LOW-INCOME PUBLIC HOUSING IN
HONG KONG AND SINGAPORE 1950 - 1980:
A COMPARATIVE ANALYSIS

by

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ABSTRACT

This thesis discusses the role of urban low-income housing in the process of socio-economic development of developing countries and examines the ways in which government housing policy and housing planning can contribute to the socio-economic effectiveness of urban low-income housing in these countries. The study focuses on low-income public housing, and is conducted through a critical and comparative analysis of the development of the low-income public housing programs in Hong Kong and Singapore between 1950 and 1980.

To understand the role of urban low-income housing, it is essential to explore the nature of housing. Three aspects of the nature are defined: (i) housing as a basic human need; (ii) housing as an economic activity; and (iii) housing as a major component of the physical environment. While the problem of housing shortage is deeply rooted in the socio-economic circumstances of developing countries, the nature of housing suggests that housing plays a dynamic role in the process of socio-economic development of these countries. Government housing policy and housing planning are therefore critical factors in determining the socio-economic effectiveness of housing.

The important questions that guide this comparative analysis of the low-income public housing programs in Hong Kong and Singapore are: (i) What were the political, social, and economic circumstances for their respective public housing
programs? (ii) How did Hong Kong and Singapore organize, finance, and administer low-income public housing programs, in particular, subsidize and distribute public housing units? (iii) How did planning and design contribute to the policy goals for the low-income public housing? (iv) What was the socio-economic effectiveness of the public housing programs?

The assumptions for the analysis are that housing played a dynamic role in the socio-economic development of the two urban-states; that financial and administrative measures were major determinants of the achievement of the social goals for public housing programs; and that the economic resources for low-income housing were constrained by the developing economy and the social system of Hong Kong and Singapore. Planning and design were therefore critical to achieve low-income public housing programs that have the attributes of large scale, low rents, reasonable quality and accessibility.

One additional assumption is that Hong Kong and Singapore shared both similarities and differences in the political, social, and economic backgrounds for low-income public housing, both of which were reflected in their housing policy and planning. Whilst the purpose of the study is to explore general principles for low-income public housing in developing countries is a purpose of the study, it is also the intention to emphasize that each country should determine its housing policy and housing planning based on its own socio-economic circumstances. It is important to notice that these differences
are reflected in the different planning and design measures in Hong Kong and Singapore, in particular the different design standards they adopted.

Hong Kong and Singapore are two of the few developing countries in the world which have achieved success in public housing policies and programs. It is important that countries and cities with comparable conditions learn from their experience. As an effort towards such learning, Shanghai, the largest and most densely populated industrial and commercial centre in China, is analyzed in the last chapter as a comparable case.
# TABLE OF CONTENTS

Abstract .................................................................................................................. ii
List of Tables ........................................................................................................... vii
List of Figures .......................................................................................................... viii
Acknowledgement ................................................................................................... ix

CHAPTER 1. INTRODUCTION ............................................................................. 1

1.1 The Housing Problem in the Cities of Developing Countries ...................... 1

1.2 Housing, Housing Policy and Planning in the Process of Socio-Economic Development in Developing Countries .................................................. 6

1.3 Purpose and Scope of the Study ................................................................. 10

CHAPTER 2. THE INITIATION OF PUBLIC HOUSING IN HONG AND SINGAPORE ................................................................. 14

2.1 Historic and Geographic Background ....................................................... 15

2.2 The Socio-Economic Situation and Housing Problem Prior to the Initiation of Large Scale Public Housing Programs ............................................. 22

2.3 The Initiation of Low-Income Public Housing Programs .......................... 31

2.4 The Socio-Economic Dynamics of the Low-Income Public Housing Programs in Hong Kong and Singapore ............................... 35

CHAPTER 3. ADMINISTRATION AND FINANCE OF PUBLIC HOUSING IN HONG KONG AND SINGAPORE ............................................ 44

3.1 The Administrative Organization for Public Housing ............................ 44

3.2 Finance of Public Housing Programs ....................................................... 57

3.3 The Distribution of Public Housing ......................................................... 62
CHAPTER 4. PLANNING AND DESIGN OF THE LOW-INCOME
PUBLIC HOUSING IN HONG KONG AND SINGAPORE ..........66

4.1 The Function of Planning and Design ......................66
4.2 Squatter Clearance and Complementary
Low-Income Public Housing Programs ......................68
4.3 High-Rise and High-Density Public Housing ............75
4.4 Low Design Standards for Public Housing ...............81
4.5 Spatial Expansion of Public Housing Programs ...........89

CHAPTER 5. THE SOCIO-ECONOMIC EFFECTIVENESS OF
THE LOW-INCOME PUBLIC HOUSING PROGRAMS
IN HONG KONG AND SINGAPORE .........................98

5.1 The Impact of Public Housing Programs
on the Provision of Housing ...............................100
5.2 Rent and Affordability of Public Housing Units .........104
5.3 The Impact of the Low-Income Public Housing on
the Physical Condition of the Residents ..................109
5.4 The Location of Public Housing Estates ..................115
5.5 An Assessment of the Social Effect of the Low-Income
Public Housing Programs in Hong Kong and Singapore ...120

CHAPTER 6. LESSONS FOR COMPARABLE CONDITIONS ..........124

6.1 Shanghai as a Comparable City ............................124
6.2 Perspectives on the Policy and Planning
for Public Housing in Shanghai ............................130

BIBLIOGRAPHY ..................................................137
LIST OF TABLES

Table 3.1 Public Housing Investment in Hong Kong .......... 61
Table 3.2 Public Housing Investment in Singapore .......... 62
Table 4.1 Features of Resettlement Estates in Hong Kong ..... 79
Table 4.2 Comparative Flat Design Standards:
          Hong Kong and Singapore ................................. 88
Table 4.3 Comparative Block Design Standards for Flats:
          Hong Kong and Singapore ................................. 88
Table 4.4 New Towns in Singapore ................................. 94
Table 5.1 Squatter Population in Hong Kong .................. 102
Table 5.2 Public Housing Construction and Squatter
          Clearance in Singapore .................................. 104
Table 5.3 Typical Rents of Public Housing in Hong Kong ..... 106
Table 5.4 Income and Rental in Six Asian Countries, 1973 ... 107
Table 5.5 Number of Households Per Living
          Quarter by Type in Hong Kong (1971) .................... 112
Table 5.6 Percentage Distribution of the Comparison of
          the Residential Conditions in Public Housing
          Estates with Past Residential Conditions ............. 114
LIST OF FIGURES

Figure 2.1 The Setting of Hong Kong and Singapore ..........16
Figure 2.2 Hong Kong ...........................................17
Figure 2.3 Singapore .............................................20
Figure 4.1 The Location of Squatter Areas in Hong Kong ......70
Figure 4.2 Resettlement Blocks for the Shek Kip Mei Fire Victims .......................78
Figure 4.3 Resettlement Housing in Hong Kong: Mark I ........83
Figure 4.4 Resettlement Housing in Hong Kong: Mark II ........83
Figure 4.5 Resettlement Housing in Hong Kong: Mark III ......84
Figure 4.6 Resettlement Housing in Hong Kong: Mark IV ......84
Figure 4.7 Types of Public Housing in Singapore ...............87
Figure 4.8 New Towns in Hong Kong ............................92
Figure 4.9 New Towns in Singapore ..............................93
Figure 5.1 Location of Public Housing in Hong Kong ..........117
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CHAPTER 1. INTRODUCTION

1.1 Housing Problems in the Cities of Developing Countries

Housing problems are universal. They are evident in the industrially most developed countries such as the USA and Canada as well as in the developing countries of Africa and Asia. The problem of the shortage of housing persists, and therefore, the provision of housing stands as a challenging area for government policy-making in virtually every country. Nevertheless, the severity of the housing problem varies from place to place, with the general observation that the cities in developing countries, 'especially the big cities, have the worst housing problem. In many of these cities, only a small proportion of households can afford housing built by the private housing sector and, as a consequence, a high proportion of the urban population, in particular the poor, have to choose to live in squatter and slum areas as a part of their strategies for survival.

Such an observation suggests that the housing problem is related to a number of socio-economic factors. First, it is related to economic capability, represented by the match between population growth and the development of human ability in mobilizing and utilising resources. Secondly, it is related to

'In this study, the concept "developing countries" indicate the countries which are neither industrially developed capitalist countries nor developed socialist countries.
the pattern of income distribution, which indicates the social pattern of the distribution of the mobilized resources. Thirdly, it is related to the pattern of the organization of human settlements, which represents the spatial pattern of the distribution of these mobilized resources.

The socio-economic reality in most developing countries is characterized by the mis-match between population and resources, enormous disparity in the distribution of income and wealth, and the concentration of population in cities. The urbanization process in these countries, with all its problems, represents such a socio-economic reality.

In the majority of developing countries, the rate of population growth is high whilst the progress of the economy is relatively slow. Statistics in 1978 show that developing countries constituted 69.8% of the world's total population but generated only 16.5% of its GNP (World Bank Atlas, 1978). This mis-match is one of the reasons for the general poverty in these countries, represented in economic terms by low GNP per capita. The mis-match has also caused the mis-match between labour supply and labour demand, and has resulted in a high rate of underemployment and unemployment. Under such circumstances, it is virtually not possible for these countries to find sufficient resources to satisfy the various needs of the population, including the need for housing. Interestingly enough, the negative consequences of the mis-match between population and resources have not had a significant impact on the pattern of
population growth. Developed countries continue their generally low rates of population growth, around one percent, whilst high rates of population growth, two to three percent or more, persist in most developing countries. Only a few developing countries have relatively low rates of population growth, including China, Cuba, Ethiopia, Lebanon, Yugoslavia. While Pakistan, Bangladesh and Afganistan, the fastest growing countries in Asia, are among the world's poorest (World Bank Atlas 1985).

The disparity in the distribution of income and wealth is currently a universal phenomenon. Such a pattern of distribution is the underlying reason for the universal existence of the housing problem. However, because of the general poverty in developing countries, the disparity in the distribution of income and wealth has resulted in a much higher proportion of the population living in "absolute poverty" (Linn, 1983, p4). As an example, in the capitalist developing countries in Southeast Asia, the top quintile of the population typically enjoy 50% of the national income while the bottom fifth receive only about 5-7% (World Bank, 1984). It is therefore not hard to imagine the limitation in the poor's economic situation in relation to their basic needs.

The current spatial pattern of the built environment, or in other words investment, is a consequence of the system of capitalist economies. Conventional economists may argue that this spatial pattern of the distribution of resources is
economically efficient, but it is undeniable that it has various negative consequences. Urbanization has resulted in an increased concentration of population and an extremely complicated relationship between man and his environment that is difficult to plan.

The urbanization process in developing countries is a process that results in the concentrations of both wealth and poverty. On the one hand, cities in these countries are the places where some people make their fortunes, receive the best education, and enjoy the best social amenities. On the other hand, the large influx of migrants, driven either by their perceptions regarding the opportunities for employment, income, education, and other socio-economic activities or by the limitation of the rural area in absorbing surplus labour and population, always surpasses in number the human resource required by the cities. As a result, cities face shortages in the provisions of employment, housing, and even food. Therefore, the housing problem in the cities of the developing countries is a part of the problem resulting from the spatial concentration of poverty in these countries. The disparity in the spatial pattern of distribution of wealth is significant not only at national and regional levels but also at the urban level. Spatial concentration of social groups and income opportunities are typical phenomena in metropolitan areas. This in turn results in the disparity in land prices related to location. The price of centrally located land is so high that the poor find it is not possible for them to satisfy their basic housing needs
including access, tenure, services, and shelter, creating a dilemma. As a consequence, symptoms of the urban housing problem, include land invasion and illegal subdivision, overcrowding, lack of services, poor access to employment opportunities, and rapidly rising land and housing prices.

The above discussion has revealed the socio-economic basis for the housing problem in the cities of developing countries, indicating the direction in which the government should approach solutions. As the housing problem is deeply rooted in socio-economic circumstances, the solution to the housing problem in the cities of the developing countries eventually requires that the combined effect of the mis-match between population and mobilized resources, and the disparity in the social and the spatial pattern of distribution have to be reduced to the extent that even the poorest urban households can earn sufficient to meet their basic needs, including housing. The magnitude of the effort needed to achieve such a goal is obvious. What the government needs to do involves reforms in the socio-economic structure of the society and improvement in the level of productivity of the country. Moreover, with the persistence of the trends in population growth and urbanization, it is estimated that urban communities in developing countries will have to absorb close to 1 billion people between 1975 and 2000 (Linn, 1983). This will, in the foreseeable future, aggravate the severity of the housing shortage in developing countries.

What should the governments in developing countries do,
about the currently high rate of population growth, limited economic resources, and the existing socio-economic structure, to make progress towards an improved housing situation?

1.2 Housing, Housing Policy and Housing Planning in the Process of Socio-Economic Development in Developing Countries'

The efforts made by governments to improve the housing situation vary significantly from country to country. Government attitudes towards the housing problem ranges from indifference to direct provision of public housing. Needless to say, the difference reflect different political systems and economic capabilities. At the same time, the difference between countries with a similar political and economic situation suggest that such difference are also conditioned by the priority given to housing in development strategies. Countries adopt different development strategies on the basis of different theories of the process of socio-economic development, which present diverse views on the the relationship between housing and the development process.

It seems a common belief among academics that the housing problem has a close association with a country's socio-economic reality and therefore improvement in the housing situation

1'This discussion is based on two references: (i) Urbanisation, Housing, and the Development Process (Drakakis-Smith, 1981); and (ii) "National and Regional Development Strategies: Implications for Housing Policies" (Wu, 1979).
actually means progress in socio-economic development. Nevertheless, there has never been agreement on the role of housing in the historic process of socio-economic development. Early statements tended to adopt the simple humanist stance that housing for the urban poor was one of the most effective ways of improving their overall living conditions, viewing housing as an end in itself rather than a means to the broader end of eradicating poverty. This view has had little influence on decision-makers so that housing protagonists have tended to expand their arguments to incorporate quasi-economic and political reasons in order to enhance their acceptance. On one hand they put great emphasis on the social functions of low-cost housing programs because of their potential for income redistribution, because they are thought to reduce disease and delinquency, and because they may moderate the impatience of the urban poor with the persistent inequalities of urban life; on the other hand, they also argue that the relatively high labour-intensity of housing construction results in increased employment opportunities.

An opposite position is taken by some economists, who argue that income redistribution can be more efficiently achieved by methods other than investment in low-cost housing, and that housing shortage is just one of many problems which result from rapid urban growth. Developing countries are therefore urged to invest in areas which offer more tangible or immediate returns. The assumption is that general economic growth will eventually bring about improvements in other fields, such as housing. In
their arguments housing is seen as an unproductive sector of economic activity which absorbs rather than generates resources. The development strategies based on this school of thought, which are what Wu calls "macro-economic growth strategies", were adopted by many governments of the developing countries after the Second World War (Wu, 1979). Nevertheless, there is little evidence that a narrow focus on economic growth has resulted in a broad permeation of benefits throughout society. On the contrary, the tendency to date is towards greater income disparity (Wu, 1979). In addition, there is no solid evidence to show that sacrificing housing development in favour of other sectors will result in a higher rate of economic growth.

Many countries have begun to realize the need to modify their development strategies because of the new interpretation of development in a broader socio-economic context. As far as housing is concerned, this means that a firmer rational for housing investment, housing policy and housing planning is being sought. The point to be made here is that the new rational should be based on an understanding of the fundamental nature of housing.

There are essentially three aspects which constitute the nature of housing. First, housing is a basic human need, which suggests its serious socio-economic consequences because of the importance of housing to every individual and the family. Therefore, rather than a result of development, housing is a basic component constituting the historic process of
development. It is therefore imperative that the government makes every possible effort to meet basic housing needs.

Secondly, housing is an economic activity, which means that housing on one hand needs resources, such as land, capital and labour, and on the other hand, creates employment and generates profits. In fact housing forms part of the capital of a society in the same way as tools, etc. This has two implications: (i) housing makes a contribution to socio-economic development through job creation, profits, and stimulation of related economic sectors; (ii) housing provision is subject to a country's economic capability for investment in it.

The third aspect of the nature of housing is that housing is a major component of the physical environment. This suggests that housing can contribute to socio-economic development through improving the relationship between man and his physical environment and through economizing on the use of urban land.

To this point, the necessity and benefits of housing development has been presented. Government housing policy and housing planning should ensure an adequate allocation of resources to the housing sector to give full play to the dynamic functions of housing. However, because the resources needed for housing are constrained by the limited economic capacity of a developing country, government housing policy and housing planning should also ensure an efficient use of the limited resources. This means that the provision of low-cost housing for the poor should be the central policy orientation.
The definition of "low-income group" is related to time and location. Nevertheless, there is one feature common to low-income groups in all countries, i.e. they do not earn enough to be able to satisfy what are considered as basic requirements for life. As far as housing is concerned, low-income households are those who cannot satisfy their basic housing needs by spending a normal proportion of their income on the housing market. In most cases, they have to spend more than 20 percent of their income on rents, if they want to have their basic housing needs satisfied. It is to these people that the government should provide low-cost housing.

The approaches taken by developing countries are diverse. The differences are seen at all levels and all aspects of housing policy and planning. Results show that not all developing countries are equally successful in improving housing conditions, which suggests the importance for these countries to adjust their approaches through learning from each other.

1.3 Purpose and Scope of the Study

This study is intended to discuss the socio-economic role of urban low-income housing in the development process of developing countries, and to examine the ways in which government housing policy and housing planning contribute to the socio-economic effectiveness of urban low-income housing in these countries. The study focuses on one approach, i.e. low-income public housing, and is conducted through a critical and
comparative analysis of the development of the low-income public housing programs in Hong Kong and Singapore.

Hong Kong and Singapore are two of the few developing countries in the world which have pursued policies of large-scale low-income public housing programs.¹ They are frequently cited as examples of successful public housing policies and programs. It is therefore likely that comparable countries can learn from Hong Kong and Singapore through understanding the socio-economic background, the nature and the policy orientation, the planning and design, and the socio-economic effectiveness of their low-income public housing programs. Contributing to such learning is the goal of this study.

Low-income public housing by definition has three essential characteristics. First, it is a social initiative rather than a market initiative, and has the objective of providing adequate housing to the designated low-income group. Secondly, because it is a social initiative, the rent for the low-income public housing is geared to the income of the residents. Thirdly, as its residents are from the low-income group, the income from rents usually cannot cover the costs of building. As a consequence, low-income public housing usually results in substantial deficits, which requires government subsidies.² What

¹Hong Kong and Singapore are usually included in the group of countries labelled "developing". See McGee, 1971, and Linn, 1983.

