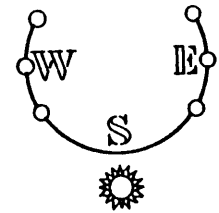
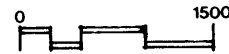
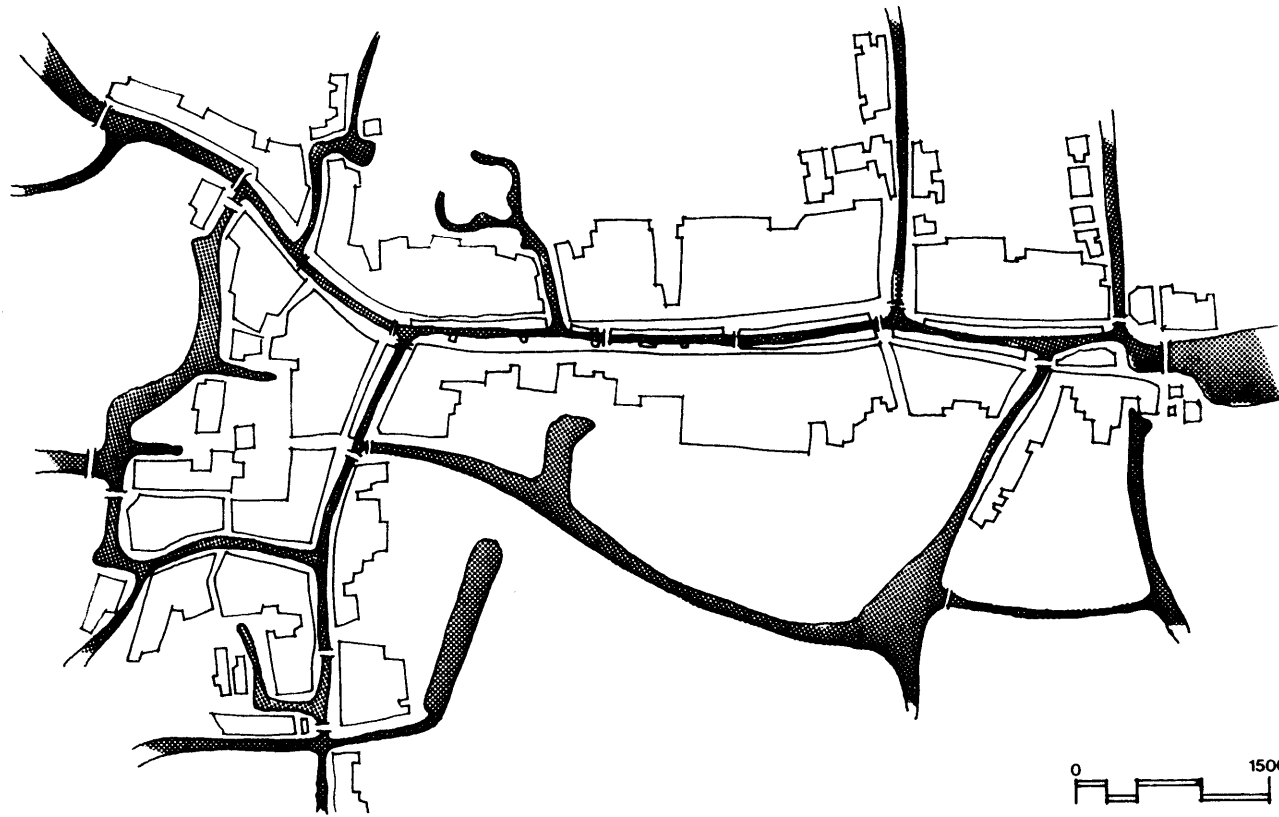


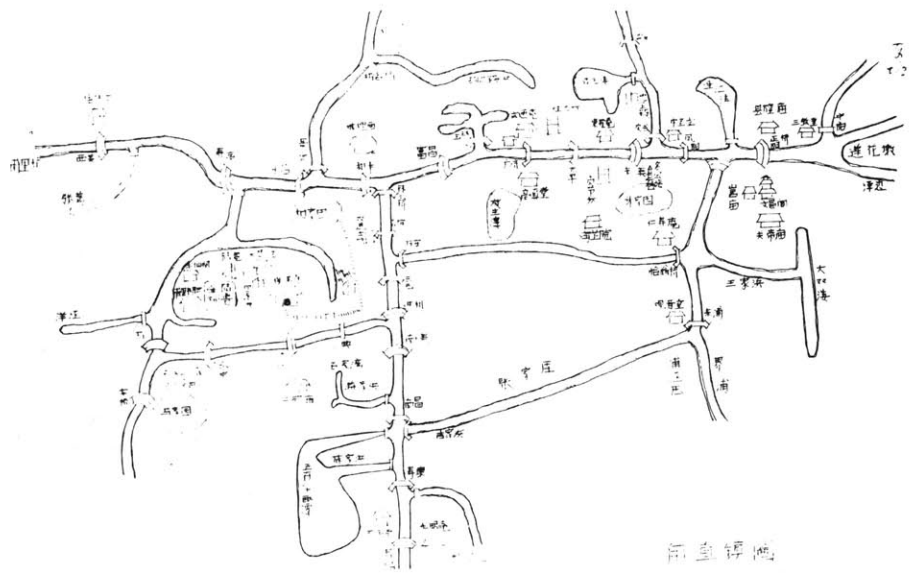
south elevation



north elevation

舟直

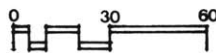
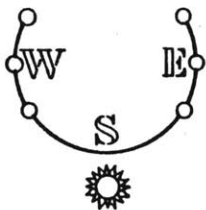




LUOZHE

Luoze, west of Suzhon, is representative of canal villages south of the Chang Jiang River. Neighborhoods are identified by bridge names because it seems that every ten steps there is a bridge. Today, some of the canals are being filled to make vehicular roadways into the village. The population of Luoze at liberation was 8,000 people, today the population has decreased to 7,000 because residents were needed for the nearby agricultural villages.

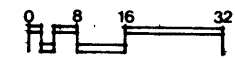
According to legend, the temple of this village was the seed for settlement. Far east of the present day village was a pagoda where the earliest houses were built. Later, when the temple, which still exists, was built, people began to settle around the new center because the abundance of worshippers provided protection for the residents. As the village grew, more houses were built along the waterways.

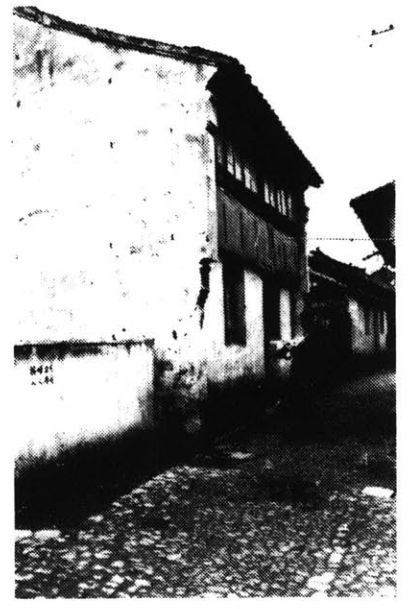
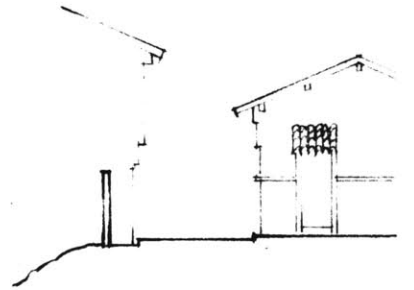
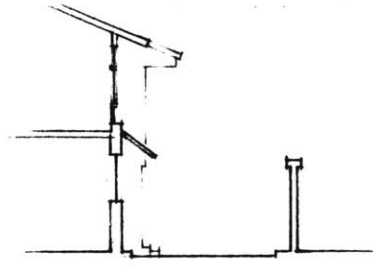
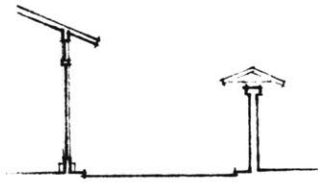
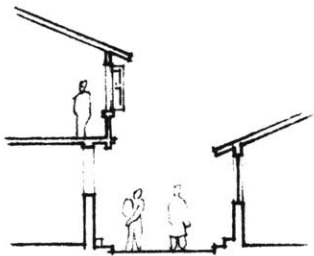
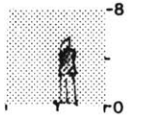


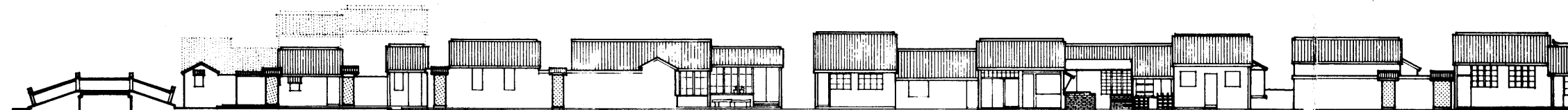




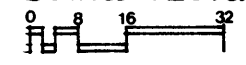
south elevation



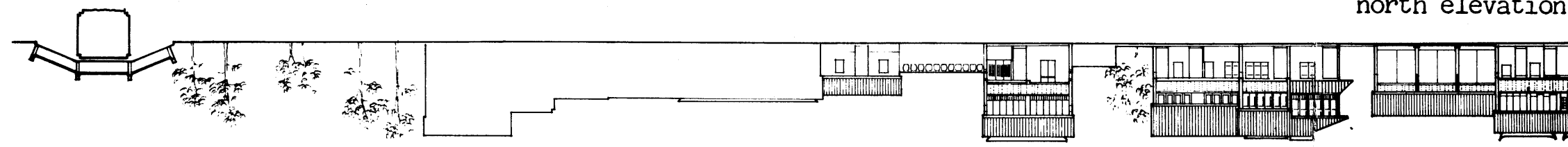




south elevation



north elevation



梅家煊



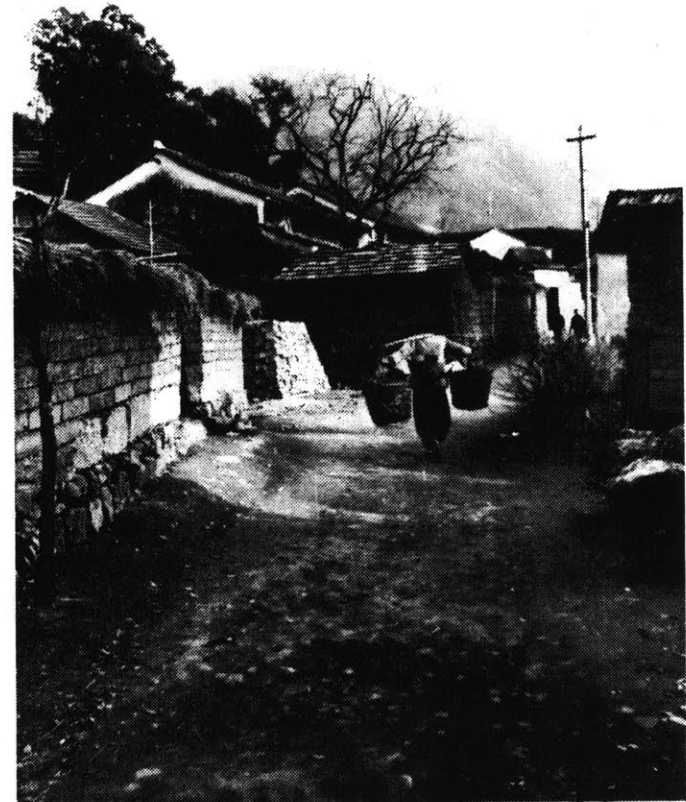
MEIJIAWU

Meijiawu, or the "Mei family port", is located just southwest of Hangzhou. The Mei family, settlers of the village, were the largest clan. Most of the family lived along the main road of the village. The second largest clan was that of the Zhu family who lived on the "bent street." Scattered among the Mei family dwellings were the homes of the Liu family, the poorest clan in the village. Each clan was responsible for its members welfare since there was no social security system. Larger clans maintained a hall for ancestor worship and supported a teacher who would educate the children of the clan not needed in the fields.

At the time of settlement, most of the villagers were peasants, not wealthy landlords. Because of the village's location in the valley of two mountains, the entire village as a rural production

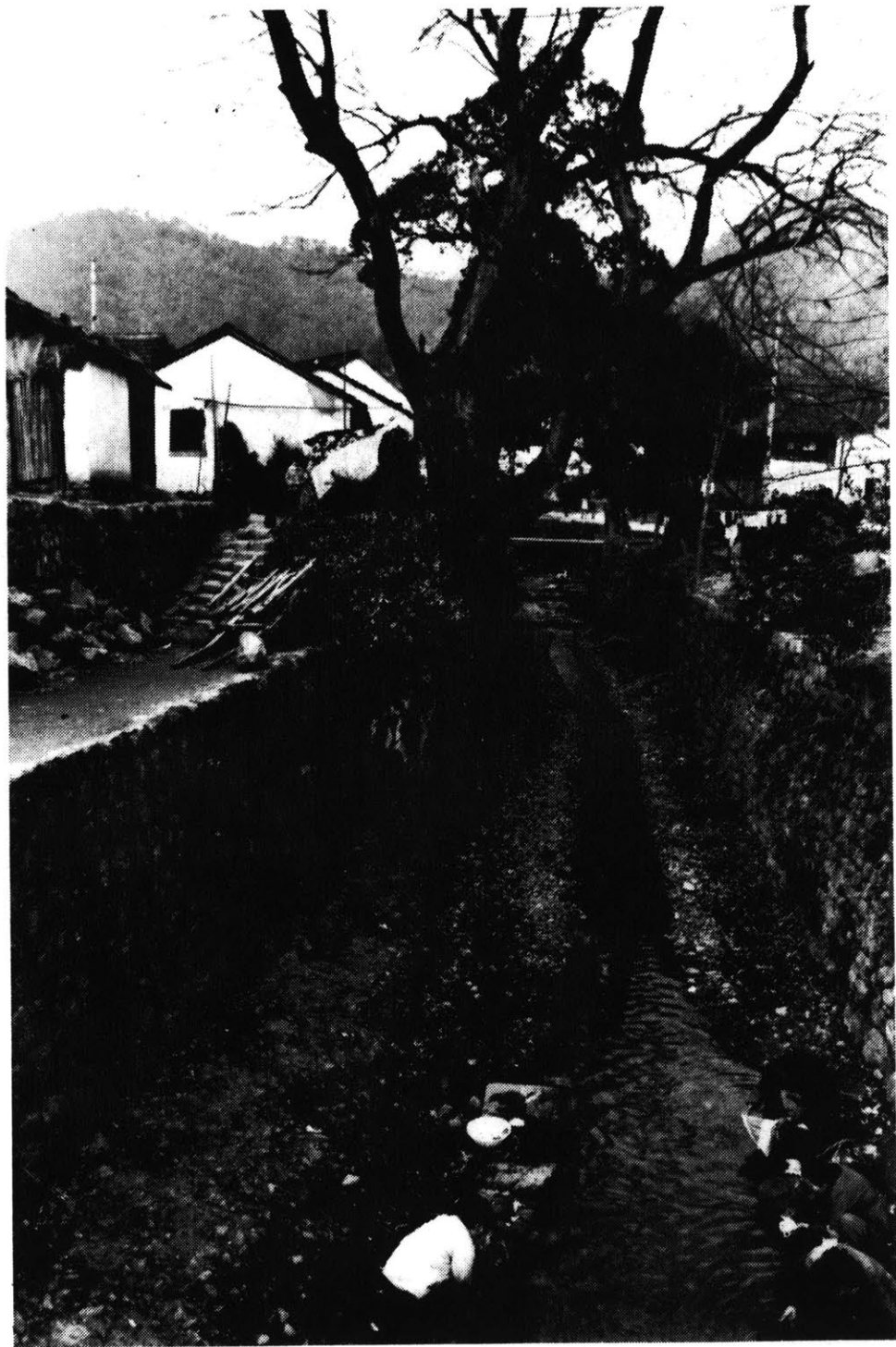
team has become wealthy. The terrain and rainfall make Meijiawu one of China's best tea growing areas.

