INSIDE THE CIRCLE OUTSIDE THE SQUARE
- ANALYSIS OF TRADITIONAL CHINESE ARCHITECTURE

by
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Accepted by _____
Edward Robbins, Chairman, Departmental Committee for Graduate Students

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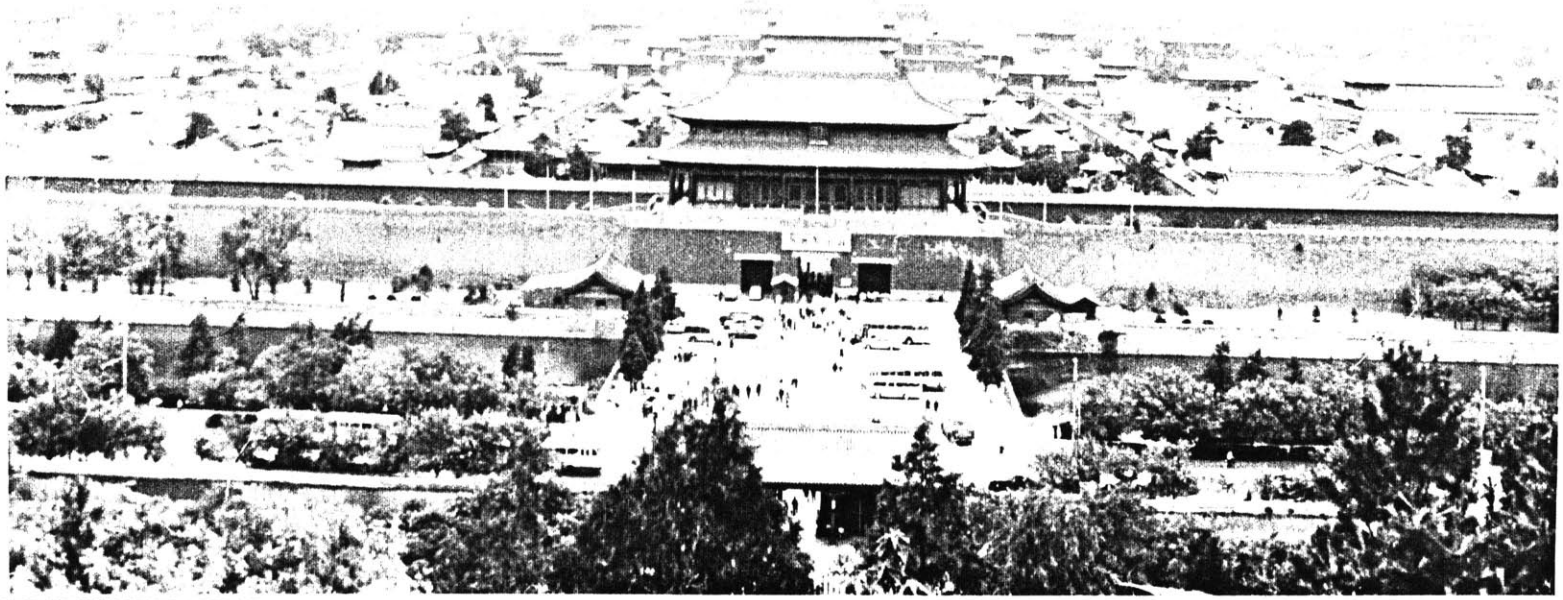
INSIDE
THE CIRCLE

OUTSIDE
THE SQUARE



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Inside the Circle Outside the Square

- Analysis of Traditional Chinese Architecture

by
Pamela Grace Chang Sing

Submitted to the Department of Architecture on February 18, 1983, in partial fulfillment of the requirements for the Degree of Master of Architecture

ABSTRACT

This thesis deals with a process of analyzing specific examples in traditional Chinese architecture in an attempt to understand and identify the underlying principles that make it essentially Chinese. The basic intent is that the development of this process of observation would later inform a process of design that would generate a 'new' architecture which could be worthily referred to as a continuum of the traditional architecture.

The examples studied range from Palace and Temple architecture to Chinese gardens. To varying degrees, these places have been analyzed in terms of their spatial organization, degrees of public and private, structural systems, use of light, method of composition, system of proportions and system of circulation.

Thesis Supervisor: Fernando Domeyko
Title: Associate Professor of Architecture

" Whereby are given unto us exceeding great and precious promises:

That by these ye might be partakers of the Divine Nature. "

2 Peter 1:4

DEDICATION

To my mother whose love and support have made this all possible.

ACKNOWLEDGEMENTS

My sincere gratitude goes

.....to those who have taught me so much during my years here at MIT

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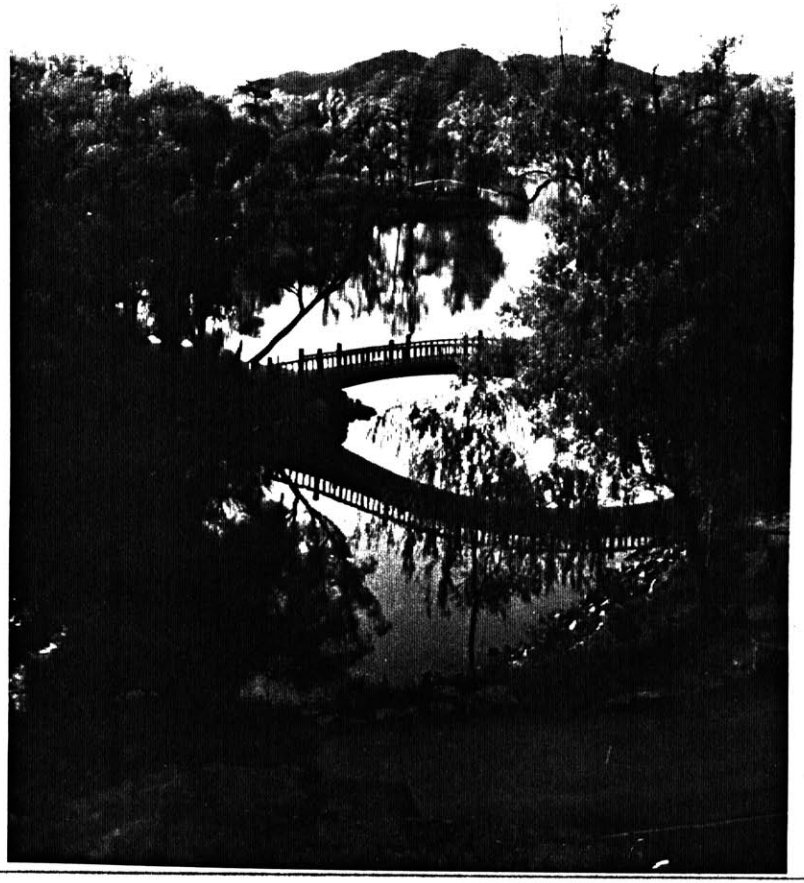


INTRODUCTION

When I wrote my thesis proposal last semester I was quite presumptuous in thinking that I could design a public building in China within the time frame of a semester. The world of architecture that lies within the Great Wall is so rich and complex that to be able to digest and assimilate a work that has been developed over a four-thousand year period and to be able to generate a built form that can be worthily referred to as a continuum of that great tradition would take a lot more time and knowledge than this graduate architecture student is capable of at present. But as a student the privilege of being able to pursue such a study is mine. In this thesis I regret that I am not able to present to you a 'final product but I do offer to share with you the little that I have seen and learnt and thought about these past few months.

Christian Norberg-Schulz defined culture in 'Meaning in Architecture' as that common order which we establish in the environment and to which we try to orientate ourselves from birth. He explains that its development is " based upon information and education and therefore depends on the existence of common symbol systems. Participation in a culture means that one knows how to use its common symbols. "

I chose the title " Inside the Circle Outside the Square " to illustrate the kind of complexity that is involved in looking at traditional Chinese Architecture. On the surface, the forms are easily comprehensible and can be viewed as basic and simplistic. Beneath, though, lie layers of meaning that contribute to its depth and, in turn, its complexity.

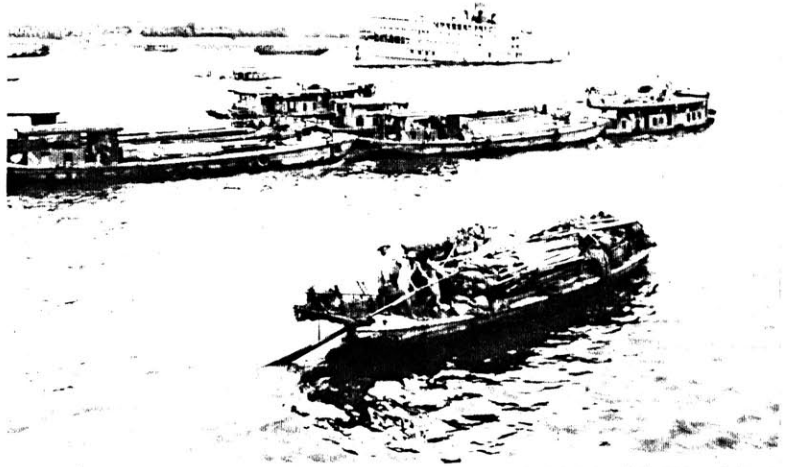
The yuan-fang (圓方) or circle-square is the first diagram of the Ying Tso Fa Shih of 1103 A.D. (the first book on building in China). These two forms were probably chosen because of the particular meaning each had in the Chinese cultural context. The circle represents the deity of Heaven. As a result of this connotation, the form of the circle stands for perfection and completeness. The Chinese character of the circle (圓 yuan) when used in conjunction with anotner character (tuan) means gathering (團圓 tuan yuan) - the coming together of people, usually the members of a family. It is not surprising then that the Chinese set aside a particular day to celebrate this coming together; this reunion amongst families on the fifteenth day of the eighth month of the lunar year when the moon is regarded to be at its fullest and forms a

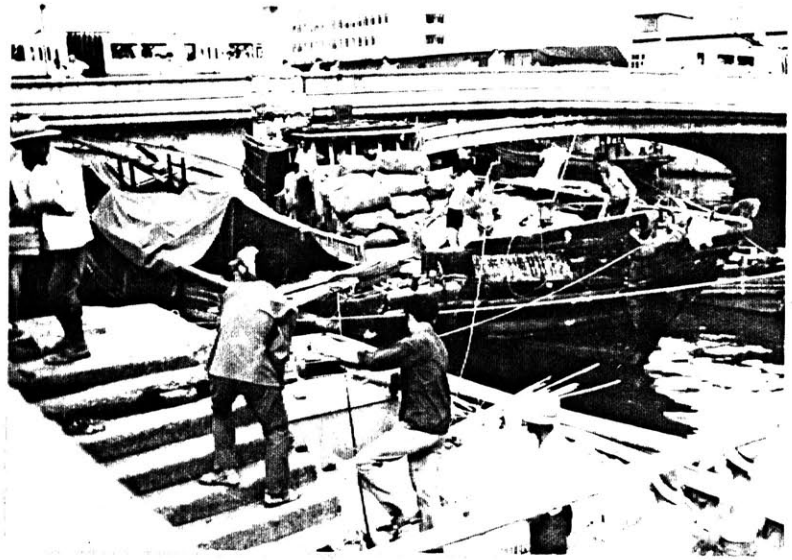
perfect circle/square.

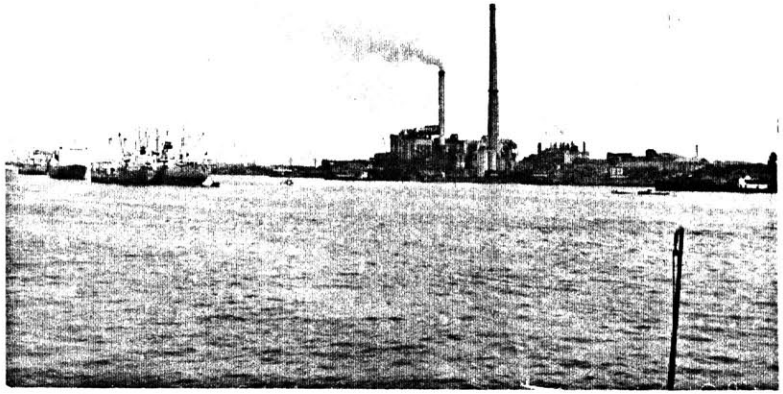
The square represents the deity of Earth. In the past, the Chinese view of the world was that it was a square with four corners and four cardinal points. Architecturally we understand that because of its non-directional nature (that is, no particular direction dominates) the square is a stable form. Perhaps this is why the square was chosen. The Chinese character for square (方 fang) when combined with the character for earth (土也 ti) means place (土也方 , ti fang). Perhaps, for the Chinese, the meaning of a place is that part of earth that is square or, rather, a 'place' is regarded as a place because of its qualities of stability.

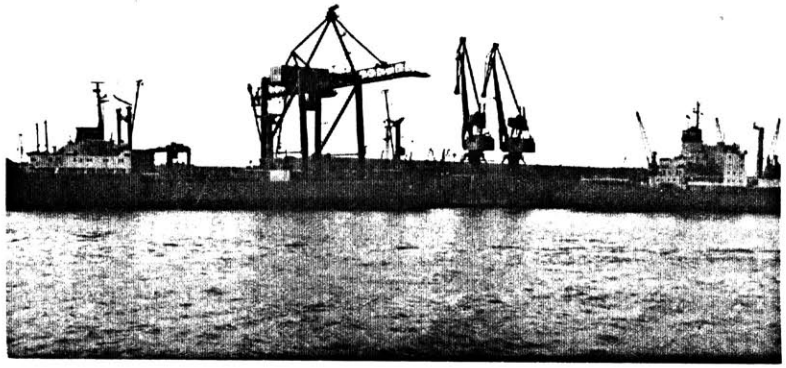
Together, the circle and the square connote a place on earth where stability presides for the coming together, the reunion of a group of people

ranging from the unit of family, to clan, to region, to country. Inside the circle and outside the square lies the zone that is under the Heaven and on the Earth - the zone which has supported the development of a culture that is distinctly Chinese - a support we refer to as the built world or architecture. Here is my limited interpretation of that zone - Inside the Circle Outside the Square.









WHY CHINA

At the beginning of last summer I boarded a plane for China. I had joined the Columbia University and Tianjin University School of Architecture summer program. For seven weeks I travelled with a group of architecture students and professors through China, 'sightseeing' for four weeks and 'studying' at Tianjin University for three weeks.

I had chosen to study Chinese architecture because I was interested in testing the process of observation and design that I had learnt in this school and I needed a culture with which I would be familiar. The study has also been generated by the sequence of events that have been taking place in China recently.

As a result of China's open-door policy inaugurated two years ago, plans have been made at

"integrating the Hong Kong and Canton economies." Special territories in neighbouring Guangdong province would be designated as special economic zones and transformed as such in the hope that they would merge with the British-run colony of Hong Kong. With the inflow of investments and the creation of new job markets a significant portion of labour would be attracted from the surrounding areas in China. As a result, a new community would be established and there would be need for new construction to house the various industries and commercial enterprises as well as housing for the people in the area and a support structure of public facilities for these people.

However, to put aside the social, economic and political aspects of such a move, pertinent questions regarding the development of architecture

in China are brought to the forefront. As Nelson Wu noted in his book "Chinese and Indian Architecture" the Chinese tradition is going through " a fundamental transformation today that is probably as significant as any in its entire history. If architecture is to continue to provide a valid setting for, and to participate in, the new cultural programs, new forms must come forth which will echo the difficult adjustments now being made deep within the very fibers of this culture - the family life and social organization of China. The superficial architectural continuity, on the other hand, as seen in such details as upturned eave lines on numerous contemporary buildings in China, is no solution and brings no rebirth."[1] His recommendation is that we should " search for the essential meaning behind the true achievements of this glorious tradition."[2]

Werner Blaser, in his book "Chinese Pavillion Architecture" also commented on the development of contemporary architecture in China as being " in the throes of a retrograde development ... quite unlike the classical palaces, of which the constructional, formal, and spatial aspects " are " of great interest."[3]

TURNING POINT

Why is contemporary architecture in China such a 'disappointment' in terms of being a continuum of traditional architecture? Perhaps it would help to understand what the circumstances were like at the time.

In China, this 'turning point' or shift from the Old to the New is quite clearly marked in history by the political events that took place during that period. The last dynastic period in China, the Qing dynasty A.D. 1644-1911, was a period when China was under 'foreign rule' by a Manchu ruling class. As recorded, it was a decadent period in Chinese history with little progress made in the field of architecture. As Jankelevitch noted, " the architectural style developed under the Ming was continued without much imagination under the Ching (Qing), who tended towards exaggerated

decoration, greater complication, and a taste for the grandiose, "[4] which he calls " the sublimity of decadence. Thus from the sixteenth century to the nineteenth century Chinese architecture declined - with a few memorable exceptions, the art and science of building being overshadowed by the spurious boldness of corrupt ornamentation."[5]

China was content with being isolated from the rest of the world, resting on the laurels of its long and glorious past. However it " was soon awakened to the fact that there existed other cultures which were even better and more advanced than their own."[6] As a result of defeat by the British in the Opium War, the Treaty of Nanking was signed on August 29, 1842 and forced China to cede Hong Kong and to open Canton, Amoy, Foochow-Fu, Ningpo and Shanghai as trade posts for the British.

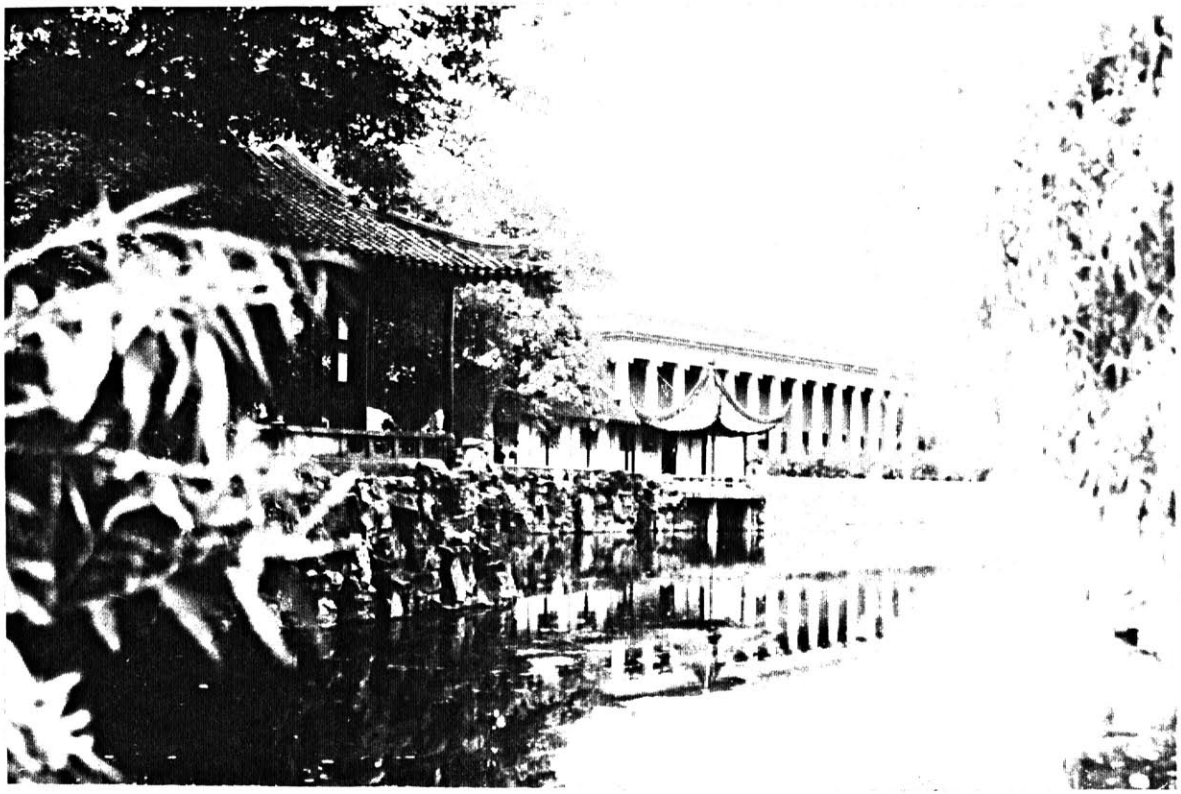
Later, in 1860, the Treaty of Tientsin and the Treaty of Shimonoseki forced the Chinese to cede Kowloon to the British and open 49 more treaty ports to foreign commerce.

And so with the onset of the Treaties of Nanking, Tientsin and Shimonoseki, " the building of Western-style houses had been set afoot in the treaty ports. Foreigners formed their own communities and built houses in accordance with their own architectural designs, in the concessions and settlements within the treaty ports. Tsingtao was a city of German-style buildings; Port Arthur and Dairen, Russian; Weihaiwei, Chefoo, and Sha Mein (Canton), British. Even in the same city, one could detect differently styled buildings in different settlements. In Shanghai, there were differences in the buildings of the International Settlement and the

French Concession; and in Tientsin between the British, Japanese and Russian settlements. Even within the same settlement, there were different buildings, respectively representing the characteristics and designs of various nations. All these were commonly called buildings of the semi-colonial era, owing to the fact that foreign powers at that time considered China a semi-colony."[7]

The architecture produced by these foreign architects were therefore direct 'imports' from the western world and made no pretense of being indigenous to the country in which they were constructed.

Although this contact with the West did not immediately bring about a valid transformation in the architecture of China, it did manage to



"These buildings were direct 'imports' from the West and made no pretense of being indigenous to the country in which they were being constructed."

influence it politically, ideologically, educationally, and artistically. In 1911, Dr. Sun Yat-Sen succeeded in leading a revolution that resulted in overthrowing the hereditary monarchy and the establishment of the Republic of China. It was an end to a system of centralized monarchy that had existed in China for more than two thousand years ever since the unification of the nation by the first emperor of the Qin Dynasty, Qin Shih Huang Ti in 221 B.C. In 1949, after the Second World War, China came under Communist rule and the People's Republic of China was founded. In 1950, the Nationalist government, the Republic of China, moved to Taiwan. Under the new rule, China's doors to the the West were closed once again and have only recently been reopened in 1980.

In 1964, Prof. Gin-Djih-Su (a Chinese

architect who had received a Western education) wrote in his book "Chinese Architecture - past and contemporary":

" Every country has its own peculiar national form of architecture which retlects it culture, history, custom, political and social systems, religious belief, and other national traditions. Thus, preserving the traditions of their own national style is, in fact, the same as maintaining the prestige of their nation. However, the development ot a national style should also keep pace with the age, and other contemporary architectural materials and method .....

Perhaps Architecture today, like dresses,cars and even languages, has a tendency towards internationalization, instead ot localization.

> Nevertheless, the interpretation of new life, whether in Nationalist or Communist China, needs a new expression. This new expression if truly delineated from its inner tradition and outer influences will undoubtedly manifest itself in a new form. So far everyone has experimented along this line, but the result is still not only unintelligible, but false and empty. It is the duty of the professional to strive to discover the new form."[8]

Seventy years is perhaps not a very long time for a country which has undergone so many basic and radical changes in its structure, as China has, to be able to turn around and generate a 'new' architecture right away. We must not forget that traditional architecture did not appear overnight but

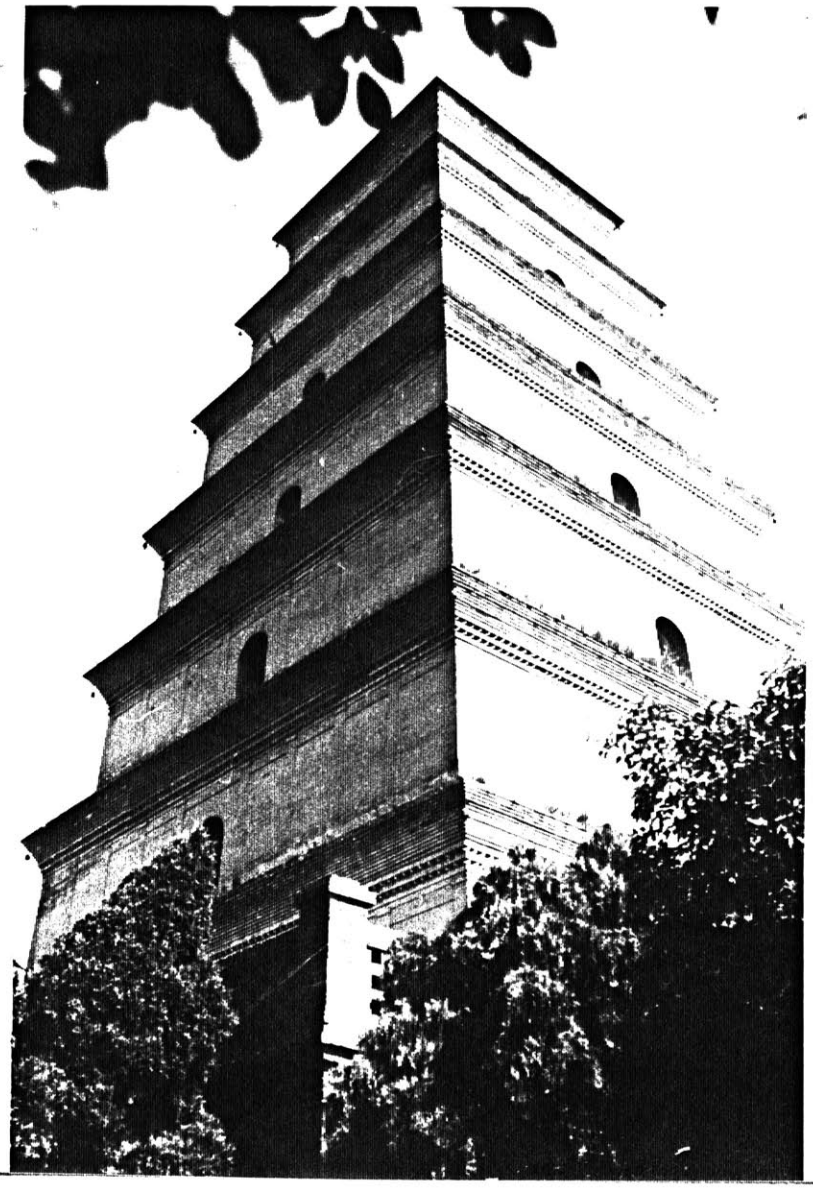
slowly evolved over a period of more than 3500 years.

It may be important to note here (what might be a rather obvious point) that conditions in China have drastically changed in terms of program requirements for building - there is a much wider range of use requirements today, some of which did not exist in Old China, and there is an increased density of use due to the overpopulation in the country.

Materials for building have also changed. In traditional architecture, wood was the major material used for construction. Today wood is no longer available for construction in such gross amounts as there is a scarcity of wood resources. Earth materials such as masonry and concrete have become the major materials for building. Other

'new' materials have also been introduced such as steel and glass.

It may seem odd that these materials are still termed 'new'. It is important to understand that in traditional architecture the various materials such as wood and masonry each had a specific role in the architecture and with it its meaning. For example, masonry was equated with earth. It was a material that one stood on. In the majority of cases where I have seen masonry being used, people stood on them, e.g. platforms on which buildings stood, column bases and bridges. Or they were used to enclose, such as in walls around a compound or as side walls in a building but they were usually non-structural elements. The only instance of its purposely being used as a major building material has been in the construction of the Imperial tombs



and certain pagodas.

Although the Chinese were quite capable of working with masonry, as shown by their stone bridgework, they chose not to for the earth had a special meaning in agriculturally-based China. The following passage from The Good Earth by Pearl Buck is helpful in giving a better understanding of the bond that existed between man and earth in feudal China:

> " He had no articulate thought of anything; there was only his perfect sympathy of movement, of turning this earth of theirs over and over to the sun, this earth which formed their home and fed their bodies and made their gods. The earth lay rich and dark, and fell apart lightly under the points of their hoes. Sometimes they turned up a bit of brick, a

splinter ot wood. It was nothing. Some time, in some age, bodies of men and women had been buried there, houses had stood there, had fallen, and gone back into the earth. So would also their house, some time, return into the earth, their bodies also. Each had his turn at this earth. They worked on, moving together - together - producing the fruit of this earth - speechless in their movement together."[9]

Wood, on the other hand, was the major material used in the construction of buildings. Perhaps the inspirations came from the trees that provided shade and shelter.

In her book "Living Architecture; Chinese", Michele Pirazzoli-T'serstevens provides an interesting viewpoint on why there was a preference

for wood and more. " This preference may have been due partly to the frequent earthquakes, which demanded a flexible structure. But it had its disadvantages. The gradual disappearance of forests and the quantity of highly skilled labour it involved made timber construction so costly that after the twelfth or thirteenth century steps had to be taken to economize materials. Another serious drawback was the risk of fire .....

This deliberately ephemeral architecture, whose products were not destined to defy time, is explained by the fact that China has never linked its destiny with the transient fate of its material realizations. It views history as a predestined, inevitable sequence of events, in which the various moments count less than a certain coherent continuity. Each great dynasty started out with the

idea of restoring the situation that had existed under its predecessor. Its first steps were conservative and several generations passed before original achievements appeared. The same principle applied to architecture. It was not in their monuments that the Chinese expressed their passion for eternity but in the ideas that presided over their design and the spiritual tradition they exemplified."[10]

Whatever the reason, wood was used as the major structural element in buildings and its properties were explored and ably used to become an inherent part of the architecture. The development of the wood 'truss' to support the roof and the 'tou-kung' or system of brackets show how the Chinese were able to carry the function of the structural system one step further to become, at the

same time, the decoration for the building.

With the introduction of the 'new' materials, a revised symbol system has to be devised. It would seem, at this point, that if these materials were approached in the same spirit as traditional materials were, new forms would naturally evolve from the process.

Looking at traditional Chinese Architecture, one cannot help but feel impressed by the clarity and consistency with which the Chinese approached the art of building. Perhaps the big step towards a 'modern' architecture is not as difficult as we have been led to believe.

In Charles Jencks' essay "The Pluralism of Japanese Architecture", he explains that one of the more popular reasons why Modern Architecture was accepted in Japan was

that " the traditional architecture of Shinto and Katsura were themselves 'modern'; they used materials in a natural, unfinished state, they emphasized joints, construction and geometry; even at Katsura the delicate asymmetries were carried through in black and white. The whole 'International Style' was there for four hundred years including standardization, flexibility, modular coordination, grid planning, and the cherished value of anonymity."

"Whereas the West had to overturn its tradition to become Modern, the Japanese simply revived parts of theirs."[11] Perhaps Chinese Architecture, like Japanese Architecture, is not too far off base from what the West calls Modern Architecture.

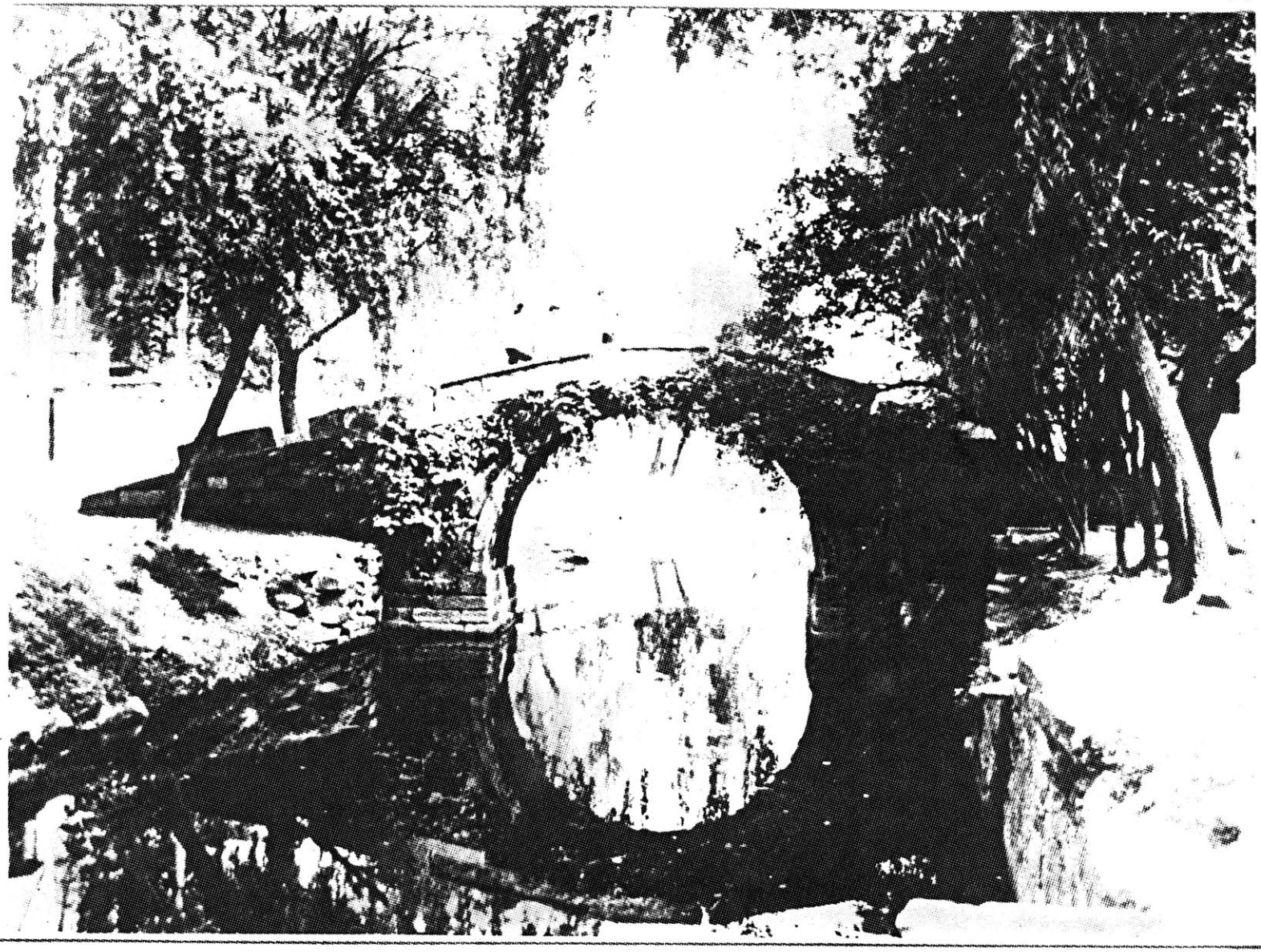
It seems, though, that a fine line exists

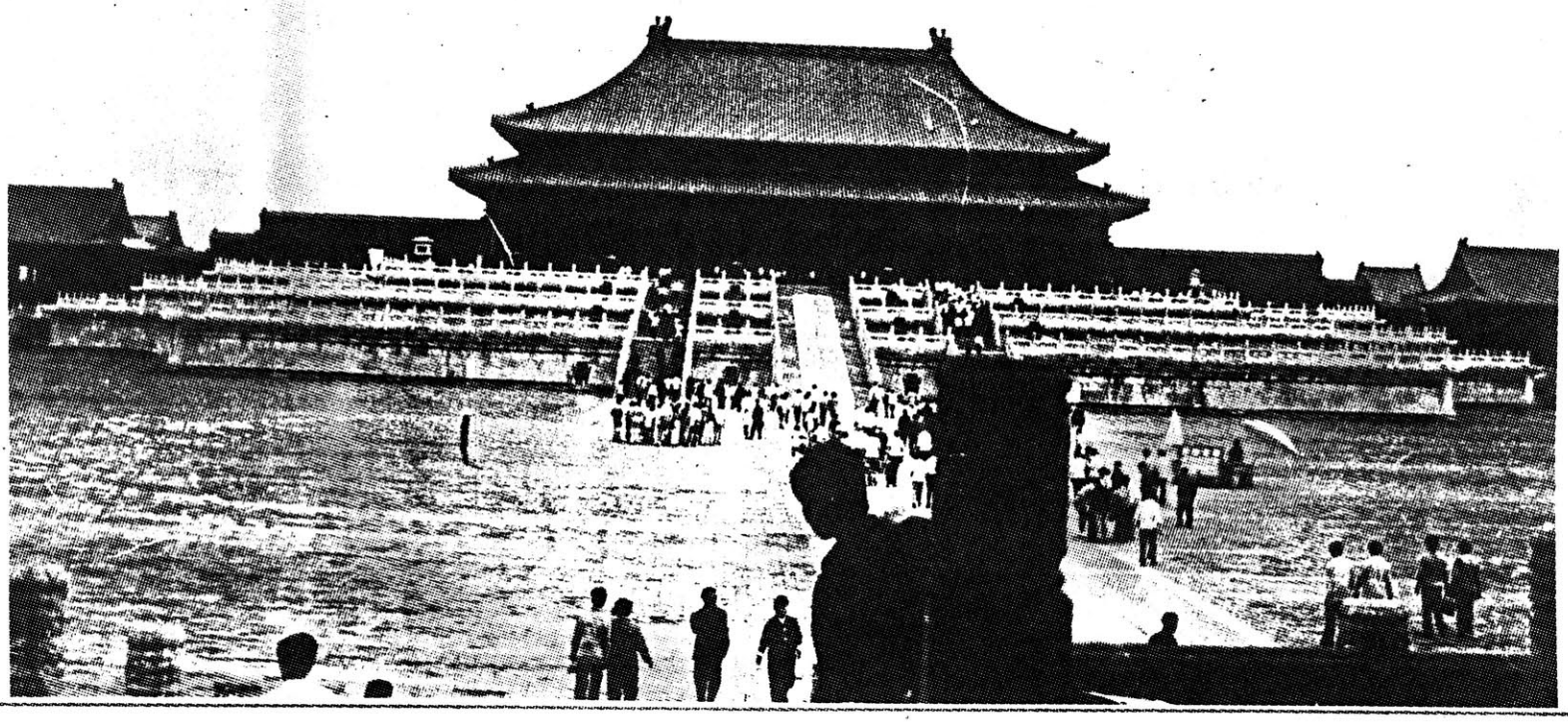
between being 'international modern' and being 'Chinese modern'. Perhaps for a country which has such a strong and beautiful architectural tradition an effort should at least be made at understanding what it is that makes its architecture so unique before an attempt is made to generate a new Chinese architecture. The clues to the future lie in the past. Whether we know how to work towards a valid continuum of that tradition lies not in being able to mimick the past but in being able to understand the principles behind the decisions. I came by this quote one day in an old architecture magazine and I felt it was quite appropriate for what I was doing.

" Except to an IGNORAMUS or INTELLECTUALIST, nothing imitative can

equal that which is imitated. Instead of imitating effects, search for the principle that made them original and own your own effects."

THE STONE BUDDHA (CHINESE)[12]





FROM LOOKING TO SEEING

Going to China is quite an experience, especially when it is your first visit. For seven weeks I spent one of the most intense periods of 'looking' that I have ever experienced. As the purpose of our trip was in a great part to learn about Chinese Architecture we travelled through the major cities of China touring the architectural works which the Chinese felt were most representative of the Chinese architectural tradition. Our itinerary included Beijing, Cheng-de, Tianjin, Che-Fu, Tai An, Tai Shan, Sian, Suzhou, Hangzhou and Shanghai. Although seven weeks were not quite enough time for one to become a scholar in the field of Chinese architecture it was long enough for me to walk away duly impressed and eager to learn to understand what made it so 'magical'.

In the first section I have included the leperello that I had produced during my first week at Tianjin University. These drawings were made after spending three and a half days recording and observing the architecture at Cheng-de - the summer villa for the Emperor of the Qing Dynasty - which is located north of Beijing. Cheng-de was our second stop in China; the first being Beijing where we spent three and a half days. What I have recorded in this leperello is but a minute part, a very quick general observation of a particular part of Chinese Architecture.

