THE USE OF CHINESE GEOMANCY IN CONTEMPORARY ARCHITECTURAL DESIGN

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ABSTRACT

In the field of contemporary architectural design the expression of cultural images without relying on superficial traditional motifs is a major concern. That contemporary architectural design should nevertheless express cultural images is the author's belief. One method for incorporating basic Chinese cultural principles in architectural design might be to follow Chinese geomantic orders expressed in modern functional and formal terms.

The main source of the geomantic principles applied in the studies are based on Yang Chai Shih Shu (The Ten Books of Yang Dwelling, by Wang Wei, fifth century), which gives the basis for orientations, site selection, the courtyard concept and other concepts of building lay-out.

A design process based on geomantic staging was developed for the experiment to investigate how the modern designer might integrate and coordinate the input of the professional geomancer with that of the architect-designer and other specialists.

In order to test the method, a hypothetical program was developed for a Chinese Cultural Research Institute. The design method attempted to respond to a decision-making process which took into account Chinese geomantic principles and other Chinese traditional requirements together with a contemporary design approach.

The result of the design experiment may not only show how a unique "Chinese" character can be expressed in modern, non-superficial terms but may also serve as an introduction to the science and use of Chinese geomancy for those unfamiliar with it.

Prof. Rogatnick, Abraham

TABLE OF CONTENTS

INTRODUCTION		1
CHAPTER 1.	CHINESE GEOMANCY IN BUILDING CONSTRUCTION	
1.1	Definition of Chinese Geomancy	4
1.2	Geomancy as a creative process	7
1.3	Functions of Chinese Geomancy	10
1.3.1	The Types of Exterior Space	11
1.3.2	The Types of Interior Space	35
1.4	Summary	52
CHAPTER 2.	CONCEPTUAL FRAMEWORK AND HYPOTHESIS	
2.1	Conceptual Framework	54
2.2	Hypothesis	58
CHAPTER 3.	DESIGN METHOD	
3.1	Design Programming Based on Geomantic Staging	61
3.2	Hypothetical Project	76
3.2.1	The Intention of Design	76
3.2.2	Specific Criteria	78
3.2.3	Design Problem Statement	79
CHAPTER 4.	DESIGN	
4.1	Site Layout and Site Planning	83
4.2	The Design of the Complex	91
CHAPTER 5.	CONCLUSION	
5.1	Conclusion and Discussion	120
5.2	Further Research	127
BIBLIOGRAPHY		129
APPENDIX I	GLOSSARY	132
APPENDIX II	OMENS	134
APPENDIX III	PATTERNS OF AUSPICIOUS SITES	137
APPENDIX IV	FUNCTIONAL, SPACING AND SITE REQUIREMENTS OF C.C.R.I.	138

LIST OF ILLUSTRATIONS

Figure	1.1	The Relationship of "li" and "ch'i"	6
Figure	1.2	The Eight Trigrams	11
Figure	1.3	Mountainous Elements	12
Figure	1.4	Topographical Elements	13
Figure	1.5	Water Elements	14
Figure	1.6	Infrastructure	15
Figure	1.7	Vegetation	16
Figure	1.8	Building Graves and Symbolic Forms	16
Figure	1.9	The Shape of The Site	17
Figure	1.10	Water Forms	18
Figure	1.11	Water Forms Associated with Chinese Pictographs	19
Figure	1.12	Water Forms Associated with Symbolic Form	19
Figure	1.13	Landforms Associated with Pictographic and Symbolic Forms	20
Figure	1.14	Landforms Associated with Mountain and Water Bodies Representing Inauspicious	21
Figure	1.15	Landforms Associated with Mountain and Water Bodies Representing Auspicious	21
Figure	1.16	Mounds or Stones on The Road	21
Figure	1.17	Road Bends out from a House	22
Figure	1.18	Road Associated with Symbolic Form	22
Figure	1.19	Roads Aimed at The House	22
Figure	1.20	Roads Aimed at The House	23
Figure	1.21	Roads Aimed at The House	23
Figure	1.22	Well Planted Tree beside The House	24
Figure	1.23	Disorganised Trees	25
Figure	1.24	Gnarled Form of Tree	28
Figure	1.25	The Location of Trees	29
Figure	1.26	The Inauspicous Trees in Chinese Geomancy	30
Figure	1.27	Chinese Traditional Relationship between Human Existence and Surrounding Environment	36
Figure	1.28	Central Space	38
Figure	1.29	Hierachical Space	38
Figure	1.30	Building Height with Five Elements and Nine stars	39
Figure	1.31	Sitting and Facing Relation with Orientation and Major Buildings and Main Gate	41
Figure	1.32	12 Examples of Courtyard Concept and Building Height	42
Figure	1.33	Building Form and Conflict	46
Figure	1.34	Building Layout for Pictographical Meaning	47
Figure	1.35	Building Height on Sloping Site	48
Figure	1.36	Building Height on an Axis	48
Figure	1.37	Building Construction Field	49
Figure	1.38	The Number of Steps for Staircase	49

Figure	1.39	Geomantic Measurements	51
Figure	3.1	The Chart of Design Programming Based on Geomantic Staging	62
Figure	3.2	The Situation of An Ideal Site	67
Figure	4.1	Soil Condition	85
Figure	4.2	Surface Drainage	85
Figure	4.3	Slopes	86
Figure	4.4	Vegetation	86
Figure	4.5	The Relationship with Natural Environment	87
Figure	4.6	The Site Layout	88
Figure	4.7	The Plan of C. C. R. I.	8
Figure	4.8	Birds Eye View of C. C. R. I.	90
Figure	4.9	Movement	95
Figure	4.10	Spatial Order	99
Figure	4.11	Natural Elements	103
Figure	4.12	Symbolic Forms	106
Figure	4.13	Notes on Geomantic Determinants	109
Figure	4.14	View from Parking Lot	110
Figure	4.15	View towards Main Gate	111
Figure	4.16	View towards Library and Pagoda	112
Figure	4.17	View from Main Gate to Courtyard	113
Figure	4.18	View from Courtyard to Medical Dept.	114
Figure	4.19	View from Courtyard to Library	115
Figure	4.20	View Inside Sub-courtyard of Arts Division	116
Figure	4.21	The Researcher's Studio	117
Figure	4.22	View of the Transition Gate	118
Figure	4.23	View of Garden and Complex	119
Figure	5.1	Basic Geomantic Order	121
Figure	5.2	Basic Geomantic Order	122
Figure	5.3	Non-Geomantic Order	123
Figure	5.4	Design Factors	124
Figure	5.5	Design Factors	125
Figure	5.6	Examples Of Resolution of Geomantic & Design Conflicts	126
Figure	IV.1	The Functional Programme Diagram of C.C.R.I.	151
Figure	IV.2	The Site	156

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May, 1978

INTRODUCTION

A design philosophy is the rudder for the boat; it makes possible a continuing course in a meaningful direction.

Having visited most Chinatowns in the North American cities during the last two years, I realised that many of the design concepts that had come to be accepted by North American Chinese do not work very well in the context of their communities. Chinese people of the third or fourth generation living in North-America prefer, in their communities, to have a feeling of the tradition of their parents and grandparents. Modernity is one thing people desire; but if traditional physical contexts must change to some degree due to essential modernization, the new physical arrangement should be adapted as closely as possible to the traditional living patterns. There is a new desire among non-western cultures to express their own traditional social and visual values in terms of modern architectural forms.

This does not mean that architects should necessarily produce facsimiles of historical relics (such as curved roofs, decorated balustrades in Chinese architecture). Some modern buildings do fit in with their surroundings without sacrificing their

modernity. There is a growing need to re-explore traditional philosophical theories which, if accepted, might reduce the shock produced by modernity. Industrialization usually goes against the traditional way of life, but this does not mean that familiar customs and cultural symbols must automatically be abandoned. Some aspects of traditional cultures can and should be reinforced within their new industrialized context.

In dealing with Chinese cultural images, physical forms and site determinants will pose problems different from those concerned with other buildings, in order to express specific Chinese geomantic and other cultural requirements, such as:

1. The need to choose auspicious situations, orienting according to cardinal points, and the need to relateus beliefs and ways of living.
2. Consideration of forms that avoid contradictory connotations.
3. Differention between auspicious and inauspicious shapes of landscape elements according to Chinese philosophy and geomancy.
4. Preference for forms related to Chinese calligraphy, images, pictographs and symbols.

Goals of the design thesis:

1. To express Chinese cultural approaches to quality and sense of humanity through a better response to Chinese cultural images.
2. To express Chinese social and cultural characteristics through the use of Chinese design rules and site factors.

Objectives of this study:

1. To bridge gap between Chinese traditional architecture and modern architecture.
2. To reach a better understanding of the relationship between traditional cultural forms and modern designing methods.
3. To help society in general and North-American Chinese in particular, to make correct and effective decisions when attempting to accomplish new cultural mixes in design.

1. CHINESE GEOMANCY IN BUILDING CONSTRUCTION

In order to present some idea of Chinese geomancy and Chinese geomantic rules for building construction, this chapter will review the historical factors influenced by Chinese philosophy and religious beliefs. An examination of the form school(as opposed to cosmological school)[1] of Chinese geomancy together with certain physical considerations of Chinese geomancy will show something about their relation to concrete reality, how geomantic symbols are derived and how they are linked to other aspects of Chinese culture and beliefs.

1.1 Definition of Chinese Geomancy

Chinese geomancy is the art of adapting the residences of the living so as to cooperate and harmonise with the local currents of the cosmic breath.[2] If houses of the living were not properly adjusted, evil effects of most serious character would injure the inhabitants of the houses, while conversely good siting would favour their wealth, healthy and happiness. While geomancy is sometimes related to comfort, comfort may be sacrificed to the religious aspects if it is at odds with it. The geomantic system is closely related to the whole culture.

The rules of geomancy govern the directions of roads, water-courses; the height, forms, placement of houses; and the placing of villages, and graves in the mystical environment among the auspicious forms of trees and hills. The central values of the people relate to these cosmological beliefs. Many ideas of Chinese philosophy have influenced Chinese geomancy and its cosmology.

A fully-developed philosophical basis to Chinese geomancy was best stated by the Neo-Confucian philosopher Chu Hsi (1200 AD). For Chu Hsi, everything had breath(ch'i): the water meandering before the door; a group of pine trees standing firm and quiet; the undulating mountains in the distance; all, like man, had life essence. Chu Hsi's cosmology is based upon a dualism between principle (li) and vital force (ch'i). He wrote "...those who speak about the physical nature, do so with reference to principle as it is found mixed with the ether(ch'i)."[3] Principle(li), is necessary to explain the reality of things. It is one, eternal, unchanging, uniform, constituting the order of things, always good, and does not contain a dichotomy of good and evil. Material force (ch'i) is necessary to explain physical form and the transformation of things. It is physical, transitory and changeable, unequal in things, constituting their physical substance, involving both good and bad(depending on whether its endowment in things is balanced or partial), and is the substance of creation. Li,

principle, is the unchanging patterns of organization of ch'i. Chinese geomancy is an attempt to discern the patterns of li and ch'i in the natural environment, so that human habitations can be built in harmony with those patterns(Fig. 1.1)

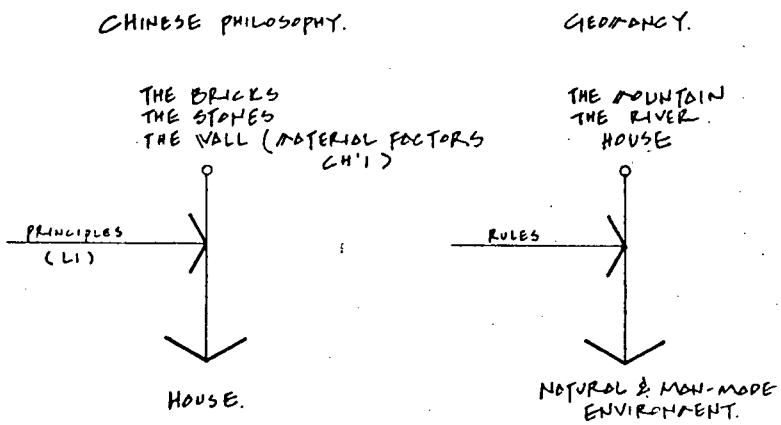


Figure 1.1 The Relationship of "li" and "ch'i"

To keep the "ch'i" circulating properly in the man-made environment is the basic requirement of the system of geomancy system, and this requires an architecture which responds both to nature and human needs. Geomancy consists of certain constants: the use of ch'i of mountains, rivers, pond, etc; and, the judgement of forms which include the forms of interior and exterior elements and the orientation which elements are located.

Geomancy is based on traditional cosmological beliefs. It articulates life with the rhythm of birth, maturity, and death. Religion is not as in the west related only to God and supernatural power. The profane world of human existence and

the sacred powers are viewed on an equal level in ancient Chinese culture. Heaven, earth and man cooperate in harmony.[4] There is no order of priority. Analogically, heaven has its seasons, earth has its resources and man has his government. These three are related to each other like hands and feet; united they produce finished physical forms so that no one of them can be dispensed with. In the relation to Chinese landscaping, the bamboo groves and path through them leads to the sacred place which is denoted to be elegant, profound space. Thus, in the garden sacred and profane are one.

1.2 Geomancy as a Creative Process

As we have said the purpose of Chinese geomancy is to harmonize with the currents of cosmic breath revealed in the local landscape. However, if the configurations of this landscape are inadequate, they can be supplemented with the aid of the geomancer's art. This he does by building mounds, digging pools, etc. This is the creative side of geomancy, and it is particularly at this point that the author's concern emerges. Geomantic rules mediate between non-being and being. They are the patterns of organization, the implicit harmonious order of nature. Within the universe there exist the ethers of Yin and Yang (negative and positive poles) and Wu-hsing (five agents of transformation), to control everything. Human beings are

immersed in the ethers of Yin and Yang, just as fish are constantly immersed in water. Water is visible, but Yin-Yang and Wu-Hsing are invisible.[5] Thus geomancy expresses harmony with nature:

> "On a rock hill you must take an earthy site;
> On an earth hill you must take a rocky site.
> Where it is confined, take an open place;
> Where it is open, take a confined place.
> On a prominence, take a confined place;
> On a flat, take the prominence.
> Where strong appears, take weak;
> Where weak appears, take strong.
> Where there are many hills, emphasize water;
> Where there is much water, emphasize hills..."[6]

As Chu Hsi wrote: "looking from the point of view of principle, although a certain object may not yet exist, the principle for that object is already there, thus there is already the principle itself, even when its object does not yet actually exist." The ideas of geomancy are related to the invisible potential which is similar to Louis Kahn's ideas of "the desire to express", "the desire to be". His design is a translation of inner order into being, so that this order is manifested in visible functioning things. Geomancy in its own terms does the same, it manifests the invisible through the visible, non-being through being. In Chinese tradition such harmony with nature brings a sense of psychological comfort. Geomancy is a way of ensuring that one's life is lived in harmony with the forces of goodness and order. This applies to the spirits of one's ancestors in their graves as well. But as it has been said naturally auspicious sites are difficult to find. As the saying

goes:

> "A lucky place is not easy to find, and to find a completely lucky one is particularly hard. In recent times, knowledgeable people have said: you may happen to have a good Geomancy, but you cannot search one out. That is to say, if there is such a thing as geomancy oriented 'protection and response' it will happen to none but the filial son and the humane man, and cannot be got by main force."[7]

This passage reminds us again of the more active and creative side of Geomancy, which assumes that man can do much to engineer his own 'comfortable' environment. The author's position is that this creative role can be continued by the modern Chinese architect, if he can 'translate' the aesthetic essence of old geomantic terms into new forms. This essence consists especially of a sense of what is fitting and appropriate in relation to the whole project, the inter-relationship of building and environment. The architects' task is not just to solve technical problems but to interpret the inner spirit or intention of the building in such a way that everything flows naturally from it.

1.3 Functions of Chinese Geomancy

There are two categories in Chinese the relationship of geomancy to building construction: 1) The types of exterior space and 2) The types of interior space.

There are three premises should be keep in mind of thinking about the phenomena of Chinese geomancy. 1) a certain locale is more favorable than others for a project. 2) an auspicious place can be acquired only through the examination of the local landscape according to geomantic principles. 3) once acquired and occupied, people who lives on the site can be influenced by the auspiciousness of the locale.[8]

1.3.1 The Types of Exterior Space

This section will present of 1) orientation with natural elements, 2) the shape of the site and 3. the forms of natural elements.[9]

---

1. Orientation with natural elements

The location of buildings related to surrounding natural elements is an important feature in guiding geomantic site selection. Basically, the eight trigrams[10] are the important determinants for deciding the orientation in most of geomantic order (Fig. 1.2).

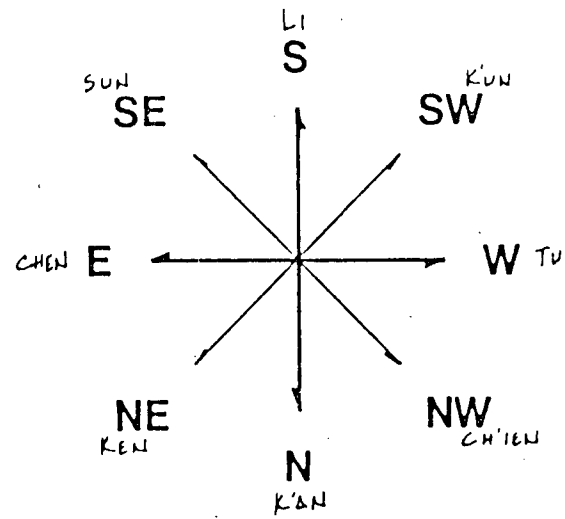


Figure 1.2 The Eight Trigrams

The natural elements considered in Chinese are recognized landforms such as mountainous ridges, hills, rolling terrain and landmarks(Fig. 1.3):

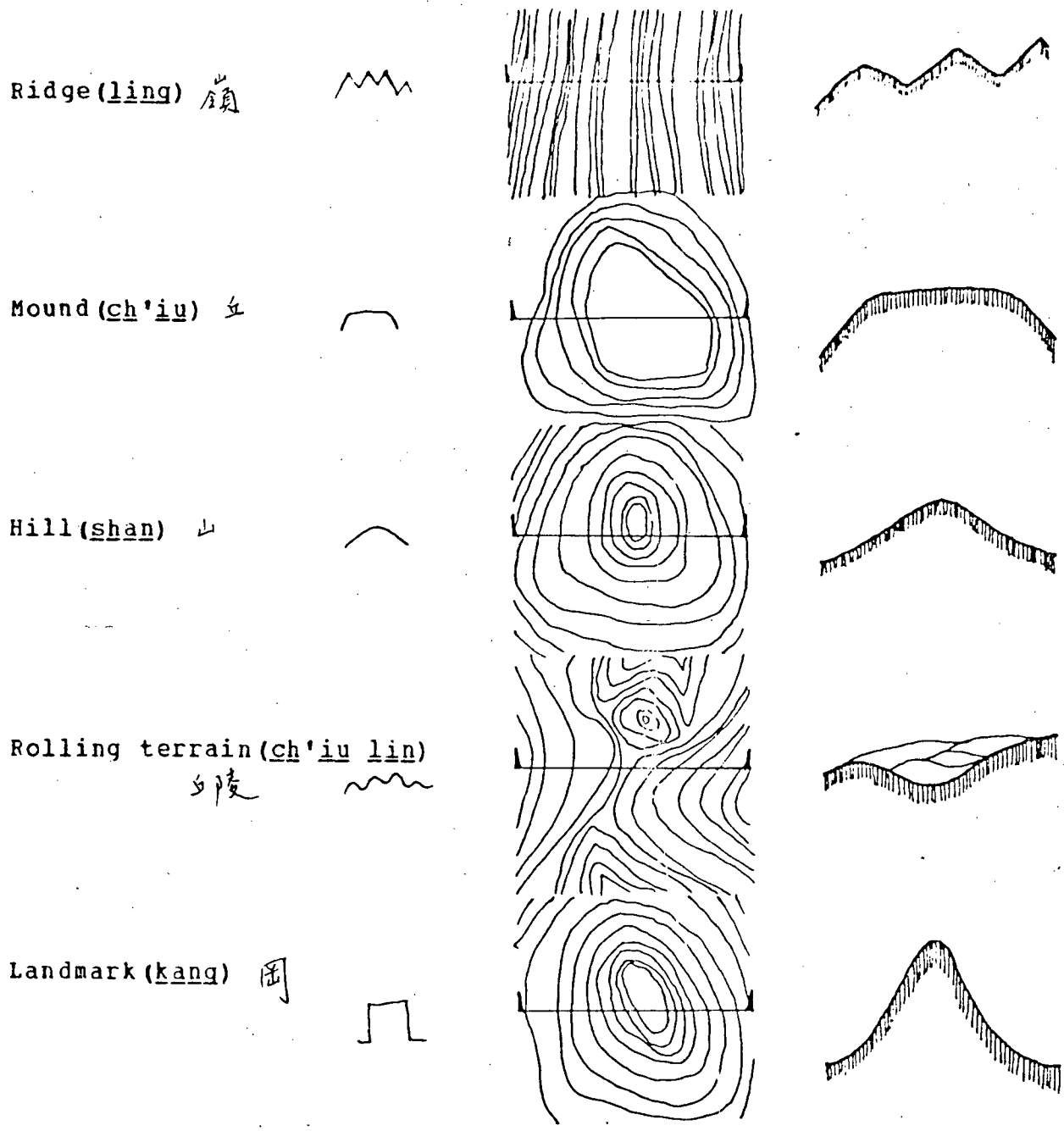


Figure 1.3 Mountainous Elements

Elements of landform, which are considered complementary are high-low and flat(Fig. 1.4):

High versus low(kao/ti) 高.低

Flat(p'ing) 平

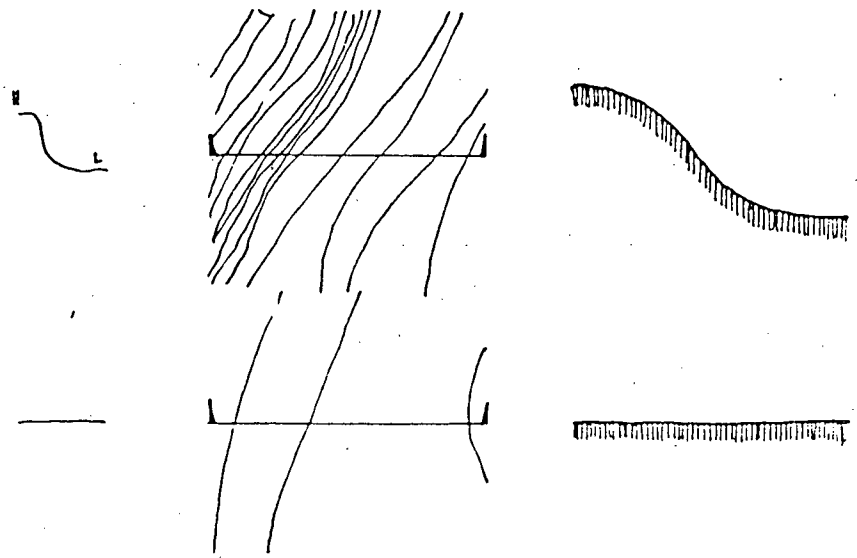


Figure 1.4 Topographical Elements

Water elements or forms of water bodies(Fig. 1.5):

Pool(ch'ih) 池

Long river(chang ho) 長河

Creek(shiu) 溪

River(ho) 河

Water(shui) 水

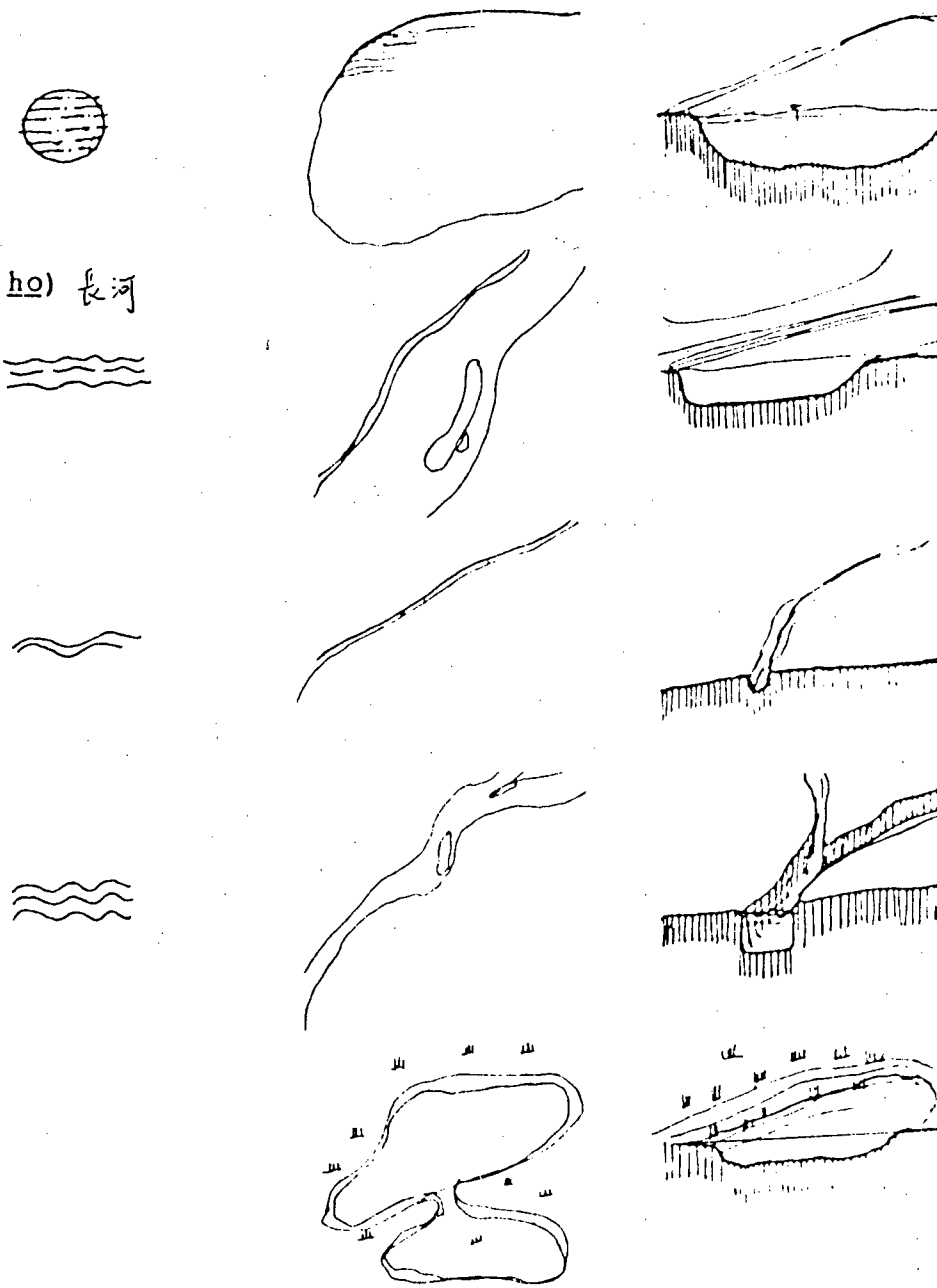


Figure 1.5 Water Elements

Elements of transportation or circulation systems(Fig. 1.6):

Way (t'ao) 道

Road (loo) 路

Path (chin) 徑

Figure 1.6 Infrastructure

Vegetation(Fig. 1.7):

Forest(lin) 林

Farm(tien) 田

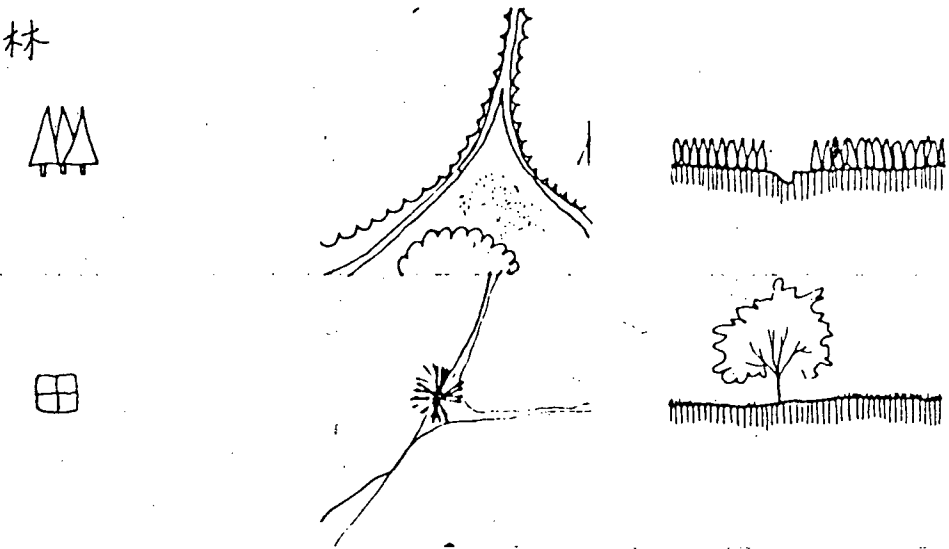


Figure 1.7 Vegetation

Symbolic forms and buildings(Fig. 1.8):

Grave(fan) 墳

Temple(miao) 廟

Shrine(sheu) 寺祠

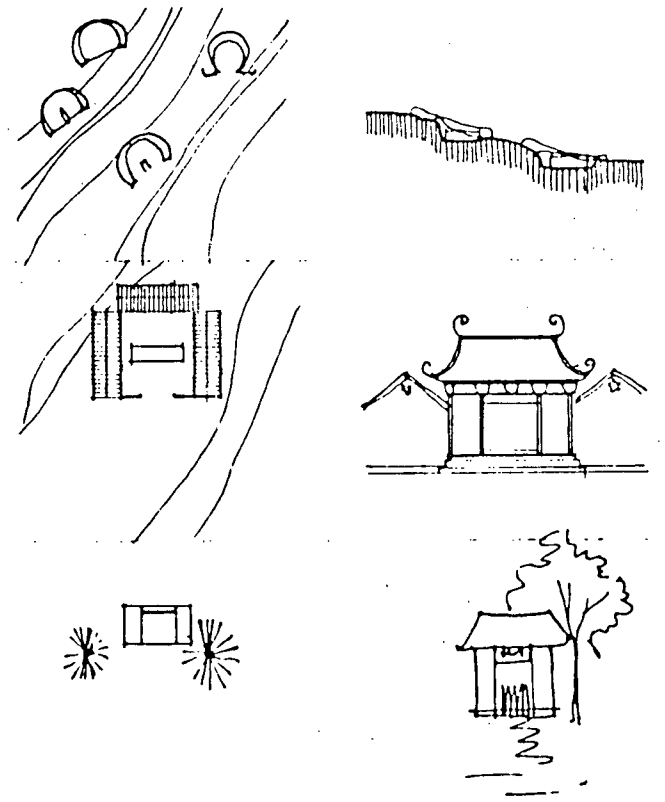


Figure 1.8 Building Graves and Symbolic forms

2. The shape of the site (Fig. 1.9):

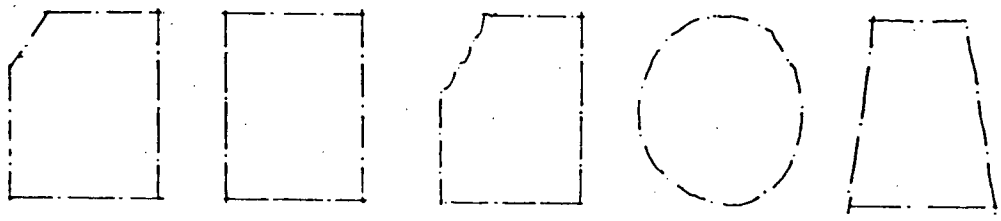


FIG. 1.9 EXAMPLES OF AUSPICIOUS GEOMANTIC SITE SHAPES.

3. The form of surrounding elements

Mountains

Mountains assume a very prominent role among the elements of Chinese environmental design. Their forms should be smooth and gently related to the natural landscape without overly dominating. If mountains express a stable and familiar form, then the site is a good site. The mountain is important in geomancy because it plays a main role in storing auspiciousness in an area by blocking winds and because the shape of mountains reflect different auspicious aspects. Mountains receive more attention in geomantic rules than any other natural elements even though they do not exist in many areas where geomantic beliefs prevail. Mountains are synonymous with nature in a long Chinese tradition of poetry and painting, and they are also the traditional abode of immortals and sacred places of Gods.[11]

As mountains are places of storing the vital energy(ch'i), good focus of ch'i come down the slopes from north to south, like streams. Although gaps in the barrier to the north let in evil influences, the barrier itself, or rather its south-facing side, is the source of good influences.

Waters

According to geomantic order, water is amorphic and flexible, governed by gravity. Generally, water forms should also be smooth and matched to the form of the natural landscape. If water form are meandering, smooth, or adopt a circular form(Fig. 1.10), then the site will be a good site.

