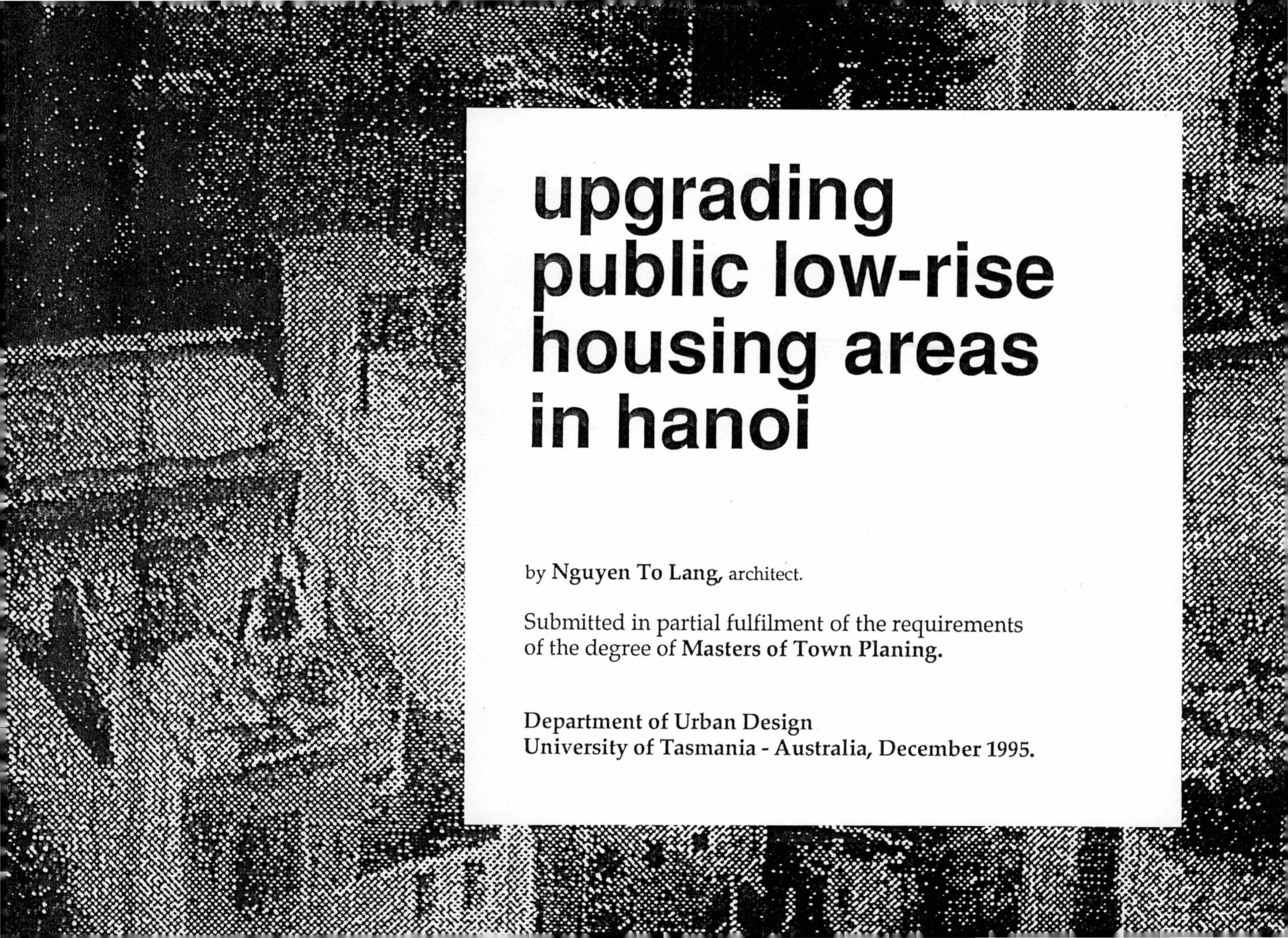
upgrading public low-rise housing areas in hanoi

nguyen to lang



upgrading public low-rise housing areas in hanoi

by **Nguyen To Lang**, architect.

Submitted in partial fulfilment of the requirements of the degree of **Masters of Town Planing.**

Department of Urban Design
University of Tasmania - Australia, December 1995.

This project contains no material which has been accepted for the award of any higher degree or graduate diploma in any tertiary institution. To the best of my knowledge and belief it contains no material previously published or written by another person, except when due reference has been made in the text of the project. I am responsible for interpreting information from Vietnamese into English.

December 1995

Nguyen To Lang

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ABBREVIATIONS

ACO	Architect in Chief's Office
AIDAB	Australian International Development Assistance Bureau
DoC	Department of Construction
DPC	People's Committee of Hai Ba Trung District
GoV	Government of Vietnam
HDM	Housing Management Department, MoC
IOG	Indochina Operational Group, International Red Cross
MoC	Ministry of Construction
NHP	National Housing Program
NIURP	National Institute for Urban and Rural Planning
PC	People's Committee
SCCC	State Committee for Capital Construction
SIDA	Swedish International Development Authority
SRV	Socialist Republic of Vietnam

ABSTRACT

This project analyses the problems of Hanoi's public low-rise housing neighbourhoods built during the years of the subsidised economic mechanism of Vietnam's socialist government from 1954 to 1986. It proposes a broad scale approach for the improvement of conditions in those neighbourhoods.

The investigative part of the project gives a brief history of housing development and housing types in Hanoi prior to and during the period in question. It explores the physical conditions of the public housing neighbourhoods today. It also describes the organisational framework which produced and manages them.

Further, it explores the changing economic conditions and government policies in contemporary Vietnam and proposes an approach for neighbourhood improvement, including the refurbishment of houses. The proposals cover not only physical planning (land use, dwellings, community facilities, public spaces and infrastructure networks) but other aspects such as land tenure, home ownership, finance and neighbourhood management, all of which have to be addressed simultaneously. The project includes a detailed study and plan for an example neighbourhood: Truong Dinh.

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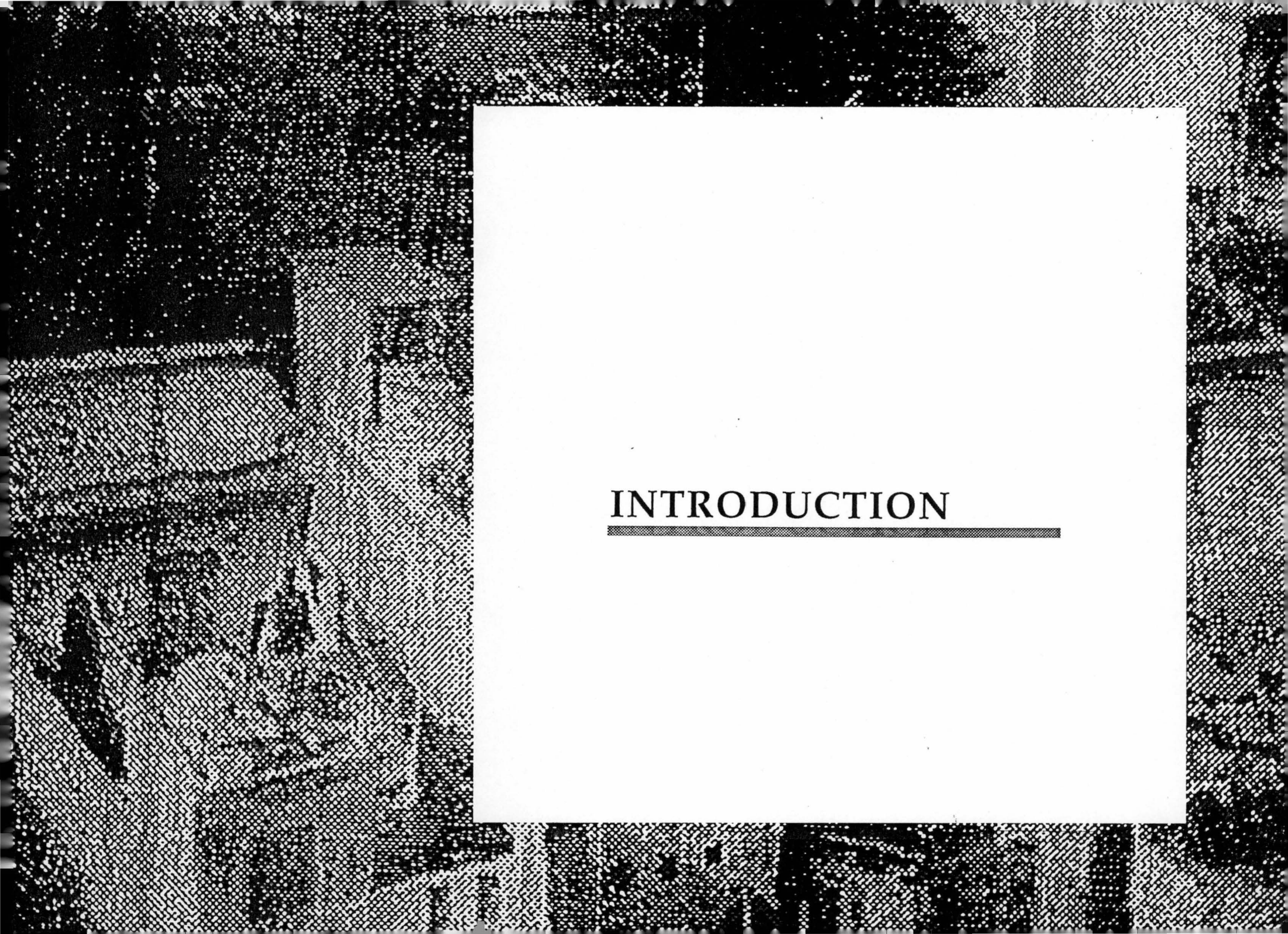
PREFACE

The project investigates the background and condition of public low-rise housing in Hanoi, and suggests an approach for improving these areas. It is a pioneering work in that the low-rise housing built during the period of the "subsidised economic mechanism" (1954-1986) has received little attention, yet it poses many problems.

Vietnam is unlike most parts of the world. It is both a socialist and a developing country. The only similar places may be Cuba and China. Thus, it is not easy to look elsewhere for guidance: the nation has specific natural and socio-economic conditions, and problems which are not easily tackled. Also, a shortage of data adds to the difficulties. Further, this particular project was hampered by limited time and distance from the scene of the plan (only one brief site visit was possible).

Thus, the analysis and proposals are very much based on personal observations and experience. It will therefore contain certain weaknesses. However, the intent is not so much to produce a definitive plan but rather to draw attention to key issues in Hanoi's public low-rise housing neighbourhoods and develop a proposal for initial discussion. The proposal is, of necessity, more than mere physical planning (although this is a major part) but also concerns land tenure, ownership, management and the organisation of finance. And at the heart of the project is the study of an example neighbourhood.



INTRODUCTION

INTRODUCTION

Hanoi will celebrate its 1000th anniversary in 2010. Today, after nearly a thousand years of development, Hanoi is the very densely populated capital of the Socialist Republic of Vietnam.

The City faces many physical planning problems, of which housing is a dominant one. The reasons are at least threefold: the consequences of long wars, frequent natural calamities and low national productivity. In addition, Hanoi now experiences the intense pressure of rapid economic development under the new economic mechanism of a partially free market.

In contemporary Hanoi, three different styles of planning and architecture are recognised, especially in housing.

- The Ancient Area of traditional Vietnamese architecture with the well known "36-street sector".
- The French Quarter which was built in the French colonial period.
- The newer development areas built in the Communist years.

In the latter, most houses are public (i.e. State) housing which represents 58 per cent of the city's total housing stock. Of this stock, low-rise houses (one and two storeys) make up more than 80 per cent of dwellings.

Public low-rise housing in Hanoi was mainly built in the period 1954-1986. During that time, it played a crucial role in attempts to solve the considerable housing demands of the people, especially after the wars. Today, the quality of this housing has declined severely due to the minimal initial investments, lack of maintenance and hasty construction. The problems occur not only in the housing itself but also in the standard of related neighbourhood amenities and infrastructure.

Of low-rise houses, two-storey housing is extensive and (for structural reasons) the most difficult to demolish while offering the greatest potential for improvement. As a consequence, this project is primarily about two-storey housing in Hanoi.

As a general background, the project explains public housing in Hanoi, from its appearance to existing problems: it covers the physical conditions of housing and some related social and economic dimensions. However, the focus is on the

public low-rise housing areas built between 1954 and 1986, i.e. from the withdrawal of French troops in 1954 to the introduction of the new economic mechanism in 1986. In other words, it covers housing built in the communist era, under the centrally planned and subsidised economic mechanism.

From an exploration of the problems, this project proposes an approach for the upgrading of public two-storey housing areas in Hanoi. Further, it does this by way of a detailed study of an example neighbourhood: Truong Dinh. This is a prefabricated, two-storey neighbourhood and typical of many throughout Hanoi and urban Vietnam. The proposals will cover land tenure and land use policies; home ownership; and the improvement of community facilities, infrastructure networks and the housing itself. Moreover, it proposes an organisational framework for implementation and management.

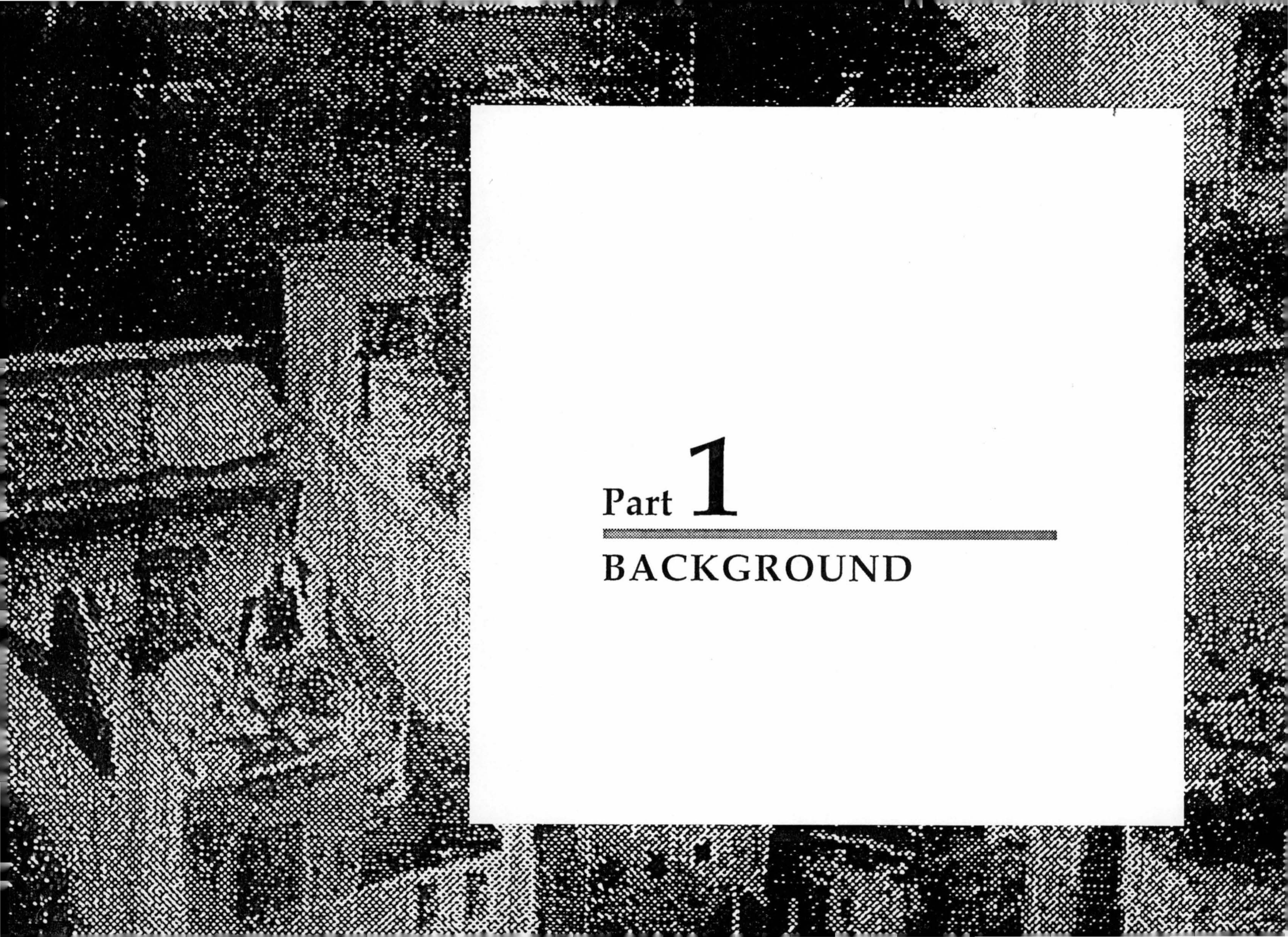
Thus, there are four parts to this work:

Part One gives an historical background to Hanoi's development, particularly housing up to 1954. It consists of two chapters.

The three chapters in Part Two deal with housing during the communist era. Chapter 3 explains the planning models (particularly the planned neighbourhood), the conceptual planning sources applied in Vietnam, and the reasons why low-rise housing was given priority. The two following chapters examine other aspects of housing in Vietnam under the centrally planned and subsidised economic mechanism, and under the new economic mechanism (or partly free market).

Chapter 6 is the only chapter in Part Three and it describes the prevailing conditions in the example neighbourhood of Truong Dinh. It covers aesthetics, amenities, services and social conditions.

Part Four consists of two chapters. The first indicates problems and opportunities for the upgrading of housing in the City. The final chapter, consistent with the study's main objective, sets out a proposal for upgrading the neighbourhood of Truong Dinh, and draws some wider implications for public low-rise housing improvement in Hanoi and Vietnam.



Part 1

BACKGROUND

Chapter 1 HANOI: THE CITY AND ITS SETTING

1.1. SOCIAL AND NATURAL CONDITIONS

Hanoi is one of the two biggest cities and the capital of Vietnam. It is the political, cultural and socio-economic centre of the nation.