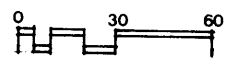
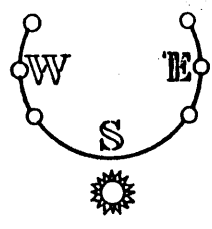
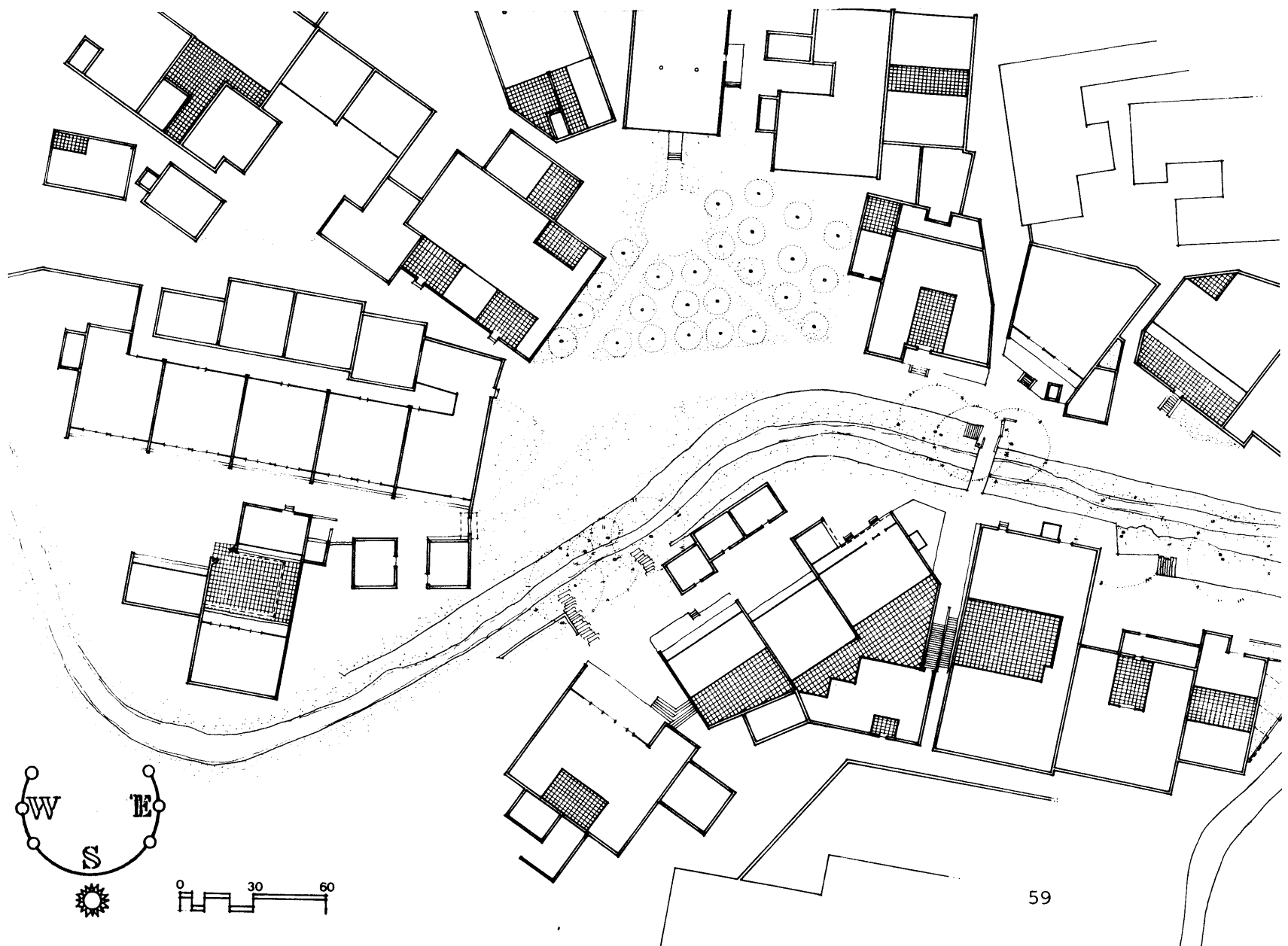
Construction materials have been designated the third objective in the Chinese economy; building materials are scarce and in great demand. Yet new buildings are being erected throughout Meijiawu. Rural housing construction owes little to the government. Household saving permits private ownership by allowing the purchase of materials from local artisans, after which construction is undertaken by the future owner. Close to Meijiawu is a stone excavation site from which Meijiawu residents can obtain building materials. At the end of each day's work, residents return home carrying stones in baskets on poles or in wheelbarrows. When enough material has been gathered, a new home or addition is built.



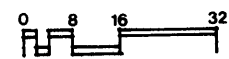
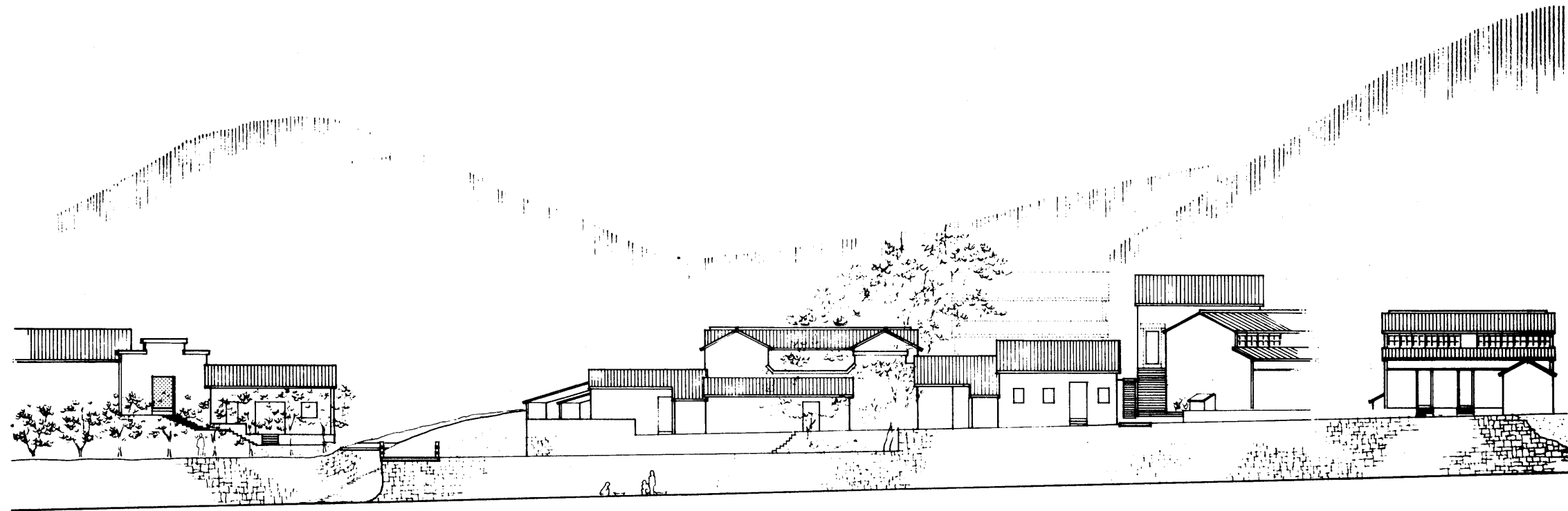












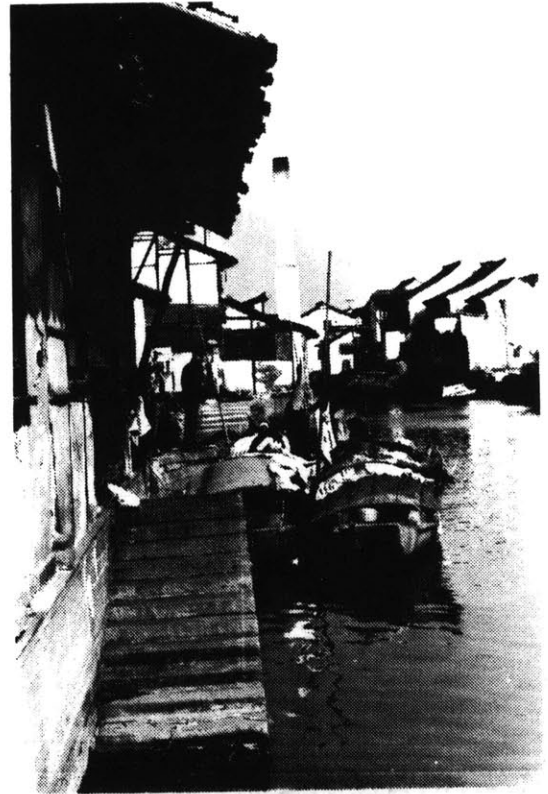
朱家角



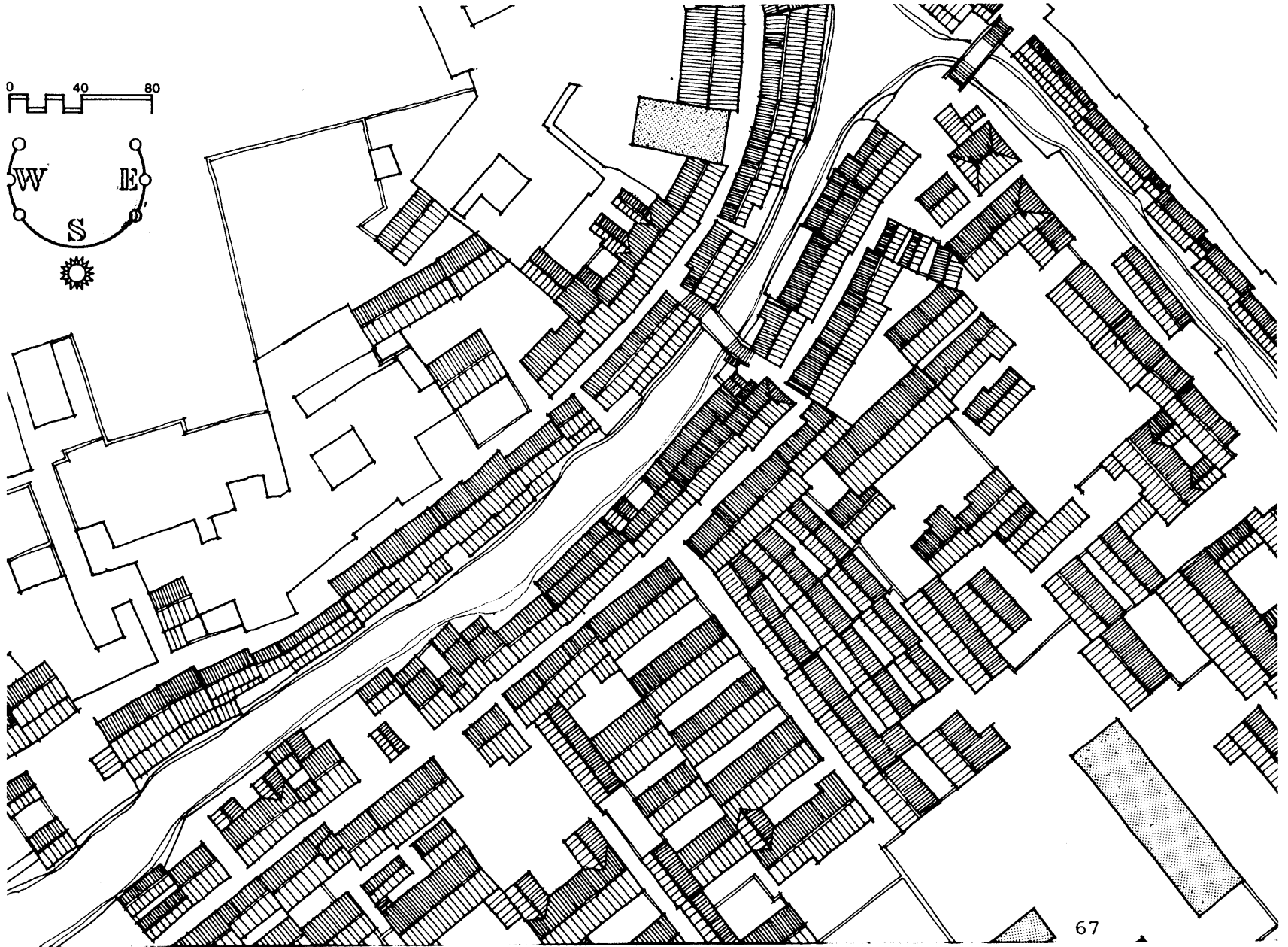
ZHUJIAJIAO

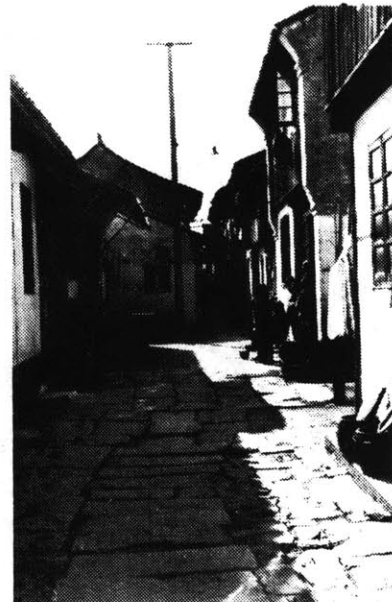
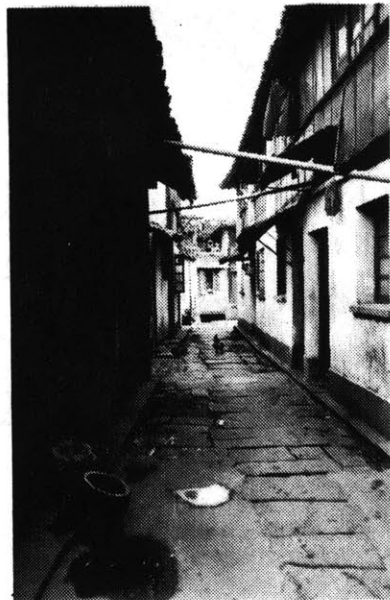
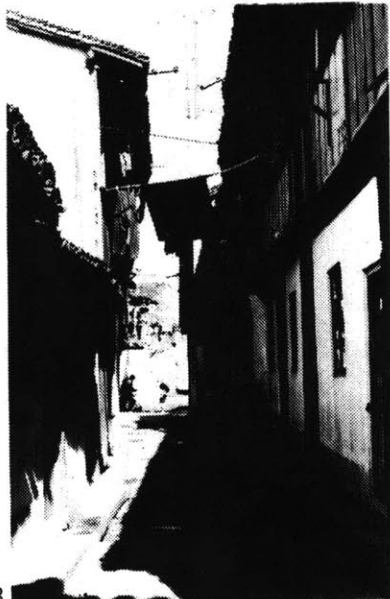
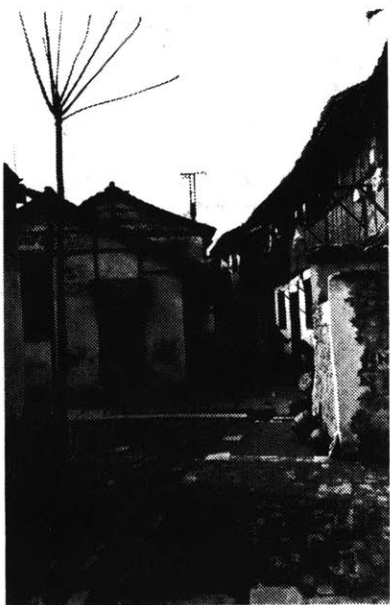
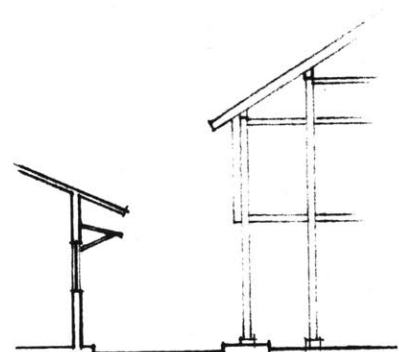
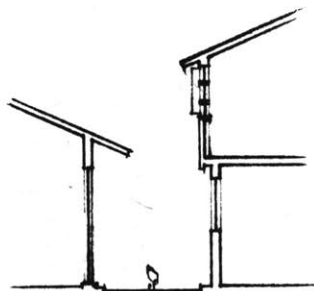
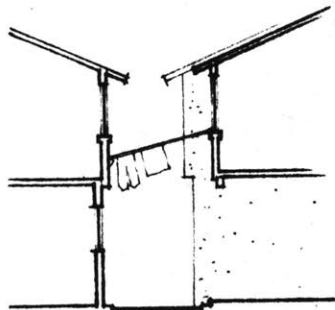
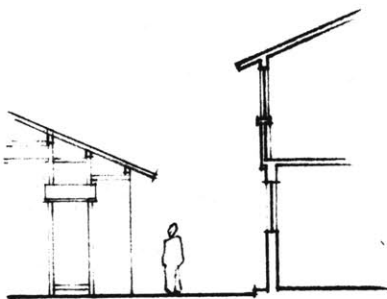
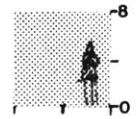
Zhujiajiao is located west of Shanghai. The most prominent architectural feature in this town is a five-arch bridge, originally built during the Ming dynasty around 1600 and rebuilt in 1912.

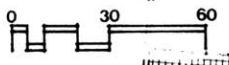
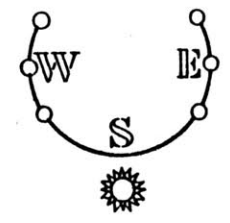
In 1959, this town was declared a historic preservation site, no vehicular roads may intrude into the original town. Any new building or renovation in the historic district must be built like the original house on the site.



