



PROBLEMS, POLICIES, AND PROSPECTS  
FOR LOW-COST HOUSING IN SOUTHEAST ASIA

# HOUSING ASIA'S MILLIONS

EDITORS: STEPHEN H.K. YEH, A.A. LAQUIAN





To RKZ

who knows the way from Calcutta to Camelot via Chicago

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## **Foreword**

Of the fundamental human needs of food, clothing, health, and shelter, the last item has traditionally ranked lowest in the priorities of most developing countries. In rural areas, where people usually have no problem constructing a home from local materials with the use of traditional skills, the lack of emphasis on housing may be easily understood. In large urban areas, however, housing for the millions of poor residents, many of whom have been migrants from the countryside, constitutes one of the most serious problems of development.

Concern for the shelter problems of the urban poor prompted a low-cost housing study in the early 1970s, which gave rise to this book. Researchers in eight countries ranging from war-ravaged Laos to the almost totally urban Singapore and Hong Kong gathered information on land provision and policies, housing design, administration, finance, urban and regional planning, and problems of squatters and slum dwellers. Most of their findings have since been published with the support of the International Development Research Centre (IDRC).

This volume pulls together the common elements of the country studies and should be read in conjunction with them. It compares the approaches of the different countries and points out successes and failures.

In supporting this collaborative research project, the IDRC was responding to a demand from officials in the Southeast Asian countries for more information on the housing problem. This demand was ironically strongest in countries where housing programs were already under way. In the other countries, social science researchers were advocating more research on housing, but local officials had not yet recognized the magnitude of the problem.

The contributors to this volume represent a cross-section of policymakers, administrators, academics, and private citizens. Although the chapters are attributed to specific individuals, they are actually the culmination of ideas resulting from almost 3 years of studies, meetings, policy conferences, and visits to particular countries. They are a concrete product of the endeavour and, equally important, a manifestation of collaboration among the countries and individuals in Southeast Asia. The project forged links between the countries so that it is now possible for an official or researcher in one country to seek the assistance of others when confronted with a specific housing problem. This is an intangible result of the study but is a lasting payoff.

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## Prologue

In October 1972, a group of researchers and administrators interested in low-cost housing met at the Hilton Hotel in Singapore to discuss the possibility of a collaborative and cooperative research project on housing for the urban poor in Asia. Persons in the group were not members of the much maligned "development set," but several of them did feel the seeming incongruity of discussing one of the most important aspects of Asian poverty in the opulent surroundings of a Hilton Hotel. Not surprisingly, most of the participants drifted after sundown to the more sanguine surroundings of the Car Park, where, over bowls of noodles and native *satay*, they continued to discuss the problems of slums, squatters, and low-cost housing.

The early 1970s were particularly auspicious times in Asia to study the problem of housing the urban poor. In Singapore and Hong Kong, where the governments had formulated definite housing policies, the conditions of the poorest of the poor had been alleviated, but the governments were still encountering considerable problems in maintaining housing standards while producing homes within the tenants' ability to pay. In the Philippines, the government had responded to slum and squatter pressure by introducing forced relocation programs that separated low-income peoples from their places of work and wasted their investments in housing. Laos was reeling from the effect of millions of refugees flocking to the cities and spilling over from temporary camps located in the outskirts of Vientiane and Luang Prabang. Malaysia was experimenting with industrial housing and discovering that the beautiful, solidly built high rises were not particularly attractive to the rural-oriented Malays who could barely afford the high rents required by high construction costs. In Thailand, the slum-squatter area around Bangkok harbour, Klong Toey, was just being discovered by researchers and housing administrators. The economic boom in Thailand arising from the Vietnam War had brought many rural dwellers to the city, and the government was seeking ways and means of coping with the resulting problems.

Meanwhile, at the Hilton Hotel the researchers and administrators discussed and adopted a common research design for a study of low-cost housing in their respective countries. The International Development Research Centre (IDRC) agreed to support the study, which became known as the southeast Asia Low-Cost Housing Study project. The project was started in 1972, and county reports were finished in 1975. This volume is a comparative report on the findings of the study and should be seen as an integral part of the series of country studies listed on page 11.

## Rationale

At a time when the housing problem for lower-income groups had become increasingly acute in developing countries and had not been accompanied by

# Housing Asia's Millions:

## Problems, Policies, and Prospects for Low-Cost Housing in Southeast Asia

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The International Development Research Centre is a public corporation created by the Parliament of Canada in 1970 to support research designed to adapt science and technology to the needs of developing countries. The Centre's activity is concentrated in five sectors: agriculture, food and nutrition sciences; health sciences; information sciences; social sciences; and communications. IDRC is financed solely by the Government of Canada; its policies, however, are set by an international Board of Governors. The Centre's headquarters are in Ottawa, Canada. Regional offices are located in Africa, Asia, Latin America, and the Middle East.

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/IDRC publication/. /Comparative analysis/ of the /South East Asia/ Low-/Cost/ /Housing/Study — discusses the objectives and/methodology/; estimation of /housing need/s; /living conditions/ in the /slum/s and /squatter/ settlements; /administrative aspect/s; /financing/; /land utilization/ policies; /location factor/s; /residential construction/; and /design/; housing investment priorities (/infrastructure/, /income distribution/); /economic implication/s. /Bibliography/, /statistical data/.

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effective policies and programs for solving it, the Southeast Asia Low-Cost Housing Study project was launched. The justification was that the study would promote greater awareness and improved policies. It was hoped, more specifically, that the project would mean a better understanding of the national experiences and a sharing of information on planning and implementation of low-cost housing programs.

The primary target of the project was the preparation of a series of national studies of housing conditions and housing needs, together with a critical evaluation of each country's experience in low-cost housing, leading to some analysis of policy implications for the immediate future. The second objective was to produce a series of comparative studies touching on areas relevant to a more general understanding of low-cost housing in the region.

The decision to limit the project to Southeast Asia was based on manageability and portability. The size of the group was workable, and the countries in the subregion shared certain problems, such as the growth of primate cities. There was also the feeling that regional affinity would contribute to the success of the project.

Southeast Asia in this study includes Hong Kong, Indonesia, Laos, Malaysia, Philippines, Singapore, and Thailand. Cambodia and Vietnam were left out of the study because of their uncertain political situation and because no suitable participants could be found. Representatives from Sri Lanka were originally invited to be observers because of the country's heavy investment in housing, but they volunteered to participate fully and contributed much to the project. A representative from Burma was an observer at one of the meetings.

All participants in the study came from the region; Western specialists were not invited, although their contributions might have enhanced the academic quality of the project. It was assumed that their absence would ensure full participation and free exchange of views among the Southeast Asians and result in a much needed expression of the local view.

As it worked out, the project coordinators approximated the ideal. They made up a considerable body of knowledge and in many cases supplemented their views by holding seminars within their countries.

The team of country project coordinators (Appendix 2) constituted the driving force, the Southeast Asia Low-Cost Housing Study group, in the project. They were responsible for the production and review of the country monographs, selection of topics for comparative study, nomination of persons to participate in comparative analyses, and scheduling of activities. During the project, they met in Singapore, Indonesia, Malaysia, Philippines, and Thailand.

They chose eight topics for comparative analysis and worked in small interdisciplinary teams to analyze the topics. Other members of the interdisciplinary teams were nominees from the group of paper writers in the country studies and two staff members of IDRC. The latter were representatives of the countries under study and specialists in the subject matter.

## **Output**

The written output of the project comprises two sets of documents: eight country studies, and this report of the comparative analysis on eight topics. The coordinators retained copyright of their monographs and were free to use them as they wished. Several of the country studies have been translated into the

local language for wider dissemination, and some have been published by government or private sponsors.

The usefulness of the country studies and of the activities leading to them has already become apparent. Without exception, the monographs were the first of their kind in each country, promoting greater understanding and policy awareness both at home and abroad. The Hong Kong and Singapore experiences, which are successful low-cost housing programs, have been described in detail and published.

According to the country project coordinators, the Indonesian monograph formed the basis of the country's report to the UN Habitat Conference in 1976; the Hong Kong monograph has been considered by the Housing Department as a comprehensive background manual and is recommended reading for the housing management course offered by the University of Hong Kong.

The Thailand monograph, already translated into the Thai language, was the first product of basic research undertaken by the National Housing Authority in cooperation with the National Institute of Development Administration. Demand for the study has been widespread, and parts of the monograph are being used for policy discussions.

The Laotian study, which was also translated into the local language, has been made available in French as well. It served as the basic document for a proposal to set up a national housing office.

## **Organization of this Report**

This volume is the comparative analysis of the Southeast Asia Low-Cost Housing Study. It comprises 10 articles that are essentially self-contained. Although references have been made to the eight country studies, there has been no attempt in this report to summarize them, and readers should consult them for a more detailed understanding of the subject.

Topics in the discussions that follow cover most of the policy concerns in housing among the countries under study. Chapter 1 introduces the study objectives and methods, and chapter 2 provides a review of housing conditions and methods of calculating housing need. The extent of the slum/squatter problem and characteristics of squatters and slum dwellers are outlined in chapter 3, which also evaluates past policy successes and failures and summarizes conventional public housing and alternatives. The administrative aspects of planning for low-cost housing are discussed in chapter 4, where emphasis is given to criteria for determining priorities, nature and levels of policy, procedures and instruments, agencies involved, and factors associated with implementation, control, and evaluation.

Chapter 5 outlines housing finance and recommends some effective means for obtaining funds. In chapter 6, the inadequacies of current land policies for low-cost housing are vividly brought forth, and some positive policies are pointed out. Chapter 7 examines decision-making for the location of public housing and offers five strategies to plan for flexibility in housing programs for the poor. Chapter 8 details information on dwelling unit design and site planning stan-

dards, urging the integration of low-cost housing development with the overall land use plan, transportation network and industrial development.

Chapter 9 surveys housing conditions and needs in the rural areas and enters a plea for greater policy attention. Chapter 10 calls for a broader perspective in housing investment priorities, including infrastructure development and income redistribution, and discusses economic implications of investment needs as well as employment impact of housing. In conclusion, it brings together some lessons of experience and outlines the crucial components of a more effective policy.

**A.A. Laquian**

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# 1

## Introduction

Stephen H. K. Yeh and A. A. Laquian

The eight Asian countries included in this study of low-cost housing range from landlocked Laos with a population of barely 3 million to sprawling Indonesia, which is the largest country in the Southeast Asian region. The human settlements in the eight countries provide vivid contrasts. They include Indonesian *kampongs*, Philippine *barrios*, and Thai villages on the one hand and the city-states of Hong Kong and Singapore on the other. The shelters used by the people are also varied, including nipa thatch huts, timber long houses, and high-rise skyscrapers. As shown in Tables 1-3, although the eight countries studied are all Asian, they have contrasting features of geography, population, urbanization, income, etc.

All the countries have one thing in common: since the postwar years, they have been confronted with the problem of how to house their millions of inhabitants. The housing need is especially acute in their cities, which have grown much faster than other settlements. In the villages and small towns, people continue to build their own shelters, using local materials and indigenous technologies. In the cities, however, self-built houses are concentrated primarily in festering slums and squatter areas where an increasing number of the poor people live.

It has been suggested by United Nations sources that some 13 dwelling units per 1000 urban inhabitants would have to be built per year to meet housing needs in the Economic and Social Council for Asia and the Pacific (ESCAP) region where all the countries participating in this study are located. This rate of building would require 5-6% of the countries' gross national product (GNP) per year. In recent years, countries in the ESCAP region have managed to meet only 15% of the housing requirements, allocating 1-2% of their GNP to housing.

The fundamental dilemma is that, on the one hand, the community and government cannot afford the resources commensurate with the housing need, and, on the other hand, the great majority of the urban population is too poor to build adequate housing without public assistance. And in some countries, housing conditions are much worse than they need be as a result of either no policy or misguided policies.

### **The Urban Context<sup>1</sup>**

The countries involved in this study cover 3.3 million km<sup>2</sup> with a combined

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<sup>1</sup> This section was prepared by Liu Thai-Ker and Tan Sioe An.

Table 1. Urban and rural population and housing data by country.

Country		Population ('000s)			Area (km <sup>2</sup> )	Density (person/km <sup>2</sup> )	Housing stock ('000s dwelling units)			Avg (person/dwelling unit)			Remarks
		Total	Rural	Urban			Total	Rural	Urban	Total	Rural	Urban	
Singapore <sup>a</sup>	1970	2075	-	2075	586	3541	307.2	-	307.2	6.8	-	6.8	
	1980	2503	-	2503	588	4257	553.7	-	553.7	4.5	-	4.5	
Hong Kong <sup>b</sup>	1971	3937	474	3463	1045	3767	655	76	579	6.0	6.2	6.0	Urban area is defined in the census 1971, consisting of HK Island, Kowloon, and Tsuen Wan
Peninsular Malaysia <sup>c</sup>	1970	8786	6277	2509	131588	67	1448	1100	348	6.1	5.7	7.3	Urban is all towns with population of 75000 or more
Philippines <sup>d</sup>	1970	36684	25007	11677	297410	123	6100	4255	1845	6.0	5.9	6.3	7515000 people in 60 chartered cities with distinct urban characteristics
	1980	48691	31260	17431	297410	164	8300	5464	2836	5.9	5.7	6.1	
Thailand <sup>e</sup>	1970	34397	26569	7828	514000	67	5908	4572	1336	5.8	5.8	5.9	
	1980	45509	35664	9845	514000	89	7549	5939	1610	6.0	6.0	6.1	
Indonesia <sup>e</sup>	1971	119322	95386	23936	2019360	59	22039	19162	2877	5.4	5.0	8.3	
	1980	152800	122240	30560	2019360	76	30560	24448	6112	5.0	5.0	5.0	
Sri Lanka <sup>e</sup>	1971	12711	9869	2842	65610	194	2217	1796	421	5.7	5.5	6.8	2028000 people are in cities (districts) with population above 150000
	1980	15733	12278	3455	65610	240	3372	2692	680	4.7	4.6	5.1	

<sup>a</sup>Report on the Census of Population 1970, Singapore.

<sup>b</sup>Hong Kong population and Hong Kong census 1971, Main Report, Hong Kong Census & Statistics Department.

<sup>c</sup>Aspects of Housing In Malaysia, SEA Low-Cost Housing Study, Draft Report, Jan 1975.

<sup>d</sup>Housing in the Philippines, Nat. Econ. & Dev. Authority (NEDA), 1975.

<sup>e</sup>Draft Report of the Study Group on Rural Housing, IDRC, Bandung, Nov 1974.

population of 220 million (1970) — about 50 million in urban areas.

In each country, the urban population represents a different proportion of the total population (Table 1, Fig. 1); in Hong Kong and Singapore almost all the population is urban, whereas the other countries have substantial rural populations. The metropolitan areas of Manila and Bangkok exert a primary dominance over the Philippines and Thailand, constituting as they do 10.1% and 8.6% of the total national populations. Colombo also exerts dominance over Sri Lanka in that its 1.5 million people are 11.6% of the total population. In contrast, Jakarta Raya, comprising almost 5 million people, constitutes only 3.8% of Indonesia's population and is only one of several metropolitan areas that, together, equal a large housing and urban services problem.

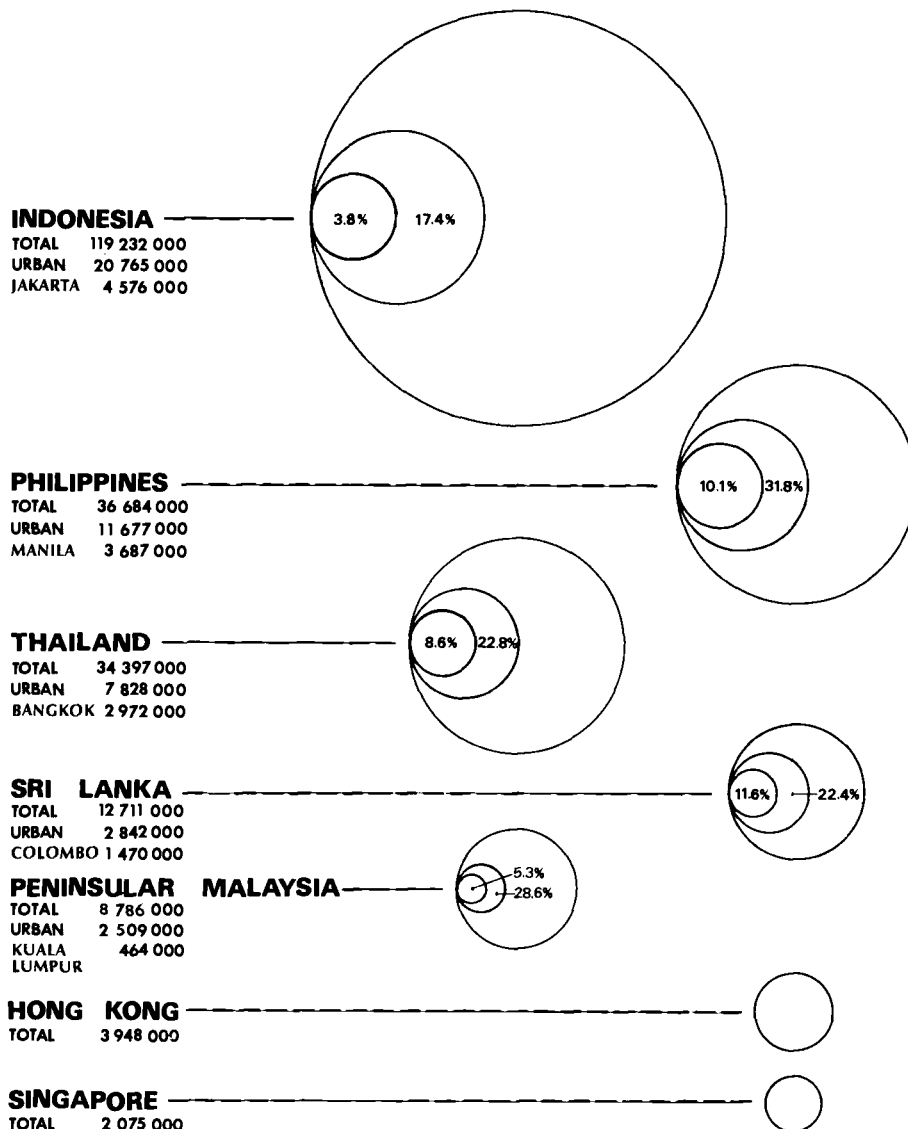


Fig. 1. Population distribution patterns at national, urban, and primate city levels.

Singapore and Hong Kong are unique in that they house more than 3500 persons per km<sup>2</sup>. Thailand, Indonesia, and Malaysia have fewer than 70 persons per km<sup>2</sup> (Table 1), but the overall figures do not reflect the magnitude of the urban housing problem. For example, the overall density in Java is 565 persons per km<sup>2</sup>, i.e., 64% of the total population occupies only 7% of the total land area of the country. As seen in Table 1, Jakarta, Manila, and Kuala Lumpur all register higher densities within their metropolitan boundaries than do Hong Kong and Singapore. This means their housing problems are comparable to those in Hong Kong and Singapore and suggests that medium- or high-rise housing is inevitable.

As shown in Table 1, the percentage of housing stock in urban areas in 1971 corresponded closely to the population distribution for most study countries. However, in Sri Lanka, 22.4% of the people lived in the city, and urban housing was only 19% of the country total. More acutely, 17.4% of the people in Indonesia were in the urban areas corresponding to only 13.1% of housing. Apart from the fact that there is already a shortage of housing in most of these countries, such discrepancies further underscore the severity of housing shortages in the capital cities.

In many cases, the available housing is not affordable. Rents demand too great a portion of income, and housing for sale is exorbitant. It would be meaningful to relate housing rents to monthly household incomes to see whether the low-cost housing is within the reach of the people catered for. In the absence of household income figures, the per capita GNP can be used as a crude measure to calculate individual income (Table 2). When the result is compared with monthly rents, it can be seen that only three countries, Singapore, Hong Kong, and Malaysia, offer housing that is totally within the means of the people. In the rest of the study countries, the low-cost housing policies and design standards may have to undergo several adjustments or even conceptual changes if the majority of the citizens are to be housed adequately.

The nature of the urban housing problem varies rather markedly from one country to another, but countries with similar geographic, demographic, and economic conditions tend to be similar in their approaches and commitments to low-cost housing. Singapore and Hong Kong are similar; Malaysia is rather unique. The Philippines and Thailand are similar, and Indonesia could be

Table 2. Income and rental, 1973 (U.S.\$).

Country	Per capita GNP at market price	Equivalent monthly income	Avg monthly rent	Annual increase in GNP (1960-70) <sup>b</sup>	Annual increase in population (1960-70)
Singapore	1490	124.2	11.6-58.0	10.1	2.4
Hong Kong	1090	90.8	3.6-32.6	-	2.6
Malaysia	480	40.0	7.2-26.8	6.3	2.8
Philippines	250	20.8	15.0-30.0	5.7	3.0
Thailand	240	20.0	9.0-67.0 <sup>a</sup>	7.9	3.1
Sri Lanka	102	8.5	1.6- 8.4	4.5	2.4
Indonesia	100	8.4	-	3.3	2.6
Laos	-	-	-	-	2.4

<sup>a</sup>Includes rental rate of public housing flats at Huaykwang and hire-purchase installment for middle-income housing.

<sup>b</sup>Annual compound rates.

Source: ECAFE Statistical Year Book for Asia and the Far East, 1970; UN, Economic Survey of Asia and the Far East, 1972.



grouped with them. All three are undergoing a relatively high degree of urbanization with severe housing shortages and comparatively low incomes in their primate cities. Sri Lanka is slightly different, as is Laos.

## **Response to the Housing Need**

It is possible to characterize the countries' responses to the housing need in terms of the policies formulated, programs implemented, agencies created, and resources allocated. They fall into three groups.

In the first group of countries are the city-states of Hong Kong and Singapore, which have formulated definite policies and programs, created specific agencies, and devoted considerable resources to housing. Peculiar historical and political processes have concentrated in Hong Kong and Singapore some of the highest population densities found in the world and have produced settlements that are almost 100% urban. The two countries have evolved housing systems characterized by high technology, use of imported materials, and complex managerial and financial organizations.

The second group of countries comprises nation-states that have only recently recognized the seriousness of the housing problem and are just evolving policies and programs to cope with it. This group, composed of Indonesia, Malaysia, Philippines, Sri Lanka, and Thailand, is characterized by diffuse and rapidly changing housing policies and a proliferation of agencies. This group has just begun to take positive steps toward meeting housing needs. In some instances, the initiatives have been influenced by the results of this study whose participants included several governmental housing officials.

Alone in the third category is the small country of Laos, with only 3.2 million inhabitants (1973), almost 85% of whom are rural. Two decades of sporadic warfare have stunted the country's economic growth and have controlled urban housing needs. Housing policy in Laos is vague, and housing programs are confined to providing houses to civil servants and thousands of displaced refugees.

In all the countries in this study, regardless of how housing needs and housing provision are measured, the gap between them is clearly widening, especially in the primate cities and very large urban areas. In recognition of this gap, which is approaching critical proportions in a number of countries, new policies and programs are being launched.

### **Hong Kong**

Hong Kong's housing record is rather unique: the government has provided, directly or indirectly, more than half the conventional domestic accommodations in the urban areas. The government had built some 336 000 housing units by 1972, and most of the government and government-subsidized housing is less than 20 years old. The performance of the private sector has been no less remarkable: nine-tenths of the existing private housing has been built since World War II.

Until 1973, there were three major public housing agencies in Hong Kong — the Housing Society, the Housing Authority, and the Resettlement Depart-

ment. The Housing Society provided economic housing for lower middle-income households, financing its activities through a revolving fund created from government loans. The Housing Authority provided housing for the lower strata of white-collar workers, and the Resettlement Department constructed large numbers of minimum housing units for those affected by the government's relocation efforts, usually squatters.

The Public Works Department also built housing estates, which were managed by the Housing Authority. Another government agency, the Housing Board, had responsibility for surveying the total housing effort and advising the government on the size and scope of future public housing programs.

In spite of its long history of involvement in housing, the government of Hong Kong did not assess the country's housing need until the early 1970s. Before the formation of the Housing Board in 1965, there was very little coordination among the three organizations responsible for government and government-subsidized housing and no coordination between public and private sectors. Even the Housing Board was largely ineffective in assessing Hong Kong's housing conditions and housing needs.

In 1973, the Housing Board, under instructions from the Hong Kong Governor, made the first comprehensive assessment of the housing situation and formulated a 10-year public housing program (1973–83). The program's objective was to provide improved housing and sufficient dwelling units for 1.8 million people, according to one unofficial estimate. This meant some 240 000 units would have to be constructed during the 10 years. To implement this ambitious program, the government needed to coordinate its efforts. Thus, in 1973 all four existing government housing agencies were integrated into one policymaking body, a reconstituted Housing Authority, with an executive arm, the Housing Department. The Housing Authority meets bimonthly and has five committees (finance, management, building, operations, and appeals). The Housing Department is divided into four branches (operations, management, construction, and administration) and has a secretariat to serve the Authority.

The overall aim of the government's housing policy is to ensure that every family eventually has a permanent, self-contained home within reach of employment and other facilities at a rent or price it can afford. The government's methods comprise improving the flow of finance to the housing market, building new towns, expanding existing communities, improving or redeveloping the existing housing stock, and providing temporary housing for emergencies and squatter clearances.

The government has adopted a system of long-range planning for each of its major social and economic program areas. A housing program plan is at an advanced stage of preparation, and forecasts have been made of demand and supply in both the public and private sectors over the next 10 years. Evaluations are currently being made of alternatives to improve performance and anticipate gaps between existing programs and what is required. Meanwhile, the standard of public housing has been raised: greater internal floor area and a range of facilities that make the flats and the estates more self-contained have been introduced.

Government capital expenditure on housing in 1974–75 amounted to HK\$383 million (U.S.\$76.6 million). This represented 17.3% of all government capital expenditures, and in 1975–76 the proportion increased to 20.8%.

The Housing Authority is required to be financially self-supporting. However, because most of its older estates incur substantial losses, a deficiency grant

has been provided temporarily from general revenue. Rents for new estates are calculated to cover capital and revenue costs with provision for a small surplus to support future schemes. Most of the Authority's capital is provided by loans from the government's Development Loans Fund.

Mortgage finance for home ownership is provided through the Hong Kong Building and Loan Agency Limited, which provides up to HK\$100 000 to prospective owner-occupiers who fall within the middle-income group. In 1974, HK\$114.5 million in loans was approved for 1865 applications.

## **Singapore**

In Singapore, substantial increases in housing construction did not begin until 1960 when the government assumed direct responsibility for providing living space for lower- and middle-income groups. The Housing and Development Board (HDB), which was formed in February 1960 to replace the former Singapore Improvement Trust (SIT), has been entrusted with the tasks of public housing construction and management, urban renewal, and other related programs.

From 1960 to 1975, HDB built some 230 000 units, housing more than 1 million people or approximately 51% of the entire population. It had completed some 54 000 units under the First Five-Year Building Programme (1960-65) and some 66 000 units under the Second Five-Year Building Programme (1966-70). The Board completed its Third Five-Year Building Programme (1971-75) by constructing another 114 000 units. The targets of the three 5-year building programs had been exceeded by more than 10 000 units. Including the units built by SIT, there were some 260 000 housing units under the management of the Board by the end of 1975. About 43% of the residents owned their homes and 57% rented them.

In 1960, when the First Five-Year Building Programme was launched, the objective was to build as many housing units in as short a time as possible and at the lowest possible cost. The program tangibly reduced the housing shortage and allowed the Board to introduce better types of flats during the Second Five-Year Building Programme. When the Third Five-Year Building Programme commenced in 1971, the standard of planning in the housing estates and the design of flats were substantially improved. Since then, emphasis has been given to building three-, four- and five-room units with larger floor space and better internal arrangements as well as more generous provisions of common space and open areas.

In accordance with the Board's policy of an accelerated building program, HDB launched its Fourth Five-Year Building Programme (1976-80) with a target of between 125 000 and 150 000 units of public housing. The emphasis was on bigger and better rooms and provision of more facilities. It is envisaged that by the end of 1980, some 65-70% of the 2.5 million people in Singapore will be housed by the Housing and Development Board and that 1 million of the citizens will have purchased their own flats under the "Home Ownership for the People" scheme.

The accelerated building program is a direct response by HDB to the large backlog of applicants that, at the end of 1975, stood at 92 000. The backlog has resulted from a government policy to enhance public housing by relaxing eligibility requirements for applicants' household size and income ceiling, by

improving housing design and increasing amenities, and by allowing the public to apply their Central Provident Fund (social security) balance, toward the purchase of flats.

Housing efforts were expanded in 1974 when the HDB formed the Housing and Urban Development Company (Pte) Limited (HUDC); also created were the Urban Redevelopment Authority (URA) and the Primary Industries Enterprises (Pte) Limited whose mandate is to build economic housing for the middle-income groups. The HUDC housing projects totaling some 3000 units of flats and maisonettes will be sold to families earning up to S\$4000.

The Board's building program has been wholly financed by loans from the government. The loans for financing rental housing carry an interest rate of 7 3/4% per annum with a 60-year repayment period, and those to finance housing-for-sale carry an interest rate of 6% per annum with a 10-year repayment period. The selling prices, rents, and service/maintenance charges of flats have been fixed according to the earnings of the residents and are well below actual costs. In fact, rents have averaged less than 15% of a family's monthly income, and, on average, a three-room flat sells for an amount equal to 2 1/2 years of the purchaser's family income. During the financial year 1975-76, the Board borrowed S\$584 million from government; the capital expenditure was S\$848 million, and the housing subsidy to the Board was estimated at S\$44 million, an average of S\$40 per year per resident.

## **Indonesia**

In Indonesia's First Five-Year Plan (1969-74), urban housing was originally not accorded high priority. Because of the country's large rural population, the plan emphasized improvement in the agricultural sector. The expectation was that further development in agriculture would increase per capita income and establish a better base for a successful housing policy. Nevertheless, a number of activities were planned as preparation for a more comprehensive housing policy. These activities included design and demonstration of prototype housing projects, analysis of different financing schemes, study of land use patterns, research and standardization of building materials, and the upgrading of local governments.

The plans were not enough; strong pressure from Indonesian society and the government's recognition of the social benefits of housing resulted in more concrete steps. In 1969, the *Kampong* Improvement Programme was started in Jakarta to mobilize residents to improve infrastructure and existing housing stock. To date, more than 1 million *kampong* residents have been affected, and the program is being extended. In addition, there are newly introduced sites-and-services projects with World Bank participation for Jakarta, Surabaya, and Ujung Pandang. The government is also planning increased construction of low-cost housing units in the metropolitan Jakarta area; the hope is to form essentially self-sufficient residential communities that can later serve as a model for other cities.

In 1974, a ministerial committee, the National Housing Authority, was established and given responsibility for formulating broad policies. The National Urban Development Corporation was set up to serve the Authority, and a housing mortgage bank was planned to finance the projects. Also planned were a number of regional executive and financing institutions to implement programs at the subnational levels.

In the Second Five-Year Plan (1975–79), the government planned substantial efforts toward provision of housing and municipal services as part of an overall strategy to achieve more equitable income distribution. Housing development in the urban areas has been mainly directed to meeting demands due to population increase, but phased efforts have also been devoted to decreasing the total shortage and replacing substandard units. The government has proposed assistance, guidance, and incentives to individuals and private developers. More specifically, government efforts in the immediate future will include the improvement of existing settlements, relocation of settlers, and development of new settlements. This means a projected target of 315 000 low-cost housing units for low- and moderate-income groups and the provision of incentives and other facilities to stimulate the private sector to build middle-income housing.

Simultaneously, *kampong* improvement programs will be increased and accelerated. In the rural areas, the government program will emphasize basic services; one target is to establish demonstration plots in 1400 villages. The rural housing programs will be limited to special projects for migrants, resettlement activities, relocation of populations from disaster areas, etc.

## **Malaysia**

With the establishment of the Housing Trust in 1946, the Government of Malaysia began formulating a national housing policy. Since then, it has become increasingly involved in housing, but its efforts to counteract the housing shortage have fallen far short of actual needs. As in many other countries, the private sector in Malaysia produces housing primarily for the upper-income groups, about 20% of the population, and most of the other people are forced to build their own shelter.

At current prices, the cheapest form of urban housing ranges from M\$7700 to M\$20 000 as undertaken by the City Hall of Kuala Lumpur and private developers, respectively. According to the 1973 Household Income and Expenditure Survey of the Statistics Department, households spend approximately 15% of their income on accommodation. It has been estimated that households earning less than M\$400 per month (about 70% of the urban population) cannot afford to rent or purchase most of the housing units.

According to the recently published Third Malaysian Plan, during 1971–75 the public sector was responsible for the construction of some 86 000 units, approximately one-third of the national output. In the Third Plan (1976–80), the public sector is expected to produce 220 000 dwelling units, not quite half the total national output of 482 000 units.

Low-cost housing is built by state governments with financial and technical support from the federal Ministry of Housing and Village Development. During the Third Plan, about 56 800 units will be built in Peninsular Malaysia, 1800 units in Sabah, and 3500 units in Sarawak. In addition, a number of federal agencies and regional development authorities are involved in providing low-cost housing. These include the Federal Land Development Authority (33 500 units), the Pahang Tenggara Development Authority (9200 units), and Johore Tenggara Development Authority (5800 units). In Sabah and Sarawak, the land development boards will construct about 4000 and 1400 units, respectively.

The public sector program will also provide 41 300 units for government employees and public authorities. More than 70% of these will be used by security forces personnel and their families. In addition, the various state eco-

conomic corporations will undertake commercial housing financed by federal government loans and other sources. Joint-venture projects between public sector authorities and private developers are also envisaged, equaling some 56 000 units.

The strategy in the Third Plan favours low-income groups; major features in the government's housing program include constructing units from M\$5000 to M\$7000, allocating basic housing shells on lots for relocation of squatters, and introducing basic services and facilities into squatter neighbourhoods.

A total M\$2.5 billion has been allocated under the Third Plan for public housing and staff quarters, a threefold increase over the Second Plan. Public housing alone accounts for M\$1.7 billion, of which M\$720 million is for the construction of 129 000 units. The Ministry of Housing and Village Development has been provided with M\$480 million to fund state government programs and to operate a M\$10 million revolving fund for a complementary housing program to meet the needs of rural migrant workers employed in industrial estates. In addition, other federal agencies and regional development authorities have been allocated a total M\$184 million for construction of about 60 000 low-cost units.

The Third Plan also acknowledges measures to reduce costs of units, such as increasing the supply of building materials, curbing real estate speculation, simplifying land conversion for residential use, streamlining processing of building plans, and using more timber in home construction.

## **Philippines**

Public housing in the Philippines dates back to before the Second World War, but since 1945 there has been a proliferation of plans, programs, and government agencies to tackle the problem of shelter. Despite all these efforts, not much progress has been made in solving the housing problem.

Between 1947 and 1970, none of the 17 national development plans in the Philippines addressed the housing sector; then, in 1970 a specific program for housing was included in the Second Four-Year Economic Development Plan (1971-74) under President Ferdinand E. Marcos. The plan proposed allocation of funds for several housing projects and drafted some guidelines for a broad national housing policy as well as specific policies on allocation of resources, control of urban land, and beneficiaries of housing programs. In the subsequent Sicut Plan (1972-75), it was stated that the national housing program should specify the role of government in social, economic, and privately owned housing. Unhappily, all the plans remained on paper because the government was not obligated to implement them.

A major obstacle to national housing programs was the fragmentation of authority in multiple government agencies. By 1974, there were 7 government agencies directly responsible for different housing and resettlement functions and another 13 government departments or agencies indirectly involved in the provision of housing and related services. Moreover, budgeting of resources for many of the agencies had not been systematic and continuous, and municipal governments usually had little authority or responsibility for programing and implementation.

Recently, the Philippine Government has taken more effective steps toward a national housing policy. The creation of the Tondo Foreshore Development Authority in 1974 signified an improved approach to sites and services by taking



*Dasmariñas Cavite, Philippines, was the site for one government resettlement program.*

into account employment and effective demand. More importantly, a National Housing Authority (NHA) was created in mid-1975, and most of the existing agencies directly dealing with housing were dissolved and integrated into the newly formed Authority. The unification of function is further emphasized by the fact that the NHA's Board of Directors consists of six cabinet members and the General Manager. The scope of the National Housing Authority's functions is wide and includes the delineation of a comprehensive and integrated national program and the power to implement it.

The Presidential Decree establishing the Authority specified that subsequent housing programs, priorities, and targets should be in accordance with the integrated human settlements plan currently being prepared by the Human Settlements Commission. Understandably, the newly created agency has required time to formulate a comprehensive and feasible housing policy.

In the preparation of the national housing program, the Authority will certainly consider further reduction of housing unit costs. Besides reviewing proposals for complete housing packages, it will seriously explore the potential of core and shell housing and self-help in light of the low paying capacity of the lowest-income families.

The Authority has been endowed with Pesos (P) 500 million capital to be released at the rate of P50 million a year. The amount substantially exceeds the collective annual operating funds of all the dissolved agencies. The Authority is also authorized to issue bonds and to contract domestic as well as foreign loans. The Government Service Insurance System and the Social Security System are to absorb all or part of the bonds or securities issued by the National Housing Authority as determined by the National Economic and Development Authority and approved by the President. Meanwhile, the government will undertake further studies on the establishment of a housing bank and the adoption of certain tax proposals designed to increase the resources available to the housing sector.

The government is also studying ways to increase private investment in housing, such as urging employers to provide staff housing, encouraging the creation of housing cooperatives, and offering building and loan associations the same privileges afforded mortgage banks and savings and loan associations.

Already, the government has been providing housing subsidies to low-income families, such as subsidized rent, sale of land at acquisition cost, sale of public housing at or below cost, use of public land for housing development, the provision of sites and services in slum improvement projects, and the provision of housing loans up to 90% of the collateral value at below-market interest rates with long amortization periods. In future, other areas of subsidy will be considered.

It is expected that the forthcoming national housing policy will include a program for slums and squatter areas with projects in both resettlement and on-site improvement. Past experience has suggested that housing schemes should be augmented by creating employment opportunities that maintain or increase the income level of the residents. This may be partially accomplished by upgrading housing in industrial estates and bringing industries into housing estates or resettlement areas.

Implementation of a national housing program or a larger-scale human settlement program requires revision of current land use legislation and policies. Certain changes have already been made: expropriation proceedings have been simplified and recently a policy has been introduced to sanction leasing, as opposed to selling, public lands. In any event, there is serious recognition of the need for general land use plans, greater accumulation of land reserves, and more effective government control over land utilization through measures such as taxation, zoning, and subdivision ordinances.

## **Sri Lanka**

The Government of Sri Lanka plays a dominant role in the field of housing. The core of its present policy is two-pronged: on the one hand it places a ceiling on the number of housing units an individual can own and, on the other hand, it encourages new house builders and housing developers.

To implement the government housing policy, the Ministry of Housing and Construction is assisted by a number of departments and state agencies among whom the most prominent are the Department of National Housing, the Department of Buildings, the State Engineering Corporation, and the Building Materials Corporation. The legislative authority is drawn from The Protection of Tenants Act of 1971, Rent Act No. 7 of 1972, The Ceiling on Housing Property Act No. 1 of 1973, The Apartment Ownership Law of 1973, etc.

Through the Protection of Tenants Act, the Rent Act, and the Ceiling on Housing Property Law, the government is attempting to prevent landlords from exploiting their tenants. The Protection of Tenants Act seeks to help tenants who are being harassed by landlords or their agents. The Rent Act is an effort at containing rents in urban areas, and the Ceiling on Housing Property Law lays down the maximum number of houses an individual or family unit can own. Legal provisions also cover financial assistance for tenants who wish to purchase surplus houses. The Apartment Ownership Law seeks to enable individuals to own condominium property, such as high-rise flats.

The second prong of the government's Housing Policy, i.e., the construction of new housing units, is being pursued vigorously through provision of



public houses and assistance to private sector home builders and housing developers. Operating mainly through the State Engineering Corporation and the Department of Buildings, the government seeks to provide flats and other storied buildings at rents that can be afforded by the lower- and middle-income group.

The encouragement and active assistance offered by government to the private sector — home builders and housing developers — is channeled through a number of agencies, including the Department of National Housing, the Building Materials Corporation, and the state banks. The Department of National Housing helps prospective house builders to obtain suitable land, to prepare construction plans, and to raise funds either by offering credit or by recommending credit facilities within the banking network. The federal government has instructed state banks to furnish credit to home builders and housing developers at low rates of interest, and the Building Materials Corporation has been charged with the responsibility of making available, at regulated prices, local and imported building materials.

Three housing programs in Sri Lanka deserve special attention: the Land Titles Clarification Program, the Land Acquisition Program, and the Aided Self-Help Housing Program, which are all operated by the Department of National Housing. The first seeks to increase housing land by acquiring desirable tracts of land that are under defective titles and distributing them to prospective home builders. The second is a scheme whereby groups of more than three persons can apply to the department for the acquisition of land for housing, and the third, which commenced in 1973, is meant to benefit low-income groups. Under the scheme, the Department of National Housing allots land to families who need housing assistance. The size of the allotment depends on the aggregate size of the available property and the number of deserving persons in the area. Home builders may acquire an allotment of 7–10 parcels. Recipients do not pay a purchase price but are expected to pay a nominal rent for the land. The department makes available building materials sufficient to construct a housing unit of about 32 m<sup>2</sup>. Construction plans and technical assistance are provided by the department free of charge. Recipients are expected to construct the houses with the assistance of their families, relations, and friends. Each house is a core unit around which additional facilities can be built later. Recipients can obtain a loan to cover the ground rent and the value of the materials provided by the department; repayment is spread over 15 years with rentals averaging Rs15 per month.

## **Thailand**

Although the Thai Government started its public housing program in 1950, there was no real national housing policy until 1972, and the projects that were implemented were ineffective. Between 1950 and 1969, three government agencies — the Housing Bureau, Housing Welfare Bank, and the Slum Clearance Office — built a combined average of 600 units a year and averaged 1000 units annually from 1969 to 1972. In 1963 the National Economic Development Board proposed to integrate the existing housing agencies, but the Council of Ministers refused.

Then, in late 1972, the National Executive Council set up the National Housing Authority, which consolidated the existing agencies. The Authority's objective has been to solve the housing problem over a 10-year period (1972-

-82). Its construction target is 170 000 dwelling units to provide homes for middle- and lower-income groups. The amount of subsidy available to households is inversely proportional to income. At present, the National Housing Authority is supported by government coffers but is expected to become self-sufficient by accumulating profits from middle-income units to offset building costs of lower-income housing. The participation of the private sector is expected in the building of middle-income units.

In the Third National Plan (1971-76) of Thailand, the housing shortage was estimated at 100 000 units, increasing to 170 000 units by 1981. Based on those figures, the government aimed to build an average 17 000 units a year during the Third Plan. Although actual construction is not likely to exceed a total 31 000 dwelling units for the 5 years, it reflects a much improved construction rate.

During the first 2 years of operation, the National Housing Authority ran into problems. Government funds were only available for continuing projects, and there had been difficulties in coordinating activities with public works agencies. Moreover, the estimated housing shortage was not based on an accurate survey of housing and socioeconomic conditions, and necessary information on housing for areas outside the Bangkok metropolitan area had not been col-



*Rural dwellers in Thailand build a grass hut; their housing will be a priority in the Fourth National Plan.*

lected. Meanwhile, the government had allowed other agencies to construct housing units and had not demanded reliable statistics. Finally, the Authority faced a 40% rise in construction costs mainly due to the energy crisis in 1974.

At this writing, the Fourth National Plan (1977–82) had not yet been published. However, it is probably safe to assume that the new housing policy will emphasize rural housing needs; specifications for government subsidy and other assistance; slum improvements; sites-and-services projects; private sector participation in low-cost housing; improved financial institutions for long-term mortgages; integration of housing projects with urban or regional development and general land-use plans; considerations of employment opportunities, transportation, and other public services; housing for government employees; and more efficient land acquisition measures and land banking.

It is anticipated that the Fourth Plan will deal with housing construction in Bangkok, improvement of the capital city's slums, and construction in the rest of Thailand.

Because the Bangkok metropolis has severe housing problems, it has assumed primary importance in the country's housing program. At present, the National Housing Authority has a government-approved 5-year plan (1976–80) to build 120 000 units, focusing on low-income households. Of the average annual 24 000 units, 11 000 will be built for households with incomes of 1500 baht or less, 10 000 units for households with incomes of 1500–3000 baht, and only 3000 units for those with incomes of 3000–5000 baht.

Slum improvement in the Bangkok metropolitan area will focus on infrastructure, land tenure, social and economic services, etc. It is not yet clear what the National Housing Authority proposes during 1977–82, but the World Bank has expressed interest in participating in one or more projects.

For urban and rural areas in the rest of Thailand, the first step required is the analysis and survey of physical and socioeconomic conditions of the households (1.8 million in 1970) occupying nonpermanent dwelling units. In principle, housing development in rural areas should take the form of pilot projects in small-scale communities or be based on regional development plans.

## **Laos**

Laotian policies and programs have changed markedly since 1975 when the Pathet Lao took over the country, but the information in this report predates the takeover. Practically all the members of the research team have now joined the "refugees" living outside Laos because of their former positions in the royalist government.

Prior to 1975, the housing problem in Laos was not really severe. More than 85% of the country's 3.2 million people lived in rural areas and had plentiful housing materials (wood, bamboo, thatch). The construction technology was well developed and appropriate. In fact, around the old city of Luang Prabang, village artisans still specialized in bamboo — constructing graceful and comfortable houses made entirely of bamboo, right down to the piles and posts of the stilt houses.

Public housing in Laos was mainly two types: housing for civil servants including the military and housing for refugees displaced by 2 decades of war. Among the total 17 050 civil servants in Laos, close to 2000 were entitled to public housing or a supplementary residence allowance. Most preferred to con-

struct their own homes and draw the allowance. A few, especially those living in remote areas, had houses constructed by the government.

The responsibility for housing rested with the Direction Nationale de l'Habitat et de l'urbanisme (National Housing and Planning Board), which was a combination planning and construction agency. Actual housing construction, however, was sometimes delegated to the prefecture governments that ruled most of the local units. Housing finance was primarily from the private sector, especially from building societies, which financed most of the villas and modern houses required by Vientiane's large foreign community. The Banque de Développement du Laos was formally charged with financing but preferred not to invest in housing because of inflation.

Providing housing for the 700 000 or so refugees and displaced persons in Laos was the primary responsibility of the Ministry of Social Affairs. The branches within the ministry charged with looking after the refugees were the Rehousing Branch and the National Welfare Branch. Refugee camps were set up outside Vientiane and Luang Prabang, and housing, agriculture, and cottage industries were introduced. With the war over, many refugees signified their intention to return to their home villages, and the royalist government encouraged the migration because it eased the housing and welfare burden tremendously.

Before 1975, it was estimated that despite massive in-migration, less than 5% of the population of the capital city, Vientiane, lived in squatter and slum communities. One community of about a thousand squatter families lived in the Bang Fay area, close to the old French cemetery, in shanties partially hidden by modern commercial buildings.

In 1974, Vientiane had a population of about 180 000 and was growing at about 3% per year. Its growth will likely slacken due to the new government's emphasis on rural development and the out-migration of many of Vientiane's middle- and upper-class residents. In addition, the new Laotian government will probably stress economic development instead of service expenditures like public housing.

## **Conclusion**

Interest in public housing, especially housing for the urban poor, is relatively recent in all eight countries. Not surprisingly, the densely populated city-states, Singapore and Hong Kong, were the first to recognize the need for policies and programs that would adequately house their citizens. Increasing urbanization has forced the other governments to face the housing problem. For example, the 1973 Philippine Constitution named housing as one of the state's responsibilities. At present, even the small country of Laos, which does not have as severe a housing problem as the others, is trying to do something about the problem.

Efforts were first confined to encouraging the private sector to construct houses. Sri Lanka still clings to this policy, continuing to manage such aspects of housing provision as mortgages, land use, rental rates, taxes, building material prices, and even how much land and how many houses a person can own. Other governments have found such regulations inadequate and have resorted more and more to direct interventions, such as devoting public land to low-cost housing, extending financial subsidies to the poor, and even actually constructing public housing.

With the growing public concern for housing, explicit policies have been formulated and specific agencies have been created to provide public housing. The many competing and conflicting agencies charged with various aspects of housing have been reorganized to place the main responsibility for public housing with one agency.

Given new policies, programs, and governmental structures, the prospects for public housing in Southeast Asia are very bright. This comparative study was carried out at a most crucial stage in the evolution of public housing policy in almost all the countries. In some ways, the study itself actively contributed to the evolution. It is the hope of the researchers, policymakers, and administrators involved in the study that the cooperation they enjoyed during their investigations will be carried over to their efforts to solve the housing problem in their countries.



# 2

## **Housing Conditions and Housing Needs**

Ramesh Chander, H. Karunanayake,  
J. de Vera, and Stephen H. K. Yeh

The eight countries in this study differ in physical, social, and economic characteristics. The group consists of the island colony of Hong Kong and the insular state of Singapore both of which are export oriented; Indonesia and the Philippines, encompassing thousands of islands; Peninsular Malaysia, rich with natural resources; Laos, land-locked and harassed by warfare; Thailand, which has a wide hinterland; and the island state of Sri Lanka, whose society adheres to a comprehensive welfare system.

Despite the wide range of economic and physical characteristics, there is one common feature: serious housing needs that the governments have found difficult to meet. Only Singapore and Hong Kong have introduced housing policies and programs that have kept pace with urban growth; both countries have invested massive resources into housing — resources that may not be easy to find in the other countries.

In most of the countries, housing problems have been aggravated by high rates of urbanization. Many large cities have grown faster than the countries as a whole, and the countries themselves have experienced rapid population growth due to declining mortalities and sustained birthrates. The rapid increase in population has placed constraints on the resources for food, employment, and housing. Moreover, the housing problem in urban areas has been exacerbated by the increasing in-flow of migrants from the rural areas. The rising urban population especially in the low-income groups, the increasingly high cost of construction materials, and spiraling land prices have created a sizable gap between housing demand and supply. The magnitude of this gap is reflected in the many slum and squatter settlements, overcrowded housing units, and obsolescent units requiring replacement in the cities.

In the rural areas, housing poses a different problem: the need for better quality housing and facilities. Current rural housing is built mainly of nondurable materials, whereas permanent materials are used in wall, roof, and floor construction in urban housing and are freely available in the modern sector. Urban housing is clustered, facilitating provision of amenities such as electricity, piped water, and sewage disposal. In the rural areas, housing is scattered, and the distance between units is often so great that it is not economically feasible to operate communal systems of housing facilities. In other words, the technological impact of the industrial revolution has not yet reached the rural areas.

The rural-urban dualism is not seen in the two city-states of Hong Kong and Singapore. They do not have rural hinterlands as such, although they possess areas that differ in environmental quality from the core of the city that

are used for agriculture. Because of their relatively small land areas, these two states have produced housing facilities in a manner far superior to the other countries in the region. The other countries are faced with the formidable problem of upgrading the undeveloped rural sector while improving welfare in urban areas. The success of the two city-states is enmeshed in special circumstances — physical, economic, social, and political; thus their housing policies do not offer much hope to the other countries in the region.

Factors that influence housing conditions and needs include population growth, urbanization trends, and economic growth. In all of the countries, the rate of economic growth has exceeded the rate of population increase (Table 2), but Singapore is the only one that has enjoyed sufficient economic growth to absorb its population increase (assuming 3% increase in GNP is necessary to absorb the dependency burden resulting from 1% population growth).

More recent data from the country studies show encouraging signs of a higher rate of economic growth. The Philippines, for instance, showed a 10% increase in GNP in 1972–73 compared to a population growth of 3.01% (National Economic and Development Authority 1974–75). Hong Kong has shown an increase of 6.5% in GNP in 1973 and a declining birthrate — from 35 per 1000 in 1961 to 19.8 in 1973 (Wong 1978). In Peninsular Malaysia, the crude rate of natural increase in population declined from 33.7 in 1957 to 25.2 in 1970 (Tan and Hamzah Sendut 1976).

A sustained rate of economic growth does not by itself lead to a substantial improvement in housing conditions; Japan is a prime example. Furthermore, present housing conditions in the region appear to be unsatisfactory. According to the United Nations (1963), the housing situation had deteriorated very rapidly in the ECAFE (now ESCAP) region and the UN housing goals for the second development decade were not realistic in view of the existing gap between resources and requirements. In 1973, the UN reported: “a large proportion of the total population of most less-developed countries now live in housing at densities and in conditions which present a serious hazard to health and safety and an obstacle to the fulfillment of decent family life than at the start of the present decade” (UN 1973). It identified the following factors as mainly responsible for the deterioration: rapid population growth, rural-to-urban migration, an uneven process of economic development, and a disproportionately low investment in public housing. A hidden element in this list is rapid urbanization.

The present trends in urbanization signal a warning for housing and urban planners in the region; they have a direct bearing on housing and will have to be taken into account in planning and programing for housing development.

## **Urbanization Trends**

The urban population of the world is increasing at a more rapid rate than is the total population; present indications are that the trend will continue. In the developing countries, the population is growing faster than it did in the developed countries prior to the industrial revolution, and population growth in urban centres often exceeds an average annual increase of 6%, reaching as high as 10% or more.

A comparative study of urbanization trends is difficult, because there is no standard population size or density that classifies an area as urban. Also, urbanization trends are dependent on many things, including the size of the urban



base, the overall population growth, and the rural-to-urban migration. For instance, because the preexisting size of the urban base in a developed country is large and the overall population growth is slow, the increments to the base show up as a low rate of urban population growth. In contrast, in the developing countries, where the preexisting base is small and the overall rate of population growth is high, similar increments net a greater increase in urban population.

Available data indicate that urbanization is rapid in almost all the countries. The exceptions are the city-states of Singapore and Hong Kong, which are already highly urbanized, and Sri Lanka. In Indonesia where the national population is increasing at 2.2% per annum, the urban population is increasing at 4.5%. In Jakarta, for instance, the urban area has increased fourfold, the population tenfold during the last 25 years (Moochtar, Kartahardja 1975); Bandung, which between 1961 and 1970 showed an annual average growth of 14.1%, is the fastest growing city in the world. In the Philippines, the national population is increasing at 3.01%, whereas the urban population is growing at a rate of 4-5%. Metropolitan Manila has almost doubled its population in 10 years, going from 2.7 million in 1960 to 4.4 million in 1970 (National Economic and Development Authority 1974-75). Peninsular Malaysia has also experienced phenomenal urban growth. The annual rate of population growth between 1947 and 1957 was 2.5%, and from 1957 to 1970, 2.6%; the rate of urban population growth, however, was 7.9% and 3.3% respectively. During the period 1931 to 1970, there was a population increase of more than 130% in Peninsular Malaysia from 3.8 million to 8.8 million. During the same period, the population living in concentrations of more than 10 000 rose from 580 000 to 2.53 million and increased from 16 to 49%. The rapid increase in urban population was felt in towns like Penang, Kuala Lumpur, and Johore Bahru (Tan, Hamzah Sendut, in press).

In Thailand, where the rate of population growth is 3.2% per annum, the city of Bangkok grows at 6% per annum and is 30 times the size of Chiangmai, the second largest city (National Housing Authority 1978).

Although urban growth in Thailand has been concentrated in the primate city, the whole country is now experiencing a greater trend toward urbanization. The proportion of population living in municipal areas is steadily increasing and is projected by the United Nations to constitute almost one-fifth of the population by 1985 (UN 1970b).

In Laos, a proper assessment of urbanization trends is constrained by the very limited data available. Observations are that the population of the Laotian urban sector has increased considerably and that suburban areas have grown rapidly (National Task Force on Low-Cost Housing 1974).

Now for the apparent exceptions. The population of Hong Kong is already highly urban and is likely to become more so. In the late 1960s, 93% of the total population lived in settlements of more than 5000; by 1986, the percentage is expected to reach 95 (Wong 1978). Singapore, like Hong Kong, is highly urbanized. In 1971, 81% of housing units were located in urban areas, and in 1966 the density was 3700 persons per km<sup>2</sup>. The limited land area of Singapore, its location, and economy, all indicate that the island will soon be a complete urban state.

Sri Lanka has an urban sector that contains 22.3% of its population. The rate of increase in the main urban agglomeration of Colombo was 2.83% during 1946-71 and was only marginally higher than the rate of increase of the total population (2.63%). The relatively slow expansion of the urban sector was due to many factors, including the slow pace of industrialization. The rural-to-urban

migration that characterized urbanization in the other countries did not materialize in Sri Lanka due to the absence of the industrial capability to absorb labour (Marga Institute 1975). However, if the experience of other countries can be regarded as an example, the urban population growth in Sri Lanka will accelerate in pace with an increase in the tempo of industrialization.

These trends indicate increasing pressure on the existing housing facilities in the urban areas. The need for additional urban housing to satisfy natural population increase is multiplied by the in-flow of migrants from the rural areas. At present, housing demand from low-income groups is being met by rapidly proliferating slum and squatter settlements, which to some degree replicate the standards of rural life and serve as "way stations" to migrants from the countryside. Slum and squatter areas, thus, bridge the rural-urban housing gap and create a kind of continuum for migrants. The absence of adequate planning and programming, however, tends to make the "way stations" permanent places of residence.

The rapid urban growth creates problems other than housing inadequacies: shortages in transportation and recreation; pressures on existing services such as water supply, lighting, and sewage disposal; soaring land prices; and other inflationary characteristics. All the problems demand attention, but they must compete with other sectors to secure their share of the limited national resources.

## **Available Statistics**

A United Nations report in 1972 concluded that statistics on housing and household sanitation are among the scarcest and least reliable of the region's social development data (UN 1972). The reasons are diverse, including practical difficulties in data collection faced by countries like Thailand or Laos with their vast rural hinterland and others like the Philippines and Indonesia that comprise a great many islands. The lack of statistics has hindered intranational comparisons between urban and rural areas and, compounded by the lack of standard definitions and statistical concepts, has rendered cross-national comparisons almost impossible.

Some improvement on previously published statistics has been achieved in the monographs from the Low-Cost Housing Study; data deficiencies in them could be classified into two main categories: inadequate geographic coverage and insufficient overall statistics. In the former category, Laos provided statistics only for Vientiane and Vang-Vieng, thus giving no picture at all of rural housing, and Thailand supplied some data that applied only to the Bangkok metropolitan area. In the latter category Laos and Thailand were accompanied by the Philippines and Indonesia.

Data available from the 1970-71 population and housing censuses of the countries may be summarized as (UN 1970a):

- Type of housing unit: Laos, Peninsular Malaysia, Philippines, Singapore, Sri Lanka, and Thailand.
- Type of housing unit by demographic characteristics of household head: Hong Kong, Philippines.
- Type of housing unit by economic and demographic characteristics of household head: Indonesia, Peninsular Malaysia, and Philippines.
- Number of rooms by number of occupants: Hong Kong, Indonesia,

Peninsular Malaysia, Philippines, Singapore, and Sri Lanka.

- Number of households per housing unit: Hong Kong, Indonesia, Peninsular Malaysia, Philippines, Singapore, and Sri Lanka.
- Type of housing unit by water supply facilities: all eight countries.
- Type of housing unit by type of toilet facilities: all eight countries.
- Type of lighting: all countries except Hong Kong.
- Tenure of households: Peninsular Malaysia, Philippines, Singapore, Sri Lanka, and Thailand.
- Type of vacancy: Peninsular Malaysia only.
- Year or period of construction by type of housing structure and material of construction: Indonesia, Peninsular Malaysia, Philippines, Sri Lanka, and Thailand.
- Type of ownership by tenure, water supply facility, and type of toilet: Indonesia, Sri Lanka.
- Number of bedrooms by number of occupants: Thailand.
- Availability of cooking facilities: all countries except Singapore.
- Availability of bathing facilities: Hong Kong, Laos, Peninsular Malaysia, and Sri Lanka.
- Rent paid for housing unit by number of rooms: Thailand, Sri Lanka.
- Rent paid by household by number of householders in housing unit: Hong Kong only.
- Ownership of consumer durable or semidurable goods: Peninsular Malaysia, Philippines, and Sri Lanka.

## Housing Conditions

Housing conditions in any country are usually characterized by three main factors: the quality and permanence of the housing stock; the extent of population densities and conditions of overcrowding in existing housing; and the quality and availability of services and amenities closely related to housing. In general, applying these indices to the eight Asian countries in this study reveals that conditions are far from satisfactory and require much improvement.

### Housing Stock

The condition of the housing stock in a country is usually assessed in relation to the materials used in housing. Thus, it is common to distinguish between houses made of strong materials (stone, concrete, heavy timber) and those constructed of less durable materials (grass, bamboo). Houses are usually categorized as permanent, semipermanent, or temporary, depending on the materials used.

Hong Kong and Singapore both have a high proportion of permanent and semipermanent units. Sri Lanka has about one-third of its housing stock constructed of permanent materials and an additional 58% semipermanent structures. The Philippines also has one-third of its stock in permanent units but 44% in temporary units. Comparatively, Indonesia has the lowest proportion of permanent housing units (6%) and the highest proportion of semipermanent structures (60%). No data are available from Peninsular Malaysia and Thailand,

although there is likely a sizable proportion of temporary and semipermanent housing units in each country.

Housing units made of permanent construction materials may not be superior to less permanent structures, especially in the congested urban areas where many such units are old, dilapidated, and subdivided to accommodate many households. Before Singapore successfully implemented massive public housing and urban redevelopment programs, its inner city slum was described thus by Barrington (1960, p. 2):

Chinatown is a grid of streets consisting almost entirely of two and three storey shop-houses. These shop-houses, originally intended to shelter one or two families, have been subdivided by a maze of interior partitions into cubicles, the majority of which are without windows and in permanent semi-darkness. Most of these cubicles are about the size of two double beds, placed side by side. In one such cubicle — dark, confined, unsanitary, and without comfort — may live a family of seven or more persons. Many of them sleep on the floor, often under the bed. Their possessions are in boxes placed on shelves to leave the floor free for sleeping. Their food, including the remains of their last meal, is kept in tiny cupboards, which hang from the rafters. Their clothes hang on the walls, or from racks. Those who cannot even afford to rent a cubicle may live in a narrow bunk, often under the stairs.

