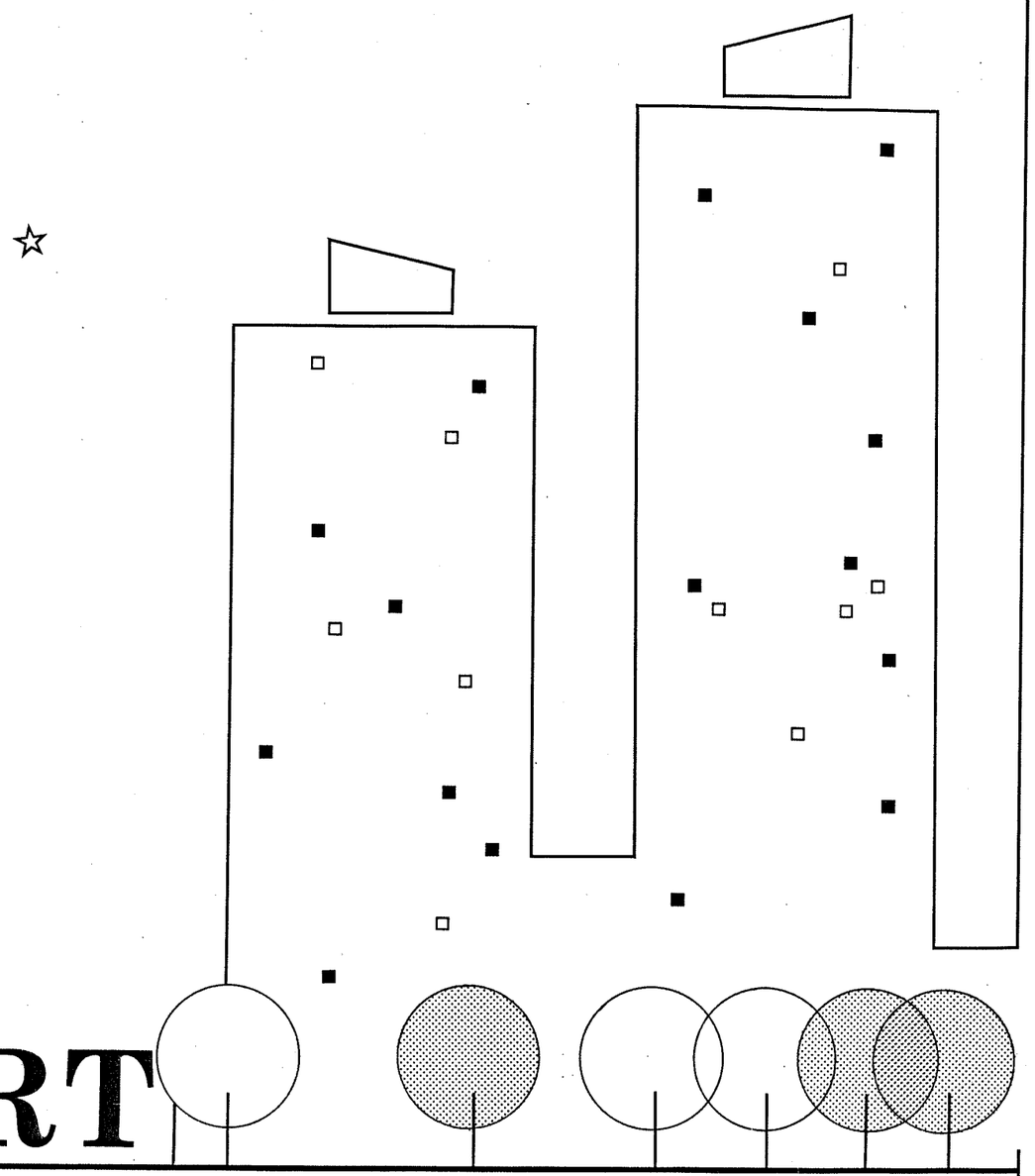


YUEN TIN COURT

A Study of Neighborhood Open Space Planning for High Density Housing Development in Hong Kong

A
Practicum
Submitted to
Faculty of
Graduate Studies
in Partial Fulfillment
of the
Requirement
of the Degree of
Master of
Landscape Architecture

by

Chi Kong Lau

University of
Manitoba

Abstract

No one visiting Hong Kong can fail to be impressed by its high density and 'Manhattan' skyline. With a total land area of only 1,064 square kilometers and a population of about 5 million, the spatial demand for more public housing has never been greater Since the advent of the "New Town Programme", many new and large scale residential projects were launched and implemented by the government to house the growing population. Each housing development was comprehensively designed to become a 'self-contained' neighborhood unit within which the basic needs of its residents are readily satisfied.

The planning for the external spaces associated with this new urban fabric is the major theme for this study. Given the strategic significance of locating close to home, the design of neighborhood open space can seriously affect the well-being of a community as well as individual residents. In general, it requires an extensive planning strategy necessary for public amenities and community facilities within a relatively limited amount of space. The art of landscape architecture lies in manipulating these external spaces as to form a continuous and yet varied environment that is both functionally sensible and aesthetically satisfying.

This study is an attempt to explore the complex issues involved in the design of neighborhood open space in Hong Kong. The initial research requires a basic understanding of the theoretical framework of a neighborhood within the context of Hong Kong. This understanding serves as an important foundation upon which further investigation and analysis can be built.

Based on this initial research, together with the results of a survey and an observation program, an existing residential environment is examined and analyzed. This analysis demonstrates the degree of satisfaction and the extent of aspirations of the residents toward their living environment. Subsequently, issues and concerns regarding site design are duly identified.

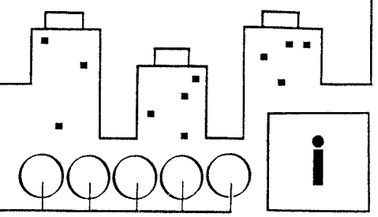
The major component of the study involves the preparation of a series of planning guidelines and a re-design proposal for the study site. The design guidelines are recommended to direct planning decisions regarding various site components. Given the unique cultural context of Hong Kong, both the eastern and western values towards site planning are taken into consideration. In order to apply and illustrate these planning guidelines, a re-design plan is proposed to demonstrate one way in which the existing environment can be modified to better serve the community.

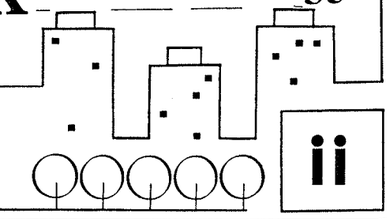
Acknowledge-ment

My sincere gratitude is extended to my practicum committee: professor E. B. McLachlan (chairman), Mr. Farley Cates and Mr. Alfred Simon for their valuable insights and helpful advice. I am especially indebted to Mr. McLachlan for his guidance in the formation of this particular topic.

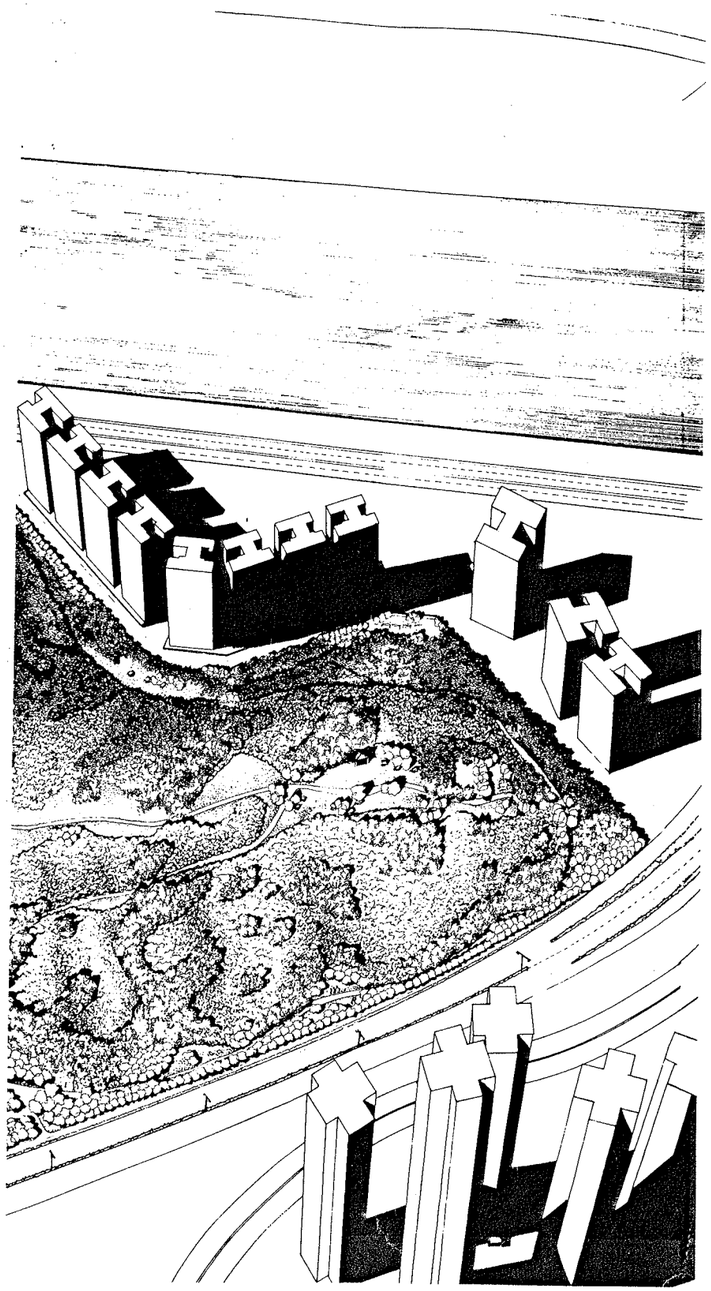
I would also like to acknowledge Mr. J. E. Lambon, architect of the Hong Kong Housing Authority, Mr. J. R. Mandem, landscape architect of the Hong Kong Housing Authority, and Mr. Paul Wong, private consultant on environment planning for their helpful information given to me during my research in Hong Kong.

Lastly, I would like to express my utmost gratitude to my Lord, my parents, my sister and friends for their love, patience and support throughout my college years.





CONTENTS



"Neighborhoods are beleaguered, especially in central city. Yet for a significant population group, they survive, change, even grow, continuing to serve as vital micro-communities larger than home, smaller than the city."[1]

--- Richard P. Dober ---

In neighborhood planning, the role of open space has been regarded as a critical element to the well-being of all residents who inhabit and use the environment. Especially in today's highly - charged urban atmosphere, the need for varied, efficiently organized public space is probably greater than any previous time. In many metropolitan centers, where high density and heavy concentration of population is found, people are saying that a good, clean and livable environment begins at home.

In Hong Kong where limited spatial resources and inexorable population growth are major design issues, a clear definition and maximization of a given space is required. These pressures have resulted in an acute awareness of the importance of open space amongst everyone who resides in Hong Kong. In 1972, the Government initiated the "New Town Programme" which aimed to house the ever increasing population in the form of self-contained townships. Each new town offers its residents a healthy environment with a full range of facilities from shops to schools as well as public amenities in order to foster a sense of community belonging. The emphasis of this programme also included the provision of functionally and aesthetically satisfying open space within each residential precinct.

These are the spaces with which landscape architects are most concerned about in Hong Kong -- the manipulation, articulation, and organization of external spaces associated with the urban residential fabric. According to Ian Lyne, resident partner of Chadwick, Bailey & Lyne Co.(Hong Kong), "These are the spaces to which sophisticated societies pay particular attention since they represent its maturity and states its concern to attend to all aspects of the environment in which it exists."[2] The task of providing an attractive and functional environment is indeed an enormous challenge and responsibility for today's designers.

In light of this observation and understanding, guidelines for neighborhood open space planning should be explored and set down. By following the design guidelines, the most effective use can be made out of the available space for the type and density of uses it must accommodate. Given the unique cultural background of Hong Kong, the guidelines should also incorporate both Eastern as well as Western values and ideals with regards to landscape design.

It is the hope of every environmental designer that the ultimate scheme yields a successful treatment and maximization of external space appropriate to the needs of a thriving community.

Study Goals

The general goals are to examine the nature and design of neighborhood open space in the context of high density residential environments and to explore the implications of applying this knowledge to the task of modifying an existing environment. The study involves three specific objectives:

Objectives

1. to understand the structure and function of neighborhood open space in the context of public housing development in Hong Kong,

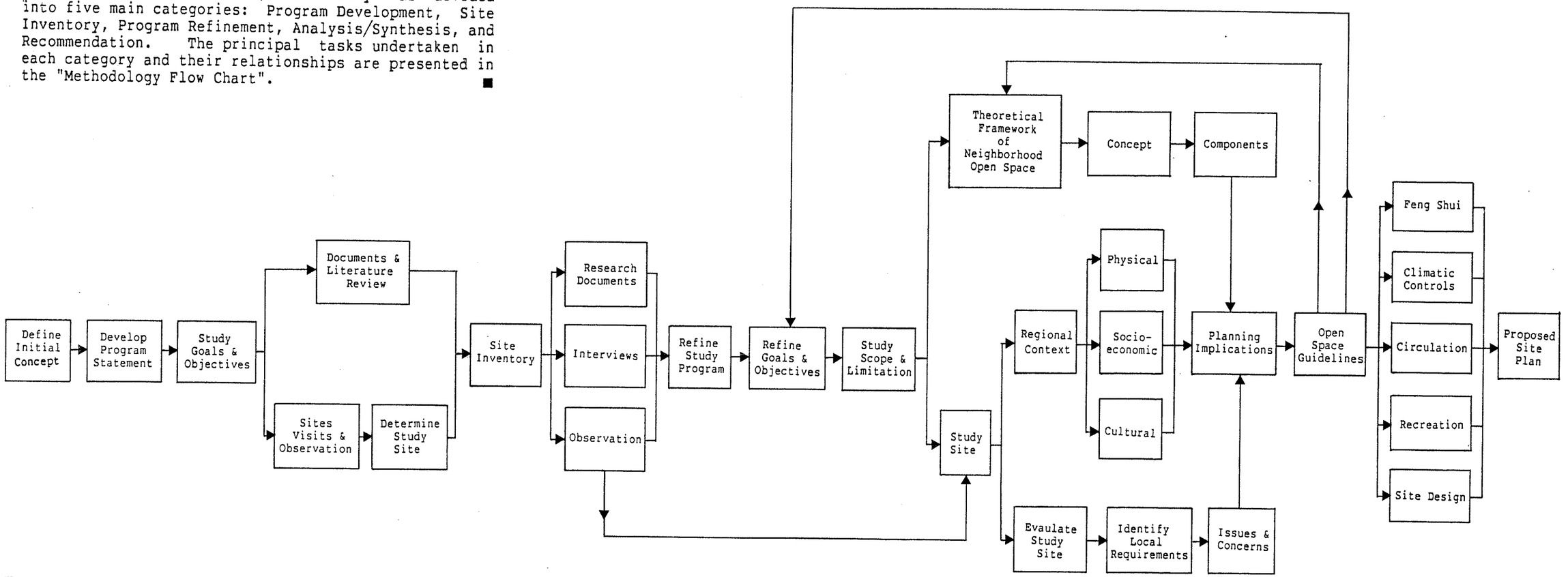
2. to examine and identify design determinants: physical, soico-economic and cultural factors affecting the design and planning of a Chinese neighborhood,

3. to develop design guidelines for the planning of residential open space and apply it to the modification of an existing environment.

INTRODUCTION

Methodology

In order to address the goals and objectives set out for this practicum, the study was divided into five main categories: Program Development, Site Inventory, Program Refinement, Analysis/Synthesis, and Recommendation. The principal tasks undertaken in each category and their relationships are presented in the "Methodology Flow Chart". ■



◦ Program Development

◦ Resoure Inventory

◦ Program Refinement

◦ Analysis / Synthesis

◦ Recommendation

Concept

Being social entities, people seek the companionship of others. Generally they desire the association of others as similar to themselves as possible. As a result, people with common interests assemble in groups to secure for themselves protection, companionship and shared amenities.

When prehistoric men found land which would support them in relative safety and comparative permanence, they formed towns. Mutual aid in times of danger and co-operation toward a general improvement in their living conditions encouraged the development of cities. As the city grew in size, some areas within it assumed homogeneous qualities which we identified as neighborhoods.[3]

In Hong Kong, the essence of the neighborhood concept is manifested in building townships with smaller, more manageable units in the form of neighborhoods which contain public facilities and services that are conveniently accessible to individual households. The neighborhood becomes an area which represents "certain values, and ideals for the residents and the larger community: cleanliness, quiet, safety, social solidarity, aesthetic quality and social prestige."[4] To some people, the local neighborhood also provides for the needs of friendship, mutual aid and attachment.

In planning terms, the creation of a neighborhood mainly involves the location and design of residential accommodation, streets, public facilities, open space and other natural and man-made elements. It aims to arrange and re-arrange these elements to create an orderly, often static but efficient and attractive community.

However, there is always a gap between a neighborhood ideal and its realization. What affects people is not only the raw environment, but the social and economic environment in which that physical environment occurs. To be successful, the planning of a neighborhood involves an integrated approach to the physical, socio-economic and cultural aspects of the planning area.

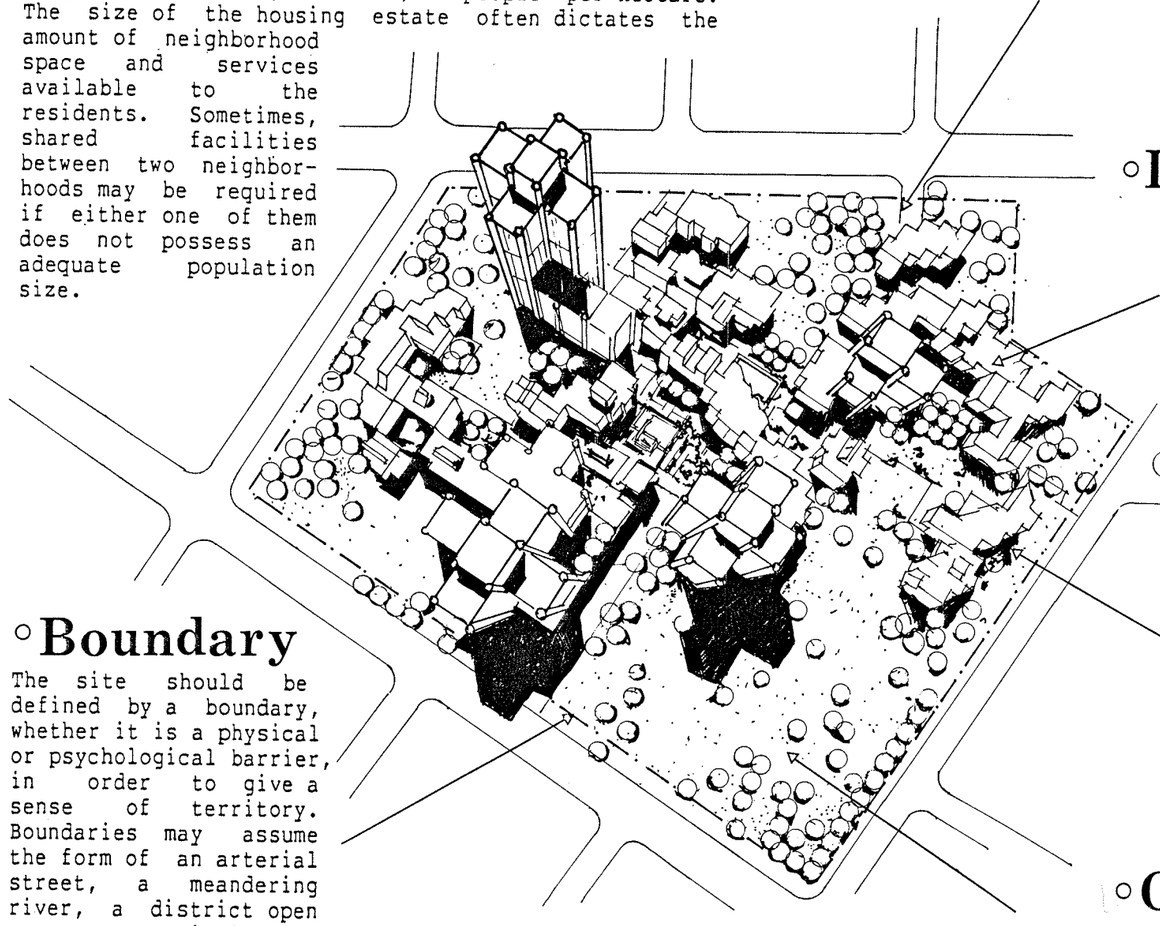
Components[5]

○ Size

A typical public residential unit development in Hong Kong varies from 2,300 to 2,800 people per hectare. The size of the housing estate often dictates the amount of neighborhood space and services available to the residents. Sometimes, shared facilities between two neighborhoods may be required if either one of them does not possess an adequate population size.

○ Circulation

The site should be provided with an internal circulation system for both pedestrian and vehicular traffic in order to facilitate easy, pleasant, and understandable movement therein.



○ Institutional Sites

Ideally, sites for school and other institutions having service spheres coinciding with the limits of the site should be provided.

○ Service

One or more shopping districts adequate for the population to be served should be laid out within the site.