Hanoi has an area of 920.6 square kilometres with nearly three million people, consisting of 5 suburban (basically rural) and 4 inner-city districts: these 4 districts account for only 43 square kilometres and more than one million inhabitants (see figure 1.1).

For administrative purposes, the city of Hanoi is a municipality which ranks with provinces and answers directly to the national government. There are three levels of government in Hanoi: city, district and commune in suburban districts, and city, district and neighbourhood in the inner city.

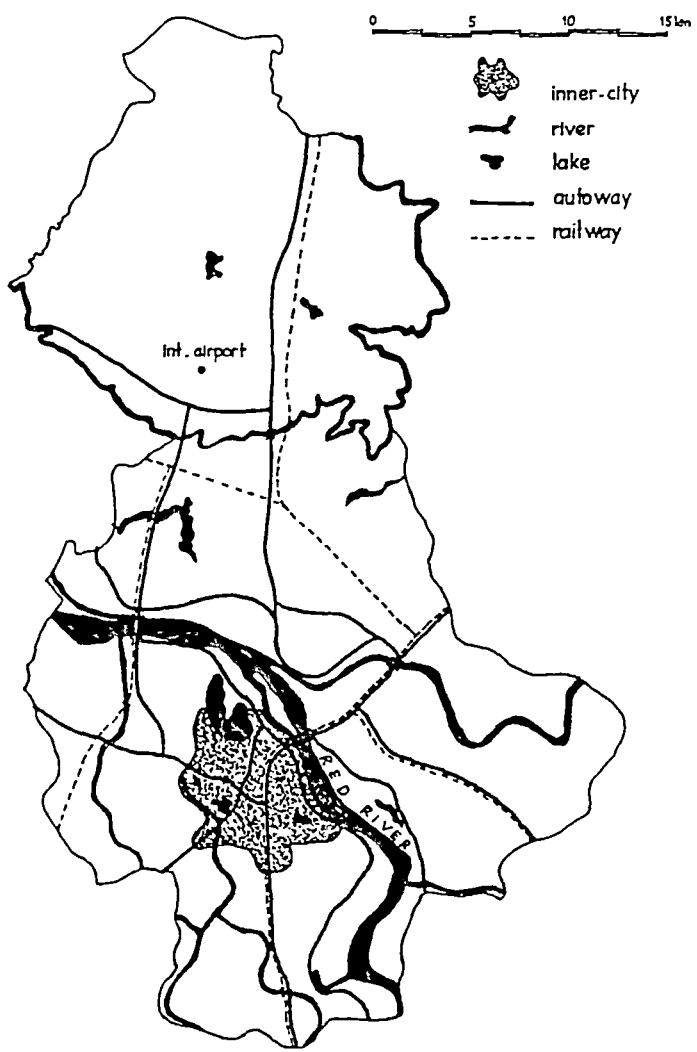


Figure 1.1. Map of Hanoi in 1995.

Thus, Hanoi is the capital and also a city-region with full provincial status.

At the smallest scale of government, one can see either the term "neighbourhood" or "guild" in books, journals and other documents about Vietnam. In Vietnamese,*"Tieu khu"* means "Neighbourhood", *"Phuong"* means "Guild".*Tieu khu* was used in previous times and *Phuong* is used nowadays. However, both of these words indicate the same residential area which is equivalent to a sub-district. The term "neighbourhood" will be used in this project.

Situated at 21.5^0 North latitude and 105.55^0 East longitude, Hanoi has a subtropical climate with an annual average temperature of 23.5^0 C. The average humidity and rainfall are respectively 85 per cent and 1678 mm which are very high.

Hanoi lies on the bank of the Red River and the city is very flat. In fact, the elevation of Hanoi is 4.5 to 10 metres lower than the highest water level of the Red River in the flood season (SIDA, 1993: 5). Thus, floods are a real possibility during rainy seasons.

The city's soil base is 20 per cent mud and the depth of this muddy bed is 10 metres: underground water is found at a depth of only - 0.7 to - 2.0 metres. The average pressure of

soil is 1.2 to 1.7 kilograms per square centimetre and in some places, this figure falls to under 1 kilogram per square centimetre (Nguyen, S. H. in Nguyen, T. L., 1989: 16). It follows that the cost for high-rise buildings is high, due to expensive foundations required to cope with these conditions.

1.2. THE HISTORY OF THE CITY'S DEVELOPMENT

Hanoi became the capital of Vietnam in 1010. Until 1882, Hanoi was under a feudal regime and there were two zones in the city. One was the Royal City which consisted of the parapet and outer wall, and the royal palace and residence of the ruling class. The other part was the Commoners' City which was for the ordinary people to live and do business (figure 1.2).

In this period, an irregular but rectilinear grid of streets appeared in residential areas (see figure 1.3) and housing developed a traditional Vietnamese style.

All houses were single storey and very low due to the feudal regulation which forbade the commoners' houses to be higher than the residences of the King (The Hong Duc Code of the Le Dynasty (1427-1789), article 142 in Hoang & Nishimura, 1990: 22). Building materials were simple and home-made, in particular small tiles and bricks.

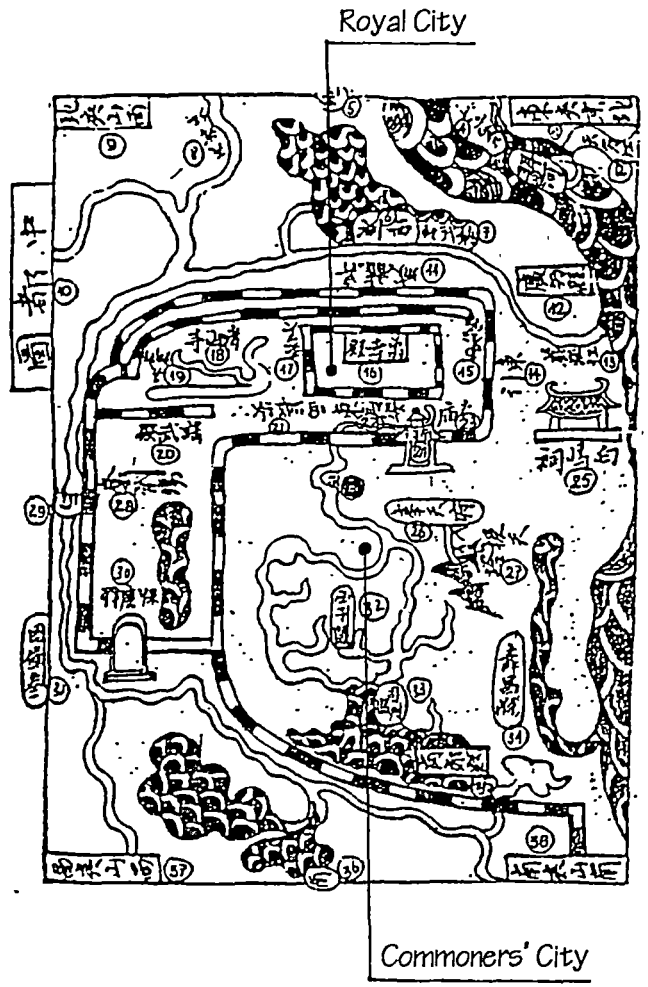


Figure 1.2. Map of Hanoi in 1470. (Source: The National Archive, Hanoi, Map A.2531)

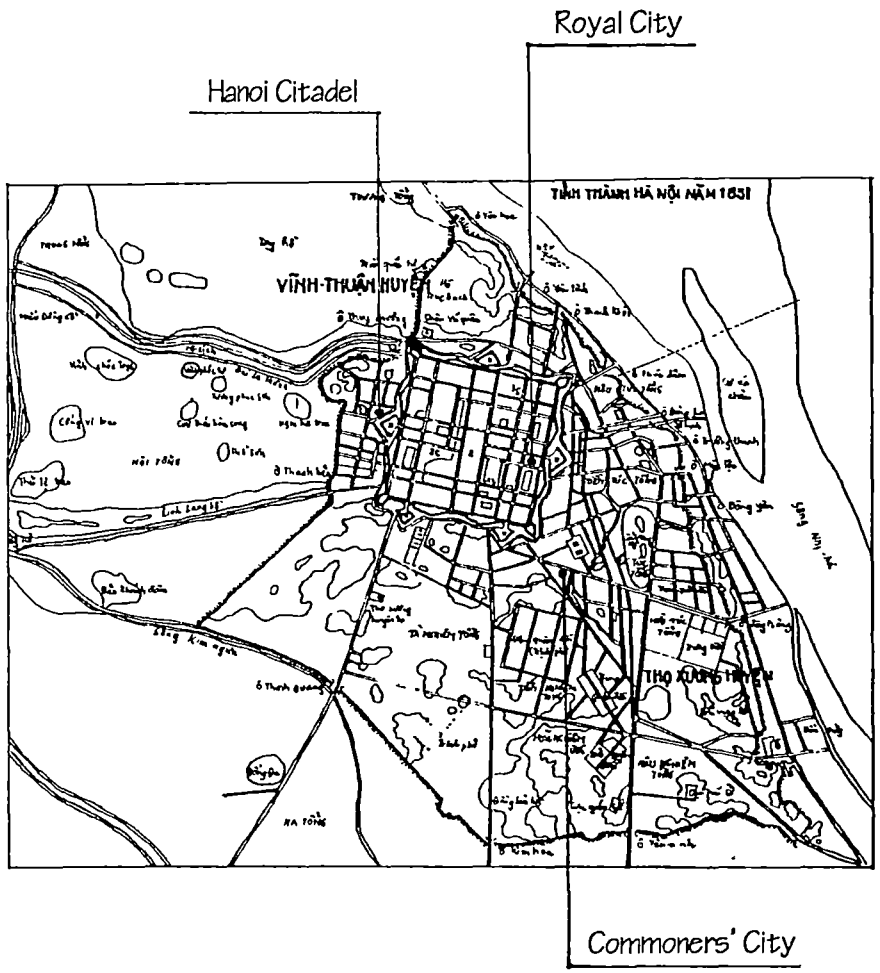


Figure 1.3. Map of Hanoi in 1831.
(Source: Nguyen, K., 1991: 13)

Between 1882 and 1945, Hanoi was under a French Colonial government. French troops levelled most of the Hanoi citadel to the ground in 1894-1897 (Nguyen, K., 1991: 14). During this period, some public buildings were constructed and the grid of streets was applied to the new development which is called the "French quarter" today. In the old area (ancient area), the streets were widened and the houses were built to two or more storeys. Figure 1.4 shows the road and street network structure in Hanoi.

From 1945 to 1954 was the period of the Indochina war and no major construction work was conducted in Hanoi.

After the withdrawal of the French in 1954, Hanoi became the political, cultural, socio-economic and industrial capital of North Vietnam, and then, the capital of the united Vietnam in 1976. During these Communist years, Hanoi was reconstructed along socialist lines. Public housing was a major aspect of this reconstruction.

Since 1986, there have been new "renovation" policies and Vietnam has opened its door to the world to attract overseas investments. Furthermore, the country has moved from the central subsidised economic mechanism to that of a partly free market economy. Hanoi is at the centre of this change in Vietnam shifting rapidly to the new mechanism. The new mechanism has affected all socio-economic aspects of life and housing construction is included.

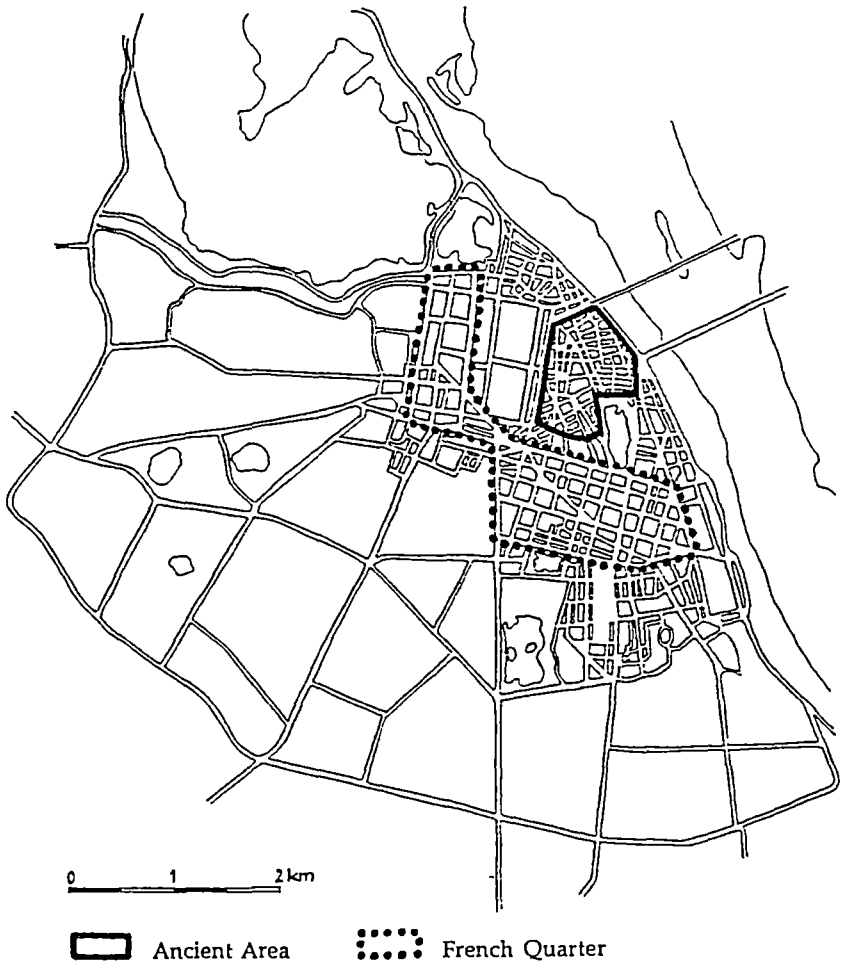


Figure 1.4. Road and street network structure in Hanoi. (Source: SIDA, 1993: 29).

1.3. AREA AND POPULATION

In 1954, the City of Hanoi had an area of 152 square kilometres. Since then, the Hanoi boundary has been extended twice and contracted once. The extensions occurred in 1960 (suburban districts and inner-city) and 1979 (suburban districts only), the contraction took place in 1991 (suburban districts only).

The growth of Hanoi in area and population can be seen in table 1.1 (Sources compiled from Atlas of the World, 1994: XI; Hiebert, 1990: 66; Le, 1993: 153; Ministry of Labour, Invalids and Social Affairs, 1994: 32; Pham, V. T., 1987: 37 and Vietnamese General Statistical Office, 1991: 5; 1992: 99).

The population density in the city has been increasing, and the highest density has now reached 140 000 persons per square kilometre in the ancient area (Peter Ward, *The Weekend Australian*, June 10-11, 1995. Property Subject, p. 8).

The population of Hanoi in 1975 was predominantly of mature age (25-59) and will remain so, even up to the year 2000 (according to the forecast of Hanoi population in 2000). A study by Nguyen, D. T., (1986: 20) indicates the age structure of Hanoi in 1975 and 1985 in figure 1.5. This factor influences vitally the short and long term provision of

housing and social services, as it is this population group whose demand is greatest.

Year	City of Hanoi		Hanoi inner-city		
	Area (sq. km.)	Population (persons)	Area (sq. km.)	Population (persons)	Density (P/sq. km.)
1921	n.a.	75000	n.a.	n.a.	n.a.
1942	n.a.	300000	n.a.	n.a.	n.a.
1954	152	530000	12	270000	22500
1960	n.a.	913000	43	370000	8605
1979	2141	2435200	43	826074	19210
1989	2141	3057000	43	n.a.	n.a.
1991	920.6	2095000	43	950000	22093
1993	920.6	2571000	43	1100000	25580

Table 1.1. The growth of Hanoi in area and population. Note: n. a. not-available

Following traditional Vietnamese lifestyle, households in Hanoi have more than one generation, usually composed of two generations (parents and children). According to Pham, V. T. (1987: 27), the proportion of households with its number of generations to the total households of Hanoi in 1987 was as follows:

- 1 generation: 6.06 per cent
- 2 generations: 76.90 per cent
- 3 generations: 16.74 per cent
- 4 generations: 0.30 per cent

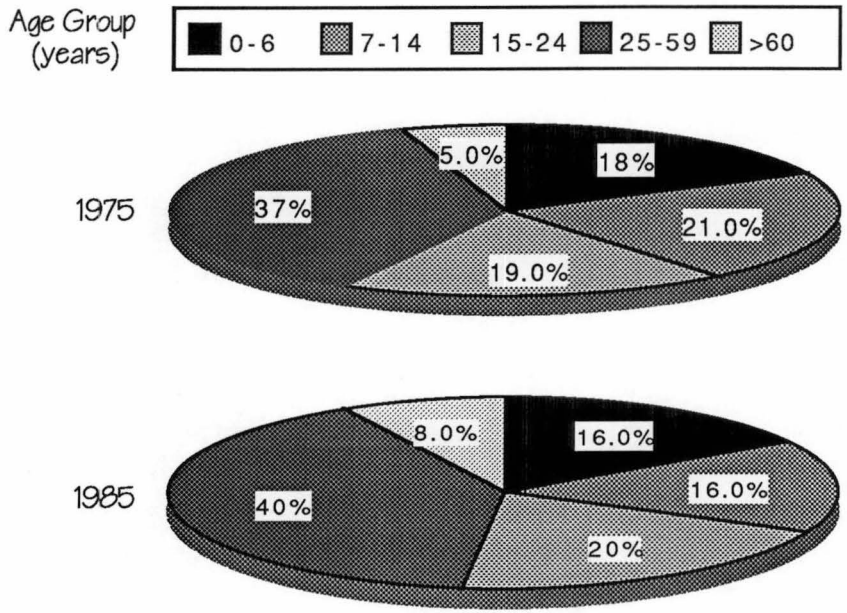


Figure 1.5. Age structure of Hanoi's population in 1975 and 1985.

The size of households varies significantly, but the average number in Hanoi is approximately 4.5 persons and this figure is declining gradually with time.