The description could be applied to many of the cities in Southeast Asia. A study of Jakarta provides some reasons why. Most houses in Jakarta were erected initially on a self-help basis. The occupants used temporary materials, though gradually the houses were improved to become more permanent dwellings with stucco-covered brick walls, tile floors, and roofs. Scattered economic improvement within *kampongs* led to today's socioeconomic mix in community life. Communities are stable due to both the extreme scarcity of housing and the high cost of urban land. With virtually no real estate market and no mortgage system, low- and middle-income families have few opportunities to move around. Given the means to resettle, however, they would not be much better off: 68% of dwellings have no toilet facilities, 80% have no electricity, and 60% have no access to piped water. Permanent houses with solid walls, cement floors, and tile roofs constitute 24% of the total housing stock; temporary houses of bamboo matting walls, earthen floors, and thatched roofs comprise 44%; and semipermanent structures having some combination of temporary and per-

Table 3. Housing units by structural type.

Country	Total	Permanent	% total	Semi-permanent	% total	Temporary	% total
Hong Kong <sup>a</sup>	654810	577921	88.3	10551	1.6	66338	10.1
Indonesia <sup>b</sup>	22040217	1303331	5.8		59.8	7730102	34.4
Laos				13437793			
(Vientiane)	11983	2175	18.1	9377	78.2	431	3.6
Peninsular							
Malaysia	1626230	-	-	-	-	-	-
Philippines	5186873	1662372	32.1	1255817	24.2	2268684	43.7
Singapore <sup>c</sup>	380523	242423	63.7	82690	21.7	55410	14.5
Sri Lanka	2382001	825581	34.6	1377336	57.7	177683	7.3

<sup>a</sup>Housing units described as "other permanent" have been classified as semipermanent.

<sup>b</sup>Classifications based on proportions realized in 1961 census.

<sup>c</sup>Attap- or zinc-roofed houses of permanent structure have been classified as semipermanent. Houses classified as "other" have been evenly distributed among the three types.

manent materials account for the balance (Table 3). Also, property transfers are complicated; after the Dutch occupation, land claims were difficult to verify and little urban land was officially registered. A 1969 survey showed more than 900 000 families living in 486 000 housing units. It is estimated that by 1983 a further 500 000 families will need shelter in Jakarta.

### Density and Overcrowding

Hong Kong has an average 3.04 rooms per housing unit, followed by Singapore with 2.64. Peninsular Malaysia has 2.3 rooms per unit and Sri Lanka 2.13. The lowest average is found in Indonesia (1.5), which also has the highest average number of persons per room (3), combining to satisfy the United Nations' definition of overcrowding. The room occupancy density is lowest in Hong Kong with 2.17 persons per room, followed closely by Singapore with a figure of 2.32. Four countries provided data on the average number of persons (5-6.6) per housing unit. Indonesia with 4.4 persons per household has the smallest average among the eight countries and shows that although its housing units are relatively small, the household size is also small. Larger households are found in Laos (6.31), Thailand (6.02), Philippines (5.8), and Sri Lanka (5.7). Data on the household: housing unit ratio are available for only four countries (Hong Kong, Peninsular Malaysia, Singapore, and Sri Lanka), varying between 1.1:1 and 1.3:1

### Service Levels

Singapore and Hong Kong have piped water serving almost their entire populations (Table 4), whereas about 12.4% of Thailand's housing units have piped water. Of the countries with substantial rural areas, Peninsular Malaysia is comparatively well served. As expected, the rural-urban differential is large, partly due to the fact that the rural households are spread over a large area and the provision of services is difficult and costly unless operated through several local schemes.

The availability of electricity is another indicator of housing standards; it not only provides the source of power for domestic lighting but also indicates access to many aspects of modern living, such as the use of appliances. Completely urbanized, Singapore shows a high average: 91% of households have access to electricity (Table 4). Although no figures are available for Hong Kong, the situation there should be close to that in Singapore and perhaps a little

Table 4. Households by availability of piped water and electricity (%).

Country	Census	Piped water	Urban	Rural	Electricity	Urban	Rural
Hong Kong	1971	86.12	-	-	-	-	-
Indonesia	-	-	-	-	-	-	-
Laos (Vientiane)	1973	19.0 <sup>a</sup>	-	-	53.1	-	-
Peninsular Malaysia	1970	47.5	81.5	36.8	43.7	83.0	31.4
Philippines	1970	24.0	54.3	10.7	23.2	60.4	6.8
Singapore	1970	90.6	-	-	91.8	-	-
Sri Lanka	1971	20.7	45.3	14.1	9.0	34.5	3.01
Thailand	1970	12.4	47.4	2.2	18.8	66.7	4.75

<sup>a</sup>Water tap in dwelling.

better. Electrical supply is somewhat low for the whole of Thailand (18.8%) and, for rural Thailand, is estimated to be very low (5%). In Peninsular Malaysia, 44% of the people have access to electricity and in the Philippines, 23%. Sri Lanka rated the lowest, having only 9% of its housing units supplied with electricity.

The urban-rural differential in the use of electricity is great. The Philippines, for example, has about 60% of urban housing units supplied with electricity but only 7% of rural units. In Peninsular Malaysia, the respective figures are 83 and 31% and in Sri Lanka, 35 and 3%.

Adequate toilet facilities ensure the proper disposal of human waste and minimize hazards to health by preventing the spread of diseases. Availability of toilets, according to the United Nations, is an indicator of standards of living. Our data show that Singapore has the highest proportion of housing units with toilets — a finding that must be ascribed to the massive introduction of public housing units complete with modern amenities. The other countries ranged from Sri Lanka with 66% through Hong Kong (62%) to Laos with 33%. Again, the difference between rural and urban levels is large in most countries.

The difference in service levels or basic infrastructure between the urban and rural sectors is usually great (Table 4). Although we do not have comparable statistics from all the countries, data from the Philippines are illustrative.

Only 23% of the total Philippine households utilize modern lighting through electricity. Although about 50% of Philippine municipalities and towns have access to electric power facilities, only 14% of the total power generated benefits areas outside the Manila Bay region. Consequently, the majority of the households (some 76%) still use oil for lighting. In urban areas, where electricity is more or less available, 60% of the households use electric lighting. But in rural areas where 7 out of 10 Filipinos live, only 7% of the households have access to electricity. The inadequacy of drinking water facilities, just as in the case of lighting, is much more pronounced in the rural areas. About 10% of rural households are supplied with water through waterworks systems, compared to 54% in the urban areas. In terms of toilet facilities, more than one-third of the total number of households in the Philippines do not have toilet facilities of any kind; of the 63% who have some form of toilet system, only 22% are afforded the comfort of a flush water-sealed system. Again, the problem is more serious in the rural areas where 45% of the households do not have any system of waste disposal and only 11% have flush water-sealed enamel bowls.

The foregoing descriptions do not mean that service levels in the urban areas, either in the Philippines or other countries in the region, are adequate. On the contrary, the opposite is usually the case due to a combination of factors such as concentration of low-income population in the cities and the lack of resources and comprehensive planning on the part of the government.

The water supply in metropolitan Manila provides a good example. The existing waterworks system was recognized as obsolete years ago. It has not been capable of meeting the demands of the population for some time. As of the beginning of 1970, metro Manila had 4.4 million people, realizing a maximum demand of 1700 million litres of water per day (mld). By 1985, when the population reaches about 8.3 million, the expected demand will be 4750 mld. At the end of the century, when metro Manila will have achieved a population of 14.5 million, the estimated demand will be 10 180 mld. Some improvements have been made, but in 1970, metro Manila was about 455 mld short of the needed 1700 mld. Moreover, some 55% of the water supplied could not be



*The water system in the Tondo sites-and-services project, Manila, has been a self-help scheme.*

charged to any user. Approximately 22% was unaccounted for because of defective equipment, illegal connections, and defective or nonexistent water metres. Another 33%, though traceable to the end-users, could not be properly billed. In metro Manila, water pressure varies greatly from place to place, with shortage especially critical in low-pressure areas. To solve this problem, users illegally connect lines directly into the main pipes. The connections frequently are not watertight, so they leak, and, if they are submerged in dirty water, polluted water infiltrates the system.

The problem of sewerage in Manila is equally serious. The Manila system, constructed in 1909, was intended to serve from 220 000 to 440 000 people. Aside from the Santa Ana pump station, built in 1938, no major improvements or extensions of Manila's sewerage facilities have been made, in spite of the tremendous increase in the city's population. New housing developments outside Manila, constructed since 1949, have been provided with systems to serve their own populations. It is no wonder that in 1969, only 12% of the population of metro Manila was served by sanitary sewers; the rest used individual or community septic tanks that discharged directly into *esteros* (canals) or open sewers. Septic tanks, which remove only 30% of the organic materials, are not sufficient devices for the treatment of wastewater.

The garbage disposal system is also obsolete. It has been estimated that there is one garbage truck to provide daily collection service for 20 000–30 000 people. In Manila city, the average is one truck for 17 000 persons. Rapid influx of people into metro Manila complicates the garbage problem. Many migrants,

unable to pay rent, settle on vacant lands, and the collection service never reaches them. In the more than 50 squatter areas in metro Manila, solid wastes, including human feces, accumulate in mounds and are allowed to stay there for long periods.

Or take the case of Jakarta, where the water distribution system has deteriorated to the extent that some officials contend an increase in pressure would increase leakage rather than supply. Some excess capacity is available at the pumping stations, but distribution lines need to be replaced and new ones constructed. More than 50% of the population relies on underground wells, which are often contaminated by sewage seepage and increasing salinity due to depletion of the fresh water underground. Approximately 40% of the households in Jakarta depend solely on water vendors for their supply at prices five times those for piped water. Jakarta has no water-borne sewer system. Even households having piped water flush their wastes into septic tanks or, more frequently, into open ditches along the roadside. Much of the population, however, has no alternative to using the drainage canals for bathing, laundering, and defecation. Most of the city's uncollected garbage ends up in canals and rivers and along the roadside where it clogs drainage channels and causes extensive flooding during the rainy season, an occurrence that is also common in several other cities in Southeast Asia. Flood waters sweep the raw sewage and garbage out of the ditches and canals back into the *kampongs*. In the dry season, wastes decay in exposed areas and pose a serious health hazard for the community.

## **Housing Needs**

Housing conditions are closely related to housing need, which should not be confused with housing demand. Housing demand may be determined in economic terms as the number of households who have the income and other resources to pay for housing units. Demand is based simply on coefficients of income elasticity, disregarding a significant portion of households in a society — those who cannot afford housing. Many housing authorities, therefore, prefer to define housing requirements in terms of social objectives — housing need — rather than in market terms.

Accordingly, housing need is defined as the extent to which housing conditions fall below the levels or norms considered necessary for the health, privacy, and development of normal family living standards (UN 1967, 1973b). It can be expressed as the number of dwellings to be built, repaired, or provided with better facilities and is closely related to the adequacy of the current housing stock, the rate of household growth (both in size and in numbers), and the anticipated rates of housing replacement. The assumption is that a humane housing policy should aspire to shelter the homeless, to provide better housing for those living in makeshift dwellings, to provide separate accommodation for each private household, to prevent levels of density from rising beyond certain limits, to provide new dwellings for the increase in households, and to replace housing stock that has reached the end of its useful life.

A slum household occupying an overcrowded, ill-equipped dwelling of makeshift construction represents a housing need, not a demand, and to ignore the need, i.e., the relationship between economic and social concepts in hous-



ing, would be unethical. The availability of housing and the ability to pay should be major factors in the formulation of a housing program, and the aim should be not to allocate meagre resources to households that can pay for improved housing but, rather, to define government support for the distressed sector.

As a tool in the formulation of housing programs and housing finance policy, housing need might be expressed in terms that indicate the cost variables within each country, viz., urban-rural need; tropical-temperate, hot-arid, and hot-humid climatic needs; and the need for new dwellings, repairs, expansion, or additional facilities. Regional, geographic, and, for some countries, racial dimensions might also figure into housing need. A constant element for consideration is gradual improvement of standards.

The objective for every country is an equitable, politically expedient housing policy. Each country is the ultimate judge of what dwellings are acceptable and unacceptable and what standards of accommodation are attainable under its physical, social, political, and economic environment.

This is not to say that housing needs are only a national or local problem. Increasingly, housing conditions in developing countries have become a matter of international concern and merit investment of external assistance through regional and international programs.

A common denominator is needed to relate the needs of one country to those of others to permit national estimates to be aggregated as an indication of the magnitude of housing needs at the regional or international level. Recognition of broad international standards in estimating housing needs becomes increasingly useful and desirable.

## **Estimates of Housing Needs**

A 1967 UN manual *Methods of Estimating Housing Needs* (p. 30), which was based on a series of seminars hosted by the UN regional commissions in Latin America, Asia, and Africa (UN 1967), used the "living quarter" as the most generic dwelling unit and defined it as an "independent place of abode" comprising:

### **Housing Units**

1. Conventional dwellings
  - a. Permanent buildings (10-year life or more, including core housing)
  - b. Semipermanent (less than 10-year life, e.g., bamboo house)
2. Mobile, e.g., tent, trailer, caravan, boats, etc.
3. Marginal housing units
  - a. Improvised housing units (makeshift shelter, like squatter huts)
  - b. Housing units in permanent buildings not intended for habitation, e.g., barns, warehouses, mills, etc.

### **Other Living Quarters (for large groups of people)**

1. Hotels, rooming houses, and other lodging houses
2. Institutions, e.g., hospital, military, convent, prison, etc.
3. Camps, e.g., military, refugees, workers, etc.
4. Unclassifiable, the residual units not conforming to above classes.

The manual stated that "each country will decide according to its circumstances which type normally provides acceptable levels of accommodation" and which type normally represents housing needs. It added that permanent housing units are usually the only acceptable living quarters but that in the tropical zone, "semi-permanent dwellings of traditional construction," which compose a substantial part of the housing inventory, particularly in the rural areas, might be considered adequate housing. Mobile housing units might or might not be adequate, but marginal housing units were usually considered not acceptable.

In 1973 the UN *World Housing Survey* equated "dwelling unit" with the 1967 definition of conventional dwelling and decided the term did not express the different housing needs of the inhabitants of countries or regions with varied climate, social, and economic characteristics. Thus the 1973 report ruled that the expression of housing requirements in terms of dwelling units would no longer suffice and employed a new entity with variable components, indicated by the symbol  $\Delta$  (delta). Delta can stand for a house, a mobile housing unit, a natural shelter or a tent and, therefore, does not require the formulation of norms and standards. In other words,  $\Delta$  is only a unit of enumeration and is the same as the "living quarter" used in the 1967 UN manual.

The number of  $\Delta$ s that are required to accommodate the population of a country is expressed (UN 1973b, p. 93):  $\Delta = 1/k (P/h_s)$  where  $P$  = population;  $h_s$  = average size of households, i.e., number of persons per household;  $k$  = number of households that occupy a single  $\Delta$ .

The estimates of  $\Delta$  deal with housing needs of the households in a given population; there is a general agreement that a household is the unit for which housing should be provided. The reason for the emphasis on households is twofold: the population in households represents the bulk of the population, and a household, which is usually composed of a single family, is the basic social and demographic unit in most countries. The reason for the emphasis on population is that the extent and nature of housing needs depend very much on the size of total population. Factors that greatly affect the scope of housing requirements include the growth of the economy, the rate of urbanization, the distribution of the population within the country, and the quality and quantity of existing housing stock.

The estimated housing requirements, as numerically expressed in  $\Delta$  (Appendix 1), have to be further compared with the existing housing stock to assess the number of new housing units required.

## **Housing Needs in Participating Countries**

Estimates of housing needs derived by the 1973 UN method are presented for the countries in this study in Table 5. They are based on 2% annual housing replacement and on three different assumptions of  $k$  for 5-year periods between 1970 and 1990. These estimates can be compared with estimates provided by Malaysia, the Philippines, Singapore, and Sri Lanka. The other four countries reported incomplete figures of their housing need. The breakdown of components provided by the country studies appears in Appendix 1. For lack of a nationwide population and housing census, Laos merely gave the estimated shortfall in housing construction for the year 1973 (National Task Force on Low-Cost Housing 1974). Thailand gave only the capital city's 10-year housing need (National Housing Authority 1978). Indonesia gave the figure needed to

Table 5. Estimated housing needs, 1970-90.<sup>a</sup>

Country	Type of requirements	1971-75			1976-80			1981-85			1986-90		
		K1	K2	K3	K1	K2	K3	K1	K2	K3	K1	K2	K3
Hong Kong	Population increase	44	34	30	45	35	30	44	34	30	67	52	44
	Replacement	93	72	62	97	75	65	102	79	68	106	83	71
	Total	137	106	92	142	110	95	146	113	98	173	135	115
Indonesia	Population increase	4773	3977	3182	4795	3996	3197	5091	4242	3394	6568	5474	4379
	Replacement	2822	2352	1881	3319	2766	2213	3818	3182	2545	4348	3623	2899
	Total	7595	6329	5063	8114	6762	5410	8909	7424	5929	10916	9097	7278
Laos	Population increase	92	76	61	113	94	76	128	107	85	154	129	103
	Replacement	60	50	40	69	58	46	81	68	54	95	79	63
	Total	152	126	101	182	152	122	209	175	140	249	208	166
Peninsular Malaysia	Population increase	303	162	202	284	264	190	291	270	194	331	304	220
	Replacement	166	166	111	198	183	132	227	211	152	258	239	172
	Total	469	328	313	482	447	322	518	481	346	589	543	392
Philippines	Population increase	1087	1076	725	1193	1181	795	1217	1205	812	1225	1213	817
	Replacement	637	630	424	750	742	500	874	865	583	1001	991	667
	Total	1724	1706	1149	1943	1923	1295	2091	2070	1395	2226	2204	1484
Singapore	Population increase	43	35	29	73	59	49	71	57	47	74	60	50
	Replacement	40	32	27	45	36	30	52	42	35	60	48	40
	Total	83	67	56	118	95	79	123	99	82	134	108	90
Sri Lanka	Population increase	327	305	218	378	353	252	314	294	209	407	380	272
	Replacement	241	225	161	275	257	183	314	294	210	347	324	231
	Total	568	530	379	653	610	435	628	588	419	754	704	503
Thailand	Population increase	392	326	261	495	412	330	604	503	402	700	583	467
	Replacement	657	547	438	698	581	465	749	624	499	812	677	541
	Total	1049	873	699	1193	993	795	1353	1127	901	1512	1260	1008

<sup>a</sup>All figures are in thousands. Replacement is calculated at 2% per annum. K1 = 1.00 households per living quarter, K2 = existing number of households per living quarter, K3 = 1.50 households per living quarter.

keep up with the population increase but did not give the demographic basis for its figure (Moochtar and Kartahardja 1975). Hong Kong enumerated 10 components of its 10-year housing need but did not supply a figure for each component (Wong 1978).<sup>2</sup> Furthermore, the information did not include the methods used in deriving the figures.

Malaysia, Philippines, Singapore, and Sri Lanka split their housing needs into several components and described their methods in estimating each component (Table 6). The components were essentially identical, even though they had different names. They consisted of:

- **Backlog** — the number of units needed to thin existing housing densities (to four persons per accommodation in Malaysia and to one household per accommodation in the other three countries). Malaysia and Philippines said overcrowded families made up 100% of the backlog; Singapore, 75%; and Sri Lanka, 45%. Malaysia calculates its backlog should be eliminated within 5 years; Philippines and Sri Lanka, 10 years; and Singapore, 20 years.

- **Immediate replacement** — the number of dilapidated units in need of immediate replacement (called unacceptable dwellings by the Philippines and equivalent to the third part of Sri Lanka's "backlog"). Singapore did not have this item but used the component "replacement" to cover all dwellings to be

<sup>2</sup> The Hong Kong study explained its inadequacy by stating that its first housing census, conducted in 1971, could not be used for this purpose.

Table 6. Estimated housing needs, 1970-90 (based on country monographs).

Country	Type of requirement	1971-75	1976-80	1981-85	1986-90
Hong Kong	Public housing	2.1 million units of public housing for the period 1973-83			
Indonesia	Backlog Population increase Replacement	1.5-4.5 million units Based on rate of growth of 2.3% per annum Based on replacement rate of 3%			
Laos	Backlog	A total of 70880 units based on 1971 data			
Peninsular Malaysia	Backlog Population increase <sup>a</sup> Replacement Total	177000 162000 166000 505000	- 264000 183000 447000	- 270000 211000 481000	- 304000 239000 543000
Philippines	Backlog Population increase Replacement Total	338000 1048000 135000 1521000	338000 1152000 158000 1648000	126000 1281000 371000 1778000	126000 1309000 495000 1930000
Singapore	Backlog Population increase <sup>a</sup> Replacement Total	25100 48400 23000 95500	25100 78100 23000 126200	25100 88400 23000 136500	25100 99600 23000 147700
Sri Lanka	Backlog Population increase Replacement Total	141800 206800 209200 557800	177200 230800 301200 709200	not available not available not available not available	not available not available not available not available
Thailand	Public housing <sup>b</sup>	170000 units of public housing for the period 1974-83			

<sup>a</sup>Based on medium estimates.

<sup>b</sup>For Bangkok metropolitan area only.

replaced either immediately or otherwise. Units in this component are not fit for habitation and must be replaced in various periods of time — 5 years according to Malaysia; 10 years for 45%, according to Sri Lanka; and 20 years, according to the Philippines.

- **Normal replacement** — the number of units that will need replacement due to losses from dilapidation (Philippines), obsolescence (Sri Lanka), or government demolition programs (Singapore). Malaysia and Sri Lanka use a yearly replacement rate of 2% of the housing stock; Singapore uses a conjectural figure; and the Philippines uses structural life assumptions applied on the 1970 housing stock by kind of construction materials and age of the dwellings.

- **New households** — the estimation of dwellings needed to meet population projections. All four used the component method and the low or medium estimate of population increase. Then they projected the number of households: Malaysia and the Philippines used the declining average household size method; Sri Lanka used constant household size; and Singapore used the headship rate method. The Philippines and Sri Lanka gave only single estimates of the increase of new households; Singapore gave three alternatives — low, medium, and high estimates. The Philippines, Singapore, and Sri Lanka computed the housing need by using the ideal occupancy ratio of one dwelling unit per household. Malaysia gave one set of household projections but gave three figures of

housing need, one using the ideal ratio of one unit per household, another using the ratio found in 1970 (1.08 households per unit), and a third showing a deteriorating ratio of 1.1 households per unit.

The housing need estimated by Peninsular Malaysia, the Philippines, Singapore, and Sri Lanka for 1970-80 can be compared with housing need estimated by the 1973 UN method (Table 7).

The estimates of Peninsular Malaysia, Singapore, and Sri Lanka are higher than the figures given by the 1973 UN method. Backlog, which is not figured into the latter, accounts for the higher numbers, but it does not explain the lower estimates of the Philippines.

The 1973 UN method was designed for the use of internationalists to facilitate global comparison in the absence of complete statistical data and the elusive one-world physical housing standard; it has stripped away national variations and is thus not suitable for use by national planners. On the other hand, the 1967 UN manual is specifically addressed to the national policymakers to guide them in formulating housing policies and programs as part of their national socioeconomic development plans.

The number and variety of demographic and housing data called for by the 1967 UN method enable policymakers and programmers:

- To assess the country's housing need with a higher degree of accuracy and reliability;
- To formulate housing programs suited to the diverse regions of the country, i.e., urban-rural, temperate-tropical, etc;
- To include in the housing program specific types of house improvement to upgrade the existing housing stock, e.g., to provide piped water, to provide toilet and bath, to build additional rooms, etc.;
- To produce one of the basic data needed in the estimation of the economic housing demand.

Table 7. Comparison of estimates of housing needs, 1970-80<sup>a</sup>.

Country	Type of requirement	1973 UN method			Country monographs
		K1	K2	K3	
Peninsular Malaysia	Backlog	-	-	-	177.0
	Population increase	587	426	392	426.0
	Replacement	364	349	243	349.0
	Total	951	775	635	952.0
Philippines	Backlog	-	-	-	676.0
	Population increase	2280	2257	1520	2200.0
	Replacement	1387	1372	924	293.0
	Total	3667	3629	2444	3169.0
Singapore	Backlog	-	-	-	50.2
	Population increase	116	94	78	126.5
	Replacement	85	68	57	46.0
	Total	201	162	135	221.7
Sri Lanka	Backlog	-	-	-	319.0
	Population increase	705	658	470	437.6
	Replacement	516	482	344	510.4
	Total	1221	1140	874	1267.0

<sup>a</sup>All figures in thousands. K1 = 1.00 household per dwelling unit; K2 = current numbers of households per unit; K3 = 1.50 households per unit.

The 1967 UN manual enumerates the components of the housing need as follows:

**Accumulated needs** (housing needs that exist at the beginning of the period covered by the estimates)

1. Number of dwellings or other acceptable living quarters required for:
  - a. households without shelter (homeless)
  - b. households occupying living quarters of an unacceptable type
  - c. households involuntarily doubled-up with other households
  - d. reduction in levels of density (persons-per-room ratio or area-per-person) in acceptable living quarters
2. Number of living quarters that are of an acceptable type but in need of repair or replacement

**Recurrent or future needs** (needs expected to arise during the period covered by the estimates)

1. Number of dwellings or other acceptable living quarters required for:
  - a. projected increase in the number of households during the period covered by the estimates
  - b. replacements of living quarters that will be lost from the inventory during the period covered by the estimates

#### **Allowance in the estimates for vacant dwellings**

The housing need is computed in accordance with the following formula (with  $t$  = the period covered by the estimate):

$$E(t) = K(E_1 + E_2 + E_3 + E_4 + E_7(t)) + E_5 + E_8(t)$$

where  $K$  = coefficient to allow for vacant dwellings;  $K$  is not applicable to the number of new living quarters required to replace substandard units ( $E_5$ ) or to replace living quarters that will be lost from the inventory ( $E_8(t)$ ).  $E_1$  = the number of living quarters required for households without shelter (homeless).  $E_2$  = the number of acceptable living quarters required for households occupying living quarters of an unacceptable type.  $E_3$  = the number of living quarters required to provide separate accommodation for households involuntarily doubled-up with other households in living quarters of an acceptable type.  $E_4$  = the number of living quarters required to reduce levels of density (persons per room or area per person) in acceptable living quarters to a desired level.  $E_5$  = the number of living quarters required to replace living quarters which are of an acceptable type but substandard or dilapidated and beyond repair at the beginning of the period covered by the estimates.  $E_7(t)$  = the number of living quarters that will be required to house the projected increase in the number of households during the period covered by the estimates.  $E_8(t)$  = the number of living quarters that will be required to replace living quarters of an acceptable type which will be lost from the inventory during the period ( $t$ ) covered by the estimates.

The housing needs expressed by  $E_4$  may be met by increasing the size (number of rooms or area) of the living quarters that will be constructed to meet the needs reflected by  $E_1$ ,  $E_2$ ,  $E_3$ ,  $E_5$ ,  $E_7$  and  $E_8$ . In this case  $E_4$  would be omitted from the above equation.

Where statistical data are inadequate, the same manual suggests the use of a

crude method according to the following formula (UN 1967, p. 32):

$$E(t) = E + U + H(t) + r^{U(t)}$$

where  $H$  = the number of households as of the beginning of the period covered by the estimates.  $U$  = the number of acceptable living quarters in the inventory as of the beginning of the period covered by the estimates.  $H(t)$  = the projected increase in the number of households during the period covered by the estimate.  $r$  = percentage rate at which acceptable living quarters will need to be replaced during the period covered by the estimates.

The above estimates do not include maintenance and repairs.

In the 1973 UN study, the number of  $\Delta$  required to house the population is calculated for three values of  $k$ . The use of  $k$  is a novel concept, and it provides the countries with a device to reduce their housing need. Thus, a country with a current household-to-unit ratio of 1.2:1 can opt to maintain this ratio by using  $k = 1.2$ , improve it by using  $k = 1.0$ , or allow it to deteriorate by  $k = 1.5$ . A  $k$ -value above 1.0 produces a lower housing need than can be estimated by the 1967 UN manual, assuming both will use the same base data.

The 1967 manual sticks to the goal of providing a housing unit to every household. Hence, it comprises the dwellings to shelter the homeless, to provide separate living quarters for those involuntarily doubled-up, and to reduce densities to desired levels. It always assumes a one-unit-per-household target.

In any event, comparing total national housing stock — regardless of quality — in 1970-71, with the estimated needs based on whatever assumption shows that the existing deficit is indeed very large in all the countries except Singapore



*Before massive public housing programs, Singapore's Chinatown represented a large housing need but only limited demand, the latter being a measure of those who can afford housing.*

and possibly Hong Kong. Although not particularly reflected in our figures, the country monographs p. 11 leave no doubt that the low-income populations in urban areas critically need housing.

In 1972, the Indonesian Central Planning Agency (BAPPENAS) estimated that to meet the total Indonesian housing shortage would require the building of 1.5 million houses annually at an annual cost of about Rp 540 billion. It was estimated that 300 000 units would be required annually to meet the needs of the major cities. A separate study conducted by the University of Indonesia reported a present shortage of 1.8 million housing units for Indonesia, with an additional 1.35 million units required by 1981. The Ministry of Public Works in yet another study has estimated on the basis of 1971 census figures that the government must build 70 000 new housing units annually in the major cities until the year 2000 to catch up with the existing housing shortages. Based on anticipated population growth for Jakarta by 1981, it has been estimated that there would be an additional 500 000 families needing shelter in single family units. In addition, nearly 1 million families are now living together in fewer than 500 000 houses and would very possibly prefer single family dwellings. Moreover, of the existing housing units, more than 200 000 are constructed of temporary materials that should, in the course of a decade, be replaced. On this basis, it is possible to project a need for 1.2 million houses in Jakarta between 1972 and 1983, or about 120 000 units annually.

In Sri Lanka, it has been estimated that national housing requirements will be about 1.16 million units during 1972-80, or about 125 000 units annually for the next decade. The annual output required to meet housing needs during the next decade will be about 25% more than the average annual output during the past decade and will range from 122 000 to 135 000 units per annum.

In the Philippines, the yearly housing need during the period 1970-2000 in urban areas ranges from 126 000 to 195 000 and in rural areas ranges from 178 000 to 268 000 units. The annual need in both urban and rural housing units ranges from 304 000 to 463 000, which is equivalent to about 6.9 new dwelling units for every 1000 population. It has been estimated that slightly more than two housing units per 1000 population are being built annually; moreover, only 8% of urban families can afford open market housing, 62% can afford subsidized housing, and 30% need social housing.

The magnitude of the housing problem in most countries in the region and the seriousness of the widening gap between supply and demand are apparent. According to available statistics, few countries have the residential construction rate that satisfies the UN standard for developing countries: 8-10 dwellings per 1000 population, assuming sound housing stock should be replaced in 30 years in urban areas and 20 years in rural areas. Progress in the housing sector has been limited by the low priority given to housing in national development plans and programs. Housing and urban development policies have not been formulated in many countries, although construction, in general, and house building, in particular, constitute a most important economic activity. For many countries, there has been no housing policy; instead there have been ad hoc allocations for the construction of a specified number of housing units.



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# 3

## Squatters and Slum Dwellers<sup>3</sup>

A.A. Laquian

Discussions on low-cost housing for low-income people eventually focus on how to house the millions of squatters and slum dwellers found in cities of developing countries. Although not all squatters and slum dwellers are poor and not all of the urban poor live in slum/squatter communities, most country policies and programs on housing have special provisions on how to deal with these less-privileged segments of the urban population.

The eight countries in this study are typical in that most governmental measures may be traced to efforts for coping with squatting and slum dwelling. References to these problems are found in practically all official policies and programs. Even in Singapore, where the public housing program was... “not intended merely as a solution to existent problems of urban slum and squatter settlements” (Chang 1975, xii.i), concern was expressed in 1960 about the estimated “one-quarter of a million persons living in badly degenerated slums and at least another one-third of a million people living in squatter areas who urgently needed rehousing” (Yeh 1975, xiii.2).

There are many reasons for the concern of government policymakers and planners. The Singapore policies mentioned above point to one of them — numbers. It’s difficult to ignore tens of thousands of families demanding housing, and slum/squatter communities are embarrassingly visible. Officials in high positions cannot help but be aware that people living under such poverty-stricken conditions require solutions. There are, at times, more immediate reasons for attempting to solve problems arising from squatting/slum dwelling. For instance, land occupied by squatters may be needed to implement officially sanctioned plans (roads, parks, industrial estates). Donor agencies, such as the World Bank, may have loan funds available for housing the very poor. Or external loans may require that part of project funds should be used for low-cost housing. In some countries, squatters and slum dwellers constitute well-organized political pressure groups that barter their votes for beneficial policies and programs. In others, they may even go beyond the normal channels of political action, carrying out “invasions” of public or private lands and illegally occupying space not belonging to them.

Nevertheless, many developing countries lack effective housing policies and programs that specifically benefit the urban poor. Among the countries in this study, only Singapore and Hong Kong have large-scale public programs for housing squatters and slum dwellers. In the Philippines, Malaysia, Thailand, and

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<sup>3</sup> The assistance of Chira Sakompan and Jacobo de Vera is gratefully acknowledged in the preparation of this chapter.

to a lesser extent in Indonesia, so-called low-cost housing has been limited and has generally been constructed at costs that the bottom 40% of urban populations are not able to afford.

Instead of official housing programs, some countries have adopted measures such as resettlement or relocation, slum or squatter upgrading, community organization and community development, social welfare, and, more recently, "sites-and-services" projects.

Experience has shown that these measures can be effectively combined into a comprehensive housing policy, but in fact they seldom are. Instead, they are used in isolation or are poorly planned and incomplete. Squatter relocation in Indonesia, Malaysia, and the Philippines is a good example. Because of the programs' inadequacies, the relocated squatters and slum dwellers eventually drifted back to the original site or to other central places. On-site redevelopment, such as the *kampung* improvement scheme in Indonesia, is another example. It seems to have had only marginal effects of a short-term nature, despite the heavy expenses involved. Even the introduction of welfare and other social services in slum/squatter communities is not enough. Although it encourages the squatters' personal, economic, and organizational assets, it also increases demands on municipal and other governmental structures, critically straining resources.

A comprehensive housing policy to benefit squatters and slum dwellers demands various approaches that conform to the characteristics of the clients themselves. The particular features of every slum/squatter problem have to be taken into consideration when proposing specific policies and programs.

The first step toward an adequate policy is to define squatting and slum dwelling; there is a clear distinction between the two. Squatting is a legal concept — a squatter is one who occupies lands, buildings, or space without the consent of the owner. Slum dwelling is more difficult to define, but there are a number of features that differentiate a slum area from a non-slum area, including dilapidated buildings and other physical structures, extremely high densities, lack of urban services, lack of privacy, and high rates of social deviation (crime, juvenile delinquency, etc.).

A squatter area need not be a slum; some squatter communities on the outskirts of cities, for example, have low densities and low social pathology, although they may look dilapidated and lack services. In Bandung and Manila, there are squatter areas where houses of strong materials occupy well laid-out plots. Likewise, a slum area need not be peopled by squatters. In fact, most of the inner city slums in this study are on land owned by private "slumlords" who regularly collect rents from their tenants. Some slum residents actually own their land; they may have squatted on government land and obtained "legitimacy" of tenure by legislation or court orders (Hollnsteiner 1975).

## **Extent of Squatter/Slum Dwelling**

The importance of the slum-squatter concept lies in its function as an indicator of housing need. Whether people be squatters or slum dwellers, they are all communities of low-income families in dire need of housing and other urban services. In this sense, the number of people living in slum/squatter areas provides a ready and visible reminder of what has to be done. In discussions of extent of the slum/squatter phenomenon in the eight countries of this study,

Table 8. Extent of squatting/slum dwelling in selected Asian cities.

City/metro area	Year	City/metro population ('000s)	Population in slum/squatter area <sup>a</sup> ('000s)	%
Bangkok-Thonburi	1970	3041	600	20
Colombo	1973	611	43	57
Jakarta	1971	4576	1144	25
Hong Kong	1971	3936	326	8
Kuala Lumpur	1970	456	150	33
Manila	1973	3687	1216	33
Singapore	1970	2300	345	15
Vientiane	1973	176	n.a.	n.a.

Sources: National Housing Authority 1975; Marga Institute 1975; Moochtar and Kartahardja 1975; Yeh and Yeung 1975; Tan and Hamzah Sendut 1976; National Economic and Development Authority 1974/75; Wong 1978; National Task Force on Low-cost Housing 1974.

<sup>a</sup>n.a. = not available.

therefore, the figures (Table 8) should be seen as indicators of a need, and, it is hoped, an imperative for action. Because the figures were taken from various sources and are based on different concepts, assumptions, definitions, and time periods, some clarifications are needed.

The figure of 600 000 squatters/slum dwellers within the metropolitan area of Bangkok-Thonburi is based on estimates of the National Statistics Office. The Third Five Year Plan (1971) of the Government of Thailand also uses the figure of 20% of dwellers in the greater Bangkok area as official data. The Low-Cost Housing Team for Thailand, however, stated that only 11.38% of families in the Bangkok metropolitan area are squatters. The team indicated that, out of 415 881 families in the Bangkok metropolitan area in 1970, only 47 332 families were squatters. This figure may be lower because it does not include slum dwellers.

Jakarta is plagued by the lack of statistics on the extent of squatting and slum dwelling. Estimates by Taylor (1973) place the number of squatters and slum dwellers at 800 000 of a total population of about 4 million. In 1961, the United Nations stated that out of Jakarta's 2.9 million inhabitants, 727 000 were squatters/slum dwellers or about 25% of the population (UN 1971). The official 1971 Indonesia census set the total population for Jakarta Raya at 4.576 million. However, if other areas in the greater Jakarta area are included (Bekasi, Bogor, Tangerang), the total population should be 8.142 million. In the absence of official data on squatters and slum dwellers for the whole Jakarta region, we can only rely on estimates. The World Bank projected that by 1975, the Jakarta Raya area would have had a population of 5.5 million, about 3.8 million (or 69%) living in "minimum standard areas" — both inner city dilapidated areas and more rural *kampongs* on the city's periphery (International Bank for Reconstruction and Development 1974).

The latest survey of squatters/slum dwellers in Kuala Lumpur was made in 1966-68 (Sen 1973). At that time, of the city's 456 000 people, 150 000-180 000 were termed squatters/slum dwellers (32-39% of the population). It was also estimated that from 31 to 35% of dwellings in the metropolitan area for the same period were occupied by squatters/slum dwellers.

Earlier figures for Kuala Lumpur showed a lower percentage of people living in slum/squatter areas. Thus, in 1961, the United Nations indicated that only 25% of the people of the city were squatters/slum dwellers (UN 1971). The

increase of the proportion of squatters/slum dwellers in Kuala Lumpur may indicate that the many measures to cope with the problem have done little to curtail the rate of growth of the poorer segments of the population.

Estimates of squatters/slum dwellers in metropolitan Manila vary from 18% (1973) to 35% (1968). The former figure is the official estimate of the Presidential Assistant on Housing and Resettlement Agency (1973) and refers to 116 289 squatter families. When slum dwellers are included in the estimates, however, the latter figure (United Nations) seems more realistic.

The difficulty in getting accurate data on slums and squatters was also encountered in Singapore. In 1966, the United Nations estimated that, of the city-state's 1.8 million people, 280 000 or 15% lived in slum/squatter areas (United Nations 1971; see also Taylor 1973). The 1970 housing census listed 33.6% of houses in Singapore as "attap or zinc-roofed houses" (Yeh and Yeung 1975); however, some of these light-material houses are far from the centre of the city and many are neither squatter nor slum dwellings.

There is a lack of data for Laos as well, but a sample of people living in two districts (*muongs*) of Vientiane indicated 450 of 14 343 households (3.1%) were living in "improvised dwellings." Another 7081 (49.1%) were living in "traditional Laotian dwellings" (mainly made of bamboo, thatch, and other light materials). These two figures suggest the extent of the lower and upper limits of squatters/slum dwellers in Vientiane; however, lacking more precise data, we can only guess at the actual situation (Choun Lamountri 1974).

## **Characteristics of Squatter/Slum Communities**

Though accurate figures on the number of squatters and slum dwellers in Asian cities are difficult to get, the resident or visitor to these cities will not find it difficult to recognize the communities of the poor. Also, studies of specific slum/squatter communities are plentiful and provide a basis on which to identify salient characteristics.

There are many characteristics of slum/squatter communities, but the following seem most important: size, density, and physical contiguity of the community; location of the community relative to transportation and urban circulation; age and physical features of community structures, and lack of urban services.

### **Size, Density, and Contiguity**

In most of the cities in this study, slum and squatter communities are easy to identify from a bird's-eye view. Often, the boundaries of the community are clearly marked by physical barriers, such as the shoreline and the railroad tracks that etch the limits of Klóng Toey in Bangkok or the fence of the port zone and the stone breakwater that mark the limits of the Tondo Foreshore land in Manila. As a rule, slum and squatter communities are not very large. Klóng Toey covers 128 hectares (Hongladaromp 1973), and the Tondo Foreshore land is made up of 185 hectares (Laquian 1971). Physical barriers, the nature of the land, or legal impediments often limit further expansion and dictate the boundaries.

Because of the relatively limited land area covered by slum/squatter communities, high densities of people and physical structures ordinarily exist — for

instance, 90 000 persons per km<sup>2</sup> in Tondo and 250 per hectare in Klong Toey.

To contain this many people, the limited space is devoted to houses and other physical structures at the expense of roads, playgrounds, parks, and other uses. In communities located in low, marshy places that are regularly flooded, people get around on narrow plank bridges instead of streets, thus requiring less space for circulation and making more space available for housing. Most houses are one or two stories and are built very close to each other. Such high densities increase the hazards due to poor health, inadequate sanitation, fires, earthquakes, and other disasters. Less visible problems are lack of privacy, gossip, social controls, etc.

From a pragmatic viewpoint, the size, density, and shape of a slum/squatter community are very important to its potential for upgrading or improvement. A relatively compact community is usually easier to organize than is an oddly shaped or elongated one where people have to travel quite a distance to interact with each other. Community cohesion may be related to ethnic identity, kinship, religious unity, leadership, or political affiliation; but in many instances, people from diverse groups are randomly thrown together by circumstances, and physical proximity is a most important variable.

In the case of Manila's railroad track squatters, for example, distance was an obstacle to community upgrading. The thousands of squatters along the railroad tracks did not have community centres, nodal points, or places for social interaction; therefore, they did not form cohesive social organizations. Because community upgrading programs have to be based on the collective resources of people in the community, using it in a community where there was very little basis for its success was not favoured.

Improvement programs for communities of very high densities usually combine relocation and on-site upgrading. The former usually poses very serious dilemmas for both governmental and local organizers because someone has to decide who should move out and who should stay. When external agencies are in charge, certain legal definitions may be used. In Tondo, Manila, for example, the law stated that bona fide tenants on the public lands could remain. In Singapore, wherever possible, a census of residents is a normal part of relocation programs. In some cases, a choice by chance (by lottery, for example) is used, although this procedure is only as fair as its organizers.

The size and physical expanse of a slum/squatter community also determine its manageability. Obviously, it makes a lot of difference whether a public agency is dealing with a community of 30 000, such as Klong Toey, or with one of only 3000 such as Manangasila. In the former, the agency must identify smaller, more manageable districts or subcommunities (it is hoped natural communities) for improvement programs, whereas in the latter there are likely to be a few readily identifiable communities.

Size and expanse also determine the visibility of a slum/squatter area, i.e., political pressures, symbolic protest, media interest, etc., which can actually harm improvement programs. For example, in Manila, the Tondo Foreshore land became a symbol of poverty in the whole country, and large symbolic battles were fought on the Tondo site. The proposed solutions became larger than life, and the stakes were raised far above the needs and wants of the Tondo dwellers themselves.

Finally, the size and expanse of a slum/squatter area determine the number of approaches needed in improvement programs. Large communities demand complex solutions. A community of 30 000 should include rich and poor, am-

bitious and apathetic, leaders and followers etc.; thus, housing programs that create ghettos of the poor without economic and social variety are bound to fail. Standards of income, family size, property ownership and other criteria may be meant as measures to lessen inequalities, but they may, in fact, exacerbate disparities.

## **Location and Access**

An important feature that affects the viability of upgrading or relocation programs is the slum/squatter community's location within the city or metropolitan area. This includes both actual physical location and relative place as determined by access to transportation and other methods for social circulation. The urban areas in this study, like Latin American cities, show the marked distinction between central city slums and peripheral squatter areas. Although slum/squatter concentrations shown on maps of Bangkok, Kuala Lumpur, and Manila appear randomly spread throughout the metropolitan areas, a closer look at community studies reveals the logic behind their location. Such factors as closeness of residence to work place, access to public transport, and availability of land and urban services emerge as reasons.

In general, slum/squatter areas tend to be close to the city centre where many of the jobs available to poorly educated and unskilled people are concentrated. In cities where slum/squatter areas are found on the outskirts, availability of public lands or government resettlement programs are responsible. Where people are allowed to settle spontaneously, however, they tend to locate where the jobs are, usually close to the city centre.

Surveys of slum/squatter community dwellers almost always reveal closeness to work as a primary reason for location. In the survey of Klong Toey, for example, 22.0% of the heads of households interviewed walked to work and 50.3% took the bus. The time spent in going to work was relatively short: 7.1% took 1–5 minutes; 20.0%, 6–15 minutes; and 18.7% took 16–30 minutes. More than a third of the employed people worked in the Klong Toey area. In fact, 12.5% worked with the Port Authority (Hongladaromp 1973).

The link between place of residence and work place is so important that it usually spells the difference between success and failure for a project. Still, availability of public land generally takes precedence over it as the main criterion for project location. Sometimes, as in the plans for sites and services in Manila, there are efforts to bring the jobs to the people. However, job creation for unskilled and unemployed people that have a history of high mobility is very complex. In many countries, efforts to create new communities with jobs, residences, and community services have not met with as much success as slum-upgrading projects that go along with the people's choice of location.

## **Age and Dilapidation**

Another feature of slum/squatter communities worth considering in attempts to improve them is their age. In inner city slums, older communities seem to show more signs of wear and tear, although in some peripheral city slums, where there is room for building and expansion, older communities seem to have developed an improved appearance through the years. This phenom-



enon confirms a hypothesis by Turner in regard to Latin American slums: provided squatters and slum dwellers have security of tenure, they tend over the years to improve their dwellings and invest more and more of their income in such improvements.

In the eyes of a middle-class observer, many of the houses in slum/squatter areas may look decrepit and dilapidated. However, the investments that go into the construction of houses in slum/squatter communities are often considerable in terms of materials, efforts, and money. In their eagerness to tear down eyesores, public officials and their paid wrecker crews often lose sight of these. In Calcutta, Rosser and van Hyck have argued that all housing — whatever shape or form — should be maintained because destruction, even of hovels, cuts down the number of units available. In Brazil, Frankenhoff carried out studies quantifying the amounts that *favelados* invested in their shanties. In the study of Klong Toey, it was found that, despite the low income of those living in the community, the average investment in construction of a house was around 3000 baht and was directly related to the level of income of a family.

In a study of Magsaysay Village, Tondo, Manila, Hollnsteiner found that the squatters had put considerable investments into their homes. One gauge of this was the expected selling price. Asked how much they would get if they sold their houses, more than a fourth of the interviewees said they could sell their houses or “rights” to the land for up to P2000. A fifth believed they could get P2001–5000, and almost another fifth thought they could sell for P8000 or more. With these findings, Hollnsteiner observed: “whatever the state of the house, it represents an important investment or a savings of sorts” (p. 56).

Although increased age may mean increased dilapidation in a community, it usually also means increased financial investments, group identification, and commitment on the part of the residents. Age may make a slum/squatter community unsightly, unhealthy, and grim, but policies that result in the razing of slum/squatter communities under the banner of urban renewal or slum redevelopment waste the positive contributions of age. Studies in the Asian cities involved in this study have found valuable resources that are masked by dilapidation that the sympathetic and sensitive planner and policymaker have to tap in efforts to cope with problems of slums and squatters.

## **Lack of Urban Services**

Side-by-side with age and dilapidation is the general lack of urban services in the low-income communities found in the cities studied. The most serious shortages are in drinking water, toilet facilities, electricity, and garbage disposal. Other shortages also occur in fire protection, health and sanitation, police and other security services, recreation, education, and social welfare.

Data from surveys and intensive studies of slum/squatter communities reveal that the lack of clean drinking water is usually a serious problem. The percentage of households with piped water available in Klong Toey was only 1.8%, 7% in Ban Fay (a Vientiane slum), 23.1% in selected squatter areas in Bandung, and 37.5% in three squatter areas studied in Kuala Lumpur. The situation is so bad in Bandung that 66.4% of households surveyed depend on open wells and streams for water. Because of the lack of water, people in many slum/squatter areas have to buy clean drinking water at exorbitant rates; 17% of people in Ban Fay and 67.5% of households in Klong Toey had to buy water from vendors.

In almost all the slum/squatter communities where data were available, toilet facilities were critically lacking. Thus, in Klong Toey, almost a third of the people had no proper toilets and about 68.5% said they relied on "some form of waste disposal," which was not specified. In a study of Tondo, close to 70% of the people admitted to not having any toilets in their homes. Most used public toilets or wrapped their waste in paper and threw it in open lots or the ocean. About 86% of the people interviewed in Ban Fay also said that they discarded their waste anywhere.

Because of the poor accessibility of most slum/squatter areas, garbage collection by government trucks is often inadequate. Residents in Manila slum/squatter areas as well as those in Kuala Lumpur have been relatively lucky. Surveys show that 23% of the former and 34.6% of the latter have their garbage collected by the government. In Isla de Kokomo, Manila, however, more than half the people throw their garbage in nearby creeks (Laquian 1964). About half of the Kuala Lumpur squatters burn their garbage.

The combination of inadequate garbage collection and lack of toilets has serious implications for the health and sanitation of people who live in slum/squatter areas. In these communities, the most common diseases are usually of the digestive tract (gastroenteritis, worms, dysentery, cholera) and of the lungs (bronchopneumonia, tuberculosis). These diseases can be directly traced to the poor environmental conditions in the slum/squatter areas. Intestinal worms (ascariasis, tape worms, hook worms) are prevalent among the people and sap the vitality even of the young. Given the population's meagre food intake because of poverty, and the incidence of parasites, it is no wonder that the energy of slum/squatter people is low and that they are prone to diseases.

Poor environmental conditions in squatter areas may be directly due to government refusal to extend services to communities that are "illegal." Resorting to legalistic interpretations of governmental functions, those in power refuse to extend water supply, garbage collection, and other services to squatter communities. Sometimes, there is a fear that extending services to the squatters will legitimize their claims and lead to abuses that will challenge the power of the state.

The lack of services creates potential and direct danger to other sectors of the urban community. Epidemics that start in the poor communities do not stop there and do not affect only poverty-stricken people. Increasingly, therefore, governments are being forced to extend services and amenities to squatter slums.

The changing attitude toward the plight of slum/squatter communities may also be seen in the recent popularity of sites-and-services programs. Recognizing that, in most instances, the problem is not the housing structure itself but the lack of urban amenities and services, the World Bank has launched no less than 38 sites-and-services projects all over the world.

## **Characteristics of Squatters/Slum Dwellers**

In determining the implications for housing policy of squatting/slum dwelling, it is most important to know something about the characteristics of the people themselves. Knowledge of the personal, social, economic, and political traits of squatters/slum dwellers aids in the understanding of their plight in hu-

man rather than merely physical terms. In policymaking, the following characteristics seem important: ethnicity, family size, employment and income, and popular participation.

## **Ethnicity**

The ethnic composition of slum/squatter communities usually reflects the homogeneity or heterogeneity of the larger society of which they form a part. Among the countries included in this study, slum/squatter communities are relatively homogeneous in Indonesia, the Philippines, Hong Kong, Singapore, Thailand, and Laos. They are heterogeneous in Sri Lanka and Malaysia, both plural societies.

In a survey of a Colombo slum, Bulankulame (1973) found that, of the 7062 persons living on 5.6 hectares in the heart of the city, about 48.2% were Moors, 37.1% Sinhalese, 13.1% Tamils, and 1.6% were other ethnic groups. The variety of ethnic groups in the community did not seem to adversely affect cooperation among the residents, but people tended to deal with relatives and people from the same blood or ethnic lines in personal and social intercourse.

It is in Kuala Lumpur where ethnicity makes a difference. In 1973, Sen observed: "There is evidence that squatters tend to locate themselves by ethnic origins, and, in almost all cases, new migrants also tend to locate themselves in those areas already occupied by their own people" (p. 22). A survey in April 1973 showed that in Kuala Lumpur, 67% of the squatters were Chinese, 20% were Malays, and 13% were Indians, Pakistanis, and others. These ethnic groups tended to locate in specific parts of the city:

Malay squatters tend to be found in the eastern, northeastern, and southeastern parts of the city, in areas such as Kampong Bahru, Dato Keramat, Kampong Pandan, Gombak, and Pantai Valley; Chinese squatters predominate in the north, northeast, south, and southeast in areas such as Segambut, Setapak, Salak South, Petaling, Pudu, Klang Lama, and in several pockets within the city centre; Indian squatters are generally located in Sentul, in the north, and Brickfields in the southwest.

Ethnicity was also apparent in the dwellings favoured by the residents. Malay squatters generally lived in attap-roofed timber houses that rested on stilts, the characteristic rural *kampong* dwelling. Chinese and Indians, however, lived in "an assortment of building types," according to Sen (1973).

Planners and administrators have to be sensitive to ethnic preferences in designing buildings, locating communities, and providing much needed services, but they must also be able to count on some form of citizen participation and cooperation.

The degree to which ethnic groups living in slum/squatter areas can cooperate with each other is important. Ideally the slum/squatter area acts as a transitional "way station" and serves as a vehicle for cultural integration. In practice, however, personal and socioeconomic pressures involved in rural-urban transition may tend to exacerbate communal and ethnic conflicts.

## **Family Size**

The number of persons in a family and the space available for them are a most important consideration in housing squatters/slum dwellers. In the slum/

squatter studies looked at for this paper, the family size ranged from an average of five persons in Klong Toey, Bangkok, to a high of seven in a slum area in Colombo, Sri Lanka. In almost all countries, squatters/slum dwellers, like most poor people, had larger families than did their relatively well off neighbours. They also tended more to band together for economic protection and social intercourse. Thus, because of economics or other reasons, even married members of a family lived with their original family. A tendency for a number of households to "double up" in the same dwelling unit was very evident. For example in the Colombo slum studied by Bulankulame (1973), 21% of the families surveyed shared a dwelling unit, and in the Kuala Lumpur survey (Sen 1973), 22% of the dwellings had two to four families and 2% had five or more. In a summary of studies done in Manila, Guerrero (1975) found that the percentage of dwellings with three or more families was 4 in Caloocan/Sampaloc; 2.4 in Vitas, Tondo, and 7.9 in Barrio Magsaysay, Tondo.

The most immediate implication of large families and doubling up is overcrowding. In the 1973 survey of squatters in Kuala Lumpur, it was found that 48% of dwellings had only one room; 29% had two; 10% had three, and only 13% had four or more. Providing a quantitative observation on Colombo, Bulankulame (1973, p. 199) wrote:

Out of the total number of 910 families, 801 occupied one room, 92 occupied two rooms; 16 three rooms, and 1 four rooms. The average sleeping accommodation per family was only 120 square feet. Therefore, if the average household unit consisted of seven people, then the average sleeping accommodation per person is only 17 square feet.

Large families, doubling up, etc. are the bane of housing administrators who have to enforce so-called minimum housing standards. Standards are set for health, fire hazard, privacy, and other reasons; the goal is safe housing. Sometimes, especially in slum/squatter life, the goal is incongruous with economic and social circumstances, and administrators must search for adequate compromises. Herein lies the challenge.

## **Employment and Income**

In the search for other options to house squatters and slum dwellers, the most important feature is almost always income. What kind of housing can the squatters/slum dwellers afford? How much can they pay for rent? For down-payment? For monthly amortizations? Are their jobs stable enough to meet long-term debts? What are their chances for improved capacity to earn and pay?

Generally, surveys find that squatters/slum dwellers have low incomes. In Klong Toey, the median monthly income was found to be 1225 baht or U.S.\$61 per family. This compares with a median monthly income of 2000 baht (U.S.\$100) for the whole city of Bangkok. In another 1973 survey, the Asia Institute of Technology found the average monthly income to be 1062 baht (U.S.\$53); 41.7% of families earning from 400–800 baht; 18.5% earning 800–1000 baht, and 19.6% earning more than 1000 baht (Hongladaromp 1973).

The same pattern exists in other cities. In the Colombo slum investigated by Bulankulame, only 69% of males over 15 years were gainfully employed.

Of those employed, 79% earned less than 200 rupees (Rs) (Bulankulame 1973, p. 198).

In a sample survey of squatters in Kuala Lumpur, made in April 1973, 21% of those interviewed were unemployed. Of 29 000 families surveyed, 9% earned below M\$100 per month. About 50% earned M\$100–M\$200; 28%, M\$200–M\$300, and 13% earned above M\$300. In fact 80% of the households studied earned less than M\$300 per month.

The low income of squatters and slum dwellers is directly traceable to the nature of their jobs. Of the 29 000 squatters studied in Kuala Lumpur, about 70% were petty traders, hawkers, general workers, or drivers; another 25% were unskilled workers and part-time workers, and about 5% were shopkeepers, landed proprietors, executives, or professionals. The same pattern of occupations was found by Guerrero in the Philippines. In slum areas in Sampaloc and Caloocan, 10.3% were white-collar workers; 31.0%, manual workers; and 58.7% were service workers. In Vitas, Tondo, 18.7% were white-collar workers; 46%, manual workers; and 35.3% were service workers. In Barrio Magsaysay, Tondo, 13% of household heads were white-collar workers; 70% were manual workers, and 17% were service workers. Based on characteristics of household heads, the average monthly income in the communities studied by Guerrero was between P125 and P200. Given the Philippines' minimum wage of P240 per month, the relatively low level of income of slum dwellers and squatters is confirmed.

In planning housing programs, of course, the capacity to pay of the client families is a most important ingredient. If we assume that most families would not be able to devote more than a quarter of their income to housing (because of needs for food, clothing, and other necessities), then we are faced with a very limited group of persons who can actually afford to go into public low-cost housing. In the Kuala Lumpur survey, for example, 60% of those interviewed said they could devote M\$20 per month for rental housing. The chance of ownership encourages people to dig into their coffers deeper: 85% of those studied said they could manage a down payment of M\$1000 toward the purchase of accommodation, and 80% said they could afford monthly installments of M\$40 if they would eventually own their house or flat (Moochtar and Kartahardja 1975).

At that price, no form of finished housing for squatters and slum dwellers is feasible without subsidies. Thus, other options, such as sites and services and on-site redevelopment, are being favoured in a number of countries. In Jakarta, for example, a World Bank project for sites and services was intended for the bottom 20% of the city's population, but it was still extremely difficult to provide programs for people earning less than 15 000 rupiahs (Rp) per month — more than a third of the city's population (International Bank for Reconstruction and Development 1974).

In the Philippines, de Vera (1974) has estimated that, of metropolitan Manila's population, only 8% would be able to buy homes in the open market; 44% would be able to purchase "strip-down design" houses that may be made available through government assistance on easy-term loans from financial institutions. Another 18% would be able to afford "row houses" of 30 m<sup>2</sup> per dwelling, but, a full 30% "are in no position to buy a decent house" because even minimum standard housing costs P 9000 and the low income of the people makes them incapable of repaying the amount.

Income and other considerations pose strict constraints on what the government and other outside agencies can do for the people in a slum/squatter

area, but the constraints can be offset by what the people can do for themselves. What is often missed by planners and policymakers is positive patterns of cooperative behaviour and attitudes that are additional resources. Squatters/slum dwellers have usually planned their own communities, organized their activities, implemented plans, and worked together toward goals. Thus they are in a good position to participate in public programs to improve their living conditions.

In studies of Tondo, Manila, Etherington (1973) found that Magsaysay Village was "divided into six more or less equal blocks each with its own government... the governing body... consists of six area councilmen who are also the captains of the six blocks. Presiding over the council is the area chairman who is elected by and is also one of the six councilmen. Assisting the area chairman is a vice-chairman, a secretary, a treasurer, an auditor, and an eight-member board of advisers, all of whom are elected. The board of advisers corresponds in composition and function to the village elders of an earlier rural period."

An earlier study by Laquian (1971) demonstrated the same formal organization in other communities in Tondo. In Barrio Magsaysay, 28 community organizations existed; 6 of these formed a Federation of Community Associations. In 1971, an umbrella organization, the Zone One Tondo Organization (ZOTO), represented some 20 000 residents from no less than 51 smaller organizations in only one part of Tondo (Hollnsteiner 1975; Taylor 1973).

A more traditional form of government is found in the *kampongs* in Indonesian cities. It replicates traditional ways of communal living and attitudes (*gotong royong*). This is true as well in other countries in Southeast Asia; in fact, the primary small community still lives in most of the urban communities. Taylor (1973) observes that:

The most consistent fact about Southeast Asia's low-income areas is that they generally exhibit a remarkable degree of social cohesion, self-reliance, and stability. People will work together to solve common problems, and in many cases have organized to save their own homes and community. There is an informality and neighbourliness which gives people support and comfort. Many areas are remarkably stable, in that most families have lived in them for several years and helped turn a collection of bits into a community....

It is, perhaps, in this very fact that planners and policymakers find positive hope for coping with the problems of slums and squatter areas. Not only do the people themselves want improvement, they have the resources — human, organizational, attitudinal — to help it. What the people contribute should not be seen only in terms of money. Their efforts should not be regarded merely as free labour or sweat equity. Their organizational capabilities should not be seen as merely saving on administrative overheads. In the final analysis, the hopes and aspirations of the squatters and slum dwellers constitute the most important resource in public efforts to deal with the problems they face.