²Notes taken in Professor Oberlander's lecture, 1986.
were the socio-economic circumstances in Hong Kong and Singapore that led to the initiation of their low-income public housing programs? What were the social orientations of the housing programs and how has this orientation evolved? How have the governments in Hong Kong and Singapore designated their administration and finance systems to direct the social orientation of the low-income public housing? What were the major constraints and opportunities for achieving the goal of the housing programs? How have planning and design played an important role in achieving the goals of the low-income public housing? What have been the socio-economic effects of the housing programs? These are the questions which guide the effort of this study.

The essential features of low-income public housing indicate that Hong Kong and Singapore share some similarities. By identifying the similarity, some basic principle in approaching low-income public housing may be generalized. However, it should be emphasized that this study is not intended to advocate public housing as a universally feasible approach to the housing problem in the cities of developing countries. It is realized that Hong Kong and Singapore as "high income developing countries" and "urban-states" are different than most developing countries. Therefore, understanding the importance of flexibility in housing policy and planning is critical to those countries that want to learn from Hong Kong and Singapore. In an effort to understand the importance of flexibility, it is an intention of this study to identify the major differences in
housing policy and housing planning between Hong Kong and Singapore and to discuss the socio-economic background leading to these differences, and the relative effectiveness of their programs.

The last part of this study, will summarise what can be learned by comparable countries including a brief discussion of the lessons which China can learn from the policy and planning for low-income public housing in Hong Kong and Singapore.

The study is based on data collected from government publications and from previous studies by various authors on low-income public housing in Hong Kong and Singapore as well as on the urban housing problem in China. Works by a number of scholars on urbanization, housing policy and housing planning in developing countries are valuable references for this study. In addition, critical comments by UBC faculty contributed many ideas for this study.
CHAPTER 2. THE INITIATION OF PUBLIC HOUSING
IN HONG KONG AND SINGAPORE

This chapter describes why and how a large scale low-income public housing program was initiated in Hong Kong and Singapore. It analyses the political, social and economic factors which constituted the basis for initiating positive governmental attitudes in the two city-states towards solving their respective housing problems. The analysis of the socio-economic significance of developing low-income public housing in Hong Kong and Singapore is the central theme of the discussion.

The public housing program in Hong Kong began in 1954. Before then, there was no tradition of government assistance in the provision of low-income housing. It is not easy to define the initial date for public housing program in Singapore because the Singapore Improvement Trust, a government organization in charge of building public housing, had been in existence since 1927, long before the establishment of the Housing Development Board (HDB) in 1960. Nevertheless, adequate housing for the whole population was only an elusive goal before the establishment of HDB, which marked the beginning of the construction of large scale public housing programs dominating the housing sector in Singapore. In this study 1960 is therefore taken as the year in which Singapore initiated its present policy for low-income public housing.

Important questions to be answered are: Why in 1954 did the government of Hong Kong change its attitude towards housing from
traditional indifference to positive direct intervention? why in 1960 did the government of Singapore appear in the housing sector with a new attitude and begin to make a fundamental improvement in the provision of low-income public housing? what were the respective potential dynamics of low-income public housing which were foreseeable to the governments?

To answer these questions, it is necessary to review Hong Kong and Singapore's historic and geographic backgrounds, their political, social and economic situations in the post-war period, and to examine the constraints on and the opportunities for their respective post-war development.

2.1 Historic and Geographic Background

HONG KONG, situated on the coast of China's Guangdong Province, has been a British crown colony since the mid-19th century. The total land area of Hong Kong is about 410 square miles (1,062 square kilometres). The terrain of Hong Kong is mostly hilly and in places very steep. Only about 20% of the total land area is suitable for cultivation or for habitation (see figure 2.1 & figure 2.2).

'This review is based on the facts provided by Encyclopedia Americana (1981); Academic American Encyclopedia (1982); The New Encyclopedia Britannia (1985); A History of Hong Kong (Endacott, 1958); Housing in Hong Kong (editor: Wong, L.S.K., 1978); Housing in Singapore (editor: Yeh, Stephen, 1975).
Figure 2.1 - The Setting of Hong Kong and Singapore

Figure 2.2 - Hong Kong

Source: Fong (1980).
Britain acquired Hong Kong from China in three stages: Hong Kong island was formally ceded in 1842; Kowloon, which included the tip of Kowloon peninsula and Stonecutters Island, was next ceded in 1860; and the New Territories, which comprised the rest of the Kowloon Peninsula, the rural areas adjacent to mainland China and over 200 off-shore islands, were leased in 1898 for a period of 99 years. The colony was acquired by Britain mainly for the purpose of trade with China and this in turn determined the spatial pattern of development in Hong Kong. The major urban areas have been built on Hong Kong island and on Kowloon Peninsula, embracing the Victoria Harbour, which is one of the world's finest natural harbours.

Hong Kong was sparsely populated before its initial occupation by Great Britain in 1841. During the second half of the nineteenth century, Hong Kong, with its strategic geographic position, was developed as a major entrepot and depot for trade. In 1859, ocean-going shipping using the Victoria Harbour was recorded as 2,179 ships of 1,164,640 tons. In 1898, the figure increased to 11,058 ships of 13,252,733 tons. Accordingly, the population of Hong Kong grew quickly, recorded as 86,941 in 1859 and 254,400 in 1898 (Endacott, 1958). Other than its growing function as a entrepot and depot for trade, the growth of Hong Kong has been closely related to many other factors. As the main source of population growth of Hong Kong was refugees from China escaping from the long years of war or seeking better opportunities, historic events such as the discovery of gold in Australia (1851), the opening of Suez Canal (1869), the fall of
the Ch'ing dynasty and the consequent revival of regional
warlords in the 1910s and 1920s, and the Japanese invasion in
1930s were all important factors behind the population growth in
Hong Kong. By 1940, the year before the Japanese occupation of
Hong Kong, the population had risen to 1.8 millions.

The colony was occupied by the Japanese in December of
1941. Between 1941 and 1945, there was considerable outward
movement through migration and the population fell to around
650,000. However, on the resumption of British administration
people streamed back into Hong Kong. The subsequent civil war in
China resulted in a flood of refugees greater than had ever
occurred in the past. By 1951 the population had risen to over
2 million.

SINGAPORE, is an independent nation in Southeast Asia. It
is located off the southern tip of the Malay Peninsula, at the
crossroads of the Indian and Pacific oceans. Together with its
40 tiny adjacent islets, the republic occupies 226 square miles
(585 square kilometres) of territory. Topographically, the
country is flat and low (see figure 2.1 & figure 2.3).

The modern history of Singapore started in the early 19th
century, a time when Singapore's strategic location came to be
recognized by the West, Britain, saw that she needed a good
harbour in the vicinity of the Malay Peninsula to serve as a
port of call for her ships on the route from India to China, and
also to open up new areas for commerce. In 1819, Thomas Stamford
Figure 2.3 - Singapore

Raffles acquired the island from the Malay Sultan of Johore on behalf of the British East India Company. In 1824, Singapore was established as a major British trading post in Southeast Asia. Chinese and Indian traders, Indian indentured labours and Malays began arriving in large numbers. In 1826, Singapore became part of the Straits Settlements, which was made a British crown colony in 1867.

The coming of the steamship in the mid-1860s and the opening of Suez Canal in 1869 contributed significantly to the development of Singapore. By the end of the 19th century, Singapore's position as a major entrepot in Southeast Asia had been well established. Accordingly, Singapore experienced a dramatic growth of population. In 1840 the population of Singapore was 35,389. By 1891 the number had grown to 184,554, mainly through immigration. During the early decades of the 20th century, the population in Singapore continued to grow. In 1901, the total population was 228,555. The figure more than trebled in four decades, recorded as 769,216 in 1941.

The island fell to Japanese forces in 1942. It remained under Japanese occupation for three and a half years, during which its prewar society was fundamentally disrupted. It was returned to British control in 1945 and became a separate crown colony in 1946. In 1959, Singapore became a self-governing state and Lee Kuan Yew, the leader of the People's Action Party, was elected as the first Prime Minister of the State of Singapore.

In September 1963, after a local referendum approving
merger, Singapore achieved independence by becoming one of the 14 states in the new federation of Malaysia. Just 23 months later, on August 9, 1965, severe internal conflict resulted in Singapore's separation from the federation. Thus the island became an independent republic within the British Commonwealth of Nations. With dramatic post-war population growth, Singapore was by then a city-state of about 2 million people.

2.2 The Socio-Economic Situation and Housing problem Prior to the Initiation of Large Scale Public Housing Programs

Three inter-related issues are to be discussed here: Post-war population growth; constraints and opportunities for development; and housing needs and housing shortage. These issues constituted the socio-economic basis for Hong Kong and Singapore's large scale government intervention into the housing sector.

HONG KONG experienced a phenomenal growth of population after it was regained by Britain in 1945. In 1951, the total population of Hong Kong rose to 2 million, which represented an increase of 40% per annum. Despite the imposition of border controls in 1950, legal and illegal immigration continued to play an important role in the overall population growth of the colony. During the 1950s permitted migration averaged 40,000 per

'This review is based on the facts provided in High Society (Drakakis-Smith, 1979); and Housing in Hong Kong (editor: Wong, L.S.K., 1978).
year, while the annual influx of illegal immigration was estimated at between 30,000 and 80,000 (Drakakis-Smith, 1979). Obviously, such population growth posed a great impact on the social and economic realities in Hong Kong.

The soaring population was not the only challenge facing Hong Kong. Another great difficulty was the fact that the foundation of Hong Kong's entrepot activity was demolished, because of the emergence of the People's Republic of China in 1949 and China's participation in the Korean War resulted in the imposition of a trade embargo by the United Nations in general and by the United States in particular.

The only choice left to Hong Kong to get out of its dilemma was to develop manufacturing. Drakakis-Smith argues that although the large influx of refugees from China in the post-war years caused various problems, it also brought Hong Kong great benefits. Many of the refugees were long-term urban residents who brought with them considerable amounts of capital, as well as extensive industrial and commercial experience. Those migrants without special attributes furnished a large pool of readily available, cheap labour. Therefore, post-war Hong Kong had certain essential conditions - capital, labour, and entrepreneurship for industrialization. Han points out that Hong Kong's laissez-faire trade policy was another important factor contributing to the opportunity for post-war industrialization (Han, 1978). The remaining question was: did Hong Kong have the physical and social environment capable of accommodating the
development of large scale manufacturing and accommodating a massive labour force at acceptable living standards? Two inter-related factors—land and housing were, therefore, of determining significance to the post-war economic development of Hong Kong.

The sudden population growth caused a great housing problem. There was no evidence that the formal housing sector in Hong Kong was expanding at a reasonable speed to accommodate the huge number of refugees. Therefore, the majority of the over one million immigrants between 1945 and 1951 either settled in squatter camps or, in the existing tenement areas through subdivision. The government felt unable to help such a large number of refugees find accommodation and hoped that if the situation quietened down in China many of these refugees would return. However, this did not happen as these people were gradually absorbed into the local economy.

The housing shortage was appalling. Squatter areas were the most visible symptom of the problem. The post-war immigrants were initially allowed to settle where they wished. As a result, squatters were seen in various places. Some were on vacant land in, or around, the city, some were located in junks on the sea, and others were on rooftops. In 1949, it was estimated that the squatter population of Hong Kong was 300,000 (Fong, 1980). In the squatter settlements, infrastructure facilities were generally unavailable. There was no control over the layout and the design of the structures. Therefore, squatter settlements
were always a threat to the health, security, and physical appearance of Hong Kong.

A higher proportion of the over one million refugees was absorbed in the existing tenement areas in Hong Kong and Kowloon. Subdivision, though less visible, caused serious overcrowding in the tenement areas. The tenements which existed in the early 1950s were usually three to five storeys high, built on long narrow lots which varied in width from 4 to 4.5 metres, with a length to breadth ratio of roughly 3 to 1. Primary leasing within most tenements was by floor, but almost all were subdivided and sublet into cubicles. Only those units near the windows had direct access to light and air. Cooking and toilet facilities were communal and primitive. The situation of overcrowding inside the tenements was severe. Ingrams described many of the tenants sleeping in six tiered bunks, and a tenement floor normally intended for three families actually contained from nine to even more than twenty (Ingrams, 1952).

Therefore, the housing situation in Hong Kong prior to 1954 was quite discouraging. The great majority of Hong Kong's two million people lived in overcrowded, unhealthy and insecure conditions in either tenements or squatter areas. There was no tradition of government assistance in the provision of housing. Although the social and economic problem caused by the severe housing shortage, especially by the large squatter population, was becoming more and more obvious, no significant action was taken by the government to improve the situation. Perhaps, the
trade embargo on Chinese goods caused a substantial decrease in government revenues and contributed to the reluctance of the government to make any large investments.

Nevertheless, the increasing recognition of the necessity of industrialization in Hong Kong and the relationship between industrialization, land, labour, and housing resulted in an increasing recognition of the importance of providing people with adequate housing. Although direct government intervention was still non-existent, the idea of a large scale low-income public housing program was being latently fostered.

SINGAPORE\(^1\) had a very high rate of population growth in the post-war years. According to the census of 1947, the total population in Singapore in that year was 938,000. The census of 1957 recorded a total population of 1,484,000, which indicated an annual growth rate of 4.3 percent during the decade 1947-57. It was made up of a 3.5 percent natural increase per annum, and a 0.8 percent increase per annum through the movement of people to Singapore from the then Federation of Malaya (Lee Soo Ann, 1973).

Post-war Singapore thus faced an acute population problem. The high rate of population growth resulted in an increasingly

\(^1\)This review is based on the facts provided in HDB Annual Report 1960 (Singapore Housing and Development Board); Industrialization in Singapore (Lee Soo Ann, 1973); and Public Housing in Singapore (editor: Yeh, Stephen, 1975).
high rate of unemployment. In 1959, unemployment reached 13.5 percent (Lim Chong-Yah, 1984). The Singapore economy was hard-pressed to maintain per capita real incomes (Lee Soo Ann, 1973). It was anticipated that the normal expansion of entrepot trade and banking would not be sufficient to keep pace with the rapid increase of population (Lee Soo Ann, 1973). Therefore it was obvious that the traditional economic pattern centred around entrepot trade and services could no longer meet the challenge and industrialization was needed in this island state which has limited land resource for agricultural.

The urgency of speeding up the industrialization process was also pushed by political changes in post-war Singapore. The change of political status from a colony to an independent state, the political and economic relationships between Singapore and the Federation of Malaya, and the political competition for leadership all had a significant influence on the industrialization drive in Singapore. Lee Soo Ann argues that, given the severe unemployment at the late 50s and the spectre of even greater unemployment in the sixties, any responsible government that came into power in 1959 would have been committed to a program of industrialization (Lee Soo Ann, 1973).

In the late 1950s, Singapore therefore faced problems in regard to arranging its physical and social environment for industrialization as had Hong Kong in the early 1950s. Housing, as a basic human need, a major occupier of land, and an economic
sector, was critical to this state anticipating industrialization under the situation of a high population growth rate within a very limited physical space.

Housing shortage had long been a problem in Singapore. Although the government entered the field of public housing as early as 1927 through the establishment of the Singapore Improvement Trust (SIT), little progress was made towards solving the low-income people's housing problem until the formation of the Housing and Development Board (HDB) in 1960. SIT came into being under the Singapore Improvement Ordinance. Nevertheless, SIT under its Ordinance was "given no power to carry out any large-scale housing construction" (Teh Cheang Wan, 1975). It was also handicapped by insufficient funds to be an effective force in urban development. By 1942 SIT had completed only 2,049 houses and 53 shops. The housing problem was aggravated during the Pacific War. Thousands of houses were destroyed and as a result of lack of control during the Japanese occupation thousands of people constructed their own unauthorised dwellings.

The housing situation further deteriorated after the war. The demand for low rental housing rose sharply as a result of migration and very high birth rate. According to Teh Cheang Wan, another reason contributed to the increasing demand was that the population had lost its temporary character and become a permanently settled one (Teh Cheang Wan, 1975). This meant that the housing need changed from single persons to families, and
could not be met effectively by subdivision of the existing housing stock.

A large part of the city centre consisted of old dilapidated shop-houses. Many of them lacked basic utilities and were overdue for demolition. As a result of the housing shortage, these houses were sub-divided into cubicles to house 10 times as many people as they normally accommodated (Varma and Sastry, 1979). When the supply of housing in the Central Area reached saturation, new immigrants formed squatter settlements on the fringe of the city. According to the 1960 Housing and Development Board Annual Report, by the end of the War tens of thousands of people were living in huts made of old wooden boxes, rusty corrugated iron sheets and other salvaged material. They lived in congested squatter settlements with no sanitation or water (HDB Annual Report 1960). The squatter communities were fire and health hazards.

This brief survey of the situation makes it clear that the post-war problems were very much greater than those of the pre-war period. By 1947 the housing shortage was very serious. Many blocks in the City contained over 1,000 people to the acre. Land became scarcer and more expensive as time went on (HDB Annual Report, 1960).

After 1947, efforts were made to increase the pace of building public housing. According to the HDB 1960 Annual Report, a total of 20,907 units were built by the SIT in the period 1947-1959, averaging 1,740 units per annum. Private
enterprise built some 19,000 units over the same period. Together then 40,000 units were built which could accommodate less than 300,000 persons. However, the total population increase over the period was 641,000 persons. In the post-war years, the housing units produced could therefore only accommodate less than half of the population increase, not to mention the huge backlog already waiting for decent housing.

The shortage of housing in the post-war years resulted in an increasing housing crisis. The already overcrowded and in many cases dilapidated old structures in the central areas of the City was being further congested, squatter population and squatter settlements were both growing in size, and unscrupulous people were using this opportunity to make quick profits out of the suffering of the poor. In 1959, there were an estimated one quarter of a million people living in slums and another one third of a million people in squatter areas. Altogether they made up about 35% of the population (Singapore 1983).

It was clear that something had to be done to change the situation. The goal was to increase the provision of low-income housing to adequately accommodate the growing population and to improve the city's social and physical environment to accommodate the development of manufacturing which was sought as the key to making progress.
2.3 The Initiation of Low-Income Public Housing

HONG KONG. On Christmas day 1953, 58,000 persons lost their homes in the great fire in Shek Kip Mei, a squatter settlement in Kowloon. Although almost half of them found accommodation in the permanent buildings of the city, the remainder moved into streets and arcades of neighboring Sham Shui Po. As the year proceeded there were five large squatter fires and a number of small ones. During the period 25th December 1953 – 25th December 1954, out of the whole population about one person in every 20 lost their home in a squatter fire.

In response to the situation, the Hong Kong Government appointed an emergency sub-committee of the Urban Council to advise on what measures should be adopted to meet this crisis. All the recommendation of the sub-committee were accepted and formed the basic plan for resettlement undertaken during 1954. These recommendations represented an abrupt departure from previous policy:

"The two main recommendations were that, as land was short, it would be necessary to resettle squatters in permanent multi-storey buildings; and, that since this undertaking would not attract sufficient private capital, the construction should be undertaken directly by Government and financed from public funds." (Hong Kong Annual Report, 1954).