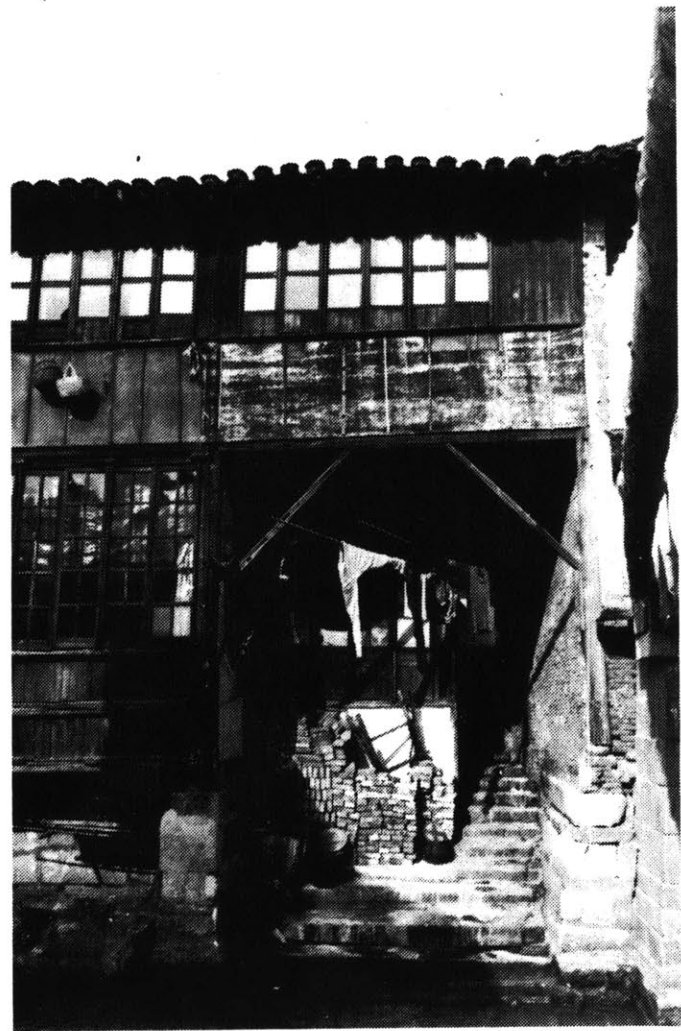


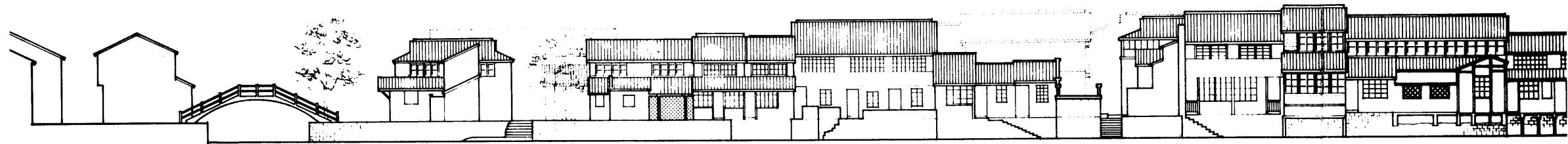




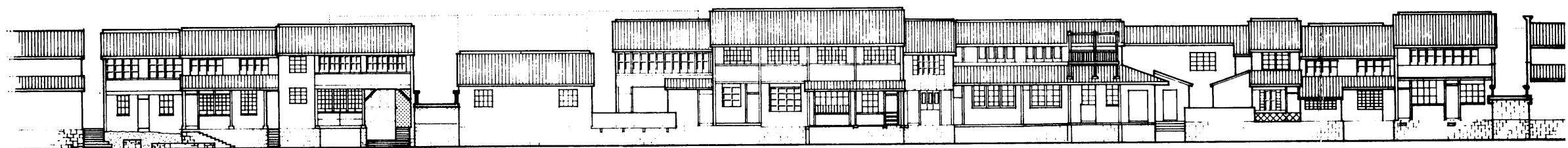


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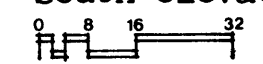




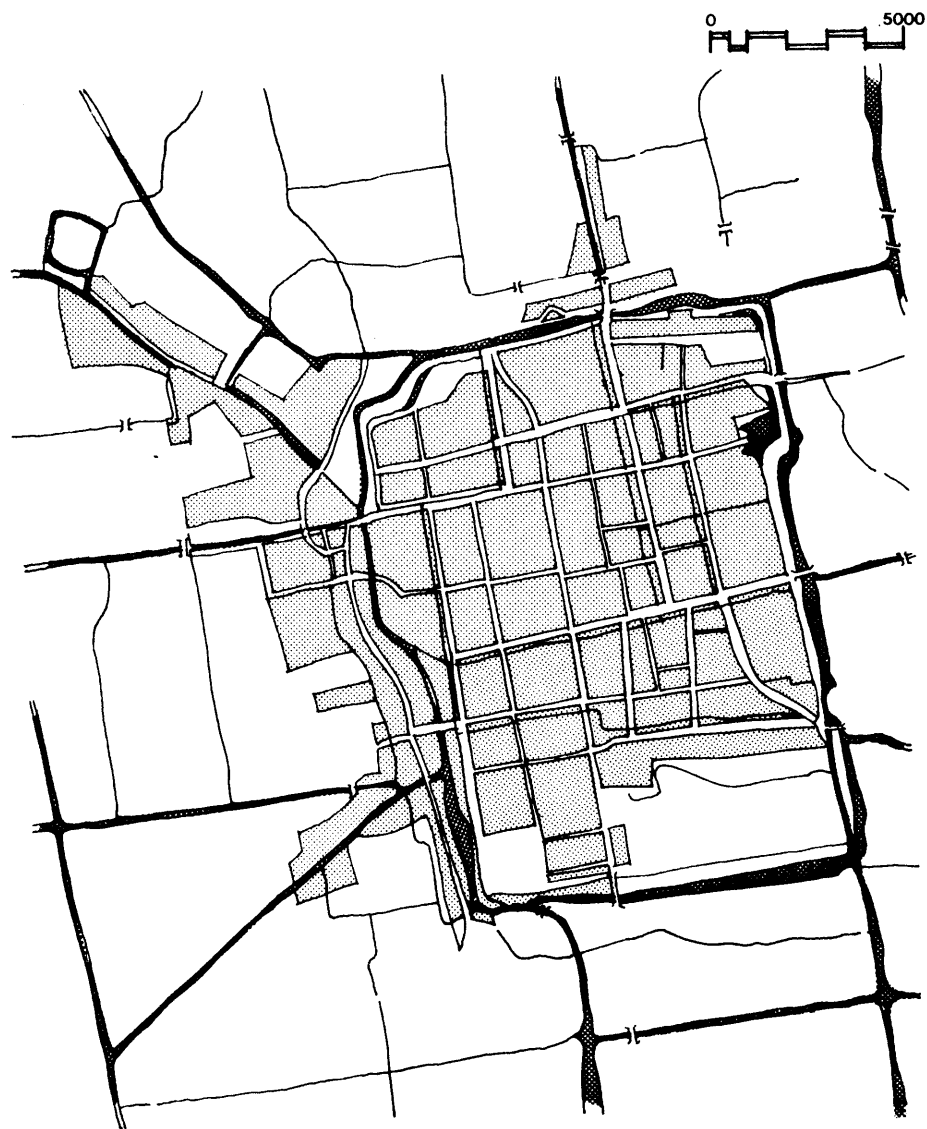
north elevation

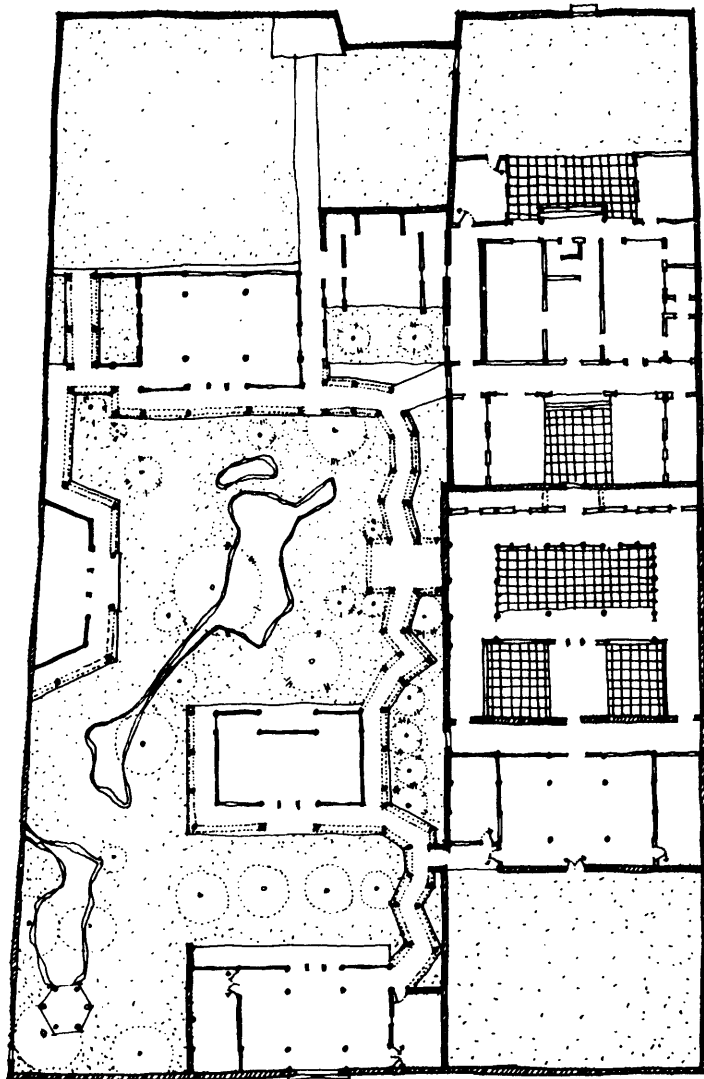


south elevation



蘇州



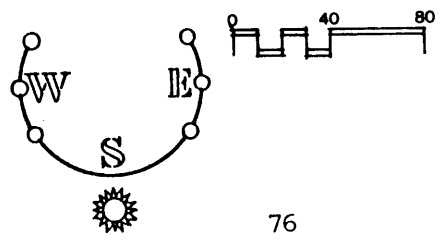


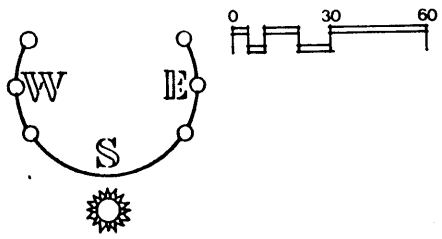
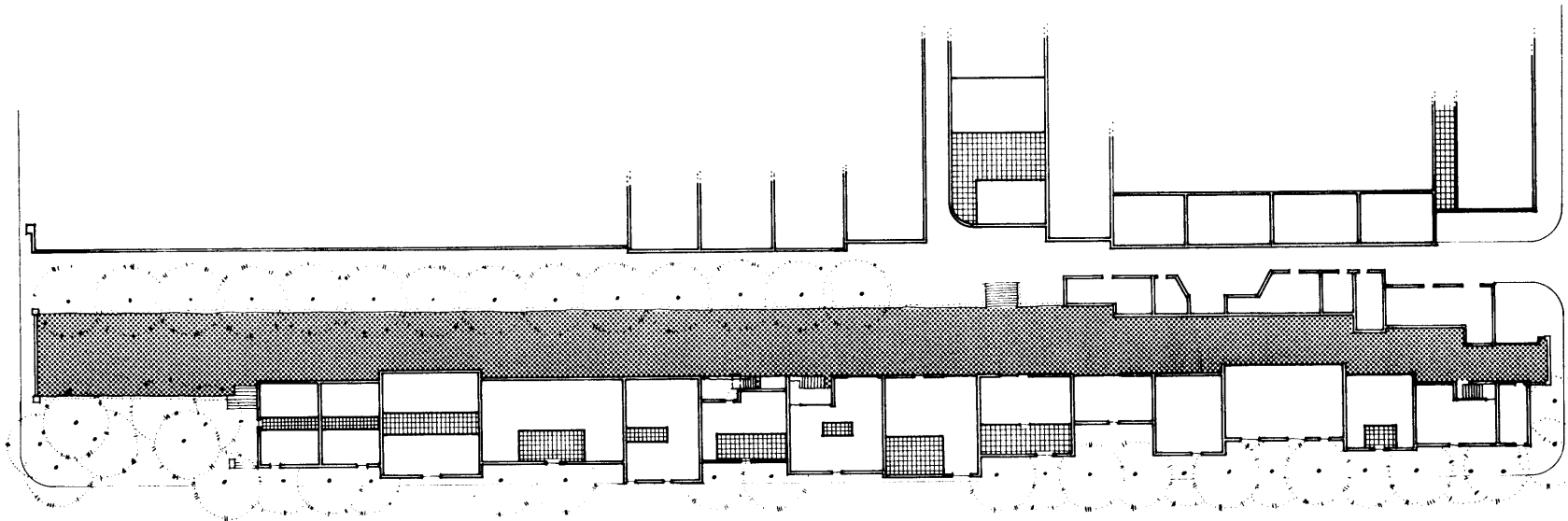
SUZHOU

Suzhou, near the Tai Hu Lake, is one of China's ancient cities south of the Chang Jiang River. It is the only city which has been documented for this thesis.

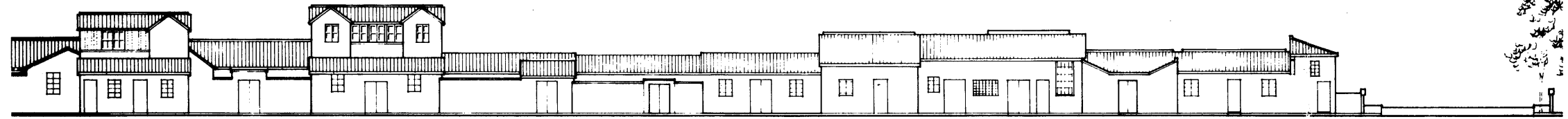
The city is surrounded and penetrated by canals. Major canals describe large islands and a hierarchy of lesser canals further subdivide the islands. Suzhou is best known for its garden architecture. Beyond the walls and through the gates that line the streets and canals, are carefully landscaped gardens once the private domains of the wealthy families. Many of the restored gardens have been converted to public parks by the government. The pieces of Suzhou documented were built by the common people of Suzhou rather than the aristocracy. Therefore there are no gardens in the drawings.



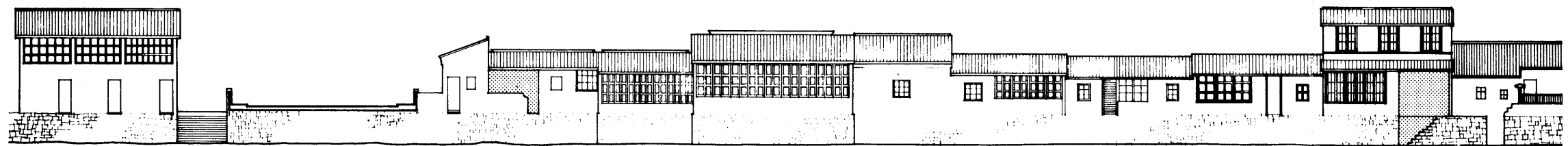




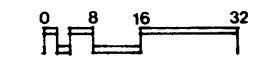




south elevation



north elevation



Observations: Public Spatial Structure

Observations about Chinese village architecture have been focused for this thesis on an exploration of activities that are shared by members of a community and the environment in which those activities take place. A public environment inherently conveys its social and physical support of towns and villages. As a social support it is the expression of shared values and collective agreements consciously or unconsciously made by individuals with respect to the needs of the community. As a physical support it encloses a village, as a mountain would surround a valley town; it defines places within the village, the spaces between buildings, the ground surfaces and the walls; it provides paths, the connections between activities, and it

identifies neighborhoods, the recognizable districts within a village. It is the composite form of social agreement of use and physical organization, form, dimension and material that I have chosen to call public spatial structure.

In design, the application of principles of spatial structure, if only morphologically extracted from observations, will create anonymous and lifeless environments because the morphology of spatial structure cannot be separated from the social, political and economic forces that shaped them. Residents of a village build their houses with a cultural understanding of the materials they use and of the forms that the materials create.

Yet the resulting spatial form can acquire new uses. The revolution in China

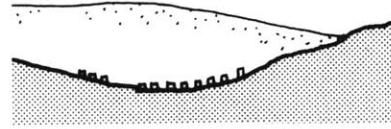
has created a new social and political structure, and people's cultural understanding of spatial form has been forced to adapt with the new structure. Observations in Chinese villages suggest that cultural understanding of the use of the built and spatial environment change more rapidly than the physical environment itself. Therefore, although the development of spatial structure is influenced by certain socio-cultural values, there is no one-to-one relationship of a form to its cognition of use. Morphological principles can be studied, but for designers to use these principles, they must consider a particular society's interpretation and use of the given public spatial structure.

to enclose



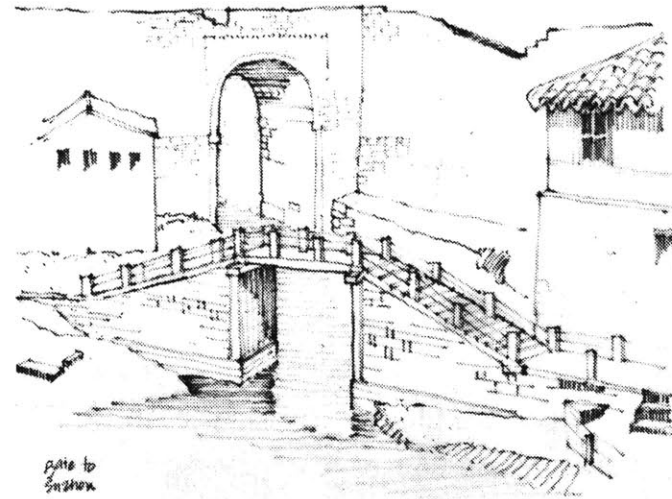
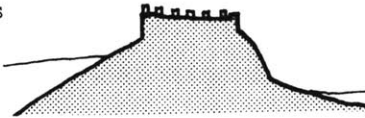
a commune village

a walled town -
Gushangjin, Suzhou



a village surrounded
by mountains -
Meijiawu

a village that dominates
the landscape does not
exist in the study area
for reasons of siting
traditions



gate to
Suzhou



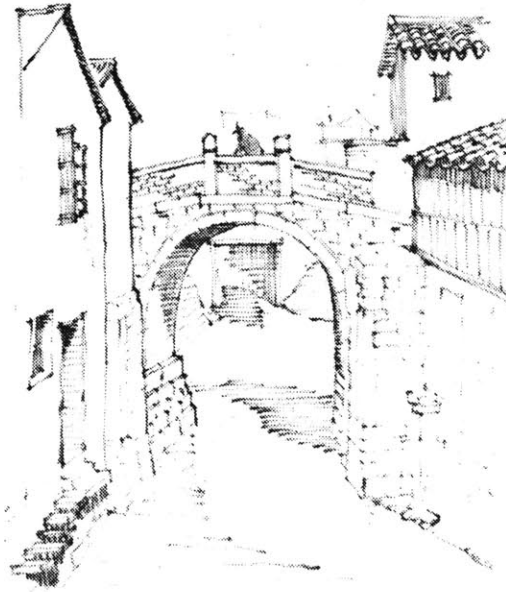
Public spatial structure includes those outdoor spaces that enclose and surround a town. A town or village is seen as a collection of buildings with various relationships to the surrounding countryside. In some villages, the buildings are incidental to the landscape, such as a farming village outside Suzhou; in others the buildings huddle together to protect themselves from the environment. Some villages are cradled by the topography; others dominate the landscape. In most, strong natural features such as streams and rivers permeate into a village, reminding one of the countryside.