Existing data displayed in table 1.2 result from a survey of household sizes, and the percentages of households in the inner city from 1972 to 1985 (Nguyen, D. T., 1986: 22 and NHP, 1987 in Nguyen, T. L., 1989: 30).

household size	percentages of households (%)								
	1972	1973	1974	1975	1981	1982	1983	1984	1985
1 person	8.2	8.1	7.8	7.5	3	3.1	3.2	3.2	3.3
2 persons	12	11.8	12	11.8	10.7	10.8	11	11	11
3 persons	14.3	14.7	15	15.6	18.6	18.8	18.9	19	19
4 persons	16	17	18	19	21.6	21.7	21.7	21.7	21.8
5 persons	14.5	15.5	15.6	16	17.8	17.8	18	18	18.8
6 persons	12.3	12.5	12.2	12	13	12.9	12.8	12.8	12.6
7 persons	9	8.8	8.5	7.8	7.6	7.1	7.1	7	6.8
8 persons	6.1	5.8	5.7	5.3	6.3	6.1	6	5.8	5.7
more than 8	7.6	5.8	5.2	5	1.4	1.7	1.3	1.5	1
average household size	4.64	4.62	4.6	4.5	4.47	4.46	4.44	4.43	4.41

Table 1.2. Household sizes and their percentages

The population growth rate in Hanoi is quite high. It was 2.74 per cent per annum in 1968. After the American war and during the urbanization period of the city (1979-1989), this figure rose to 3 per cent. In 1989, the population growth rate fell to 2.3 per cent and hopefully, it will be below 1.8 per cent in 2000 as projected in the government's family plan (SIDA, 1993: 20).

Vietnam is an agricultural nation. 20 per cent of its population are living in urban areas today. This figure was only 7.5 per cent in the 1930s (Pham & Parenteau, 1991: 155). It is easy to trace an influence of rural lifestyle in the cities. The majority of Hanoians were peasants who previously lived in rural areas. A sociological study conducted in 1992 (Dang, C. K., 1993: 63) shows that only 22 per cent of residents in the central area of Hanoi are original Hanoians. 43 per cent of the people immigrated to the city from 1954 to 1975. The remaining 35 per cent came to Hanoi after 1975.

Therefore, rural housing traditions have continued in urban housing forms:

- People want to live in low-rise housing with gardens. All activities are likely to be conducted on the ground floor which is close to the nature.
- Service areas are always separated from the living spaces by courtyards. The main reasons are: Fuel for cooking is usually wood or bamboo, and animals like pigs and chickens are usually bred in a house.
- Households usually have more than one generation.

Chapter 2 HOUSING BEFORE COMMUNISM (Before 1954)

2.1. 1800-1882: THE FEUDAL PERIOD

Being the capital of Vietnam since 1010, Hanoi was constructed from the early eleventh century as a palace for the Vietnamese feudal regime.

No more than vestiges can be seen today due to the life - span of building materials. Also, no records like books or photographs exist, due to deficient techniques for recording or bad conditions of archives. However, an Italian missionary in the sixteenth century described two-storey houses in the Commoners' City, and people had been known to build mezzanines for taking refuge in flooding seasons (Tran, Q.V., 1977 in Hoang & Nishimura, 1990: 3). Some traditional Vietnamese houses from the Feudal period are still standing today: these were mainly built in the period of 1800 - 1882. Most have been upgraded, but some are originals. Others have disappeared due to the

building materials which may have been wood or bamboo and thatch. A study conducted by Nguyen Vinh Cat in 1993 shows that in 33 streets of the ancient area, only 7 per cent of the total 2 345 existing houses were built before 1900, and these are scattered throughout the area (Logan, 1994: 4).

From this period, there are two typologies: "Tube- house" and "Three-bay house".

i/ "Tube-house"

The "Tube-house" is the main type in the ancient area. It is a long, narrow dwelling designed to provide a room from which people do business, fronting onto the street. There is no pre-space between the street pavements and the shops. Goods are often displayed encroaching on the pavements, and activities like carpentry and metal work are also carried out here. These tube houses have a frontage of only 2-4 metres but the depth can be up to 50-60 metres (Dang, T. H., 1985: 13).

There are one or two storeys, and mezzanines or attics are usually built to increase living areas and provide refuge from flooding. The height of storeys is often low due to the feudal regulations. According to Dang, T. H., (ibid: 15), the height of the main entrance is only approximately 1.8 metres due to the low level of the roof edges. The level of the ground floors is only 5 to 15 centimetres higher than the level of the pavements.

One or two open-air inner courtyards are often used to provide light and ventilation, a space for outdoor activities and a place for relaxing with decorative plants and possibly a goldfish pond (see figure 2.1 and plate 2.1). This is Vietnamese lifestyle - people want to bring a piece of natural life into their houses where applicable. There is usually a wet courtyard for washing activities next to the service areas, which include kitchen, toilet and bathroom.

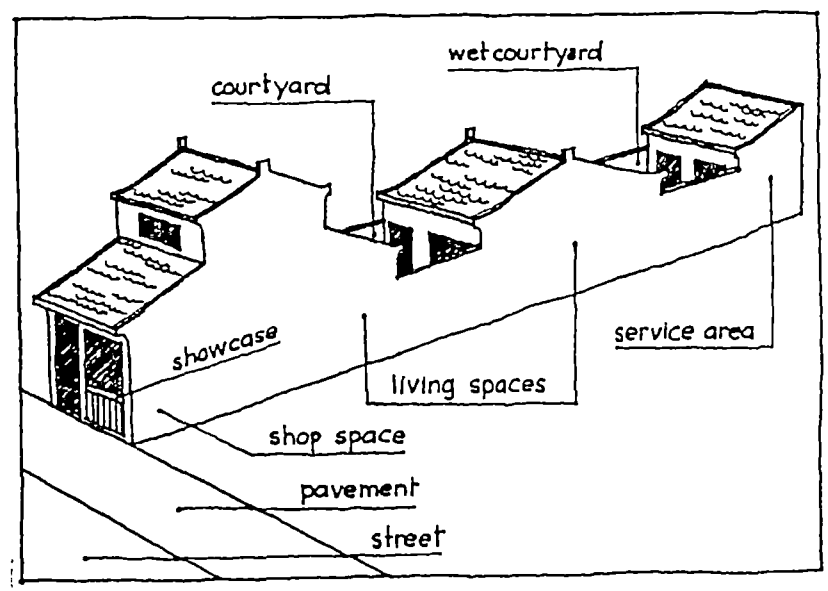


Figure 2.1. Form of a unit of tube houses

a/ Ground level

b/ Sky view

Plate 2.1. A small wet courtyard of 3 square metres in a tube house. (Source: Field Study, 1995)

Building materials from this period are walls of bricks and roofs of home-made tiles. Front doors, with sliding wooden panels, are usually opened up to the whole width of the facades.

Original householders of these houses consisted of traders, craftsmen, intellectuals and mandarins. The household structure was often composed of two, three or even four generations.

The plan layout of tube houses can be classified by depth and width, as shown in figure 2.3.

The spatial organisation of housing in this period can be divided into several models (figure 2.4) depending upon their functions and the people's customs (Dang, T. H., 1985: 14-15). All of these models of housing were the basic typology for later development. By the end of the Feudal period, housing had two storeys. The models are shown in figure 2.5.

Every two tube houses are joined by the "party wall", which could be a single wall (when they both were built together) or two separate walls (when they were built separately).

The form of the city from this period is the combination of the grid of streets and the blocks of buildings. The building density is very high in this area. The figure ground can be seen in figure 2.2.

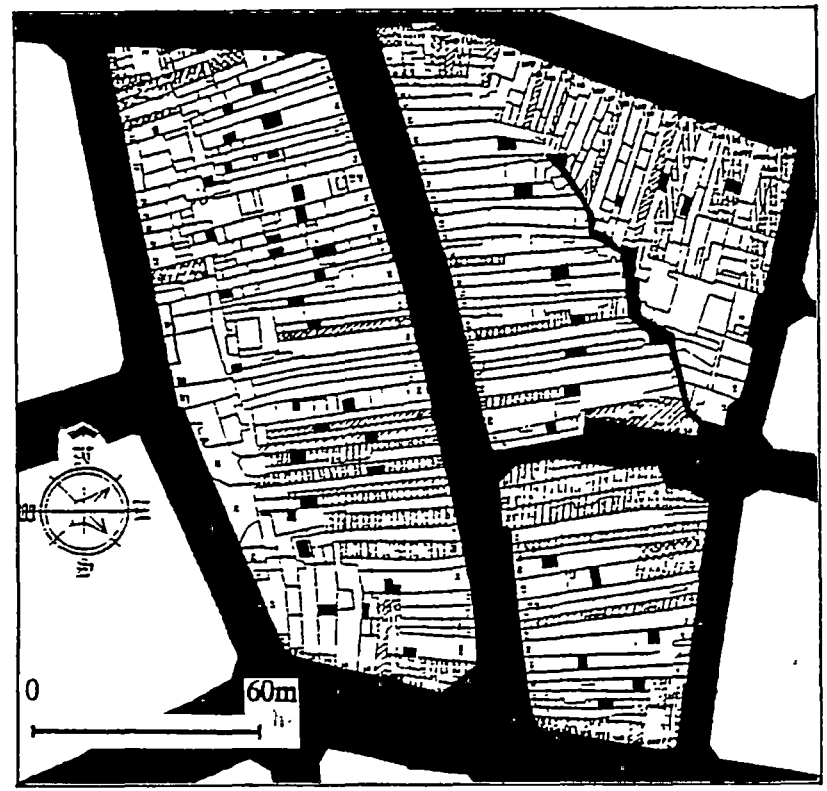
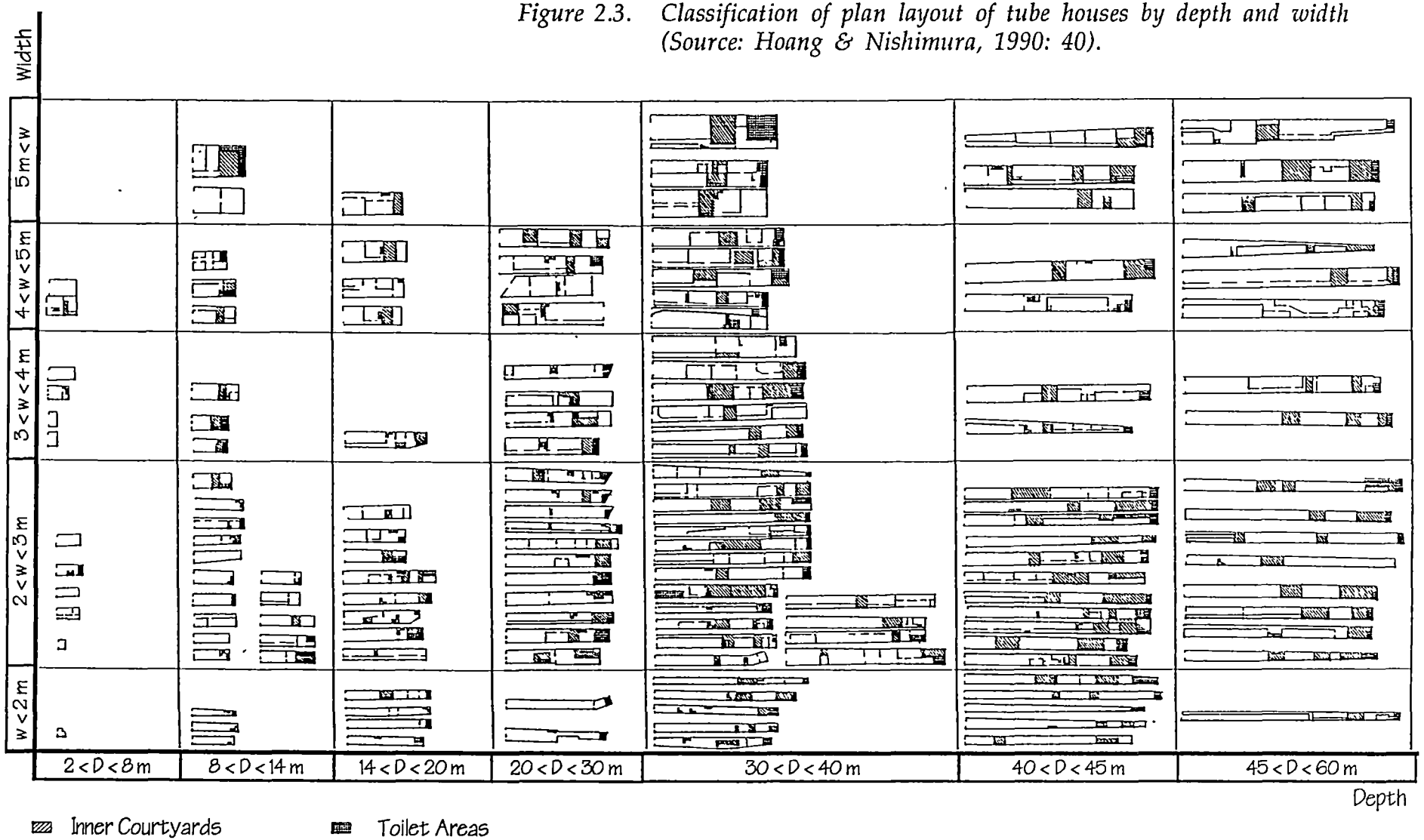


Figure 2.2. Figure ground of a part of the ancient area with streets and courtyards (i. e. spaces) as the figure. (Source: Drawn on map 12 in Hoang & Nishimura, 1990: 25)

Figure 2.3. Classification of plan layout of tube houses by depth and width (Source: Hoang & Nishimura, 1990: 40).



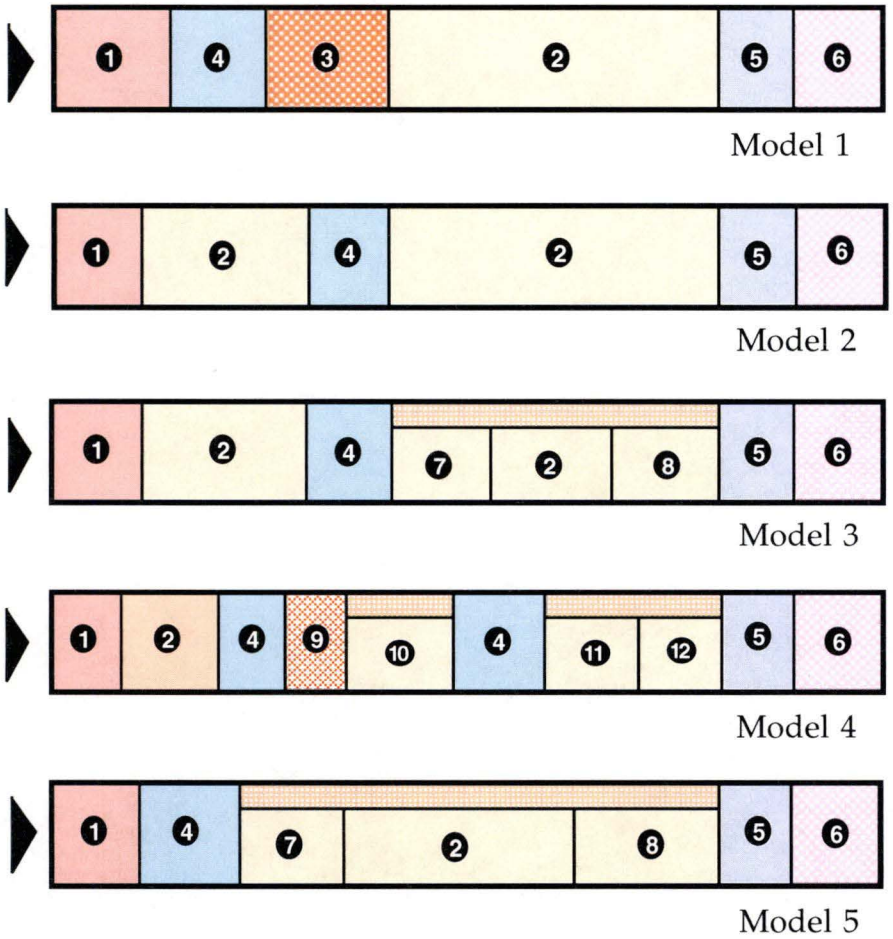


Figure 2.4. Models of single storey housing.

1. Shop, 2. Living Space, 3. Place of Worship, 4. Courtyard, 5. Wet Courtyard, 6. Service Area, 7. Room for Rent, 8. Eldest Son's or Teacher's Room, 9. Pre-Space, 10. Hostess's Room, 11. Children's Space, 12. Host's Room.

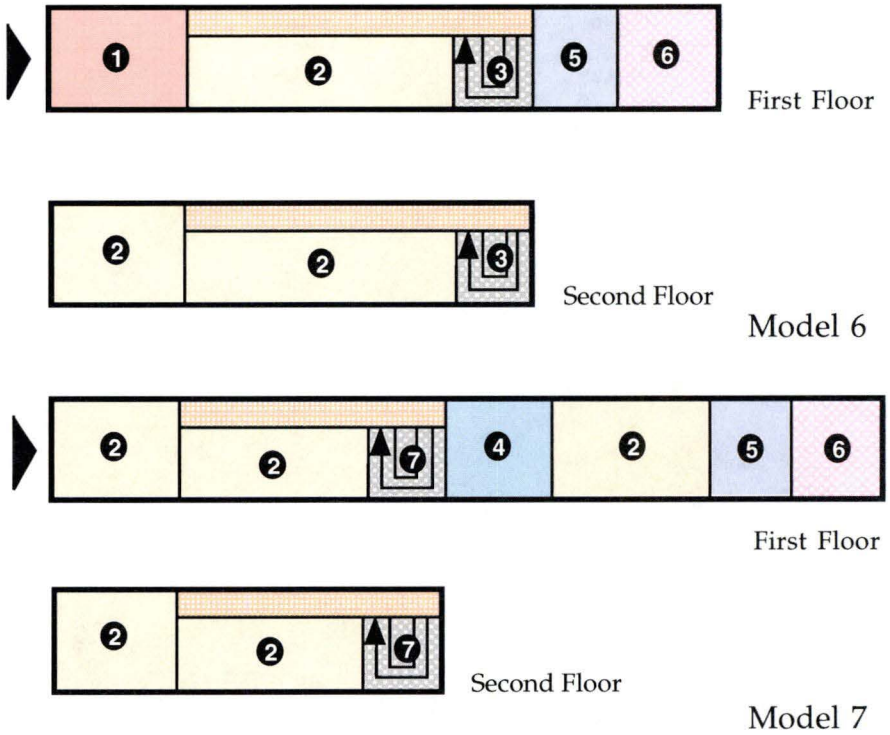


Figure 2.5. Models of two-storey housing.