In the Spring of the year a temporary Department of

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1This review is based on the facts provided in High Society (Drakakis-Smith, 1979); The First Two Millions (The Hong Kong Housing Authority, 1980); and Housing in Hong Kong (editor: Wong, L.S.K., 1978).
Resettlement was set up under a Commissioner for Resettlement, to be responsible for all matters connected with prevention of illegal building and the clearance and resettlement of squatters. During the year the government constructed emergency accommodation for 54,000 persons. Eight permanent six-storey blocks, each housing over 20,000 persons, were completed and occupied. The design standard of these building was very low. The per capita floor space was only 2.2 square metres. Water standpipes, cooking facilities and flush latrines were all communal. These facilities were grossly inadequate. Although ground floor shop space was provided, the amount was insufficient to cope with the demand and the residents therefore had to meet their own retail requirements through the hawker trade.

Rents in the resettlement flats were based on a 40 year amortization of construction costs, including loan repayment. Eventually, rents were fixed at only $14 per month for a standard flat, inclusive of water charges. According to Drakakis-Smith, such rents were lower than those which a large number of squatter families were already paying for their huts (Drakakis-Smith, 1979).

Government's policy at the close of 1954 was to accelerate and expand the multi-storey resettlement program as far as funds would permit with a view to removing the worst squatter areas within about two years. By the end of the year, resettlement operation assumed a new direction and impetus.
SINGAPORE. In a manner different from Hong Kong, political events, rather than fire hazards, marked the change in the government's attitude towards the housing problem in Singapore. When the new fully-elected Government came into power in June 1959, most of the expatriate officers of the SIT left the service. The mass resignation of experienced officers greatly demoralised the remaining staff and shattered the Singapore Improvement Trust organization.

Within weeks of coming in to office, the newly elected government began to prepare draft legislation to dissolve the SIT and to set up a more viable organization with more funds and legal powers to deal with public housing construction and management, urban renewal and related problems.

The Housing and Development Board (HDB) was established on the 1st February, 1960. It is a Statutory Board under the portfolio of the Minister of Law and National Development. After coming into being, the HDB made a quick study of the extent of the housing problem. It was estimated that 150,000 units were required from 1960-1970 to meet the demand, to relieve overcrowding in Central Area, to provide accommodation for the new families formed during the decade, to provide alternative accommodation for the resettlement of people affected by public development projects, to rehouse people affected by the urban

1This review is based on the facts provided in HDB Annual Report 1960 (Singapore Housing and Development Board); and Public Housing in Singapore (editor: Yeh, Stephen, 1975).
renewal program in the Central Area and to rehouse those removed by slum clearance. It was further estimated that the private sector could only built about 40,000 units during the decade for the upper and middle income groups (Teh Cheang Wan, 1975).

The HDB study made it clear that the government had to provide some 110,000 units for the ten year period 1960-1970. A Five-Year Building Program was prepared by the Board and was later approved with some modifications by the Government. The Plan aimed at building 52,842 public housing units at a cost of $230 million over the period 1960-1964, averaging 10,000 units of low-income public housing per year (HDB Annual Report, 1960). A program of such a scale represented a new beginning for public housing in Singapore, in which the government played a dominant role in providing shelter especially for low-income people. The Building program was successfully implemented. A remarkable 7,320 units were built in 1961.

Two types of housing were built: emergency one room flats and self-contained flats with two to three rooms including kitchen, bathroom and modern sanitation. The emergency type was of low standard: it provided 120 square feet of living space and 80 square feet of service area with bathrooms and cooking facilities. Nevertheless, 10,000 units of such type were built in the first three years of the five year program. The monthly rent for these units was only S$20. According to 1960 HDB Annual Report, the housing program were extensive and comprehensive and in all the housing estates, essential services, such as
electricity, gas and piped water were available. Communal facilities such as shopping centres, schools, community centres, clinics, children's playgrounds and open spaces were also provided either in the estates or within walking distance.

2.4 The Socio-Economic Dynamics of the Low-Income Public Housing Programs in Hong Kong and Singapore

Hong Kong and Singapore are good cases for exploring the relationship between urban low-income housing and the process of socio-economic development in developing countries. Since 1954 and 1960 respectively, these two urban-states have been distinguished from the majority of developing countries in that the governments are active in response to their countries' housing problems and that their response has been the construction of large scale low-income public housing estates.

In the first chapter, we have briefly mentioned that there are different schools of thought on the approach to development and on the role of housing in the process of development. Based on different theories, there are various government development strategies in developing countries to pursue socio-economic development. Whilst each theory has its own implications for housing policies, one group of the development strategies, i.e. the one which Wu calls "macro-economic growth strategies", has had the greatest influence (Wu, 1978).

Macro-economic growth strategies were adopted by many national governments after the Second World War. The important
factors were seen to be the national availability of capital, labour, resources and technology. Economic growth was equated with economic development and the conditions for growth were assumed to be endogenous. An implicit assumption is that development could only be achieved through industrialisation. An additional assumption is that national economic growth would in time benefit the individual citizen. Industrial development requires large capital investments. Capital could be accumulated by exporting natural resources, encouraging higher propensities to save among the population, and by foreign investment and international loans. There are divergent views among these proponents of rapid national growth. One approach favours massive investment in major industrialisation projects as well as infrastructure. The other approach argues for concentrated investment in a few selective key industries.

In terms of its implications for housing policy, since the chief goal of macro-economic development strategies is to achieve rapid economic growth through industrialisation, any program which diverts scarce capital away from the key industries might be considered as negative. Provision of public housing can be seen as investment in a non-productive sector. It could be argued that the same resources might be used to build more factories. It is often said that the input-output ratio of housing investment is too high to be economically efficient. Consequently, any substantial public housing program could be considered to be economically unwise.
It can be further argued that any program which detracts from the promotion of aggregate economic growth should be delayed until such time as the overall improvement in economic welfare will allow either the individual or the government to afford the provision of better living condition; that better housing may contribute towards improvements in public health and consequently healthier workers, is not persuasive since under conditions of labour surplus wages can be kept very low and replacements are plentiful. Therefore, only limited showcase housing projects are likely to be acceptable when these projects are necessary to soften political unrest.

The weakness of this strategy lies in its narrow definition of development. It is true that, in the existing world economic system, industrialisation is a critical process towards development, and economic growth is an important measure of the rate of development. However, industrialisation and economic growth is not the only context for development, nor is it separable from social development. A good social and physical environment is both a purpose of economic growth and a means to further development. Industrialisation depends on the availability of not only on capital and natural resources, but also on human resources and technology. The dynamic role of social development is most clearly seen in its relation to the development of human resources and technology, which in turn determines the efficiency of capital investment and resource utilization.
In the first chapter we have discussed the nature of housing, which is comprised of three aspects, i.e. housing as a basic human need, housing as an economic activity, and housing as a major component of the physical environment. The nature of housing suggests that a new rational, based on a broader interpretation of development in its socio-economic context, should be established to guide future investment in housing. Hong Kong and Singapore are good examples for developing this idea further. While most developing countries were reluctant to allocate funds to housing, Hong Kong and Singapore began large scale low-income public housing programs. It is worth understanding the major factors which caused this active political response. What potential socio-economic dynamics of housing were foreseeable to the policy-makers in Hong Kong and Singapore? Why was a low-income public housing approach taken?

Like many other national governments, the governments of Hong Kong and Singapore have been active in searching for economic development. They consciously pursued policies designed to foster economic growth in the conviction that economic prosperity would filter down. Nevertheless, they are distinguished from other developing countries because they view housing as a part of an integrated process of development. They have achieved success in both housing and economic growth.

The basis for establishing the positive relationship between low-income urban housing and the process of socio-economic development was provided by the ability of low-income
housing to satisfy the large low-income population's basic housing needs, improving the physical environment and economizing on the use of urban land. Rather than the fruit of a developed economy, the development of the large scale low-income public housing programs was a necessary step in the socio-economic development of Hong Kong and Singapore.

As a basic human need, the provision of housing offered accommodation to millions of low-income people who were a major resource for industrialisation and economic development in the two urban-states. Cheap labour was critical to the competitive price of export commodities, which was, and still is the major component of manufacture in Hong Kong and Singapore. The situation in Hong Kong and Singapore in 1940s and 1950s was that of an unbalanced match between population growth and the provision of basic human needs, which created severe constraints on economic development. As was shown in the study by the Singapore HDB, the housing market was not able to provide enough low cost housing to meet the needs of the growing population. Or, in other words, the existing economic situation and the disparity in the distribution of wealth meant that for a high proportion of the population basic housing needs could not be presented as an effective demand. The increasing squatter population and slum residents in Hong Kong represented the same situation. It was also a threat to political stability. Government intervention in the housing sector was increasingly necessary in order to prevent the expansion of squatter settlements and the further deterioration of the social and
As a major component of the physical environment, the provision of well planned low-income public housing was an efficient way to mobilize under-used land resources. Both Hong Kong and Singapore are among the most densely populated countries in the world. Therefore, prevention of further expansion of squatter settlements and clearance of squatter land of high development value was critical to their economic development. The squatter land in both Hong Kong and Singapore was in public ownership, which provided a good basis for their public housing programs. As was pointed out in the report by Hong Kong's Commissioner for Resettlement, it was "ridiculous for the economic and social progress of the colony to be strangled through a land shortage which could be relieved if illegal structures could only be removed" (Commissioner for Resettlement, 1955).

The socio-economic dynamics of the development of low-income public housing in Hong Kong and Singapore demonstrate that, although the political response to the housing problem was pushed by emergencies (in Hong Kong fire disasters, and in Singapore political change), public housing programs in both urban-states were far more than simply welfare programs. The political response was deeply rooted in broader socio-economic realities. Here is an extract from the Hong Kong Annual Report describing the relationship between the fire hazard and the initiation of its low-income public housing program:
"These unhappy developments had two important results. First, they transformed the squatter problem from a stubborn and apparently endemic evil into an emergency of the first order; and second, the fires freed for proper development substantial areas of valuable land which the presence of squatters had rendered unusable and whose removal had defied all ingenuity."

It was made clear that the squatter settlements were seen as both a social problem and a block to development, and the fires were seen as providing chances to change the situation.

The method used to make the change was to develop low-income public housing to resettle squatters. Nevertheless, it was further clarified that squatters "are not resettled simply because they need...or deserve, hygienic and fireproof homes; they are resettled because the community can no longer afford to carry the fire risks, and threat to public order and prestige which the squatter areas represent and because the community needs the land of which they are in illegal occupation. And the land is needed quickly" (Commissioner for Resettlement, 1955).

From the above review of the background and purpose for the initiation of large scale low-income public housing in Hong Kong and Singapore we see that these two cities share many common features in their historic, geographic, social, and economic contexts. Although marked by different historic events, public housing programs in both Hong Kong and Singapore are essential components of gradually established political strategies for economic and social development. There are four main common features in the initiation of Hong Kong and Singapore's large
scale government intervention in the housing sector. First, they were both urban-states pursuing industrialization under conditions of rapid population growth and economic pressure. Secondly, the serious housing shortage, together with the shortage of land resources, posed severe constraints on socio-economic development in both urban-states. Thirdly, the squatted lands in both Hong Kong and Singapore were generally in public ownership. Finally, the private sector in both cases was not able to satisfy the increasing population's basic housing needs.

Nevertheless, it is also important to note the differences between Hong Kong and Singapore. One major difference is that the post-war population impact was much greater in Hong Kong, because a large influx of refugees and immigrants was an important cause of population growth, whilst in Singapore the impact of immigration was far less significant. A second major difference is that Singapore experienced more political change in the post-war years. A third major difference is that Singapore had a tradition of government assistance in housing whilst Hong Kong did not have such tradition. A fourth difference is that Hong Kong's public housing program was initiated in 1954, when the GNP per capita was much lower than that of Singapore in 1960. All these differences were reflected in their public housing programs. For instance, in the initial years, public housing in Hong Kong had a contingency nature while it was better prepared in Singapore. Furthermore, the design standard was lower in Hong Kong than in Singapore.
The potential dynamics of low-income public housing in the development process in Hong Kong and Singapore were clear. However, housing as an economic activity requires economic resources as an input. How could Hong Kong and Singapore, with their limited economic resources, achieve the goal of housing development? It seems that their essential approach was to direct the limited assistance towards low-income groups by constructing "low-income public housing". But who was in the "low-income" group? What were the policies used to ensure the social goals? And what planning and design measures were used to ensure the socio-economic effectiveness of the housing programs? The common features and differences in the respective housing programs of the two city-states will be analysed further in subsequent chapters.
CHAPTER 3. ADMINISTRATION AND FINANCE OF PUBLIC HOUSING IN HONG KONG AND SINGAPORE

It is important to discuss administration and finance of public housing because these factors indicate both the resources available for public housing and the manner in which they are mobilized and utilized. As it is now about three decades since large-scale low-income public housing programs in these two urban-states were initiated, the administrative and financial aspects have evolved, going hand in hand with the development of public housing.

Three aspects of administration and finance are reviewed here: first, the administrative organization for public housing; second, the financial arrangements for public housing; and the third, the allocation of public housing flats.

3.1 The Administrative Organization for Public Housing

Public housing administration has a dual role. First it advises government on policies regarding public housing, which means that it is one of the major actors determining the policy orientation of public housing programs. Second, it implements public housing program, which involves various activities of

The discussion in this chapter is based on facts provided in: Hong Kong Housing Authority Annual Report (1975-1985); Singapore Housing and development Board Annual Report (1960-1979); Housing in Hong Kong (editor: Wong, L.S.K., 1978); Public Housing in Singapore (editor: Yeh, Stephen, 1975); and Housing Problems and Public Housing Program in Hong Kong (Fong, 1980).
planning, land acquisition, design, construction, and management. The administrative organization for public housing is therefore critical to the setting and the achievement of policy goals.

HONG KONG. At first we will review the public housing administration in Hong Kong by examining the general organization of its government administration. As a British Crown Colony, Hong Kong is administered by the Hong Kong Government of which the central figure is the Governor who presides over both the Legislative Council and the Executive Council. The Legislative Council enacts legislation and controls the expenditure of public funds. The Executive Council, advises the Governor on all important matters of policy.

At the centre of public administration in Hong Kong is the Government Secretariat. The Chief Secretary is the Governor's principle adviser on policy and the chief executive of the government. His office co-ordinates and supervises the work of all government departments and is organized into six policy branches based on program areas: environment, economic services, home affairs and information, housing, security, and social services. In addition, it has two resource branches dealing with finance and a branch for administration of the New Territories.

In addition to the central government organization there are a number of semi-autonomous statutory bodies. The most important of which, as far as housing is concerned, are the
There have been many changes in the administrative organization for public housing in Hong Kong since large-scale low-income public housing programs were initiated in 1954. At the beginning, the Urban Council was designated by the Resettlement Ordinance as the authority for the management of the resettlement estates, factory areas, and "approved areas" in the metropolitan Hong Kong. In the New Territories, the competent authority was the Commissioner for Resettlement who was also responsible for the clearance of squatters throughout Hong Kong and for squatter control in urban areas.

Two select committees of the Urban Council, one in charge of resettlement policy and the other charged with estate management, were created. A Resettlement Department headed by a commissioner was also established. In practice, the Urban Council's Resettlement Policy Committee determined resettlement policies and priorities while the Resettlement Department executed these policies and carried out the resettlement of squatters, the administration of resettlement areas and estates, and the prevention of new squatter settlements. Two important areas were outside the executive authority of the Resettlement Department. The first concerned the selection of sites and the design and construction of the multi-storey estates, which was the responsibility of the Public Works Department who handed the buildings over on completion to the Resettlement Department for management. The second was the financial control of the
The second major piece of housing legislation passed in 1954 was the Housing Ordinance which established a Housing Authority to provide housing for low-income families living in overcrowded conditions in private tenements. The Authority was comprised of all the ex-officio members of the Urban Council, together with not more than three persons nominated by the Governor. Under the terms of the Ordinance, it was given a wide range of authority to build housing, as well as powers to develop land and acquire and improve residential buildings.

In 1959, the government, disappointed with the progress in relieving the housing problem and clearing unsatisfactory private tenements, commenced the third type of public housing, i.e. the Government Low Cost Housing Scheme. This program was for people with a family income lower than the housing authority tenants. The Public Works Department was responsible for the construction and the completed estates were managed by the Housing Authority.

Therefore, there were three types of low-income public housing with two social goals— one was the resettlement housing, which was basic accommodation hastily erected in large numbers for those affected by squatter clearance or those made homeless by fires; the other was self-contained public housing built by the Housing Authority or under the Government Low Cost Housing Scheme, supplying better accommodations to other low-income people in need of housing. The problem with the early
pattern of administration was that there were many organizations involved in public housing but little cooperation among them. In 1964, a Working Party, appointed by the government to investigate housing problems, recommended the establishment of a Housing Board to advise government on all housing policy and to review the implementation of approved policy by all the departments concerned. The government accepted the proposal, and in 1965, the Housing Board was established with the responsibility for surveying the total housing effort, public and private, advising government on the size and scope of the future public housing and on such matters as rent levels, and eligibility for public housing (Morris 1978). In its eight years of existence from 1965-1973, the Housing Board made many policy recommendations to the government. Nevertheless, it was only an advisory body, not accountable for the implementation of its recommendations. There was still no single organization that had the overall responsibility for housing policy and for implementing the public housing program. The problems with the administration system, according to Morris, were: (i) there was a gap between responsibility for the planning and design of public housing estates and the responsibility for managing and maintaining them (while the former lay in the domain of the Public Works Department, the latter was a major function of the Housing Authority and the Resettlement Department); (ii) the existence of the two separate management bodies caused tremendous confusion for the public, particularly as the design of later resettlement estates was similar in standard to low
cost housing; and (iii) the large size of the public housing program required pooling of the limited professional resources (Morris, 1978).

In October, 1972, the Governor of Hong Kong announced a ten year housing program with the target of providing permanent, self-contained homes with good amenities in a reasonable environment, for the majority of the people of Hong Kong. This program involved building accommodation for some 1.8 million people over the next ten years. The Governor also announced the creation of new housing organization to give the program the necessary support:

"What we propose is to vest in a single body the powers and functions that are at present fragmented, that is to say those of the Housing Board; those of the Urban Council and the Commissioner for Resettlement under the Resettlement Ordinance and those of the Housing Authority under the Housing Ordinance. We propose to associate with this single body a unified Housing Department. This will be responsible for the planning, administration and construction ... of all public housing in the Colony and also for all the duties formerly carried out by the Resettlement Department and the staff of the Housing Authority". (speech by the Governor of Hong Kong, Sir Crawford M. Maclehose, to the Legislative Council on October 18, 1972).

There were also other important changes in public administration in Hong Kong which had a great influence on the administration of public housing. One involved the grouping of departments to achieve greater coordination in government programs. A number of new branches were created, including a Housing Branch headed by the Secretary for Housing with responsibility for policy and programs in the housing field.