## **Some Policy Implications**

From the experiences in the eight countries included in this study, policies and programs directed toward solving problems of squatting and slum dwelling

may be classified as direct population-control measures; public housing; self-help and cooperative approaches including community development; and sites and services.

Control measures include attempts to relocate squatters and slum dwellers to outlying areas, prevent migrants from entering large cities, or limit city services to bona fide residents. Public housing may mean high-rise or low-rise dwellings, finished or semifinished "core houses," rental or for-sale housing. Self-help and cooperative approaches involve the efforts of the people themselves, often with the assistance of either government or private organizers. Sites and services — the latest approach in the low-cost housing field — originally meant just opening up new lands, providing basic services and amenities, and moving people into the new sites. Currently, however, sites and services means a gamut of approaches, ranging from opening up new lands to upgrading houses in existing squatter and slum communities (Laquian 1976).

Experiences thus far have been that direct population-control approaches, such as relocation in Kuala Lumpur and Manila or closing the doors to new settlers in Jakarta, have met with little success. The large cities in the countries in this study have realized that such palliatives are not sufficient. Rural-urban migration shows no signs of slackening; commerce and industry are not growing fast enough to absorb the people already in the cities; the birthrates of rural-urban migrants are not spiraling downward; and efforts to resettle people to frontier areas or secondary urban places are not succeeding. Something more than just coercion and persuasion is called for to even out settlement patterns in a nation. Perhaps population-control measures have a role as tactical approaches within a total and comprehensive strategy, but they cannot, by themselves, solve the slum/squatter problem.

Public housing, as exemplified in Singapore and Hong Kong and to a less successful extent in Kuala Lumpur, Bangkok, and Manila, requires massive financial subsidies from national government or international lending agencies. Although more and more countries are being encouraged to provide public housing because of its impact on development, the hoped-for bonanza from industrialized housing approaches has not really materialized in the Asian region. Whatever benefits and savings have been obtained from speed and efficiency of industrial techniques have probably been undermined by the unused labour that squatters and slum dwellers could have provided. Also, the high capital inputs have deterred certain governments from investing in industrial housing approaches.

Certain beneficial innovations have been observed in the countries studied regarding public housing. For example, the experience with four- to five-story walk-ups in the Philippines, Thailand, Malaysia, and Indonesia has been rather positive. Although improvements in dwelling design and community planning are still needed, the squatters and slum dwellers seem to adapt to their new environments relatively well. Innovations in semifinished dwellings (core housing) have also been generally positive, although some schemes are still too expensive for the real urban poor. Core housing lengthens the period of construction and thus fits the income and resource potentials of the squatters/slum dwellers more reasonably.

Self-help and cooperative approaches should be elements of any program meant for squatters and slum dwellers. Used alone, they are quite limited, but in consonance with public housing or sites-and-services approaches, they have increased possibilities of success. In a number of countries, self-help has been urged by ideological or reformist methods — in Tondo, especially before martial

law was imposed in the Philippines; in Kuala Lumpur, around communities in Petaling Jaya; and in Bangkok, where volunteer organizers tried to form squatters and slum dwellers into citizen forces and pressure groups. The teachings of Saul Alinsky, the reformist intents of church groups, the militancy of student leaders, and the confrontation tactics of civil rights activists have been tried. Such methods served to highlight the needs and problems of slum/squatter areas. In some instances, however, they also prompted harsh and repressive reactions. To the extent that local people found their community identities and that public officials learned about the power of the poor, some success has been achieved. However, in the final analysis, traditional community associations, such as those in Jakarta's and Kuala Lumpur's *kampongs* and Manila's *barrios*, have accounted for slow but more lasting changes for the better.

Sites-and-services approaches have changed radically since the World Bank initially invested in them. With about 38 projects all over the world in existence right now, they have expanded immensely from the original idea of just providing basic infrastructures to open up new lands for settlement. Early sites-and-services projects tended to fall into the pitfalls of previous relocation projects: choosing lands too far from the jobs and services naturally provided by the city, not providing services, not providing jobs along with basic services, and not allowing enough time for people to adjust naturally to their new environments. As specific problems were identified, partial solutions were evolved. Acquisition of land, formerly prohibited by World Bank policies, is now considered. Provision of housing, from partial cores to finished dwellings, is now acceptable (as in a project in El Salvador). Control of housing materials and supplies, formerly left to the government or individual families affected by the scheme, is now entrusted to nonprofit corporations who buy and sell the materials or even private entrepreneurs who serve specific communities under acceptable terms. Community organization is now a part of practically all sites-and-services schemes, as are research, evaluation, and monitoring.

With all these innovations, sites and services is a different approach than it was originally and might be more suitably called planned community improvements. The most important thing, however, is the recognition among those seeking solutions to slum and squatter problems that, for measures to be really effective, all the resources and efforts of the government, the private sector, the international sector, and above all, the squatters and slum dwellers themselves are needed.

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# 4

## Housing Administration

Choop Karnjanaprakorn, Chong Kim Chang,  
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The misconception that housing is a social problem and should not play an important role in development priorities led many Asian countries to neglect housing policies, programs, and activities until the mid-1960s. Then, deteriorating urban services and the rapid growth of slum and squatter areas forced governments to pay more attention. Initially, most governments created agencies to deal with specific problems, such as providing housing for civil servants, introducing basic services, financing schemes, and later, coping with slums and squatter areas.

Providing houses to civil servants, the first application of public housing in Asia, was one of the main concerns of the colonial governments that ruled seven of the countries in this study. Provided by the home or interior ministry as well as the specific departments or ministries in charge of field administration (army, police, revenue), housing units were considered especially crucial in stations far from the national capital.

Public housing, as it is generally understood today, first came onto the Asian scene as a palliative for housing deficiencies created by rapidly growing urban areas. One of the earliest agencies involved in public housing was the Singapore Improvement Trust, organized in 1927. Over a span of 32 years before being absorbed by the Housing and Development Board, the Trust built 23 019 housing units, while the population of Singapore expanded from half a million to 1.5 million.

To be fair to SIT, it must be mentioned that the main function of the agency was to prepare and carry out a general improvement plan for Singapore rather than to construct public housing. Public housing was only to be provided to people rendered homeless by the improvement schemes of the agency. SIT planned new roads and open spaces, condemned old and dilapidated buildings, acquired land, provided basic services, and carried out improvement programs for slum property.

Across the ocean, in equally crowded Hong Kong, the first concern was to cope with the squatters. With the communist takeover in mainland China, thousands of refugees moved to Hong Kong so that within a 5-year period before 1950, the population of the colony had increased fivefold. A series of tragic fires in the squatter areas where the refugees lived forced the Urban Council of Hong Kong to take notice. Two select committees in the Urban Council (one in charge of resettlement and the other charged with estate management) were created. A Resettlement Department headed by a commissioner was also organized. From these emergency efforts, the present administration in Hong Kong took shape.

The Malaysian government started getting concerned over the housing problem about the same time as the Hong Kong government; it adopted an approach similar to neighbouring Singapore. In 1951, it created the Federal Housing Trust. Previously, much of housing in East and West Malaysia had been left to the private sector; only when a shortage of serviced land stymied many developers, did the government directly intervene.

The Housing Trust was only one of the agencies created in Malaysia to meet the housing problem. Others were at the federal, state, and municipal government levels. At the state level, the various housing commissions operated, and the economic development corporations became active in housing. The Federal Land Development Authority built rural housing for its development schemes, and the Urban Development Authority, the Malaysian Building Society Berhad, and even the Government Officers' Housing Company Ltd. engaged in housing. As late as the early 1970s, therefore, housing administration in Malaysia was characterized by fragmentation of responsibility and the lack of coordination among entities concerned with the housing effort.

The same kind of fragmentation and lack of coordination was found in the other countries participating in this study. In the Philippines, before the creation of a centralized National Housing Authority in 1975, there were no less than a dozen and a half government agencies having something to do with housing, resettlement, social welfare for the urban poor, housing finance, and other aspects of the housing problem. In Thailand, housing was first made a function of the Department of Public Welfare in 1940; a Housing Bureau was created in 1949; a Housing Welfare Bank was set up in 1952; and a Slum Clearance Office was established in 1959. No new agency superseded others before it, and it was not until 1973 that a National Housing Authority was created to coordinate housing efforts.

Some Asian governments, reflecting the reluctance to engage directly in housing, have left initiatives to the private sector, reserving for the state only the planning and regulatory functions. This is the case in Sri Lanka where efforts have focused on influencing the private sector. A Rent Restriction Act was passed in 1942, for example, to prevent landlords from exploiting the shortages created by the Second World War. In 1949, realizing that the private sector lacked development funds for housing, the government created the Housing Loan Board, which was meant to provide funds for developers going into middle- and lower-income housing. In 1954, funds were still lacking, so the government created the National Housing Fund, administered by a commissioner. Reverting, in 1973, to the philosophies of the rent restriction laws of the 1940s, the government passed a ceiling on housing property. The new law limited the number of houses a family could own to the number of dependants in that family plus two. Landlords were forced to sell properties in excess of the limits.

In Indonesia, where most of the people still live in rural areas, the government did not feel the need for housing programs until recently. Most villagers built their own housing, using local materials and indigenous technology, and there was no need for the government to intervene. Then, in the 1974-79 development plan, housing became a priority, although the machinery for housing remained fragmented and uncoordinated. Four ministries (internal affairs, social welfare, public works and electric power, and health) shared responsibility for housing until July 1974 when a National Housing Authority was created to coordinate efforts in building construction, real estate, mortgage banking, land development, and housing development.

## **Housing Organization and Management**

The types of organizations created to administer housing and related activities in the eight countries involved in this study may be differentiated according to their levels in the government hierarchy, the statutory authority and power vested in them, and the specific functions that they perform. Categorizing housing agencies is not easy because there are usually many types of agencies involved in housing. Also, the formal authority vested in an agency by legislation may not reflect administrative reality and in any case it may change suddenly due to shifts in political power.

Based on level of authority, substantive powers, and functions, housing agencies in Asia may be classified into four types. These are ministerial level housing agencies; special corporate agencies at the subministerial level; regular line agencies; and special agencies with a definite territorial sphere of responsibility.

The importance given to housing in recent years has resulted in the creation of the first group, such as the Ministry of Housing and Construction in Sri Lanka charged with the formulation of national housing policy. Agencies at this level usually coordinate housing programs rather than engage in housing construction, finance, estate management, etc. In other words, they are most often coordinative, not line, agencies. Sri Lanka's ministry is a good example; it coordinates the activities of the Department of National Housing, Department of Buildings, the State Engineering Corporation, the Building Materials Corporation, the Department of Town and Country Planning, the Land Commissioner's Department, the Land Development Department, and other agencies.

Some governments believe that housing is a commodity that entrepreneurs are better at managing. Thus, they set up corporate agencies to take care of housing. The agencies are provided with land and capital, credit authority, and the power to construct, sell, or rent housing. An example is the People's Home-site and Housing Corporation in the Philippines, governed by its own Board of Governors and managed by a general manager. Another example is the Housing and Development Board (HDB) of Singapore.

The HDB manages all public housing in Singapore and is entirely financed by internal resources. It obtains two types of loans from the Singapore Government: a 60-year loan at 7 3/4% interest for the construction of rental housing and a 10-year loan at 6% interest for financing housing for sale. Run like a normal company, the HDB maintains properties and pays taxes for housing estates under its management. Its income comprises rents, interest received on mortgage loans, and a monthly service and conservancy charge on all units under its management. Rents are fixed with the government's approval and are kept at subeconomic levels to cater to lower-income groups. At the end of each financial year, any deficit incurred by the HDB in its operation is reimbursed by the government in the form of a housing subsidy. Subsidies over the last few years have averaged U.S.\$ 4.80 (S\$12) per person per year.

Because the HDB manages all public housing estates, it oversees residential and industrial properties, shops, hawker centres, markets, landscaped and recreational areas, etc., and provides for estate cleaning, maintenance services, and other facilities. It coordinates activities through a decentralized system of area offices, each responsible for up to 15 000 housing units.

The Singapore HDB is one of the few examples of a successful corporate agency. Elsewhere the resources and the flexibility of a corporate agency are often offset by its susceptibility to political interference. Many corporate agencies have found that the business of providing low-cost housing to people with limited capacity to pay is not an easy undertaking at all. A number of them have incurred tremendous deficits and have been abolished. Others have fallen by the wayside, unable to resolve the dilemma of whether public housing is an economic investment or a social welfare expense.

One alternative to the corporate agency is the line agency. At present, there seems to be a trend in many Asian countries to consolidate governmental response to the housing problem and to concentrate housing responsibility and authority in one line agency. The current National Housing Authority in the Philippines and its counterpart and namesake in Thailand and Indonesia are examples. In the past, line agencies were usually limited to overseeing a specific geographic area or providing a very specific function, such as physical planning and project development, finance, construction, or regulations related to housing. In Laos, for example, the National Housing and Planning Board within the former Royal Lao Government played the role of a planning and construction agency.

Until 1976, there were many line agencies in the Philippines. Some of them directly or indirectly provided new houses, some provided home mortgage insurance, and still others handled resettlement projects. Among the first group were the Bureau of Public Works; the Department of National Defence; and the National Housing Corporation, a semigovernment agency created in 1968 to oversee prefabricated housing. The principal financing agencies were the Government Service Insurance System, the Social Security System, and the Development Bank of the Philippines. Home mortgage insurance was handled by the Home Financing Commission (HFC) created in 1956. Resettlement projects were handled principally by the Presidential Assistant on Housing and Resettlement Agency (PAHRA), the Central Institute for the Training and Relocation of Urban Squatters (CITRUS) created in 1966, and other executive departments of the government.

In addition, there was the Presidential Committee on Housing and Urban Resettlement (PRECHUR) whose mandate was to advise the President in coordinating and controlling the implementation of housing and urban development programs. In 1973, a task force on human settlements, composed of key officials of major government agencies, was created to conduct frontier and slum settlement projects, integrated area developments, a national housing program, etc. In 1974, the Tondo Foreshore Development Authority was formed to handle the Tondo Foreshore lands and resettlement sites.

The achievements of these agencies in the past 10 years have been relatively modest: the value of government-built dwellings and of housing loans obtained from government financing agencies amounts to U.S.\$260 million, about 21% of all investment in housing.

To effect better coordination in housing administration, the Philippine government passed a decree in 1975 consolidating housing efforts within the National Housing Authority. The People's Homesite and Housing Corporation and practically all the agencies concerned with housing in the past were abolished and incorporated into the new structure. At the same time, a Housing Development Fund was also set up to support the plans of the new authority.

The government in the Philippines discovered that having too many line agencies with limited functions created coordination problems and that introducing area and jurisdictional limitations made things worse. Other countries, like Hong Kong and Thailand, have had similar experiences and have moved away from single-area jurisdictions, preferring instead agencies with broader geographic coverage.

In Thailand, until 1973, Bangkok dominated urbanization, and housing programs were limited to the Bangkok metropolitan region. In 1973, the government approved the creation of a National Housing Authority and vested it with jurisdiction over housing for rent, sale, and hire purchase; buyer financing and housing guarantees; serviced land for housing; and proper sanitation for about 30 000 families in the known slum areas in Thailand. Most important, the Authority was given national jurisdiction.

In Hong Kong, where about 53.2% of housing in 1972 was either built or subsidized by the government, housing was under the jurisdiction of no less than four agencies until March 1973. The Urban Council/Resettlement Department looked after the resettlement estates; the Hong Kong Housing Authority had its own housing estates and managed the low-cost housing estates built by the Public Works Department; and the Hong Kong Housing Society also ran its own estates.

After 1973, the Urban Council/Resettlement Department and the Housing Authority were amalgamated and reconstituted into the Hong Kong National Housing Authority. The new body now manages all existing public housing estates; it plans and builds public housing estates "for such kinds or classes of persons as the Authority may . . . determine." It is the agency with the authority for clearance of land for development. It can prevent and control squatting, and it is, finally, the main policy adviser to the Governor of Hong Kong.

Although no one housing structure seems best suited to cope with the housing problem in all the countries, some general principles seem to apply to administration: a proliferation of housing agencies is not conducive to efficient and effective work, and, except in Singapore, the corporate or public enterprise has not proved responsive to peoples' demands or safe from political interference. At present, line agencies for housing are popular, perhaps due to the increasing demand for any form of government action; whether they will deliver housing effectively, efficiently, and responsively, only experience and time will tell.

## **Policymaking and Implementation**

The agencies and structures that administer housing in Asia translate their policies into programs and activities in various ways, but they all proceed through several stages: policy determination; identifying needs and setting priorities; designing housing programs; and initiating, maintaining, and evaluating housing programs.

### **Policy Determination**

Housing policies in Asian countries are usually integrated with socioeconomic development plans. In Singapore and Hong Kong, a separate housing

sector is integrated into development plans to reflect the crucial role of housing, which is expected to create jobs, utilize land, generate capital, and increase the social welfare of the people. Elsewhere, housing is included in the social sector of the development plan.

The national agency that prepares the plan sets housing policies but normally relies on the main housing agency for background such as the projected housing need, the capital and operating funds needed, the location of future housing projects, and the extent to which the housing demand will be fulfilled.

The countries in this study have become increasingly aware of the effect of the housing sector on other elements in development plans. When lumped together with the construction sector, housing strongly influences employment, technology, credit, and general productivity. Although housing itself accounts for only 3–7% of Gross Domestic Product (GDP), it boosts construction output to 45–65% of gross domestic capital formation. These figures show that construction is a key capital input to almost any sector in the national economy. The main inputs take the form of building materials, plant and equipment, labour, and services of design and construction companies.

Housing sector policies usually are interspersed throughout development plans in sections covering other policies, such as credit and public finance, land policy, foreign exchange rules, and regulations on rent, mortgages, zoning, and other aspects of housing. Most countries in Asia rely on proceeds from taxation to finance their housing programs — a practice that has grave implications for the volume and rate of expenditure that can go to public housing. In Singapore and Hong Kong, housing funds are separate from general funds and are usually included in the capital investments side of the budget. Consequently, both countries devote a good proportion of GNP to housing — in Singapore the percentage is 20.5 compared to 3 for most of the countries in the region. Housing funds in Hong Kong and Singapore are also considerably enriched by cross-subsidies from other projects. For example, the Housing and Development Board in Singapore constructs and sells middle- and upper-income housing and channels the profits into low-cost houses.

In most countries, housing policies must cater to the private sector as the main supplier of housing. Policies, therefore, often promote long-term finance for would-be buyers of housing, encourage banks to offer mortgages, support the setting up of savings and loan associations, permit the use of pension and labour union funds for housing, urge materials industries to develop indigenous resources, or subsidize infrastructure and land development. Policies can spell the difference between enthusiasm or apathy in the private sector, and they need to be analyzed carefully to make sure that gains in housing investments created by some will not be washed out by the difficulties created by others.

## **Setting Needs and Priorities**

With the exception of Singapore and Hong Kong, the countries in Asia have accorded low priority to housing until recently. In fact, Indonesia has included housing as a priority in the latest development plan but has confined its input to encouraging individuals and the private sector. Government-sponsored housing is limited to demonstration projects designed to show what can be done.

Ideally, all the countries should be deciding priorities in accordance with accurate information on needs. Most countries, however, do not have the nec-



essary machinery for estimating the true housing condition. Housing data are usually gleaned from general censuses, although in Sri Lanka and the Philippines, special housing censuses have been carried out. Only in Singapore and Hong Kong are housing censuses and special housing studies regularly conducted.

In the absence of valid and reliable information, priorities are often set on the basis of personal commitments of top decision-makers. For example, the priority given to finding shelter for refugees, slum dwellers, and squatters in Hong Kong was in response to the pressures on officialdom, and the high priority given to solving the problem of shelter and amenities in the Tondo area can be traced to the personal interest of the President and the First Lady of the Philippines. Sometimes, a disaster, such as the tragic Christmas Eve fires in the squatter colonies of Hong Kong in 1953, can focus attention on a specific problem and make it high priority. At other times, the availability of foreign funds for housing may result in priority being given to housing (witness the sudden popularity of sites-and-services schemes favoured by the World Bank). More often, however, priorities are set in the normal bargaining of ministers and leaders determining their development strategy. Decisions are usually made after a consideration of the data, the political and vested interests involved, the personal interests of the powerful, and the capacities of the economy and the bureaucracy.

## **Formulating Housing Programs**

After the policies and priorities have been set, the coordinative body normally directs the housing agencies to design a housing program. Countries may break down their programs into specific targets, such as number of housing units to be constructed within a given time. The targets are often justified on the basis of expected housing needs and demands and are usually expressed in terms of the twin objective of closing the housing gap and providing for new households. In the past, program agencies have been content to set targets in aggregate numbers. At present, reflecting the greater awareness of the national human settlements patterns in most countries, agencies are also including a spatial dimension in their programs. Now, they are determining how many units should benefit specific social classes and income groups and also are indicating where the beneficiaries are expected to be living. Using housing both to generate growth in the economy and to cut down social disparities is proving to be one of the recent innovations in housing administration.

The main problem, however, is not setting targets but meeting them, and the greatest obstacle is lack of coordination. Although Singapore and Hong Kong have centralized their authority and power for housing, other countries continue to spawn new agencies and to divide authority among many of them. Whereas the 5-year plans formally declare housing for the poor as a high priority, the programs for finance, construction, and infrastructure may actually be unrelated to low-cost housing. It is openly accepted in most countries that development plans are not only documents of intended action but also political statements of goals and aspirations. Unfortunately, the gap between goals and performance is usually wide, especially in the housing field.

In countries where a single agency has the task of carrying out the housing program, implementation is relatively straightforward. Problems arise, however,

when the mandate for implementation is not clear or when many agencies are competing for the various tasks to be carried out.

The most important tasks are research and planning, finance, land acquisition and development, resettlement, construction, estate management, and program evaluation. In a centralized housing agency, the tasks can be allocated among headquarters and field units with authority and responsibility clearly delineated. Confusion over division of responsibility in new tasks or grey areas can be anticipated by building in a coordinative mechanism.

All the tasks in program implementation and evaluation are separate but interdependent. Research into housing standards, especially the use of space, is needed to plan proper design of housing units; technology research is needed to balance the goals of production with those of employment creation and to interpret roles for contractors and the people themselves. Research and planning should be anchored by a smooth flowing information gathering, processing, and feedback system so that results can be applied to other tasks. For example, research into the employment, household income, and expenditure patterns of families involved in housing projects is needed to support finance operations. The data can be used to determine repayment rates and to project viability of low-cost schemes.

Research and planning are nothing without finance, which itself plays a dual role. It launches a project and serves as a monitor of success. Cashflow — the rate of payment of loans or rents — is an excellent indicator of how well or how badly a program is going. Setting targets and timetables for investments and monitoring the actual flow of funds are simple means for measuring progress.

Funding goes hand in hand with finding suitable land for housing development. The problem is that people want to live close to their jobs, and the jobs are usually in city centres where the price of land is high. High-rise buildings have been the answer in Singapore and Hong Kong, but their high costs for construction and maintenance may rule them out as housing for the urban poor in other countries.



*Singapore has opted for high-rise housing to solve its needs; less-affluent countries, however, may have to seek other solutions.*

Most countries rely on land acquisition in some form. Methods include land banking, that is the purchase of undeveloped land for future use; urban land reform, or the breaking up of big landholdings, which is a thing of the past in the cities; and most often, land consolidation, the merging of a number of small parcels of land.

One possible solution is to build low-cost projects at the periphery of urban areas. When integrated with employment, transport, and service facilities, this has met with some success. Examples are the housing estates of Singapore and Hong Kong. However, in the Philippines and elsewhere, where the availability of public land was the main consideration in location, the projects have failed to attract people. Poorly chosen sites result in high transport costs, increased pollution, and other direct and indirect costs to the people.

At times, people have to be moved to project sites, and the task of moving them — resettlement — is onerous. People do not readily accept relocation even if they can see that life in the new areas may be better. Resettlement becomes particularly difficult when squatters are not offered specific alternatives on where to settle or when resettlement sites have not been developed and are unprepared for the people being moved. In general, slum clearance without housing options does not work. People may move, but they will usually settle in a nearby slum or squatter area.

Experience has revealed that uncertainty accounts for most of the anxiety in people being resettled. If people are told why they are being moved, when the move will be made, where they will be going, what units they are allotted, who will move them, how they will be transported, and what compensation, if any, will come their way, then they are able to plan ahead and cooperate in the move. Otherwise, rumours of preferential treatment tend to materialize and create conflict. Resettlement units in housing agencies, such as those in Singapore and Hong Kong, have worked out standard operating procedures for resettling people, and they have found that if the procedures are known far in advance by the people, problems are usually minimized.

Whereas resettlement is one of the most difficult tasks, construction is one



*Upgrading schemes usually entail some resettlement. Some people must be moved to make room for roads, sewers, and water systems.*

of the most expensive. The biggest problems encountered in construction seem to be delays that can run up costs tremendously. Some delays are unavoidable; materials, especially those imported into the country, may be delayed in arriving. Labour disruptions, mechanical breakdowns, and a myriad of other things can happen. In some countries, problems are exacerbated by petty graft and corruption in purchase of building materials, failure to observe prescribed standards, failure to carry out proper inspection, and the hiring of unskilled political protégés for construction jobs where specific skills are required. The number of housing projects actually completed on time and at the level of original cost estimates is extremely small in Asia and other developing countries. Even the most efficient housing agencies have their closets full of problem projects.

Because planning ahead minimizes delays, most construction agencies now follow some form of operational phasing in their work. Using some version of program evaluation review technique (PERT) or critical path method (CPM), they usually sort out and schedule all the tasks involved in the project in such a way that the critical sequences of specific activities are followed.

In both construction and maintenance, housing agencies usually encourage the participation of people directly affected. For instance, in sites-and-services programs, clearing land, digging drainage and water channels, and finishing houses are all specific tasks that are allocated to the tenants and future homeowners. Popular participation can cut down costs, tap hidden resources among the people, and achieve better cooperation and collaboration. No matter how desirable it is, however, it does not come free. The housing agency has to have a specific unit charged with community organization and development and has to be willing to devote valuable time and other resources to programs for eliciting cooperation.

Evaluation is usually set as one of the last tasks involved in implementation, but it should permeate all stages of the administrative process. Evaluation may be broken down into three components: evaluation of results against goals, periodic assessment of processes, and evaluation of project impact. The first is straightforward: setting targets (quantitative or qualitative) and then periodically assessing whether they have been achieved. The second is more commonly known as monitoring, and its main use is for short-term guidance and course correction. The last may comprise measuring the effect on the people directly involved in the project, on the administrative machinery for carrying out the project, or on other communities or groups directly or indirectly influenced by the project.

Whatever forms of evaluation are used, the housing agency should have a specific unit in charge of the task, following procedures that are effective and economical. There is usually a big temptation to use elaborate methods for evaluation, sometimes involving comprehensive surveys and complex methods and analyses. What is often missed is evaluation procedures that rely on the by-products of normal administrative procedures. For example, instead of conducting elaborate user surveys to determine housing needs, it may be possible to examine applications for public housing. Instead of conducting expensive household income and expenditure surveys, it may be possible to determine rents or mortgage payments as the percentage of income going to shelter. Construction charts may be used as indicators of housing consolidation and field construction reports as monitoring tools. Based on normal operations, these data cost relatively little to collate and analyze, and they have the added merit of being readily available and cheap to obtain.

## **Search for Solutions**

Of the administrative structures and processes devoted to housing in the eight countries participating in this study, a number of specific approaches and actions stand out. They constitute a serious search for solutions and comprise (1) the formation of national housing policy, (2) the improvement of legislation related to housing, and (3) the training of administrators who can carry out the policies and programs.

The success of any housing program depends on an organized system of housing administration, effective legislation, and a firm housing policy. There should be a centralized body capable of identifying needs, setting targets, planning strategies and programs, coordinating agency functions, researching and applying resources, implementing policies, and evaluating projects.

## **National Housing Policy**

A comprehensive housing policy should be established at the very earliest stage; it should not be left until lack of housing is so acute that a sensible approach is no longer possible and piecemeal actions are taken to cope with the urgent demands. The national housing policy must clearly state how far the government is prepared to go into public housing, and what contribution will be expected of private enterprise. This means deciding who can expect to receive government aid in obtaining housing and who can expect to fend for themselves through private sources. It also means stipulating how much funding will be set aside in relation to GNP or other factors. It may also mean defining "adequate" and "inadequate" housing and laying down standards of housing provision.

Too frequently, housing is given low priority in development policies. Housing is an expensive investment involving large capital outlays, but ultimately it is an investment in the people, promoting a sense of security and belonging that may, in turn, lead to political stability and social progress.

A national housing policy provides an opportunity for government not only to solve housing problems in cities but also to declare its population distribution strategy, viewing national population characteristics as a whole. If the government aims to decentralize its population and exploit the country's natural resources to the fullest extent, it must gear programs to the decentralization of industries and other employment opportunities.

Examples of comprehensive housing policies are found in the island state of Singapore and the territory of Hong Kong. Both have housed more than half their populations through direct government actions and both aim at providing housing for all those who need it. Most of the other countries are in the process of evolving national housing policies; some have achieved a clear-cut definition of aims and targets; and a few have not yet set definite policies.

## **Improved Legislation**

Laws and regulations should support the national housing policy. They may encourage foreign and domestic investment in housing, promote local industry in standardization of building components, urge prefabrication and use of local materials, and circumvent some of the obstacles to speedy construction.

To direct foreign and domestic investments toward the provision of housing, governments may introduce exemptions or reductions in taxes for foreign and local companies that are engaged in housing and building industries. They may also consider special exemptions from import taxes for companies requiring foreign machinery, equipment, or materials for operation. Banking laws and facilities may be used to simplify foreign exchange for funds invested in housing and to assist local estate developers in acquiring foreign loans and investments for housing purposes. Governments may encourage local industrialized or pre-fabricated building components by making available low-interest loans. They may even consider legislation that will require industrialists and big concerns to invest part of their capital gains and reserved internal funds in housing, either through the purchase of housing bonds or through deposits with housing and building societies.

Any big housing program requires an efficient building industry, employing standard building methods and materials. Planning and building permissions should be approved quickly and the approving authorities made answerable for their decisions. Although building regulations should not be too restrictive and rigid, standards for building materials and components should comprise units of measure, quality control, and distribution channels. The last, if disorganized, will become costly and ineffective and should be regulated so that production and cost can be controlled.

## **Personnel Training**

The implementation of a housing program requires qualified personnel at all levels. At the highest level are the policymakers and administrators who need support from professionals and specialists who advise and oversee activities. Policymakers are usually strongly influenced and assisted by professionals, such as town planners, sociologists, housing and estate managers, architects, economists, etc., who have a thorough understanding of problems and solutions not only in their own countries but also in other countries and regions. Technicians are needed to carry out the housing program itself. Well-qualified persons must also be employed to manage the completed houses or estates and prevent them from becoming architectural slums and liabilities rather than assets.

The importance of personnel underlines the need for adequate training programs. At the outset of any housing venture, a comprehensive training program should be devised. The call may be for personnel in professional fields, such as architects, planners, engineers, draftsmen, services engineers, surveyors, etc., or technicians, such as electricians, plumbers, builders, etc. All are indispensable.

When a housing program is well into the advanced stage, estate managers may be necessary to handle commercial lettings and leasing, property and business management of large housing estates, progress of estate growth, improvement and maintenance, etc. Housing managers may also be required to ensure that new tenants settle happily and that new communities develop in accordance with planned goals.

## **Conclusion**

In their efforts to resolve the housing shortage for low-income people, Southeast Asian countries have moved toward mass construction of housing by

public bodies, but few of them have been able to provide the capital required from public funds. Thus, the major addition to housing stock has been contributed by the private sector, and the real estate market is hardly well organized. If the government's role in housing is to be advanced, there should be agencies that act as efficient clearinghouses for urban land or dwellings and help to mediate or regulate prices. The government should formulate policies to offset market imperfections, to prevent worsening of an already serious situation, and to solve problems such as unrealistic rent controls, lack of information on estate values, and the absence of controls on land speculation.

How the government can plan for, develop, and administer housing for the urban poor is the subject of this chapter; whether or not it should do so is not discussed. Despite the situation in Singapore and Hong Kong, most of the people in Asia are still living in dwellings provided by nongovernmental efforts and are likely to continue to do so, because governments do not yet have the resources to provide public housing for all.





# 5

## Housing Finance

Gerardo M. Sicat

Finance, which is essential to any housing program, is in short supply in most developing countries. Housing is just one of many national priorities that compete for government funding, and, because it represents large investments and long-term commitments, is less attractive than most.

At present, the financial systems in developing countries are new and have not acquired the monetary base necessary for long-term funding. Private financial institutions channel most of their funds into less risky investments and devote only a small proportion to housing and long-term loans. What little they do spend on housing fails to reach low- and middle-income households; their contribution to low-cost housing is negligible, although they account for two-thirds of total investments in open-market housing.

Financing of low-cost housing programs in Hong Kong, Singapore, Malaysia, Sri Lanka, Thailand, and the Philippines<sup>4</sup> has largely been relegated to the government, and, with the exception of Singapore and Hong Kong, the countries have thus far failed to grapple with their housing problems. The evidence is the unabated growth of slums and squatter settlements.

### Organizations for Housing Finance

In the past, governments created separate housing finance agencies, such as the Home Financing Commission of the Philippines or the Hong Kong Building and Loan Agency, Ltd.; more recently they have established agencies with responsibility for all the components of housing, including planning, construction, management, and finance. Examples are the Housing and Development Board of Singapore, the Hong Kong National Housing Authority, the National Housing Authority in the Philippines, the National Housing Authority in Thailand, and the Department of National Housing in Sri Lanka. The way these agencies finance their operations deserves special attention.

The Hong Kong National Housing Authority, which replaced three separate housing agencies — the Hong Kong Housing Society, the Hong Kong Housing Authority, and the Resettlement Department — is funded mainly by the Hong Kong government, which also provides the lands for housing. With minor exceptions, all the land in Hong Kong is government-owned and is available to the Authority free of premium for public housing and at one-third market value

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<sup>4</sup> Unfortunately, data for Indonesia and Laos were not available for this analysis.

for higher-income housing. As might be expected, the land policy has considerably lightened the financial burden of public housing, leaving only the construction costs to be met.

The Hong Kong Building and Loan Agency, Ltd., provides 5–12-year loans at 10% interest to private individuals. It caters to low- and middle-income groups by making loans available at longer repayment terms than are otherwise available in the colony. The agency finances its loans by issuing 5-year notes guaranteed by the government up to a total HK\$170 million. The notes rank as liquid assets under the Hong Kong Banking Ordinance.

In Singapore, the Housing and Development Board (HDB) is the sole housing authority. Created in 1960 as a statutory body under the Ministry of Law and National Development, the HDB is charged with the massive task of promoting housing and urban development. Under the first two 5-year building programs (1960–70), the HDB completed a total 120 669 public housing units and in the next 4 years, another 64 821 units.

The capital for the construction of public housing is met by loans from the government. The 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. Due to the government's avowed policy of providing decent housing for the lower-income groups, the rents are heavily subsidized, and the selling prices of the flats are fixed below cost. The deficit is reimbursed by the government in the state budget. The Board's annual deficit has increased from S\$10 million (1971) to over S\$30 million for the financial year 1973–74 and is expected to continue increasing as more and more people move into HDB flats and the standards of housing are improved.

In Thailand, the institutional framework for housing had been set up for about 30 years before a housing policy was explicitly stated, but in the Third National Economic and Social Development Plan, the government proposed to construct and provide housing for low-income families. It then established the National Housing Authority (NHA) to replace the four major public housing bodies (the Housing Bureau, the Housing Division, the Bangkok Slum Clearance Office, and the Housing Welfare Bank). The dissolved agencies had largely acted independently but had one thing in common: insufficient budgetary support. Budget constraints had prevented them from realizing their programs and had forced the Housing Welfare Bank to extend loans mainly to middle- and high-income borrowers.

As for the Philippines, an institutional dilemma characterized the housing sector for almost 3 decades. Several government housing agencies were created at different times and pursued diverse functions. The much-needed integration came in July 1975 with the creation of the National Housing Authority (NHA) by virtue of Presidential Decree No. 757. The NHA is charged with the pursuit of three major objectives: provide and maintain housing for as many Filipinos as possible, undertake housing development and resettlement, and encourage the private sector to participate in housing ventures. The establishment of the NHA signaled the beginning of more determined efforts of the government toward eliminating the housing shortage, which is urgent in many urban areas and particularly acute in the metropolitan Manila area where squatter settlements grow at the rate of 12% a year. At present, the NHA is focusing on the policy of upgrading sites and services but is proposing also to construct new units to cope with the backlog and the increase in households and to relocate and

resettle families living in unsafe areas or areas needed for public infrastructure developments.

Since 1975, the NHA has assumed responsibility for financing housing projects. Before that, three government lending institutions financed housing development, extending loans to individuals and supporting mass housing projects. They were the Government Service Insurance System (GSIS), the Social Security System (SSS), and the Development Bank of the Philippines (DBP). The contribution of the GSIS and the SSS was substantial; they financed low-cost housing projects for their members in joint ventures with private developers and even today continue to loan money to individuals. They also absorb housing bonds floated by the NHA. For the period 1972 to June 1977, GSIS, SSS, and DBP financed a total of about 59 000 dwelling units with disbursements reaching about P1.5 million. During the same period, the government promoted the construction of 19 400 houses through the Home Financing Commission (HFC), an agency operating a mortgage insurance program that encourages banks and financing institutions to grant housing loans on easy terms of payment.

In Malaysia and Sri Lanka, the national and subnational governments cooperate in viable housing programs. Through efficient coordination they are able to deliver heavily subsidized housing to lower-income families.

In Malaysia, constitutionally, state governments are responsible for low-cost housing, but they can obtain soft loans from the federal government. Moreover, they may seek technical guidance from the Housing Trust, a statutory body now under the responsibility of the Ministry of Local Government and Housing. For their part, state governments make available land on nominal terms and provide infrastructure services, such as roads, water supply, roadside drains, and electricity.

Some state governments can afford to fund housing on their own but need advisory assistance from the Housing Trust. Examples are Johore and Selangor, which have undertaken housing through their state development corporations. As the state corporations gain expertise, the Housing Trust will likely play a lesser role but will continue to advise on all aspects of low-cost housing.

The other public institutions that play a major part in the financing of housing in Malaysia are the Council of Trust for the Indigenous People (MARA), the Federal Land Development Authority (FELDA), and the Treasury Housing Loans Division. MARA provides loans in the form of housing materials to low-income groups, and FELDA gives loans for the construction of settler houses. Meanwhile, the Treasury Housing Loans Division caters to government employees by granting housing allowances or nominal rent charges against the use of government quarters.

Approximating the strength of Malaysia's institutional setup, Sri Lanka has strong links between the central and local governments. The Department of National Housing under the Ministry of Housing and Construction is not only a housing developer but also a financier of local social housing programs, annually appropriating Rs10 million in recent years. Moreover, the Department gives out financial, land acquisition, and technical assistance and clearances of titles to prospective house builders. It is also actively involved in the country's primary mortgage system, which was evolved in 1973 along with a self-help scheme incorporating development of the Department's lands in both urban and rural areas.

Further contributing to Sri Lanka's sound housing program is the National Housing Fund, established in 1954 under the administration of the Department of National Housing. The Fund functions as the major supplier of housing finance, usually extending loans to private building and cooperative societies for their housing projects, local governments for slum clearance and urban development projects, and the Land Development Department for rural housing projects. The Fund's principal sources of funds are treasury loans and debentures. Housing finance is further beefed up by the National Savings Bank, the People's Bank, Bank of Ceylon, Treasury Loan Board, and State Mortgage Bank.

## **Source of Funds**

The main sources of housing funds in the six countries are: grants and loans from central or local governments; earnings from operations; bonds and other borrowings; government insurance, social security, or provident fund organizations; government savings banks; private banks and savings and loan associations; and private savings. In most of the countries, private funds are usually inadequate to meet the housing needs, especially of low-income people, and considerable subsidies are extended by public authorities for low-cost housing.

Grants and loans from central or local governments may be in the form of long-term capital grants to housing agencies or short-term operational funds voted in annual budgets. They may also be in kind, such as big tracts of land or provision of infrastructure and services to housing sites.

Income from housing operations may be rents, sales, conservancy charges, or special fees and may be used to offset some of the costs. In Singapore, for instance, profits from the sale or rental of middle-income or high-income flats are used to support low-income housing.

Most national housing agencies are given the authority to float bonds or debentures to be used for housing. The government may guarantee the bonds or instruct central banks to purchase them. Also, housing agencies or individuals desiring to build or improve a house may have access to provident funds, insurance funds, or social security funds. However, in many instances, such funds are available only to members, who are usually not in the low-income bracket. The same holds true for mortgages and housing loans that are available from government and private banks only to people who have collateral, i.e., the middle- or high-income people. In the final analysis, of course, building a house usually depends on the savings that a family can raise. This is especially true with self-built housing, such as that found in squatter upgrading schemes or sites and services.

In Singapore, the HDB finances its ambitious public housing program mainly through rents, conservancy and service charges, and government loans. Since 1964, another major source of finance has been the Home Ownership for the People scheme under which flats have been sold by the Board to the public.

Rental income from flats, shops, and markets was the main source of revenue of the Board, varying from 94 to 63% of total income between 1960 and 1973/74. Conservancy and service charges recoverable from both tenants and lessees increased from S\$30 800, 0.2% of total income, in 1960 to S\$17 million, or 13.7%, in 1973/74. Interest receivable from investments and mort-

gage loans has also been an increasing source of revenue. Because the HDB fixes rents and selling prices at subeconomic levels, subject to government approval, its expenditures exceed income. The resulting deficit is made up by the government by means of a subsidy provided for in annual budget estimates. From 1960 to 1973/74, the government advanced S\$71 million to cover the Board's deficits.

The capital expenditures incurred by the HDB are financed mainly by government loans, which amounted to S\$1.193 billion from 1960 to 1973/74. Money earmarked for the construction of housing units for sale is available at 6% interest per annum over 10 years; the amount is based on the total value of flats sold in a year less any Central Provident Fund contributions that represent withdrawals for the purchase of HDB flats. Loan drawings that exceed the value of flats sold are treated as a long-term loan at 7 3/4% per annum over 60 years.

Under the Home Ownership for the People scheme, Singapore citizens earning not more than S\$800 per month, with a total family income of not more than \$1000 per month have been encouraged to purchase flats. Those unable to raise the funds themselves have been offered HDB loans repayable over 5, 10, or 15 years at 6 1/4% interest.

In September 1968, the scheme was augmented by the Central Provident Fund (CPF) Approved Housing Scheme, whereby CPF members could apply their contributions to the purchase of HDB flats or to the payment of monthly installments. Furthermore, down payments were reduced to S\$300 for a two-room or three-room flat and S\$100 for a one-room flat.

The Home Ownership scheme brought a significant increase in the number of applications for purchase of flats starting from a 1968/69 figure of 13 825 to about 45 999 in 1973/74. Under the scheme, 62 333 flats were registered from 1964 to 1973/74.

The utilization of the Central Provident Fund contributions for the purchase of public flats has augmented the flow of funds into housing finance. On the one hand, CPF credits utilized by the purchaser are a source of capital revenue for the government's development fund, and on the other hand, they are a source of finance for the Singaporeans and provide the means to purchase housing.

In the case of Hong Kong, the sources of funds for the financing of housing include general revenue of the government, loans from the Development Loan Fund, income from housing estates, and bonds and other borrowings. Costs of construction and operations of the resettlement and low-cost housing estates are shouldered by general revenue, to which are credited the rents received from the estates. The Hong Kong National Housing Authority gets the bulk of its capital from the Development Loan Fund, which was established in 1958 for the purpose of financing schemes of development within Hong Kong. In 1973, 75% of the HK\$700 million fund was devoted to housing in the form of loans at the low interest rate of 3-5% per year.

Meanwhile, the capital of the Hong Kong Building and Loan Agency is augmented by the sale of 5-year notes issued by the agency and redeemable at 8% interest per annum. The agency also borrows from financial institutions on the security of debentures and deposit receipts. From borrowed funds, the agency operates a home loan scheme offering a maximum loan of 85% of the assessed value of low-cost residential units or 75% of the assessed value of higher-priced units. The absolute maximum is HK\$100 000 for any unit. The

loans are repayable over periods ranging from 5 to 12 years at an interest rate that relates to the Agency's cost in borrowing funds. The interest rate is reassessed from time to time and is currently 10% per annum. To be eligible for a loan, an applicant's family should earn in the neighbourhood of HK\$4000 per month. The agency commenced business in 1966 and reported mortgage assets of HK\$141 million at the end of 1971.

In Malaysia, the financing of public housing is straightforward. The federal government extends soft loans to state governments, which in turn fund municipalities and development corporations. Under the 1971-75 Second Malaysia Plan, the federal government's allocation for public housing amounted to M\$953.7 million, or 10% of total public expenditures, and M\$240 million was set aside for low-cost housing loans. Until about 1969, loan terms for low-cost housing were 2.5% interest repayable over 17 years for hire-purchase schemes, and 5% over 60 years for rental schemes (flats). Interest rates have since been increased to 5% over 20 years for hire-purchase schemes and 6% over 30 years for rental schemes.

The state government in Selangor funnels loans to the Selangor Development Corporation, which operates a housing program using both federal and state monies. The corporation repays the loans from mortgages on its houses, which range from low-cost terrace to medium-cost, semidetached or detached, homes. Loan terms for low-cost housing are 4% interest repayable over 15 years and for medium-cost housing, 7 1/2% interest repayable over 10 years.

Funds in Sri Lanka can be obtained from national and subnational sources. The treasury is the main source of funds at the national level followed by the Central Bank institutions. Treasury revenue and debentures issued by the Central Bank exclusively finance the National Housing Fund, the largest financier of housing in the country. At the subnational level, finance companies, rural banks, cooperative societies, employers, savings and loan associations, and building societies offer loans.

The National Housing Fund loans money to individuals, building societies, and cooperative societies for small-scale housing projects. Applicants may solicit up to 100% of the construction costs. The loan is repayable over 10-25 years according to the borrower's capacity to repay. Interest rates are 6% for loans up to Rs10 000, 7% on Rs10 000-Rs15 000, and 9% on loans above Rs15 000. The payment of premiums and interest is spread evenly over the repayment period. In addition, the Development Finance Corporation, the National Savings Bank, the State Mortgage Bank, the People's Bank, the Treasury Loan Board, the Bank of Ceylon, the Public Service Mutual Provident Association, the Government Officers' Benefit Association, and commercial banks, all offer loans to finance housing undertaken by the private sector.

In Thailand, low-cost housing is financed by public sources. Direct financing is available from:

- National budgetary allocations, which pay for the bulk of NHA housing projects;
- Government Savings Bank, which provides housing loans to its employees and depositors and to the NHA. The bank has instituted a deposit for housing, wherein for a minimum of 3 years savings, the depositor will be entitled to a housing loan using the land and house as collateral, repayable up to 15 years at the low interest rate of 7%; and

- Lottery Bureau, which lends some of its profits to low-income groups.

From 1963–71, the approved budget for low-cost housing increased from 12.1 million baht to 18.0 million baht but fell short by almost 75% of what was required to meet the housing need. On the whole, Thailand has only touched the surface of its finance problem. The NHA, which was established in 1973, has yet to come up with an effective financial scheme to solve the country's critical housing problem.

The same can be said of the Philippines, where the major sources of funds for low-cost housing are:

- National budgetary or special appropriations for upgrading, social housing, and resettlement projects, particularly for low-income families;
- Pension and Insurance bonds held by GSIS (for government employees) and SSS (for private employees), which comprise compulsory contributions of the employees and their employers; and
- Funds currently used by DBP, which come from the bank's capital subscription and earnings.

The budget allocations for housing showed a sharp increase starting from 1975 with the establishment of NHA in the Philippines. The predecessors of NHA were hampered in undertaking their housing and resettlement efforts because of meagre budgetary support, particularly in the early 1970s when inflation severely hit land and construction costs. The budgetary allotments for the 3 years from 1975 to 1977 amounted to about P256 million, compared to P134 million for the previous 18 years.

The financing schemes of the GSIS, SSS, and DBP, whose funds still constitute a major source of housing finance in the Philippines comprise:

- The GSIS Individual Housing Loan (temporarily suspended) to policyholders: up to 80% of the value of the collateral, repayable in 10–25 years at 6% interest per annum up to P30 000, 9% for P30 000–P70 000, and 12% for amounts in excess of P70 000;
- The SSS Individual Housing Loan to members: up to 60% (90% if HFC insured) of the value of the collateral but not exceeding P50 000, repayable in 10–25 years at 6% interest per annum for the first P30 000 and 9% for amounts in excess of P30 000.
- DBP Financing Schemes to P15 000 for the construction of a DBP designed low-cost house repayable in 10, 15, 25 years at 12 and 14% interest per annum.

## **Role of the Government and Private Sector**

Despite the number of agencies and the amount of public funds devoted to housing, finance in most developing countries is primarily provided by the private sector. This is less true in Hong Kong and Singapore. In the former, 53.2% of domestic dwellings were provided by the government and in the latter, it is planned that from 65 to 70% of the people will be housed in public housing by 1980.

In other countries, the fact that housing finance is still mainly undertaken by the private sector means that funds are available mainly to middle- and high-income people. Government policies and programs that try to influence the use of private funds usually are not successful. Private financiers insist on recovering their investments and even making a profit, and people, especially the poor, simply cannot afford to reimburse them. The mortgage market is usually very limited, because short-term investments promise to earn more in less time. There is practically no mortgage or refinancing available in the countries included in this study. The bulk of government funds for housing is usually in direct grants or subsidies, which are grossly inadequate.

Singapore and Hong Kong are notably different. Owing to well-conceived and executed policies, the majority of their populations are housed in serviced dwellings with good access to income-earning opportunities and urban facilities. The two countries have controlled and developed serviced land and urban transport; encouraged vigorous, competitive construction and construction materials industries; provided long-term credit for housing, etc. Impressive housing construction programs have been tailored to dwelling standards affordable by low-income groups and have differed considerably between the two cities, as well as within each city through time. Currently, the programs meet about 40% of the housing requirements without large subsidies. Only about 15% of the populations still live in slums and shacks, and public housing programs are expected to accommodate these families in the 1980s.

Of the total number of domestic units available in Hong Kong as of 1972, the government sector provided 53.2% and accommodated about 1.75 million people (44%). The private sector still played the major role, providing accommodation for about 56% of the population. Many of the units built by the private sector were larger than those provided by the public sector and were primarily for sale, whereas most of the public units were rented.

In Singapore, the private sector caters to the middle-income group, whose family earnings are above the maximum allowed for HDB flats. The houses constructed by private developers are complementary to those constructed by HDB, which concentrates on high-rise flats. The private developers construct other dwellings, such as terrace, semidetached, or detached houses, financing them through building societies, cooperative societies, banks, insurance companies, building development companies, etc.

A similar pattern exists for private sector financing in Thailand. During the last 20 years, a number of land subdivision projects for middle- and higher-income residences have been carried out under private auspices and financed largely with privately owned and controlled funds. Sources for financing are:

- Direct, i.e., private builders and development companies, and
- Indirect, such as commercial banks, investment and development finance companies, and insurance companies.

Housing undertaken by the private sector is financed mainly by the pool of building societies, housing mortgage institutions, housing cooperatives, commercial banks, borrowing companies, insurance firms, cooperative banks, and savings and loan associations. Credit given by these institutions rose to M\$391.7 million at the end of 1971 from M\$58.4 million at the end of 1961. The increase was primarily due to government intervention requiring commercial banks to



invest at least 50% of savings deposits in housing loans to individuals. Another breakthrough was the formation of building societies and housing cooperatives. The building societies grant loans on the security of freehold or leasehold properties, receive deposits, serve as agents of major firms and statutory bodies, etc.; mortgage institutions play similar roles. In contrast, housing cooperatives, numbering 70 as of 1971, develop houses as cheaply as possible and extend loans to members. Licenced borrowing companies also grant housing loans, as do the insurance companies (as of the end of 1971, 9 life, 12 general, and 11 life-general).

The public sector has provided roughly 9% of total housing investment in Sri Lanka. It is estimated that the average annual investment between 1965–69 was Rs35 million, increasing to Rs75 million for 1970–74. In contrast, the private sector invested an estimated Rs677 million in 1972. Financing for the private sector mainly came from its own resources and sale of assets, although the amount of credit available to investors for housing in 1974 was in the region of Rs162.5 million. No information is available on the volume of credit that has gone to support low-cost housing, but it can be inferred that housing credit flowed mainly to middle- and high-income groups who were good credit risks and, therefore, acceptable borrowers for institutional lending. Sources of credit at the national level are the National Housing Fund, the Development Finance Corporation, the National Savings Bank, the State Mortgage Bank, the Treasury Loan Board, state-owned banks, and commercial banks. Organizations at the subnational level are finance companies, cooperative societies, building societies, savings and loan associations, and rural banks.

As for the Philippines, the ratio of public to private investment in dwelling construction was 20:80 in the past. The private sector played a significant role in total residential activity, but its thrusts were directed toward open market housing and, on a limited scale, economic housing. To finance housing endeavours, the private sector relied heavily on its own funds and short-term credit from financial institutions. The government undertook some resettlement and low-cost housing but, because of budgetary constraints, accomplished little in the late 1960s and early 1970s. Moreover, GSIS and SSS funds for housing were confined to qualified recipients, i.e., upper echelons of factory workers, public service employees, and other middle- and upper-income groups. Although there was some attempt to design projects that would cater to low-income families, promoting low-income housing was not a special concern.

In all the countries, some factors continue to aggravate the housing situation: the low income of the majority of the people; prohibitive land and construction costs due to land speculation and high building standards; high cost of financing; and shortage of credit for low-income groups. They are all facets of finance, affecting developers/builders and buyers alike. In some countries they are being offset by novel government measures and schemes, such as joint housing ventures, secondary mortgage markets, and payroll taxes.

## **Problems and Solutions**

Joint ventures are the primary means available in the Philippines to deal with the urgent shortage of funds for adequate housing. The housing need or backlog in the urban areas was estimated at 981 000 units for 1977, and in the rural areas, was placed at 144 000 units. Without a resolute and organized mass

housing development, urban needs will increase by 884 000 units in the next decade and rural needs, by 252 400 units.

In future, the NHA, financial intermediaries, and private proponents will have to work together to provide social and economic housing. Land will mainly be contributed by the private proponent, whereas the NHA will provide funds through financial intermediaries. Liberal credit schemes already exist to finance low- and middle-income housing projects. They include affordable interest rates and repayment terms, graduated amortization, and subsidies to cover a portion of the interest due on the capital costs of construction. Moreover, according to Presidential Decree No. 1217, domestic corporations/partnerships and land-owners who invest funds in housing for low-income groups will enjoy tax breaks.

In a related move, the impending creation of a national home mortgage institute has set the stage for secondary mortgages in the Philippines and elsewhere. The need for a secondary mortgage market to support national housing programs is brought about because:

- Housing must be partly funded by public savings;
- Financial intermediaries originate home mortgages with savings that are short-term in nature;
- Institutions with investible long-term funds (savings) will find it more attractive to engage in housing finance as secondary investors.

Thus, the secondary mortgage market will make it possible to finance national housing efforts in an orderly and economical manner with long-term funds. Moreover, combining short-term funds and long-term funds will give housing a boost and will be possible through secondary mortgage markets.

The payroll tax is another potential source of long-term funds. The way it works is that employers contribute a graduated percentage of employees' earnings to a fund, and the money is applied to housing. The tax is over and above the take-home pay of employed persons and can be viewed as an increment or addition to their income. In fact, it would be tantamount to raising the minimum wage and would mean the increase in income would be converted to savings and diverted into a new fund available for housing development.

In Sri Lanka, there is a general lack of finance for investment in housing; there is a need to relate the concept of housing to demand; there is a high dependence on the private sector to invest in housing; and because of the low per-capita income and the rent controls, there is considerable doubt whether the private sector will invest in housing. Moreover, due to high unemployment in the country, it may not be economically feasible to invest in housing for the lowest-income groups.

Government bank sources and nonbank lending institutions provided an estimated Rs162 million for housing in 1974, and the prospects of mobilizing additional resources, within the present framework of housing finance, are not very promising. Institutional arrangements for mobilizing the savings of the community have yet to be developed.

A pivotal role is needed in the National Housing Fund, giving highest priority to low-cost housing, and finance provided by the Fund to house builders needs to be managed on commercial lines to give a boost to the low-cost sector. The Fund's resources could be partly diverted from the high-income to the low-income segment by charging different rates of interest depending on the size of the house and the borrower's income. At present, a scheme of differential

interest rates is already being followed, but it still has room for greater subsidies at the lower end of the scale and increased interest at the higher end to reach levels comparable to bank rates. The Fund could also be augmented by levying a fee for houses with floor areas greater than a given amount and by selling reclaimed land at enhanced values. In all these measures, the high-income builders are made to contribute toward the financing of low-cost housing. Another possibility is to make greater use of a flexible scheme for repayments to recover capital sooner from high-income households than from low-income households. Loan recoveries could be made on a rising scale to correspond to the borrowers' income. In this manner, capital could be more quickly recouped and reinvested.

## **Conclusion**

In any housing development program, the role of government is of utmost importance. The government has to create and ensure a buoyant and vibrant economy that can provide sufficient funds for housing. The government's role in housing finance is crucial, particularly in low-cost social housing. Bearing in mind the passivity of the private sector in this area, the government has to evolve effective means of harnessing private financial resources.

The experience of the six countries in this study should be studied closely for concrete measures toward solving the housing problem. Singapore and Hong Kong seem to be the most successful in financing their housing programs. The other four countries must tackle their weak institutional framework, low domestic savings accumulation, inflation, and other pertinent factors. Malaysia and Sri Lanka have made some gains but have not been able to sustain their increasing populations. Thailand and the Philippines are still in the initial stages of eliminating their housing backlogs and have not begun to cope with their rapid rates of population increase and urbanization. Although they may benefit from knowing the strategies and measures adopted by Singapore and Hong Kong, they cannot adopt them uncritically because of differences in their economic and social situations.

Possible areas of consideration are policies that reduce the cost of financing and the cost of houses and lots for low-income earners. A reasonable interest rate to motivate savings is another point to be studied.

In summary, the governments should give primary concern to evolving more realistic housing policies, particularly in the area of housing finance for low-cost housing.



(1)

Rural people build their houses themselves, often using local materials. This house of woven bamboo outside Vientiane, Laos, can last from 10-15 years under normal conditions (1).

## Moving to the city



(3)



Great numbers of rural people have migrated to urban areas, resulting in densities comparable to those in Hong Kong (2).



The rural people in the cities have traded their thatched huts for patched-up shanties such as those found in Klong Toey, Bangkok (3) and Tondo, Manila (4).



Too many people critically strain city services. Residents of Tondo, Manila, buy drinking water from itinerant vendors (5).



**Strain on basic services is acute**

Where government is able to provide water it is usually

through standpipes, such as this one in Malaysia (6), rather than individual house connections. People in Davao City capture rainwater (7).



A housewife in a Jakarta kampong fetches water from a well (8). The problem is that until recently, governments have hesitated to provide a protected water supply and adequate waste disposal to slum/squatter areas, fearing the possible backlash from legitimizing the land claims of the squatters. Their reticence has been overcome by the crisis represented in the growing slums.



## ***The future?***

*The problems of providing basic services and housing for urban dwellers are immense. Whether future cities will continue to be shantytowns (9) or planned settlements (10) will depend on creativity and innovative approaches. A look at what is going on may provide insights.*





Rural resettlement programs have been attempted. Relocation sites outside cities are provided and the government sometimes provides core housing, as in Sapang Palay, Philippines (11).

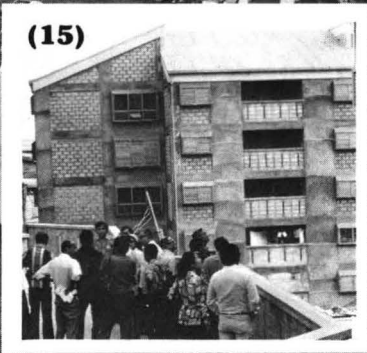
## **Relocating people is one answer**

A new settler  
has constructed  
his own house  
in this  
agricultural  
colony in  
Thailand (12).



New settlers are housed by the government in this FELDA scheme in Malaysia (13).





*High-rise housing has been provided by Singapore's program (14), but it is costly to build and is beyond the financial means of the target groups in most of Southeast Asia. Condominiums, such as this one being visited by the low-cost housing project researchers in Mandaluyong, Manila (15), can cater only to middle-income families.*





(17)

### **Seeking alternatives**



*Demolishing shanties such as this one in Manila (16) is not an alternative unless linked with other programs. In Tondo, Manila, a sites-and-services project financed by the World Bank combines upgrading with relocation. Some houses are realigned and people lift them to upgraded locations (17). Others located on what would be a street in the new plan are demolished and people affected are relocated to the newly opened site in Dagat-Dagotan (18).*



*Drainage ditches and new water supply lines are provided with peoples' assistance in Tondo (19). In Jakarta, another upgrading scheme is changing the urban villages called kampongs. Cement walkways (20) are replacing the muddy paths (21). And small canals are provided with embankments and are cleaned (22).*



**Building  
on the  
existing  
sites**

(22)



# 6

## Land Policies and Practices

Ramon Casanova, Tan Soo Hai,  
K.C. Leong, and S.H. Soepangkat<sup>5</sup>

In Southeast Asia, as in many developing regions, the main problem in housing the urban poor is usually not the construction of dwellings but rather the availability of land and the planning and regulation of its use. This is especially true in large urban areas where land is at a premium.

Most of the countries in this study have not effectively coordinated low-cost housing with an adequate land policy; Hong Kong, Malaysia, and Singapore have come the closest. Although all the countries, except Laos, have legally provided for the acquisition of land for public housing, they lack other components of a comprehensive land policy that can make possible the smooth execution of a low-cost housing policy. They need to support the land acquisition policy with appropriate land prices, land banking, taxation, land administration, land valuation, and town planning.