○ Boundary

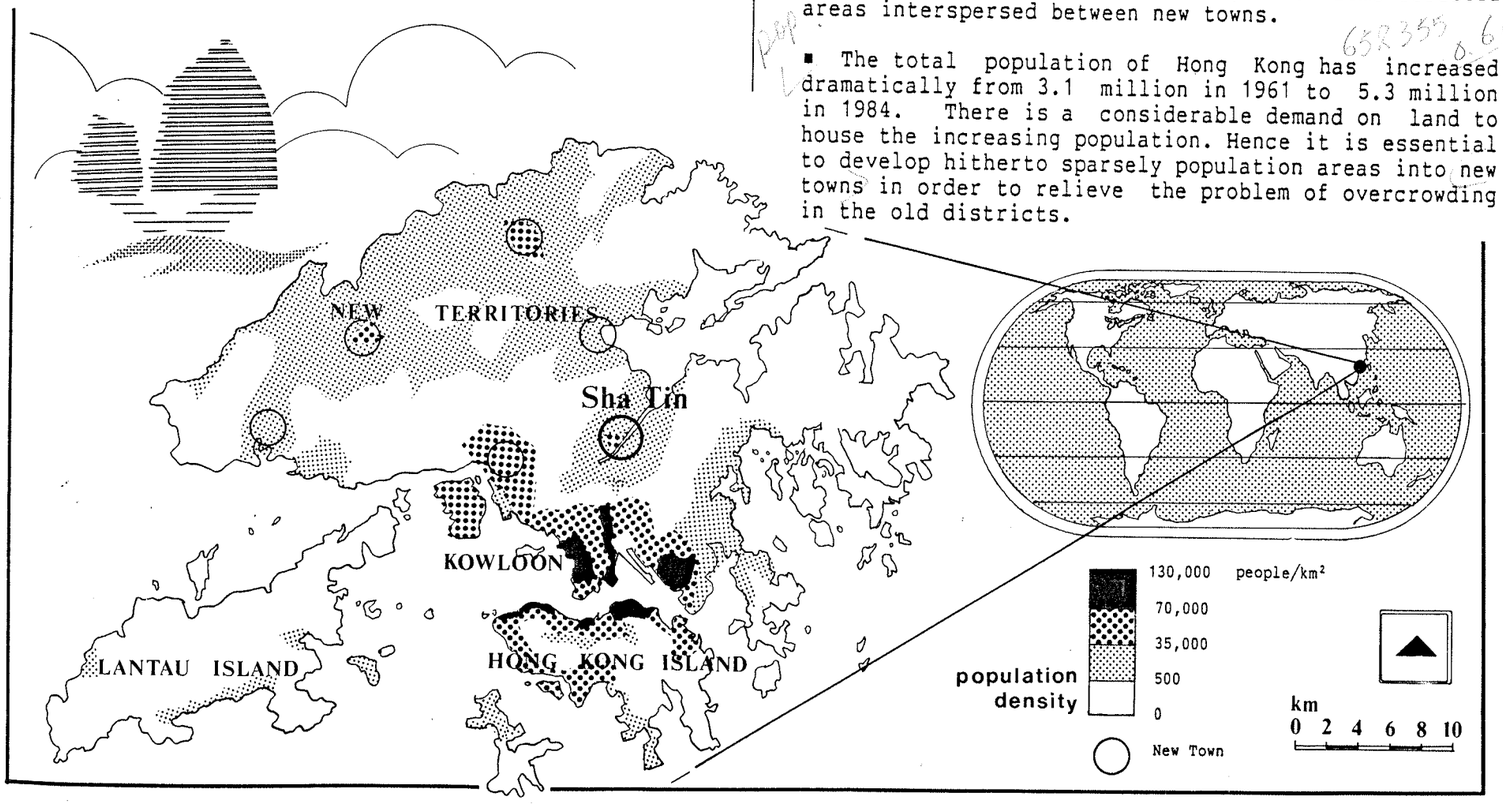
The site should be defined by a boundary, whether it is a physical or psychological barrier, in order to give a sense of territory. Boundaries may assume the form of an arterial street, a meandering river, a district open space, or simply a row of trees. A strongly defined boundary often strengthens the sense of security within a neighborhood.

○ Open Space

It may take a variety of forms: sport fields or playgrounds for active recreation and rest gardens or other spaces for passive recreation. ■

Hong Kong

Planning for Hong Kong has had to cope with essentially two major problems: the critical shortage of developable land coupled with a high population growth rate particularly caused by immigration in recent years. The interplay of these problems has resulted in the rapid and intensive development of Hong Kong, making it one of the most densely populated cities in the world. In efforts to solve these problems, the Government has initiated land reclamation programmes adding 1.7% additional developable lands since 1945. The Government has also undertaken a massive public housing programme in the 1970s with the aim of relocating urban populations into better housing and living conditions.



- Hong Kong is situated at the mouth of the Pearl River on the south-eastern coast of Mainland China. It is just inside the tropics, less than 160 km south of the Tropic of Cancer, and lies between latitude 22°9' and 22°37' north and longitudes 113°52' and 114°30' east.

- Hong Kong is about 1066.53 sq. km in area. It is made up of hundreds of islands, with the larger ones being Hong Kong Island, and Lantau Island.

- Of the total land in Hong Kong, only 16% is built up area. The main urban areas of Hong Kong Island, Kowloon, and six new towns in the New Territories, constitute almost 9% of the total land area. 7% of the built up land are rural towns and villages. The rest of the territory is mostly uninhabited typically grass and scrub land and badlands (63%), natural and established woodlands (11.7%), and some forested areas interspersed between new towns.

- The total population of Hong Kong has increased dramatically from 3.1 million in 1961 to 5.3 million in 1984. There is a considerable demand on land to house the increasing population. Hence it is essential to develop hitherto sparsely population areas into new towns in order to relieve the problem of overcrowding in the old districts.

New Town

The aim of building new towns in the New Territories is to achieve 'self-containment' and 'balanced development'. By 'self-contained development', the daily needs of the residents can be met within the new town. By 'self-balanced development', new towns may be able to supply the necessary employment opportunities. Above all, the scheme endeavors to provide an optimal housing mix between public/private housing, ownership/rental units, and high/low density housing through which a healthy social mix within a community may be achieved.

In the physical form of the new town, civic design principles are often applied so as to achieve an esthetically enjoyable environment for residence, work, and recreation. The process of development commences with planning and engineering studies from which development plans and programmes are prepared. These studies take into account the potentials and constraints of each new town setting. Natural environment, scenic areas, sites of historic/archaeological and scientific interest are preserved. Green belts are usually zoned along the fringes of the new town as a means to discourage urban development beyond the designated new town boundary.

The New Town Scheme was established to alleviate Hong Kong's problem of urban congestion by decentralizing population to the New Territories while providing:

- adequate housing development through land reclamation within the confines of the town boundary,

- comprehensive transportation network which allows easy access to, from and within the town itself,

- industrial development and entrepreneural establishments to generate a healthy economy and employment opportunities,

- improved environmental conditions through the planning and allocation of more local as well as district open space systems.

Sha Tin

The New Town in Sha Tin is designed to provide land for residential and industrial development within the framework of a balanced land use pattern to allow people to live within a reasonable distance of their place of work. Other main objectives include the creation of a vigorous, socially-balanced and reasonably self-contained community which meets the basic needs of all its residents, as well as providing them with new opportunities and freedom of choice in housing, shopping, employment, and recreation.

Basically, the town plan for Sha Tin involves the construction of an interrelated series of compact, serviced, communities of various sizes within a larger city community covering an area of 2,694 hectares. Each individual community is then comprehensively designed to become an urban neighborhood. The plan also outlines ways and means by which people will be able to use the area's available resources efficiently and imaginatively.

Landuse

Wherever practicable, land in the new town is appropriately zoned for residential, industrial, commercial-residential, government and community uses.

The new town's high population density housing areas are located on the flat lands along the central floor of the valley. Certain types of buildings and facilities, such as high density flats, food stores, servicing workshops and retail shops are grouped together for the convenience of residents. The lower population density housing areas are, for the most part, located on elevated ground around the periphery of the new town in order to take advantage of the natural vistas.

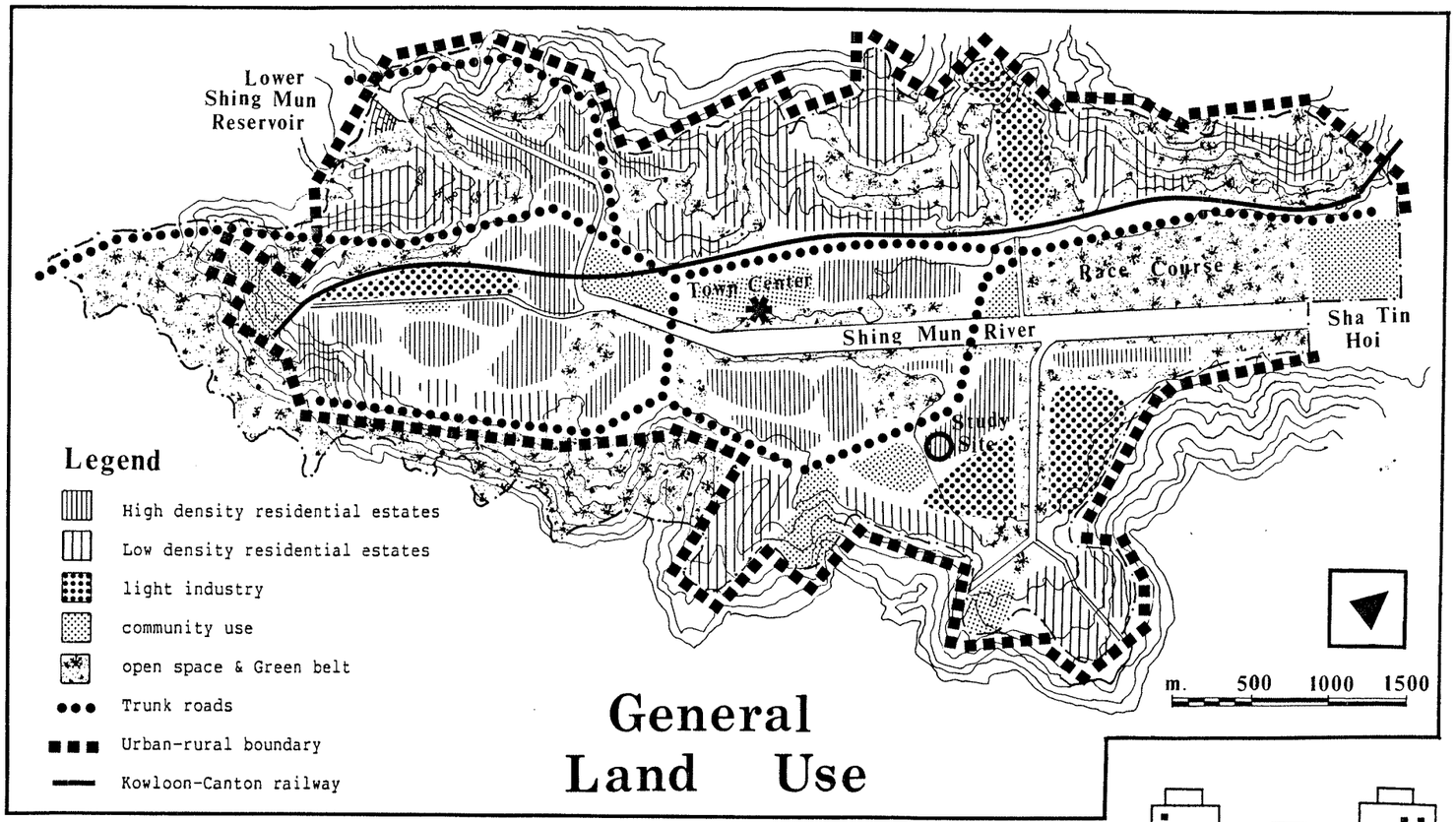
Land set aside for offensive uses is segregated from the general community as much as possible, and noxious industries are not permitted within the new town boundary.

Topography

Sha Tin (meaning 'sandy field') is situated at the head of the southern inlet of Tolo Harbour. From the head of the inlet, it extends in a south-westerly direction for a distance of nearly two miles. The new town is characterized by several distinct topographical features:

- Sha Tin Hoi (Tide Cove), a wide and relatively shallow estuary which forms the southern extreme of Tolo Harbour,
- a lowland flood plain situated near the mouth of the Shing Mun River,
- the foothills surrounding the valley,
- the steep, high mountains encircling Sha Tin Hoi and the foothills.

On three sides of the valley, hills rise steeply to heights of more than 300 metres above sea level which from a natural barrier to communication. However the mountains for most part present a reasonably unblemished green vista except to the north where an expanse of placid, blue sea can be seen. The Shing Mun River flows into Sha Tin Hoi from the west, and acts as a tail-race for the overflow from the Lower Shing Mun Reservoir.



General
Land Use

History

Since the Ming Dynasty (1368 - 1644), people have lived and farmed in Sha Tin. The flat ground of the valley is extremely fertile and according to legend, rice produced there used to be taken 3,000 kilometers north to Peking for the Emperor's table.

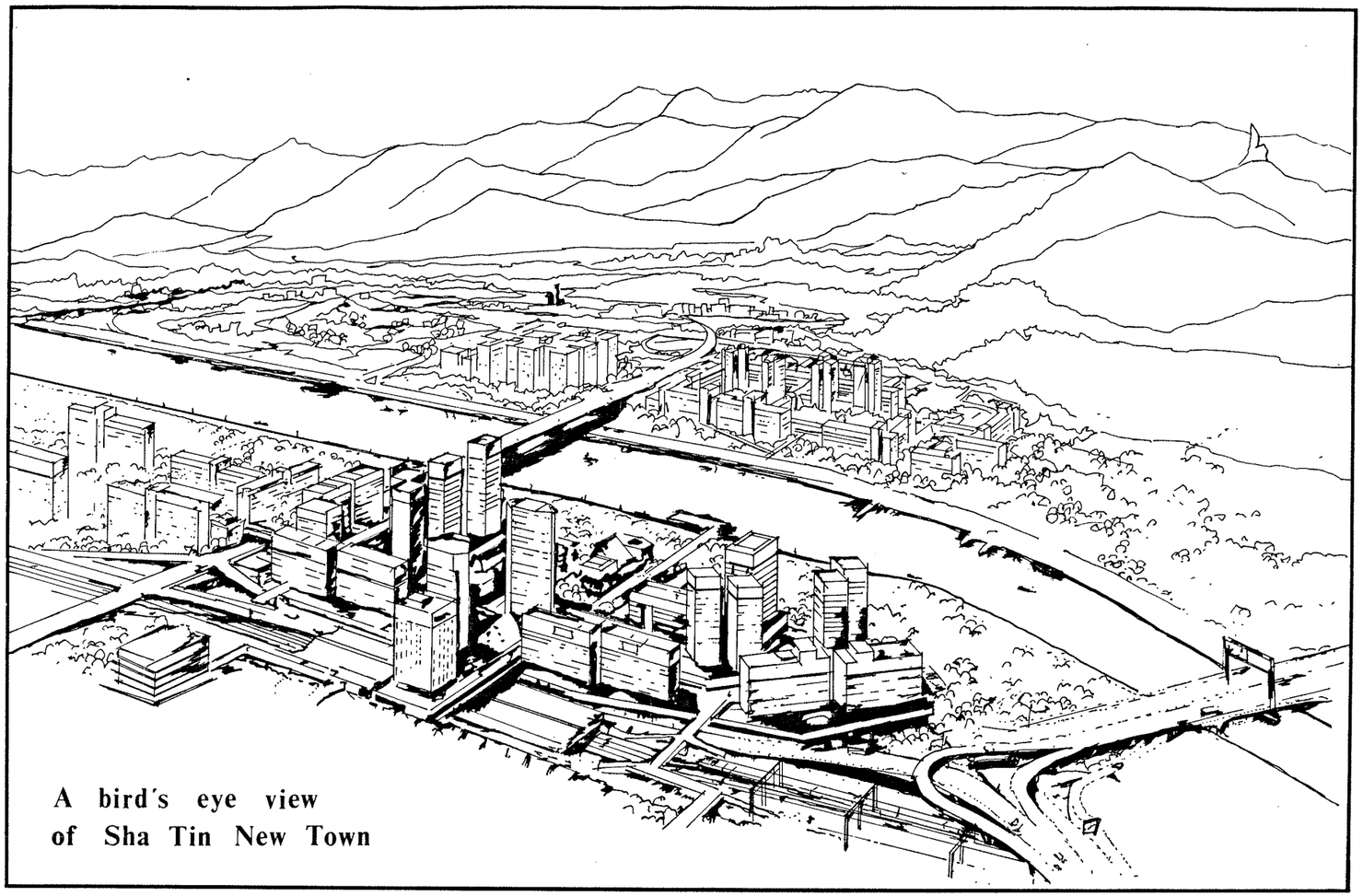
However in recent years, rice crops have given way to vegetables and flowers. As the valley's villagers have prospersed and rebuilt their homes, little has been left of the earlier buildings such as the village of Tsang Tai Uk and the Che Kung Temple which date from the early days of British rule in the last century.

Tsang Tai Uk, the best-preserved walled village in Hong Kong, is the home of the descendents of a man named Tsang. He founded it some 120 years ago as a rural retreat from the bustling and growing settlements of Hong Kong and Kowloon. As such, it may have been a harbinger of the Sha Tin New Town.

Recreation

In the crowded Hong Kong scene, open space has always been a luxury. The new towns have been specifically designed as an answer to this need.

Each housing estate and designated planning area will have its own open space, playgrounds, and recreational facilities. A total of 14 hectares of land has already been set aside for these purposes in Sha Tin. A further 47 hectares have been allocated as district open space to serve the community as a whole. Most of the land is used for both indoor and outdoor recreational pursuits, but certain areas are left in a natural state. Other recreational facilities such as a horse racecourse, major sports centres, and a stadium are constructed and interconnected by cycle paths and walkways. Access to the riverbanks is provided and boat enthusiasts are able to sail and row on the Shing Mun River which flows through the centre of the town. It is also planned to transform certain areas in the southeast portion of the Sha Tin Valley into 'Green Belt' for hiking, picnicking, and general recreation.



A bird's eye view of Sha Tin New Town

Industry

The present population in Sha Tin New Town is about 289,000. Many of them commute daily to Kowloon for work while others cultivate market gardens in the low-lying areas.

Light industry, some of it illegal, is scattered throughout the valley. Two of the largest factories offering local employment are a cotton yarn factory and a dye works. The Valley also contains a number of Hong Kong's major historic and cultural landmarks such as the walled village of Tsang Tai Uk, the Sha Tin Floating Restaurant, and the Temple of Ten Thousand Buddhas which are invaluable assets to the tourist industry. ■

Yuen Tin Court

◦Size

The housing development in Yuen Tin Court provides 1,704 dwelling units in seven (28 to 36 storey-high) residential towers. The total population accommodated amountes to an estimated 7,000 people. In a total land area of 8.6 acres, the population density reaches 814 people/acre.

◦Boundary

Yuen Tin Court exhibits a strong sense of territory because of the "curvilinear wall" formed by the buildings. The site is bounded by:

- major arterial roads on the north and west side;
- institutional buildings on the east side;
- and an undeveloped district open space on the south side.

◦Circulation

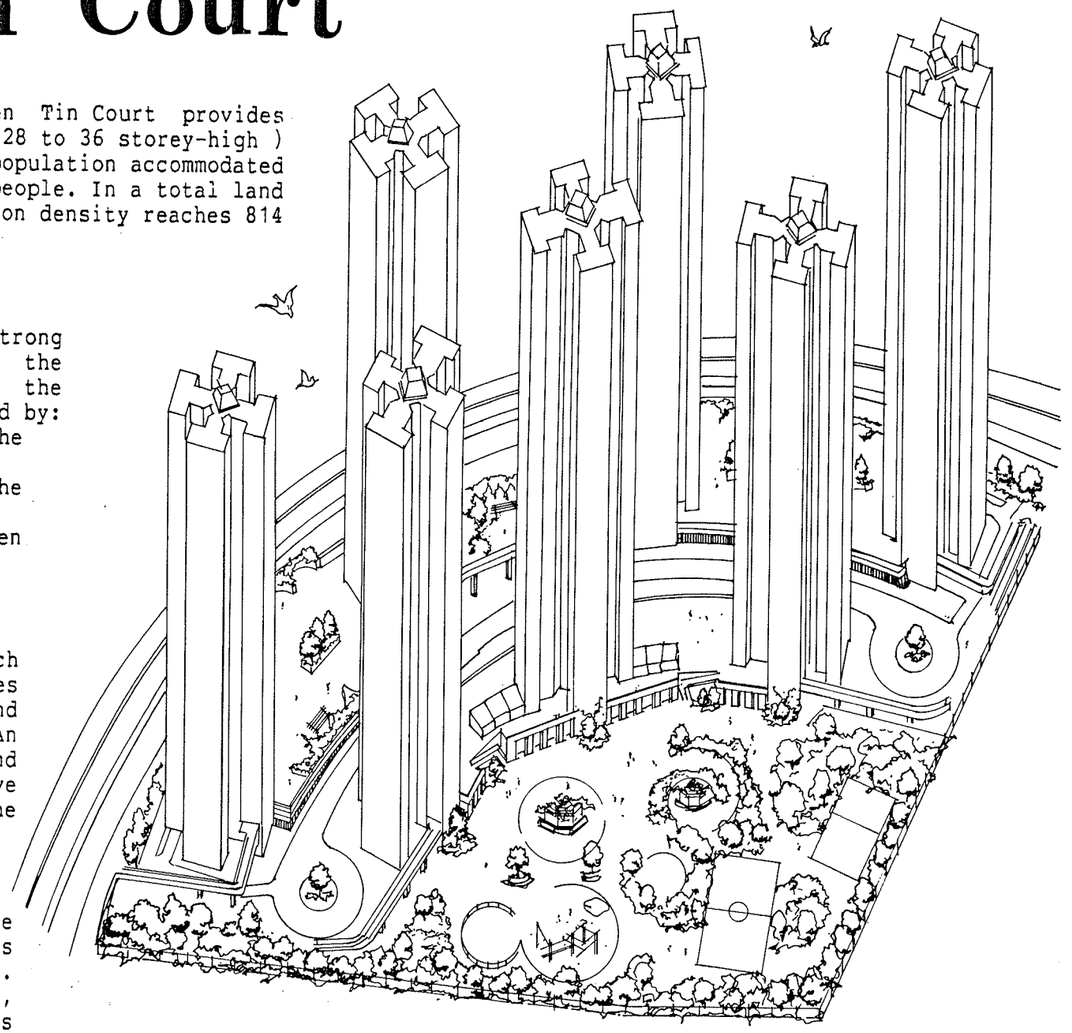
A major vehicular route, each ends with a cul-de-sac, provides access for service/management and public transportation. An elaborate system of ramps and stairs are designed to give barrier-free circulation for the residents.

◦Service

A range of commercial shops are established to provide services as required by the residents. There include a bank, bookstore, drugstore, a market and various retail shops.

◦Open Space

Unlike many other housing developments, Yuen Tin Court contains a spacious communal area containing a rest garden, sitting areas, and recreation grounds planned to meet the daily recreational needs of the residents.



◦Institutional Sites

Educational institutions are provided both within and outside the site. One kindergarten located on the estate is attended by children living on the premises. Two high schools located adjacent to the Court are intended to serve residents from several developments of close proximity.

Lying on the eastern side of the Shing Mun River, Yuen Tin Court was one of the 'micro-communities' established in 1982 by the Government. This residential estate was comprehensively designed to become a self-contained neighborhood unit with its own commercial complex, community facilities and other public amenities. The development is supervised by a full range of management staff appointed by the Government.

At first glance, the site seemed to be a fair choice for a housing project. The land was vacant since it was reclaimed and the topography was generally flat. Also, the residents of the Court enjoy the convenience of being located in close proximity to a distict open space, large shopping center, a bus terminal, and a spectacular view of the mountain range lying to the south of the site.