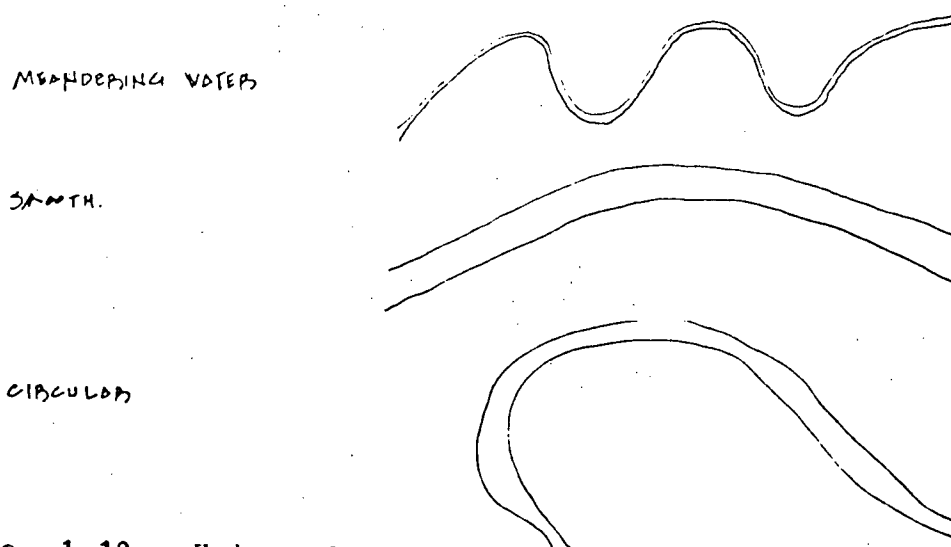


Figure 1.10 Water Forms

The layout of ponds should take into consideration the form of Chinese pictographs. If the layout takes the form of '哭'(which in Chinese means crying), then the site would be

inauspicious (Fig. 1.11).

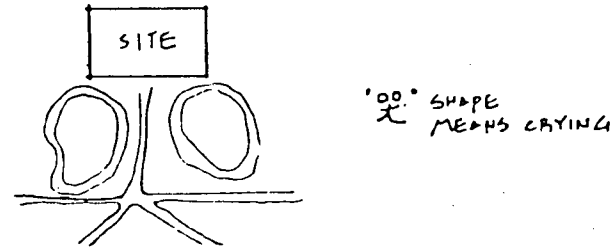


Figure 1.11 Water Forms associated with Chinese Pictographs

The layout of water ponds should also take into consideration the form of Chinese calligraphs and the thoughts associated with them. If the shape is auspicious, then the site is an auspicious site. For instance, if the site has a pond in front of it which looks like a dragonfly, it will acquire the inauspicious meaning attached to the concept of flight without stability associated with a dragonfly(Fig. 1.12).

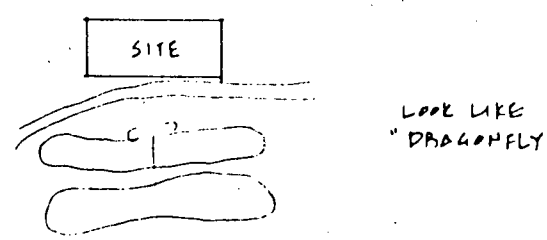


Figure 1.12 Water Forms associated with Symbolic Form

If the housing layout has a square pond in front of the house and the whole organization of the site plan looks like '品', (which in Chinese means 'institutional family'), then good fortune will be predicted for the family in the future(Fig. 1.13):

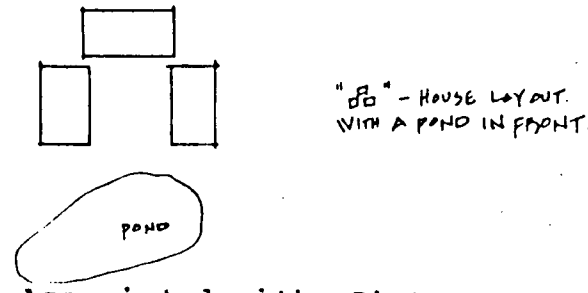


Figure 1.13 Landform Associated with Pictographic and Symbolic Form

It is essential to have water in front of an auspicious place. Ideally a slowly winding watercourse should flow some distance from the front of the auspicious location, and there should be small watercourses both to the right and left of the auspicious place. Water located in front of anauspicious place can help to hold the vital energy in the geomantic envircnment, where the forces of the "ch'i" are being delivered from the main mountain. Watercourses should not flow in a direction parallel to the course of the mountain ranges(Fig. 1.14). Therefore the watercourses should nct flow in straight lines. If they do they are considered as not having the desire to hold vital energy. So the situation on the right hand side of Fig. 1.15 is suggested.

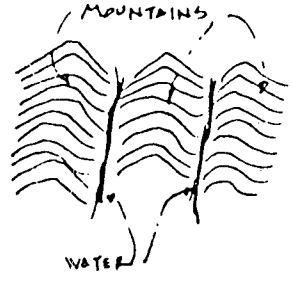


Figure 1.14

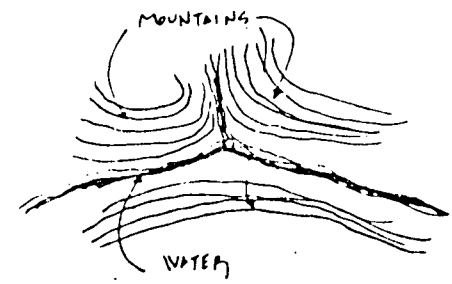


Figure 1.15

Roads, ways and paths

The following are examples of auspicious and inauspicious road patterns:

There are three categories of Chinese geomantic thinking in reference to road patterns.

1. It is not allowed to have anything blocking the road and the view. If there should be interruptions in the middle of the road, the feeling of interrupting smooth circulation is considered inauspicious(Fig. 1.16).

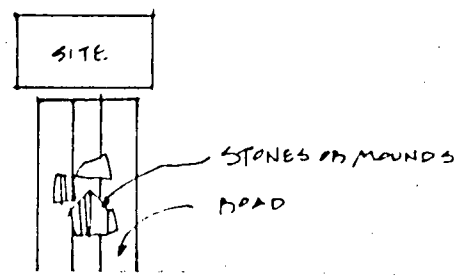


Figure 1.16 Mounds or Stones on the Road

2. The form of the road will be considered as either to be attracting or repelling good fortune. For instance, a road that bends away from a house will be considered as inauspicious. The form of this road will let all the fortune out (Fig. 1.17)

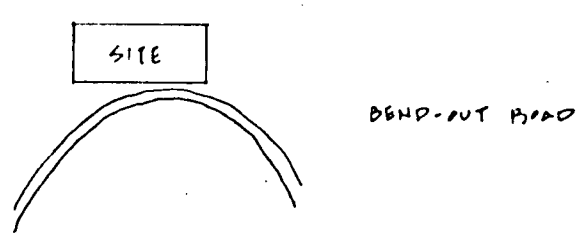


Figure 1.17

" ㄟ " suggests the shape of a worm which is reminiscent of the slow-moving and consequently is inauspicious(Fig. 1.18).

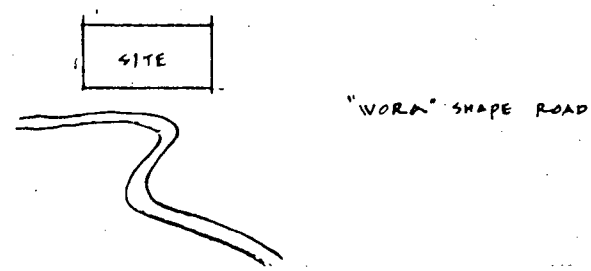


Figure 1.18 Road Associated with Symbolic Form

3. If the roads go directly to the door of the house, they will form an arrow aimed at the house; therefore , this will bring evil to the house. (Fig. 1.19)

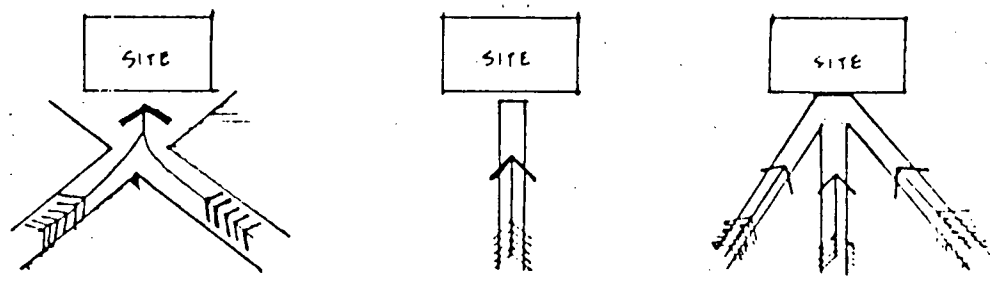


Figure 1.19 Roads Aimed at the House

. " ㄒ " and " ㄱ " as sharp turns in the road should be kept distant from the site(Fig. 1.20).

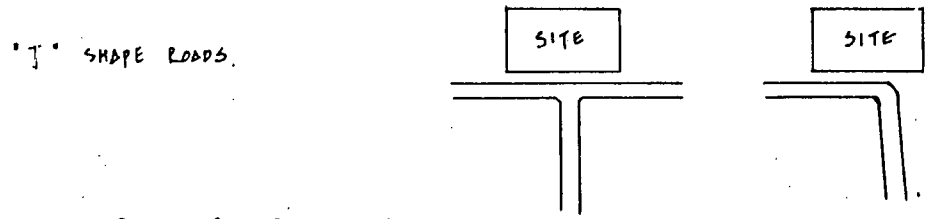


Figure 1.20 Roads Aimed at the House

. "川" should be avoided in front of the site, because it makes retaining good fortune impossible (Fig. 1.21).

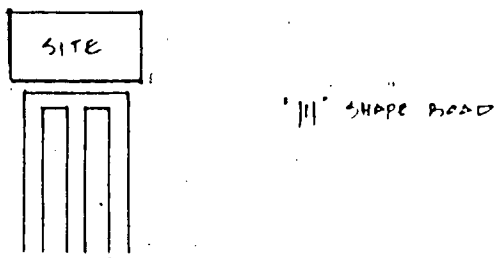


Figure 1.21 Roads Aimed at the House

Vegetation

Vegetation is an important factor in Chinese geomancy, which is primarily concerned with 1) arrangements of trees, 2) categories of trees and 3) the form of trees in symbolic meaning. To a geomancer, the quality and quantity of vegetation in an area are important criteria in determining the quality of a mountain. For instance, a mountain with thick vegetation is auspicious since the land has enough vital energy to support it. In fact, the Yang Dwelling Principles recommends dwellings with trees around them so long as the trees are not in the front.

Although little is mentioned of trees in the geomantic

rules, they are one of the most common geomantic symbols. Trees are wild, entirely natural, and they live with mountains. Moreover, they are also to be found in urban contexts, often as the only pure examples of natural growth. They are the most ubiquitous and sensitive focuses of interest in Chinese geomancy.

1. Arrangement of trees

If trees are growing in a healthy and thriving group, the group of trees is arranged in good proportion, or the forms of trees are in keeping with Chinese esthetic thinking, a site close to these trees should be an auspicious one.

If trees and well-planted bamboos grow beside the house, it is an auspicious site(Fig. 1.22).

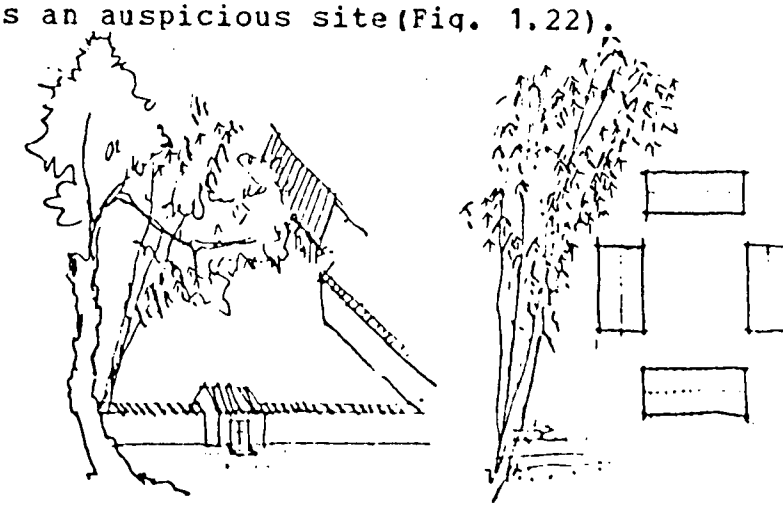


Figure 1.22 Well Planted Tree beside the House

Trees growing in a disorganized are considered as

inauspicious (Fig. 1.23).

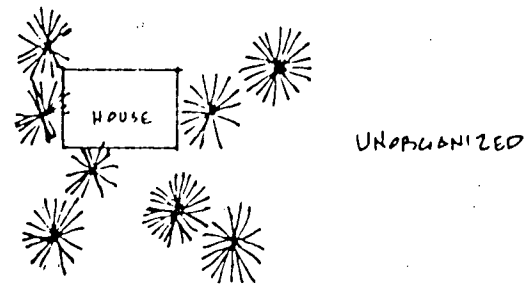


Figure 1.23

2. Categorizaticn of trees in Chinese meaninq

Trees are representative of shiftinq temporal thouqhts and forms. They are prominent features in the desiqn. Although mountains and water are the central desiqn ingredients to qive definition to the desiqn, horticulture is highly prized. Chinese estheticism is associated with the appreciation of refined veqetaticn in landscape design. The followinq trees have special symbolic qeomantic meaninq.

The apricot, Mei Hua, botanical name: Prunus Mume. A small tree with a round head similar in shape to peach tree, the apricot may live to be a lonq-lived. Such specimens with crooked, qnarled shape admired by the painters. Apricot's flowers have five petals and since five is the Chinese number for good luck; the flowers have come to symbolize good fortune.

The peach, t'ao, botanical name: Prunus Persica. It has

been in cultivation for fruit and blossom for thousands of years. Most varieties of peach tree have deep pink flowers and a heavy spring flowering is a good omen. T'ao Yuan-ming (372-427) the poet, wrote a story called "The Fountain of the Peach Blossom" about a fisherman who entered a lonely valley in mountains and followed the course of the stream until he reached a grove of peach trees in full bloom. There he discovered a secret cave which led to an isolated valley that contained a perfect society, a paradise. This story indicates the importance of peach symbolism.

Bamboo symbolizes lasting friendship, hardy age and gentlemanliness. It is one of the central subjects of Chinese botanical painting.

Plum trees are popular in China. Li, or Prunus saliciua is the renowned for its spring blossoms. Some specimens might have a bent trunk, gnarled main branches, twigs in a certain order, a forceful mien, and finely formed blossoms, not too densely arranged. The shapes of trees are typically believed by geomancy to show omens.

Pine, especially old pine, symbolizes hardiness, strength of character, silence and solitude. It is a favorite subject with artists and poets.

Each species has become associated with symbolic values that are carefully observed when they are planted in a garden, or when one is composing poetry. According to Chao Ch'ang of the seventeenth century,

> "By planting pines , one invites the wind...
> "by planting flowers, one invites butterflies...
> "by planting banana trees, one invites rain...
> "by planting willow trees, one invites cicadas."[12]

3. The symbolic meaning of tree forms

If the form of a tree is crooked and gnarled, and the shape looks like an old man, it is appreciated by Chinese as representing long life, auspiciousness and prosperity (Fig. 1.24). Geomantically auspicious trees should never be cut or scarred in any way. If their foliage is abundant it is a sign of prosperity. If possible they should evergreens, evergreens being a symbol of high yang content.

4.) Location of trees

It is recommended that some tree be planted in particular locations and orientations (Fig. 1.25).[13]

Figure 1.24 - Reproduced from Plate 12, "The Gardens of China", by Osvald Siren.

Plate 12. A summer pavilion surrounded by gnarled pines at the foot of overhanging cliffs. Part of a painting by Hsii Shih-chang (thirteenth century), Freer Gallery, Washington.

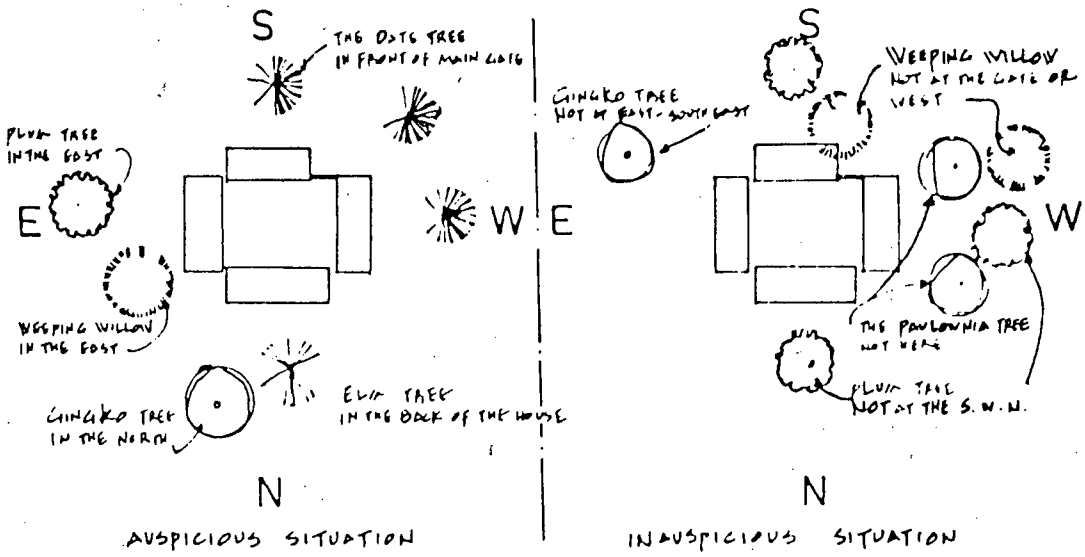
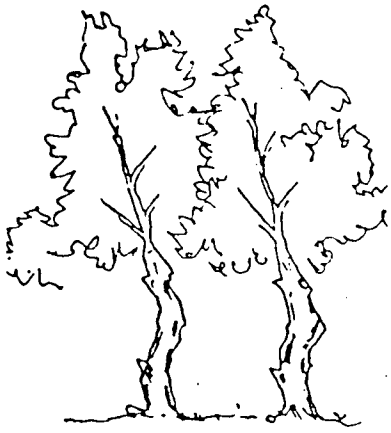


Figure 1.25 The Location of Trees

The following are some inauspicious trees forms(Fig. 1.26).[14]:

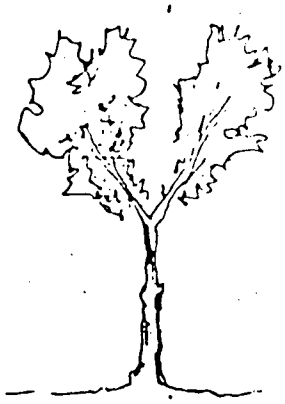
Strange, unfamiliar tree.



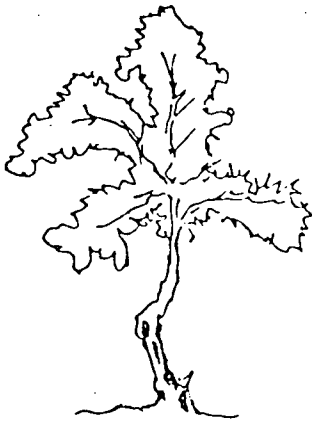
A pair of trees with abnormal shape.

Single tree with a mountain peak in the distance.

Bamboo which normally grow straight growing bent.



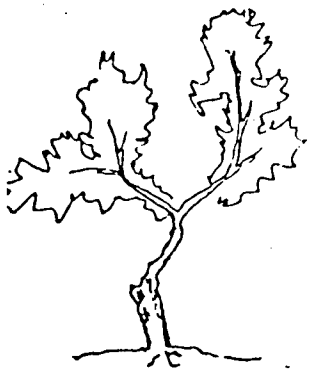
Branches pointed rigidly upward like arms.



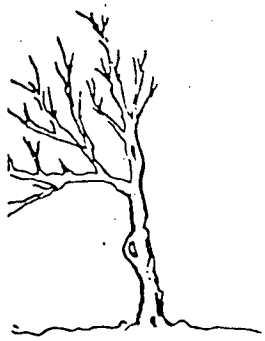
Trees without defined branches.

Trees with over heavy foliage.

Trees with roots and vines dropping towards the ground.

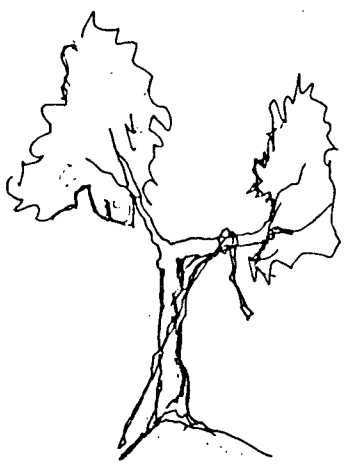


A recalcitrant, stubborn defiant tree.



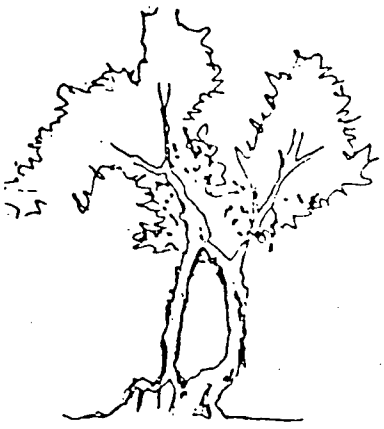
A tree with unidirectional branches.

Strange, unnatural forms, weird trees.



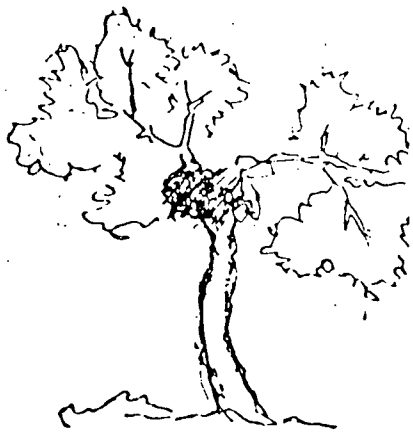
A tree which appears like a "hanging" tree.

Swollen trunk at bottom and top.



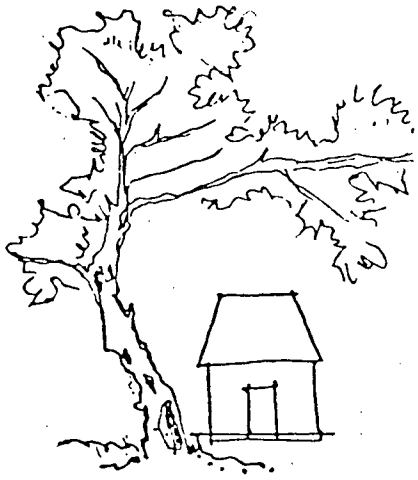
A tree with a hollow trunk.

Deformed, demonic-looking trees.

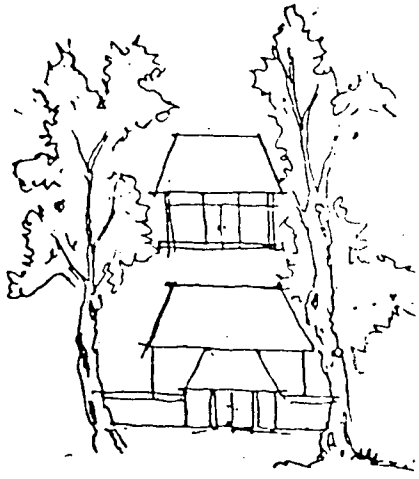


A tree swollen at the top.

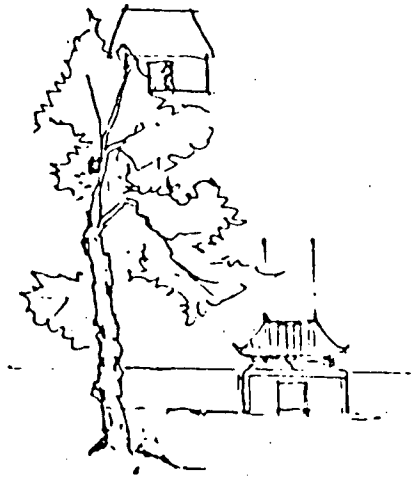
A dense, chilly forest.



A big tree overhanging a house.



Two trees straddling the foreground of the house.



A strange lonely tree in the foreground of the house.

1.3.2 The Types of Interior Space

The house form, style, orientation, relationship to adjoining units, and its site arrangement are all important elements Chinese geomancy as well as in Chinese architectural design.

The Chinese relied on themselves as the originators of knowledge and looked to the ground rather than to heaven for inspiration. In an idealized fashion, the Chinese man sees himself not fixed in the center of this world, but looks longingly beyond his walls

> "He starts from himself as the center, and works out toward a clearer understanding of reality." (Gardiner, 1974)

Therefore, he organizes his basic cell in order to organize the world around it. Inside his own house the Chinese regulates human relationships to achieve internal harmony--which is seen as the highest goal to be achieved on earth.

The types of interior spaces involve: 1) the courtyard principle, 2) building form, 3) building layout, 4) building height and size, 5) the process of construction and 6) the entrance.

1. Courtyard Concept

The rectangular house form evolved as a direct result of its relationship to the cardinal points of the compass.

The traditional Chinese had no knowledge of the extent of the universe; all they knew was that they existed in it, and imagined themselves in the middle of it(Fig. 1.27).

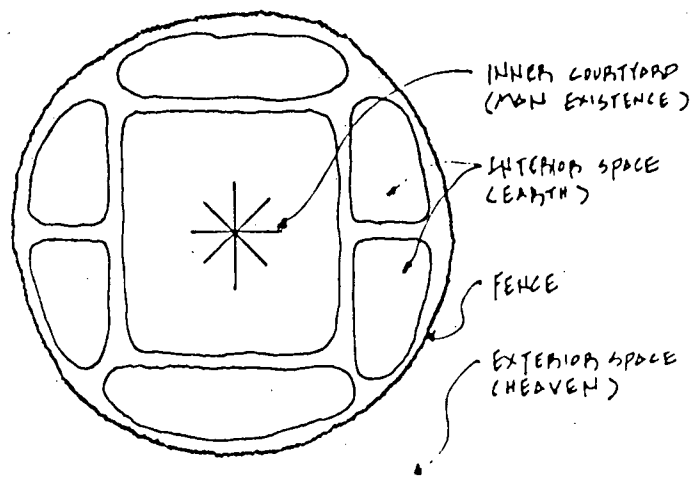


Figure 1.27 CHINESE TRADITIONAL COURTYARD CONCEPT.

The courtyard is enclosed by buildings. The cosmic orientation produces very different forms of building layouts. But success in life is dependent upon the rules concerning the relationship and orientation of settlements and houses to the supernatural forces embodied in the environment; these auspicious forces have to be tapped for good fortune.

The concept of the courtyard in Chinese architecture consists of

grouping the buildings into a small area to achieve a central space for the family and the users, which is considered to be "interior" space. The land that remains outside the group becomes the "exterior" space.

In Chinese geomantic rules(Yang Dwelling Classic) relating to the courtyards, there are the following items for consideration: 1) orientation, 2) central space 3) building height and size and 4) paths and access.

1. Orientation

The eight orientations which have been discussed in Chapter one (p.11) will control the building location, the building height and the entrance location for geomantic requirements. The orientations relate to eight trigrams of "K'an", "Li", "Chen", "Tui", "Ch'ien", "Sun", "Ken", "K'un"(see Fig. 1.2); and the nine stars and the five elements(see Fig. 1.30).

2. Central space

The central space always provides a central gathering place for the family, to exclude the outside and to provide a pleasant enclosed area(Fig. 1.28).

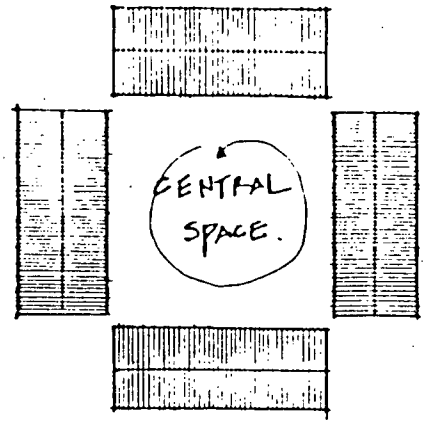


Figure 1.28 CENTRAL SPACE IN A COURTYARD

This arrangement reflects a dualistic conception of the universe. It also reflects a conception of man's relationship to the universe. The courtyard system also reflects the hierarchical structure of Chinese society(Fig. 1.29).

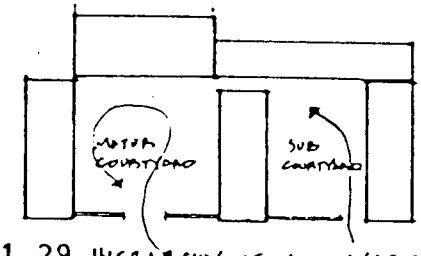


Figure 1.29 HIERARCHY OF COURTYARD SPACE

The Chinese preoccupation with these relationships leads to an attitude toward architecture where spatial arrangements supercede structural requirements. The square or rectangular design represents man's order and knowledge. Between man and nature, there is interior space. Between man and heaven, there is a garden. These conceptions represent the eternal principles of the cosmos, which should be paralleled in architectural form.

3. The building height and size

The heights of separate buildings around the courtyard are determined by the orientations, size needed for adequate sunlight and air, protection from winds and storms and to avoid bad views and scenes. The heights of buildings are related to the 'five elements', which are metal, wood, fire, earth and water. Metal, wood and earth are associated with high levels; water and fire are associated with low levels. The following list shows the relationship of the five elements, and the nine stars to building height (Fig. 1.30).

FIVE ELEMENTS	NINE CATEGORIES (STARS)	BUILDING HEIGHT
EARTH	LU-TS'UN (SALARY PRESERVED)	HIGH
METAL	WU-CH'U (MILITARY ACTIVITIES)	HIGH
WATER	WEN-CH'U (CULTURAL ACTIVITIES)	LOW
WOOD	T'AN-LANG (COVETOUS WOLF)	HIGH
FIRE	LIEN-CHEN (PURITY AND UPRIGHTNESS)	LOW
EARTH	CH'U-MEN (CHIEF GATE)	HIGH
METAL	P'O-CHUN (DESTROYING ARMY)	HIGH
WATER	YU-PI (RIGHT ASSISTANT)	LOW
WOOD	TAS-FU (LEFT ASSISTANT)	HIGH

Figure 1.30 Building Height with Five Elements and Nine stars

Reference to these elements and categories provides rules for establishing heights of structures in relation to the

central space, corners and surroundings.

4. Path and access in the courtyard

The path and access layout attempts follows an orientation which will preserve privacy. Private spaces and courtyard sequence are created by paths between separate buildings and by perforated screens, trees and level changes along the path.

Yang Dwelling illustrates plans of houses around which not only the nine stars and the eight trigrams and the five elements are disposed, but for which other stars and influences are critical.[14] There are 12 examples in the manual. They are in fact closer to the cosmological type of geomancy, being mere extensions of the compass dial on the ground. It is easy to see how several types of activity, study, sleep, keeping accounts etc., may be circumscribed in time and space by the ritual dictates of the compass.