### Land Acquisition Policies

The countries in this study have been hesitant to enforce their power to acquire land for housing and other developmental purposes (Table 9). With the exception of socialist Burma, they have held to the sanctity of private ownership of land and have resorted to legal measures only when forced by demands for urban housing and the high cost of land arising from its scarcity.

#### Hong Kong

The approach to land acquisition in Hong Kong is progressive compared to that in other countries. The government owns all the land and thus can control its use for public housing. It leases the land; some is sold by auction or made available through private treaties. At the end of each lease, the existing social and physical organization of urban areas is reviewed before a new lease is issued.

Public housing projects, public utilities, schools, clinics, and approved charitable groups may acquire land through private treaty grants, which are subject

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<sup>5</sup>Col. Soe Tin, who participated in the January 1975 Manila meeting of the low-cost Housing Study Group, subsequently contributed a short paper, "Land Policies Prevailing in Burma," which helped the authors to comment on the situation in Burma.

Table 9. Legislative and effective powers to implement public housing programs.<sup>a</sup>

Factor	Hong Kong		Malaysia		Singapore		Sri Lanka		Burma		Indonesia		Philippines		Thailand	
	Effective power	Possible power within existing law	Effective power	Possible power within existing law	Effective power	Possible power within existing law	Effective power	Possible power within existing law	Effective power	Possible power within existing law	Effective power	Possible power within existing law	Effective power	Possible power within existing law	Effective power	Possible power within existing law
Powers of acquisition	+2	+2	+2	+2	+2	+2	+2	+2	+2	+2	+1	+2	0	+2	+1	+2
Powers to control land prices	+1	+2	-2	+2	n.a.	n.a.	+1	+2	+2	+2	-1	-1	0	+2	-2	+1
Powers to create land bank	n.a.	n.a.	-2	+2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	+2	0
Powers to tax land transactions	n.a.	n.a.	-2	+2	n.a.	n.a.	+2	+2	n.a.	n.a.	+2	+2	n.a.	n.a.	-2	n.a.
Well-organized land office	n.a.	n.a.	+2	+2	+2	+2	+2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-1	n.a.
Adequate financial resources	+1	n.a.	0	+2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-2	n.a.	n.a.	n.a.
Experienced valuation officers	n.a.	n.a.	+1	+2	+2	+2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Experienced planners	n.a.	n.a.	+1	+2	+2	+2	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Powers to gazette town plans	+1	+2	0	+2	n.a.	n.a.	+2	+2	+2	+2	n.a.	n.a.	n.a.	n.a.	-1	+2

<sup>a</sup>+2 denotes strong power; +1, adequate power; 0, partial power; -1, little power; -2, no power; n.a., information not available.



*Shops occupy the ground floor of Wah Fu housing estate, Hong Kong. Land is at a premium in the city-state, but imaginative policies and practices have helped to ensure everyone has a space.*

to the scrutiny of the Governor-in-Council or a delegated authority. The treaty sets a premium that ranges from nil for nonprofit schools to full market value for public utilities.

If land is urgently required for public purposes such as road widening, community buildings, or public housing schemes, it may be expropriated from the current lessee by a land exchange or cash compensation. If the lessee is unwilling to cooperate, the Crown Land Resumption Ordinance can be invoked. This ordinance provides for review by the Resumption Compensation Board. The Board comprises a chairperson (appointed by the Chief Justice) and two members, one representing the lessee and the other appointed by the government. Since the Second World War, more than 100 hectares in the New Territories for New Town development have been obtained through the ordinance. Currently, a Land Tribunal Ordinance is under preparation to replace the Resumption Compensation Ordinance.

Compensation for land is sometimes given in the form of what is called a Letter B. Instead of cash compensation, vendors may opt for Letter Bs, which entitle them to 2 square feet (.182m<sup>2</sup>) of building land for every 5 square feet (.465m<sup>2</sup>) of agricultural land they surrender. The Letter Bs may be resold or exchanged. This system has proved to be attractive to both the original lessees and the government, which is spared heavy expenditures on land resumption in the initial stages of New Town developments.

## **Malaysia**

Malaysia, like Hong Kong, has quite an adequate land policy. Outside the federal territory, land is a state, rather than a federal, government matter. Parliament may legislate on land matters, but the federal government has no executive authority over land without state consent. To obtain land, the federal government may either buy it directly from the proprietor or request the state government to acquire it compulsorily under the Land Acquisition Act.<sup>6</sup>

Article 83 of the Constitution provides that the federal government may direct state governments to acquire land for any public authorities. For land grants, in perpetuity, the federal government must pay an appropriate quit and a premium equal to the market value for the grant. The federal government can only solicit state land when it is in the national interest to do so and only then if it reimburses the state for expenses in acquiring a substitute piece of land.

The state is authorized to acquire land for any public purpose; for any

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<sup>6</sup>The pertinent constitutional provisions are in Article 76 Clause 4, which states:

Parliament may for the purpose only of ensuring uniformity of law and policy, make laws with respect to land tenure, the relations of landlord and tenant, registration of titles and deeds relating to land, transfer of land, mortgage, leases and charges in respect of land, leaseholds and other rights and interests in land, compulsory acquisition of land, rating and valuation of land, and local government; and clauses (1)(b) and (3) shall not apply to any law relating to such matter.

Article 80(3) so far as law made under Art. 76(4) makes provision for conferring executive authority on the Federation it shall not operate in any State unless approved by resolution of the Legislative Assembly of that State.

function judged to be of public utility; or for mining, residential, agricultural, commercial, or industrial purposes. Just compensation is to be paid at the market value in all cases.

## **Singapore**

About 55% of the total land area in Singapore is held by government and statutory authorities like the Housing and Development Board,<sup>7</sup> the Jurong Town Corporation, and the Port of Singapore Authority. The rest of the land is privately owned.<sup>8</sup>

The methods of acquisition used in Singapore are similar to those used in Malaysia, that is, private treaty and compulsory acquisition. Land resources are scarce in relation to demand, and the government is sometimes unable to strike an agreed price in a private treaty. The Land Acquisition Act, 1966, therefore, entrusts the HDB with the heavy responsibilities of systematically acquiring suitable land for building, urban renewal, and related programs. The Act stipulates that the acquisition must be, in the opinion of the Minister for Law and National Development, of public benefit, of public utility, or in the public interest.<sup>9</sup> Compensation is based on the market value at the date that the landowner is officially notified.

Because the government encourages maximum private investment, it carries out compulsory acquisition only when the private sector appears incapable of undertaking projects of social benefit and national development, for example, low-cost public housing.

## **Sri Lanka**

Sri Lanka is not too far behind in coordinating its land policy with its low-cost housing policy. A wide range of instruments are at the disposal of the state to obtain private land for housing development. Under the Crown Lands Ordinance No. 8 of 1947, the government is empowered to make absolute or provisional land grants to sell, lease, or otherwise dispose of state lands; and to enter agreements for the sale, lease, or disposal, or occupation of state lands.<sup>10</sup> The same ordinance empowers the Minister of Lands to surrender state lands in exchange for private property.

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<sup>7</sup>Formed in 1960, the HDB is the single authority entrusted with the management of the vast number of housing estates to ensure that the government's social housing policy is carried out with maximum efficiency.

<sup>8</sup>The various forms of land title include grants in fee, simple (freehold) statutory land grants (titles in perpetuity subject to payment of quit rents), and leases of 999 years, 99 years, and less than 99 years. In the central area more than half of the land is under private ownership.

<sup>9</sup>When the piece of land is declared under acquisition, a collector appointed by the President proceeds with the acquisition of the land by first giving notices to the landowners concerned. An inquiry is then conducted and reasonable compensation made to the landowners concerned. Appeals may be made by an aggrieved landowner to the Land Acquisition Appeals Board.

<sup>10</sup>These grants may be made to governments, local authorities, housing societies, or individuals for the construction of houses.

The state is also authorized to take possession of land abandoned by the owner for a period of 8 years or more if no valid claim is made by the owner. Furthermore, the Minister of Lands may acquire land for any public purpose, providing compensation to the owner at the assessed market value of the land. The owner, after notice of acquisition, may lodge objections or compensation claims that are referred to a Court of Law.

## **Burma**

In Burma, a socialist state, land is not privately owned; all lands are state lands,<sup>11</sup> and individual "rights" to land are established by grants, leases, and licences. The law reserves government rights on all mines and mineral products and all buried treasures. At present, freehold grants are not available. Leaseholds run from 5 years to a maximum of 90 years and reflect the use to which the land is to be put and the degree of development of neighbouring lands. The land office issues temporary licences for limited terms of 3 years. Squatter tenure is recognized, but squatters may be evicted without compensation.

Land needed for public purposes may be easily acquired under the Land Acquisition Act, which calls for compensation equal to the market value of the land plus 15%.<sup>12</sup> Land needed for housing, urban development, and town planning may be acquired with minimum lapse of time under the National Housing and Town and Country Development Board Act of 1951. Under this act, awards for compensation favour the government and do not include the added 15%.

## **Indonesia**

The procedure for land acquisition in Indonesia is uncomplicated and does not compare favourably with the progressive systems of Hong Kong, Singapore, Malaysia, or Burma.

Administered at the national level by the Ministry of Home Affairs, at the local or provincial level by the Directorate of Agraria of each province, and at the regency or city level by the Sub-Directorate of Agraria, land policy is that the government has unequivocal authority, and the President has the power to abolish land rights.

Government land may be acquired from the Minister of Internal Affairs via a title procedure stated in the Regulations of the Minister of Internal Affairs 1972 No. 6. The right to the land is purchased by payment to the State Exchequer and is registered at the local land register office. The title is known as a "certificate," which is regulated by Government Ordinance 1961 No. 10.

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<sup>11</sup>The Constitution of The Socialist Republic of the Union of Burma in Article 18 paragraph (a) states: "The State is the ultimate owner of all natural resources above and below the ground, above and beneath the waters and in the atmosphere, and also of all the lands."

<sup>12</sup>For example, to quote Sect. 19A(b): "In respect of land purchased prior to 4th January 1948, the market value or the price which the owner paid whichever is less," and (c) "In respect of land purchased after 4th January 1948, the market value or the price which would have been payable in December 1947 or the price paid by the present owner whichever is the lower of the three."



Government lands illegally occupied by people are cleared by the city or regency chief administrator under the authority of the 1960 Act No. 51: "Prohibition of land occupation without permission from the rightful claimant or his proxy."

Compensation for expropriated land is usually given in the form of funds or land, depending on the policy of the local government. A settlement is negotiated with private owners under the supervision of the mayor or regent chief administrator. When negotiations fail, the government is authorized by Presidential Instruction 1973 No. 9 to compel relinquishment of land. However, the Presidential Instruction stresses that expropriation should only be undertaken in the public interest and should be executed cautiously in a righteous and wise manner. There is also legislation to protect the rights and interests of the land owners.

Compensation<sup>13</sup> is based on the actual value of the land determined by an appraisal committee under oath to make a fair and objective valuation.

## **Philippines**

In the Philippines, existing land policy prevents effective implementation of a low-cost housing program. Anchored upon the freehold system of land tenure, it permits the state to grant absolute ownership of land to individuals. The civil law concept, which has been in force in this country for more than 400 years, gives landowners the right to use, to possess, to dispose, and even to *abuse* the land, as long as they do not use it in a manner contrary to law, to public order, or to public policy. Land is a simple commodity of trade that in urban centres and major cities has fallen into the hands of the enterprising few. And people in the middle- and low-income brackets find it extremely difficult, if not impossible, to acquire land for housing. The result has been land speculation on the one hand and rampant squatting on public and private land on the other.

As in most other countries, the state is empowered by the Philippine Constitution to expropriate private property for public use and housing upon payment of just compensation. The government can also subdivide and resell the land at cost to deserving landless or homeless citizens. The problem is that there is no mechanism to control land prices, and the soaring costs of land have discouraged government action. The 1973 Constitution of the Philippines reaffirms the country's commitment to promote social justice and empowers the state to regulate the acquisition, ownership, use, enjoyment, and disposition of private property. It has triggered a series of major land policy changes, chief among which are: Presidential Decree No. 2 of 22 September 1973, proclaiming the implementation of the land reform program across the country; Presidential Decree No. 27 of 21 October 1973, granting tenants the right to own rice and corn land they till and giving them 15 years to pay the purchase price to the former owners; Presidential Decree No. 76, requiring that all persons owning or administering land file sworn statements of the land's value and ruling that compensation for expropriation be based on the declared value or assessed value whichever is lower.

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<sup>13</sup>The Act does not clearly define the criterion concerning the meaning of "proper compensation." Although compensation will be based upon the actual value of the land concerned, the price is not necessarily the same.

Of more recent vintage are announced policies of the President to build into the system new land use controls, such as:

- All alienable and disposable public lands are to be owned by all and shall no longer be sold or transferred to private persons but shall only be subject to lease or similar dispositions.
- Private ownership shall be recognized, and existing titles to land shall be given validity and value.
- Private lands, as instruments of national development, cannot be built up in any way that alters their original purpose without permits granted by a national government authority.
- The sale or transfer of private land or its alienation or encumbrance shall be made in accordance with the development plans prepared by the national government.
- Expropriation of private lands shall be limited to public purposes, like housing, public works, and socioeconomic development in general.
- An office of human settlements shall be created to ensure quality of life compatible with health and dignity so that land may be conserved as a common resource for future generations.
- The principle of free enterprise shall be respected in production, manufacturing, agriculture, marketing, and trading, but in the use or disposition of land, the principle of regulation of private property shall apply in accordance with the provision of the new constitution.

## **Thailand**

At present, Thailand's National Housing Authority has three avenues open to it in acquiring land for public housing. It may obtain government lands by patents or grants involving transfer of ownership from another agency. For example, the Klong Toey slum area was transferred from the Port Authority of Thailand to the National Housing Authority. To obtain private land, the Authority can either pay the owner a normal market price or exercise the right of eminent domain, which is applicable to land required for public purposes and is subject to payment of reasonable compensation. Eminent domain is limited to acquiring land for use by public, quasi-public, or specific private agencies and groups.

Thailand's clause on reasonable compensation provides the NHA with some leeway to acquire land for public housing. Certain inroads have also been made in other countries, especially in Singapore and Hong Kong, but, largely, land acquisition for low-cost housing is still very much hampered by existing legislation and legal precedents. Only in socialist Burma has the government taken the bold step of declaring that all land belongs to the state. Elsewhere, constitutional and statutory provisions protect the right of the individual to use land.

Still, there are a number of innovative measures; one noteworthy approach is Hong Kong's system of exchanging plots of land for those it needs. Another is the system of issuing certificates of compensation, or Letter Bs, instead of outright cash for land.

The approach used in Singapore, wherein the Housing and Development Board and other authorities engage in large-scale purchase and assembly of

land to anticipate development, is also progressive. Of course, it requires considerable financing but works quite effectively when coupled with compulsory acquisition powers by the state and the exercise of the power of eminent domain.

All the approaches broach the problem of how to set the rates of compensation for land acquired by the state; the only approach that eliminates the problem is the one taken by Burma. In the Philippines, where fair market value is the basis for acquisition, the task of housing authorities is made most difficult. In Indonesia some form of arbitration simplifies the work of public authorities; compensation procedures are carried out under local government officials and the rates are decided by an appraisal committee.

## **Other Land Use Policies**

Shortage of available land inevitably results in high land prices, but an effort may be made to control land prices by preventing hoarding and speculation. One method is to impose a building covenant requiring a certain investment in the land within a stated time and prohibiting resale until the covenant is fulfilled. This method has been effective in Hong Kong where it has been used for some time.

In Malaysia, the Land Speculation Tax Act, levies a 50% tax on any gains from the resale, within 2 years, of properties valued at M\$100 000 or above. A Foreign Investment Committee has also been set up to prevent land speculation.

At present, the government of Indonesia has made no provision for controlling land prices, and no effective measures to prevent speculation exist. It is proposed that legislation should limit land ownership and provide for high taxation on idle land. Speculation may be decreased by wide publicity of the planning for regional development schemes determined by the local government. The existing land tax only imposes a low tariff on idle lands.

The Public Land Law (1936) of the Philippines, designed to prevent "regressive and wasteful land tenure," invests the national legislature with power to determine the size of public lands to be developed, held or acquired by, or leased to, any qualified individual. Unfortunately, the law does not overbalance the effects of free enterprise sale or lease of public land.<sup>14</sup>

Another problem in the Philippines is that lands disposable for residential, commercial, or industrial purposes are often too costly to develop, are limited in area, or are unsuitable for the intended purposes. Their availability merely defeats the intentions. The Real Property Tax Administration Code is an attempt to limit unused lands but its tax rates are too low to be effective. Proposing a levy of 2% tax on idle private lands, it may force land prices up instead of alleviating the land problem.

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<sup>14</sup>Speculative land hoarding is not the only cause of spiraling land cost. Another factor contributing to the high cost of land is the wide disparity between the cost of the land bought in large tracts and the cost of individual lots after they have been subdivided. There is also no free and open land market in many places. Either land is too costly or it is totally held out of use.

The Philippines urgently needs a proper land policy with mechanisms to regulate the prices and taxes on land<sup>15</sup> and to enforce the exercise of eminent domain. The government should take total control of land use and should form land banks to increase public access to urban land.

The government has taken the first step by declaring that no alienable and disposable public lands can be sold or transferred to private persons. At present, it offers land through leases, which have a built-in mechanism for combating land speculation and provide a steady source of revenue. Now the government can more easily avail itself of land for vital socioeconomic projects.

In Thailand, the metropolitan area of Bangkok is severely infected by speculation. Indeed, more than half the land in the city is in the hands of land speculators. There is little control on land prices because the Thai government charges only 1.5% of the selling price as a transfer fee and levies no capital gains tax. At present, the city is headed toward almost complete control by land speculators aided by commercial banks.

Burma is the only Southeast Asian country that has an effective system of controlling land prices. In Indonesia, the Philippines, and Thailand land prices are high, and in Hong Kong, high land prices may be unavoidable because of land pressure. Unfortunately, no information on Singapore's power to control land prices is available from the information collected.

## **Land Banking**

In countries that adhere to the principle of private ownership of land, one measure being introduced to control land availability is land banking. The principle is that the government, usually through some special development authorities, purchases as much land as possible at a time when prices are low. The land thus "banked" is controlled and regulated by the government and used for development in the future. Land banking is a forward looking and useful approach but to date the land banks in Asia have primarily been the result of historical accident rather than forward planning.

In Thailand, through some fortuitous circumstances, the government owns large tracts of land in the Bangkok metropolitan area. The Port Authority of Thailand is one agency that has acquired reserved land for future use; and the State Railways of Thailand, the Ministry of Interior, and the Ministry of Defence are others. The King's Property Office also holds land that could be turned to public use with the consent of the office. None of these agencies collected land as part of a national policy, but they have accumulated a substantial reserve of public land that forms the nucleus of a land bank.

Malaysia does not have a land bank but may eventually form one with lands reclaimed from disused mining grounds.

A Hong Kong land bank would appear increasingly unrealistic because of the shortage of land in the city. In the past, the government was able to capitalize on the fringes of the urban areas. The land was hilly and broken and required extensive development to make it suitable for buildings. The material excavated from the areas was used to reclaim land, and the reclaimed land was suitable for industrial establishments. Now, the practical limits for further reclamation

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<sup>15</sup>Regular land taxes as well as land development taxes in case of leasehold; special assessments and/or betterment taxes to recover unearned development projects; penalty taxes to prevent the misuse, abuse, or underuse of land are needed.

schemes in the fringe areas are being reached and the emphasis is being transferred to the development of self-contained new towns in the New Territories.

In other countries, the high cost of land makes the setting up of land banks difficult. Furthermore, the entry of the government into the land market creates serious price increases in the private sector: the more the government buys, the less is available to private developers and the higher the prices. Because the private sector still produces much of the housing in Southeast Asia, land banking may be inimical to the public interest in the long run, especially if the government does not develop the lands quickly. Unfortunately, so much of public finance is devoted to land purchases, very little money is left for further development.

## **Taxation of Land Transactions**

Because most governments in Southeast Asia are reluctant to control land prices directly, they sometimes employ an indirect method — taxation of land transactions. Taxes are used to prevent speculation, to generate public income, to encourage development in some areas and discourage it in others, or even to force the development of idle lands that may best be used for public purposes.

In Malaysia, a minimal stamp duty is levied on all land transactions, and to discourage speculation, the government imposes a steep tax on properties that are resold within 2 years of purchase. This tax setup has its drawbacks. At present, it won't deter good land speculators who can afford to let land lie fallow for 2 years, and it doesn't touch on a much larger problem in Malaysia: the undervaluation of land to avoid taxes.

The Indonesian government, too, imposes a tax on all land transactions; for those that involve a direct transfer of land titles, it is 1.3% of the land price.

Sri Lanka also collects tax on land transactions but goes a step further, taxing land and housing property. Coupled with an effective weapon to enforce a more equitable distribution of land, taxation is a powerful tool in Sri Lanka. The three principal measures for land regulation are the Wealth Tax; the Capital Gains Tax; and the Land Reform Law. The wealth tax is payable yearly. Assessed at current market prices, it covers land and other immovable and movable property and acts as a deterrent to the ownership of unproductive lands. It is supported in principle by the Land Reform Law No. 1, 1972, which is not a form of taxation, but rather a limit on the size of private holdings. The law confines ownership to 50 acres of land per family or 25 acres of *padi* land.

The Capital Gains Tax in Sri Lanka is a preventive against land speculation. It deals with profits from property transactions, making them less attractive to speculators.<sup>16</sup> At the normal rates of income tax, large profits can be unequivocally reduced.

In Thailand, very little or no tax is levied on capital gains, although authorities have advocated several control measures including powers to tax land transactions. The absence of taxation — so-called land boom control measures — has been blamed for the unreasonably high prices of land in the metropolitan Bangkok area.

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<sup>16</sup>(Sale Price of Land/Market Value of Property) minus (Market Value as at 1.4.57 divided by Purchase Price — if purchased later — plus Cost of Improvements plus Expenses of Acquisition and Sale).



*Recreation areas in the housing projects of Singapore attest to the sound land policies.*

Tax legislation on land transactions is only as good as the government machinery that supports it, and, unfortunately, in most Southeast Asian countries, support systems are lacking. Land assessment, valuation, record keeping, and regulation of the bureaucracy are not operating smoothly. Often, there are basic philosophical conflicts, such as whether to use taxes as income or as a tool for civic regulation, and whether to rely on the private or the public sector for the development of land and the provision of housing.

### **Land Administration and Management**

Commonly, the organizational means to implement statutes and policies are fragmented and uncoordinated. Individual offices are created to carry out specific functions, such as land purchasing, land regulation, zoning, or town and country planning. They exist in isolation at national (federal), provincial (state), and local (municipal) levels, vie for the small numbers of trained personnel, and are forced to use outmoded, inadequate equipment. The pattern, however, is not universal. Singapore is an exception and, to a lesser extent, so are Malaysia and Sri Lanka.

The Singapore government vests in a single authority, the Housing and

Development Board, the management of all public estates. It also offers private developers the benefit of its expertise and provides them with comprehensive plans; land clearance, amalgamation, and resubdivision; and infrastructure support.

In Sri Lanka, the Land Reform Commission acquires private holdings that exceed the owner's legal limits. Then it develops them and turns them over to the Land Commissioner's Department, which administers leaseholds, cooperative settlement schemes, and housing programs.

In Thailand, the administrative mechanisms are less satisfactory. The National Housing Authority acquires land through its own resources and ingenuity and does not benefit from the support of other authorities, such as the Land Office and the Registrar of Titles Office. The registrar agency in the land office functions purely as a vehicle for registration of land transactions and to date has not been utilized as a tool to effect a more equitable distribution of land among the population.

In Malaysia, land offices exist at both the state and the federal levels, with the state having constitutional responsibility for land administration. The offices are organized, but they suffer from a shortage of experienced staff. The personnel shortage extends into planning and land valuation but is less marked. Each state has a Town and Country Planning Office with one or two professional planners in charge. More planners are required, and their numbers are slowly increasing at a rate of six planners per year. Large areas of the country are now covered by regional planning and development studies, and the preparation of structure plans for all development areas is being investigated. Qualified professional land valuers are also taking their place in the service, and through the Valuation Division of the Treasury are now giving strong support to the land office in checking speculation and determining land values for purposes of fixing taxation and stamp duties.

In Singapore, the planning department is part of an integrated ministry for national development. Experienced planners work closely with overseas consultants to prepare master plans covering the whole island. A special division updates the plans, and development control planning is undertaken by another division that trains and employs local personnel.

## **Town Planning**

In Hong Kong, town planning is aimed at separating noncompatible land uses by introducing zoning restrictions in areas where the land use is not governed by lease conditions. In older parts of the urban area where most leases are for 999 years, the program has been to resume control of lands to ensure improved layouts with better open space and community facilities.

In Sri Lanka, the prevailing land laws indicate the government has tight control over land use; grants or leases issued by government stipulate use and are rendered void if the land is used for any other purpose without government approval.<sup>17</sup> Failure to comply with any of the conditions in the grant or lease empowers the government to resume the land and confiscate all trees, crops, buildings, and salt works on the land.

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<sup>17</sup>Penalties include confiscation of the land and property by government, eviction of the occupants from the land, fines, and imprisonment.

Land use laws in Burma include the Land Nationalisations Act, which safeguards against urban encroachment on agricultural lands. The law requires central government sanction for all alienation of land, making wrongful use of agricultural land a punishable offence.<sup>18</sup>

In Thailand, zoning plans are an accepted means to direct land use, but their enforcement, especially in the Bangkok metropolitan area, may be far from satisfactory. Problems arise from the procedures to determine the exact location and boundaries of land required by government and from the procedures to update town plans and make fuller use of provisions under the Town Planning Enactments.

Thailand's difficulties are theoretically circumvented in Malaysia where the government has power to update plans as well as gazette them.

## **Conclusion**

The differences in land policy and land laws existing in the countries in this study have resulted largely from historical circumstances modified by social and cultural practices. With the exception of Thailand, all the countries were dominated by colonial powers at some time and those with similar or identical colonial tradition share common traits in legislation, attitudes, etc.

Malaysia, Singapore, Sri Lanka, Hong Kong, and, to some extent, Burma inherited their land laws and policies from the British colonial system, whereas the Philippines came under Spanish colonialism and later American influence. Indonesia, which was dominated by the Dutch for several hundred years, exhibits the remains of Dutch tradition, and Laos has felt the effects of French domination and, more recently, revolution.

Most of the countries have become independent relatively recently, and their evolving laws have just begun to take cognizance of local customs and practices.

In the years to come there will, no doubt, be considerable changes in land laws, rights of land ownership, systems of land tenure, etc. Much of the prevailing legislation is out of date and no longer consistent with the times. Land policies have already been modified in places like Hong Kong and Singapore to enable the governments to face up to the enormous task of providing adequate housing for their populations in the relatively limited space available. In both Hong Kong and Singapore, governments have taken a dynamic approach to land policies and land tenure systems and have attained substantial achievements. Successes in public housing were made possible through drastic changes in laws and practices relating to subdivision, ownership, and alienation of land.

In Singapore, particularly, town planning legislation and town planning practices were used effectively to rezone areas, control population density, and secure the release of vast areas of land for public housing. The government of Singapore realized early the value of urban planning in public housing policy and has revamped town planning enactments to allow government flexibility. In Singapore, there has been a willingness to review and modify programs — a quality much needed in countries like Malaysia, which has not changed the Town Planning Enactments since 1932.

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<sup>18</sup>Building bylaws and regulations framed under the Rangoon Municipal and Burma Municipal Act demand that special licences be acquired when building premises are used for industrial and specified commercial purposes.





# 7

## Locational Planning<sup>19</sup>

Y.M. Yeung

...economic development could only be separated in practice from physical planning at considerable cost and frustration. As complementary and interrelated parts of the same process, they need to be given equal weight and approached with the same vigor. Although many nations have set up national economic planning machinery, very few have recognized the spatial and locational aspects of economic growth, and these aspects have generally been neglected in development programs.<sup>20</sup>

The quotation above is especially applicable to low-cost housing — housing intended for lower-income groups — in Southeast Asia. Like other development programs, low-cost housing has rarely been given the locational considerations it rightly deserves. Some of the overriding concerns have been financial means, land availability, administrative capability, and politics. Location, which embraces not only geography but also space in social and economic terms, has often been decided by a set of givens or implicit assumptions that spell failure for low-cost housing projects.

### Theory

Low-cost housing may be viewed as an exercise that embodies location from the standpoint of the producers (usually governments) and from that of the consumers (residents of housing projects).

The producer or developer decides where housing will be erected, who will likely occupy it, how much it will cost, etc. In low-cost housing, the government usually provides some form of subsidy and thus assumes the responsibility for making the decisions. It considers legal and fiscal powers for land acquisition, political exigencies, etc. and tries to view low-cost housing in the social and economic context of society at large. For example, the government must ask: Will housing be linked to national policies? Who will qualify? What income levels will be subsidized from public funds? What measures will be available to modify income policies? And will low-cost housing projects be separated from higher-income housing? Theoretically, the producer may view low-

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<sup>19</sup> Thanks are due to Josefina Ramos, Barry Will, Luke Wong, and Sirichai Narumit for constructive comments on an earlier draft of this chapter.

<sup>20</sup> A statement made in September 1965 by the United Nations Committee on Housing, Building and Planning. Quoted in Roque A. Magno, *Physical planning strategy for the Philippines*. (National Economic and Development Authority 1974/75).

cost housing, at best, as an optimization of human and other resources, and, at worst, as an effort to placate voters.

The producer's choice of location affects the consumer's whole gamut of daily activities, acting as the focus for patterns related, for instance, to the place of and journey to work, the frequency and place of shopping, schooling, visits to doctors, and recreation. In fact, all activities are locational decisions based on convenience, cost, and time. When people decide where to live, they set the limits for later locational decisions. They ask themselves: How will I get to work? Will there be job opportunities nearby? Where will my children go to school? Basically, "how will I satisfy my daily needs?" To a degree, housing may be evaluated by surveys of residents' views on their locational decisions, taking what Stephen Yeh calls the inside-out view. This mode of evaluation has been tried with moderate success in Singapore, Hong Kong, and Malaysia.

The ideal location would be one that satisfied all the locational decisions of its residents. Unfortunately, in real life ideal locations are rarely attainable for low-cost housing projects. The next best alternative appears to be neighbourhood planning, which opens up new possibilities by anticipating residents' needs and introducing services to meet them. Planners simulate behaviour patterns of potential residents and aim at maximum use of a given location. The major drawback of neighbourhood planning is that it requires large capital outlay and is dependent upon cooperation from development programs other than housing. Although neighbourhood planning is not without its critics, it has proved to be a practical, guiding force in massive housing developments in Singapore and, to a more limited extent, in Hong Kong. At present, no other planning principle offers as much. In future, it is hoped that planned neighbourhoods of convenience will become, as Liu Thai-Ker has put it, neighbourhoods of community with social and cultural ties.

The most important concern in neighbourhood planning should be residents' employment and journey to work. A recent survey (1973) of squatters in Kuala Lumpur revealed that local employment opportunities were among the chief factors in the persistence of squatter life (Sen in press). In the Dindaeng-Huaykwang projects in Bangkok, it was admitted that the locations and sources of employment had not been given serious consideration. Surveys of the project indicated that about one-quarter of the household heads were able to find work in the local district, two-thirds journeyed to work by bus, and another quarter spent 40-60 minutes traveling one way (Noranitpadungkarn 1978).

### **Location: the Southeast Asian Experience**

Planning techniques vary widely in Southeast Asia, with Laos perhaps at one end of the continuum and Singapore at the other. The former has few guidelines for locational planning, and the latter has established procedures that have been followed for more than a decade.

In all the countries, planning is influenced by the physical and financial availability of land. In government housing projects in the Philippines, for instance, the availability of land for purchase at low acquisition cost is one of the major criteria for site selection in the metropolitan Manila area. Other considerations are proximity to heavily populated areas, accessibility to public transportation systems, and accessibility to water and power facilities (Orola 1975). In general, planning in the Philippines makes provisions for community services

and facilities, such as recreation and open spaces, schools, religious facilities, neighbourhood markets, and shopping areas.

Elsewhere in Southeast Asia also, land availability has been a principal determinant in shaping the pattern of development. In almost every country, large-scale low-cost housing projects are located in the city periphery where land is more readily available. In Hong Kong, for example, in 1974, Dwyer observed marked contrasts in the location of public and private housing (Dwyer 1977). Private housing development was concentrated in the inner city, whereas public housing was scattered on the outer fringe. In fact, Pryor noted that in 1973, 70% of the total gross floor area of private housing was in the inner districts of Hong Kong Island North and Kowloon and that 88% of total floor area in public housing was in the outer districts of Hong Kong Island South, New Kowloon, and Tsuen Wan (Pryor 1977). The main reason for the disparity is that private developers have invested in piecemeal rehabilitation of old properties to take advantage of the high market demand in the central areas. Although, initially, the government also built in the city centre on sites made available by squatter fires or public squatter clearance programs, after the 1950s it turned its attention primarily to peripheral areas.

In Singapore, too, large-scale construction programs since 1960 have been launched in the outlying areas where large tracts of land were assembled at lower costs. Although at one time a number of urban renewal projects were carried out in the more central localities, the latest developments have been self-contained satellite towns, such as Toa Payoh, Queenstown, and Macpherson estates. These are located about 8 km from the city centre, a distance that is estimated to be close enough for commuting without severe economic strain. The newest proposals for new towns are much larger than previous ones but will still conform in location and population size to the broad framework of the Concept Plan formulated by a team of United Nations consultants and accepted by the government in 1971.

In Jakarta, the three sites-and-services projects at Klender, Cengkareng, and Depok are also peripheral to the metropolitan area, ranging from 10 to 25 km from the city centre.

Even in Malaysia, low-cost housing projects in the cities tend to be governed by land availability. Future developments are likely to be farther and farther from the city core, although at present the government is exhausting its stock of inner-city lands, building up rather than out. Tan has noted that low-cost housing is often erected on residual properties owned by the state or the municipality and consists mainly of high-rise buildings with densities far in excess of adjoining properties (Tan in press). In a country where high-rise living is new, pioneering of this life-style through public housing has attracted some criticism. Leong (in press) and Tan (in press) have cited inexperience, political haste, and planning constraints as negative factors. Sen (in press) has strengthened their observations, finding that squatters generally do not like the high-rise life-style and would prefer to live in four-story housing units. Not surprisingly, Sen's findings are similar to those from squatter and other surveys in Singapore in the 1960s. More recent research in Singapore, however, has indicated that initial inhibitions, notably among the Malays, have been overcome.

All other things being equal, it appears that most Asian people prefer smaller buildings with few people. Unfortunately, the increasing shortage of land and the rapid population growth suggest that high-rise housing is inevitable in Southeast Asia and that Frank Lloyd Wright's vision of the broadacre city is an im-

possible dream. In fact, land pressure is so great in some cities that the only solution is high-rise, high-density housing. The city-states of Singapore and Hong Kong are examples par excellence.<sup>21</sup>

Hong Kong deserves the credit for first experimenting with high-rise, high-density public housing; in the mid-1950s, the government launched high-rise living and experienced remarkable successes in the North Point Estate. Singapore was not far behind; it adopted the high-rise solution wholesale in the 1960s. Before that time, adequate housing provision for the whole population was only an elusive goal, even though the government had entered the field of public housing as early as 1927.

In Singapore, high-rise buildings have actually meant more living space for residents. Comparative statistics leave no doubt that residents in HDB premises enjoy much greater floor area and open space per person than they did before moving into public flats. Yeh and Lee (1968) have shown that living space per person more than doubled after relocation, increasing from just under 3 m<sup>2</sup> to 6 m<sup>2</sup> per person. And on the basis of more comprehensive and detailed data, Liu brought home the point more forcefully (Liu 1975), showing that population density plunged from 940 persons per acre in Sago Lane to 150 persons per acre in Redhill/Henderson Estate. Residential floor space and open space had jumped from about 4 m<sup>2</sup> and 2 m<sup>2</sup> respectively to 7 m<sup>2</sup> and 20 m<sup>2</sup> per person.

The reaction to high-rise housing in the rest of Southeast Asia has been mixed. In Thailand, the National Housing Authority appears convinced that high-rise housing is the answer to Bangkok's housing shortage. Encouraged by the Dindaeng-Huaykwang projects, it has proposed upgrading the present density limit of 60 dwelling units per hectare to 187. The Town and Country Planning Bureau, which is responsible for the Bangkok Master Plan, has agreed to consider the proposal.

The Sri Lankan experience, on the other hand, has been negative. In the Maligawatte Housing Scheme in Colombo a high-rise flat costs Rs35 000 (U.S.\$5000) to build, whereas a single-story equivalent would be available at Rs8900 (U.S.\$1270). In addition, high-rise living has not been well accepted by the population.

Similarly, high-rise housing has not met with success in the Philippines (Ramos 1973b, p.P.). Inadequate site planning and maintenance, construction costs, and dissatisfied tenants who are delinquent rent-payers are some of the reasons for failure.

The motto perhaps is that when necessity and planning go together, public acceptance will eventually follow; if high-rise housing can be seen as an improvement over existing housing, people will usually accept it, especially as land becomes less and less available.

## **Land Availability**

The availability of land depends primarily on land ownership policies and patterns. In most Asian countries, urban land is under private freehold tenure, and "despite the size of publicly owned tracts and the purpose which public

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<sup>21</sup> For a comparative statement of the two city-states, see Y.M. Yeung and D.W. Drakakis-Smith. 1974. *Comparative perspectives on public housing in Singapore and Hong Kong*. *Asian Survey*, 14(8), 763-775.

ownership serves, present circumstances in Asian urban areas are oriented towards private tenure rather than outright public ownership with the leasing of development and ownership rights to developers and/or families'' (UNESCO 1973, p. 234). There are some exceptions: in Hong Kong, the government owns all the land, and in Singapore, the government owns 55–60% of all land.<sup>22</sup> In Sri Lanka, also, the government owns considerable land, but most of it lies outside urban areas.

Like most countries in the world, Southeast Asian countries have lately witnessed a sharp inflation of land prices. In fact, in the Rajang Park Scheme in Malaysia, land costs exceeded construction costs and accounted for more than half the selling prices of one- and two-story houses (Leong 1977). However, according to a UN report, land costs per unit area are still far below building costs in Sri Lanka, Hong Kong, and the Philippines (UNESCO 1973, p. 221).

Generally speaking, the rapid rise in land values is caused by land speculation and less-than-optimal use of land — both of which need to be controlled by legislation. In some countries, vacant land taxes, capital gains taxes, and other taxes have been debated as measures to curb the rapid increases in land prices, but they have not been widely accepted. The main argument against them is that they may mean extensive government intervention through price controls; otherwise, as Casanova cautions, the burden of the levied taxes falls on the buyer (Casanova 1975). The result, hence, could be the opposite of what was intended, forcing land prices up instead of down.

In the Philippines, there are no adequate laws to limit the extent of urban land ownership, to compel development of idle lands, or to allow the government to expropriate private properties for public housing. Thus, urban land, which is relatively abundant, is high priced and is out of reach for public housing programs. The only law to control prices is the Philippine 1972 Presidential Decree No. 76. It requires landowners to declare the true market value of their lands, which is the maximum amount payable by the government in case of expropriation and is the assessed value for calculation of realty tax (de Vera 1975). To date, the law has done little to control land prices.

In Sri Lanka, control measures have been introduced to limit private ownership of land. They are designed to free large land holdings and, thus, to lower prices and eliminate speculation. A recent survey in Colombo showed an increase in land values over the past decade ranging from 214 to 233%, but the new law is expected to check the rising costs. Another survey identified unused and underutilized land in and around Colombo that could be earmarked for housing. It revealed about 520 hectares of suitable vacant land in the city; another 250 hectares occupied by slums and shanties; and about 300 hectares of low-lying land that could be reclaimed for housing construction. Added to these were about 2000 hectares of usable lands in the suburbs.

In Thailand, a full inventory of vacant or underutilized public lands is also under way and it is anticipated that, based on the inventory, sizable pockets of military land within the metropolitan area will be released for civil developments.

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<sup>22</sup> See Evans, D.M.E. 1971. Some legal aspects of urbanization in Hong Kong. In Dwyer, D.J., ed., *Asian Urbanization: A Hong Kong Casebook*, Hong Kong, Hong Kong University Press, 20–32; and Motha, P. 1976. The land value dilemma in developing countries, with special reference to Singapore. In Wong, J., ed., *The Cities of Asia*, Singapore, Singapore University Press, 187–209.

Among others, the National Housing Authority expects some of the land to be made available for its projects.

## **Adaptations Necessary**

Unfortunately, in many cases, the lands that are made available for low-cost housing are not the best. In Malaysia, for example, they are normally swampy low-lying coastal areas, such as the fishermen's village at Kuala Kedah or Bintawa near Kuching, Sarawak; seaside locations like Berhala Darat in Sandakan; foothills; or worked-out mining properties consisting of sterile tin tailings, as exemplified in the environs of Kuala Lumpur and Ipoh.<sup>23</sup> In almost every case, adaptations through imaginative construction methods and building designs are necessary to take advantage of the available land.

The topography, height of water table, exposure to strong winds, intensity of sunshine and rainfall, liability to flooding, availability of groundwater, etc., all affect housing design. In addition the bearing capacity of the subsoil is crucial for high-rise structures. For instance, in the Bedok area of Singapore, where high-rises are being built on reclaimed land, pilings have to be driven about 27 m into the ground to reach bedrock. In the Philippines, storm-drainage lines are a must due to heavy rainfall; in projects where they have been omitted, the streets become flooded and serve as runways to the nearest creeks (Ramos and Hong 1975).

In the original Mark I and II Resettlement blocks in Hong Kong, scant attention was given to orientation, prevailing wind direction, and microclimatic variations peculiar to each site. The standard plans and layouts pitched at a very low level were not conducive to a healthy and pleasant living environment (Will 1977). Sited on relatively flat ground, the H-shaped blocks are in parallel rows with about 10 m between them. Open space was provided at an extremely low standard of 0.01 hectare per 1000 persons and was primarily inside the arms of the H and between the blocks.

The problem is that adapting housing plans to physical properties can substantially increase the costs of developing sites and can introduce unplanned delays. In peripheral areas, especially, the introduction of basic services can be postponed for quite sometime because of insufficient funds. One example is the Cengkareng project northwest of Jakarta, which was delayed because of the high costs of the sewerage system. The Indonesian government and the World Bank agreed that costs would be allocated to site occupants, but the resulting price of the lots, even with cross-subsidy from the Klender development was too high for the target group.<sup>24</sup> Likewise, in Hong Kong, despite the early designation of Shatin as a new town, development was delayed due to the difficulties in providing proper sewage disposal. In Singapore, also, the initial development of Woodlands New Town proceeded more slowly than demand warranted because of the costs and time in servicing the land.

Some positive approaches to site adaptation can be found in the rural areas of Malaysia. For example, the Sabah State Housing Commission has employed some highly imaginative solutions. The Likas Bay Housing Project, on the out-

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<sup>23</sup> For a detailed discussion of locational constraints in Malaysia, see Tan (in press).

<sup>24</sup> Information on this project is based on correspondence with Hendropranoto Suselo of Indonesia, a member of the Low-Cost Housing Study group.

skirts of Kota Kinabalu, is worthy of mention. Because local building materials and skilled construction labour are in short supply, the houses are pre-cut and packaged in Singapore and Peninsular Malaysia for assembly on site. On stilts, the houses are arranged to enhance community cohesion but not at the expense of household privacy. The corals and the tides of the marine environment have been cleverly harnessed to provide a natural sewerage system.<sup>25</sup> Similar successes are the Berhala Darat Project in Sandakan and the Bintawa Housing project about 6 1/2 km from Kuching. Less successful, perhaps, is the self-help scheme in Sibul, Sarawak, where poor site conditions and amateur construction confounded the goal of safe and appropriate housing.

## **Socioeconomic Guidelines**

Who is qualified for public low-cost housing is an administrative decision tied to the political philosophy, economic capability, and prevailing national priorities of a country. It is normally determined by the household income of potential beneficiaries. For example, public housing projects of Dindaeng and Huaykwang in Bangkok are open only to persons who earn no more than 2650 baht a month (about U.S.\$132). Applicants must also have resided in Bangkok at least 6 months at the date of application and qualify for urgent housing according to the Public Welfare Department's list of priorities.<sup>26</sup> Applicants in Hong Kong may have a maximum assessed family income of HK\$1250 (U.S.\$250) to qualify for the best public flats, but there is no income limit on resettlement housing, which is rented at extremely low rates, ranging from HK\$18 to \$35 (U.S.\$3.60 to \$7) per month. To date, resettlement housing has preoccupied officials so much that, in the 1971 census, resettlement dwellers accounted for 60% of the 1.5 million in public housing. In 1969, Hopkins argued that an inordinately large share of official attention and resources had been devoted to squatter resettlement at the cost of improved housing standards for tenement slum dwellers who form a sizable portion of the population (Hopkins 1969). More recently, new targets and standards have been established, and the Hong Kong Housing Authority has launched an advanced housing development plan for 1973-83.

In Singapore, the income ceiling for public housing has been raised substantially over the past 15 years to correspond to a better overall standard of living. In the early 1960s, public housing was undertaken to deal with a crisis shortage; it has now become a stabilizing force, providing employment and other economic spin-offs. Over the years, the government has introduced changes that reflect shifting national priorities. In 1964, the government launched the Home Ownership scheme and, in 1968, began to allow prospective owners to apply their Central Provident Fund contributions to the purchase of housing. The government has also brought housing policies into line with national goals of zero population growth and ethnic integration. Now, small families may obtain public housing (the minimum qualification until 1967 was a household of five persons), and the different ethnic groups are systematically integrated in

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<sup>25</sup> Illustrations and details of the design aspects of low-cost housing in various parts of Malaysia may be found in Leong (in press).

<sup>26</sup> A comprehensive background and evaluation of the Dindaeng-Huaykwang projects is reported in Chakrit Noranritpadungkarn 1978.





*High-rise housing has not been well accepted by the people in Kuala Lumpur, in contrast to Singapore and Hong Kong.*

housing blocks. Even in the predominantly Malay area of Geylang Serai, half of the flats in the two public high-rises were allocated to non-Malays.

The Singapore policy in reverse appears to operate in rural and urban areas of Malaysia where ethnic groups are segregated upon religious grounds and racial sensitivities. Although segregation, at face value, runs counter to the Second Malaysian Plan, it is common for entire floors or blocks of public housing to be allotted to tenants belonging to the same race or religion. It is hoped that, given time, the segregation policy will change.

working area, and water closet. The occupants are expected to partition living rooms and bedrooms to suit their convenience and tastes.

In East Malaysia, the Sabah State Housing Commission has launched pilot schemes on both new and existing sites. The commission selects sites carefully, adapting services and plot sizes to ensure low development costs. The commission is experimenting with many different house designs and colour schemes to test public reaction, which thus far has been favourable.

In Indonesia, the Pilot and Demonstration Projects also cover both new and existing settlements. They have been introduced since the 1950s to transfer know-how, methods, and techniques, and to stimulate like developments elsewhere. Some examples are the housing projects for rural East Java, which have influenced housing as far as Central and West Java.<sup>27</sup>

## Conclusion

Location is not an isolated variable in low-cost housing, but it is an important one that deserves more deliberate study.

To plan with greater locational flexibility and choice may involve five strategies. The first, and one of the most important, is to devise an efficient land policy providing fiscal and legal powers in keeping with the popular political philosophy and social mores of society at large. The second is to establish a land bank to purchase and claim land for low-cost housing. Thirdly, it is necessary to plan with medium- or long-term horizons so that locational requirements in housing may be met or created. It is noted that Singapore has already earmarked land for its new towns to the end of this century. Fourthly, effective administration must be created, concentrating authority in one central housing agency. Already, Singapore, Hong Kong, Thailand, the Philippines, and Indonesia have established unified housing bodies. Laos, before the change of government in 1975, was moving rapidly in the same direction. Finally, governments must be prepared to undertake detailed cost-benefit analyses, based on social benefits as well as economic considerations. Taken together, these strategies allow leeway in locational planning and lighten the burden on government in its struggle to provide shelter for the masses.

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<sup>27</sup>See Soebagio, W., 1975. Evaluation of pilot and demonstration projects. In R. Moochtar and A. Kartahardja, eds. *Low-Cost Housing in Indonesia*, Bandung, Building Research Institute.

In Hong Kong, segregation is not a problem because the Chinese population is extraordinarily homogeneous. And in the other countries in the region, ethnicity appears to be secondary to other considerations in housing allocation.

In the Philippines (Ramos 1975), where ethnolinguistic groups abound, the People's Homesite and Housing Corporation extends public housing assistance to any Filipino head-of-family. Applicants must be of legal age and meet residential, income, and other requirements. Certain occupations have been given priority — government employees, military personnel, public school teachers, etc. Tenements are open to persons earning not more than P1800 (U.S.\$257) annually or P120 (U.S.\$17) per immediate dependant; the rents range from P4.00 (U.S.\$0.57) to P28.00 (U.S.\$4) per month (Careaga 1975). In addition, resettlement lots of at least 200 m<sup>2</sup> have been granted to landless urban squatters who earn P150 (U.S.\$21.40) or less.

### **Location and Variety of Low-Cost Housing**

In the Southeast Asian region, low-cost housing generally can be grouped into two types of projects — those that are built on existing facilities and those that are built on new sites.

The first group are intended to improve housing conditions of existing settlements. They are exemplified in the *kampong* improvement schemes that were initiated by the Special Government of Jakarta in 1969. Between 1969 and 1973, housing and environmental conditions in 68 *kampongs* involving more than 1 million people were improved, and the total spent amounted to Rp5228 million (U.S.\$13 million), or Rp5084 (U.S.\$12.70) per person. During the Second Five-year Plan (1974–79), the expenditure is expected to increase to Rp7000 (U.S.\$17.50) per person and will be bolstered by contributions from the World Bank.

The second group of projects are aimed at introducing new settlements. The approaches include basic sites-and-services schemes that provide sewage disposal, water supply, etc., on unsettled tracts of land; core housing schemes that provide basic structures; and neighbourhood planning programs that provide comprehensive living facilities. They all require careful site selection, planning, and preparation.

The basic sites-and-services projects, which depend primarily on self-help, are exemplified in Jakarta, Surabaya, and Ujung Pandang. Judging from official reports, site selection procedures are streamlined for the project in Jakarta and will be similar for the other two. The total cost is estimated to be Rp41 million (U.S.\$102 500) for 1974–79 and will be supported by the World Bank.

Variants on the sites-and-services framework are two schemes launched recently in Sri Lanka. In the first, the Department of National Housing acquires land in the city periphery and lays out basic facilities. Several housing plans are designed and are made available to prospective occupants, who include carpenters, masons, brick-makers, and building labourers and who are expected to work together to erect the buildings. In this scheme, builder/occupants must secure temporary lodging, whereas in the second scheme, called core housing, immediate occupancy is possible. In the second scheme, the government provides mass-produced modules that are approximately 22–46 m<sup>2</sup> on plots of land that are large enough to permit expansion. The modules have water taps and toilets and consist of an outer shell enclosing a living area, cooking area,

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# 8

## Planning and Design<sup>28</sup>

Liu Thai-Ker and Tan Sioe An

The function of low-cost housing is to provide shelter to the needy population; therefore, the acid test of housing policy is whether it can deliver enough completed residential units to make an impact on the living conditions of the target group. Policymakers need to identify who will occupy housing and what standards of planning and design will best reflect their living habits and paying ability and make optimum use of limited financial and land resources. The goal is to strike a balance between quality dwelling design on the one hand and resource constraints on the other.

In rural areas of Southeast Asia, the climate is mild and building materials are readily available. With a minimum of skill, people can build their own shelters quite easily. The responsibility of the governments, therefore, is mainly to ensure rural peoples have adequate sewage disposal, water supply, and other essential infrastructures.

In the urban areas, housing is much more complicated. The high population density and rapid population growth, coupled with the ubiquitous problems of high land cost and land shortage, are forcing denser development, even medium- or high-rise structures, which require sophisticated construction to minimize fire and health hazards. The result is often greater dependency on skilled workers and imported building materials. Public housing agencies, under these circumstances, need to optimize resources and to map out comprehensive approaches to their tasks. This is true in countries without hinterlands like Singapore and Hong Kong and is equally true in metropolitan areas, such as Bangkok, Manila, and Jakarta, in countries with large hinterlands.

### Design of Dwelling Units

The approaches and commitment to public housing vary from country to country; the differences are inevitably manifested in the final products: the dwelling units — in their floor plans, design standards, construction systems and costs, selling prices or rents, and the quality of design (Appendix 3 and Tables 10–14). Some of the dwelling units are prototypes in the sense that they are

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<sup>28</sup> The authors gratefully acknowledge the assistance of Henry Hee Enn Loy (Singapore) for the preparation of the tables and figures and the members of the study group: Barry Will (Hong Kong), Radinal Moohtar (Indonesia), Josefina Ramos (Philippines), and Wadanyu Nathalang (Thailand).

Table 10. Comparative flat design standards.

Country	Predominant types	Year constructed	Room schedule <sup>a</sup>	Net dwelling unit size (m <sup>2</sup> )	Floor space standard (m <sup>2</sup> /person)	Remarks
Singapore	Public housing: 1-5- <i>rm</i> flats	1 <i>rm</i> 1966-75 2-4 <i>rm</i> 1969-75 5 <i>rm</i> 1970-75	L,0-3B,K, 1-2 Ba (D,Bal for 5 <i>rm</i> )	35-125	7.0-23.5	Rubbish chute per 2 dwelling units
	Middle-income housing: Type A & B flats, Maisonettes	1974-75	L,D,3B,K,2Ba,T,U,Bal	145-158	27.0-32.0	
Hong Kong	Marks I-III (and some government low-cost housing flats)	1955-67	B-L,communal T & Ba (Bal for Mk III)	11	2.2-3.0 per adult	Cooking mainly in access balconies
	Marks IV-VI (and some Hong Kong Housing Society flats)	1965-75	B-L,T,Bal	11-20	3.0-4.0	Bal. mainly for cooking
Malaysia	Based on 2 completed projects in Penang	Late 1960s	L, 1-2B,K,Ba,Bal	35, 47	4.5-7.5	
Philippines	Based on 2 projects by PHHC		L-K, B,Ba,Bal L,K,Ba,Bal	27, 39	Estimated 5.0-6.0	
Thailand	Based on proposed flats for groups A,B,C	Targeted 1976-80	L,1-2B,K,Ba	35-55	4.8-8.0	Some similar existing flats in Huaykwang
Indonesia	Type F64 (based on 1 project in Cijagra, Bandung)		L,2-3B,K,Ba,Bal	64	12.0	
Sri Lanka	Working class		L,B,K,WC,Bal	25-35	4.0-6.0	No known project
	Lower-middle class		L,2B,K,WC,Shower,Bal	40	6.5	

<sup>a</sup>Room schedule refers to the types of rooms available within each dwelling unit. The abbreviations are: L, living room; F, family room; B, bedroom; K, kitchen; S, store; Ba, bathroom with at least a shower and water closet; T, toilet with just a water tap; U, utility room; Bal, balcony or terrace.

Table 11. Comparative block design standards for flats.

Country	Height in stories	Vertical circulation (dwelling units/stairway or lift)	Units per floor	Units per block	Block organization	Ground floor uses
Singapore	Mainly 10-25 with lifts; some 2-4 without lifts. Minimum 2 lifts or stairways per block. Maximum distance from dwelling unit to stairway, 20 m	Public housing 16-100/stairway 40-100/lift Middle-income housing 10-72/stairway 10-72/lift	4-32	Mainly 80-200; up to 700	Mostly slab blocks; 1-rm flats (central corridors); 2-, 3-rm flats (access balconies); 4-, 5-rm flats (2 flats flanking 1 stair with connecting access balconies every 4th floor); 5-rm flats, point block (cross-ventilated lobbies) Type A & B flats (slab block with 2 flats flanking 1 stair); point block (with cross-ventilated lobbies) Maisonettes (slab block with access balconies)	Mostly free, some for commercial or institutional
Hong Kong	Marks I-III, 6-8 without lifts Marks IV-VI, 8-20 with lifts	80-415/stairway 330/lift	60-135	400-2150	Mostly H, L, E, $\square$ blocks; Marks I & II (flats doubled up back to back fronting access balconies); Marks III & IV (central corridors)	Marks I-III communal Ba, WC Mostly commercial
Malaysia	3-4 without lifts 16-18 with lifts	135-180/stairway and lift	24-32	400-550	Slab blocks (central corridors or with access balconies along internal courts)	Mostly commercial
Philippines	4 without lifts 7 with lifts and 2 rasps	8/stairway 84/stairway and lift	10 96	40 650	Slab block (2 flats flanking 1 stair) $\square$ block (access balconies along central courts)	Flats Residential, commercial
Thailand	Mostly 5, rarely 12	27-40/stairway	20	80	Mostly slab blocks (access balconies)	Mostly free, some for commercial
Indonesia	4	8/stairway	2	8	2 flats flanking 1 stairway	Flats
Sri Lanka	2-5	2-8/stairway	4	8-9	Square block (1 lift or stair to upper floor flat; 2 flats flanking 1 stairway)	Flats



repeated thousands of times. Some others represent particular development projects. Still others are mere drawings on paper, proposals that have not yet materialized but may reflect the thinking and visions of the policymakers and designers.

All the countries are involved in the development of flats. Singapore had built 225 000 by 1976 and Hong Kong 335 000 by 1972. Malaysia, Philippines, and Thailand have completed a few high- and medium-rise flat developments. The Indonesian example is one project (size unknown) in Cijagra; the information available from Sri Lanka has not derived from any known project. With the exception of Singapore and Hong Kong, all the countries also provide one- or two-story row houses (or town houses), which are generally larger than the flats (Table 15). In addition, the Philippines, Thailand, Indonesia, and Sri Lanka provide semidetached or detached houses.

Detached or semidetached units are larger in most cases than either flats or row houses. Some, in fact, such as in Thailand and Indonesia, verge on luxury housing. In Sri Lanka, by contrast, larger dwelling units appear to come in the form of flats, whereas now, semidetached, or detached houses are mainly for the poor working classes. The largest units, at 158 m<sup>2</sup>, are found in Singapore, produced for sale to the middle-income group. The largest public housing flats are also in Singapore; at 125 m<sup>2</sup>, they are larger than all but a few isolated examples of semidetached houses (140 m<sup>2</sup>) in Indonesia.

The smallest units, at 11 m<sup>2</sup>, are found in Hong Kong. Even the larger versions of Hong Kong flats at 20 m<sup>2</sup> are smaller than any of the other public housing units. Because the housing units in Hong Kong are high rise, they are particularly confining. The next smallest units, which are in Sri Lanka, are mainly one- or two-story buildings with ready access to the outdoors as an extension of living area.

Table 12. Comparative row house design standards.

Country	Stories	Room schedule <sup>a</sup>	Net dwelling unit size (m <sup>2</sup> )	Net floor space standard (m <sup>2</sup> /person)	Remarks
Malaysia	1, 2	L, 2-3B, K, 1-2 Ba, S	58.0-89.0	9.0-13.5	No known project
Philippines	1	L-D, 2B, K, Ba	48.0	-	Based on 1 example of PHHC project
Thailand	1, 2	L-K, 0-2B, WC L, 1-3B, K, WC, Light well	27.0-54.0 38.0-66.0	4.5-5.2 4.7-7.0	Based on 5 examples of proposed project in Ta Sai
Indonesia	1	L, 2-3B, K, Ba, Terrace (2 Bal for type 70A)	36.0-70.0	7.0-10.0	Based on T 36, 45, 54, 70, 70A prototype housing project in Cijagra, Bandung
Sri Lanka	1	L-B, K, WC, Light well	23.0	5.0	Based on 1 example of working-class housing; no known project

<sup>a</sup>Room schedule refers to the types of rooms available within each dwelling unit. The abbreviations are: L, living room; F, family room; B, bedroom; K, kitchen; S, store; Ba, bathroom with at least a shower and water closet; T, toilet with just a water tap; U, utility room; Bal, balcony or terrace.

Table 13. Comparative design standards of semidetached and detached houses.

Country	Stories	Room schedule <sup>a</sup>	Net dwelling unit size (m <sup>2</sup> )	Net floor space standard (m <sup>2</sup> /person)	Lot size (m <sup>2</sup> )	Remarks
Philippines	1	<b>Semidetached:</b> L-D, B, K, Ba	35	-	-	Based on 3 examples in PHHC and LHDC/SSS projects
		<b>Detached:</b> L-D, 2-3B, K, Ba, some with carport	63, 85			
Thailand	2	<b>Semidetached:</b> L-K, B, Ba, Bal	64	6.0	-	Based on 2 examples in the proposed Ta Sai project
		<b>Detached:</b> sitting room, 2B, K, 2 WC and covered, unenclosed ground floor	117			
Indonesia	2	<b>Semidetached:</b> 2L, 3B, K, S, 3 Ba, 2 Bal, carport	140	20	305.5	Based on 140 prototype housing project in Cijagra, Bandung
Sri Lanka	1	<b>Working class:</b> semidetached, detached: L, B, Bal	20	3.5	-	Examples are aided self-help housing; no known project
		<b>Lower-middle class:</b> detached: L, D, 2B, K, WC	44	7.0	-	

<sup>a</sup>Room schedule refers to the types of rooms available within each dwelling unit. The abbreviations are: L, living room; F, family room; B, bedroom; K, kitchen; S, store; Ba, bathroom with at least a shower and water closet; T, toilet with just a water tap; U, utility room; Bal, balcony or terrace.