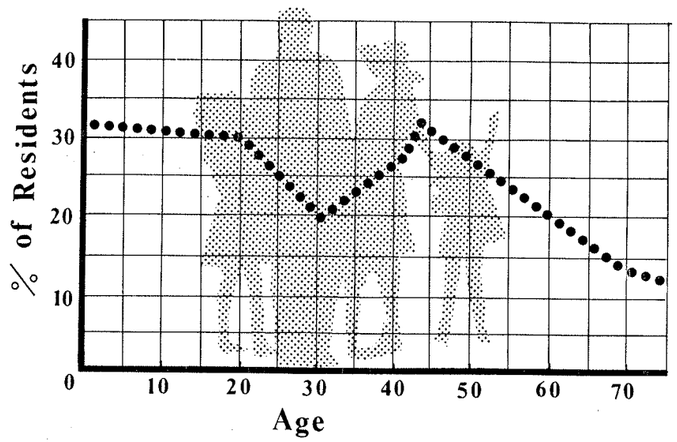
Of necessity, all public housing developments are constructed in high rise towers in order to accommodate the required number of households. Yuen Tin Court was no exception. Seven residential blocks were built on the western edge while the rest of the site was allocated for recreation and circulation purposes.

The quest for variety in open space planning is generally accepted by the residents in Yuen Tin Court as an important design criterion. Although designers took great pain to produce an environment that is attractive and village-like, avoiding the image of just another Government project, there are still problems concerning circulation, climatic factors, management and the provision of recreation opportunities for the residents. Both the designers and the residents admitted that some of the sub-spaces within the site do not integrate well with each other. As a result, they look like a catalogue of different site elements put together. They are either misplaced, misused, or simply unused.

The design of a local open space system is more than just cosmetic. It should serve other important purposes of fostering neighborliness, promoting socialization, and cultivating a sense of community pride through the introduction of a pleasant and functional environment. ■

STUDY SITE

Socio-economic



Government surveys had shown that the lower middle class was the hardest hit sector of the community. They earned too much to qualify for public housing but not enough to afford the cost of flats in the private sector. Caught in the middle, many were spending as much as 50% of their income on rent[6]. The concept of the "Home Ownership Scheme" (which is exemplified by Yuen Tin Court) aims to provide a high quality, better designed but affordable public housing alternative for this group of people. With the promotion of home ownership as a desirable social objective, the scheme also encourages the more affluent public housing tenants to give up their subsidized flats for more deserving families.

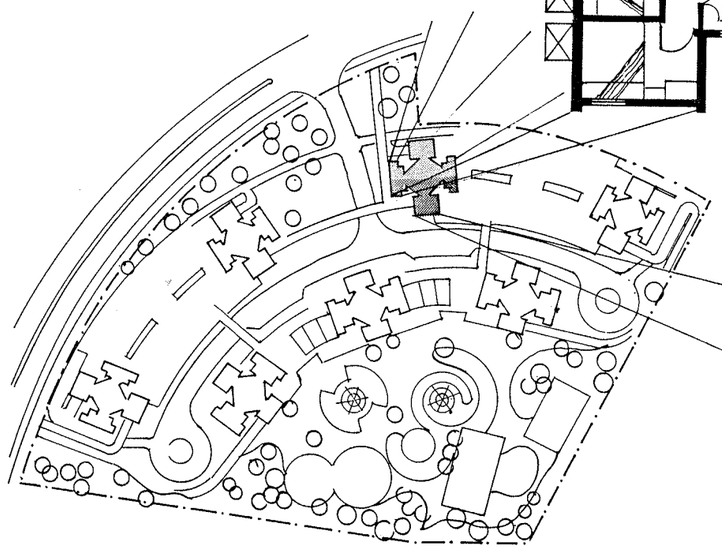
On the average, each family living on Yuen Tin Court earns a total monthly income of $1,000 Can. or under. They usually possess some monetary surplus and a relatively active savings account. Although they do not manage to accumulate enough for substantial purchases, economic security against illness or loss of employment is assured. Seldom is the contemporary family forced to the brink of financial desperation. All of them can afford television sets, small household appliances, and occasional visits to local restaurants. In fact, the residents of this premise are very typical of the majority of Hong Kong's population residing in the government-sponsored housing[7].

Family Structure

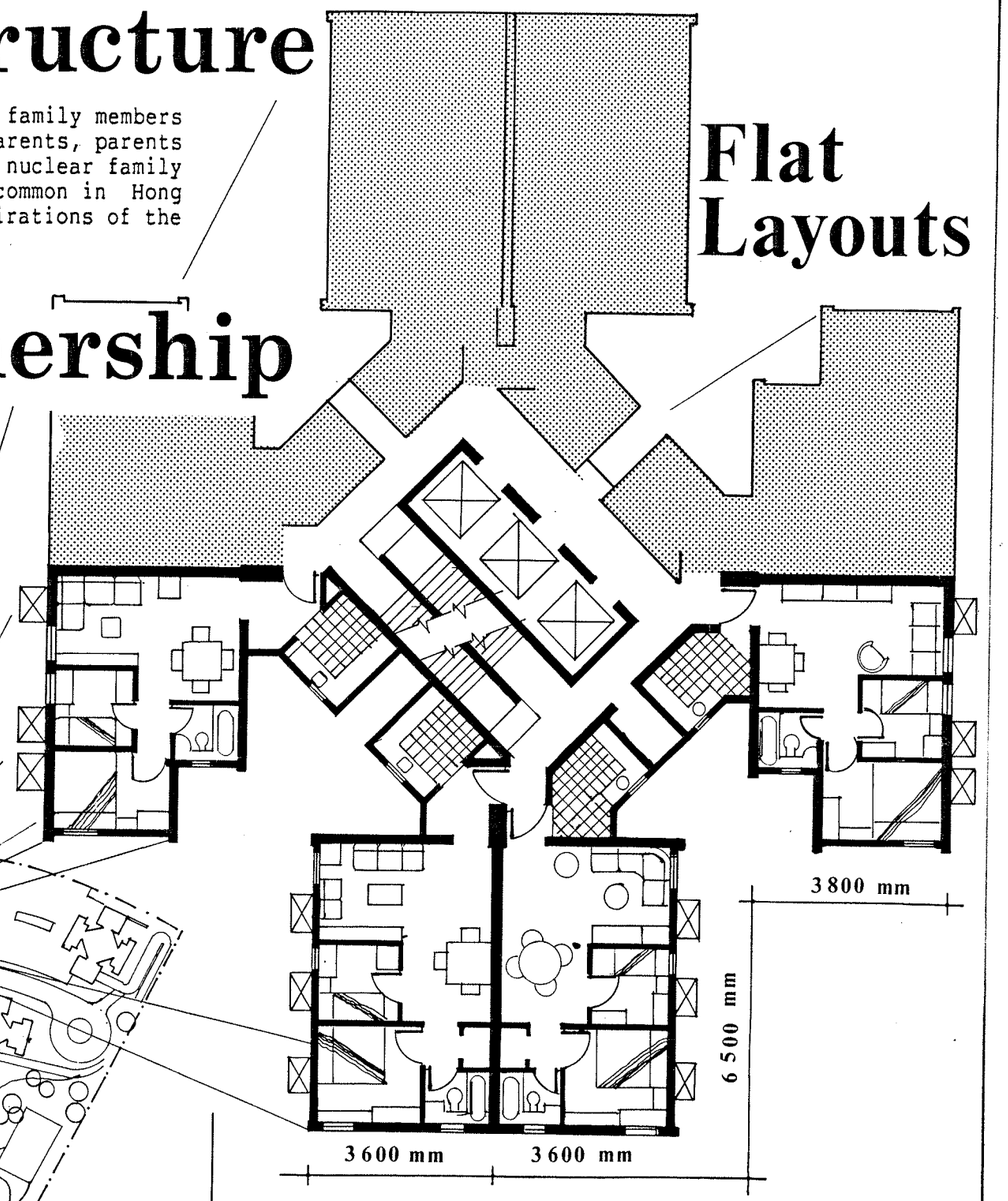
Most dwelling units consist of five family members spanning three generations: grandparents, parents and children. This kind of traditional nuclear family structure is typical and extremely common in Hong Kong. As a result, the needs and aspirations of the residents vary accordingly.

Home Ownership Scheme

All flats built under the scheme range in size from 37 to 60 sq. metres. Each unit has a living room, a dining room, two or three bedrooms, a kitchen and washroom. Finishes are comparable to good private developments which include security door-phone and closed-circuit TV surveillance.



Flat Layouts



TENANT'S PROFILE

Socio-cultural

In terms of environmental planning for housing development in Hong Kong, cultural context is a variable too important to ignore. The Chinese people (who represent 98% of the total population) have a rich cultural heritage which has spanned nearly two thousand years. The traditional values and ideals for a decent way of living are still highly regarded by the people.

In the formation of its early culture, China was cut off from western Asia by mountains, deserts, and jungle barriers, and so developed a unique cultural outlook. In terms of landscape design, the Chinese do not have endless terrain with which to play. Thus fantasy and imagination have to supply the aesthetic impact that size could not provide. "A great emotional change could be wrung from a garden that was only a few acres in physical space, but expansive in poetical space"[8]. Therefore, the Chinese tend to perceive space in small, confined and intimate fashions as opposed to the larger and more open spaces preferred in western culture. This kind of spatial perception is especially evident in Hong Kong where extreme density is found.

▫Density

Western planning philosophy often stresses the ill-effects of high density development on human behavior. Due to its unique circumstances, Hong Kong has no alternative but to resort to high density. Its fundamental problem is the inability to accommodate a large population in a very small land area. However, according to social researches (Millar, 1976; Mitchell, 1977), the people in Hong Kong appear to have a high degree of biopsychic and social well-being. The inevitable feeling of being crowded is said to be counteracted by many Chinese coping mechanisms[9]:

- the desirability of several generations sharing the same dwelling unit,
- the cultural habit of using space for multi-purposes, eg. sleeping, dining, reading, entertaining,
- the popular use of compact furniture in the households,
- the cultural acceptance of a relatively close spatial distance between individuals, etc.

Of course, this does not mean that the high densities do not have a differential impact on the people. The adverse effects may be relatively weak, but nonetheless, there are effects. Mitchell (1977) stated that easy escape from others by retreating outdoors could significantly reduce the strain. He suggested that town planners should endeavor to plan better exterior environments outside the living units so that people living in high density areas can relieve pressures from over-crowding inside their dwelling units.[10]

▫Community Image

Apart from the high differential in housing density, the living environment also contrasts remarkably between Hong Kong and the western society. Many westerners living in a typical bungalow have every opportunity to design and articulate their living environment, eg. front-yard, back-yard, etc. As a result, the degree of design sophistication in planning often reflects the status of its owner. However, the residents in Hong Kong cannot afford such opportunity when most of them are cramped inside a thirty-storey high concrete building with no private outdoor space. Since all the high-rises assume more or less the same form, the design of open space appears to be one of the few elements flexible enough for manipulation in order to differentiate between each housing project. According to the residential survey, a well-designed open space can become a successful representation of the neighborhood and, subsequently generate a sense of pride and belonging within the community.

▫Recreation

Beside its psychological benefits, open space planning also serves an important functional purpose -- to provide public amenity and recreation space for the residents. Given the high demands for dwellings that have prevailed in Hong Kong, it is natural and no doubt that there should be an emphasis on the necessity for open spaces: this recognized the value of sunlight, fresh air, free movement in promoting health, and the psychological needs for sight and smell of grass, bushes, flowers, trees and open sky. The open space is treated as a place of refuge whose main values derived from its contrast with the noisy, crowded, and dusty urban hive.

Due to the shortage of land, large scale parks are often located in rural areas and are out of reach to many people for their daily recreational needs. This inevitably makes the existence of a local open space more valuable than ever before. Moreover, neighborhood open space can contribute tremendously to a community's well-being when there are adequate opportunities for the residents to relax, retreat, and recreate.

The Chinese also display a strong affinity to many cultural superstitions and traditional beliefs like 'Feng Shui -- a Chinese geomancy meaning 'winds and water'. Feng shui is a term relatively foreign to western thinking, but it is a science consulted in the choice of any major building, garden, or even grave site. Any development should conform to good geomatic principles which will be discussed in detail later on.

In spite of that, Hong Kong is, yet, a contemporary society under the heavy influence of western culture. Since free trade between the colony and the western world began, the transfer of goods also brought the exchange of culture. When a resident of Hong Kong meets visitors, reads newspapers or studies out of foreign textbooks, it becomes inevitable for him/her to incorporate a new set of cultural traits into his/her life. This is especially true and evident in today's younger generation. Most of them have absorbed and adopted western culture and ideals which seem to exhibit a sharp contrast to their traditional counterparts. Therefore, this two-sided phenomenon should be seriously considered by designers during any planning process. ■

Data Collection

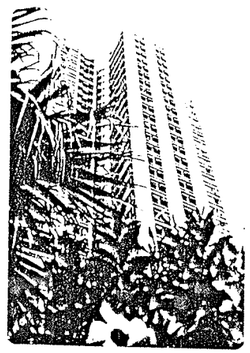
The relationship between people and the environments they inhabit is characterized by a complexity demonstrated by the tremendous diversity of physical forms found both around the world and throughout history. The forms of environments vary according to the available technology and resources and to various needs for shelter and climatic protection exacted by the local environmental context.[11] However, environments do not necessarily satisfy the needs of those who inhabit them. Rather than serving the users by facilitating their preferred life styles, environments often promote frustration, conflict, and dissatisfaction.

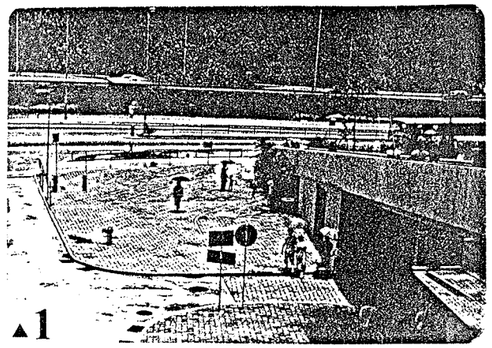
This recognition, that the physical form of the environment is itself an important factor in the quality of life enjoyed by the inhabitant, has, in the recent past, stimulated a great deal of research. Different useful concepts and techniques were developed to provide data in analyzing and evaluating existing environments. In order to assist in the evaluation of Yuen Tin Court, data collection techniques were selected in order to provide information on how residents felt about their environment and on how they actually used it. The techniques used for gathering data included:

- Interviews and informal conversation with the residents;
- Observation program;
- Photography.

The data collected has certain limitations which stem both from the nature of the process in general and from the amount of data received. For instance, many residents were reluctant to do interviews because of the conservative nature of Chinese people. As a result, casual conversation with the residents became an important source of information. (see appendix)

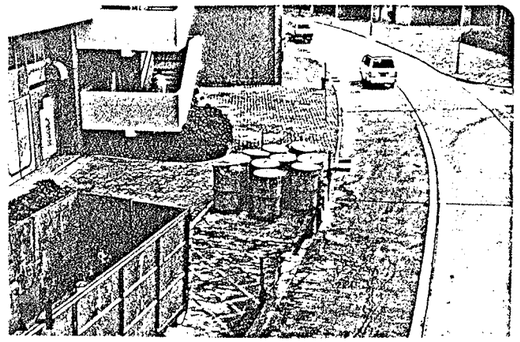
Site Plan



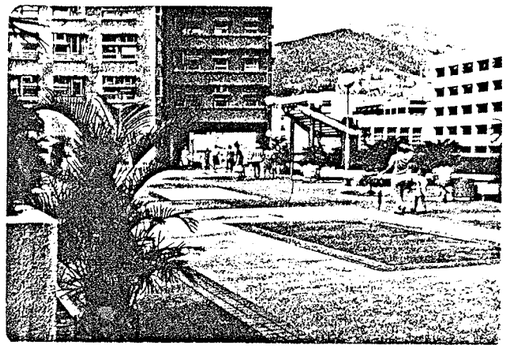


▲1

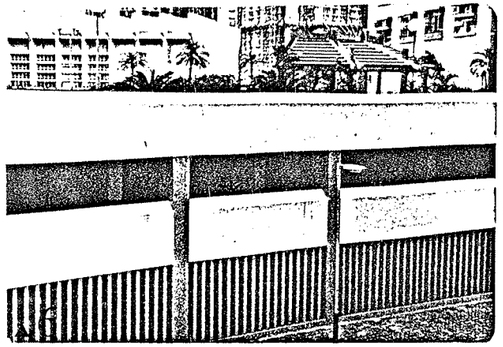
There is no clear distinction between the public and private domain at the entrance of the site. People can easily walk into the development and not aware of it.



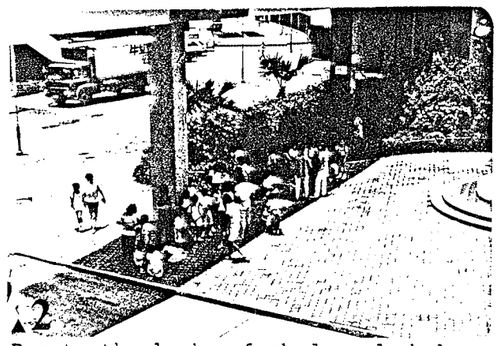
The garbage collection point is badly located near the entrance of the development. It is unscreened, easily accessible to to children and creates problems like odor to the immediate housing units.



The podium is usually used as circulation space within the development.



The two levels of parking space under the podium are mostly empty -- only 35% of the residents are car-owners.



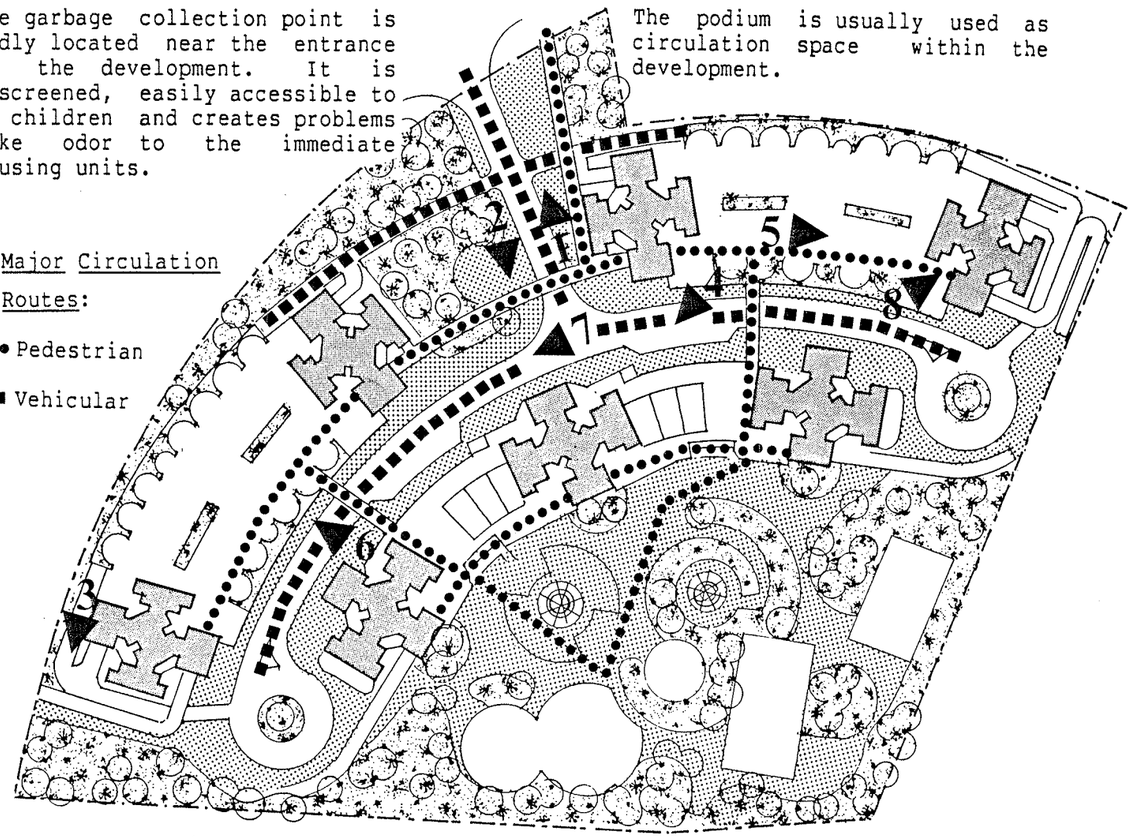
▲2

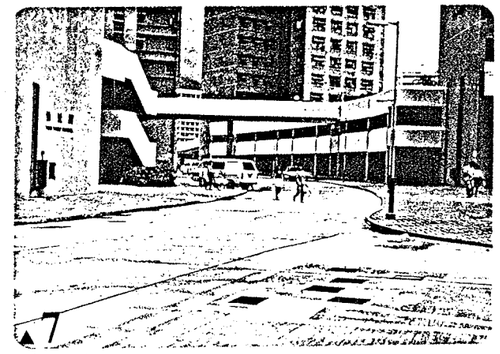
Due to the lack of shade and shelter from the burning sun, residents take refuge under the shade of the overhead ramp.

▶ Major Circulation Routes:

●●●● Pedestrian

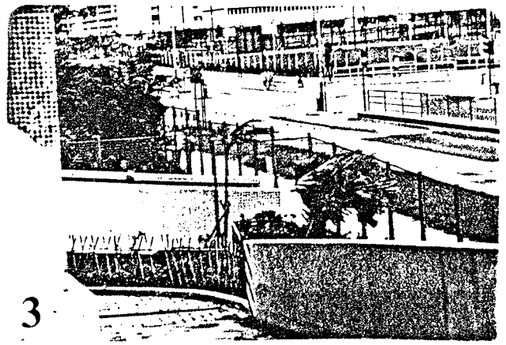
■■■ Vehicular





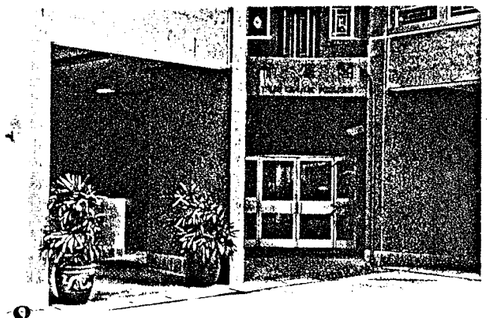
▲7

The barren streetscape along the vehicular roads in the site.