Leperello

OBSERVATIONS:

1. THE PEOPLE

GATHERING AROUND/ENCIRCLING SEEMS TO BE A VERY CHINESE CHARACTERISTIC. BE IT IN THE ACT OF :

EATING -- PEOPLE GATHERED AROUND A ROUND TABLE
TALKING -- PEOPLE GATHERED AROUND IN A CIRCLE.
SPECTATING -- PEOPLE GATHERED AROUND AN ACTIVITY

THE CIRCULAR FORM OR ENCLOSING FORM BECOMES INHERENT IN THE CULTURE.

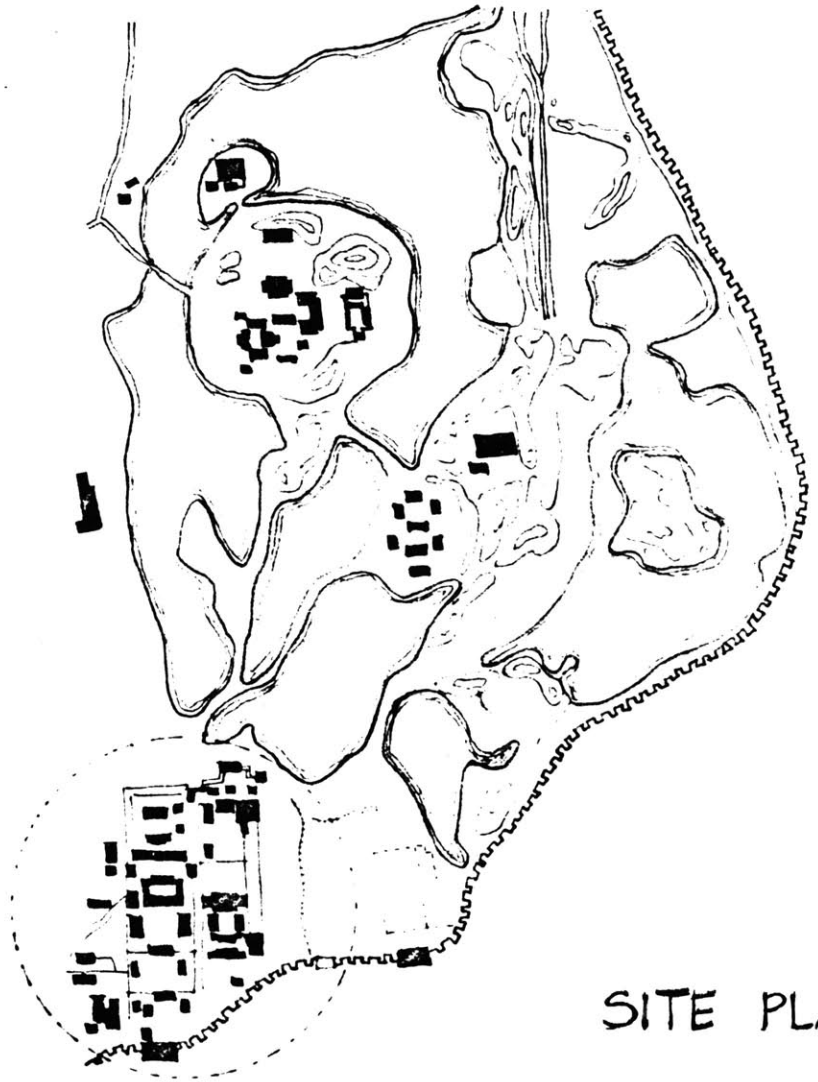
2. THE ARCHITECTURE

A). FORMS GENERATED ARE REFLECTIVE OF THE CULTURE AT THE DIFFERENT SCALES -- SITE
BUILDING
ROOM
PERSON

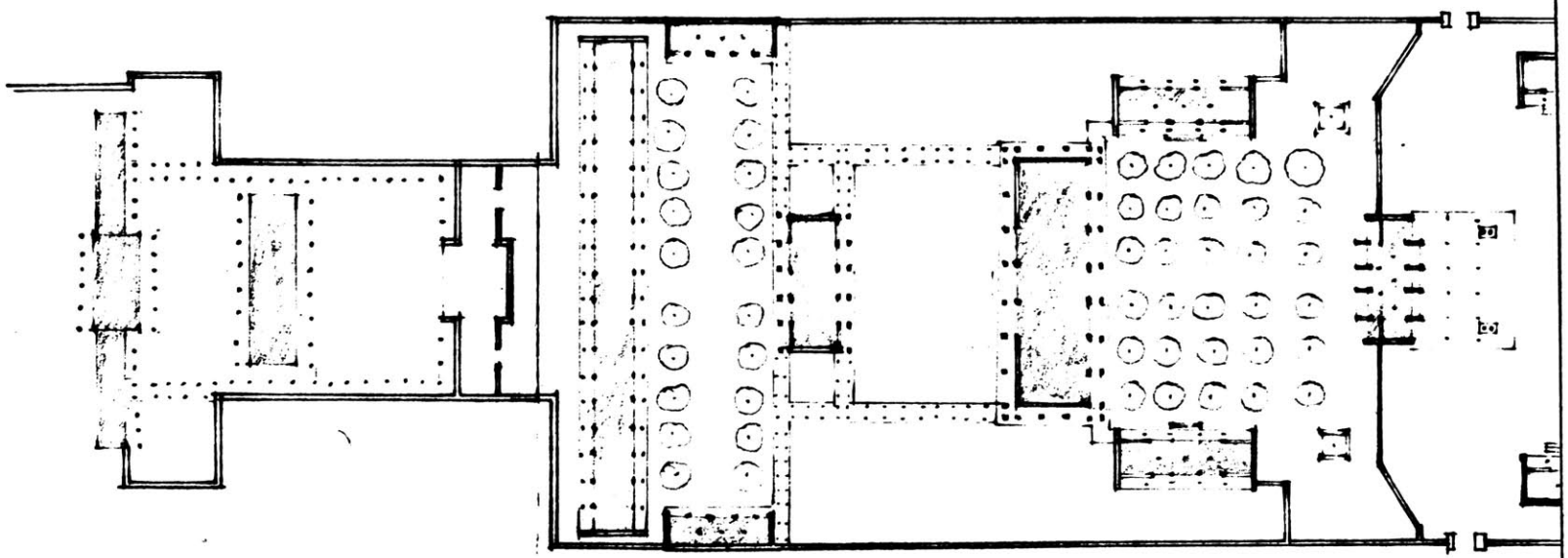
B). ORGANIZATION ACCORDING TO HIERARCHICAL STRUCTURE OPERATING AT DIFFERENT LEVELS -- SPATIAL ORGANIZATION
BUILDING METHOD

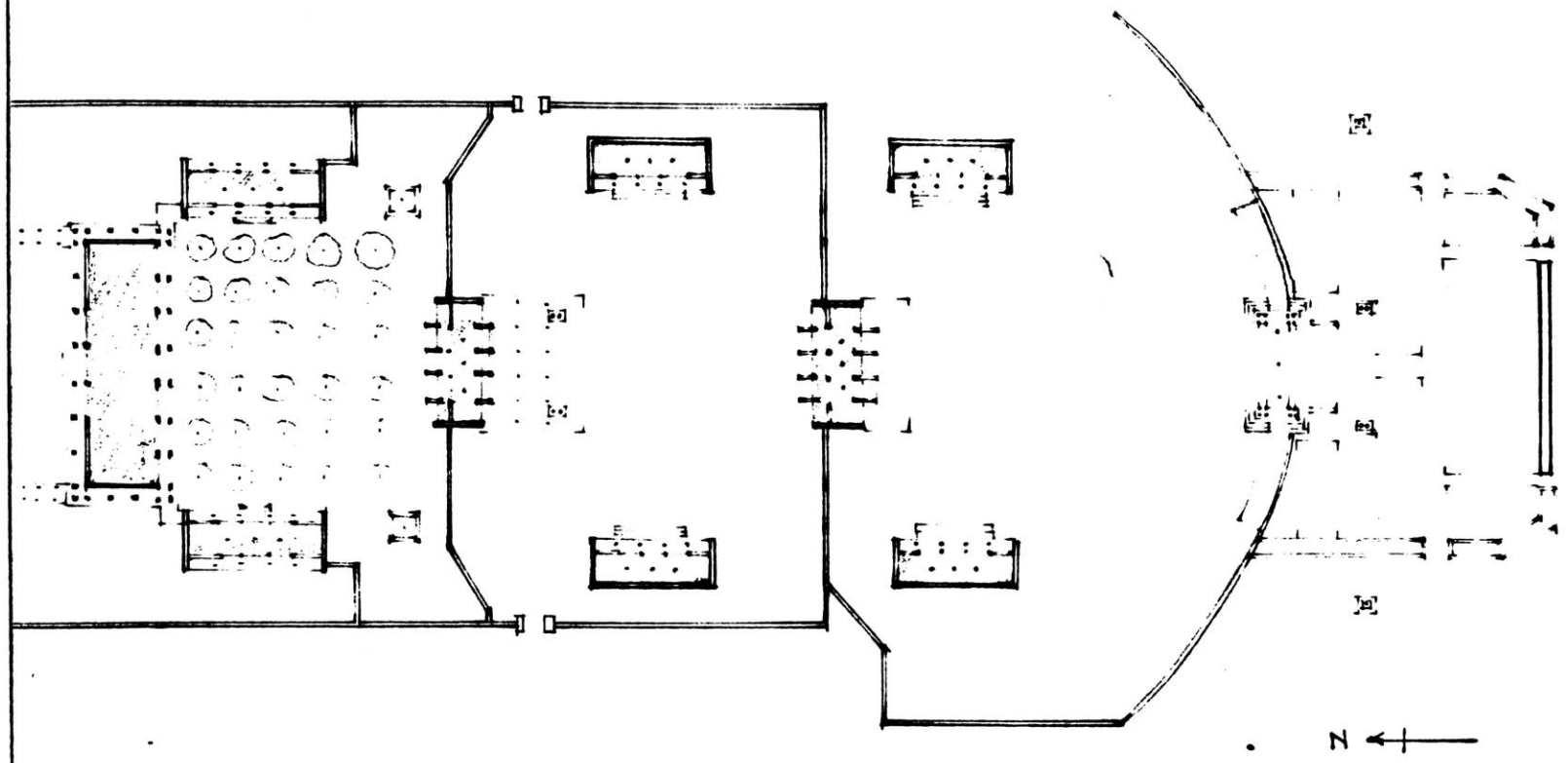
C). MADE THROUGH A PROCESS OF ADDITION

PAMELA G. CHANG SING

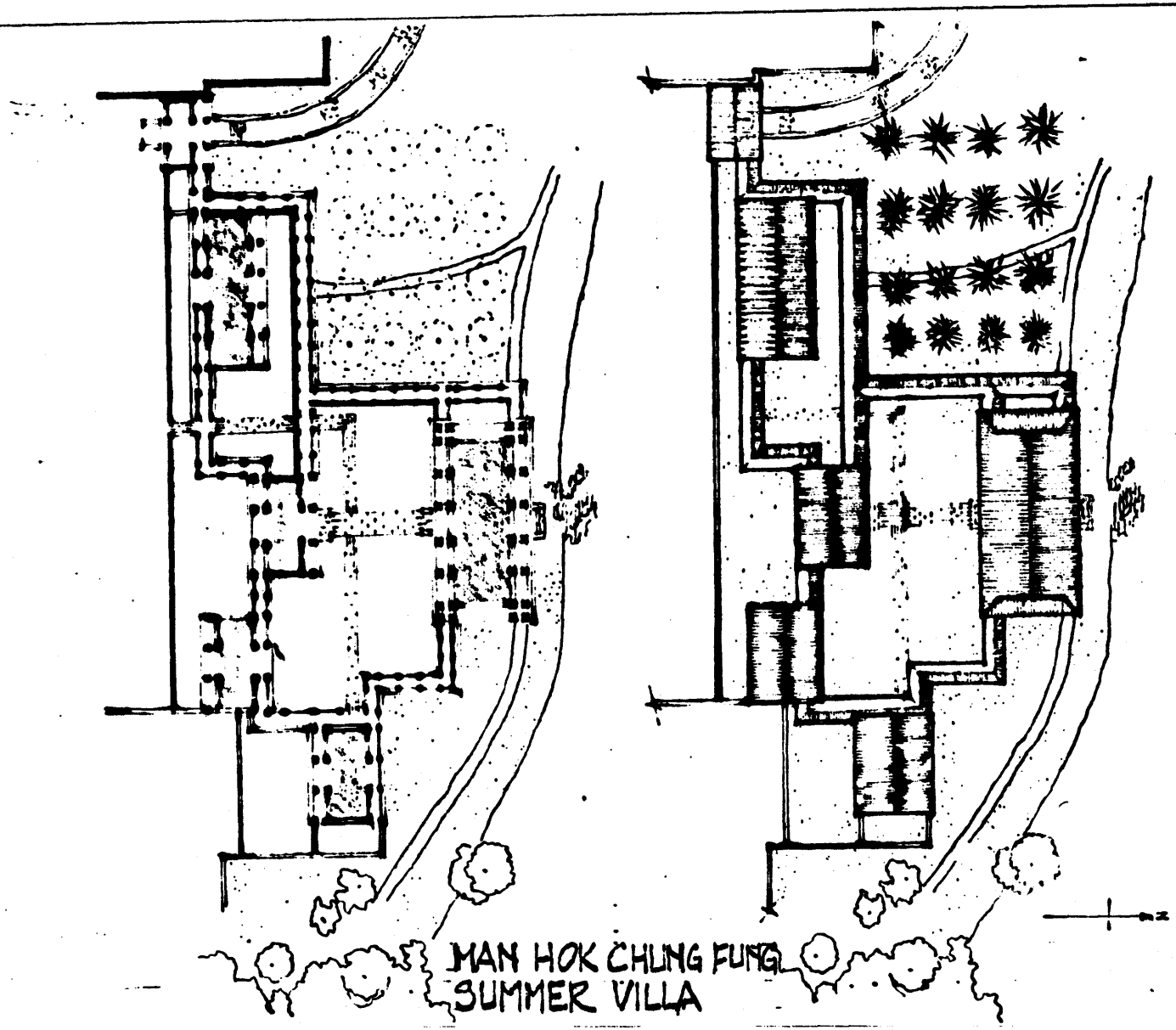


SITE PLAN

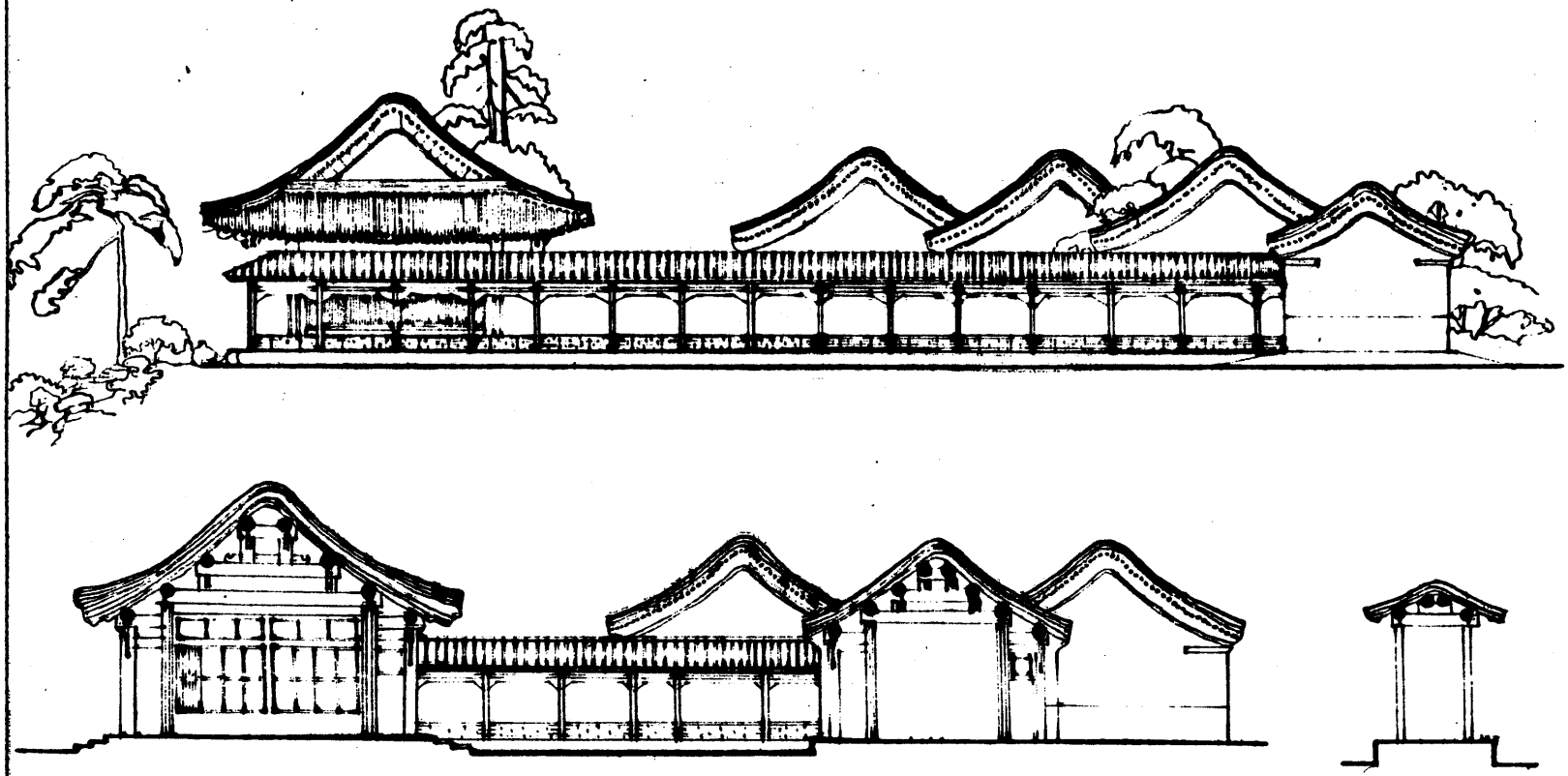




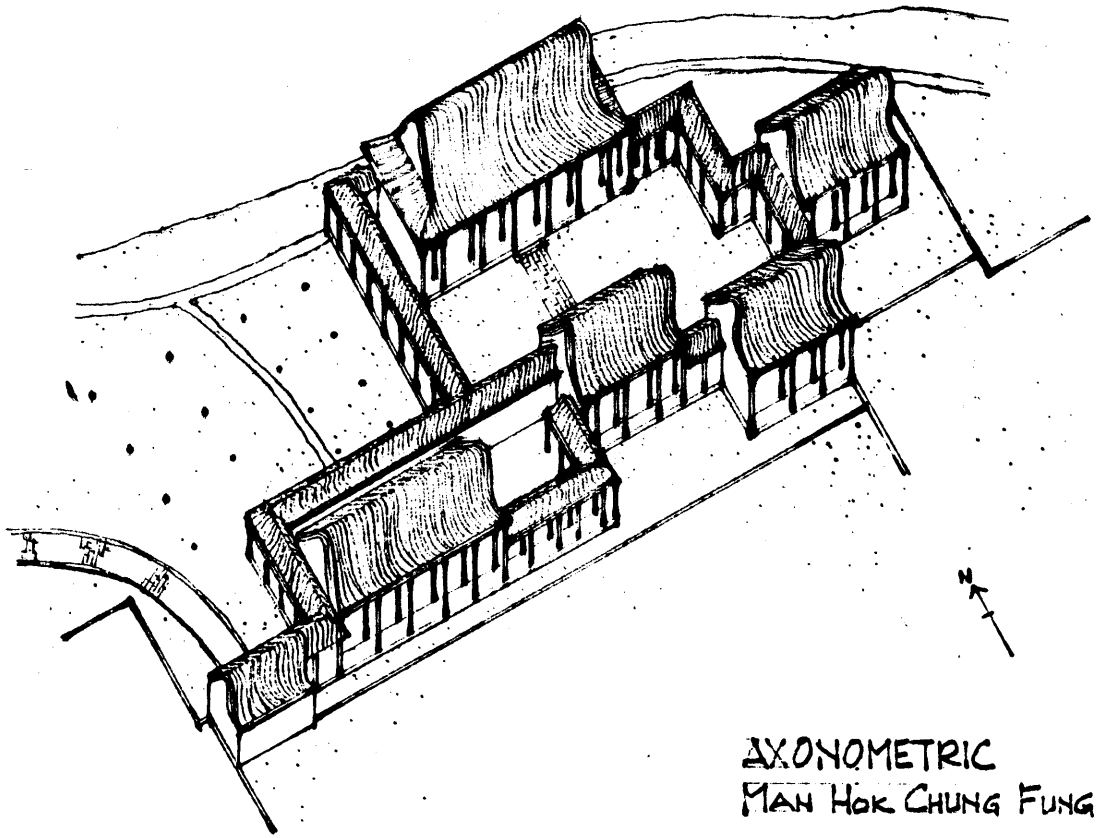
FLOOR PLAN OF
MAIN PALACE, SUMMER VILLA,
CHENG-DE, CHINA



MAN HOK CHUNG FUNG
SUMMER VILLA



SECTION
MAN HOK CHUNG FUNG

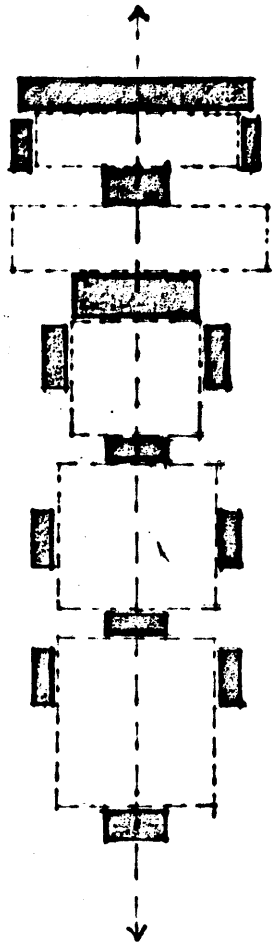


AXONOMETRIC
MAN HOK CHUNG FUNG

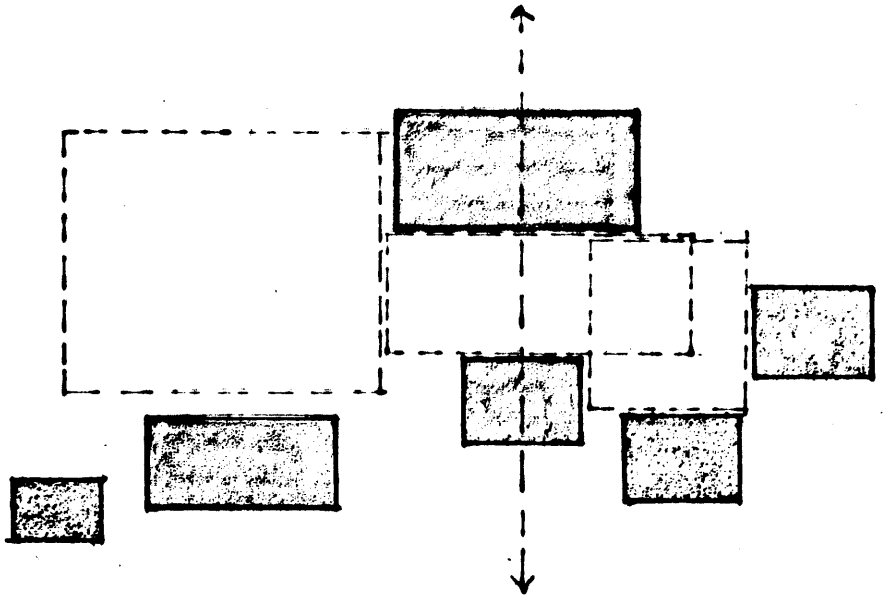
A. BUILT FORM

- SITE SIZE:

- OUTDOOR ROOM, COURTYARD CREATED BY SITING BLDG AROUND OPEN SPACE = ENCLOSURE COMPLETED BY GARDEN WALL
- COMPLEX CREATED BY ADDING SERIES OF COURTYARDS
- ORGANIZED THROUGH AXIS.

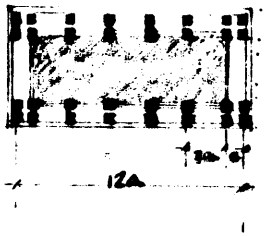


MAIN PALACE

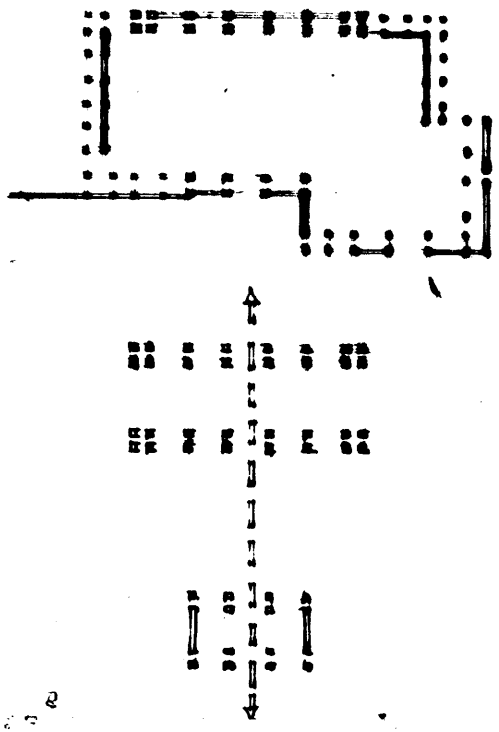


"MAN HOK CHUNG FUNG"

50 — BUILDING SIZE, ROOM SIZE



INDOOR ROOM DEFINED BY AGGREGATION OF COLUMNS. LARGER DIMENSION OF BLDG, ROOM CREATED BY ADDITION OF STRUCTURAL BAY SIZE
DIMENSIONS GENERATED BY NATURE, PROPERTIES OF BUILDING MATERIAL (WOOD).

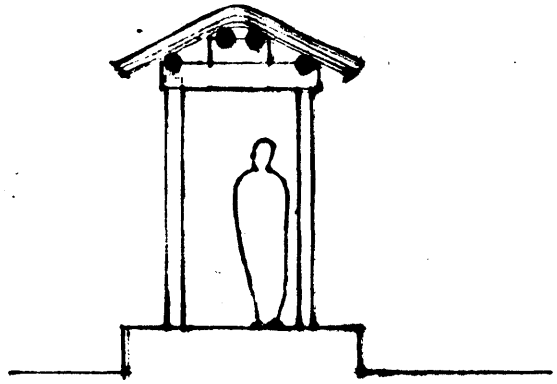


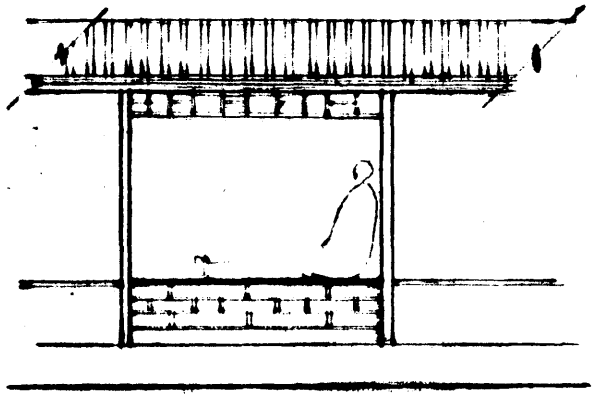
OUTDOOR ROOM DEFINED BY
1. BLDG. VOLUMES — MASSING
2. BLDG. PRIMARY STRUCTURAL SYSTEM — ROUND COLUMNS
3. ARCADE STRUCTURAL SYSTEM (SECONDARY) — WOOD POSTS
4. INFILL — SCREENS, BLDG. CLOSURE

PLACE-MAKING THROUGH INTENSIFICATION OF EDGE

PRIMARY STRUCTURAL SYSTEM BUILDS UP DIRECTION OF N-S AXIS.
SECONDARY SYSTEM CAN BE FREER, MORE SPONTANEOUS

PERSON SIZE





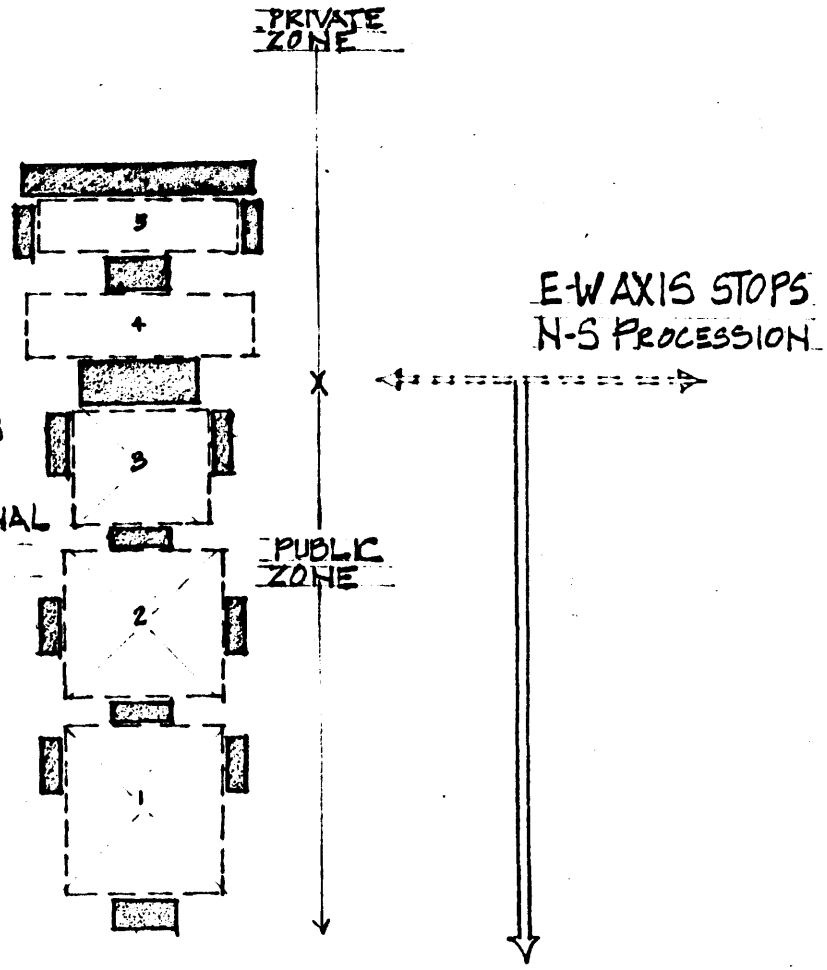
PERSON SIZE DIMENSIONS OCCUR ON EDGE OF SPACE

- CIRCULATION DIMENSION
- SITTING/STOPPING DIMENSION.

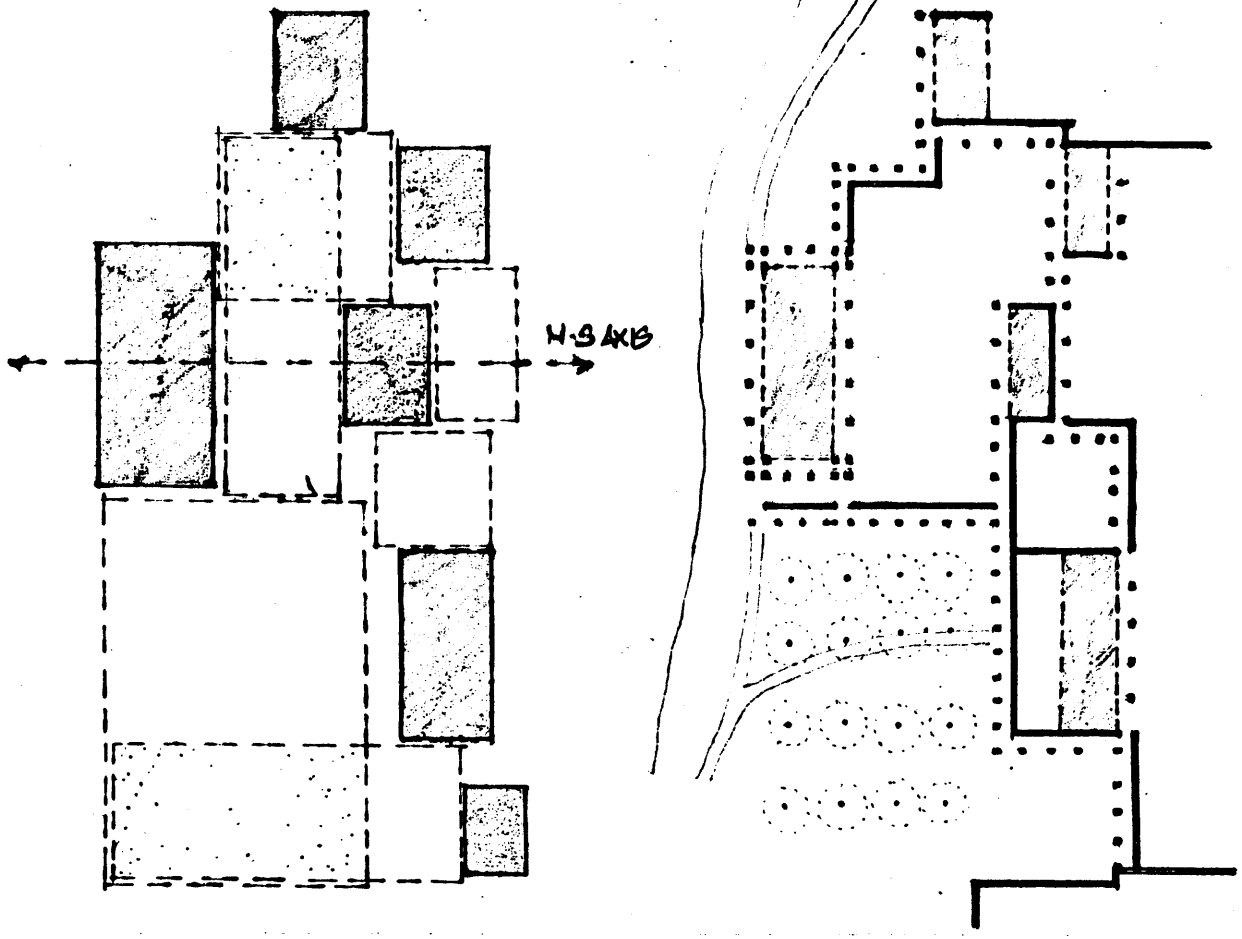
B. ORGANIZATION

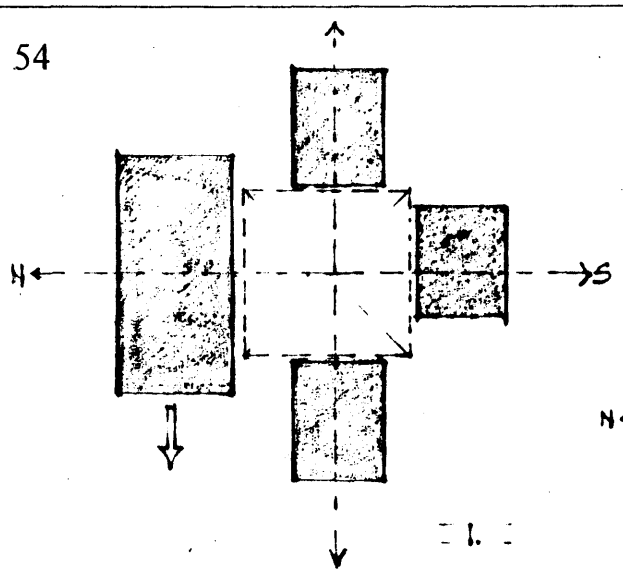
SPATIAL ORGANIZATION
- AXIAL
- PROCESSIONAL
- EXPERIENCE – LINEAR
- STRONG SYMMETRY

PROPORTION OF "PUBLIC" COURTYARDS IS ROUGHLY SQUARE –
NATURE OF SQUARE IS NON-DIRECTIONAL
NATURE OF COURTYARD IS STABILITY

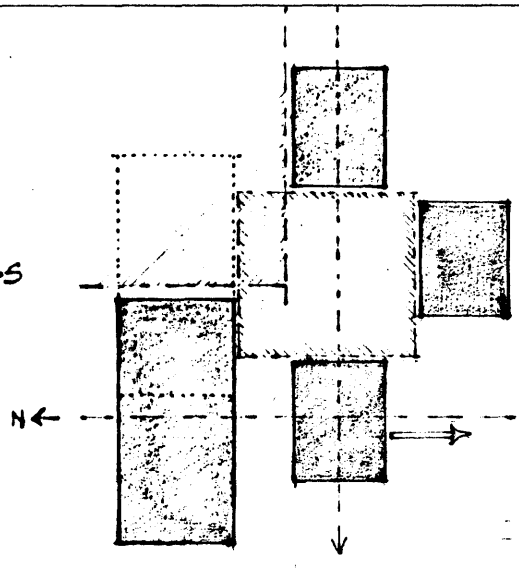


- AXIS MAINTAINED
- SPATIAL OVERLAP INTRODUCED
- NON-PROCESSIONAL
- EXPERIENCE - NON-LINEAR



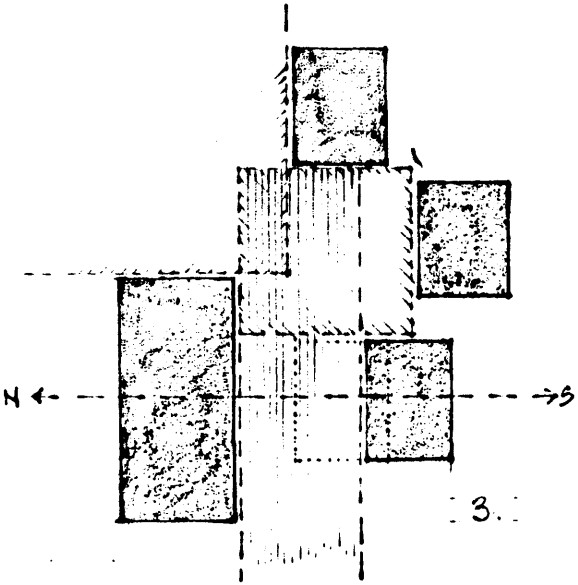


1.

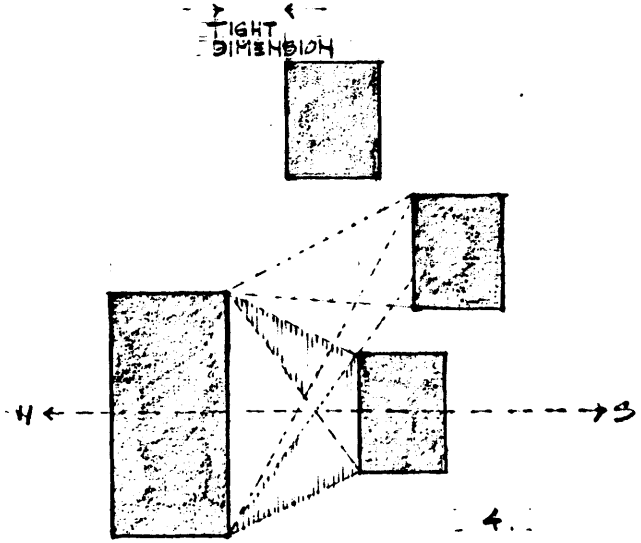


2.

EIGHT DIMENSION



3.