1. Shop, 2. Living Space, 3. Outdoor Stair, 4. Courtyard, 5. Wet Courtyard, 6. Service Area, 7. Indoor Stair.

Figures 2.4 and 2.5. Models of low-rise housing in the Feudal period of Hanoi.

NB: If drawn to scale, these houses would be much longer than shown.

ii/ "Three-bay house"

The "Three-bay house" is the second typology of housing in Hanoi from this period. This typology was more popular in Vietnamese rural areas previously.

The housing structure consists of three bays, with two wooden trusses in the middle and two outside brick walls. Trusses are with or without columns depending upon their length. The width of a bay is usually narrow, about 1.7 to 2.5 metres. The three-bay house is usually single storey housing.

This housing has no shop at the front and is used for living only. The particular feature of this typology is that the house always has a gate plus a brick wall screen to block the view from outside to inside of the house (Dang, T. H., 1985: 14-15). The typical plan is as in figure 2.6.

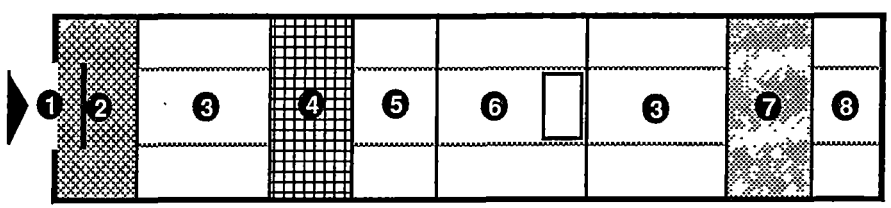


Figure 2.6. Typical plan of "Three-bay house".
1.Gate, 2. Screen, 3. Living Space, 4. Courtyard, 5. Pre-Space, 6. Place of Worship, 7. Wet Courtyard, 8. Service Space.

Building materials are often brick walls, wooden trusses and tiled roofs. A small number of Three-bay houses can be seen today in some areas of Hanoi. None the less, most of them have been modified by the owners due to the lack of living space.

2.2. 1882-1945: THE COLONIAL PERIOD

This period can be divided into two stages:

i/ 1882 - 1918: known as the first French exploitation program in Vietnam,

ii/ 1918 - 1945: known as the second French exploitation program in Vietnam.

i/ 1880 -1918.

The French captured the city of Hanoi in 1882 to accomplish the conquest of the whole country, and started to build cities. Building and planning methods of European cities were imported to Vietnam during this time.

The majority of constructions in Hanoi were public buildings and road networks, and in addition, the improvement of the old residential areas. In the ancient area, roads were widened and asphalted and most of the houses were upgraded to become two-storey dwellings. In other areas of Hanoi, new methods of building were first

applied. Asphalt roads were constructed first, followed by housing (housing was built before roads in previous times). The houses in these new areas were often a combination of European and Vietnamese styles.

Building materials from this period are similar to the ones used in previous times, although several houses have prefabricated tiles and concrete was sometimes used for flat roofs.

ii/ 1918 -1945.

After World War I, the French invested considerably to exploit Indochina, especially Vietnam. In this second exploitation program, the French gave priority to constructing public buildings as well as houses which consisted of two kinds: row housing and villas.

- Row houses along streets were the continuity of traditional housing. However, they were often wider and they were built with more solid materials and new models of facade disposition and building methods. This kind of housing was owned by high-income traders, middle-income petty bourgeoises who were trained by the French and worked for them, and housing bourgeoises.

The majority of the row houses from this period usually have two storeys and a courtyard. The plan was designed with an indoor stair way which is either (a) between two rooms or (b) along the depth of the house (Dang, T. H., 1985: 29).

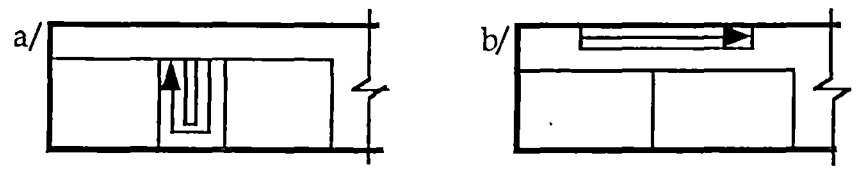


Figure 2.7. Location of stair way in a house.

In some houses, outdoor stair ways were planned. In some others, there are two courtyards and two stair ways, one indoor and the other outdoor. Figure 2.9 shows the typical plans of dwelling units in row housing from this period. Model 5 shows a design with one central room which has a height of two storeys, in order to allow light and ventilation.

New building materials were developed: walls of bricks, floors of concrete and roofs of prefabricated tiles or concrete. In this period, models of facades were changed. Houses were decorated with parapets, despite a tiled roof or concrete flat roof (loc. cit.).

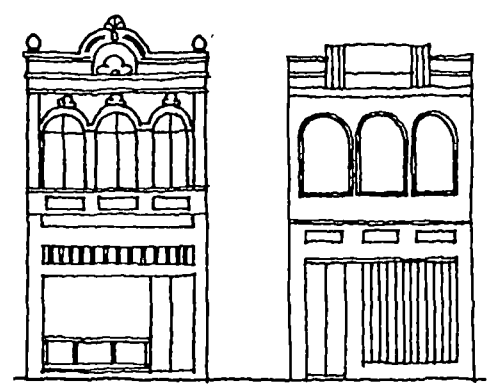
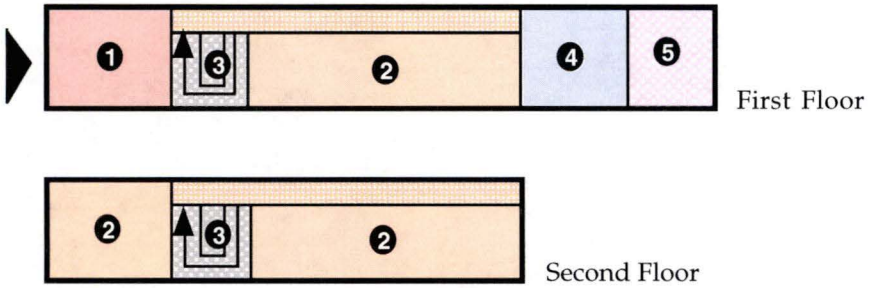
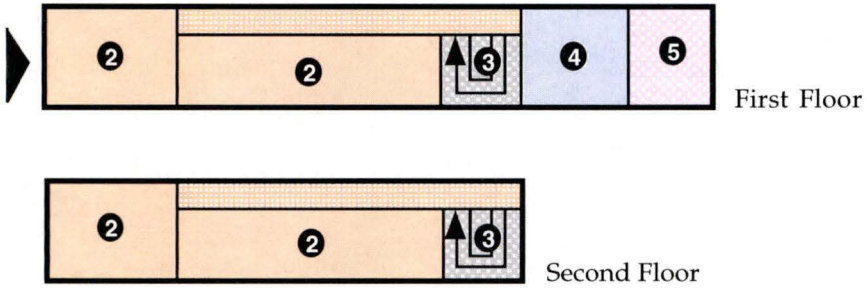


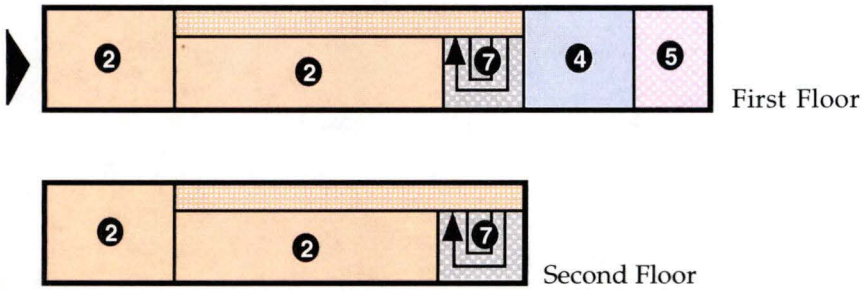
Figure 2.8. Models of housing facades during 1918-1945.



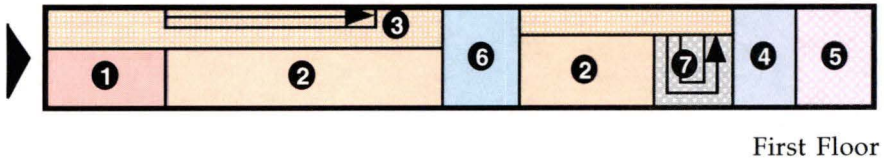
Model 1

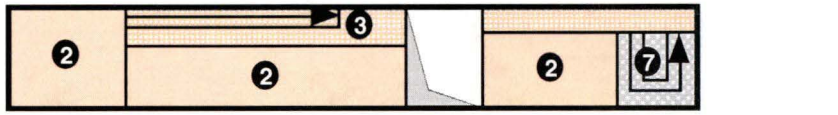


Model 2

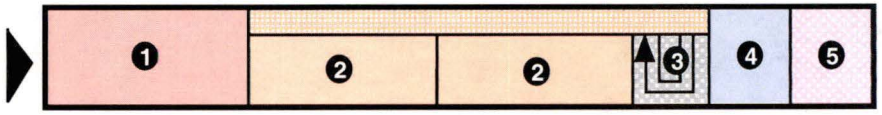


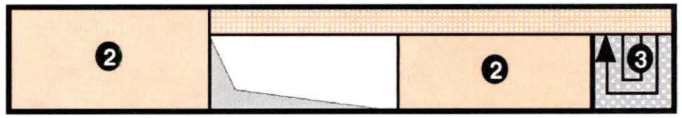
Model 3





Model 4





Model 5

Figure 2.9. Models of two-storey housing in the Colonial period of Hanoi.

1. Shop, 2. Living Space, 3. Indoor Stair, 4. Wet Courtyard, 5. Service Area, 6. Courtyard, 7.Outdoor Stair.

NB. If drawn to scale, these houses would be much longer than shown.

■ In the colonial period, besides row housing along the streets, the French constructed many villas for the colonists and their puppets. Furthermore, some villas were built for Vietnamese traders, intellectuals, doctors and the like. Some types of colonial villas remain in Hanoi. However, this typology is not very relevant to this study due to its marginal relationship with public housing.

2.3. 1945-1954: THE INDOCHINA WAR

Due to the war, no major construction work was carried out in this period. A small number of houses were built. Nevertheless, the style of housing and materials used were similar to the previous period.

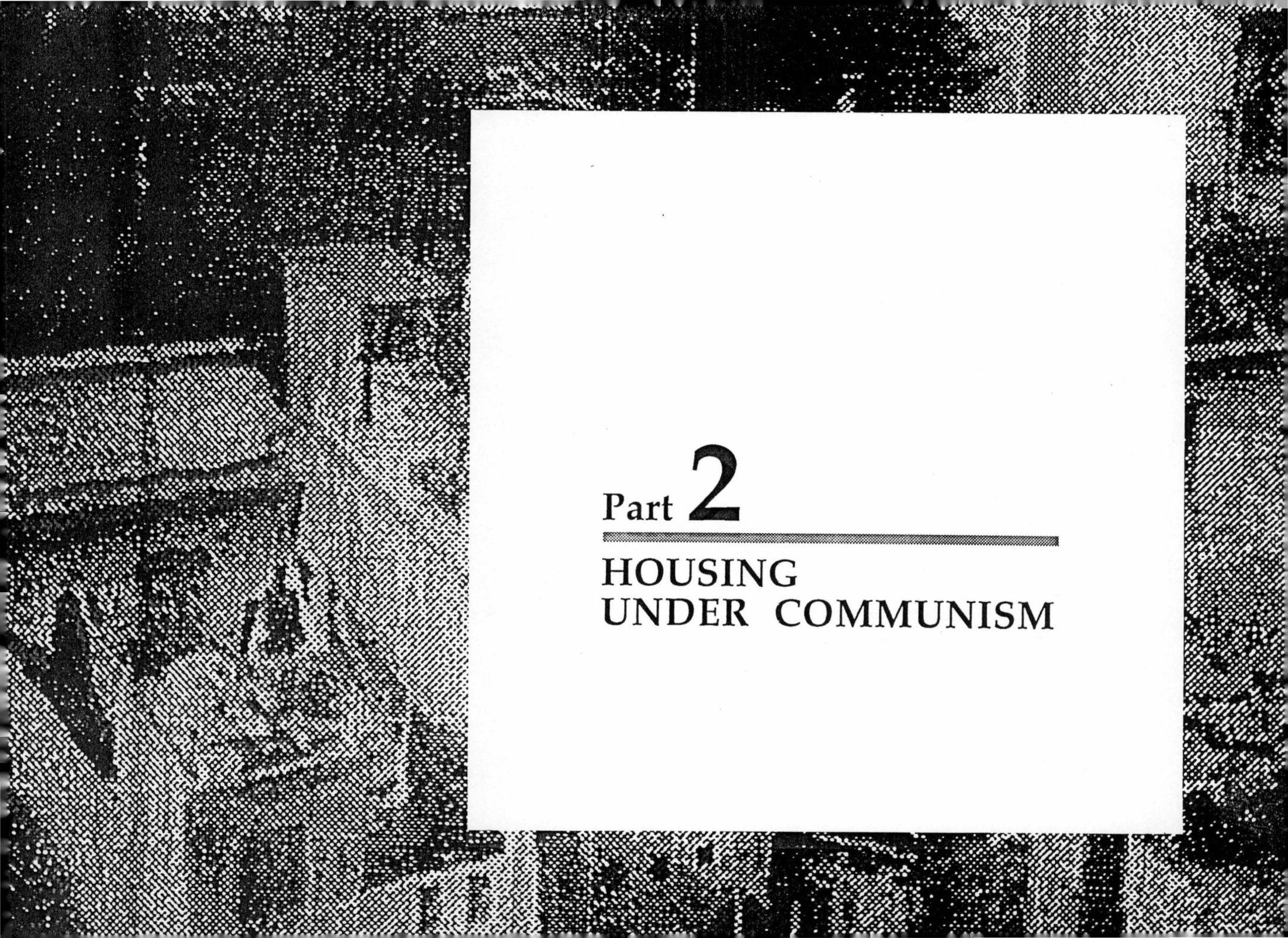
2.4. CONCLUSIONS

Most housing constructed during the Pre-Communist period, when Hanoi was under the feudal regime (before 1882) and the French colonial regime (1882-1945), shared many common traditional Vietnamese characteristics.

There were six main physical characteristics:

- Houses were of a "tube" shape.
- The number of storeys was one or two (i. e. it was low-rise housing).
- Building materials were usually simple and local (wood, bamboo, home-made bricks and tiles).
- There were one or two courtyards in a house.
- The service area (kitchen, toilet and bathroom) was always separated from the living spaces.
- There was a place of worship with an altar in every house. The altar area is always in the highest and most solemn position of the house.

In addition, households usually consisted of more than one generation. Where a house was also a shop, the latter facility was at the front and often encroached on the street pavements.



Part 2

HOUSING UNDER COMMUNISM

Chapter 3 PUBLIC HOUSING UNDER THE SUBSIDISED ECONOMIC MECHANISM (1954-1986)

3.1. HOUSING DEMAND, POLICY AND INVESTMENT

3.1.1. Demand

Housing demand became a problem of Vietnam in general, and Hanoi in particular, after the withdrawal of French troops in 1954. The housing industry in Hanoi was unable to meet local demand. It developed very slowly due to the extremely low national productivity and per capita income, which even today is only US $200 per annum (*Atlas of the World*, 1994: X). Three other main factors that affected housing demand in Hanoi were:

- The increase in population
- The development of urbanization
- The destruction of urban housing during the wars.

Firstly, the increase in the population of Hanoi after the wars was a great concern. There has always been an unprecedented population growth after war (Hall, 1980: 156). Like many other countries, Vietnam was not immune. The increase in population resulted from an increase in marriages and associated births in the post-war period. The growth rate was approximately 1 per cent in 1936 (Pham and Parenteau, 1991: 153) and only eight years after the Indochina war, it had climbed to 4.7 per cent in 1962 (1962 Statistics in SCCC, 1964: 9). (see also Section 1. 3).

Secondly, in terms of urbanization, Hanoi was well-established as the political, cultural and socio-economic capital of the country. It attracted therefore many offices, factories, and enterprises, especially in the early stages of constructing the socialist society (i.e. the period of 1955-1960) and after the reunification of the nation (1975). The urbanization and industrialization resulted in an increase in the number of workers, who in turn generated a strong demand for housing.

Finally, a great deal of housing was destroyed in the wars. During the Indochina war (French war), there was no major housing construction conducted whilst many existing dwellings deteriorated through lack of maintenance. After the wars, some 50 000 living spaces were found to be in a seriously decayed condition: these needed to be demolished from 1955 to 1960 (loc. cit.). In the American war, Hanoi was bombed from 1965 to 1972, notably by the severe B52 bombers in December 1972. As a result, more than one million of the city's population lost their homes (IOG, 1976: 5).

3.1.2. Policy

Whilst Vietnamese independence was promulgated in 1945, it was not until the end of the French war in 1954 that the Party and the State were able to address the problem of housing.

Since that time, Vietnam has been both a socialist and a developing country and has carried the characteristics of both groups of nations. Like most socialist countries, Vietnam's aim has been to satisfy the people's growing material and spiritual needs. The Vietnamese government had until 1986 a policy of providing public welfare for people of which housing was the most crucial objective.