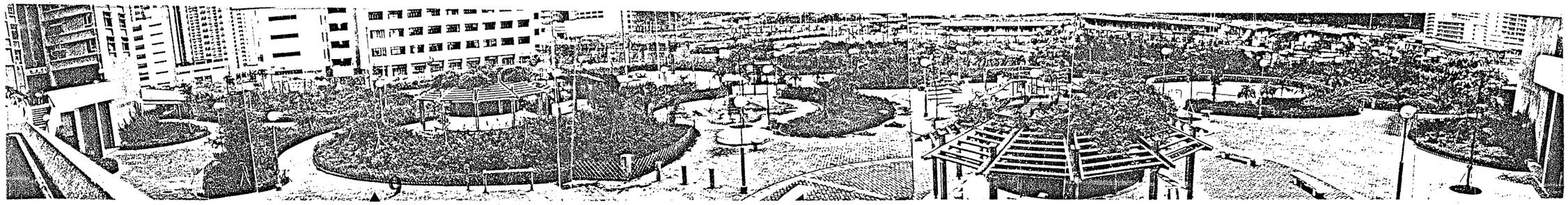
3

◀ Back entrance which allows easy access to the site by strangers or other undersirables is a major threat to neighborhood security.



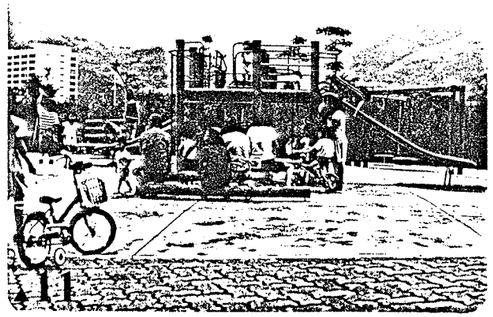
8

Entrance to the building block --▶ very secluded, protected, and uninviting.

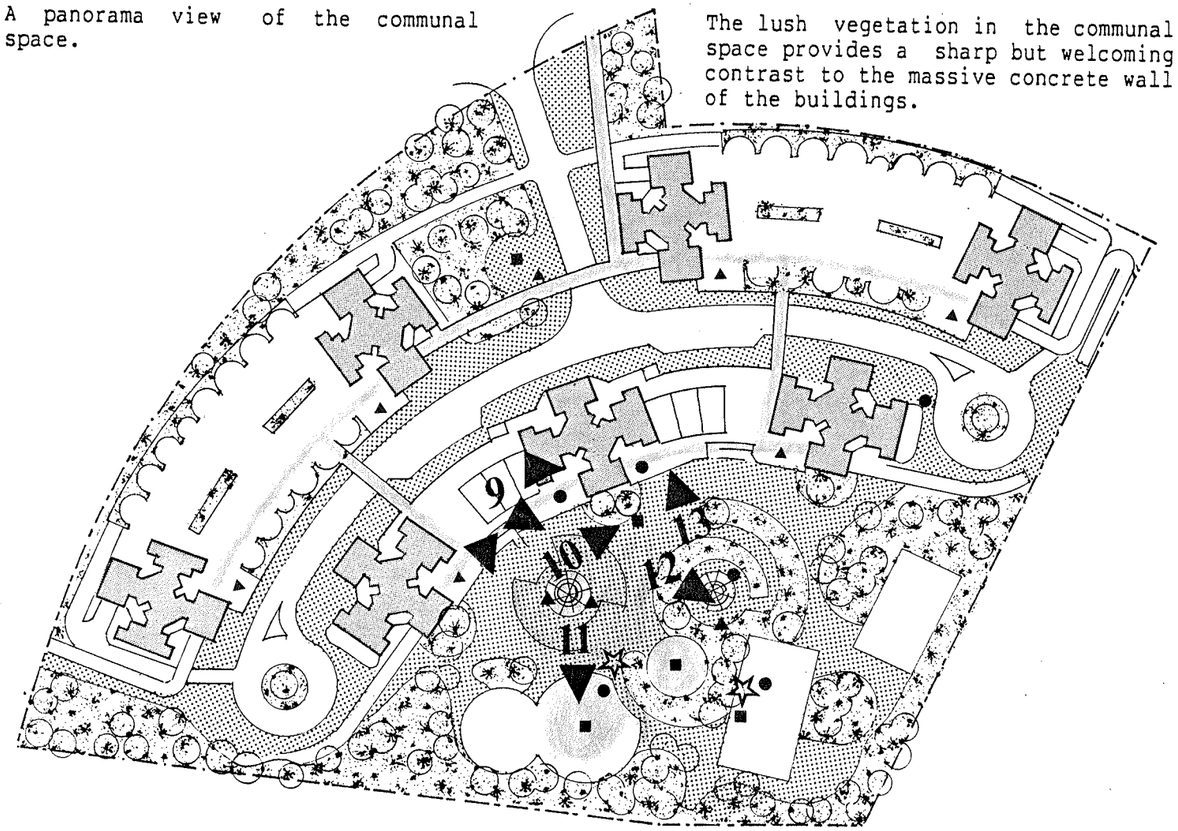


A panorama view of the communal space.

Children are curious and explorative. They have a great appetite for learning and investigating thing, but the design of the communal space does not encourage such activities.



Some of the benches are located so far away that the parents need to sit on the play structure in order to supervise their children.



Major Gathering Areas for:

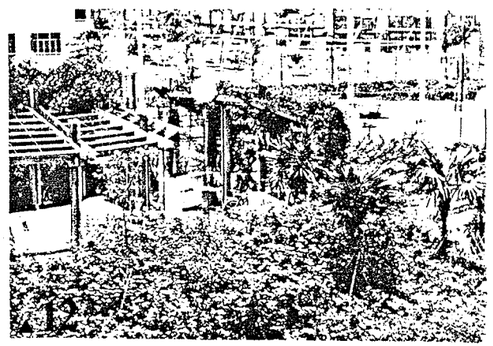
- ■ Children
- ▲ Adults/Elderly
- ● Teenagers

Resident's Use Intensity:

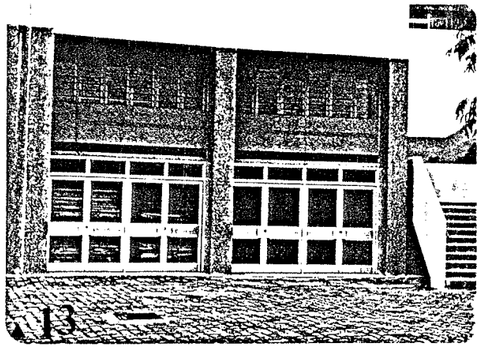
- Moderate
- High

Activities in ☆ Conflict

The lush vegetation in the communal space provides a sharp but welcoming contrast to the massive concrete wall of the buildings.



There are a few gems -- small, intimate and delightful spaces in the communal area which allow for quiet conversation, mediation or simply relaxation.



An indoor recreational hall is closed and has become a storage space. ■

The data collected from the research indicated that there were a number of positive and negative features at Yuen Tin Court. The following is a summary of the more important issues and concerns:

◦ Positive Features

1. Location -- Most people expressed satisfaction with the location of Yuen Tin Court. Convenient access to work, school, and play was provided, especially for those who did not own a vehicle. Also the natural setting surrounding the neighborhood gave Yuen Tin Court a suburban, village-like atmosphere which was quite unique and precious in Hong Kong.

2. Pedestrian/Vehicular Separation -- Relative safety for the residents was achieved through the separation of pedestrian and vehicular circulation routes. The design of pedestrian ramps allowed the residents, especially the children, to move around the site with a minimum number of hazardous road crossings.

3. Communal Space -- Most residents felt 'lucky' and privileged to have a spacious communal space where they can engage in different kind of activities. Most importantly, it gave the children a play environment outside their immediate dwellings which their parents could easily supervise.

4. Dwelling Units -- In general, residents indicated that they were satisfied with their dwelling units -- as compared to what they had before. About half of the people interviewed said that a balcony would be a welcome addition to their units because it gave each family a private outdoor space. However,the presence of a communal area was an important substitute.

• Negative Features

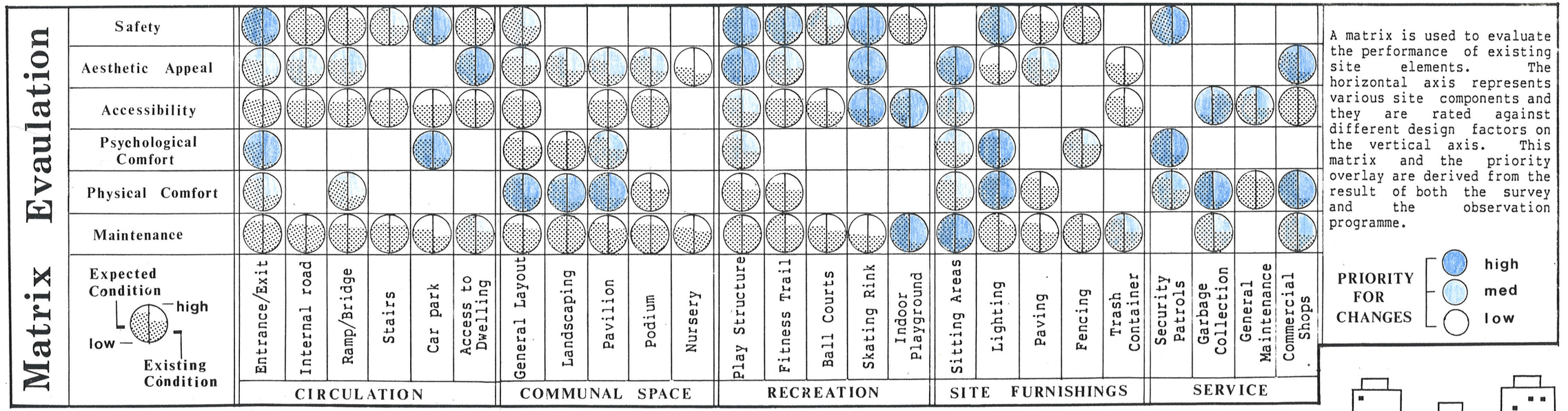
1. Climatic Controls -- Most residents said that there had been a lack of sensitivity towards the effect of weather and its impact on the use of the site, eg. shelter from intense solar radiation and heavy rainfall. As a result, the use of the neighborhood open space was limited to several hours per day.

2. Circulation -- The pedestrian walkway was said to be unprotected climatically, and ill-lit at night. No clear direction was given at the entrance of the development. This created difficulty for visitors and delivery people finding their way around.

3. Recreation -- In terms of quality and quantity, the existing recreational facilities do not correspond to the needs of those residents who use it. The small play structure was often crowded with children while the volley ball court and the skating rink were left virtually unused.

4. Security -- Easy access by the general public to and within the site had been a constant threat to the residents. Security was ranked as the most desirable attribute of a good neighborhood.

5. Parking -- Excessive space had been allocated for parking purpose (only 35% of the entire parking space was occupied). The management's decision to rent the empty parking stalls to people living outside the premises created an extremely uneasy feeling among the residents as related to internal site security. ■



A matrix is used to evaluate the performance of existing site elements. The horizontal axis represents various site components and they are rated against different design factors on the vertical axis. This matrix and the priority overlay are derived from the result of both the survey and the observation programme.

PRIORITY FOR CHANGES — high, med, low

ISSUES & CONCERNS

Introduction

To many people, planning of neighborhood space only involves the mere notion of allocating enough recreation grounds for the residents. Indeed, recreation planning is an indispensable component of the system, but open space design is more than the placement of a few basketball courts or interesting play structures. It also includes the design of a pleasant and functional environment for other needs: such as circulation and social interaction. It is, indeed, the design of the exterior space surrounding the residential blocks, which aims to provide a clean, livable and efficient environment for its inhabitants.

In order to do so, design guidelines are recommended. It presents some overriding planning standards and design principles which will guide both the preparation and the overall direction of neighborhood open space planning. However, it must be emphasized that this study is not intended to be seen as a manual on how to build a neighborhood space. Rather, it is hoped that insights into the critical components of open space can be acquired which will, in turn, direct the planning and design of specific projects.

The planning guidelines outlined in this practicum are derived from a process of information gathering based on a residential survey and some related studies. By means of formal interviews and casual conversations, many residents of Yuen Tin Court expressed their opinions regarding the design and use of the open space system. It is important for us as designers to find out how well the residential needs in a public housing project were fulfilled by the physical design of the environment. By capitalizing on the success and shortcomings, especially in terms of oversights and mistakes regarding residents' needs, one can build a more solid foundation towards neighborhood open space planning in the future. Some recommendations are drawn from the findings of numerous other works in this field, as well as on personal observations of other high density housing developments in Hong Kong.

These design guidelines are intended to offer perceptive guidance for the planning and design of open space in a residential setting. They should be considered and then translated into appropriate physical form according to the unique requirements of specific projects. The ultimate design solution should be an elegant compromise between the locational constraints and opportunities of individual sites. However, "one needs to realize that there are no absolute ideal solutions. Most design represents a whole series of compromise between potentially irreconcilable demands. The skill of the designer lies in attaining a solution involving the least sacrifice of any particular kind."[12]

In order to facilitate actual use of the guidelines in a design solution, they are organized under five headings:

- Feng Shui,
- Climatic Controls
- Circulation
- Recreation
- Site Design.

These five areas are considered by both the residents and designers as critical to the design of neighborhood open space in Hong Kong. This is, by no means, a complete list of design guidelines and other factors such as visual resource and vegetation should be looked at as well.

General Guidelines

1. Neighborhood Concept

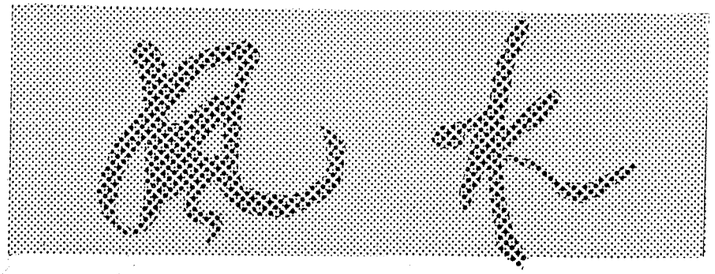
In order to develop a functional neighborhood unit, the principles of the six components namely the size, boundary, circulation, open space, institutional sites, and services should be closely observed and included. (Refer to "components" on pg. 2) The designer should acknowledge the relative importance of these components and an extensive understanding of each component should be gained by carrying out a site inventory and analysis. For example, communal open space will be used when it is attractively landscaped, provided with benches, play equipment and other social foci; and where there is easy access to other public facilities such as parking, garbage sheds, manager's office, etc. from the dwelling units. The final design should be a system coordinating each individual element in order to form an efficient and pleasant environment for its inhabitant.

2. Government Policy

In preparation for the design of neighborhood open space, the designer should consult the "Hong Kong Planning Standard & Guidelines" provided by the Lands Department Policy Committee of the Government. In general these standards help to ensure that an adequate quantity of open space is allocated for each development. However, successful planning must be further supplemented by a careful investigation and sensitive understanding of the social and physical requirements of the site.

3. Aesthetic

The creation of an attractive and visually pleasing environment is important in order to give the development a physical identity and uniqueness to the residents. To the Chinese, aesthetics are very much a subjective notion under strong influence of their culture. Therefore, designers should familiarize themselves with the spatial perception of the Chinese people as well as some other cultural variables like "feng shui" in site design and spatial articulation. ■



The Chinese often trace success or failure not so much to human actions, but to the workings of mysterious earth forces, known as "Feng Shui", literally meaning "winds and water."

As a single term, feng shui stands for the power of the natural environment -- the winds and the airs of the mountains and hills, the streams and the rain; and much more than that; the composite influence of the natural process. Behind it is a whole cosmology of metaphysical concepts and symbols, a "rosetta stone linking man and his environment, ancient ways and modern life. It interprets the language articulated by natural forms and phenomena, by man-made buildings and symbols, and by the continual workings of the universe, including moon phases and star alignments. Feng shui is the key to understanding the silent dialogue between man and nature."[13]

By planning oneself well in the environment, feng shui will bring good fortune. Therefore great store is set by the proper placing of landscape features around the site.

Man & Nature

The Chinese saw a magical link between man and the landscape: nature reacts to any change and that reaction resounds in man. They saw the world and themselves as part of a sacred metabolic system. Everything pulsed with life. Everything depended on everything else. The Chinese felt they shared a fate with the earth: when it was healthy and prospered, they thrived; when the balance was destroyed, they suffered. So it is important in feng shui terms to enhance the environment rather than to harm or deplete it, thus hurting the chances for good luck and happiness.

The roots of feng shui grew out of a primitive agrarian way of life when the fate of man was inextricably bound up with the whims and cycles of heaven and earth; with weather, fertility of the earth, floods, and accessibility of water, and the amount of sunlight. Man was vulnerable to nature, so he kept watch on it.

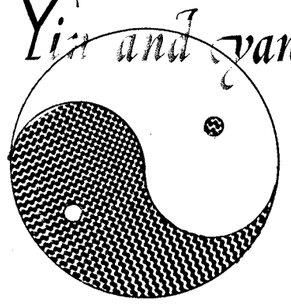
The ancient Chinese found that a south-facing house sited halfway up a hill with a river close by received optimal sun, was protected from harsh winds, avoided floods, and still had access to water for crops. In such surroundings, it was easiest to survive: rice, vegetables, and fruit-bearing trees grew under an unhintered sun, cattle grazed on lush grass, and a house stayed relatively warm in the winter. The environment proved comfortable and harmonious, and helped inhabitants to survive and to grow successful and even wealthy.

When that kind of ideal space was unattainable, the search for antidotes led to the study of feng shui. Soon thereafter, the pursuit and fabrication of a viable physical setting became a basic environmental science, with its goal the control of man's immediate surroundings.

Feng shui supports the modern idea of ecology and conservation. Its message is: Harmonize with, do not disrupt, nature. Tampering with nature might disrupt its equilibrium. Changes must be planned and executed carefully. Indiscriminate altering of nature can set off a series of events leading to unpredictable results.

There are two very important principles which govern this belief and ultimately become the essence of feng shui:

□ Yin and yang



Yin and yang are the two primordial forces that govern the universe and symbolize harmony. They are opposites: yin is dark, yang is light; yin is passive, yang is active; yin is female, yang is male. But unlike western ideas of conflicting extremes, yin and yang are complementary. They depend on each other. Without dark, there is no light; without life, there is no death. Like a magnet's positive and negative poles, yin and yang unite. In feng shui, all things contain certain degree of yin and yang. Yin and yang continually interact, creating cyclical change. Therefore the yin and yang of a site must be balanced, bringing residents into harmony with their environment.

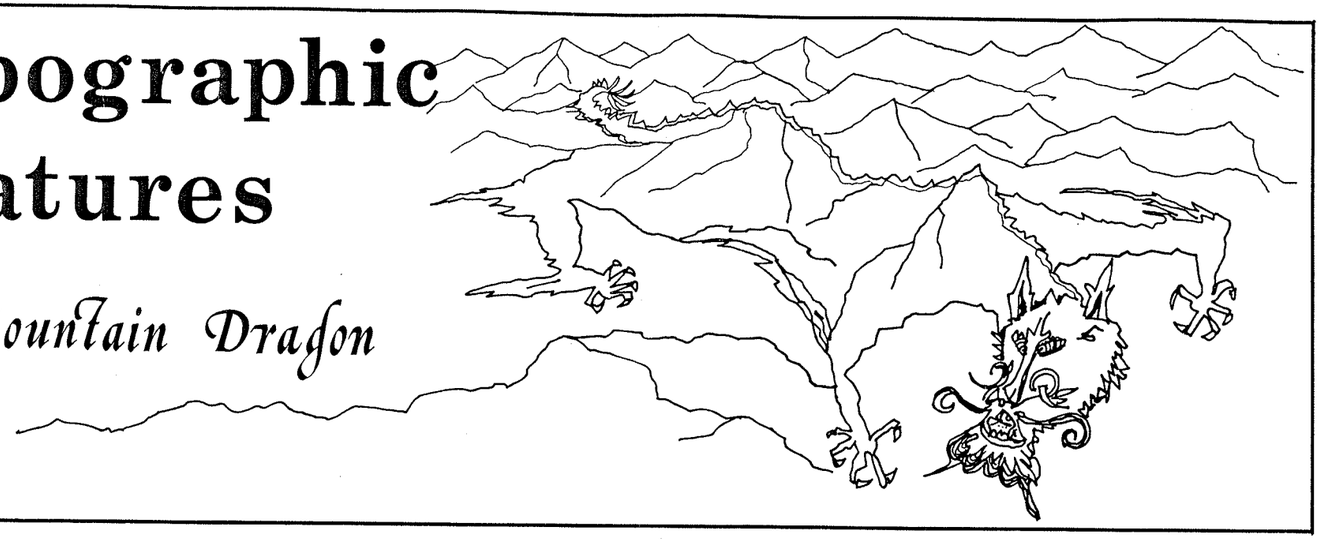
□ Ch'i

Ch'i" is the most important element in feng shui. It is the vital force that breathes life into animals and vegetation, inflates the earth to form mountains, and carries water through the earth's ducts. "Ch'i is a life essence, a motivating force. It animates all things. Ch'i determines the height of a mountain, the quality of blooms, the extent of potential fulfillment. All things -- hills, streams, trees, humans -- inhale it, thus affecting each other."[14]

According to feng shui masters, buildings, trees, and sun all affect the quality and the flowing out ch'i. Feng shui's goal is to tap the earth's ch'i. The feng shui adept must find a place where the ch'i flows smoothly and the principles of yin and yang are balanced. If this is not possible, feng shui offers methods of bringing the environment into harmony. In divining the potential of a landscape, feng shui experts discern if ch'i is expanding or receding and make suggestions accordingly.

In Chinese, the character "ch'i" has two meanings: one cosmic, one human. Heaven's ch'i encompasses air, steam, gas, weather, and force. Man's ch'i includes breath, aura, manner, and energy. The two types of ch'i are far from separate. Man's ch'i is strongly influenced by the ch'i of both heaven and earth.

Topographic Features



◦ Hills

Hills have figured prominently in the development of towns everywhere in the world. For the Chinese, they have traditionally been welcome barriers: defenses against Mongol barbarians, and cold northern winds. The shape of a hill, which is the product of the powers of wind and water, is crucial in feng shui. Seen as earthly outcropings formed by good ch'i, hills present rich, useful imagery such as dragons, and tigers normally associated with rural areas. The worst possible location for a development is featureless ground.

Looking at hills from the side, the Chinese see three basic shapes:[15]

- Round: the gracefulness of a rounded hill and gentle slope valley is naturally the most preferable, offering a continuous rolling quality in its contours;
- Square: square buttes with a structure on top, will protect the house from floods, but expose it to cutting and harsh winds;
- Triangular: triangular land is inhabitable only if terraced, or if the structure is sited at just the right place.