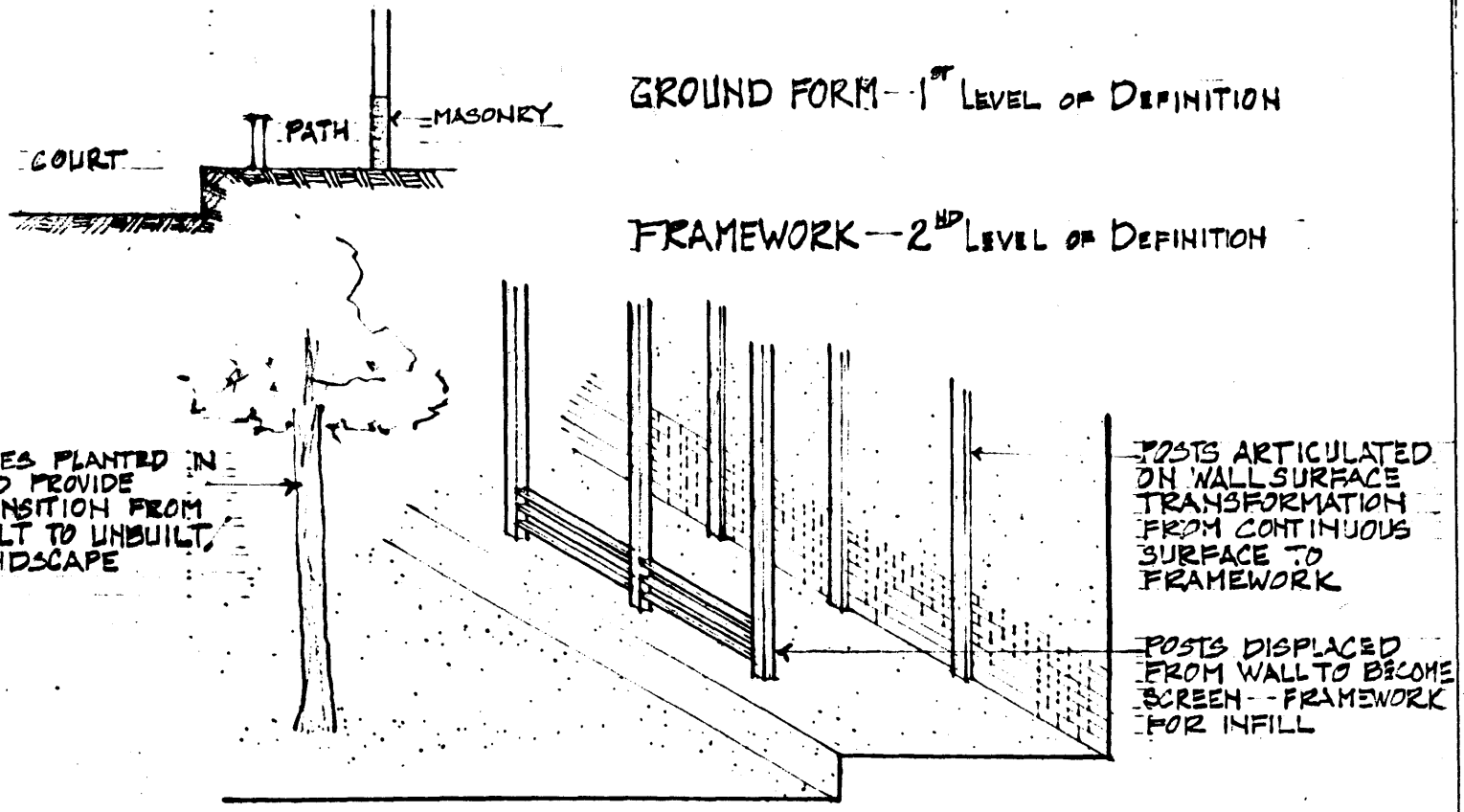


4.

BUILDING BLOCKS SHIFTED — INCREASE IN COMPLEXITY AND RICHNESS OF :
--OUTDOOR SPACE
--BLDG. RELATIONSHIPS
--EXPERIENCE OF PATH

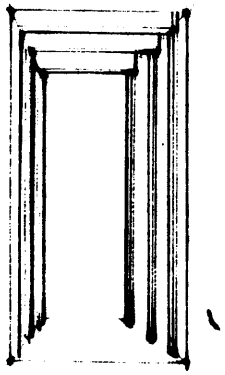
BUILDING METHOD

- CLEAR DISTINCTION BETWEEN TOP/MIDDLE, BOTTOM
  - ROOF/FRAMEWORK, GROUND FORM
- CLARITY BETWEEN STRUCTURAL AND INFILL ELEMENTS.

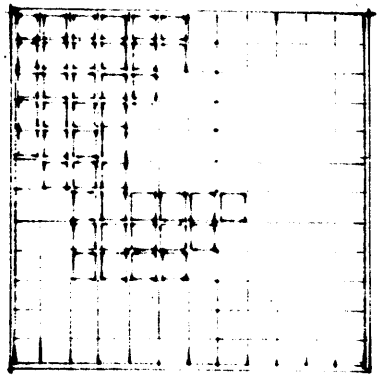


ROOF/SHELTER/TOP -- 3ED LEVEL OF DEFINITION

ANALOGY — TREE : ROOTS = FOUNDATION
TRUNK = FRAMEWORK
FOLIAGE = ROOF.

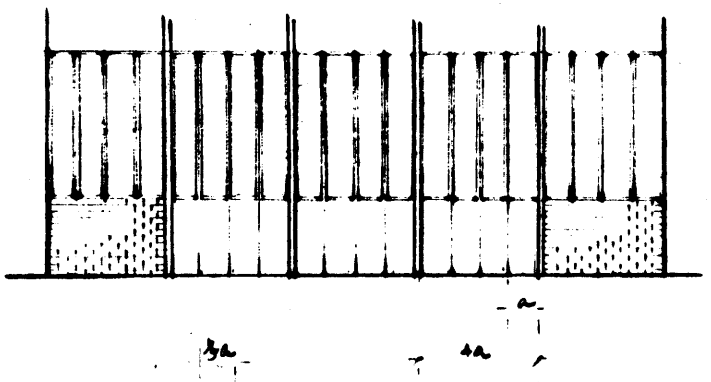


CEILING REINFORCES DIRECTION OF MOVEMENT -- EXPOSED BEAMS AND RAFTERS BUILD DIRECTION

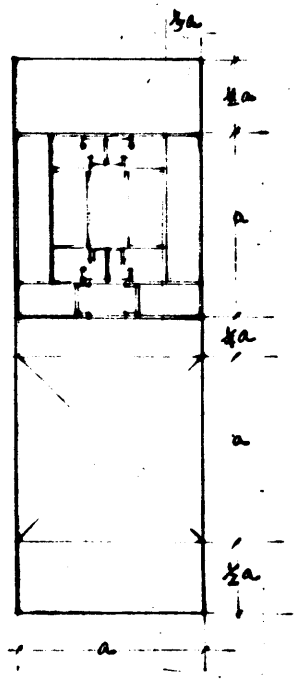


CEILING REINFORCES SENSE OF PLACE -- TWO-WAY SYSTEM/ GRID/SQUARE "STOPS."

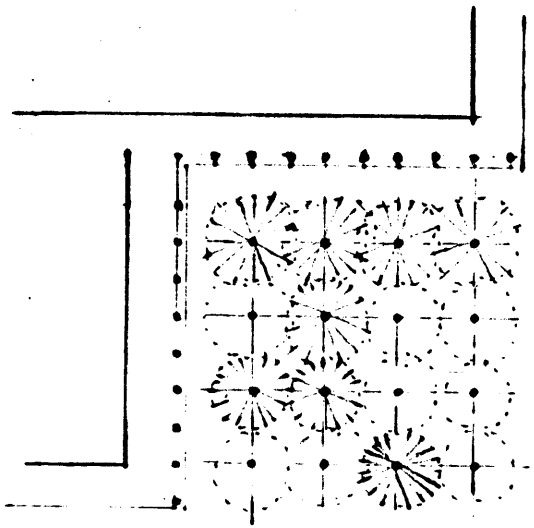
INFILL, SCREENS — 4TH LEVEL OF DEFINITION



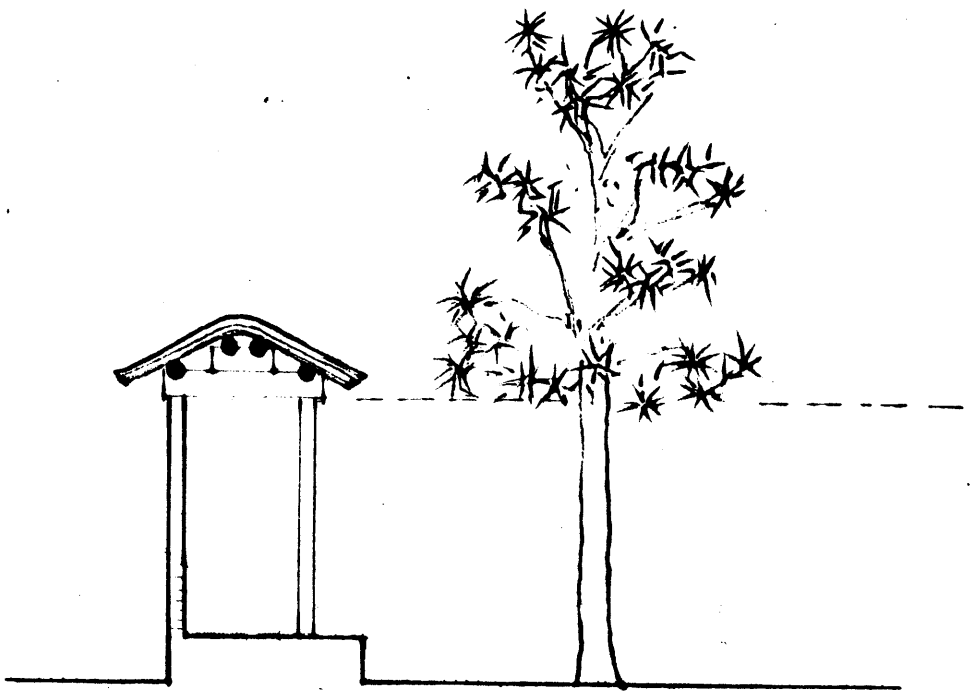
PRIMARY STRUCTURE ESTABLISHES FRAMEWORK -- BAY SIZE
INFILL DIMENSION GENERATED THROUGH HARMONIC DIVISION OF PRIMARY BAY.
PROCESS OF ADDITION.



INDIVIDUAL SCREEN IS BUILT OF SMALLER PIECES, DIMENSION OF WHICH IS HARMONIC DIVISION OF SCREEN SIZE.



TREES PLANTED IN GRID PATTERN REINFORCES SENSE OF PLACE -- NON-DIRECTIONAL IN HORIZONTAL PLANE



FOLIAGE TRIMMED TO LEVEL OF EAVE TO PROVIDE CONTINUITY FROM BUILT TO UNBUILT

From the Imperial palaces, temples and tombs in Beijing to the palaces and temples in Cheng-de, the villages in Tai An and Che-Fu, the mansion, tomb and temple of Confucious, the climb up Tai Shan, the earth dwellings in Sian, the gardens and canals in Suzhou, the West Lake in Hangzhou and the old streets of Shanghai, I was left quite breathless at what I had seen, walked through and experienced. Here was an architecture that was so widely ranging and yet so consistent, so consistently Chinese.

It was neither the massive roofs with broad sweeping curves that made it nor the bright colours of yellows, reds, greens and blues (that we see so fakely replicated to herald entry into some Chinese restaurant in downtown U.S.A.). It was an order generated by a culture that had evolved slowly over

time. Each piece had meaning; each space had purpose. Together they had reason, dignity, beauty and strength but, dismantled, all strength would be lost. Each piece in and of itself could be termed an excellent piece of art but only when together could they be called architecture. For the individual piece derived its meaning only through its existence in the whole.

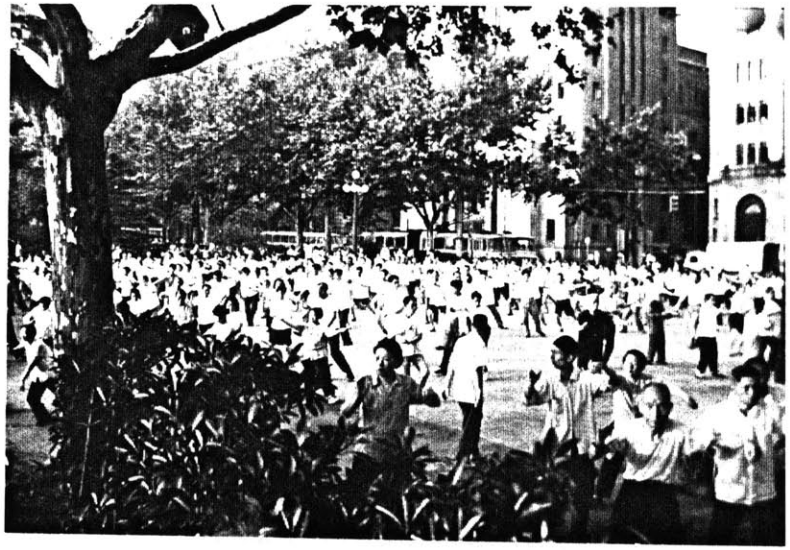
The architecture is like a symphony where the importance lies not in the sound of each individual instrument but in the mood and rhythm that they all join to create. Be it in the rhythm of a dwelling, a garden, a temple, a tomb or a palace, moods are created that communicate to us the attitudes of a people towards family and country, towards life and death, towards that which is natural and that which is man-made, towards Heaven and Earth, towars the

sovereign ruler and those ruled, towards inside and outside. The architecture is beautiful because it tells the story of the Chinese people.

I decided that in order to begin to understand how all this came to be I needed to look at a few examples in greater depth. The main palace at Cheng-de was one because I had studied it briefly before; the Imperial Palace (Gugong) and Temple of Heaven complex in Beijing because they are significant pieces of Chinese architecture; and the Liu Garden in Suzhou because it is from the other extreme of the spectrum and simply because I enjoyed being there very much.

What I have learnt from the analyses are manyfold. Though I realize how dangerous generalizations can be, as one can never be sure of how representative a small sample from a large sea

of examples is I will have to take the risk. May the reader accept the limitations of the study for what it is - an exploration of a process of observing - or hopes to be - a search for the principle(s) that make traditional Chinese Architecture original.



The Chinese call themselves "people of the Middle Kingdom" - 中國人 (Chung Kuo Jen). The third character 人 (jen) means 'person'. It is a simplified picture/diagram of a person with two legs. The first character 中 (chung) means 'middle'. It describes the situation or location by drawing the vertical line down the centre of the rectangle.

What is interesting about the Chinese written language is that it has evolved from a very visually-oriented system of communication. Each character was initially generated by a pictorial representation of the object described. The second character 國 (kuo) means 'kingdom' in the above translation. Its more general meaning is 'country'. The character is a drawing of what the Chinese felt 'country' meant. The significant part of the

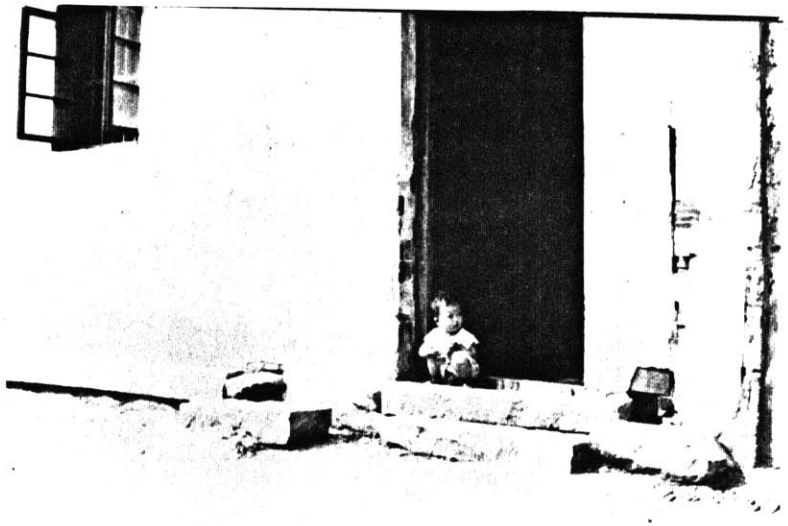
character is the enclosing line  which, if we let our imagination go a little, is the enclosing wall that defines the boundaries of the territory that belongs to a people. If we go a little furtner and insert in the four cardinal directions with the top of the page being north, the lower part being south, right being east and left being west, we realize that the definition made by the line is actually a response to the strategic location of China in the Asian continent. Protective walls are needed towards the north to ward off invasions from the barbaric tribes as well as the cold and dusty winds from the deserts to the north-west of China. The territories to the south are associated with fertile soils and the warmth of the sun. Entry into the 'enclosure' is from the south and in this diagram is closed off with a line ( ).

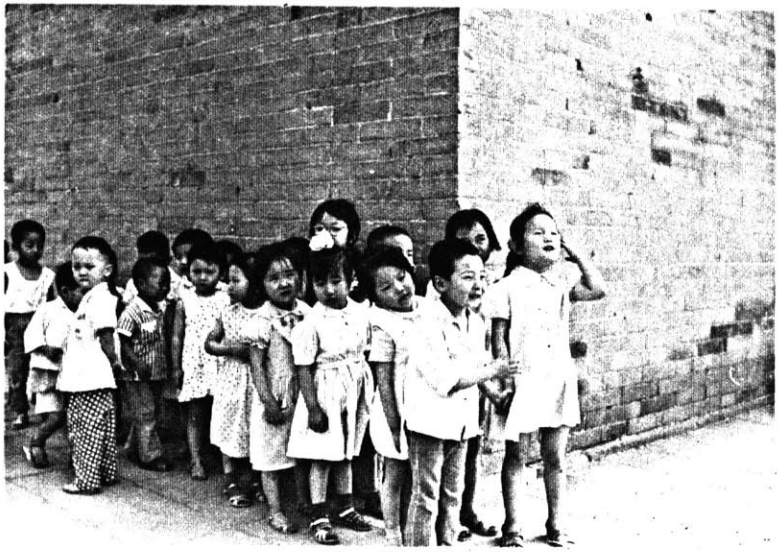
It is of interest to note that when China was unified for the first time in its history under Qin Shih Huang Ti (First Emperor of the Qin Dynasty) in 221 B.C. the building of this diagram took place in the form of the Great Wall of China, a gesture to protect the northern frontier and a monument to the unification and 'enclosure' of the country.

The diagram of enclosure did not stop at the scale of the country. It was carried through down the different scales. Cities had walls around them, as did smaller towns, compounds, and dwellings for, unlike the popular image of the peaceful Chinese, "China had a long military tradition."[13] Walls, it seemed, were looked upon as protective barriers from the outside and were used to define territory and protect private property. Inside the walls, in contrast to the troubled world outside, sanctuaries

were created that provided its occupants with a feeling of peace and stability.

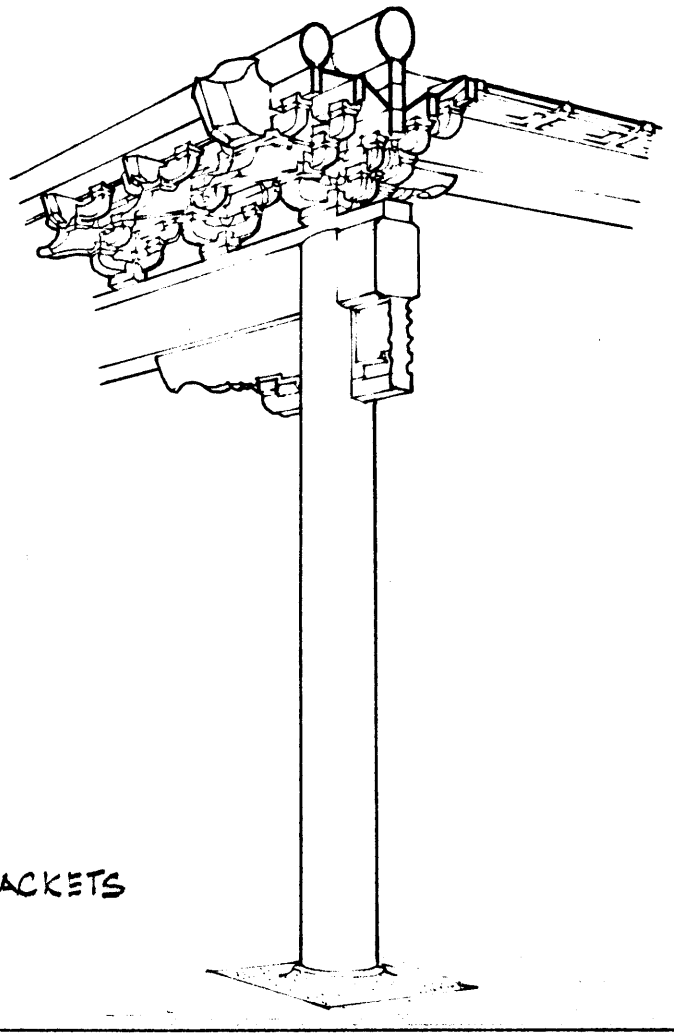
INSIDE THE WALL





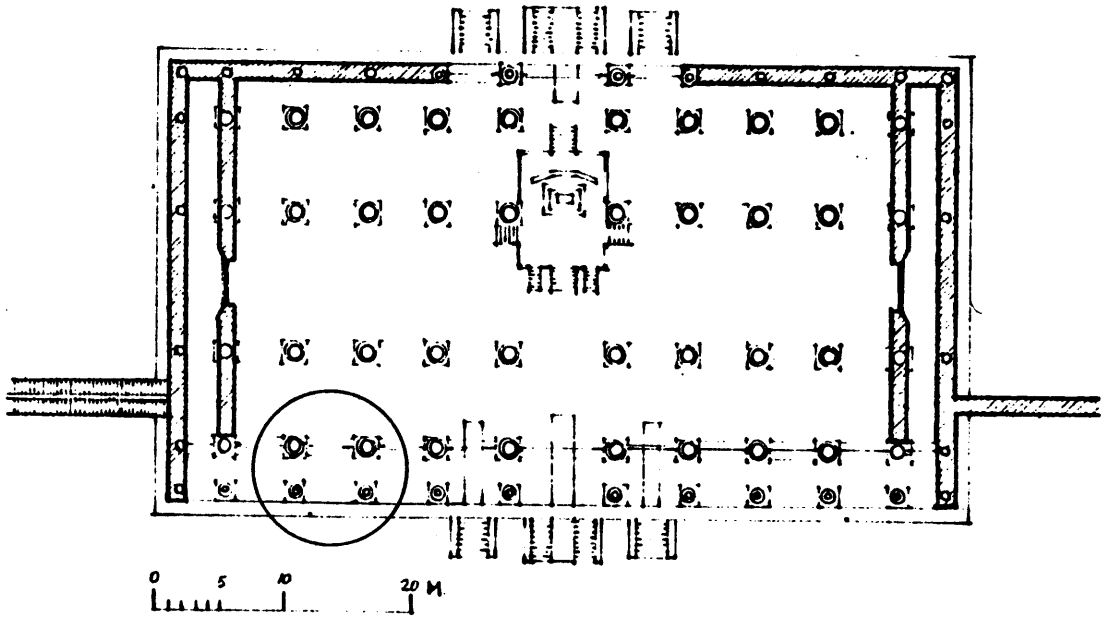
THE ARCHITECTURE

IS MADE THROUGH A PROCESS OF ADDITION
FROM THE SMALLEST STRUCTURAL DETAIL
TO THE TOTAL COMPOSITION OF THE SITE....

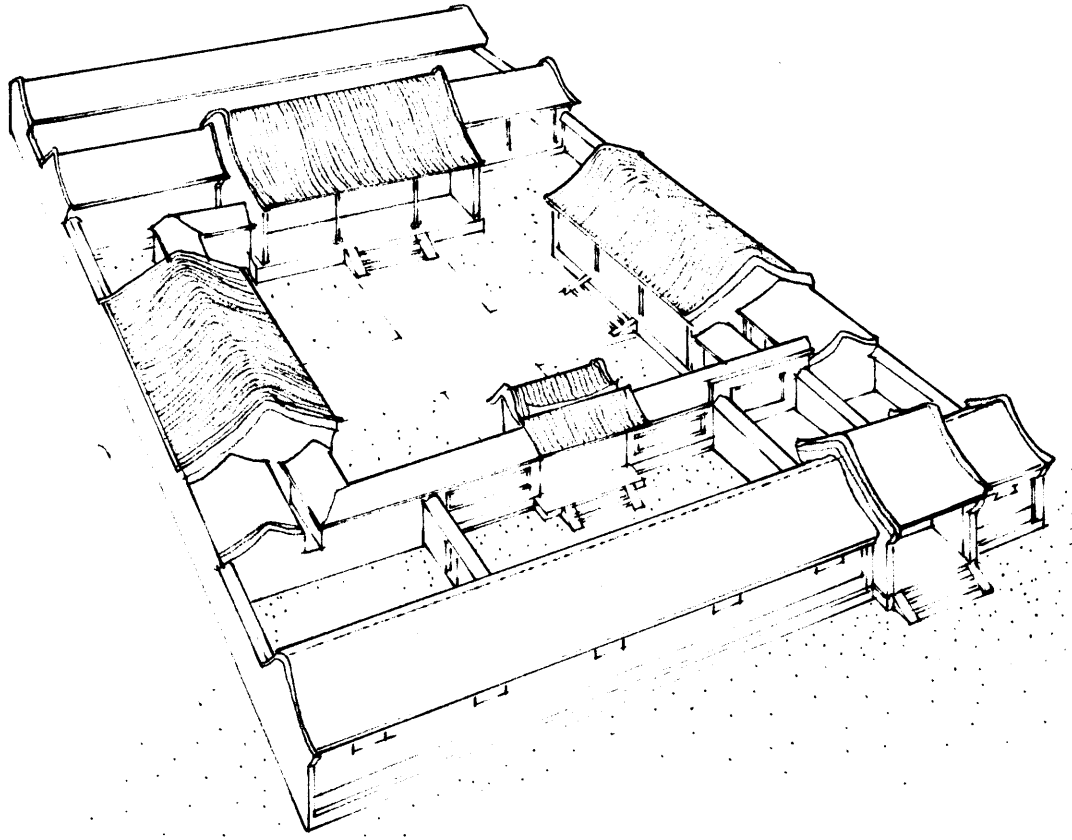


THE COLUMN — AN ADDITION OF

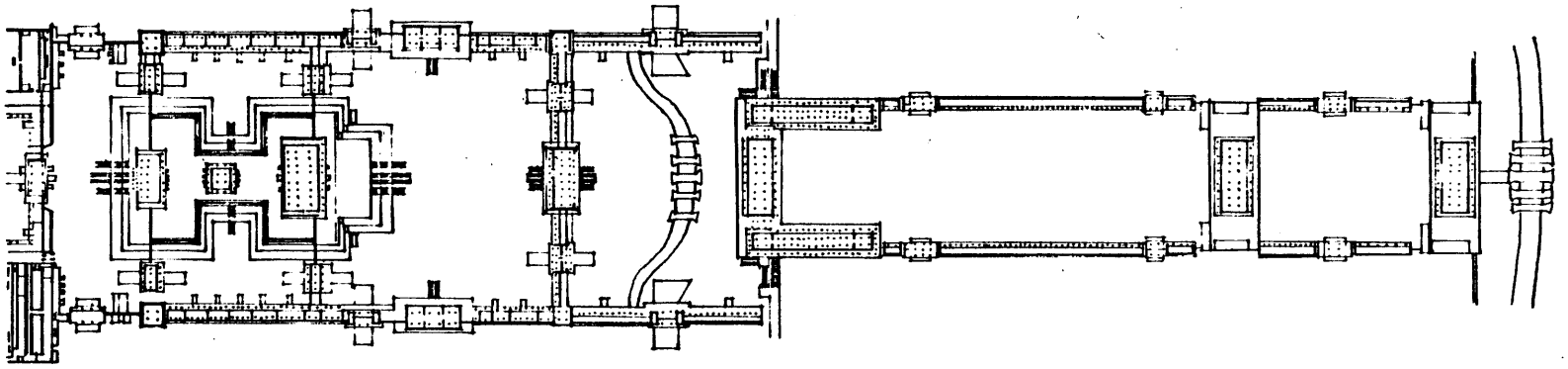
- CAPITAL -- ADDITION OF BRACKETS
- SHAFT
- BASE



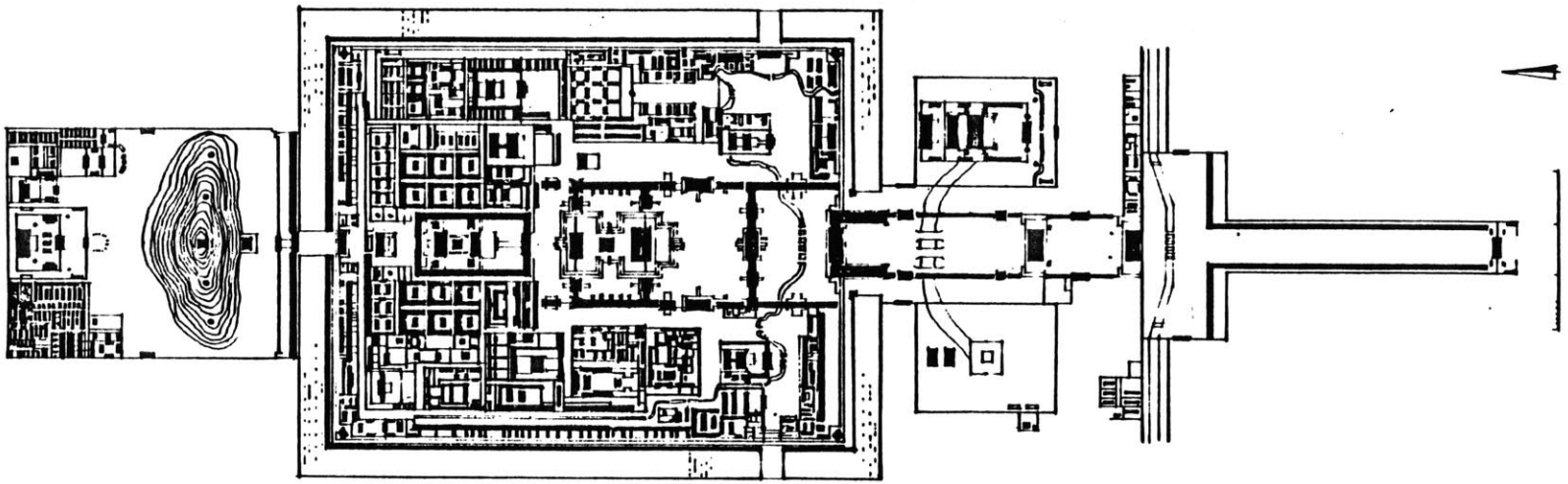
THE BAY — AN ADDITION OF COLUMNS
THE BUILDING — AN ADDITION OF BAYS



THE COURT — AN ADDITION OF BUILDINGS



THE COMPLEX -- AN ADDITION OF COURTS



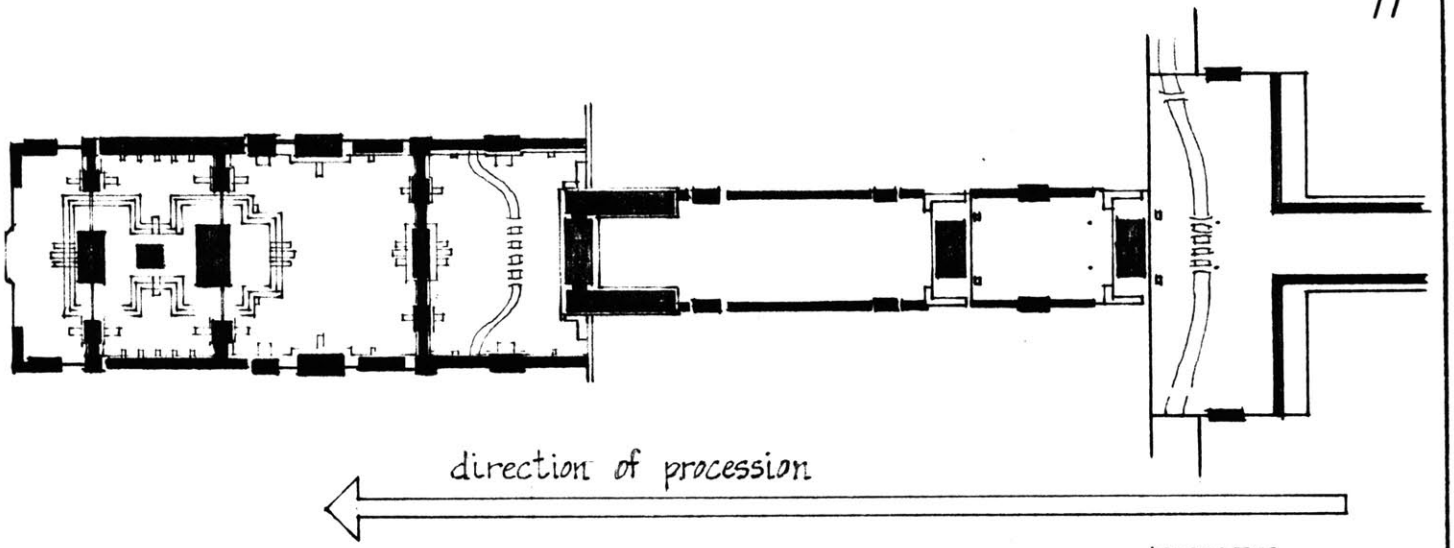
THE COMPOSITION -- AN ADDITION OF COMPLEXES

SYSTEM OF SPATIAL ORGANIZATION

THE METHOD OF ORGANIZATION WHICH DETERMINES THE PATTERN BY WHICH THE SPACES ARE ADDED RANGE FROM THE 'FORMAL' TO THE 'INFORMAL'. THE 'THREAD', THOUGH, THAT APPEARS TO LINK THE METHOD OF ORGANIZATION OF THE FOLLOWING PLACES THAT I HAVE ANALYSED IS THAT THE CHINESE SET UP A SYSTEM WHICH THEY FEEL PERTAINS TO WHAT THEY ARE BUILDING AND THEN REPEAT THIS SYSTEM TO BUILD UP THE 'EFFECT'.

PALACE AND TEMPLE ORGANIZATIONS — FORMAL AXIAL ORGANIZATIONS

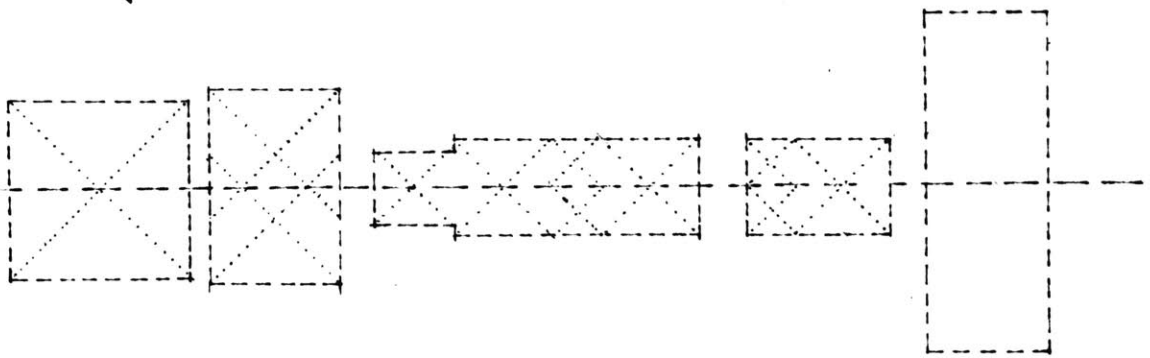
AIM	TO ACCENTUATE THE IMPORTANCE OF THE POSITION OF THE EMPEROR (SON OF HEAVEN) → PALACE OR OF HEAVEN → TEMPLE
METHOD	TO HAVE A LINEAR PROCESSIONAL SEQUENCE OF SPACES THAT BUILD UP TO A CLIMAX
SYSTEM	AN ADDITION OF SPACES ORGANIZED ALONG THE NORTH-SOUTH AXIS THAT ENDS WITH A SPECIAL ARCHITECTURAL ELEMENT.



direction of procession

N-S AXIS

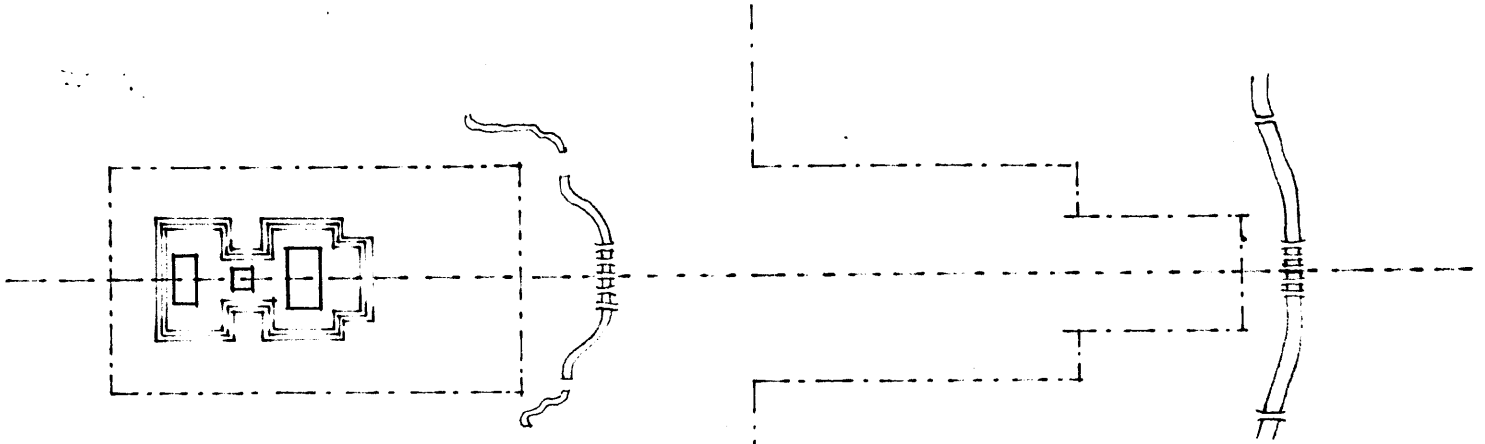
axis of movement



SQUARE

MARKS ARRIVAL AT CLIMAX

note: dimensions of preceeding spaces are related to square, e.g. of system and addition.