The orientation of a building is probably more important than any other element in the geomantic rules. The terms, "sitting" and "facing" orientation refers to Chinese existent concepts. "sitting" orientation is the direction from the front of a building toward the back; "facing" orientation is the forward orientation of a building or the direction forward which the

facade faces. These two orientations are always used in a combined form. Based on the sitting and facing orientations all buildings are divided into two groups; Eastern Four Houses and Western Four Houses. The former are associated with the east, south, southeast and north; and the latter are associated with the west, southwest, northeast and northwest. The primary uses of these two orientation groups is to make decisions on the locations of housing elements, especially the main gate and the main room of the house. In order to be in harmony these elements and to be associated with the same orientation group.[15] (Fig. 1.31)

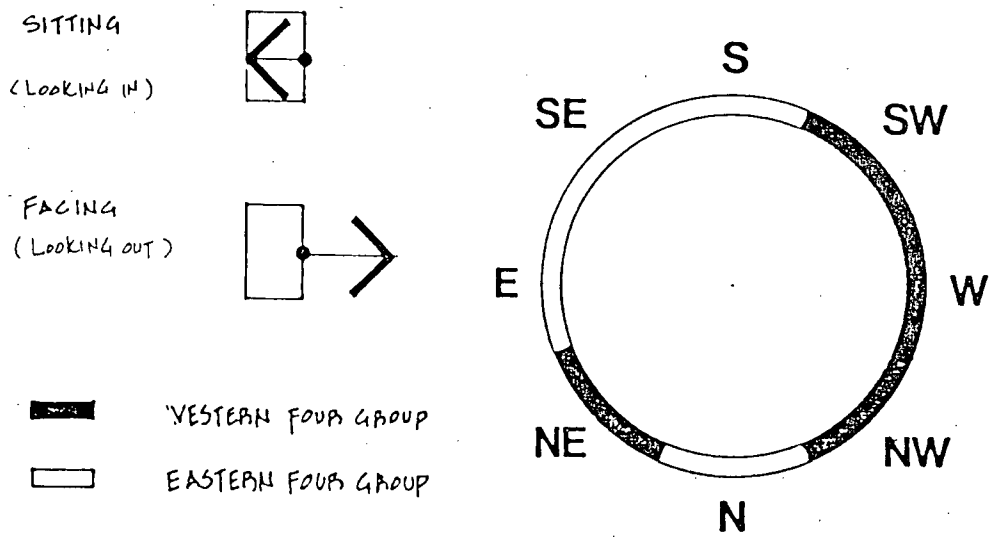
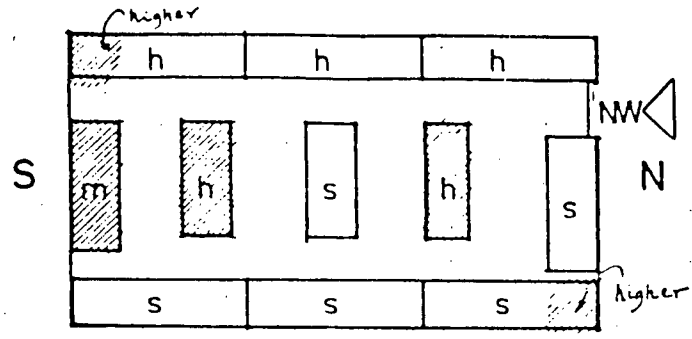


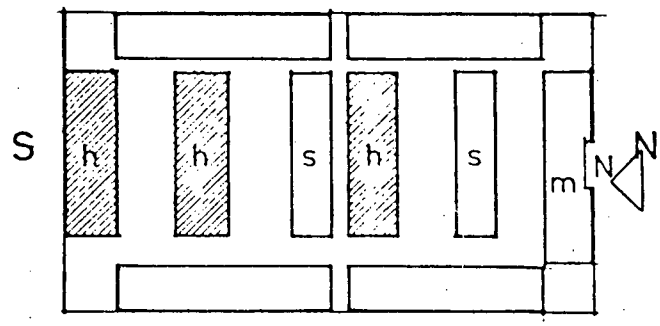
Figure 1.31 Sitting And Facing relation with Orientation and Major Buildings and Main Gate

The following drawings illustrate twelve diagrams related to the geomantic courtyard concept for height, size and path location (Fig. 1.32).[16]

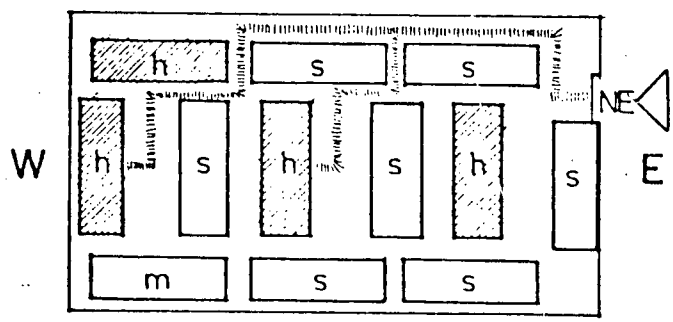
- Sitting on S facing N and open NW door.



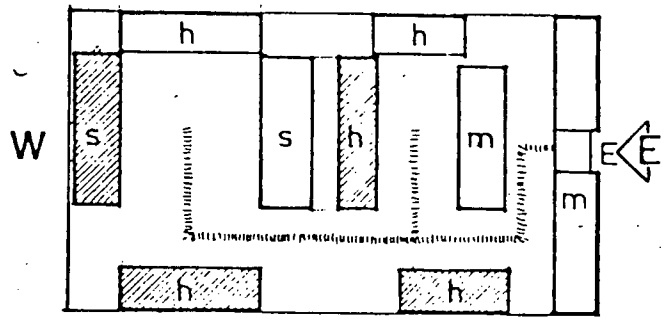
- Sitting on S facing N and open N door.



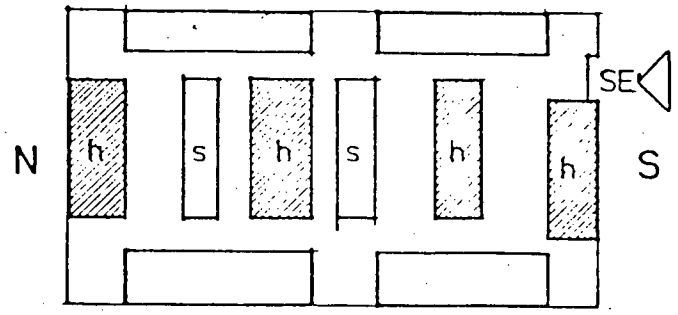
- Sitting on W facing E and open NE door.



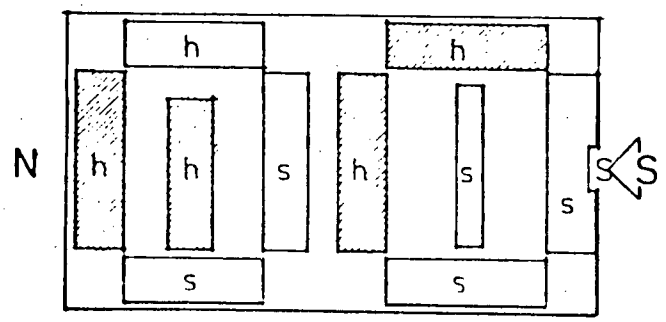
- Sitting on W facing E and open E door.



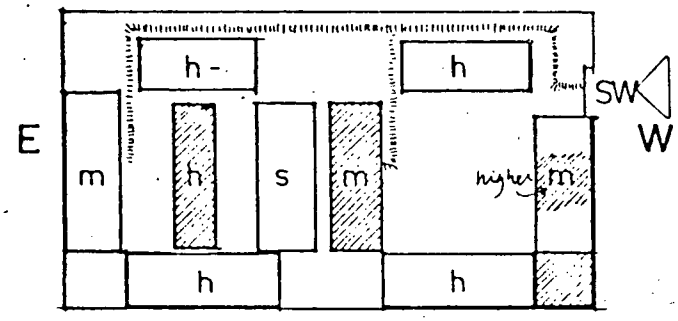
- Sitting on N facing S and open SE door.



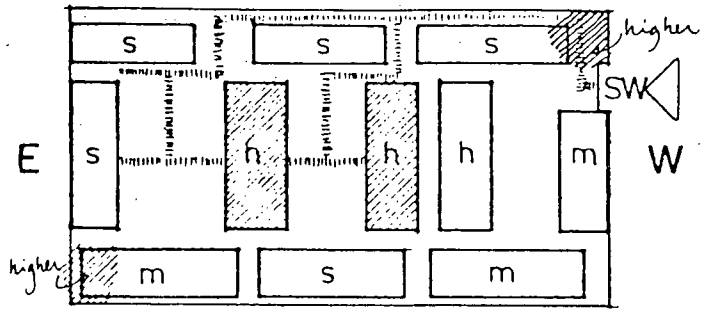
- Sitting on N facing S and open S door.



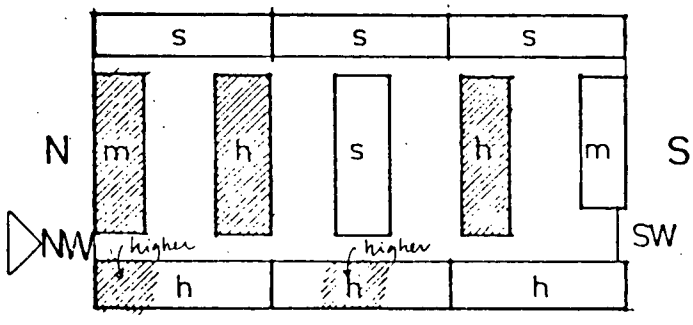
- Sitting on E facing W and open W door.



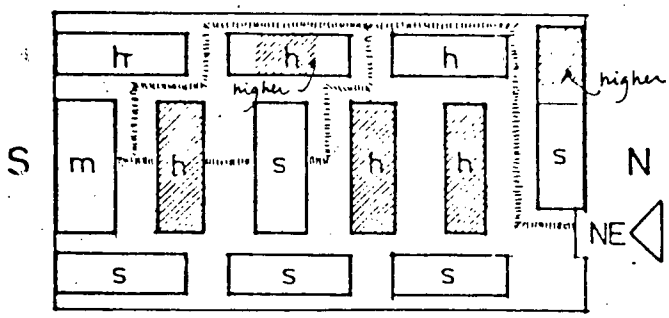
- Sitting on E facing W and open SW door.



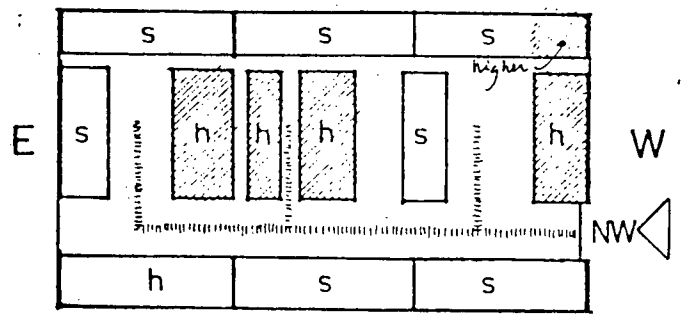
- Sitting on N facing S and open NW door.



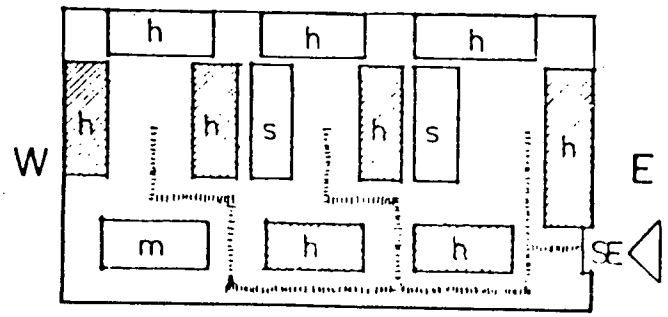
- Sitting on S facing N and open NE door.



- Sitting on E facing W and open NW door.



- Sitting on W facing E and open SE door.



2. Building Form

In general, building form is related to the symbolic meaning of the facade and the orientation. The structure of the building should be harmonious with the surrounding houses, structures, and forms. Also, it should not face any form which appears to be "attacking" or in conflict with the building. The following cases are considered to be inauspicious(Fig. 1.33)

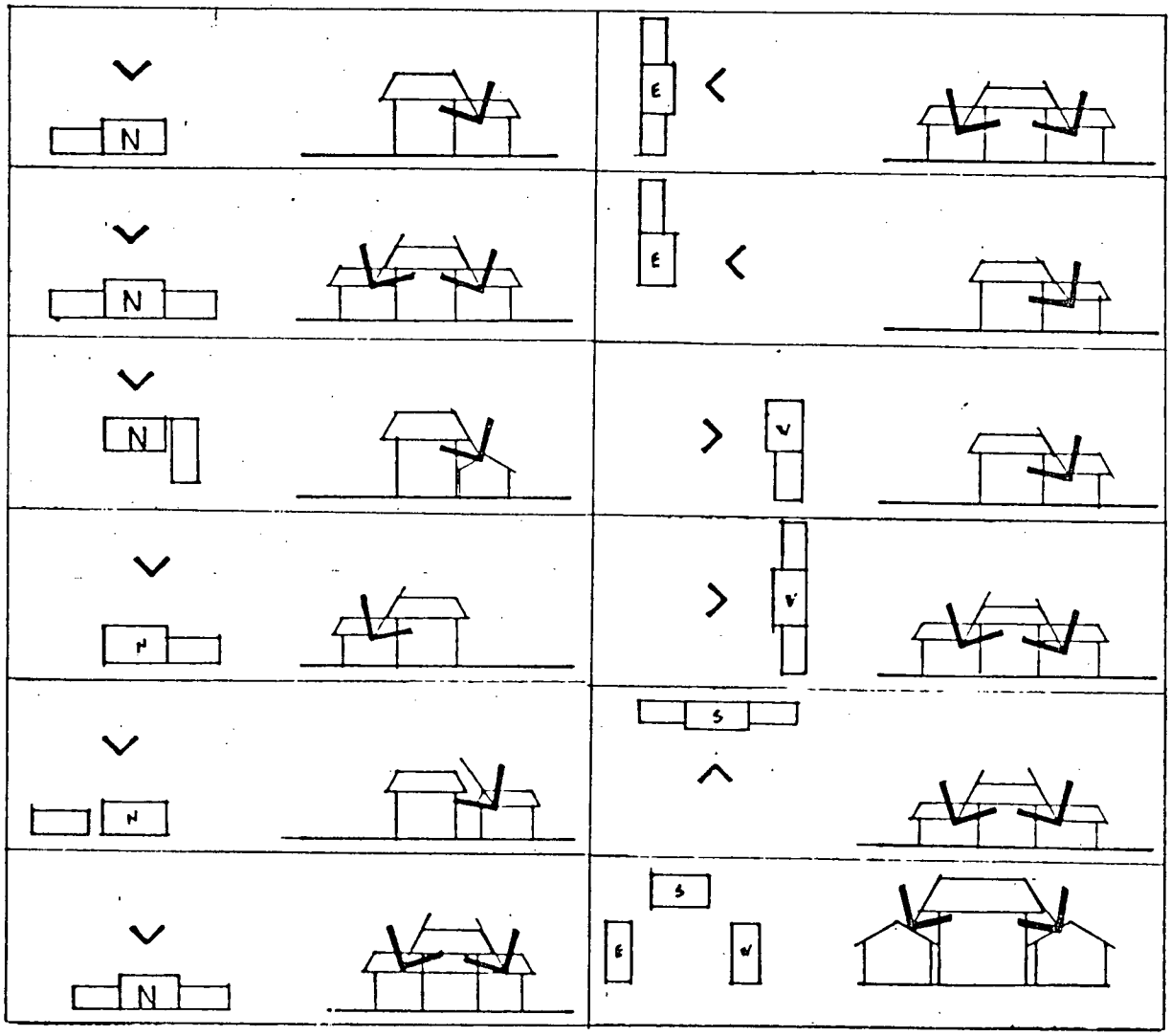


Figure 1.33 Building Form and Conflict

3. Building Layout

This category deals with the plans of the buildings. The following are some examples of Chinese geomantic rules for the pictographic meaning of building layouts(Fig. 1.34).

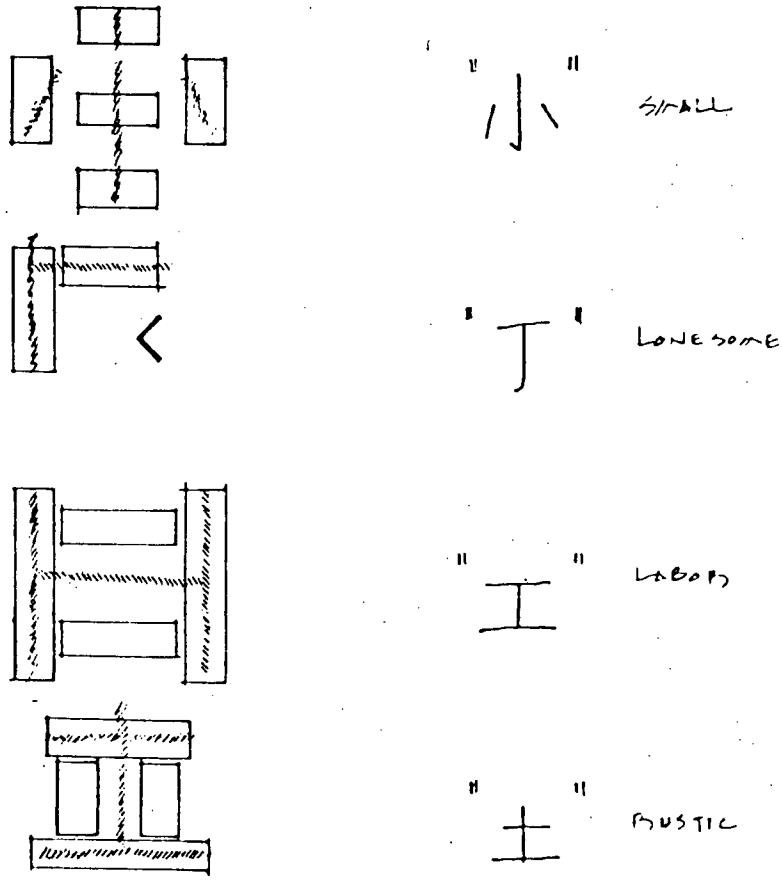


Figure 1.34 Building Layout for Pictographical Meaning

4. Building Height and Size

In general, the building height should take into consideration its orientation. The heights of buildings facing each other are determined by the position of the building and the direction of the axis of the buildings. The building in front of another building should be the lower (Fig. 1.35).

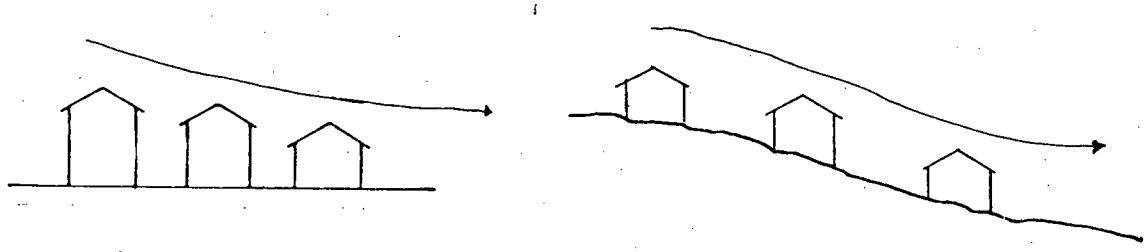


Figure 1.35 Building Height on Sloping Site

If there are three buildings on an axis, and the central building is higher than the others, then the arrangement is inauspicious (Fig. 1.36).

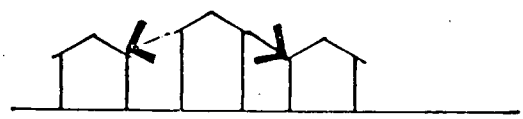


Figure 1.36

5. Building Construction Process and Number Meaning

In geomantic rules for housing and building construction, there are implications for preventing inconvenience. If the shape of the site looks like " "(Fig. 1.37), which in Chinese means a

site with difficult access. The cost of construction and the labor will be higher. It will also be inauspicious for future living.

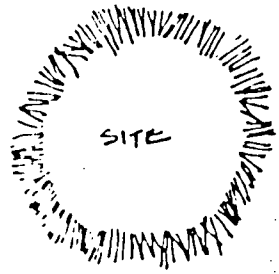


FIG. 1.37 DIFFICULT ACCESS SITE

The meaning or number in Chinese geomantic rules is a very important factor. For instance, eleven is a combining number. If there are nine buildings for a household, it should be divided into three courtyards. Here, three, nine and eleven are odd numbers with good meaning. In general, for a main hall nine columns are recommended, seven for smaller hall. An even number of building doors is good. An even number of buildings is also good. Finally the steps of staircases are considered auspicious if thay number three, five, nine, or eleven. When there is a landing each run is counted separately beginning with the landing(Fig. 1.38).

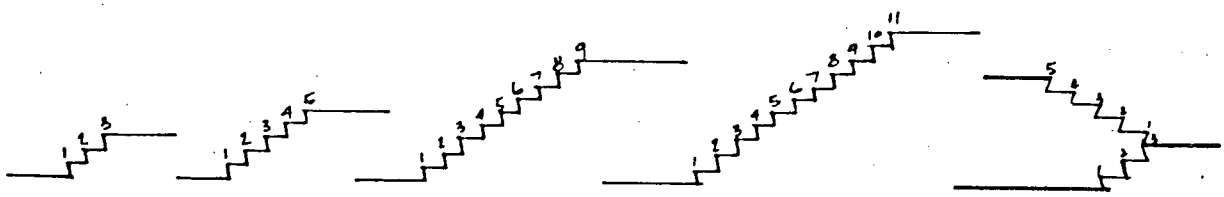


Figure 1.38 The Number of steps for Staircase

6. The Entrance

The construction of the doors should consider the time of

erection and sequence of construction.

> "In the spring, don't make a door in the east;
> in the summer, don't make a door in the south;
> in the autumn, don't make a door in the west;
> in the winter, don't make a door in the north."[14]

In geomancy, the measurement of the door or window is done by "Lu-Ban" foot, a measure of length equal to 1.04987ft, or o.320 meters. On one side, the measuring stick is ruled into eight portions related to wealth, sickness, departure, righteousness, nobility, disaster, danger, and fortune; on the other side, it is divided to eight portions which relate to authority, robbery, inauspiciousness, auspiciousness, official benefit, loneliness, evil and administration. The latter side is further divided into fourty sections indicating inauspicious or auspicious dimensions for particular purposes such as measurement of building halls, interior courts, studios and kitchens(Fig. 1.39).

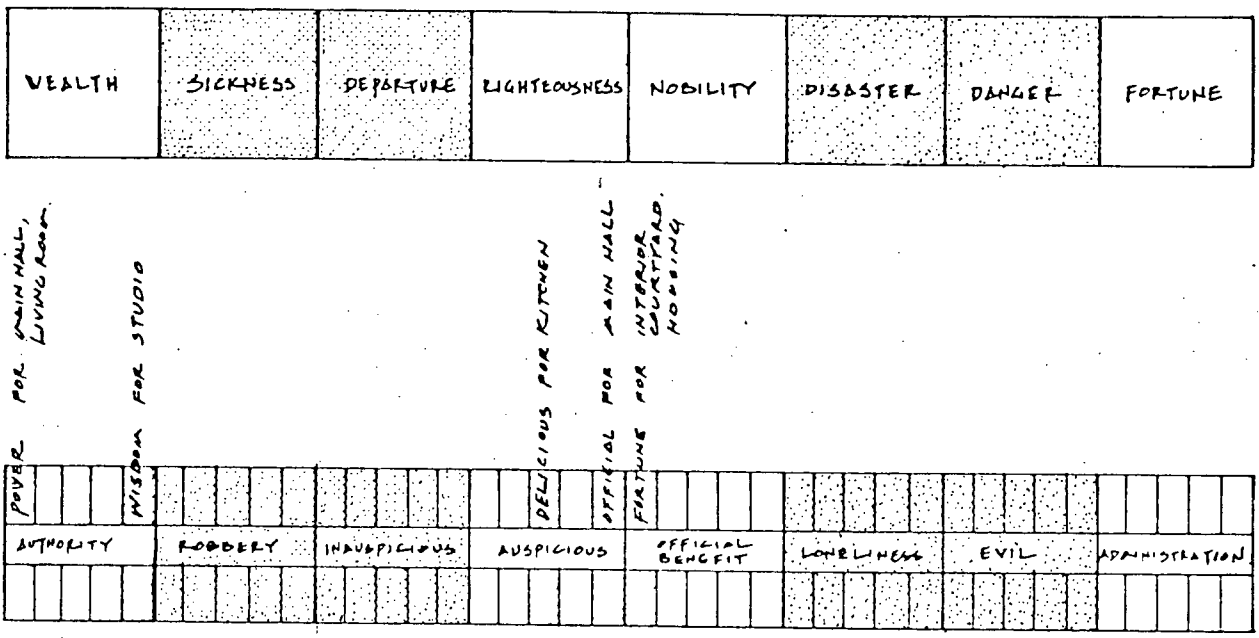


Figure 1.39 The Geomantic Meansurements

1.4 Summary

As shown above, functional geomantic order in building design and construction implies ways to achieve a perfect harmony between man and his environment. The site selection and the orientation of various elements of the buildings are the most critical factors in determining the auspiciousness of the building. The best utilization of space and a harmonious balance between the building structure and its environment requires full consideration for the geomantic principles of building construction. Even the symbolic and geomantic significance of the enclosure of space by the buildings or by fences or the consideration of what type of person should live in the house show concern not only for harmony between the house structure ans its environment, but also between the house and its inhabitants.

Footnote

[1]Stephan, D.R., Fenchwang, Anthropological Analysis of Chinese Geomancy, p. 16.

[2] Needham, Joseph Science and Civilization in China Vol. II p. 359

[3] Feng, Yu-Lan A Short History of Chinese Philosophy, New York, The Macmillan Co., 1948. P. 23.

[4] William, Theodoro De Bary,Sources of Chinese Tradition Vol. I. P. 145-210.

[5] Wing-Tsit, Chan, Trans, and Comp. A Source Book in Chinese Philosophy. Princeton: Princeton University Press, 1973. P. 244-250, 271-288.

[6] March, Andrew T. "An Appreciation of Chinese Geomancy." Journal of Asian Studies. Vol.27, No.II, PP. 252-267

[7] Ibid.

[8] Hong-Key, Yoon Geomantic relationships Between Culture and Nature in Korea p. 24

[9] The sources of this section are based on Yang Chai Shih Shu (The Ten Book of Yang Dwelling).

[10] Hong-Key, Yoon p. 17

[11] Stephan, D. R., Feuchtwang, Anthropological Analysis of Chinese Geomancy. P. 121

[12] Osvald, Siren The Gardens of China

[13] Hong-Key, Yoon Geomantic relationships between Culture and Nature in Korea p. 126

[14] They are "yen-nien", "sheng chi", "t'ien-i", "huo hai", "chue ming", "wu-kuei", "liu sha". Feuchtwang, Geomancy p. 166.

[15] Yoon, Geomancy p. 81.

[16] Yang Chai Shih Shu

2.1 Conceptual Framework and Hypothesis

In the last chapter, we noted the importance of the relationship between the human condition and its counterpart in nature.

Chinese geomancy deals with universal ideas and problems facing human beings in all life situations. The divination process itself requires a letting go of the intellect which is to acknowledge the rhythmic and unconscious forces at work in the universe.

The Chinese geomantic system can be seen as related to the system of the I-Ching (Book of Change). If we can give way to these forces and think of ourselves as part of the universal processes of living, of time in space, then we can release ourselves from preconceptions and inhibitions which prevent and block creativity. (Halprin, 1968)

Most designs in a modern city focus on the enclosing elements, the architecture of facades, and place great emphasis on the visual experience. But the implication of Chinese geomancy is that it deals with behavioral patterns in relation to cultural and religious contexts rather than just to visual aspects. For instance, some beautiful architecturally-designed buildings can be very dull, and many historial environments with little

architectural distinction may stand out over the years as exciting places to be in (Halprin, 1968). Chinese geomantic ideas do control certain elements: space, pattern or configuration, mode of movement and to a certain extent, rhythm. More than this they alter the opportunity to work with unseen forces which determine physical form. They focus on leisure and quiet as implicit reactions to the quality of serenity of pedestrian spaces in the designed environment. Street patterns in Chinese geomancy do influence the life patterns of inhabitants; they prevent the road pattern from expressing inauspicious symbolic forms. They also deal with the 'proper' orientation of road patterns.

The 'open' spaces are the spaces of courtyards or spaces closely related to buildings and the outside streets or outside configuration immediate to the building. These public 'open' spaces affect the quality of the life of the users even more than the physical aspects of the space. It is the place which reflects the character of the functions of the building. For instance, the courtyard in a shopping area, reflects the functions of people getting together for shopping, visiting, eating and other occasions of meeting such as festivals. In an institution of learning the courtyard spaces should be quiet and monastic in character, whereas the courtyard in a housing unit should be seen as a subsidiary space of the living space.

The relationships between the various elements discussed in Chapter one become involved and complex, and the interrelationships emerge as one studies and empathizes with the complete geomantic system of nature. Eventually they are understood to form a complete human living environment. Some biologists call it an ecosystem. The ecosystem is a unique combination of all the elements in an area at a particular moment in time, each one of which has its own unique characteristics and its own individuality, but which together form another organism which is more than just a sum. The community becomes a total individual itself. Thus, an ecosystem is a community made up of all the plants, lands, soils, wind and climate within a place-- each interacting with the other and forming more than the parts(Halprin)[1]. Basically, Halprin's ecosystematic ideas are quiet similar to the principles of Chinese geomancy. Therefore, the design of nature, natural senses of order, natural materials, natural landscapes and gardens, natural cities and towns and urban spaces can arise not through copying pictures of nature but by using her tools of composition. Particularly, in modern Chinese architecture and landscape design, using the metaphysical ideas of Chinese geomancy may provide one way in which to solve the conflicts of modern architecture. (as Brolin in his book <u>The failure of modern architecture</u> has mentioned)[2]

The Chinese geomantic system attempts to avoid design based on

matters of chance. If man is part of nature and the universe, then everything he does influence his surroundings and in turn nature influences him. If you lean to the south, the whole world tilts in that direction. Thus, this system adapts to this interrelatedness and is an echo of it. It is a concept difficult for Westerners to comprehend; Westerners have always assumed nature on the one hand and themselves on the other, outside of it. They treat nature as a base of man's operation, not as Chinese, who consider man's operation as part of nature. So when the Chinese consider nature they are inside of it, working with it, and correlating with the whole natural environment. The implications are that as we are part of nature, we violate her balances at our own risk. For instance, building a freeway through a river valley can change the ecological balance and the aesthetic and social values of a whole region. Afterwards it may be too late to rectify or alter the effects. That is why, more than ever before, we need to construct our environment carefully according to ecosystematic principles such as geomancy.

2.2 Hypothesis

Commonly the attempt to design modern architecture in keeping with Chinese cultural tradition has combined functionalism with a range of traditional motifs. This usually leads to superficial results. To re-interpret the Chinese traditional heritage and to create a specific new form and theory based on the whole cultural and religious philosophy and the contemporary methods of building seems a more profound approach.

To recognize the spiritual forces of Chinese traditonal architectural philosophy, the only approach is to translate the 'form' language into a new idiom. The previous chapter has surveyed the details of Chinese geomancy as applied to building construction. This system may provide a deeper understanding of the spatial concepts and cosmological principles which are the main essense of Chinese traditional forms.

To develop a design method compatible with Chinese cultural architecture it will necessary to re-interpret the Chinese traditional heritage in terms of modern architectural ideals. To provide the essence of symbolism of Chinese aesthetic philosophy is more important than the mere reproduction of a traditional features.

The intention of a design for modern Chinese life must not depend merely on direct borrowing, but rather must find an essential Chinese bases for the discovery of new and imaginative spatial relationships. The new attention will be directed increasingly towards social aspects which are specifically Chinese, and will deal with the emotional and social reactions to traditional Chinese cosmological aesthetic judgements.

Attention must be paid to expressing traditional symbolism compatible with the modern spirit rather than involving the mere design of decorative details. The design principles of this thesis are derived from Chinese geomancy following its sequence of design stages, its design implications for spatial relationships, planning and form arrangement.

Footnote

[1] Halprin, Lawrence The RSVP Cycles creative Processes in the Human Environment. New York, George Braziller, Inc., 1969. P. 102

[2] Brolin, Brent. C. The Failure of Modern Architecture VNR Inc., N.Y. 1976. P. 8

He is concerned that modern architectural and planning ideas have failed whenever the architect disregards the social and aesthetic values of the user: "Growing reaction against modern buildings in tradition contexts that try to be 'different' rather than fit in. And a new disposition of non-Western cultures, which formerly accepted modern architecture because of a sense of cultural inferiority, to try to recapture their own traditional visual and social values."

3.1 Design Programming based on geomantic staging

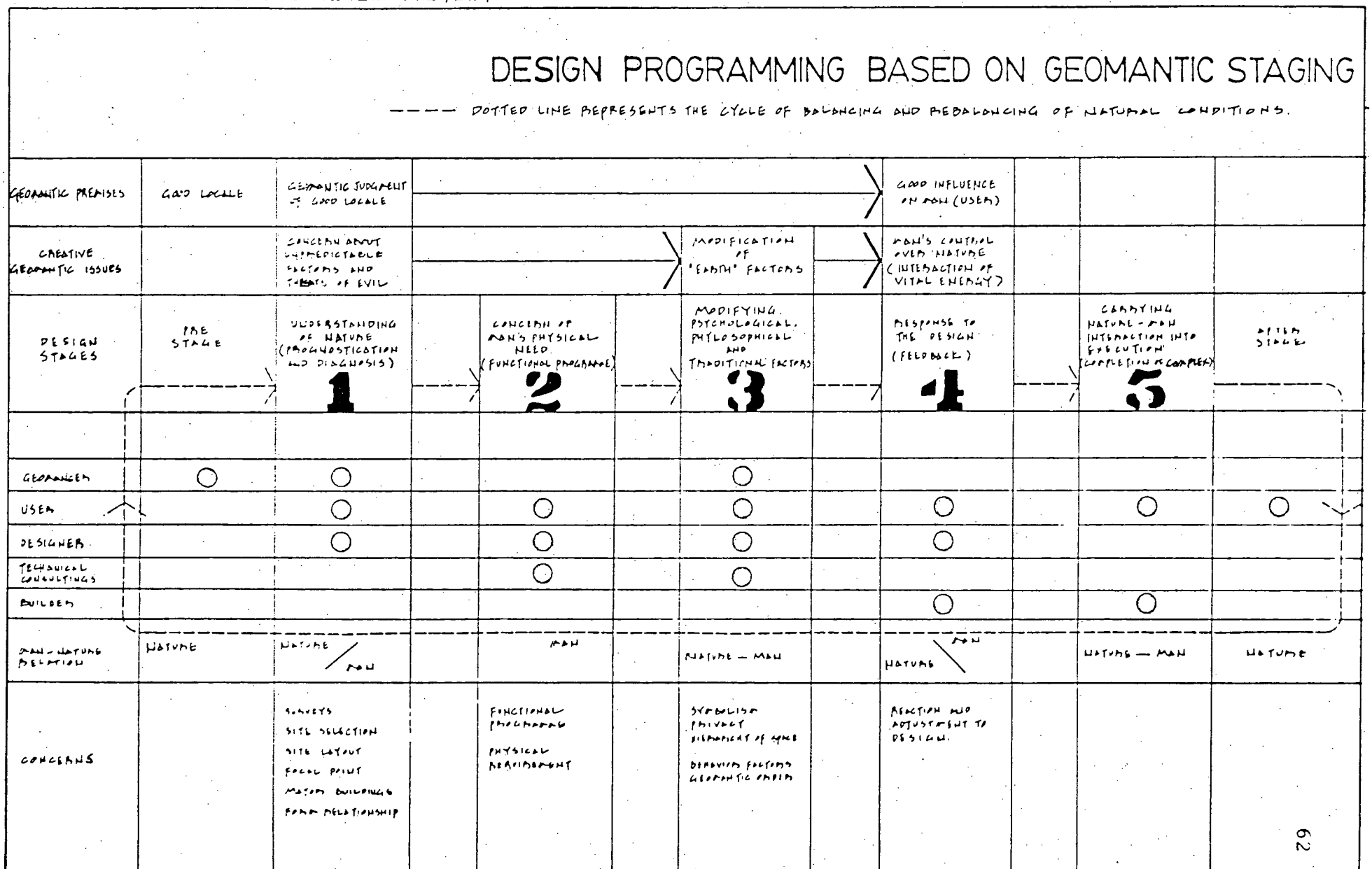
Design programming based on geomantic staging is developed to investigate how the modern designer might integrate and coordinate the input of the professional geomancer with that of the architect-designer and other specialists. It tries to include the entire ecosystem in balance in the man-nature environment(Fig. 3.1)

Pre-stage

Presentation of Nature

Initially nature exists without any human association. A geomantic sequence in a given area begins with nature's presentation of itself to man. He approaches the environment and associates with it, in various ways, on a mental and perceptual(non-material) level. As man contemplates the area's various natural phenomena, he gradually begins to understand his relationship, in the traditional Chinese sense, with that particular environment. Traditionally nature provides an escape from the din and dust of the world and thus permits spiritual communion between the self and the cosmos.