In feng shui terms, of course, development often unbalances nature. Roads cut through mountain veins or high knife-like buildings plunge into the earth's flesh. In these cases, the keen eye of a feng shui expert has proved indispensable. But according to tradition, a Chinese house should be built in a commanding but well-sheltered: midway up a hill facing south to the sea is the classic.

◦ Water

In town siting, the topography of water which symbolizes money, is crucial. A structure at the head of a round bay is best because the water is round and money is balanced and flowing in; house at the end of a point may have trouble, with nothing to hold the water (money) in.

Ponds, lakes, or rivers in front of a house are generally good, bestowing ch'i on residents. But these waters should be 'alive', clean, pure and moving, as opposed to dirty stagnant and 'dead'. A garden pond must be close enough for a house to benefit from the water's ch'i, but not so close as to be destructive or dangerous.

Size is also important, and should the pond be larger than the house, its ch'i may overwhelm the residents.

◦ Plants

Plants, according to feng shui experts, provide keys to the nature of an area's ch'i. "Some have light shades, others are vibrant green, like newly sprouted grass. One can trace a line connecting all bright green plants. Such lush stripes are often termed 'dragon veins'"[16]

Buildings sited at points along them enjoy first-rate ch'i, tapping the landscape's most positive energy. Trees can be both good and bad in town feng shui. For a house on the roadside, they hedge against pollution, noise, and bad ch'i from passing traffic. Especially when planted to the west, they will block the worst heat of the summer sun. But too close to an entrance way, trees can break up the flow of incoming ch'i and inhibit that of residents passing by.

◦ Roadway

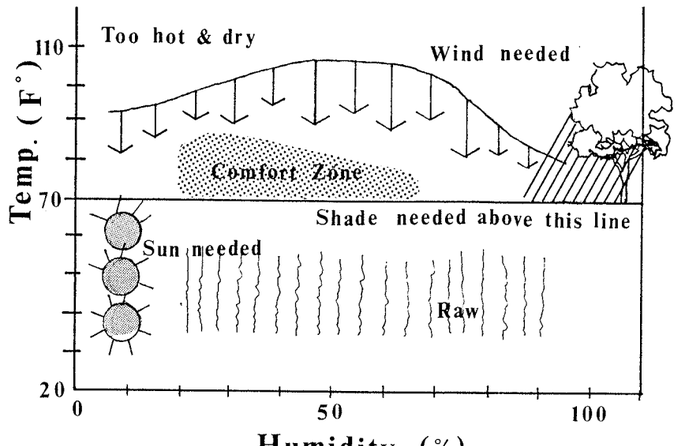
The feng shui access to a site should be cordial, not direct. The ideal is a pleasantly meandering approach, or at least a house off to the side of the road. By far, the worst is the terminus of an arrow straight dead end, the fast-flowing conduct of notorious "killing ch'i". Residents of houses skewered by straight road ch'i may become sudden victims to strange accidents and unexpected illness.

◦ Remedy

Mirrors are the 'aspirin' of feng shui. Its brilliance "represented the light of the sun and the moon combined: communicated the intention of the powers of earth beneath and the spirits in heaven above."[17] Whether the problem is weak ch'i, or too much bad ch'i, a threatening high-rise, etc. The cure is often no more than the use of any shining glass or a reflective pool.

Another remedy to correct bad feng shui is either increase or modify the flow of ch'i. These can churn and activate weak or stagnant ch'i, circulating it through a house with a bright light, or a bubbling fountain. ■

The Comfort Zone



Man's physical strength and mental activity function best within a given range of climatic conditions, and we call this condition the "comfort zone".

The comfort zone is the range of temperature variation, humidity level, wind velocity, and amount of radiation within which human beings can live and work with minimal expenditure of energy and maximum comfort. The breadth of the comfort zone varies with culture, age, and up-bringing. A person accustomed to the sub-tropics, eg. Hong Kong, will be comfortable in a zone with a maximum temperature several degrees warmer than the maximum effective temperature comfortably tolerated by a person from a cool climatic zone like Winnipeg.

Since neighborhood open space is largely an exposed area vulnerable to any climatic influence, the provision of a 'comfort zone' through the modification of harsh climatic condition should be one of the primary concerns for environmental designers.

Goals

In designing for climate, the designer's main goal is to create a 'comfort zone' that allows maximum use of the site, space, and structure.

- Providing Shelter -- Providing shelter is the primary means of creating a comfort zone on the site. The word 'shelter' suggests that designers should take all steps necessary to ensure that people keep cool or warm, dry, protected from burning sun and debilitating winds.

- Extending Livability -- A second goal is to extend the livability of the site and space, so that the site's effective use is longer than what would otherwise be, owing to climatic constraints. Again, introducing shelter is the major means of accomplishing this goal.

- Economizing -- Sensitivity to climatic conditions and knowledge of the controls that can be designed for those conditions will enable the design to reduce mechanical and monetary expenditures needed to keep the space cool in summer and warm in winter, while making the site as safe as possible throughout the year.

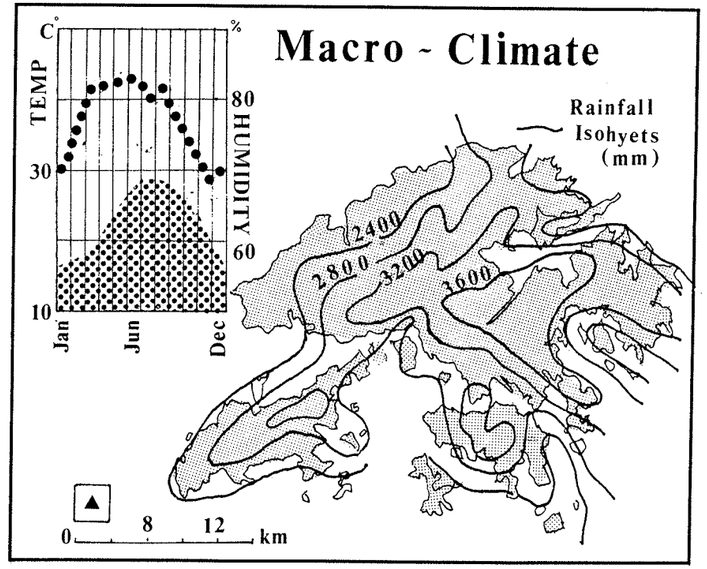
Hong Kong's Macro-climate

Hong Kong's sub-tropical climate is characterized by two distinct seasons: the very hot wet season from from April to August, and cooler dry season from September to March. The climate favors outdoor living and recreation for much of the year. However, adverse macro climatic conditions like intense solar radiation , heavy rainfall, and typhoons are important design concerns.

Micro-climate

Micro climate is determined geographically by a site's latitude, proximity to major bodies of water, and relationship to dominant land features such as mountains. In simple geographical terms, the new town of Sha Tin occupies a valley that is oriented along a NE-SW axis and is roughly four miles long and less than a mile wide at its mid point. The valley is flanked on its NE and SW sides by mountain ranges having ridges and peaks of well-defined configuration.

The NE/SW orientation of Sha Tin Valley acts as a funnel for the cold NE and torrid SW monsoon winds. To counter the NE monsoon, it will be necessary to give careful thought to the disposition of buildings and inter-connections to minimize wind tunnel effects particularly at ground level in areas where major pedestrian activities are planned. At the same time, there may be a conflicting requirement to so dispose buildings to facilitate air circulation during the hot summer months.



◦Solar Protection

Over 80% of the residents expressed their concerns regarding protection from the sun. A large amount of hard paving and walls of high rise buildings which trap and reflect heat and glare also contribute to an uncomfortable condition.

The major controls of solar radiation occurs through introducing shades and at the same time reducing reflective surface area. Shading can be accomplished through the use of:

▪ Natural elements like vegetative cover which ameliorates climatic problems in many ways:[18]

- it provides sun-screen, shade, and shadow;
- it retains the cooling moisture of precipitation;
- it cools and refreshes heated air by evaportranspiraton;
- it checks the winds.

▪ Mechanical or constructed devises such as canopies, lattices, and awnings. Covered walkways are required around the site to link residential buildings with shopping, parking, and other community facilities.

▪ Surface materials such as grass and other groundcovers which can keep the ground temperature from rising and eliminate much of the heat and light reflected into the structures or adjacent space.

▪ Intensive solar radiation can be soothed through maximization, channeling and funneling of the summer breeze.

◦Wind Controls

The orientation of structures and sites in relation to prevailing winds can have an important impact on heating and cooling.

▪ The primary control a designer has over the wind is the use of a windbreak, especially during the chilly winter months in Hong Kong. Windbreak can be composed of plants, structured materials, or both. The optimal design for a windbreak is perpendicular to the wind with a composition that permits 50% wind penetration.[19]

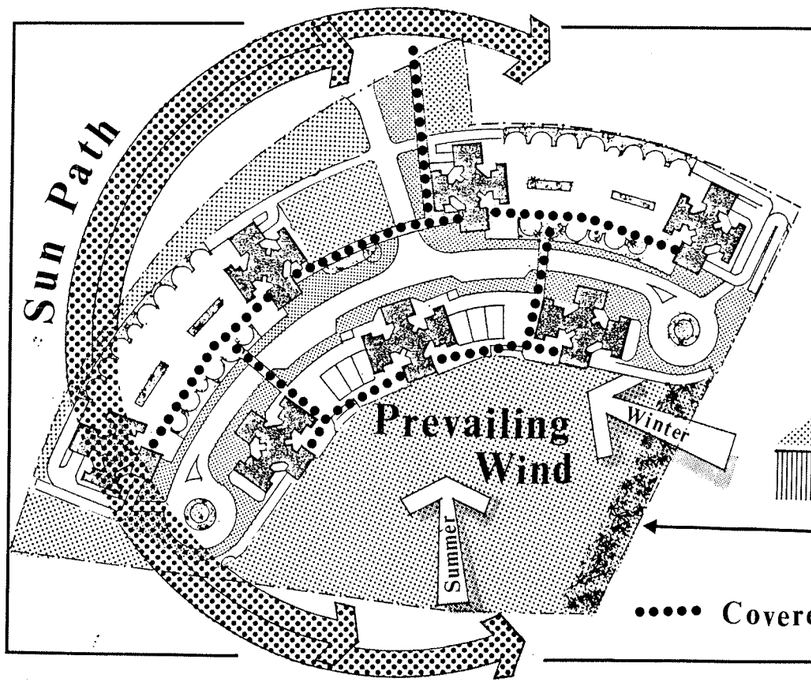
▪ High windspeeds are also a problem around the base of tower blocks. Turbulent wake created by downdraught of high velocity winds create frequent discomfort for the residents. It is recommended to surround the slab with a projecting canopy at about two storeys high with a gap above the podium level to 'bleed off' the downdraught.[20]

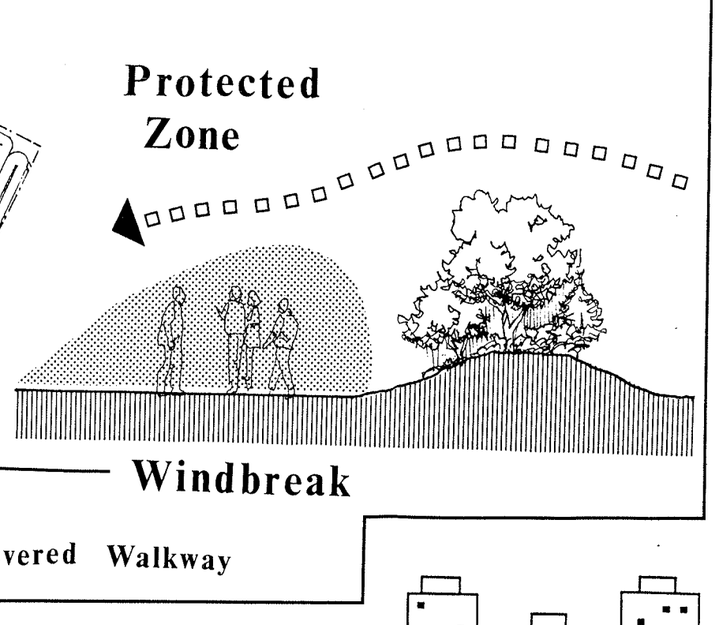
◦Temperature Controls

Control of temperature at the mirco-climate level requires attention to all climatic factors. The influence of wind in providing cooling through evaporation and convection is an effective means of control. The cooling effects of plant mterials, too, can be important in creating a comfortable microclimate. Not only does the canopy lower the temperature beneath it, but the absorption of sunlight by dark green leaves may result in as much as 14° in temperature difference.[21]

◦Water

The presence of water in any form, from film to waterfall, has a cooling effect both physically and psychologically. Especially in a hot area like Hong Kong, it connotes and promotes refreshment and stimulates verdant growth. Its sound, motion, and cooling effects give a welcoming relief to its beholders. ■





Introduction

In the earlier discussion of the Chinese perception of exterior space, circulation was described as a way people can fully experienced the site in three dimensions -- the constantly changing panorama of views and vistas of a site experienced through movement.

In practical terms, good circulation design is required to channel people and vehicles from place to place in an orderly fashion. Given the high population densities in public housing developments like the Yuen Tin Court, an efficient and well-coordinated circulation system is an important component in neighborhood planning.

There are basically two types of circulation systems that have distinct influences on the site: the pedestrian system and the vehicular system.

Pedestrian Circulation

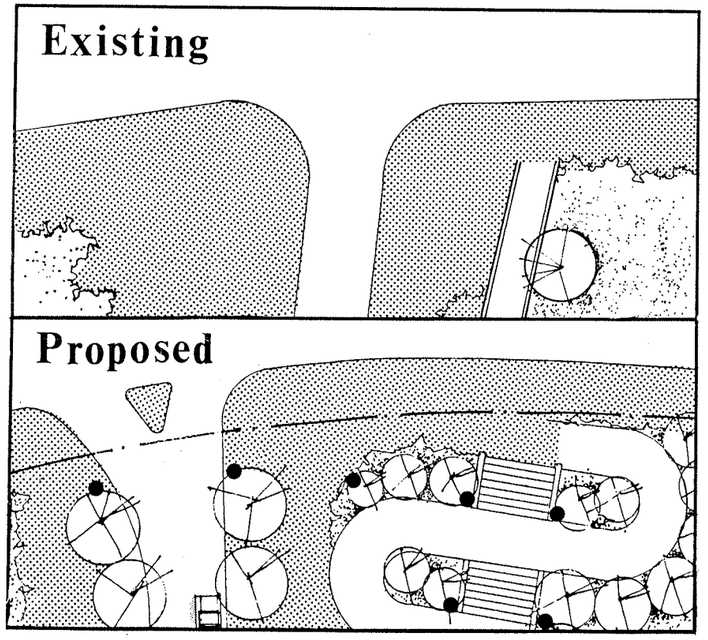
The pedestrian system is characterized by looseness and flexibility of movement, slow speeds, and appropriate haman scale. Of all circulation systems, it offers the most design freedom because it benefits from human ability to climb steep grades, turn sharp corners and change direction or stop abruptly. However, this flexibility can also create problems. The designer must channel the flow to desirable locations. Too much rigidity in the design of the system will be met with resistance. Too little control will lead to much of the site being trampled and abused by the pedestrians in search of shorter routes to their destinations.

◦Hierarchy

An hierarchy of use intensities should be developed on the site. Major circulation routes should be widened at heavy traffic locations, such as entrances, main arteries and exits, and narrowed at places of light traffic.

◦Entrance

The point of entrance is an opportunity to identify the development and to clarify movement for visitors. Therefore public entrances should be made clear and visible from afar. This transition space which proceeds from pubic domain to private property should be well indicated so that a sense of privacy and territory is evident. Very often, a gateway representing a door gives that feeling of territory.



◦Layout

The layout of the pedestrian circulation path should:

- accommodate predictable traffic patterns. The most important facilities to which the family needs access, eg. the dwelling unit, garbage disposal, car parking, recreation areas, commercial facilities, etc.;
- give shelter from cold winter winds, summer sun and torrential rain for the principal pedestrian walkways;
- planned in such a way to enhance the use of facilities that depend on ample customer patronage;
- explore the opportunities for changes of level needed to create visual interest and provide an answer to the need to segregate incompatible uses;
- use ramps instead of stairs wherever possible to accommodate physically disabled tenants, or for residents who frequently use shopping carts or baby carriages;
- lead people to some designed focal points which may vary considerably in scale and function ranging from a school bus waiting area to a quiet corner with a shady tree. The aim is to create a sense of pleasure and delight.

Vehicular Circulation

The vehicular system has more complex design requirements than other circulation systems. This system is characterized by variations in speed and vehicular size. It requires surfaced routes of different dimensions to provide adequate negotiating space in transit and enough storage space upon arrival. Because this system's required size, technical requirements, and cost, its design frequently determines the layout of other site elements.[22] This is particularly true of residential sites like Yuen Tin Court which can only afford limited opportunities for connecting the on site system with off-site feeders.

◦ Efficiency

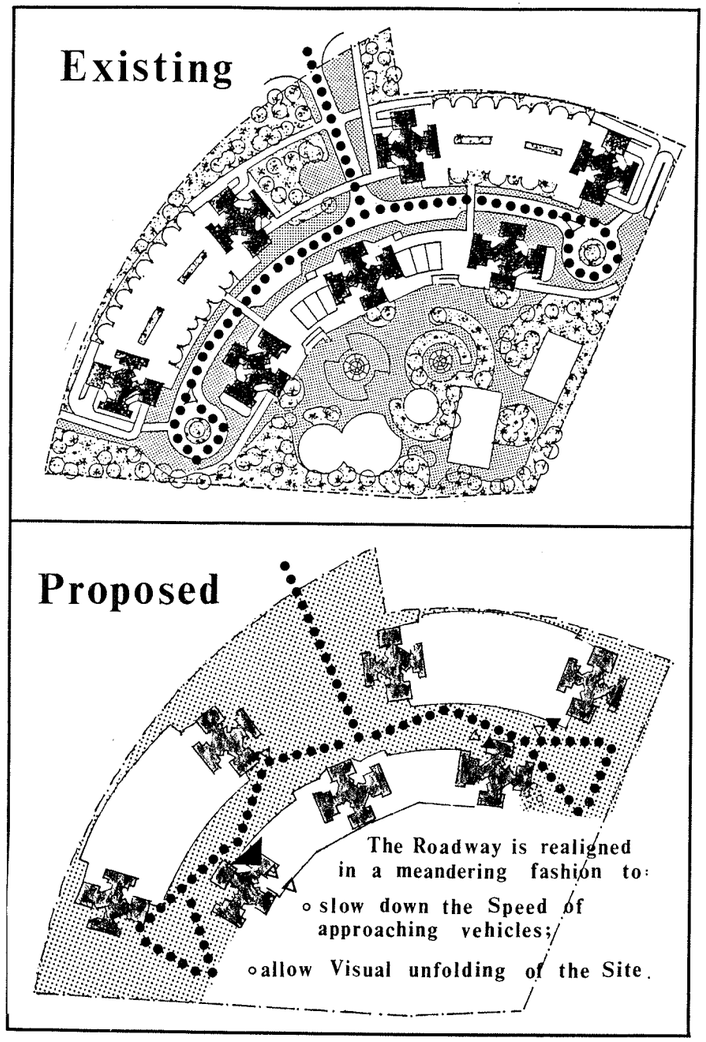
The design of a vehicular road inside a residential premise should be functional and efficient. Street layouts like a ring road or a cul-de-sac design are optimal choices for residential environments. It should be kept short for economy of construction and ease of maintenance.

◦ Access

The control of vehicular access points is important to maintain a safe and efficient living environment. The driveway entrance should be set at a point which will assure a safe sighting distance up and down the passing street or roadway. The more intersections there are and the closer together they are located, the greater the potential for accidents. Since the internal vehicular routes are located within private domain, public use of such systems should be discouraged.

◦ Speed

A tight control over the driving speed should be clearly expressed and understood to suit the local traffic. Details such as paving materials, signage, etc. can be used to reduce speed.



◦ Transition

Develop a pleasant transition by designing an attractive space and theme modulation from driveway through to the building entrances, to the parking court, and the return drive. The road width may vary, swelling at the drive entry, at the curves, and the fore court and always suggesting traffic flow.[23]

◦ Legibility

A clear definition between major vehicular and pedestrian circulation route should be made evident, especially for the children living on site. Wherever there is an intersection between the two systems, clear demarcation as to the right of way should be laid out to signify such conflicts.

◦ Emergency Access

Fire trucks, ambulances, police cars, and utility service vans require emergency access to the buildings. The site plan must ensure that these vehicles can get where they need to go. If direct road access cannot be provided, walks and other paved areas may be utilized provided they are designed with this purpose in mind. ■

Introduction

Play and leisure time activities are essential elements of our daily lives. They help to promote physical fitness and mental development and provide a controlled release of tensions and frustrations. Studies (Friedburg, 1970; cohen, 1977) have shown that children deprived of play opportunities during their first four or five years seldom obtain full mental development. Since children always have an incessant desire to fantasize, explore and create, the provision of recreation opportunities is indeed an major component in the design of neighborhood open space.

In order to correct the scarcity of open space within the urban scene in Hong Kong, Sha Tin New Town has been specifically designed to provide far more recreational opportunities. This involves the provision of local open space within each housing development. The aim of such endeavor is to satisfy the daily recreational requirements within a specific neighborhood unit like the Yuen Tin Court.

Children

By far the dominant users of neighborhood open spaces for recreation are children. Since most of them are living in a small and crowded unit with their parents and siblings, they have no choice but to come down from the multi-storey blocks to play in the open space. Therefore, in terms of recreational planning, more efforts should be directed towards children rather than adults.