In China, the sense of enclosure, or the difference between built and agricultural landscape, is enhanced by the building of village walls that may be penetrated only at gates. In feudal China, walls were built as defense against thieves that roamed the countryside. The walled village and its gates were eventually adopted as tradition and gates were built to announce one's entrance either to the built or to the natural landscape.

Public spatial structure is composed of outdoor places that act like glue between buildings and is defined by the facades of buildings that surround them. An outdoor space becomes a place when it is recognizable and distinguishable as a particular area through the homogeneity of dimension, building and ground materials and location which give clues to people about the use of a space.

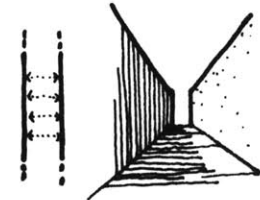
A linear space, such as a market street, becomes a place when it is 10' - 2" wide along a length 96' which is interrupted by archways every 24', paved with stone and lined on both sides with open counters of stores. A canal becomes a place when it is 16' - 9" wide in length between two bridges and lined on both sides by houses with white stucco walls on the ground floor and wooden screens on the second floor.

A concentric space, such as the courtyard of feudal China, became a place when it was filled with flowers and trees, paved with slate and surrounded by carved wooden doors and screens on two sides

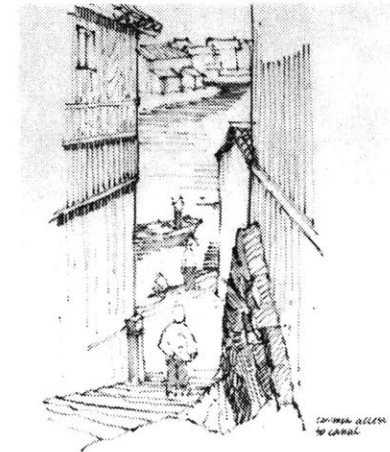
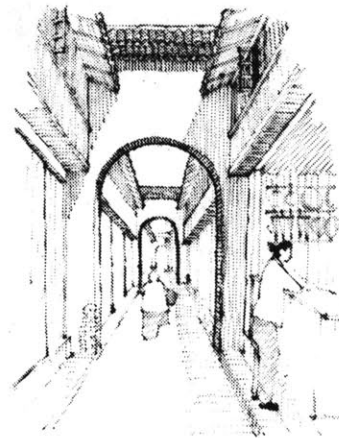


Suzhou canal

to
define
place

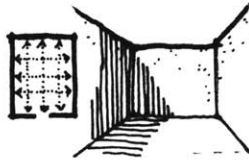


a linear
space

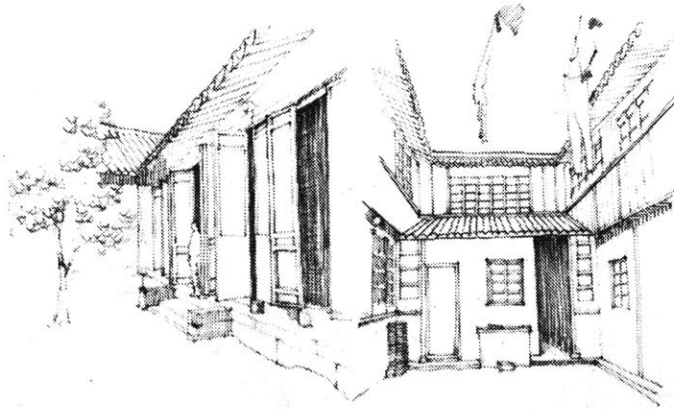


canal access
to canal

to
define
place

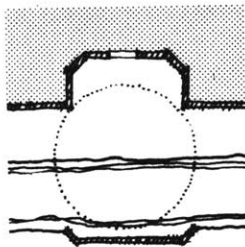
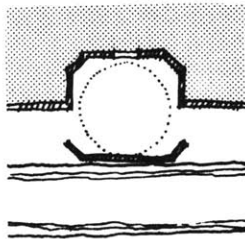


a concentric
space



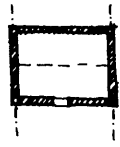
Zhujiajiao

Gushangjin

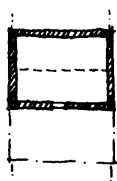
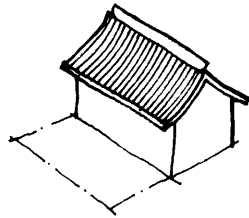


and on the other two sides by tall stuccoed walls protecting the courtyard from the public eye. With little or no physical change, the courtyard is now shared by many non-related families due to government reallocation of housing. The private outdoor room is now part of the semi-public realm. Transition from public to private territory occurs at the threshold of each house, the threshold between interior and exterior rather than at the gate of the compound. The concentric space has become a public outdoor room, filled with laundry, wash basins and toilets, extensions of the work spaces of the houses.

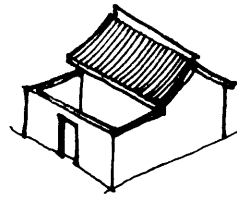
A linear space becomes a concentric space by the use of "reflecting walls," or zhao bi. The Chinese built these walls to contain pieces of the public domain as private entries to wealthy residences or as public entries to large temples or administrative buildings.



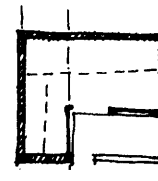
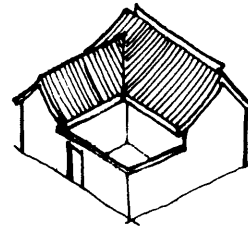
a simple rectangular block



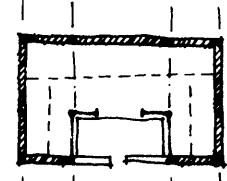
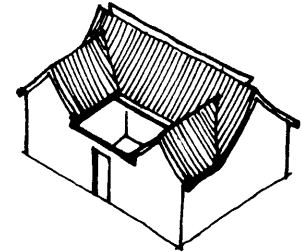
a box with property on the public side, differentiated by a change in level or a change in materials



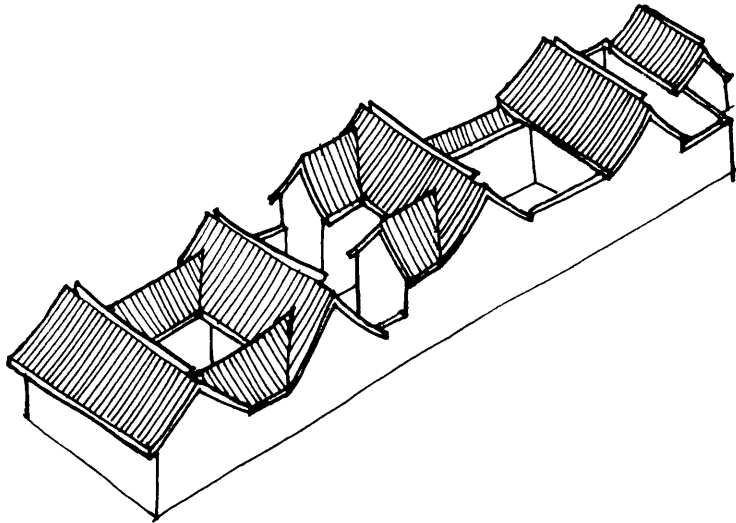
a one-bay house with courtyard



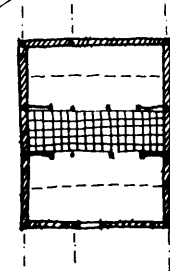
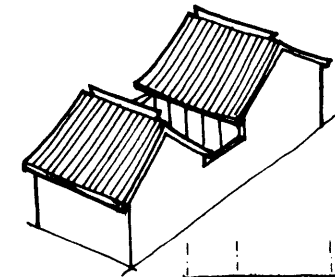
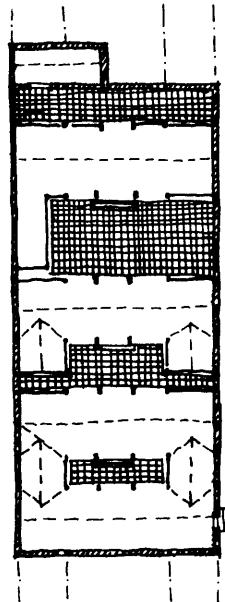
a two-bay house with courtyard



a three-bay house with courtyard



the addition of courtyards and houses

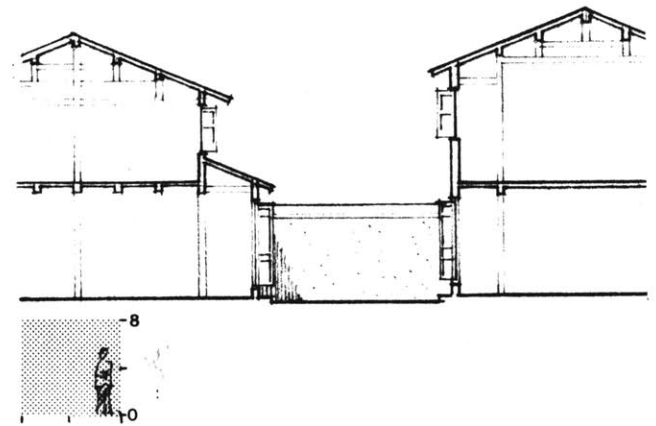


The Growth of Houses and Courtyards

to
provide
path

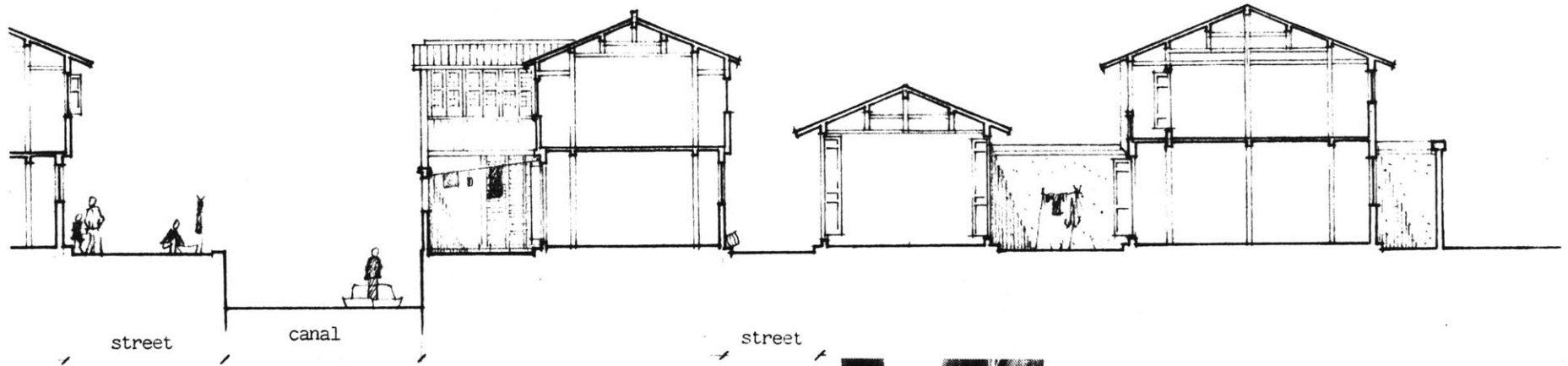


88 KEQIAO



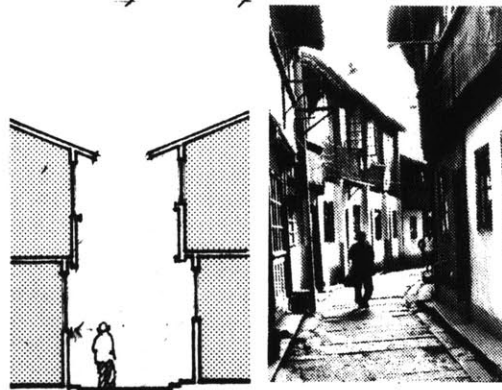
Public spatial structure within a village provides outdoor paths, ways to move between activities.

The canal was once the most important path in feudal villages; not only was it the means of transportation and distribution of goods, it was also the source of sunlight and water. Although canal cities and villages recall romantic images, most unfortunately, are polluted and unsanitary because the water is used for many purposes. In Zhujiajiao, I saw the many uses of canal water. From one house along the canal, a villager dropped a bucket from his window and scooped up water to use in his house. On another bank, a cargo of coal was being unloaded



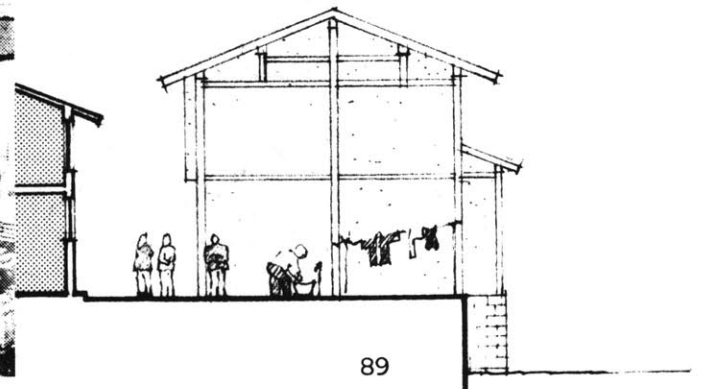
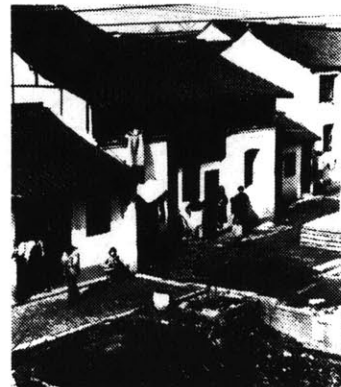
from a boat. At the foot of the bridge a squatting woman was washing her clothes. Just a few feet away, on a set of stairs that led down to the water, another woman scrubbed her wooden toilet with a straw brush.

Streets are the elements of public spatial structure that are most often perceived as paths. Traditional Chinese streets are much more than channels for travel, they are places to relax, to socialize, places to see and to be seen. They are the extension of indoor activities such as working, eating, washing, and sleeping. By modern standards, Chinese streets are very narrow, usually

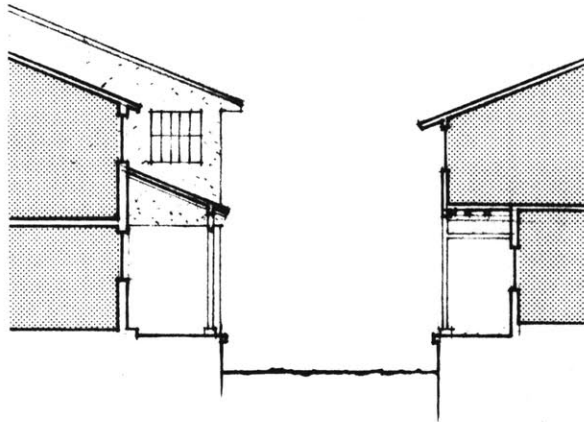


to
provide
path

Zhujiajiao



to
provide
path

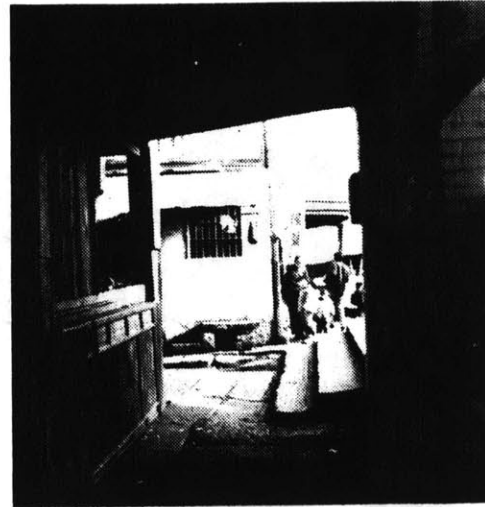
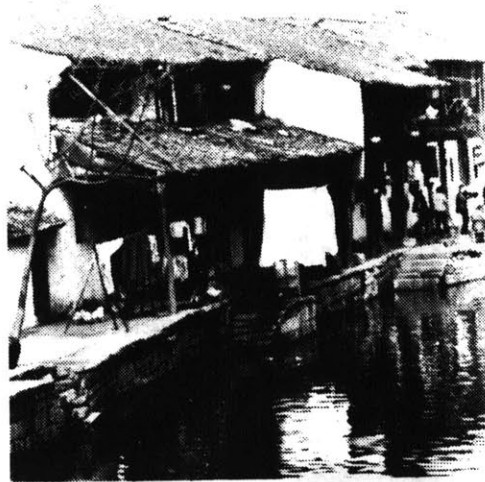


KEQIAO

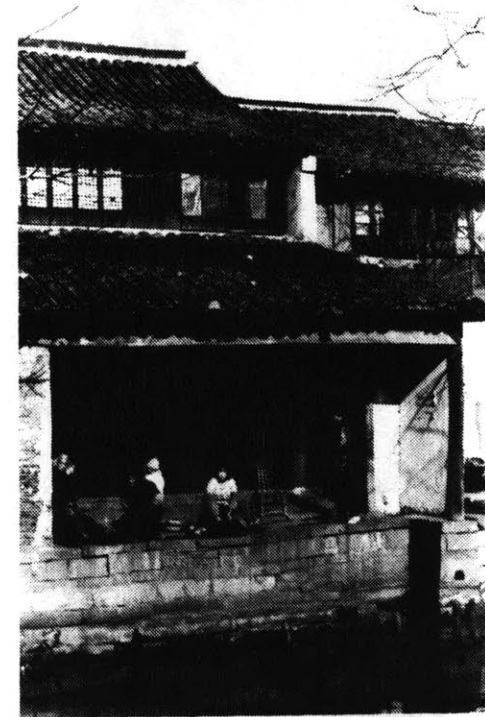
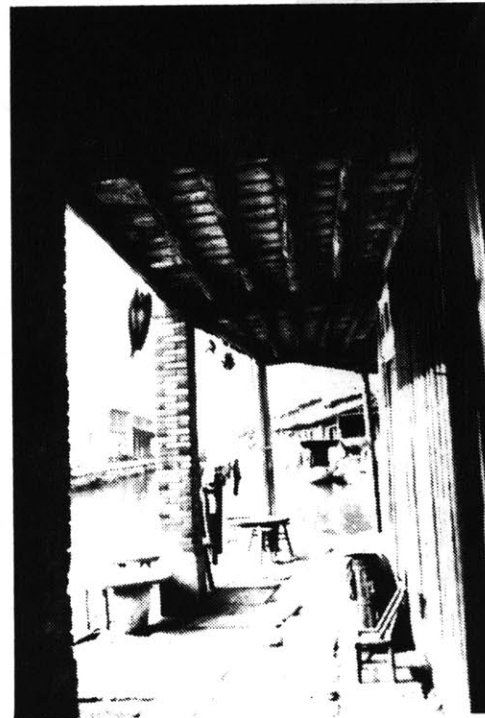
no more than three meters wide, because most towns and villages were settled during the Ming and Qing dynasties, long before the invention of the automobile.