Figure 3.1 The Chart of Design Programming based on Geomantic Staging



Stage 1.

Understanding of nature(prognostication, diagnoses)

Once the observations and subsequent perceptions of the area are complete, man is then able to formulate conclusions which permit a physical inter-relationship with the environment. This stage represents the initial design process. These processes which reflect concepts exemplified by beautiful water and mountains, reveal beauty in human beings. They lead to site inventories and site analyses which provide three benefits: 1) conditions of the site are revealed. 2) all the resources and liabilities of the site are displayed. 3) on the basis of all information, site selection can actually be made. Consideration must be given to the following areas:

Topographical Survey

This survey will evaluate the grade of the slopes; 8% represents an area that is suitable for building. Grades of 8%-20% or greater present difficulties.[1] It will also determine the amount of high, low , and flat land, the number of water bodies, mountain ranges and the view. Geomantic rules also apply to soil stability[2] and the prevention of the erosion of foundations.

Geological Survey

Knowledge of geological base and land forms are important in foundation design and construction of road beds[3] as well as selection of a site for excavation. Chinese geomantic rules provide guidelines for natural geological elements such as outcroppings and ravines, flat mounds, rocky mountains and exacavation. In addition, banks of streams or ponds should not be creeping and sliding. Fulfilment of these requirements should be a concern of the construction process.

The geological survey is the stage during site selection where careful consideration should be given to balance and correlation between various aspects of the site. For instance, in designing the landscape, the open area, pond and water tank should be considered for soil soaking, creeping and future slumping of the mountain slope. Consideration should be given as well to the mountain in back of the site and its water in regard to the gutter system and retaining wall.

In Chinese geomancy the purpose of the geological study is to avoid excussive cut and fill in the proposed site and thus prevent deleterious alteration to the natural condition. It is an ideal intended to ensure a design which best protects the foundations.

For landscape alteration and improvement, ponds should be dug out in a particular orientations and locations. Soil conditions also provide information regarding the proper site. The geological survey would include a test to determine the type of soil ie. whether it is red rock, clay, loam...etc.[4] On the basis of information gathered, and the intended use, a decision must be made as to what the soil will support without eroding.

Hydrographical Survey

Studies must be made to determine the compatibility between drainage sewer systems and ponds or other water configurations within the site. The presence of a pond(or other water bodies) is critical for complete integration of the spiritual forces interacting in the design and thus its dimensions and location are of the utmost importance. Conditions regarding water soak and soil erosion should be examined carefully.[5]

Views

Chinese geomantic rules apply to orientation and site view (both looking in and looking out of the site) in terms of inauspicious and auspicious elements of nature. Therefore, the view from the site will influence site selection. Borrowed scenery is an important aspect of the geomantic order and the landscaping

design. The views of distant hills and trees are thus carefully inccrporated in the garden design, and in the space surrounding the garden.[6]

Site Selection

The patterns in appendix III. show the orientations and natural elements which result auspicious sites. These patterns are critical in site selections and Fig. 3.2 shows The ideal site situation.

In the Chinese gecmantic view, cosmic principles lie behind all natural surroundings and cosmic ideals are considered in providing for ccmfort in living. Therefore, beginning from site selection early in the design stage up to the completion of construction, it is important to maintain harmony with nature. Site selection is decided by the orientation, the relationship of natural elements(mountains, water, infrastructure, vegetation) and man-made envircnment.[7]

Mountains are marked as places of special pilgrimage; rivers and bridges become holy; a building or a tree, or rock or stone, takes on the power through which people can connect themselves to their own memory and the psychological importance of the site.

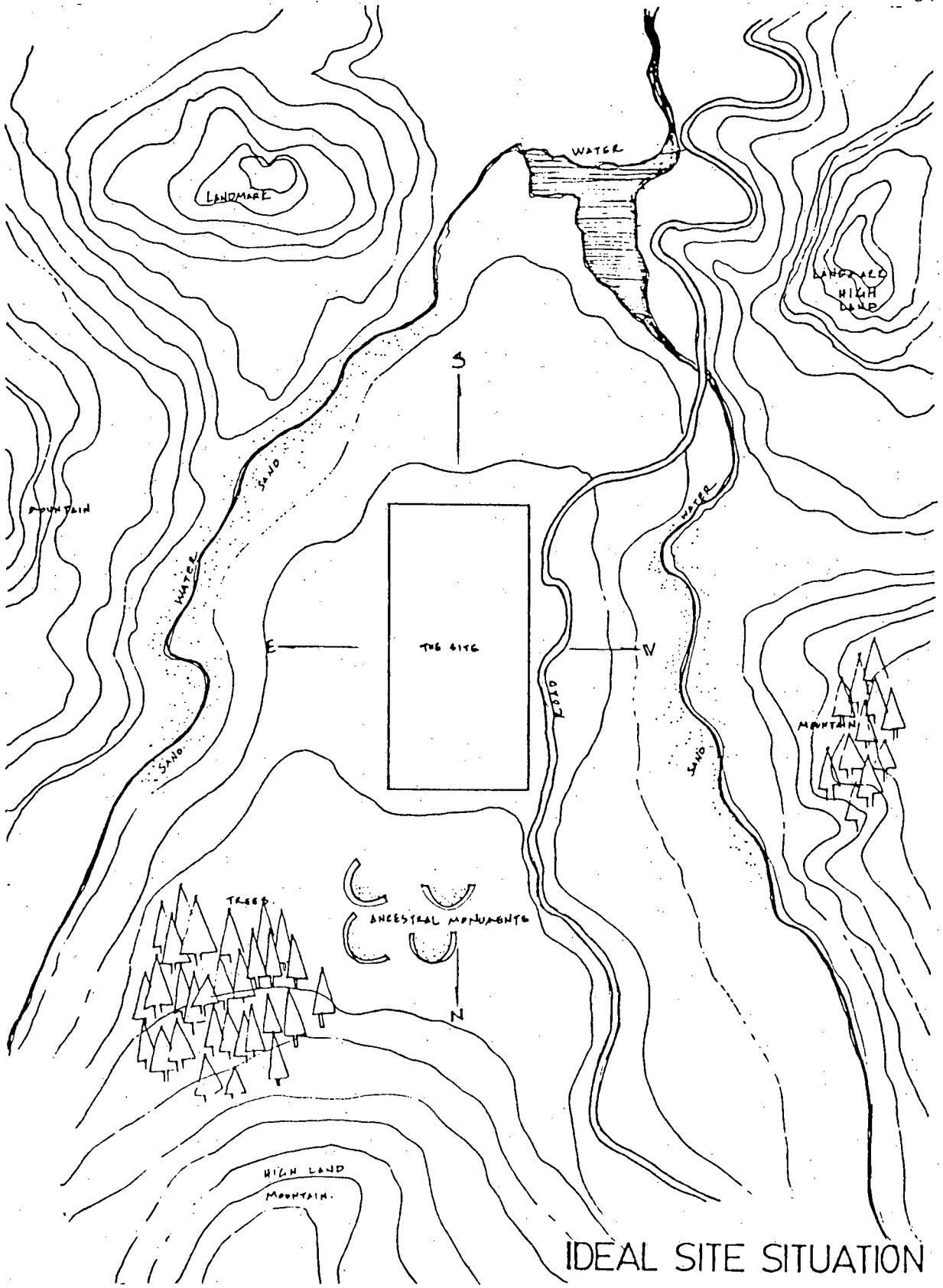

LANDMARK
WATER
LANDMARK HIGH LAND
S
MOUNTAIN
SAND
WATER
THE SITE
E
W
WATER
SAND
SAND
MOUNTAIN
TREES
ANCESTRAL MONUMENTS
N
HIGH LAND
MOUNTAIN
IDEAL SITE SITUATION

Figure 3.2

Site Layout

Elements of the complex are introduced into the site on the basis of their relation to the eight primary directions and to the various near and far elements in the landscape which may be said to have an influence (auspicious and inauspicious) on the particular parts of the complex. Then the focal point, major buildings, major gate and form relationships will be decided.

Stage 2.
Diagnosis of User and The Owner

In this stage, the physical requirement is the only factors concerned.

Stage 3.
Modifying Psychological and Traditional Factors with Design

In this stage, man transforms his understanding of nature into an evironment where he can live. He attempts to perform this transformation in a way that maintains balance and harmony with nature. The following patterns are the developed elements for representing the geomantic principles related to some of the important philosophical characteristics of Chinese architecture.

Approach

The road approach integrates with the topographical setting, and holds the observer in a continuous visual experience where expectation is produced through bodily motion.

The access path and the major entrance road should follow the contours to reach a particular point of the site. The blocking effect can be created by artificial landscaping which utilizes trees and walls. This action in there gives the impression of leaving a dynamic state and entering a static site.

Geomantically the northern side of a site is an ancestrally sacred place. The access area should then be developed so as to provide a special pedestrian path that will reach that place.

Entrance

A modifying element at the entrance area should indicate the direction of entrance. It is a non-verbal sign that will direct people to enter the building through the main gate, suggesting a natural pathway to follow.

The gate wall and gate way concepts are typical transitions of interior yin and exterior yang spaces, movement from this area should be such that the individual is compelled to go in a

particular direction. This movement should be at the right place and to follow the "right" path.

Courtyard Concept -- As a Central Space

The central concept of the complex is the courtyard. This idea is critical in terms of height, size, pathways and accesses.

Following the order of geomantic courtyard principles, the orientation of the courtyard will first be considered. According to the same principles the best entrance location for a courtyard will be selected. Having then established the alignment of the courtyard, attention must be given to the buildings which surround this space. The buildings which lie along the particular directional edges of the courtyard must be constructed so that these respective edifices are higher or larger than the rest of the buildings. In keeping with the role of the buildings in the creation of the courtyard, the structures on the north side of the site should be higher than those on the south, east or west sides.

The orientation and form of the courtyard should be reflected in the accesses and pathways of the area. This may be achieved by the facades that consitute the paths and means of access. The variety of proportion, the reflective glazing on parts of the facade and the strong character of the surrounding rooves

provide the greatest impact of the central courtyard. The slope of the rooves is in unison with the sloping nature of the courtyard. The levels demonstrate the hierachical sequence and functional differences of space. This gives a sense of flowing into the inner space as well as a feeling of unity with the surrounding area. This is best experienced when one stands at the entrance gate and looks down into the courtyard.

The courtyard is an articulated enclosure which is determined by the spatial grouping of columns at the right angles to the entrance gate on four sides of the rectangle. The heights of the buildings and the paved pedestrian areas of the enclosure help to create a qualified openness. The open area in the central space of the courtyard will be available for outdoor gathering activities. The spaces on different levels may be arranged symbolically to express separate integrated into one.

The small courtyards related to in respective buildings may show some ambiguity in respect to indoors and outdoors. They should have sufficient access from the surrounding building and should not be too enclosed. Therefore, every courtyard should have a view of the central courtyard. These small enclosures provide transitions of space from the exterior courtyard as well as from the outdoor gardens. The small courtyards should be surrounded by roofed verandas which form the transition between indoor and outdoor space.

Spatial Transition

The central courtyard space should be is partially enclosed and partially open. The purpose of this space is to try to make the outdoor enclosure positive with many different activities and social functions. The sub-courtyards should be related to special functions.

The spatial transition from the inside or outside of the building should be "formal", that is, should respond to specific transitional or geomantic rules. In Chinese architecture, the transitional areas should have special patterns of doors and windows. The Chinese preoccupation with these types of relationships lead to an architectural attitude where spatial achievements transcend structural methods.

The greatest concern is with man's position; man is defined originally as in the center of an enclosed space which is organized around him according the organization of the cardinal points. The square or rectangular design as exemplified by buildings represents man's order and knowledge. Nature's geomatry and truth are represented by circular forms, symbolic of heaven.

Between man and heaven, there are gardens. Here man assumes an idealized role in order to think philosophically about matters

of eternity.

Arcades and Fences

Arcades are covered walkways at the edge of buildings, which are partly inside, and partly outside. They play a vital role in the way that people interact with buildings and natural environment. The arcades in the Chinese architectural and geomantic order not only have a role in these interactions but they also reflect cultural aesthetic meanings. The veranda represents the 'zigzag' transition between interior and exterior spaces.

The fences represent the completion of the enclosural space for keeping the auspicious vital energy inside the buildings. These fences are built to fulfill geomantic requirement; they are symbols of boundary and the transition elements of interior and exterior spaces.

Trees and Vegetation

As vegetation is an important expression of the relationship between the site and the building in terms of auspiciousness, geomancy outlines methods of utilizing, planting and caring for the various types of foliage. Trees and shrubs represent

combinations of special meaning, number and color with regard to cosmic orientation and should be planted accordingly. Their location exemplifies auspicious forms and symbolic meanings.

Stage 4

Response to the design (Feedback)

During the construction, the user begins to move in and the complex begins to be seen as part of the existing environment.

Stage 5

The Completion

In the completion stage, putting nature-man interaction into execution, the user starts to understand and merges with nature, and relates the design organization to the natural environment.

After Stage

The ultimate stage is to reach a re-establishment of the harmonies and balances which must exist in a man-nature relationship. In other words, when the architectural intervention is truly complete, the balance of nature is truly natural and gives no evidence of having been disturbed or

interrupted or left in disharmony. This is the geomantic philosophical idealization of the continuity of "ch'i" which ensures good influence in the future.

3.2 Hypothetical Project

In order to provide a vehicle for the above study, these principles will be applied to a hypothetical project, the design of a Chinese Cultural Research Institute in British Columbia, Canada.

3.2.1 The Intention of Design

The Chinese Cultural Research Institute will be able to bring cultural and educational services to an ever-growing public. It will provide North Americans and especially Canadians with a recognized place in which to experience aspects of Chinese civilization.

As a centre for education, the institute will contribute to the understanding of Chinese civilization. It will give scholars, students and public visitors an opportunity to learn about specific aspects of Chinese philosophy, art and science as represented in various departments of the institute. But there will also be lessons to learn from the planning and design of the Institute environment itself.

The specific site planning that will be applied to the Chinese

Cultural Research Institute will give inspiration and pleasure to many different groups of artlovers and cultural researchers. Finally, it will become a demontration of certain profound aspects of Chinese thought.

Purpose of Locating near Vancouver

Vancouver contains the second largest Chinatown in North-America. The Chinese community is of great interest not only to oriental immigrants but also to Chinese born in North America and to all North Americans and visitors to North America.

Topographical surroundings can be found nearby which express traditional Chinese cosmological ideas of mountains, rivers and forests.

Choosing the actual site

Separating a research institute from the city protects it from the distractions of urban life. Different architectural forms create different emoses. This design will try to evoke an image of architecture integrated with wild nature in a uniquely Chinese manner.

> " A deep and persistant feeling for wild nature... religious aspiration, sense of awe, insight into reality."(Boyd,1962)

Achieving the experience of transition from the urban scene to that of the isolation of wild nature is part of the intention of this study.

3.2.2 Specific Criteria

The institute is expected to provide:

1. A showplace for the collections of Chinese art and science by the Chinese cultural foundation.
2. A variety of facilities for Chinese cultural research.
3. Facilities for the exhibition and the presentation of Chinese art, music, literature, philosophy and science.
4. A museum capable of establishing a working relationship with other cultural research centres in North America.
5. A cultural centre for North-American Chinese and related subcultures; and for anyone interested in these cultures.
6. An "interface" between the world of Chinese scholarship and that of international world scholarship.

In fulfilling the above objectives certain facilities should be provided and should be treated in a manner compatible with and expressive of Chinese cultural attitudes.

1. The institute must provide adequate housing and public display area for research activities and collections.
2. The institute must provide adequate research and display facilities to support a variety of researchers from all over the world.
3. The size and location of the site should allow for the development of an Chinese "cosmologically appropriate" setting in which the cosmological orientation and other Chinese architectural and landscape design philosophies can be presented.
4. The facilities should be planned and constructed with proper attention to expressing the Chinese institutional design and possible working arrangement with its own independent activities.
5. The type and design of the facilities should allow the institute to expand its research services to the local Chinese community, universities, research groups and the general public.

3.2.3 Design Problem Statement

<u>The Environment</u>

1. Those who visit and work in the institute will

experience more than just the contents of its buildings. It will be the overall experience of the performance and the display, the building itself, and the siting into its surroundings that will express the whole Chinese cosmological ideal.

2. The choice and development of the site should provide a Chinese cosmologically appropriate setting for an institute in which the philosophical culture of Chinese architecture is displayed.

The Psychological Environment

1. The site, the architecture, the research studios, the performance centre and those residential village should be integrated into an experiential whole .
2. Visitors will come to be entertained as well as informed.
3. Not all researchers or visitors will be interested in every research activities or every display or performance or scientific demonstration, but at the very least it should be possible for any one to enjoy a pleasant, diverting and informative promenade through the complex.
4. The visitors should be able to develop their own sequence of movement through the arcaded public space or the central public space, or in the natural environment

outside.

The Physical Environment

1. In some areas, special control of temperature and humidity will be needed to protect the collections from decomposition, while still providing comfortable human conditions. In others refined control may be less critical.
2. The public and non-public areas will need to be designed to effect their clear separation without impeding and uninterrupted, easy circulation.
3. The institute will offer international research groups and the public, the opportunity for structured and non-structured learning experiences and entertainment.

Appendix IV shows the physical requirements for this hypothetic project of C.C.R.I.

Footnote

[1] Rubenstein, H. M. A guide to Site and Environmental Planning N.Y. John Wiley and Sons, Inc., 1969. P. 11

[2] The recommendation by geomancer for the right kind of soil to preserve the body is both symbolic and practical.

[3] Lynch, K. Site Planning Cambridge: MIT Press. 1962

[4] Hard rocky soil is lifeless(De Groot, p. 953) It is not necessarily harmful, but a house built in such conditions would certainly have an unfertile garden and would thereby be without a valuable source of income. Red,loamy soil is full of life, and prevents the decay of coffin and corpses.

[5] Undrained subsoil, marshy ground and sluggish water, give off damp and stinking exhalations (sha ch'i) which, blown over the building, would put its inhabitants in danger of sickness and misfortune. The geomantic order would recommend the clearing or digging of watercourses, or choosing a site in the neighbourhood of free flowing watercourses and a situation on a slope both for the sake of drainage and for the free circulation of air. The pool, which should be situated in front, that is down the slope from it, as well as accumulating "ch'i" performs a very practical function.

[6] The recommendation to choose a south-facing site and to have protection from the north means that the site will benefit from warm, wet winds and be protected from cold winter winds.
A sunny site and unrestricted view of the site are developed as tne most beautifully situated. Everyone takes unsymbolic pleasure in sunlight, fresh air, and a good view. Being in a beautiful situation is an unsymbclic pleasure, but it is also an educated pleasure (in Chinese landscape painting) and is more the pleasure of being seen in a beautiful situation than enjoying it oneself -- a socially symbolic pleasure! (Feuchtwang Geomancy, p. 117)

[7] The overall aspect of a good site is calm and smooth. It must be protected since, just as too fast a watercourses carries bad and disperses good influences, too much wind is either malicious or does not allow good influences to accumulate. On the other hand, too little movement of air and sluggish water flow mean the stagnation of the site's good influences, while all these considerations have symbolic significance, it is at the same time easy to see that they conform purely to the practical side of siting.(Feuchtwang Geomancy, p. 116)

4. DESIGN

During the second stage, the soil conditions(Fig. 4.1), surface drainage(Fig. 4.2), slopes(Fig. 4.3), vegetation(Fig. 4.4) and the relationship with environment (Fig. 4.5) are studied. The site layout is based on those studies for the proposed site planning.

4.1 Site Layout and site planning

The following number sequence is related to Fig. 4.6.

1. The major approaching view will be developed as a sculptural landmark or significant visual point to suggest to the traveler a feeling of approaching the site.

2. As an ancestrally sacred place, the symbolic sculptures and the access path should then be developed so as to provide a special pedestrian path that will approach the sacred place in a meandering way.

3. The tree plantings are shown as they would be after a decade of growth. The forest trees would be cut and planted to block the "sha ch'i", retain the vital energy, and to serve as a medium for the transmission of "ch'i".

4. View from west, east and south are the "borrowed" views of Loon Lake, Blaney Lake and the creeks and the natural mountainous scenes (see Fig. 4.5).

5. The existing surface drainage (see Fig. 4.2) will be considered as path of vital energy. Keep the surface drainage system for the sewer system of the project as a path of vital energy.

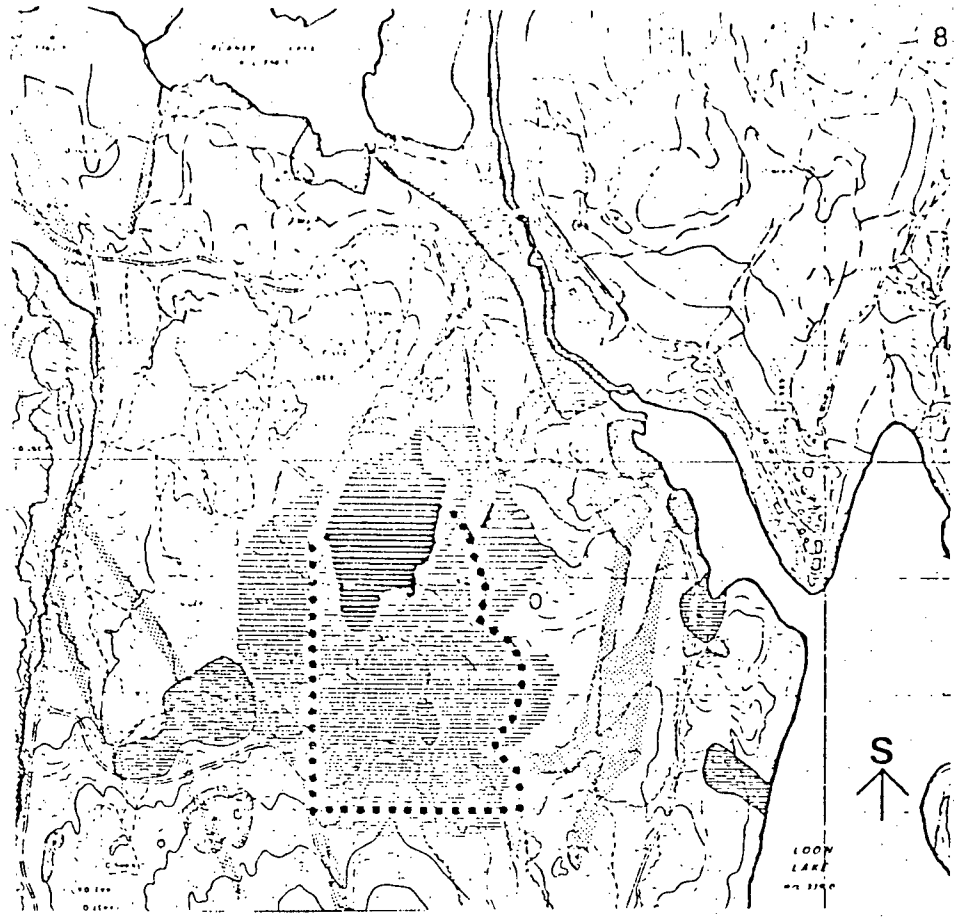


Figure 4.1

SUITABILITIES SANDY SOIL

LITHIC SOIL

PERMEABILITY

EROSION HAZARD

SOILS

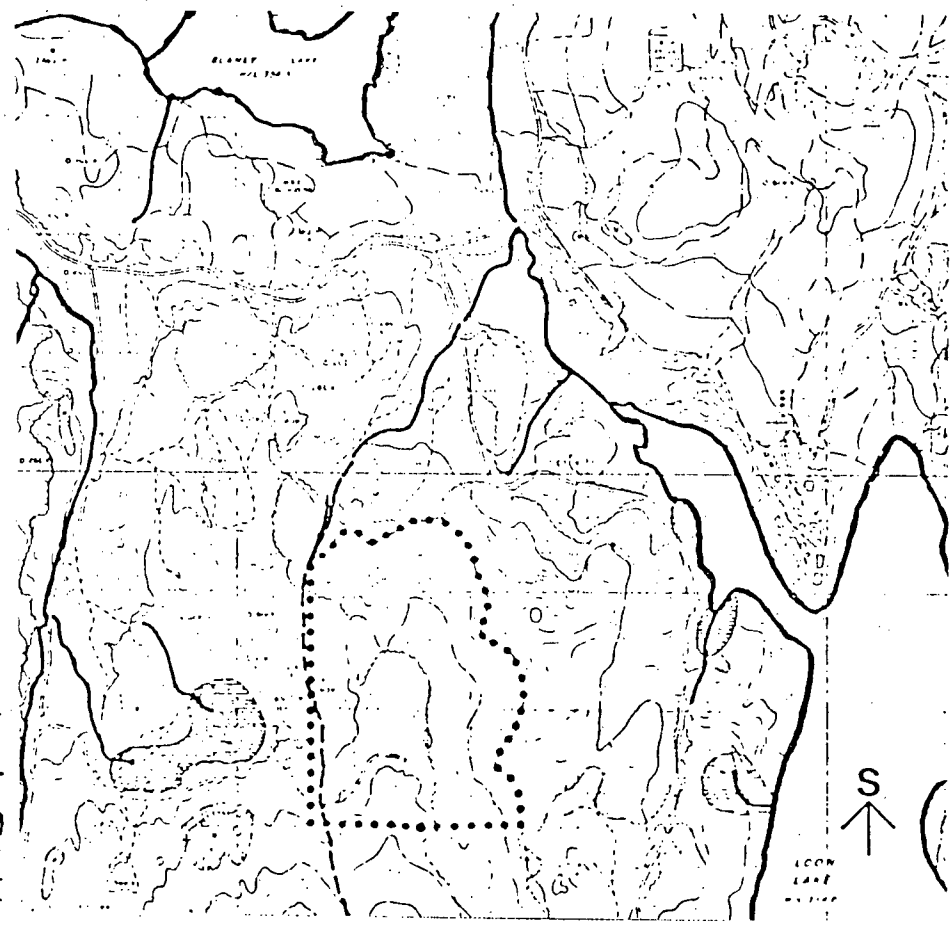


Figure 4.2

PERENNICAL STREAM

INDETERMINATE DRAINAGE

POORLY DRAINED SOILS

SURFACE DRAINAGE

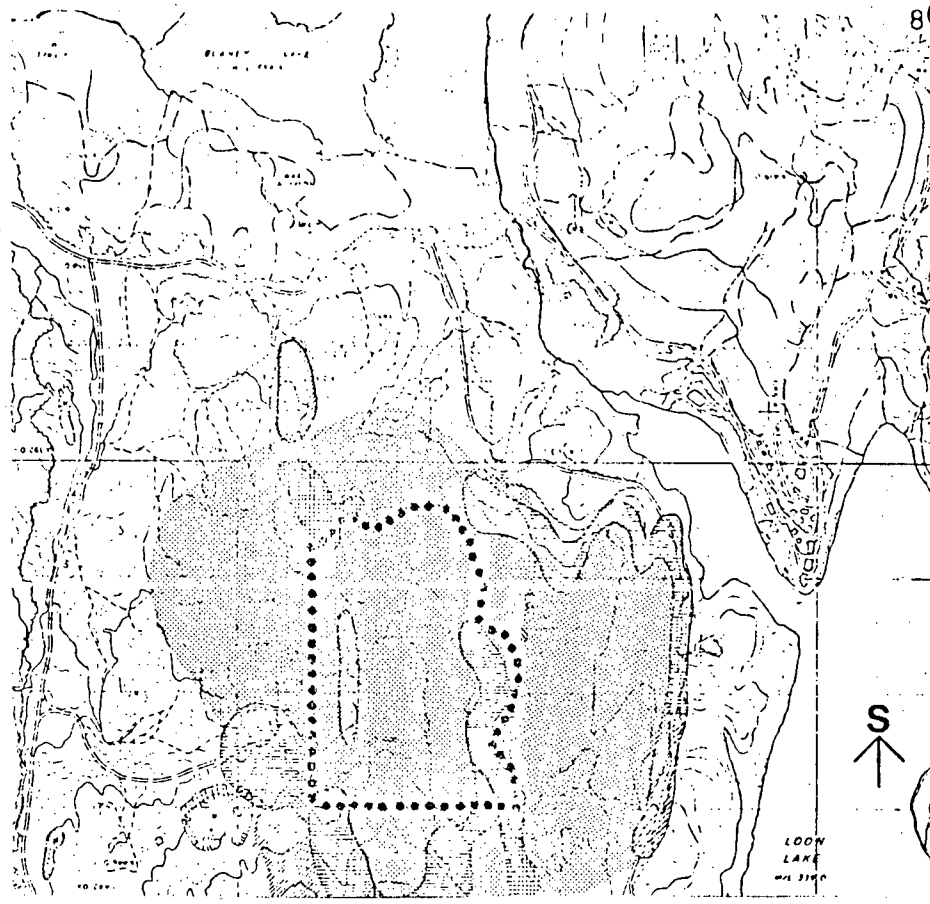


Figure 4.3

30°-40°
20°-30°
10°-20°
0°-10°

SLOPES

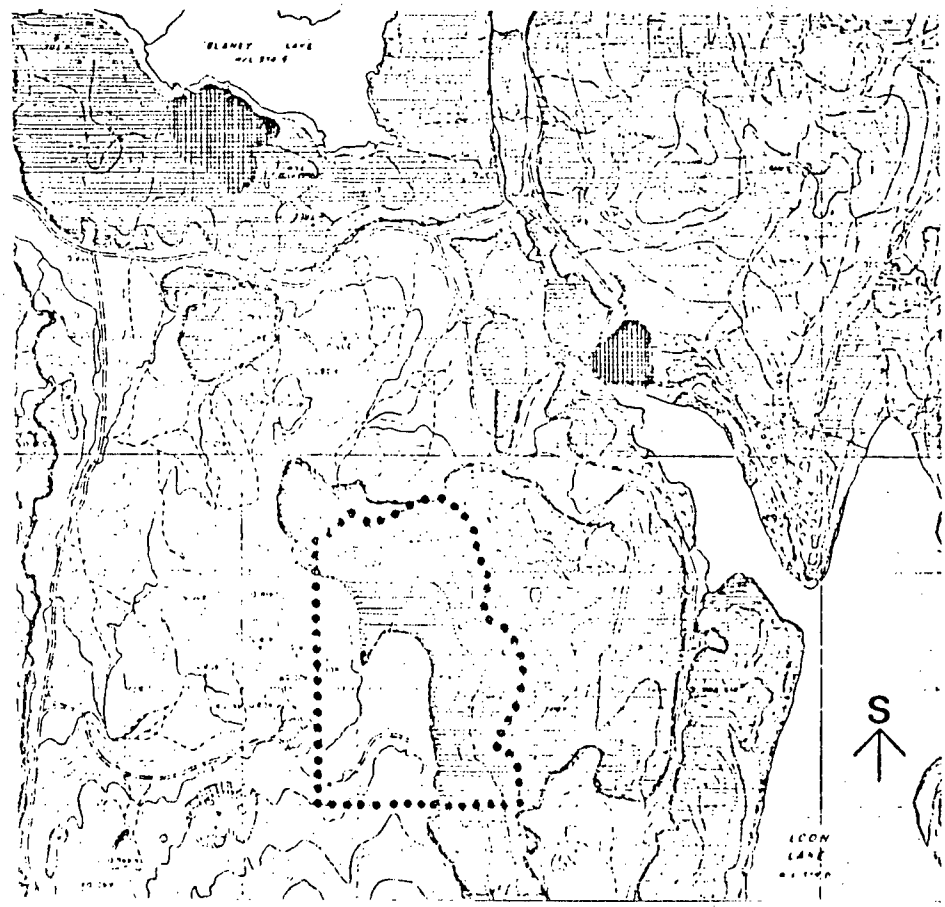
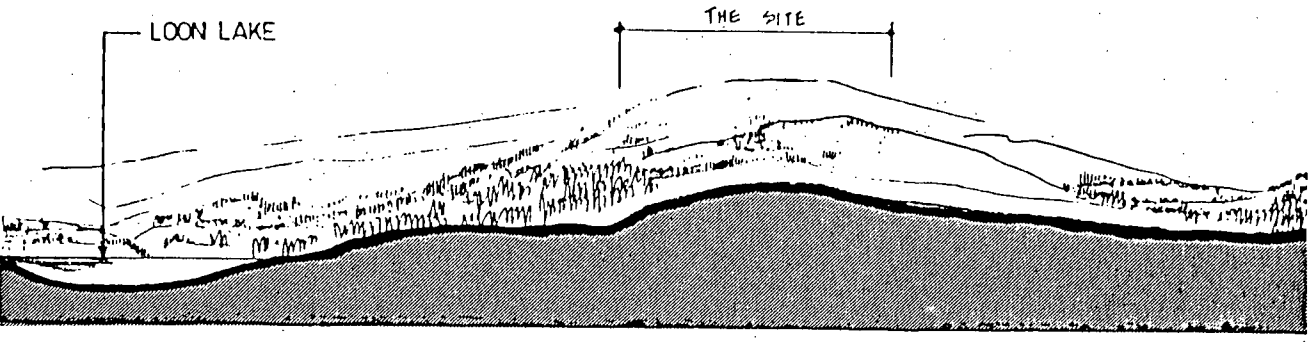


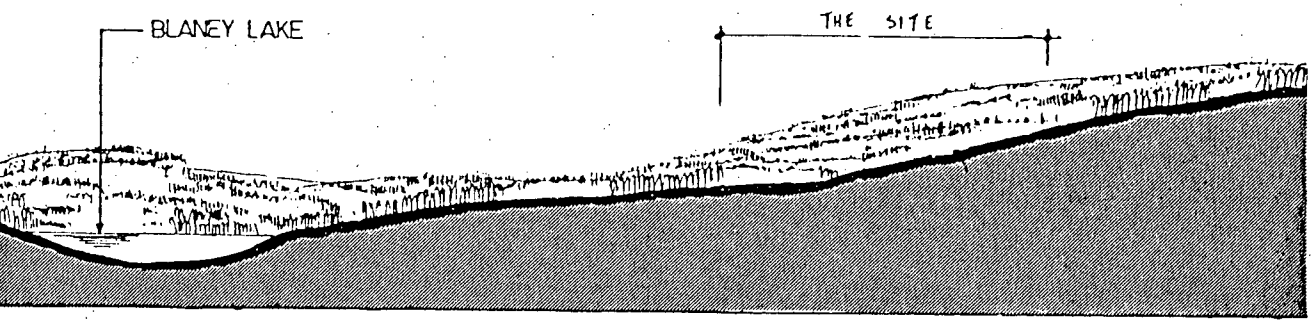
Figure 4.4

OG F.H.C 170'
2G F.H.C 110'
LOGGING

VEGETATION



E~W SECTION



S~N SECTION

SCALE : 1 / 8.000.