Outside Hong Kong and Sri Lanka, countries generally take 35 m<sup>2</sup> as the minimum dwelling unit size. In Malaysia, Philippines, and Thailand, size ranges are very similar, falling somewhere between the two extremes set by Hong Kong and Singapore. In Singapore, the wide range of dwelling unit sizes (35 m<sup>2</sup> to 158 m<sup>2</sup>) enables the government to cater to most socioeconomic groups. In fact, more than 90% of the population is eligible for government housing. Singapore also sets the highest standard for floor space and maintains the widest range at 7-32 m<sup>2</sup>/person. Hong Kong's range of 2.2-4.0 m<sup>2</sup>/person represents the lowest standard. In between, the starting standard is 4.5 m<sup>2</sup>/person. Philippines, Thailand, and Sri Lanka reach a maximum of about 6-7 m<sup>2</sup>/person, whereas Malaysia reaches 13.5 m<sup>2</sup>/person. Indonesia, while staying in the same range as Malaysia, shoots up to a maximum 20 m<sup>2</sup>/person in semidetached houses.

## Flat Design

Two categories of flats are built by the Singapore government: public housing and middle-income housing (Fig. 2). There are five public housing prototypes (one-room to five-room flats). For middle-income housing, there are types

Table 14. Comparative construction costs and systems.

Country	Net construction cost <sup>a</sup> (U.S.\$/m <sup>2</sup> )	Selling price (U.S.\$/m <sup>2</sup> )	Monthly rents (U.S.\$/m <sup>2</sup> )	Structural frame	Wall	Floor	Door/Window	Roof
Singapore	Public housing flats <sup>b</sup> (89.80-99.40)	40.30-140.10	0.30-0.60	Reinforced concrete	Concrete hollow block	Reinforced concrete	Steel or timber casement louvres	Reinforced concrete with secondary roofing
	Middle-income flats <sup>c</sup> (190.00-205.00)	220.00-242.70	n.a. <sup>e</sup>	Reinforced concrete	Concrete hollow block	Reinforced concrete	Steel or timber casement louvres	-
Hong Kong	Flats <sup>c</sup> (32.30-101.10)	n.a.	0.20-1.80	Reinforced concrete	Load-bearing concrete cellular (exterior) Nonload-bearing spinewalls	Reinforced concrete	Timber	Reinforced concrete
Malaysia	Row houses (39.50-41.90)	73.50-144.30 <sup>d</sup>	-	Reinforced concrete (2-story)	Brick (exterior) Hardboard on frame (interior)	Reinforced concrete	-	Asbestos cement or tile
	Flats (34.40-59.70)	-	0.20-0.60	Reinforced concrete or prefab members	Concrete hollow block	Reinforced concrete	-	Asbestos cement or tile
Philippines	Semidetached & detached <sup>c</sup>	-	-	-	Concrete hollow block or precast panel	Concrete	Glass windows or timber louvres	Galvanized iron, asbestos cement
	Row houses <sup>c</sup>	-	-	-	-	-	Glass windows or timber louvres	Reinforced concrete
	Flats <sup>c</sup> (70.80-91.60)	111.70	0.50-1.00	-	-	-	-	-
Thailand	Semidetached (77.50)	93.40	-	Reinforced concrete	Concrete block (exterior)	-	-	-
	Row houses (73.80)	79.00	-	Reinforced concrete	Hardboard on frame (interior)	-	-	-
	Flats (85.40-102.10)	90.50	-	-	Concrete block	Semprefab	Timber casement or louvres	Asbestos cement
Indonesia	Semidetached (107.10)	178.60	1.40	-	Pozzolanic (1 story)	-	Timber casement	Clay tiles with ceiling
	Row houses (55.50-78.60)	71.40-92.60	1.40-1.90	-	-	-	-	-
	Flats	78.10	1.60	-	-	-	-	-
Sri Lanka	Semidetached (18.00-33.50)	18.00-33.50	0.10	-	Load-bearing brick (1 story)	Reinforced concrete	-	-
	Row houses (30.70-40.20)	n.a.	0.10-0.20	-	-	Reinforced concrete	-	Tiles or asbestos cement
	Flats (80.50-105.60)	n.a.	0.10-0.20	-	Concrete block (2-5 story)	Reinforced concrete	-	-

<sup>a</sup>Based on construction cost over net dwelling unit areas for flats or total built up areas of other dwelling units not including land cost unless otherwise noted.

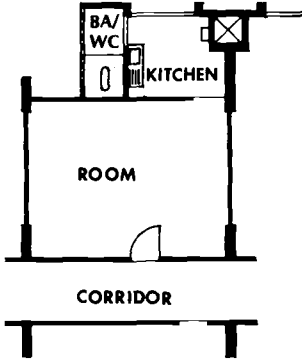
<sup>b</sup>Includes land cost but not professional fee and financial cost.

<sup>c</sup>Includes land cost.

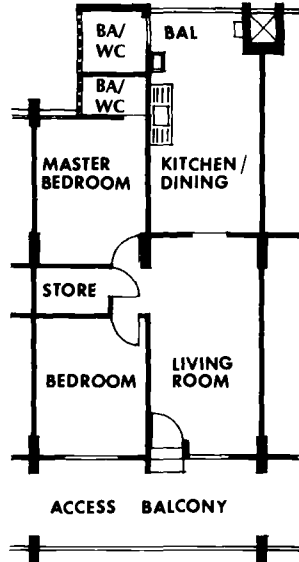
<sup>d</sup>Vary according to lot size.

<sup>e</sup>The abbreviation n.a. stands for not applicable.

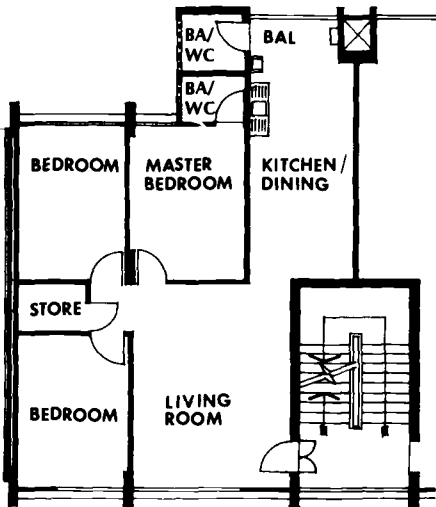
**SINGAPORE**



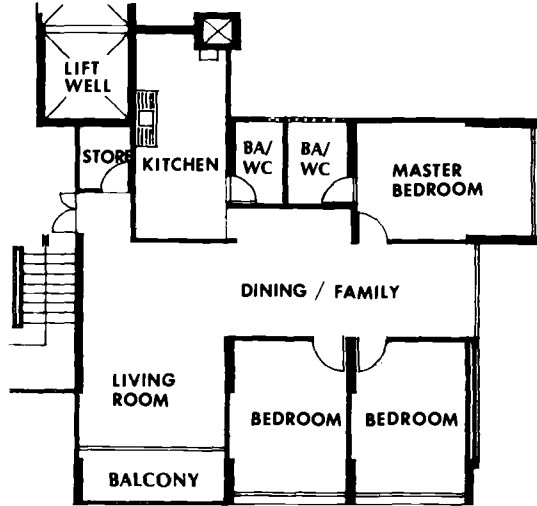
**PUBLIC HOUSING  
1-ROOM IMPROVED FLAT  
(FLAT SIZE 32.8 m<sup>2</sup>)**



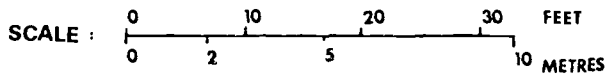
**PUBLIC HOUSING  
3-ROOM IMPROVED FLAT  
(FLAT SIZE 68.6 m<sup>2</sup>)**



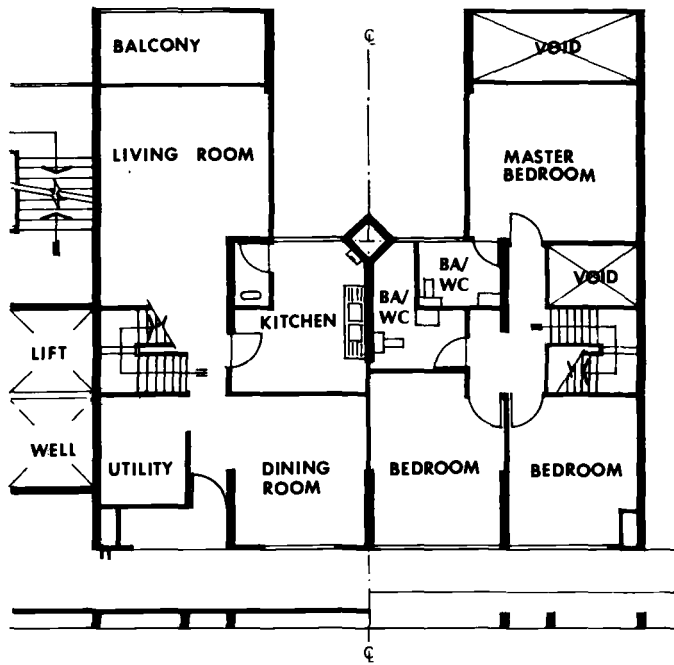
**PUBLIC HOUSING  
4-ROOM NEW FLAT  
(FLAT SIZE 92.6 m<sup>2</sup>)**



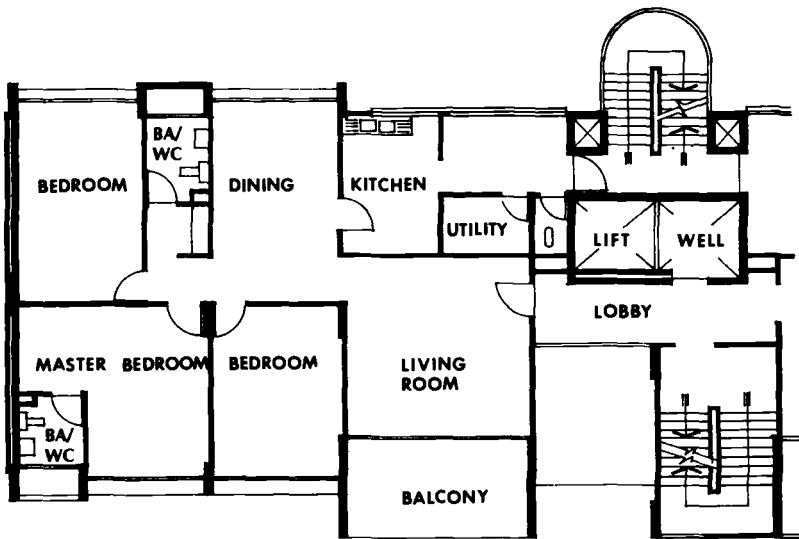
**PUBLIC HOUSING 5-ROOM FLAT (POINT BLOCK)  
(FLAT SIZE 120.7 m<sup>2</sup>)**



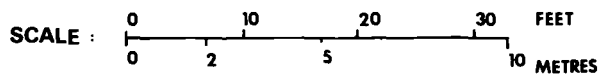
*Fig. 2. Selected floor plans for flats in Southeast Asia.*



Lower Floor Upper Floor  
**MIDDLE-INCOME HOUSING FLAT - MAISONETTE**  
 (FLAT SIZE 157.6 m<sup>2</sup>)

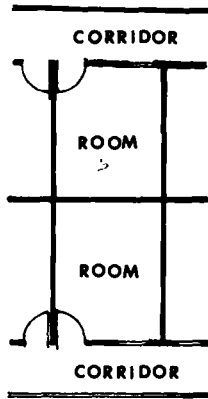


**MIDDLE-INCOME HOUSING FLAT TYPE A**  
 (FLAT SIZE 157.4 m<sup>2</sup>)

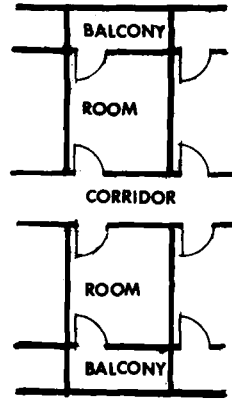


(Fig. 2. continued)

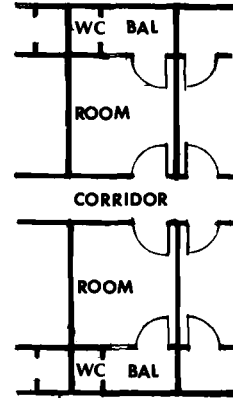
HONG KONG



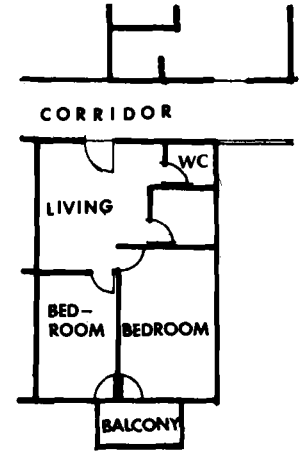
TYPICAL FLOOR PLAN  
MARK I



TYPICAL FLOOR PLAN  
MARK III

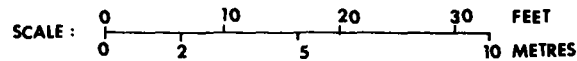


TYPICAL FLOOR PLAN  
MARK IV

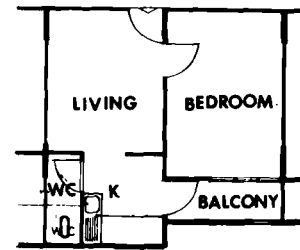


TYPICAL FLOOR PLAN  
NORTH POINT ESTATE

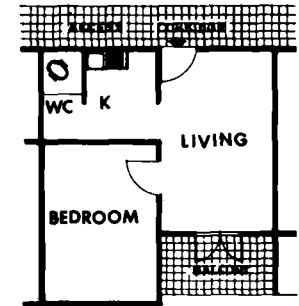
MALAYSIA



(Fig. 2. continued)

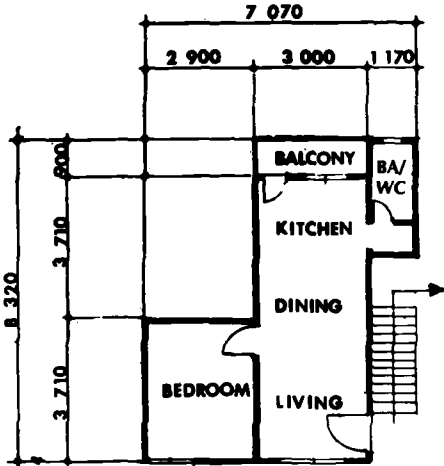


TYPICAL FLOOR PLAN  
17-STORY FLATS AT  
AYER HITAM

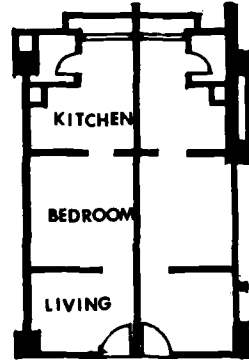


TYPICAL FLOOR PLAN  
17- & 18-STORY FLATS  
AT JALAN RIFLE RANGE

## PHILIPPINES

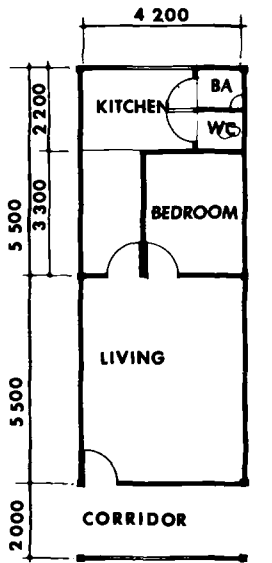


TYPICAL FLOOR PLAN  
3-STORY WALK-UP FLATS  
MANILA (PHHC)

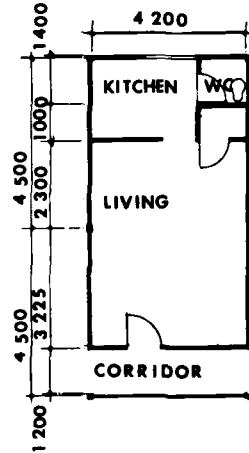


TYPICAL FLOOR PLAN  
HIGH-RISE FLATS (PHHC)

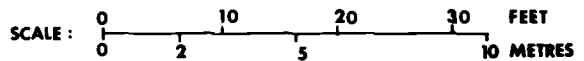
## THAILAND



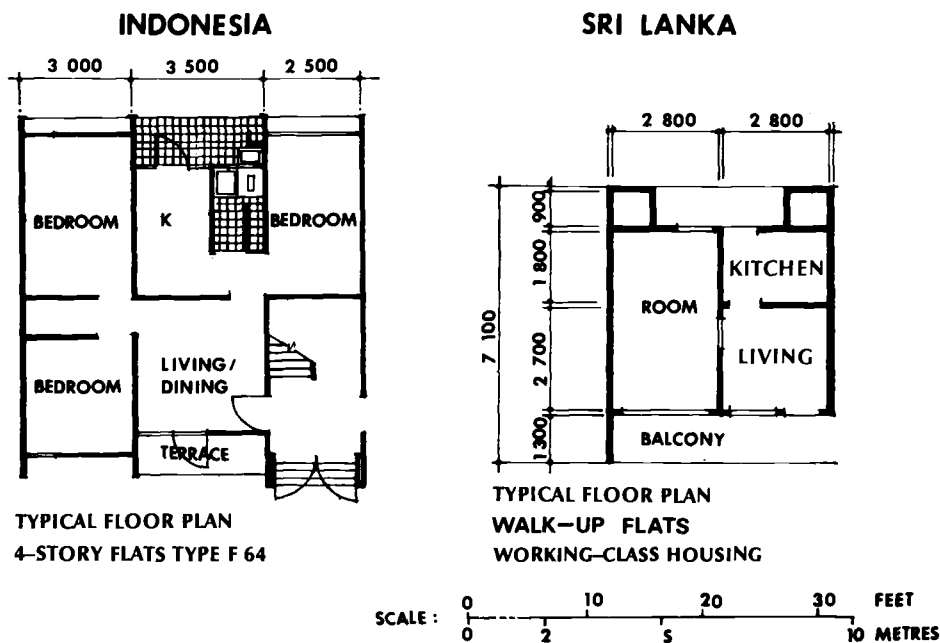
TYPICAL FLOOR PLAN



TYPICAL FLOOR PLAN



(Fig. 2. continued)



(Fig. 2. concluded)

A and B flats and maisonettes, which feature a variety of floor plans. All flats are self-contained, with living room, bedroom, a kitchen, one or two bathrooms, and a rubbish chute directly off the kitchen. Middle-income housing flats include a utility room and a balcony.

The public housing prototypes follow fixed schedules of floor area and accommodation for uniform rental or selling prices. Among the different prototypes, the finishes and fixtures vary somewhat. The bedroom sizes are generally bigger than the minimum 11 m<sup>2</sup> required by the Singapore Building Code, and the living room and dining room vary in proportion to the sizes of flats. In five-room flats, living rooms are set apart from the dining or family room to increase privacy somewhat. By and large, a reasonable amount of elbowroom has been provided everywhere to help compensate for the constraints intrinsic in high-rise living.

In the 17 years of existence of the Singapore public housing program, three major phases of prototype flats have evolved. Between 1960 and 1965 there

Table 15. Comparative dwelling unit sizes (m<sup>2</sup>).

Country	Flats	Row houses	Semidetached, detached houses
Singapore	35-125, 145-158 <sup>a</sup>	n.a. <sup>b</sup>	n.a. <sup>b</sup>
Hong Kong	11, 11-20	n.a. <sup>b</sup>	n.a. <sup>b</sup>
Malaysia	35, 47	58-89	n.a. <sup>b</sup>
Philippines	27, 39	48	35, 63, 85
Thailand	35-55	27-54, 38-66	64, 117
Indonesia	64	36-70	140
Sri Lanka	25-35, 40	23	20, 44

<sup>a</sup>Middle-income housing

<sup>b</sup>n.a., not applicable.



were only the one-, two-, and three-room (standard) flats. After 1965, improved one-, two-, three-room flats were introduced, incorporating such new features as larger floor space, new fixtures, and separate bathrooms and toilets for the two- and three-room flats. The four-room flats were introduced in 1968; the five-room flats in 1971. Then in 1973, responding to feedback from tenants, the housing authority launched a new series of prototype three- and four-room flats (called New Flats). Besides the basic prototypes, several modified versions of three- and four-room flats were created to suit special needs. As a result, there are around 30 variations of flats now in use.

In contrast to Singapore, Hong Kong has only recently produced self-contained flats. The Housing Authority's flats are identified as Marks I to VI, and other government housing authorities conform more or less to the same standards. Marks I and II are the smallest flats and are similar. Mark III is larger and includes individual balconies. Marks IV and V, based on the same space standards as Mark III, have water closets. Mark V is designed for larger families, and Mark VI provides further improvements in floor space standards. Marks I to III, built between 1955 and 1967, have communal toilets and bathrooms. Cooking is done mainly along the access balconies that form a ring around the buildings. Marks IV to VI, introduced since 1965, with higher floor space standards and individual toilets and balconies are relatively self-sufficient. The balconies, including those of Mark III, are meant to be cooking areas.

The flats in other countries have essentially been built for rather small development projects and are not prototypes. Their standards generally fall between the two extremes set by Singapore and Hong Kong, with floor areas ranging between 30 and 55 m<sup>2</sup> and floor space standards at around 4.5–7.5 m<sup>2</sup>/person (Fig. 2). The flats in Thailand and Malaysia are comparable and are larger than those in the Philippines. Predominantly self-sufficient with kitchen and water closet, most of them also provide balconies attached to the kitchens. In Indonesia, the two-story maisonettes and four-story flats are larger in area than single-story row houses; in Sri Lanka, the flats are generally larger than other dwelling types. Just as there is a distinction between middle-income and low-cost housing in Singapore, in Sri Lanka public housing is designed for two income groups, the poor working class and the lower-middle income group.

## **Block Organization of Flats**

In the block design of flats, the salient features are story height, the provision of vertical circulation by lifts or staircases, the number of units per block and per floor, and block organization, which gives some indication of physical characteristics and design quality. Among the countries under study, Singapore and Hong Kong are characterized by high-rise residential blocks, ranging from 8 to 25 stories (Fig. 3). The only other country that is known to have invested significantly in high-rise development is Malaysia. All the rest of the countries confine themselves mainly to medium-rise flats. The person-per-lift ratio is a vital concern to residents in the high-rise blocks: the better the ratio, the easier the vertical circulation and, therefore, access. In Singapore, except for flats built in the first few years, each block is provided with at least two lifts at a ratio of 250–450 persons/lift (40–100 flats/lift); the average number of lifts per block is three. Blocks up to four stories high are not provided with lifts, whereas in Hong Kong some eight-story buildings are without lifts.

The physical mass of the building block can be gauged by the number of dwelling units it contains. The building blocks in Hong Kong are predominantly large, with at times more than 2000 dwelling units per block. A few Malaysian and Philippine examples are also large. To accommodate such a large number of flats per block, the building cannot be in a simple slab-block or point-block form but must resort to H, L, E, and other complex configurations. Often, the designs cannot avoid internal courts and their attendant problems, such as entrapped noise, poor cross ventilation, and inhibited views. By comparison, the building blocks in Singapore are relatively small maintaining between 80 to 200 dwelling units per block. At the low end of the scale, in Indonesia and Sri Lanka, there are blocks with as few as eight dwelling units.

An important consideration in block organization is the type of corridor provided. A central corridor serving dwelling units on both sides generally suffers from poor lighting and results in poor cross ventilation for the units. Its main advantage is economy of circulation space. From the environmental point of view, a better alternative is the access balcony, which ensures good cross ventilation, a highly desirable quality for tropical living. The access balconies, because they are outdoors, are much more suitable for communal space and play

### SINGAPORE

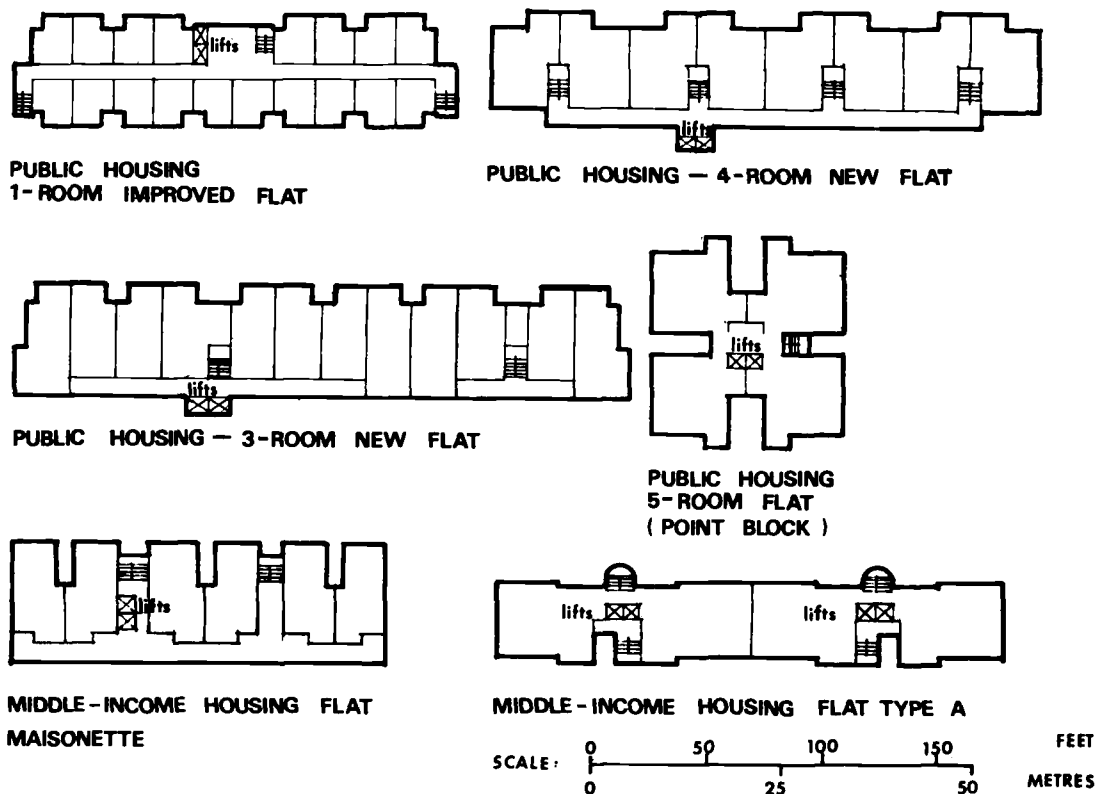
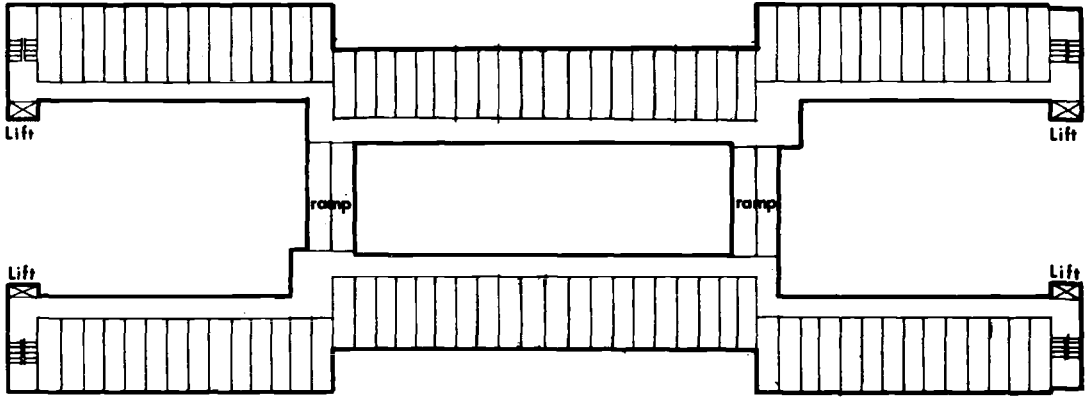
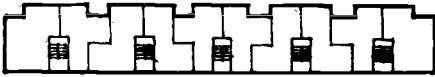


Fig. 3. Selected block plans of flats, row houses, semidetached and detached houses.

**PHILIPPINES**

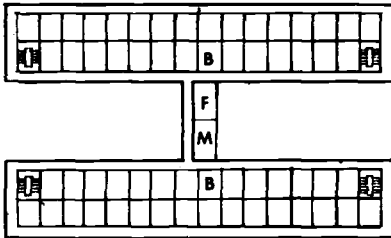


**HIGH-RISE FLAT (PHHC)**

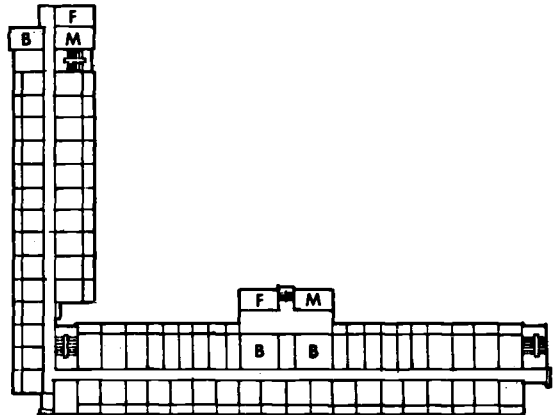


**3-STORY WALK-UP FLATS (PHHC)**

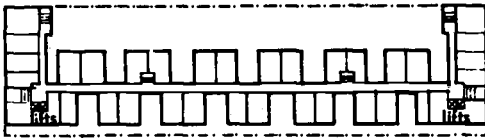
**HONG KONG**



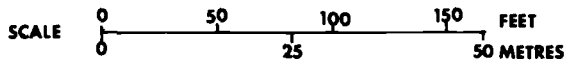
**MARK I  
RESETTLEMENT HOUSING**



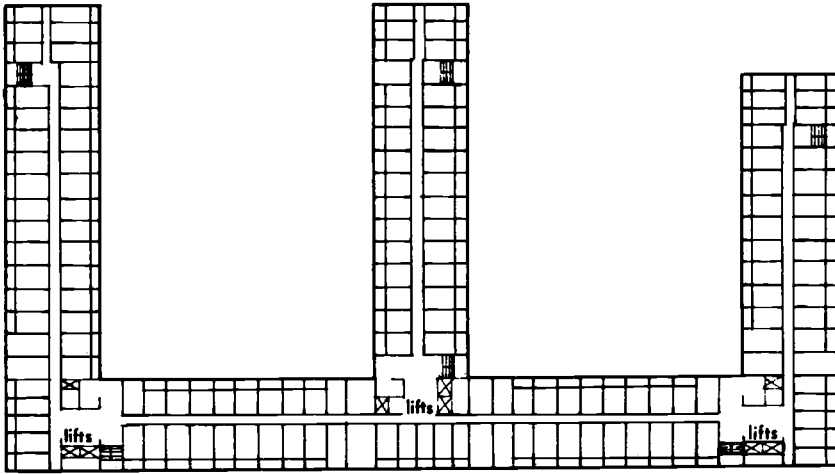
**MARK III  
RESETTLEMENT HOUSING**



**NORTH POINT ESTATE  
HOUSING AUTHORITY**

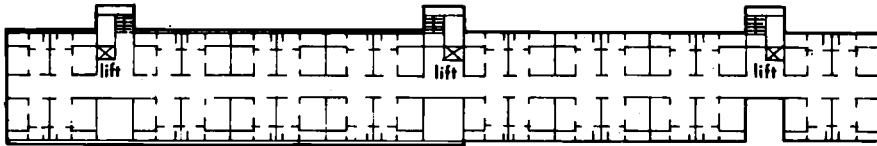


*(Fig. 3. continued)*

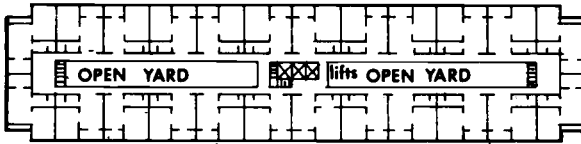


**MARK IV  
RESETTLEMENT HOUSING**

**MALAYSIA**

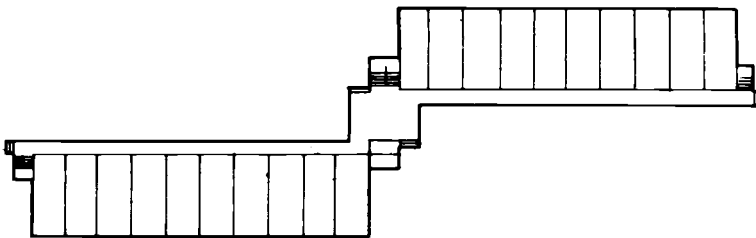


**17-STORY FLATS AT AYER HITAM**

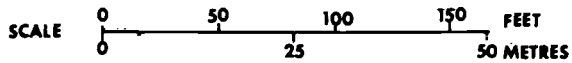


**17- & 18-STORY FLATS AT JALAN RIFLE RANGE**

**THAILAND**



**5-STORY FLATS AT HUAYKWANG**



*(Fig. 3. continued)*



5-STORY FLATS AT TA SAI

**INDONESIA**



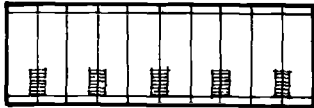
4-STORY FLATS  
TYPE F 64

**SRI LANKA**



5-STORY FLATS  
16 UNITS/BLOCK

**THAILAND**



2-STORY TYPE 4  
ROW HOUSE



2-STORY SEMIDETACHED



2-STORY DETACHED

**INDONESIA**



2-STORY TYPE M 70  
ROW HOUSE



SINGLE-STORY TYPE T 45  
ROW HOUSE



2-STORY TYPE M 140  
SEMIDETACHED

**SRI LANKA**



SINGLE-STORY TERRACE HOUSE  
WORKING-CLASS HOUSING



SINGLE-STORY  
SEMIDETACHED



SINGLE-STORY DETACHED

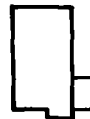
**PHILIPPINES**



SINGLE-STORY ROW HOUSE  
QUEZON CITY (PHHC)

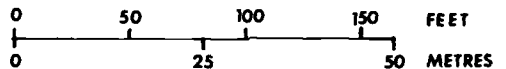


SINGLE-STORY SEMIDETACHED  
HOUSE (PHHC)



SINGLE-STORY DETACHED  
QUEZON CITY

SCALE



(Fig. 3. concluded)

areas for young children. In Singapore, most of the flats that are larger than one room have access balconies. In fact, Hong Kong is the only country in the group where the central corridor is predominant.

The potential of the access balconies as a play and communal area has been more fully realized in Singapore than elsewhere. In the last 5–6 years, balconies have been widened to 2.5 m, and in the case of three-room flats, the balcony floors have been set approximately 300 mm lower than the internal floors to enhance the impression of houses along a street. In addition, the window sills of the flats are correspondingly higher and more private. Generally, the windows are louvred, having two aluminum leaves at the bottom that can be closed for privacy while the upper glass leaves are left open for ventilation.

In Singapore, the ground floor is generally kept free partly to provide covered play areas for children and partly to make available floor space for future institutional uses, such as kindergarten, creches, and homes for the aged. In Thailand, too, the ground floor is unoccupied, whereas in Hong Kong, the ground floor usually contains communal bathrooms or water closets, residences, businesses, and institutional uses.

The practice of virtually all the countries is to provide flats of the same prototype within a building block. The only significant attempt at mixing prototypes is found in Singapore. Sometimes, when feasible, the three-room and four-room flats or the four-room and five-room flats are mixed in the same block, because their occupants are known to be socially and economically quite compatible with one another.

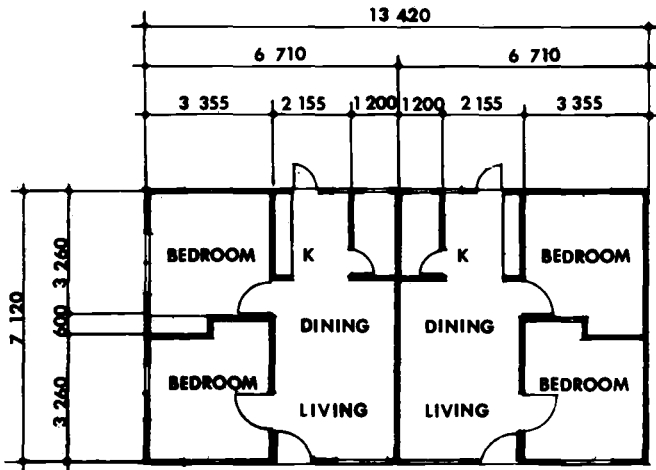
## **Design of Row Houses**

Row houses are not provided by the governments in Singapore and Hong Kong but are available in other countries. In Malaysia and Thailand, row houses in the form of one- or two-story buildings represent better class housing because of the attached private gardens. In Indonesia and Sri Lanka, however, row houses are smaller in built-up areas than flats (Fig. 3) and appear to cater mainly to low-income groups. In any event, all the row houses are relatively small in size. The floor plans do not differ substantially from those of the flats or maisonettes (Fig. 4), although in Thailand, some of the terrace houses have incorporated light wells. Similarly, a courtyard is found in some of the row houses in Sri Lanka, where the kitchens are exceptionally small. It may be that the designers have tried legitimately to trim costs, expecting the family to extend the functional area of the kitchen to the courtyard.

## **Design of Semidetached and Detached Houses**

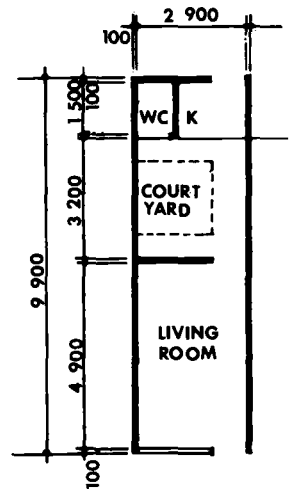
Semidetached or detached houses of one- or two-stories are available as public housing in four countries, the Philippines, Thailand, Indonesia, and Sri Lanka (Fig. 5). In Sri Lanka, they are the poorest quality housing under the aided self-help program. The opposite is true in the other three countries where semidetached and detached houses are the most luxurious, even featuring carports in the Philippines and Indonesia. In fact, the Indonesian semidetached house is so plush that it probably should not be discussed under the heading of low-cost housing. In Thailand, the ground floor design of detached houses is unique in that it is essentially a free space.

**PHILIPPINES**



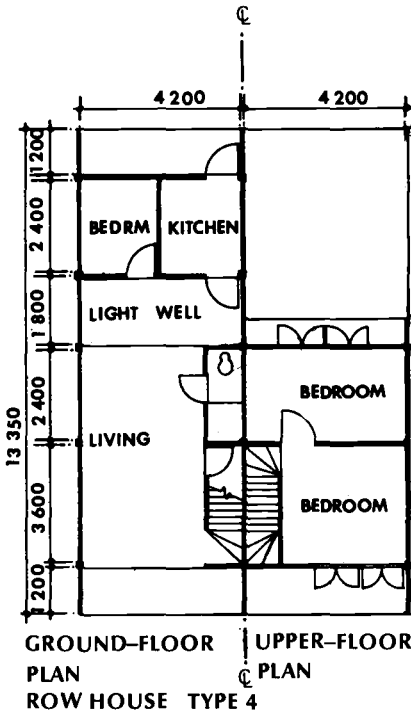
SINGLE-STORY ROW HOUSES  
QUEZON CITY (PHHC)

**SRI LANKA**



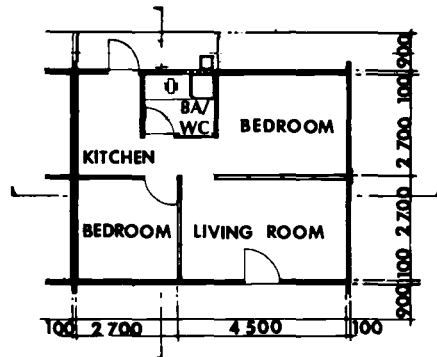
SINGLE-STORY TERRACE HOUSE  
WORKING-CLASS HOUSING

**THAILAND**



GROUND-FLOOR PLAN | UPPER-FLOOR PLAN  
ROW HOUSE TYPE 4

**INDONESIA**



SINGLE-STORY ROW HOUSE TYPE T45

SCALE

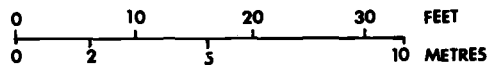
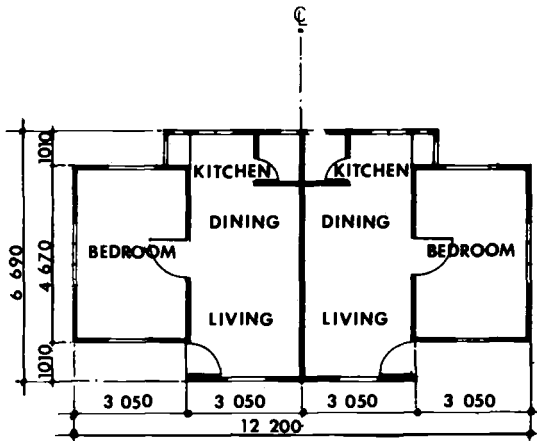
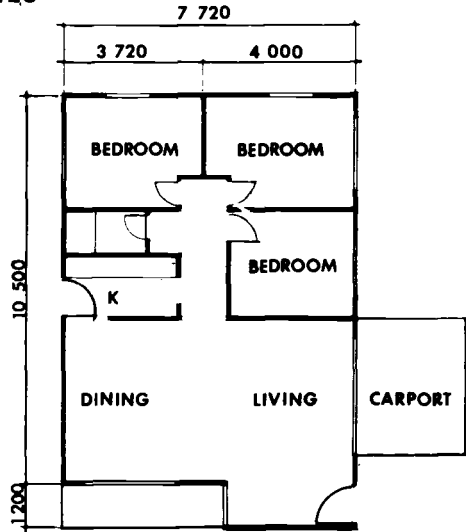


Fig. 4. Selected floor plans of row houses.

## PHILIPPINES

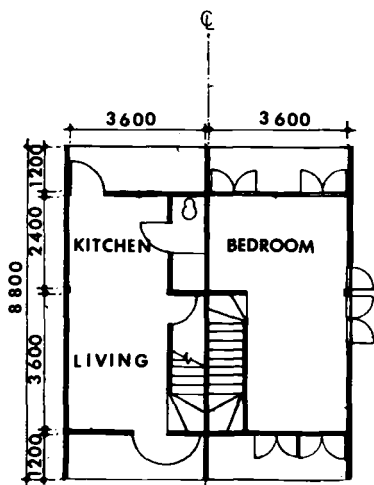


SINGLE-STORY SEMIDETACHED HOUSE (PHHC)

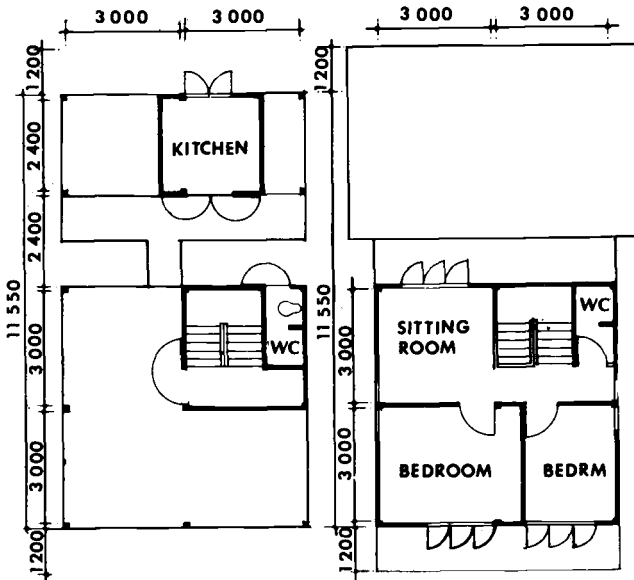


SINGLE-STORY DETACHED HOUSING QUEZON CITY

## THAILAND



GROUND FLOOR  
UPPER FLOOR  
SEMIDETACHED



GROUND-FLOOR PLAN  
UPPER-FLOOR PLAN  
DETACHED

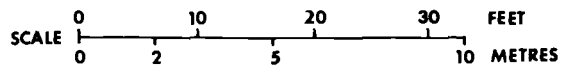
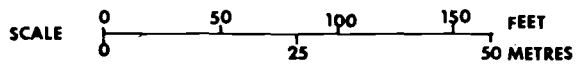
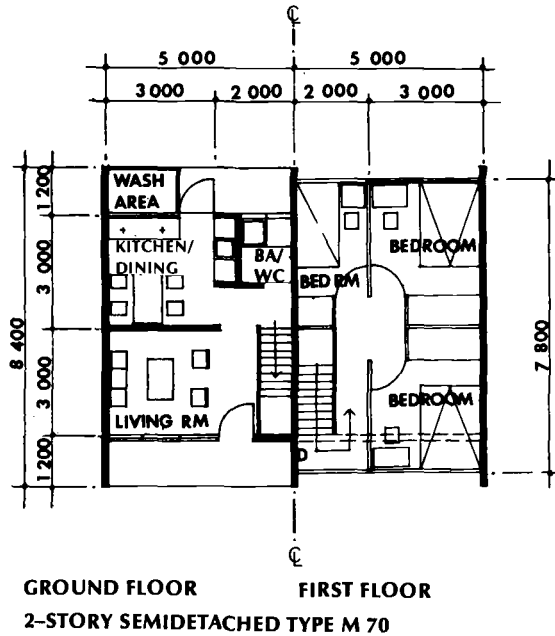
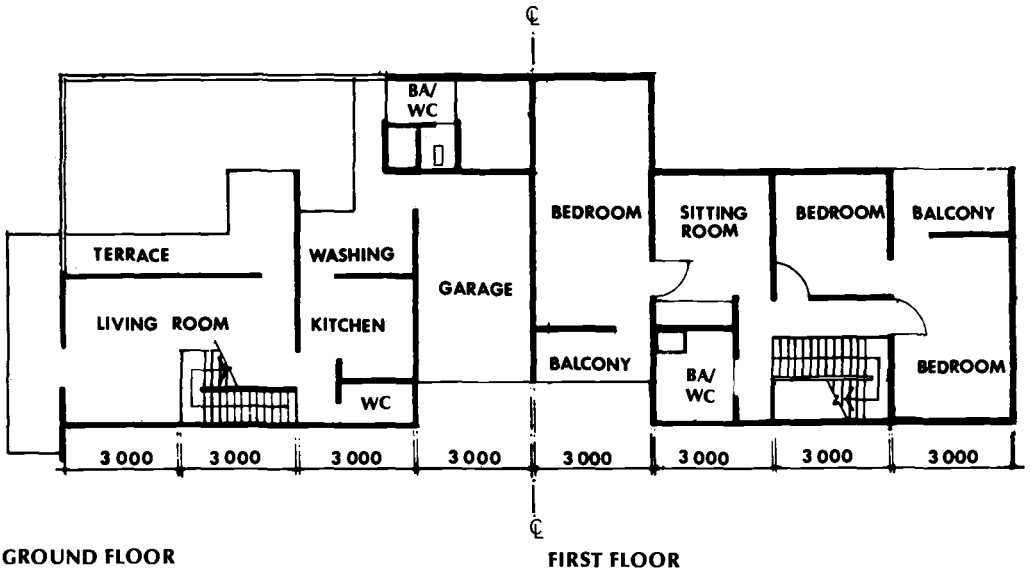


Fig. 5. Selected floor plans of semidetached and detached houses.

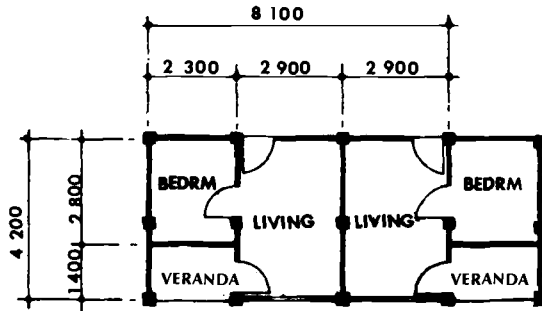


INDONESIA

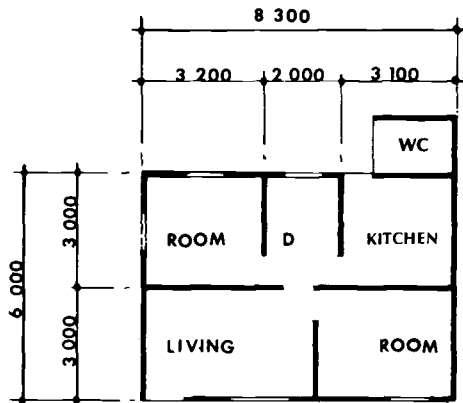


(Fig. 5. continued)

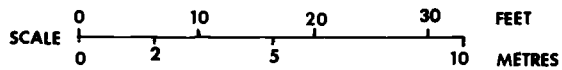
## SRI LANKA



**SINGLE-STORY SEMIDETACHED (AIDED SELF-HELP)  
WORKING-CLASS HOUSING**



**SINGLE-STORY DETACHED (AIDED SELF-HELP)  
LOWER MIDDLE-CLASS HOUSING**



*(Fig. 5. concluded)*

## **Building Costs and Construction Systems**

The size and construction standards of a dwelling unit help determine the costs in producing public housing; other influential elements are materials, construction systems, etc.

Generally speaking, only Thailand is known to have experimented with limited prefabrication (Table 17). The other countries have adopted the conventional method of construction. The principal materials used are concrete,

load-bearing brick, and concrete blocks. Windows, roofing, and ceiling are mostly made with modern, durable materials. There is only limited use of indigenous materials for mass housing, although pozzolanic building blocks may be used extensively in simple construction in Indonesia where they are locally available.

Information on construction costs is subject to a variety of assumptions and interpretations. For instance, some of the statistics include land costs, professional fees, and finance costs. Others don't. Also it is not clear whether or not construction costs apply to net dwelling unit areas. Therefore, a meaningful comparison of construction costs among the countries is not possible; the most that can be said is that construction costs primarily range from U.S.\$70 to 100/m<sup>2</sup>. At the two extremes are Singapore's middle-income housing flats that have concealed wiring and piping and more elaborate finishes and fixtures (U.S.\$190-205/m<sup>2</sup>) and the flats in Hong Kong and Malaysia that are as low as U.S.\$30/m<sup>2</sup>.

The importance of building cost is its influence on selling price and, ultimately, the ability for the producer and consumer to reach their housing goals.

The range of selling prices is narrow except in Singapore and Malaysia where it stretches to U.S.\$100/m<sup>2</sup> and reflects the government's philosophy of heavily subsidizing low-income housing and breaking even or making a small profit from middle-income housing. Rentals per month per m<sup>2</sup> are lowest in Sri Lanka and highest in Indonesia (U.S.\$1.40-1.90). Hong Kong rents range from U.S.\$0.20 to 1.80/m<sup>2</sup> per month. The Philippines is on the high side; Singapore and Malaysia are in the lower-middle range.

The fact that in Singapore and Hong Kong the majority of people live in public housing may be partly due to housing supply and partly due to realistic design standards that have been linked to the income levels of the people. In Singapore, where the population enjoys a comparatively high average income, the standard of public housing design is correspondingly high. In Hong Kong, on the other hand, where the income of the people is lower, the dwelling unit design and the environmental standards of public housing are poorer.

Housing cost in Malaysia is also relatively realistic compared with the income level of the people, but the same cannot be said for the rest of the countries in the region. The pragmatist would argue that the only possible way to provide shelter for the people is to contain costs through compromise; the environmentalist, on the other hand, would voice concerns for the long-term effects of such compromises, especially on children. Weighing the drawbacks and the advantages of compromises is the job of public housing producers who have to search for the least objectionable compromise, keeping in mind the overall size of the task and the available funds and personnel. There appear to be sufficient innovations in dwelling unit design to reflect the social and cultural habits of most people and to minimize management problems after the buildings are completed.

## **Planning the External Environment**

Dwelling unit design can receive a substantial boost from a well-planned external environment, i.e., the location of the housing estates, the residential density, the provision of essential facilities, open space standards, transportation planning, and the provision of utility services. The external environment is a

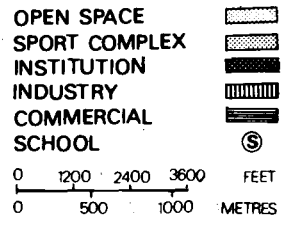
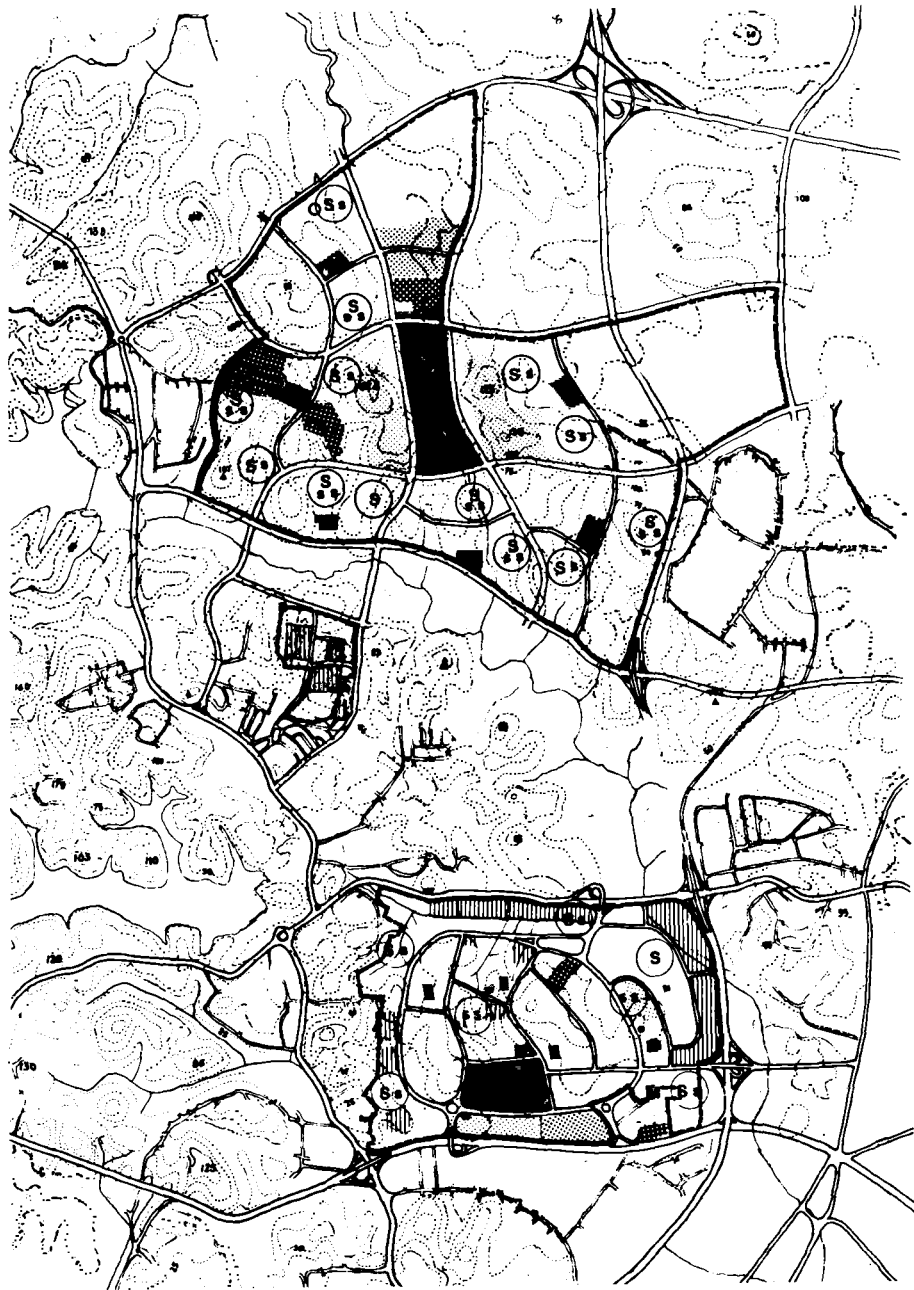


Fig. 6. Locations of existing public housing estates, Singapore.

measure of convenience and accessibility, sanitary provisions, and comfort level. It reflects site planning standards in each country and deserves special attention.

## **Singapore**

Although Singapore has two main categories of government housing, middle-income housing and public housing, this section deals only with public housing, which is far more prevalent.

Over the years, Singapore has evolved a set of comprehensive and detailed planning standards at various hierarchical levels. During the 1<sup>st</sup> decade of public housing, the government built the majority of housing estates within 8 km of the city centre, using vacant pockets of land among existing developments. Later, it was forced to move farther out to the extremities of the island and produce developments that were more self-sufficient. An example is Toa Payoh New Town (Fig. 6). Future public housing estates are likely to be patterned along this line.

New town development offers several practical spin-offs for city planning. In future, the urbanized areas of Singapore will flow essentially along four corridors radiating from the central area, two corridors to the north around the water catchment reservoirs in the centre of the island and a belt each to the west and the east along the southern coast (Fig. 7). New towns will be sited along these corridors, served by public transportation routes, arterial roads, and expressways. Major social and commercial facilities will also find their way into these new towns to serve the people not only in the low-cost housing estates but also in the surrounding districts. The more self-sufficient the new towns are, the less motivation there is for people to go to the central city. Therefore, less traffic is generated on the major roads.

Residential density for public housing is uniformly high in Singapore. Net densities are formulated by considering all the significant elements in a residential precinct, namely the size of the flats, building heights, building spacing standards, building coverage, car parking requirements, and open space standards. Normally, there is only one type of flat in each building block, although at times, three-room and four-room or four-room and five-room flats are mixed in the same block. The net densities (dwelling units per hectare) are 250 for one- and two-room flats, 200 for three-room flats, 175 for four-room, and 150 for five-room flats. On each development site, a good mix of flats is attempted, and the average overall density is about 220 dwelling units per hectare. In future, the present high demand for larger flats will probably mean a lower density at around 185 dwelling units per hectare. Calculated on an average of five persons per dwelling unit, the net residential density is 925 persons per hectare.

In the new towns, the government's aim is to establish new neighbourhoods (Table 16) with a neighbourhood centre and related facilities, such as schools, community centres, minor institutions, and recreational areas. Several neighbourhoods, interlaced with district open space and sport complexes, make up the new town, and the town centre, which is located in the geographic centre accommodates shops, fresh-food markets, a hawker centre, a post office, branch library, cinema, clinic, creche, HDB area office, and social function hall.

To sustain the town centre, the minimum population required is estimated to be around 150 000 to 200 000 people; the high density also ensures the

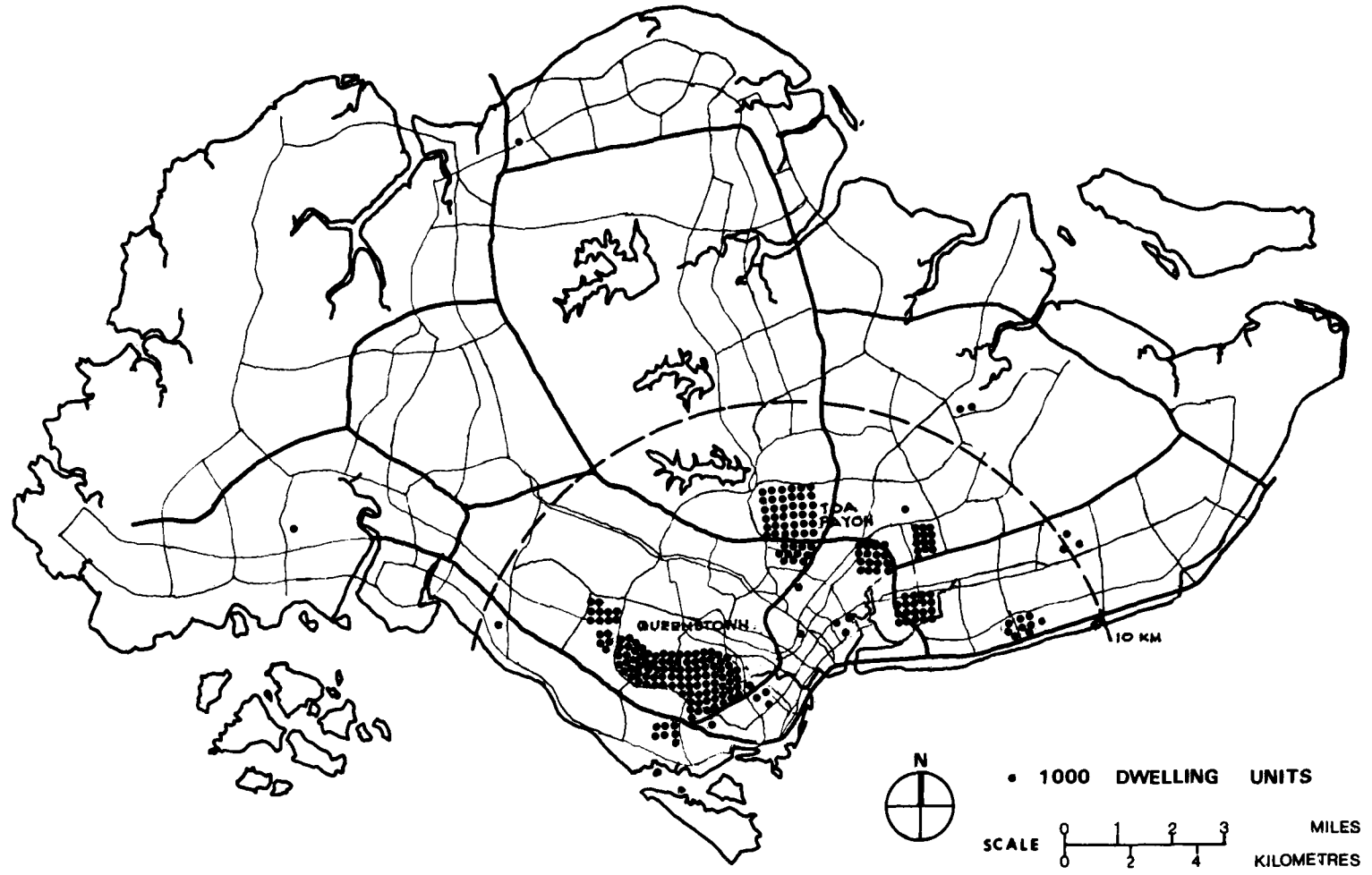


Fig. 7. Outline plans for Ang Mo Kio New Town and Toa Payoh New Town, Singapore.