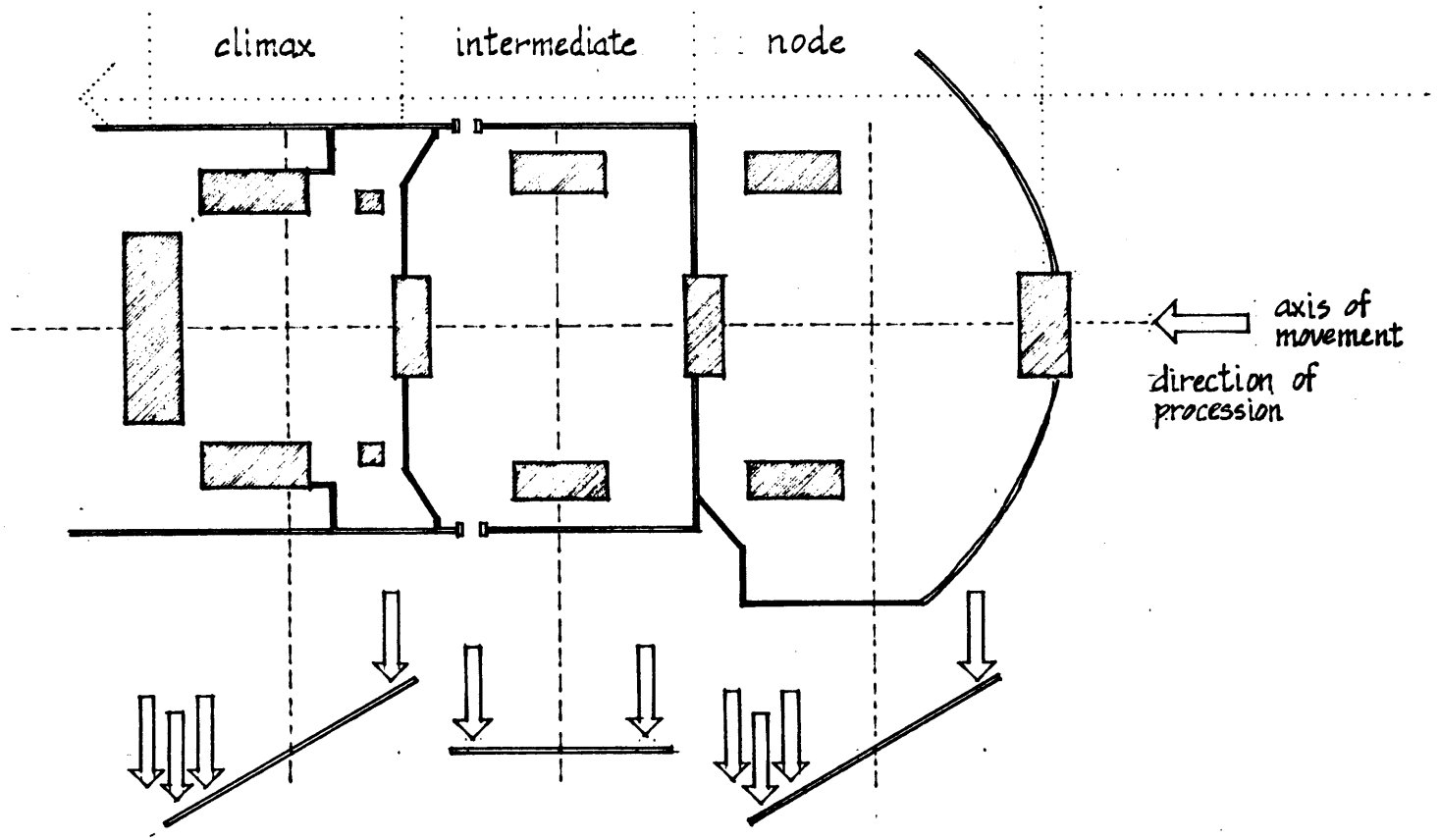


water heralds entry into administrative complex.

water heralds entry into Imperial Palace.

The fluid curve of the water is contrasted against the formal order of the composition.

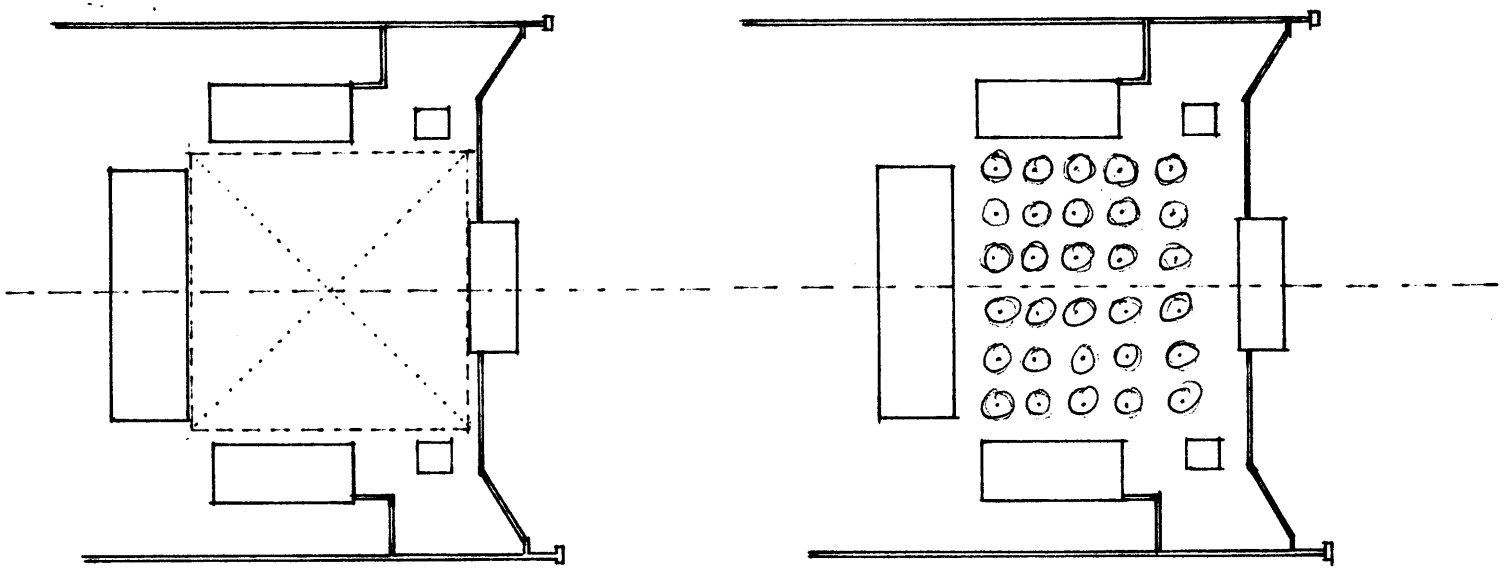
THE THREE HALLS OF HARMOHY ARE RAISED ON A THREE-TIER PLATFORM TO ACCENTUATE THE IMPORTANCE OF THESE THREE BUILDINGS IN THE PALACE COMPLEX AND TO MARK THE END OF THE FORMAL PROCESSIONAL SEQUENCE.



FOCUS THRUSTED ON MOST IMPORTANT BUILDING IN PALACE BY HAVING BUILDINGS CONCENTRATED ON ONE END OF MOMENT ARM.

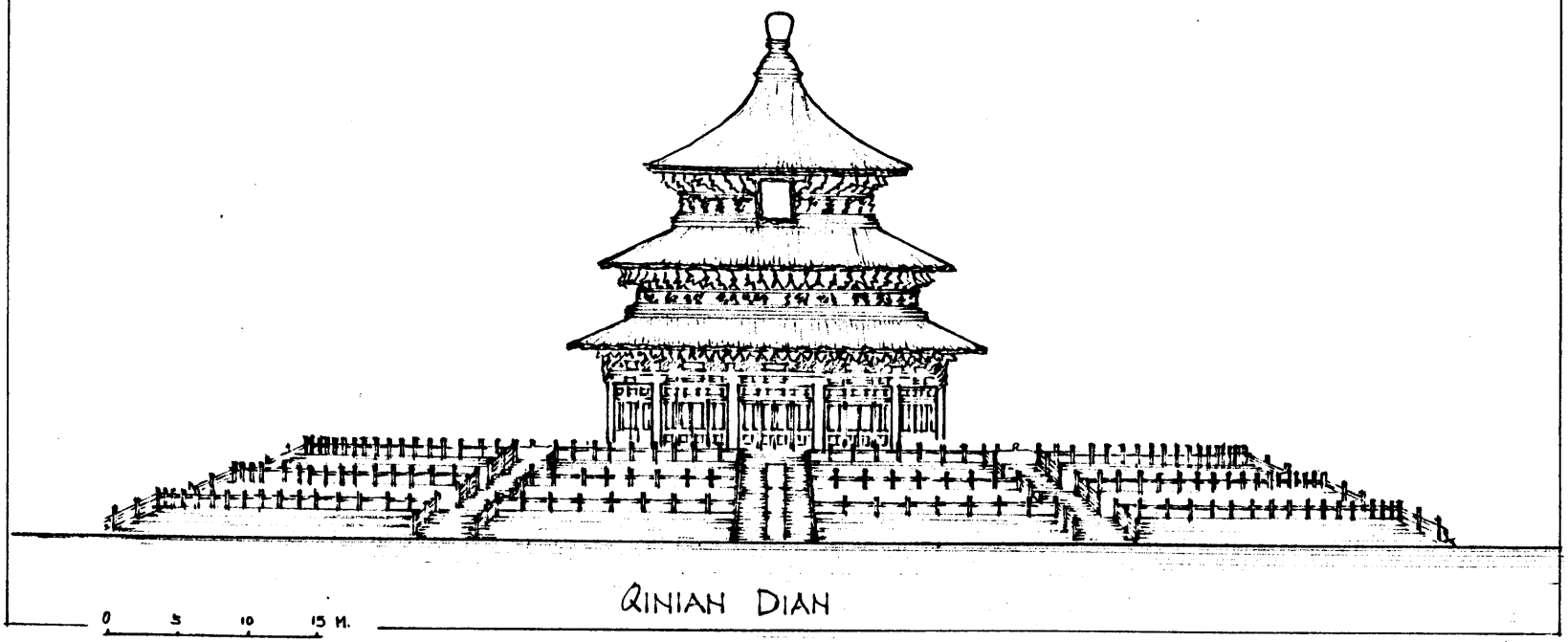
NEUTRAL BREATHING SPACE CREATED BY HAVING BUILDINGS PLACED EQUIDISTANTLY.

THRUST TOWARDS MAIN PALACE CREATED BY HAVING BUILDINGS CONCENTRATED ON ONE END OF MOMENT ARM.

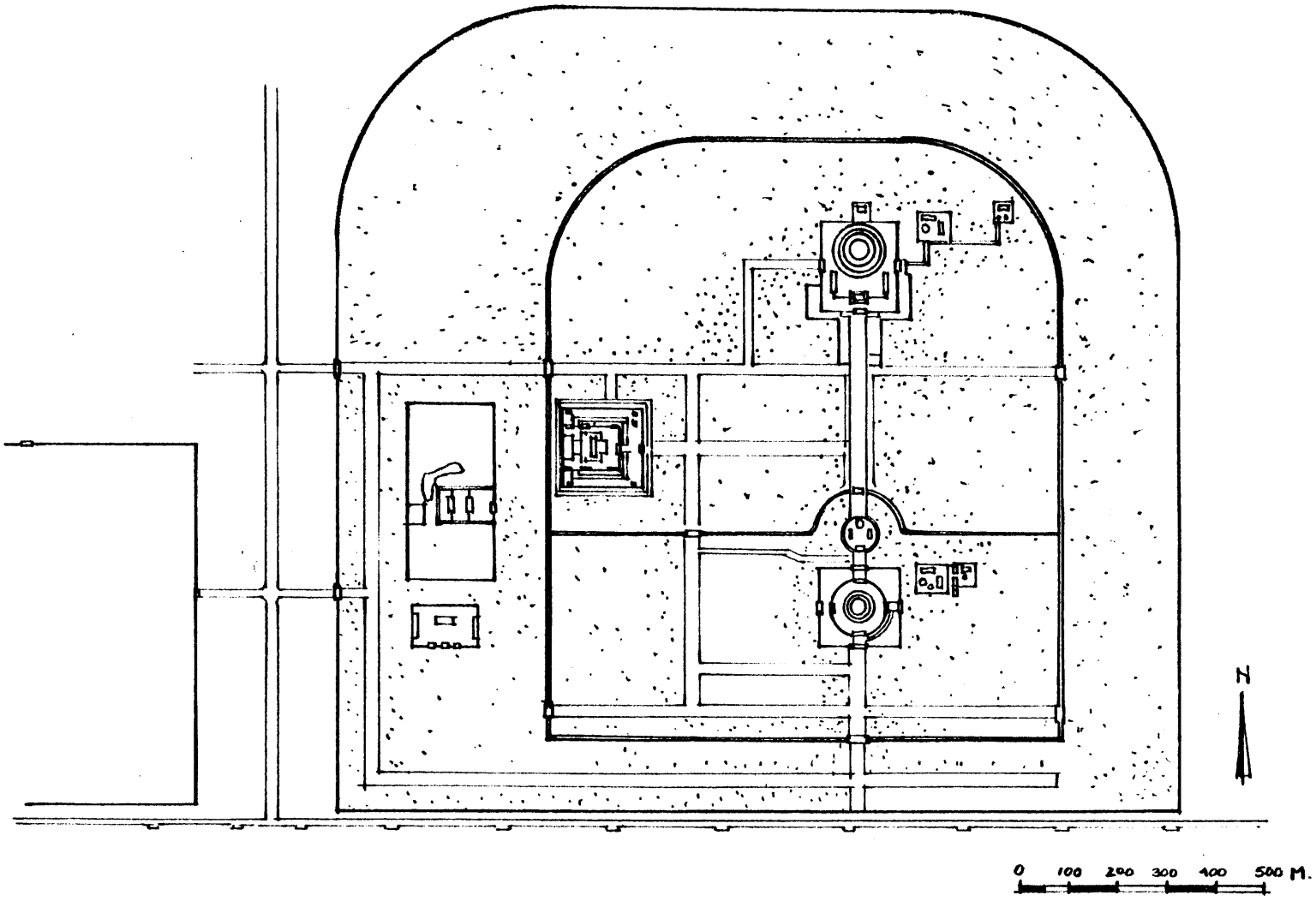


SQUARE
MARKS ARRIVAL AT CLIMAX.

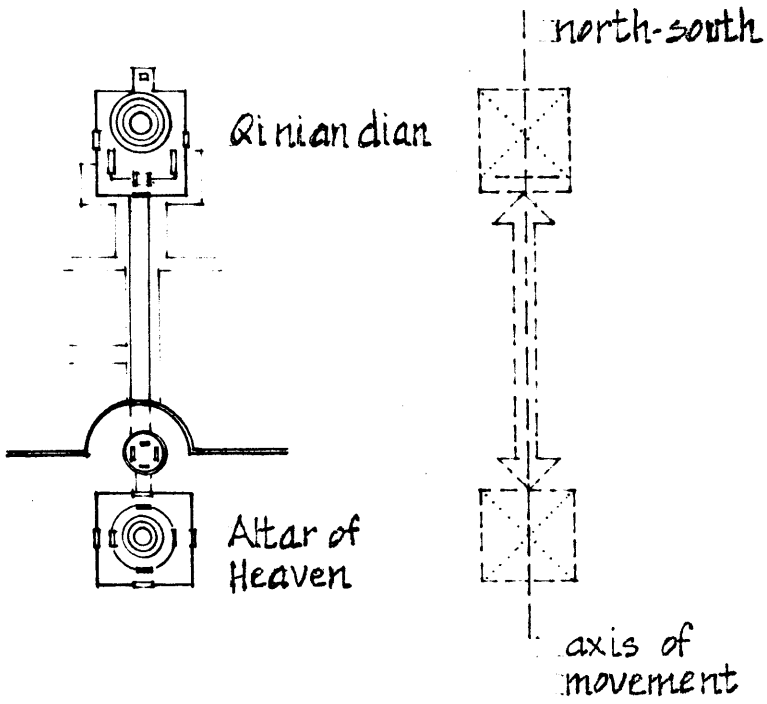
TREES PLANTED IN GRID PATTERN REINFORCE THE 'SQUARE'



QINIAN DIAN



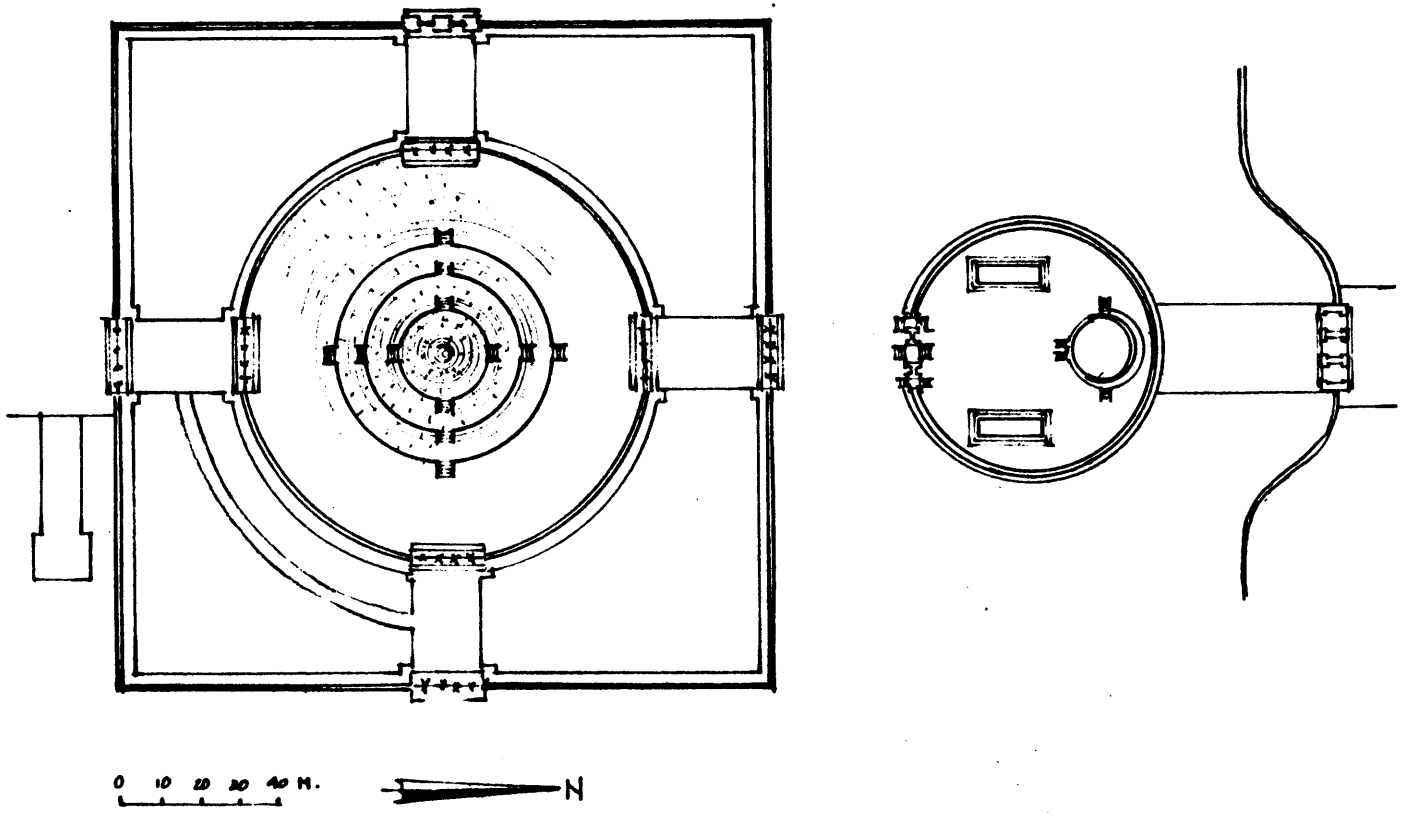
TEMPLE OF HEAVEN



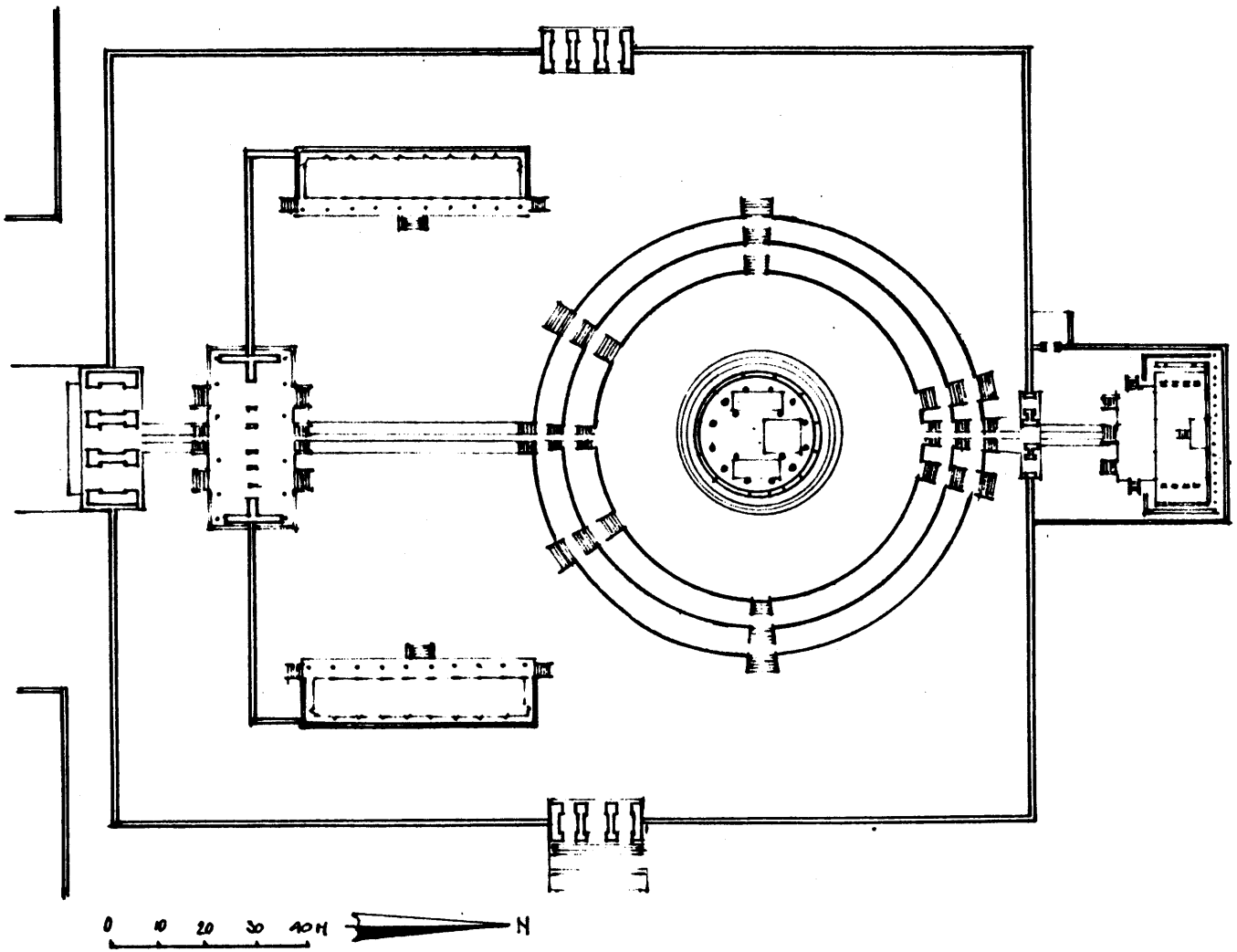
SQUARE MARKS ARRIVAL AT CLIMAX.

In the case of the Temple of Heaven Complex there are two squares. The first square, to the south, defines the Altar of Heaven — a 3-tiered platform that has the 'circle' of the sky for its roof.

The second square, to the north, defines the Qinian dian (Hall for praying for a Good Year) -- a 3-tiered platform with a 3-tiered circular building and built circular roof to symbolize Heaven.



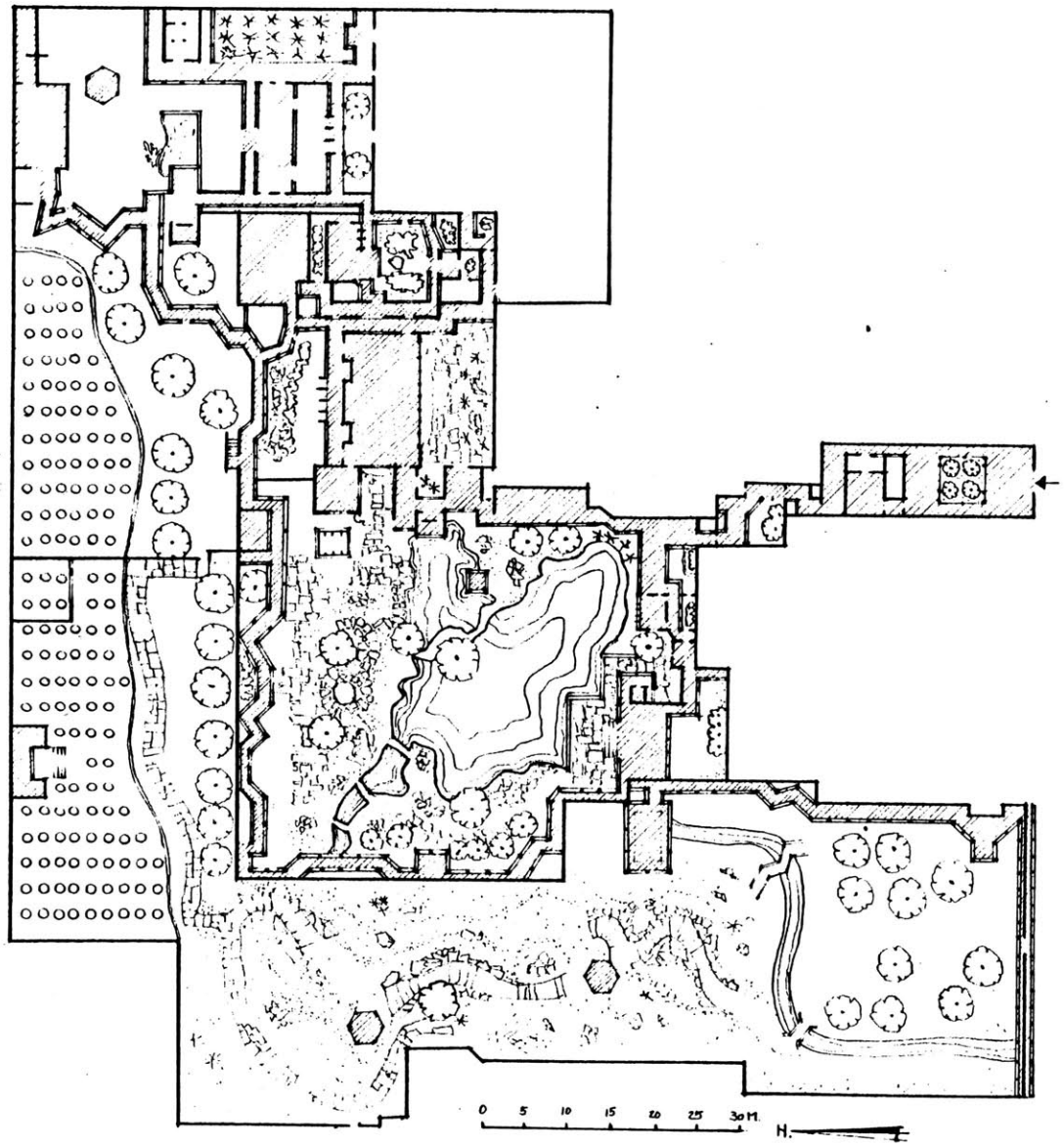
Altar of Heaven



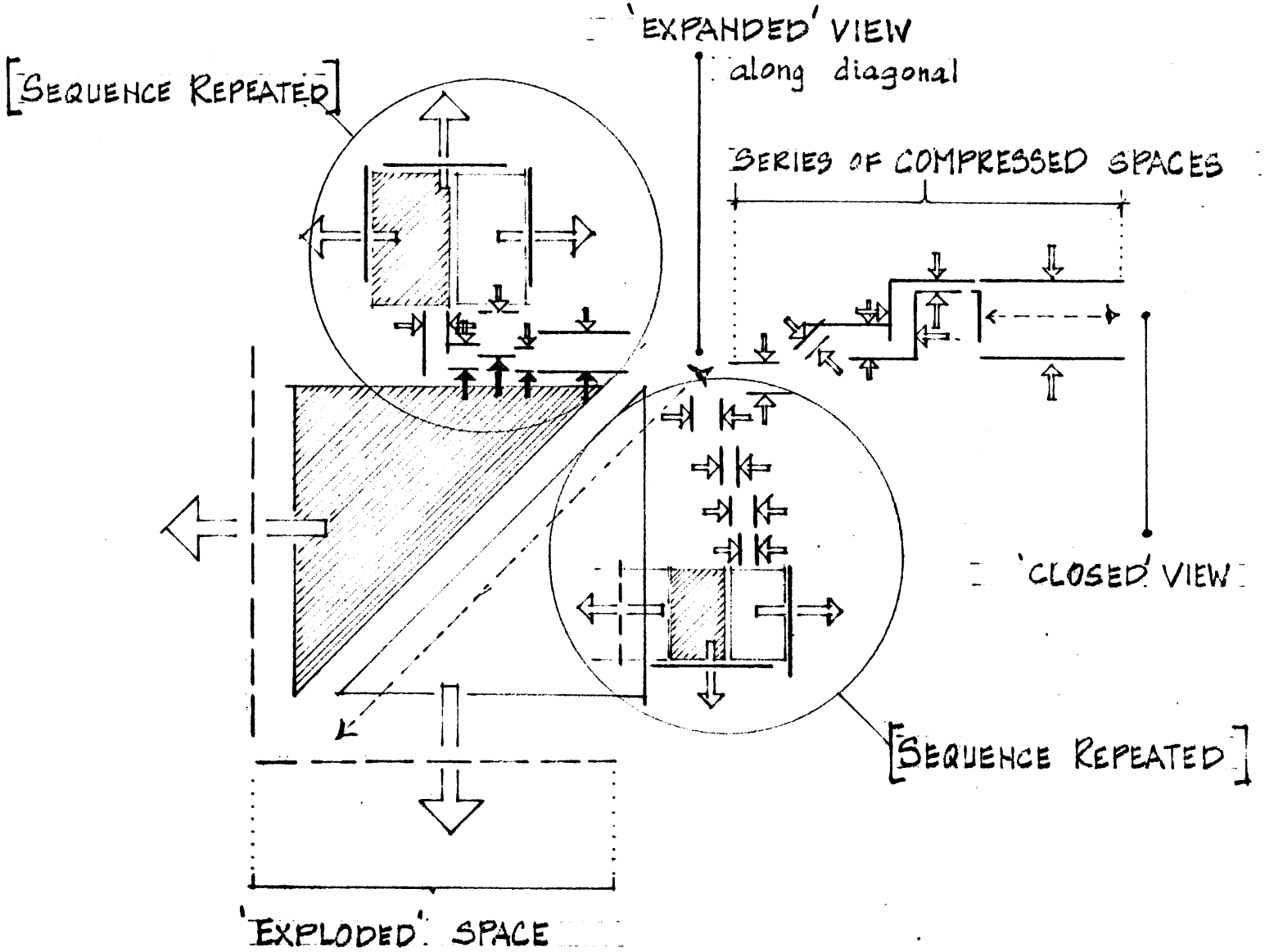
QINIAN DIAH — HALL FOR PRAYING FOR A GOOD YEAR

GARDEN ORGANIZATION
— INFORMAL NON-AXIAL ORGANIZATION

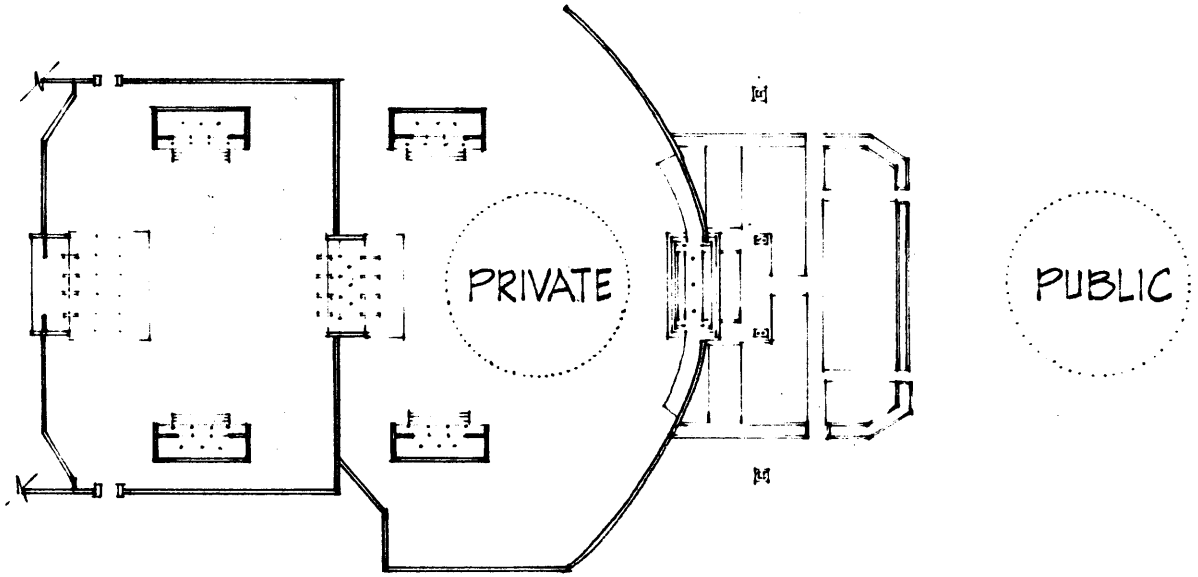
AIM	TO RECREATE A MICROCOSM OF NATURE WITHIN THE CONFINES OF A SMALL SITE.
METHOD	TO CONTRAST DIFFERENT SIZES OF SPACE BY MAKING THE SERIES OF SPACES THAT ONE MOVES THROUGH SO SMALL THAT ANY RELEASE OF SPACE THAT FOLLOWED WOULD HAVE THE ILLUSION OF BEING MUCH LARGER THAN IT ACTUALLY IS.
SYSTEM	A SERIES OF COMPRESSED SPACES THAT LEAD INTO A LARGER EXPLODED SPACE.



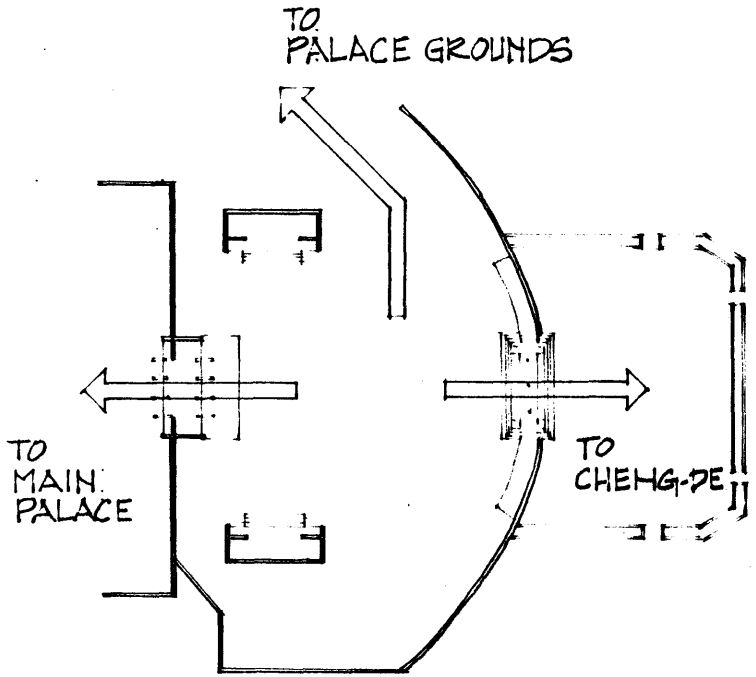
LIU YUAN


'EXPANDED' VIEW
along diagonal
[SEQUENCE REPEATED]
SERIES OF COMPRESSED SPACES
'CLOSED' VIEW
[SEQUENCE REPEATED]
'EXPLODED' SPACE

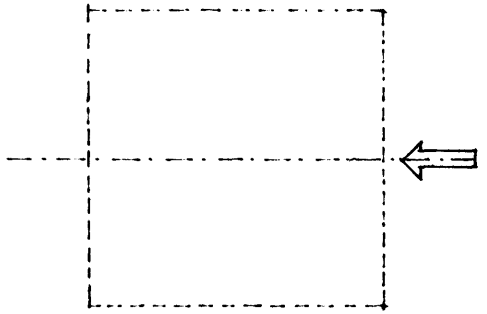
Degrees of Public to Private
are relative to one's location in a place



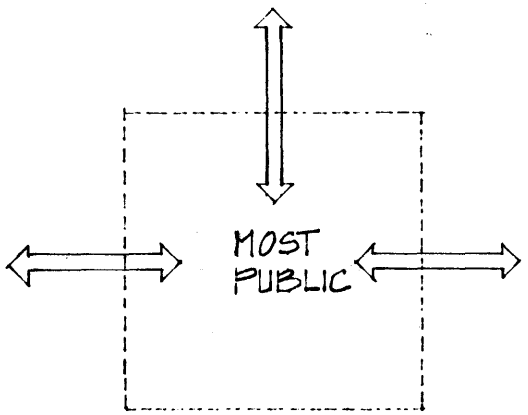
The Main Palace Compound is a Walled and Protected Entity which makes it Private within the Cheng-De Context. However, within the Palace Walls the Full Range of Public to Private EXISTS ...

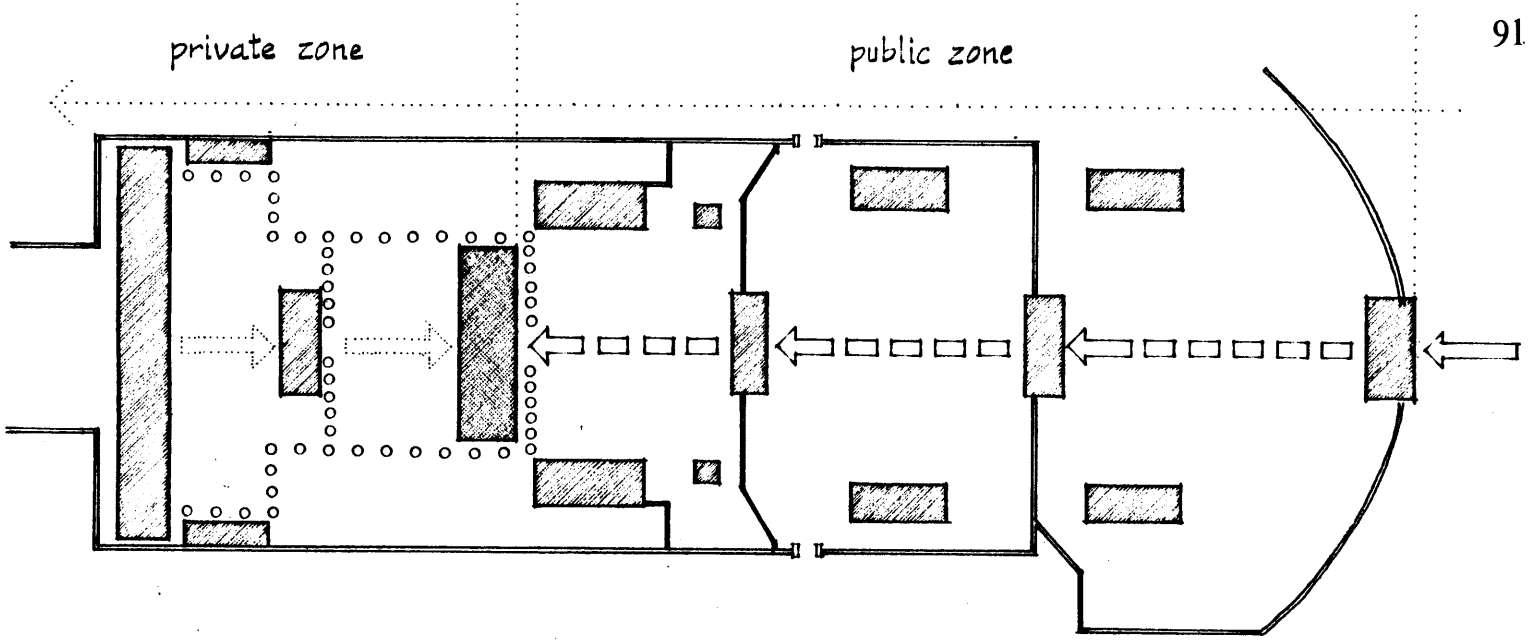


MOST PUBLIC SPACE BECAUSE IT IS
THE MEETING POINT/
POINT OF DEPARTURE
TO -- CHENG-DE
-- MAIN PALACE
-- PALACE GROUNDS

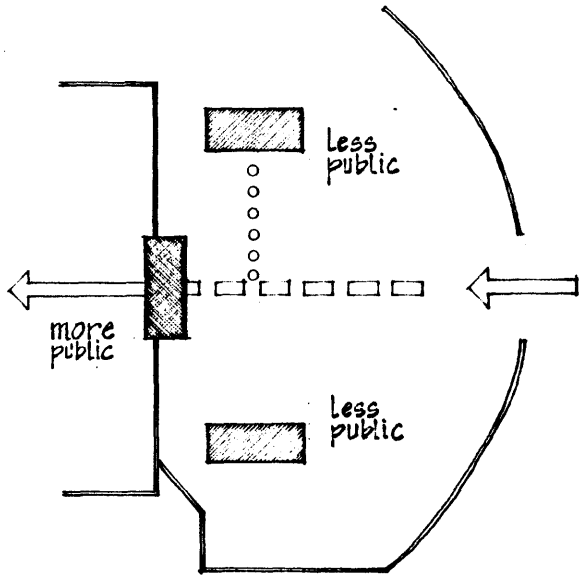


ENTERED ON AXIS



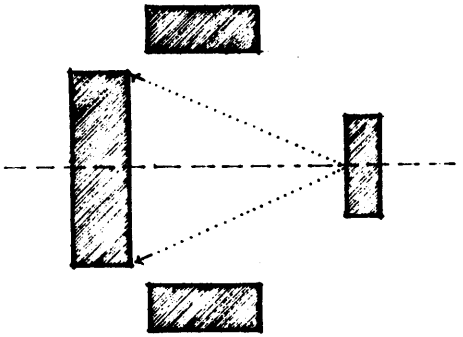


THE PUBLIC IS ENTERED INTO CEREMONIOUSLY VIA THE MAIN AXIS;
ONE TRAVELS VIA A STRAIGHT AND DIRECT PATH.
THE PRIVATE IS ENTERED FROM THE CORNERS AND EDGES;
ONE IS CONTINUOUSLY DEVIATED FROM TRAVELLING IN A STRAIGHT LINE.