Residential streets, flanked on two sides by one or two story houses are dark and only used for travel and the drying of toilets, but in the gaps between houses, there is a burst of activity. In these spaces women wash and dry laundry, clean vegetables and fill buckets with clean water from a shared tap. Men stand in the doorways, rice bowls in hand, squatting children eat their evening meal.

Although the summer is hot in this part of China, the cold winters make sunlight valuable, therefore the use of arcades is uncommon. The exception is the village of Keqiao, west of Shaoxin; the houses extend over the streets, expanding the room available to each household while sheltering public activity from rain. In the winter people sit along the edge of the canal in the narrow band of sunlight on the path.

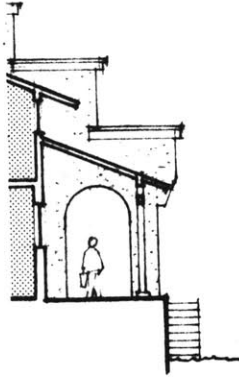
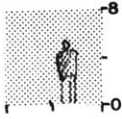


to
provide
path

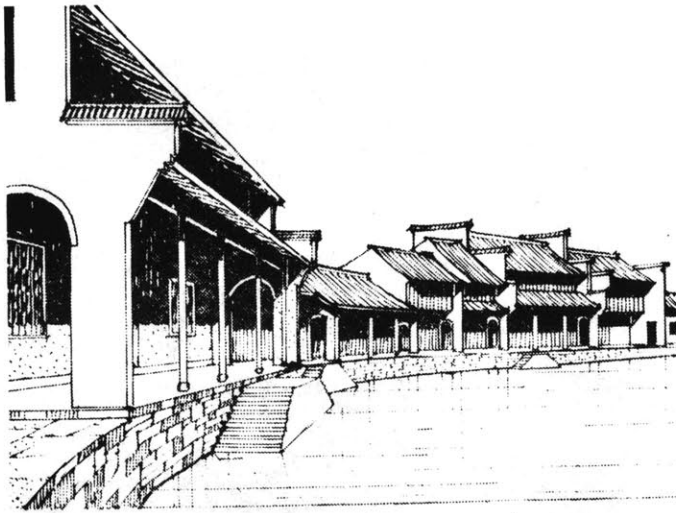


91 KEQIAO

to
provide
path

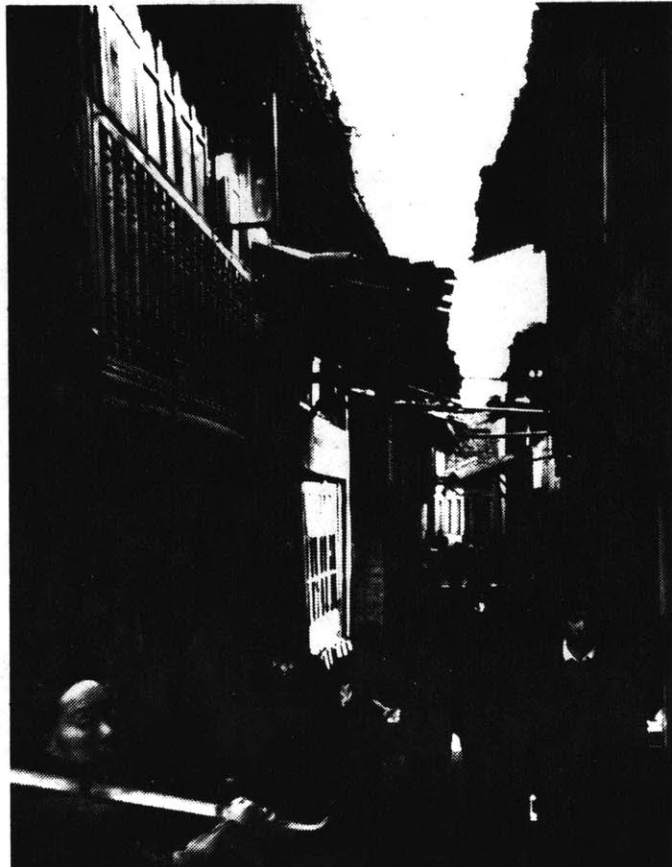
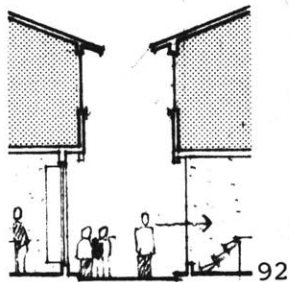


Nanjin



Ma tou qiang ("horse head walls") or bearing walls, of Nanjin extend past the house to form a series of arches, though the path is not covered. These walls are the built representation of a property line, and the arches are reminders that the pedestrian is traveling along the path through the common agreement of the landlords who reside along that path.

Zhujiajiao



Market streets are very similar to residential streets - one or two story buildings line either side of the three meter path. But on the first floor of residential areas masonry infill walls are built to ensure privacy for families; in market streets, the store is open or screened with wood doors that can be opened or removed. The following description of a market street was written by Ruth Sidel in Families of Fengsheng:

"The main shopping streets in Fengsheng Neighborhood are busy at all times of day: A woman is selling vegetables on a sidewalk, carefully weighing each person's purchase; a restaurant is ready

for the next rush hour with a bunch of chopsticks standing in a glass in the center of cleanly wiped tables; a super-market selling everything from candy and cigarettes to fruit, vegetables, soft drinks, fish, meat, and cookies is crowded with shoppers in midafternoon. A clothing store carries ready-made clothes and fabrics - flowered blouses for women for 3 yuan, 58 fen (approximately \$1.50), men's shirts for 3 yuan, 85 fen (almost \$1.60), a child's shirt with a zipper up the front for 3 yuan, 5 fen (approximately \$1.25), a toothbrush for 50 fen (20¢), sneakers, toys, flashlights, a colorful thermos, and intricately woven baskets. A shop to buy rice is next to a shop that sells only various kinds of tea....Much business is carried on outside on the sidewalks: A man is selling brooms, a glazier is cutting a piece of glass to size while his customer waits, a shoe repair man has his place of business at the corner where the sidewalk and a tiny alley meet, and a group of men crowd around watching two others playing Chinese chess on a step.

"Toward five o'clock the lanes becomes busy and crowded with returning children and workers. All around, the dust is raised by people returning home on their bicycles, and the old women who remain at home come to the doorway of the courtyard to watch the others returning to the neighborhood."



to
provide
path

John Thomson:
Physic Street
Canton c.1868

Peking c.1860



to
provide
path



Lo-An



Lo-An

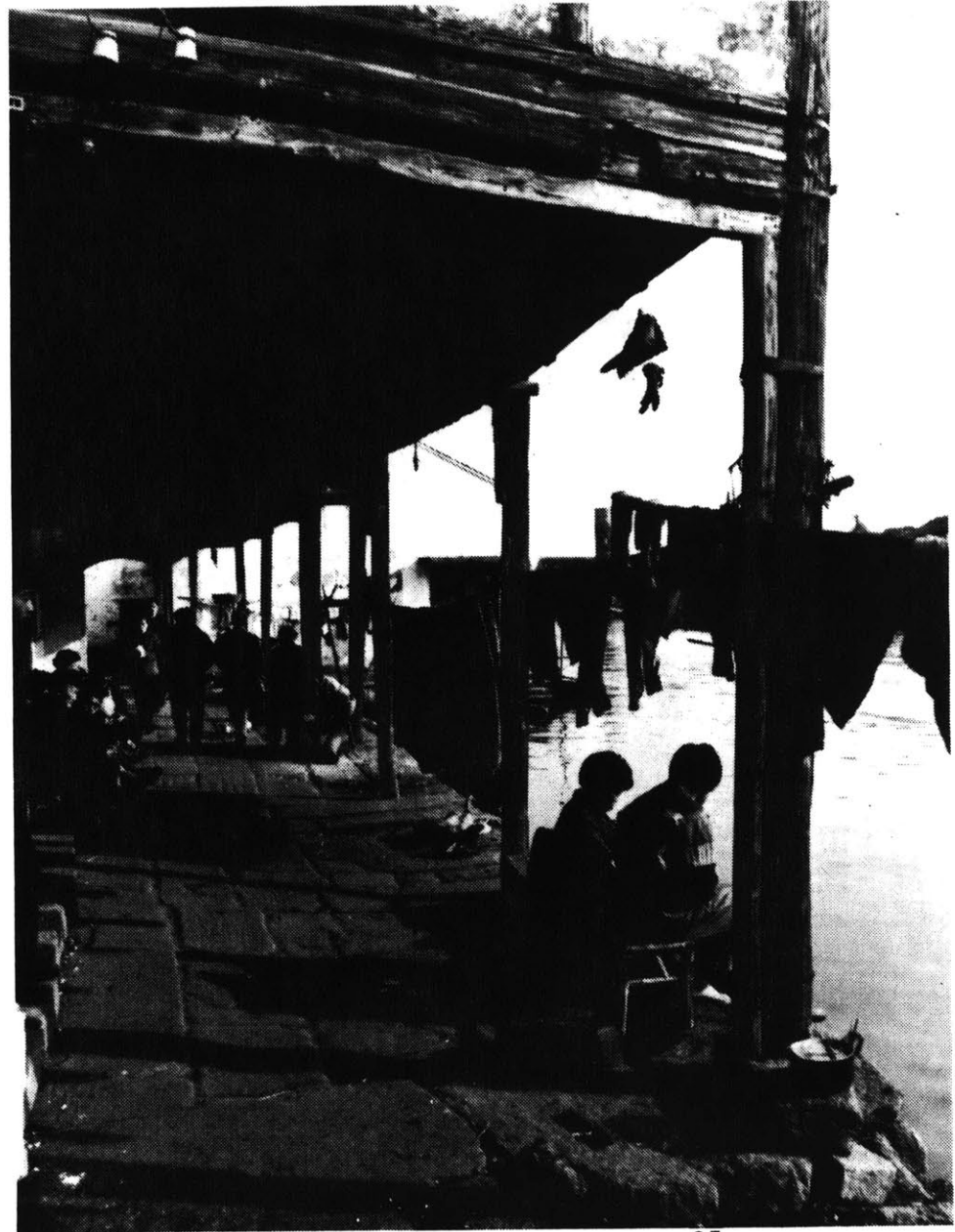


94 Suzhou

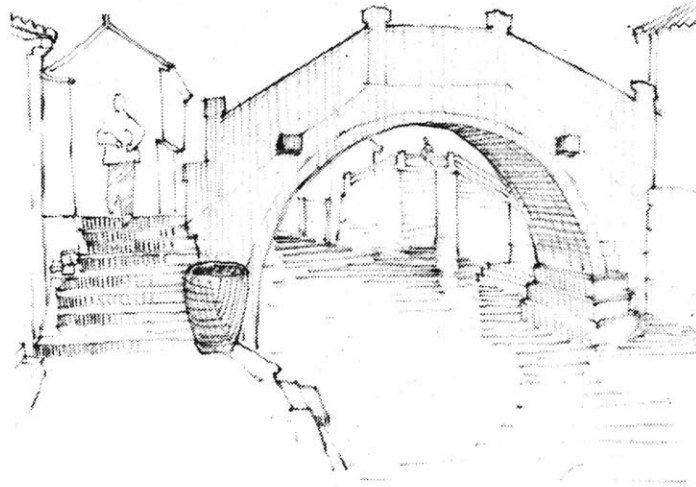
Prior to liberation, the wealth of street activity was inversely related to the economic status of the families who lived in the village. In the compounds of the wealthy, household and social activity was internalized in courtyards protected by tall walls which created public streets that were narrow and dark alleys used only for travel. Because housing in modern China is overcrowded, even these unpalatable alleys are used when the courtyard is full; in a narrow alley of Lo-Au I found a man carving stone to be used for the restoration of a nearby temple.

Suzhou, once a city of the wealthy, is well-known for its beauty. Yet, while walking down the streets and alleys, all one can see is the blank walls punctuated by doors and windows. The public street is excluded from the beauty of the courtyards and gardens hidden deep in the family complex.

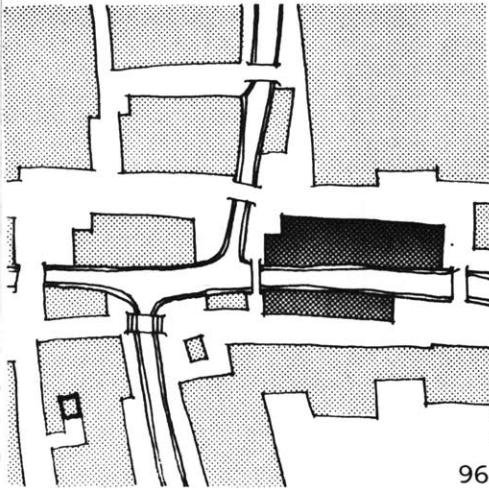
In contrast, in the villages such as Keqiao, home of peasants and farmers, activity occurs publicly, not protected within courtyards. Peasants did not own enough property to build courtyards, therefore houses were one-room boxes. Indoor activity spilled out onto the street.



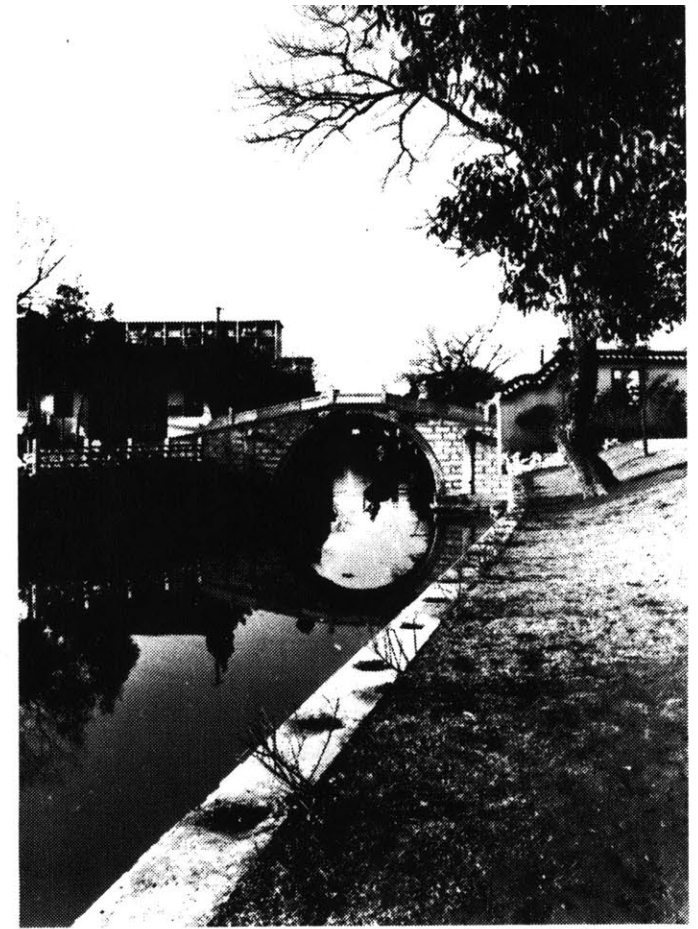
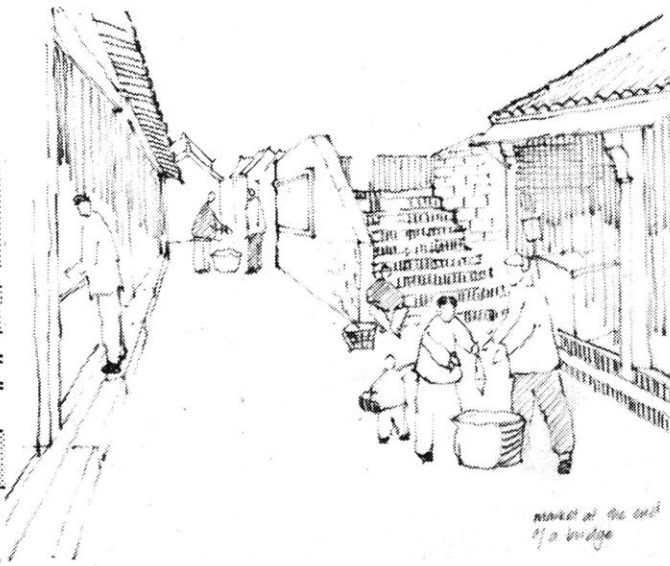
to
identify
neighborhoods