•General Guidelines

Children tend to play anywhere and everywhere, not just in designated play areas. The whole site should be designed with the children in mind. design factors like safety and visibility must be considered. But since adults need some degree of predictability as to what will happen where, there needs to be some place-structured activities.[24]

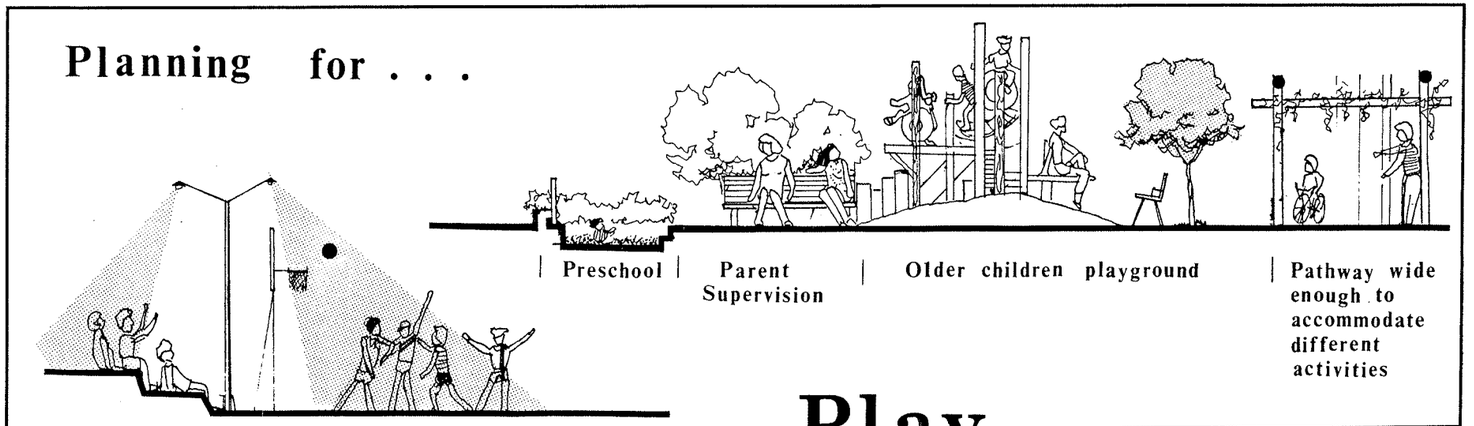
The most frequent outdoor play activity of children is moving around the neighborhood. Children like to be constantly on the move, by walking, running, cycling, etc. and they are often careless about traffic and other pedestrians. The pathway system should be free from traffic and wide enough for children on bicycles as well as walking adults. If not so, riding bikes should be forbidden for safety purposes.[25]

Children prefer to play and move around in an environment that is varied and full of surprises. Children need choice and variety to keep their interest, since they rarely are engaged for long in any one activity. They like to engage in fantasy and need places to hide and explore. The site plan should reflect this by being irregular, with a variety of spaces, surfaces, and levels.

◦Preschool Age («5)

Children under six like to climb, slide and use self-propelled vehicles to develop muscle co-ordination and perceptual control. Preschoolers have a great appetite for learning. They need a variety of sensory experiences to sharpen their senses and stimulate their thinking processes. Through trial and error, children learn about objects, their properties and simple relationships. However, they should still play within the sight and/or calling distance of their parents or other adults known to them.[26]

- Play location should be sheltered and sunny. Planting or fencing around the space may give a sense of enclosure and security without blocking out the view for adult supervision.
- Scaled-down play equipment in a variety of colors should be provided to stimulate interest and imagination. Safe landing surfaces allow for intentional or accidental falling.[27]
- Flat paved surface areas are important for tricycling or small wheeled toys and balls. Sand or other granular materials are required for safety and manipulative play.
- Comfortable benches should be provided with a view for supervision of the play area by adults. Some benches should be located close to play facilities for parents of very small children, and some further away for the supervision of older children.



◦School Age (6 - 10)

Children between six and ten are the most frequent users of public areas and it is this group in particular who tend to use the whole site for their play activities. Specific structured play areas for them should also be provided. School age children are busy doing things intellectually and physically. With improved co-ordination, they learn new skills and play games. They are equally active socially and peer groups play an increasingly important role.[28]

▪ play spaces for pre-schoolers and school age years should be separate for safety reasons, but not necessarily completely segregated.

▪ Children generally spend very little time in any one activity, and so the greater the variety provided for in a play area, the longer it will hold their attention.

▪ Play equipment should be selected with two important criteria in mind: children's preferences and durability.[29]

▪ Play structures should be designed to include a number of features popular with the children: different ways to climb up and come down, a variety of levels and sizes of spaces, etc.

▪ Facilities should be provided for soccer and basketball for six year olds. Depending on the size of the development, several half-courts for play may be preferable to one full court. The courts should be located so as to minimize problems of noise.

Teenagers

In terms of local recreational use, teenagers are a comparatively insignificant group. Given more freedom and greater mobility, they can venture far from their immediate dwellings for other recreational pursuits -- like the swimming pool or a gym.

▪ Teenagers like informal gathering places where they can socialize, show off, see and be seen by their peers. Adults are sometimes threatened or embarrassed by such activity. Good locations for teenager hangouts are at street corners, at major pathway intersections, near parking lots, or overlooking a basketball area. These areas should be furnished with benches suitably arranged for group conversations. If thoughtful provision for these areas is not made, the designer can be sure that teenagers will gather where it is possible to sit, or may take over an area intended for others, eg. tot lots.

▪ Teenage boys need a place for ball games. They play faster and more boisterously than younger boys and courts for soccer and basketball should be provided for this group. If possible, two separate courts for different ages should be available. There should also be benches for friends and on-lookers and it should be well-lit for night time use.

Adults and Elderly

When compared to the younger age groups, the adults tend to use the open space for passive recreation pursuits. Except for a few active ones, most of the adults use the space to supervise their children. Some use it for strolling and jogging. But seldom do they engage in any active recreational activities.

Besides the children, the elderly is the second largest group to use the open space. Most of them no longer have their jobs to keep them occupied and they are lonely. An open space, if properly designed, can provide an important social environment that satisfies enough needs of the elderly for a regular senior constituency with their peers.

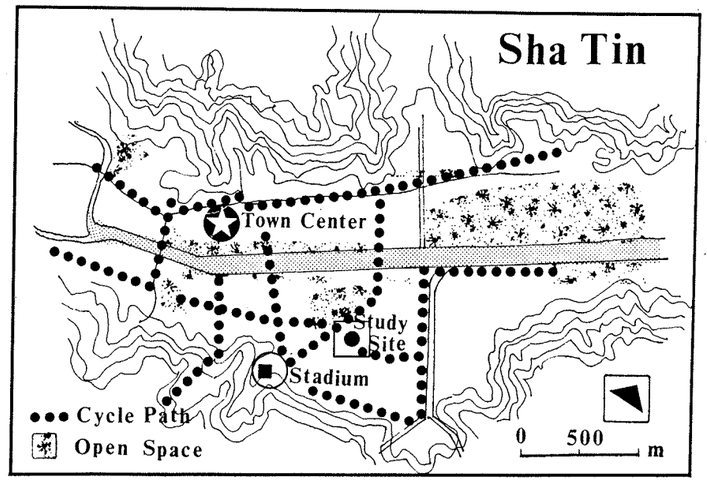
▪ Both the adults and the elderly enjoy being with their own peers either for socializing, gossiping or just a game of chess. Well-shaded, comfortable area should be provided for such activities.

▪ Both age groups enjoy a morning or/and evening stroll in a well-landscaped garden or any large district open space. A safe and, best of all, traffic free link to a district park will be most appropriate.

Network Of Play

Informal neighborhood contact with others is a vital life experience. People need a large variety of easily accessible activities which are appropriate to different ages and interests. A single designated play area, no matter how elaborate it is, cannot provide all their needs.

Therefore it is important to develop a range of recreational areas which are linked with each other, either by walking trails or cycle paths. Local open space begins to link together with the district open space and becomes a network of recreational facilities. ▪



Site Management

In order to perform various functions and services effectively in residential developments, a comprehensive management program must be established. At present, the management program for the public housing estates in Hong Kong exists at two levels. The overall managing body is the "New Town Management Committee" which oversees and monitors the housing developments. It has a functional interest in planning as well as its primary task of management. At a lower level, each housing development is managed by a 'Housing Manager' and his/her staff who maintain close liaison with other government departments including the police. However, in order to attain a high standard of management,public participation is also an essential part of the effort.

Security

According to the survey, most people feel that safety is among the most desirable attributes of a good neighborhood. The existence of police and security patrols in the local communities have their own deterrent effect on crime and general misdemeanors. However, the deterrence and control can also be exercised by the residents themselves. With the existence of reasonably amiable interpersonal relationship, people are more likely to look out for each other.

In general, the kind of physical layout which establishes zones of influence from private to public spaces and permits maximum visibility also contributes to the improvement of neighborhood security. This has been described as "defensible space". The basic concept of defensible space is that "modification should be made to housing estates, to encourage within the residents a sense of belonging and a desire for involvement in their protection and upkeep. To achieve this, the physical layout of the estates must be designed in such a way that people perceive their immediate as their own and are able to keep constant surveillance over that environment".[30] The designer's job is to extend the residents' sense of ownership from their front door to the immediate public spaces and to the whole of the estate. Some of the general guidelines include:

- All public areas on the site should be so arranged that they are readily and continuously under casual surveillance by residents from their dwellings and by the passerby.

- Physical boundaries of housing estates should be clearly defined and delineated so as too create a feeling of enclosure.

- Playgrounds and sitting areas in the estate, should be enclosed to create a sense of ownership.

- The areas around the blocks must be seen as belonging physically to the blocks and come under their influence.

- The design should promote as much visual accessibility as possible, eg. the minimization of blind corners.

The creation of defensible space in the development does not mean that crime will be eradicated, but simply that there are less opportunities for people to commit petty crimes like vandalism, mugging and general 'crimes of opportunity'. The design of defensible space means that residents can feel that there is a secure environment, at least in their own housing estates.

There are other measures which can be taken to strengthen the sense of security:

- The higher the lighting level in public outdoor areas, the less the likelihood of night time crime. Pedestrian routes most frequently used at night should be well-lit and constantly under patrol.

- Entrances and building lobbies should prevent free access by vagrants or other undesirables. An entry which is locked and has intercom system between dwelling and the outer door will generally reduce unwanted access.

- Entrance for each block should be supervised by security personnel so that strangers can be recognized and questioned.

Parking

In general, urban transportation in Hong Kong is characterized by its low car ownership ratio, limited road capacity and dependence on public transport as compared to other developed countries. At the end of 1982 when the peak of car ownership was reached, it was estimated that 24.6% households in Hong Kong owned a motor car.[31] Nonetheless, parking provision is still required in public housing areas. High densities in the development demand most of the parking be provided underground or in a large multi-level structures. Great care should be taken to ensure that these areas are pleasant, well-lit and well ventilated.

When parking is provided in communal lot, the design should ensure that:

- Spaces are numbered and assigned, and clear directions are provided for visitor parking areas.

- Parking areas are screened by means of plantings, walls, earth berms, or changes in level.

- Access from the parking area to the units is as direct as possible.

Landscape Planting

In the planning of open spaces, the use of appropriate planting materials help to articulate and strengthen layout. It develops an interrelated pattern of open, closed, or semi-enclosed spaces, each shaped to suit its planned function. "Planting extends topographical, frames views and vistas, and provides visual transitions from object to object and place to place."[32]

Aside from serving these 'practical' functions, plants in their many forms and varieties are also decorative. But even their decorative quality is more pleasing if there is an evident reason behind their selection and use. Essentially, each plant used should serve a purpose, and all together should contribute to the function and expressiveness of the plan.

- In the use of plant materials, consider:
  - need;
  - suitability;
  - hardiness;
  - appearance in all seasons;
  - appearance in all stages of growth;
  - compatibility of form, texture, color;
  - association in total building and site composition;
  - cultural requirements;
  - and degree of maintenance needed.[33]
- As a rule, use indigenous or naturalized materials except for bedding plants and container-grown exotics.
- Plants used for backdrop, screening, shade, or space definition are generally selected for strength and cleanliness of form, richness of texture, and subtlety of color. Plants to be featured are selected for their sculptural qualities and for ornamental twigging, budding, foliage, flowers, and fruit. They should be placed strategically for optimum display.[34]

Nursery

In this particular housing development, portions of the existing open space can be converted into tree and shrub nurseries. Managed and maintained by the site manager and his/her staff, the nurseries would provide a continuous, long term supply of plant materials at very reasonable cost.

- The location of nurseries should provide a favorite growing environment for the plants.
- The nurseries should be defined by fences and restricted to public access.
- As the need for large amounts of plant material decreased, sections of the nurseries could be used for vegetable gardening.

Garbage Collection

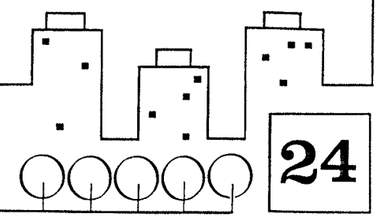
Communal garbage collection points should be:

- Not so visible as to become an eyesore, and not so close to dwellings and open space to create problems with odor.
- Enclosed or otherwise screened from view, including view from above.
- Inaccessible to children at play and impervious to strong winds;
- Easily approachable by collection vehicles.

Site Furniture

Appropriate and well-maintained site furniture is an important component in open space design. In the selection and placement of paving materials, lighting standards and fixtures, recreational equipment, informational signs, benches and tables, etc., one should consider:

- Functional suitability, compatibility of form, materials and finish, as well as long-term cost. A higher initial expense that yields longer life with less required maintenance is usually good economics.
- Durability should be stressed. Site equipment and furniture must be designed to withstand the effects of the elements, including sun, expansion-contraction, wind stress, and moisture.
- A coordinated 'family' of shapes, materials, and finishes should be planned. Components such as lighting globes, signposts, bench slats, etc. that are part of the cultural expression of its community should be standardized.



◦Paving

With a basic understanding of materials and how they work together, the site designer can create many aesthetic and interesting patterns with paving. Limitations other than the material itself might be the function of the paving, safety, cost factors, and the physical environment (frost, temperature fluctuation, etc.)[35]

- A range of surface treatment appropriate for different use of the site should be planned.

- Durability and ease of maintenance are necessary conditions in the choice of paving materials.

- The color of paving is an important aesthetic and functional design consideration, eg. color adds interest in areas overcast with limited sunshine during winter months. In color selection, one need to consider the context of the project, and the compatibility or contrast with materials used on existing structures.

◦Lighting

Site illumination provides safety in traffic movement and crossings, gives warning of harzards, and serves to increase security and reduce vandalism. It interprets the plan arrangement by giving emphasis to focal points, gathering places, and building entrances. It demarcates and illuminates paths at the connection of path to increase legibility of the night environment.

- Lighting arrangement should be planned from the start as a coordinated system in order to give clarity and unity to the overall site and to each sub-area within it.

- Lights should be of unbreakable plastic, recessed, or otherwise designed so as to reduce the damage and replacement problem.

- Lighting is usually placed about 12 feet high in pedestrian areas to stay in scale with people.

◦Signage

In order to solve the concerns raised by many residents that visitors and delivery people often have difficulty finding their way around, the general environment should be designed to be legible. Signs should only be used where it is necessary to give directional information, eg. at the entrance of the site. A site which is overloaded with signs would only create confusion.

- Signs are best developed as a hierarchy, each sign being designed in terms of its size, color, and placement to best serve its particular purpose and all existing together as a related family.

- The signage system should be kept simple and standardized in order or give its own sense of order and clarity to the residents. Consistent application of symbols in preference to text, color, and type face and uniform positioning of the sign are essential aids to legibility.[34]

- Both signage and site illumination are usually interdependent and complementary, hence, street and route lighting should be planned together with the positioning of related directional signs.

◦Benches & Tables

Benches with backs and tables should be provided so that people can sit, talk, and rest.

- Benches and tables should be provided on the site in a sheltered location.

- The benches should be located so that there is a view of some activity or a pleasant distant view.

- In some places, benches should be arranged to form an enclosed group, so that a number of people can gather to have a group conversation.

- Seating can be combined with tree planters to provide shade and shelter.

◦Litter Disposal

Children and teenagers need to dispose of litter, ice - cream wrappers, soft drink cans, etc. and will not go far to do so. Litter receptacles that are obvious and attractive should be placed at fairly frequent intervals, and especially close to play areas and sitting places.

- Litter receptacles should be simple in character, easy to maintain, and easy to empty at frequent intervals.

- Containers should be related to other site furnishings including lighting columns, shelters, or seats to form a co-ordinated design package.

- Maintenance as relates to the placement of litter containers must be adaptive to the changing needs and habits of the residents, such as changing circulation patterns. ■

Introduction

By recognizing the design deficiencies of the existing neighborhood environment as well as the needs and concerns of the residents of Yuen Tin Court, a series of design guidelines were developed which offer direction and guidance for the planning of neighborhood open space. However, the whole process of investigation, analysis, and recommendation should not be terminated without presenting a re-design proposal for the open space system therein. This proposal serves as one of the many possible solutions to better serve the individual as well as the community living in Yuen Tin Court.

The main concept for re-development is to strengthen the neighborhood concept within the context of Yuen Tin Court. The six components namely the size, boundary, institutional sites, open space, circulation, and services should be clearly defined and made explicit as functional elements working together and at the same time, complementing each other. Size, boundary, and institutional sites are components which are rigidly set and should be acknowledged and respected. However, the other three components: circulation, services, and open space require substantial interventions according to both the residents and the designer.

Open Space -- Goal : to create a contemporary 'Chinese' garden in an "urban forest" which aims to be visually and functionally appropriate for neighborhood recreation. It includes:

- application of the principles of feng shui in the use of site elements, choice of materials, and spatial articulation;
- provision of comfortable, shaded areas for social interaction in a wide range of scales and privacy;
- co-ordination of the recreational areas for all age groups in an integrated circulation system which allows easy access, both visually and physically, by the residents.

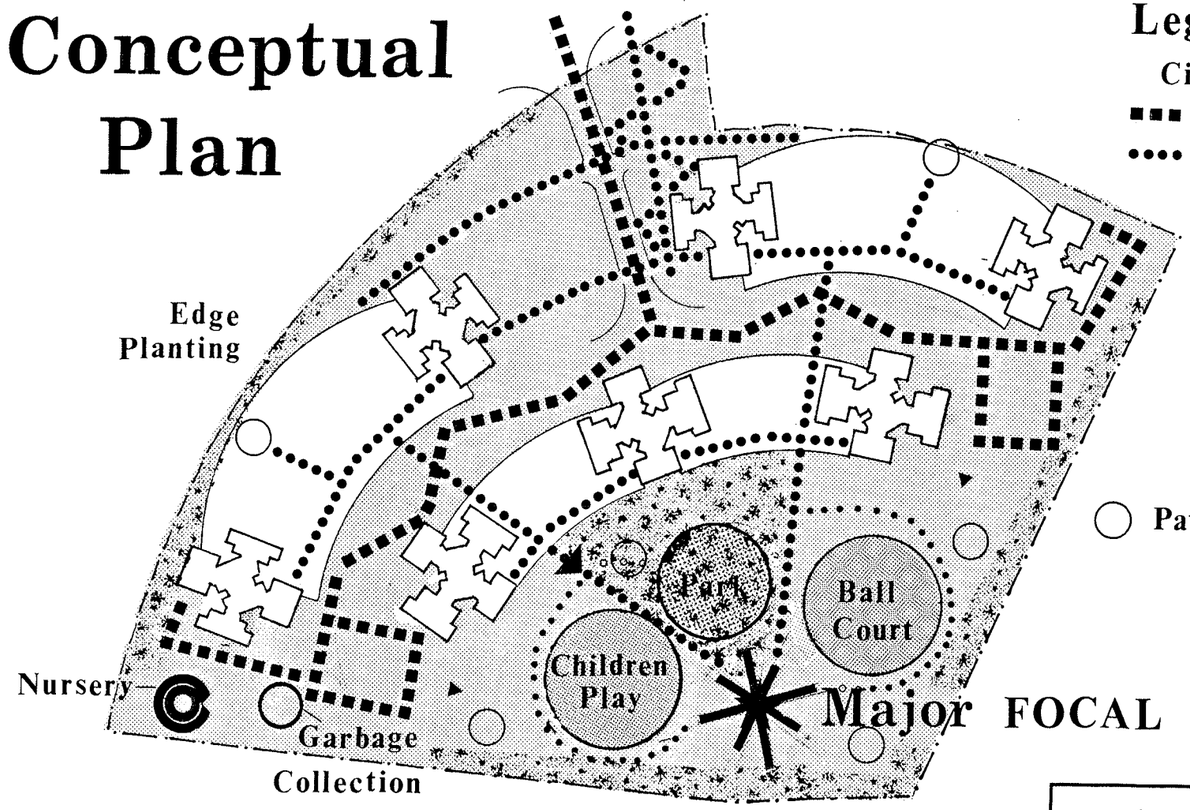
Circulation -- Goal: To develop a pleasant and legible system for both pedestrian and vehicular circulation within the site.

- To introduce a gateway at the entrance to give a sense of transition and territory;
- To provide shades and shelters for physical comfort along major circulation path;
- planning favorite views and focal points along and at the termination of pathways.

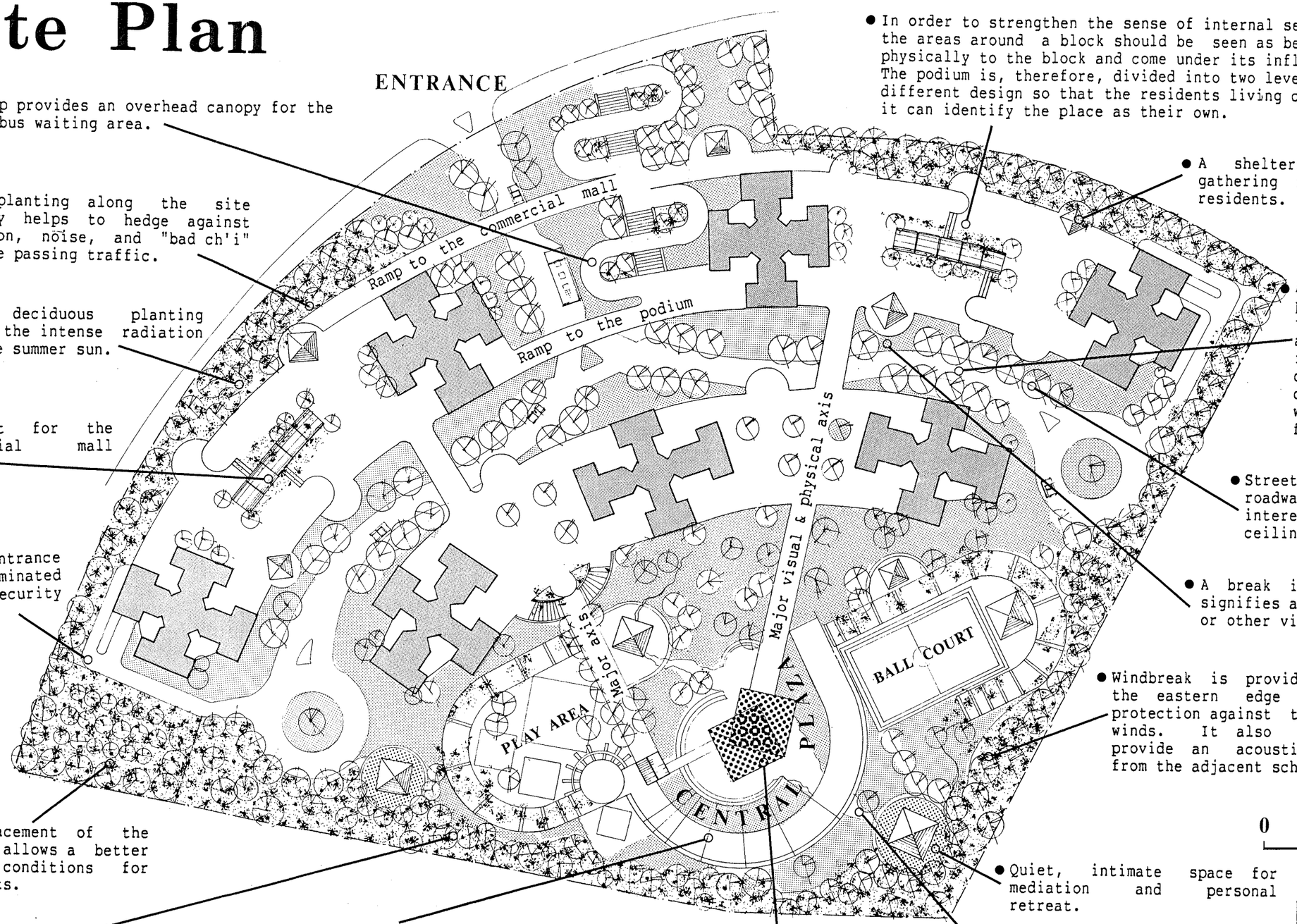
Services-- Goal : to re-organize the existing scattered service areas into a more-structured and well-defined service core by:

- eliminating the excessive parking space on the second level of the buildings;
- relocating all the commercial shops to the second level -- a 'Mall' concept.
- using the vacated commercial space for the development of social and community functions within the neighborhood.