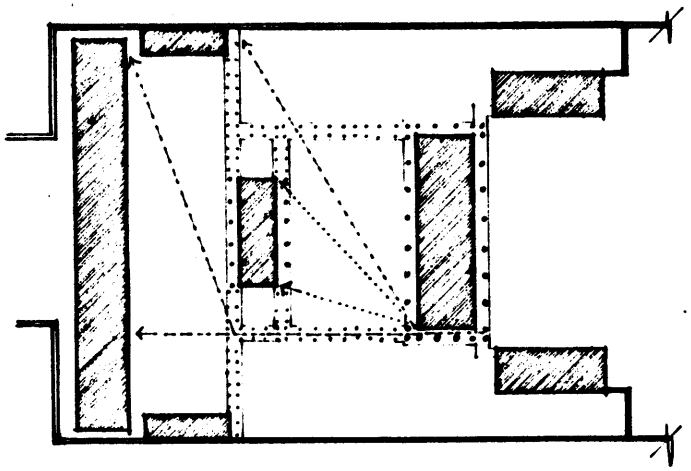


THE TWO SIDE BUILDINGS BECOME MORE PRIVATE BECAUSE
- THEY ARE OFF THE MAIN AXIS
- THE PATH TO THEM CUTS THE MAIN AXIS AT A RIGHT ANGLE
- THE DISTANCE BETWEEN THE BUILDING AND THE MAIN PATH CREATES THE FEELING OF PRIVACY AND DISTANCE.

THE BUILDING ON THE AXIS IS THE MOST PUBLIC BECAUSE
- IT EXISTS DIRECTLY ON THE PATH
- IT IS THE ONLY POINT OF ENTRY INTO THE MAIN PALACE



PUBLIC:
--EXPERIENCE OF COURTYARD SPACE IS ONE OF SYMMETRY AND BALANCE;
--BUILDING APPROACH IS FRONTAL;
--VIEWS ARE CONTAINED.



PRIVATE:
--EXPERIENCE OF COURTYARD SPACE THAT IS SYMMETRICAL ABOUT THE H-S AXIS IS ONE OF ASSYMMETRY;
--BUILDINGS ARE VIEWED AT AN ANGLE;
--VIEWS EXTEND BEYOND THE BOUNDARIES OF THE IMMEDIATE COURTYARD;
--VIEWS ALONG THE DIAGONAL ALLOW THE LONGEST DIMENSION OF THE COURTYARD TO BE EXPERIENCED.

SYSTEM OF STRUCTURE

THE 'BUILDING METHOD' MAKES A CLEAR DISTINCTION BETWEEN
TOP, MIDDLE / BOTTOM
ROOF / FRAMEWORK / GROUNDFORM

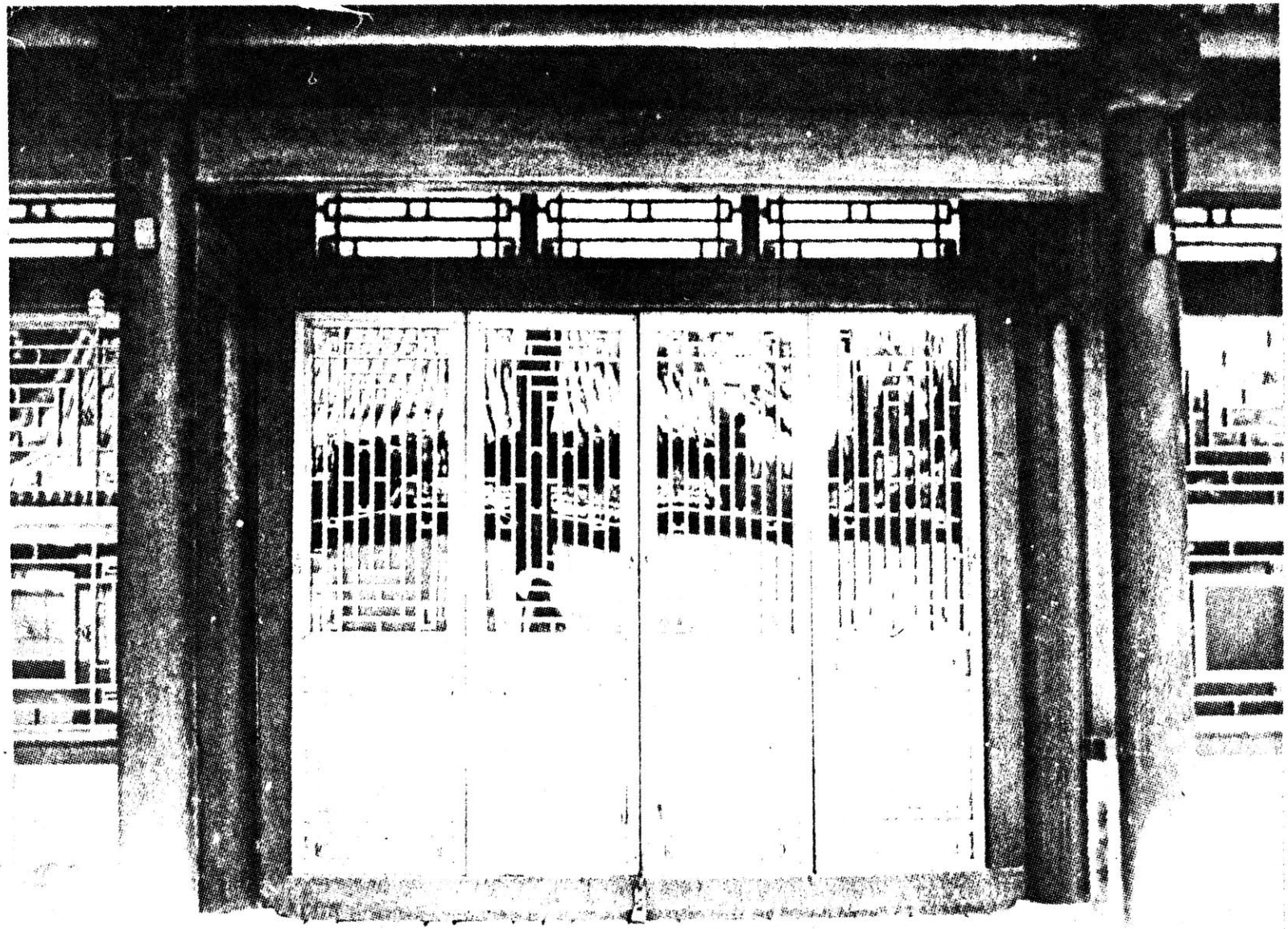
ANALOGY : TREE
ROOTS ≈ FOUNDATION
TRUNK ≈ FRAMEWORK
FOLIAGE ≈ ROOF

... AND BETWEEN PRIMARY STRUCTURE AND INFILL.

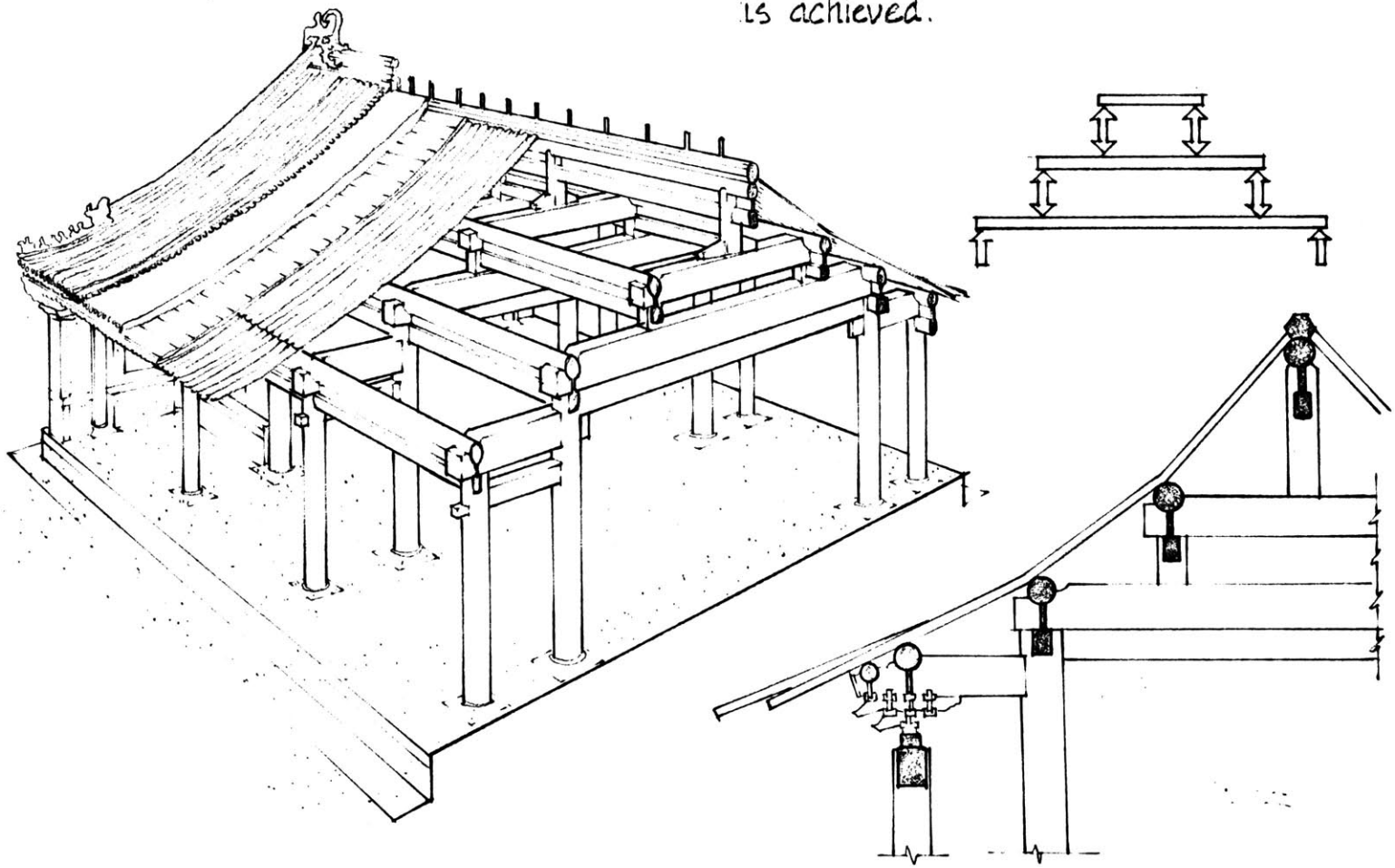
THE STRUCTURAL SYSTEM IS VERY MUCH INTEGRATED INTO THE ARCHITECTURE OF THE BUILDING. IT THEREFORE SERVES THE DUAL PURPOSE OF BEING STRUCTURAL AS WELL AS AESTHETIC.

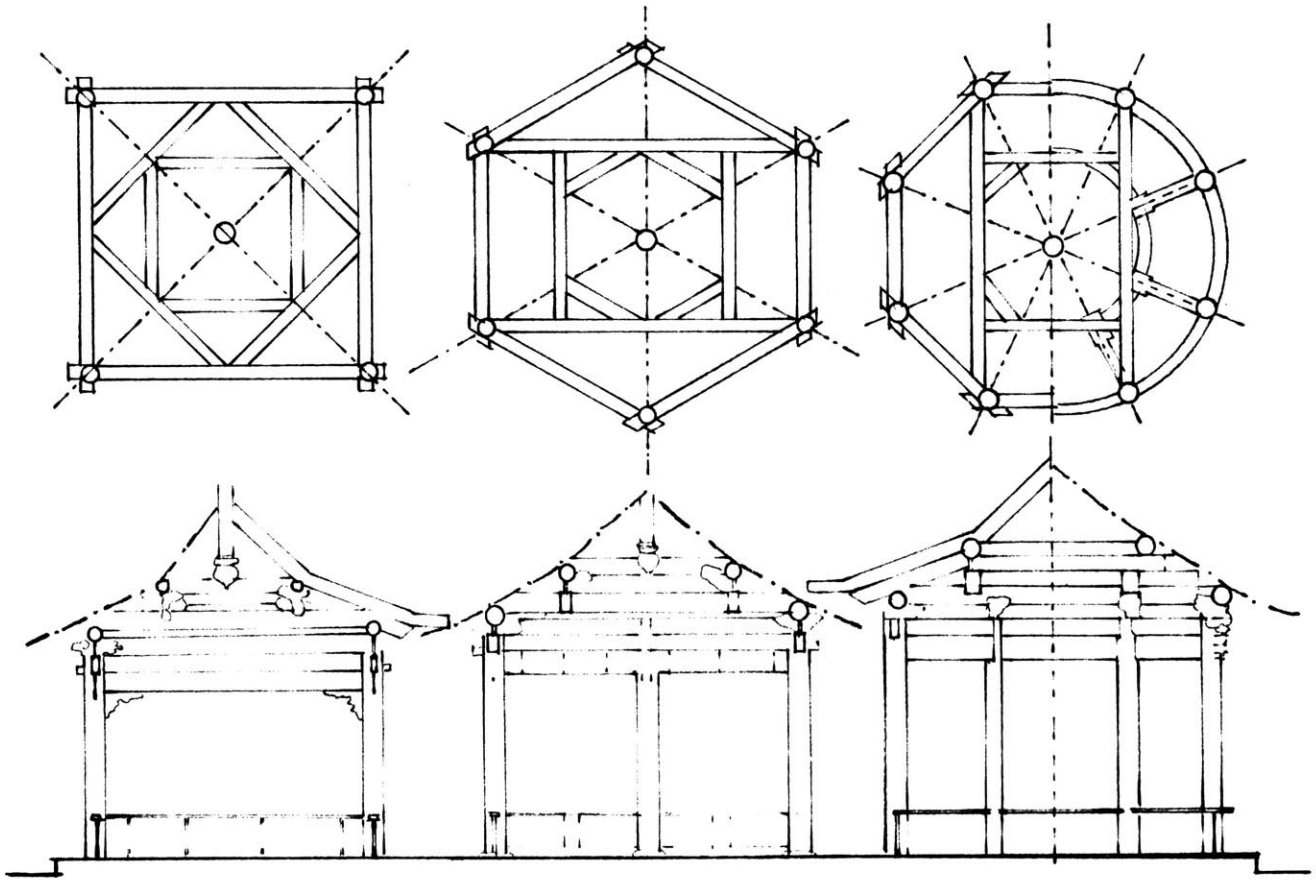
≈ COLUMN BASE
≈ COLUMN SHAFT
≈ COLUMN CAPITAL

THE DEVELOPMENT OF THE SYSTEM OF BRACKETS (THE TOU-KUNG SYSTEM) SEEMS TO BE INSPIRED BY THE NATURAL FORM OF THE TREE.

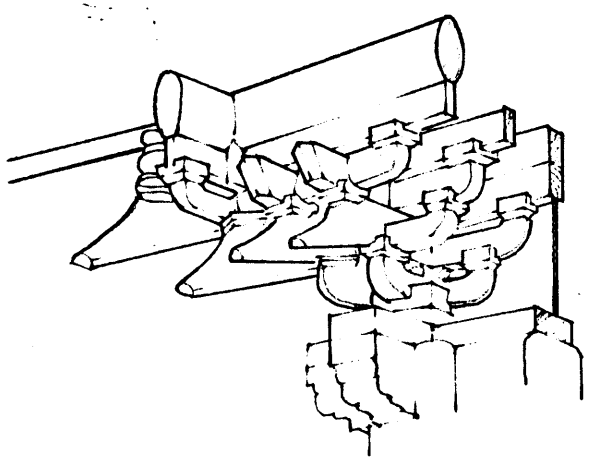


The structural system is based on the simple two-point-support statics diagram for a horizontal beam.
This becomes the basic concept for the structural system from the construction of the structural bay to the roof.
The roof 'truss' is formed by repeating and stacking the diagram.
By varying the lengths of the various beams the concave profile of the roof is achieved.

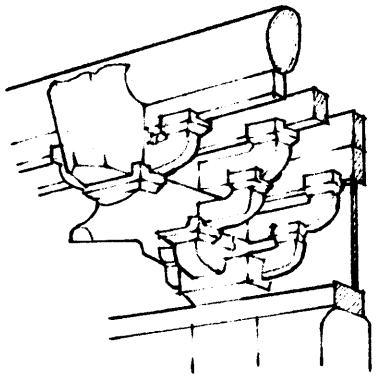




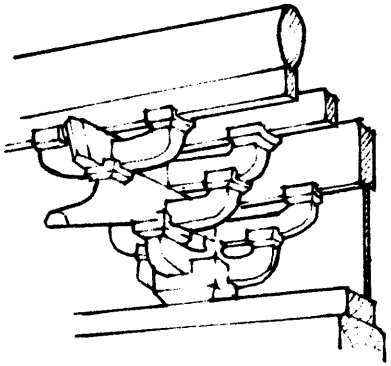
Different roof shapes can be generated using the same diagram.



Corner Set

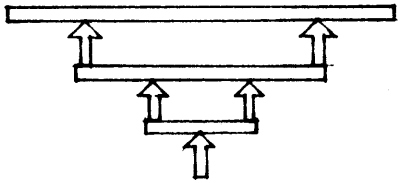


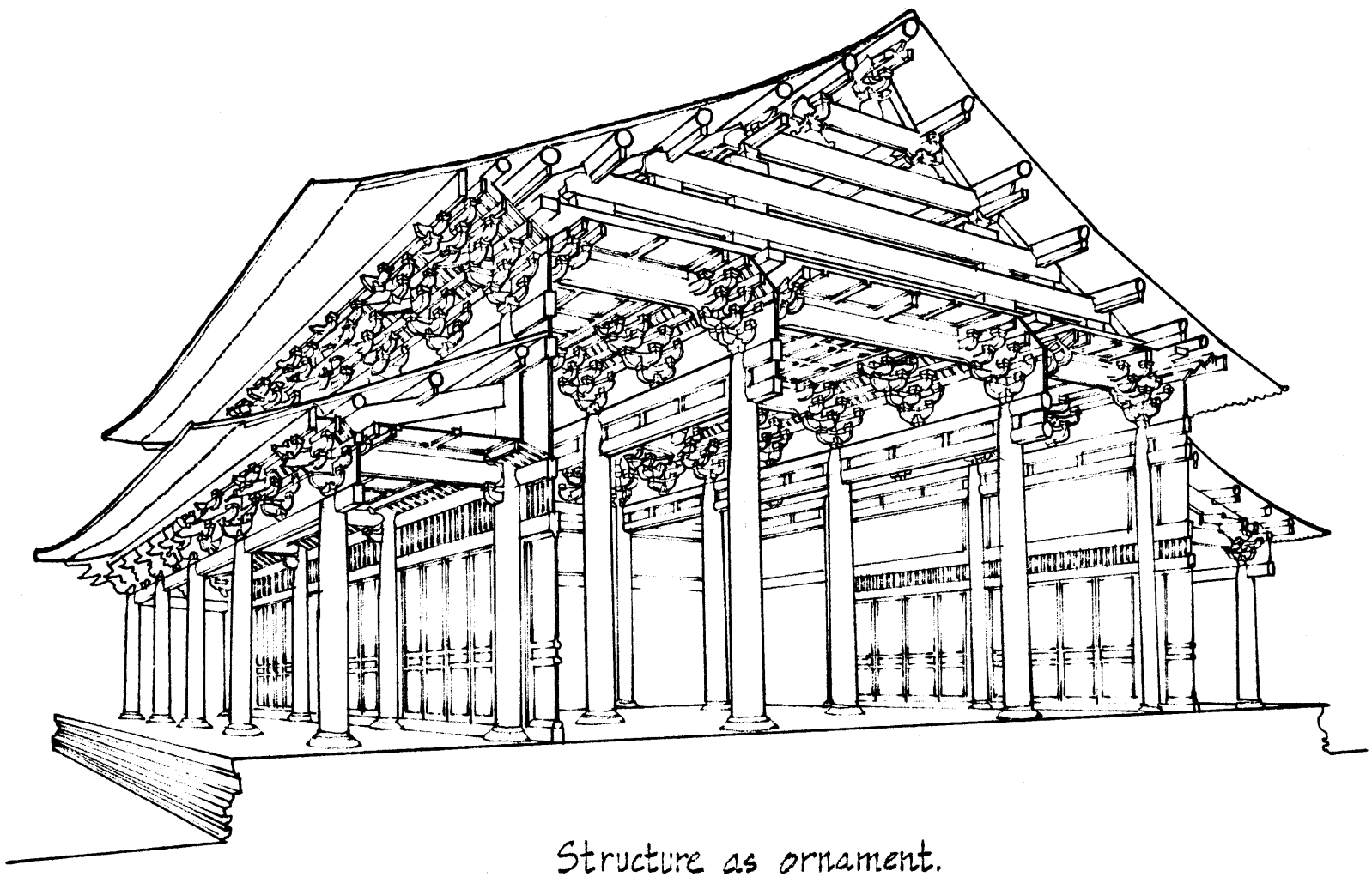
Column Top Set



Intermediate Set

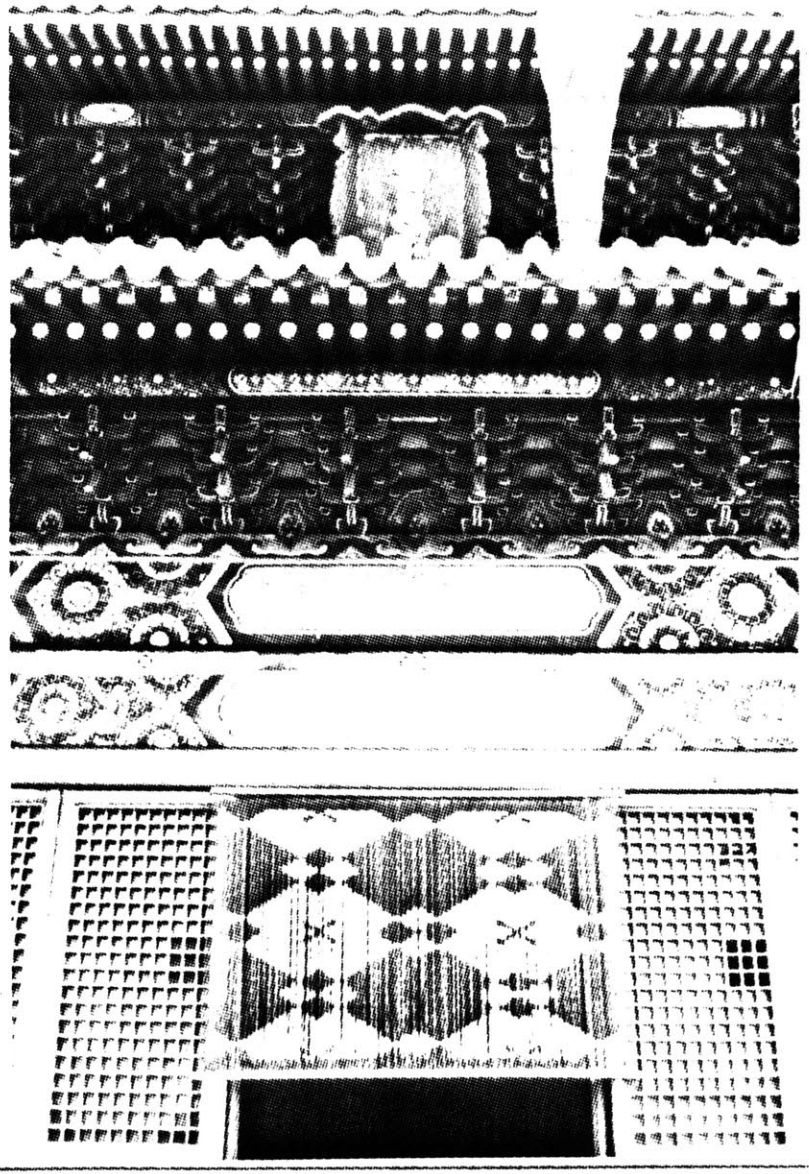
The tou-kung or system of brackets forms an elaborate transition from column to beam with the loading principle consistent with that of the basic concept. The diagram of the system is like a three-dimensional inverted version of the roof 'truss', bearing a strong resemblance to tree branches. The strong reference to the tree is not surprising as the major material used for building was wood.



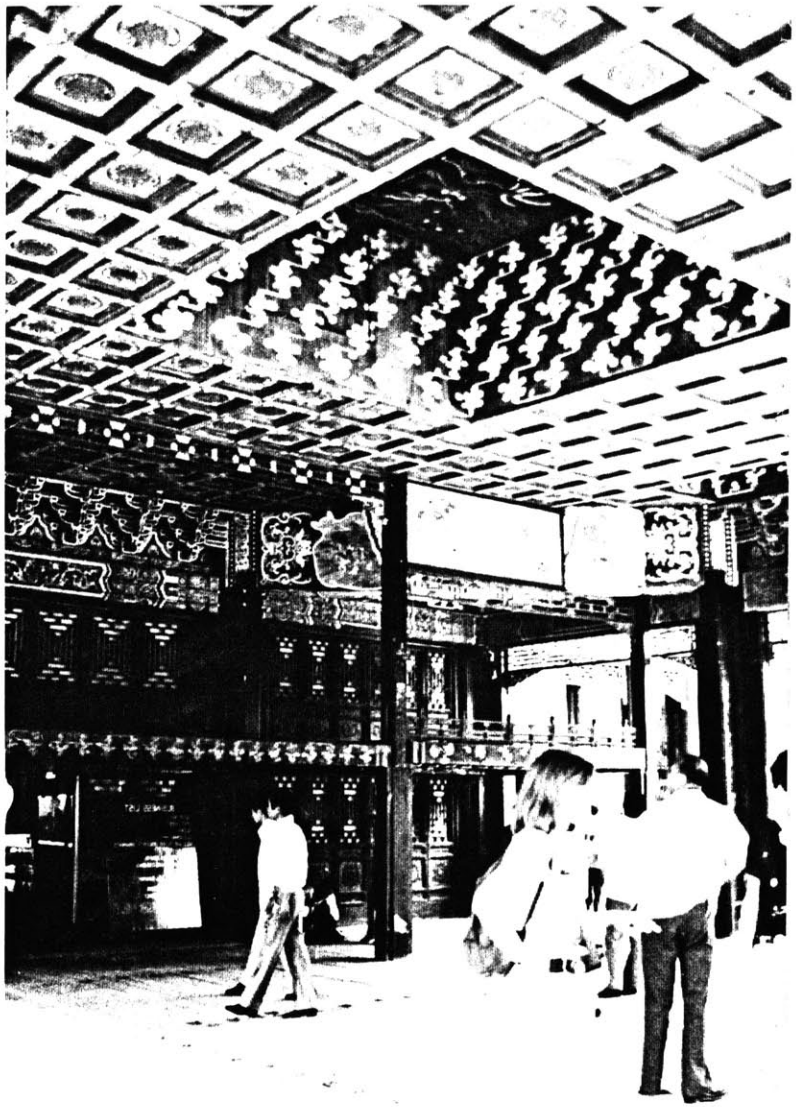


Structure as ornament.

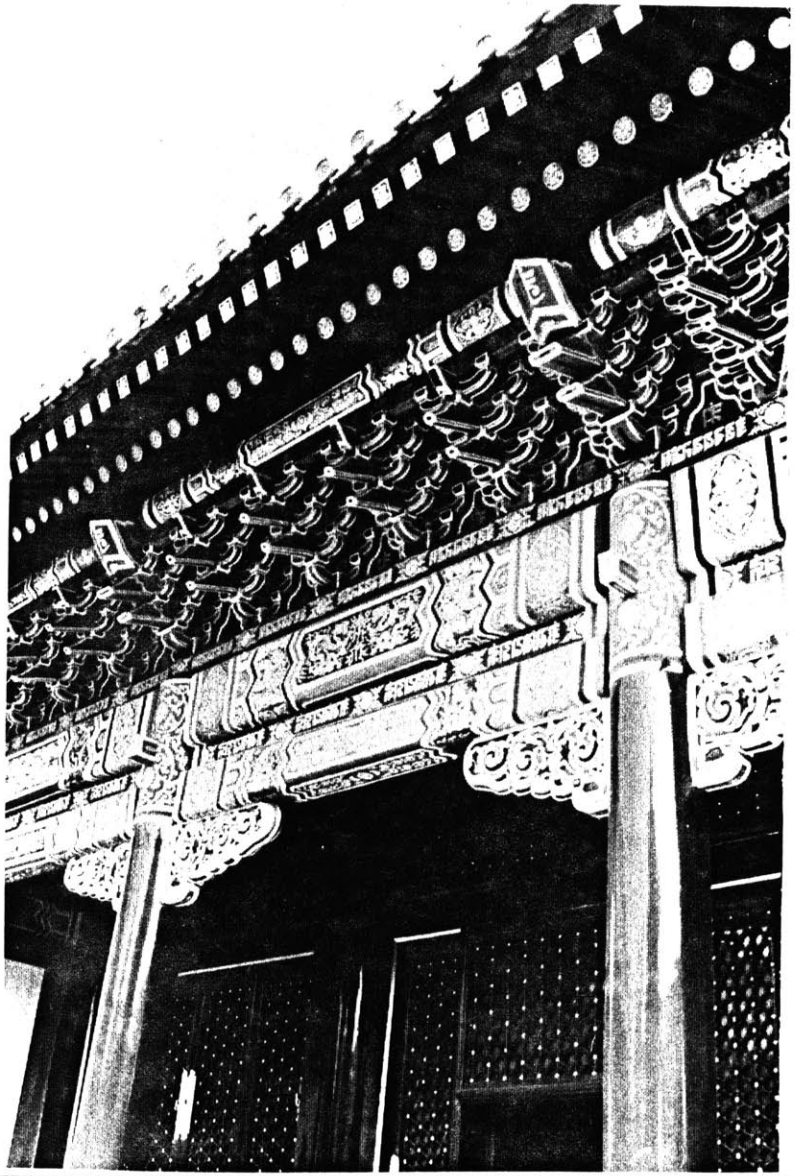
100



THE STRUCTURE ALSO BECOMES THE SUPPORT FOR FURTHER INTENSIFICATION / DECORATION THROUGH THE USE OF COLOUR.



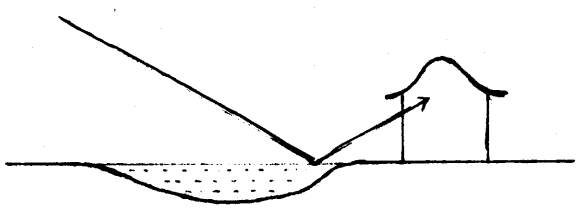
The colour gold recovers the light in the overhead plane.



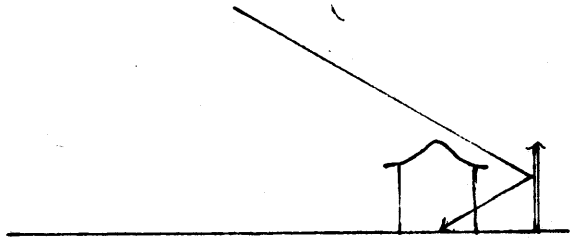
The edge of the brackets are painted gold ..... perhaps to suggest the light that shines through the network of tree branches.

SYSTEM OF LIGHT

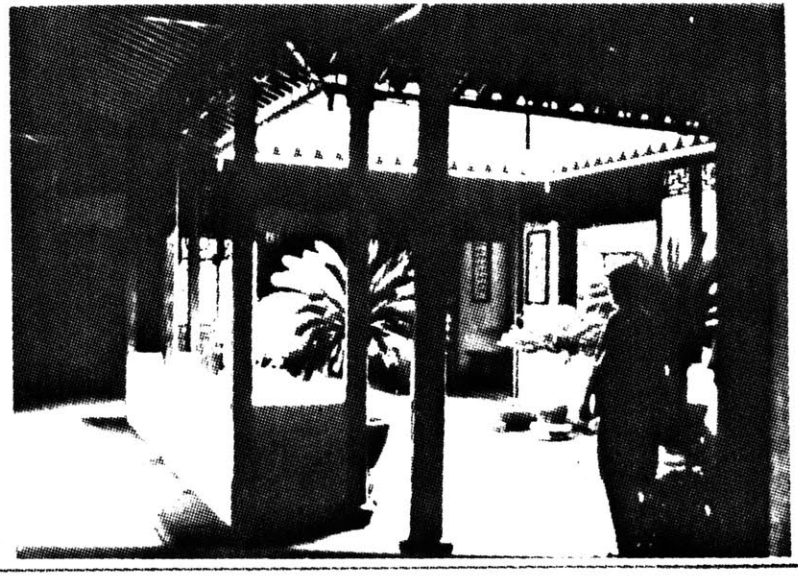
IN AGRICULTURALLY-BASED SOCIETIES, IN PARTICULAR, PEOPLE LEARN TO WORK WITH THE SUN. THEY DEPEND ON THE SUN'S RAYS FOR THEIR FOOD, WARMTH AND PHYSICAL WELL-BEING. THE CHINESE ARE NO EXCEPTION. BUILDINGS ARE ORIENTED SOUTH. MASSIVE ROOFS AND BROAD EAVES SHIELD THE SCORCHING RAYS OF THE SUMMER SUN BUT ALLOW THE LOW WINTER RAYS IN TO PROVIDE WARMTH.
LIGHT WAS ALSO BROUGHT IN THROUGH REFLECTION USING

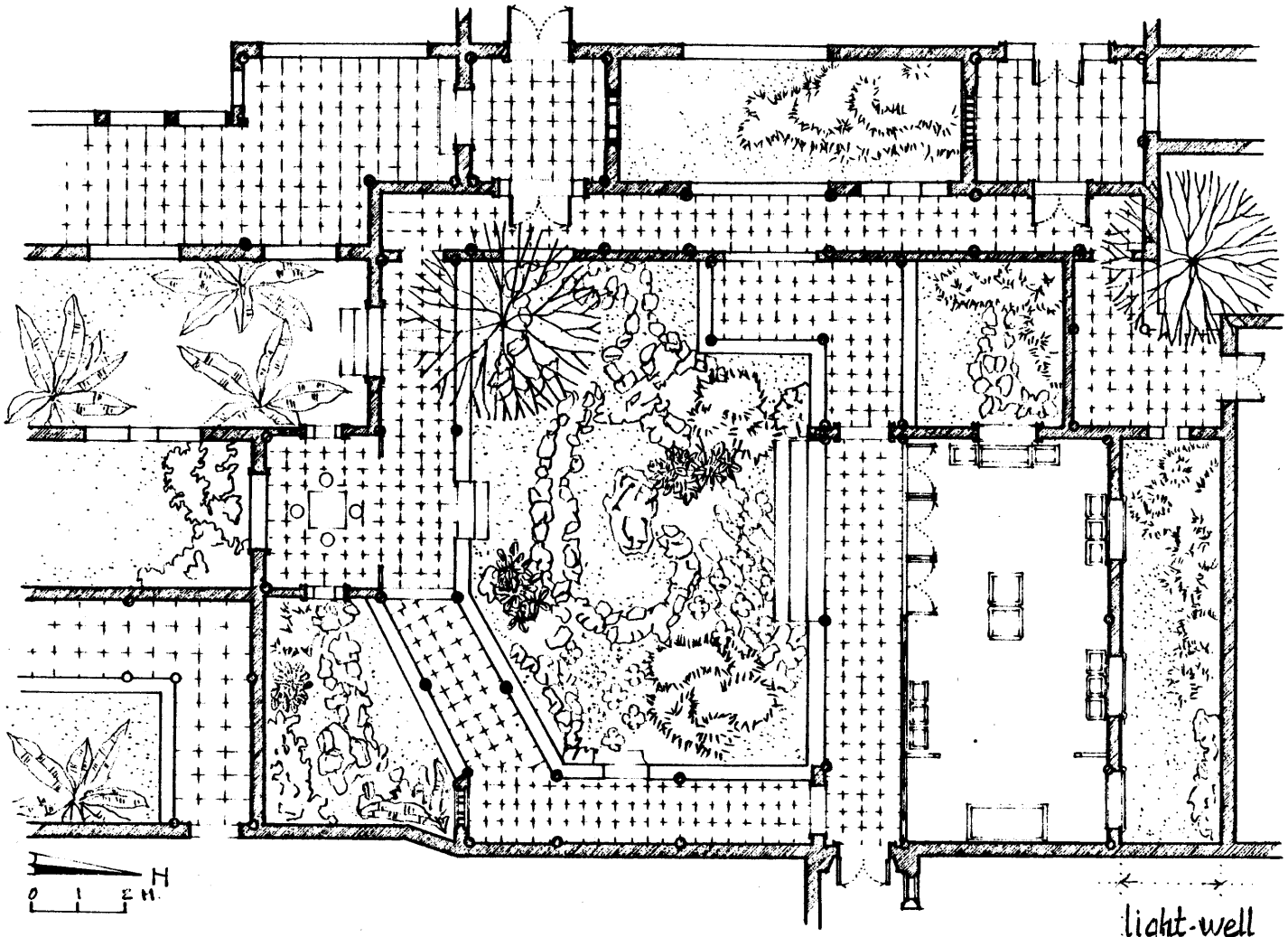


using water as a reflective surface.