Luoze



96

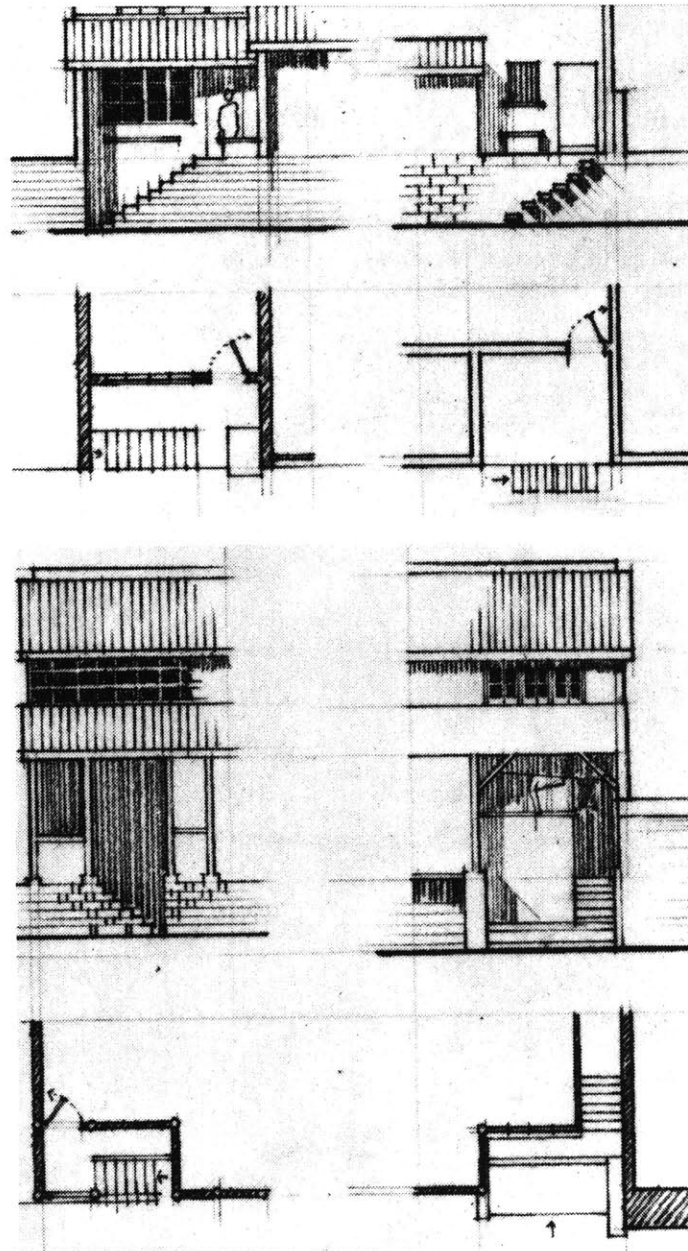


Nanqiang

Spatial structure helps to identify neighborhoods. The neighborhood is an intermediate, collective grouping of residents, it is a level of identification between the individual home and the whole village. A neighborhood is distinctive; it has a separate or different image that distinguishes it from other areas of the village.

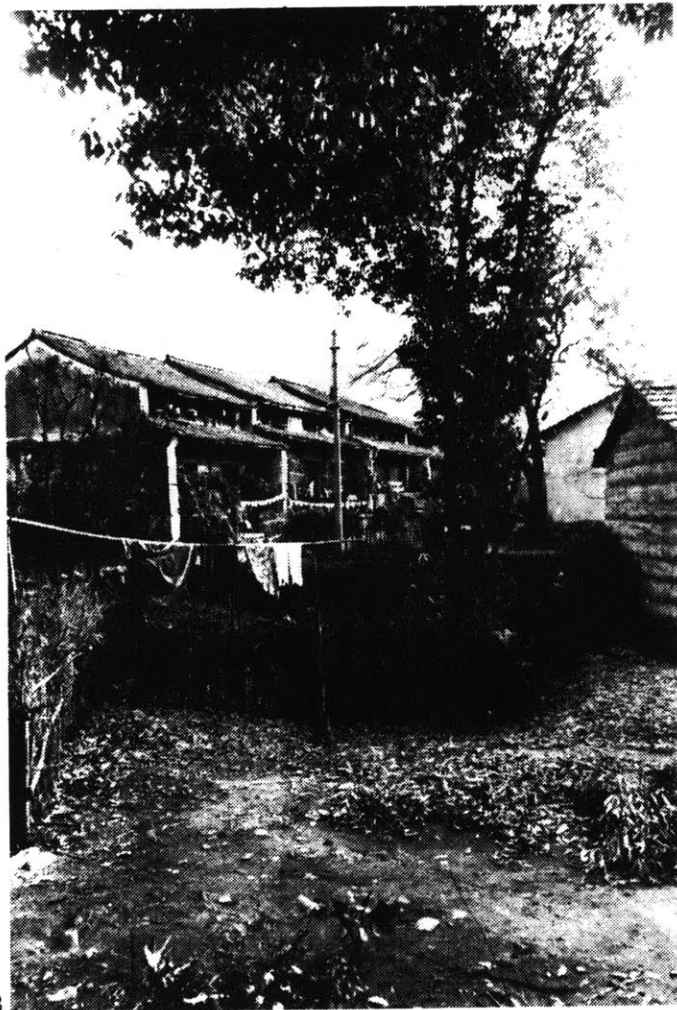
For instance, the district of Ming and Qing dynasty houses form one neighborhood in Nanqiang. The older two story houses are surrounded by new six story housing, therefore the age and construction of the older houses are distinct within Nanqiang. In Luozhe, the neighborhoods are organized around the numerous bridges and neighborhoods are referred to by their bridge names.

Neighborhoods might be identified by common physical characteristics or thematic spatial relationships. In Zhujiajiao, private stairs to the canal are repeated in many houses, creating a particular image of that neighborhood. The repetition of common spatial relationships was built by the clansmen of Meijiaw; each house makes similar transitions between indoor and outdoor space, but the wooden screens that serve to make the transition vary from house to house.

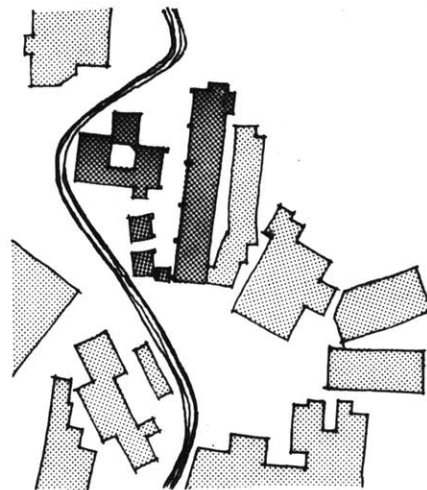


to
identify
neighborhoods

to
identify
neighborhoods



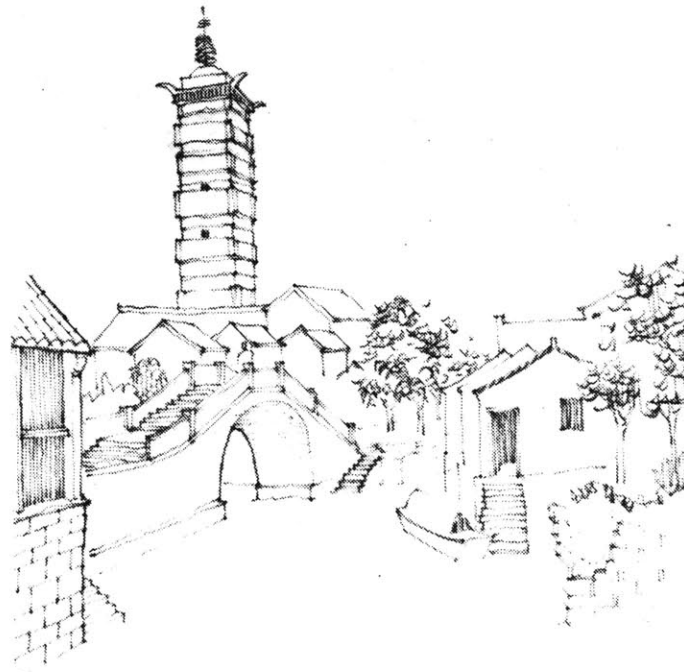
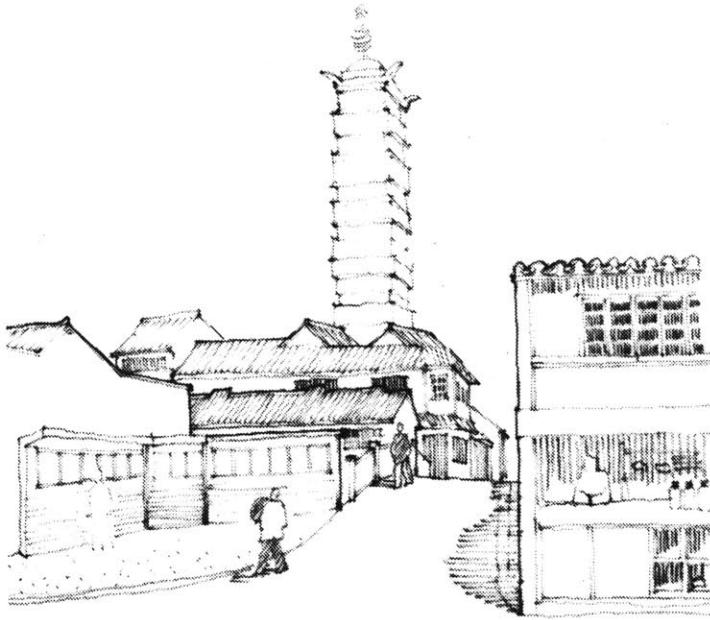
98



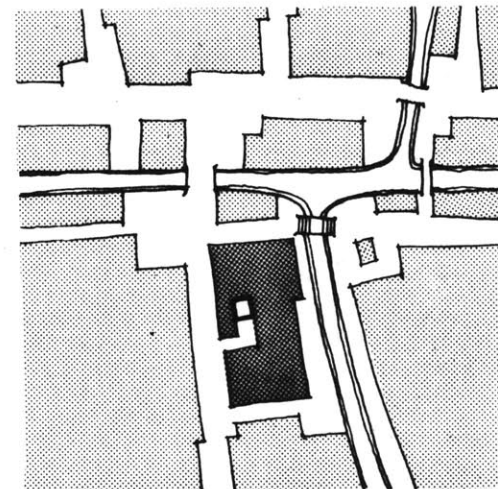
Meijiawu



to
identify
neighborhoods



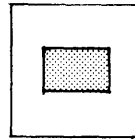
Neighborhoods might also be identified by the intrusion of an uncommon, non-thematic building or open space, such as landmarks and public squares. In China the pagoda is a landmark in the village landscape; the houses around the pagoda are identified as a neighborhood.



morphology
of
public
spatial
structure

Public spatial structure combines the properties previously discussed - to enclose, to define place, to provide paths and to identify neighborhood. The physical expression of the combination is categorized into three morphological groups: compositional, sequential and amorphous.

compositional
form



for illustrations
see pages

85 - courtyard

76 - garden

108 - multifocal
order

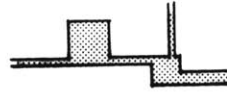
Compositional form of public spatial structure is well defined at its edges and readable in shape. It is an outdoor space that is partially or entirely enclosed by buildings in an essentially concave fashion. The courtyard, the Chinese garden and public squares or plazas are examples of compositional forms.

Sequential form of public spatial structure is a connected series of outdoor places which are given form by a contiguous building pattern. It is a skeleton of outdoor places composed of a path with other paths and stopping places connected to it. This is the most prevalent form of spatial structure in Chinese villages.

The street system of Zhujiajiao is one illustration of sequential form. Every household in that village has access to the water for washing, cleaning and cooking. Residents who do not live in houses along the canal's edge get their water from semi-public plazas at the water's edge or from hu-tung, narrow alleys, that lead to the canal's edge. The public spatial structure is a skeleton of street, hu-tung and outdoor spaces.

The feudal family compounds of Zhujiajiao were arranged for sharp contrast between public and private outdoor places. With the reallocation of housing in China, many families now share a

sequential form



for illustrations see pages

107- linear order

108- multifocal order

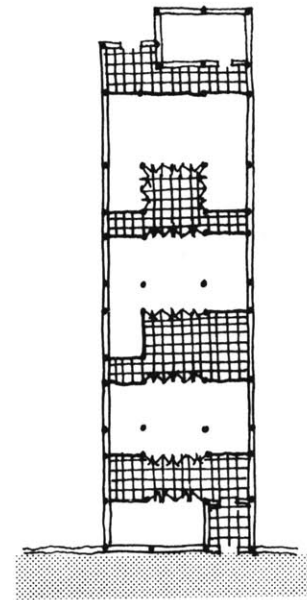


illustration of compositional form

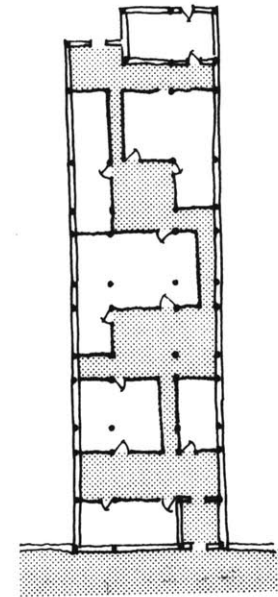
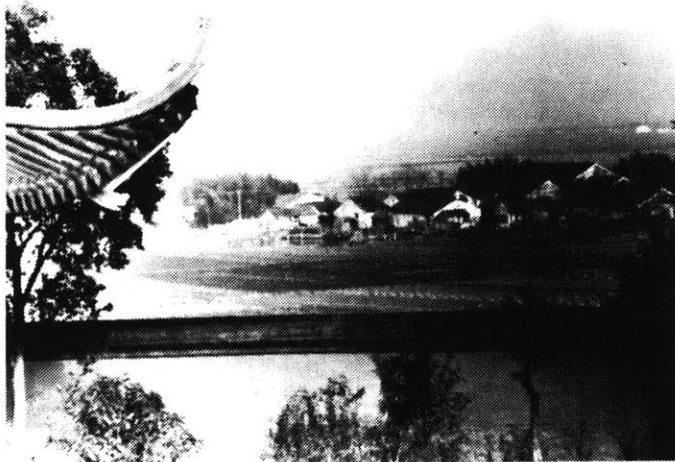


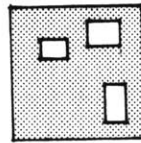
illustration of sequential form

Zhujiajiao





amorphous



for illustrations
see pages

104 - scattered
order

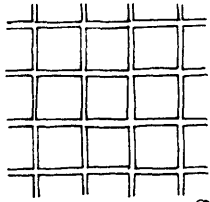
105 - clustered
order

compound built for an extended family. In order for inner buildings to be accessible, hu-tung have been carved through buildings, making the formerly private outdoor rooms into collective courtyards, converting several compositional forms into a sequential form.

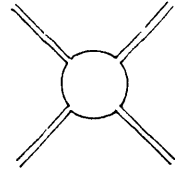
Amorphous spatial structure has no form; it is not given any definition by buildings and there is no clear limit or end to the space. In this type of spatial structure, buildings are emphasized as individual objects.

The houses of the agricultural communes around Shaoxin illustrate amorphous public spatial structure. These villages were built after Liberation to house the growing labor force close to the farm land. Since there is little or no fuel for winter heating, southern orientation for maximum sun exposure was the major siting criteria.

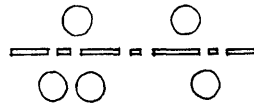
geometric
order



grid

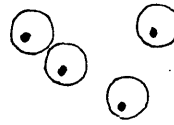


radial

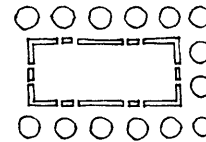


axial

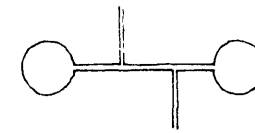
organic
order



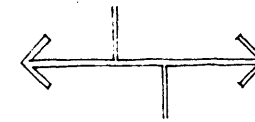
scattered



clustered



multifocal



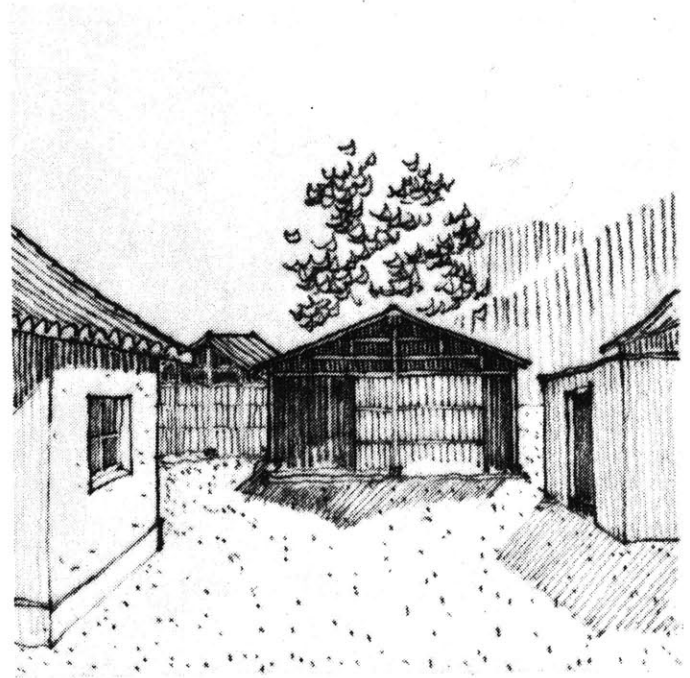
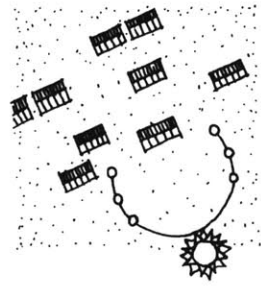
linear

order of
public
spatial
structure

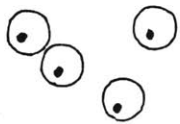
Combinations of the properties of outdoor spaces are expressed in many physical forms such as the street, the canal, the alley and the courtyard. These places are combined to make a spatial structure. If the spatial structure arranges activities and physical form so residents can recognize the organization of the parts of a town, then the public spatial structure is described as ordered.