In April 1948, in a letter sent to the first congress of the Vietnam Architects' Association, President Ho Chi Minh affirmed that: "In four necessary matters of human beings, accommodation and transportation are as substantial as food and clothing." (Pham, V. T., 1987: 7).

Housing was always regarded as an issue of government, especially following the two wars (1954 and 1975), when housing demands were greatest. The Politic Report of the fourth congress of the Vietnamese Communist Party, 1976 clearly pointed out:

> Housing is the greatest problem in the life of workers and in the life of those who live in cities and zones devastated by the war. To build homes is to realise an important aim for improving the material and spiritual life of the people, it is the primary task of the Party and the State, and the first aim of the economic development plan. (Pham and Parenteau, 1991: 158).

Article 62 of the Constitution of the Socialist Republic of Vietnam, 1980 reminded that:

> The citizen is entitled to housing. The State provides the framework for house building; at the same time it stimulates and helps the communities and citizens to build houses conforming to the master plan, the aim being the gradual realisation of this entitlement. The distribution of living space in the housing management by the State must be just and rational. (loc.cit.).

In urban areas, all government employees had the right to accommodation. Public housing was provided free of charge by the State and each employee was distributed one living space only. In housing distribution, an average standard living area of 4 square metres per person was applied from the 1960s to the 1980s. However, allocations depended upon one's working status and duration (see Appendix 1).

According to the stipulation of the Ministers Council Office (1978), living space was prohibited as an item for transfer or exchange in any form, and had to be returned to the state when no longer used (for reallocation).

In Vietnam, all land belongs to the government. People have had the right to use the land on which houses were built and provided. All land and most urban housing has been in state ownership. Further, living in residential areas, people were not only provided with housing but also a basic system of social facilities, such as schools, kindergartens and other services, and physical infrastructure like power and water supply.

3.1.3. Investment

As with most developing countries, though the government had a policy of housing provision for the people, it concentrated on industrial and agricultural development rather than housing. Between 1960 and 1985, the average annual state investment in housing construction was only about 3 per cent of the total

investment in capital construction[1] (Nguyen, D. T., 1986: 6). The peak was 5.76 per cent in 1961 (the first year of the first five-year economic plan) and the lowest was 0.26 per cent in 1968 (when North Vietnam was heavily bombed by the Americans) (NHP, 1982: 48). This figure compares poorly with other Communist countries as well as Western nations. For example, in 1960 Soviet Union and Poland devoted 22.5 and 19.2 per cent respectively of investment in capital construction to housing (Pham, V. T., 1987: 7). During 1965-1972, France devoted more than 8 per cent of its Gross Domestic Production to public housing (McGuire, 1981: 23). Appendix 2 will show further comparisons with regard to housing policies and investment.

Due to the scarcity of capital, housing provision in Vietnam has always lagged far behind demand.

Being the capital city, Hanoi always had some priority in public housing construction. In the 3 years 1961-1963, 99 700 square metres of residential floor area was built in Hanoi to house nearly 25 000 people (Dang, T. H., 1985: 37). From 1976 to 1980, the floor area was 363 000 square metres which accounted for 79 per cent of the total housing area constructed. In the 5 following years (1981-1985), more than 400 000 square metres of public housing was built to house approximately 100 000 inhabitants (Pham, V. T., 1987: 48 and 8).

[1] Activities of principle construction in the national economy, such as industrial and civil construction, and that of transportation, water-resources, communication.

At the same time in the state capital, the government stimulated various offices, factories and other enterprises (i.e. the collective sector) to invest in housing for their own employees. The collective sector played an important role in the production of housing. In the 5 years 1976-1980, 32 000 square metres of housing (or 7 per cent of the total new area) in Hanoi was constructed through this kind of capital investment (ibid, p. 48). This collective housing was built either from investment by the collective sector only (using funds derived from the sale of their products), or in partnership with the State.

In conclusion, as the national capital, Hanoi benefitted enormously from housing policies under communism. However, with a low overall investment in housing, the problem of satisfying demand became immense. Densities remained high, and quality of housing and infrastructure was very poor.This resulted in further problems as will be explained in later chapters.

3.2. PLANNING MODELS AND CONCEPTUAL SOURCES

Like socialist systems elsewhere (e.g. former Soviet Union, Poland and Hungary) Vietnam has applied a neighbourhood model to its urban residential areas (Hanoi

Architectural Institute, 1961; Tran, H., 1979 and Nguyen, T. B., 1982). The application in Vietnam can be traced back to the ideas of Clarence Perry and Clarence Stein with some modifications.

The theory of Perry's model emerged at the same time as the Radburn typology of Clarence Stein (1923-1929). "Crucial to Perry's concept was the idea that all day-to-day facilities: shops, schools, playgrounds and so on should be within walking distance of every house." (Broadbent, 1990: 126).

In Perry's neighbourhood, essential services of a neighbourhood are placed within walking distance of a group of houses. According to Perry, at least an elementary school, shops and recreation grounds should be provided (Ostrowski, 1970: 113).

Perry also suggested service routes should not cut across busy roads, thus his neighbourhood is bounded by arterial and main highways (figure 3.1). The plan for Harlow new town near London is one such application (figure 3.2). Perry drew attention to activities within a neighbourhood unit, while also stressing connection and interaction between neighbourhoods and a town as a whole.

Clarence Stein's main concern was to build a city which provides security and happiness for its inhabitants (Stein,

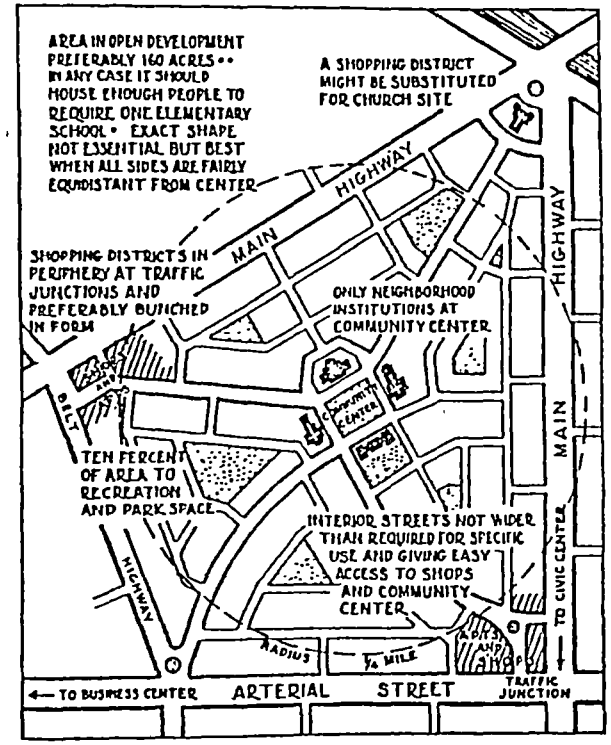


Figure 3.1. *Perry's neighbourhood diagram (Source: Perry in Ostrowski, 1970: 117).*

1966: 41). In his Radburn model, there are 5 elements:

- The superblock which is not crossed by any roads.
- A hierarchy of specialized roads planned and built for different categories of movement: express highways, main through roads, collector roads and service lanes.

- The complete separation of pedestrians and automobiles. Foot paths are formed in different networks to roads and even at different levels when crossing autoways.
- Houses are turned around with main rooms facing gardens and parks whilst service rooms face towards the vehicle access lanes.
- The park is the backbone of the neighbourhood.

The plan of Radburn can be seen in figure 3.3. Figure 3.4 shows Stein's plan for a city of 25 000 inhabitants, composed of 3 neighbourhoods.

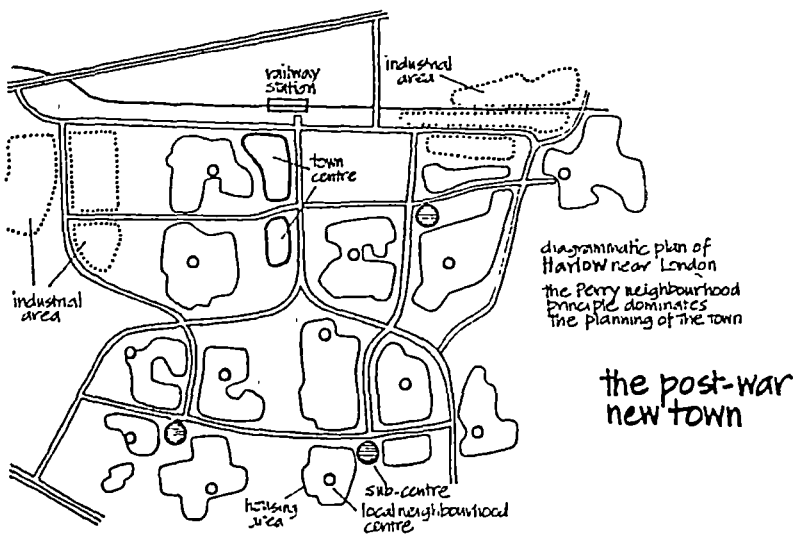


Figure 3.2. Diagrammatic plan of Harlow, London. (Source: Risebero, 1979: 250).

Figure 3.3. Plan of Radburn, New Jersey. (Source: Stein, 1966: 43).

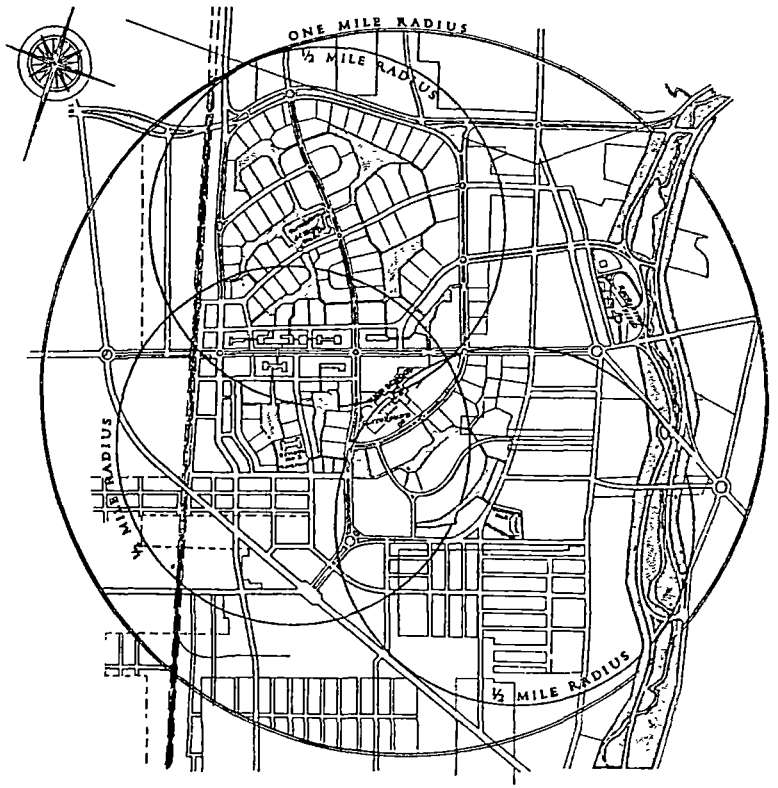


Figure 3.4. Stein's plan of the whole city (Source: Stein, 1966: 50).

The noticeable difference between Perry's and Stein's ideas is the system of roads. In Perry's model, neighbourhood may be limited in its extent by surrounded highways. On the other hand, pedestrian movement and activities within Stein's neighbourhoods are separated from autoways and neighbourhoods overlap each other. Further, the neighbourhood size is smaller in Perry's plan (the radius is a quarter mile) compared with Stein's (a half mile).

The other influential source for planning urban residential areas in Vietnam was early European Modernism. Works such as the Weimar housing program, and a residential area in Romerstadt, Germany in the 1920s-1930s are good examples. These and other similar projects were shared by well-known radical architects, like May, Gropius, Scharoun, Haring, Forbat, Bartning and Hertlein (Pawley, 1971: 29-32). Terraced two and three-storey houses, and slab blocks using prefabricated concrete construction systems provided models used throughout Europe from the 1920s to the 1960s (see figures 3.5, 3.6 and plate 3.1).

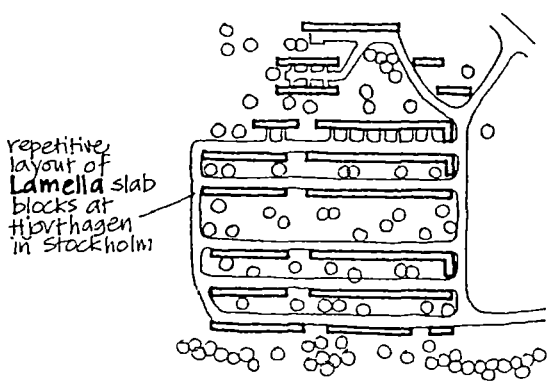


Figure 3.5. Plan of a residential area in Stockholm, showing use of slab blocks (Source: Risebero, 1979: 241)

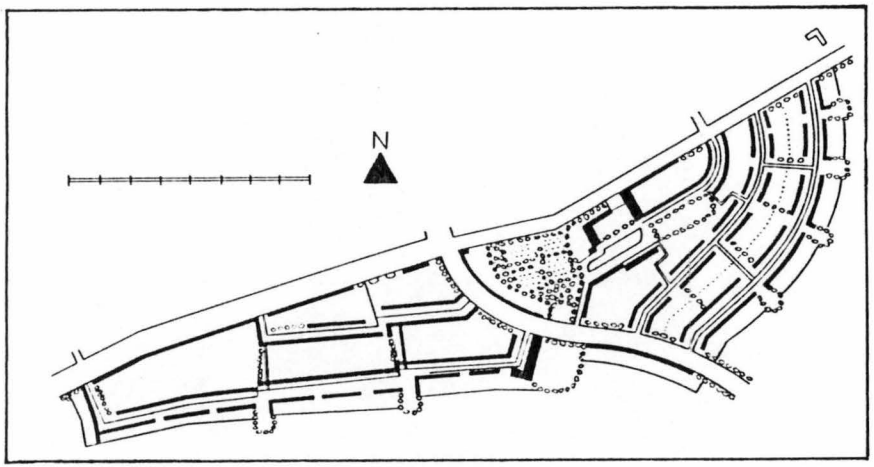


Figure 3.6. "A block plan of the suburb of Romerstadt showing the extended curves of the terraced houses and apartment buildings with communal gardens. This pattern of public-sector development was widely imitated as late as the 1960s." *(Source: Pawley, 1971: 29).*

Most ideas arrived in Vietnam via other socialist countries in which a whole generation of Vietnamese architects and planners were trained. Eastern European countries featured most strongly in this training, particularly the former USSR and Poland, while a few professionals received their education in Cuba and elsewhere.

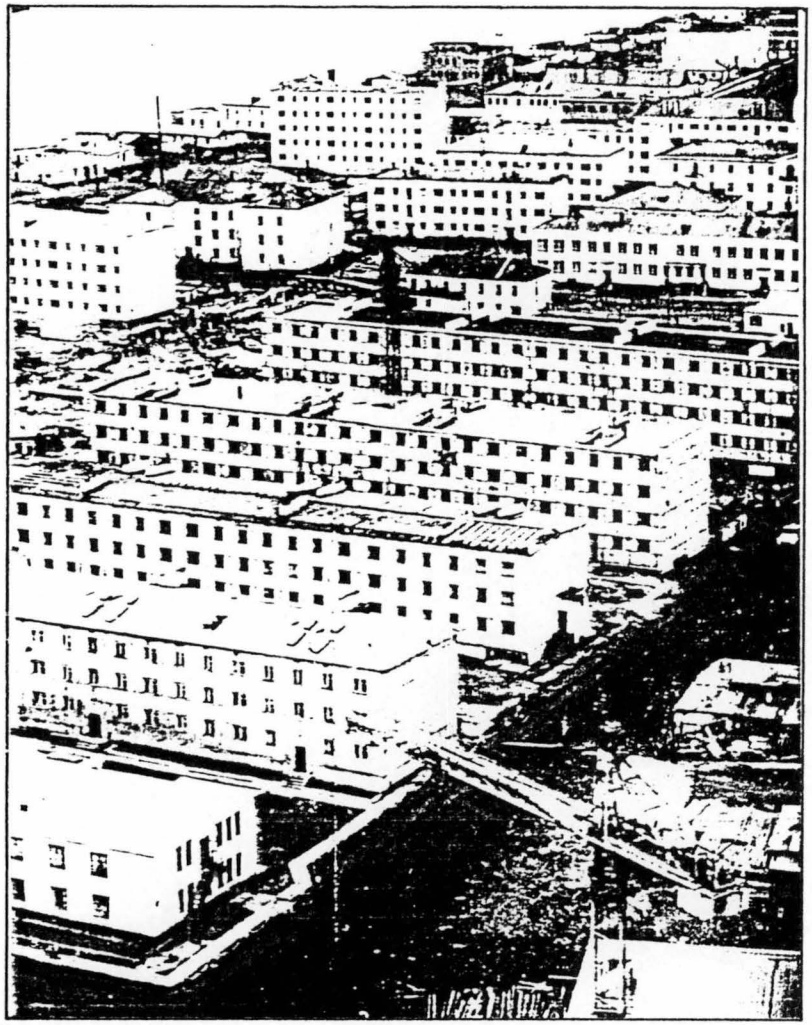


Plate 3.1. *Prefabricated apartment houses for industrial workers (built in the early 1960s) in the USSR. (Source: Pawley, 1971: 74).*