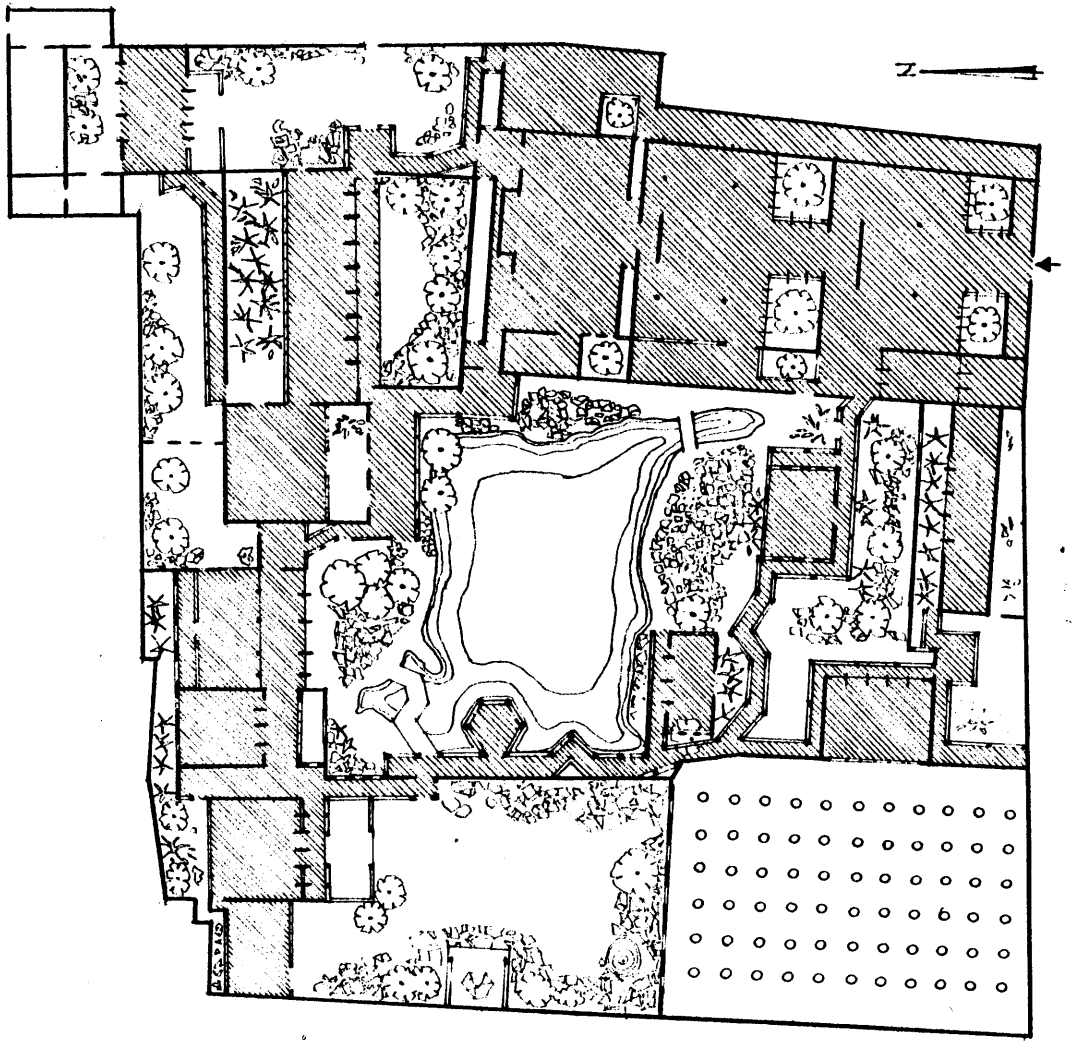


or a light-coloured vertical wall.





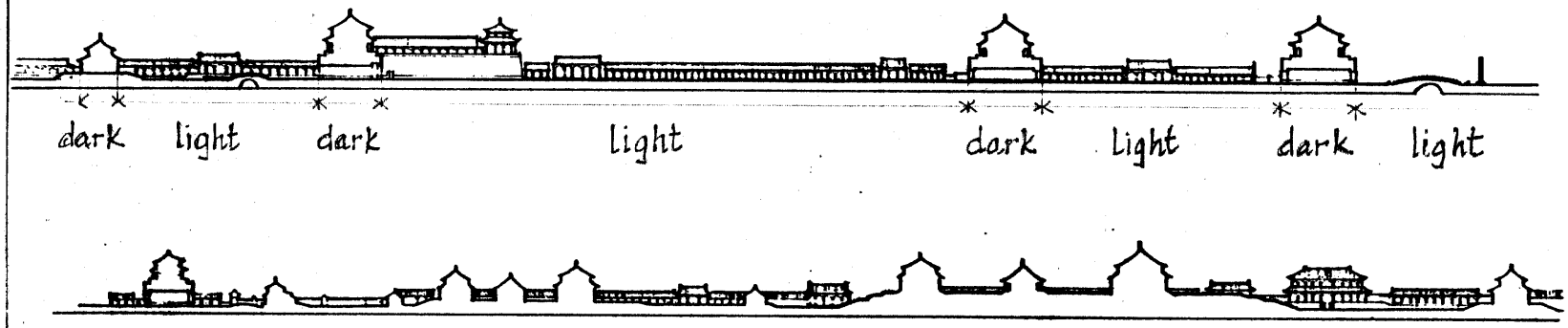
SHEK LIN SHIAO YUAN



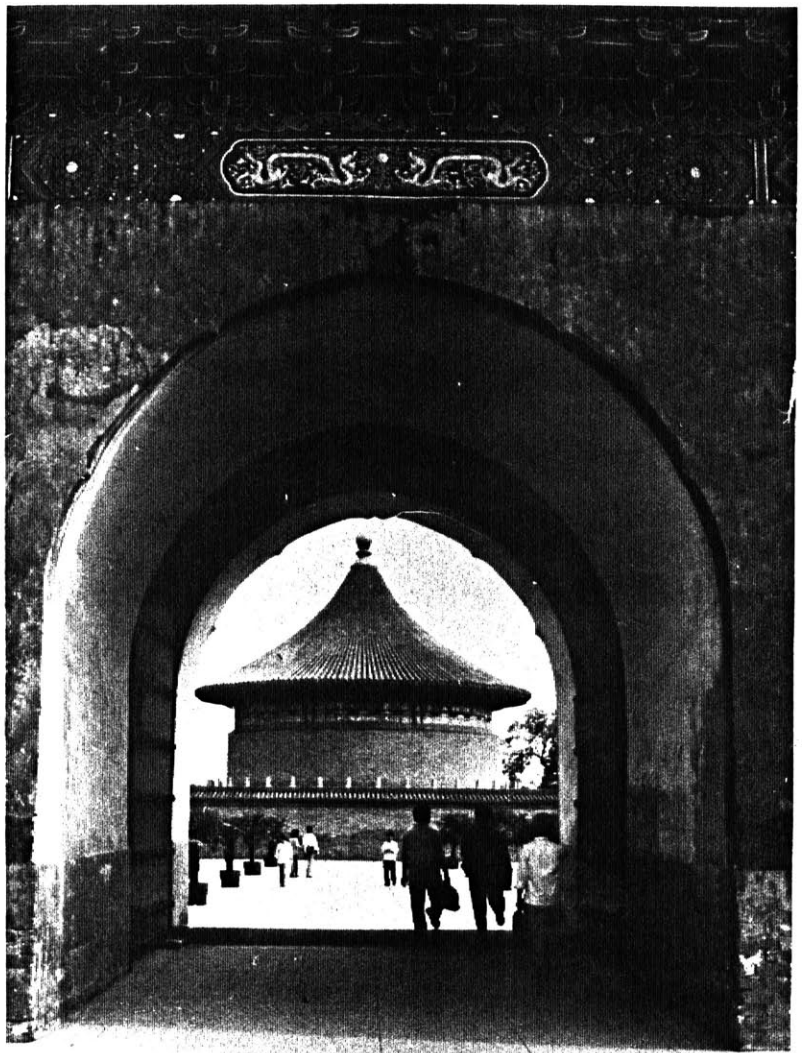
WANG SHIN YUAN

'The lake is the great mirror of the garden.'

LIGHT BECAME AN IMPORTANT ELEMENT IN THE ARCHITECTURE...

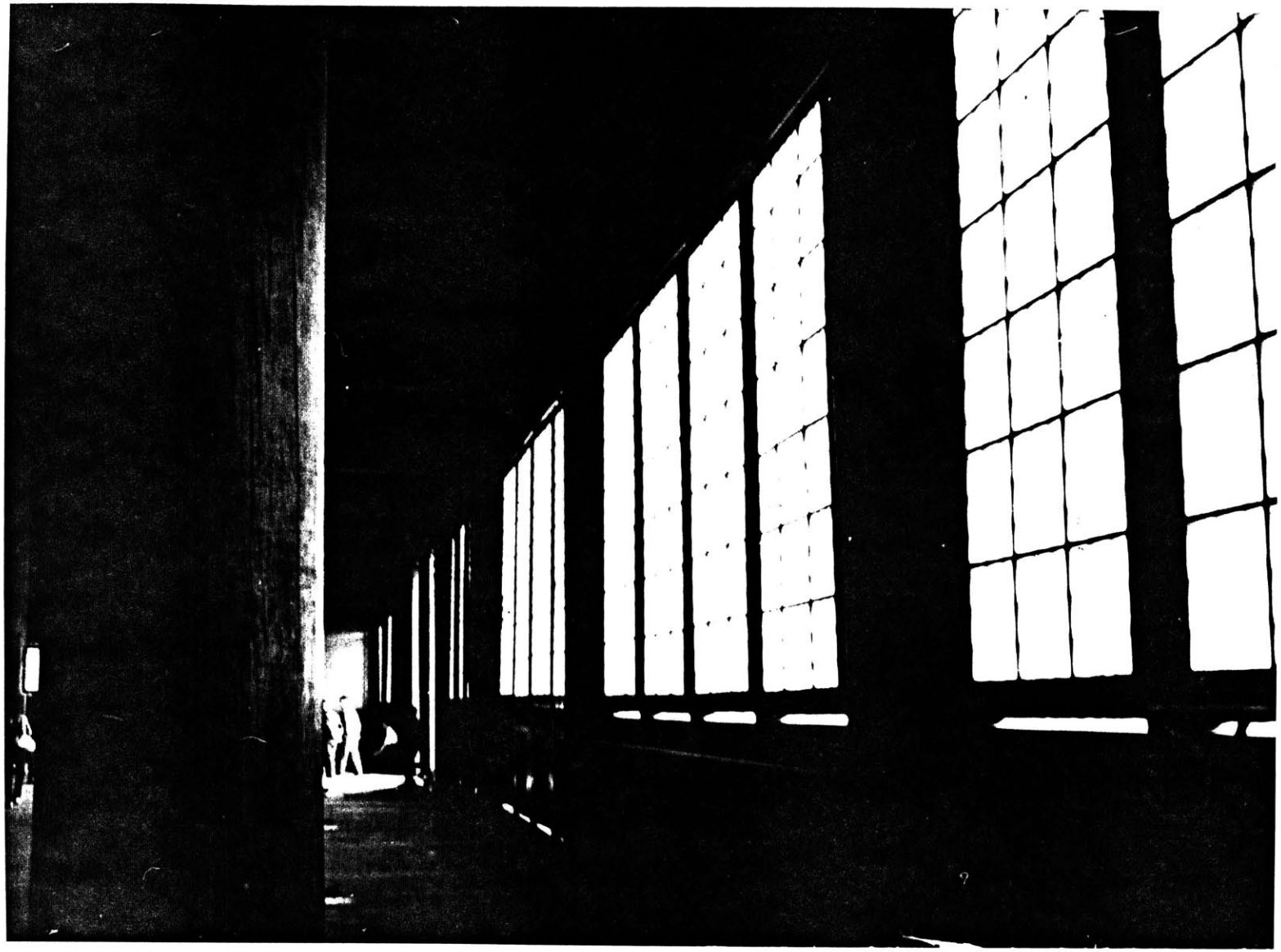


It established a certain rhythm in axial organizations.



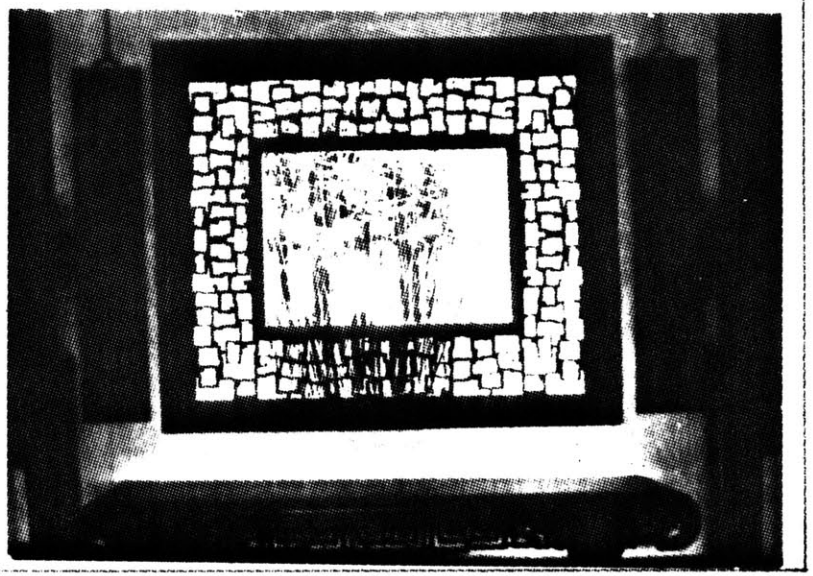
dark compressed space...
...bright exploded space

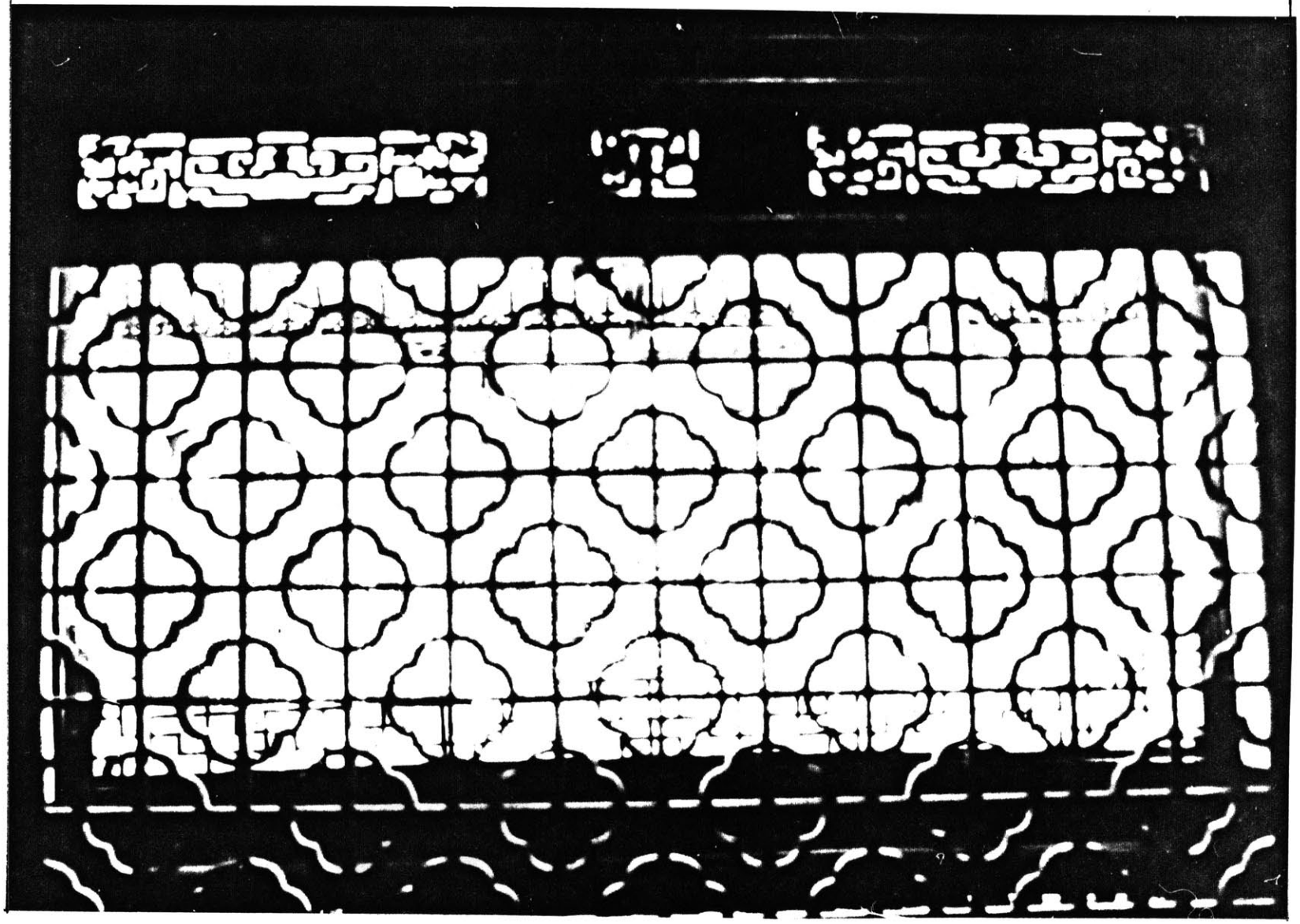
110



Light is either background or figure.

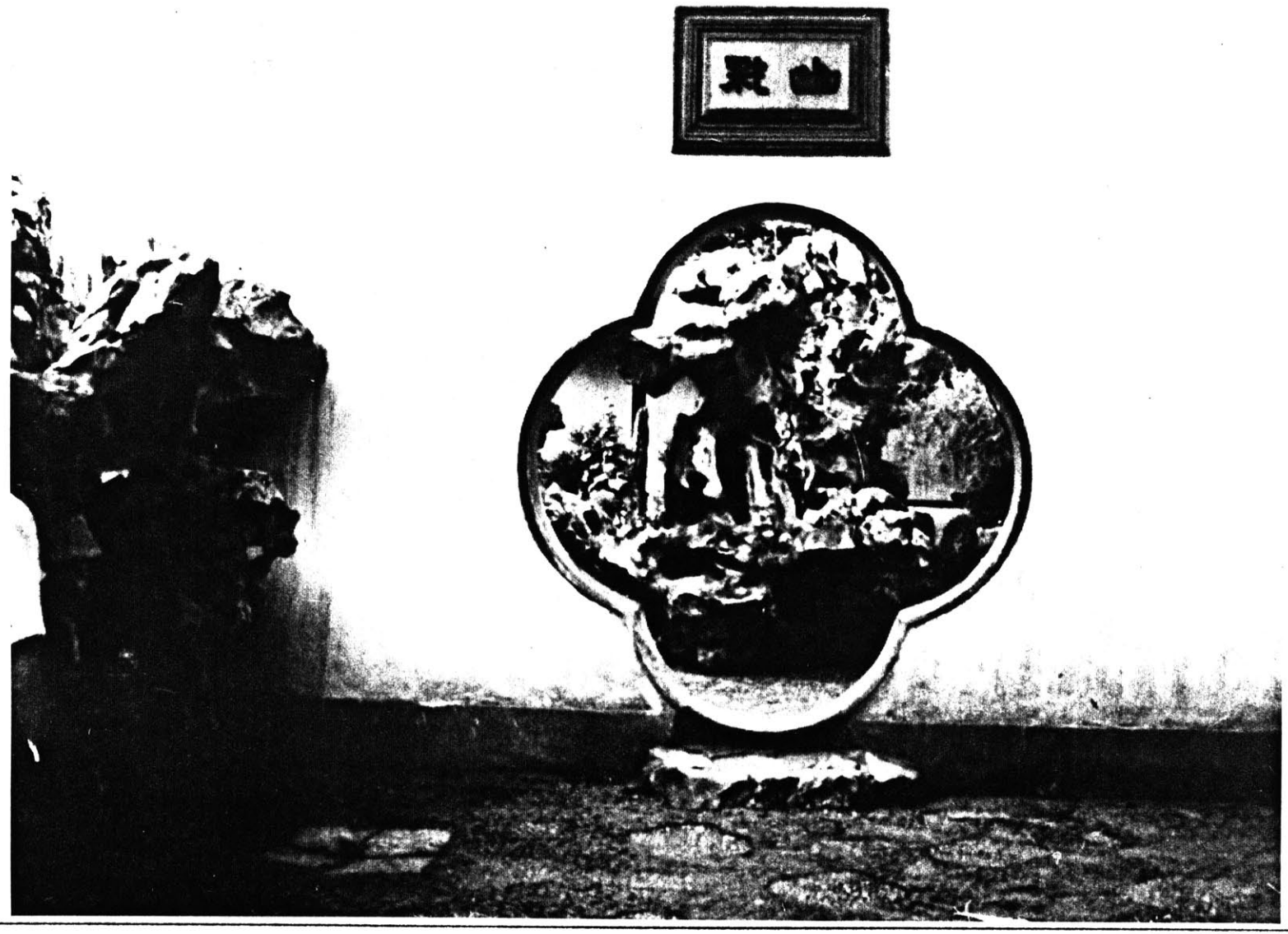
When it is background we see the intricate pattern of the lattice windows.
When it is figure, light is framed and contained. Lattice windows have been so intricately designed and patterned, perhaps not so much to be seen solely for the frame but for the mosaic of light that it creates. The piece of light is like a piece of tile and is given shape and form and, in the window, becomes planar and two-dimensional.
The function of the window is transformed — rather than for looking through it is for looking at.

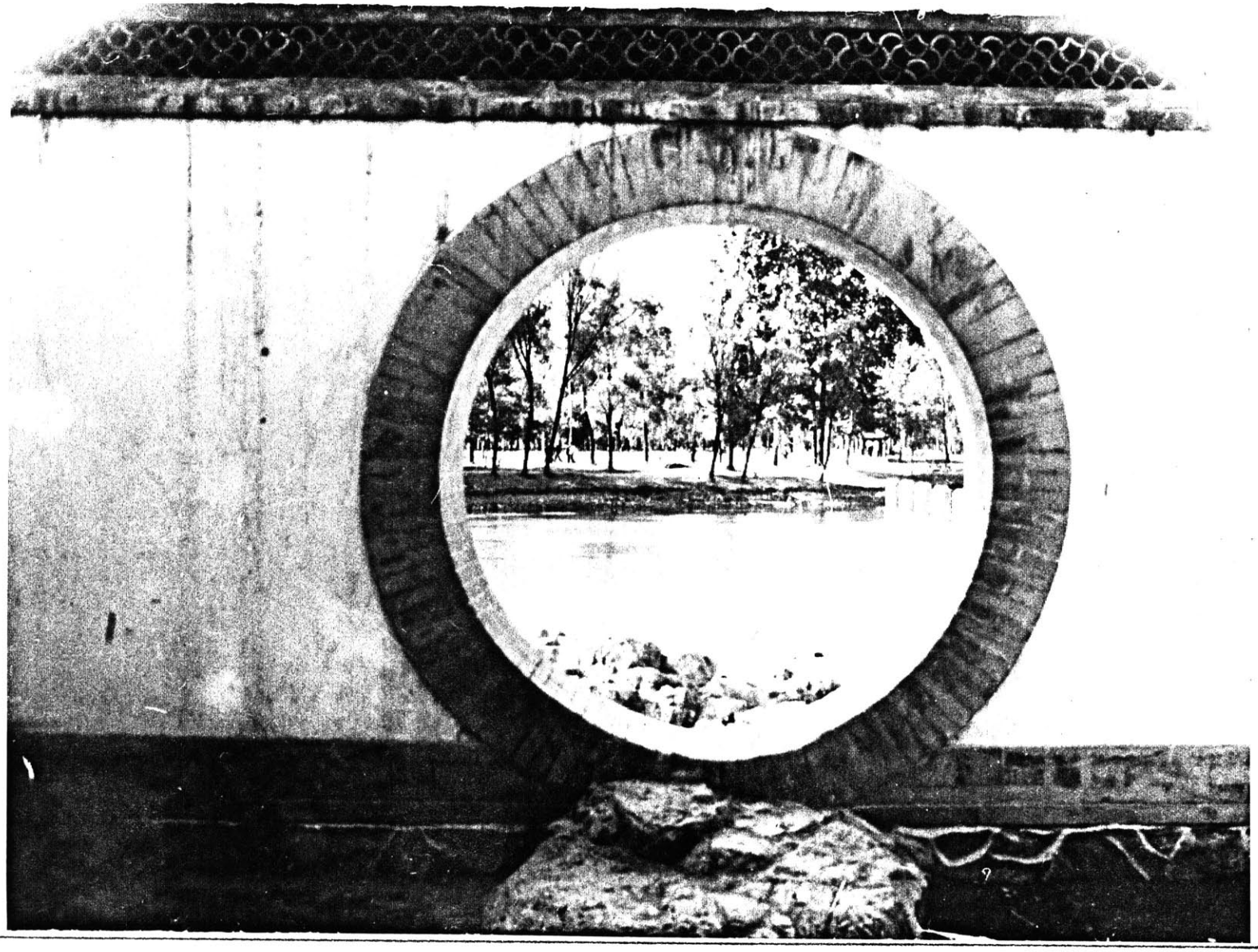


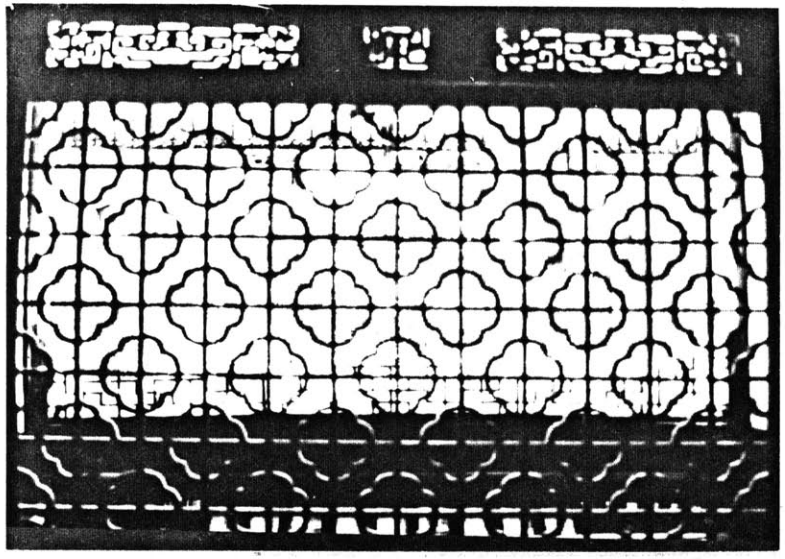


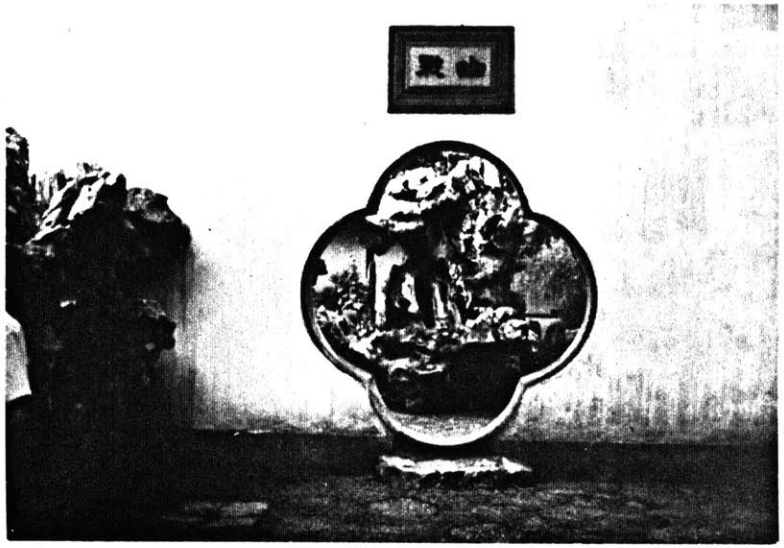
In Chinese architecture, elements are transformed from the functional to the aesthetic. We have seen it in the case of the structural system and the window. The door is no exception. In addition to being an opening for going through, it too is for looking at.

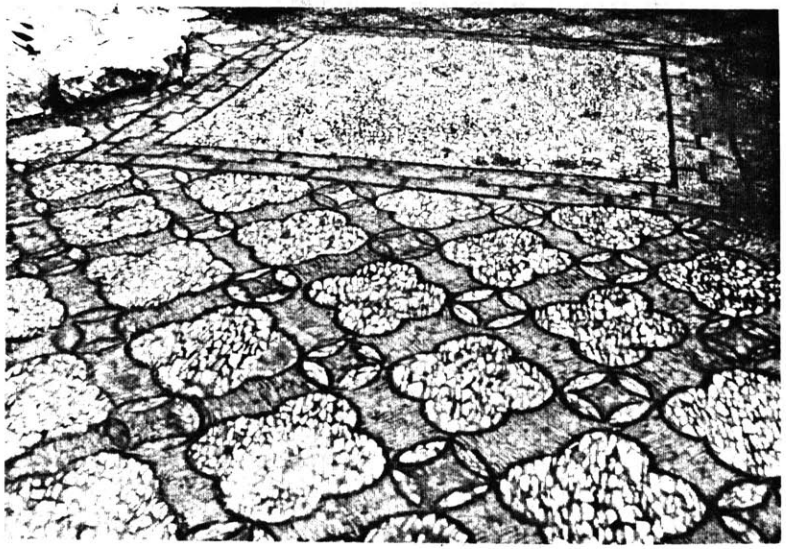
Views are composed and framed; usually via comprehensible shapes .....


敦曲

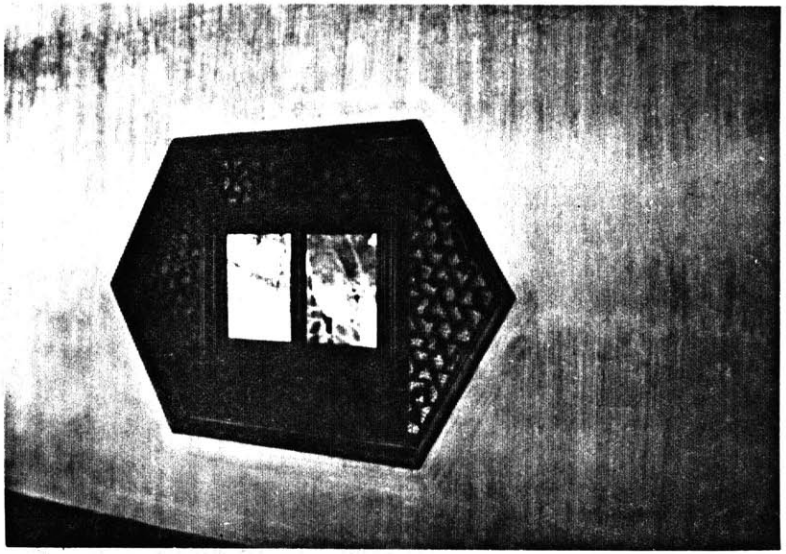


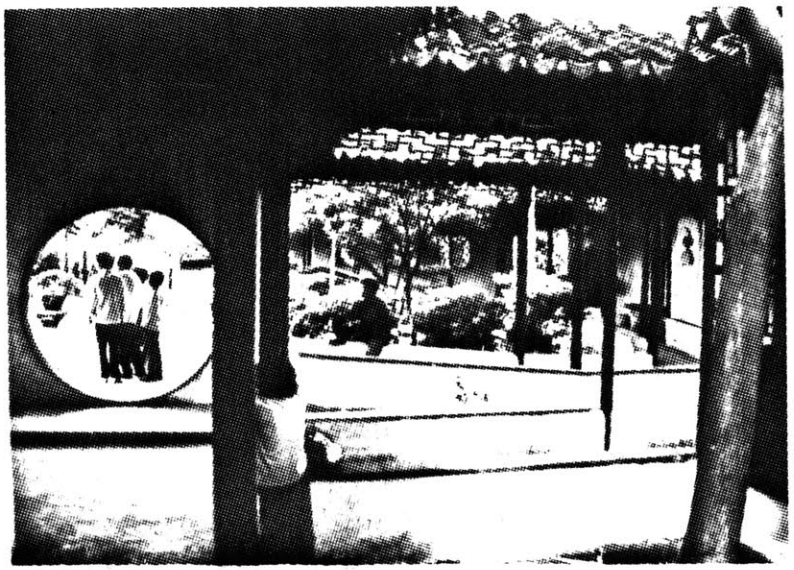


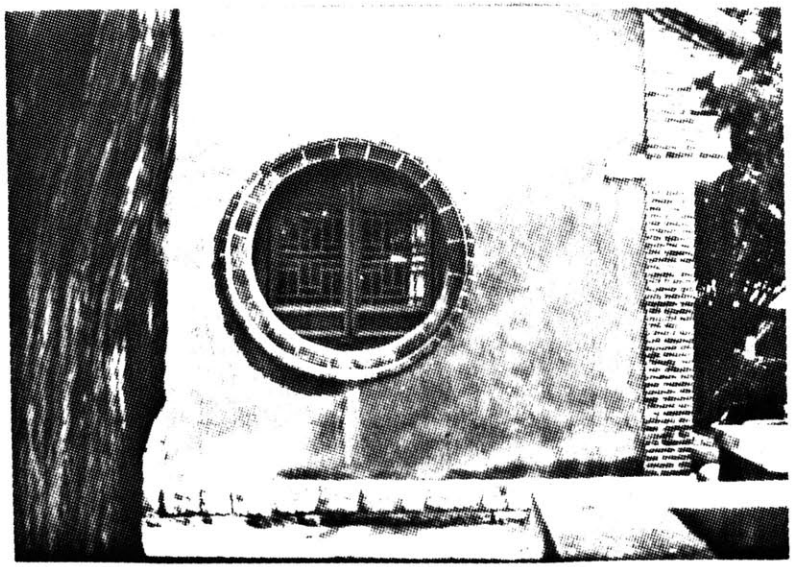




These shapes can be found in a range of situations.....







SYSTEM OF COMPOSITION

The Chinese notion of aesthetic and appreciation, it seems, is based on a 'method' of contrast and composition. By the juxtaposition of two extremes, the quality of either extreme can be better appreciated. For example,

- the height of a vertical element is better appreciated when it is placed next to something low and horizontal. By being placed next to the vertical element, the horizontality of the low element is enhanced.
- Symmetry is better understood when asymmetry exists and vice-versa.

The list goes on :

line	v.s.	plane
plane	v.s.	volume
ordered	v.s.	natural
light	v.s.	dark
hard	v.s.	soft
wide	v.s.	narrow
open	v.s.	closed
stable	v.s.	flowing
linear	v.s.	curved
real	v.s.	virtual
direct	v.s.	indirect

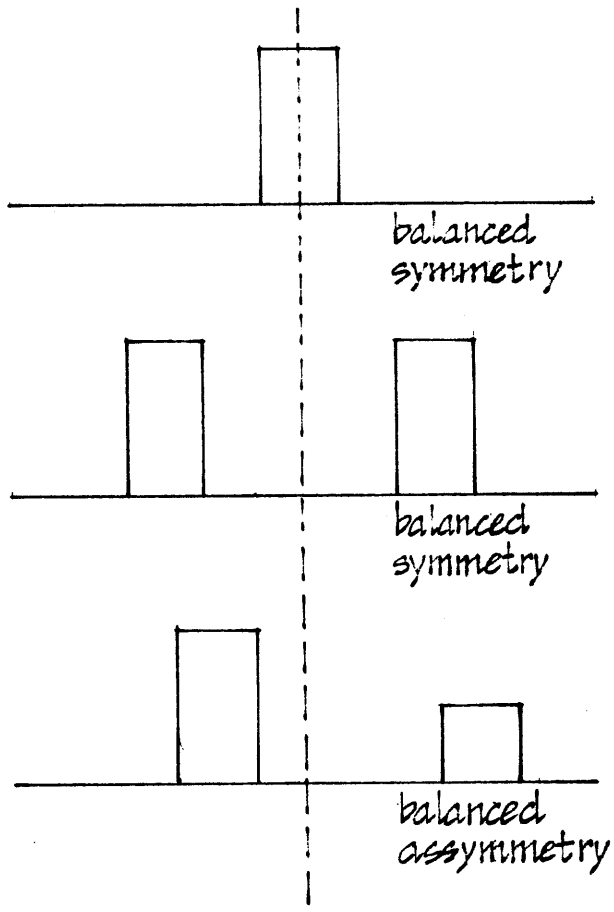
The list is long. The instances in which these contrasts occur are wide-ranging. For example,

- the order and symmetry of Gugong (the Imperial Palace) is enhanced through the introduction of the sinuous curve of the water and vice-versa.
- In Liu Yuan, the size of the main court is experienced to be much larger than its actual size by having gone through a series of very small compressed spaces.
- In I He Yuan (the summer palace in Beijing), the expanse of Kunming Lake to the south is contrasted with the narrow canal to the north.
- colour and forms are doubled in the garden by reflections in the water.