There are two types of order of spatial structure, organic order and

geometric order. An organic order is unpredictable; one cannot foretell how the parts of the town are arranged nor how one will move through the town, but the organization is revealed and understood as one travels through it. An organic order is an extension of nature; public spatial structure bends with the contours and waterways of the topography. A geometric order is predictable, one knows beforehand what is about to occur and the organization is immediately understood. An intellectual concept of order is imposed on the natural landscape. 103



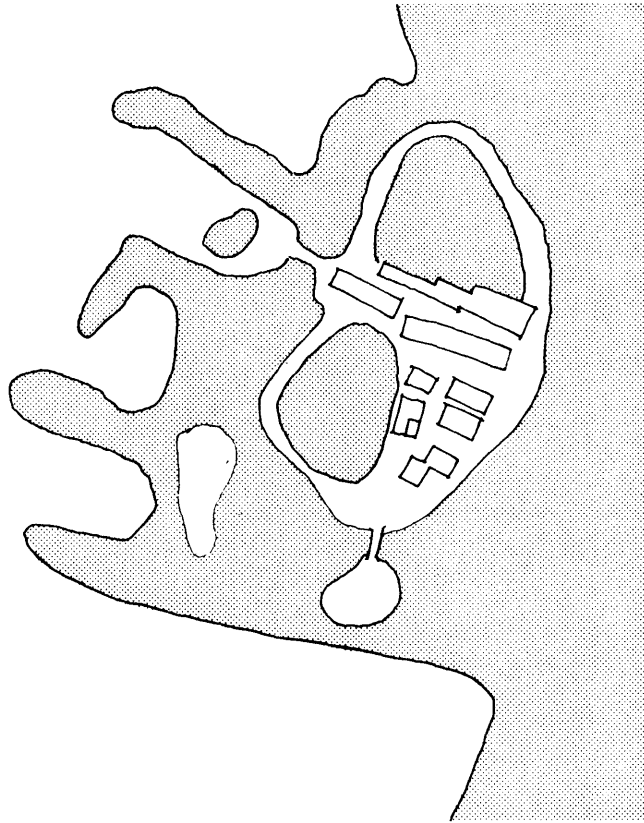
scattered
(organic
order)



Underwood and Underwood
Rice paddies and tea
Shrubs, 1902. 104

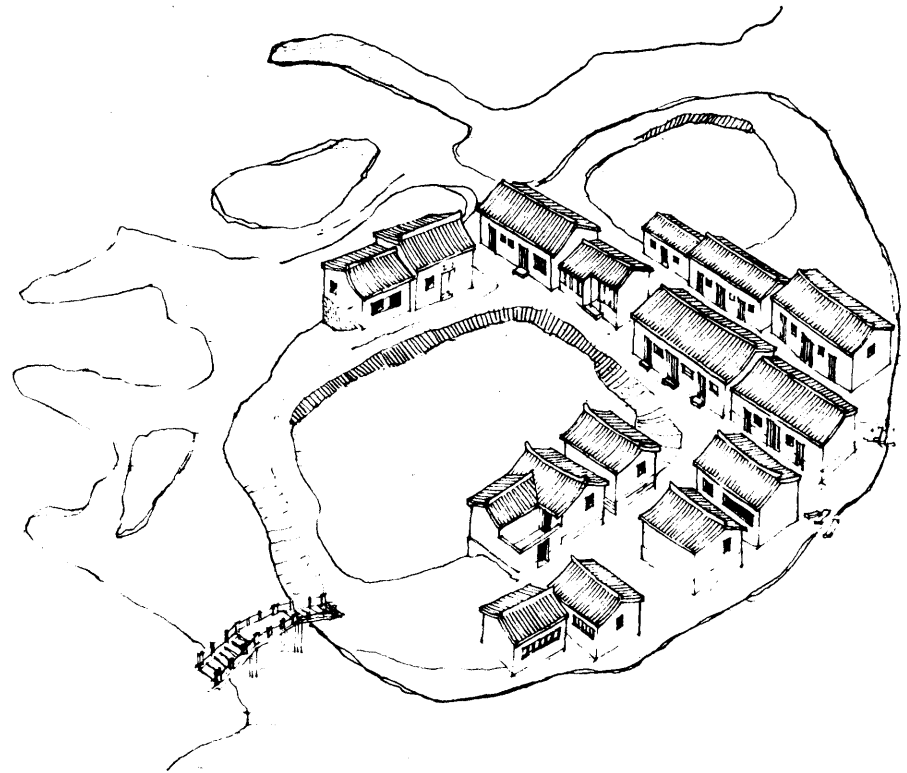


Spatial structure that is scattered, and therefore amorphous, can achieve organic order through the proximity of buildings or through the sharing of common visual traits. For instance, in Meijiawu, the proximity of one family's home to another of the same clan makes their homes recognizable as the Mei family domain. Another grouping of houses is part of the Zhu family domain.



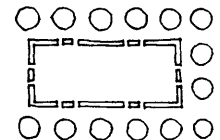
The housing villages of agricultural communes are ordered by sharing common visual traits. Every building is oriented toward the sun with the longer side of each house facing due south.

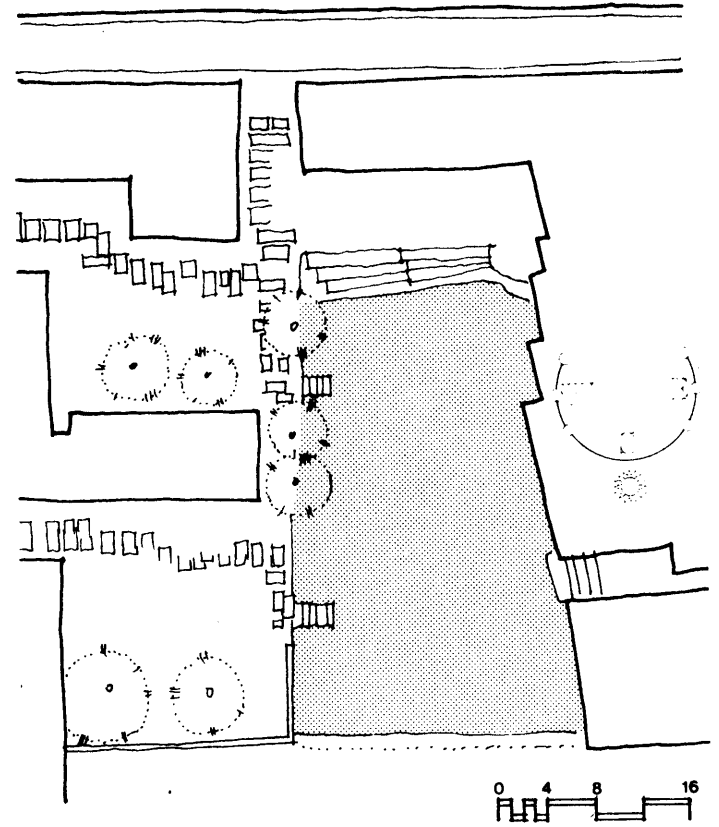
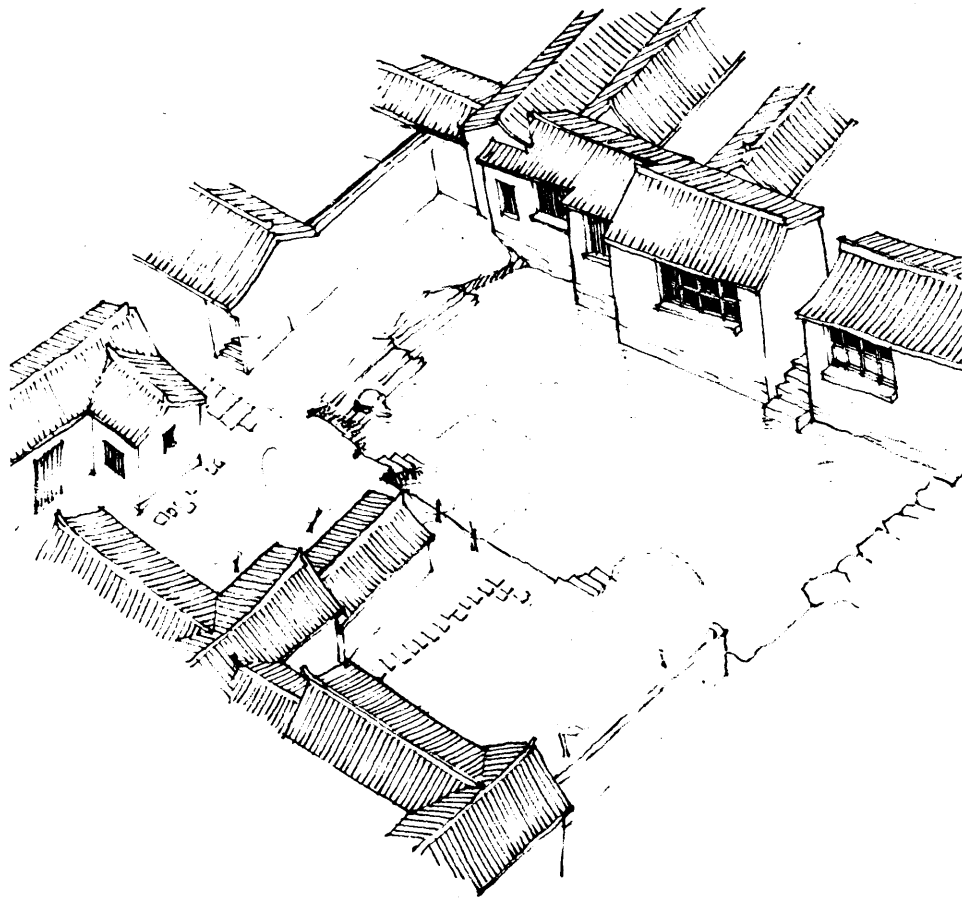
With a clustered order, there is a clearer definition of outdoor space by buildings. Buildings and courtyards are grouped around a primary outdoor space.



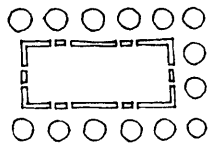
This space then serves to order discrete buildings and secondary spaces. Once the houses have been grouped together, a distinction is made between public and semi-public outdoor place. Besides the two illustrations shown on these pages, another very common example is the sharing of a courtyard by a number of families.

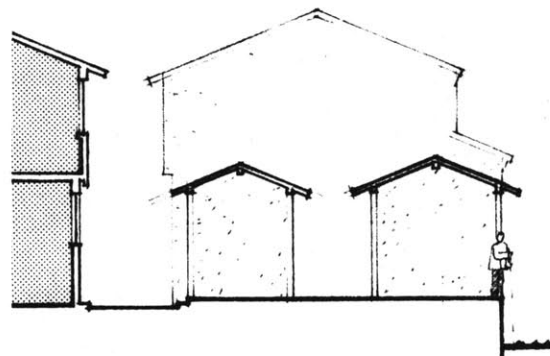
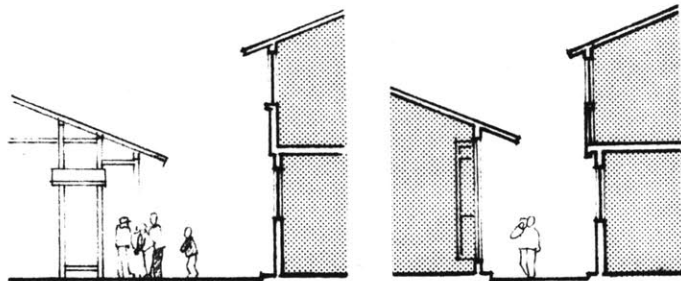
clustered
(organic
order)



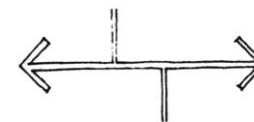


clustered
(organic
order)

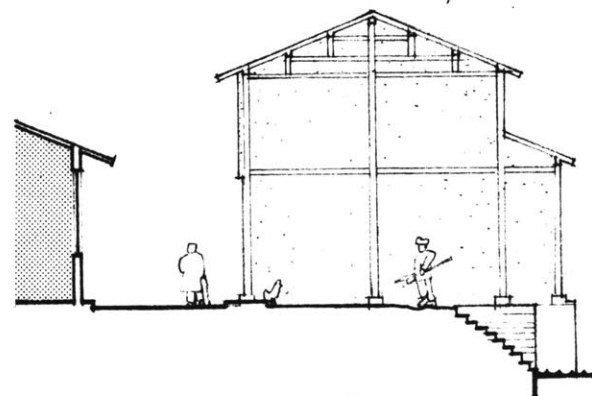




linear
(organic
order)

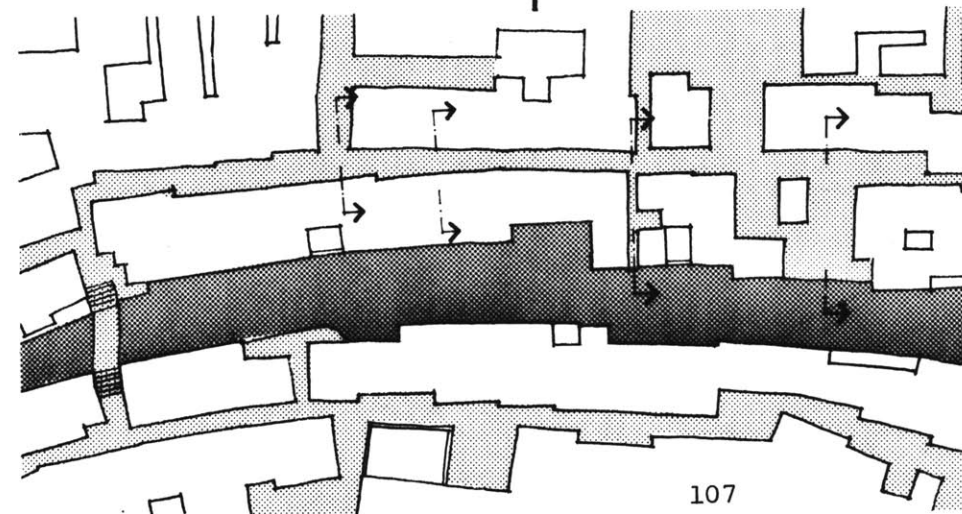


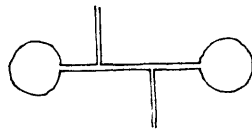
A linear order is a sequential public spatial structure in which buildings and outdoor spaces are arranged in a row, though not necessarily in the form of a straight line. This is the most common order in the villages south of the Chang Jiang River.



Zhujiajiao

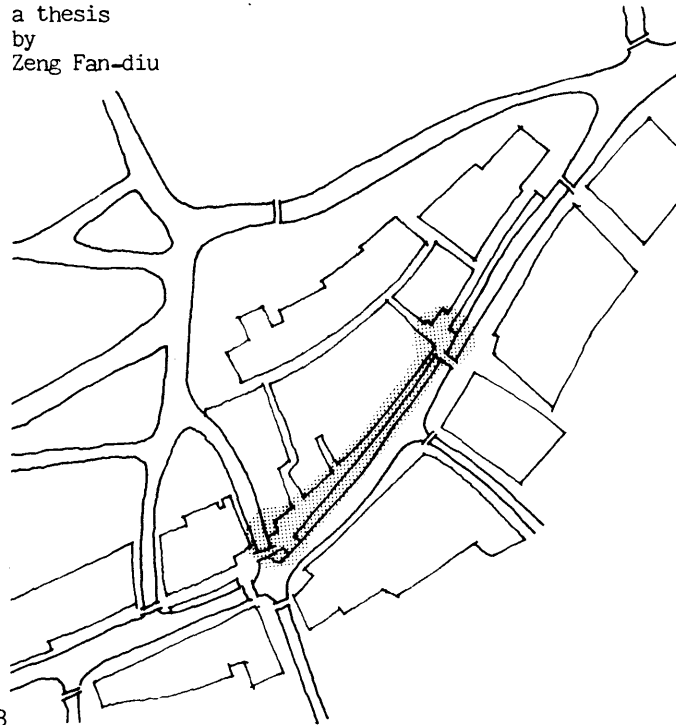
During the Ming and Qing dynasties, settlers chose to live by the water because it provided the only means of transportation, sewage disposal and distribution of goods. The canal also provided the water for cooking, washing and drinking. Houses grew along the banks of the water and streets paralleled the canal. The canal was the origin from which the linear order of Luozhe and Zhujiajiao grew.