Since 1973, public housing administration in Hong Kong has
been under one single organization - the Hong Kong Housing Authority. It is a statutory body responsible for coordinating all aspects of public housing. The functions of the Authority include: (i) advises the Governor on all public housing policy matters; (ii) plans and builds public housing estates for classes of people recommended by the authority and approved by the Governor; (iii) manages public housing estates, Cottage areas, Temporary Housing Areas and Transit centres throughout the territory of Hong Kong; (iv) advises the Governor on policies pertaining to squatter control and eligibility for rehousing on clearance and emergencies; (v) acts as agent for the Crown in the sale and development of land. In addition, the Housing Authority has since 1977 undertaken the responsibility for planning, building, and managing Home Ownership flats financed initially by the government where individual flats are sold to families within certain income limits on terms approved by the government.

The Authority meets quarterly under the chairmanship of the Secretary for Housing to review the work of the six standing committees which have delegated powers to deal with matters concerning finance, building, estate management, home ownership, operations and appeals. The Authority comprises 14 members representing a wide spectrum of the community, and six official members from Government departments directly involved in housing matters.

The building Committee holds monthly meetings to decide
upon the selection, planning and layout of sites, the design and construction of buildings and the acceptance of tenders for building works.

The Finance Committee meets once every quarter and examines the annual income, expenditure and capital budget of the Housing Authority. It also co-ordinates and advises on the financial aspects of the policies formulated by other committees of the Authority.

The Management Committee meets monthly and is responsible for overseeing the management of housing estates and considering policies and standards for the selection of tenants, tenancy conditions, methods of rent collection, and estate maintenance, repairs and sanitation.

The operation Committee is responsible for policy matters pertaining to the clearance of land required for redevelopment, prevention and control of squatting; planning and co-ordination of improvements to squatter areas; management of Cottage Areas and Transit Centres; and allocation of temporary and permanent public housing.

The Appeals Committee is a statutory body established under the Housing Ordinance to hear appeals by tenants against the termination of their tenancy or the service of a notice to quit.

The Home Ownership Committee carries out its function by making recommendations on new eligibility criteria for applicants for flats under the Home Ownership Scheme and flat
prices.

In addition, the Committee on Housing Subsidy to Tenants of Public Housing was set up in October 1984 to consider the issue of housing subsidy for public housing rental tenants.

The Executive arm of the Authority is the Housing Department. The Department is divided into four branches: Administration, Construction, Estate Management, and Operation.

The Administration Branch co-ordinates the staff and administrative functions of the Housing Department. These functions include provision of office services, finance and accounts, personal training, and research. The Construction Branch handles the planning, design and construction of public housing and ancillary commercial, industrial and social facilities. It also directs and co-ordinates the work of consultants, and carries out research on the technical aspects of housing. The Estate Management Branch is responsible for the management of the Authority's rental housing estates. In addition, it also manages the Home Ownership Scheme and properties on behalf of the government. The Operations Branch is responsible for clearance of land for development, rehousing the affected squatters and tenants of dilapidated tenement buildings, victims of natural disasters, control of illegal structures, and redevelopment of the overcrowded Mark I and Mark II resettlement estates built in 1950s. It is also in charge of preparing planning briefs and acquiring suitable sites for the construction of housing estates and temporary housing areas.
SINGAPORE's political system is based on the British model of parliamentary democracy. It consists of three parts: the Legislature, the Judiciary and the Executive. The Legislature consists of the President of the Republic and Parliament. The power of the Legislature to make laws is exercised by passing Bills which are assented to by the President. Judicial power is vested in the Supreme Court and the Subordinate Courts. The function of the Executive is carried out by the Cabinet, which is chaired by the Prime Minister, who is appointed by the President. The Cabinet is a council of ministers charged with the responsibility for administering the country and providing Parliament with the policy guidance. The Prime Minister effectively directs the Government. The Cabinet is responsible collectively to the Parliament and comprises the Prime Minister and fourteen ministers in charge of Ministries of Communications, Culture, Defence, Education, the Environment, Finance, Foreign Affairs, Health, Home Affairs, Labour, Law, National Development, Social Affairs and Trade and Industry (This review is based on Encyclopedia Americana 1981; Academic American Encyclopedia 1982).

The Ministry of National Development is responsible for planning, supervising as well as undertaking physical development. Its main development activities cover public housing, middle income housing, urban renewal, public works, primary production, parks and recreation. It is the sole government authority responsible for formulation and implementation of settlement plans at all levels. The ministry
has a number of departments to control and guide development in Singapore. The policies formulated by the ministry are carried out by two statutory bodies, i.e. the Housing and Development Board and the Urban Redevelopment Authority.

The Housing and Development Board is a statutory body established in 1960 by the enactment of the Housing and Development Act. It has been responsible for public housing and auxiliary facilities since then. The Board is comprised of a chairman, a deputy chairman, and four members. Initially, the organization under the Board comprised six departments: Secretariat, Finance, Resettlement, Lands, Building, and Estates. A major change in the administrative structure of the Board occurred in 1973, when it was restructured into four sections. Since then, the Board has comprised three Divisions and one Department all under the direction of the Chief Executive Officer: Administration and Finance Division, Building and Development Division, Estates and Lands Division, and Resettlement Department.

The Administration and Finance Division consists of three departments: Secretariat, Finance, and Systems and Research. The Secretariat Department is responsible for general administration, personnel administration including staff recruitment and training, conditions of service, union matters, and public relations. The Finance Department is in charge of financial policy, budgetary control, records and accounts of income and expenditure, and collections and payments. The
Systems and Research Department is responsible for management and statistical information systems, socio-economic surveys and research, organization systems and methods studies, and electronic data processing. In addition, there is an Internal Audit Department which is directly responsible to the Chairman of the Board.

The Building and Development Division consists of the following departments: Administration and Contracts, Architectural, Civil Engineering, Structural Engineering, Electrical Engineering, and Survey. The Division is responsible for long and short term building programs, planning and urban design including new towns, housing estates, Central Area housing sites, and rural centres. It is also responsible for design and supervision of (i) HDB projects, including public housing, towns centres, industrial areas, sports and creational facilities, social and community facilities; (ii) agency projects, including land reclamation, middle income housing, and other Government housing projects. The other functions of the Division include repair and redevelopment of housing estates, and management of the plants for building materials.

The Estate and Land Division consists of the following sections: Central Administration, Land Acquisition, Land Management and Leases, Lettings, Hawkers and Markets, Car Parks, Landscaping, Essential Maintenance Services, Labour and Welfare, Security, Legal, Reverted Properties, and 24 Area Offices. The Division has the following responsibilities: management of HDB
properties and reverted properties, land acquisition and management, sale and rental of flats, rental of shops and industrial premises, management of hawker centre and markets, car park management and enforcement, landscaping, 24-hour essential maintenance service, labour and welfare service, estates and lands legal matters, security services, and residents' committees.

The Resettlement Department is responsible for (i) clearance of State Lands required for public development, including public housing, urban renewal, industries, port facilities, airport development, roads, reservoirs and other public works; (ii) relocation of households, shops, farmers and industries; (iii) assessment of ex gratia compensation, and (iv) development of resettlement farms.

From the above review, we can clearly see that both Hong Kong and Singapore have complex and well established administrative systems for public housing. They both have the following features: (i) there is a statutory body which has responsibility for all aspects of public housing, including planning, finance, design, construction, allocation, and management; (ii) this administrative body has a structured organization such that each component has clearly defined responsibilities; (iii) the responsibility of the administrative authorities for public housing covers a wide area, in accordance with the policy goal of the government to designate public
housing program as a part of its overall development strategy.

3.2 Finance of Public Housing Programs

Finance is essential for implementing any public housing program. It is as an indication of the success of public housing programs, because (i) the source of finance indicates the social orientation of the housing programs and is a major determinant of rents; (ii) the scale of capital investment determines the scale of the public housing programs; (iii) finance is a major determinant of the attributes of public housing, such as the location of sites and the availability of amenities, which are important factors determining the socio-economic effects of the public housing programs.

In Hong Kong between 1954 and 1972, as we have seen from the above review, there were three kinds of low-income public housing—resettlement estates provided by the Resettlement Department, housing estates provided by the former Housing Authority, and housing estates built under the Government Low-Cost Housing Scheme. These public housing programs were financed in different ways. The capital for Resettlement Housing estates and Government Low-Cost Housing came directly from Government Revenue. The Housing Authority was financed by low-interest Government Development Loan Funds plus self-financing from rents received. All three types of public housing received government subsidies. The capital allocation for Resettlement Housing and Government Low-Cost Housing was a social rather than an economic
initiative. Loans to the Housing Authority carried a lower than market rate of interest. In addition, all types of public housing received government subsidies through allocation of land by the government at less than full market value (see Drakakis-Smith, 1979, Fong, 1980, and Morris, 1978). The result was that the rents for these public housing flats were substantially lower than market prices. The resettlement housing received the largest subsidies because its rents were based on a 40 year amortization of construction costs, including loan repayments at only 3.5% per annum interest. No provision was made for regular rent reviews to cover increases in operating costs, resulting in substantial deficits which were covered by government grants (Morris, 1978, p58).

Since 1973, public housing in Hong Kong has been administrated by a single organization - the Hong Kong National Housing Authority. The reconstructed Housing Authority' activities are financed in a number of ways. Expenditures on clearance and squatter control are met in full from the General Revenue of Hong Kong. Expenditures on managing and maintaining the former Housing Authority and Government Low-Cost Housing are met entirely from income from rents while any surplus is to be used to meet expenditures on redeveloping old estates and developing new ones. The major source for the massive capital investment is loans from the Hong Kong government. The deficits in managing and maintaining the former Resettlement Estates are met by a deficiency grant provided by the government. After 1976, the government provided land to the Authority free, as a
premium for low-income public housing. This principle also applies to the sites on which public housing estates have been built since 1973, and to land occupied by former Resettlement and Government Low-Income estates which were handed over to the Authority in 1973.\(^1\) The new land policy has considerably lightened the financial burden of public housing, leaving only the construction costs to be met.

In Singapore, the capital for the construction of public housing is met by loans from the government. The Housing and Development Board obtains two types of loans: a 60-year loan at 7 3/4% interest to finance public housing for rental and a 10-year loan at 6% interest to finance public housing for sale. In 1978, S$910 million of loan funds were allocated to the Board for public housing.

The expenditure of the HDB includes repayments of loans, property tax, administration, maintenance and conservancy charges. The income is from rent, service charges, interest and other miscellaneous income. Due to the government's policy of providing decent housing for the low-income people, the rental of public housing is fixed at a sub-economic level, and the

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\(^1\) Since 1973, the administration of public housing in Hong Kong has been under one single organization, i.e. the Hong Kong Housing Authority. Accordingly, all three types of public housing built between 1954 and 1973 by the previous three bodies were handed over to the newly established Hong Kong Housing Authority.
selling prices of the flats are also below cost. As a result the Board's annual expenditure has always exceeded its income. The recurrent deficits are fully subsidised by the government in the following year through annual provision made in the Republic's Main Estimates. The Board's annual deficit was S$10 million in 1971, S$30 million in 1973, and in 1978, the figure rose to S$59 million (Sicat, 1979, and Annual Report 1978-1979).

Another important feature of the finance of public housing is the scale of investment. Both Hong Kong and Singapore have put considerable amount capital into public housing (table 3.1 and 3.2).

Table 3.1 Public Housing Investment in Hong Kong (at 1978 market prices HK$M.)

<table>
<thead>
<tr>
<th>Year</th>
<th>Public Residential Buildings</th>
<th>Percentage of Gross Domestic Fixed Capital Formation</th>
<th>Percentage of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>52</td>
<td>4.0</td>
<td>0.9</td>
</tr>
<tr>
<td>1962</td>
<td>74</td>
<td>4.3</td>
<td>1.1</td>
</tr>
<tr>
<td>1963</td>
<td>124</td>
<td>5.5</td>
<td>1.6</td>
</tr>
<tr>
<td>1964</td>
<td>135</td>
<td>5.1</td>
<td>1.5</td>
</tr>
<tr>
<td>1965</td>
<td>129</td>
<td>4.3</td>
<td>1.2</td>
</tr>
<tr>
<td>1966</td>
<td>125</td>
<td>4.9</td>
<td>1.1</td>
</tr>
<tr>
<td>1967</td>
<td>120</td>
<td>5.6</td>
<td>1.0</td>
</tr>
<tr>
<td>1968</td>
<td>101</td>
<td>5.1</td>
<td>0.8</td>
</tr>
<tr>
<td>1969</td>
<td>91</td>
<td>3.7</td>
<td>0.6</td>
</tr>
<tr>
<td>1970</td>
<td>104</td>
<td>2.9</td>
<td>0.6</td>
</tr>
<tr>
<td>1971</td>
<td>112</td>
<td>2.3</td>
<td>0.5</td>
</tr>
<tr>
<td>1972</td>
<td>90</td>
<td>1.7</td>
<td>0.4</td>
</tr>
<tr>
<td>1973</td>
<td>117</td>
<td>1.8</td>
<td>0.4</td>
</tr>
<tr>
<td>1974</td>
<td>313</td>
<td>4.3</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Table 3.2 Public Housing Investment in Singapore

<table>
<thead>
<tr>
<th>Year</th>
<th>Capital Investment in Public Housing (S$M.)</th>
<th>Year</th>
<th>Capital Investment in Public Housing (S$M.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>10.0</td>
<td>1970</td>
<td>91.1</td>
</tr>
<tr>
<td>1961</td>
<td>30.2</td>
<td>1971</td>
<td>136.4</td>
</tr>
<tr>
<td>1962</td>
<td>40.5</td>
<td>1972</td>
<td>242.7</td>
</tr>
<tr>
<td>1963</td>
<td>50.8</td>
<td>1973-74</td>
<td>436.2</td>
</tr>
<tr>
<td>1964</td>
<td>35.3</td>
<td>1974-75</td>
<td>475</td>
</tr>
<tr>
<td>1965</td>
<td>31.9</td>
<td>1975-76</td>
<td>648</td>
</tr>
<tr>
<td>1966</td>
<td>50.4</td>
<td>1976-77</td>
<td>765</td>
</tr>
<tr>
<td>1967</td>
<td>59.4</td>
<td>1977-78</td>
<td>n.a.</td>
</tr>
<tr>
<td>1968</td>
<td>72.2</td>
<td>1978-79</td>
<td>911</td>
</tr>
<tr>
<td>1969</td>
<td>71.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


The above review shows that both governments have put considerable effort in financing low-income public housing programs to ensure the social nature of public housing. Although different types of public housing are subsidized to different extents, rentals and sale prices of all the public housing flats are lower than actual costs.

We now know the different ways in which the government subsidies are provided: in Hong Kong it is free land; in Singapore the government covers deficits by grants, and both governments offer low interest loans for public housing. Next we are interested how the public housing administration guides the distribution of the subsidized public housing flats. What are the regulations to ensure the social orientation of the low-income public housing? Who are the persons eligible for the subsidized public housing flats?
3.3 The Distribution of Public Housing Flats

The focus of discussion here is not on the process of distribution or on the methods used in such a process, rather, it is on the administrative regulations which determine the beneficiaries of the public housing programs.

In Hong Kong, before 1973, the criteria for the allocation of the various types of public housing were as follows (Drakakis-Smith, 1979):

The Resettlement Housing was built to resettle families displaced from Crown land required for development, families made homeless by the demolition of dangerous buildings, compassionate welfare cases, and certain victims of natural disasters. For this type of public housing there were no income criteria.

The Government Low-Cost Housing was for low-income families living in overcrowded and sub-standard accommodation. In terms of income limit, the original goal was to build flats for families earning less than HK$300 per month, but even the simplest form of building made the rents too high for this income group and the upper limit was therefore, raised to HK$500.

The Housing Authority built housing for families of moderate means living in overcrowded and sub-standard accommodation. These families were to have an income between HK$500 and HK$900 a month.
For the housing built by the Hong Kong National Housing Authority after 1973, the eligibility criteria are a low household income (HK$2,000 a month for a family of three to HK$2,850 for ten or more) and a maximum living area of 35 square feet per person. The following is a list of eligibility criteria for public housing which was used in 1979 (Fong, 1980):

1. Victims of fires and natural disasters,
2. Compassionate cases,
3. Ex-tenants of dangerous buildings,
4. Development clearances,
5. Urban Renewal Scheme,
6. Redevelopment or conversion,
7. Re-use of temporary housing areas,
8. Relief of overcrowding,
9. Waiting list applicants,
10. Junior civil servants,
11. Miscellaneous.

Occupants of huts affected by natural disasters or in development clearance areas are eligible for public housing only if the huts concerned were recorded in the 1964 squatter control survey.

In Singapore, the public housing flats built by HDB are also allocated to the low-income group. In the early period, the criteria for allocation were: "an applicant must be a Singapore citizen over 21 years of age, and have a family unit of not less than five persons, including himself"; and "the applicant's
income must not exceed S$500 p.m. and the total family income must not exceed S$800 p.m.". Registration for the Board's one room units is open to those with a family unit of not less than three persons and an income not exceeding S$250 per month.

In 1964, the Board initiated the Home Ownership Scheme. Under this scheme, the basic criteria for a person to purchase HDB flats are that the applicant's individual monthly income is not more than S$800 and that the total monthly income of the applicant's family is not more than S$1,000. In 1969, the family income ceiling was raised from S$1,000 per month to S$1,200 per month.

In August 1967, the requirement on the size of the applicant's family was reduced to 2 persons. The income limits for renting public housing flats remained until 1978, when the individual income limit of $500 per month was removed.

As a conclusion to this discussion on the administration and finance of the public housing programs in Hong Kong and Singapore, we may say that, the organization of public housing administration in both Hong Kong and Singapore provides a sound basis for efficiency; the finance is also promising for successfully achieving the policy goal of providing housing to the low-income families; and such a policy goal seems further ensured by the regulations which guides the allocation of public housing flats. Nevertheless, it has to be emphasized that administration and finance is not the only factor determining
the socio-economic effects of low-income public housing. There are a number of reasons for saying this. First of all, although administration and finance is of critical importance, there are other determinants of the success of public housing programs, including physical planning, design, construction, management. For example, what decides the affordability of public housing flats is not only the subsidies but also the final rent, which is a result of various factors. Secondly, to allocate public housing to the low-income group does not necessarily mean that the poorest people are among the beneficiaries because other considerations, especially distance to employment and rents, may force the low-income people to give up their chances to live in remotely located or expensive public housing estates. Therefore, we have to explore other important factors contributing to the success of the low-income public housing programs in Hong Kong and Singapore, in particular, the physical planning and design of public housing.
4.1 The Function of Planning and Design

This topic is discussed here on the assumption that planning and design are a critical step towards implementing government housing policy and low-income public housing programs. Previous analysis has shown the potential of developing low-income public housing programs in Hong Kong and Singapore. The most important finding is that public housing can be an effective way to satisfy basic housing needs of the poor and that it can be an efficient strategy to economize on the use of urban land, which is critical to both the industrialisation and social development of Hong Kong and Singapore. The administration and finance of low-income public housing have set promising guidelines for the socio-economic goals of the housing programs of which the central theme is to give full play to potential social and economic development through providing well planned public housing for low-income households. What should planners and architects do, with the limited economic resources provided, to achieve these policy goals?