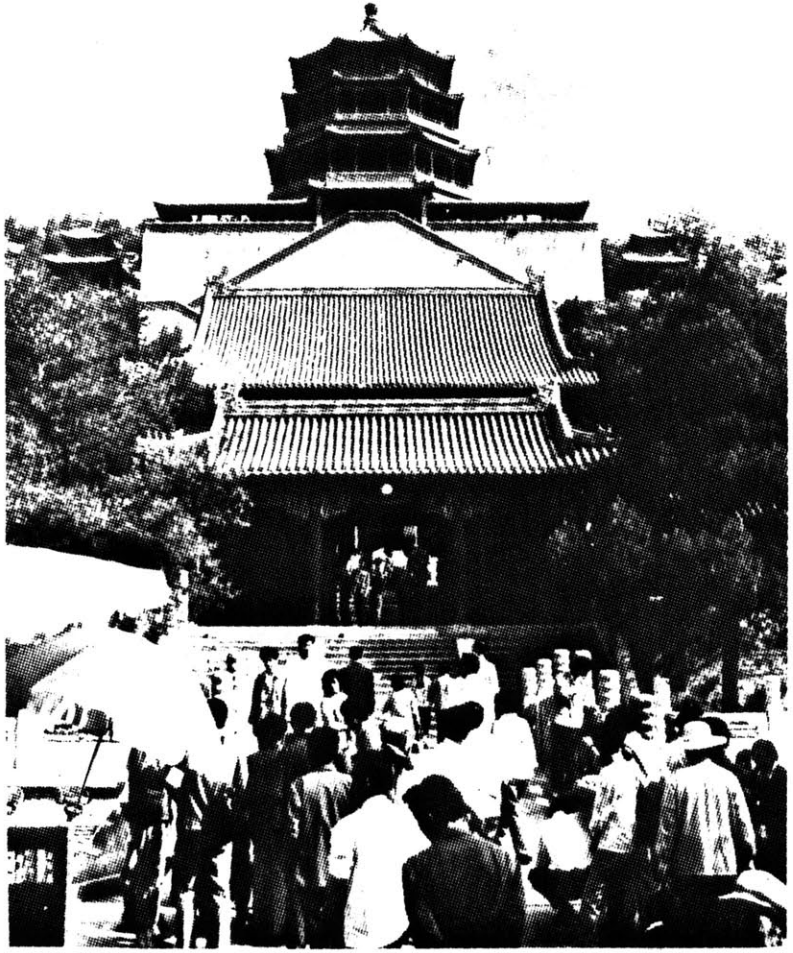
The Chinese are incredibly adamant about composing what they look at and they seek 'balance' in their architecture. 'Balance' being not just equated with symmetry but also possible with assymmetry.
While at Tianjin University, Geoffrey Siebens, a member in our group made an interesting observation.
The principle behind composing masses in a building complex, it seems, is quite similar to balancing a moment diagram,
where
mass of bldg.(m_1) x distance from fulcrum (d_1)
= mass of bldg.(m_2) x distance from fulcrum (d_2)

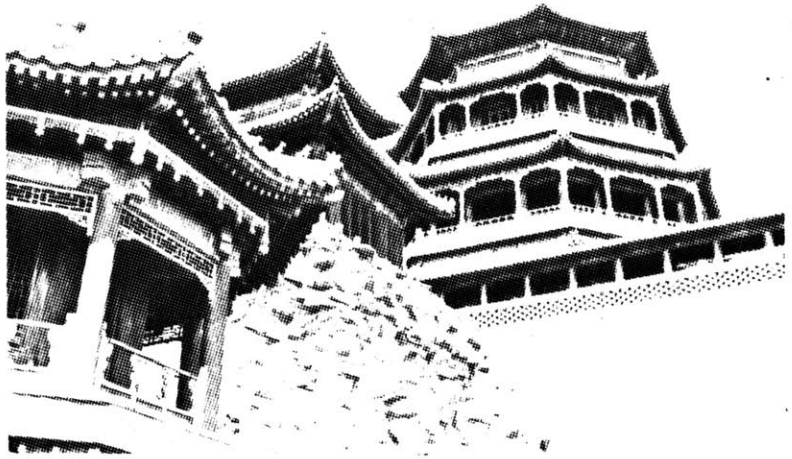
or $\Sigma m_1 d_1 = \Sigma m_2 d_2$

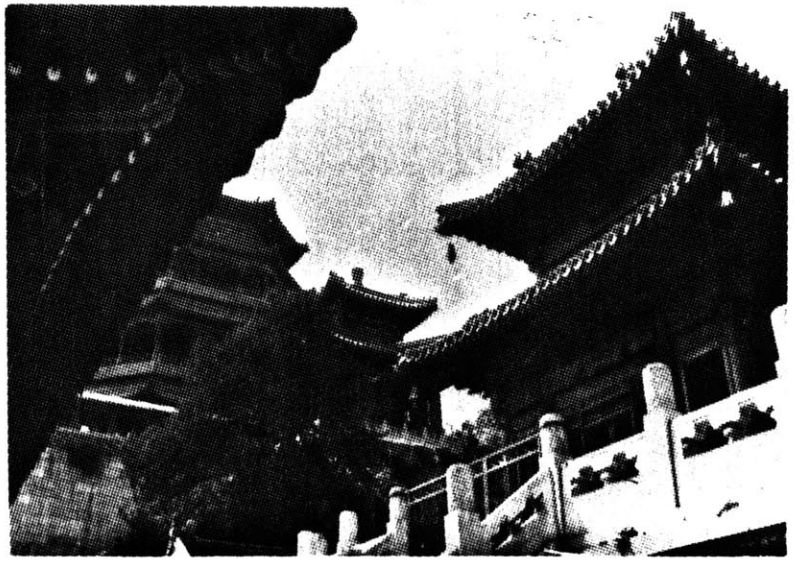
A number of possibilities can occur :



diagrammatical representation







balanced asymmetrical

← balanced symmetrical

balanced asymmetrical →

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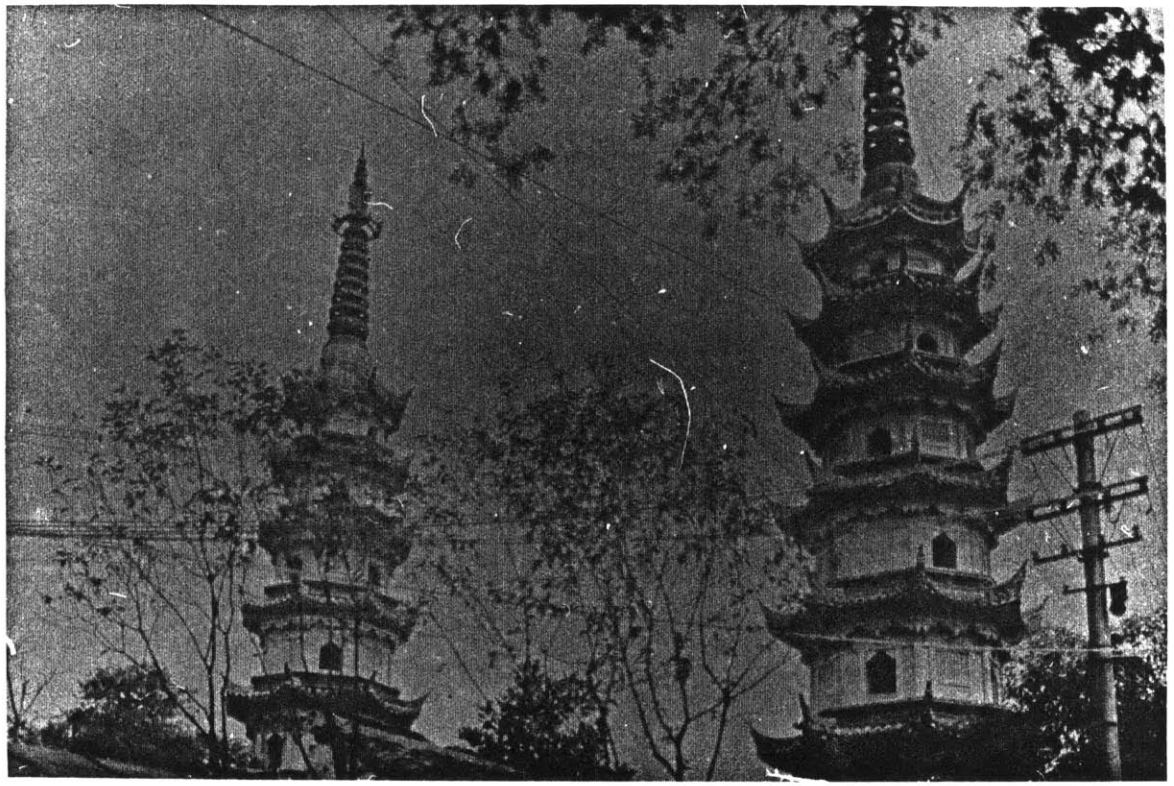


balanced symmetrical

SYSTEM OF PROPORTIONS

— A COMPOSITION OF DIMENSIONS

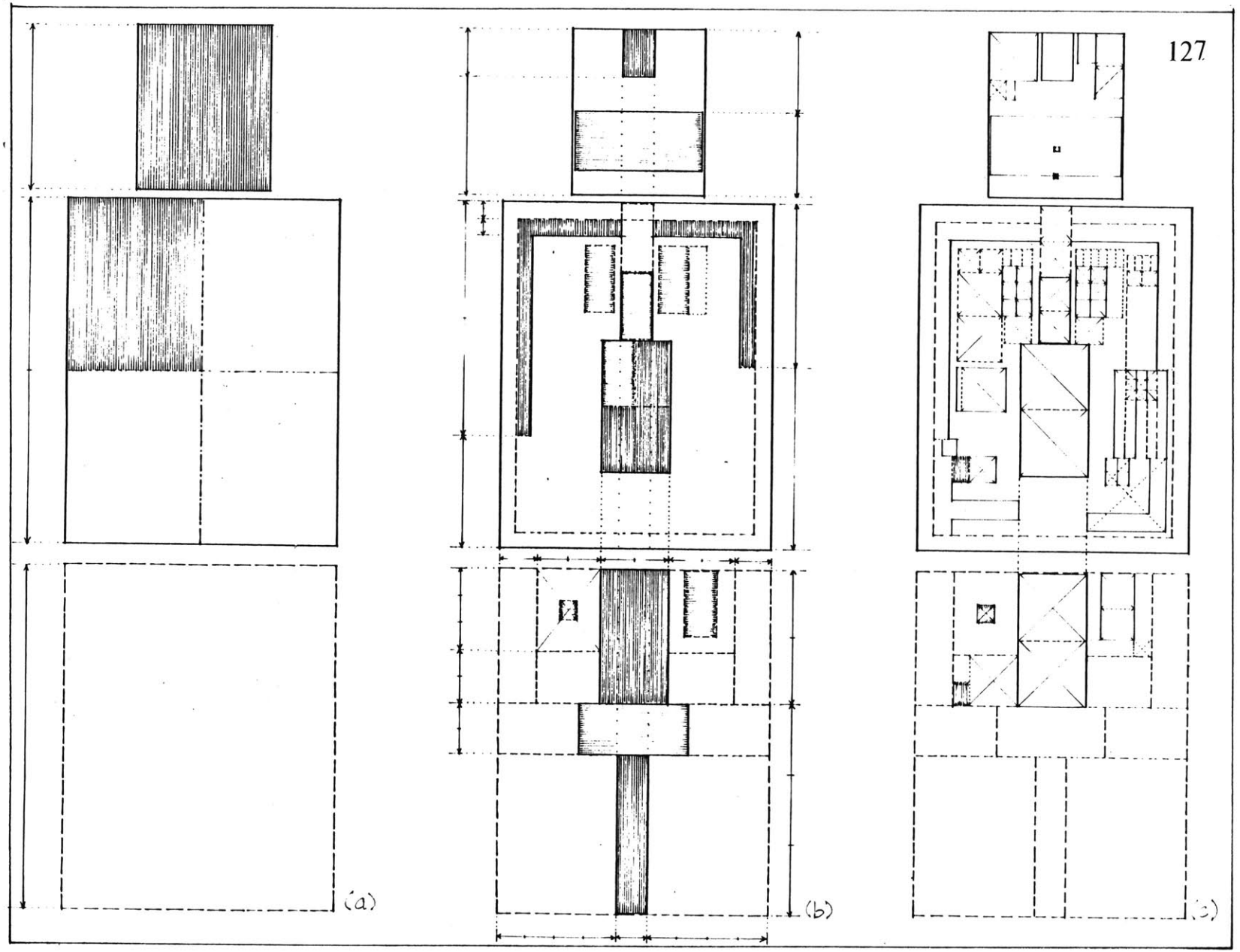
The following analysis drawings serve to illustrate the dimensional relationships between the various elements in Gugong in Beijing.
In the analysis of the Gugong complex site plan we can begin to understand the consistency by which the Chinese execute their ideas in architecture.
The planning of Gugong was conceived to be a microcosm of the universe as seen by the Chinese. Whether the dimensions of the palace are indeed related to that 'universe' is beyond my knowledge. However, within the boundaries of the complex itself sizes do seem to be related.

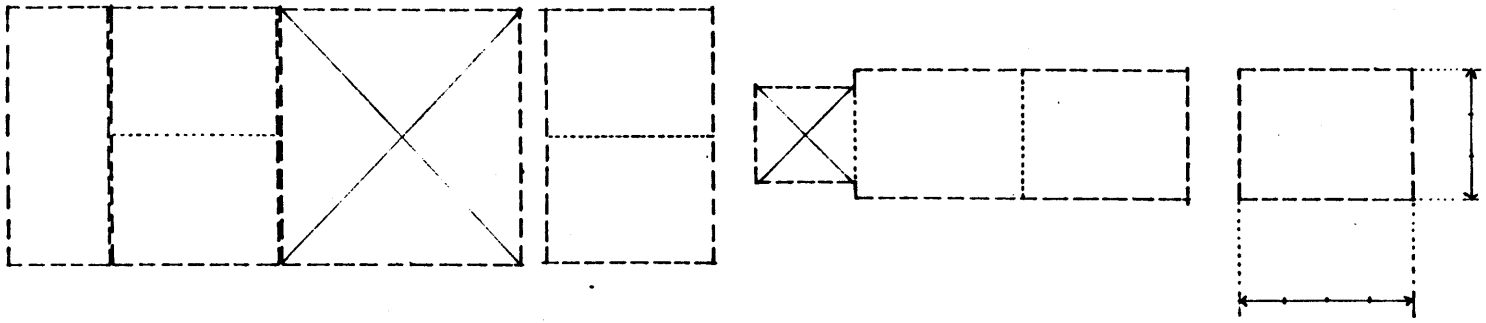
(A description of Gugong has been included in the appendix.)

Drawing (a):
The dimension of the complex in the N-S direction is divided into 5 parts.
note:
actual length defined by King Shan
= 1/5 (total length)
actual length defined by palace proper
= 2/5 (total length)
virtua length defined by 'rest'
= 3/5 (total length).
area defined by King Shan
= 1/4 actual area defined by palace proper
= 1/4 virtual area defined by 'rest'.

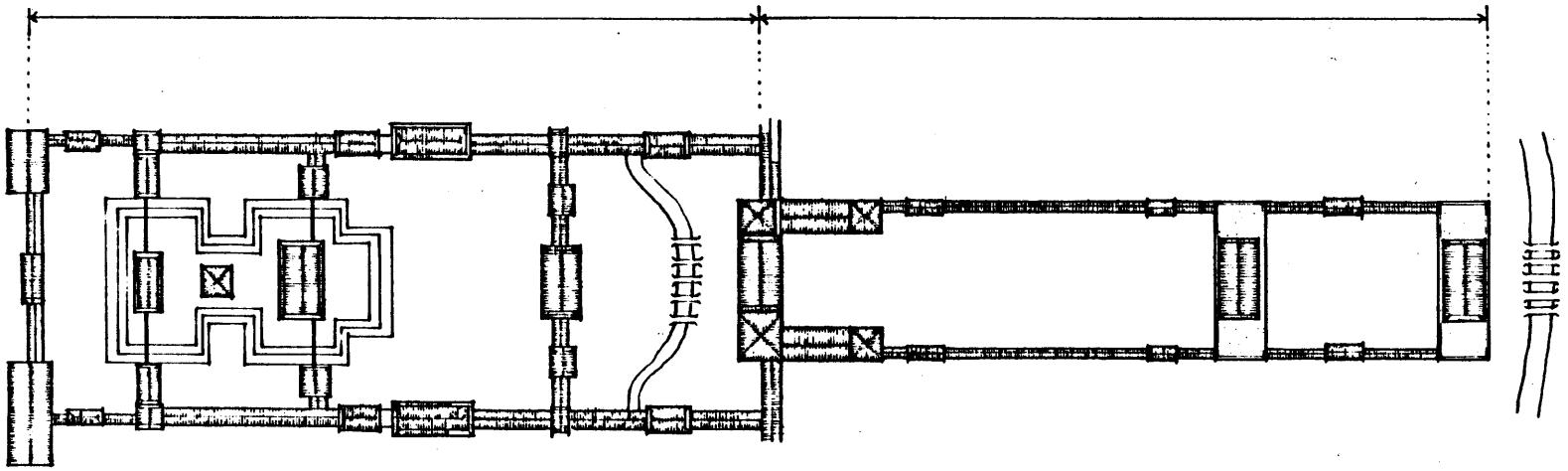
Drawing (b):
note:
area of residential complex
= 1/4 area of administrative complex

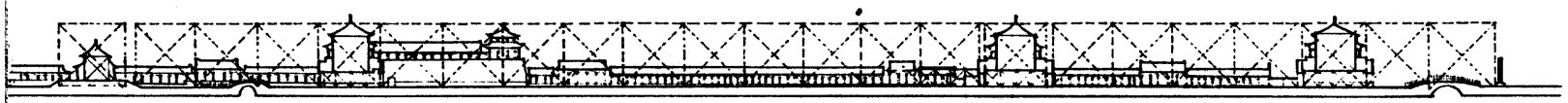
Drawing (c):
An assemblage of virtual squares can be identified.
note:
distance between res. complex and King Shan
= length of residential complex
= 1/2 length of administrative complex


(a)
(b)
(c)



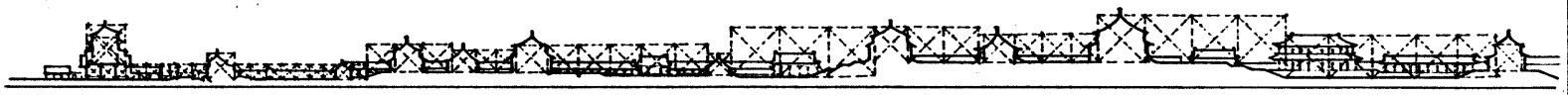
A basic unit (virtual rectangle of width : length = 3:4) is added together to generate the various spaces.





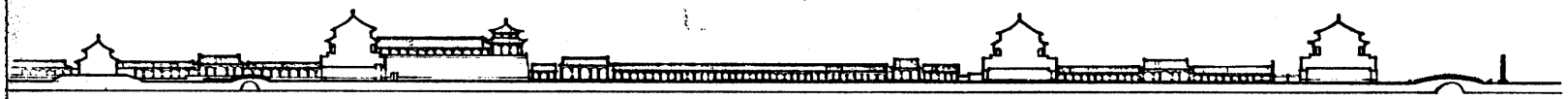
each building mass can be inscribed in a virtual square.

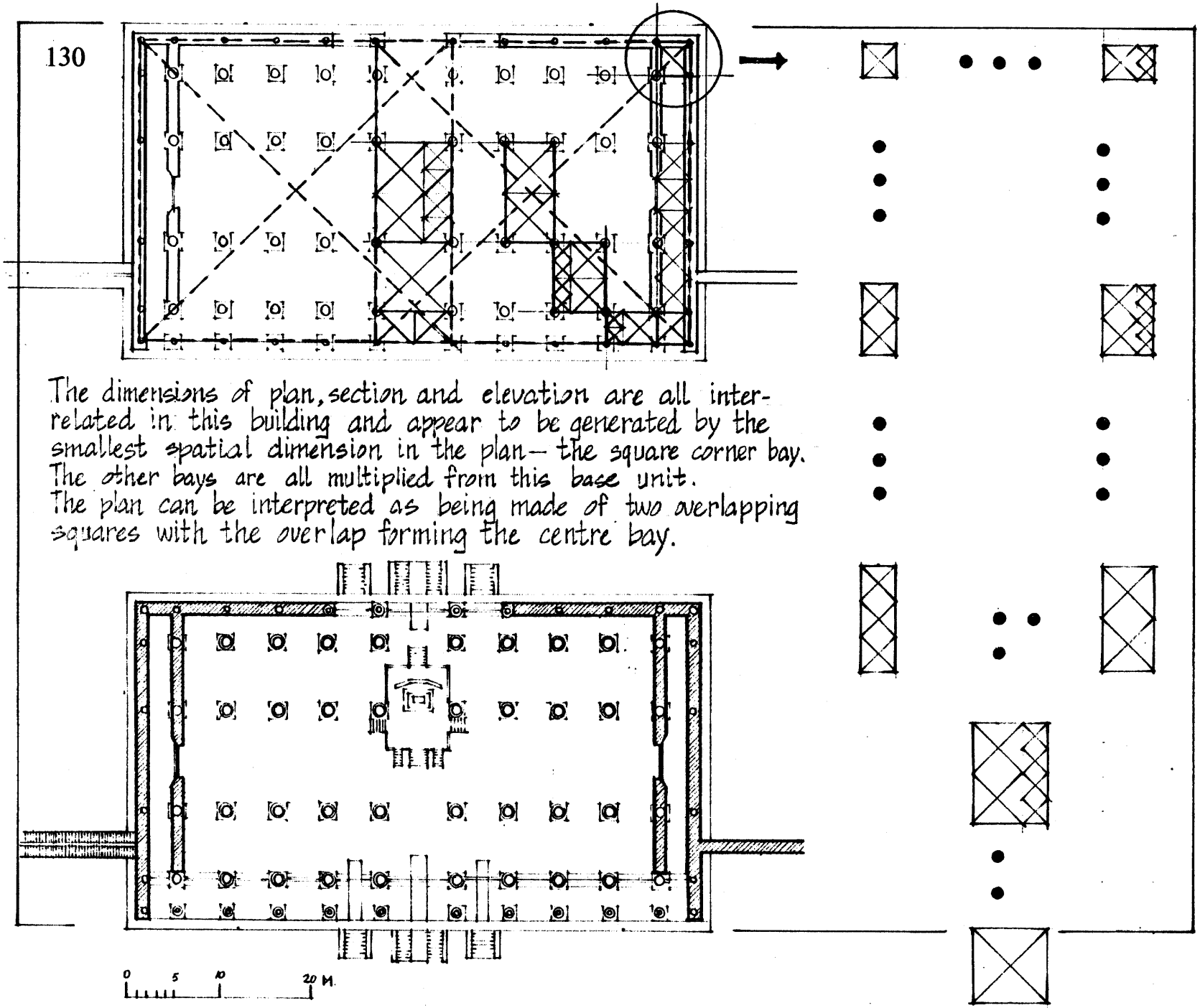
dimension of courtyard
= n × dimension of 'square of adjacent bldg.



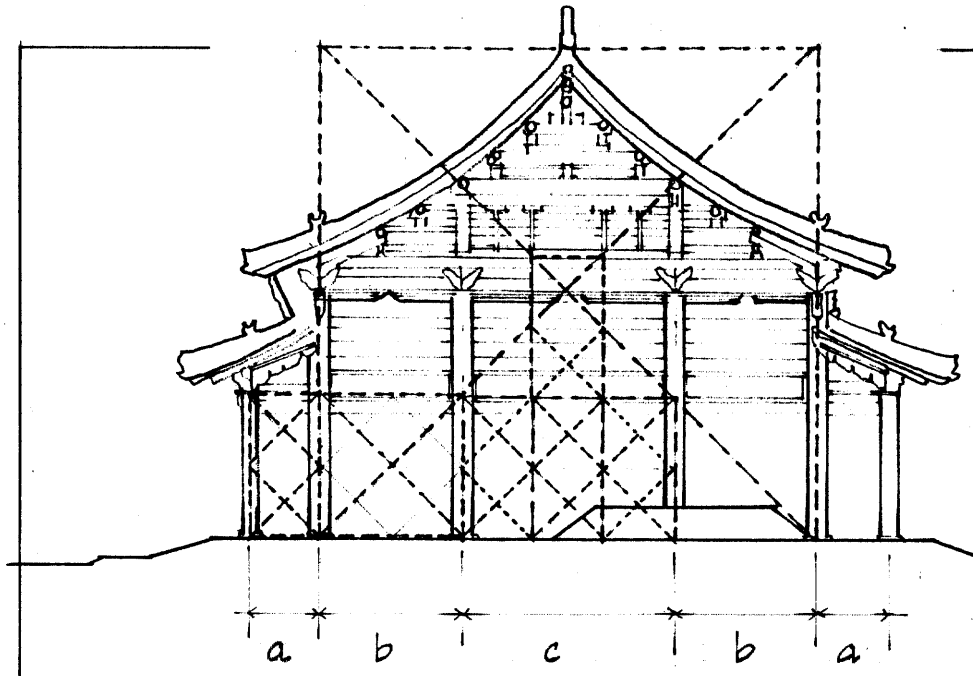
height of passage through gate
≈ height of side bldgs.
≈ height of platform of admin. complex

length of passage through gate
= n × height of passage
where 'n' is whole number





The dimensions of plan, section and elevation are all interrelated in this building and appear to be generated by the smallest spatial dimension in the plan— the square corner bay. The other bays are all multiplied from this base unit.
The plan can be interpreted as being made of two overlapping squares with the overlap forming the centre bay.

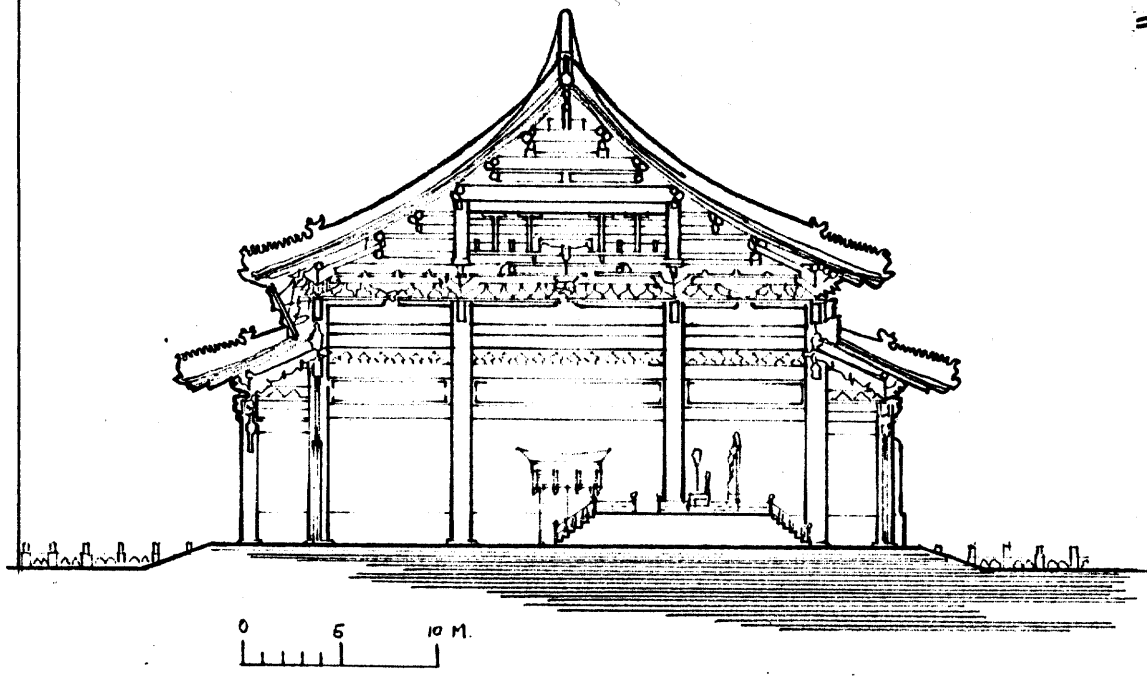


The main building mass can be inscribed in a virtual square with dim. of 'circulation' bay = 1/7 dim. of main bldg. mass

Dimensional relationship of the 3 bay sizes seen in this section;

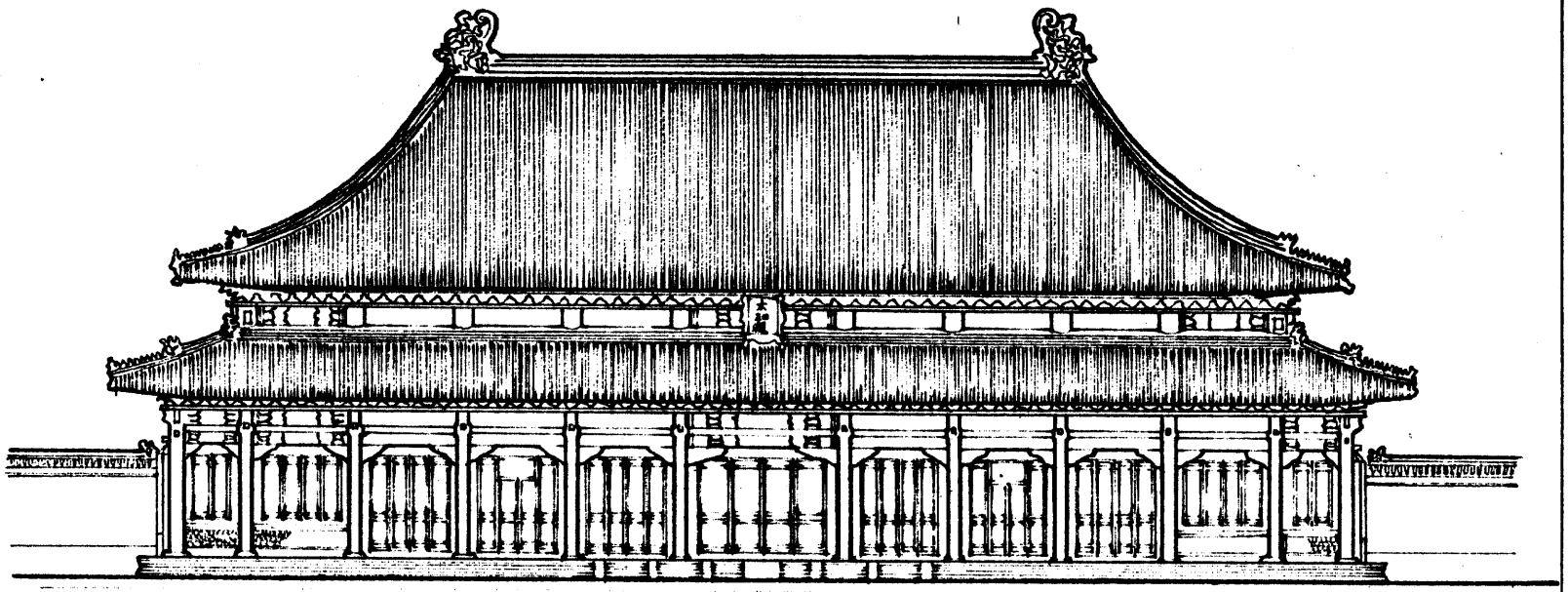
a : b : c
= 1 : 2 : 3

note:
dim. of 'circulation' bay = dim. of square corner bay in plan (i.e. the 'base-unit')



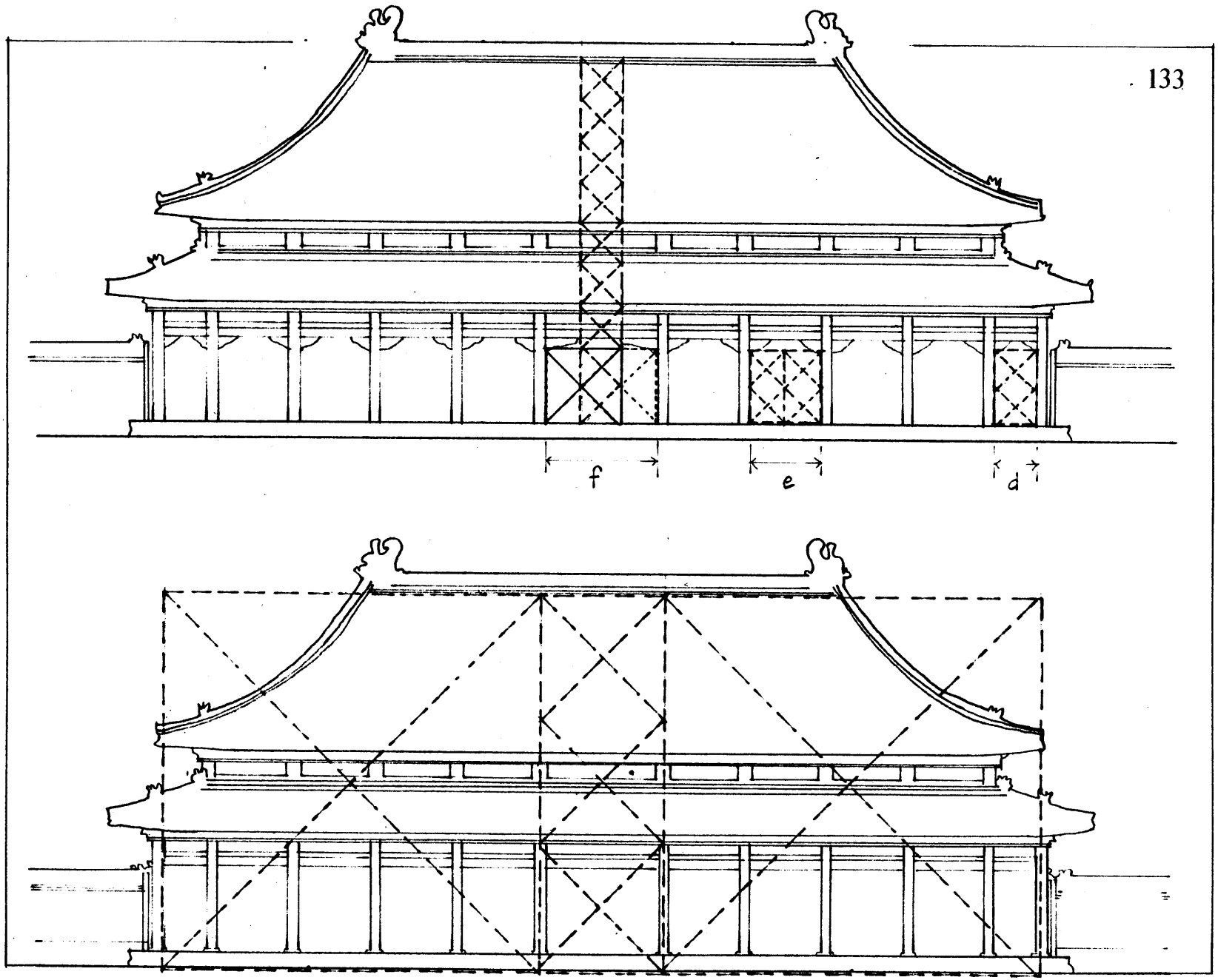
The elevation can be interpreted as being made of two squares abutting the centre bay with
dim. of centre bay = 1/7 total width
width of centre bay = 3 × width of base-unit
height of elevation = 9 × dim. of base-unit

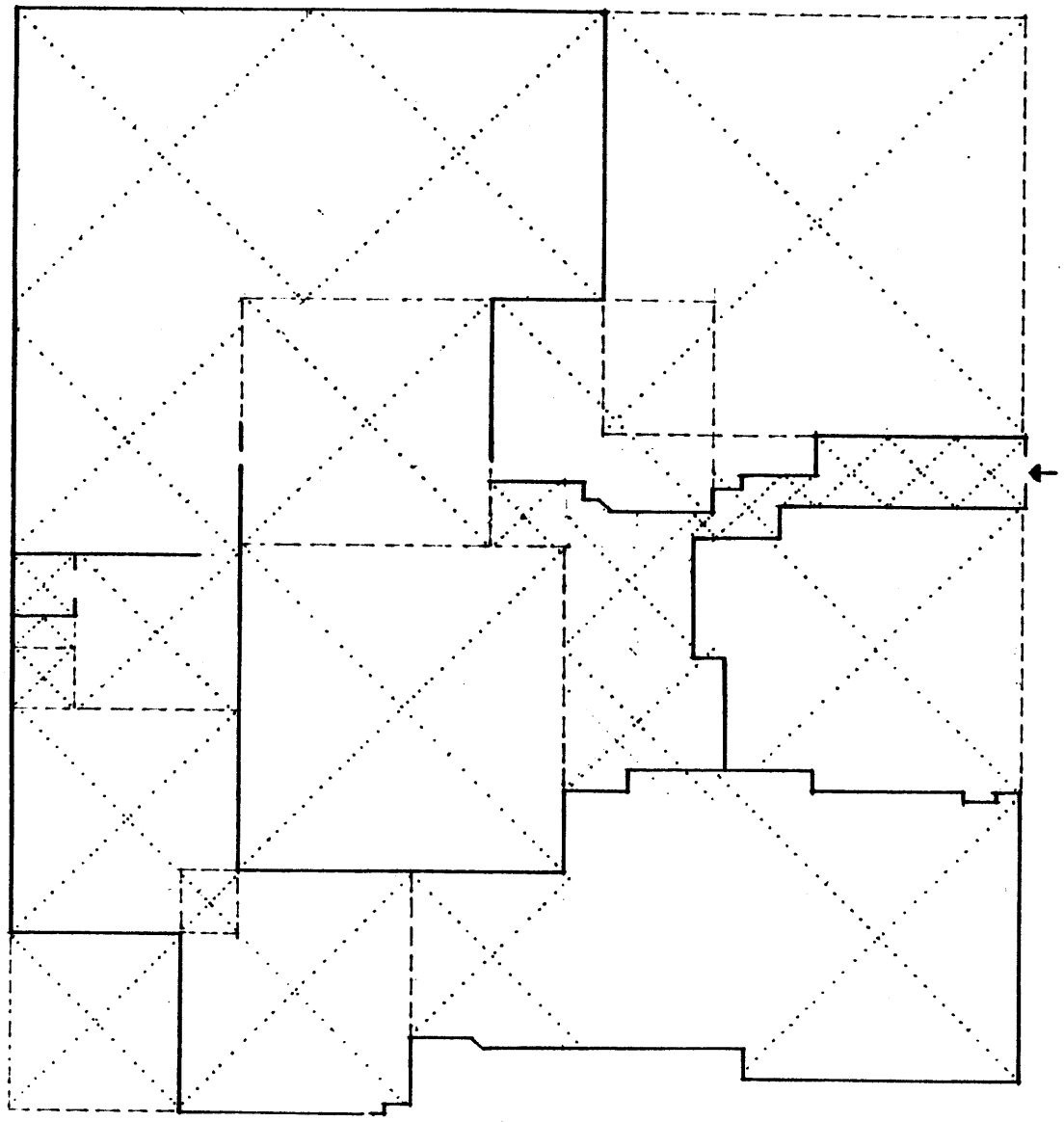
note:
position of eave lines coincide with edge of square and dimensional relationship of 3 bay sizes;
d : e : f = 1 : 2 : 3



0 5 10 M.

HALL OF SUPREME HARMONY


f
e
d



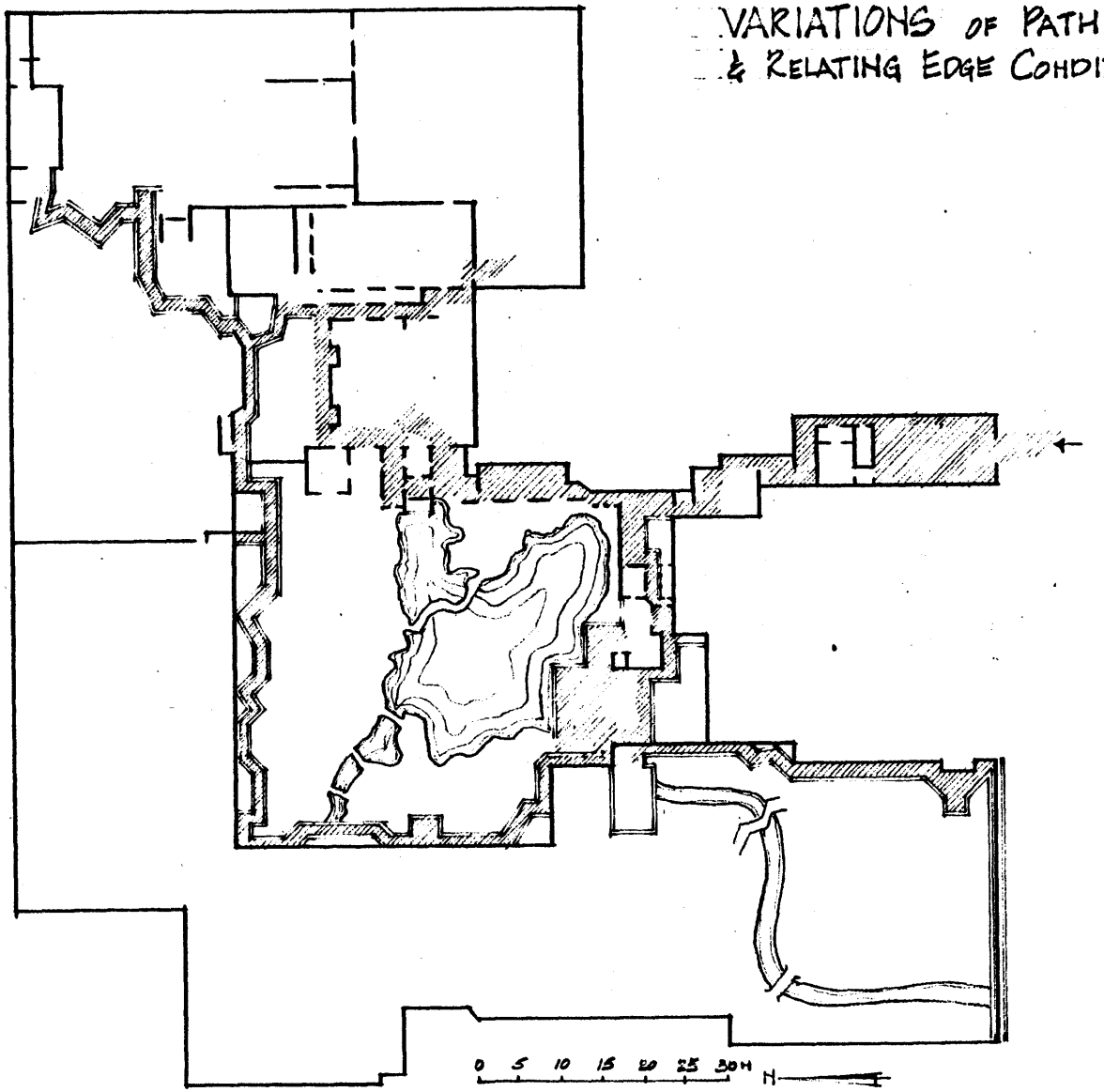
LIU YUAN -- an assemblage of squares

SYSTEM OF CIRCULATION

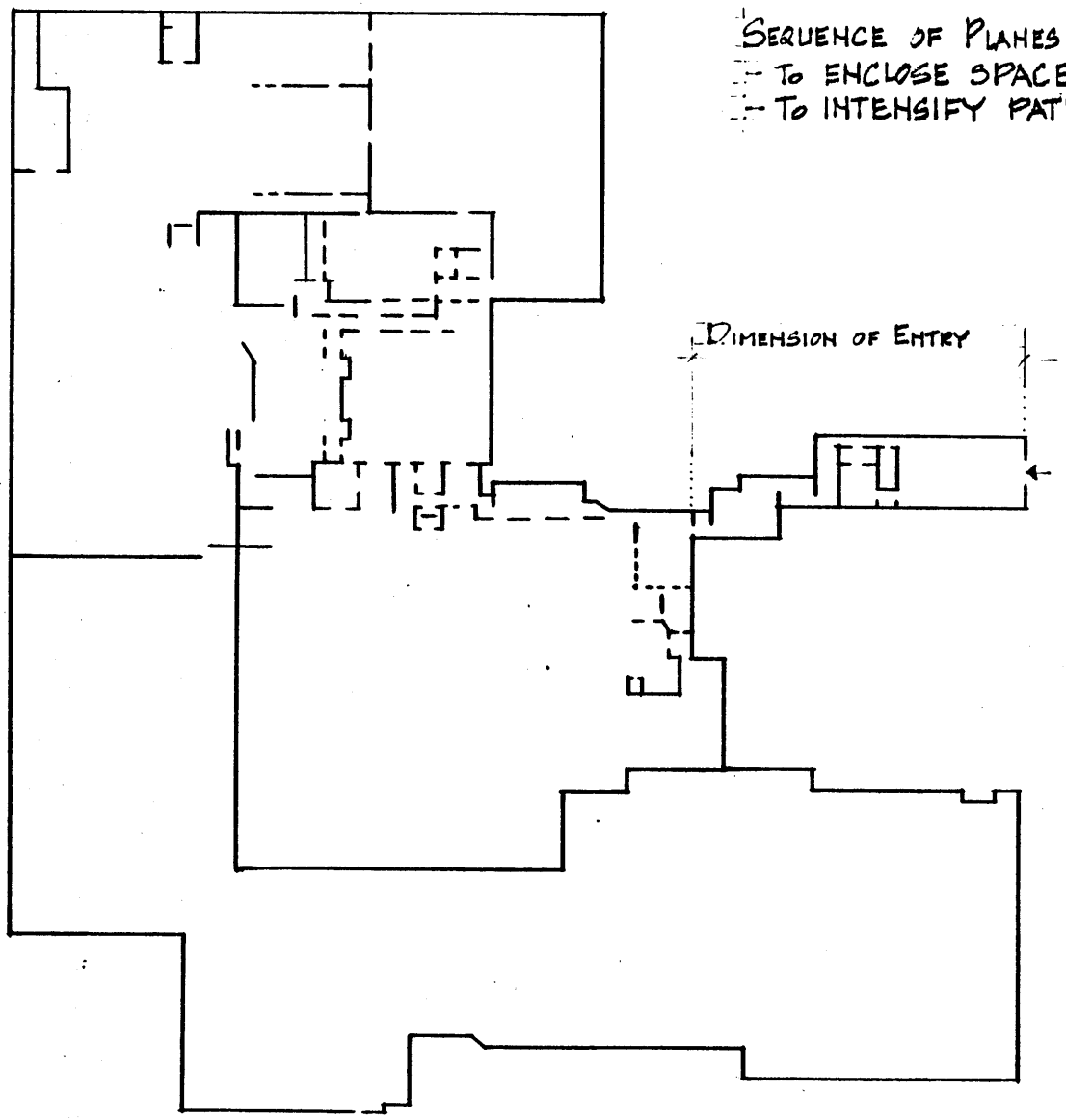
The Chinese enjoy walking/strolling — at least, this is what one is lead to believe by the architecture. The path is actually built and conscientiously designed so that the whole experience is preplanned and, in a way, 'controlled'.