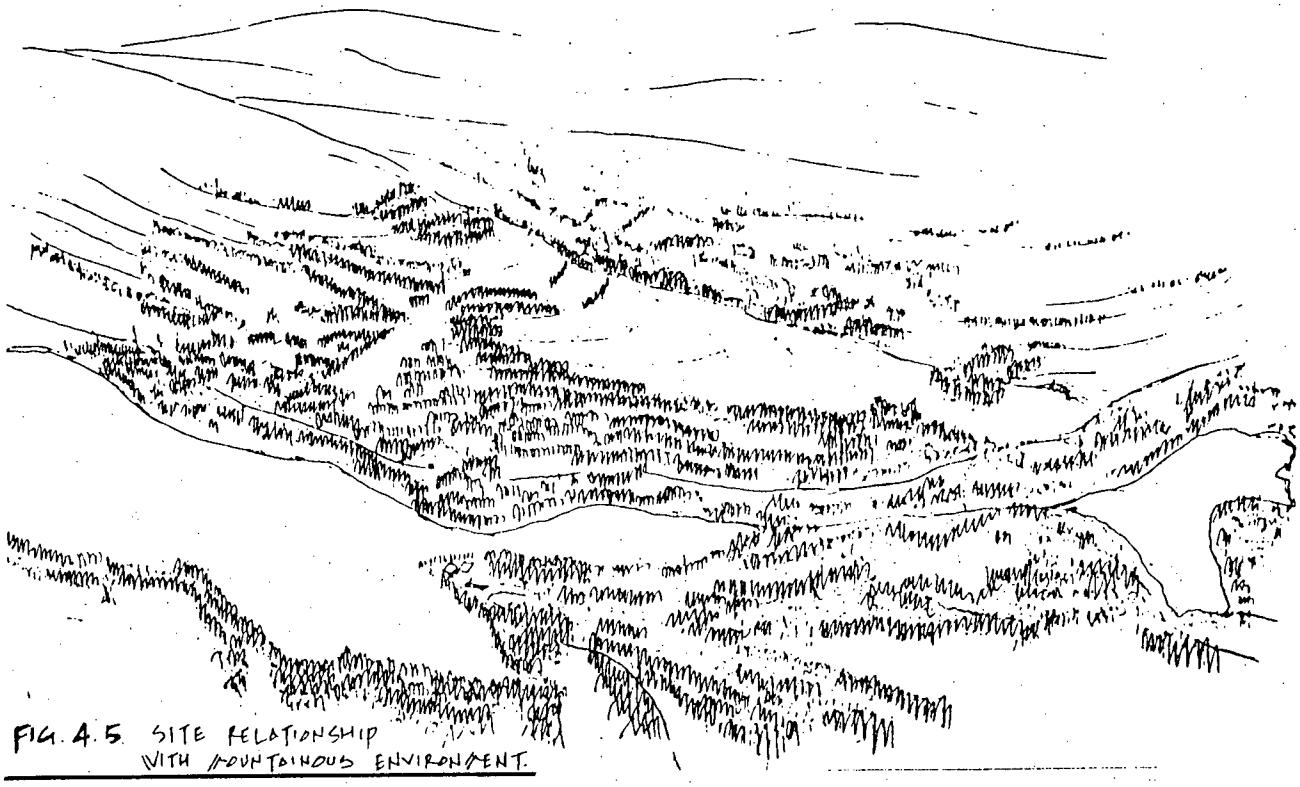


FIG. 4.5 SITE RELATIONSHIP WITH MOUNTAINOUS ENVIRONMENT.

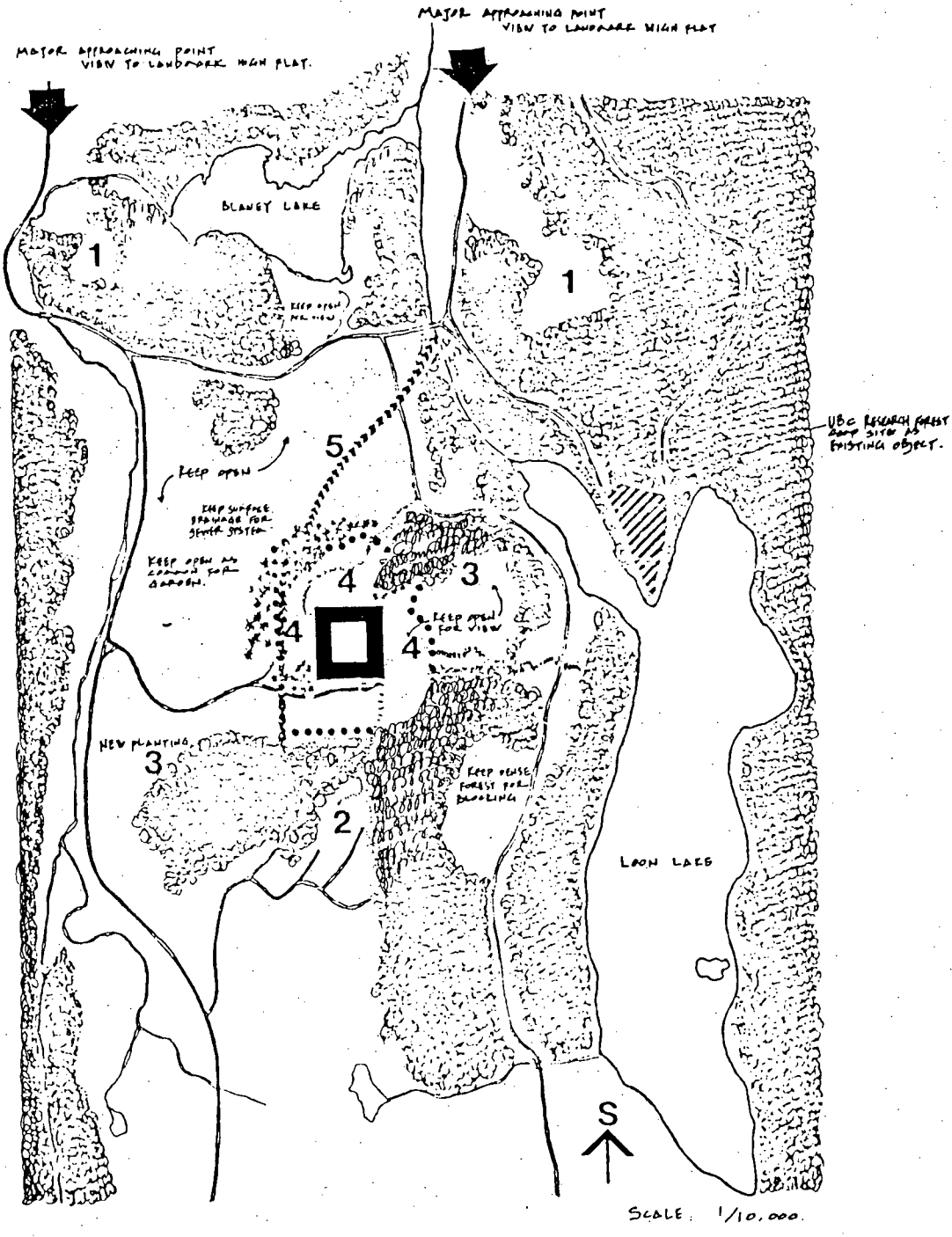


FIG. 4.6 THE SITE LAYOUT.

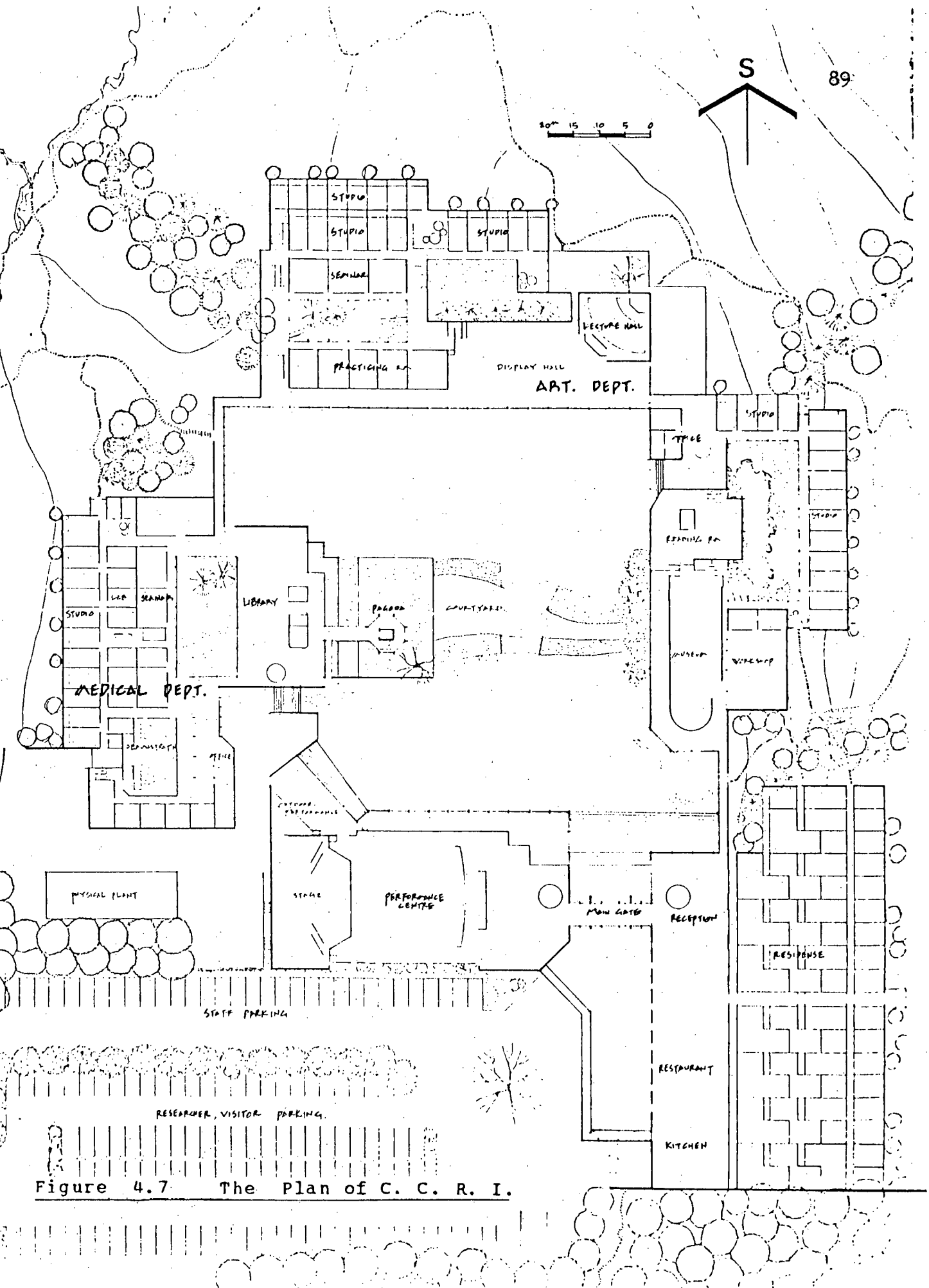


Figure 4.7 The Plan of C. C. R. I.

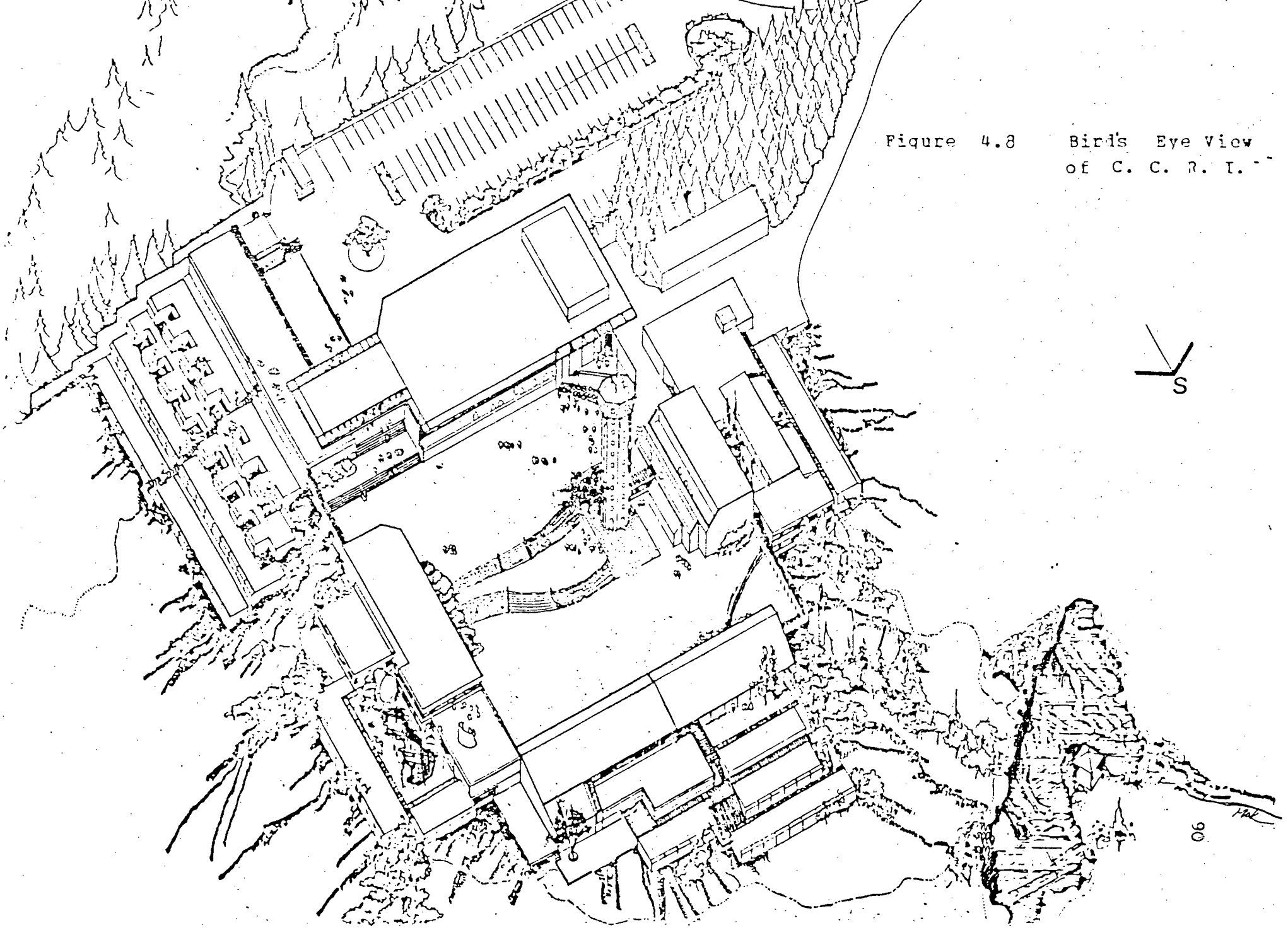


Figure 4.8 Bird's Eye View of C. C. R. I.

4.2 The Design of the Complex

The use of Chinese geomancy as design guidelines for C.C.R.I. will be explained by following categories:

MOVEMENT

The following number sequence are related to Fig. 4.9 (fold out p. 96)

1. Approach and arrival:
Movement here is guided by the elements 1) the symbolic placement of vegetation 2) the framed opening of the wall 3) the 45° cut wall opening. All three factors combine to give visitors the impression of leaving a dynamic state and entering a static environment (see Fig. 4.14 and 4.15).

2. Main gate transition:
The circular frame of the main gate emphasizes the psychological and emotional change that is experienced where a person moves from an exterior to an interior space. This reflects the movement from the "outside" area (the circle of heaven) to the inside man-made world. This construction also reflects the philosophical assumptions of geomancy, which indicate that events should occur in the correct time and place.

The main gate opens into a small 6M wide glassed-in reception area which permits the visitor to move in one of three directions 1) to the reception area, 2) the performance center 3) through to the courtyard. Movement toward the latter area gives the visitors a commanding view of the entire courtyard and the surrounding uniformity of construction -- representing the "interior" world, where all research and performance activities occur. At the exterier circumference, all non-research, residential, recreational activities occur. These activities are all to be considered as "interior" functions according to geomantic philosophy (see Fig. 4.15).

3. Reception area:
This area is an extension of transition represented by the gate--the point of pausing and announcing oneself (registration), acquainting oneself with the complex (information) and determining the direction of one's path(orientation).

4. Performance center:
The theatre is placed here because for many visitors it will be the primary and only function they attend(see also Spatial Order p. 98). The gate is designed to emphasize different times, such as when there is a performance in the theatre.

5. - 13. These are transitions from the interior courtyard

space to the major buildings. The next sequence of movement points is to be related to the "western" group of directions which constitute half of the circle of directions starting from SW to W, NW and then NE. (orientation system see p. 39)

14. - 19. These are transitions from semi-public to semi-private areas.

20. This shows movement from the semi-private to the private space.

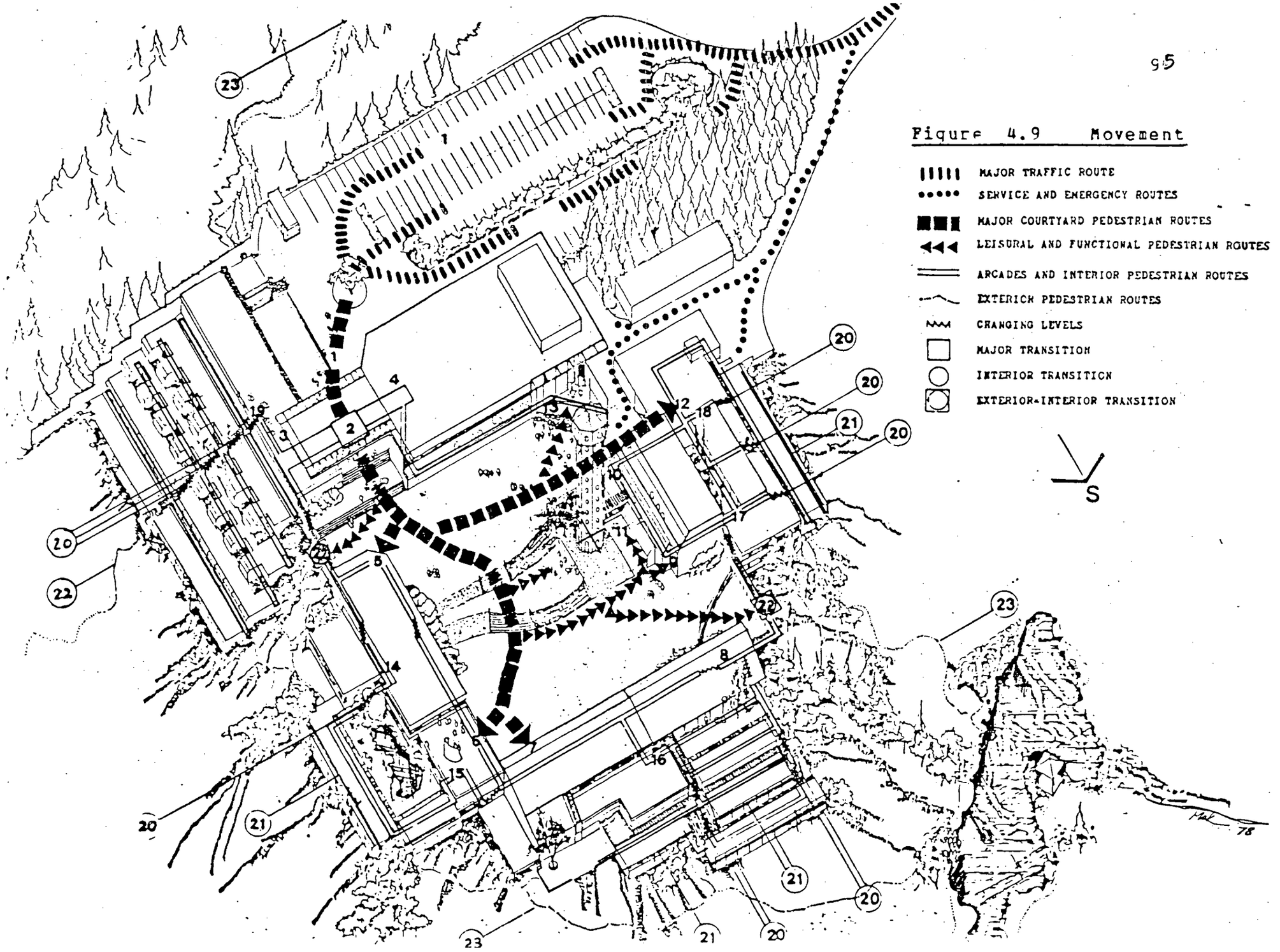
21. This demonstrates the final level change in the studio space. The three steps into the researchers work area provide a partition which separate this space from the rest of the studio. This area is in the lowest position of all the building spaces and has an excellent view, which in philosophical terms provides emotional stability and thus enhances research productivity. This space is surrounded by a green outdoor area which contains trees that are selected for their symbolic significance and are planted according to geomantic principles for balance of "vital sequence" (Fig. 4.21).

22. This is a transition between the interior courtyard(earth) and the "exterior" natural environment(heaven) (see Fig. 4.22 and Fig. 4.23).

23. Outdoor "exterior" path:

This represents a natural path to provide a link to both natural environment and the artificial lake and its vegetation which represent a transition between man and heaven (see Fig. 4.23).

Figure 4.9 Movement



SPATIAL ORDER

The spatial order establishes areas in terms of the uses and functions of the space (see Fig. 4.10, Fold out p. 101). The hierarchy of spaces is:

Public<---------->Semi-public<------>Semi-private<----->Private

Uncovered<---->Partly covered and partly uncovered<---->Covered

General group---Functional group---Special group--Personal group

The hierarchy of typical interior spaces:

Amusement oriented

Learning oriented

Creativity oriented

Comtemplation oriented

The composition of this spatial order, proceeding from public to private, from uncovered to covered, from people gathering space to personal owned space, is an attempt to provide optimal working conditions for researchers.

According to geomantic philosophy the hierarchy of public versus private use should parallel the higher to the lower terrain. (In flat terrain the hierarchy would be similarly expressed in terms of distance rather than height.)

1. Public Space: the central courtyard, pagoda, reception information and restaurant and cafe, and theatre.

. concentration of the major functions of the institute around this courtyard's open space.
. This courtyard is a public and an essentially pedestrain path, 80mx80m, from which all the institute's major activities open off. The entire courtyard cannot be grasped at first glance, only appreciated as one approaches in space and time, unfolding like a piece of music or a scrcll of painting (see Fig. 4.17, 4.18 And 4.19).

2. Semi-public space: museum, reading rooms, organization office, exhibition hall and data center.

. Covered indoor space as a linkage of central courtyard to departments and research space. Here is a space for researchers and visitors chatting with friends, reading, and walking around the exhibitions.

3. Semi-private space: subcourtyards, seminar rooms and lecture halls

. for group discussion and demonstration.
. link between semi-public and private space. The subcourtyards provide space for seminar breaks or private

contemplation (see Fig. 4.20).

4. Private space :residence, researchers studios and labs.

Stairways serve not only as connectors between levels but also as symbolic transitions between the spaces, which are considered to be symbolically on different levels. Even in the researcher's studio, the three-stepped change has a symbolic meaning which represents the ultimate part of the entire hierarchical sequence (see Fig. 4.21).

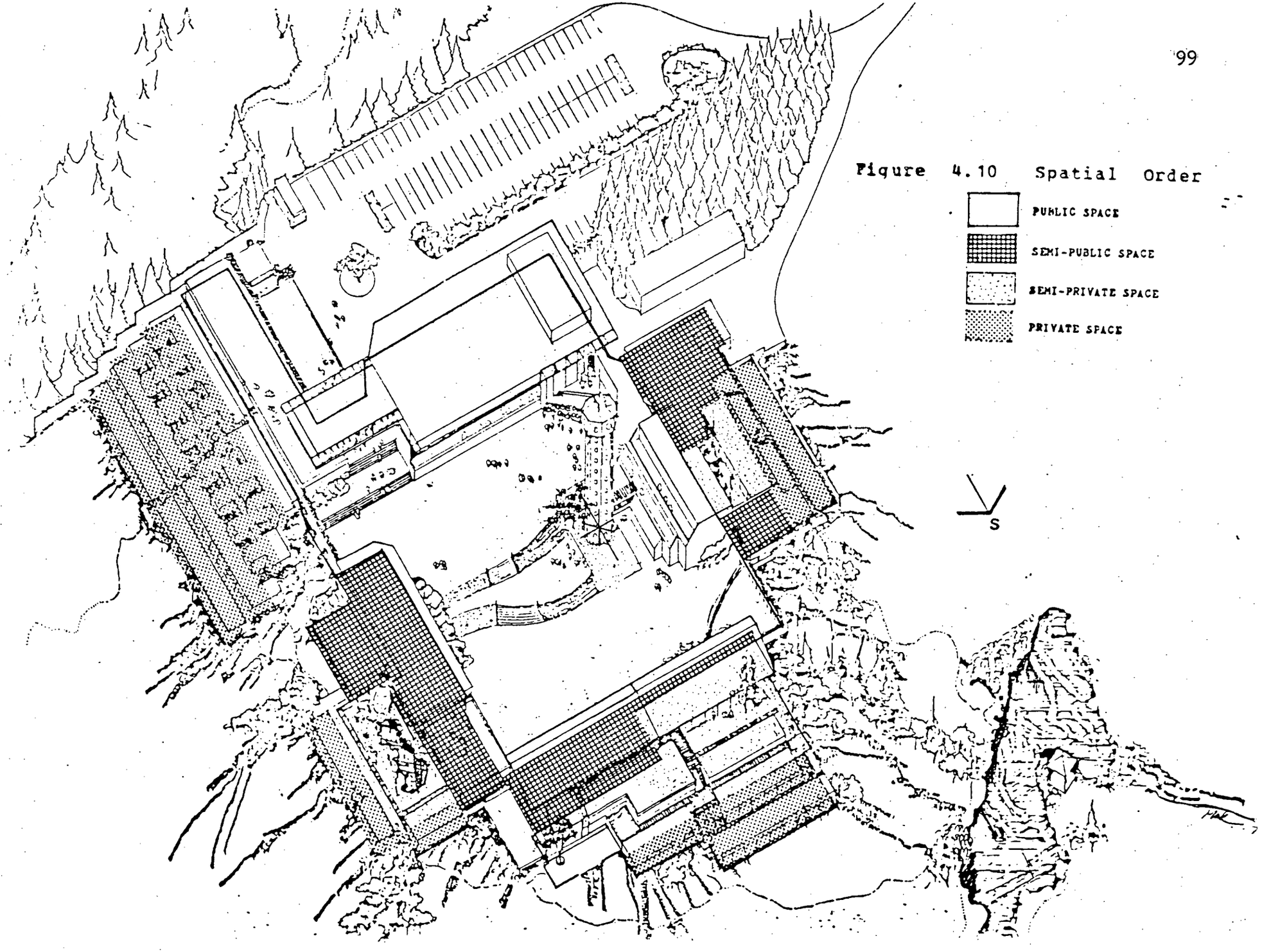


Figure 4.10 Spatial Order

NATURAL ELEMENTS

The following number sequence is related to Fig. 4.11, (fold out p. 106)

1. The forest areas that surround the approach and entrance to the C.C.R.I. preserve a sense of continuity with the natural environment and protect the complex from "sha ch'i". In geomantic terms, "sha ch'i", or inauspicious forces, reside in the north and travel in straight lines. Their influence can be circumvented by protective barriers (Fig. 4.14).

2. The avenue of lush deciduous trees links the forest growth with the single tree at the entrance of the institute. The visitor then is gradully taken from natural to man-made surroundings (Fig. 4.14).

3. The single tree marks the entrance way and representing the change from natural landscape to the man-made (Fig. 4.15). It is also the "representative" tree related to the main gate which is to reflect the vital energy of the entire complex. (see Chapter one, vegetation)

4. The single tree in the courtyard provides continuity with the interior environment. The lone tree symbolizes an "plentitude" and thus prosperity (see Chapter one, vegetation)

5. The shrubbery is placed here to soften the building's transition from one level of the courtyard to the next as well as soften the harsh lines of the interior corner spaces.

6. The arrangements of shrubbery and grass provides a gentle means of denoting the changes in the level of the courtyard.