Table 16. Land use distribution of new towns, Singapore.

Land use	Prototype New Town 175000 pop (35000 dwellings)		Toa Payoh New Town 182000 pop (36500 dwellings)	
	(ha)	(%)	(ha)	(%)
Town centre	20	3.3	16	5.3
Residential	212 <sup>a</sup>	35.3	130	42.8
Schools	46	7.7	32	10.5
Open space <sup>b</sup>	28	4.7	8	1.0
Sports complex	16	2.7	13	4.3
Institutions	57 <sup>c</sup>	9.5	8	2.6
Industries <sup>d</sup>	146	24.3	51	16.8
Major roads	69	11.5	51	16.7
Utilities	6	1.0	-	-
Total	600	100.0	309	100.0

<sup>a</sup>Including neighbourhood centres at a density of 165 dwelling units per hectare (Table 22).

<sup>b</sup>Excluding open green, play fields, and car parks between the building blocks.

<sup>c</sup>Including hospital, junior college, and vocational institutes, religious buildings, and social welfare homes.

<sup>d</sup>Clean and labour-intensive industries.

viability of the neighbourhood centres. Situated at an interval of 0.6 to 1 km, each centre is within walking distance of 4000 to 6000 dwelling units, covering up to 40 hectares in area (Fig. 8).

A model new town has been constructed as a guide in Singapore. Developed when Toa Payoh New Town was well under way, it greatly benefited from the experience already gained. It provides for more land to be allocated to housing services, shopping, etc. (Table 16) and proposes an overall population density (including all the facilities and other land uses) of about 290 persons per hectare and a neighbourhood density of 535 persons per hectare. Open spaces are provided in the form of parks, gardens, and continuous green corridors that are meant to function as pedestrian and bicycle paths.

The transportation and circulation network is part of the comprehensive new town plan. All new towns and their centres are directly served by the island-wide bus services as well as feeder and local bus lines. Car parking standards (Table 17) have been meticulously worked out to cover a wide range of uses, including residential, commercial, and institutional (Table 18).

All public housing estates are provided with water, electricity, gas, telephone, master TV antenna, sewerage connections, and garbage collection. With the exception of a small number of early examples, every flat is provided with an individual kitchen, toilet, and rubbish chute.

Table 17. Residential parking requirements in public housing estates, Singapore.

Flats	Carpark ratio <sup>a</sup> (d.u./parking space)	
	Outside central area	Within central area
1-room	10	20
2-room	5	10
3-room	3	6
4-room	1.5	3
5-room	1	2

<sup>a</sup>d.u. is dwelling unit.

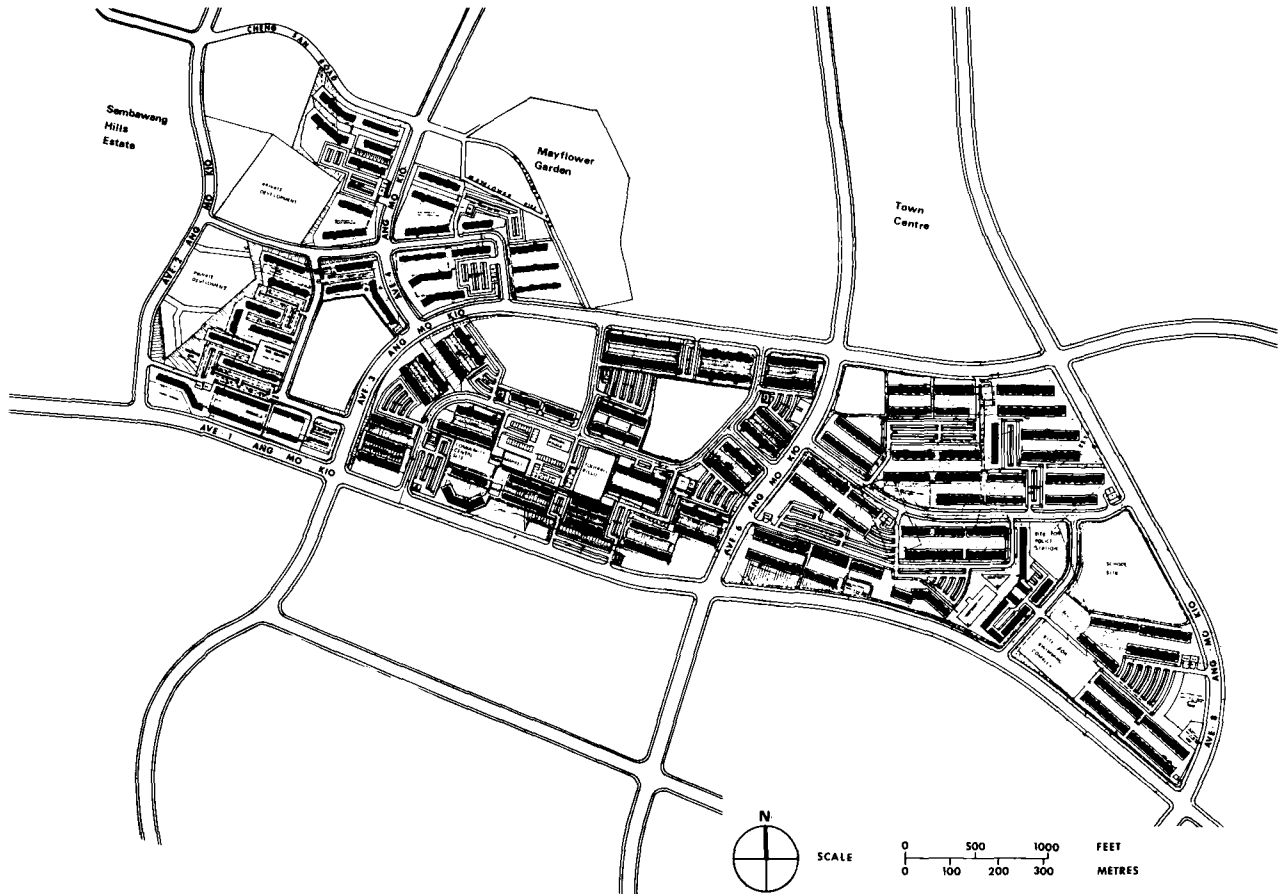


Fig. 8. Site plan for neighbourhoods 2 and 3, Ang Mo Kio New Town, Singapore.



Table 18. Neighbourhood land use, Singapore.

Distribution	Area (ha)	Remarks
Neighbourhood centre	4.0	60 shops; market (fresh food stalls, 162); hawkker centre (cooked food stalls, 20 or 40); 300 car parking spaces; 60 bus and lorry parking spaces (0.6 ha); community centre (0.6 ha); reserve land (0.6 ha)
3 residential precincts	32.4	6000 dwelling units (5 persons/unit)
School sites: 1.7 secondary schools 2.4 primary schools	7.2	1 secondary school (double session) per 3500 dwelling units; 1 primary school (double session) per 2500 dwelling units
1 sports complex	2.4	Alternating among neighbourhoods: 1 football field with basketball courts, etc. or 1 swimming complex with 1 olympic pool and wading pool
Balance of district open space	9.6	0.15–0.40 ha/1000 persons depending on surrounding open space

## Hong Kong

Site planning standards in Hong Kong are not as comprehensively spelled out and consistently applied as those in Singapore, but the numerous completed housing estates provide some idea of existing norms.

The majority of the public housing estates are located within a 7-km radius of the central business district (Fig. 9). The proposed new towns, however, are going to be situated 10–24 km from the centre. In general, because of lower land cost and less competition with private residential development, public housing estates are sited on the periphery of the urban areas.

Residential density in Hong Kong is probably the highest in the world. The gross density in the Housing Authority Estates is 4800 persons per hectare (Wong 1977, p. 113); in government low-cost housing and resettlement housing estates, 4000–4800 persons per hectare (Wong 1977, p. 120); and in the newer estates (Fig. 10) and new towns 2500 persons per hectare, which is still exceedingly high on such a massive scale of development.

The provision of facilities has progressively improved since the first resettlement blocks were built. In the early developments, which were virtually devoid of essential supporting facilities, unauthorized hawkker stalls occupied the open spaces between the blocks, and the rooftops of the blocks had to be utilized for schools and kindergartens. In the newer estates, commercial space is provided on the ground floor of the blocks, and more recently, the Mark IV, V, and VI developments accommodate schools in separate multistory buildings. The ground floor has been increasingly allocated to club halls, vocational training schools, libraries, post offices, larger restaurants, department stores, and, in several estates, clinics and market stalls. All the newer estates are reported to have kindergartens and most of them, primary schools. There are management offices in the estates, and now that it is possible for residents to pay rent directly to banks, there is an upsurge of banks.

There are no known guidelines for open space in Hong Kong. In the early resettlement estates only 0.008 hectares per 1000 persons was devoted to open

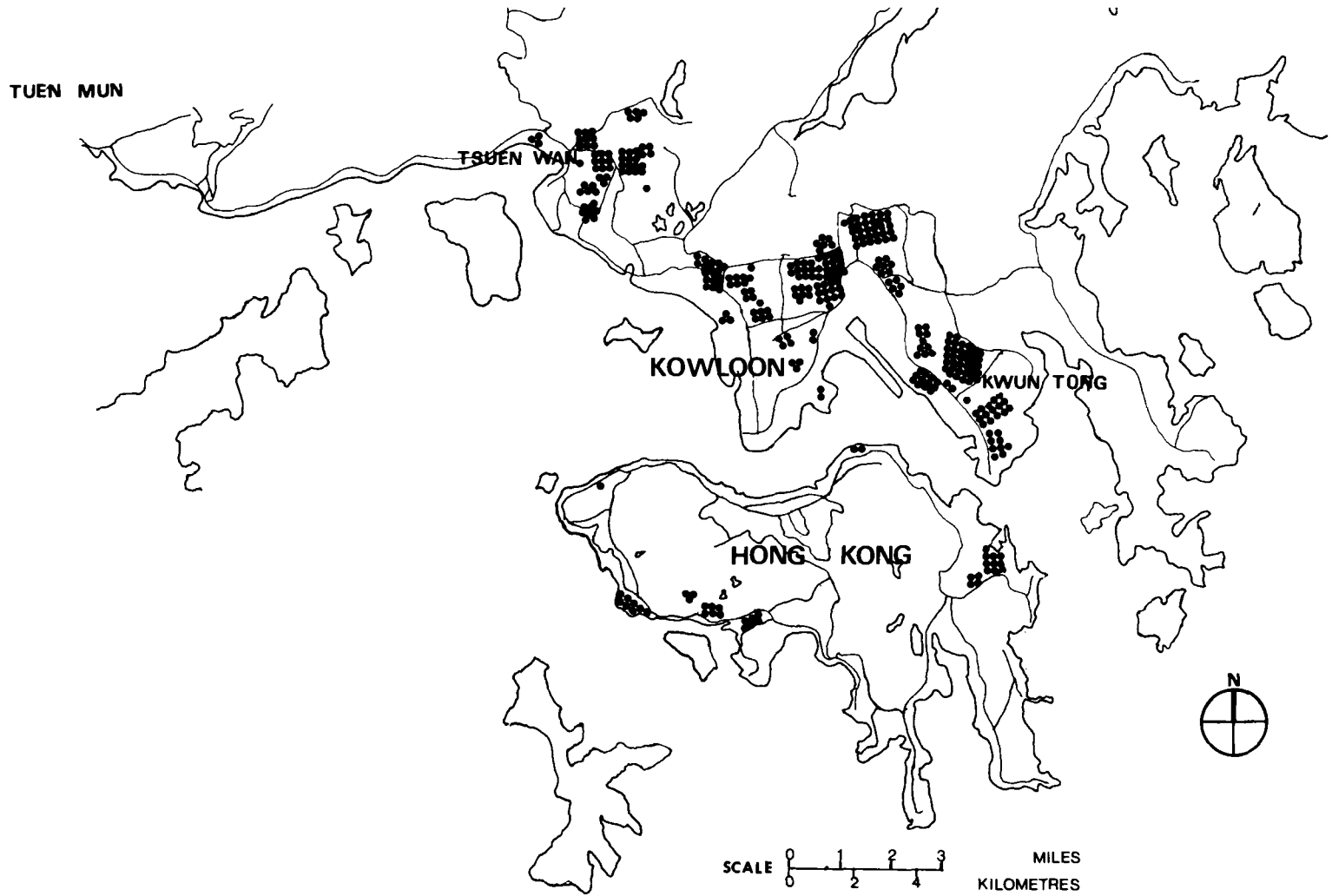
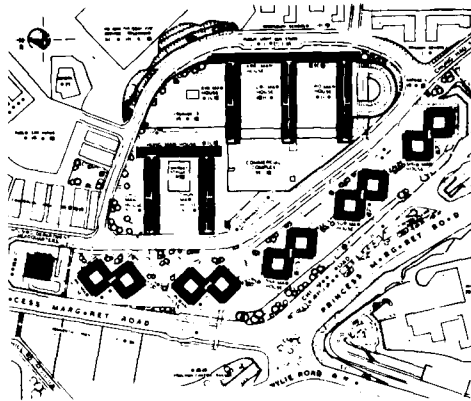
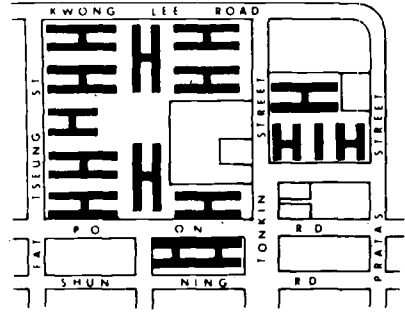


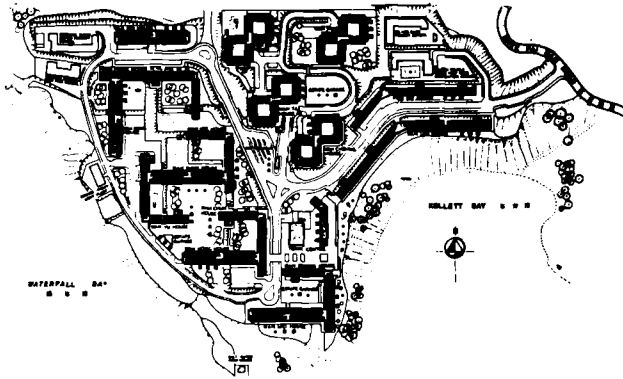
Fig. 9. Location of public housing estates, Hong Kong.



OI MAN ESTATES



LI CHENG UK ESTATES  
TYPICAL RESETTLEMENT HOUSING



WAH FU ESTATES

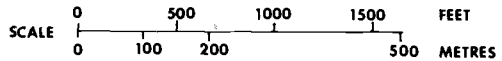


Fig. 10. Site plans for Oi Man, Wah Fu, and Li Cheng Uk resettlement estates, Hong Kong.

space (Wong 1977, p. 112), but the Housing Authority estates enjoy slightly more green space, more playgrounds, and gardens.

As a general rule, bus and mini-bus terminals are provided in the centres of the estates. There was no parking provision in the original resettlement estates, but in some Housing Authority estates, multistorey garages are provided. Car park ratios differ widely among the estates from one car park for every 7.6 flats in the Ping Shek Estate to one car park for every 42.5 flats in the North Point Estate (Housing Authority 1972). There is no common standard for parking provisions. In fact, discussions are known to have taken place on whether or not public housing occupants can really afford cars.

Water, electricity, and sewage have always been available in one form or another in the Hong Kong estates. In the Mark I and II resettlement estates, only communal bathrooms and toilets were provided. These have proved most unsatisfactory. Later resettlement flats were provided with a water tap per unit, one water closet for every two adjacent flats, and built-in electrical fittings and refuse chutes to each block. The first Mark IV flats, completed in 1965, were provided with a private lavatory per unit. The Housing Authority flats are all

self-contained units with kitchens, water closet, shower and wash basin, electricity, and a common refuse room on each floor. In the newer buildings a master antenna is being encouraged.

## **Malaysia**

It is difficult to generalize on site planning standards in Malaysia because there are only a couple of completed examples. To date, the site selection appears to have been strongly influenced by the availability of land. For example, a number of the low-cost terrace housing units in the smaller towns of Peninsular Malaysia were sited without proper consideration to the surrounding developments (Tan, Hamzah Sendut, in press, chapter IV). Some are located on the outskirts of the town and are surrounded by rubber plantations or secondary forest (Tan, Hamzah Sendut, in press, chapter VII). In general, four- and five-story walk-up flats are built along the periphery of existing towns (Tan, Hamzah Sendut, in press, chapter VII), whereas high-rise flats are on residual land in urban centres built to very high densities to justify the land cost. The high-rise developments built so far are fairly evenly distributed throughout Malaysia, i.e., three each in Kuala Lumpur, Penang, and Ipoh, and one each in Seremban, Malacca, and Johore Bahru.

There are no data for the low-density terrace housing units in Malaysia. The four-story walk-ups are reported to have 500 persons per hectare (Tan, Hamzah Sendut, in press, chapter IV) and the 16–18 story buildings to have 2000 persons per hectare (Tan, Hamzah Sendut, in press, chapter VI). The high-density, low-cost housing has not been well provided with facilities and amenities, although markets, bus terminals, *seraus* (mosques) are generally available. In some projects, such as one in Kuala Lumpur and another in Penang, the facilities were added as an afterthought. A swimming pool was provided in the Kuala Lumpur scheme. The flat-to-shop ratio is 40:1 in the Kuala Lumpur project and 66:1 in Penang.

## **Philippines**

The information on site planning for the Philippines has been extracted from housing projects in Roxas District, Project 6 (Magsaysay District), Markina Heights (LHDC), both in Quezon City and a proposed GSIS Financed Tenement Housing in Tondo, Manila. Figure 11 shows the locations of public housing projects. No data are available on development density but there is a policy to include open space. All the projects are reported to be provided with commercial centres, religious facilities, schools, recreation spaces, etc. Sports facilities seem to favour basketball and pelota courts.

## **Thailand**

Information on only two urban housing schemes is available for Thailand (Fig. 12). The completed Huaykwang Housing Project comprises 3920 units on 28.8 hectares of land. The proposed Ta Sai Housing Project consists of 1419 units on 37.3 hectares of land. The Huaykwang project is about 7 km from the

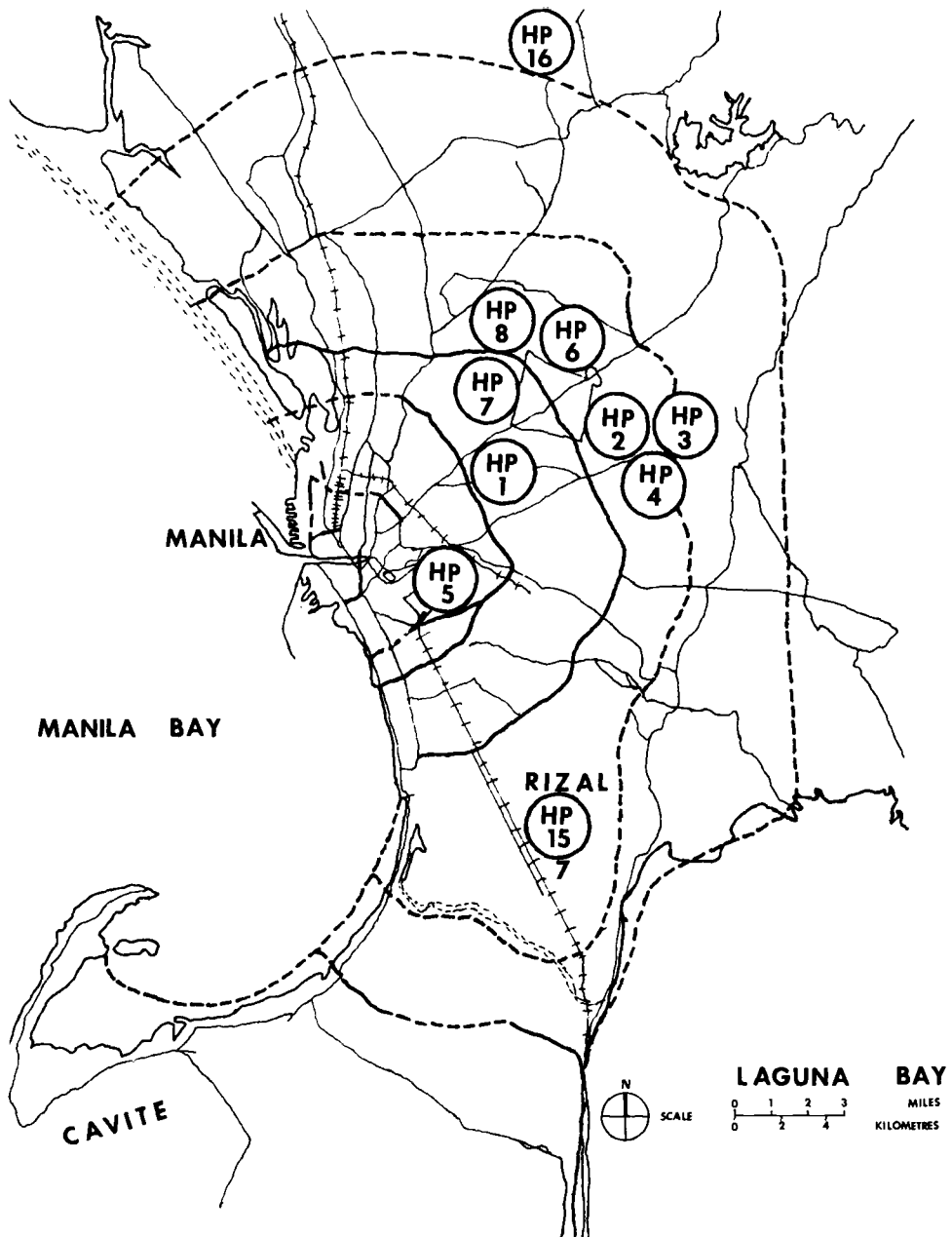


Fig. 11. Location of public housing projects, Manila.

city centre; Ta Sai, 14 km. On the average, the net densities (persons per hectare) by housing type in these projects are: 12-story flats, 2950; 5-story walk-ups, 1250–1560; row houses, 458–688; duplexes, 344; detached houses, 172.

Facilities and open spaces for the two projects have been worked out in great detail (Table 19). In the Huaykwang project, one car park serves every

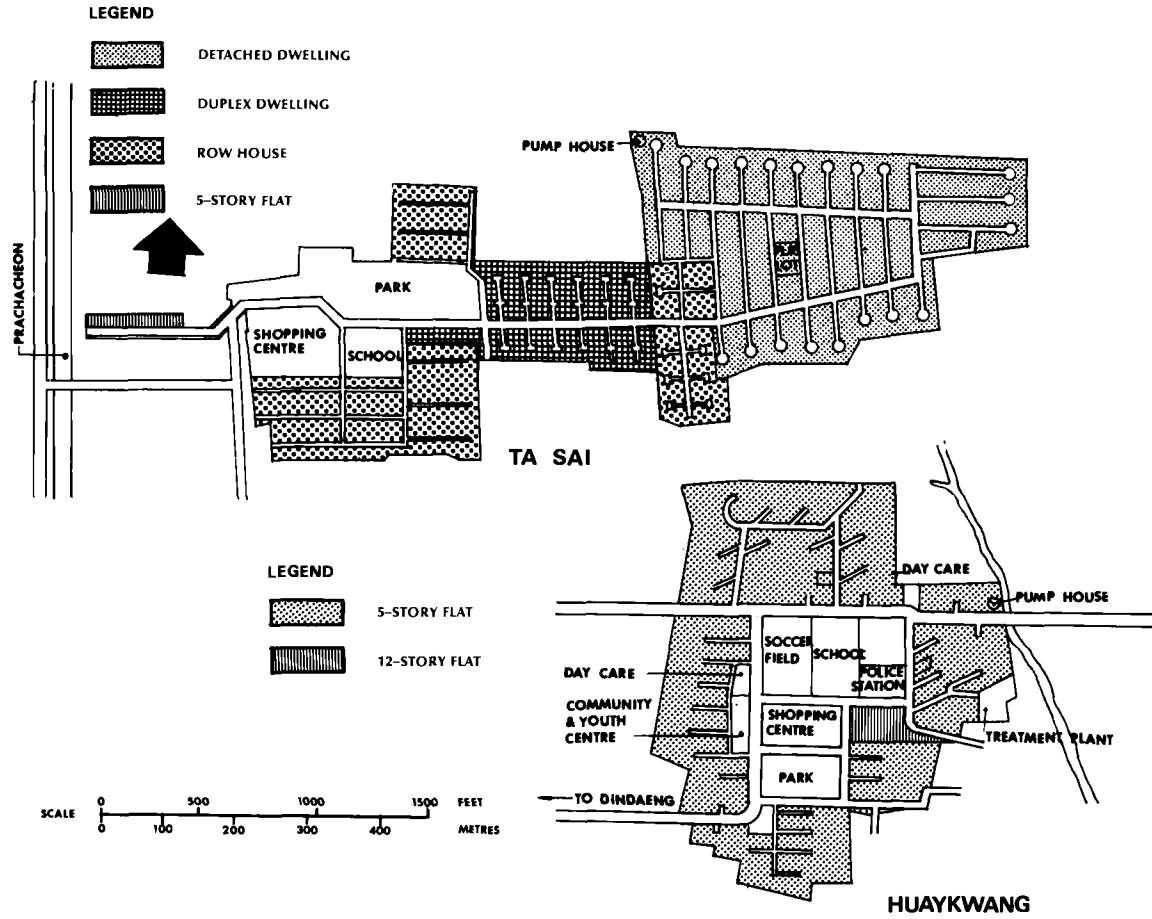


Fig. 12. Site plan of Ta Sai and Huaykwang projects, Bangkok.

Table 19. Land use in Huaykwang and Ta Sai, Bangkok.

	Huaykwang		Ta Sai	
	Area (ha)	% of total	Area (ha)	% of total
<b>Total land area</b>	28.80	100.0	37.28	100.0
Residential land				
excl. carparking	16.20	56.1		
incl. carparking	17.75	61.4	24.00	64.4
Community facilities <sup>a</sup>				
(incl. shopping centre)	1.85	6.4	1.49	4.0
Schools	1.57	5.4	0.69	1.9
Sports facilities				
(soccer field)	1.08	3.8	-	-
Open space				
(incl. play lots)	1.43	5.0	3.16	8.5
Roads <sup>b</sup>	4.71	16.3	7.82	21.0
Utilities	0.50	1.7	0.12	0.3

<sup>a</sup>The Huaykwang figure includes the market.

<sup>b</sup>The Ta Sai figure includes space for footpaths.

Table 20. Sizes and facilities of planning units, Cijagra, Bandung.

Items	Neighbourhood	Elementary school or subneighbourhood	Kindergarten unit
Number of housing units	-	600-1000	150-250
Population	22000	5000-6000	1000-1500
Site area (ha)	110	18-30	3-6
Density (persons per hectare)	2000	-	-
Facilities	At neighbourhood centre: small public auditorium; police office; fire station; shops (various); market; sport field; park; swimming pool/recreational area	At subneighbourhood centre: elementary school for ± 960 students; office of <i>rukun kampong</i> (head of the subneighbourhood); polyclinic; shops; small <i>musholla</i> (mosque)	At kindergarten centre (0.4 ha in size): kindergarten for ± 80 pupils, office of <i>rukun tetangga</i> (head of 25 households), small <i>musholla</i> (mosque), shops
Land use	Green areas 4.5%; streets/roads/footpath 22.5%; housing lot 60%; public facilities 13%		

12 flats; in the Ta Sai project, there is a parking spot for every detached house and two for every duplex in the form of recessed off-street parking.

## Indonesia

In Indonesia a number of low-density, low-cost housing projects were developed in the early 70s. They are mainly prototype low-rise developments in

Jakarta and Bandung (Sumintardja 1975). Data from Cijagra, Bandung, indicate that development is planned on three hierarchical levels, namely, the neighbourhood, the subneighbourhood, and kindergarten sectors. The size, densities, and facilities seem rather unrealistic (Table 20).<sup>29</sup> No information is available on car parking standards, although parking would likely be provided within the individual lots. Daily water consumption is designed for 150 litres per person and electricity is available. There is no mention of sewer facilities.

## **Sri Lanka**

There is very scanty information on site planning in Sri Lanka, but the few existing public housing projects appear to be located according to the availability of rail and bus services. Some are sited within the city of Colombo, others 8–10 km away, and a few, more than 15–20 km away. New housing schemes are known to be provided with shops, community centres, and playgrounds.

## **Summary**

The countries studied in this project are at different stages of national development, let alone housing development; and thus they vary in sophistication. Some do not have the administrative machinery nor the budget to solve their housing problems; some do not even have the resources to assemble land, the most basic ingredient of public housing. Given the restraints, the countries may be tempted to limit their scope of work to the mere provision of environmental sanitation and shelters. However, the experience in Hong Kong and Malaysia demonstrates that certain essential facilities, e.g., shopping, schools, clinics, and employment-generating activities, are necessary for the daily life of the people.

The type of facilities, undoubtedly, is governed by the needs of the particular population to be served, the available capital, and the capability of maintaining and running the facilities. Also, in the planning there should be some allowance for future additions and improvements. For example, in Singapore, site planning standards are spelled out in detail for present and future developments, and the demand for facilities and amenities has grown steadily and relentlessly. Adequate land, strategically located, is reserved to meet needs in time to come. In Thailand, there are examples of comprehensive site planning standards that meet the essential need of the people and apparently can be realized, but in some of the countries, the planning has been idealistic and unrealistic.

Many of the housing projects are relatively small and isolated, drawing on facilities from surrounding developments. There is very likely a shortage of facilities in the vicinity, and new housing projects, if not complemented with supporting facilities, actually overtax the limited existing resources. It would be more appropriate to provide additional facilities in the locality than to build more housing, and it would make more of an impact on the redevelopment and environmental upgrading of the city as a whole.

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<sup>29</sup> It was reported that as a first delivery, a total 360 single-story units would be constructed by the central government and the municipality.



The country data show a wide range of residential densities, ranging from the normal low-rise, single family houses to extremely dense developments in Hong Kong (4800 persons per hectare). Although there may be a limit on acceptable population density, higher density may be compensated by more elaborate provision of amenities. The difference between net and gross residential densities in a single development may be the clue. In Singapore, the net residential density is 925 persons per hectare, but the gross density, taking all the land areas within a new town, is only 290 persons per hectare. There are extensive and comprehensive facilities within the area, and the housing environment and quality of life are correspondingly good.

Many big metropolitan areas in the region have population densities equal to, or higher than, those in Hong Kong and Singapore. Thus, they may find that public housing developments have to be at least medium-rise to accommodate their populations in respectable living conditions. To ensure that there is enough land to house everybody in the city, it would be desirable to take stock of the total land likely to become available. Checked against the projected housing need, it would indicate the density at which the government should develop public housing. It would also be desirable to plan housing estates near transport routes and complementary facilities, such as shopping and employment centres.

In planning and design, there is really no useful model to follow from either Europe or America. Because of Southeast Asia's peculiar socioeconomic conditions and constraints, the countries must evolve their own models.

Given strong political will to solve the housing problems, their major stumbling block will be shortage of government funds on the one hand, and, on the other, the inability of low-income groups to pay for the relatively high costs of housing construction. This dilemma pressures designers and planners to trim design standards and keep construction costs as close as possible to the income levels of the people. For instance, in Hong Kong, where income is second only to Singapore, floor space and provision of sanitary facilities are the lowest in the region. Although Hong Kong has kept costs within the financial means of the target group, it has sacrificed much in standards. Whether or not it has compromised too much has been debated, but, after all, the art of low-cost housing development lies in adjusting design standards and costs without endangering the short- and long-term welfare of the target population. The available information suggests that some of the countries are not yet practiced in the art. Erecting or proposing comparatively luxurious housing units, the governments have not related the costs to the general income levels of the people and thus have limited their ability to produce an adequate supply of low-cost units.

One of the major issues of urban public housing in this region is population. In most of the major cities, the population sizes are great, but the people do not have the economic means to disperse to distant residential communities from the core of the city while maintaining their mobility by car or buses. Even in Singapore, the bus fares represent a major expense for a family. It is necessary for the people to live near their places of work and other facilities. Consequently, many of the major cities in the region not only have large populations but also have extremely heavy population concentration or density. Row houses and detached or semidetached houses are of such a low density that they cannot adequately accommodate the people. Medium- or high-rise developments, though they mean higher building and maintenance costs, offer more realistic density levels. At least the four- to five-story medium-rise, walk-up flats deserve

higher priority than is evident so far in the public housing programs in some of the countries.

Finally, in the Southeast Asian region, the only hope for housing the majority of the population in urban centres is government commitment to the problem. The market for private developers is confined to a handful of people; there is virtually no profit, and, therefore, no incentive for private enterprise to be engaged in low-cost housing. Moreover, it is essential to ensure the continuity of the low-cost housing program until, perhaps decades later, the problem is solved.

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# 9

## **Rural Housing**

Chandra Soysa

In the countries under review, the most immediate housing needs are those brought about by the rapid and often unplanned growth of urban centres; housing problems in the rural areas have attracted little attention. Development planners feel that rural housing is suited to the climate, environment, and traditional social structures in Asian society, but if they took a closer look, they would see that rural housing is also, more often than not, substandard by prevailing social or legal norms. With the increasing global interest in the elimination of mass poverty and the move toward equity and justice, housing in the rural sector cannot be ignored.

At present, one of the most striking manifestations of rural poverty is the poor quality of housing. A development effort aimed at eliminating mass poverty and meeting basic needs must concentrate on the provision of housing of minimum standards to all people.

If "it is important to develop the creativity and initiative of the rural population and to involve them on all levels of planning and implementation" (Organisation of Economic Co-operation and Development 1975), the potential of rural housing must be carefully examined. Rural housing can forge links between different development sectors, can generate employment, sharpen local skills, and create a market for local materials.

To date, the rural economy of Asian countries has not effectively captured the full potential of the rural labour force. Based on traditional agriculture, it suffers from general underemployment and seasonal surpluses. A well-designed program of self-help housing schemes in planned community improvement projects could mobilize the entire labour force during the slack season in agriculture and boost the economy's employment and capital formation.

Rural housing, therefore, could be central to a program of integrated rural development through which all sections of rural society could be reached, including those engaged in nonagricultural activities. In the past, it has been, at best, a supplementary program in government settlement schemes, the objectives of which have been either to resettle the landless or to raise agricultural productivity. Little attempt has been made to invest in rural housing or to assess its socioeconomic contributions to national and regional development.

### **Overview of Rural Housing**

In 1970, of the world's 3.6 billion people, 62.6% resided in the rural sector. The developing countries had a rural population of 1.9 billion — 74.1% of their

total population — and by 1980 they are estimated to have 2.3 billion.

Table 21 gives the distribution of rural population and rural housing stock in Indonesia, Laos, Malaysia, Thailand, Philippines, and Sri Lanka. The city-states of Singapore and Hong Kong are not included because they do not have rural hinterlands as such, and their rural housing is of little significance to the total housing picture.

Although the rural sector accounts for more than two-thirds of the populations of the six countries, it has traditionally been a service sector and relatively stagnant compared to the developing urban centres. Its housing standards are different, as are the materials used and the supply of housing amenities and spatial requirements.

A feature of rural housing is its heavy dependence on construction materials that are used in their natural or rudimentarily processed state, such as vegetative material for roofing or wattle and daub for walls. Steel, cement, and glass, which reach the urban sector, rarely filter to the rural areas, and even when they do, are rarely available for rural housing because of their high costs.

Table 21. Structural composition of rural housing stock.

Country	Year	Permanent housing units	Semi-permanent housing units	Temporary housing units
Indonesia	1971	1111102	11458941	6591765
Malaysia	1970	82849	837073	118610
Thailand	1970	2914076	99608	1578492
Philippines	1970	1094719	1046641	2029464
Sri Lanka	1971	550851	1253287	137380

## Design and Building Materials in Rural Housing

The warm, humid regions have evolved an airy house on stilts normally built of timber, with a steep, sloping roof; large low windows; and closable awnings. The hot, arid regions have evolved thick, earth-walled structures with small, high windows; flatter roofs; and, often, inner courtyards into which rain-water is drained. The former is built of organic materials, such as timber, straw, cadjan, bamboo, palms, and grass, whereas the latter uses inorganic materials, such as earth, stone, bricks, and clay tiles. Examples of both types are found extensively in the countries under study.

Of the locally available building materials, the most extensively used is soil in its many forms — as burnt or sun-dried bricks, tiles, as rammed earth, or as dried mud reinforced with straw, rice husks, or timber. Also used extensively are vegetative materials, such as bamboo in Indonesia, nipa in the Philippines, and coconut palm in Sri Lanka. From an ecologic and even a climatic point of view, these materials may be the most suitable for the region, but their inherent perishability and the necessity for regular renewal and replacement tend to diminish their value for housing.

Considerable research is being done in the region to improve local raw materials. For example, soil products can now be treated with preservatives and

stabilized with asphalt emulsion, molasses, and other binding, but noneroding, materials. Chemical treatment can protect grass, cajan, or bamboo against fire and termites, extending its life from 2 to 12 years. Methods for exploiting cheap and readily available types of wood have also been researched (e.g., the boron treatment of rubber wood in Sri Lanka). However, the results of research do not seem to reach rural areas and their practical application is limited. Research institutes are invariably located in the capital cities and are not complemented by intensive local projects.

In all the countries except Thailand, permanent housing units compose only a small proportion of the total housing stock.<sup>30</sup> In Thailand, permanent houses make up 63% of total stock because timber is readily available and is less expensive than masonry. In northern and eastern Thailand, however, there is evidence that perishable materials, such as bamboo, nipa leaves, and elephant grass, are used in building.

Permanent housing units account for 28.4% of Sri Lanka's rural housing. The overall quality of new housing has rapidly improved since the post-war years, and both urban and rural housing has been increasingly built of durable materials. In the Philippines 25.7% of rural housing is reported to be permanent. This is a considerable proportion of total housing in a country where the traditional rural house — the nipa hut — is temporary, built of thatched palm or rush, with walls made of woven grass or palm leaves lashed on bamboo frames. The share of permanent housing may be due not only to the use of timber when available but also to the considerable investments made by the People's Homesite and Housing Corporation (PHHC) and Government Service Insurance System (GSIS) in "rural" housing near towns. These organizations make use of durable materials and do not follow the design of traditional rural housing. In Malaysia and Indonesia, the share of permanent units remains relatively low at 7.98% and 5.8% respectively.

In the Philippines, the nipa hut is the commonest type of rural house, and in Thailand, wooden houses predominate. In the other countries, most housing is semipermanent; with Peninsular Malaysia leading (80.6%) and Sri Lanka next (64.6%). In both Malaysia and Sri Lanka, rural housing programs in recent years have been coupled with land development schemes and have increased the numbers of semipermanent dwellings. Also, wattle and daub has been used extensively in the two countries, and though it looks temporary, wattle and daub can, with proper maintenance, outlast the lifespan of the builder. In Indonesia, the Ministry of Interior has worked through social village committees (*Lembaga Sosial Desa*) to support mutual aid and self-help housing schemes, and the Ministry of Social Affairs has provided financial aid for housing devel-

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<sup>30</sup>The categorization of houses into three broad types — permanent, semipermanent, and temporary — is based on the UN statistical indicators for housing. The classification is made on the basis of the principal materials used in the construction of the wall, roof, and floor. Where such materials are durable like cement, brick, tile, asbestos, metal, or wood, the house has been classified as permanent. (Wattle and daub used in Sri Lanka and Malaysia for the construction of walls, has, in this chapter, also been classified as durable.) Where walls and roofs are made of cajan, nipa grass, or other nondurable materials, the house has been classified as temporary. Where a mixture of both durable and nondurable materials is used, the house has been classified as semipermanent. There have been slight variations in these classifications among the countries, but there do not seem to be any broad divergences that would render the data unsuitable for comparison.

opment. The programs have made a significant impact on rural housing, with the result that the semipermanent units are now the predominant structural types and account for 59.8% of the total rural housing. In the Philippines, semipermanent housing is 24.6% of the total rural housing stock, and in Thailand it is only 2.17%.

Temporary housing deserves special attention. It is occupied by the lowest-income groups and is an indication that basic human needs are outside their means. It is significant that the highest percentage of temporary housing is found in countries with mass migration and rapid expansion of capital cities — the Philippines with 47.7% and Indonesia and Thailand each with 34% of rural housing classified as temporary.

In rural areas, shelter is readily available, but quality shelter is another matter. Although the climate in Asia does not call for the same type of protection necessary in some temperate areas, it does demand security from the vagaries of monsoons, typhoons, and other tropical storms. Shelter for the night and for the storage of grain is subsistence housing and may not be adequate as the process of modernization brings into focus a new set of needs.

## Rural Housing Amenities

Because rural peoples live farther apart than urban dwellers, they are less suited to communal services designed to ensure environmental health, the two most essential of which are an adequate and protected water supply and a safe means of human waste disposal.

Protected water supplies are much less common in rural areas than in urban areas (Table 22). Malaysia and Indonesia, with 37% and 32% of housing units supplied with pipe-borne water, are at the top of the list. Sri Lanka ranks next with 14%, and the Philippines and Thailand have very few units (8% and 2.2% respectively) supplied with pipe-borne water.

Open waters, such as wells, streams, and ponds situated in the immediate vicinity, are the main sources of supply. In Sri Lanka, the commonest source of water is the open well, serving 75.4% of rural households; in the Philippines, too, the open well is the major source, supplying water to 68.1% of rural house-

Table 22. Number of rural housing units classified by source of water supply.

Country	Year	Pipe-borne water		Water from wells, streams, rivers, etc.	
		Number	% total	Number	% total
Indonesia	1971	6131875	32.00	13030233	68.00
Malaysia	1970	382180	36.80	656352	63.20
Thailand	1970	104316	2.27	4487860	97.73
Philippines	1970	367980	8.60	3910913 <sup>b</sup>	91.40
Sri Lanka	1971	252807 <sup>a</sup>	14.06	1501842 <sup>c</sup>	85.94

<sup>a</sup>Comprises 28644 with pipe-borne water inside units, 130844 with pipe-borne water outside units but on premises, and 93314 with pipe-borne water outside premises.

<sup>b</sup>Comprises 2913944 units with water supply from wells and 996969 units with water supply from streams, rivers, etc.

<sup>c</sup>Comprises 1313357 units with water supply from wells and 188485 units with water supply from streams, rivers, etc.

Table 23. Number of rural housing units classified by type of sanitary facilities.<sup>a</sup>

Country	Year	Flush toilets		Water-sealed		Bucket type		Pit system		Total <sup>b</sup>	
		Number	% total	Number	% total	Number	% total	Number	% total	Number	% total
Indonesia	1971	n.a.		n.a.		n.a.		n.a.		2299453	12.00
Malaysia	1970	114239	11.00	n.a.		n.a.		n.a.		783054	75.40
Thailand	1970	n.a.		n.a.		n.a.		n.a.		844640 <sup>c</sup>	18.30
Philippines	1970	179711	4.20	158317	3.70	5757	0.14	2160813	50.40	2504598	58.44
Sri Lanka	1971	53524	2.98	234792	13.07	25077	1.40	702690	44.22	1096083	61.67

<sup>a</sup>n.a. = not available.

<sup>b</sup>Total excludes rural housing units with no toilet facility.

<sup>c</sup>Excludes units with pit system.



*Building materials for rural housing are usually abundant but often not permanent.*



holds. In the Philippines, 23.3% of rural households have to seek their water from streams, rivers, and similar sources, and in Sri Lanka 10.5% fall into this category. The available data indicate that 97.7% of the households in Thailand, 68% in Indonesia, and 63% in Malaysia do not have pipe-borne water.

Rural houses in the region also have inadequate toilet facilities (Table 23). In Indonesia, 88% of rural houses do not have toilet facilities; in Thailand, 81.6% either have only a pit or have no toilet facilities at all. In Peninsular Malaysia, only 11% of rural houses have flush toilets, and 24.6% have no toilets at all. Sri Lanka is similar with 16% of rural households provided either with flush or water-sealed toilets and 38% without facilities. In the Philippines, the situation is worse with only 8% of rural houses having flush or water-sealed facilities, and almost 41% without toilets.

Data regarding other amenities are very scarce. Infrastructurally, very few amenities appear to be provided. It is likely, however, that development in the rural sector will soon force construction of rural housing with adequate common amenities and communication. A tendency may also grow for settlements that are large enough to be served economically by common utilities, and governments may be obliged to improve rural services and housing in support of their programs to contain rural-urban migration. New, improved settlements would assist in curbing migration and in modernizing the rural householder. Although a certain amount of rural-urban migration is inevitable, a more modern rural sector would better equip the rural dweller for life in the city.

## **Profile of a Typical Rural House**

The available information on rural housing gives a broad picture of the countries under review, but the various concepts and definitions used in the collection and presentation of rural housing statistics preclude a satisfactory comparative analysis.

The Sri Lanka monograph provides the most extensive statistics on the quality of housing in the country and presents a profile of a typical rural house.

Statistically, a typical rural house in Sri Lanka is a one- or two-room structure, 23 m<sup>2</sup> in floor area, less than 30 years old. It is owned by one of the occupants who earns less than U.S.\$30 per month. The house is a semi-permanent structure, with walls of wattle and daub, a roof thatched with cadjan, and a floor of dried mud. It has no toilet facilities. Lighting is from a lamp using kerosine oil. There are about five occupants, and they have access to drinking water from a well shared with others. For bathing, they make use of rivers and streams nearby (Table 24).

This typical rural house looks attractive in that it appears clean and is located in a pleasant environment. However, a close view of the inside shows a shelter greatly in need of repair. In the dry season the house is cool, and, but for the smallest children, often empty during the day. In the rainy seasons, the floors and walls are constantly damp, and small children and domestic animals share the living areas. Water has to be carried to the house and is stored in the backyard in open bins that are playgrounds for various insects and birds. Open cooking is done so close to the main living area that the interior of the house is practically covered with soot. Outside, garbage is spread around to feed domestic animals, and the location of toilet facilities is a matter for daily decision.

the Philippines have been issuing loans to rural persons who own their land, and private rural banks have been established with a 50% government subscription, to issue loans to the rural sector. Since 1959, the Development Bank of the Philippines has been granting small loans for low-cost rural homes, the plan for which is prescribed and enforced by the Bank. During 1968–73 the Bank financed 12 166 units, mostly in rural areas on the outskirts of towns. The Government Service Insurance System (GSIS) gives loans as a joint venture with the private sector. About 31% (14 000 units) of its total housing projects under the group housing program are located in the rural areas and are occupied not by small farmers but by members of the middle class who have established colonies in the periphery of the urban centres.

In Indonesia, the monetary resources immediately available have been allocated to technical and organizational aid and building materials where necessary. Limited goals have been established with the objectives of improving knowledge and education about housing, relating housing to other rural development schemes, and making maximum use of local resources, especially those that help to conserve scarce building materials. Priority has been given to self-help programs and pilot and demonstration schemes to illustrate better designs, techniques, and working methods. The government will extend credit for building materials and building components and will offer equipment, supervision, and technical advice free. Credit will be available to members of a formal self-help group and payment will be made in installments to be repaid over a period of 5 to 8 years. Periods of repayment have been designed to coincide with harvest of crops in the region.

In Sri Lanka, particularly in the rural sector, institutional finance plays only a marginal role mainly through rural banks, cooperative societies, savings and loan associations, and building societies. Almost two-thirds of the investment funds in rural housing come in the form of accumulated personal savings or funds collected through disposal of agricultural assets. Loans from kin-groups also play an important role. Employers also offer assistance, particularly in the plantation areas of the rural sector.

A limited but effective part of the Sri Lanka program has been the launching in 1972 of aided self-help housing by the Ministry of Housing and Construction. The program is designed to provide an acceptable house at the lowest possible cost to persons who live in rural areas close to towns and who have neither the land to build on nor the income to pay rent. First, a demonstration house is usually constructed to serve as an office and model. Then, land and material are made available at the site to suitable participants who construct their own core house under the supervision of technical officers of the Department of National Housing. About 7–10 perches<sup>32</sup> of land are allocated per family and the size of each housing unit is 23 m<sup>2</sup>, comprising an open veranda and two rooms, in a design that enables extensions to be made later. Drinking water is provided from communal wells, and each unit is provided with a water-sealed lavatory. These schemes are becoming increasingly popular.

In Malaysia, private developers are expected to provide half the housing requirements of the country, investing in rural settlements as well as in new village schemes. The number of new villages that are expected to be developed annually has been calculated as three-fourths of the rural public housing targets,

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<sup>32</sup> 384 perches = 1 hectare = 2.4 acres.

with private development being equal to the public sector's contribution.

In Thailand, the Bank for Agriculture and Agricultural Cooperatives has loanable funds of U.S.\$50 million for a 5-year agricultural program that could include a housing component. A new National Federation of Agricultural Cooperatives has also been set up, but the low priority of rural housing in Thailand suggests little improvement.

The financing of rural housing in the region is, therefore, mainly from private savings or borrowings rather than public funds and long-term finance. Rural householders generally have low incomes and do not provide a lucrative housing market. At present, they are often compelled to build substandard houses using readily available local materials; a program of housing finance through the rural credit institutions supporting agriculture could offer a workable alternative.

The tradition of self-financing in house building is the basis of several self-help schemes in many countries. Indonesia, Malaysia, and Sri Lanka all have introduced variations on the theme. Governments or employers provide limited assistance normally including house designs, community planning, special building materials, and even some skilled labour. Sometimes even special equipment, e.g., blockmaking machines, are loaned for use and return.

Mutual aid, e.g., *gotong royong* in Indonesia, *bayanihan* in the Philippines, and *shramadana* in Sri Lanka, is widespread in the region: housing together with harvesting and planting are traditional activities in which there is mutual aid. However, to date, mutual aid has not been fully integrated into formal development programs involving joint activity.

Self-help could be harnessed and utilized effectively in a planned program of rural housing and development. Through a supplementary employment project sponsored by the government, educated youth now in the rural sector could be mobilized to work during the period when they have completed their education and are awaiting employment (usually a waiting period of 2-3 years in the countries of this region). A scheme could be based on interdisciplinary teams of youths who visit villages other than their own to mobilize both the internal and external resources toward planned community improvement. The program would serve as a component in an employment creation strategy and create a permanent pool of off-farm skills.

Jan Myrdal visiting the villages of Liu Ling in 1969 after an absence of 7 years, wrote: "One of the significant changes in the village was that in 1962 only the school and administration offices were housed in stone caves; the rest were in earth. In 1969 about half the households had moved into new stone caves — all built during the cultural revolution and built by the brigade's building group. In the words of Feng Chang-yeh, 'it should be possible to realize the idea of rebuilding the entire village. Some thought it impossible. It would cost too much. We discussed the matter many times. We studied Mao Tse-tung... we must be capable of changing things ourselves and breaking with poverty and backwardness. Our discussions went on a long time. In the end agreement was reached' " (Myrdal and Kessle 1970).

The role of the brigade's building group and its contribution to the "idea of rebuilding the entire village" and the peasants' awareness that they could change things themselves, and "breaking with poverty and backwardness" merit further examination.

## **Integrated Rural Development**

With the increasing interest of development planners in strategies that seek the elimination of mass poverty and unemployment, the rural sector has acquired a new dimension. It has been recognized as the home of the majority of the population of developing countries and thus the focus for a new development strategy. The rural economy, which had previously been bypassed by modernization plans, may benefit from increasing information on the experience in Chinese communes. The model of a microeconomy based on many different, but interrelated, activities is of interest not only to planners but to the rural workforce who are not satisfied with traditional urban industry.

The character of the rural workforce has changed; many new entrants are educated youth who cannot be absorbed by the existing economy. The aspirations of the new workforce have led planners to reappraise nonagricultural employment in the rural sector and to examine the links between agriculture and other sectors. A program of rural housing could be of significant value in developing skills in the rural sector. Carpentry, masonry, and other skilled occupations associated with construction could be introduced into the rural sector by housing programs and tapped for other activities in rural development.

In this context, one can envisage new labour-intensive technologies in which men and women use local raw materials to produce household goods or building material primarily for the use of their own communities. Some of the items they could produce in most of Asia are bricks, tiles, claddings of various types, domestic glassware, fibre products, cotton cloth, kitchen tools and utensils, and furniture.

By creating employment, a rural housing program could release social forces that would spark the peoples' ingenuity in identifying and using village resources. The spin-offs would be better living conditions and, possibly, increased output and productivity.

In the rural economy, the household performs an all-purpose function, being a unit of cohabitation, reproduction, and child rearing as well as the unit of production, consumption, and investment. Unlike the structured parts of the economy where individual effort is marketed and rewarded outside the household, the rural sector still operates with the household as a relatively indivisible economic unit. Members of the household essentially strive to maximize the welfare of the household rather than to accumulate individual profit or personal income. In such a context, improvement of the house benefits every member of the household and can become an important social and economic objective, acting as incentive for better productivity.

Rural housing in a well-conceived rural development strategy is a growth sector: it can direct demand to a whole set of local goods and services, can support modernization, generate employment, promote interaction among various age and skill groups in the community, mobilize self-help, and encourage self-reliance.

A rural housing program must be geared to more than just providing increments based on population increase. It must propose to improve existing stock and prepare for modern life-styles and new expectations. All governments in the Asian region have agreed that more than two-thirds of the present generation, and their children, will live out their lives in rural areas and that the integrated development of the rural sector is important. Now, the natural cor-

ollary is that development will generate higher incomes and the life-style of rural householders will change. The range and quality of their requirements will become more diversified. If they suddenly find their houses inadequate both in size and quality, they will surely look to the urban areas for a satisfactory home and environment.

In addition, the countries under study are typical of the population pyramid of developing countries in that they have a very high percentage of young people (e.g., in Sri Lanka 60% and in the Philippines 72% of the total population is under age 25). About 70% of them will continue to live in rural areas, but they will have more formal education than their parents and will demand more and better housing. Their independence and wider horizons will mean the rapid creation of new households.

Further, development programs, especially those that have a major housing component for resettlement, will raise rural expectations of housing standards. And, finally, housing needs will be multiplied by more equitable distribution of land through investments. For example, through land reform in Sri Lanka, nearly 160 000 hectares of agricultural land have become available for distribution.

The rural housing needs of these countries are very difficult to estimate accurately. Conflicting figures for each country have been estimated at various times but considerable research is called for to obtain a true picture of the housing needs that will arise from an improved rural sector.

Although at present there may not appear to be a pressing need for government intervention in rural housing, there is a need for new methods to project the effects of national development policies and to clarify, at a national and a regional level, the real housing needs of a modern rural sector.

A rural housing program could be based on the creativity and initiative of the rural population and guidance and technical assistance — rather than massive budgetary allocations — from governments. It might also include legislative and fiscal measures to channel the financial results of rural development into housing improvements instead of consumer goods.

Policymakers must bear in mind that the core problems of rapid and continuing urbanization are essentially of rural origin and that house building and improvement can be a labour-intensive rural activity with intersectoral links. Without dissipating the current concentration on urban housing, a carefully worked out, complementary rural housing program could become a valuable long-term investment in the region. It would raise living standards, release social forces, increase skills outside agriculture, and create rural employment opportunities, all of which may be critical factors in the regeneration of the rural areas. The results may contribute not only to the eradication of one of the worst manifestations of rural poverty but also to the creation of an environment conducive to the rapid growth of an egalitarian society.

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Table 24. Statistical profile of rural housing in Sri Lanka (1971).

Item	% total rural housing
<b>Structural type:</b>	
Semipermanent	64.6
Permanent	30.6
<b>Materials used for construction of walls:</b>	
Wattle and daub	51.6
Concrete, brick, stone, cement, or cabook	40.5
<b>Materials used for construction of roof:</b>	
Cadjan/palmyrah	44.4
Tile	31.5
<b>Materials used for flooring:</b>	
Mud/earth	62.9
Cement/concrete	36.3
<b>Number of rooms:</b>	
One	34.1
Two	31.9
<b>Floor space:</b>	
9-23 m <sup>2</sup>	32.9
23-45 m <sup>2</sup>	29.8
<b>Tenure status:</b>	
Owner occupied	66.9
Free of rent but do not own	17.2
<b>Source of water</b>	
Shared well	50.9
Exclusive well	31.0
<b>Bathing facilities:</b>	
Shared well	38.9
Other (streams, rivers, etc.)	34.4
<b>Type of latrine:</b>	
Pit	44.4
None	41.5
<b>Type of lighting:</b>	
Kerosine	85.5
Electricity	2.8
<b>Type of cooking facilities:</b>	
Separate kitchen	71.9
No kitchen	22.0
<b>Average number of occupants:</b>	
Fewer than 3 per room	65.6
<b>Income per month:</b>	
Below U.S.\$30	44.4
U.S.\$30-U.S.\$60	37.9
<b>Number of occupants per house:</b>	
Average 5.6 persons	100.0
<b>Age of house:</b>	
Built after 1945	78.5

Rural housing in Sri Lanka appears to be of better quality in both structural characteristics and amenities than that of countries like Indonesia, Philippines, and Thailand. However, even in Sri Lanka, which has invested heavily in welfare policies and has some key social indicators of a very developed country,

the statistical profile of rural housing reflects the poor living conditions of the majority of its people.<sup>31</sup>

## Government Policies

Although agriculture generates a substantial part of the exports of the countries concerned and generates at least one-third of the national domestic product, agricultural areas and the rural environment receive meagre national investment. Rural housing and related programs, therefore, receive comparatively little attention, and very little information is available on rural living, especially regarding the quality of rural housing. The lack of data could well be one of the main factors inhibiting positive governmental action in the field of rural housing.

At best, the provision of rural housing has been undertaken in the countries as an ancillary program to settlement or agricultural schemes (e.g., the Federal Land Development Authority schemes in Malaysia and the Gal Oya and Uda Walawe schemes in Sri Lanka). Recently, however, due to emerging pressures of the rural sector and a growing social awareness in the countries, some governments have made policy statements on rural housing. The 5-year development plan of Sri Lanka states:

...the rural housing programme has high priority. It is a means of mobilizing savings and diverting a portion of the increase in rural incomes to investment on housing in the rural sector. It will generate a demand for building materials, furniture, and other local products which will promote industrial activity in the rural areas. It will also create employment opportunities. (p. 126)

Repairs or renovations and the provision of basic community facilities have, traditionally, been done through government rural development schemes (e.g., the Department of Rural Development in Sri Lanka, the Office of Community Development in the Philippines) or through private voluntary organizations or semigovernmental organizations. Church organizations and voluntary groups have also been active in community improvement and have often been linked to foreign donors or private aid organizations. But housing policy and legislation and, often, the provision of housing itself are controlled by government.

In Indonesia, three ministries are involved in rural housing — the Ministry of Public Works and Electric Power, the Ministry of Social Welfare, and the Ministry of the Interior. During the first Five Year Development Plan (1969–74), emphasis was placed on research, training, and study to prepare for a large-scale housing program. Building information centres were set up in Jakarta, Bandung, Yogyakarta, Bali, Surabaya, Medan, Ujung Pandang, and Banjarmasin to manage the preparations and to cooperate with other institutes, in particular the Social Welfare Institute and Village Community Development (PMD). For the second plan, the government emphasizes the improvement of the rural environment and the restoration of rural houses in village development

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<sup>31</sup>For example, infant mortality is 45 per 1000 live births, literacy is 70–80%, birth-rate is 28.6 per 1000 (1970–75 average), life expectancy at birth is 68 (1970–75 average), and death rate is 6.4 per 1000 (1970–75 average). See Overseas Development Council. 1975. *Agenda for Action*. Praeger, p. 200.

programs. The priority is, however, the development of new villages to meet the needs of transmigration and resettlement schemes. The plan is to develop five villages in every region as model projects, i.e., a total 1400 villages throughout Indonesia, and to open new building information centres. It is hoped that the model projects, operating through self-help schemes, will have a multiplier effect. Support for the program will be given in cheap building materials, a soft loan payment system, and a rural credit institute.

In Malaysia, state governments have ultimate authority over rural housing, but the Housing Trust is the central government agency for the implementation of national housing policies and programs. In the last 3 years it has been responsible for the completion of more than 8000 units of rural housing distributed in the various provinces of Malaysia. Other central authorities responsible for rural housing are the Federal Land Development Authority, the Ministry of Local Government and Housing, and *Majlis Amanah Ra'ayat*. It is expected that most of the rural public housing will be developed in new village schemes but will also be developed in or near existing settlements. When possible, programs will concentrate on complete community development projects and not on isolated groups of housing.

In the Philippines, the Four Year Development Plan (1974–77) provides for the improvement of rural housing and community facilities through the Office of Community Development. The orientation is toward planning for sites-and-services schemes to obtain the most efficient return for infrastructural input; government efforts toward improved housing and related community facilities are integrated in the rural development program. The Home Financing Commission's self-help schemes (using the traditional Filipino *bayanihan* as a basic institution) appear to have been a failure, but the reason may be that the farmers were expected to leave their traditional nipa huts and their fields to reestablish themselves in a separate community. Self-help projects under the Presidential Assistant on National Minorities (PANAMIN) have been slightly more successful, settling 5643 families on a mutual aid basis. In general, however, "the role of the government in the development of rural housing has been quite minimal. Plans did not materialize, research results were not used, and public services and facilities are undertaken by major financing institutions without any deliberate effort towards a betterment of rural housing" (National Economic and Development Authority 1975, p. 483).

In Sri Lanka, the government plays a key role in the field of housing. Housing policy is determined by the Ministry of Housing and Construction and implemented by the departments of national housing, town and country planning, land development and rural development, and some of the autonomous authorities involved in regional development activities, such as the Mahaweli Development Board, the River Valleys Development Board, the Department of Buildings, the State Engineering Corporation, and the Building Materials Corporation. Of these, the Department of National Housing, the Land Development Department, and the Mahaweli Development Board are the most important in respect of rural housing. The Department of Town and Country Planning, which theoretically is responsible for spatial planning, is available for consultation by other governmental agencies involved in rural housing. Government schemes range from complete housing provision to aided self-help programs.