To satisfy the housing needs of the poor, planners and architects should first understand the term "housing needs". At one level, housing is a basic human need; a secure and sanitary private shelter is essential to life. At another level, housing is seen to contribute to the self-realization and overall
development of a person's abilities, socio-economic activities and social relations. Therefore, planners and architects should carefully consider a wide range of attributes of housing, including affordability, physical and social amenities, location and access. Because of the severity of the housing shortage in Hong Kong and Singapore, it was also essential for a successful housing program to be of a scale which enables the overall housing shortage to be alleviated quickly.

Housing is a major component of the physical environment. As an important land use, it may conflict with the development of other sectors, especially manufacturing and commerce. Such conflicts have often occurred in Hong Kong and Singapore where space is so limited while the demand for land for industry, and housing the growing population have both been great. Therefore, economizing on urban land through improved planning and design was, and still is, an important objective for the designers of the low-income public housing programs in Hong Kong and Singapore.

No doubt the difficulty involved in planning and design has been enormous. It is costly to build housing that is well located, equipped with basic infrastructure, and has easy access to employment and social services, while the low-income people's potential to pay for housing is extremely limited. Even though both Hong Kong and Singapore offer government subsidies, the capital resources are limited. Moreover, the land shortage in both urban-states presents a further challenge. What have the
planners and architects done to bridge the gap between the economic resources and the ambitious policy goals of the public housing programs?

There have been essentially four measures used in Hong Kong and Singapore in planning and designing their respective public housing: (i) squatter clearance and complementary public housing programs; (ii) high-rise and high-density public housing; (iii) spatial expansion of public housing program; and (iv) low design standards for public housing. The following sections discuss the ways in which these measures contribute to the success of the physical planning and design of the housing programs.

4.2 Squatter Clearance and Complementary Public Housing Program

HONG KONG is one of the most densely populated areas in the world. In 1978, the overall population density of Hong Kong was 11,582 people per square mile. The 1976 By-Census showed that the density of the metropolitan areas (Hong Kong Island, Kowloon, New Kowloon, and Tsuen Wan) was 64,532 people per square mile. The density of the most populated urban district in Kowloon-Mong Kok was over 413,000 people per square mile, which is probably the highest in the world (Fong, 1980). As a high percentage of its land area is hilly and unsuitable for development, the value of the land located in the urban areas is obviously high.

The high price of urban land, together with the serious
housing shortage, has caused squatter settlements. The history of the squatter problem in Hong Kong goes back as far as the 19th century. However, it was only since 1949 that the magnitude of this problem become unmanageable, and it was then that the government began to employ some preventative measures to clear squatter areas for development. Nevertheless, clearance without rehousing achieved little success in improving the overall situation (Fong, 1980).

Since 1954, the response of the Hong Kong government to the land shortage has been to pursue a more comprehensive program of land development to provide sites for housing and other urban uses. The most important measure applied for this purpose has been squatter clearance and the complementary public housing programs.

In the early 1950s, the squatter population of Hong Kong was widely scattered throughout the existing urban areas (figure 4.1). These squatter settlements illegally occupied considerable amount of unleased Crown Land. Most of the areas occupied by squatters was land which was suitable for other forms of development. Many hill slopes occupied by squatters were ideal sites for multi-storey residential blocks as these sites often commanded a good view of the harbour. As Hong Kong was then anticipating industrialization, these squatter settlements blocked the path of economic development. The under utilization of the land in the squatter areas contradicted the reality of the overall land shortage in Hong Kong and aggravated conflicts
Figure 4.1 - Squatter Areas in Hong Kong, 1955.

over land use. Moreover, squatter settlements caused many social and environment problems. They were threats to public health and security. Therefore, it was necessary, in order to achieve the policy goal of economizing on the use of urban land, to build public housing estates to replace squatter settlements.

The continued squatter fires in 1953 and 1954 created opportunities for the Hong Kong government to reorganize the squatted land. The government took the opportunity and initiated the Resettlement Program. It was the government motive to alleviate the severe conflicts over land use between housing and other forms of development through greater efficiency in the use of land for both housing and other purposes, such as manufacturing and social services. This was done by using high density multi-storey resettlement blocks to replace squatter houses, and leaving part of the cleared land for other uses. This approach, of the Resettlement Program, was the dominant component of the public housing program in Hong Kong in the period from 1954 to 1973.

This approach involved a comprehensive policy of control, clearance, and rehousing of squatters. All squatter areas were to remain "frozen" as from August 1954, i.e. no unauthorised new squatter structures were permitted. Squatter structures which were erected before August 1954 were designated as "tolerated" structures. They were specially marked and allowed to remain undisturbed until they had to be demolished to make way for development, at which time the occupants were rehoused (Fong,
1980). This was an essential measure to ensure that squatter areas were under government control. When an area was required for development, the Resettlement Department was responsible for arranging clearance of all structures and rehousing of the eligible persons. Priority and timing for clearance of an area was often decided with reference to the purpose for which the land was required; the time required for the clearance of the land; the number of squatters affected and the availability of alternative accommodation for these squatters.

A new pattern of land use has appeared on the previously squatted areas. According to Drakakis-Smith, over 27 percent of the squatter land cleared between 1956 and 1964 was used for industrial development and auction sales, about 42 percent was used for public housing estates, and the remainder was used for infrastructures, such as road or drainage schemes, and other public works (Drakakis-Smith, 1979). Such a new pattern of land use was a result of the construction of resettlement estates and other forms of low-income public housing to "provide residential units at much higher densities than the squatter areas they replace" (Dwyer, 1975).

SINGAPORE. The shortage of land relative to the population is also a major constraint on the development of Singapore. In 1980, the 2.43 million population of this urban-state lived at a density of 3907 persons per square kilometers. This population density, although slightly lower than that of Hong Kong, was
much higher than the densities in other Southeast Asian countries (Liu, et al, 1983).

Singapore is therefore similar to Hong Kong in its land problem. In the late 1950s and early 1960s, the land problem was very serious in Singapore because there was an increasing housing shortage and the squatter settlements were increasing. The government recognized these constraints on economic development and the need and opportunities for industrialization.

The establishment of HDB and the consequent low-income public housing program marked the beginning of a positive government attitude towards the land problem. As in Hong Kong, the government of Singapore has pursued a comprehensive program of land development to provide sites for housing and other urban uses. The major measure used for this purpose has also been the construction of large scale low-income public housing estates to achieve a higher efficiency of land use. The major difference between these two urban-states has been that Singapore uses public housing to replace both squatter settlements and slum buildings through both resettlement and urban renewal programs, whereas Hong Kong has concentrated its efforts more on clearance and resettlement of squatters.

The policy in Singapore was that the occupants had to be resettled in acceptable accommodation of one form or another before urban redevelopment could take place. Practical policies for relocation and compensation of those affected by clearance
are implemented. Most persons affected by clearance schemes are rehoused in HDB flats under special arrangements (Wan, 1975).

There is no data available regarding the new pattern of land use on the former squatter settlements or slums. There is, nevertheless, sufficient evidence to show that the cleared land is used for various purposes, including public housing, industrial development, infrastructure, and leases to private developers.

From the above discussion we can conclude that the development of large scale low-income public housing in these two city-states, especially Hong Kong has made a significant contribution to industrialization through reorganizing land use in the former squatter areas. However, to assess whether the development of public housing has been successful and whether it has really alleviated the conflicts over land use between housing and other sectors, it is important to examine whether or not such a contribution has been made at the expense of housing development itself. It is not unusual that governments in developing countries, in order to obtain urban land for industrialisation, clear squatter areas but do not offer adequate alternative housing. Has the situation been avoided in Hong Kong and Singapore?

The findings are quite positive. In Hong Kong, the highest priority for the re-use of squatter areas was usually given to land required for Government housing estates which would provide alternative housing for the squatters cleared. The resettlement
estates built between 1954 to 1964 were in locations near the main metropolitan area of Kowloon with its array of employment opportunities and service facilities. The fact that a large number of squatters have been rehoused in a short time indicates the success of the resettlement program. In 1969, fifteen years after the start of the public housing program, a total of one million people were accommodated in Resttlement Housing (Wong, 1978), representing a substantial increase in the housing stock. A similar situation is observed in Singapore, where the proportion of population housed in public housing estates reached to 75% in early 1980s.

Public housing replacing squatter settlements and slums made better land use planning possible, so that land, a very scarce economic resource in both Hong Kong and Singapore, could be put to its optimal use for the entire community. What we should know next are how other planning and design measures have been used to achieve the policy goals in Hong Kong and Singapore.

4.3 High-Rise and High-Density Public Housing

To achieve the policy goals for low-income public housing, it is essential that the limited resources of land and capital are used appropriately. As we have seen in the previous section, the reorganization of land use in the former squatter areas has reduced the land resource available for housing. We have also discussed the importance of investment in industry seen by most
developing countries. With most capital going to investment in it, the amount available for housing is limited. Therefore, it would not have been possible to achieve satisfactory progress in housing, if special measures had not been taken in the physical planning of the public housing estates. One essential measure which has been used in Hong Kong and Singapore is high-rise and high-density.

HONG KONG. The hillsides behind the metropolitan areas of Hong Kong Island and Kowloon had been both a physical and psychological barrier to the spatial expansion of Hong Kong. Before the new town development program was initiated in the early 1970s, the government felt that the only space available for development was the existing squatter areas, and that the resettlement program would be feasible only if the original inhabitants could be accommodated at a higher density, while providing roads, services and open space in the same areas (Will, 1978). Such a belief became a severe constraint on physical planning in the first two decades.

Even before the start of the large scale low-income public housing program, there had already been some evidence that low density one and two-storey housing was unrealistic for Hong Kong. In 1952, the non-profit Hong Kong Settlers' Housing Corporation, partly financed by Government, started building and selling small stone cottages in approved areas. These houses became very popular among squatters and non-squatters alike.
However, it was very slow to build this type of housing as well as very land consuming. To accommodate all squatters in Hong Kong in this type of housing would have required both a considerable amount of land and a long period of time, neither of which Hong Kong could afford.

Single-storey was once again considered for the design of the first public housing estates to rehouse the Shek Kip Mei fire victims, but finally multi-storey reinforced concrete blocks were used, although some two-storey housing were also built for emergency relief. Basically, each resettlement block was a six-storey building in the form of an "H", with the minimum requirements for health. Although there is no data available regarding the density of the resettlement estates, the density was obviously very high. The initial space standards adopted were only 24 square feet per adult and half of this for a child. The high flat densities were compounded by high ground densities (figure 4.2). Although six different types of resettlement building have been introduced since 1954, the density has remained high and the height has increased (table 4.1).
Figure 4.2 - Resettlement Blocks for the Shek Kip Mei Fire Victims.

Table 4.1 Features of Resettlement Estates in Hong Kong

<table>
<thead>
<tr>
<th>Year</th>
<th>Type</th>
<th>Stories</th>
<th>Floor Space per Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>1954-61</td>
<td>Mark I</td>
<td>6-7</td>
<td>24 (sq.ft.)</td>
</tr>
<tr>
<td>1961-64</td>
<td>Mark II</td>
<td>7-8</td>
<td>24</td>
</tr>
<tr>
<td>1964-67</td>
<td>Mark III</td>
<td>8</td>
<td>24-26</td>
</tr>
<tr>
<td>1965-69</td>
<td>Mark IV</td>
<td>16</td>
<td>24-26 (self-contained)</td>
</tr>
<tr>
<td>1966-71</td>
<td>Mark V</td>
<td>n.a.</td>
<td>27-35 (self-contained)</td>
</tr>
<tr>
<td>1970-</td>
<td>Mark VI</td>
<td>n.a.</td>
<td>35 (self-contained)</td>
</tr>
</tbody>
</table>

Sources: Will, 1978; Fong, 1980.

There were two other major types of public housing before the formation of the new Housing Authority in 1973: the Housing Authority Estates and Government Low-Cost Housing Estates. Although these types of public housing had relatively higher design standards than the resettlement estates, they also had high-rise and high-density as their physical feature. High-rise and high-density has also been used as an essential feature for the public housing estates built after 1973, including those located in the satellite towns.

SINGAPORE, like Hong Kong, could not afford to allocate space liberally. For instance, the provision of open space in residential layouts is set at a standard of about 1 acre per 1,000 population, which is much lower than 7 acres per 1,000 population as recommended in English towns (Varma, 1979).

High-rise has been the major form of design of public housing estates since the formation of the HDB. Most of the public housing estates built in 1960 were 4 to 12 stories (HDB
Annual Report, 1960). Density and economy were emphasized.¹

The height for the later public housing was usually around 12 stories for slab blocks and 20 to 25 stories for point blocks (Liu, 1975, p138 & 145). Average overall density is about 88 dwelling units per acre. Calculated on an average of five persons per dwelling unit, the net residential density is about 370 persons per acre (Liu and Tan, 1979).

Most building blocks in the satellite towns take the form of 9- to 13-storey slab blocks and 20- to 25-storey point blocks (Liu, et al, 1983). Density is around 440 persons per acre for the older satellite towns and 240 to 440 persons per acre for the new ones (Liu, 1975).

As a means to deal with the problem of land shortage, high-rise and high-density is a common feature of public housing in Hong Kong and Singapore. However, this creates many problems which will be reviewed in next chapter. Despite these problems, high-rise and high-density have been used in Hong Kong and Singapore for the last two or three decades, to successfully build the linkage between economic development, and the development of housing and to ensure a satisfactory progress in

¹According to the HDB 1960 Annual Report, the HDB revised the planning principles for public housing which had been used by the SIT. These revised principles included "the density in all the undeveloped neighbourhoods had to be substantially increased to cater for the increase of population..."; and "economy is the most important factor in the laying out of housing estates".
housing provision with limited land resources.

4.4 Low Design Standards for Public Housing

Low-income public housing programs on the scale of those in Hong Kong and Singapore need substantial economic resources. The measures used by the governments to deal with the constraints on land has been discussed in the previous section. In this section, the term "economic resource" is used to represent both land and capital. The focus of the analysis is on the relationship between economic resources and design standards for public housing. Five variables should be considered in deciding on the design standards. First, the availability of land. Second, the capital resource available for housing in general and for low-income public housing in particular. Third, the total housing needs which are to be met by low-income public housing. Fourth, the living habits of the prospective residents. Fifth, the paying ability of the prospective residents. A successful design needs to achieve a balance between quality and resource constraints.

HONG KONG.¹ The initial design standard for the resettlement housing estates was very low. In Mark I estates, which were built between 1954 and 1961, the space allowance per

¹The main sources for this discussion are: Housing Problems and Public Housing Program in Hong Kong (Fong, 1980); and High Society (Drakakis-Smith, 1979).
person was 24 square feet, with children under 10 years old counting as half an adult. According to this standard a 120 square feet unit had to accommodate five adults, or three adults and four children. The supposed legal minimum living space in Hong Kong at that time was 35 square feet per person. Therefore the design of the resettlement housing estates was substandarded. These H-shaped blocks contain 64 back-to-back rooms per floor and the cross piece is a service core containing six communal flush toilets for each sex, two water standpipes, and an open communal clothes washing space (figure 4.3). The design for Mark II blocks was about same as Mark I (figure 4.4). Great improvements were made in the design of the Mark III estates, which were built between 1964 and 1967. The space per person was raised to 26 square feet, and each unit has its own water tap and balcony. Rooms are accessed by an internal corridor instead of a perimeter balcony (figure 4.5). The Mark IV estates, built between 1965 and 1969, had a basic layout similar to the Mark III with the exception that each unit has its own private toilet. Another difference is that two elevators are provided in each of these 16-story buildings (figure 4.6). The Mark V block, built between 1966 and 1971, was a modified version of the Mark IV with variable room sizes incorporated to allow accommodation of different family sizes. A further modification made in 1970 upgraded the space allocation to 35
Figure 4.3 - Resettlement Housing in Hong Kong: Mark I.

Figure 4.4 - Resettlement Housing in Hong Kong: Mark II.
Figure 4.5 - Resettlement Housing in Hong Kong: Mark III.

Figure 4.6 - Resettlement Housing in Hong Kong: Mark IV.
square meters per person. It was the first time that the resettlement estates were built in accordance with the legal minimum living space per person.

The design standards have been significantly improved in the new Housing Authority Estates built since 1973. All units are now self-contained, with private balcony, kitchens and toilets with showers. The minimum space standard is set at 35 square feet per adult and increasing to 50 square feet in latest models.

SINGAPORE. Looking back at the last twenty five years, the HDB has had to start from a "simple, crude and economic design" (Liu, et al, 1983). The early public housing blocks were built to the maximum density, based on the housing policy of the government which emphasizing "to provide, within the limits of the resources available, as many low-cost housing units as possible in order that citizens in the lower income group can, with the assistance of the Government, obtain a decent standard of housing" (HDB Annual Report, 1960). It was realized that "until the industrialisation plans of the State are able to attain a sufficiently high degree of success, there is little possibility of the average income levels of these people being raised and the public housing provided must be such as to be able to meet their needs as well as to come within their ability to pay" (HDB Annual Report, 1960). Between 1960 and 1965, there were two types of public housing: emergency one room flats and
self-contained flats of two to three rooms with kitchen and bathroom. A high proportion of public housing units built in this period were the one room emergency type (according to Varma and Sastry, for the first and second 5-year housing programs, the proportion of flats was fixed as 40% for 1-room type and 30% each for 2- and 3-room types). This type of public housing provided about 200 square feet of floor space. After 1965, improved one-room, two-room and three-room flats were introduced with greater floor space. Four-room flats and five-room flats were introduced in 1968 and 1971 respectively (figure 4.7).

Although both Hong Kong and Singapore have used a low design standard as an efficient way to achieve policy goals for public housing, the "low standard" has been interpreted differently. If we make a comparison between Hong Kong and Singapore in their design standards, we find that the differences are quite significant. The standards of Hong Kong's public housing are much lower than those of Singapore's (table 4.2 and 4.3).
Figure 4.7 - Types of Public Housing in Singapore.