7. Subcourtyard vegetation consists of a few "interestingly" formed trees which should denote prosperity (Fig. 4.20).

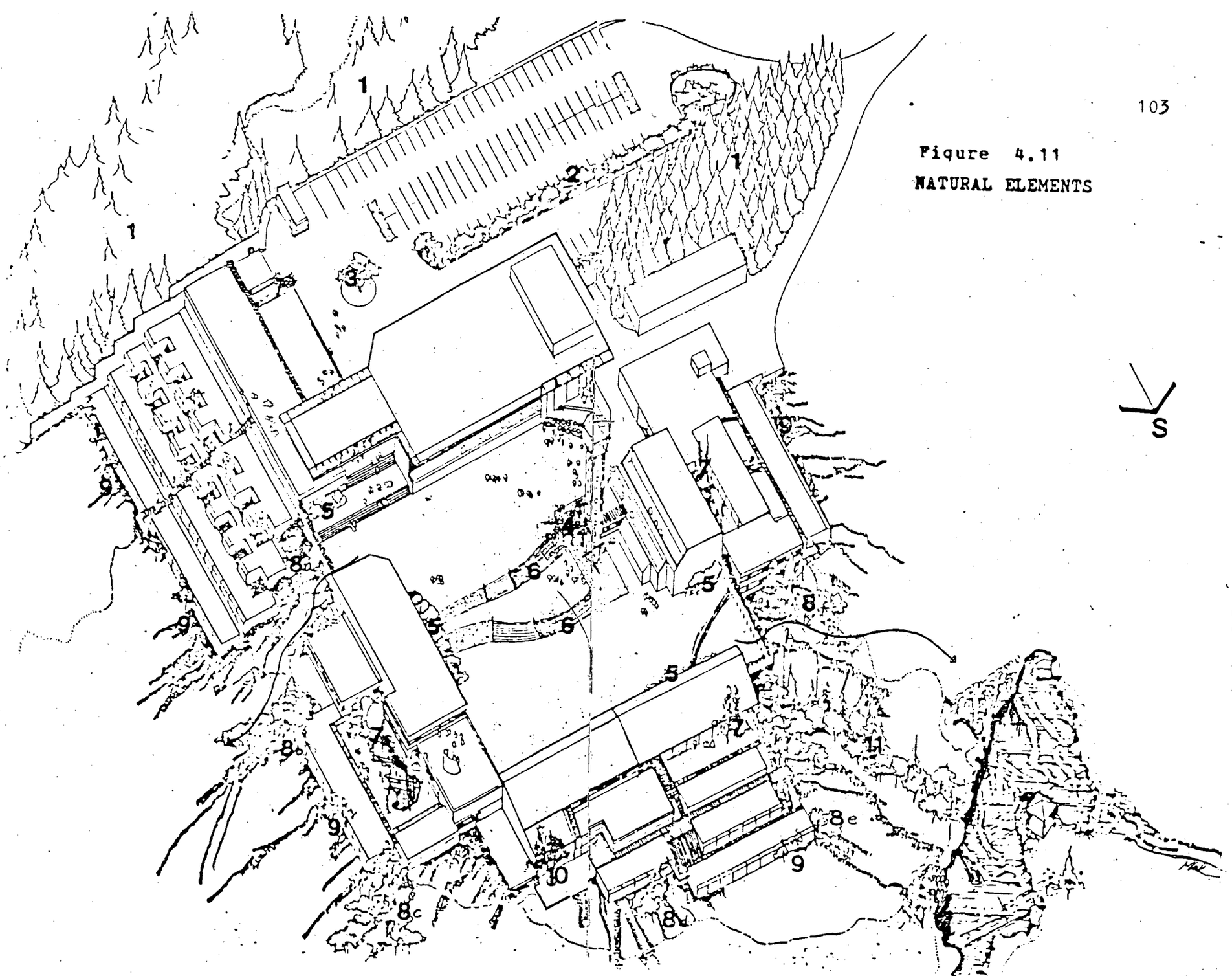
8. The small groves of trees (see 8a, 8b, 8c, 8d, 8e, 8f) outside the courtyard mitigate the harshness of building corners and linkages and provide a means of gradually re-introducing the natural environment as well as to provide a sence of "surprise". The placing of this growth is also used to direct movement in a subtle way. The control of this movement--avoiding sharp straight lines also refers to control the "sha ch'i" (The curved corners of the traditional Chinese also refers to the above concerns).

9. Single, lightly foliated trees beside the researcher's studio providing a "good" environment for work. (see Chapter one, vegetation and Fig. 4.21)

10. The single tree here links the man-made and natural environments in between which the patio is located.

11. These groves of trees provide continuity between the project and the artificial lake. They represent the collection of "ch'i" or vital energy. These trees signify the transference of "vital energy" from the complex to the drainage system, the creeks, rivers and finally the ocean. When they flourish it is an indication of the movement of stirring vital energy of "ch'i" which is a central idea in all traditional of Chinese arts and sciences.

Figure 4.11
NATURAL ELEMENTS



SYMBOLIC FORM

The following number sequence relates to Fig. 4.12 (fold out p. 110):
1) The retaining wall, 2) The barrier wall, 3) The concrete wall and 4) The solid wall provide protection from the "sha ch'i" or insuspicious forces coming from the northern especially the north-west. "Openings" to these directions should be blocked.

5. This wall with framed windows identifies the project and marks the means of access via the main gate without any worded signs (Fig. 4.15).

6. This nine storied pagoda tower is the focal point of the project. It is also the spiritual landmark of the surrounding site. It is built to concentrate the "ch'i" or vital energy of the area and ward-off "sha" or inauspicious forces.
The observation deck will be used to present a permanent exhibition of the Chinese geomantic principles to which all the parts of the complex respond. Thus, the pagoda becomes the central focus of information dealing with geomancy as a Chinese cultural philosophy. The tower also symbolize the project from a distance(Fig. 4.16).

7. Arcades provide covered walkways on the interior perimeter of the buildings. They serve to symbolize the movement from the

outside(heaven-circle) to the inside(earth-sguare) and vice versa. The lack of a wall on one side of the walkway may be interpreted symbolically as "heaven's circle".

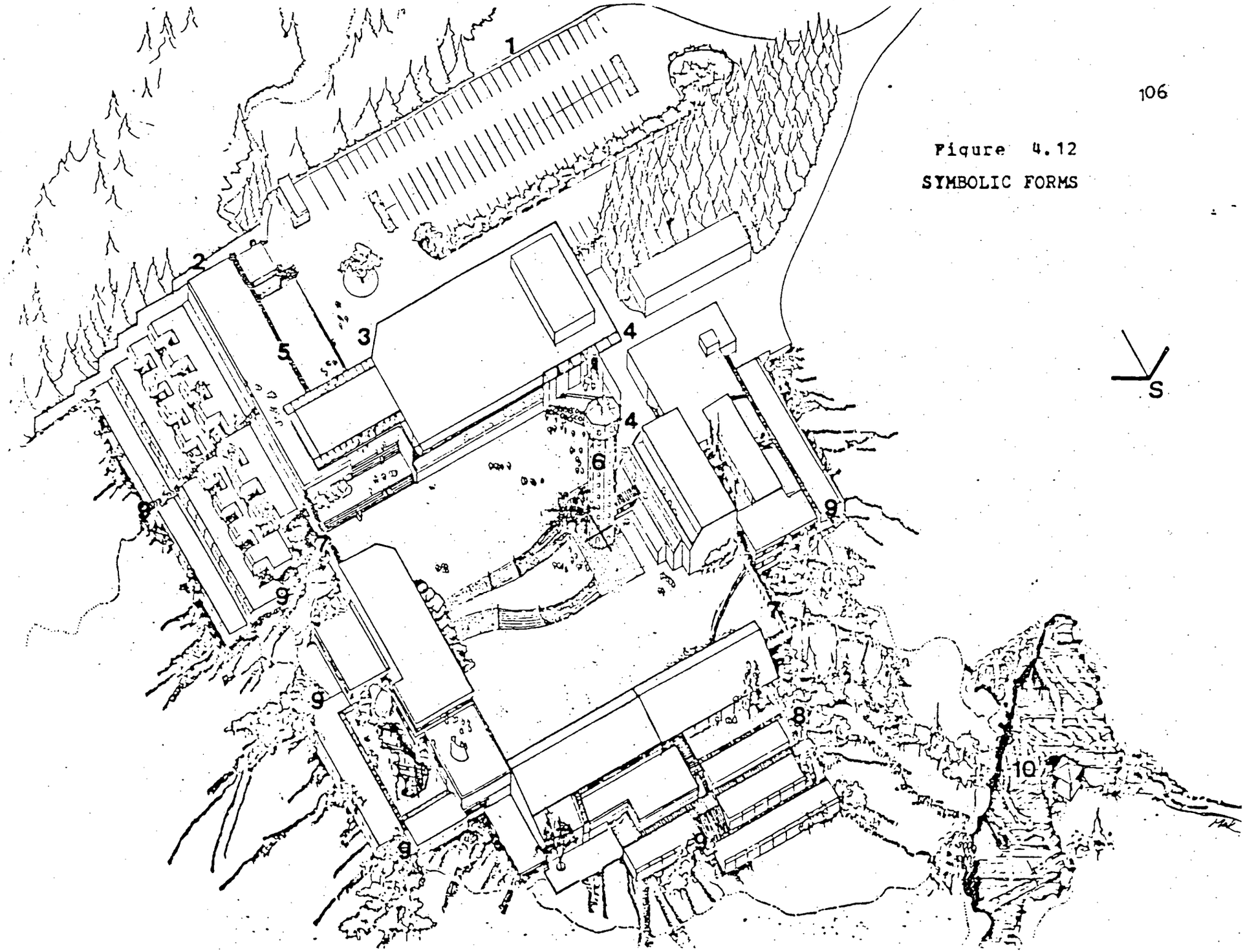
8. These fences are built to satisfy geomantic requirements. They are symbols of boundary and enclosure as well as symbols of transition from interior to exterior space.

9. The gates of the private studio space open onto the natural world. These gates are again symbols of transition.

10. The artificial lake

Water in front of the project ensures that it will be a "good place". The lake at once both collects vital energy from the outside and transmits it to the interior and also transmits energy from the interior to the exterior (see Fig.4.23).

Figure 4.12
SYMBOLIC FORMS



ADDITIONAL NOTES ON GEOMANTIC DETERMINANTS

The following number sequence related to Fig. 4.13 (fold out p. 113):

1. After the projected uses of the site have been related to the orientation and the the slope of the site, it is next necessary to establish the areas of the spatial hierarchary such which that they correspond to these uses.

The decisive factor in the design is the relation between the courtyard and the focal point of the project.

2. The orientation of the courtyard is based on a north-south axis. The parking lot blocks out inauspicious forces which reside in the north. The major gate then can be located in either the NW or NE. The best location for the gate based on "Yang" dwelling principles (see p. 39 and p. 43) is the NW position. The NW gate is represented by "chan", is the best site for the major opening of a courtyard which is isolated in the north and faces south.

3. The major gate is located in the NW, the main doors of main buildings (medical research dept., Library, art-music and art dept.) must then open to face the four points within the "western" group of directions. Therefore, the NW, W, SW, NE positions are good orientations for the doors of main buildings.

4. Based on above decisions, and continuing with the "yang dwelling" principles, the buildings of the center western side of the complex as well as the NW corner should be higher than those that adjoin them. The building in the center courtyard should also be higher too.

Before the normal functional decisions regarding the project were made the design of the C.C.R.I. was dictated by the above mentioned decisions. Given the positions of the higher buildings in the complex, the appropriate functioning such as the C.C.R.I. Office, the art reading room and the library were placed in them.

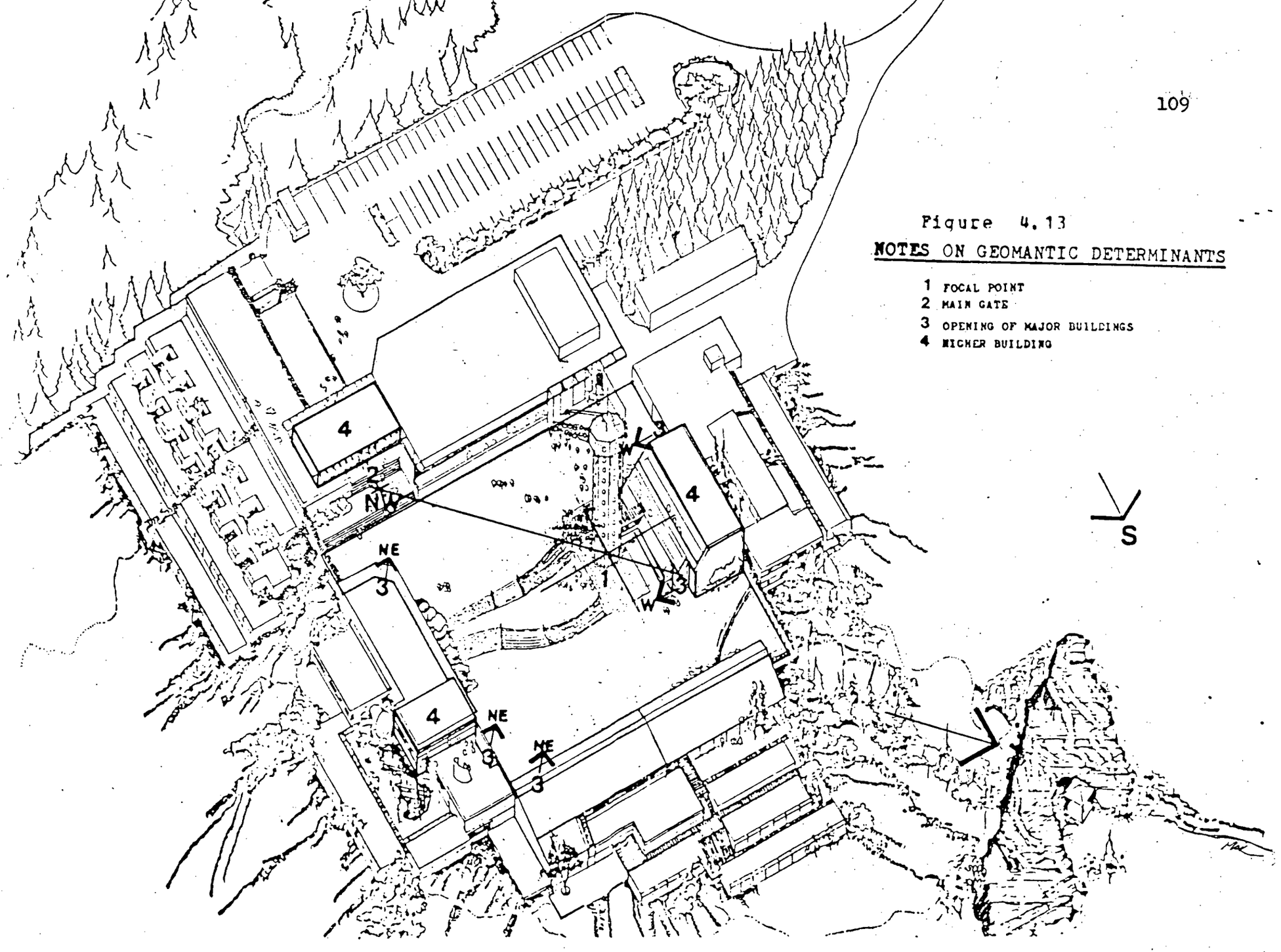


Figure 4.13

NOTES ON GEOMANTIC DETERMINANTS

1 FOCAL POINT
2 MAIN GATE
3 OPENING OF MAJOR BUILDINGS
4 HIGHER BUILDING

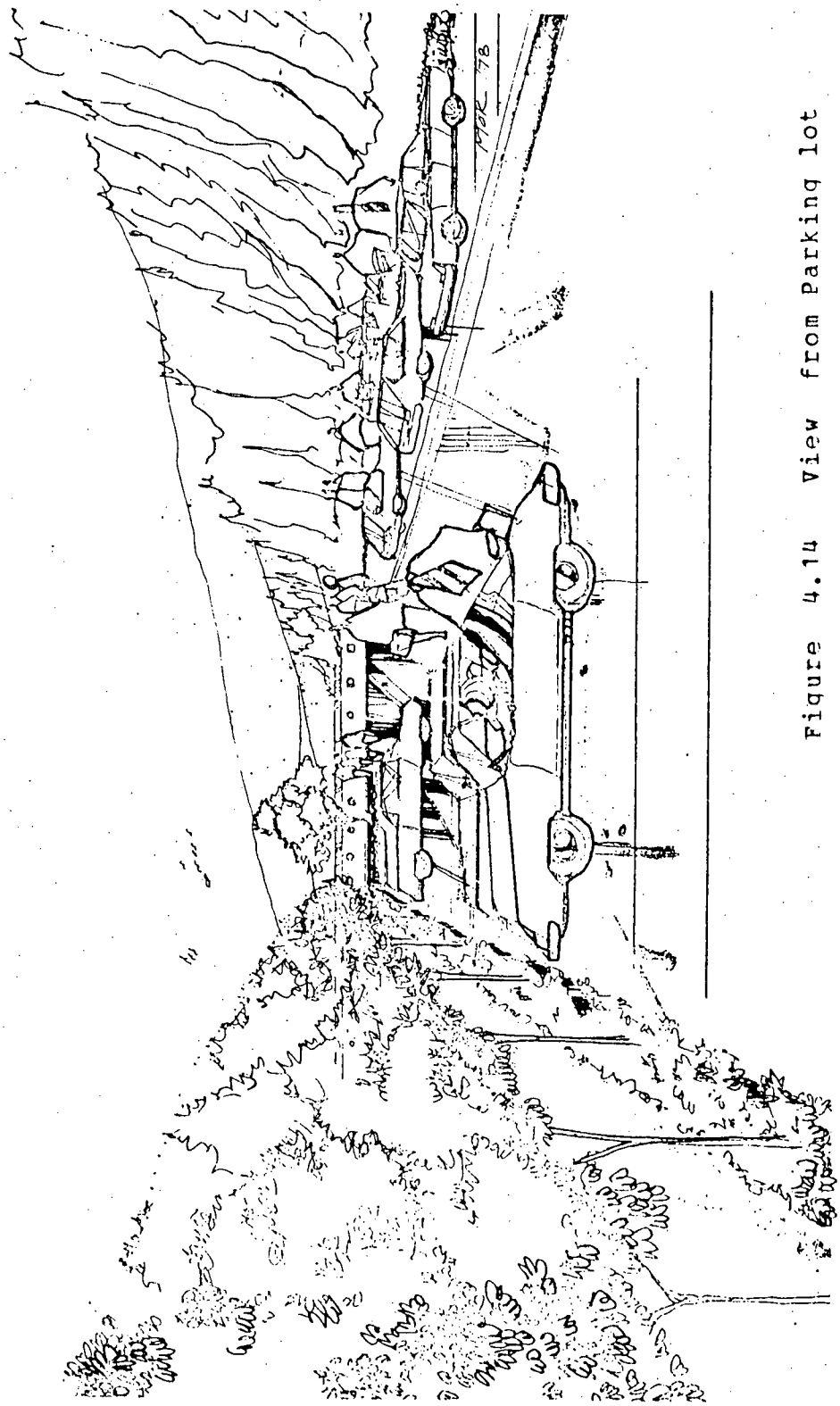


Figure 4.14 View from Parking lot

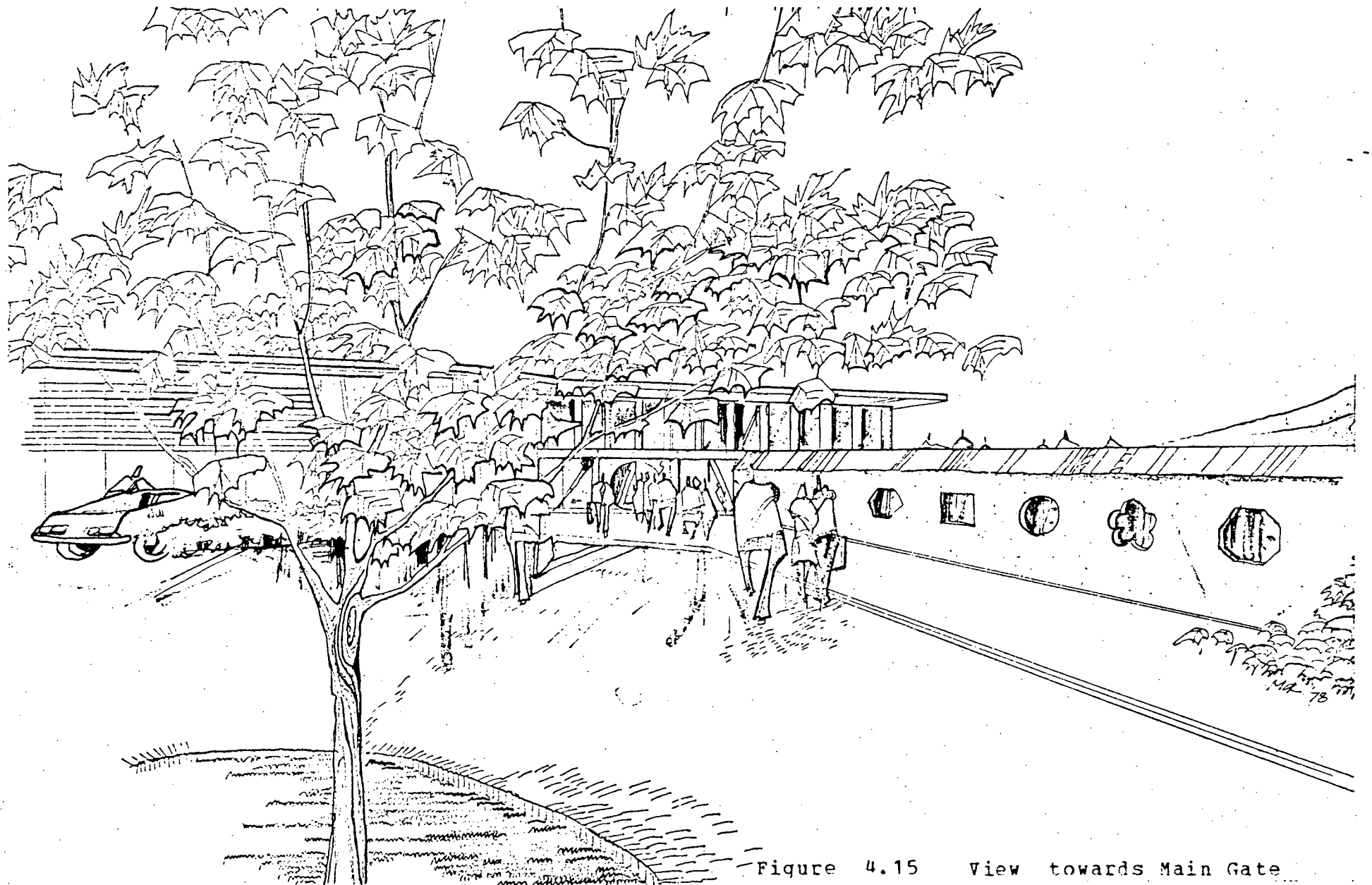


Figure 4.15 View towards Main Gate

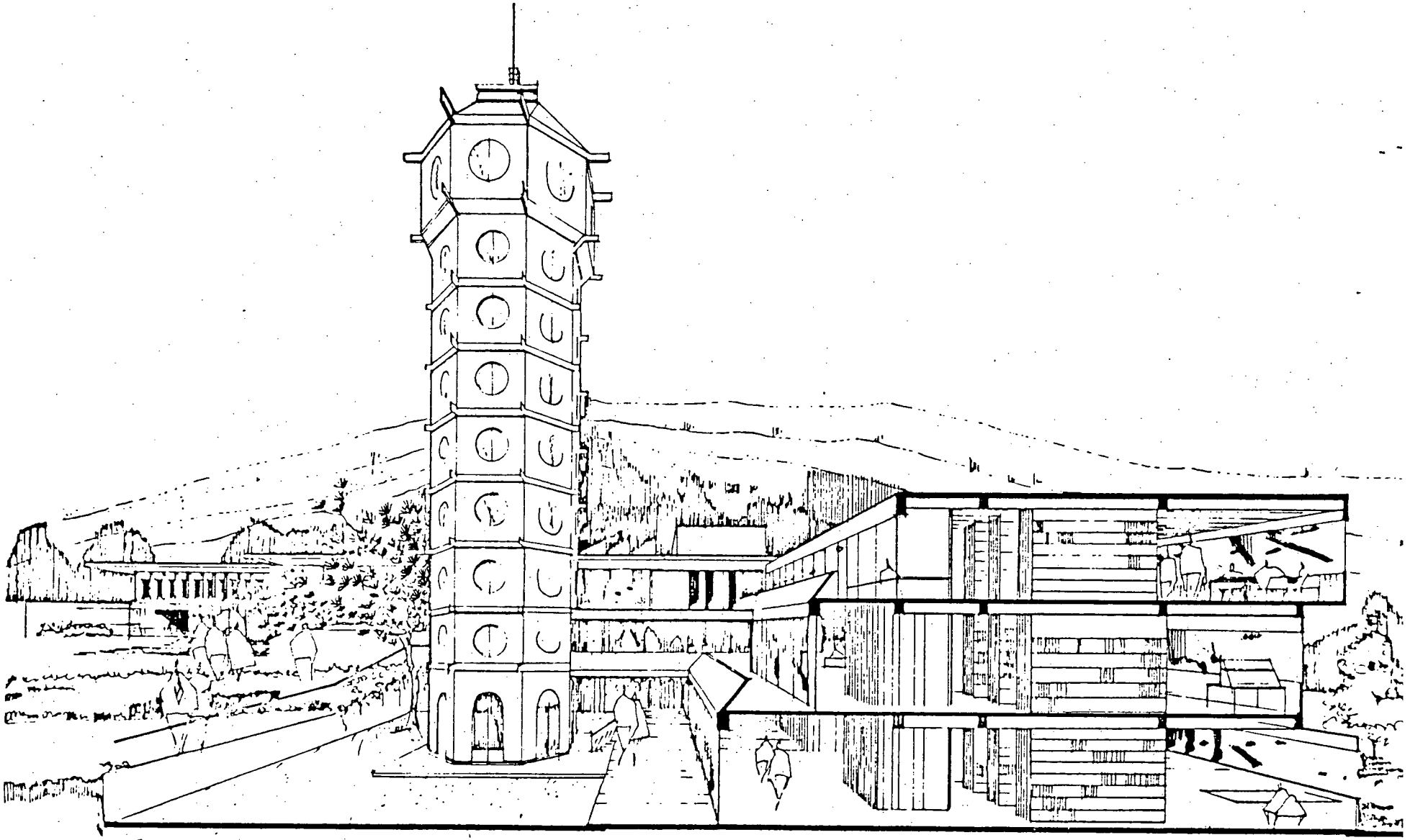


Figure 4.16 View towards Library and Pagoda

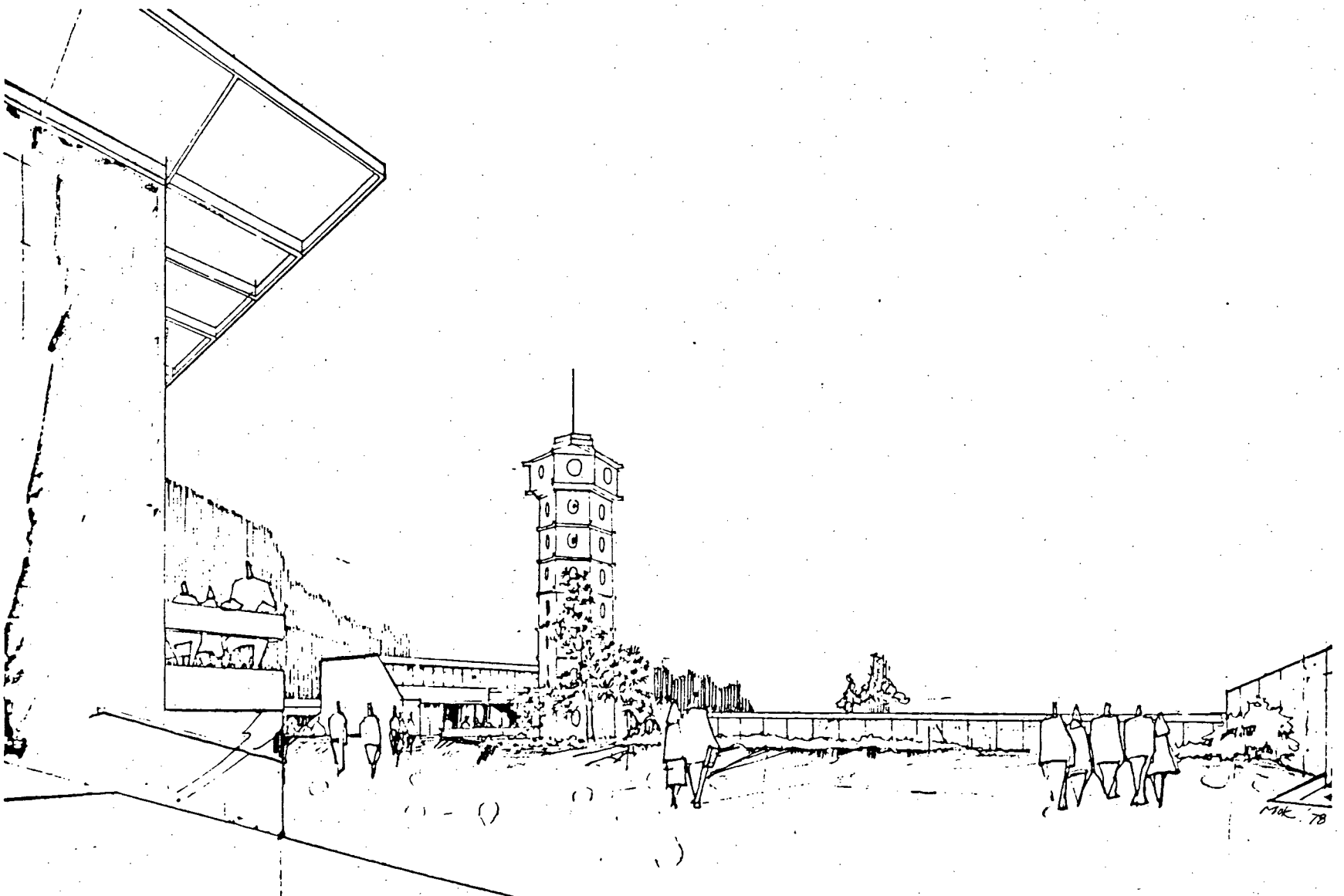


Figure 4.17 View from Main Gate to Courtyard

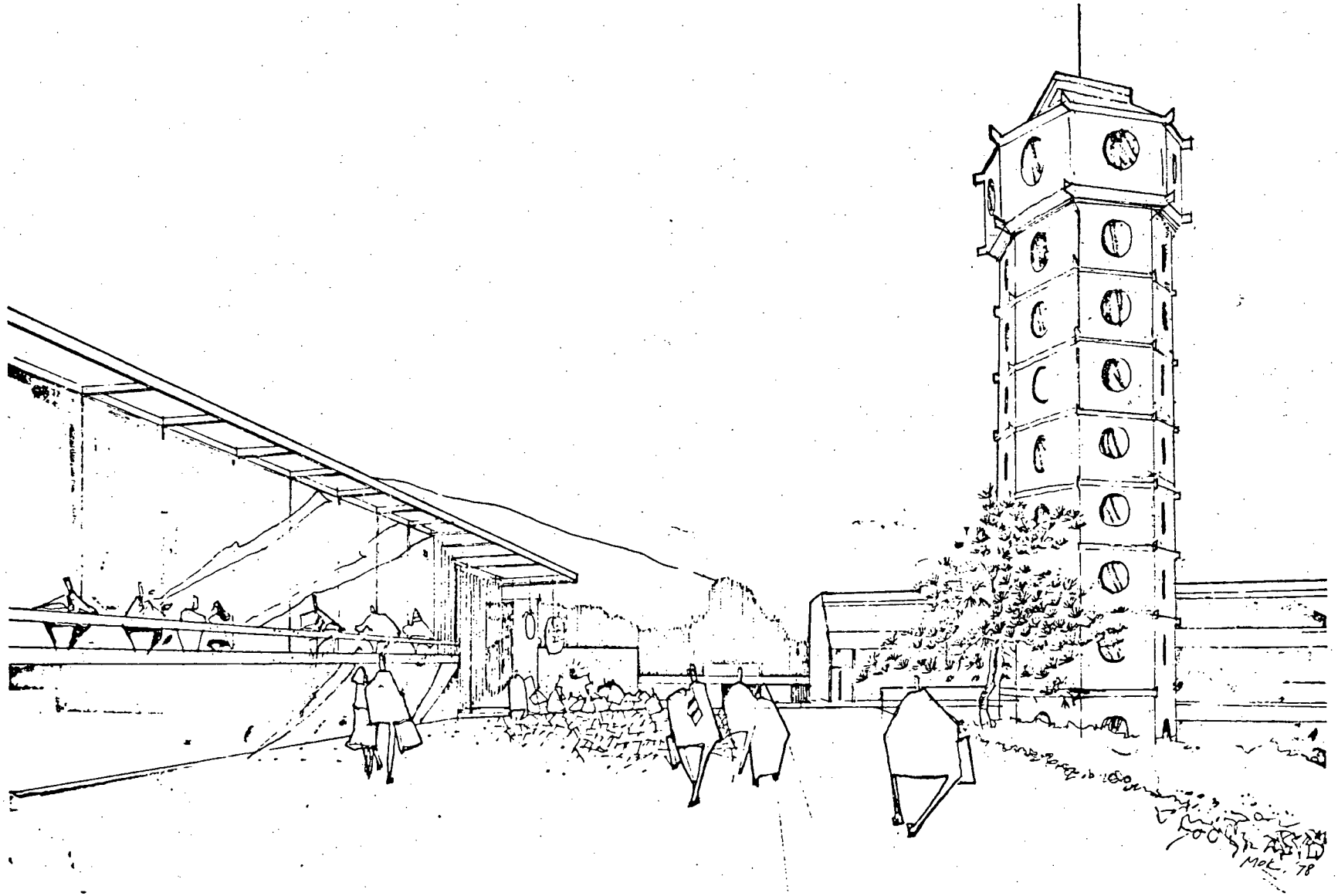


Figure 4.18 View from Courtyard to Medical dept.