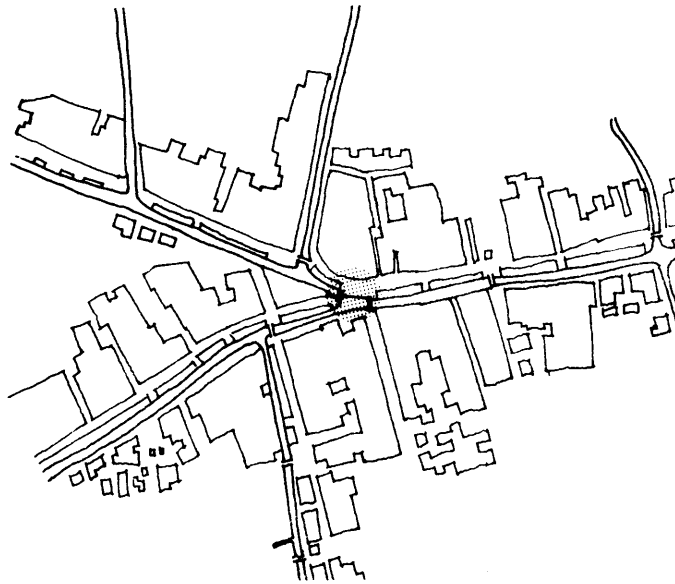


multifocal
(organic
order)

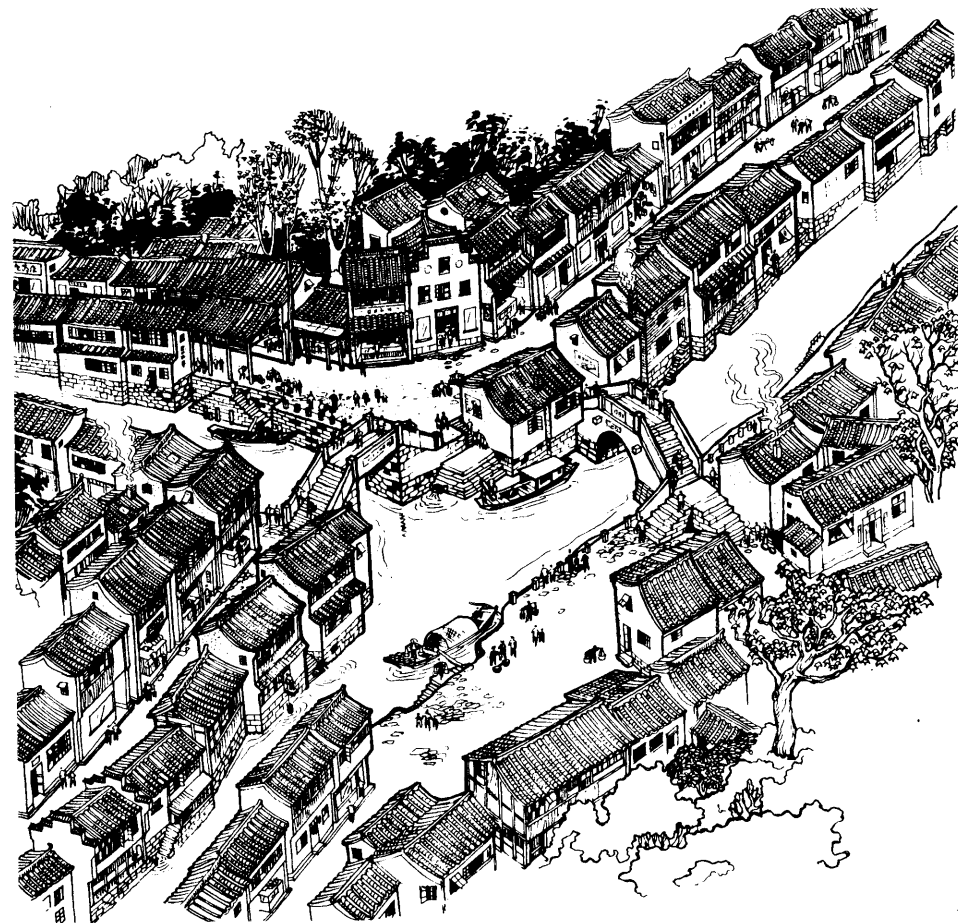
redrawn
from
a thesis
by
Zeng Fan-diu



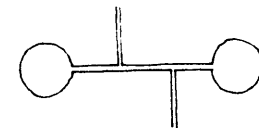
A multi-focal order is a linear order with points of destination. As one moves along a linear path, a destination is revealed. In Western architecture, this destination might be a plaza, piazza, or town square, an outdoor space for community interaction. The public square was omitted from Chinese town planning because Ming and Qing China were not egalitarian societies. According to Confucian ideals one accepted one's position in life, therefore there was no need to gather as a large group for public forum.



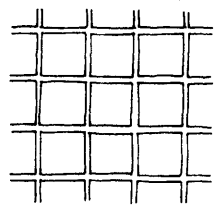
Focal points in Chinese villages were incidentally created along market streets, at the ends of bridges, or at street intersections. Because of the intensity of pedestrian traffic in these locations, peddlers choose them to sell their wares. Sometimes these open markets occur in openings at the ends of bridges, other times the markets are no wider than the intersecting streets, bringing traffic to a standstill.



redrawn
from
a thesis
by
Zeng Fan-diu

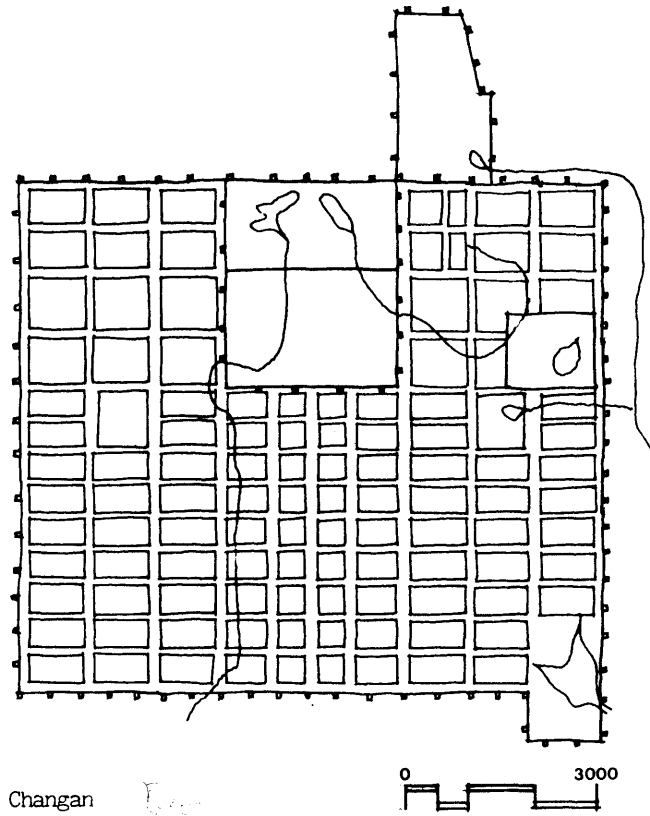


multifocal
(organic
109 order)

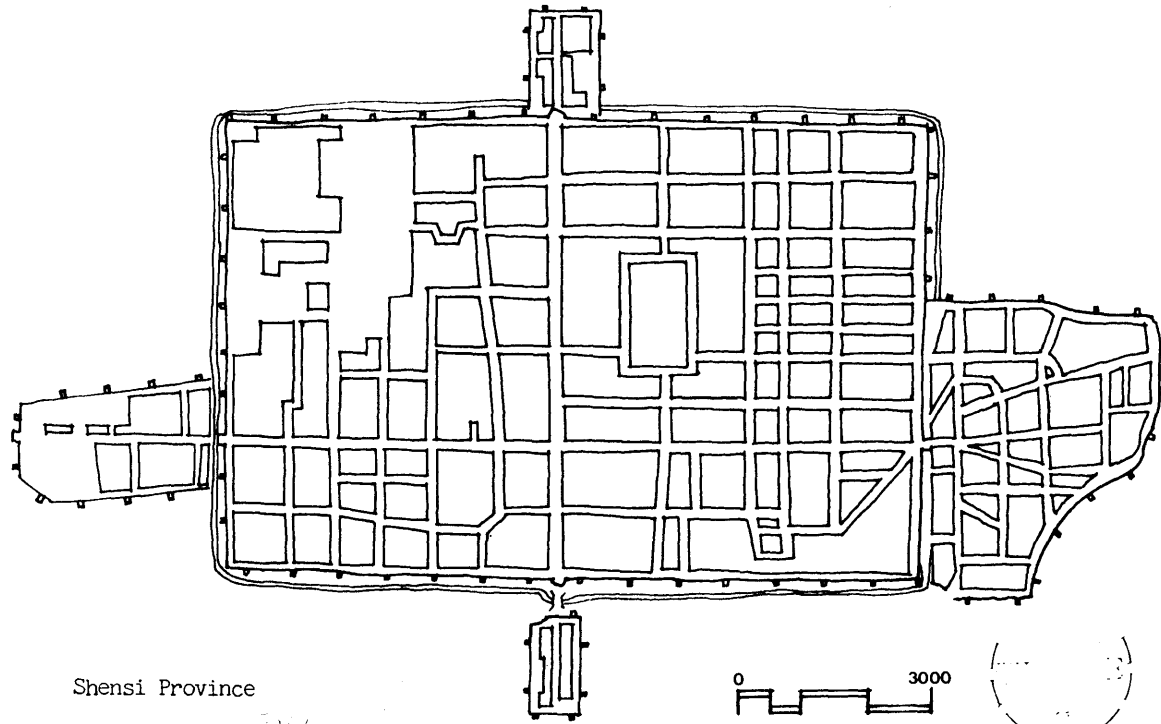


grid
(geometric
order)

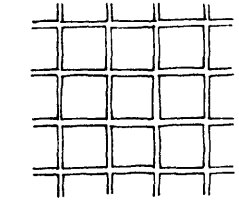
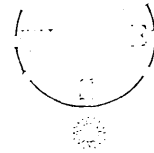
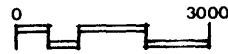
110 Changan



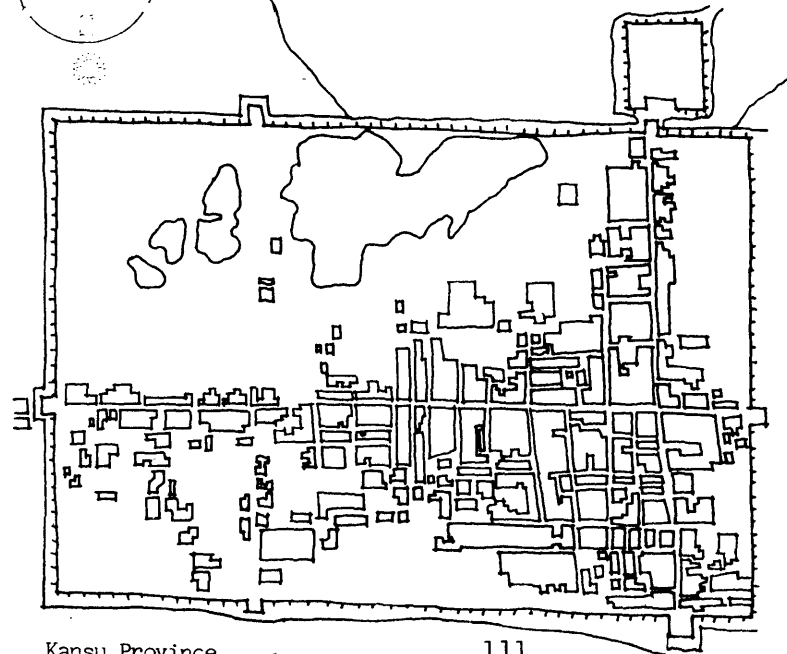
Geometric orders of public spatial structure reflect a centralized power at the time of settlement. The monarchs of the Chinese dynasties imposed their world view on the built environments of capitols and administrative towns. Also, a Chinese form of geomancy, called fengshui, dictated the choice of town and house site, the preparation of the site for building and symbolism to be used to layout the town. The square represented the earth, the circle represented the heavens. Therefore, square and rectangular geometries were used for the construction of towns and houses.



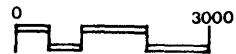
Shensi Province



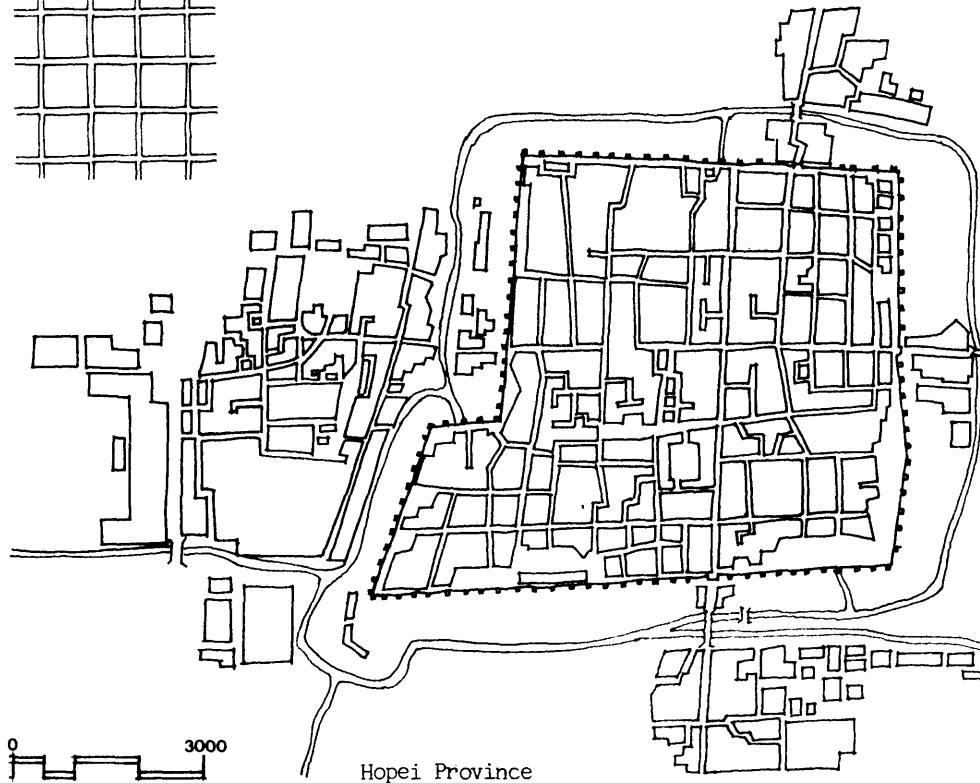
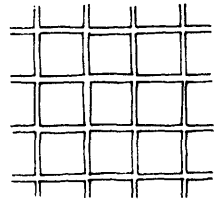
grid
(geometric
order)



Kansu Province

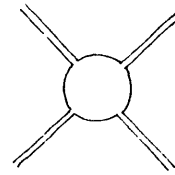


grid
(geometric
order)

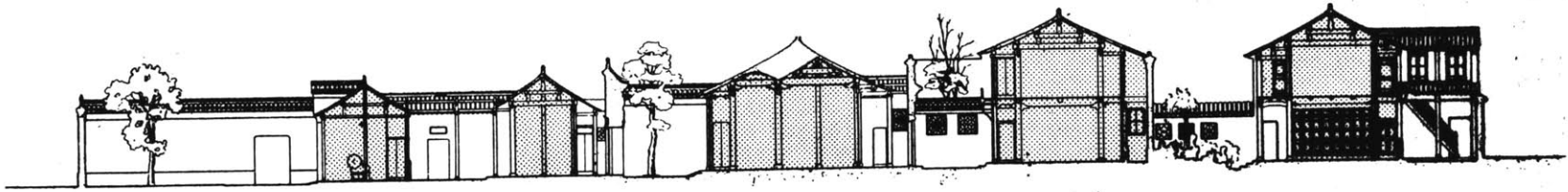


The grid is a geometric order that is characterized by uniformly spaced horizontal and perpendicular paths. Such a layout was used for the dynastic capitols and administrative towns throughout China because the town was built in the image of the universe as an ordered whole. A rectangular walled town could be entered through twelve gates that represented the twelve months of the year. The chief axes of the town ran north to south and east to west. The imperial palace was located in the center. Courtyard houses were distributed along the rectangular system of intersecting streets.

radial
(geometric
order)

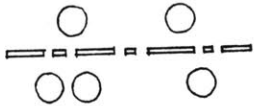


A radial order, or central point from which linear paths diverge, is not common in China. Centrally focused orders highlight some space or building, but the Chinese did not use such a hierarchy and avoided circular geometries for secular activities.



from Blaser's
Courtyard
Houses
of China

axial
(geometric
order)



Axiality was a major planning principle used for the organization of pieces of towns and houses. Buildings and spaces that are organized around an abstract line are axial. The line in Chinese architecture does not cut through a plan as an outdoor space. It is an organizing abstraction that passes through outdoor places, buildings, walls and openings. There is no culmination of the line in an element of central importance and the whole length of the line is never revealed. Instead, the order creates a succession of felt outdoor places.



Epilogue

In vernacular village architecture, one or two orders of spatial structure are adequate provision for the daily functioning of villages. I have emphasized the study of vernacular villages because of their organic order. Our modern cities are dominated by one spatial order, the grid. With the complexity of

life in modern cities, a multiplicity of spatial structures should be provided, a multiplicity which acknowledges the differences in the spatial requirements of pedestrians and residents as opposed to vehicles or utilities. Other orders of spatial structure should be integrated with the grid in order for city and town environments to be humane. When designing, the use of morphologies of spatial structures should not be applied abstractly but rather should be carefully linked with the cultural understanding of the residents for the materials and 115

forms of outdoor place.

The study of the spatial structure of Chinese villages verifies that its form structure is permanent, resistant to physical change. But new uses and understanding of the spatial structure can occur and has very rapidly occurred in China. With the reallocation of housing, the boundary line between public and private domains has been redrawn. The boundary is no longer drawn at the gate to the extended family complex, but at the threshold of each house. The public
116 to private boundary now occurs at the

outdoor - indoor boundary of buildings, and this has influenced the character of domestic and civil life in China.

Ideally, the once exclusive courtyard has become the collective gathering place for the residents who surround it. In the outdoor space, they share cooking facilities, exchange gossip, wash their clothing. The courtyard serves to draw them together as a new social unit. In the worst cases, courtyards have been reduced to light and ventilation wells, bleak grey spaces where neighbors avoid each other and speak in low voices.

The streets continue to be places of great activity. With the overcrowding in China, even once quiet and narrow lanes are places to work and carry out daily chores.

The public spatial structure of villages is integral to daily living in feudal and modern Chinese villages. In a very crowded living situation it extends the family's usable space with a minimum of social and economic constraint. Public spatial structure is the gathering place, the extension of Chinese villagers' homes.



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