### Table 4.2 Comparative Flat Design Standards: Hong Kong and Singapore

<table>
<thead>
<tr>
<th></th>
<th>Hong Kong</th>
<th>Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net dwelling unit size (sq.ft)</td>
<td>120-215</td>
<td>380-1350</td>
</tr>
<tr>
<td>Floor space (sq.ft-person)</td>
<td>24-43</td>
<td>75-260</td>
</tr>
<tr>
<td>Provision of facilities</td>
<td>* communal toilet and bathroom for Mark I-III. * cooking mainly in access balconies in Mark I-VI * self-contained for other types</td>
<td>* self-contained for all types of public housing.</td>
</tr>
</tbody>
</table>


### Table 4.3 Comparative Block Design Standards for Flats: Hong Kong and Singapore

<table>
<thead>
<tr>
<th></th>
<th>Hong Kong</th>
<th>Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height and accessibility</td>
<td>* Mark I-III, 6-8 without lifts * Mark IV-VI, 8-20 with lifts</td>
<td>* Mainly 10-25 with lifts * Some 2-4 without</td>
</tr>
<tr>
<td>Vertical circulation</td>
<td>* 80-415-stairway * 330-lift</td>
<td>* 16-100-stairway * 40-100-lift</td>
</tr>
<tr>
<td>Units per floor</td>
<td>60-135</td>
<td>4-32</td>
</tr>
<tr>
<td>Units per block</td>
<td>400-2150</td>
<td>Mainly 80-200; up to 700</td>
</tr>
</tbody>
</table>


It is important to understand the reason for this
difference. The essential reason is that although the housing programs in Hong Kong and Singapore have many similarities in terms of socio-economic background, policy goals and planning measures, they were developed on different economic bases. One indicator of the different economic level is the fact that the population in Singapore enjoys a higher average income than that in Hong Kong. A second indicator is that Hong Kong faced a population impact which was far greater than Singapore's. A third indicator is that the population density is higher in the urban areas of Hong Kong because its geographical features caused highly concentrated human settlement. Nevertheless, whether or not Hong Kong and Singapore have set their respective design standards appropriately is an important issue for the analysis in next chapter.

4.5 Spatial Expansion of Public Housing Program

Intensive development or redevelopment of lands in the main urban areas has been a policy for the public housing programs in Hong Kong and Singapore. Efficiency in the use of land, at least in terms of economic value, has been achieved in the urban areas developed under this guideline. Nevertheless, the continuous population growth in these two city-states has created pressure on land use which is too great to be totally contained within the limited space of the main urban areas. Since the mid-1960s, spatial expansion, mainly in the form of new town development, has been a complementary policy of their public housing programs.
HONG KONG. In about the mid-1960s, Hong Kong finally decided to abandon the tradition of containing urban growth within the limited space of Hong Kong, Kowloon and New Kowloon.

The obvious factor behind the spatial pattern of development was the need for newly developed land to accommodate further population increase. It was estimated by the Census and Statics Department that the total population of Hong Kong would rise from 3.94 million in 1971 to 5.69 million in 1986. The expected addition of roughly 1.7 million people between 1971 and 1986 would have to be accommodated in the New Territories as land within the main urban areas had not only been nearly exhausted, decanting of overcrowded population in some urban districts had also been considered as a social and environmental necessity (Sit, 1981). According Pryor, in 1974 about 29% of the total population in public housing in the main urban areas lived in Mark I and Mark II Resettlement estates which had gross densities of over 1,600 persons per acre. A plan for redevelopment of these older estates was prepared by the government, and a density of 960 persons per acre was expected to be used as a guide for the redevelopment. It was estimated that 0.15 million out of the total 0.48 million people would have to be rehoused elsewhere as the result of the redevelopment (Pryor, 1978). The population in the urban areas was expected to drop by 270,000 persons in the decade 1976-1986, according to official planning. Altogether about 4,700 acres of new land for residential purpose would be required by 1986, to meet the needs of an increased population, and to decant people from some
overcrowded urban districts (Sit, 1981).

New land was also required to sustain industrial development. By 1986, the total work force in Hong Kong's manufacturing industry, according to government sources, would be about 1.78 million. This figure suggested that about 3,600 acres of land would have to be provided for this sector. At the end of 1977, the amount of industrial land zoned within the main urban areas was approximately 900 acres. Thus, an additional 2,750 acres would be needed between 1978 and 1986 (Sit, 1981).

Within the main urban areas, according to Sit, the amount of new land that might be available after 1976 would be very limited. It amounted to only 300 acres for industrial, and 145 acres for residential. Therefore, new land to accommodate the expected population increase and to provide space for the growth of industry would have to be provided mainly by new urban development outside the main urban areas (Sit, 1981).

By the end of 1979, six new towns were being planned. They are: Tsuen Wan, Sha Tin, Tuen Mun, Tai Po, Fanling-Sheung Shui and Yuen Long (figure 4.8). The plans for the first three new towns was started in late-50s and 60s, but the main impetus to the development of these three new towns came in October 1972, when the government's ten-year housing target was approved by the Executive Council. This ten-year housing plan aimed at providing 1.8 million people with public housing, and 1.3 million of this target figure would be constructed within the new towns. Tsuen Wan New Town is expected to provide for an
ultimate population of nearly a million people, and Sha Tin New Town and Tuen Mun New Town are each to house about half a million (Fong, 1980). The plans for the last three of the six new towns were made known to the public in December, 1979. Their initial designated target populations were 220,000, 170,000 and 128,500 respectively (Sit, 1981).

Figure 4.8 - Location of New Towns in Hong Kong.
SINGAPORE began its comprehensive new town development program in the mid-1960s. Although there is no data available regarding either land need or the capacity of the existing urban areas, the shortage of land in the urban area was no doubt the key factor behind the development of new towns.

Eleven new towns have been built or are being built in Singapore. They vary in size and in distance from the city centre (figure 4.9 and table 4.4). Most of these new towns are designed to contain 30,000 to 40,000 dwelling units for an estimated population of 150,000 to 200,000 persons, covering an area of 300 to 600 hectares each. These new towns, together with rural communities, contained some 20 percent of the population (data from Hardoy, 1979; Varma and Sastry, 1979).

Figure 4.9 - Location of New Towns in Singapore.
Table 4.4 New Towns in Singapore

<table>
<thead>
<tr>
<th>New Towns</th>
<th>Projected Popu.</th>
<th>Distance from City Centre (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queenstown</td>
<td>150,000</td>
<td>5-8</td>
</tr>
<tr>
<td>Toa Payoh</td>
<td>190,000</td>
<td>6-8</td>
</tr>
<tr>
<td>Telok Blangah</td>
<td>70,000</td>
<td>5-7</td>
</tr>
<tr>
<td>Woodlands</td>
<td>290,000</td>
<td>22-25</td>
</tr>
<tr>
<td>Bedok</td>
<td>225,000</td>
<td>10-14</td>
</tr>
<tr>
<td>Ang Mo Kio</td>
<td>245,000</td>
<td>10-14</td>
</tr>
<tr>
<td>Clementi</td>
<td>120,000</td>
<td>11-13</td>
</tr>
<tr>
<td>Nee Soon</td>
<td>200,000</td>
<td>19-21</td>
</tr>
<tr>
<td>Hou Kang</td>
<td>120,000</td>
<td>9-13</td>
</tr>
<tr>
<td>Jurong</td>
<td>160,000</td>
<td>14-19</td>
</tr>
<tr>
<td>Tampines</td>
<td>230,000</td>
<td>14-18</td>
</tr>
</tbody>
</table>


It is important to look at the impact of the new town development on the spatial pattern of economic development in Hong Kong and Singapore. In both cities, new towns were initially built to accommodate public housing estates, not industrial enterprises. Therefore much of the redistribution of population towards these areas is the result of the location of public housing estates rather than the result of a decentralized economy. In such cases, public housing provides the low-income group with shelter but does not satisfy their housing needs because the most important attributes of low-income housing, i.e. location and accessibility, are ignored. There have been various problems concerning transportation, employment, and social services in the new towns. Such problems were particularly severe in the early years of the new town program. Later developments were designed to establish integrated and partly self-sufficient industrial new towns. In the newer public
housing estates, not only are there many community facilities such as market places, schools, playgrounds, social welfare agencies, banks, post offices within or adjacent to the estates, plans for these estates often include the provision of factory sites for industrial development. But despite improvements, problems still exist. In Hong Kong, for instance, most of the new towns, with the exception of Tsuen Wan, are not doing very well in attracting industries. Tsuen Wan does not have this problem because of its longer history, the existence of an established industrial core, and its proximity to the main urban areas. The other five new towns are still in the early stage of development and therefore there are problems in the provisions of infrastructure and transportation. It is argued by some scholars that manufacturing industries are most unlikely to decentralise from the main urban areas to the new towns without some form of government incentive (Fong and Yeh, 1984). Nevertheless, there is a lack of active policies in Hong Kong to attract industries and employment to the new towns.

In Singapore, the Housing and Development Board also builds industrial premises in the new towns. The comparatively cheap and well-serviced industrial and commercial sites have attracted some light industry and commercial development. The proportion of land use for industry in the later new towns is higher than that in the early ones (Yeung, 1979, p35). Therefore, it seems that the new towns in Singapore have become increasingly self-contained. However, most of the jobs for primary income earners remain in the main city centre. Thus, the new towns tend to
serve simply as large suburban housing estates with most of the local jobs taken up by secondary income earners (Hardoy, 1979, p81).

Many new town residents in Hong Kong and Singapore have to commute to the main urban areas where most jobs are located. However, this problem has been partially alleviated through provision of intensive transportation services.

Because of the obvious disadvantages associated with the public housing in the new towns, one of the early worries of new town development in Hong Kong was how to fill the new towns with people. However, the actual situation in the last fifteen years or so has been encouraging. About 50% of the total population increase of Hong Kong between 1971 and 1981 moved to the new towns (Yeh and Fong, 1984). Some evidence indicates that people choose public housing in the new towns in order to obtain a cheaper and better living environment at an earlier date (Yeh and Fong, 1984). Because the demand for public housing is high, it takes eight to nine years to get a public housing unit in the urban areas, whereas it takes only three to four years to obtain one in the remote new towns such as Tuen Mun.

The discussion in this chapter has shown us the ways in which the planning and design of the public housing in Hong Kong and Singapore have bridged the gap between the resources for public housing programs and the policy goals for the programs. Again, Hong Kong and Singapore share similarities in the
essential measures used to achieve the objectives for planning and design. These similarities are explained by the similarities in the historic, geographical, economic, and social backgrounds of the respective public housing programs. The major difference is seen in the enormous gaps between the design standards of the public housing in Hong Kong and that in Singapore, which is a consequence of the different economic bases on which the public housing programs have been developed. What do the similarities and differences mean to the socio-economic effectiveness of the public housing programs? This question is addressed in the next chapter.
CHAPTER 5. THE SOCIO-ECONOMIC EFFECTIVENESS OF THE LOW-INCOME PUBLIC HOUSING PROGRAMS IN HONG KONG AND SINGAPORE

The previous analyses has shown that both Hong Kong and Singapore's low-income public housing programs have been developed under the guidance of a new rational for housing investment. This rational views housing as a basic human need, an economic activity, and a major component of the physical environment all of which suggest that housing plays a dynamic role in the process of socio-economic development. This role has been particularly obvious in Hong Kong and Singapore where dramatic population growth has created a shortages of housing and urban land both of which were constraints on industrialisation. An effort has been made to give full play to the dynamic role of housing. Has the effort been fruitful? To assess the low-income public housing programs in Hong Kong and Singapore it is necessary to examine the socio-economic effectiveness of the programs.

The nature of the housing problem in developing countries guides this assessment. A successful public housing program must have the force to help change societies, social and physical environments through its impact on the pattern of the distribution of wealth and the spatial organization of human settlements. A successful public housing program is also a dynamic force that raises the productivity of society through the improved quality of human existence and, in some cases, the direct economic benefits generated by the housing sector.
Whether or not a public housing program is successful is, to a large extent, reflected in the characteristics of the housing built, including its scale, affordability, design standards, location, and accessibility to social services.

The scale of public housing is an important indicator of success or failure. A massive housing shortage indicates the need for a large increase of housing stock. To be successful, a public housing program must be of a scale that will alleviate the housing shortage.

The rent and affordability of the public housing units is another imperative. A successful low-income public housing program has to be affordable to the majority of the low-income people, who are assumed to be the beneficiaries of government assistance.

The physical conditions of the low-income households in public housing estates is an important indicator of the socio-economic effectiveness of the public housing program. It is essential for a successful low-income housing program to help the poor improve their living conditions rather than simply to relocate them.

The location and accessibility of public housing estates is another indicator of socio-economic effectiveness. It represents the impact of the public housing program on the spatial pattern of urban development. Proximity to employment and social services is important to the low-income people's survival.
For both Hong Kong and Singapore, the government's housing policy objective is to ensure that eventually every family has a permanent, self-contained home within reach of employment and other facilities at a rent or price it can afford. It is obvious that such an ambitious goal takes time to achieve. How effective have Hong Kong and Singapore been in implementing their respective policy measures? What have been the difficulties involved in their respective approaches? And, how can these problems be solved in the future?

5.1 The Impact of Public Housing Programs on the Provision of Housing

Increase in the housing stock is an important indicator of improvement in the housing situation, as it alleviates the housing problem by reducing the overall housing shortage. In a country where the supply of housing responds purely to market demand, the problem of housing shortage can not be avoided because the housing needs of the poor are not effectively represented in the overall demand. Large scale low-income public housing programs make it possible to reduce the housing shortage through increasing the provision, because the subsidized housing units are designed for low-income groups.

The amount of low-income public housing provided in both Hong Kong and Singapore is impressive. By 1980, the public housing sector in Hong Kong accommodated more than two million people, or about 40 percent of the population (Fong, 1980). In
Singapore, by 1983, low-income public housing estates had accommodated 1.8 million people or about 75 percent of the 2.5 million population. A total of about 380,000 units were built by the HDB between 1960 and 1983 (Singapore 1983).

What has been the impact of such a significant increase in housing on the low-income group as a whole? We can find the answer by observing the changes that have taken place in the squatter areas and slums in Hong Kong and Singapore in the last two or three decades. The importance of the slum-squatter concept lies in its function as an indicator of housing need which can not be effectively represented in demand. Therefore, an effective low-income housing program should have direct impact on the squatter settlements and slums. What we see in the case of Hong Kong and Singapore is a decrease of squatters and slum residents in both cities. In 1953, 13 percent of the population of Hong Kong lived in squatter areas, while in 1980 only 5.6 percent of the population was estimated to be squatters. The table 5.1 shows us the change in squatter population in Hong Kong in the last three decades.

Although it appears that the total number of squatters in 1980 was very close to that of 1953, which was the year prior to the initiation of its large scale public housing program, it is a necessary to stress the increase in total population in Hong Kong in the three decades. Only if we keep in mind the 120% population increase in the 28 years can we possibly realize the enormous difficulty involved in providing housing in pace with
the population increase and the great achievement made by the proportional decrease of squatter population.

Table 5.1 Squatter Population in Hong Kong

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Population</th>
<th>Estimated Squatters</th>
<th>Percentage in the Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>1,900,000</td>
<td>250,000</td>
<td>13.2</td>
</tr>
<tr>
<td>1953</td>
<td>2,300,000</td>
<td>300,000</td>
<td>13.0</td>
</tr>
<tr>
<td>1956</td>
<td>2,610,000</td>
<td>265,000</td>
<td>10.2</td>
</tr>
<tr>
<td>1959</td>
<td>2,950,000</td>
<td>500,000</td>
<td>17.0</td>
</tr>
<tr>
<td>1964</td>
<td>3,490,000</td>
<td>546,000</td>
<td>15.6</td>
</tr>
<tr>
<td>1965</td>
<td>3,597,900</td>
<td>538,300</td>
<td>15.0</td>
</tr>
<tr>
<td>1966</td>
<td>3,629,900</td>
<td>514,800</td>
<td>14.2</td>
</tr>
<tr>
<td>1967</td>
<td>3,722,800</td>
<td>485,100</td>
<td>13.0</td>
</tr>
<tr>
<td>1968</td>
<td>3,802,700</td>
<td>442,600</td>
<td>11.6</td>
</tr>
<tr>
<td>1969</td>
<td>3,863,900</td>
<td>428,700</td>
<td>11.1</td>
</tr>
<tr>
<td>1970</td>
<td>3,959,000</td>
<td>411,145</td>
<td>10.4</td>
</tr>
<tr>
<td>1971</td>
<td>4,045,300</td>
<td>392,700</td>
<td>9.7</td>
</tr>
<tr>
<td>1972</td>
<td>4,114,400</td>
<td>323,160</td>
<td>7.8</td>
</tr>
<tr>
<td>1973</td>
<td>4,159,600</td>
<td>309,500</td>
<td>7.4</td>
</tr>
<tr>
<td>1974</td>
<td>4,248,700</td>
<td>325,000</td>
<td>7.6</td>
</tr>
<tr>
<td>1978</td>
<td>4,720,000</td>
<td>295,000</td>
<td>6.3</td>
</tr>
<tr>
<td>1980</td>
<td>5,017,000</td>
<td>278,800</td>
<td>5.6</td>
</tr>
</tbody>
</table>

Sources: Fong, 1980, p88.

There is no information which clearly indicates the change in the population of slum residents in Hong Kong. However, it is very likely that the figure has dropped with the increase in the provision of low-income public housing units. Public housing built before 1973 by the Housing Authority and the Government Low-Cost Housing Scheme was oriented to slums residents. While the overall increase in the housing stock contributed by the public housing sector releaved some pressure on private tenements. The 1968 survey by the University of Hong Kong showed that over half of the squatters interviewed lived in private
tenements before they moved into squatter huts (Fong, 1980, p90). Perhaps the reason for this move was that the resettlement housing was oriented to squatters rather than slum residents, and therefore living in squatter areas was considered as means for obtaining a public housing unit.

Similar observations can be made in the case of Singapore, though the available data is not as complete. In 1959, one third of a million people lived in squatter areas and another one quarter of a million in slums. Altogether they accounted for about 37% of the total population. By 1970, the number of squatters and slum residents in Singapore decreased to 345,000 or only 15% of the total population (Laquian, 1979, p53). No doubt, with the boom in public housing and the continuous effort put into squatter clearance in the 70s and 80s, the proportion of squatters and slum residents has dropped further (table 5.2).