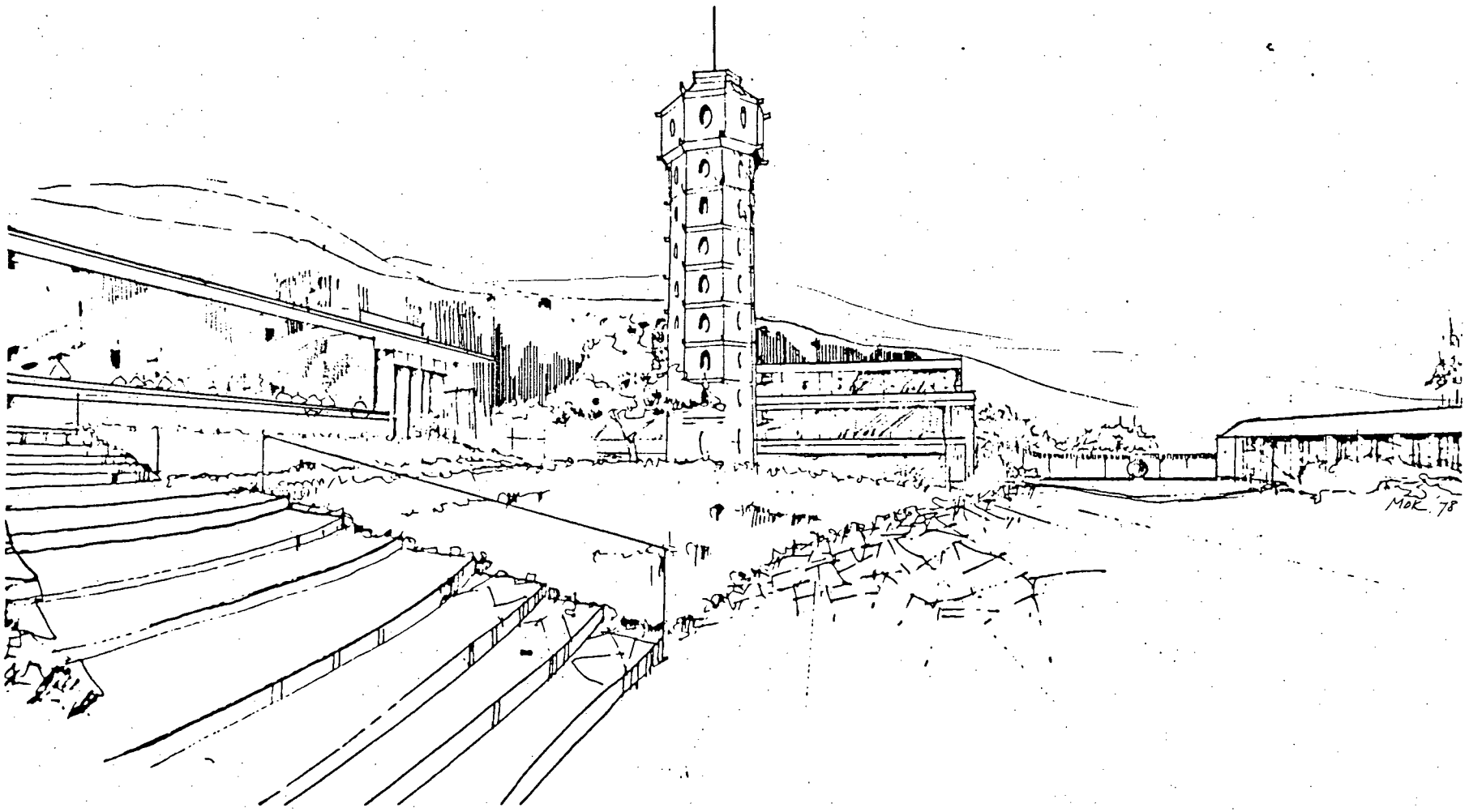


Figure 4.19 View from Courtyard to Library

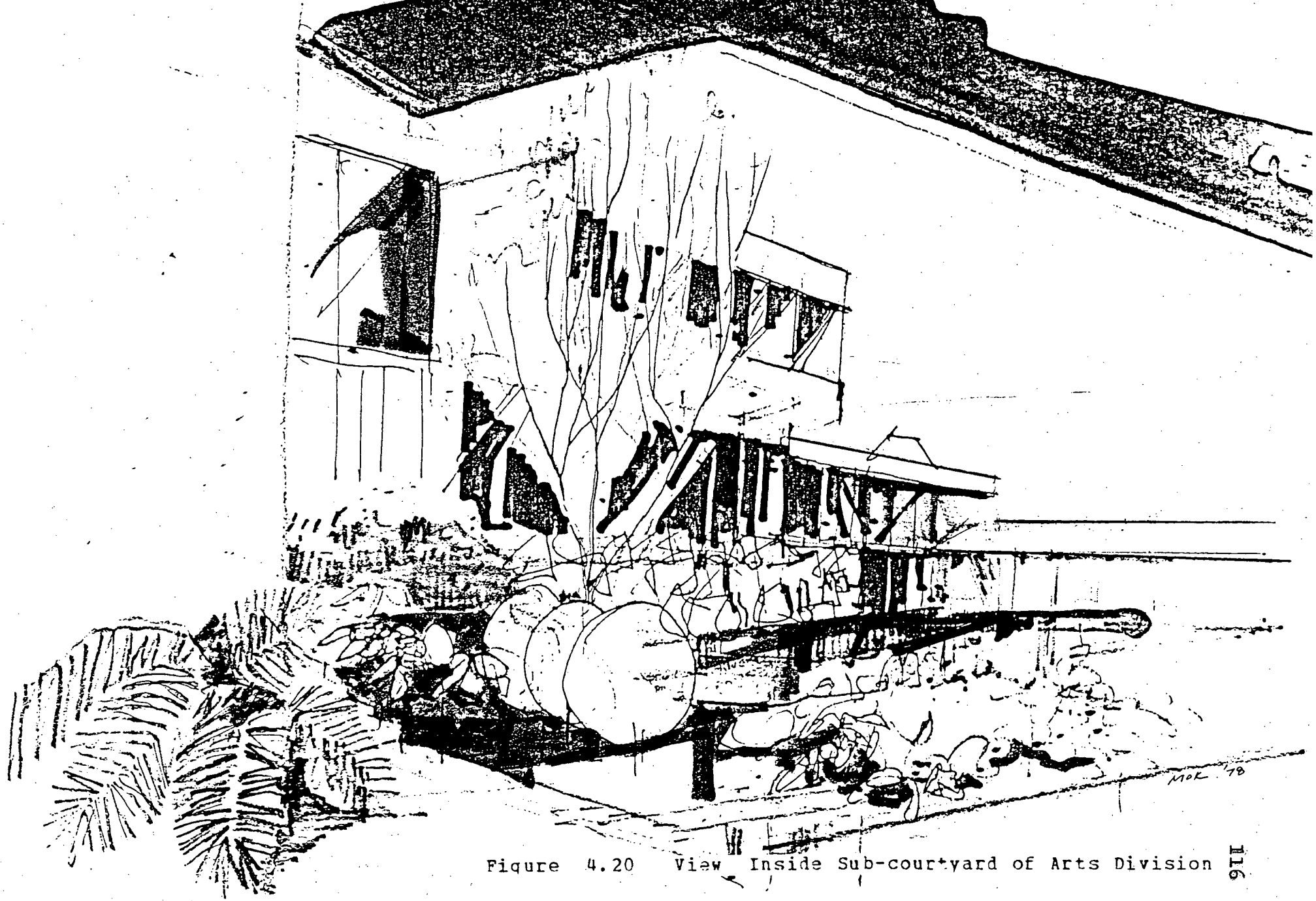


Figure 4.20 View Inside Sub-courtyard of Arts Division

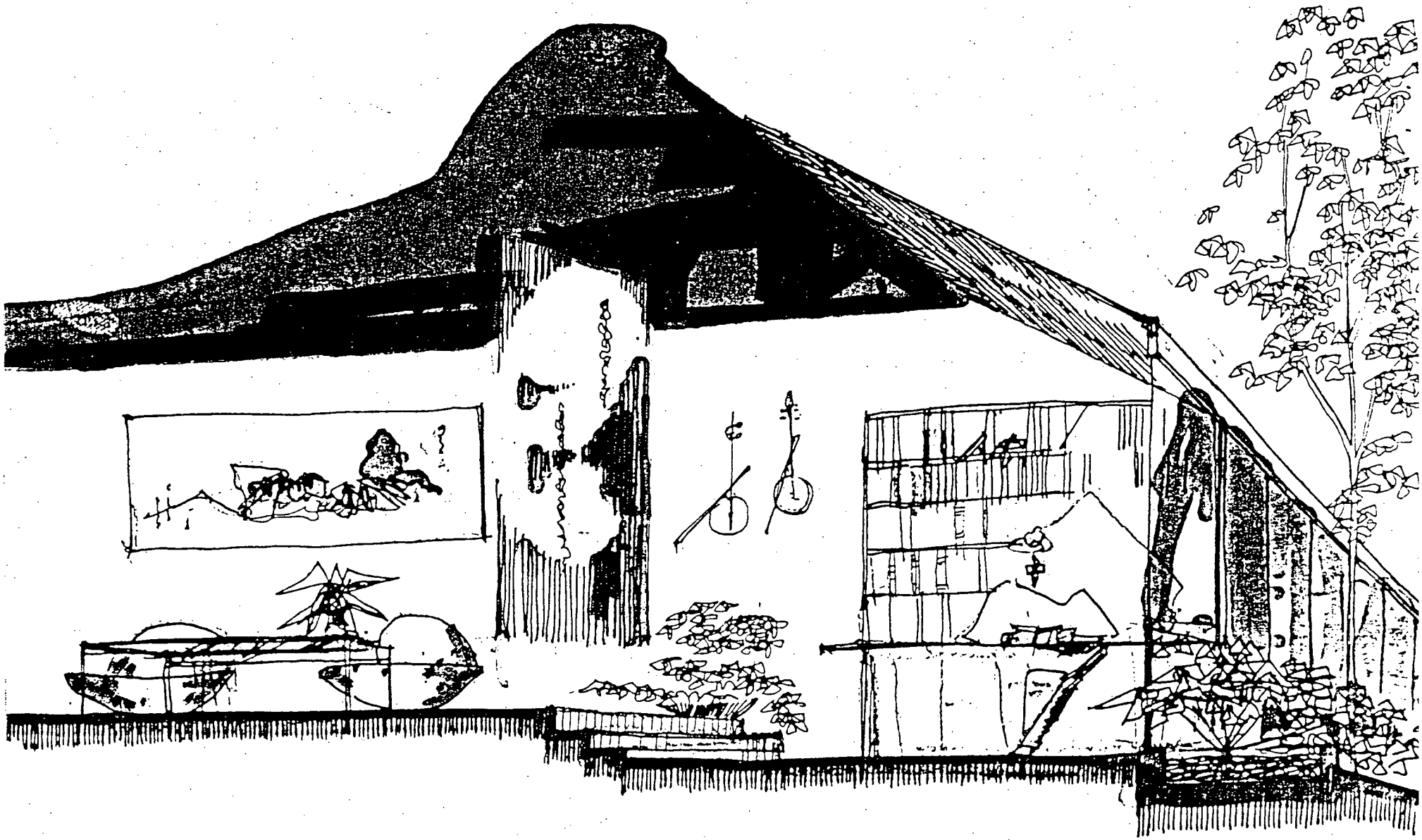


Figure 4.21 The Researcher's Studio

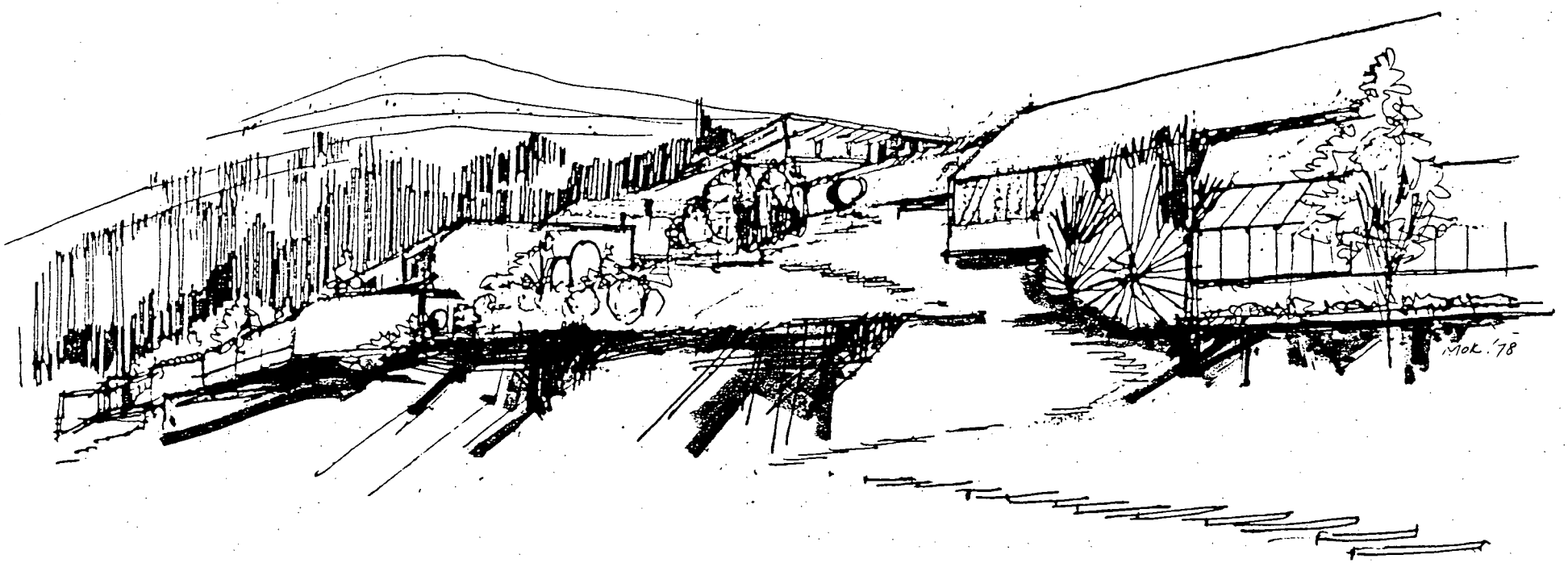


Figure 4.22 View of the Transition Gate

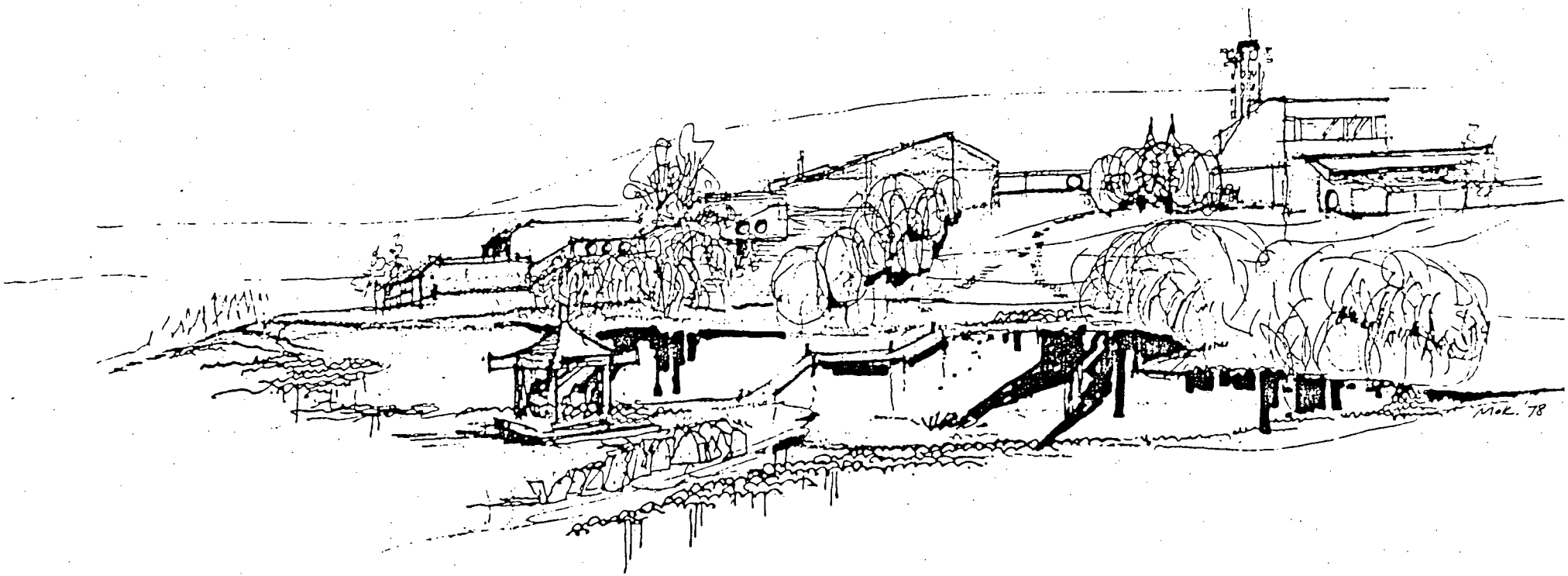


Figure 4.23 View of Garden and Complex

5.1 Conclusion

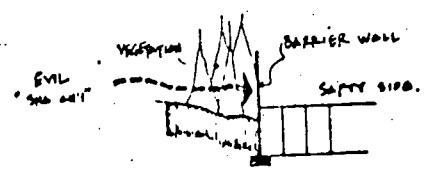
This experiment should show that it is indeed possible to integrate the principles of Chinese geomancy into modern architectural design. Conflicts do occur between geomantic requirements, "practical" needs, and contemporary theoretical and philosophic design requirements. However, the design experience shows that these conflicts can be resolved with no more difficulty than the resolution of those conflicts which may occur in the application of geomantic principles themselves or in the resolution of typical design conflicts (see Fig. 5.1, 5.2, 5.3, 5.4, 5.5 and 5.6).

The resulting design does indicate that the process used in the experiment can lead to a unique and profound expression of Chinese culture without resorting to superficial traditional motifs.

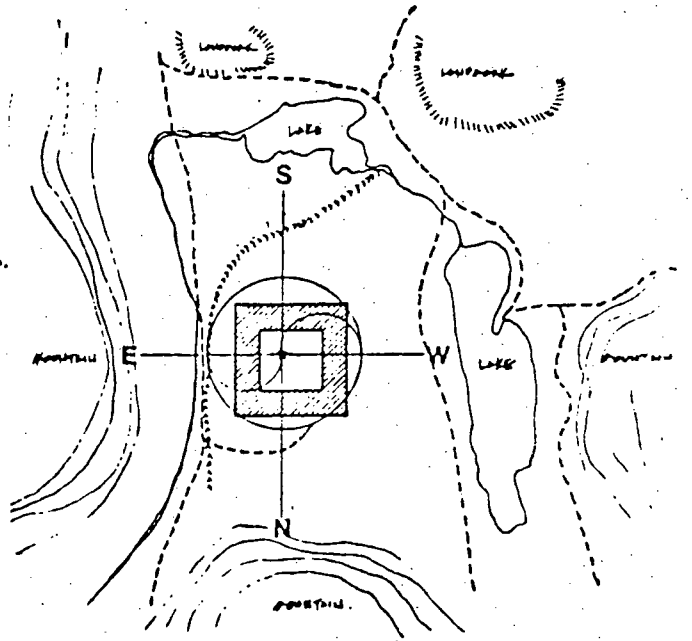
Figure 5.1

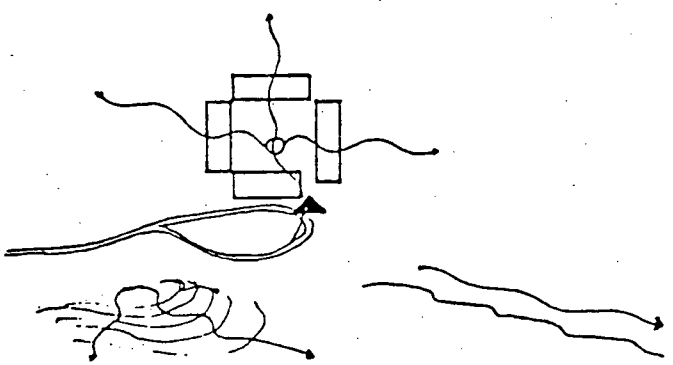
BASIC GEOMANTIC ORDER

1. ☐ ORIENTATION
   - ☐ BASED ON NORTH-SOUTH AXIS.
   - ☐ RELATING TO EIGHT TRIGRAM.
2. ☐ THE RELATION WITH NATURAL ELEMENTS.
   - ☐ RELATING TO
     - MOUNTAIN : RIDGE, HILL. FLAT. HIGH.
     - WATER : RIVER, CREEK, LAKE. PUDDLE.
     - ROAD : PATH, ROAD. WAY.
     - VEGETATION : FOREST. TREES. FARM
   - ☐ REFERRING TO NATURAL ENVIRONMENT. (HEAVEN)
3. ☐ COURTYARD
   - ☐ REFERRING TO ORIENTATION. MAN-EXISTENCE (EARTH)
4. ☐ FOCAL POINT.
   - ☐ REFERRING TO SPIRITUAL CENTRAL POINT.
5. ☐ MAJOR ENTRANCE
   - ☐ REFERRING TO ORIENTATION.
6. ☐ ENTRANCE ROAD
7. ☐ FLOWING SEQUENCE OF CHANGING LEVELS.
   - ☐ REFERRING TO TOPOGRAPHICAL SLOPING
   - ☐ REFERRING TO BUILDING HEIGHT.
8. ☐ BARRIERS FOR BLOCKING.



9. ☐ VEGETATION
   - ☐ SINGLE TREE, AVENUE. GROVE. FOREST.
   - ☐ TREE'S FORM.
   - ☐ TREE'S LOCATION.
   - ☐ CATEGORY.
10. ☐ MODIFICATION OF EARTH FACTORS.
    - ☐ ARTIFICIAL LAKE ON SOUTH-EAST SIDE
    - ☐ SACRED PLACE ON NORTH SIDE





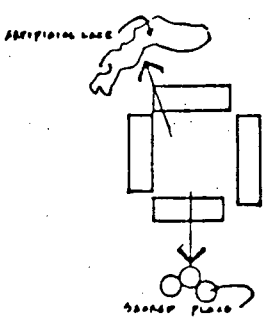
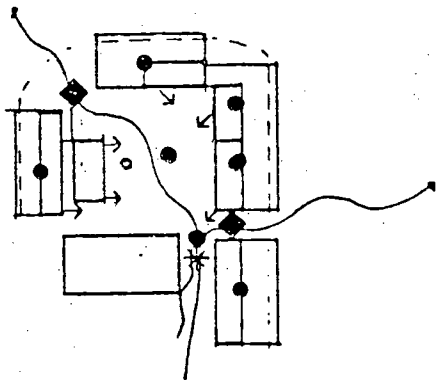


Figure 5.2 ■ BASIC GEOMANTIC ORDER

11 ☐ MAJOR BUILDINGS OPENINGS
- ☐ REFERRING TO WESTERN FOUR GROUP.
- ☐ REFERRING TO MAJOR BUILDING CIRCLE

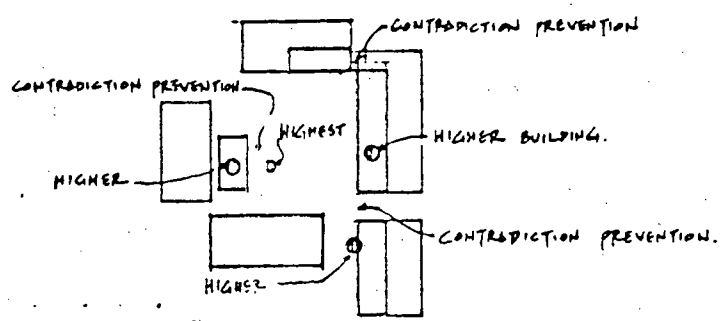
12 ☐ HIERARCHICAL SPACES
- ☐ PUBLIC SPACE
- ☐ SEMI-PUBLIC SPACE
- ☐ SEMI-PRIVATE SPACE
- ☐ PRIVATE SPACE

13 ☐ MAJOR TRANSITIONS BETWEEN "INTERIOR" SPACE "EXTERIOR" SPACE
- ☐ CIRCLE GATE.



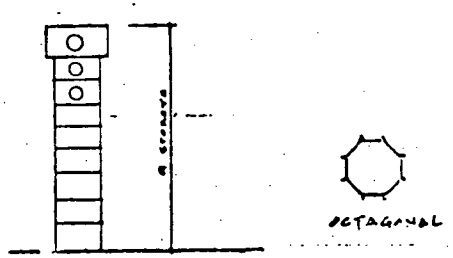
14 ☐ PLACEMENT OF STAIRWAYS
- ☐ TRANSITION SEQUENCE
- ☐ CHANGING HIERARCHICAL SPACES.

15 ☐ CONTRADICTION PREVENTION
- ☐ CORNER CONJUNCTIONS
- ☐ BUILDING BESIDE HIGHEST BUILDING
- ☐ MAJOR ENTRANCE



16 ☐ HIGHER BUILDINGS
- ☐ LOCATIONS BASED ON "WESTERN" FOUR GROUP.

17 ☐ BUILDING DETAILS (SPECIFIC)
- ☒ PAGODA
  - SHAPE
  - ORIENTATION
  - NUMBER
  - OPENING



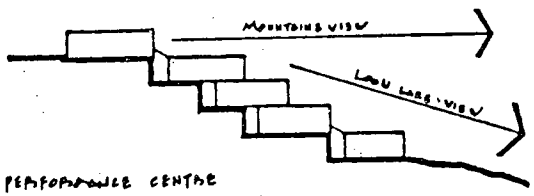
18 ☐ BUILDING DETAILS (GENERAL)
- ☐ NUMBERS — STAIRWAY STEPS.
- ☐ MEASUREMENT — GEOMANTIC RULER.
- ☐ SCALE
- ☐ PROPORTION
- ☐ LAYOUT GRID — ART BASE

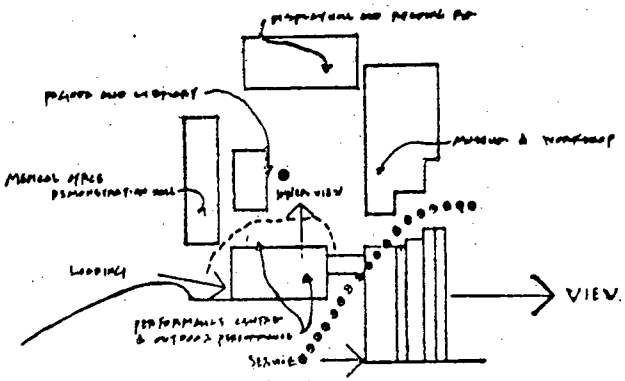
Figure 5.3 NON-GEOMANTIC ORDER

1 ☐ ACTIVITIES SEPARATION.

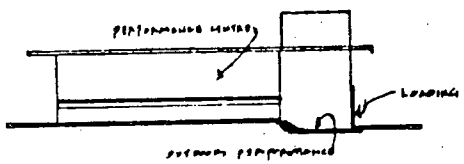
- ☐ BASED ON GENERAL ACTIVITY REQUIREMENTS
- ☐ BASED ON SPECIFIC FUNCTIONAL PROGRAMME.

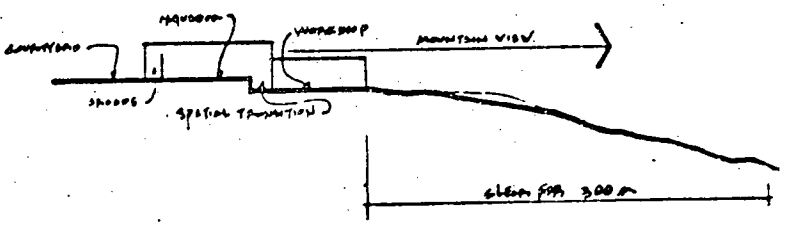
- ☐ RESIDENCE.
- ☐ RECEPTION HALL, CAFE AND RESTAURANT.





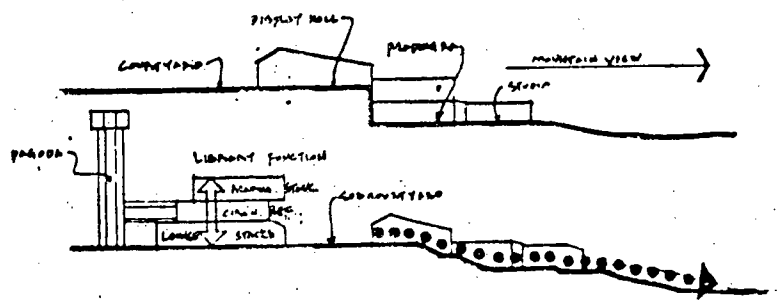
- ☐ PERFORMANCE CENTRE
- ☐ OUTDOOR PERFORMANCE



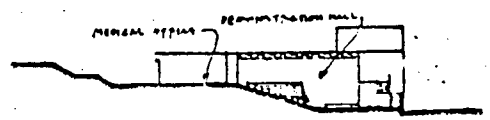


- ☐ MUSEUM AND WORKSHOP

- ☐ DISPLAY HALL AND READING RM.



- ☐ MAIN LIBRARY
- ☐ PAGODA WITH A DEMONSTRATION ROOM ON THE TOP FLOOR.
- ☐ MEDICAL OFFICE AND DEMONSTRATION HALL.



2 ☐ SERVICE AND ZONING ARRANGEMENT.

- ☐ PHYSICAL PLANT.
- ☐ MECHANICAL, ELECTRICAL
- ☐ SERVICE FOR HANDICAPPED
- ☐ FIRE AND EMERGENCY SERVICE
- ☐ LOADING SERVICE

Figure 5.4

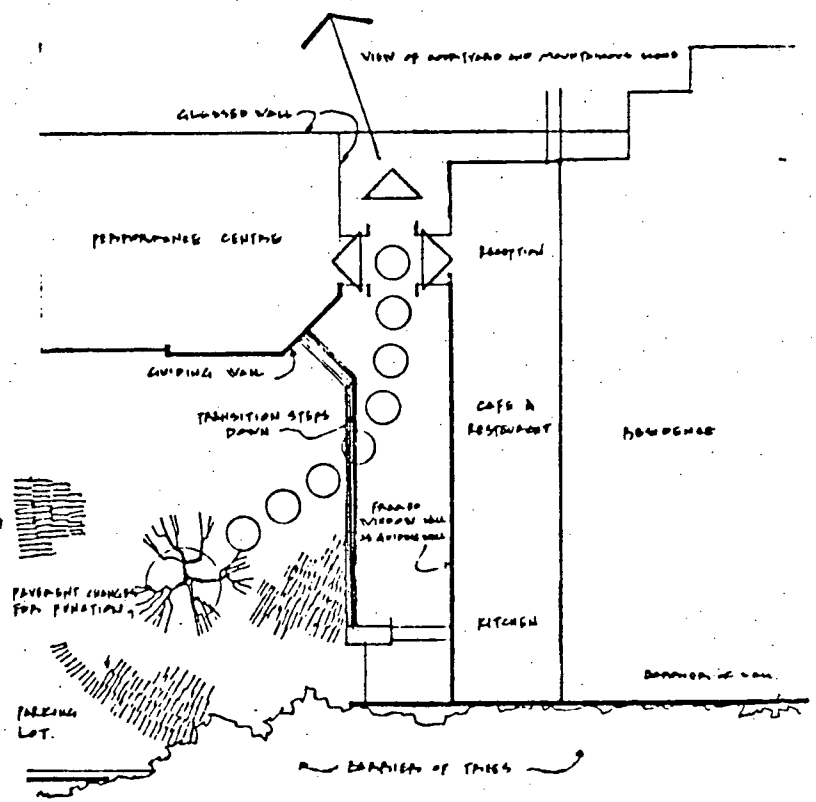
DESIGN FACTORS

1 ☐ MAJOR ENTRANCE

☐ GEOMANCY INFLUENCED
- ☐ LOCATION OF THE MAIN GATE ON NW CORNER OF THE COURTYARD.
- ☐ BLOCKING SYSTEM
- ☐ SYMBOLIC FORMS FOR TRANSITION
- ☐ TREE PLANTING

☐ DESIGNER INFLUENCED
- ☐ OBJECTIVE RECOGNITION OF MAIN ENTRANCE.
- ☐ TRANSITION SEQUENCED.

☐ SPECIAL SOLUTIONS
- ☐ FRAMED-WINDOW WALL.
- ☐ LENGTH AND WIDTH OF TRANSITION
- ☐ MATERIALS OF PAVEMENT PRESENT THE TRANSITION.
- ☐ TYPES OF WALLS FOR BLOCKING.
- ☐ CORRELATION OF CONTOUR LINE TO MAKE RETAINING WALL FOR PARKING LOT.

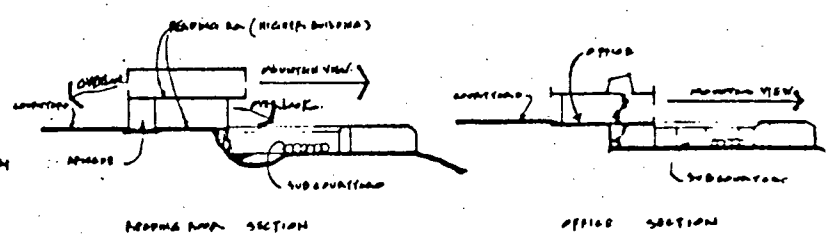


2 ☐ SPATIAL TRANSITION AT ART DEPT.

☐ GEOMANCY INFLUENCED.
- ☐ SPATIAL ORDER OF SPACE.
- ☐ HIGHER BUILDING IN RELATION TO STREAMS.
- ☐ CORNER CONTRADICTION OF SPACE.

☐ DESIGNER INFLUENCED.
- ☐ MAXIMUM EXPLOITATION OF VIEWS.