Conceptual Plan



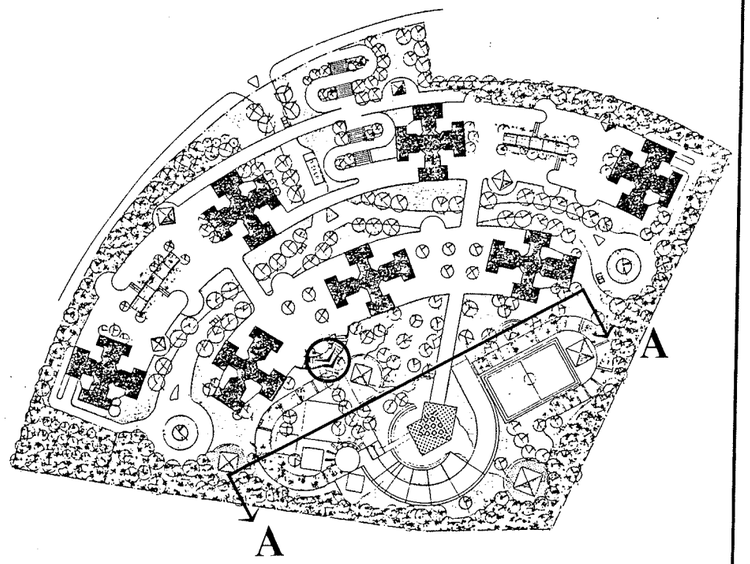
Site Plan

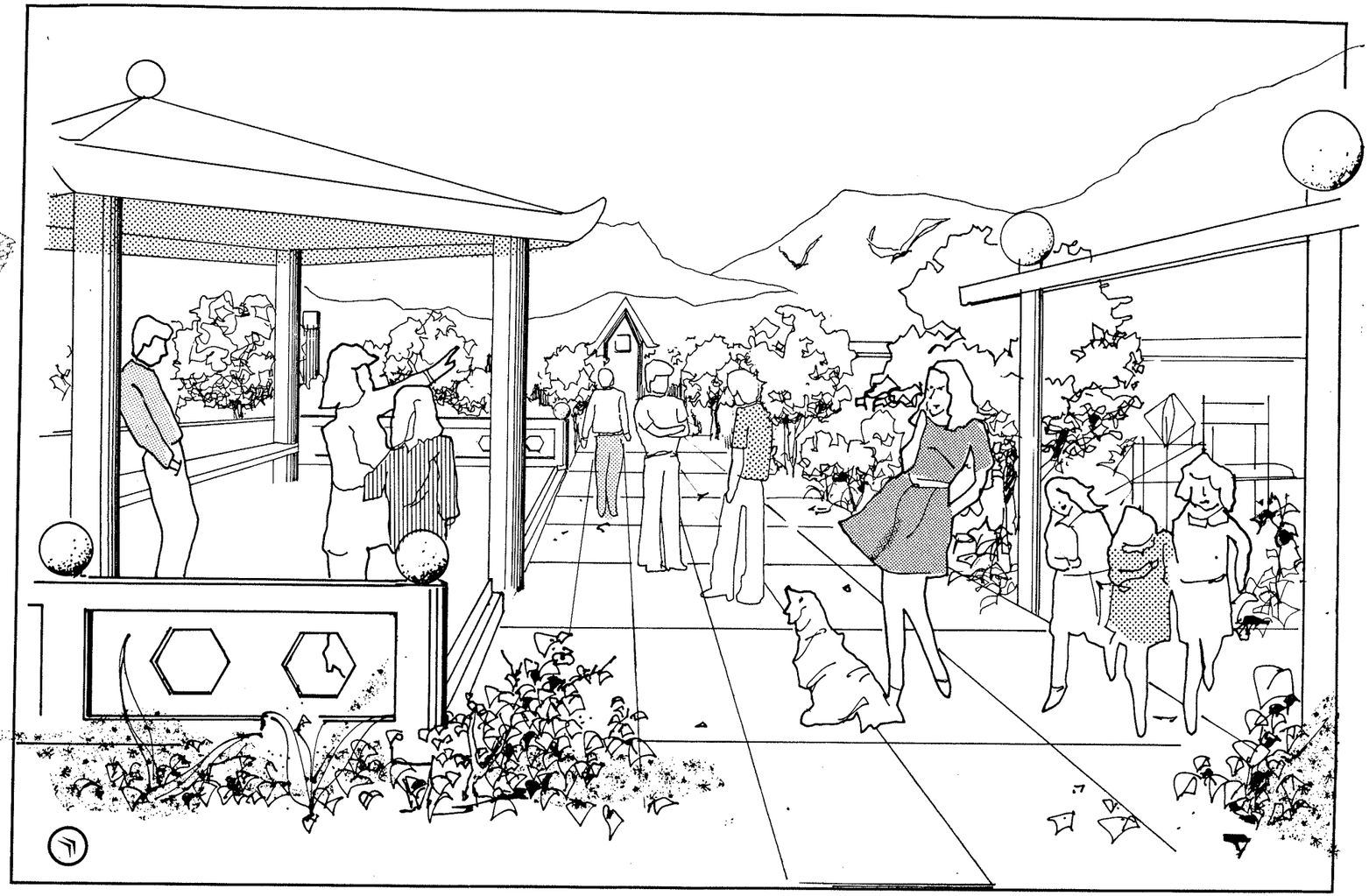


- The ramp provides an overhead canopy for the school-bus waiting area.
- Edge planting along the site boundary helps to hedge against pollution, noise, and "bad ch'i" from the passing traffic.
- Heavy deciduous planting blocks the intense radiation from the summer sun.
- Skylight for the commercial mall below.
- Back entrance is eliminated due to security reasons.
- The placement of the nursery allows a better growing conditions for the plants.
- Planting and berm are used to screen out the temporary housing nearby.
- The major circulation path is used to delineate spaces of different nature/functions .It facilitates a smooth and logical flow for the entire layout.
- A two-level 'pagoda' sitting on top of a sunken plaza forms the major focal point in the communal space.
- In feng shui, a meadering river brings both money and good ch'i to the site and its inhabitant.
- Quiet, intimate space for mediation and personal retreat.
- Windbreak is provided along the eastern edge to give protection against the winter winds. It also helps to provide an acoustic buffer from the adjacent school.
- A break in the street planting signifies an important entry point or other visual foci.
- Street planting along the roadway provides visual interest and a 'spatial ceiling' to the pedestrian.
- According to the design principles in feng shui, the meandering layout for a roadway is the most ideal solution. This design also helps to slow down the internal traffic which may reduce chances for accident.
- A sheltered space for group gathering is provided for the residents.
- In order to strengthen the sense of internal security, the areas around a block should be seen as belonging physically to the block and come under its influences. The podium is, therefore, divided into two levels with different design so that the residents living close to it can identify the place as their own.

0 5 10 20 M

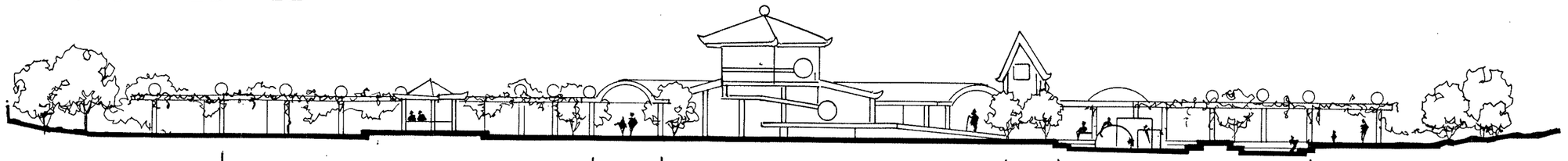
Communal Space



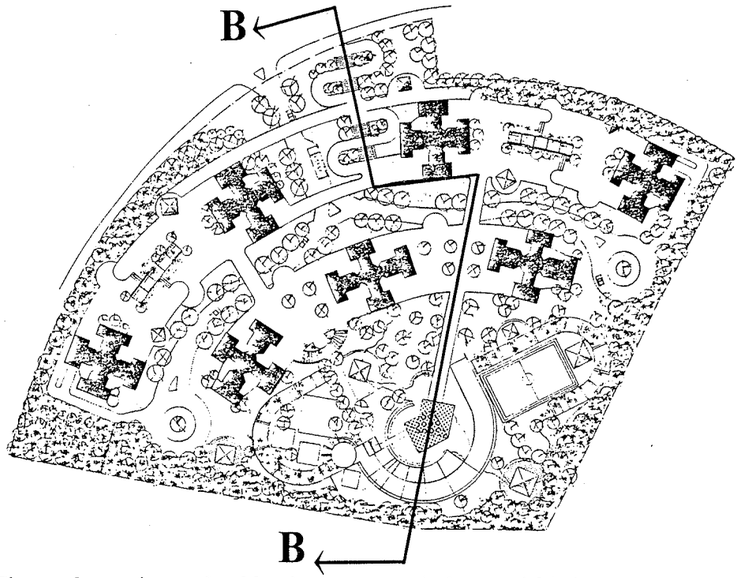


The communal space is like a 'back-yard' of the development in which residents can relax, retreat, and recreate. This sketch shows one of the major axis in the design where different recreation opportunities are available to satisfy different needs, eg. a pavilion for the adults and elderly and play areas for the children.

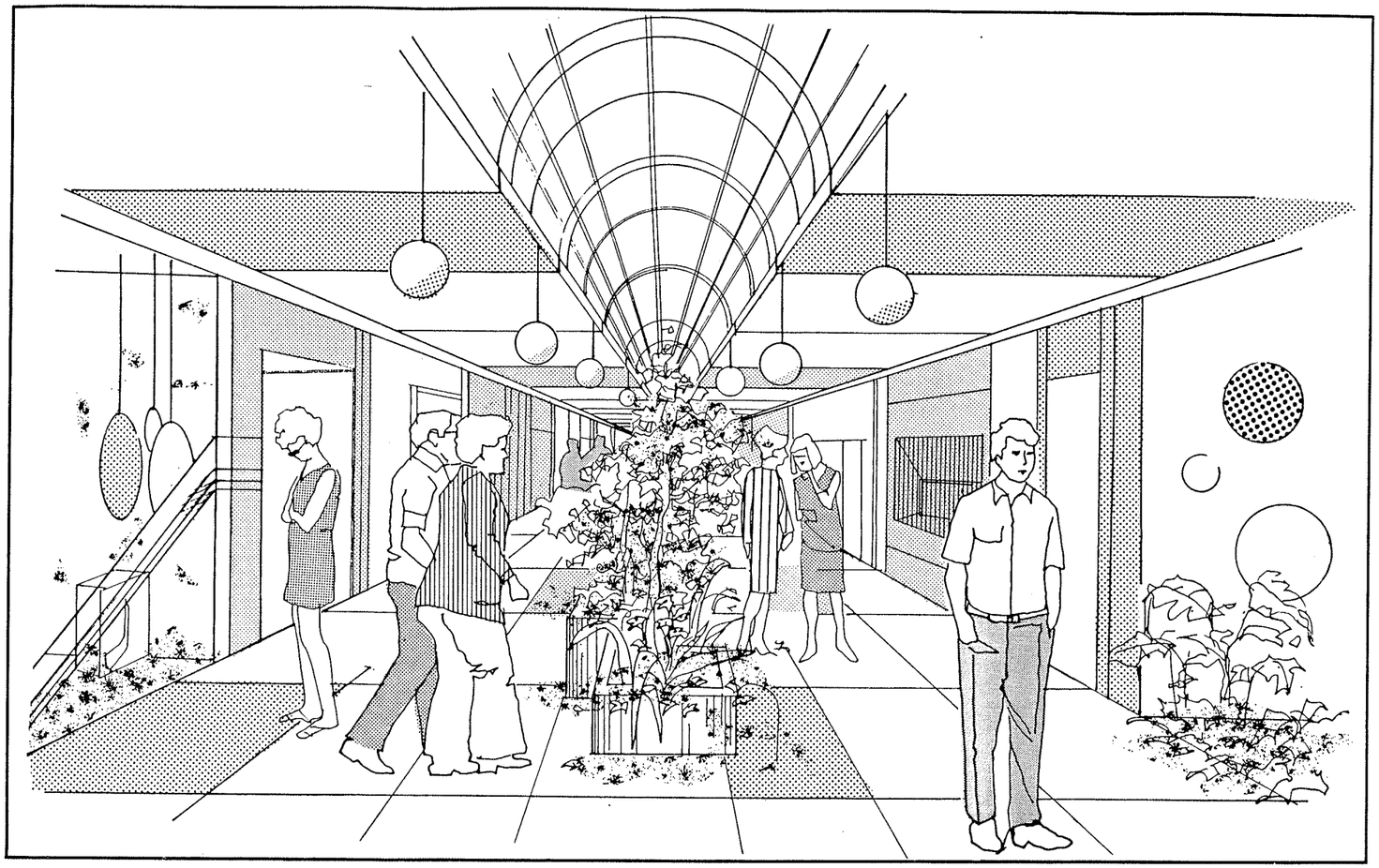
Section A - A



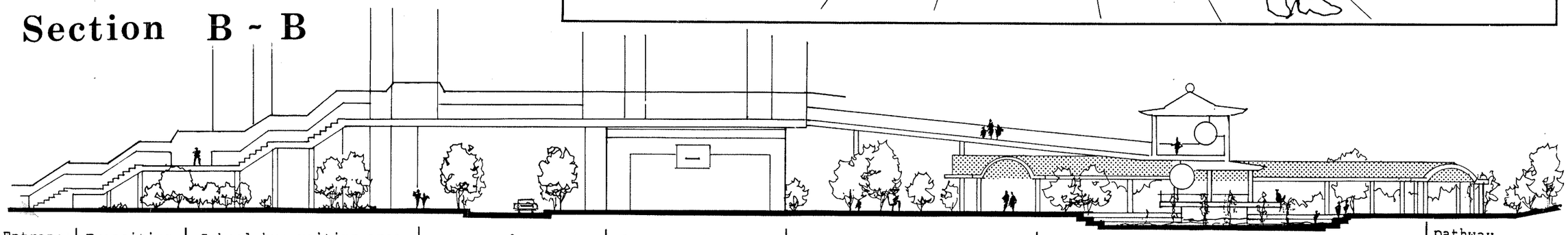
Commercial Space



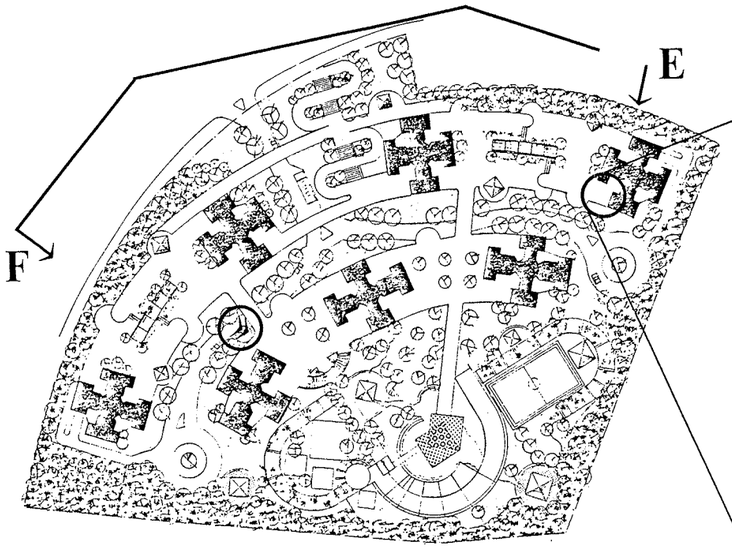
The relocation of all the commercial establishments on the premises to the vacated parking lot provides a larger and more centralized shopping mall for the residents. Different shops are arranged along the two sides of the mall with a skylight light on top.

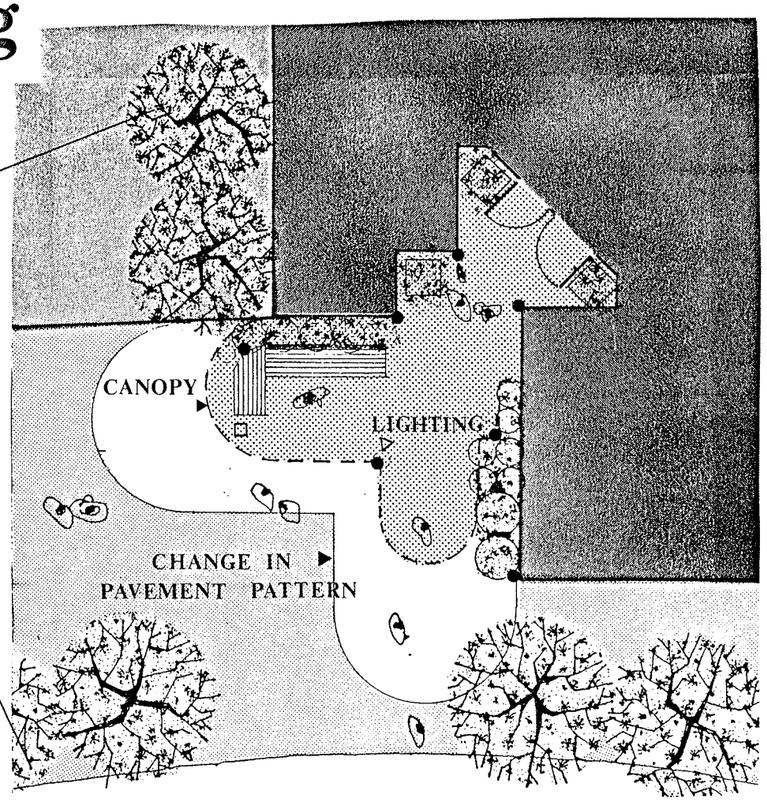


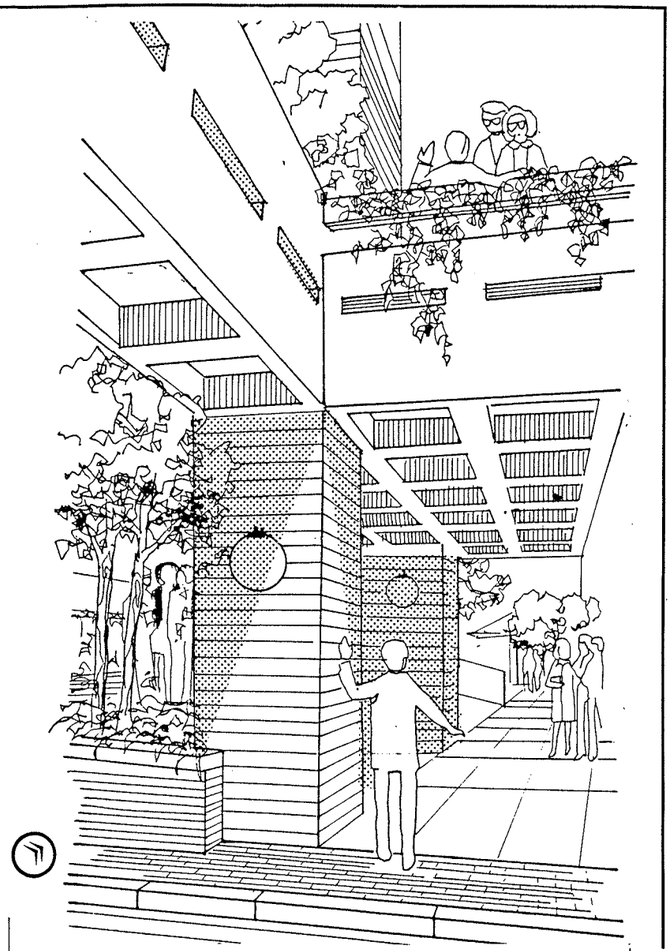
Section B - B



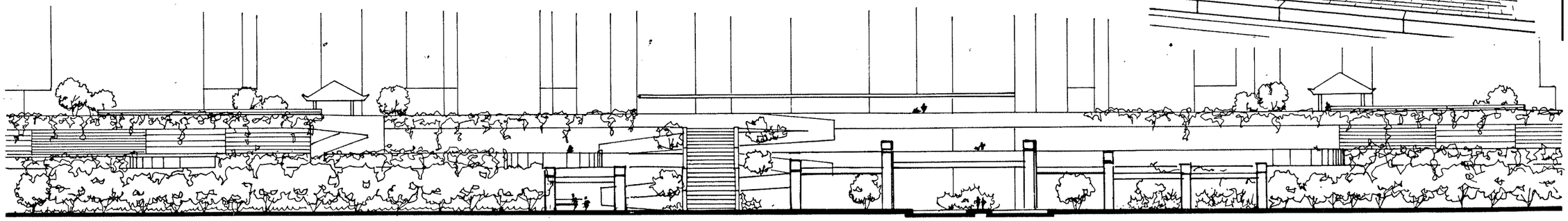
Access to Building







The principles of 'defensible space' should be a guide to the design of building access -- visible (easily recogized by visitors), protected (allow as much visual accessibility as possible), and well-lit at night. Afterall, a safe neighborhood is, according to the residents, the best neighborhood.