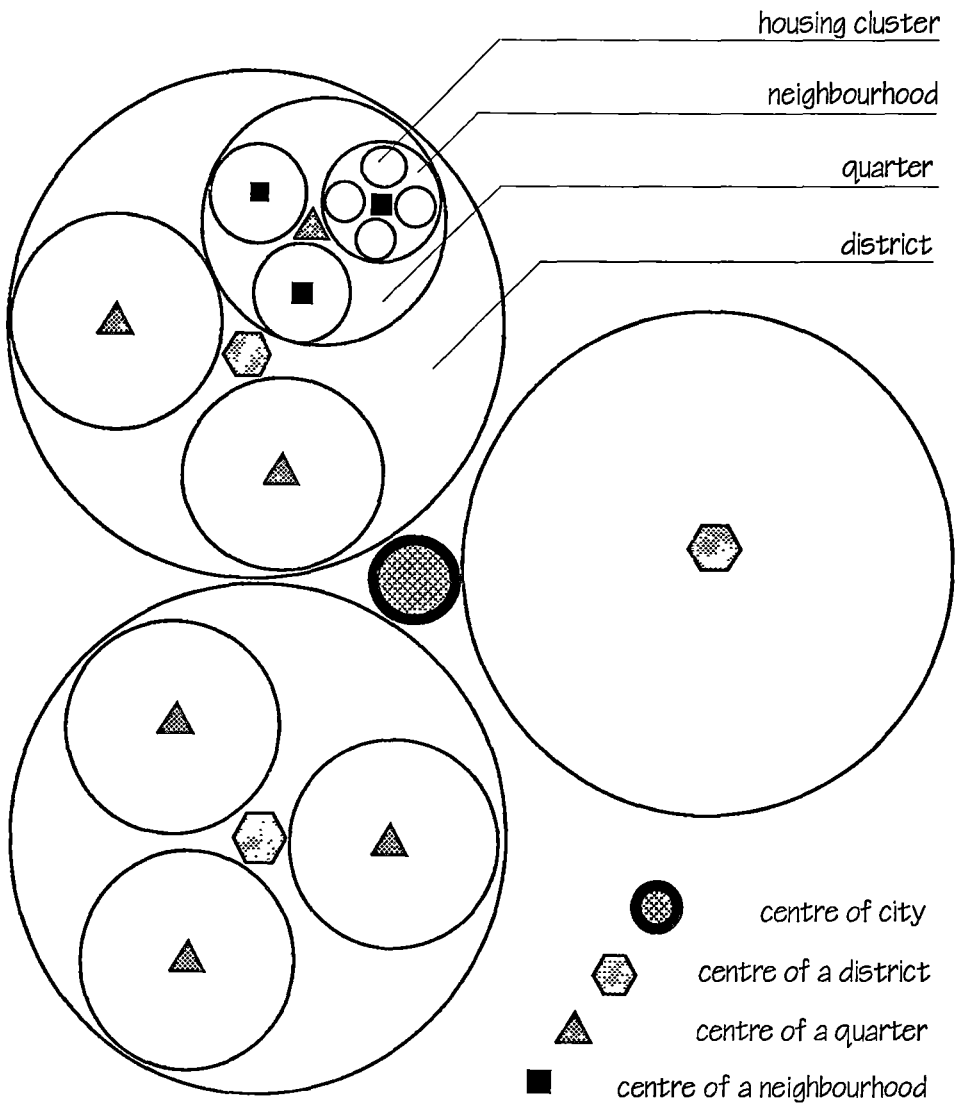


Figure 3.7. The structure of Vietnamese urban centres

3.3. THE NEIGHBOURHOOD AND THE WIDER CITY STRUCTURE

As was the case in some other socialist countries, urban residential areas in Vietnam are comprised of four levels (Rimsha, 1976 and Nguyen, T. B., 1981): district, quarter, neighbourhood and housing cluster (figure 3.7). In Vietnam, the residential quarter is only included for large cities of more than 300 000 inhabitants, and there is no administrative organization at this level. Smaller cities and towns include only three levels.

The hierarchy of urban structure is determined in the master plans of cities. Occasionally in some special cases, neighbourhoods do not strictly follow this hierarchical system, and answer directly to the city instead of the district. The neighbourhood is the smallest unit for administrative management purposes and is considered the basic unit for urban residential development in Vietnam. However, a neighbourhood consists of housing clusters.

The **Housing Cluster** is the basic element of a housing complex. It consists of a group of dwellings with a day care centre and/or kindergarten which is located not more than 200 metres from the furthest

house in the cluster. The cluster site may include small gardens (not necessarily attached to the dwellings) for use by the people living there. All components in the cluster are linked to each other by pedestrian streets. The area of a housing cluster is from 2 to 4 hectares with a population of 1 000 to 2 000 inhabitants.

The **Neighbourhood** is a complex of housing clusters. It includes houses and community facilities, of which an elementary school is the core building. The neighbourhood is usually bounded by residential streets and not crossed by main roads. There is access, via ring roads and cul-de-sacs, for fire-engines and for rubbish collection to reach within 100 metres of every house in the neighbourhood.

The area of a neighbourhood is usually from 16 to 25 hectares. The population depends upon the average number of building storeys. It ranges between 4 000 (minimum for single storey housing) and 16 000 inhabitants (maximum for 9-12 storey housing) (MoC, 1982: 47). It is estimated that from 190 to 235 children per 1 000 inhabitants attend elementary school. Therefore in a neighbourhood of 4 000 people, a school would be established to have between 760 and 940 children (ibid, p. 65).

Community facilities are arranged in the neighbourhood centre and provide daily services: these are located no more than 500 metres from the furthest house. Community facilities consist of schools, shops, cafeterias, service facilities, a health care centre and a cultural institution. They are linked to each other and to the houses in the neighbourhood by pedestrian streets.

The **Residential Quarter** is a larger housing complex. It consists of 3 to 5 neighbourhoods and provides higher order service facilities: e.g. high schools, cinemas, clubs, libraries, restaurants and sport facilities, etc. These are located within a distance of 1 000 to 1 200 metres of the furthest house. Local roads can pass through the quarter to serve the local population. The area of a residential quarter ranges from 70 to 100 hectares with a population of 12 000 (minimum for single storey housing) to 40 000 (maximum for 9-12 storey housing) (loc. cit.).

The **District** is comprised of groups of residential quarters or 3-5 neighbourhoods in small cities or towns (less than 300 000 inhabitants). There is a major centre which serves the entire district. It consists of administrative offices, urban shopping centres, sport centres, exhibition halls, etc.

There are three large cities in Vietnam which are municipalities and rank with provinces. These are Hanoi, Hai Phong and Ho Chi Minh City. The centres in these cities serve not only the cities themselves but also the nation and

include international links. Besides functioning as city centres, these include national and international organisations for political, administrative, industrial and commercial purposes.

3.4. THE NEIGHBOURHOOD AND BUILDING TYPES

In most cities of Vietnam, especially Hanoi, there are three kinds of neighbourhood depending upon the building types:

i/ High-rise residential areas (slab blocks).
ii/ Low-rise residential areas (1 to 2 storey row housing).
iii/ Mixed areas with types (i) and (ii).

Single and two-storey houses in Vietnam are considered as low-rise housing. High-rise housing is usually built with 5 walk-up storeys. Public housing was constructed within these three kinds of neighbourhood which, in turn, conformed to the master plan of the city. Figures 3.9 and 3.10 show examples of low-rise and high-rise public housing areas in Hanoi. Building density depends upon the type of housing. Plans and patterns of buildings and spaces can be seen in the figure-ground drawings of these areas (figures 3.11 and 3.12).

In Vietnam, there are guidelines for land use allocation at the neighbourhood, quarter and district levels. The general functional components of each level are indicated in figure 3.8.

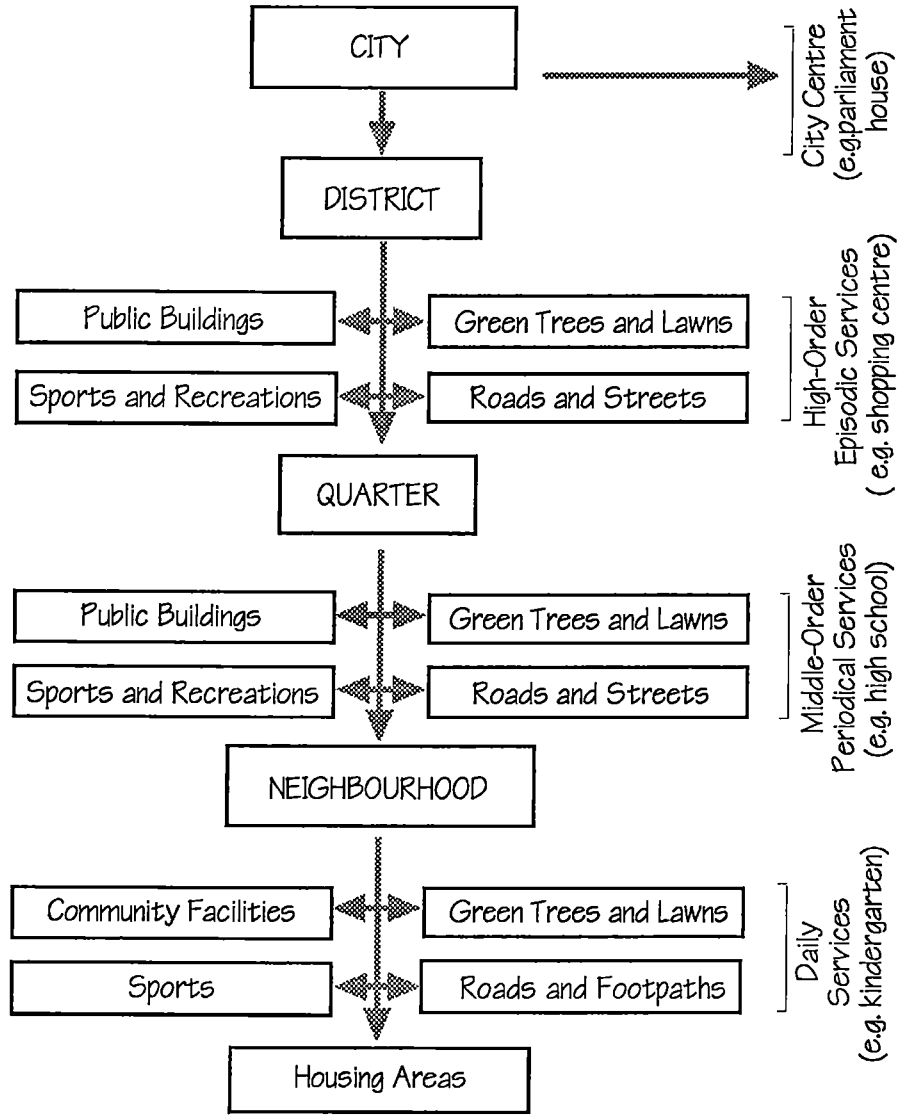


Figure 3.8. Diagram of components in Hanoi urban areas.

Figure 3.9. Yen Lang, a low-rise housing area. Map A (01-04)-c and A (01-04)-d

(Source: Hanoi Department of Construction, 1988)

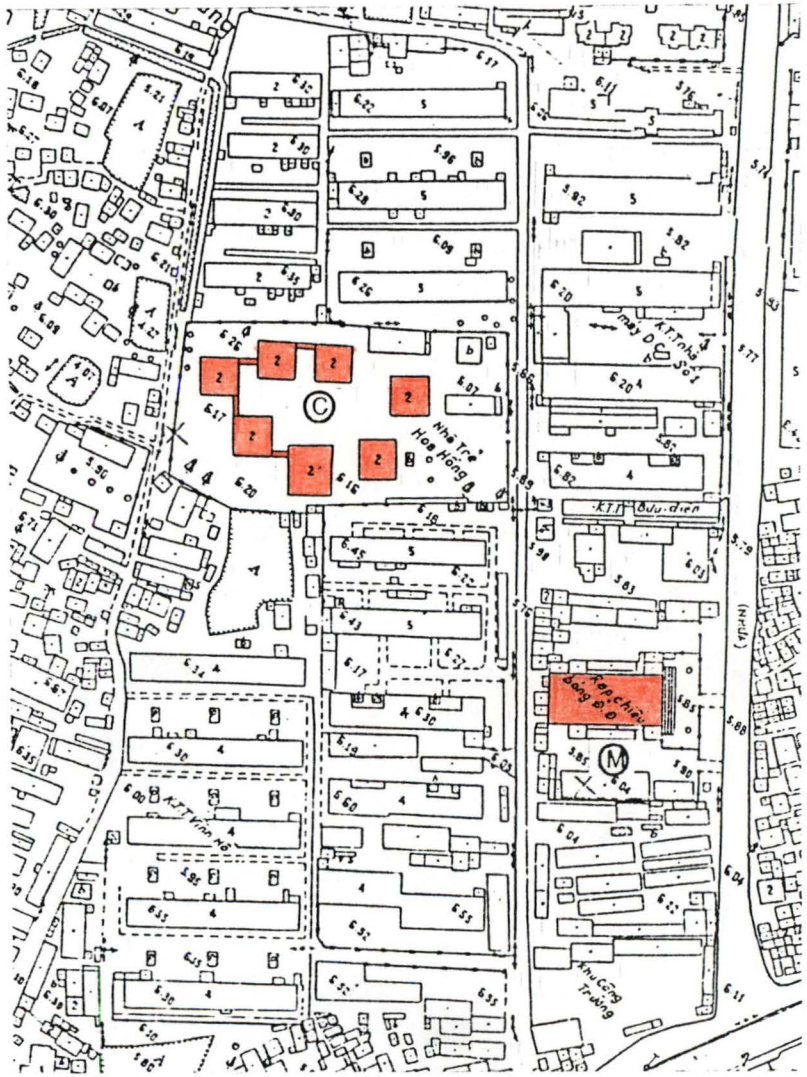


Figure 3.10. Vinh Ho, a high-rise housing area. Map B (01-04)-b

Scale: 0 20 40 60 m

Ⓒ Child Care & Kindergarten Ⓢ School Ⓜ Cinema

2 Housing with the number of storeys Single storey housing

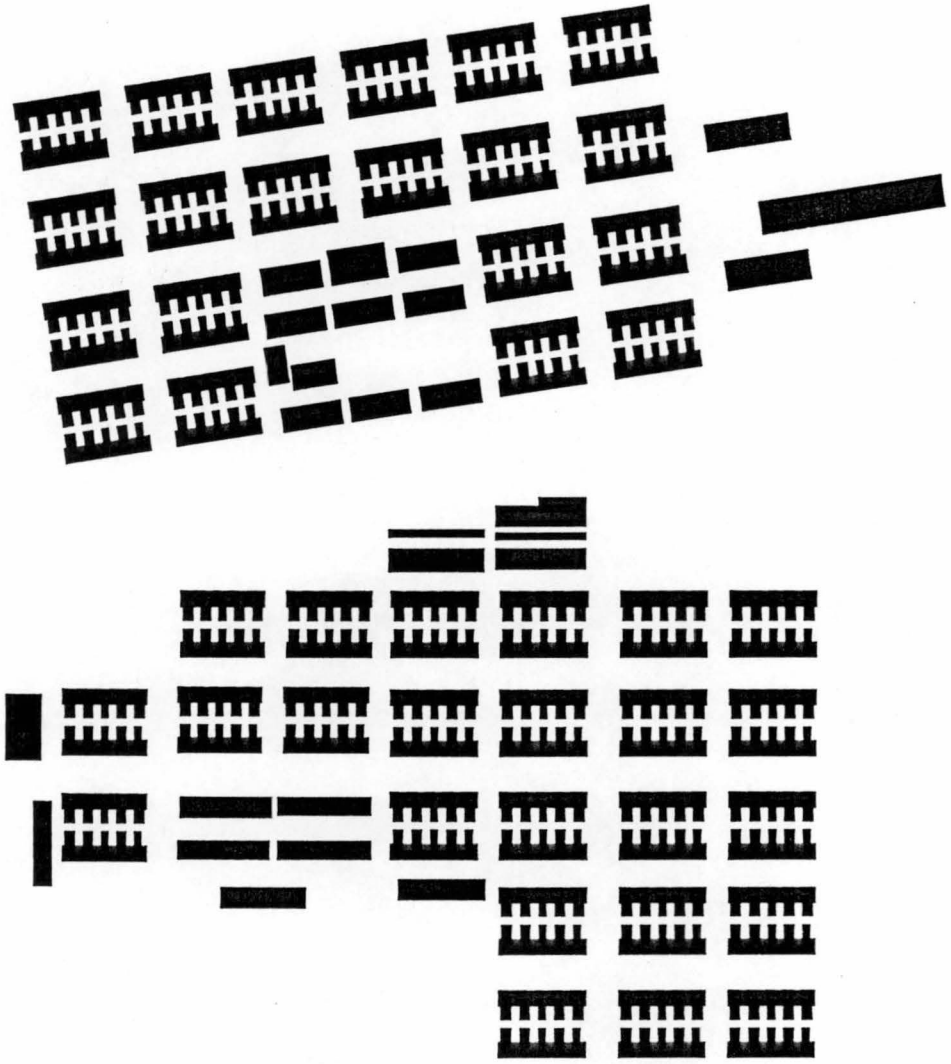


Figure 3.11. Figure ground of Yen Lang housing area. (designed plan). Drawn on Map A (01-04) - c & d

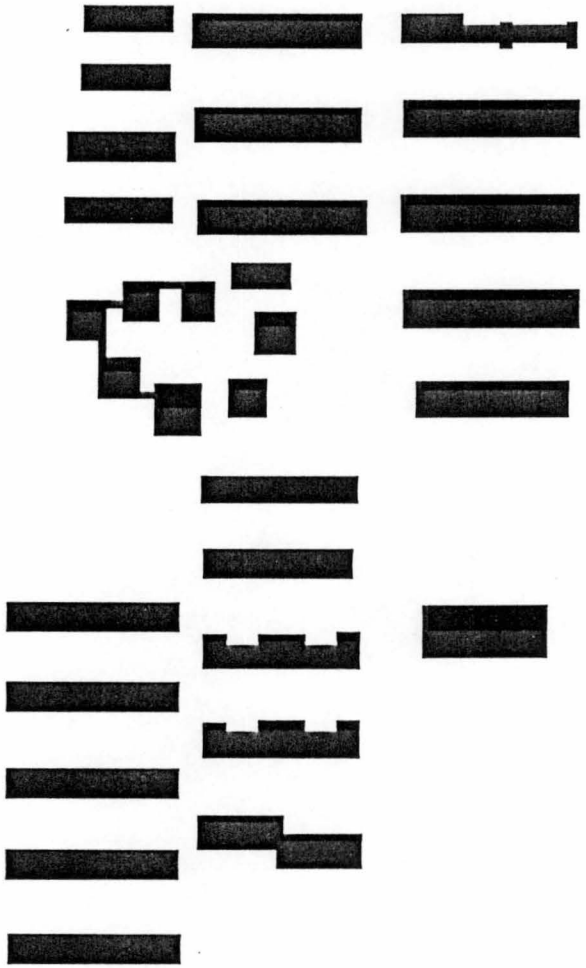


Figure 3.12. Figure ground of Vinh Ho housing area. (designed plan). Drawn on Map B (01-04) - b

In the neighbourhood, "housing area" includes houses, yards and gardens, accesses, parking spaces and gardens of the housing cluster. In other words, "housing area" means the whole housing cluster excluding the space for child care and kindergarten.