In Thailand, "the shortage of rural housing when compared to the magnitude of urban housing shortage would be overshadowed into insignificance.... The evaluation of rural housing standards based on a falsely conceived set of



criteria (where standards are unrealistically high) gives rise to the possibility of over-estimating the magnitude of the rural housing problem; an impression of overwhelming rural housing shortage in Thailand could thus be engendered... Since a rural housing problem, by and large, does not exist in Thailand, the National Economic and Social Development Plans from the First Plan to the existing Third Plan (1971-76) did not make any provision for rural housing" (Prabhasnobol 1974). Sidhijai Tanphiphat and Sittichai Singhasakares state, however, that "although the problem of rural housing is not so urgent as to require remedial measures immediately, preparatory steps such as data collection have been initiated by some governmental agencies for eventual rural housing development...furthermore, rural housing is receiving increasing attention from the national research institution, from which accumulated and processed data could be used for policy making, planning, and programming of rural housing development in the future" (National Housing Authority 1978). The only housing program affecting the rural areas in Thailand appears to be a project for the resettlement of urban slum dwellers in the rural areas. The objective of this program is to solve the urban slum problem by dispersing "urban concentration of humanities back to the rural areas" (Prabhasnobol 1974). The program is handled by the Department of Community Development, which selected, initially, 100 families for vocational training preparatory to their resettlement in the 12 provinces in the region. The program according to the target of the Department of Community Development will eventually cover 5000 families.

## **Financing of Rural Housing**

Rural housing is very largely financed from the income, savings, and private borrowings of the rural householder. Generally, the governments compel plantation employers to provide resident labourers with housing; examples are the tea and rubber plantation employers in Indonesia, Sri Lanka, and Malaysia and the larger sugarcane plantation, lumber, and mining employers in the Philippines. But there is very little control on the standard of housing, and often plantation labourers reside in dwellings akin to tenement housing in urban areas.

Government funds are normally channeled through grants, loans, and/or subsidies and are often extended to local government authorities, housing societies, or to housing cooperatives (the last, especially in Malaysia and Sri Lanka). Sometimes, government funds are channeled into self-help schemes (as in Indonesia and Sri Lanka).

In most of the countries in the region, there is a noticeable absence of a loan fund market equipped to cater to the needs of the rural sector. Commercial banking facilities and postal savings banks are sometimes available, but they do not normally lend money to rural families whose cash incomes are often at subsistence level. Only recently has the rural credit base begun to expand with support from central banks. In the Philippines, the Agricultural Credit Administration (ACA) is working in close coordination with the land reform project administration, and an agricultural guaranteed loan fund has been established for medium- and long-term loans. In addition, a number of private rural banks have come into existence to supplement credit funds being channeled through official agencies. The Philippine National Bank and the Development Bank of

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# 10

## Policy Trends and Prospects

Stephen H.K. Yeh and A.A. Laquian

Present housing problems in Southeast Asia may be ascribed to economic, social, and political factors. First of all, for nearly 3 decades, the population has grown rapidly, especially in urban areas. For instance, the average natural population growth in the region during 1950–70 was about 2.6%; the average in urban areas was approximately 5.3%. At that rate of growth, the urban population promises to have doubled by 1985.

Primate cities tend to be the fastest growing areas and to suffer from the gravest problems. They are faced with absorbing new households and labour that include not only the young but also many low-skilled, employment-seeking migrants. Their basic services are strained to breaking and at best are only reaching a proportion of their populations. City land is at a premium, especially near employment opportunities, water supply, transportation, etc., and speculators increase the premium by holding large areas of land vacant. On the periphery of the cities, land is often more readily available but is usually not functionally integrated with the inner city and lacks adequate infrastructures.

The existing urban services and housing are deteriorating, and the trend is likely to continue because of overall low incomes and uneven income distribution. Income is the most important determinant of housing characteristics, influencing the type and location of each family's dwelling and reflecting the country's capacity to house its population. The distribution of income among households determines the number and proportion of poor families as well as the extent of their poverty. The spatial distribution of income affects the residential characteristics of different parts of a city as well as housing characteristics between cities or regions of a country. In Southeast Asia and elsewhere in the developing world, income variations directly explain the substantial differences in housing quality and infrastructure levels between urban and rural areas, between small and large cities, and between various segments of the same city.<sup>33</sup>

The interaction between natural population growth, urban population "implosion," and low levels of income can best be illustrated by the experience in the Philippines. Over a period of years, the natural population averaged 3% increase per year, while the population in metropolitan Manila grew approximately 6% a year and the slum and squatter population in the city increased

<sup>33</sup> See chapter 2 for a discussion of housing conditions, including the urban and rural differential. For a discussion on the pattern of urban growth, see Yeung, Y.M. 1976. *Southeast Asian Cities: Patterns of Growth and Transformation*. In Berry, B.J.T., ed., *Urbanization and Counterurbanization*, Beverly Hills, Sage Publications.

an estimated 12% a year. The figures for urban areas in other countries are similar and indicate a phenomenal housing need.

## **Housing Sector**

The means for meeting the housing need come from the private, public, and popular sectors. The private housing sector generally caters to higher-income groups and needs to be complemented by an active and efficient public housing sector. For instance, in the comparatively rich countries of Singapore and Hong Kong, the private sector actively produces housing for those who can afford what the open market offers; at the same time, the government — or public sector — provides housing for the remainder of the population, which is more than half the people.

The inhabitants — or popular sector — in Southeast Asia produce virtually all their own housing in rural areas where materials are readily available. In urban areas, the popular housing sector has fewer resources and is characterized by impermanent and semipermanent housing with poor sanitation facilities. A large popular sector in a city usually means poor living conditions and low incomes. An indication of the amount of popular sector housing can be gained from surveys investigating the extent of squatting and from censuses revealing the proportion of permanent housing. For example, permanent stock in Indonesia was 6% in 1970 and in the Philippines and Sri Lanka it was 32 and 35%, respectively. In contrast, Singapore and Hong Kong had much more permanent housing, reaching 64 and 88% respectively. The remainder of housing is impermanent and semipermanent and is a rough gauge of the size of the popular housing sector, especially when taken with slum and squatter figures. In the early 1970s, in Colombo, the slum and squatter population constituted more than half the city's population, at least one-third that of Kuala Lumpur and Manila, and some 20–25% of the population of Bangkok-Thonburi and Jakarta. Although these figures do not measure the popular housing sector, they give an approximation of the housing need and provide some indication of the success of public housing efforts and policy.

Poor housing policies can actually make the housing problem much worse than it need be. Dotson (1972) reviewed housing policy in Southeast Asia and labeled it as unconscious, partial, uncoordinated, and negative. First, it is unconscious in that the decision-makers are unaware of a policy's overall proportions and features; it is partial because governments do not use it effectively; it is uncoordinated because it is formulated apart from existing urban and housing plans; and it is negative because many public investments and interventions are aimed at diverting, retarding, or stopping urban growth rather than increasing housing supply for low-income groups.

Examples of policy failures are readily available. Previous chapters in this book have highlighted many of them. There have been instances of poorly defined housing priorities, inadequate land policies, misdirected finance, and poorly conceived housing design and construction plans. Housing policy has rarely been incorporated into national development plans and into a coherent urbanization strategy; allocations to housing have been viewed as social costs rather than productive investments; and housing policy has not been exploited as a means to attain other social and economic objectives.

There are isolated examples of effective policies that are geared to affordability, locational considerations, and realistic standards of construction. More importantly, government officials have become more aware of the housing problem and have begun to revise current policies and introduce better delivery systems.

## **Trends in Policy Response**

The decade after the Second World War saw most countries in Southeast Asia preoccupied with reconstruction. Even during the 1950s when the housing problem began to be felt, there was either inaction on the part of governments (Indonesia and Hong Kong) or token reaction (Malaysia, Philippines, Singapore, Sri Lanka, and Thailand).

Beginning in the early 1970s, there were improvements in practically all the countries in the region.<sup>34</sup> Hong Kong consolidated its four housing agencies into one Housing Authority in 1973 and tackled a 10-year (1973–83) program with the objective of providing some 240 000 dwelling units for 1.8 million people. The 10-year plan emphasized expansion of existing communities, construction of new towns, urban renewal, provision of temporary housing for squatter clearance and emergencies, and the improvement of the flow of finance to the housing market.

In Singapore, the Housing and Development Board has been accelerating its construction since the beginning of this decade. About 114 000 units were built under the third 5-year building program (1971–75) and another 125 000–150 000 units are proposed under the current program (1976–80). At present, the Board's accent is on building new towns outside the city centre because inner-city land is already intensely developed. At the same time, the Board is reconverting a large number of smaller units into larger ones to meet the changing levels of demand. In 1974, the government established a separate Urban Redevelopment Authority to assume some of the functions of the Board. Both the Board and the Authority come under the Minister for National Development. Meanwhile, the Housing and Urban Development Company was created as a Board subsidiary to undertake the provision of housing for the middle-income groups that can no longer afford housing produced by the private sector.

In Indonesia, housing was not accorded high priority until the shortage became very visible, politically and otherwise. In 1974, the government responded by creating the National Housing Authority, essentially in the form of a ministerial committee, and its action agency, the National Urban Development Corporation. A national housing policy began to emerge, comprising four simultaneous strategies: *kampung* improvement, sites-and-services projects, public housing in the city, and new towns on the penphery of metropolitan areas. There is a projected target of 315 000 units for low- and moderate-income groups, although how many units will actually be built under the current 5-year plan (1975–79) is uncertain. In the rural areas, the government will emphasize improved infrastructure, establishing demonstration plots in a proposed 1400 villages to meet the demands of special projects such as transmigration and relocation programs for disaster areas.

The Third Malaysia Plan (1976–80) endorses a total public sector housing output of 220 000 units of which some 100 000 units are for various public

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<sup>34</sup> The rapid changes in policy may date some of the information in this document.

housing schemes. This represents a 250% increase in budget allocation. The plan directly acknowledges that 70% of the urban population cannot afford to rent or purchase housing, and it devotes special attention to the lower groups, suggesting projects in slum upgrading, sites and services, provision of basic housing shells, and further cost reduction in conventional public housing.

In the Philippines, housing policy and administration have improved phenomenally since 1974 when the Tondo Redevelopment Authority was created to undertake the first slum-upgrading project in Manila. In 1975, the National Housing Authority was established, integrating a number of existing housing agencies. By 1977, most of the components of a comprehensive national housing policy were apparent. The government had adopted a basic human settlement's approach, a more realistic means of assessing housing needs over the 10 years from 1978–87, increased financial support, and a program that would reach a much wider range of income groups, settlement types, and urban centres throughout the country. The Authority's housing strategies are to participate with local governments to upgrade marginal urban settlements and provide low-cost housing in regional cities; to develop improved sites-and-services projects in concert with a resettlement program; and to invest in joint ventures with the private sector to produce low- and middle-income housing.

In Sri Lanka, the government plays a dominant role in housing, and its policy has two main features: to control unfair landlordism and to encourage private sector contributions to public housing. On the one hand, government introduced a series of laws in the 1970s to protect tenants from harassment by landlords and to limit the number of dwellings an individual or a family could own. Legal provision was also made for tenants to purchase surplus housing, a measure in addition to rent control. On the other hand, the government began providing public housing to middle- and lower-income groups and assisting private home builders and developers in housing endeavours. Through a number of agencies, it helps the private sector in obtaining land, preparing construction plans, securing credit at low-interest rates, and obtaining construction materials. The government also acquires land and redistributes parcels of it to developers and private citizens. Moreover, the "Aided Self-Help Program" started in 1973 is aimed at low-income groups and may be considered a version of the sites-and-services approach with a mixture of self-help housing and public assistance.

In 1972, Thailand integrated its four housing agencies into the National Housing Authority, introducing new building targets of 17 000 units per year for 10 years. Actual construction during 1971–76 did not exceed a total of 31 000 units but represented a substantial increase over all previous efforts. During the Fourth National Plan (1977–82), the National Housing Authority is expected not only to accelerate its output of public housing but also to undertake slum upgradings, sites and services, and the building of new towns. A 5-year slum improvement program beginning in 1978 includes 160 sites comprising 40 000 families. At present, Thailand is concentrating efforts almost exclusively in the metropolitan Bangkok area where the shortage of shelter is seen to be most acute.

Policy trends in this decade signal more realistic government commitment to tackling housing problems. The governments have demonstrated their political will by improving the administrative organization of national housing agencies, allocating more resources to housing, aiming for higher housing outputs, and planning or considering slum-upgrading programs. The last activity means a significant change, however gradual, in housing politics.

In the past, some governments were paralyzed by the magnitude of their housing deficit, burying themselves under statistics that included all temporary and some semipermanent housing stock. Now, more and more governments see existing settlements as something to build on. Slum upgrading and sites-and-services projects have offered them a fresh approach, aiming at improvements that represent standards within the financial grasp of low-income groups and equitably distributing limited resources. In other words, governments have shifted to an acceptance of marginal settlements and a commitment to integrating the residents into the urban scene with whatever trade-offs are necessary in short- and long-term considerations. Increasingly, governments are viewing public housing as a package of services, including land, infrastructure, social amenities, and access to employment, as well as the dwelling structure itself.

The remainder of this decade and the next will be crucial for the countries in this study, especially for those planning varied and large-scale programs for the first time, such as Indonesia, Philippines, Thailand, and Malaysia. They will need to draw on the experience of veterans in public housing and learn from earlier mistakes. They can derive a number of lessons from countries like Singapore and Hong Kong who have evolved successful housing programs.

### **Hong Kong and Singapore Revisited**

Much has been written recently about government failures to solve the housing problem. Lack of success is usually attributed to inadequate finance and land assemblage, excessively high design standards and costs not in concert with affordability, ill-conceived locational planning, insufficient public services and social amenities, administrative inefficiency, ineffective management, etc. The failures are manifested in limited outputs that fall far short of effective demand, giving public housing a poor image in some quarters.

There are a few exceptions, notable successes in public housing, achieved by countries like Hong Kong and Singapore. They have merited worldwide attention but have sometimes been dismissed as irrelevant to other countries. The two city-states enjoy much higher income levels than do their neighbours and do not have to contend with a large influx of rural migrants. Moreover, high-rise, high-density housing has been seen as inappropriate for other countries in the region. Because of the different socioeconomic circumstances, the experiences may not be directly transferable to Indonesia, Malaysia, Philippines, and Thailand, but there are some valuable, less visible, lessons to be learned. Hong Kong and Singapore are not models that other countries can follow, but their experiences do provide some ideas on what is and is not desirable in the way of policies and programs.

To begin with, Hong Kong and Singapore have placed housing policy into an effective overall framework that minimizes market imperfections. Housing is regarded as an instrument for shaping cities and enhancing urban productivity as well as for improving the living conditions of low-income people. The two cities are similar in that they both effectively mix general public policies with housing policies, producing shelter for the majority of their populations.

Both countries hold to the policy that housing costs should represent a low proportion of household income and that housing standards should be in line with income levels. Although, over the years, they have increased rents as a reflection of rising incomes, the increases have been moderate and have lagged



behind government investments in public housing. Increases in rents and purchase prices reaffirm the general policy of gearing housing standards to affordability. Higher income levels have meant concurrent improvements in public housing — larger units and better facilities.

Singapore has demonstrated repeatedly the importance of planning for the external environment of dwelling units. At present, there are six criteria used in Singaporean site planning: location, residential density, utility services, social amenities, open space, and transportation (chapter 8). The implication is not that other countries should emulate Singapore's standards, or even those of Hong Kong, but rather that each country should detail its own set of planning standards to be applied at various hierarchical levels, anticipating developments of public housing estates outside the city centre. The farther away from the city's business core, the more important is comprehensive planning. Therefore, the ways in which Singapore has achieved self-sufficiency in its new towns may be particularly interesting to Bangkok, Jakarta, and Manila, as they plan new town developments in the near future.

Both Hong Kong and Singapore's housing programs have been integrated with efforts to provide accessible employment. In Singapore, "flatted factories" for small-scale industry have been built in the housing estates, and large-scale, labour-intensive industries have been attracted by the provision of factory space through leases. The introduction of employment opportunities is a deliberate policy of the government to diversify the economy and to reduce unemployment, commuting time, and inner-city traffic congestion (Yeh, Lee 1975). In Hong Kong, the policy was adopted as part of resettlement schemes. Early public housing was developed to correspond with the relocation of flatted factories that served as squatter workshops.<sup>35</sup> Later, new industrial sites were located near housing developments.

Of course, employment consideration is but one of a series of factors requiring attention in the locational choice of public housing estates (see chapter 7). The three main points to remember are that "location" includes not only geography but also space in social and economic terms; that the scope of locational choice depends on land policies and availability, timetables, political exigencies, etc.; and that locational preferences of potential residents should be taken into account. Singapore has used location as a tool to achieve several national development objectives, such as the integration of racial and ethnic groups as well as low- and high-income residential areas. Some of the resettlement areas for semiagricultural squatters have been located near the Jurong Industrial Estate to encourage industrial employment, which generates higher incomes and needed skills. Moreover, large-scale development of new towns has enabled Singapore, and to some extent Hong Kong, to redefine and reshape physical, economic, and social land use patterns as parts of an integrated urbanization strategy. There is no doubt that Hong Kong and Singapore's achievements in housing can be partially attributed to their sound land policies, which include the power to acquire land, to control land prices, to create land banks, to tax land transactions, to gazette and review town plans, and to impose realistic land tenure systems.

The two city-states have been able to combine zoning measures with land development, housing construction, and the provision of land for industry. Con-

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<sup>35</sup> Government efforts notwithstanding, resettlement housing in Hong Kong is still viewed as strong on amenities and weak on locational considerations.

sequently, costs have been minimized, the housing industry has been stimulated, and workers have been provided access to employment nearby or through inexpensive and convenient transport. Singapore in particular has made very effective use of town planning legislation and practices to secure rezoning of areas and manipulation of density controls, ensuring ample land for public housing (chapter 6). The experience of Hong Kong and Singapore indicates that zoning is a potentially valuable instrument of urban and housing policy. It is important in protecting an aesthetically pleasing urban environment, grouping commercial and other activities in an efficient way, and segregating activities that are incompatible with each other. Zoning, however, must be used in a dynamic context, with an appreciation of present realities and future development goals. Inappropriate application of zoning regulations may exclude the poor from residence near industrial, commercial, and high-income residential areas that provide their greatest opportunities for earning income. Properly used, zoning can help to ensure a supply of urban land in an expanding city and to provide the public purse with a share in any gains.

What is sometimes not realized is that good policies must be complemented by considerable technical know-how in the public sector. Wide-ranging expertise and effective administration in housing institutions take time to establish and are the result of training and experience. At least in Singapore, the efficiency of the Housing and Development Board reflects upgrading of the entire civil service from a colonial administration to a development administration. The lesson to be learned is that sufficient land and funding alone cannot guarantee success. Careful matching of administrative and technical capacity to the scale of the program is also needed, corresponding to proper development of human resources in various fields of housing. Training is beneficial, but there are specifics in each country that can only be learned from experience. Perhaps it is wise for countries without much experience in public housing, such as Indonesia, to decide to learn by doing and not to aim to accomplish large volumes of construction in the beginning. Although large-scale projects mean economies in purchasing, planning, etc., large-scale failures are extremely expensive.

Success in public housing does not end with sound planning and construction; rather this constitutes a good beginning and the maintenance of success depends much on the quality of estate management. One of the more neglected fields in housing administration, estate management is relatively underdeveloped, even in countries with extensive public housing. Singapore has opted to sidestep management problems by urging private ownership (Yeh 1975). Hong Kong has fashioned housing management after the British model, training required personnel at the University of Hong Kong. In any event, each country has to define its own organization and functions of management, devoting particular attention to personnel development.

The policies, personnel, and plans of public housing in Hong Kong and Singapore have proved successful, based on some essential ingredients that can be generally applied. First, housing standards have been consistent with prevailing income levels. Second, buildings have been designed with flexibility to meet changing demands and with consideration of different cultural patterns. Third, design and construction have been technically sound and economically efficient. Fourth, public housing has been located near employment opportunities. Fifth, housing estates have been large enough to include basic social amenities, such as schools, markets, clinics, and recreation areas, or to have good access to them. Sixth, planning for public housing has usually been cog-

nizant of transportation. Finally, estate management input has been substantial and efficient, enhanced by community participation.

## **Impact of Public Housing**

Thus far, the social and economic impact of public housing in Southeast Asia has not been thoroughly researched or evaluated. Most of the countries have not yet produced a significant number of public housing units to make studies worthwhile. Again, Hong Kong and Singapore are the exceptions. However, even in Hong Kong, systematic studies are generally not available. In fact, the Hong Kong Housing Department has only recently (since 1975) established a Statistics Unit to generate more data and studies.

Some indicators of the economic impact of Singapore's public housing programs are available. The ratio of construction-to-GDP (gross domestic product) in Singapore has been increasing both absolutely and proportionally during the last decade. Next only to the manufacturing and quarrying sectors, construction has been a leading contributor to GDP, averaging an annual growth rate of 22% between 1960 and 1971. Moreover, more than 40% of gross domestic fixed capital formation or total investment was contributed by the building sector for each year of the last decade. A large proportion came from the construction of dwelling units, which include public housing and related urban renewal activities. Although the exact contribution of the Housing and Development Board is not clear, the sheer numbers of dwelling units indicate it is significant.

Public housing in Singapore has generated a substantial amount of employment during its first 15 years. The building and construction industry is highly labour-intensive, absorbing both skilled and semiskilled workers. In fact, one government intention of the first building program (1961-65) was to create jobs at a time when unemployment was very high. It was estimated that the construction of one public housing unit would generate employment for 9 months directly on site and that a building program of 10 000 units per annum would create 15 000 jobs. In 1970, the HDB employed an average 6000 persons per day on site, not to mention the additional people employed in the primary and secondary building materials and other related industries.

Massive public housing construction has also contributed to the rapid expansion in the local manufacture of building materials. Over the last decade, a large number of factories producing building materials were established to meet the demand. Between 1960 and 1970, materials used for internal floors alone in public housing units constituted an estimated 13 million bags of cement, 1.3 million cubic metres of sand/concrete, 2.7 million pieces of hollow blocks, 56 million pieces of bricks, 10 million metres of cable, 3.3 million metres of battens, and 4 million metres of earthwires.

Perhaps of greater importance, public housing in Singapore, together with effective urban renewal and resettlement strategies, has been used as an instrument to help shape the overall pattern of urban growth. Policymakers have carefully chosen locations to correspond to a city plan. Thus, public housing has been an attempt to integrate physical, social, and economic planning all at the same time, linking territorially bound activities associated with work, school, residence, and recreation and producing ecologically functional neighbourhoods with strong social networks (Yeung, Yeh 1975).

Singapore's approach has produced substantial improvements in living conditions. The available statistics indicate that public housing has meant better

quality housing stock, lower population densities per room and dwelling, and increased facilities. A series of surveys have corroborated high levels of satisfaction with most aspects of the living environment even among those affected by government resettlement programs (Yeh, Lee 1975). In contrast, surveys conducted among residents in certain public housing estates in Bangkok and Penang have shown much lower satisfaction levels (Abraham, in press; Noranitipadungkam 1978). The subjective evaluation of the residents, if measured correctly, can be used to correct existing deficiencies and promote better planning in the future.

In the final analysis, the impact of public housing programs is best measured at the level of the family and the individual who are the alleged beneficiaries. This is why an on-going evaluation of the effects and impact of a sites-and-services project in Tondo, Manila, is of so much importance to advocates of new approaches to public housing. This study, started in 1976 and projected to take 5 years to complete, is supported by the International Development Research Centre and the World Bank. It is being carried out concurrently with similar evaluation studies in San Salvador, El Salvador; Dakar, Senegal; and Lusaka, Zambia.

The study intends to measure the effect and impact of sites-and-services approaches by surveying the incomes of project participants, their employment, health, degree of housing consolidation, community involvement and participation, etc. These factors are taken as dependent variables directly influenced by the different sites-and-services schemes. It is hoped the study findings will help answer such questions as: What proportion of household income can poor families really afford to devote to housing? What plot sizes are optimal for low-income households? What repayment terms and rates are best for sites-and-services schemes? And what role does housing play in the individual and familial development of low-income peoples in large urban areas?

## **Planned Community Improvement**

If the cost of dwelling units of different sizes, quality, and locations is congruent with the ability of the target groups to pay, a much larger proportion of the population than previously thought possible can be provided with public housing. In very large, low-income cities, where the poor segments of the population cannot even afford the most economical forms of public housing, slum upgrading seems to hold the most promise.

The 1960s marked the massive proliferation of slum and squatter areas in many cities. Government programs to cope with the attendant problems generally fell into two categories: either heavy investments in housing or benign neglect. Hong Kong and Singapore undertook large-scale construction of high-rise public housing units coupled with squatter relocation to ease the shelter problem by the end of the decade. Singapore also began to implement a comprehensive urban renewal program that until now remains the only successful effort of its type in the region. Sri Lanka also significantly increased its housing investment and formulated legislation to promote improvement in the housing stock in both urban and rural areas.

The governments of Malaysia, the Philippines, and Thailand did not appreciably enhance their role in the supply of low-income housing. The housing that they produced was minimal and only highlighted the growing magnitude of the problem. The Philippines experimented with a few sites-and-services

projects on the periphery of metropolitan Manila to accommodate relocated squatters, but these were largely unsuccessful due to inappropriate location, inadequate infrastructure, and lack of social services. Thailand made limited attempts at slum clearance in Bangkok; planning was piecemeal and the relocation services for those affected were not sufficiently provided. The Indonesian government was largely inactive, although it offered some assistance to *kampung* improvement projects based largely on community self-help. Laos, because of its small population and low rate of urbanization, did not have the kind of housing problems found in the other countries; the war, however, brought refugees in hoards to Vientiane and escalated urban housing problems. The government response so far has been inadequate.

Sites-and-services projects have recently gained popularity in Southeast Asia. Land plots are surveyed, prepared, and furnished with access roads, drainage, water, sewage, and sometimes electricity. Schools and health clinics are provided. When feasible, they may also include refuse collection, fire protection services, and other public facilities. Particular attention is given to location in terms of proximity to jobs and markets or introduction of industries on the sites.

Upgrading of slum and squatter areas may be a complement to sites and services; it provides for retaining and improving existing housing stock as well as introducing job opportunities. In slum upgrading, the objective is to avoid, in so far as possible, the dislocation of residents; however, in many central city slums and squatter areas of long standing, it is usually not possible to introduce services such as water and sewage without removing some structures. Some families usually have to be rehoused.

Slum upgrading and sites-and-services projects have been called the "environment improvement" approach and have offered an alternative to the "housing deficit" approach of public housing programs. The essence of environment improvement is the recognition that the more urgent problems of squatter settlements and slums do not lie in the dwelling unit but rather in the uncontrolled human wastes, the polluted stagnant water, constant threat of flooding and fire, inadequate water supply, and lack of social amenities. In this light and given the potential of community self-help, a housing policy that emphasizes environmental improvement is a catalyst for community development and a positive urbanization strategy.

Experience in slum upgrading and sites-and-services projects of the countries in this study is relatively limited so far. Jakarta has the most experience derived through its *kampung* improvement programs, which were started in 1969 and have benefited more than 1.2 million people. Other large cities in Indonesia have now begun similar projects. In the Philippines, Manila implemented a few sites-and-services projects in the 1960s, though the early attempts were not successful. Valuable experience was gained, underlining the importance of ensuring employment and other social services. Starting with the Tondo Foreshore improvement project in 1974, a nationwide urban slum improvement and relocation program was approved in 1976. In metropolitan Manila alone, more than 200 sites have been identified for upgrading in a 3-year program; planning for the 1st year is under way. In Thailand, too, the future is optimistic; there is a 5-year (1977-81) slum upgrading program for Bangkok, proposing 160 sites with 40 000 families. Sri Lanka has experimented with sites-and-services programs, and its experience, which was largely unsuccessful, emphasized the importance of identifying appropriate locations for environmental improvements. Malaysia has expressed interest in the environmental approach but has not made a firm commitment to it.



*In Tondo, Manila, the existing housing is upgraded and alleys are provided with curbs. The building plots are demarcated for sale.*

The experiences of Manila and Colombo as well as those of other cities in the world have demonstrated that moving people to new sites on the periphery of a city is not enough. The Sapang Palay resettlement project in Manila is an example. Squatters were moved more than 32 km from their original homes, and only a handful were offered jobs around their new residences. The result was that within a year and a half, 40% had returned to the city centre.

Slum upgrading projects have one major obstacle: a shortage of serviced land. The introduction of basic services usually means that some families must be moved to new locations. The very recent slum upgrading program in metropolitan Manila is already confronted with the problem of finding land in the proximity of the sites scheduled for improvement. In some instances suitable vacant land is very costly; and in other instances, it is simply not available.

Rationalization of land tenure is usually considered a top priority in slum improvement and the rights of the landowner and the tenant are crucial. If the landowner is the state, the process may be simple. If the landowner is the private sector, then expropriation, which can be expensive and cumbersome, may be required. In the case of Thailand, present legal structures make land expropriation for public programs extremely lengthy and complex. On the average, the

whole process takes at least 5 years and in many cases it goes beyond 10 years, a serious impediment for all public works projects including housing. The problem of land tenure rationalization may be more acute in the inner city because of land costs. Some initial experience in Manila has shown that the government's costs in land acquisition can be so high that they cannot be recouped from low-income groups. This means that upgrading inner city slums with a view to granting land tenure to the residents can impose a financial strain on the government.

At times, even acquiring public land for housing is complicated. If the land is zoned for purposes other than low-income residences, it may be difficult to secure, or if it belongs to government departments and agencies other than the national housing agency, it may be earmarked for other uses. Even if a government department or agency is willing to relinquish the land for housing, there may be legal tie-ups; for example, a presidential proclamation is required in the Philippines for this purpose, and in Bangkok there are laws prohibiting the tenure legalization of some crown land.

In some instances, slum upgrading is possible without changing land tenure arrangements. One reason that the Jakarta *kampong* improvement program has such low costs is that existing land tenure arrangements are satisfactory to the residents of project sites; hence there is no cost for land acquisition. In the proposed Bangkok upgrading program, one category of slums will be improved as temporary residential areas, which means land tenure is not guaranteed but clearance is not expected in the near future. The improvements focus on the social and economic aspects of the slums instead of the introduction of services. In the Philippines, security of land tenure is a basic component of slum upgrading, although the communities are often located on private land. One project site on private land is Bagong Barrio in Caloocan City, Manila, which has an area of 562 000 m<sup>2</sup> with nearly 17 000 families. The cost of land acquisition alone is estimated to be U.S.\$8 million.

The characteristics of slum and squatter communities (chapter 3) often influence the selection of a site for upgrading. In Bangkok, priority is given to areas with low levels of public services and income, high levels of social problems, and feasibility of land tenure security. For instance, settlements located on public land that can be zoned for low-income residences take priority over those on other public or private land. In Jakarta, the age of a *kampong*, flooding, population density, income, water supply, building conditions and structure, road network and conditions, self-sufficiency of residents, land allocation according to master plan, and community acceptance of improvements are all considered during site selection. In addition, the distribution of the *kampongs* is reviewed to ensure that every part of the city has a share in the program. Equity of distribution is also ensured in the upgrading program of metropolitan Manila because each of the cities and municipalities assume major responsibility for identification of project sites in their area as well as planning and implementation of improvements. Site selection criteria include water, drainage and waste disposal, availability of health centre, physical features of the site, density, school, number of families affected, power facilities, and the existence of parks and community centre.

Site selection criteria are closely related to design criteria. In planning for slum upgrading and sites and services, one important consideration is the necessity of taking into account the people's values and style of life in addition to affordability. In the Philippines, for example, Western standards of density do

not seem applicable because of the apparent cultural tolerance for high density within the dwelling unit. In other words, the more rooms there are in the home, the more persons that can be accommodated. "Crowding" in small rooms is typical; people even take in boarders despite physical discomforts from overcrowding. Social norms of interpersonal relationships make living in high densities tolerable and even enjoyable in some instances.

Standards such as floor area or plot size should take into account what is acceptable to the people who actually live on the spaces. In Asia, the smallest minimum plot is proposed in Bombay, where 13 m<sup>2</sup> is considered fit for habitation. One proposed standard for New Delhi is 20 m<sup>2</sup>. In Karachi, while discussion was held to decide whether the minimum plot size should be 50 m<sup>2</sup> or 66 m<sup>2</sup>, the residents of the community in question had already subdivided their 66 m<sup>2</sup> lots. Apparently, the bustee dwellers discovered empirically that a family can decently live on 33 m<sup>2</sup>. A study of slum housing in Bangkok also found the most frequent house size to be 33 m<sup>2</sup>, which happens to be the floor area of the smallest public housing unit in Singapore. In Manila, minimum plot size for the Tondo Foreshore improvement project is 48 m<sup>2</sup>, whereas the proposed minimum for other central slum areas in Manila scheduled for improvement ranges from 30 m<sup>2</sup> to 35 m<sup>2</sup>.

Programs of slum improvement and sites and services should be seen as a process rather than a one-shot event. Low-income people cannot be expected to invest large sums on their dwelling structure or environment all at once. There has to be a balance between needs and means, with room left for future improvement. For example, residents in project areas who are unable or unwilling to pay for house-to-house connections may be provided with standpipes until their needs and means change. Similarly, open drains may be the first step toward adequate waste disposal. In view of the time and space involved in most improvement plans and their limited subsidy, many of the physical improvement plans must be based on plans for cost recovery.

In the final analysis, the really significant standards are not those of dwelling units but of public service and environmental sanitation. There should be flexibility in standards in keeping with the characteristics and the needs of the particular settlement, and at the same time, there should be built-in safeguards against interference from higher-income groups.

It is generally accepted that, at least in principle, slum upgrading cannot succeed without cohesive and cooperative communities to work with government agencies. After all, it is the human element and not the physical characteristics that determine the quality of life. A cohesive community ideally includes friends and relatives, high levels of satisfaction and pride in community living, community associations, and indigenous leaders with broad-based support.

To date, in-depth studies of community cohesion and structure are scarce, but surveys of slum-squatter areas commonly include questions on neighbourliness, satisfaction, reasons for living in the community, participation in community affairs, and mobility aspirations together with a host of other items. Almost without exception, the answers indicate favourable reactions to life in the settlement and a high degree of participation in community affairs and organization. In other words, all available evidence contradicts the myth that slums and squatter areas are centres of crime and social disorganization and alienation, but there is not yet sufficient information and analysis to give a detailed picture of the community organization and its capacity to participate in the improvement program.



The nature and type of community that exists in slum and squatter areas is crucial to community development efforts. Basically, community development comprises several stages: identifying problems, pinpointing community resources, analyzing alternatives, coordinating community efforts, carrying out solutions, and evaluating results. The government role is to generate popular participation by training community development workers and providing resources, although the latter may also be done by voluntary associations.

Thus far, community development has almost been ignored in housing programs in Asia. This is why there are so few successful experiences (Laquian 1976). In an appraisal of the global sites-and-services experience, Laquian has observed that the unlocking of popular energies and resources among lower-income groups has not materialized according to the expectations. Given the sometimes intricate relationship between the government and the community, perhaps a greater understanding of community organizations in the project sites followed by more intensive community development efforts may enhance popular participation.

### **Toward a More Efficient Housing Policy**

For most countries under review, the recent improvements in housing policy have yet to meet the test of experience. In the next decade, they will have to produce substantial and sustained results, something that previous policies have failed to do. Past failures at times were due to a misunderstanding or partial understanding of the nature of the task of housing provision; decision-makers and planners needed to consider and resolve some basic issues in designing and implementing a comprehensive national housing policy.

It is unrealistic for most countries to attempt to solve their housing problems within 10 years. Given the rapid rate of urban population implosion, the growth of slum and squatter areas, and the substantial backlog in housing and infrastructure (measured by whatever standards), compounded by the required changes in political thinking, legislation, administration, and resource allocation, a comprehensive solution for most countries will require decades rather than years. An effective policy is one that clearly recognizes the limits and sets priorities accordingly. Most governments will be doing well if they can generate the supply to keep up with demand resulting from population growth, let alone the correction of existing deficits.

Although sites and services, slum upgrading, and self-help or mutual-help housing improvement schemes do, at least in principle, maximize equity and cost less than alternatives, they are by no means inexpensive compared to what governments normally allocate to low-cost and low-income housing. Unless there is a very sizable increase in funding and a very rapid development of government land banks, it is unlikely that most countries can commence more than a limited number of projects at any given time. Learning by doing will take time, but there is an urgency for rapidly building the capacity to plan and implement large-scale programs. In several countries, the government's housing effort so far has reached only the primate city, and this situation must be corrected before too long.

It is generally recognized that urban land reform is a crucial factor in overall urban development, of which housing is a component. Land ownership in some

urban areas is at least as complex and as badly distributed as in the rural areas. A complete overhaul in land tenure can be a long-term target, but slum upgrading is a means for improving the situation quickly for at least part of the low-income population. Giving squatters security of tenure introduces an element of equity into land ownership and can net high returns in terms of retained and improved housing stock, access to earning opportunities and consequent welfare. Of course, some payment for the land should be required in exchange for ownership rights so that excessive subsidies don't go to only a small number of people. Issuing land rights to squatters may still be a complex and explosive political and legal issue, requiring a strong commitment by the decision-makers and careful planning by the practitioners.

Taxation on land is also essential for an effective housing policy. It is a means of penalizing landowners who speculate, keeping large tracts of land undeveloped. Although capital gains and other taxes are effective tools for limiting speculation, in practice, they are often confounded by valuation problems and erosion of the tax base through exemptions and corruption.

At present, a strong constraint on housing is the lack of mortgage funds. The financial sector is still in its infancy in most of the countries and does not have the funds to devote to long-term commitments like housing. Some of the countries urgently need financial reforms, such as lifting interest rate restrictions, encouraging competition among banks, ending inappropriate banking practices, promoting insurance companies and pension funds, etc. All these measures support long-term credit and, therefore, increase the potential for financing the housing sector. Mortgage insurance may be used to facilitate increased lending for housing and to bring such lending within the reach of lower-income groups. Lending in small amounts to low-income borrowers, sometimes a component for self-help housing improvement, calls for special institutional approaches in housing policy.

A national housing policy should give recognition to the need for improving service levels and community facilities throughout the country, even in the villages, although rural housing programs per se may be formulated according to "felt need" and effective demand. At present, the most suitable approach to rural housing appears to be to improve basic services and facilities rather than to eliminate the housing deficit. Improvement in rural living conditions and the quality of rural life would help reduce urban migration and would be within the financial reach of government and local residents.

An effective housing policy requires not only sound strategy but also effective administration. Past experiences in most countries in this study suggest that not enough attention has been given to supporting institutions with a focus on unique local conditions and to developing institutions with the capacity to design and implement urban development plans and, within them, housing programs.

In the final analysis, an effective national housing policy cannot exist in isolation, independent of a coherent human settlements strategy. Housing policy, however comprehensive, necessarily depends on the efficiency of other policies dealing with city and metropolitan development, the planning of new regional growth centres, employment creation, and internal migration. An effective housing program can serve as an incubator for positive social and economic change besides producing shelter and services.

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# Appendix 1.

## **Description of Housing Need Components and Methods Used in the Country Monographs**

### **Hong Kong**

In 1972, the Governor of Hong Kong instructed the Housing Board to assess the amount of public housing required to be built in the next 10 years (1973–83). The estimates made (April 1973) were based on the following categories of persons in need of housing:

- Occupants of temporary housing in squatters and licenced areas;
- Occupants of cottage areas;
- Occupants of Mark I/II resettlement estates involved in renewal schemes within the 10-year period or so overcrowded that they needed larger accommodation;
- Persons unsatisfactorily housed in the New Territories;
- The marine population requiring housing on shore (including boat-squatters);
- An allowance for population growth at 18.5% for the 10 years (1973–83);
- An allowance for relief of overcrowding due to population growth in government housing estates;
- An element for the expected shortfall in the private sector, i.e., the amount of accommodation required to eliminate sharing and to meet population growth minus expected gain;
- A safety margin to cover unexpected delays in the building program at 5% of total requirements;
- The difference between individual units of accommodation and persons actually housed.

The estimated housing need was calculated by the component method, i.e., from estimates made by the various government agencies concerned.

The population projections for estimating housing requirements were those published by the Population Council, USA. 1973. Reference tables to the future of population growth: alternative paths to equilibrium.

The household size was based on the 1971 census and was assumed to be constant because of current low fertility rates. The existing  $k$  value was calculated from the 1971 census to be 1.29.

### **Peninsular Malaysia**

In Peninsular Malaysia, 73.3% of the occupied private living quarters were reported to be in sound condition, 22.3% were observed to be deteriorating, and 4.4% were assessed as dilapidated. In the urban areas, about 85.1% of the

occupied private living quarters were reported as sound. The percentage was 69.5% in the rural areas.

Comprehensive statistics on the number of dwellings constructed in any given year in Peninsular Malaysia are not available. As a proxy measure, an estimate was made by the Commissioner of Census and is contained in the West Malaysia Census of Housing 1970, Final Report. The number of dwellings 0–4 years old was divided by 4 to find the average constructed per year in the 4 years preceding the census or 68 000.

The UN formula was used to project housing requirements of Peninsular Malaysia between 1970 and 1990; the following elements were included:

- **Population:** the basic population projections used were also used by the Economic Planning Unit for purposes of the midterm review of the Second Malaysia Plan, 1971–75, especially for the 20-year prospective plan. They were derived from the 1970 census, using the component method and assuming constant mortality, declining fertility, and no net migration.

- **Household size:** it was assumed that there would be gradual declines in the size of households over the period of projections. An average household size of 5.6 in 1970, 5.5 in 1975, 5.4 in 1980, 5.3 in 1985, and 5.1 in 1990.

Number of households per dwelling: based on the number of private living quarters and the number of private households in 1970,  $k$  was calculated to be 1.08.

Estimates of housing needs were the sum of the backlog of housing requirements based on the criteria of four persons per room (some 113 363 new housing units); the immediate replacement of housing units in a dilapidated condition (4.4% or 63 944 living quarters); the replacement needs of housing units over time, assuming 2% per annum; and the requirements arising from population growth.

## Philippines

Housing needs were grouped into major classes: current and future. The current housing needs comprised households doubled up with other households and the unacceptable dwellings found in housing inventory. The future housing needs comprised projected increase in the number of households and replacements due to deterioration.

Doubled-up households were estimated by subtracting the number of occupied dwelling units (6.011 million) from the number of family nuclei in the census (6.436 million). The number of doubled-up families was therefore 425 000.

There were two types of dwellings that were unacceptable: the *barong-barongs* or makeshift shacks and the urban dwellings with walls or roofs made of light and very inflammable materials such as bamboo, nipa, cogon. These were estimated to be about 222 000 and 280 000 dwellings, respectively.

Calculations of future households were based on the size and growth of the population and the average and changing size of households. The component method was used to project population growth and was based on the 1970 census. The average household size of 5.98 in 1970 was obtained from the same source as population figures, but gradual decline was assumed. The  $k$  value of 1.01 was also calculated from the 1970 census.

Replacements due to obsolescence and dilapidation were figured from construction materials and the year of construction. By assuming that concrete dwellings had a life span of 70 years, wooden dwellings 50 years, and the others only 25 years, a schedule of replacement was prepared from the age distribution of the dwellings in the inventory and their estimated life. The estimated number of dwellings to be replaced up to 2000 is about 2.84 million.

## **Singapore**

The estimates of housing needs were based on the sum of three components: future increase in the number of households, the number of households who were involuntarily sharing space with other households, and the housing units that would be lost due to obsolescence or demolition.

In projecting the future number of households, the headship-rate method was used. This method assumes that counting the household-heads is equivalent to counting the number of households. By grouping the heads by age, sex, and marital status, it is possible to obtain much useful information that can be used in projection. Estimates of households by this method require that both the total population and the heads of households are analyzed by the same age, sex, and marital groups and that the population projections are done for the same groups. Three estimates are produced.

Households that involuntarily share space were considered to be those in which more than one household occupied a single housing unit or there were multifamily households. Replacement calculations were mainly based on demolition and the government's urban renewal programs.

Population projections used in estimating housing requirements were based on the 1970 census, assuming constant fertility. The  $k$  value was also based on the 1970 census as was the household size. A gradual decline was assumed in the latter.

## **Indonesia**

In 1961, the average size of households was 4.4 persons; if the average size in 1971 was still 4.4, then the total number of households in 1971 was approximately 27 million. The total number of individual residences in 1971 was approximately 22.5 million. Based on the ideal of one household per dwelling, a total of 4.5 million dwellings was needed. If the objective were five persons per dwelling, then only 1 1/2 million houses would be needed. The population of the whole of Indonesia is increasing at 2.3% per annum; the urban population at 4.5%. Multiplied by the existing number of households, these percentages give the increase in the number of dwellings needed each year.

It was assumed that the replacement of demolished houses would be at the rate of 3% per annum.

The population projections were based on the 1961 census and from the United Nations (ECAFE) 1971 report on the regional seminar on ecological implications of rural and urban population growth. The household size was assumed to be 4.4 persons and was not expected to change over the years. The  $k$  value, 1.2, was also derived from the 1961 census.

## **Thailand**

The government has begun building housing for low-income families in particularly congested areas of Bangkok-Thonburi. Thus far, attempts have been quite inadequate. Within the last 10 years, the government has constructed 150 000 units; the population during the same period has increased by 1.5 million. In the meantime, the Greater Bangkok Plan 1990, drafted by the consultant city planners, Litchfield, Whiting, Browne, and Associates, estimated the housing requirements at 19 000 units annually and no less than 17 000 units.

A National Housing Authority survey suggested that in metropolitan Bangkok in a 10-year period (1974–83) housing needs would exceed 170 000 housing units. The NHA is therefore determined to improve production and to encourage housing investment from private companies.

In estimating housing requirements, the population figures were based on data from the Population Council, USA (1973. Reference tables to the future of population growth: alternative paths to equilibrium.) The household size was taken from the National Statistics Office and was assumed to be declining gradually. The present  $k$  value was assumed to be 1.2.

## **Sri Lanka**

To estimate the backlog of housing requirements as revealed in the census of 1971, three relatively reliable indicators were used: the nondurability and temporary character of housing units, sharing of housing units by more than one family, and obsolescence.

The household size was derived from the 1963 figure of the United Nations compendium of housing statistics 1971, and a gradual decline in the size was assumed. The  $k$  value was calculated on the basis of the same information.

The calculations for urban and rural areas, respectively, were temporary housing units 39 704, 137 380; sharing families 90 300, 242 983; units constructed prior to 1920, 54 964, 144 432.

The projected housing needs included new demand arising from population growth, replacement of obsolescent units at a rate of 2% of the stock per year, and the elimination of 45% of the backlog.

## **Laos**

The traditional Laotian house is wood or bamboo, materials that nature provides in abundance. In the cities there is a fairly substantial housing shortage, but in the countryside, virtually all households occupy their own dwellings. The crisis in Laos is not shortage but poor quality, because most of the dwellings do not meet minimal standards of hygiene and sanitation.

An assumed housing shortage of 33% in the urban sector and a shortfall of 10% in the rural sector would mean a shortage of 70 880 dwellings for the whole country, based on a total population of 3.181 million inhabitants; an urban population (14.65%) of 466 000; and a rural population (85.35%) of 2.715 million. On the basis of six persons to a household, the urban households (466 000/6) are 77 666; and the rural households (2.715 million/6) are 452 500. Thus, the urban shortfall (77 666 x 0.33) would be 25 630; the rural

shortfall (452 500 x 0.10) equal to 45 250; and the total shortfall (25 630 + 45 250) would be 70 880 dwellings.

The population projections used in the estimated housing requirements were taken from the United Nations (ECAFE) 1971 report on the regional seminar on ecological implications of rural and urban population growth. Household size was obtained from the UN's World Housing Survey (1971), and a gradual decline was assumed for calculations. The k value was assumed to be 1.2.

## Appendix 2.

### Country Project Coordinators

#### *Hong Kong*

**Luke S. K. Wong**, Assistant Dean of Students, University of Hong Kong, Hong Kong.

**Barry F. Will**, Lecturer, Department of Architecture, University of Hong Kong, Hong Kong.

#### *Indonesia*

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**Manorak Luangkhot**, Formerly Director of Housing and Urbanization, Ministry of Public Works and Transportation, Laos.

**Suthone Bilavarn**, Director, Social Welfare Department, Laos.

#### *Malaysia*

**Tan Soo Hai**, Director, S.H. Tan Chartered Town Planner; Past-president, Malaysian Institute of Planners, Malaysia.

**Hamzah Sendut**, Chairman, Environmental Quality Council Malaysia; Former Vice-Chancellor, Universiti Sains Malaysia, Malaysia.

#### *Philippines*

**Gerardo P. Sicat**, Minister for Economic Planning; Director-General of the National Economic and Development Authority, Philippines.

**Josefina M. Ramos**, Project Director, UNEP-NHA Marginal Settlements Improvement Project, National Housing Authority, Philippines; Professor and Director of Graduate Studies, College of Architecture, University of the Philippines; Director, Social Services Staff, National Economic and Development Authority, Philippines.

#### *Singapore*

**Stephen H.K. Yeh**, Professor of Sociology, Urban and Regional Planning and Population Studies, University of Hawaii, USA; Honorary Consultant,

Housing and Development Board, Singapore; Honorary Consultant, National Housing Authority, Philippines.

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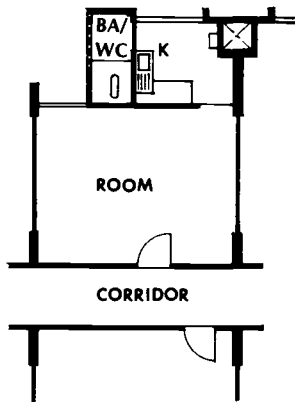
## Appendix 3.

### Low-Cost Housing Designs

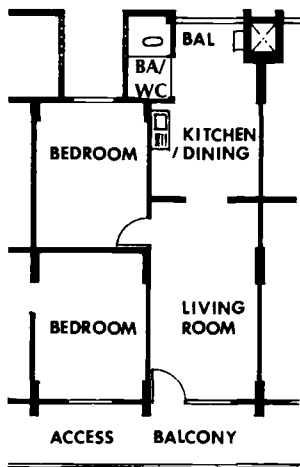
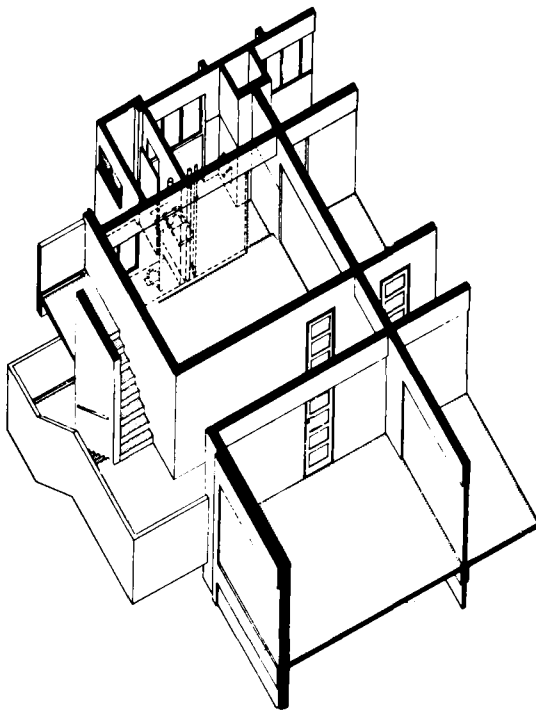
Development of low-cost public housing in the urban areas has been a matter of concern for all Southeast Asia. Some, like Singapore and Hong Kong, have evolved designs from a large number of developments. Others have yet to test their designs on a large scale and may change them significantly in time to come. Nonetheless, a comparison of designs offers a useful gauge on the state of the art of public housing in each country.

In this appendix the salient details of the designs are selected and organized country by country (Append. Tables 1-8 and Append. Fig. 1-9). They have been essentially derived from the submissions by the participating countries according to the framework agreed upon at conferences in Penang (April 1974) and Manila (January 1975). Unfortunately, only partial submissions were received from some of the participants and supplementary information has been extracted from the country monographs and other publications.

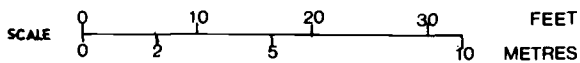
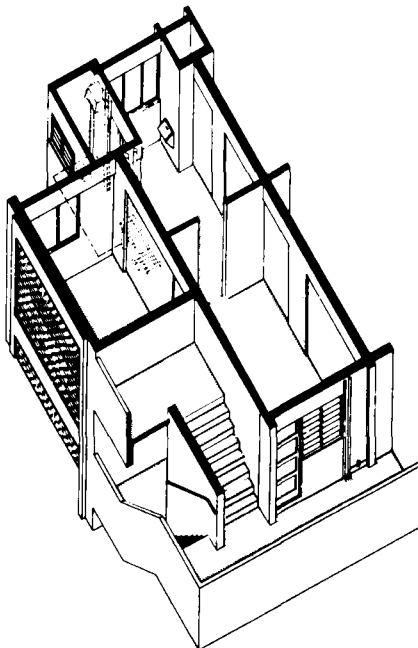
The general abbreviations used in the tables and figures are: -, no data; n.a., not applicable; L, living room; F, family room; B, bedroom; K, kitchen; S, store; Ba, bathroom, with at least a shower and water closet; T, toilet, basically with just a water tap; WC, water closet; U, utility room; Bal, balcony or terrace.



**PUBLIC HOUSING  
1-ROOM IMPROVED FLAT  
(FLAT SIZE 32.8 m<sup>2</sup>)**

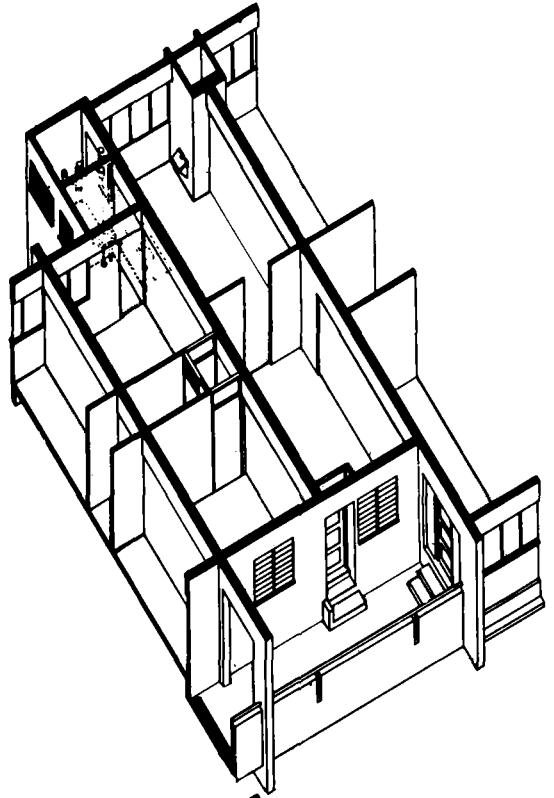
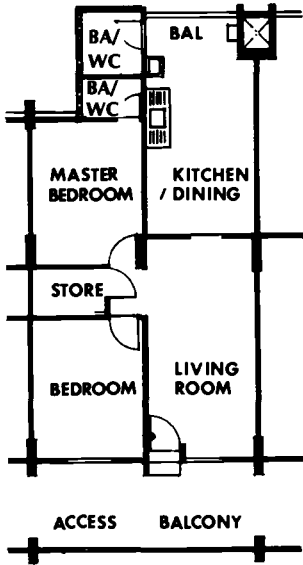


**PUBLIC HOUSING  
2-ROOM IMPROVED FLAT  
(FLAT SIZE 44.4 m<sup>2</sup>)**

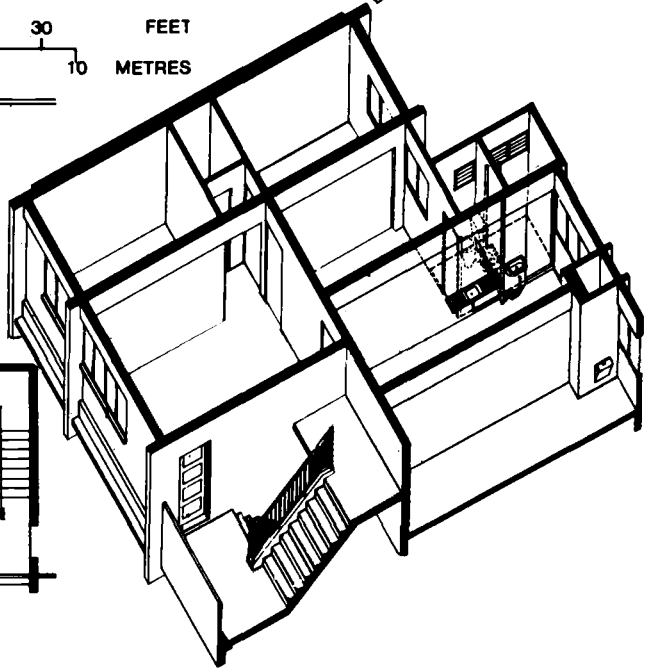
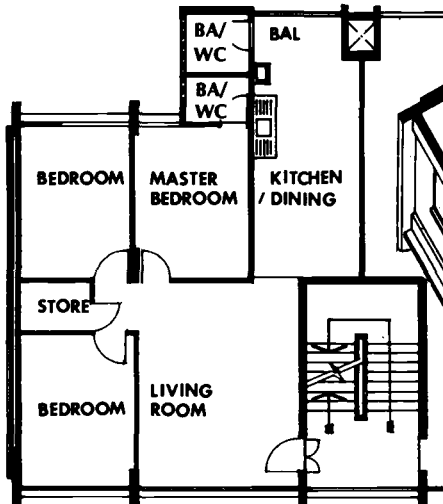
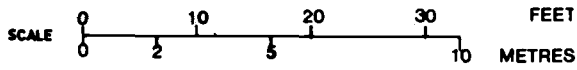


*Append. Fig. 1. Prototype public housing flats in Singapore.*



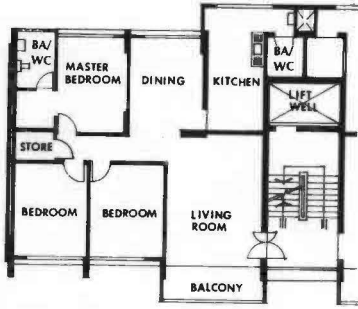


**PUBLIC HOUSING**  
**3-ROOM IMPROVED FLAT**  
 (FLAT SIZE 68.6 m<sup>2</sup>)

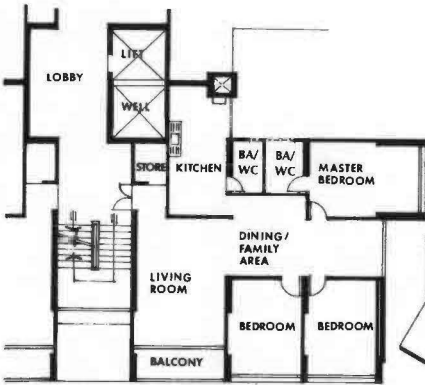
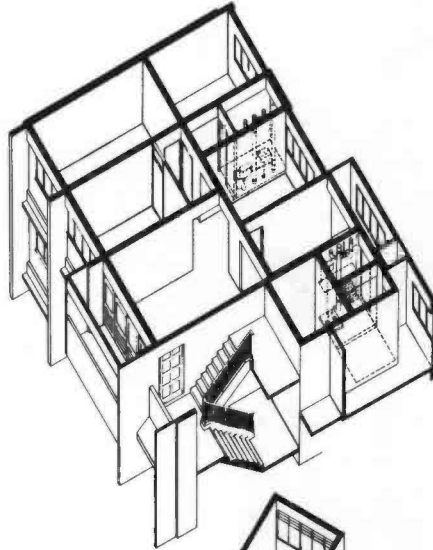


**PUBLIC HOUSING**  
**4-ROOM NEW FLAT**  
 (FLAT SIZE 92.6 m<sup>2</sup>)

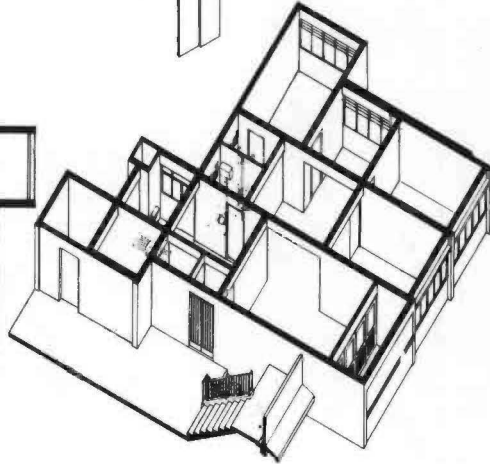
(Append. Fig. 1. continued)



PUBLIC HOUSING 5-ROOM FLAT  
(FLAT SIZE 121.3 m<sup>2</sup>)



PUBLIC HOUSING 5-ROOM FLAT (POINT BLOCK)  
(FLAT SIZE 120.7 m<sup>2</sup>)



SCALE 0 10 20 30 FEET  
0 2 5 10 METRES

(Append. Fig. 1. concluded)



The 4-room public housing flat in Singapore has a spacious kitchen/dining area.

Append. Table 1. Public housing in Singapore.