FRONT ELEVATION

Conclusion

The purpose for presenting this design proposal is twofold: i) to illustrated the design principles which should be considered in the planning of neighborhood open space; and ii) to acknowledge and accommodate the needs of the residents which were not addressed by the original design. Although the plan has not been implemented and tested in order to determine its success, the proposal clearly demonstrates design enhancements which afford opportunity from which the entire community can benefit.

In general, the design proposal offers a conceptual framework for the re-development without going into a detailed level of design. It identifies the key areas within which appropriate changes should be made, summarizes the principal design criteria to be considered, and offers the following recommendations:

Size:

- The effect of high density (814 people per acre) can be considerably ameliorated through the use of outdoor environment that are aesthetically satisfying and functionally sensible.

Boundary:

- The physical boundary is defined by the use of fences for the sake of internal security.
- Edge planting is used to provide a visual as well as acoustic barrier for the site. It also helps to soften the sense of rigidity imposed by the fences.
- Clear definition between the public and private domain has been made more evident at the entrance of the site.

Circulation:

- Safety has been a primary factor is the design of circulation routes. Clear separation between the vehicular and pedestrian traffic is maintained.
- Major circulation routes are protected from adverse climatic conditions.
- Circulation routes are planned in such as way that they are legible, efficient and visually attractive.
- Important access points (eg. to buildings or communal space) are identified through the use of signs and/or site elements, eg. change in pavement pattern.
- A simple map of the entire site (which can be easily understood by people) is placed at the entrance in order to direct the visitor to his/her intended destination.

Open Space

- Communal space has been planned to be the focal amenity for the development to the benefit of the residents.
- A variety of recreational opportunities appropriate for different age groups are provided:
  - Children - playground designs that are interesting, stimulating and appropriate to different developmental levels of the children.
  - Teenagers - ball courts (both indoor and outdoor).
  - Adults/Elderly - pavilions allow for formal gathering or personal retreat.
- The use of different site elements: a pagoda, sunken plaza, a 'river', etc. provide visual foci to attract the current non-users to the site.
- The communal space is appropriately landscaped to provide a visual contrast to the massive concrete of the buildings and, at the same time, moderate the micro-climate in the site.

Institutional Sites:

- The existing kindergarten is important to the pre-schoolers living on the site due to their limited range of mobility. Convenient access to the use of playground in the communal space is provided.

Service

- The excessive parking spaces which are not required by both the residents and visitors are eliminated so that no rental policy to the outsiders is necessary.
- All the commercial shops which used to spread around the site are relocated to the vacated parking area. Such changes would allow more retail shops to establish in the development to satisfy the needs of the residents.
- It is recommended that the management staff should endeavor to render a better service with regards to security patrols and site maintenance (eg. lighting)

Given the amount of alternations required, there is no question that the actual implementation of this proposal would be both costly and complex. It would require a more detailed development program in order to resolve many financial, social and physical planning issues. Specifically, it would be essential to fully understand the costs and benefits of the re-development, the impact upon the present and future residents of Yuen Tin Court, and the management adjustments that would be necessary in order to effectively administer such process. The successful completion and continuation of a good neighborhood requires a very strong commitment on the part of the residents and the Hong Kong Housing Authority as a whole. Nevertheless, despite the extensive process involved in implementing this proposal, the resulting environment may well prove to be of high quality and very satisfying for the residents in Yuen Tin Court. ■

1. R. T. Hester, Jr., Neighborhood Space, Stroudsburg, Pennsylvania: Dowden, Hutchington & Ross Inc., 1975, p.5

2. Ian Lyne, "Landscape Architecture in Hong Kong", Building Journal, March, 1983, p. 43

3. A. B. Gallion, S. Elsner, The Urban Pattern, City Planning and Design. New York: D. Van Nostrand Co. Inc., 1962, p. 277

4. Suzanne Keller, The Urban Neighborhood, New York: Random House, 1968, p.92

5. The six neighborhood components are adapted from the principle of "Neighborhood Unit" in the Regional Plan of New York, Although they are applied in a different cultural context, the statements can still be considerated valid due to the universality of the neighborhood concept. C. A. Perry, "The Neighborhood Unit", Neighborhood and Community Regional Survey, Vol. VII, New York: Regional Plan of New York and its Environs, 1929, pp.34, 35

6. The First Two Million, Hong Kong Housing Authority, Hong Kong: Graphic Printing & Design Co. Ltd., 1980, p.56

7. John T. Myers, "Resident's Images of a Hong Kong Resettlement Estates: A view from the Chicken Coop'", Social Life and Development in Hong Kong, ed. by Y. C. King, Y. C. Lee, Hong Kong: The Chinese University Press, 1981, p.29

8. Edwin T. Morris, The Garden of China: History, Art and Meanings, New York: Charles Scribners Sons Ltd., 1983, p.26

9. P. L. Lee, "High Density Effects in Urban Areas: What do we know and what should we do?", Social Life and Development in Hong Kong, ed. By Y. C. King, Y. C. Lee, Hong Kong: The Chinese University Press, 1981, p.14

10. C. S. Chau, High Density Development: Hong Kong as an Example, A paper presented to the Commonwealth Association of Planners Asian Regional Workshop & Conference, 1981, p.2

11. P. F. Smith, Willow Park East Housing Co-operative: A Study in Territorial Re-structuring, University of Manitoba, Department of Landscape Architecture Practicum, 1980, p.29

12. C. C. Cooper, Easter Hill Village: Some Social Implications of Design, New York: The Free Press, 1975, p.211

13. Sarah Rossbach, Feng Shui, London: Rider & Co., 1985, p.4

14. Ibid., p.21

15. Ibid., p.62

16. Ibid., p.65

17. Florence Ayscough, A Chinese Mirror, Boston: Houghton Mifflin, 1925, p.9

18. John O. Simonds, Landscape Architecture, A Manual of Site Planning and Design, New York: McGraw-Hill Book Co., 1983, p.85

19. Victor Olgyay, Design with Climate, Princeton; New Jersey: Princeton University Press, 1973, p.15

20. Antony Sealey, Introduction to Building Climatology, London: Commonwealth Association of Architect, 1979, p.35

21. Op. cit., p.51

22. K. W. Todd, Site, Space & Structure, New York: Van Nostrand Reinhold Co., 1985, p.85

23. John O. Simonds, Landscape Architecture, A Manual of Site Planning and Design, New York: McGraw-Hill Book Co., 1983, p.218

24. C. C. Cooper, Easter Hill Village: Some Soical Implication of Design, New York: The Free Press, 1975, p.232

25. Ibid., p. 233

26. Anne-Marie Pollowy, The Urban Nest, Stroudsburg, Pennsylvania: Dowden, Hutchinson & Ross Inc., 1977, p.14

27. James Bernard, Children in the Built Environment: Guidelines for Planning and Design, Melbourne: Georgian House, 1980, p.20

28. Op. cit., p.35

29. C. C. Cooper, Easter Hill Village: Some Social Implications of Design, New York: The Free Press, 1975, p. 236

30. Oscar Newman, Defensible Space: Crime Prevention through Urban Design, New York: The MacMillian Co., 1972, p.60

31. Town Panning in Hong Kong, Town Planning Division, Lands Department, Hong Kong: Government Printer, 1984, p.10

32. John O. Simonds, Landscape Architecture: A Manual of Site Planning and Design, New York: McGraw-Hill Book Co., 1983, p.129

33. Ibid., p.131

34. Ibid.

35. Theodore D. Walker, Site Design and Construction Detailings, Mesa: PDA Publishers Corp., 1978, p.55

36. Op. cit., p.127

37. A. E. Weddle, Techniques of Landscape Architecture, New York: American Elsevier Publishing Co. Inc., 1967, p.122

Altman, Irwin. The Environment and Social Behavior: Privacy, Personal Space, Territory, Crowding. U.S. of America: Wadsworth Publishing Co. Inc., 1981

Ayscough, Florence. A Chinese Mirror. Boston: Honghton Mifflin, 1925

Bernard, James. Children in the Built Environment: Guidelines for Planning and Design. Melbourne: Georgian House, 1980

Bristow, Roger. Land-Use Planning in Hong Kong: History, Policies and Procedure. Hong Kong: Oxford University Press, 1984

Chan, C. S. High Density Development: Hong Kong as an Example. A paper presented to the Commonwealth Association of Planners, Asian Regional Workshop & COnference, 1981

Children's Play on Housing Estates. National Building Studies Research Paper no. 39. London, Her Majestry Stationary Office, 1966

Clare, C. M. People, Places, Design Guidelines. Neighborhood Parks - Rolf Diamant, Marta Huck, Joel Summerill, Lesley Turner. Department of Landscape Architecture, University of Berkey, 1976

Cohen, U., A. Hill, L. Lane, T. McGinty, G. Moore. Recommendations for Child Play Area. Milwaukee: School of Architecture & Urban Planning, University of Wisconsin-Milwaukee, 1978

Cooper, C. C. Easter hill Village: Some Social Implications of Design. New York: The Free Press, 1975

Fong, K. W., G. O. Yeh. Public Housing Programme in Hong Kong, 1973-83 Hong Kong: University of Hong Kong, Center of Urban Studies & Planning, 1984

French, J. S. Urban Space: A brief History of the City Square. U. S. Iowa: Kendall/Hunt Publishing Co., 1978

The First Two Million. Hong Kong Housing Authority, Hong Kong: Graphic Printing & Design Co. Ltd., 1980

Gibson, E. Principles of Perceptual Learning & Development. New York: Meredith Corporation, 1969

Golgh, Otto. An Environment Study of Squatter and Resettlement Housing in Hong Kong. Hong Kong: University of Hong Kong, Ph. D. Thesis, 1968

Greeley, Andrew M. Neighborhood. New York: The Seabury Press, 1977

Gull, K. L. Recreation for Young People: A Survey. Hong Kong: S. Young Government Press, 1978

Hester, R. T. Jr. Neighborhood Space. Stroudsburg, Pennsylvania: Dowden, Hutchingon, & Ross, Inc., 1975

Hong Kong Housing Authority Annual Report 1981-82. Housing Authority Public Relations Section. Hong Kong: Star Envelopes & Printing Co. Ltd., 1982

Jarvie, I. C., J. Agazzi, ed. Hong Kong: A Society in Transition London: Routledge & Regan Paul Ltd., 1969

Kan, Angela W. S. Implications of Concentrated Utilization of Local Facilities & Services in Public Housing Estates in Hong Kong. Hong Kong; The Chinese University of Hong Kong, Social Research Center, Occasional Paper, 1975

Keller, Suzanne. The Urban Neighborhood. New York: Random House, 1968

King, Ambrose Y. C., Rance P. Lee, ed. Social Life and Development in Hong Kong. Hong Kong: The Chinese University Press, 1981

Knight, Bill ed. Hong Kong 1985 - A Review of 1984. Government Information Services, Hong Kong: Government Printing Department, 1985

Konya, Allan. Design Primer for Hot Climate. London: The Architectural Press Ltd., 1980

Lyne, Ian. "Landscape Architecture in Hong Kong", Building Journal. March, 1983

Mann, P. H. "The Neighborhood", Neighborhood, City, and Metropolis: An integrated Reader in Urban Sociology. R. Gutman, D Popenoe ed. New York: Random House, 1970

Morris, Edwin T. The Gardens of China: History, Art, and Meanings. New York: Charles Scribner's Sons Ltd., 1983

Newman, Oscar. Defensible Space: Crime Prevention through Urban Design. New York: The MacMillan Co., 1972

Nuttonson, M. Y. The Physical Environment & Agriculture of Central & South China, Hong Kong and Taiwan. Washington: American Institute of Crop Geology, 1963

Olgyay, Victor. Design with Climate. Princeton; New Jersey: Princeton University Press, 1973

Perry, Clarence A. "The Neighborhood Unit", Neighborhood and Community Planning, Regional Survey New York: Regional Plan of New York and its Environs, 1929

Plants, People and Environmental Quality. U. S. Department of the Interior, National Park Service & American Society of Landscape Architects Foundation. Washington, D. C.: U. S. Government Printing Office, 1972

Pollowy, Anne-Marie. The Urban Nest. Stroudsburg, Pennsylvania: Dowden, Hutchingon & Ross Inc., 1977

Progor, E. G. Principles of Design for Public Housing Estates in Shatin New Town. Hong Kong: The Chinese University of Hong Kong, Occasional Paper, 1978

"Recreation & Open Space" Hong Kong Planning Standards & Guidelines. Hong Kong Lands Department, Housing Authority, 1981

Redpath, R. L. Security Considerations in New Town. Hong Kong: The Chinese University of Hong Kong, Occasional Paper, 1979

BIBLIOGRAPHY

A Reivew of the Social and Physical Concepts of the Neighborhood as a basis for Planning Residential Environments. Department of City & Regional Planning, University of Carolina, 1977

Rossbash, Sarah. Feng Shui. London: Rider & Co., 1985

Rubenstein, H. M. A Guide to Site and Environmental Planning. New York: John Wiley & Sons Inc., 1980

Rutledge, A. J. A Visual Approach to Park Design. New York: Garland STPM Press, 1981

Sealey, Antony. Introduction to Building Climatology. London: Commonwealth Association of Architects, 1979

Seymour, W. N. Jr. ed. Small Urban Spaces: the philosophy, design, sociology and politics of vest-pocket parks and other small urban open spaces. New York: New York University Press, 1969

Simonds, John O. Landscape Architecture: A manual of site planning and design. New York: McGraw-Hill Book Co., 1983

Sinha A. "Continuity & Branching in Pre-school Playground", Design Research Interactions: Exploring the future through the 1980's. A. E. Osterbery, C. P. Tiernan, R. A. Findlay, ed. Washington, D. C.: Environmental Design Research Association, 1981

Smith, Peter F. Williow Park East Housing Co-operative: A Study in Territorial Re-structuring. Department of Landscape Architecture, University of Manitoba, Practicum 1980

A Study on Leisure Activities of Children and Youth. Research & Development Committee, Kowloon City District, Youth Services Council, 1975

Todd, Kim W. Site, Space, and structure. New York: Van Nostrand Reinhold Co., 1985

Town Planning in Hong Kong. Town Planning Division, Lands Department, Hong Kong: Government Printer, 1984

Walker, Theodore D. Site Design and Construction Detailings. Mesa: PDA Publishers Corp., 1978

Wang, F. C. An Anthropological Analysis of Chinese Geomancy. Vithagna: Vientiane Lao, 1974

Weddle, A. E. Techniques of Landscape Architecture. New York: American Elsevier Publishing Co. Inc., 1967

Whyte, William H. The Social Life of Small Open Spaces. Washington, D. C.: The Conservation Foundation, 1980

Wong, K. Y. "New Town: the Hong Kong Experience", Hong Kong in the 1980's. Joseph Y. S. Cheng ed. Hong Kong: Summerson Eastern Publishers Ltd., 1982

Yeung, Y. M. ed. A Place to Live: More effective low-cost housing in Asia. Canada: International Development Research Center, 1983

Resources

In order to collect information concerning the relationship between the residents and their environment at Yuen Tin Court, different techniques for recording soical phenomena were employed. The main reason for using different techniques was to establish a clearer and more accurate picture of how the existing environment was being used and vice versa. For instance, one of the very common problems of having a single technique to determine the level of satisfaction experienced by the users is that people often say one thing and do quite another. In order to fully understand the relationship between the user and his/her environment, it is important to know how the person feels about his/her environment as well as how he/she actually uses it. Each type of information provides a slightly different but essential perspective on the evaluation of a given environment.

◦Residential Survey

In order to elicit information regarding resident's attitudes toward Yuen Tin Court, a residential survey was carried out during the summer of 1985. The questions in the survey were designed to extract opinions toward different aspects of the open space which included circulation, communal space, recreation, landscaping and management. The survey form consisted of 46 questions and usually required 20 minutes to complete. Two major types of questions were asked:

- "open-ended" questions were intended to encourage spontaneous responses, eg. 'What do you usually do in the communal space?'

- "closed-ended" questions were asked in order to gather certain types of information which could be quickly tabulated and analyzed, eg. 'Are there enough recreation facilities at Yuen Tin Court to satisfy your needs? Yes / No'

Limitations

The data collected by using this technique has certain limitations which stem both from the nature of the process in general and from the amount of sample size. In order to ascribe the proper value to the data, and thus to optimize its usefulness, these limitations must be fully understood.

Due to the lack of accessibility, limited time, prohibitive cost, and mostly importantly, the conservative nature of the Chinese people, most of the residents were reluctant to do interviews. As a result, the sample size was extremely limited (30 people out of 7,000 -- .5% of the entire population) Consequently, the result is not statistically valid. Also, the sample did not represent a cross section of the population. Most of the residents interviewed were females between the age of 20 to 45 who were the regular users of the open space system. The outcome of the survey would inevitably be biased towards this particular group of residents.

In order to gather information from other age groups, especially the elderly whose traditional attitudes often prevent them from being 'questioned', formal interviews were often substituted by causal conversations. One must acknowledge that information gathered in this manner was indirect, and often incomplete. Yet, its value of providing insights into the needs of this significant and often overlooked age group should not be understated.

The following is a summary of the major findings:

Demographic Data:

- Sample size -- 30 (11 male / 19 female)

- Age structure -- 20 & below (2); 21 - 45 (26); 46 & above (2).

- Occupation -- The majority were homemakers, technicians, craftsman, labours and teachers.

- Household size -- An average of 5 family members per household spanning three generations.

Circulation:

Most of the residents (60% or over) felt that the design of both the pedestrian and vehicular circulation routes were efficient, safe, clean and well-lit at night. However, residents did express their immediate concerns about the legibility of the system, protection from harsh climatic conditions, and the problems of strangers wandering into the site.

Communal Space:

About half of the residents interviewed indicated that the design of the public amenity space was an important part of this neighborhood -- nearly equal in importance to their own home. Most of them said that existing design was fairly attractive and well-maintained. Supervising children, chatting with neighbors and relaxation were the most common activities that occured in the communal area. However due to the lack of micro-climatic controls in the site, about 80% of the residents use the space only in the early evening hours (between 5 to 7 p.m.).

Recreation:

Given the large number of children living in the site, the existing recreational provision for young children was inadequate (55%). According to some residents, equal amount of play apparatus and equipment should not be allocated for each age group when the dominant users of the space were the young children. As a result, the play structure was often crowded with fun-seeking children and according to many residents, it could increase the chance for unnecessary accidents. It was suggested that the skating rink, fitness trail and volleyball court be eliminated. (They were the most unpopular spaces as they received minimum use.)

When asked about the design of play structures for the children, many parents said that they were dull (60%) and not very stimulative (55%). Given the important role of play in a child's development, detail investigation into their needs and preference should be a basis for properly designed apparatus for children's recreation. Because of the long monsoon season in Hong Kong, an indoor playground was said to be an welcomed addition (77%) to the development.

Landscaping:

When asked about the quality of landscaping in Yuen Tin Court, most residents said that the design was pleasant (57%), unique (60%), and well-maintained (65%). According to the same group of respondents, the landscaping only contained 'cosmetic' values and had no other functional purposes. The lack of tree canopy to modify the micro - climate was an often cited example. Also the massive greenery in the communal space seemed to be quite monotonous without the contrast of flowering plants.

Management:

In terms of property management, the problem of security was cited to be the major concern (63%) of the residents although the crime rate within the development was very low. When asked specifically about the quality of the management services, many residents gave conflicting responses (eg. cleanliness). But overall, they felt they were quite satisfied. However, most of them agreeded that the management fee they paid was definitely too high (83%).

◦Interview

In order to fully understand the original design concept behind the development in Yuen Tin Court, it was important to conduct a formal interview with architect (Mr. J. E. Lambon), and the landscape architect (Mr. J. R. Mandem) who are responsible for the planning of the entire neighborhood. Excerpts from the interview were as follows:

Design Concept:

The development was built on a reclaimed land and was previously planned by another architect. The concept for the site was originated from having 7 blocks of residential buildings facing onto a singe, large communal space and the mountains lying beyond. The disposition of the buildings created a 'wall' which had its back against the busy traffic corridor. The design of the building represented an arc of a circle whose center was located somewhere in the communal space. This center was then resolved to be the focal point to which other site elements should relate, eg. pavilions, access pathway, etc.

There were various play spaces in the communal area, designed to fit the needs of different age groups: pre-school, older children, teenagers and adults. Most of the play areas or sitting arrangement took the form of a circle as a continuation of the theme. The general layout suggested an organic, free-flowing plan in which different sub-spaces could be integrate smoothly.

Landscaping:

The landscaping was used mainly to delineate spaces. Trees and high shrub were used extensively to create a visual and acoustical barrier. Berms was used along the outer edge of the site to deflect wind and to help screen the temporary housing nearby.

Originally there was to be a District Open Space located adjacent to this area, but it had not materialized due to various reasons. There is a small nursery located within the site to provide a continuous, long term supply of plant materials at a reasonable cost.

Criticisms:

There are a few criticisms of the design:

1. The overall scheme, especially in the communal area, is too 'busy', lacking discipline and controls.

2. The free-flowing plan does not work well and space are not well integrated with each other.

3. There is lack of concern of human scale in the design of various site elements, especially in terms of the tremendous psychological effect of the 30-storey high-rises on the residents.

◦Observation

A program of site observation was developed in order to document how the site was being used. The objectives were to find out who was using the site, what they were doing, and where they were doing it. The emphasis, in this respect, was placed upon recording those activities which were frequent and common, rather than those which were exceptional or unique. The information included the documentation of directly observed behavior and of the physical evidence of unobserved activities and attitudes.

The procedure involved a tour of the site at one to two-hour intervals from 9:00 a.m. to 7:00 p.m. over a period of three weeks. The usual observation times were: 9 to 10 a.m., 12 to 2 p.m., and 5 to 7 p.m. There were totally twelve visits, 12 of them during the weekdays and 2 on the weekends.

Observations were documented directly onto site plan and/or record sheets. The summary of the observation program were shown partly in the chapter on "Site Analysis" and and site performance matrix in "Issues & Concerns".

◦Photography

A collection of photographs was prepared to document both the site and the activities therein. Photography provided important visual evidence that was lacking in both the techniques previously discussed. In addition to this documentary function, photographs assisted in the analysis of other data and for presentation purposes. Some of the pictures were shown in the chapter on "Site Analysis".