LAND USE Neighbourhood	Building Type (number of storeys)				
	1 (row housing)	2-3 (row housing)	4-5 (slab block)	6-8 (*)	9-12 (tower)
Housing Areas	33-26	23-12	13.5-10.0	10.6-8.4	8.3-6.8
Child Care - Kindergarten	3.6-1.9	3.2-1.9	2.8-1.9	2.5-1.9	2.3-1.9
Elementary, Secondary Schools	5.4-3.0	4-3	4.4-3.0	3.9-3.0	3.5-3.0
Daily Services	0.6-0.2	0.6-0.2	0.6-0.2	0.4-0.2	0.4-0.2
Green Trees and Lawns	1	1	1	1	1
Sports	0.5	0.5	0.5	0.5	0.5
Roads and Footpaths	3.5-3.0	3.0-2.6	2.6-2.2	2.2-1.8	1.8-1.6
Total Land of a Neighbourhood	47.6-35.6	36.2-21.2	25.4-18.8	21.1-16.8	17.8-15.0

Table 3.1. Standard for land use in a neighbourhood (unit: square metre per person) Source: Ministry of Construction, 1982: 200.

According to the Vietnamese regulations and norms for urban physical planning (MoC, 1982), the area of a neighbourhood depends upon the intended population and building types. The standards for land use are also related to population and building type at neighbourhood, quarter and district levels. Table 3.1 indicates the standard areas of land devoted to various components in a neighbourhood for each building type.

The regulations and norms also refer to the standards of land use at various levels of settlement (tables 3.2 and 3.3).

LAND USE Town or City	Building Type (number of storeys)		
	1 (row housing)	2-3 (row housing)	4-5 (slab block)
Districts	60-45	48-31	36-28
Public Buildings	2-3	3-4	4-5
Sports and Recreations, Green Trees and Lawns	4-5	5-6	6-7
Roads, Streets and Squares	14-13	12-11	10-9
Total Civilian Land of a Town or City	80-66	68-52	56-49

Table 3.2. Standard for civilian land use in a town or city (unit: square metre per person) Source: Ministry of Construction, 1982: 202.

LAND USE District	Building Type (number of storeys)				
	1 (row housing)	2-3 (row housing)	4-5 (slab block)	6-8 (*)	9-12 (tower)
Neighbourhoods	48-35	37-21.6	26-19.3	28-17.3	20-15
Public Buildings	3.0-1.4	2.6-1.4	2.2-1.4	1.9-1.4	1.7-1.4
Sports and Recreations	1	0.9	0.8	0.7	0.6
Green Trees and Lawns	2	2	2	2	2
Roads and Streets	6.0-5.6	5.5-5.1	5.0-4.5	4.4-3.6	3.7-3.0
Total Land of a District	60-45	48-31	36-28	32-25	28-22

Table 3.3. Standard for land use in a district (unit: square metre per person) Source: Ministry of Construction, 1982: 201.

(*) While this type appears in the regulations, it has not been built on the ground).

3.5. INSTITUTIONAL FRAMEWORK FOR HOUSING CONSTRUCTION

Although most housing has been built by the State, it does not follow that the organization of housing construction in Vietnam is simple. Many different Ministries and Commissions are involved at different levels of government as well as the collective sector and all have been responsible for the construction of housing.

In Vietnam, construction work has been classified into several levels (national, ministerial, provincial, city, etc.) depending upon the amount and source of investment, and the scale of work.

Ministry of Construction (MoC) has been in charge of all planning and construction activities at the national level. It deals with urban development issues and construction work from investigation through planning and designing to implementation. It manages, supervises and maintains construction work. Moreover, it produces building materials on a large scale for the whole country.

Public housing under the subsidised economic mechanism (i.e. from 1954 to 1986) was mainly designed and constructed by the MoC. The MoC utilised the state's budget on housing

to implement the work through a network of its own building companies in most provinces and cities.

However, at the central government level, there are many other Ministries and Commissions which have their own departments and institutes of capital construction, and can include housing in their building programs. Housing has also been completed by Ministries and Commissions using their own collective capital[1] as well as central government funds. Nevertheless, even this work needs mostly to be approved and supported by the MoC. Usually, these organisations contract with MoC's building companies to build.

Under each ministry and state commission there is an equivalent department (i.e. covering the same field) at the provincial or municipal level. The Department of Construction in Hanoi, for instance, belongs to the city government. Departments of Construction in the provinces and cities are responsible for all planning issues and construction work, at provincial level.

In every province and city, there is an Institute of Housing and Public Building Design, and a number of building enterprises which belong to the Department of Construction. These professional bodies deal with housing construction at the provincial and municipal levels, using funds from the State and provincial or city budgets. Like Ministries and Commissions, they need the approval of, and assistance from the MoC. Besides the main construction department, most other departments at the provincial level also have their own sections which build houses for their employees.

In brief, besides the main organisations for housing industry (i.e. Ministry of Construction and Departments of Construction), most public organisations involve themselves in some form of housing construction. Figure 3.12 gives some indication of the complexity of organisation for housing construction in Vietnam.

The provision of social facilities and physical infrastructure in residential areas depends upon co-operation between the MoC and organisations related to other ministries and provincial departments. For example, the Ministry of Health would support the MoC to build a hospital; the Ministry of Education and Training would help the MoC to construct a university or a training centre; and the Hanoi Department of Transportation and Public Works would assist the Department of Construction in Hanoi.

[1] Capital derived from the sale of their products or other works which exceed the State's Plan.

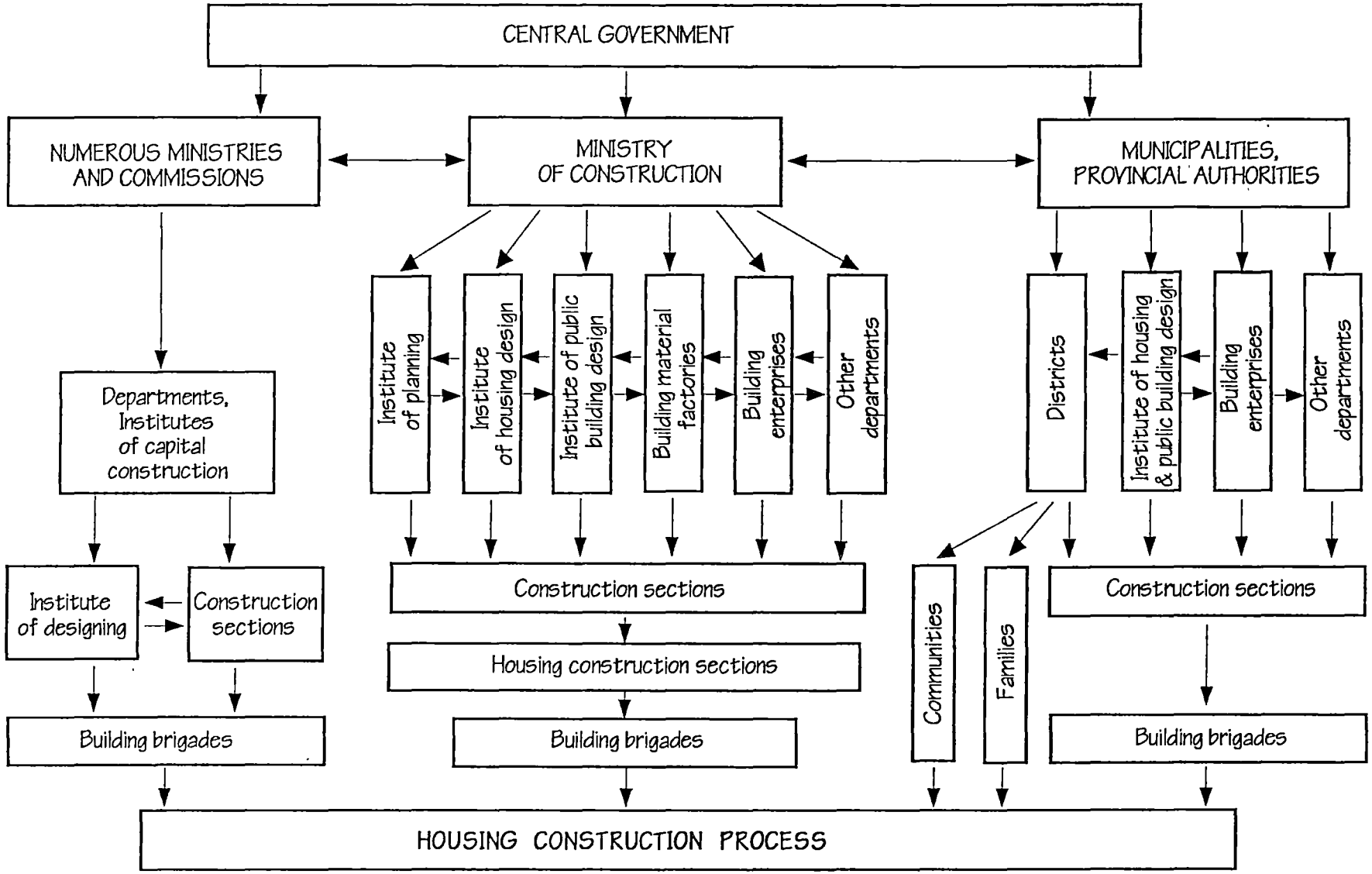


Figure 3.13. Diagram of organisation for housing construction in Vietnam (Source: Nguyen, T. L., 1989: 23).

3.6. LOW-RISE HOUSING AS A PREFERRED FORM FOR INTERVENTION

Housing is a complex and multi-sided matter and depends upon many factors: sociological, natural, cultural, economic. Following the French war, the question of whether to build high-rise or low-rise housing in Vietnam was a vital one.

The question was addressed in the Conference on Housing Design held in Hanoi in December 1963, at which the advantages and problems of public high-rise and low-rise housing were discussed (SCCC, 1964: 29-30). The points raised and decisions made very much reflect the poor economic conditions in Vietnam after war and in the early stage of building socialism.

The advantages of high-rise were thought to be as follows:

i/ Saving building land and increasing dwelling areas.

ii/ Reducing the length of roads, drainage and sewerage networks as well as equipment for power and water supply.

iii/ Centralizing public services and reducing service radius (e.g. for the same population, service radii in high-rise areas would be smaller than in low-rise ones).

iv/ Reducing management costs for individual houses and the whole housing areas.

v/ High-rise could be constructed by adopting industrialized building methods thus speeding up the building process.

vi/ It may contribute to an improved townscape, though this was not explained.

The perceived disadvantages were:

i/ The essential materials for high-rise construction (e.g. steel, cement) had to be imported which was economically problematic.

ii/ Initial investments were higher than low-rise housing though there may be long term benefits. Water supply for high storeys would prove difficult for reasons of expense and complexity.

iii/ High-rise required greater care and sophistication at the design stage.

iv/ Circulation may prove difficult, especially in the absence of lifts.

For low-rise housing, the advantages were also noted:

i/ Low-cost, local building materials could be used.

ii/ Low-rise housing using mere conventional methods could take advantage of the plentiful labour supply and existing skills.

iii/ Less work would be required in planning and surveying.
iv/ The initial investment would be less.
v/ It was seen as the preferred type of housing for people to live in.

Disadvantages were listed as:
i/ It would occupy more land, and dwelling areas and open space would be smaller.
ii/ Infrastructure networks would be more extensive which increases the costs.
iii/ Management would be more difficult.
iv/ It would be more difficult to create a good townscape.

During the 1950s-1960s, Vietnam faced an enormous housing problem. Furthermore, the country lacked funds and fundamental building materials as well as building techniques. To attempt to solve the problem of inadequate housing at greatest speed while using least funds and local resources, the government had little option but to concentrate on building public low-rise housing.

Low-rise housing was chosen in this period because it had advantages: building techniques that were readily available, speed of construction and lower costs. This type of housing was also similar to the traditional Vietnamese houses which allowed people to live closer to nature (i.e. on the ground).

1/ Building techniques

Building low-rise housing needed only simple techniques. In the postwar period (1954-1960), Hanoi lacked sophisticated building techniques, both in terms of knowledge and equipment. Low-rise housing could be constructed by manual and conventional methods with the standard knowledge of building.

2/ Building speed

The application of simple techniques to low-rise housing was more likely to result in rapid building. According to the NIURP (1985: 28), building low-rise housing (1-2 storeys) was probably 4 times faster than high-rise housing (4-5 storeys) over an equivalent area. This speed advantage was consistent with quick solutions required after the wars in Vietnam.

3/ Costs of building

One of the most important advantages of low-rise housing was the cost of building. Low-rise housing (especially public housing) needs relatively little cement and steel which had to be imported into Vietnam after the wars. Low-rise housing could be built of low-cost, local building materials which reduced housing costs. Also, the collective sector could invest in small-scale building for their employees.

This type of investment contributed considerably to overcoming the housing shortage for workers and officers.

In the same study, the NIURP (ibid: 39-42) points out that the building cost of one square metre of low-rise housing was usually half the cost of the same area in high-rise housing, as in figures 3. 14, 3.15 and 3.16.

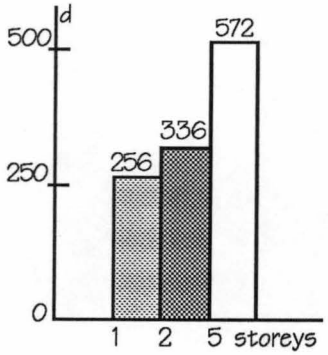


Figure 3.14. Cost of building 1 m² living area (d: Vietnamese currency)

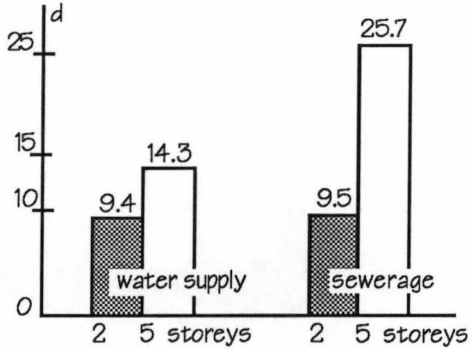


Figure 3.15. Cost of building the water supply and sewerage systems indoor. (for 1 m² living area)

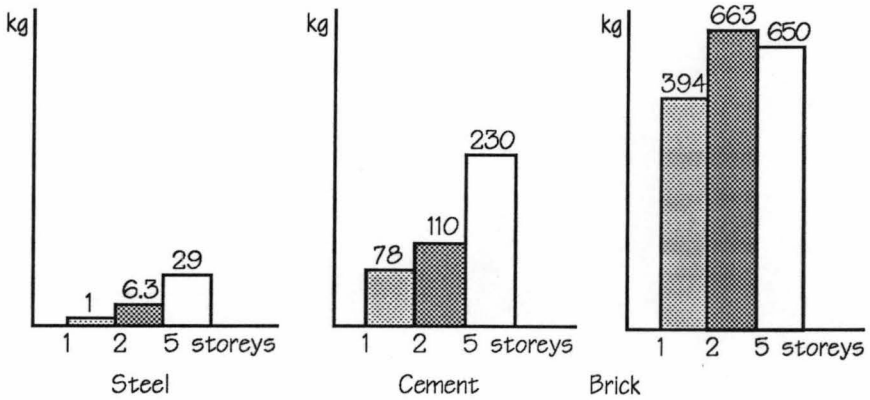


Figure 3.16. Expenses of main materials for 1 square metre living area

3. 7. SUMMARY

This chapter has examined the great housing demands, the policy and investment responses under the subsidised economic mechanism and, in particular, the nature of the planning models adopted which were based on the neighbourhood concept. It has also indicated the complexity of the housing industry even under a socialist system and the reasons for predominantly (though not exclusively) low-rise construction.

In situations of housing shortage, most governments in the world have intervened, for housing is a critical issue throughout the world. However, each country has its own

approach to housing covering policy, investment and physical solutions. This depends mainly upon political and socio-economic conditions of individual nations.

The state of economic development is the major factor influencing investment levels in most countries. One difficulty with comparisons is that housing investment allocations are based on different criteria. In developed nations, government investment in housing is evaluated by the percentage of gross domestic product devoted to housing, and as shown in Appendix 2, it was usually from 3 to 7 per cent of GDP. In socialist countries, a proportion of total capital construction was allocated to housing and 15 per cent was not uncommon. In most developing countries, however, public investment in housing was generally less than developed countries (only 2-5 per cent of GDP), since these governments emphasised industrial and agricultural development.

Vietnam is a socialist and also a developing country. Like most socialist countries, Vietnam had a policy of providing housing for its people. Public housing was allocated free of charge to Vietnamese government employees. At the same time, as a developing nation, Vietnam focused on industrial and agricultural development rather than housing. Average investment in housing was about 3 per cent of the total investment in capital construction. Under these conditions, Vietnam provided a considerable quantity of primarily low-rise housing but it was of poor quality and poorly maintained. These points will later be explained.

Public housing in Vietnam was funded mainly from two sources, the State and collective sectors, whilst many ministries, commissions and departments were involved in its construction. However, the Ministry of Construction, and Departments of Construction of provinces and municipalities were mostly responsible for the use of the State's budget to build public housing on a large scale. Other organisations operated at far smaller levels.