Description	1-room improved flat	2-room improved flat	3-room improved flat	3-room new flat	4-room improved flat	4-room new flat	5-room flat	5-room improved flat
Building type <sup>a</sup>	Free ground floor plus 8-15-story slab block with central corridor		Free ground floor plus 8-16-story slab blocks with access balconies				Free ground floor plus 24-story point blocks	
Room schedule	B-L,K,WC	L,B,K,T-WC	L,2B,K,T,WC	L,2B,K,S,2Ba	L,3B,K,T,WC	L,3B,K,S,2Ba	L,Bal,F,3B,K,S,2Ba	L,Bal,F,3B,K,2Ba
Dwelling unit size (to external wall surface, m <sup>2</sup> /unit)	32.76	44.41	61.78	68.60	82.77	92.60	120.69	123.43
Circulation area including ground floor free space (m <sup>2</sup> /unit)	13.77	16.32	19.70	23.83	19.41	26.46	28.06	28.66
Floor space standard (m <sup>2</sup> /person)	6.97	7.93	10.84	12.03	10.57	15.18	28.21	23.74
Family size (person/unit)	4.7	5.6	5.7	5.7	6.1	6.1	5.2	5.2
Cost (1974/75 <sup>b</sup> , U.S.\$/unit)	2941	4375	5720	6747	7782	9200	11320 (1973/74)	11520
Selling Prices (U.S.\$/unit):								
New towns	1320	2760	4720	6320	7400	9800	12000	14000
Suburban areas			5400	7000	8600	11000	14200	16200
Urban area			7000	8600	10400	12800	16400	18400
Service, conservancy (U.S.\$/month)	5.60	6.80	8	8	10	10	12	12
Rents (U.S.\$/month):								
New towns, suburban areas	9.40	16	30	n.a.	n.a.	n.a.	n.a.	n.a.
Urban areas	12	24	36	n.a.	48	n.a.	n.a.	n.a.
Service, conservancy charges (U.S.\$/month)	5.60	6.80	8	n.a.	10	n.a.	n.a.	n.a.

Construction, materials

Reinforced concrete frame, floor, and roof infilled with nonload-bearing concrete; hollow block walls, steel, or timber windows

Vertical circulation

Units/lift <sup>a</sup>	85-100	72-84	63-80	63-80	40-60	40-60	48	48
Units/staircase	58-100	48-84	42-74	42-74	16-30	16-30	96	96
Remarks	Mostly rental properties; tenants unlikely to make improvements	As in 1-room improved	Common additions, modifications include built-in kitchen cupboards, additional sanitary fixtures, floor and wall finishes, alteration to nonload-bearing partition walls	1st units not completed till mid 1975	As 3-room improved	1st units not completed till early 1976	As 3-room improved	1st units not completed till early 1976

<sup>a</sup>There are some 4-story walk-ups.

<sup>b</sup>Construction cost includes the building, plumbing, wiring, installing lifts, roofing, TV antenna, water connections, gas connections, sewers, piling, roads, carparks, culverts, drains, earthworks, and supervision.

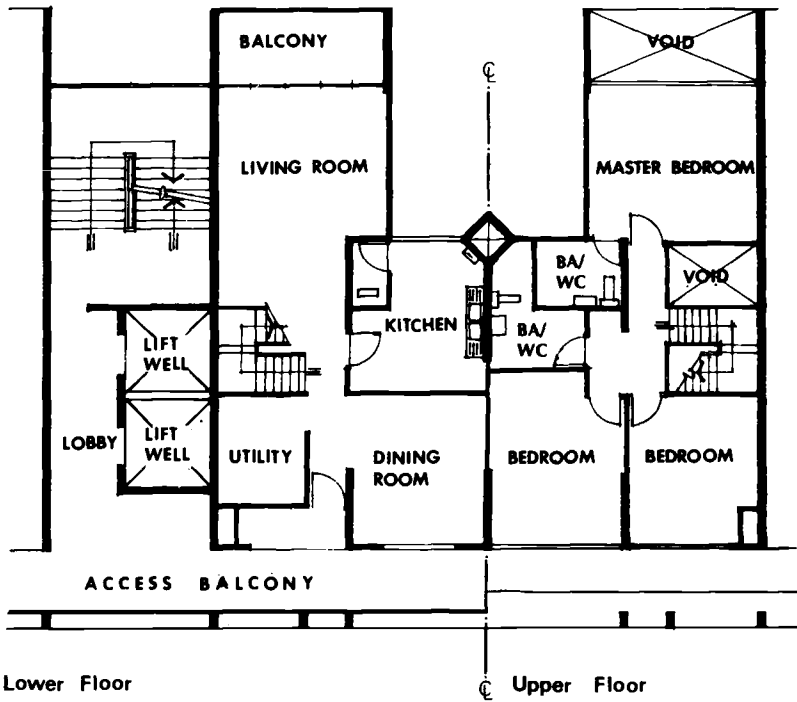
<sup>c</sup>Stops at every 4th floor, with minimum 2 lifts/block. No lift for 4-story walk-ups.



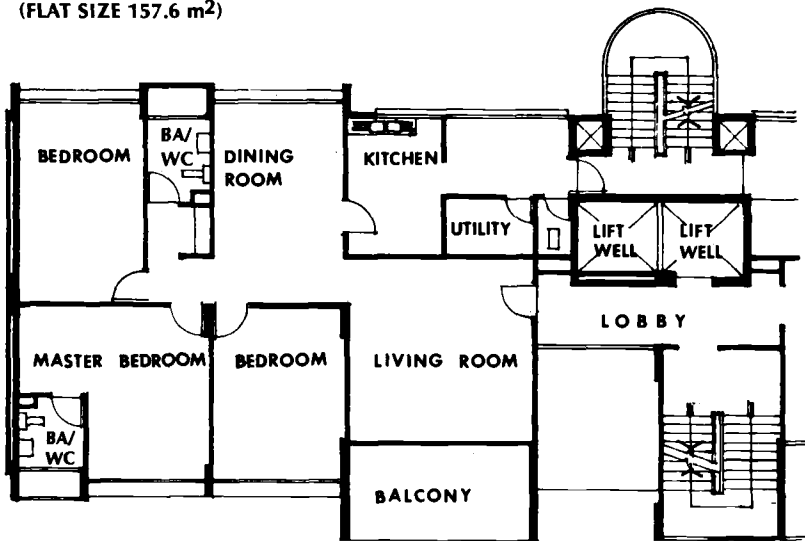
*The Bukit Merah Estate in Singapore comprises point-block buildings with 4-room flats.*

Append. Table 2. Middle-income housing, Singapore.

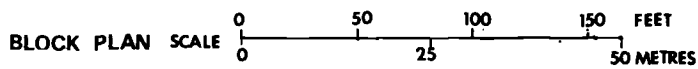
Description	HUDC type A flat	HUDC maisonette
Building type	Free ground floor plus 10-20-story slab block	Free ground floor plus 10-24-story slab block
Room schedule	L,Bal,D,3B,2Ba, T,K,U	L,D,Bal,3B,2Ba, T,K,U
Size to external wall surface, m <sup>2</sup> /unit	157.4	157.6
Floor space standard (m <sup>2</sup> /person)	30.3	30.3
Family size (persons/unit)	5	5
Cost (U.S.\$/unit)	30200	30400
Selling prices (U.S.\$/unit)	32000-40000	32800-36800
Monthly service, conservancy charges (U.S.\$/unit)	20	20
Construction, materials	Reinforced concrete frame, floor, and roof; plastered brickwalls, aluminum, steel, or timber windows with terrazo and parquet floor finishes; concealed pipes and wiring	
Vertical circulation		
Units/lift	10-20	30-72
Units/staircase	10-20	30-72
Remarks	1st project (1976) in Lake View	1st project (1977) in Amber Estate



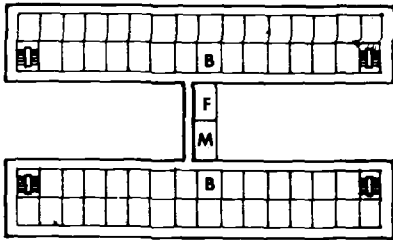
TYPICAL FLOOR PLAN  
(FLAT SIZE 157.6 m<sup>2</sup>)



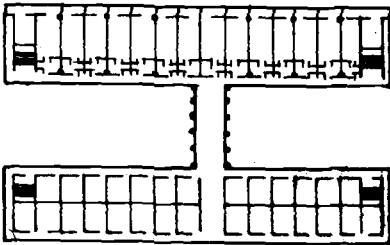
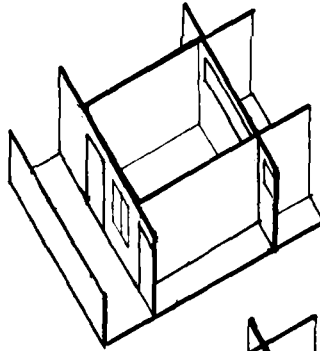
TYPICAL FLOOR PLAN  
(FLAT SIZE 157.4 m<sup>2</sup>)



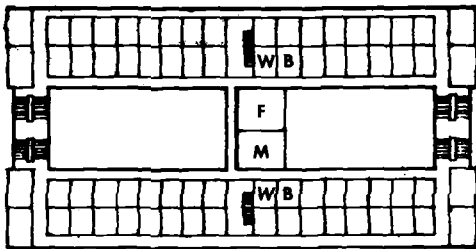
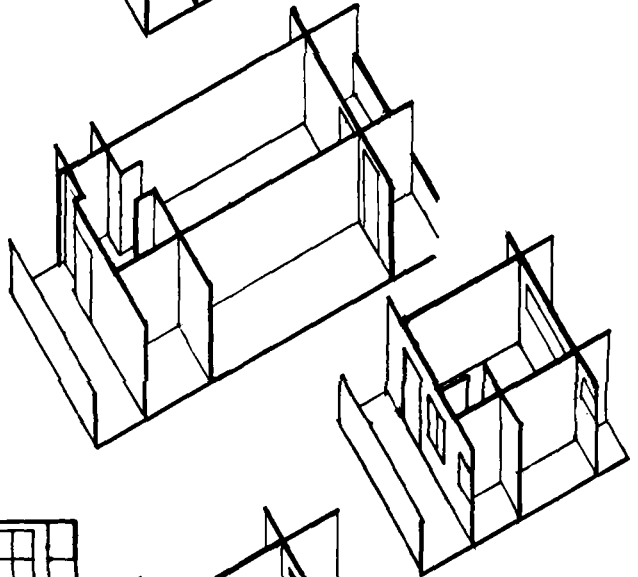
Append. Fig. 2. Prototype middle-income housing flats in Singapore.



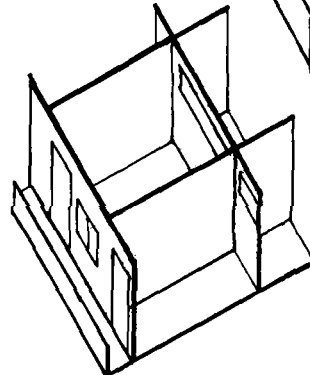
**MARK I  
RESETTLEMENT HOUSING**



**CONVERTED MARK I  
RESETTLEMENT HOUSING**

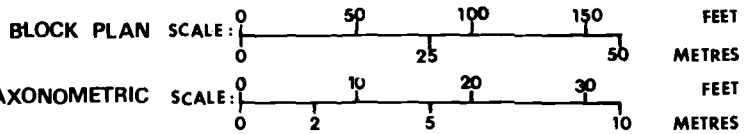


**MARK II  
RESETTLEMENT HOUSING**

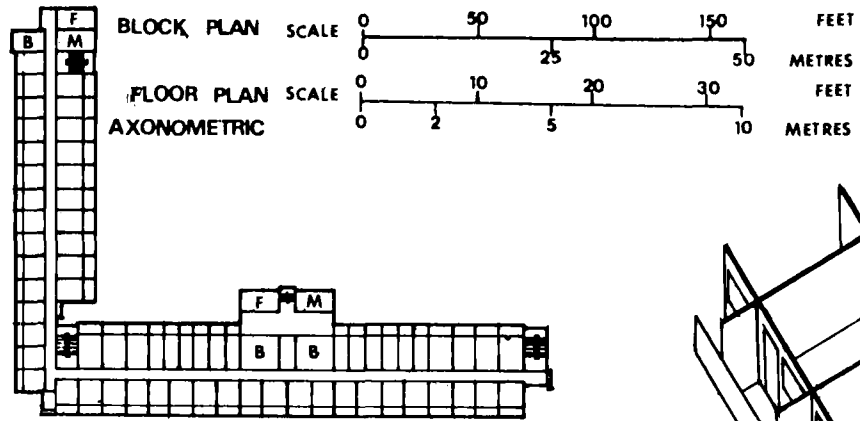


**KEY**

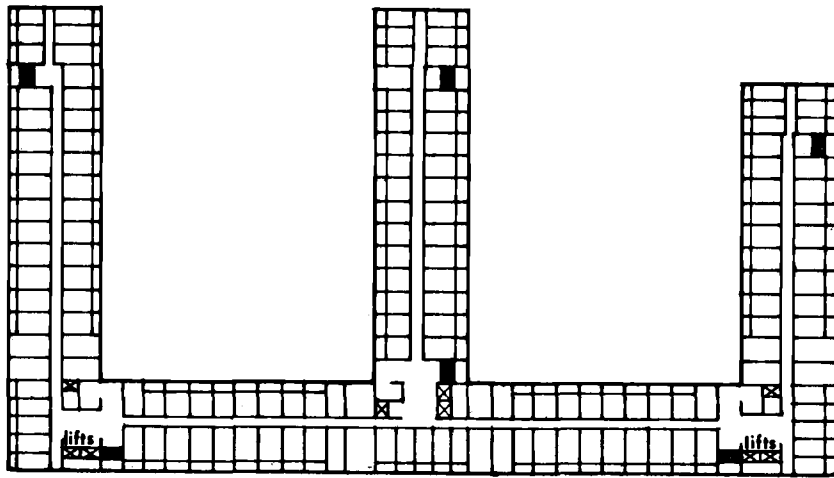
- M: MALE LATRINE**
- F: FEMALE LATRINE**
- B: BATH**
- W: WASH AREA**



*Append. Fig. 3. Typical public housing units in Hong Kong.*



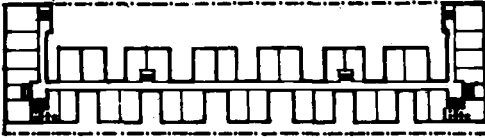
**MARK III  
RESETTLEMENT HOUSING**



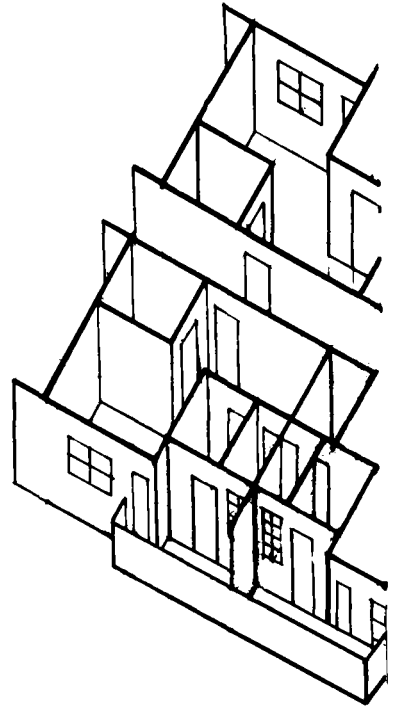
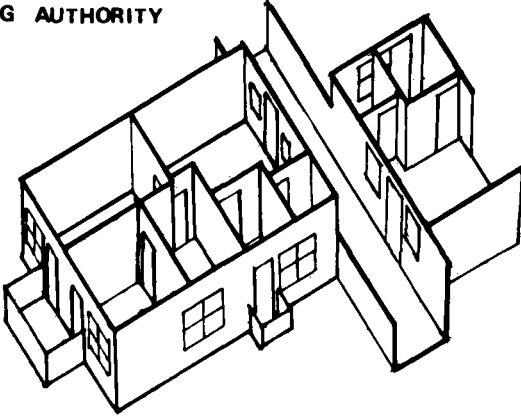
**MARK IV  
RESETTLEMENT HOUSING**

*(Append. Fig. 3. continued)*

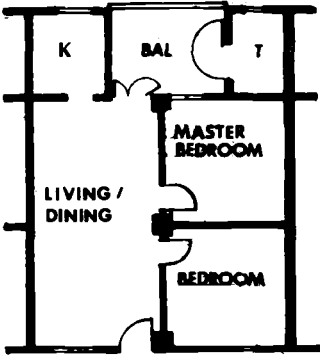




**NORTH POINT ESTATE  
HOUSING AUTHORITY**

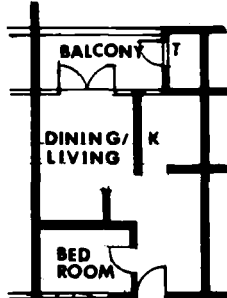


**SO UK ESTATE  
HOUSING AUTHORITY**



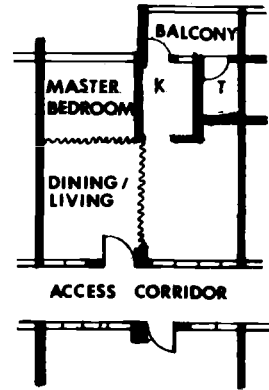
**ACCESS BALCONY**

**TYPICAL 2-BEDROOM TYPE  
OI MAN ESTATE  
HOUSING AUTHORITY**



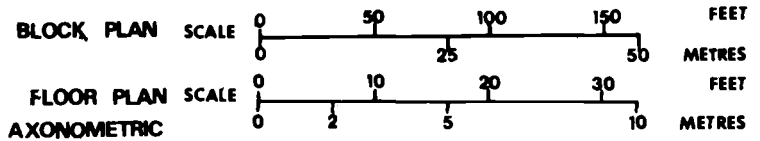
**ACCESS BALCONY**

**TYPICAL 6-PERSON FLAT  
WAH FU ESTATE  
HOUSING AUTHORITY**



**ACCESS CORRIDOR**

**TYPICAL 7-PERSON FLAT  
WO LOK ESTATE  
HOUSING AUTHORITY**



(Append. Fig. 3. concluded)

Append. Table 3. Public housing, Hong Kong.

Description	Urban Council/Resettlement Dept.						Housing Authority (introduced 1958)	Govt. low-cost housing (introduced 1962)	HK Housing Society (introduced 1952)
	Mark I <sup>a</sup> (1955-61)	Mark II <sup>a</sup> (1961-64)	Mark III (1964-67)	Mark IV (1965-69)	Mark V (1966-71)	Mark VI			
Building type	6-7-story H block, 64 units per floor	7-8-story H block, 64 plus 4 large end units per floor	8-story slab or L block with central corridor	As Mark III 8 or 16 stories	Modified Mk IV with variable room sizes for different family sizes	As Mk V	11-12 stories with central corridor	7-20 stories with central corridor and different-sized living room	7-17 stories
Room schedule	B-L, communal WC	As in Mk I	As Mk I but with Bal, shared by 2 units	As Mk III with individual WC	As Mk IV	As Mk IV	Varies with partitions, K, WC, Bal	As Mk III or Mk IV	As Mk I, WC shared by 2 units, communal kitchen and laundry, or as Housing Authority example
Size (m <sup>2</sup> /unit)	11.1 + 3.6 room and public balcony	As Mk I; 28.8 for end units	11.1 + 4.0 room and private balcony	As Mk III	Varies	20.1	Varies	As Mk III	-
Floor space standard <sup>b</sup> (children under 10 years = 1/2 adult, m <sup>2</sup> adult)	2.2	2.2	3.0	3.0	3.0	4.0	4.5-5.7	3.0	3.0-4.5
Household size (adult/unit)	5	5	5	5	Varies	4	Varies	5	Varies
Cost (U.S.\$/unit)	\$475 (1954) including land at 1/3 assessed market value	As Mk I	As Mk I	\$830 (1966) including land cost at 1/3 assessed market value	-	-	\$4160 (1958) for North Point; \$1559 (1963) for So Uk; land 1/3 assessed market value	-	\$1038-1094
Rental (1973/74, U.S.\$./month)	\$2.70-\$4.80	As Mk I	\$6.40	\$5.70-8.60	\$7.80-10.40	\$11.90	\$18.00-30.00	\$9.69-22.20	\$9 for 4-person unit to \$41 for 12- person unit
Construction, materials	Reinforced concrete frame; hollow block cellular load-bearing ext. walls; nonload- bearing spine wall, timber shutters	As Mk I	As Mk I but with central transverse box corridor, laterally braced by stairwell	As Mk III but with fair-faced walls	As Mk IV	As Mk IV	Reinforced concrete frame, brick walls, steel windows, hardboard doors	As Mk III or IV	As Mk I or Housing Authority example
Vertical circulation									
Units/lift	n.a.	n.a.	n.a.	331	-	-	-	-	-
Units/staircase	105	82	120	414	-	-	-	-	-

<sup>a</sup>The Mark I and Mark II resettlement units were scheduled for conversion into self-contained flats of various sizes with individual water supply, kitchen, and WC.

<sup>b</sup>Figure excludes kitchen or bathroom.

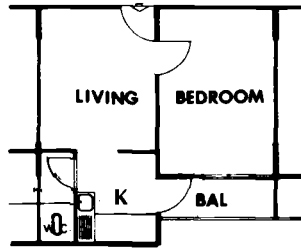
Append. Table 4. Low-cost housing, Malaysia.

Description	Terrace housing		Medium-rise flats	High-rise flats
Building type	Single story	2 story	3-4 story	16-18 story
Room schedule	L,2B,K,S,Ba	L,3B,K,2Ba	L,1B or 2B,K,Ba,Bal	L,1B or 2B,K, Ba,Bal
Size (m <sup>2</sup> /unit)	58.2	89.2	35.9-40.2	1-B flat, 35.1-37.3 2-B flat, 42.2-46.9
Lot size (m <sup>2</sup> )	149-379	149-409	n.a.	n.a.
Floor space standard (m <sup>2</sup> /person)	9.3	13.3	4.6-7.4	4.6-7.4
Cost (U.S.\$/unit)	2436 (1970)	3528 (1970)	1600-2400	34.4/m <sup>2</sup>
Selling prices (U.S.\$/unit)	5400-8400	6560-9800	-	-
Rents (U.S.\$/month)	-	-	1-B flat, 7.2 2-B flat, 14.0 3-B flat, 20.0	1-B flat, 18.8 2-B flat, 26.8
Construction, materials	Brick ext. walls, hardboard on timber frame, internal walls, corrugated asbestos cement roof	Reinforced concrete frame, brick infill or hardboard lining, mass concrete tile roof	-	Reinforced concrete frame or industrialized members with concrete block infills
Vertical circulation				
Units/lift				128-171
Units/staircase	n.a.	n.a.	n.a.	128-171
Remarks	-	-	Some ground floor units for shops	1 common refuse chute per floor; shops on ground floor; community hall; post office; etc.

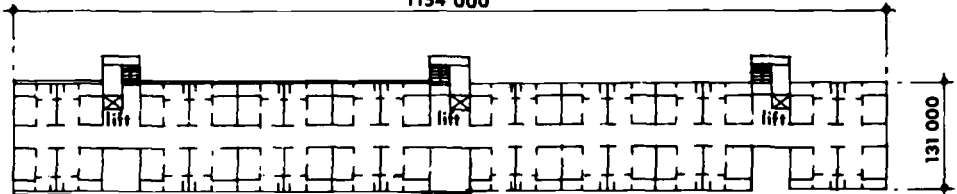
\*Based on recommendation by the Committee on Minimum Standards for Low-Cost Housing.

Append. Table 5. Design data for dwelling units, Philippines.

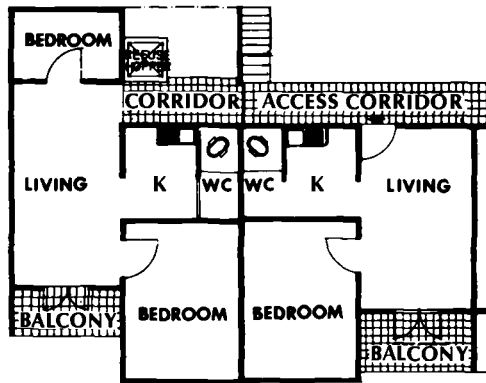
Description	Peoples' Homesite and Housing Corporation projects					LHDC/SSS projects (Marikina Heights, Rizal)	Proposed GSIS tenement housing (Tondo, Manila)
	Single-story detached house	Single-story semi- detached house	Single-story row house	4-story, medium-rise flat	7-story, high- rise flat	Single-story, detached house (3 room)	5-story, medium-rise flat (ground floor for commercial)
Room schedule	L-D,3B,K, Ba, 1 carport	L-D,B,K,Ba	L-D,2B,K,Ba	L-D-K,B, Ba,Bal	L-B,K- D,Ba,Bal	L-D,2B,K,Ba	L,2B,K-D,Ba,U
Dwelling unit size (m <sup>2</sup> )	85 (excluding carport)	34.7	47.7	39.2	27.0	63	26.3-30
Lot size	-	-	n.a.	n.a.	n.a.	-	n.a.
Floor space standards (m <sup>2</sup> /person)	-	-	-	-	-	10.0	5.0
Cost (U.S.\$/unit)	-	-	-	-	-	4463 (1968)	2409 (1973)
Selling prices (U.S.\$/unit)	-	-	-	-	-	7037 (1973)	-
Rents (U.S.\$ month)	-	-	-	-	-	28.75 (1973)	15-30
Construction, materials	Concrete hollow blocks or precast panel wall; asbestos or galvanized iron roof; concrete floor; glass window or timber louvres	As in single- story house	As in single- story house	As in single- story house but with reinforced concrete roof	-	Reinforced concrete floor, concrete hollow block external walls, prefab plywood internal partitions; prefab trusses with galvanized iron or aluminum roof, plywood or pressed board ceiling; aluminum or steel-framed glass louvres	Reinforced concrete structures, pyramidal design with hangers for canti-levered hallways
Vertical circulation (Units/staircase)	n.a.	n.a.	n.a.	8	n.a.	n.a.	n.a.
Remarks	Substantial improvements and alterations including structural				-	Additions: grills, locks, walls, partitions, floor, gates, fences, pathways, terraces, drains	-



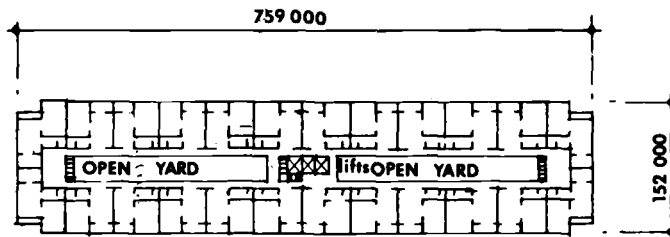
TYPICAL FLOOR PLAN  
1154 000



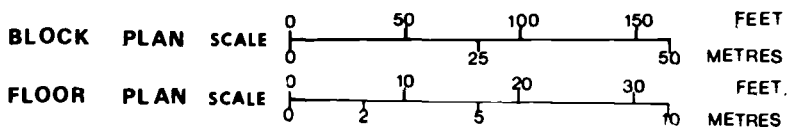
17-STORY FLATS AT AYER HITAM



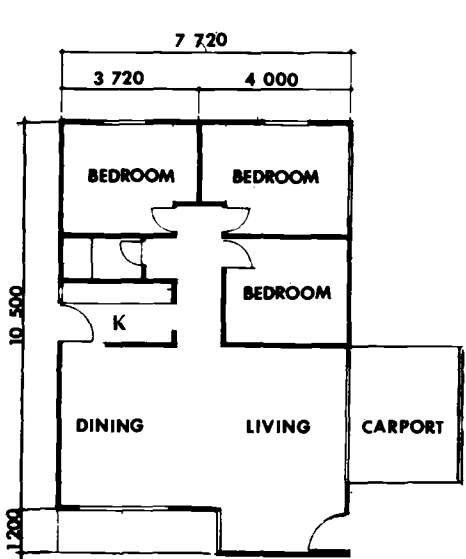
TYPICAL FLOOR PLAN



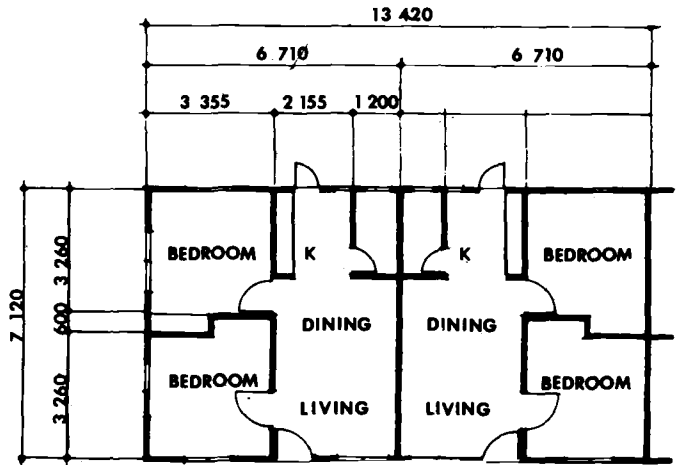
17- & 18-STORY FLATS AT JALAN RIFLE RANGE



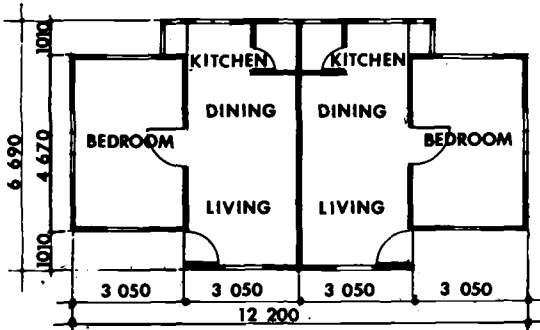
Append. Fig. 4. Examples of high-rise flats in Penang, Malaysia.



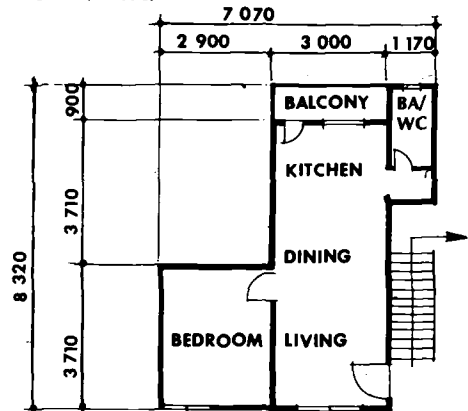
SINGLE-STORY DETACHED HOUSING  
QUEZON CITY



SINGLE-STORY ROW HOUSES  
QUEZON CITY (PHHC)



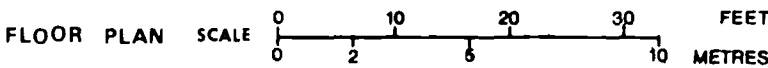
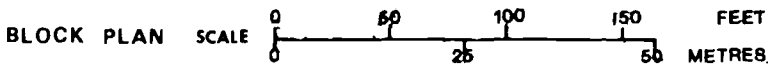
SINGLE-STORY SEMIDETACHED HOUSE  
(PHHC)



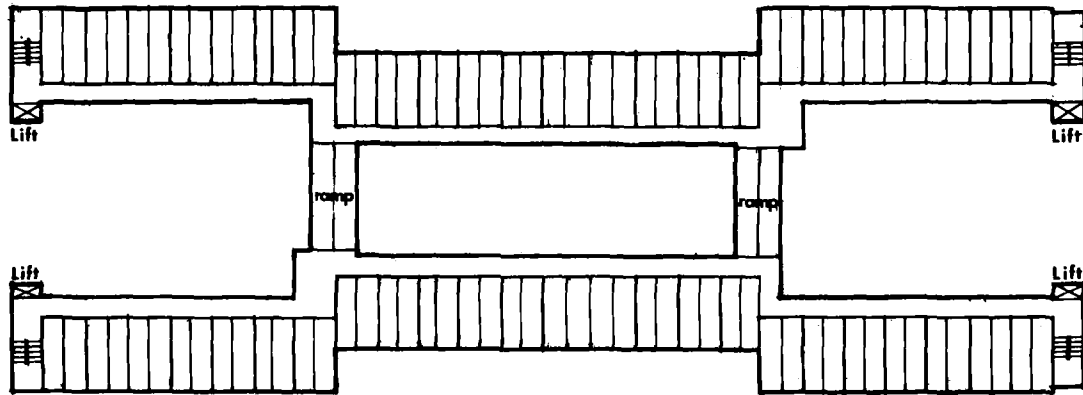
TYPICAL FLOOR PLAN



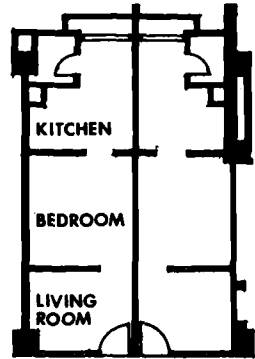
3-STORY WALK-UP FLATS  
MANILA (PHHC)



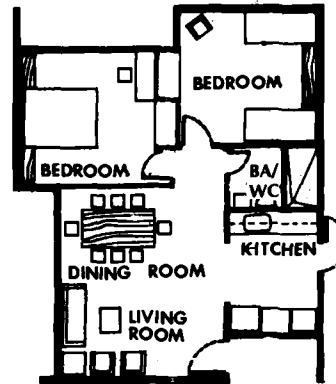
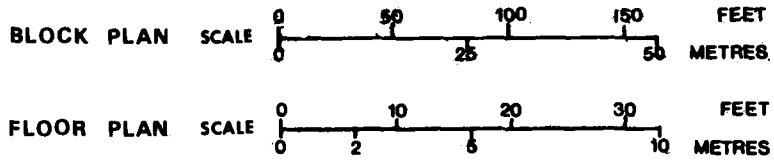
Append. Fig. 5. Examples of urban low-cost housing, Manila, Philippines.



HIGH-RISE FLATS (PHHC)

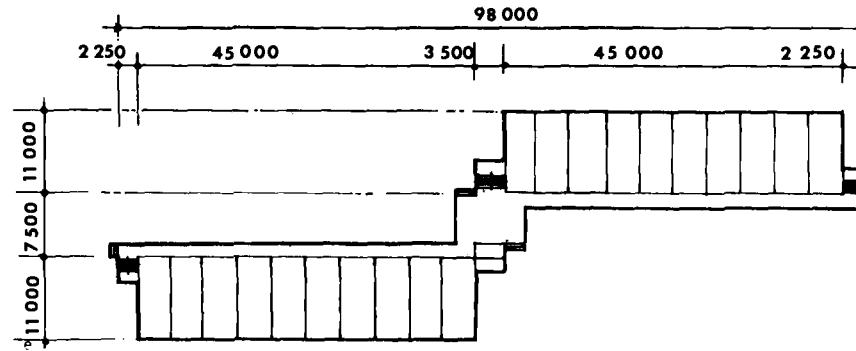


TYPICAL FLOOR PLAN  
HIGH-RISE FLATS  
(PHHC)

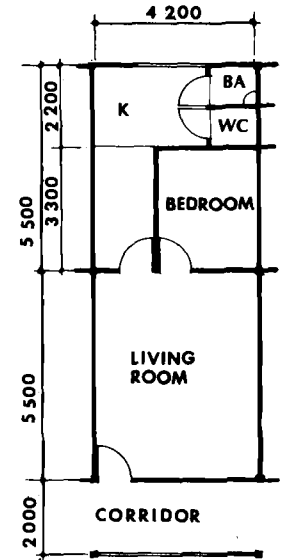


SINGLE-STORY DETACHED HOUSE  
LHDC/SSS PROJECTS MARIKINA HEIGHTS RIZAL

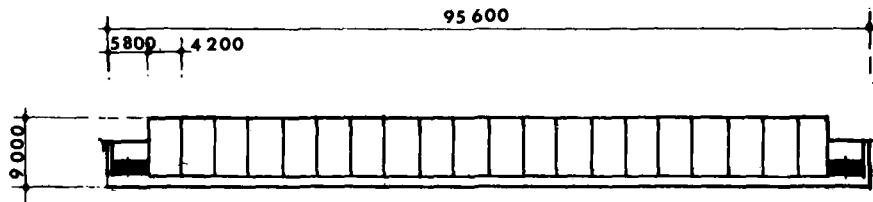
(Append. Fig. 5. concluded)



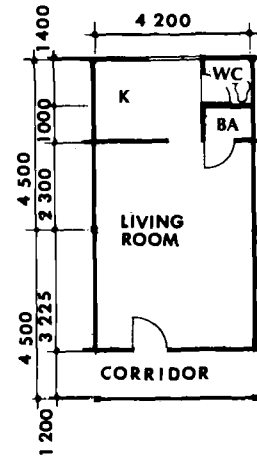
**5-STORY FLATS AT HUAYKWANG**  
 (The total length of the building in Group B F2 is 132 m,  
 and there are 60 dwelling units.)



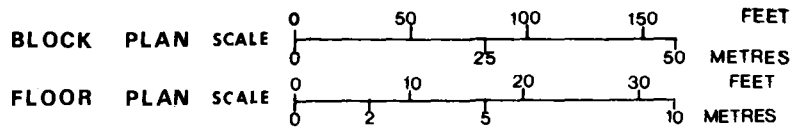
**TYPICAL FLOOR PLAN**



**5-STORY FLATS AT TA SAI**



**TYPICAL FLOOR PLAN**



*Append. Fig. 6. Examples of walk-up flats at Ta Sai and Huaykwang, Bangkok.*

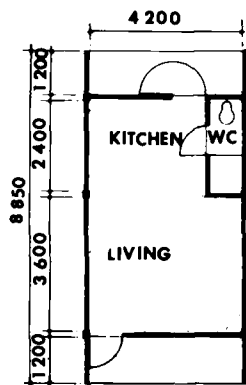


Append. Table 6. Dwelling unit design, Thailand.

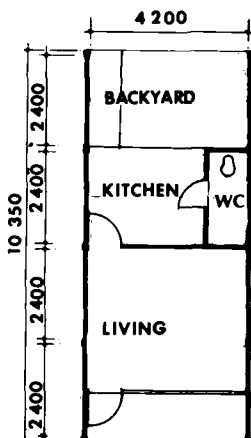
Description	National Housing Authority			Huaykwang project, 7 km from Bangkok	Proposed Ta Sai project, 14 km from Bangkok		
	Group A	Group B	Group C				
Building type	Type F1 5-story flat	12-story flat <sup>a</sup>	8-story flat	5-story flat	5-story studio flat	Type 4A: 2-story row house	Type 3: 2-story semidetached house
Room schedule	L,B,K,Ba, hallway	L,2B,K,Ba	L-D,2B,K, Ba,Bal	L,B,K,Ba,WC	L-B,K,S,Ba	L-D-K,2B, Ba,Bal	L-D-K,B,Ba,Bal
Dwelling unit size (m <sup>2</sup> )	35	40	55	46.2	33.28	53.8	46.1
Floor space standard (m <sup>2</sup> /person)	4.0	8.0	-	6.87	6.0	6.4	4.5
Cost <sup>b</sup> (U.S.\$/unit)	-	-	-	4718	2798	3970	3573
Selling price (U.S.\$/unit)	-	25 (over 20 years)	-	-	2965	4250	4306
Rents (U.S.\$/month)	Max 15	n.a.	n.a.	9	Hire-purchase 28.0 for 20 years	Hire-purchase 48.5 for 15 years	Hire-purchase 56.3 for 15 years
Construction, materials	Reinforced concrete frames on piles; concrete block external walls; hardboard internal walls	as Type F1	as Type F1	Reinforced concrete frames; semiprefab floors; concrete block walls; asbestos roofing on timber frames; timber casement windows or louvres	As in Huaykwang project	Reinforced concrete frames, semiprefab floors, concrete block walls, wood-framing roof	
Vertical circulation							
Units/lift	80	44	-	26	40	n.a.	n.a.
Units/staircase	-	60	-	-	-	-	-
Remarks	Ground floor generally free or for shops	-	-	-	-	-	-

<sup>a</sup>Another building type similar to F1 is the F2 of group B. It is a 5-story, 47 m<sup>2</sup> apartment unit with 40 units per floor. Its construction and material features are the same as for F1.

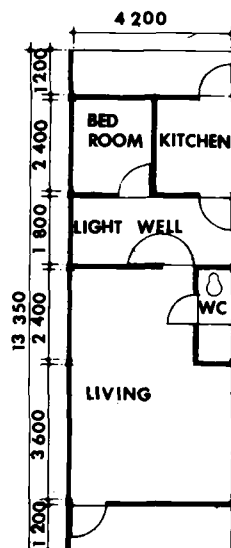
<sup>b</sup>Cost consists of building, engineering, land, administrative costs plus 10% interest.



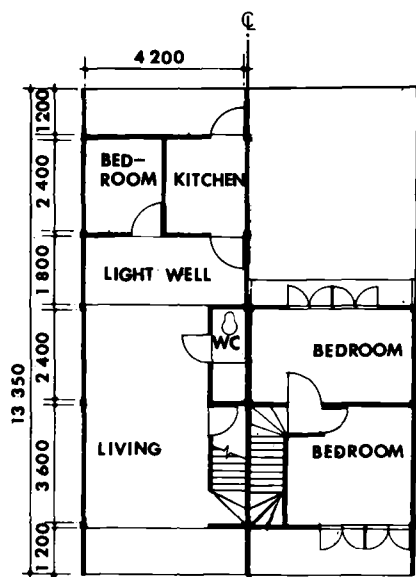
TYPICAL FLOOR  
PLAN TYPE 1  
ROW HOUSE



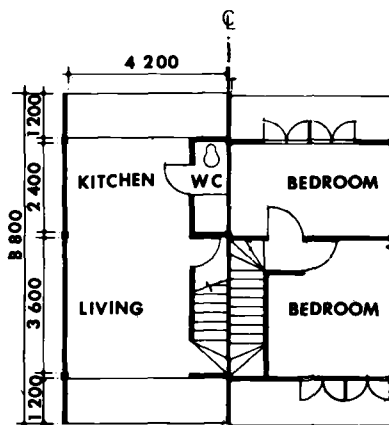
TYPICAL FLOOR  
PLAN TYPE 1:1  
ROW HOUSE



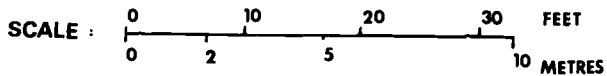
TYPICAL FLOOR  
PLAN TYPE 2  
ROW HOUSE



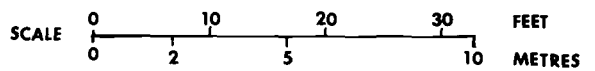
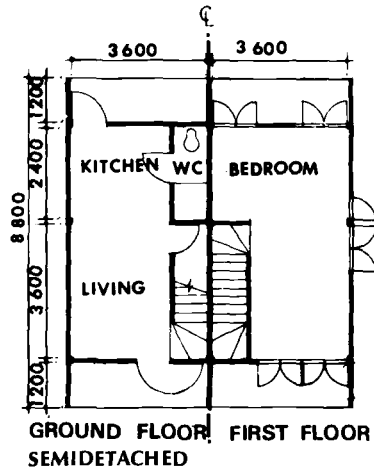
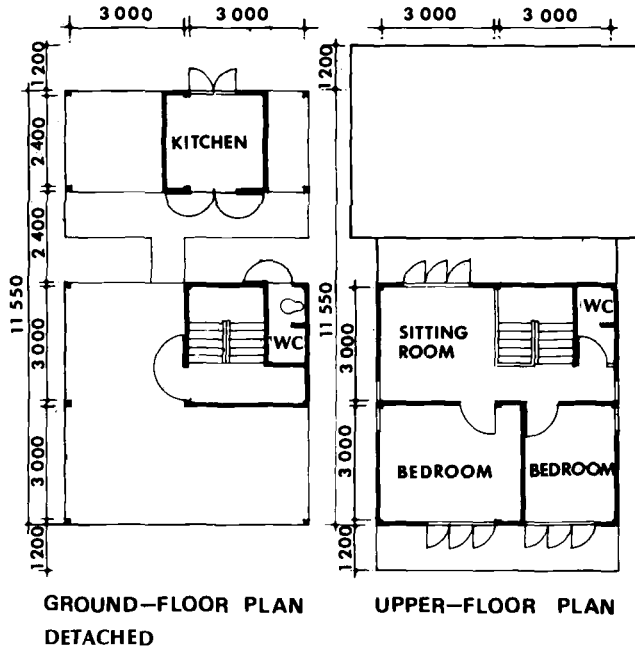
GROUND-FLOOR  
PLAN TYPE 4  
ROW HOUSE



GROUND-FLOOR  
PLAN TYPE 4A  
ROW HOUSE



Append. Fig. 7. Examples of row houses, semidetached and detached houses in Ta Sai, Bangkok.



(Append. Fig. 7. concluded)

Append. Table 7. Dwelling unit design, Indonesia.

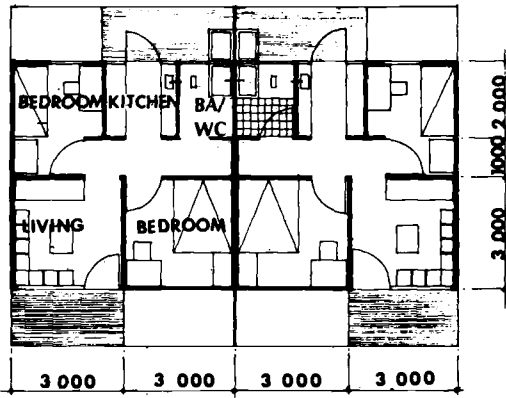
Description	Prototype housing projects, Cijagra, Bandung <sup>a</sup>					
Building type	T45: single-story row house	T54: single-story row house <sup>d</sup>	M70: 2-story maisonette <sup>d</sup>	M70A: 2-story maisonette <sup>d</sup>	M140: 2-story maisonette <sup>d</sup>	F64: 4-story flat
Room schedule	L,2B,K,Ba	L,3B,K,Ba, terrace	L,3B,K,Ba, terrace	L,4B,K,Ba,2Bal, terrace	2L,3B,K,3Ba,S,2Bal, garage, terrace	L,2B or 3B,K, Ba,2 Bal
Dwelling unit size (m <sup>2</sup> )	45	54	70	70	140	64
Lot size (m <sup>2</sup> )	n.a.	n.a.	n.a.	n.a.	305.5	800 for 16-unit block
Floor space standards (m <sup>2</sup> /person)	9	9	10	10	20	12
Cost <sup>b</sup> (U.S.\$/unit)	2500	3000	5500	5500	15000	16400
Selling prices (U.S.\$/unit)	3000	5000	5000	5000	25000	5000
Rents <sup>c</sup> (U.S.\$/month)	50	100	100	100	200	100
Construction, materials	Clay-tile roof with ceiling; pozzolanic walls, wooden frame glass windows		Clay-tile roof; timber-frame glass windows			
Remarks	Built as detached houses also	-	-	-	-	-

<sup>a</sup>To try out nontraditional building methods and building materials as well as new uses of local building materials. To gain experience toward improved design for system-building.

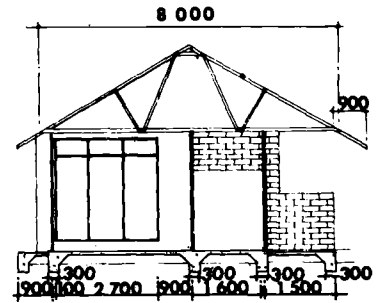
<sup>b</sup>Figure excludes land cost, 1975 estimate.

<sup>c</sup>These are 1975 free market prices, not prices paid by occupants.

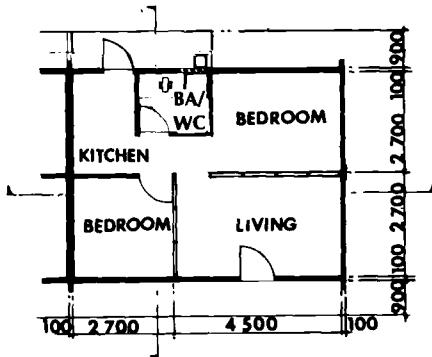
<sup>d</sup>These are more conventionally called semidetached houses.



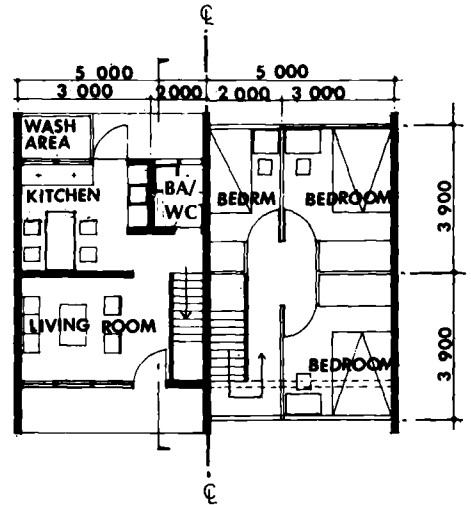
FLOOR PLAN  
SINGLE-STORY ROW HOUSES TYPE T 36



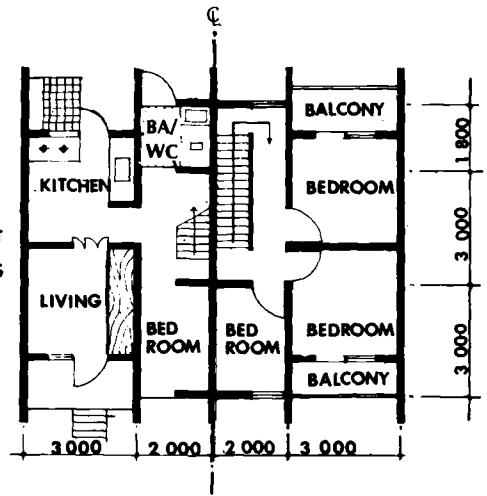
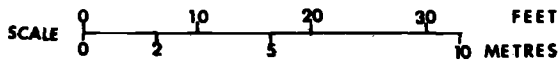
SECTION



FLOOR PLAN  
SINGLE-STORY ROW HOUSES TYPE T 45

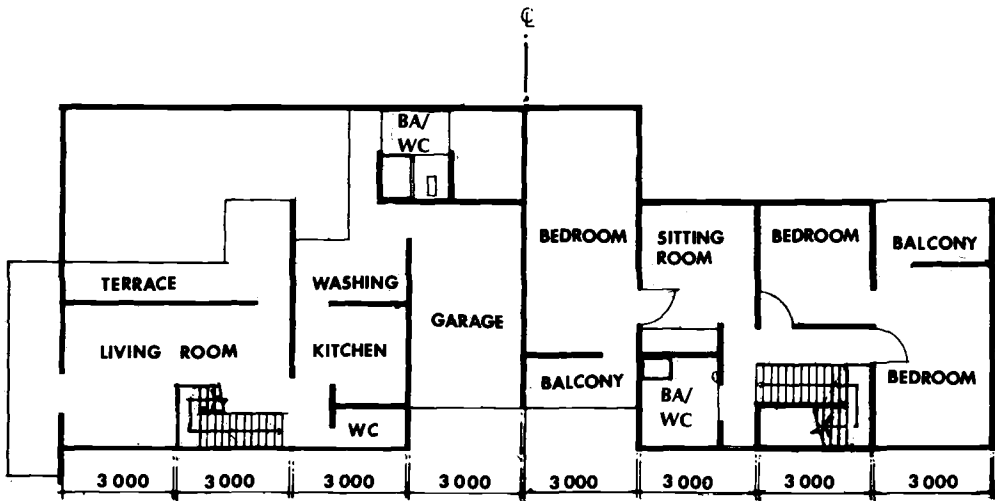


GROUND FLOOR FIRST FLOOR  
2-STORY ROW HOUSES TYPE M 70

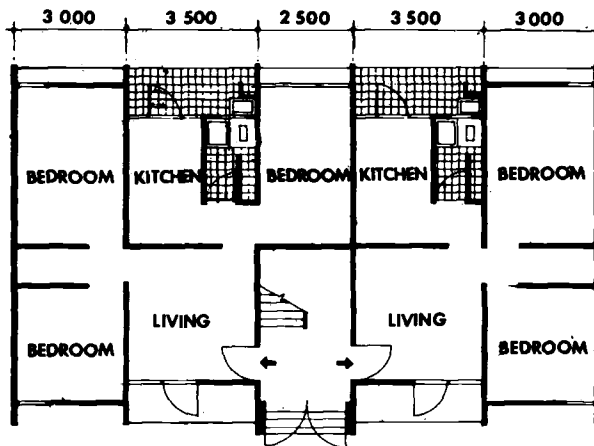


GROUND FLOOR FIRST FLOOR  
2-STORY ROW HOUSES TYPE M 70 A

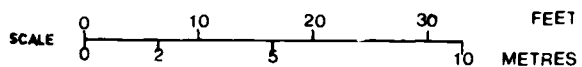
Append. Fig. 8. Examples of urban low-cost housing in Cijagra, Bandung.



**GROUND FLOOR** **FIRST FLOOR**  
**2-STORY SEMIDETACHED PLUS GARAGE TYPE M 140**



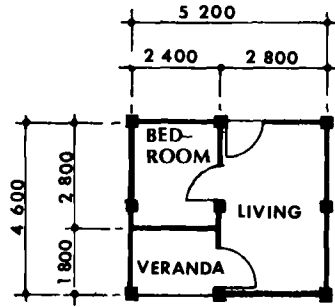
**TYPICAL FLOOR PLAN**  
**4-STORY FLATS TYPE F 64**



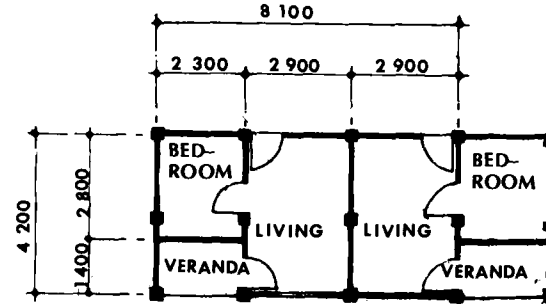
*(Append. Fig. 8. concluded)*

Append. Table 8. Dwelling unit design, Sri Lanka.

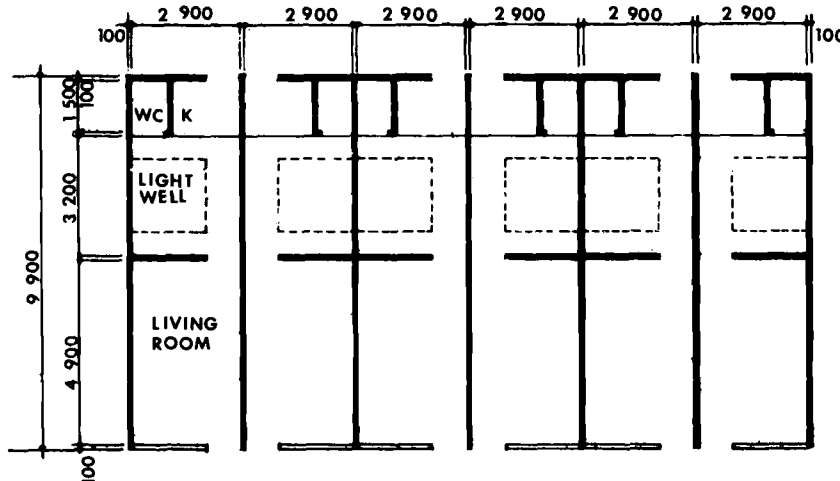
Description	Working-class housing					Lower-middle-class housing	
	Single-story detached or semidetached (aided self-help)	Single-story terrace	2-story flats 8 units/block	3-4-story flats 16 units/block	5-story flats 20 units/block	Single-story detached (aided self-help)	4-story flats
Room schedule	L,B,Bal	L-B,K,WC, light well	U,B,K,WC,Bal, light well	L,B,K,WC,S, Bal	L,B,K,WC,S, Bal	L,D,2B,K,WC	L,2B,K,Ba,WC
Dwelling unit size (m <sup>2</sup> )	20.4	23.2	25.4	35.5	35.5	43.4	40.8
Floor space standard (m <sup>2</sup> /person)	3.4	5.2	4.2	5.5	5.8	7.1	6.6
Cost (U.S.\$/unit)	367.90	932.00	778.50	2858.50	3750.00	1452.50	3400.00
Selling prices (U.S.\$/unit)	367.90	n.a.	n.a.	n.a.	n.a.	1452.50	n.a.
Rents (U.S.\$/month)	1.60	4.50	4.50	4.50	4.50	8.50	8.50
Construction, materials	Brick load-bearing wall; tile roofing		Concrete block load-bearing walls; reinforced concrete floors; asbestos cement roofing			Brick load-bearing walls; tile roofing	Concrete block load-bearing walls; RC floors; asbestos cement roofing
Vertical circulation (units/staircase)	n.a.	n.a.	6	12	24	n.a.	24



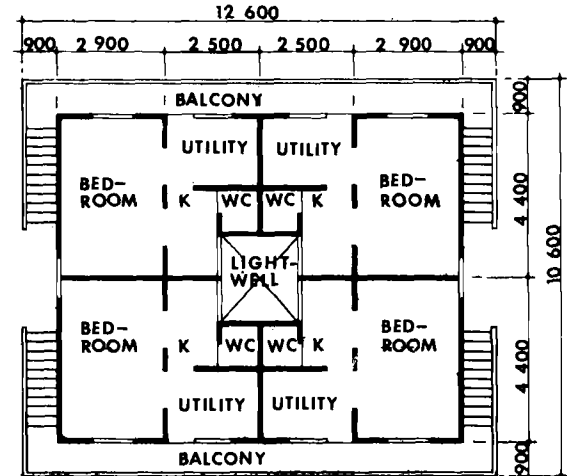
SINGLE-STORY DETACHED (AIDED SELF-HELP)  
WORKING-CLASS HOUSING



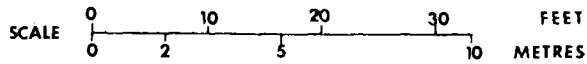
SINGLE-STORY SEMIDETACHED (AIDED SELF-HELP)  
WORKING-CLASS HOUSING



SINGLE-STORY TERRACE HOUSES  
WORKING-CLASS HOUSING

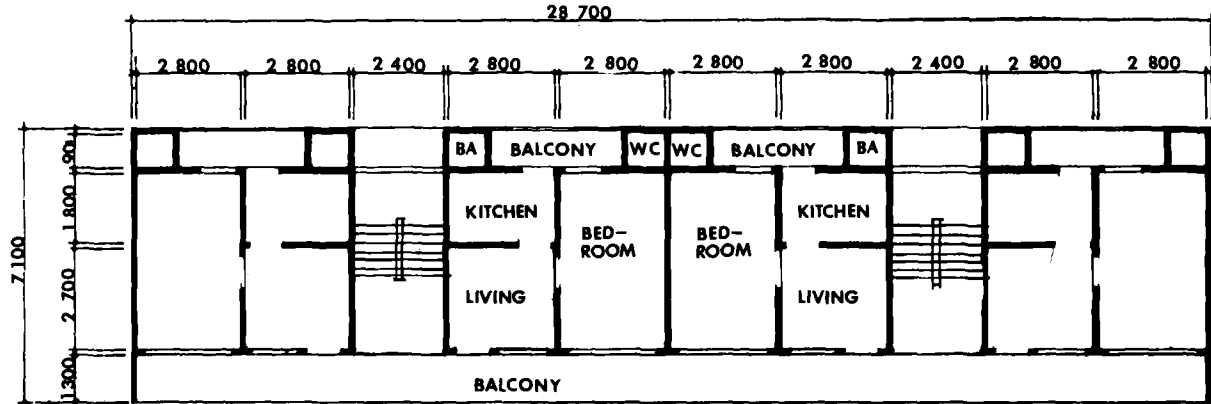


2-STORY FLATS  
WORKING-CLASS HOUSING

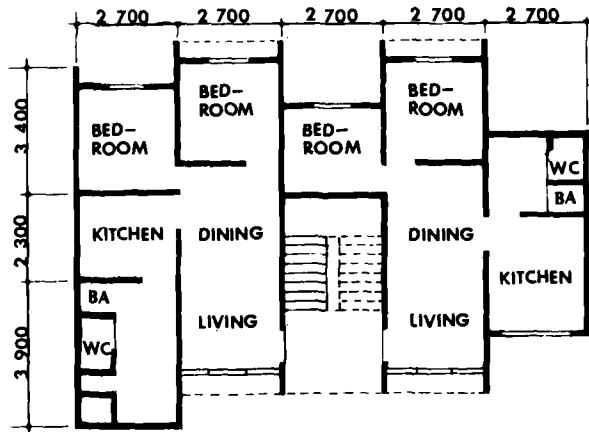


Append. Fig. 9. Examples of urban low-cost housing in Sri Lanka.

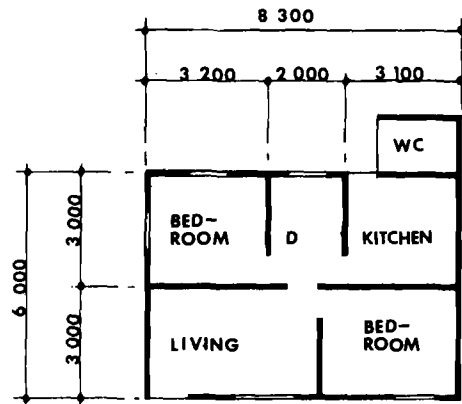




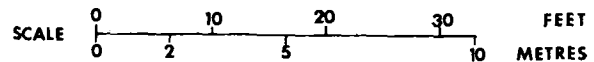
WALK-UP FLAT (16-20 UNITS/BLOCK)  
WORKING-CLASS HOUSING



4-STORY FLATS  
LOWER MIDDLE-CLASS HOUSING



SINGLE-STORY DETACHED (AIDED SELF-HELP)  
LOWER MIDDLE-CLASS HOUSING



(Append. Fig. 9. concluded)

## Appendix 4.

### Currency Conversion Table\*

Singapore	S\$ 2.50 = U.S.\$ 1.00
Hong Kong	HK\$ 5.00 = U.S.\$ 1.00
Malaysia	M\$ 2.50 = U.S.\$ 1.00
Philippines	P 6.641 = U.S.\$ 1.00
Thailand	20.00 baht = U.S.\$ 1.00
Indonesia	Rp 415.00 = U.S.\$ 1.00
Sri Lanka	Rs 10.00 = U.S.\$ 1.00

\*In effect at the time the report was compiled.

**Credits**

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