One instance of this built path is the corridor which is a very important element in the architecture. It is the thread that ties all the pieces together.

VARIATIONS OF PATH & RELATING EDGE CONDITIONS



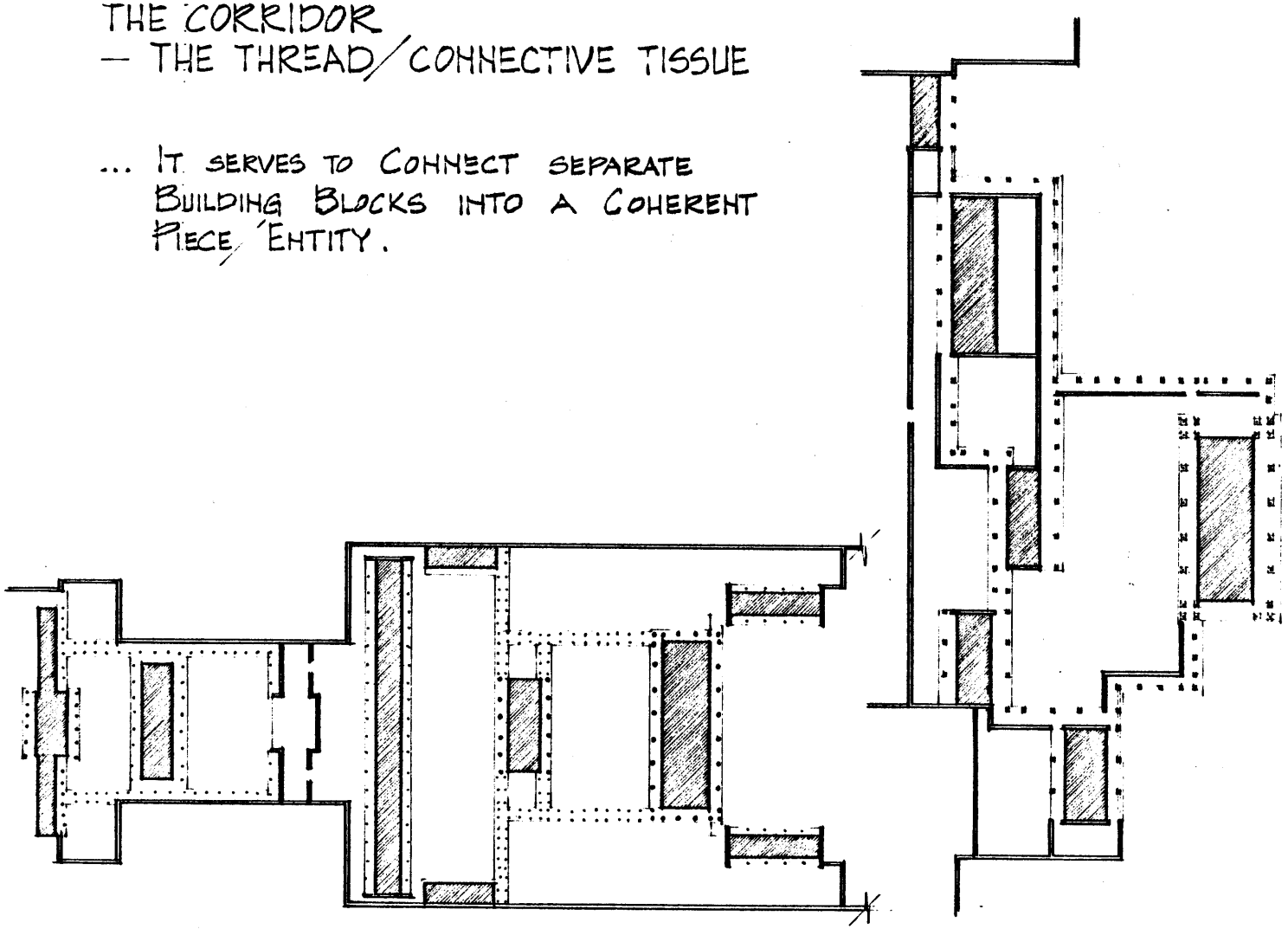
LIU YUAN

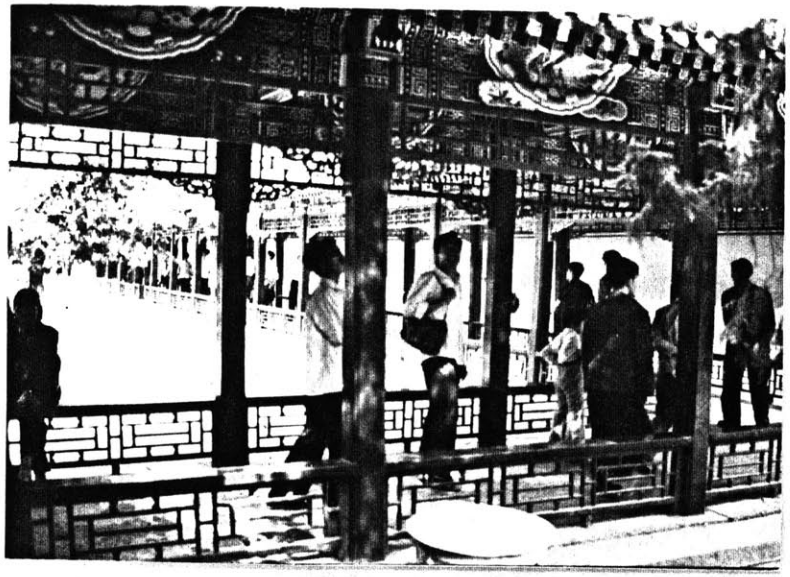

SEQUENCE OF PLANES
- TO ENCLOSE SPACE
- TO INTENSIFY PATH
DIMENSION OF ENTRY

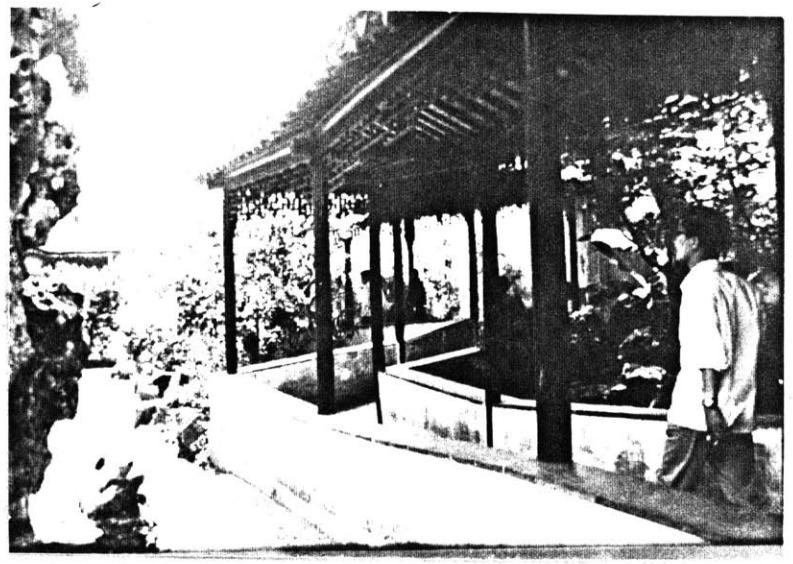
LIU YUAN

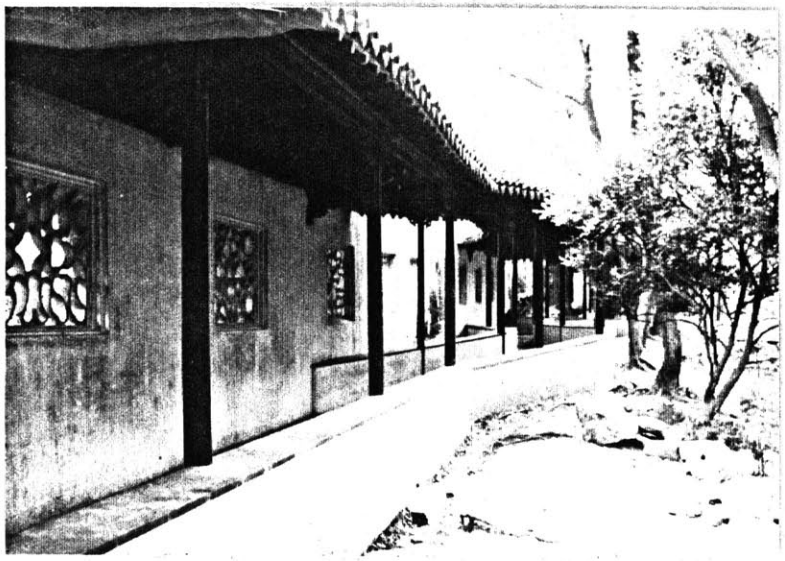
THE CORRIDOR
— THE THREAD/CONNECTIVE TISSUE

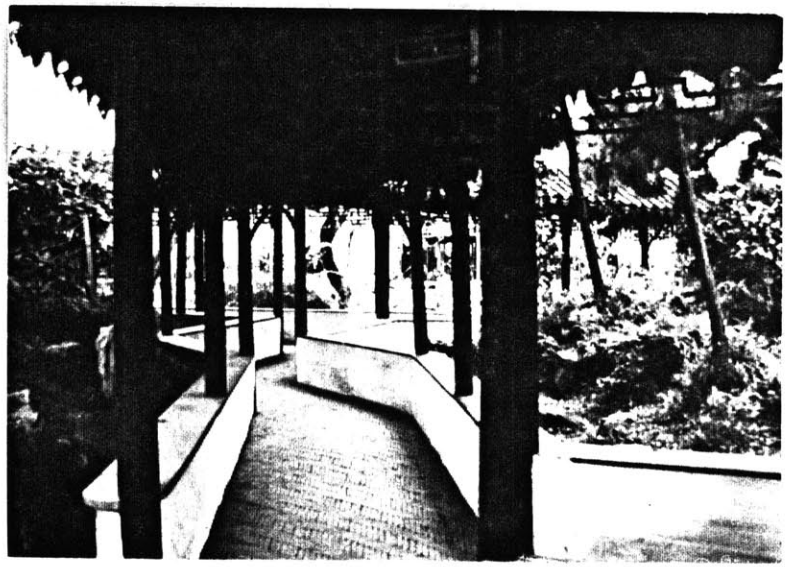
... IT SERVES TO CONNECT SEPARATE BUILDING BLOCKS INTO A COHERENT PIECE/ENTITY.

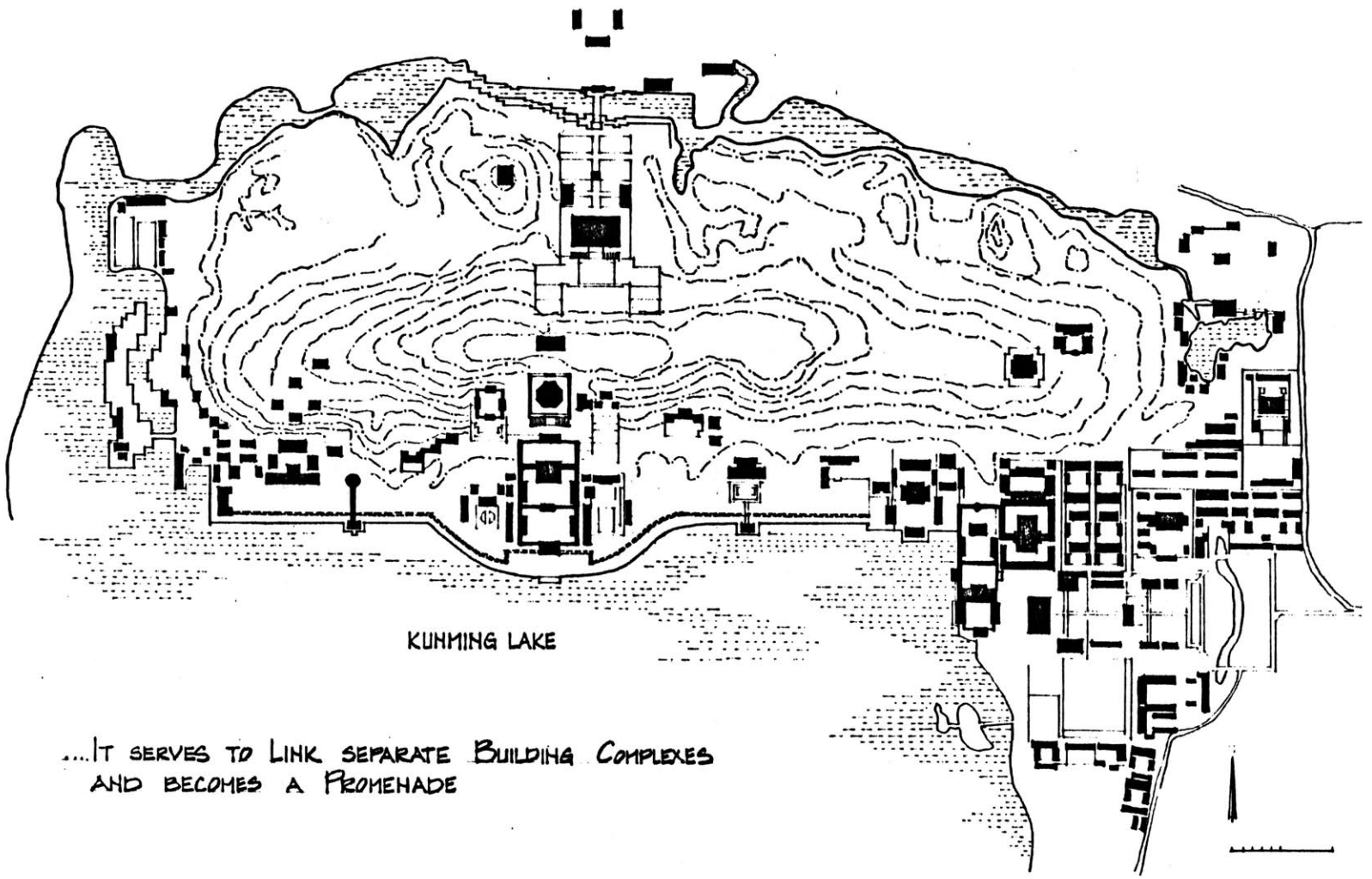






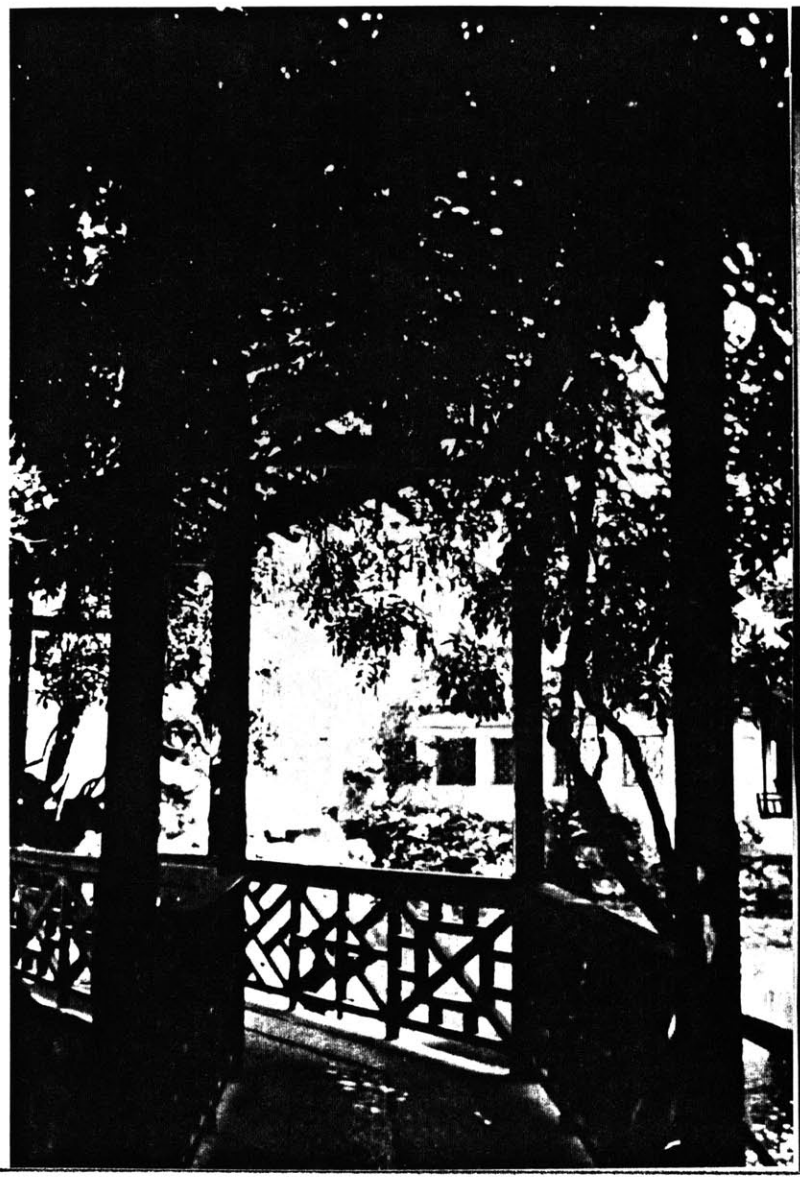


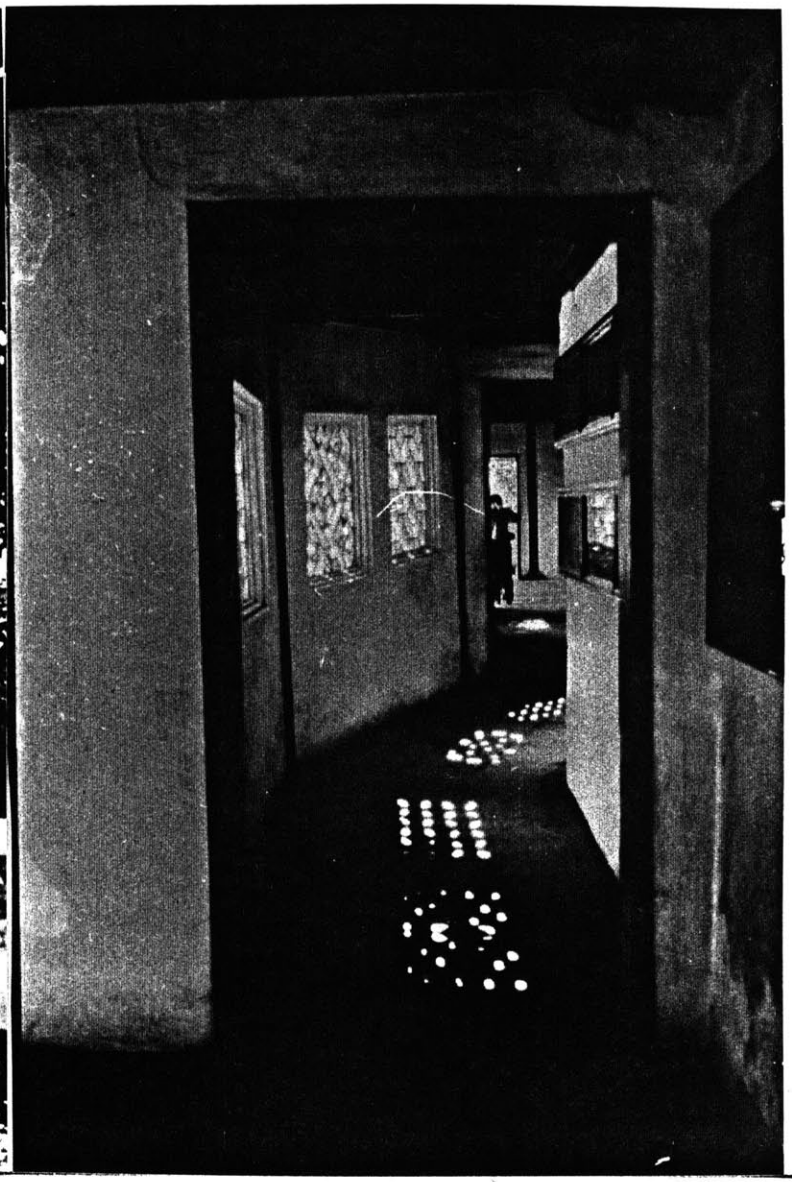




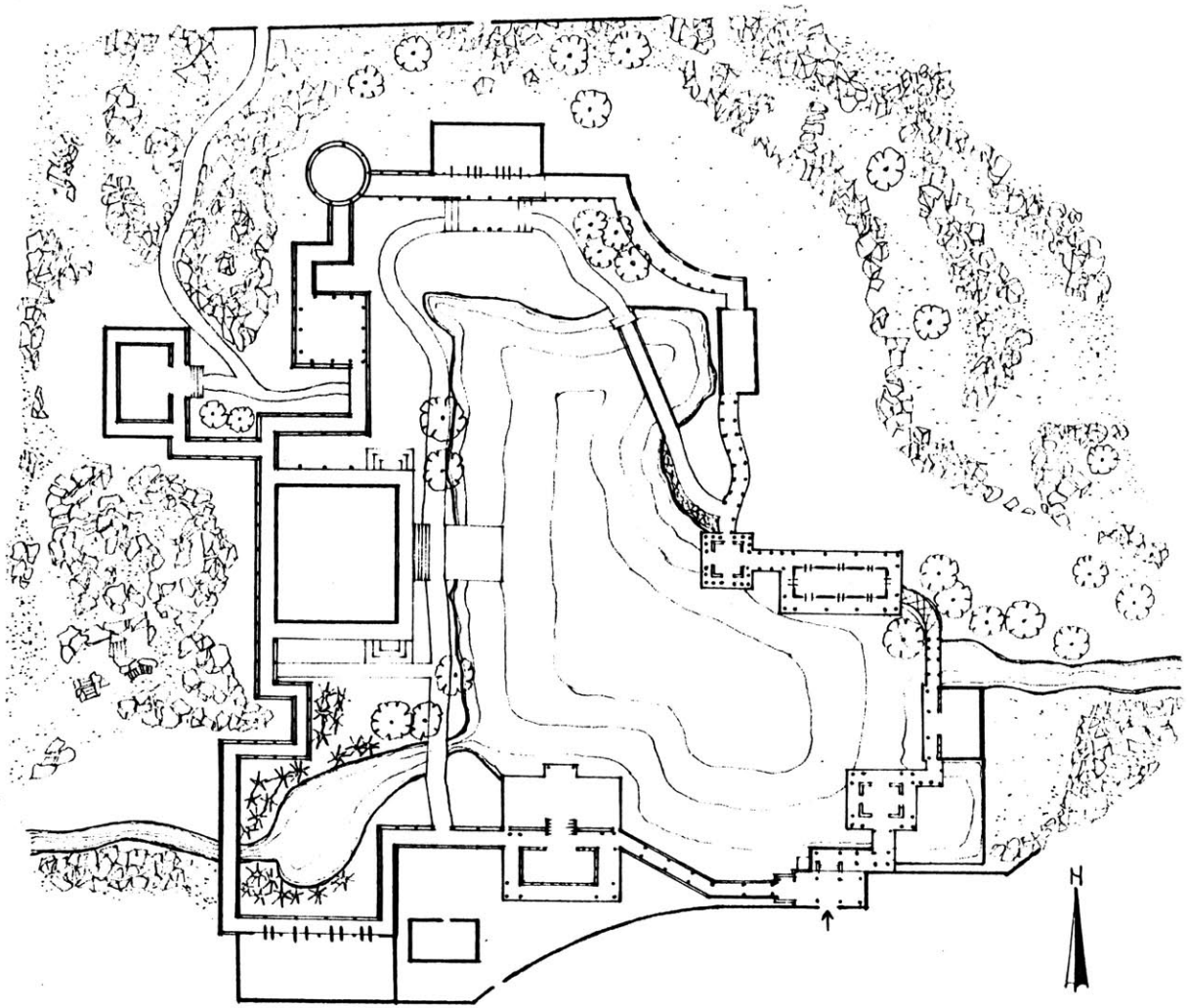
....IT SERVES TO LINK SEPARATE BUILDING COMPLEXES AND BECOMES A PROMENADE

I HO YUAN



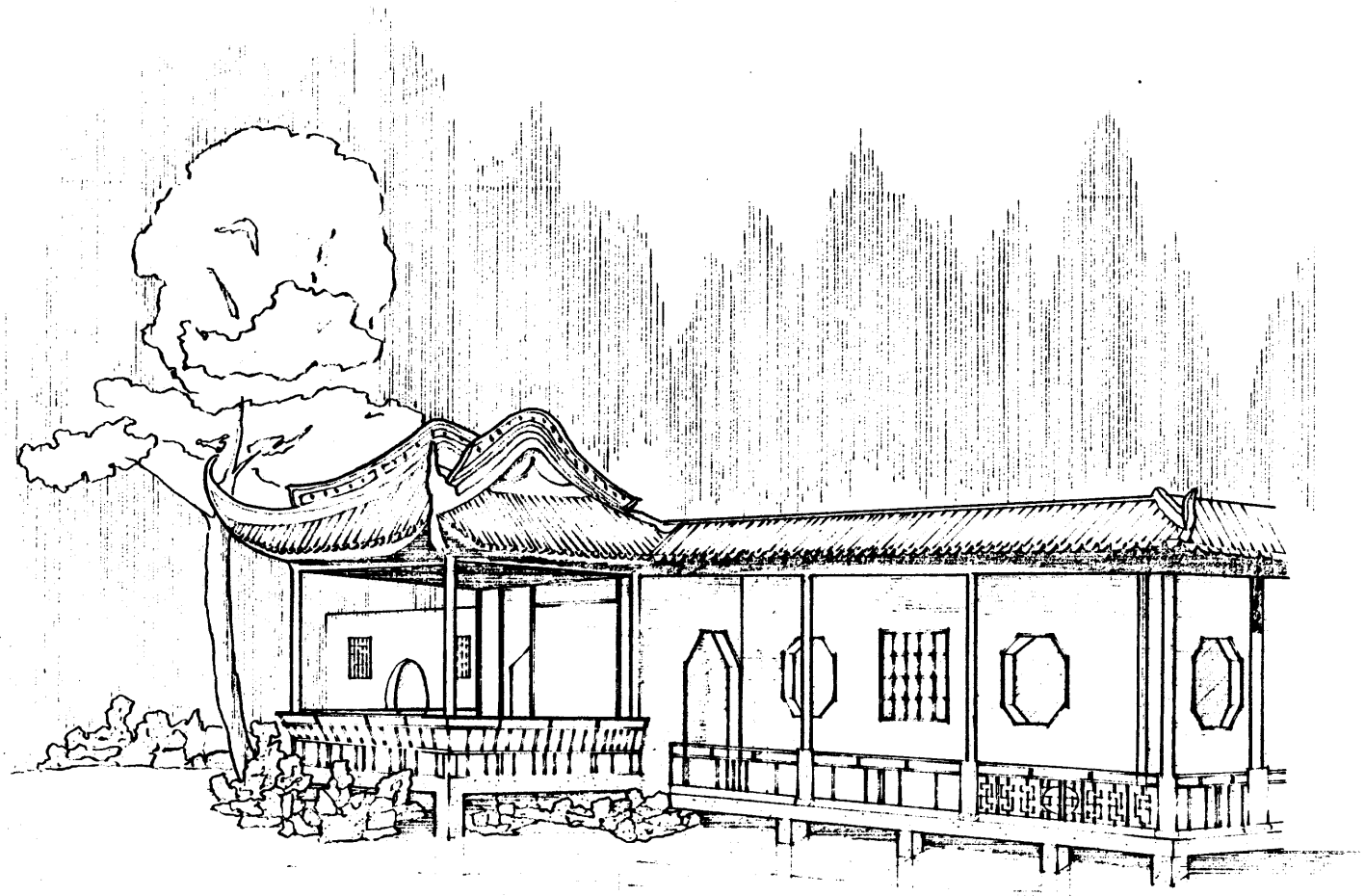


..... it adds interest and rhythm to movement
..... it gives scale
..... it provides continuity through change
..... it provides change within a constant field
..... it frames views
..... it is a screen
but most important of all .....



HSIEH CHU YUAN

It is more than being just a path.....



... It becomes a Place

ONWARD

The information that can be gathered through looking at traditional Chinese Architecture is abundant. What I have presented here in this thesis is but a minute portion and limited version of that vast base of knowledge. Nevertheless, it is a beginning towards realizing what this 'new Chinese architecture' could be.

The need to have this 'new' architecture be a valid continuum of traditional Chinese architecture stems not from nostalgia for a past age but a belief that four thousand years of living has developed with it an understanding of what this process of building is all about. Where European 'imports' seemed out of place in the Chinese context yesteryear, a replication of traditional forms in today's context would appear to be just as invalid.

The issues that will have to be addressed in

this period of history are complex but they are issues that confront other countries as well. It would be ignorant to ignore the developments in architecture that have been made outside the Wall. The 'new' should evolve from a synthesis of the two - underlying principles in traditional Chinese architecture and recent architectural developments in the outside world.

Appendix

The Imperial Palace in the 'Forbidden City' in Beijing is the largest and best preserved group of historic buildings in China today. The 'Forbidden City' was built between 1406 A.D. and 1420 A.D., a period of fourteen years. In spite of many subsequent alterations and expansions it remains, after more than 560 years, fundamentally unchanged in both dimension and layout.

The 'Forbidden City' is located roughly in the center of Beijing but closer to the southern edge of the city. The Palace is located within the 'Forbidden City' and is approximately 960 meters long along the North-South axis and 760 meters long along the East-West axis. There are huge city gates on four sides and the four corners of the palace each have a corner tower. The Palace, which is now used as a museum, was originally the Imperial Palace during

China's Ming and Qing dynasties. It included the administrative and residential quarters for the emperors of those periods.

The Beijing city plan of the Ming and Qing periods is a clear example of the Chinese feudal society approach to planning cities and palaces. A major road/spine runs from south to north through the city and the palace and important buildings are organized along this axis.

In the south the Wing Ting Men ('Men' meaning 'gate') forms the starting point. Then from the inner city wall gate the Ching Yeung Men runs a straight and wide main road along which there are two huge complexes on either side.

From the Ching Yeung Men the road passes through the Tai Ming Men to the main entrance gate of the Imperial Palace, the Tien An Men. Here, to

the south of Tien An Men is the famous Tien An Men Square. The 'entrance' procession is very elaborate. After passing through the Tien An Men one moves through a series of courts and gates - the Tien Men and the Ng Men before arriving at the Tai He Men which is the gate that forms the entrance into the administrative complex of the three big Throne Halls: the Tai He dian (Hall of Supreme Harmony), the Zhong He dian (Hall of Middle Harmony) and the Bao He dian (Hall of Preserved Harmony). This administrative complex marks the end of the public section of the Palace.

Behind the administrative complex is the Qien Qing Men which marks the beginning of the private residential section of the Palace. This section includes three palaces - the Qien Qing gong, the Jiao Tai dian and the Kun Ming gong. To the north of this

residential group are the Imperial gardens which hold the seventh building which lies on the main axis of the Palace, the Oi Nan dian. The Sun Mo Men then closes the formal palace grounds.

At the back of the formal palace grounds rises the King Shan (View Hill) - a hill of approximately 50 meters in height that forms the highest point along the North-South axis in the Imperial Palace as well as that in the city of Beijing and offers a wonderful view of the city from its pavillion that is perched on the top.

Behind King Shan is the North Gate of the Imperial Palace, Ti An Men (Gate of Earthly Peace). The end of the axis of the Forbidden City is then marked by two tall structures - the Bell and Drum Towers - that flank the axis on either side.

BIBLIOGRAPHY

ALEXANDER, CHRISTOPHER. A PATTERN LANGUAGE
NEW YORK, OXFORD UNIVERSITY PRESS, 1977

BUCK, PEARL S. THE GOOD EARTH
POCKET BOOKS, NEW YORK, 1939

BLASER, WERNER CHINESE PAVILLION ARCHITECTURE
ARCHITECTURAL BOOK PUBLISHING CO. INC., NEW YORK, 1974

CHAI, CH'U THE STORY OF CHINESE PHILOSOPHY,
WASHINGTON SQUARE PRESS INC., NEW YORK, 1961

CHING, FRANCIS D. K. ARCHITECTURE: FORM, SPACE AND ORDER
VAN NOSTRAND REINHOLD COMPANY, NEW YORK, 1979

DYE, DANIEL SHEETS CHINESE LATTICE DESIGNS
DOVER PUBLICATIONS, INC., NEW YORK 1974

EBERHARD, WOLFRAM A HISTORY OF CHINA
UNIVERSITY OF CALFORNIA PRESS, BERKELEY AND LOS ANGELES, CALIFORNIA, 1977

EITEL, E. J. FENG SHUI
KINGSTON PRESS, GREAT BRITAIN, 1979

FUNG, YU-LAN A SHORT HISTORY OF CHINESE PHILOSOPHY
THE FREE PRESS, NEW YORK, 1966

GERNET, JACQUES DAILY LIFE IN CHINA
THE MACMILLAN COMPANY, NEW YORK, 1962

HAWLEY, W. M. CHINESE FOLK DESIGNS
DOVER PUBLICATIONS, INC., NEW YORK, 1971

JENCKS, CHARLES LATE-MODERN ARCHITECTURE
RIZZOLI INTERNATIONAL PUBLICATIONS, INC., NEW YORK, 1980

KANDA, SHUN "THE 'STREET' AND 'HIROBA' OF JAPAN", ARCHITECTS YEARBOOK 14
LONDON: ELEK BOOKS

KATES, GEORGE N. THE YEAR THAT WERE FAT
THE MIT PRESS, CAMBRIDGE, MASSACHUSETTS, 1967

KESWICK, MAGGIE — THE CHINESE GARDEN
ACADEMY EDITIONS, LONDON, 1978

LIANG, SHIH CHING, — QING SHIH YING TSO JEH LI, (translated QING DYNASTY CONSTRUCTION METHODS)
CHINESE CONSTRUCTION SOCIETY PRESS, BEIJING, 1980

LIN, YU TANG — THE CHINESE THEORY OF ART
PANTHER BOOKS, LONDON, 1969

LIU, K. C. — CHUNG KUO KOO TAI CHIEN CHU SZE (translated HISTORY OF TRADITIONAL CHINESE ARCHITECTURE)
CHINESE CONSTRUCTION SOCIETY PRESS, BEIJING, 1980

PIRAZZOLI-T'SERSTEVENS, MICHELE — LIVING ARCHITECTURE: CHINESE
GROSSET & DUNLAP, NEW YORK, 1971

SU, GIN-DJIH — CHINESE ARCHITECTURE: PAST AND CONTEMPORARY
THE SIN POH AMALGAMATED (H.K.) LIMITED, HONG KONG, 1964

THAKURDESAI, S. G. — " 'SENSE OF PLACE' IN GREEK ANONYMOUS ARCHITECTURE ", ARCHITECTS YEARBOOK 14,

ELEK BOOKS, LONDON

THILO, THOMAS — KLASSISCHE CHINESISCHE BAUKUNST

KOEHLER π AMELANG, LEIPZIG, 1977

TUAN, YI-FU — TOPOPHILIA

PRENTICE-HALL INC., NEW JERSEY, 1974

WHITE, THEODORE H. — IN SEARCH OF HISTORY

WARNER BOOKS, NEW YORK, 1981

WU, NELSON — CHINESE AND INDIAN ARCHITECTURE

GEORGE BRAZILLIER, NEW YORK, 1963

FOOTNOTES:

1. Norberg-Schulz, Christian - Meaning in Architecture
2. Wu, Nelson - Chinese and Indian Architecture: The City of Man, The Mountain of God, and the Realm of the Immortals
3. Blaser, Werner - Chinese Pavillion Architecture
4. Pirazzoli-T'serstevens, Michelle - Living Architecture: Chinese
5. Ibid.
6. Eberhard, Wolfram - A History of China
7. Su, Gin-Djih - Chinese Architecture: Past and Contemporary
8. Ibid.
9. Buck, Pearl - The Good Earth
10. Pirazzoli-T'serstevens, Michelle - Living Architecture: Chinese
11. Jencks, Charles - "The Pluralism of Modern Architecture", Late-Modern Architecture
12. Architectural Form, Jan. 1948
13. Eberhard, Wolfram - A History of China

The base drawings in this thesis were redrawn from various sources:

- HISTORY OF TRADITIONAL CHINESE ARCHITECTURE
- CHINESE GARDENS
- NOTES COMPILED BY TIANJIN U. DEPARTMENT OF ARCHITECTURE

All the photographs were taken during my visit to China this past summer of 1982.