The above observations make it clear that the low-income public housing programs in both Hong Kong and Singapore have made a significant contribution to the overall housing stock. They are distinguished from "token housing programs" which are intended to be visible symbols of governmental concern for the poor rather than meeting their real needs. The decrease in the population living in squatter areas and slums suggests the positive impact of the public housing programs on the social and physical environment in Hong Kong and Singapore.
### Table 5.2 Public Housing Construction and Squatter Clearance in Singapore (1961 - 1978)

<table>
<thead>
<tr>
<th>Year</th>
<th>Public Housing Built (units)</th>
<th>Squatter Cleared (families)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>7,320</td>
<td>294</td>
</tr>
<tr>
<td>1962</td>
<td>12,230</td>
<td>817</td>
</tr>
<tr>
<td>1963</td>
<td>10,085</td>
<td>1,181</td>
</tr>
<tr>
<td>1964</td>
<td>13,028</td>
<td>3,643</td>
</tr>
<tr>
<td>1965</td>
<td>10,085</td>
<td>6,510</td>
</tr>
<tr>
<td>1966</td>
<td>12,659</td>
<td>6,018</td>
</tr>
<tr>
<td>1967</td>
<td>12,098</td>
<td>5,984</td>
</tr>
<tr>
<td>1968</td>
<td>14,135</td>
<td>5,865</td>
</tr>
<tr>
<td>1969</td>
<td>13,096</td>
<td>6,519</td>
</tr>
<tr>
<td>1970</td>
<td>14,251</td>
<td>6,125</td>
</tr>
<tr>
<td>1971</td>
<td>16,147</td>
<td>3,882</td>
</tr>
<tr>
<td>1972</td>
<td>20,252</td>
<td>4,060</td>
</tr>
<tr>
<td>1973-74</td>
<td>23,224</td>
<td>12,067</td>
</tr>
<tr>
<td>1974-75</td>
<td>27,128</td>
<td>10,980</td>
</tr>
<tr>
<td>1975-76</td>
<td>29,458</td>
<td>12,011</td>
</tr>
<tr>
<td>1977-78</td>
<td>25,354</td>
<td>16,443</td>
</tr>
</tbody>
</table>


### 5.2 Rent and Affordability of Public Housing Units

The affordability of housing is critical as it determines its social orientation. It is a common situation in developing countries that the price of the low-income housing is too high for the poor. In such cases the social impact of the low-income housing program is contrary to the policy goal, because instead of helping the poor, all the public assistance goes to people who have the financial ability to afford the housing. Therefore, rent and affordability are important indicators of success or failure.

The rent for each type of public housing in Hong Kong is
shown in table 5.3. The rents for the resettlement housing, which is the dominant type of public housing in terms of total units built, are very low indeed. Most of these housing units are designed for five-person households. If we take 20% as a normal percentage household expenditure on housing, we will find that in 1974 the monthly rent for all of the resettlement housing unit was within the means of a five-person household earning "poverty income" (according to Chau, in 1974, the poverty income for a five-person household was US$710 annually, which was equivalent to about HK$300 per month. Chau 1979). Cheap rent for the resettlement housing in Hong Kong is seen as a forceful point in persuading squatters to move quietly from their homes, which were often more spacious and convenient to work, than the resettlement estates (Hopkins, 1969). The rents for the other types of public housing, again using 20% as a normal percentage for household expenditure on housing, are generally within the means of the designated income-groups. They are much lower than the rents for private tenements. In 1976, the rent for a private tenement of 349 square feet was HK$630, whereas the rent for a public housing unit of 393 square feet was only HK$196 in 1978 (table 5.3).
Table 5.3 Typical Rents of Public Housing in Hong Kong

<table>
<thead>
<tr>
<th>Type</th>
<th>Program &amp; Year of Completion</th>
<th>Size of Flat (sq. ft.)</th>
<th>Monthly Rent ($HK)</th>
<th>1974</th>
<th>1978</th>
</tr>
</thead>
<tbody>
<tr>
<td>Former</td>
<td>I-II (1954-64)</td>
<td>86</td>
<td>14</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Resettlement Estates</td>
<td></td>
<td>120</td>
<td>19</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>152</td>
<td>24</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td></td>
<td>III (1964-66)</td>
<td>171</td>
<td>32</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>IV (1966-69)</td>
<td>137</td>
<td>29</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>169</td>
<td>35</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>43</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td></td>
<td>V (1969-72)</td>
<td>176</td>
<td>39</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>221</td>
<td>52</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td></td>
<td>VI (1972-74)</td>
<td>238</td>
<td>60</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>Former Old Type</td>
<td></td>
<td>171</td>
<td>48</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>Government Estates</td>
<td></td>
<td>204</td>
<td>54</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Low Cost Housing</td>
<td>New Type (1967-73)</td>
<td>234</td>
<td>67</td>
<td>103</td>
<td></td>
</tr>
<tr>
<td>Estates</td>
<td></td>
<td>299</td>
<td>84</td>
<td>142</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>375</td>
<td>111</td>
<td>179</td>
<td></td>
</tr>
<tr>
<td>Former Authority</td>
<td>1958-65</td>
<td>259</td>
<td>90</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td>296</td>
<td>132</td>
<td>157</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Authority Estates</td>
<td>329</td>
<td>141</td>
<td>171</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1966-73</td>
<td>304</td>
<td>122</td>
<td>138</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>329</td>
<td>143</td>
<td>171</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>393</td>
<td>174</td>
<td>196</td>
<td></td>
</tr>
<tr>
<td>New Housing Authority</td>
<td>1973-78</td>
<td>120</td>
<td></td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Estates</td>
<td>244</td>
<td></td>
<td>181</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>364</td>
<td></td>
<td>261</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>400</td>
<td></td>
<td>286</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Fong, 1980.

Rents for the public housing units in Singapore are also within the financial capability of most intended households. For the 1-, 2- and 3-room residential units built in the early years, the standard rents were fixed at S$20, S$40, and S$60 per
month respectively, equivalent in each case to about 15 percent of the family income of the designated income groups (Yeung, 1973, p48). In 1966, the monthly rent including service and conservancy charges for a one-room public housing unit was S$30 (equivalent to about HK$60). In 1983, 16 years later, the monthly rent for a one-room unit, inclusive of the charges, was S$40 (equivalent to about HK$80), an increase of only one third. By comparison, the rent for private apartment has gone up five to ten times during this 16 years period (Singapore 1983).

Compared with Hong Kong, Singapore has higher design standards for public housing and correspondingly higher rents.

Table 5.4 shows the income and rent for low-income housing in six Asian countries. It reveals the proportion of average monthly rent to per capita GNP varies significantly among different countries and the figures for Hong Kong and Singapore are much lower than those of other countries.

Table 5.4 Income and Rental in Six Asian Countries, 1973

<table>
<thead>
<tr>
<th>Country</th>
<th>Per Capita GNP (US$)</th>
<th>Equivalent Monthly Income (US$)</th>
<th>Average Monthly Rent (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>1490</td>
<td>124.2</td>
<td>11.6-58.0</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1090</td>
<td>90.8</td>
<td>3.6-32.6</td>
</tr>
<tr>
<td>Malaysia</td>
<td>480</td>
<td>40.0</td>
<td>7.2-26.8</td>
</tr>
<tr>
<td>Philippines</td>
<td>250</td>
<td>20.8</td>
<td>15.0-30.0</td>
</tr>
<tr>
<td>Thailand</td>
<td>240</td>
<td>20.0</td>
<td>9.0-67.0</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>102</td>
<td>8.5</td>
<td>1.6-8.4</td>
</tr>
</tbody>
</table>

Source: HOUSING ASIA'S MILLIONS. ed. by Yeh & Laquian, 1979

No doubt both Hong Kong and Singapore are distinguished
from other developing countries where public housing programs are a consequence of "misplaced philanthropy" and are not affordable to the majority of the poor. However, it is important to note that, in both Hong Kong and Singapore, although the rent for public housing is significantly lower than that for private housing and the units are affordable to the designated income-groups, they may not be affordable to the poorest. For instance, in 1971 more than 15% of the total population in Hong Kong could not afford the housing units built by the Housing Authority, if the expenditure on housing was not to exceed 20% of these households' income (according to Fong, in 1971 15.3% of the households in Hong Kong earned less than HK$400 per month. Fong, 1980, p107). Such a problem is more likely to occur in Singapore, where relative higher rents have resulted from higher design standards. According to Buchanan, a survey made in 1967 showed that one third of slum residents were not moving to HDB housing estates mainly because the rents would have been too great a proportion of their income - in most cases, these rents were equivalent to between 20% and 50% of total household income (Buchanan, 1972, p234). In a HDB survey conducted in late 1960s, it was found that "change in housing expenditure" ranked first for those residents' reporting a change for the worse (Yeung, 1973). Although the situation may have been improved in 1970s and 1980s, earlier problem suggests that the government should offer the poorest more assistance. Design standards could also be more flexible because a lower standard results in lower rents, which in turn means that public housing can be accessible
to more low-income people.

5.3 The Impact of the Low-income Public Housing on the Physical Conditions of the Residents

Scale and affordability are meaningful indicators of the social effect of low-income public housing programs only if the housing units provide adequate conditions for the residents, i.e. they meet the basic requirements for safety, health, and daily life convenience. For any low-income public housing program which is not solely a means to obtain the squatter land or to redevelop dilapidated areas, quality should always be a serious consideration. There is no social benefit to the low-income residents in a relocation process in which they are resettled in public housing estates where the conditions are as bad or worse than in the squatters areas or slums which they have lived.

What kind of housing environment do the residents obtain from the low-income public housing programs in Hong Kong and Singapore? What has been the change, in terms of residential conditions, for the low-income households who were relocated from squatter settlements and slum areas into the low-income public housing estates? In the last chapter, we have reviewed the physical planning and design standards of low-income public housing in the two city-states. What have been the social effects of the planning and design? The answers to this question are so diverse (Fong, 1980, Drakakis-Smith, 1979, Grimes, 1976,
Liu, 1975) that it seems necessary to use explicit criteria to achieve an objective view. There are three variables which may be considered as major indicators of the change in residential conditions of the low-income people: safety, density, and the availability of services. It should be stressed that a valid discussion must be firmly rooted in the socio-economic backgrounds of the public housing programs. What is desirable may not be what is possible. Therefore, the assessment should be made by comparing the residential conditions in the low-income housing estates and those which are offered in other possible alternatives, i.e. squatter housing and low-rental tenements provided by the private housing sector.

In Hong Kong, low-income public housing estates demonstrate an improvement in safety, as compared to the squatter areas from which a large proportion of the residents came. Before these people were relocated, they faced the threats from landslides, typhoons, fires, and evictions, for example the Shek Mei fire. In the 1969 survey conducted by Keith Hopkins as apart of a Squatter Research Project, 60 percent of the squatters who had responded stated that security from natural disaster was the most important reason for their move (Fong, 1980, p183). This finding clearly indicates both the improvement in safety provided by the public housing sector and the importance of such an improvement to the poor.

Overcrowding is usually considered as the worst aspect of Hong Kong's public housing program. This is particularly true
for the resettlement estates built between 1954 and 1963. According Drakakis-Smith the low standard and lack of planning in the Mark I, II and III resettlement estates were depressing to outside observers (Drakakis-Smith, 1979, p54). The overall density of these estates was higher than that of the squatter areas that were replaced (Dwyer, 1972). According Fong, the average floor area per person for various public housing estates was 28 square feet, which is lower than the corresponding figure of 30 square feet for private tenements (Fong, 1980). The gap between private tenements and the early types of resettlement estates that provided only 24 square feet per adult is even more significant. However, these observations may not be a sufficient basis for making a judgement. First of all, high density does not necessarily mean crowding. A higher density in the resettlement estates than that in the squatter areas can be the result of more efficient land use in the former through high-rise rather than the result of lower standards. Secondly, although the average floor area per person is higher in private tenements than in resettlement estates, the distribution is much more unequal in private tenements. In fact, the private tenements have a very high percentage of households sharing their living quarters with others. In 1971, the degree of sharing in this type of housing was close to two families per unit, which is much higher than the corresponding figure found in the public housing estates where sharing is almost non-existent (table 5.5). Therefore, it is likely that the overcrowding situation in the resettlement estates is not as
serious as that in the many tenements where households share their living quarters. Thirdly, the situation of overcrowding is found mostly in the resettlement estates built between 1954 and 1963 which does not present the whole picture of public housing in Hong Kong. In fact, the average floor area per person for the public housing estates built in 1970s and 1980s is higher than the figure for private tenements.

Table 5.5 Number of Households Per Living Quarter by Type in Hong Kong (1971)

<table>
<thead>
<tr>
<th>Type of Living Quarter</th>
<th>No. of Households</th>
<th>No. of Living Quarters</th>
<th>Households Per Living Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private self-contained flats</td>
<td>185,632</td>
<td>135,589</td>
<td>1.37</td>
</tr>
<tr>
<td>Private tenements</td>
<td>249,256</td>
<td>125,211</td>
<td>1.99</td>
</tr>
<tr>
<td>Non self-contained public housing units</td>
<td>106,295</td>
<td>103,894</td>
<td>1.02</td>
</tr>
<tr>
<td>Self-contained public and aided housing</td>
<td>156,879</td>
<td>156,137</td>
<td>1.00</td>
</tr>
<tr>
<td>House</td>
<td>8,625</td>
<td>7,214</td>
<td>1.20</td>
</tr>
<tr>
<td>Simple stone structure</td>
<td>57,553</td>
<td>49,876</td>
<td>1.15</td>
</tr>
<tr>
<td>Other permanent housing</td>
<td>10,794</td>
<td>10,551</td>
<td>1.02</td>
</tr>
<tr>
<td>Temporary housing</td>
<td>71,636</td>
<td>66,338</td>
<td>1.08</td>
</tr>
<tr>
<td>All types</td>
<td>846,670</td>
<td>654,810</td>
<td>1.29</td>
</tr>
</tbody>
</table>

Source: Fong, 1980, p189.

The availability of physical amenities such as electricity, piped water supply, toilet and kitchen is also an important measure. Very few squatter households have water supply in their houses. Some of them don't even have electricity, and sewerage is generally not provided in squatter areas (Fung, 1978). In resettlement estates, household utilities such as electricity
and water supply are provided. All the public housing units built after 1973 are self-contained. The average situation in the private tenements is largely the same as in the public housing, although it is not clear how bad the situation can be in some of these tenements.

In Singapore, using the same criteria, the positive impact of the public housing on the conditions of the relocated households is more obvious. In terms of safety, the squatter settlements also had serious problems, especially the danger of fires. So public housing is no doubt an improvement. According to Yeung, when the densities in the public housing estates are compared with the more congested parts of the city from where most residents have moved, public housing estates generally represent an improvement (Yeung, 1973). With regard to modern town planning principles, residential uses in the estates occupy, on the average, only 50 percent of the total land area. The other half of the land is devoted to roads, schools, landscaping, and other auxiliary services. Living space per person has more than doubled, having increased from 31.2 to 66.4 square feet after relocation. In terms of the provision of physical infrastructure, nearly all HDB flats have individual kitchen, bathroom, and toilet facilities. The progress made in residential conditions, when measured against the the slum areas and insanitary squatter colonies in Singapore, is considerable (Yeung, 1973, p58). Table 5.6 is a summary of a survey conducted by the HDB, which present the interviewee's positive response to the comparison of residential conditions in public housing units.
with their past living conditions.

Table 5.6 Percentage Distribution of the Comparison of the Residential Conditions in Public Housing Estates with Past Residential Conditions

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>No Change</th>
<th>Changed for the Better</th>
<th>Changed for the Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes in life in general</td>
<td>12.6%</td>
<td>69.8%</td>
<td>11.8%</td>
</tr>
<tr>
<td>Changes in public security</td>
<td>37.7%</td>
<td>55.9%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Change in health of household members</td>
<td>28.9%</td>
<td>66.8%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Change in cleanliness</td>
<td>14.9%</td>
<td>75.2%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Change in environment in bringing up kids</td>
<td>25.8%</td>
<td>68.7%</td>
<td>5.5%</td>
</tr>
</tbody>
</table>


All the above comparisons clearly indicate that in both Hong Kong and Singapore the residential conditions in the public housing estates are usually better than in the squatter areas. Conditions in the private tenements are no better than in the public housing estates. Actually, it is likely that a considerable proportion of private tenements are in a worse condition. Therefore, it is perhaps fair to say that the public housing sector in both cities offer their residents housing units of adequate quality. Nevertheless, it is also necessary to point out that the residential conditions in Hong Kong's non self-contained resettlement estates are very low indeed. This low quality has caused many problems for the residents and has been criticized by a number of writers in this field (Drakakis-Smith, 1979, and Morris, 1978). But, it is important that
criticism be based on the economic conditions at the time rather than on an unrealistic "design standard". In fact, in Hong Kong projects for the conversion of the old estates have been planned and implemented since 1968.

Comparatively speaking, the higher design standards of the public housing in Singapore do result in better residential conditions than those in Hong Kong. Nevertheless, both urban-states have provided low-income people with an improved housing environment through public housing programs. The quality of residential conditions, together with the scale of the housing programs and the generally affordable rents, are positive socio-economic effects of their respective public housing programs.

5.4 The Location of Public Housing Estates

The word "location" used here includes both actual physical location and mobility or access to transportation. The location of low-income public housing has an important social effect because it determines access to employment and social services. Proximity to employment is critical to the survival of the poor. Surveys of slum and squatter dwellers almost always reveal that closeness to work is a primary reason for their location. The link between place of residence and place of work is so important that it is often a major determinant of the success or failure of a low-income housing program.

In the last chapter we showed that the physical and financial availability of land is a major determinant in shaping
the pattern of development. In Hong Kong, private housing is concentrated in the inner city, whereas public housing is scattered on the fringe. In fact, Pryor noted that in 1973, 70% of the total gross floor area of private housing was in the inner districts and 88% of the total floor area of public housing was in the outer districts (Yeung, 1979). Although initially the government also built in the city centre on sites made available by squatter fires or squatter clearance programs, after the 1950s it turned its attention primarily to peripheral areas because land values are higher in the inner districts (Figure 5.1). As a result, the low-income housing program in Hong Kong has created a major population shift within the city. The bulk of the resettlement population has been moved to the suburban areas, whilst the main economic foci, especially in terms of commercial and service jobs, still remain in the older parts of the city. This has resulted in considerable segregation between the places of work and the places of residence in the city. In a study by Fung on squatter relocation and home-work separation, it was found that the process of relocation disrupted the existing commuting patterns of the affected squatters. Those people moved to a peripheral setting did exhibit more commuting than others (Fung, 1978). The opposition to moving has come, not so much from the type of Resettlement Housing being offered, but from its location (Fung, 1978).
In Singapore, a similar pattern of development can be observed. Large scale construction programs since 1960 have been launched in the outlying areas where large tracts of land were assembled at lower cost. Although at one time a number of urban renewal projects were carried out in more central locations, the latest developments have been self-contained satellite towns. As in Hong Kong, the central area in Singapore is still the employment focus, and most residents of public housing estates have to spend a long time on their journey to work.

No doubt location is a major problem for low-income public housing programs in both cases. First of all, the root of the
The location problem is urban expansion resulting from population growth and economic development; and secondly, the high land values in the central districts. This forces the decentralization of public housing, the move of the low-income households towards fringe, and the overcrowding in central districts. In examining people's response concerning the reasons behind their residential move, it was found that the main reasons for squatters' residential moves were related to insufficient space and expensive rent in their previous accommodation which constituted as much as 67% of all the answers (Fung, 1978).

The land in the outlying areas is cheaper because it is less valuable as measured by the existing economic system. Manufacturers are hesitant to locate there because it is usually more profitable to invest in central areas. Therefore, the problem of home-work separation often occurs as a consequence of new town development.

Theoretically, there are three ways for an individual affected by relocation to react to an increased level of commuting: (a) to seek a change of job; (b) to change residence; and (c) to tolerate increased commuting. But in both Hong Kong and Singapore, most people did not change their jobs after moving into public housing estates, and few people had the intention of moving out. Therefore, the most common reaction was to tolerate increased commuting.