☐ SPECIAL SOLUTIONS
- ☐ READING RM OVERLOOKS THE SUBCOURTYARD AND MAINTAIN VIEW AND INTERIOR COURTYARD AS WELL.



READING RM SECTION — OFFICE SECTION

Figure 5.5 **DESIGN FACTORS**

3 ☐ PAGODA

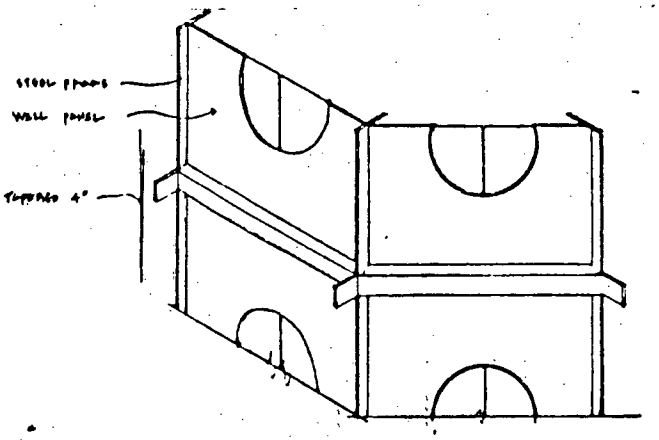
☑ GEOMANTIC INFLUENCED

- ☐ LOCATION ON FOCAL POINT OF THE SITE.
- ☐ 9 STOREYS HIGH RELATED TO NINE STARS (SEE PAGE 39)
- ☐ GEOMANTIC ARRANGEMENT
- ☐ GEOMANTIC SYMBOLIC OPENINGS
- ☐ OCTAGONAL PLAN

* PROPORTIONS OF PANELS AND STRUCTURAL MEMBERS SHOULD RESPOND TO GOVERNING ORDER (NOT YET FULLY DEVELOPED HERE)

☐ DESIGNER INFLUENCED
- ☐ DIRECT REMINISCENCE OF TRADITIONAL PAGODA FORM.
- ☐ LANDMARK

☐ SPECIAL SOLUTIONS
- ☐ MATERIAL OF MAJOR FRAME AND WALL PANEL.
- ☐ CANTILEVERED SYSTEM TO SHOW THE TRANSITION OF EACH FLOORS.
- ☐ STRUCTURAL SYSTEM.
- ☐ CIRCULAR WINDOW FRAME AND ARCH FRAME ENTRANCE
- ☐ TAPERED FORM.

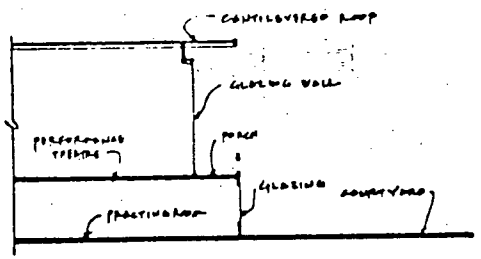


4 ☐ PERFORMANCE CENTRE

☐ GEOMANTIC INFLUENCED
- ☐ "MASTER" BUILDING FOR BLOCKING THE NORTH
- ☐ HIERARCHY OF SPACE.

☐ DESIGNER INFLUENCED
- ☐ INTRODUCTION OF MORE ACTIVE, IMPOSING BUILDING.
- ☐ TO CONTRAST WITH MORE PASSIVE BUILDING AROUND COURT.

☐ SPECIAL SOLUTIONS
- ☐ RELATION BETWEEN INTERIOR AND OVERLOOKING FORMS.
- ☐ GLAZING SYSTEM AND ROOF STRUCTURE.



5 ☐ ARTIFICIAL LAKE

☐ GEOMANCY INFLUENCED
- ☐ ORIENTATION AND LOCATION.
- ☐ PLANNED AS "VITAL ENERGY" COLLECTOR

☐ USE OF CHINESE TRADITIONAL LANDSCAPE ELEMENTS.
- ☐ CHINESE LANDSCAPE PRINCIPLES.
- ☐ "SURPRISING" IRREGULARITY.
- ☐ CURVILINEARITY.
- ☐ UNDULATING LANDSCAPE.
- ☐ ZIG-ZAG FORMS.
- ☐ NATURE AS EMOTIONAL STIMULANT.

☐ SPECIAL SOLUTION.
- ☐ NATURALISTIC POND SHAPE.
- ☐ ZIG-ZAG BRIDGE AND PAVILION
- ☐ MEANDERING PATHWAY.

Figure 5.6

EXAMPLES OF RESOLUTION OF GEOMANTIC & DESIGN CONFLICTS

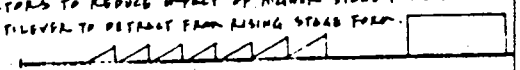
1

☐ STAGE OF PERFORMANCE CENTRE.
CONFLICT: HIGH STAGE ON NE CORNER.

☐ GEOMANTIC REQUIREMENTS.
■ HIGHER BUILDING TO BE AVOIDED AT THE LOCATION OF STAGE.

☐ PRACTICAL REQUIREMENT
■ LOCATION CHOSEN FOR EASY SERVICING.

☐ SOLUTION
■ USE OF ROOF VENTILATORS TO REDUCE HEIGHT OF HIGHER STAGE FORM.
■ EMPHASIS OF ROOF CANTILEVER TO RETREAT FROM RISING STAGE FORM.



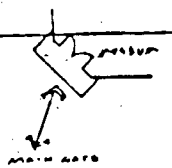
2

☐ MAJOR ENTRANCE OF MUSEUM
CONFLICT: OPENING CONFRONTS WITH MAJOR GATE.

☐ GEOMANTIC REQUIREMENTS
■ AVOID CONFUSION BETWEEN MAJOR ENTRYWAYS.
■ AUSPICIOUS OPENINGS: WEST. NE. NW. SW.

☐ DESIGNERS CHOICE
■ NE CORNER CHOSEN AS MOST VISIBLE CAUSING CONFLICT WITH GATE.

☐ SOLUTION
■ ENTRANCE SET BACK FROM THE CORNER.
■ DIAGONAL DIRECTION OF ROOF REMOVED CONFLICT WITH GATE.
BETTER SOLUTION MIGHT HAVE BEEN CHOSEN AT NW CORNER.



3

☐ MAJOR ENTRANCE TO MEDICAL DEPT.
CONFLICT: ENTRANCE CONFUSED BY PROXIMITY TO OUTDOOR STAIR AND LIBRARY ENTRANCE.

☐ GEOMANTIC REQUIREMENT
■ EXISTING SLOPE TO BE RESPECTED.
■ THE ENTRANCE SHOULD FACE W.

☐ SOLUTION
■ RAISING THE ENTRANCE OF MEDICAL DEPT. TO COURTYARD LEVEL CREATING BRIDGE FROM COURTYARD TO MEDICAL BUILDING.
(ALSO RAMP PARALLEL TO BRIDGE CAN BE USED AS EMERGENCY VEHICULAR ENTRANCE TO COURT)

4

☐ LIBRARY ORIENTATION.
CONFLICT: POSITION GIVES EXCESS WESTERN SUN.

☐ GEOMANTIC REQUIREMENT
■ HIGH BUILDING REQUIRED NEAR CENTRE OF COURTYARD WITHIN LARGE CONFIGURATION CHOSEN.

☐ DESIGN CONSIDERATION.
■ HIGH CENTRAL BLOCK MOVED TO EAST SIDE OF COURTYARD TO ALLOW SPATIAL FLOW FROM ENTRANCE GATE TO GARDEN GATE.

☐ SOLUTION
■ MAKE PATIO SET BACK ON EACH FLOOR OF THE LIBRARY.
■ STACKS OF READING ROOMS LOCATED ON EAST SIDE, WEST SIDE DEVOTED TO BALCONIES LOUNGES AND CIRCULATION.

5

☐ RESIDENCE.
CONFLICT: STRAIGHT CUT THROUGH BUILDING FROM UPPER TO LOWER LEVEL

☐ GEOMANTIC REQUIREMENT.
■ AVOID LONG STRAIGHT PATHS

☐ DESIGN CONSIDERATION
■ TO TAKE ADVANTAGE OF VIEW AND DRAMATICS OTHER STRAIGHT CUT CHOSEN.

☐ SOLUTION
■ MAKE STAIR OPENING WIDE ENOUGH SO THAT PATH OF STAIRWAY CAN ZIG-ZAG WITHOUT BEING BLOCKED ALONG THE WAY.

5.2 Further Research:

1. This study is based on several primary and secondary sources dealing with Chinese geomancy. The design project is a hypothetical base for a test of the entire geomantic order. Studies of this nature should include general design problems, from those applying to a single family house to those applying to a small village; from public building to city planning and it should not be limited to the idealized site situation. In this study, the only constraints were those set by the project itself. This study demonstrates institutional design in a "monastic" environment, but does not deal with the implications of geomancy for other designs and situations.

2. The concept of the expression of cultural perceptions should be explored further in the detail designs for buildings.

3. If "symbolic geomantic" organization within the project is important, then other designs related to Chinese could profit from the use of this system.

4. Another study might be undertaken in which the geomantic order is dissected into operational definitions with a survey of respondents' attitudes to geomancy and the application of the designs. This would allow a realistic analysis of the relationship between the professional geomancer and the designer in modern architecture.

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Appendix I

Glossary

chan she shih che 占射事者	gecmancer(expert on divination, avoidance of conflict and adviser on the affairs of men)
feng shui 風水	Chinese geomancy, divination
fang wei chia 方位家	an expert who sites a location for building, for graves, etc.
Hsing qa chia 形法家	topographer
hsing shih 形勢	situation
hsing lung 形龍	flowing activity
kan 堪	trunk
li,ch'i 理.氣	principle and matter
sha ch'i 煞氣	destructive evil forces
sheng ch'i 生氣	productive good forces
ti li 地理	principles of geography(earth)
to shen kung, kai tien ming 奪神功.改天命	to control the forces of nature (seize spiritual forces, change the decree of heaven)
ch'ung 冲.衝	conflict
chai 宅	site, home
yang chai 陽宅	habitation of the living
yin chai 陰宅	tomb
fu 符	charm
tao 道	way, road, white tiger
shui 水	watercourse, azure dragon
ho 河	river

ch'ih	池	pond, pool
t'ang	塘	tank
shan	山	mountain, hill, peak
ling	嶺	range, ridge
kang	崗 岡	post
kao ti	高地	high level
ti ti	低地	low level
p'ing ti	平地	flat level
ch'iu	丘	mound
sha	沙	sand
fen	墳	grave
shu	樹	tree
feng wei	方位	location, orientation
pei-k'an	北 - 坎	north
nan-li	南 - 离	south
tung-chen	東 - 震	east
hsi-tui	西 - 兌	west
tung-pei-ken	東北 - 艮	north-east
hsi pei-ch'ien	西北 - 乾	north-west
tung nan-ken	東南 - 巽	south-east
hsi nan -k'un	西南 - 坤	south-west

Appendix II

Omens

wealth(fu) 福	. luck in making money . wealth and high honors, high official positions and riches . honor and riches to attend great achidvement and good reputation
nobility(cheng chei) 權貴	. inherent power to do things . political power amd influence of authority . a noble family and person . elegant, magnificent . highly respected and revered
honor(tsun) 尊	. respect, venerate . a honorable nome
abundance(feng) 豐富	. plentiful descendants . well provided with food and well- protected . wealthy, having abundance (family, nation) . rich and powerful person
power(ch'uan-li) 權力	. unlimited power to do things . political strategy, resourceful tactics . financial power . military power and authority

foremost (cho-ming) 著名	. superior . most important
hero (ying-hsiung) 英雄	. a champion, conqueror . a powerful and rich man . a great fighter, warrior
luck (hsing-fu) 幸福	. life course of a person or nation . calculated to prolong one's life . good luck, blessing . in good fortune
blessing (chu-fu) 祝福	. happiness of life . be blessed with a double portion of good fortune . elegant and refined . enjoy the blessing of life . live and luxurious life elegantly attired and feasting on delicacies
happiness (lo) 樂	. good luck . utopia, paradise . condition of perfect happiness . easygoing, happy-go-lucky
longevity (ch'ang-shou) 長壽	. long life, perpetual rejuvenation . have a ling span of life
prosperity (mou-sheng) 茂盛	. fortune, good and luck

- plenty, fullness
- thriving(of growing tihings or ccmmerce, industry and naticn)

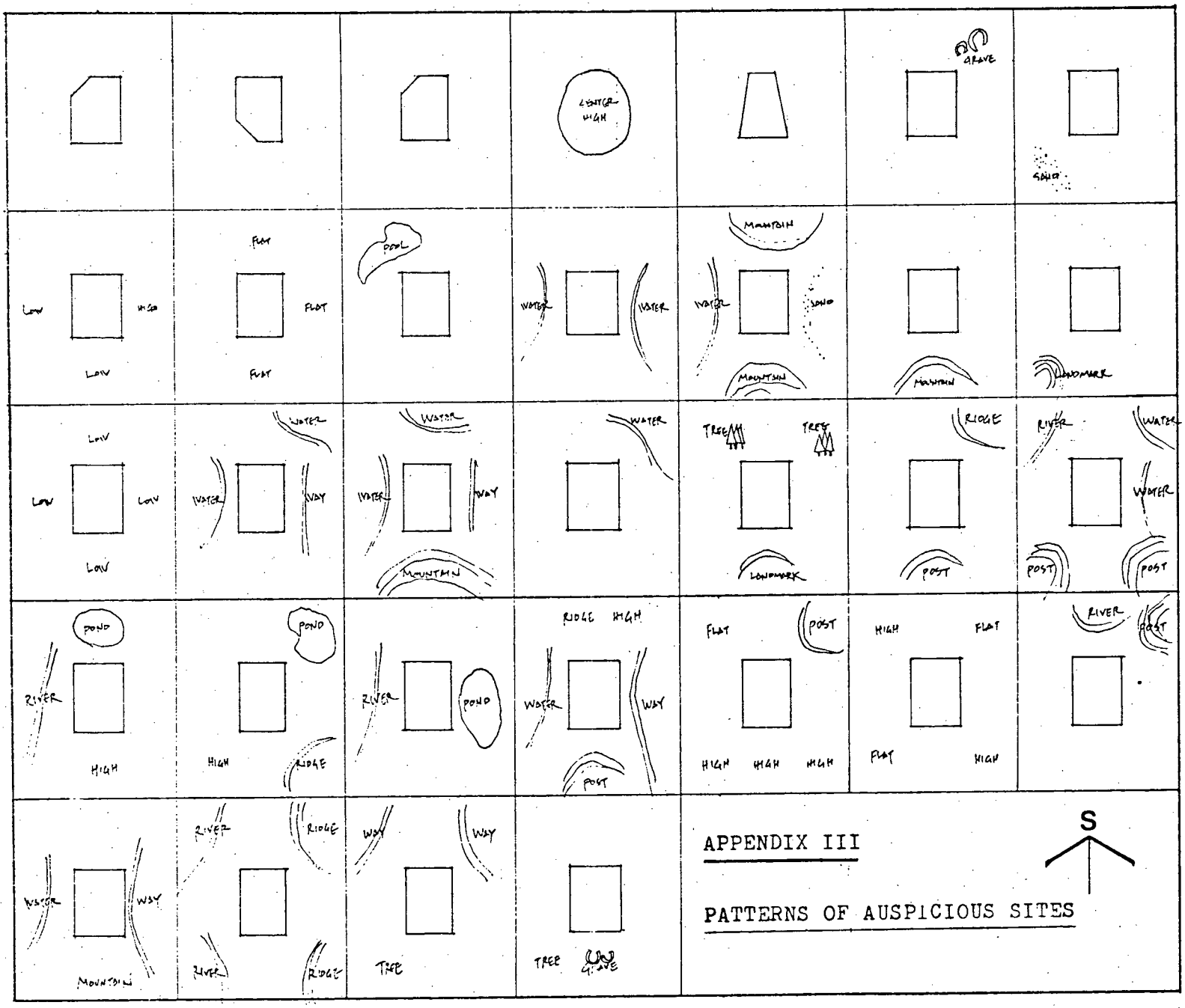
reputation(ming-yu) 名譽
- a person's prestige
- reputation for honesty
- reputation enjoyed by an official

virtouus(te-wei) 德位
- moral, excellence, goodness
- a model of feminine virtue
- beautiful character
- great virtue

rich(fu) 富
- vigorous energy
- solid financial strenqth
- having abundance

glory(junq-fa) 榮發
- splendid
- win praises for one's ancestors
- enrich one's posterity
- reflect glory on one's ancestors

strenqth(ch'iang-shing) 強盛
- having much force or power
- noble to last, endure, resist
- strong family, nation


LOWER HIGH
GRAVE
SALT
POOL
FLAT
LOW
HIGH
WATER
MOUNTAIN
LANDMARK
TREE
RIDGE
RIVER
POST
POND
WAY
APPENDIX III
PATTERNS OF AUSPICIOUS SITES
S

Appendix IV

FUNCTIONAL AND SPACING REQUIREMENTS

President

The representatives of the Chinese Cultural Foundation excutive the program of C.C.R.I.

Personnel

President	1.
Vice-president	1.
Committee	4.
Consultants	2.
Secretary	1.

Activities

- approving and coordinatingthe programme.
- faculty Meeting and organization management.
- organizing international conferences.
- fund control.
- administering the editing of Chinese Cultural Foundation publications.
- planning and executing.
- future expansion schedule.

Facilities(administration)

Facilities	User	Unit area	Units	Net area
▪Reception	20			30m²
▪Office	Vice-president			50m²
▪Office	President			100m²
▪Committee	consultants			100m²
▪Conference room	20			50m²
▪Service space	8			20m²

▪Lounge	20	25m²
▪Waiting	20	25m²

Coorporate management

Perscnnel

Programme planner	2.
Executive administrator	1.
Executive assistant	2.
Secretary	2.

Activities

. programme planning.
. executing the programme.
. institute administration.
. housing management.

Facilities

Facilities	User	Unit area	Units	Net area
▪Office	Planner			50m²
▪Office	Administrator &sec'y			50m²
▪Office	Executive assistant			50m²
▪Waiting lounge	10			20m²

Researching

Researcher(art&culture) 30.
Researcher(others) 15.

Personnel

Organizer 1.
Secreatary 2.
Librarian 2.

Activities

- research in Chinese art, literature, music, language, philosophy, religion, history, politics, anthropology and social science and folk customs program.
- painting, dancing demonstration and music presentation.
- teaching, practicing, reading, lecturing, displaying.
- documenting the research papers and theses.
- language instruction.

Facilities

Facilities	User	Unit area	Units	Net area
▪Studio	Researcher	24m²	30	720m²
▪Studio	Researcher	24m²	15	360m²
▪Seminar	researcher	30m²	5	150m²
▪Lecture hall	60			100m²
▪Technician office	2			50m²
▪Office	Organizer			25m²
▪Office	Secretary			25m²
▪Reading room	30			200m²
▪Language lab	40			50m²
▪Waiting lounge	10			50m²
▪Research service space	5			30m²

Museum

Personnel

Manager 1.

Activities

- conserving and exhibiting permanent collections of calligraphy, sculpture, painting, stone engraving, wood engraving and seal arts.
- preparing And exhibiting the special shows.
- storing of exhibits, artifacts, artwork.
- cataloging of art and artifacts.
- operating open studio for public demonstration.

Facilities

Facilities	User	Unit area	Units	Net area
•Display gallery	50			400m²
•Office	Manager			25m²
•Storage	-			200m²
•Preparation	20			50m²
•Workshop	30			100m²
•Open space	20			200m²
•Service space	10			40m²

Perfcrmance centre

Personnel

Manager 1.
Organizer 1.

Activities

- managing multi-purposes auditorium for concerts, plays variety shows, lectures, films, meetings, festivals.
- performance production.
- maintaining performer facilities.
- maintaining practice facilities.
- storage of equipment, scenes, costumes, furniture storaging.

Facilities

Facilities	User	Unit area	Units	Net area
•Auditorium	150			800m²
•Stage	-			100m²
•Dressing room	20			50m²
•Workshop	10			100m²
•Loading area	-			150m²
•Outdoor auditorium	50			200m²
•Practice room	1	10m²	5	50m²
•Office	Organizer			20m²
•Practice room	2	20m²	5	100m²
•Storage room	20			50m²
•Service space	10			20m²
•Lounge	50			100m²

Medical research

Researching User

Medical researcher	15.

Personnel

Organizer	1.
Secretary	2.
Librarian	2.

Activities

- research in Chinese medical science and general medical researchs.
- acupuncture research.
- herbal researching and defining herbal medicine and pharmacology.
- demonstration in different sections and groups.
- researching the implications of the Chinese experience for modern Chinese and non-Chinese medicine, medical research and health care.

Facilities

Facilities	User	Unit area	Units	Net area
▪Studio	Researcher	20m²	10	200m²
▪Lab	Researcher	25m²	5	125m²
▪Lab	Researcher	25m²	5	50m²
▪Multi-purposes lab	Researcher	40m²	2	80m²
▪Preparation	Researcher	50m²	2	100m²
▪Animal room	Researcher	30m²	2	60m²
▪Computer terminal	5	50m²	1	50m²
▪Dark room	3	10m²	1	10m²
▪Cold room	2	30m²	1	30m²

▪Lecture hall	30	80m²	1	80m²
▪Seminar room	10	25m²	2	50m²
▪Reading room	Researcher			50m²
▪Office	Organizer&secreatary			30m²
▪Waiting lounge	20			50m²
▪Service space	10			25m²

Clinic

Perscnnel

Operators	5.
Nurses	10.

Activities

- medical operation demonstration.
- medical practicing.
- medical care, rehabilitation and nursing.

Facilities

Facilities	User	Unit area	Units	Net area
▪Reception lounge	10			30m²
▪Operation room	5			50m²
▪Pharmacy	2			30m²
▪2 bed nursing	2	16m²	5	80m²
▪4 bed nursing	4	28m²	4	112m²
▪12 bed nursing	12	120m²	2	240m²
▪Herbal research centre	10			150m²
▪Supply service	2			100m²
▪Waiting lounge	5			50m²
▪Service space	6			20m²

Library

Personnel

Librarian	2.
Assistant	3.

Activities

. providing a focus for Chinese cultural research.
. collecting rarebooks for special research.
. providing language instruction and communication with other research libraries in Canada and other country.
. providing the individual or group study space for researchers and the public.

Facilities

Facilities	User	Unit area	Units	Net area
•Collections	-			200m²
•Reference	-			50m²
•Individual study	25			4m²
•Group study	10			50m²
•User service	5			40m²
•Lounge	20-			40m²
•Commemorative collections	10			100m²
•Communication centre	20			100m²

Dining Service

Personnel

Manager	1.
Serviceman	5.

Activities

. providing a dining area for researchers and staff and public.
. providing the public gathering place for relaxation and communication.

Facilities

Facilities	User	Unit area	Units	Net area
▪Restaurant	80			400m²
▪Cafe	40			150m²

Residence

Personnel

Manager	1.
Clerk secr'y	2.

Activities

- maintaining residence for permanent staff of the institute.
- providing residence for short-term researchers and special visitors.

Facilities

Facilities	User	Unit area	Units	Net area
▪Studio-apt.	4	96m²	10	960m²
▪Apartment	2	40m²	33	1320m²

Maintenance

Personnel

Manager	2.
Mechanics	5.
Janitor	5.

Activities

- building services.
- building maintenance and cleaning.
- landscape maintenance.

Facilities

Facilities	User	Unit area	Units	Net area
▪Greenhouse	-			50m²
▪Physical plant	-			100m²
▪Janitor room	-	15m²	6	90m²

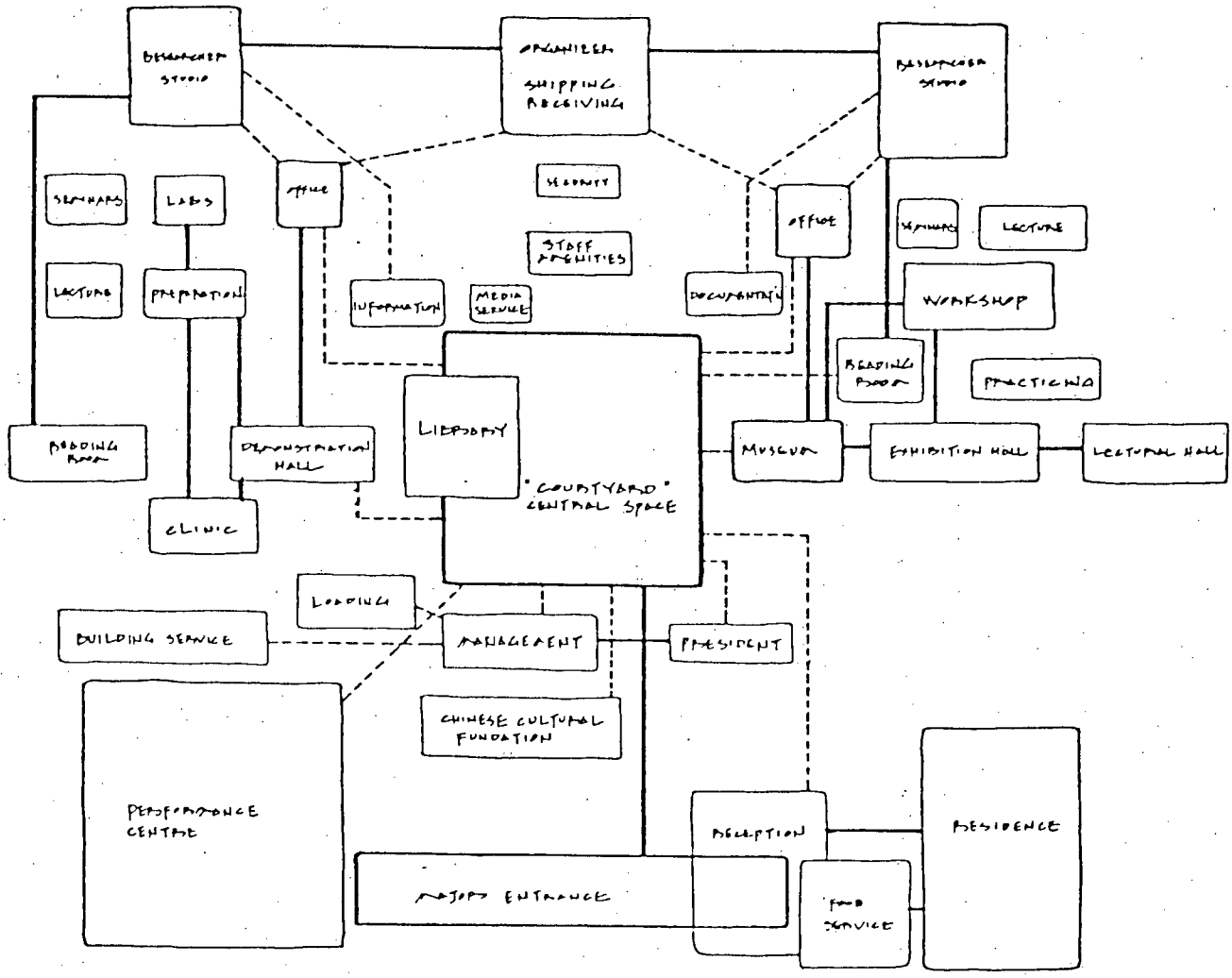


FIG IV.1 FUNCTIONAL RELATIONSHIP DIAGRAM OF C.C.B.I.

DARK LINE: MANDATORY RELATIONSHIPS
LIGHT LINE: OPTIONAL RELATIONSHIPS.

should be provided,with loading bays. Emergency vehicle access such as fire, ambulance, and inhalator is required, although properly designed pedestrian ways may also be used in emergencies.

CHARACTERISTICS

The following characteristics of the site can be expected to affect the selection of the location of the site for the institute and the surroundings.

Site Boundaries

The site is located to the east of Loon Lake in UBC Research Forest, aproximately 350m to the south of the nearest peak A. The portion of the land is delimited to the north by a boundary running east-west, to the east by a boundary running north-south, and to the south and the west by the 400M contour line.

Plant Material

Site Requirements

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1. Appropriate setting

The special intention of the institute is to demonstrate the Chinese traditional architectural spirit. The site should be selected according to the ideals of Chinese cosmic regulation, so that the arrangement of the buildings, courtyards, interior and exterior spaces, the wooded area, surrounding mountains and water can all respond to and express fundamental Chinese philosophy and usage.

2. Access

. Pedestrian The institute will encourage free pedestrian access through and around the site.

. Vehicular Traffic and Parking provide staff and researcher parking, 50 parking spaces, and visitors parking, 100 parking spaces.

. Bus and Transit for bus and tourists bus parking, 5 bus spaces.

. Service and Emergency service vehicles space for two trucks

This site has good Fir, Hemlock and Cedar forests, with stands of spruce near the eastern creek. The second growth forest is located in the south side of the site, with trees 15m high. They are considered to be reasonably healthy.

Views

In this development, the buildings should not obstruct the view. Views along south, west and east sides should be developed as the major views to Loon Lake, Blanet Lake and the creeks on the east.

Potential Uses

1. To develop as large an area as possible (compatible with UBC Research Forest policy) for public park to demonstrate the Chinese landscape design philosophy.
2. House the Chinese Cultural Research Institute with a minimum parking for 150 cars. The access road to it will be a reconstruction of the E branch road of the UBC Research Forest.

These potential uses of the site generate the following approximately space needs:

. Central courtyard	5,600 m²
. Buildings circle	20,650 m²
. Parking	3,600 m²
. Garden	10,000 m²
. Open natural area	104,150 m²

.. Property area 144,000 m²=35.5 Acres.

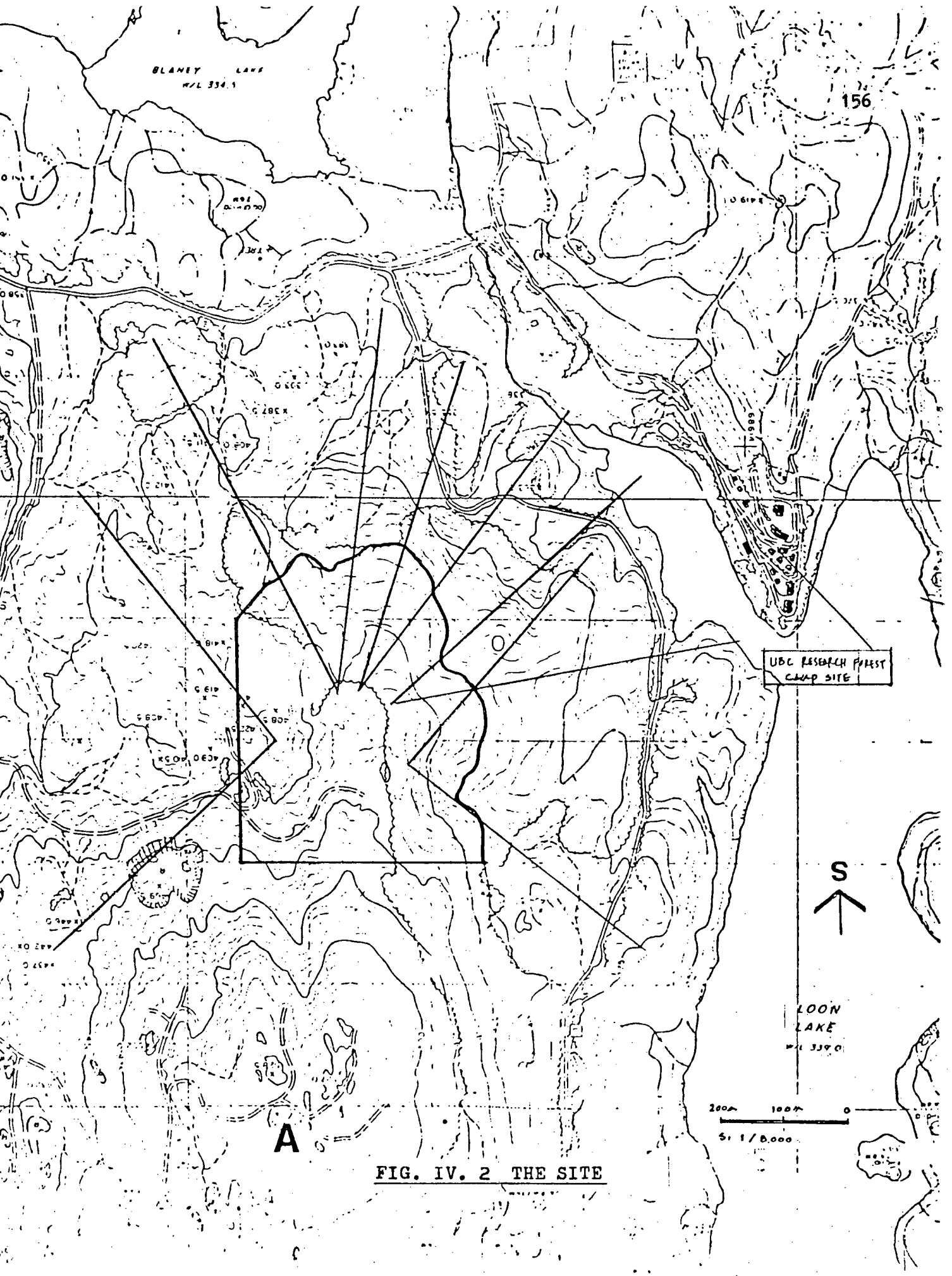

FIG. IV. 2 THE SITE