What effort can the government make to alleviate the location problem of low-income public housing? There have been
two approaches. One is to offer the residents jobs within the housing estates through decentralizing industries and to build more social services in the public housing estates. A second approach is to increase the accessibility of the residents by improving the transportation system.

How significant are these approaches? The first approach seems to have had only limited success so far in Hong Kong and Singapore because the governments in both urban-states have been reluctant to offer incentives to encourage the decentralization of industry. In Singapore, for instance, although it has been the policy of the HDB to build local light industries in some estates, to enable local residents to find jobs nearer their homes, it has been found that not enough has been provided to absorb or attract the available labor force in public housing areas. Most of the chief income-earners of the households in peripherally located public housing estates still work in the central district (Yeung, 1973; Hardoy, 1979). As has been mentioned in chapter 4, in both Hong Kong and Singapore, many of the residents of public housing estates have to rely on vehicular transportation to get to work. Fortunately, significant improvements have been made in the transportation systems in both cities.

Nevertheless, it has to be stressed that there are many problems associated with home-work segregation and relying on transportation alone can not provide a final solution to the problem. Continuous urban expansion aggravates the problem of
home-work separation because the poorest can not afford the cost of transportation. Therefore, it seems necessary that Hong Kong and Singapore pursue a more comprehensive spatial planning policy to create job opportunities in the new towns in order to give the low-income residents easier access to employment.

5.5 An Assessment of the Social Effect of the Low-Income Public Housing Programs in Hong Kong and Singapore

Scale, affordability, quality and location are major indicators of the socio-economic effectiveness of low-income public housing programs. Whereas it is necessary to examine each separately to understand the merits and problems of these programs, an overall assessment should consider their interrelation. Public housing ought to be a result of a planning process which balances these interrelated features.

The low-income public housing programs in both cities are successful in terms of quantity. The large scale provision of low-income public units has, to a large extent, satisfied the housing needs of the low-income people which can not be effectively represented by demand in the market economy. The social orientation of housing provision by the public sector is to a large extent ensured by the low rents for the public housing units and the regulations controlling the distribution of the subsidized low-income public housing units. As a result, the people in the low-income groups are the major beneficiaries of government assistance.
Nevertheless, there have been problems regarding the distribution of benefits within the low-income groups. In Hong Kong, the major problem has been that the low-income public housing program was oriented to squatters in the first two decades and the appalling residential conditions for the poor living in private tenements were neglected. The dominant proportion of the public housing built in Hong Kong before 1973 was for relocating squatters, whereas the opportunities for the poor living in private tenement to obtain a public housing unit was much more limited. In Singapore, as compared with Hong Kong, the design standards for public housing units have been higher, and so have been the rents. There have been some indications that the low-income public housing units in Singapore were not affordable to the poorest of the poor (Buchanan, 1972). According to Yeung, by 1973, public housing had attracted mostly people of upper, lower, and lower middle classes (Yeung, 1973). Although both Hong Kong and Singapore have the problem that the poorest of the poor may be excluded from the benefits of public housing due to the rents, this problem is more likely to occur in Singapore. This situation suggests the necessity for more government assistance to the poorest households.

In terms of the quality of public housing, it has been made clear in the previous discussion that in both Hong Kong and Singapore public housing offers much better residential conditions than do the squatter settlements. Although design standards in some public housing estates, particularly the resettlement estates built in Hong Kong between 1954 and 1963
are very low, criticism should also consider the great scale, the low rent, and the socio-economic background of the early resettlement program.

To conclude, the public housing programs in Hong Kong and Singapore have made a significant contribution to housing the poor in these two urban-states because few low-income households can afford to pay for private tenements. It is difficult to imagine how the millions of low-income people would find accommodation for themselves, if there were no low-income public housing programs in Hong Kong and Singapore.

Nevertheless, as we have noted many residents of the public estates face the problem of home-work separation. As the centrally located land becomes increasingly scarce, it has been a strategy for new public housing projects to be built further away, owing to the limitation in public financial resources. However, we have to keep in mind that such a pattern of development is more a result of urban expansion resulting from population growth than a shortcoming of the public housing programs. Nevertheless, planners should always remember that government housing policy and planning should be a dynamic force to change the existing spatial pattern of the distribution of wealth and human settlement in case such pattern of distribution blocks further socio-economic development. In the case of Hong Kong and Singapore, it is necessary for the governments to make an effort to decentralize industries and social services.

The nature of housing suggests that it contributes to
socio-economic development not only through satisfying basic human needs, but also through improving the physical environment and spatial pattern of cities and by direct economic benefits from the housing sector. The dynamic role of the public housing programs in changing the physical environment and spatial pattern of cities is partially seen in the large number of squatters cleared and the development of new towns. Such impacts have been critical to the industrialisation and urban development in both Hong Kong and Singapore. It is widely admitted that, socio-economic development and public housing have reinforced each other in both Hong Kong and Singapore. Nevertheless, an accurate assessment of the socio-economic effectiveness of the low-income public housing programs requires more detailed analyses, including the consequent pattern of land use, urban environment, employment in public housing construction and building material industries which, owing to the limitation of available information, should be explored in further studies.
CHAPTER 6. LESSONS FOR COMPARABLE CONDITIONS

6.1 Shanghai as a Comparable City

In this chapter the lessons of the low-income public housing programs of Hong Kong and Singapore are applied to the city of Shanghai, which has seven million people and is the largest industrial and commercial centre in China.¹

It is certainly true that there are enormous differences in the socio-economic situation of China and the two urban-states. It is essential to keep these in mind because Shanghai is a metropolitan unit within the political, social, and economic framework of China. However, Shanghai is in many respects a city comparable to Hong Kong and Singapore. First of all, Shanghai is among the most densely populated cities in the world. Secondly, the economic productivity of Shanghai, as measured by GNP per capita, is much higher than the average for China, and is perhaps close to the GNP per capita of Hong Kong or Singapore in the late-1960s. Thirdly, Shanghai has comparable conditions concerning human resources for planning and designing housing as well as technological ability for construction. Fourthly, the historic and geographic features of Shanghai are also comparable to Hong Kong and Singapore: Shanghai was a semi-colonial city before the foundation of the People's Republic of China; it is

¹Statistics show that in 1985, Shanghai had 6.98 million people of which the total number of households were 1.97 millions (The Ministry of Public Security, 1986).
also an international port city. Fifthly, the current economic reforms in China, which promote the co-existence of market and planned economies and increase the autonomy of local governments, make Shanghai more comparable to Hong Kong and Singapore.

If the focus of the discussion is narrowed to housing, we can find more comparable features. One is the shortage of housing. The previous discussion has shown that in the 1950s and 1960s, both Hong Kong and Singapore faced a serious housing shortage, and a high proportion of their population was forced to live in squatter settlements and slums. Although the problem of housing shortage is visually less obvious in Shanghai, it is actually serious. According to the China News Agency, Shanghai now has a half million households (over 25 percent of its total households) that are not housed appropriately, and its housing shortage has not been alleviated despite a great effort having been put into housing since 1980 (China News Agency, May 10, 1986 and May 18, 1986). The housing shortage is represented in a number of ways. First, it is seen in the massive subdivision of the existing units through family ties. A high proportion of urban households in Shanghai are composed of three or even four generations. It is not uncommon that ten or more people crowd into a housing unit intended for four to five persons. This situation is to certain extent similar to the subdivision observed in the private tenements in Hong Kong and Singapore. Second, the housing shortage is shown by the severe difficulty faced by the city in providing housing for newly
formed families. Many young couples cannot find housing for themselves, and many others are delaying marriage because no houses are available. Third, the housing shortage is seen in the collective accommodation provided for pre-married people. A single room in these collective residences is shared by two to more than ten persons. This form of housing is common for young people attending colleges or working. Fourth, the housing shortage is also seen in the lack of services such as water and sewage.

A second comparable feature concerns the nature of the housing problem. It was stated in the first chapter of this study that the housing problem is related to: (i) economic capacity, represented by the match between population growth and the development of human ability in mobilizing and utilising resources; (ii) the social pattern of the distribution of the mobilized resources; and (iii) the spatial pattern of human settlements. Like the two urban-states in the 1950s and 1960s, the economic capacity of China is low, owing to the mis-match between population and resources. This is shown by the low GNP per capita, the high population density and the corresponding shortage of land and other resources. While Shanghai has higher productivity than the national average, its wages and investment are centrally planned. As a result, Shanghai's average household income is not significantly higher than in other cities, and its economic resources for housing, physical infrastructure, and social services are limited. Moreover, population pressure causes problems of underemployment and a severe land shortage.
In terms of the social pattern of the distribution of wealth, Shanghai, like other parts of China, has a more equal distribution than Hong Kong and Singapore, and correspondingly the social distribution of wealth has relatively less impact on the housing problem. However, a gap does exist. One aspect of the gap is seen in the difference in wages. This aspect of the gap is currently growing. A second aspect of the gap is seen in unequal accessibility to the wealth which is distributed through non-market channels. Consequently, there is a gap in households' housing conditions. In terms of the spatial pattern of settlement, the concentration of population in urban areas is closely related to the housing problem in Shanghai and other cities in China such as Peking. Shanghai faces a population pressure that is the result of both a high birth rate in the 1950s and 1960s and rural-urban migration. It is different than Singapore where the population pressure has come mostly from natural growth. However, Shanghai is similar to Hong Kong in a sense that immigration, legal and illegal, has contributed significantly to the population growth. Nevertheless there is an essential difference between Shanghai and both Hong Kong and Singapore in that land is not a market commodity in China, and as a result the spatial concentration of social groups seems less significant in the city of Shanghai.

The third comparable feature is the dynamic role of housing in the process of socio-economic development. In Hong Kong and Singapore, the development of public housing has gone hand in hand with socio-economic development. Housing is equally
important to Shanghai, a city that plays a leading role in China's modernization drive. Housing as a basic human need is critical to the political stability and economic efficiency of the city. The existing housing shortage is therefore a severe constraint on the socio-economic development of Shanghai. Although there is no information available to show the impact of the housing problem on Shanghai people, such an impact may well be perceived by looking at the result of a survey in Peking. According to the People's Daily, a recent survey conducted in a neighbourhood in Peking included the following two questions: (i) "if you were the Mayor of Peking, what would be the first thing for you to do for the city?"; and (ii) "which sector do you think should be of the highest priority for the next step of our economic reforms?". The results revealed that, for the first question 70% of married people answered that housing should be the most urgent issue; and for the second question, again housing accounted for 53% of the total answers (People's Daily, August 1, 1986). These answers also demonstrate that, as China has just experienced many disastrous political movements such as the Cultural Revolution, material incentives are increasing their importance in mobilizing people. Housing, as shown by the survey results, is most important to the people. Moreover, the welfare nature of urban housing in China and the non-market method of its distribution have together caused corruption and corresponding resentment. This certainly aggravates the negative consequence of the housing shortage. As an economic sector, housing is an area with great potential in creating employment.
and benefits, and stimulating related economic sectors. As a major component of the physical environment, housing development has a direct impact on the spatial pattern of settlements. Well planned public housing in Hong Kong and Singapore have made a significant contribution to their socio-economic development through the reorganization of the use of urban land. It is equally important for Shanghai to achieve the optimal use of its land, because the per capita land resources are extremely limited while the demand for land is high. The public ownership of land provides Shanghai with a good opportunity for the spatial planning of its housing. Well planned housing development can effectively alleviate the serious housing shortage of Shanghai, provide jobs to its growing labour force, and achieve a high efficiency of its land use, all of which will result in a fast and smooth pace of socio-economic development in the city, and consequently, in China.

While the dynamic role of housing provides the opportunity for housing development, Shanghai faces various constraints. The most obvious constraints are similar to those faced by Hong Kong and Singapore, i.e. the shortage of capital and land for large scale housing programs.

It is now clear that Shanghai shares many similarities with Hong Kong and Singapore in regard to the severity of the housing problem, the nature of the housing problem, and the dynamic role of housing in the process of development. What are the implications of these similarities for the exploration of useful
6.2 Lessons of Hong Kong and Singapore for Shanghai

The success of the low-income public housing programs in Hong Kong and Singapore is based on a new rational for housing investment which sees housing as an inseparable part of an integrated process of development. There are two essential policy and planning guidelines for their low-income public housing programs: (i) government policy and planning should ensure an adequate allocation of resources to the housing sector to give full play to the dynamic functions of housing; and (ii) because the resources needed for housing are constrained by their limited economic capacity, government housing policy and planning should ensure an efficient use of the limited resources. The previously reviewed similarities suggests that these two guidelines may be equally important for Shanghai.

Under these guidelines, the governments in Hong Kong and Singapore have achieved large scale, low rental public housing with reasonable quality and accessibility through four distinctive policy and planning measures. First, they have been active in financing low-income public housing programs. Second, they have a well defined social orientation for their public housing programs, directing public assistance to low-income groups through subsidies and distribution regulations. Third, they have used design standards and physical planning to bridge their policy goals and respective resource potential for public
housing programs. Fourth, they have been active in pursuing housing development through spatial planning and the development of satellite towns.

In Shanghai, investment in housing was restricted for three decades from the 1950s to the 1970s, as housing was seen as an unproductive sector. This has resulted in a serious housing shortage. However, the situation has changed since the late-1970s. It is encouraging to see that a new rational for housing investment, based on the recognition of the dynamic role of housing, has been accepted. According to China News Agency, 330,000 households in Shanghai have moved into new housing flats since 1980 (China News Agency, May 18, 1986). This situation demonstrates that as far as housing investment is concerned, Shanghai is learning the lessons of Hong Kong and Singapore.

However, despite the increased capital investment in housing, a serious housing shortage persists in Shanghai. In order to speed up the pace of housing development to alleviate the housing shortage, it is necessary for Shanghai to explore more sources for housing investment. One important source is personal savings. To attract individuals to invest in housing, commercialization of housing sector has been proposed by many Chinese scholars and has been partially implemented (Dai, 1984; Lin, 1984). Shanghai is among the more than 160 cities in China that build and sell commercial housing units. These units are usually sold to individuals at subsidized prices. This measure is similar to the Home Ownership Program of Hong Kong and
Singapore, which has been a major trend in these two urban-states for the last decade. This approach is efficient in raising investment in housing by utilizing the capital resources of those who able to pay for it. There have been other measures applied in Shanghai to raise housing investment. These include financial bonds which carry higher interest than the usual interest for fixed-term savings accounts, and a lottery linked to housing.

To this point, it is important to learn the lessons, concerning the social orientation of public housing, provided by Hong Kong and Singapore. Currently, the housing built in Shanghai can be categorized roughly into two groups: welfare public housing and commercialized housing. Welfare public housing units are rented at rents that are significantly lower than the actual costs. The residents of welfare public housing usually pay less than 5 percent of their households income for rents. These housing units are distributed through administrative channels. The commercialized housing units are built by the public sector, and are sold at prices closer to real costs. They are distributed mainly by the market. These housing units are also, in most cases, subsidized, although the subsidies vary. The problem in Shanghai is that there are usually no income limits specifically designated to regulate the distribution of the welfare public housing units. The overall housing shortage and the distribution of the welfare public housing based on administrative decision together result in government subsidised housing going to those who have the
influence to obtain the limited housing units provided. Although commercialized housing avoids the problem of corruption, not all households can afford it. It is therefore important that the social orientation of each kind of housing be clarified. In Hong Kong, public housing is built to accommodate the high percentage of households that are not able to afford the housing built by the private sector. Perhaps it is wise for Shanghai to use income as the major criteria for the distribution of the welfare public housing units, to ensure that the increase in commercialized public housing does not reduce the chance for the lower income households to access affordable housing. The alternative is that Shanghai gradually commercializes the whole housing sector, and the subsidies to the commercialized public housing units are geared to the household income of prospective residents. To enhance the accessibility of the commercialized housing to low-income people, it may be an effective approach for Shanghai to establish a mortgage system for purchasing housing. Such a financial measure can attract more funds to the housing sector, and as a result more housing units can be built to alleviate housing shortage. This financial measure has been widely applied throughout the world, and is associated with the great progress of public housing in Hong Kong and Singapore in the 1970s and 1980s.

The spatial planning for the low-income public housing programs in Hong Kong and Singapore also provides useful lessons. It was a necessary step for Hong Kong and Singapore to obtain more land resources for low-income public housing
programs through the development of satellite towns. Nevertheless, decentralization of low-income housing without decentralization of industry has resulted in home-work separation in both Hong Kong and Singapore. Because of the land shortage in the urban areas, Shanghai is also planning and building a number of satellite towns. It is important that Shanghai should try to avoid the problems encountered in the development of the satellite towns in Hong Kong and Singapore. One encouraging sign of the spatial planning in Shanghai is that housing and industrial development are going hand in hand. However, there have been evidence suggesting that the satellite towns of Shanghai are still not attractive to its residents because of gaps in regard to education quality, social life, and commercial services between the central areas and the satellite towns. It should emphasized that these gaps must be reduced in order to achieve successful development of the satellite towns in Shanghai. It is therefore important that planners understand the problems faced by the residents of the satellite towns.

The physical planning and design for the public housing in Hong Kong and Singapore also provides valuable lessons for Shanghai. The basic guideline for physical planning is that it links limited economic resources with the policy goals of the housing program. This is clearly shown in the efforts by Hong Kong and Singapore to achieve large scale production and low rents for public housing. The severity of the housing shortage in Shanghai indicates that a great number of housing units are needed to satisfy the housing needs; The low income of
the majority of the Chinese households indicates that rents or prices must be low.

It is therefore important that the standards for housing be under government control, and perhaps it is wise to maintain low standards until the overall housing shortage is alleviated. In the past five years, Shanghai has raised its per capita living space from 5 square metres to 6 square metres, which is much higher than that in Hong Kong (China News Agency, 1986). However, it has not reduced the number of households in urgent need of housing. We know from the previous discussion that the standards for public housing vary significantly between Hong Kong and Singapore and low standards has been a basic measure used by Hong Kong to achieve the policy goals for low-income public housing. Under the current situation of housing shortage, planners in Shanghai should put more emphasis on the scale of production rather than on the increase of per capita living space. It is also important that the land resources be used economically. The per capita land area for China is amongst the lowest in the world, and the land shortage is especially severe in Shanghai. It is valuable to explore the significance of high-rise and high-density in contributing to the success of the low-income housing programs in Hong Kong and Singapore. It seems increasingly necessary for Shanghai to accommodate more development by high-rise and high-density housing.

The above discussion has shown that the cities with
comparable conditions can learn many useful lessons from the low-income public housing programs in Hong Kong and Singapore. Shanghai is only one of these cities, and the analysis for it may not be valid for others. It therefore needs to be emphasized that such learning be expanded based on each comparable city's own situation. However, it is essential to realize that the success of low-income public housing is composed of a number of facts rather than a single one. Flexibility and comprehensiveness are both important.
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