Public housing is mainly for rent in developed countries. The rent usually ranges between 15 and 25 per cent of the family's income. On the other hand, public housing was viewed as a social right in socialist countries. Rents were very low by comparison - usually less than 10 per cent of the household's income.

The majority (though not all) of public housing stock in Vietnam is low-rise resulting from the political and socio-economic conditions of the country, especially after the wars. It answered quickly the situation of insufficient housing at a time when the country was acutely short of funds, fundamental materials and advanced building techniques.

Like urban centres in most socialist countries, the neighbourhood typology was adopted in Vietnam as the basic unit for residential development in a four-level urban hierarchy. All activities and land use areas in urban areas were allocated according to their function and had to conform to national guidelines and the master plan of the city.

The areas of public low-rise housing in Hanoi are, however, now experiencing many social and physical problems which will be explored in some detail in the next chapters of this work.

Chapter 4 PHYSICAL CONDITIONS OF PUBLIC LOW-RISE HOUSING

Chapter 3 discussed the planning models adopted for public housing in Vietnam and the institutional framework for its construction as well as the reasons for building predominantly low-rise housing during the 1954-1986 era. It also indicated that this housing is today mostly in very poor condition which, it was suggested, may be attributed to the shortage of funds at the time of building, hasty construction, general inexperience in mass construction and poor maintenance.

This chapter examines the physical conditions of the housing today. The problems in Hanoi's public low-rise housing dating from this era are multiple and severe. The houses have themselves deteriorated while the neighbourhoods have substandard social facilities and physical infrastructure, and the streets are often encroached upon by shanty-like extensions.

4.1. STREETS AND OTHER PHYSICAL INFRASTRUCTURE

4.1.1. Road and Street Network

The road network in Hanoi is quite inadequate. Roads and streets in the inner city have not changed for about 20 years. They occupy only 3.5 per cent of the total land area - a small proportion compared with 25 per cent in developed countries. Road density is 0.66 kilometres per square kilometre, which equates to only one fourth of the international standards for a city with medium traffic density (SIDA, 1993: 29). The quality of roads and streets is very poor. This reflects the lack of funds to maintain them and sometimes the frequent repairs necessary to underground infrastructure.

Hanoi has no designated roads for different kinds of transportation: all kinds (motor vehicles, bicycles, carts, pedestrians, etc.) have to share common roads and streets. This circumstance reduces the speed of movement and compounds congestion on the roads, especially at rush hours. Hanoi's transport problem is additionally affected by a major railway crossing at the centre of the city. The street-level railway from the North to the South of Vietnam cuts Hanoi into two parts (refer to figure 1.1).

The street and pavement areas are invaded severely by more than 30 000 registered shops and some tens of thousands of illegal hawkers. On the latter point, hundreds of temporary open markets intrude onto the road carriageways and pavements (Le, 1993: 160).

Also, Hanoi has a serious lack of parking spaces. A few years ago, private citizens had no right to own a car and a small number of public-owned cars were not constrained by this factor. In fact, parking spaces were not a crucial component in city planning. Today with the new economic mechanism and private ownership, the number of cars is increasing dramatically, and parking space is becoming one of the tough problems facing the city. Parking shortages have two dominant consequences:

- Cars have to be parked on the already narrow streets.
- Congestion is often caused by drivers looking for parking spaces.

In residential areas, the form of streets varies depending upon the character of the housing. The building types and the topography of building sites are major influences. Normally houses were built in rows in order to save funds and land, and increase the possibility of rapid multiple construction. In addition, housing often responds to the natural conditions, particularly the direction of sunshine and winds, which gives it a South or Southeast orientation.

The patterns of streets are usually grid or tree-like branching networks. The streets are always parallel with housing rows, running from East to West or Northeast to Southwest (see figures 4.1 and 4.2).

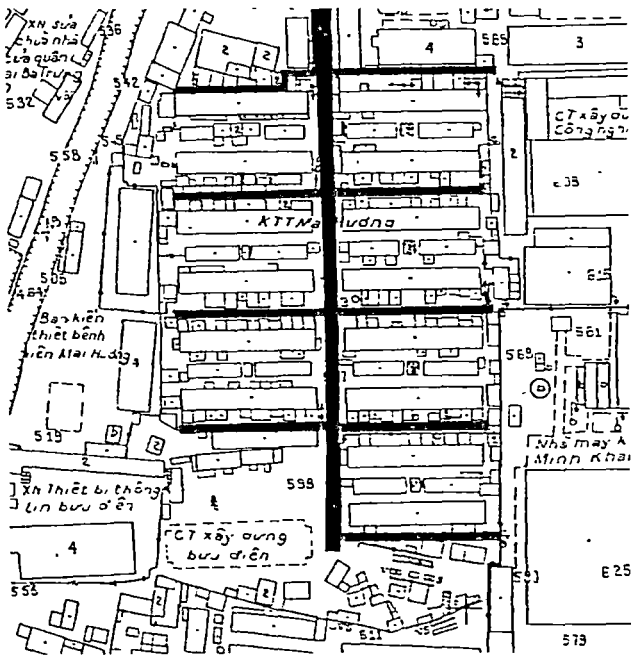


Figure 4.1. Tree-like branching network of streets in a single storey housing area. (Source: Drawn on Map B (01-06)-c, Hanoi Department of Construction, 1988).

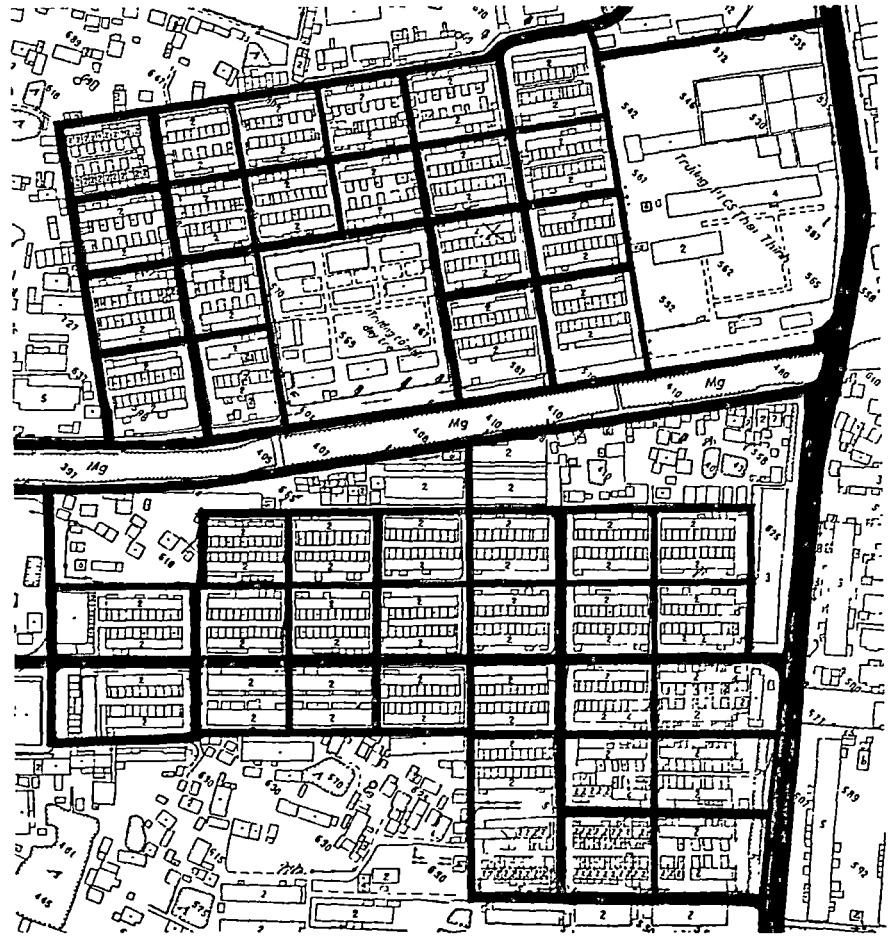


Figure 4.2. Grid network of streets in a two-storey housing area. (Source: Drawn on Maps A (01-04)-c and A (01-04)-d, Hanoi Department of Construction, 1988).

Spaces and streets are now intruded upon severely due to the often illegal expansion of dwellings by the residents themselves. In some places, the space between two rows of houses has contracted from 10 metres to only 2 metres. At the rear of housing rows, the space for infrastructure systems is likewise encroached upon. Such conditions can be seen in figure 4.3.

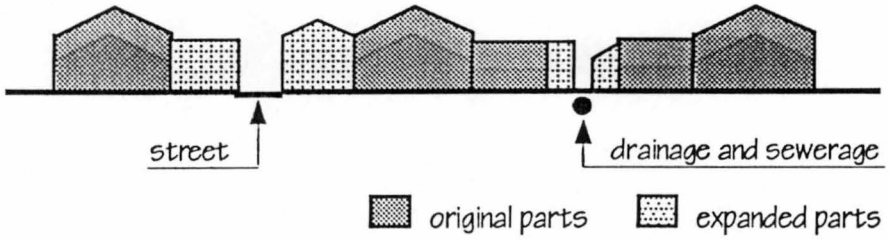


Figure 4.3. Typical situation of encroaching spaces. (Source: Field Study, 1995)

The encroachment on open spaces has taken place gradually in a piecemeal fashion depending upon the needs and resources of each household. These actions have generally been carried out without any permission from the authorities. In public low-rise housing areas, 34 per cent of households have widened their homes on average, the number depending upon land availability. For instance, 45 per cent and 18.9 per cent of families in Truong Dinh and Van Chuong have expanded their housing respectively (NIURP, 1985: 30). Nevertheless, due to the acute housing shortages and unclear policy, the authorities have usually ignored the phenomenon. Figures 4.5, 4.6 and plates 4.1, 4.2 all illustrate the problem of encroaching spaces in a single storey housing area.

4.1.2. Transportation

Traffic density in Hanoi is very high although there are few motor cars. In 1993, there were 35 000 motor vehicles, 1 600 lambrettas[1], 2 000 tractors, 270 000 motorcycles and 1 500 000 bicycles (Le, 1993: 160), and the numbers are increasing every year. Compared with other Southeast Asian capitals, the motorization rate in Hanoi is high whilst the number of cars is still very low (see figure 4.4). At rush hours, there has always been congestion in the city, notably at the crossroads. In some places, the number of passing bicycles may be up to 220 per minute (Ministry of Transportation and Post in Pham, K. T., 1991: 52).

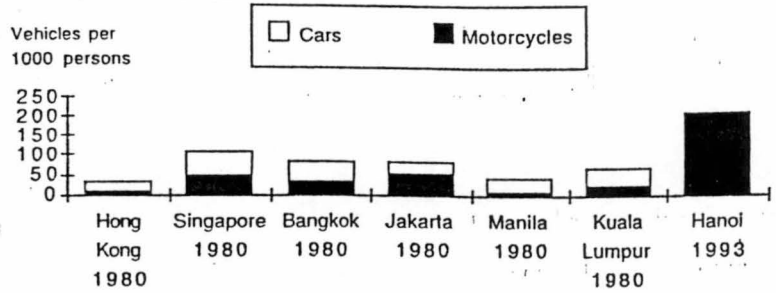


Figure 4.4. Motorization rates in Southeast Asia 1980 and Hanoi 1993 (Source: SIDA, 1993: 64).

[1] 3-wheeled passenger vehicle

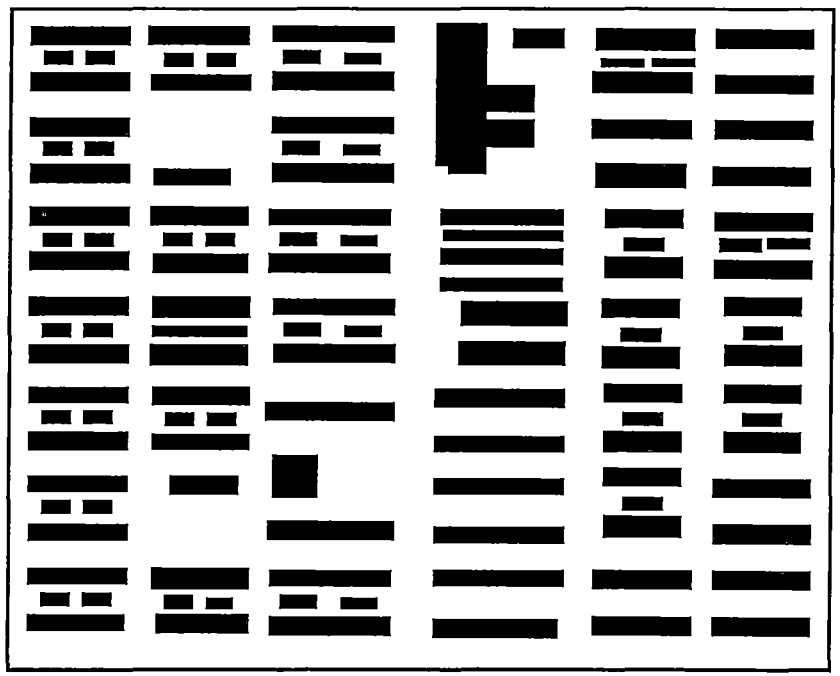


Figure 4.5. Figure ground of Tan Mai housing area. Designed plan, 1970. (Source: Drawn on Map F-48a-116-(17), the Survey and Map Department of the State of Vietnam, 1983).

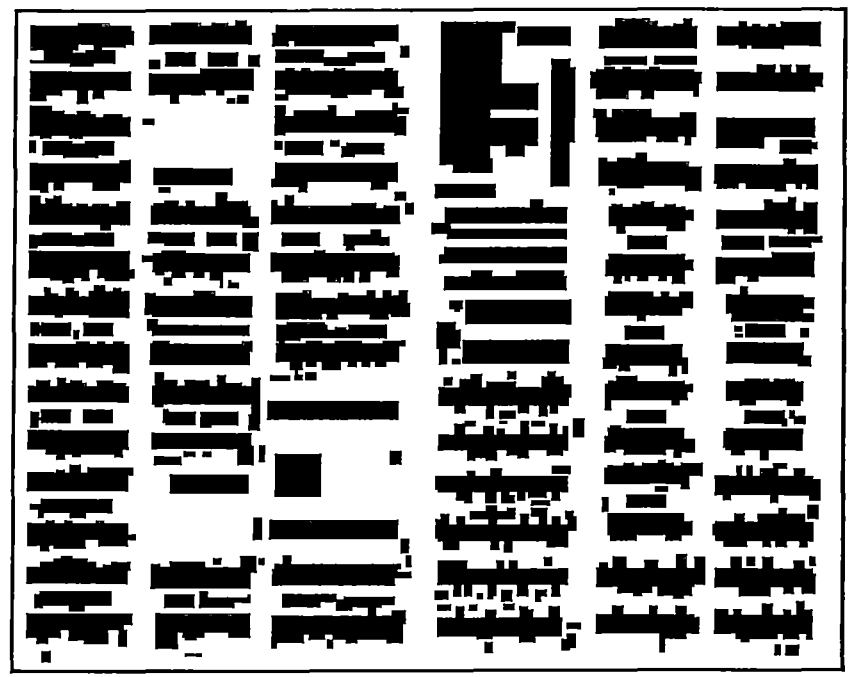


Figure 4.6. Figure ground of Tan Mai housing area. Actual situation, 1988. (Source: Drawn on Map B (02-06)-a, Hanoi Department of Construction, 1988).

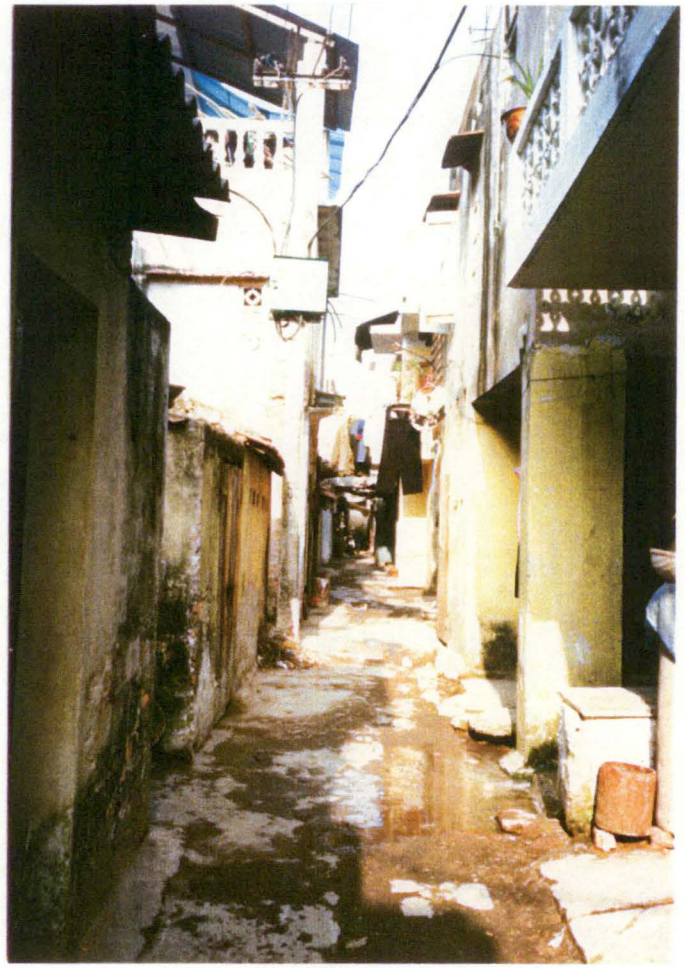


Plate 4.1. *Tan Mai housing area today - Above.*
(Source: Field Study, 1995)

Plate 4.2. *Expanded housing has encroached upon the street - Right.*
(Source: Field Study, 1995)

Private transport dominates in Hanoi with nearly 90 per cent of the people using their own cars, motorcycles and bicycles. According to the Hanoi Bus Company (Chu, 1993: 227), the city has just 600 buses to serve more than 500 million passenger trips. Public transport in Hanoi provides for less than 10 per cent of trips whereas public transport in Southeast Asian capitals generally caters for the majority of passengers. The situation in these cities in the 1970s and Hanoi in 1993 is shown in figure 4.7.

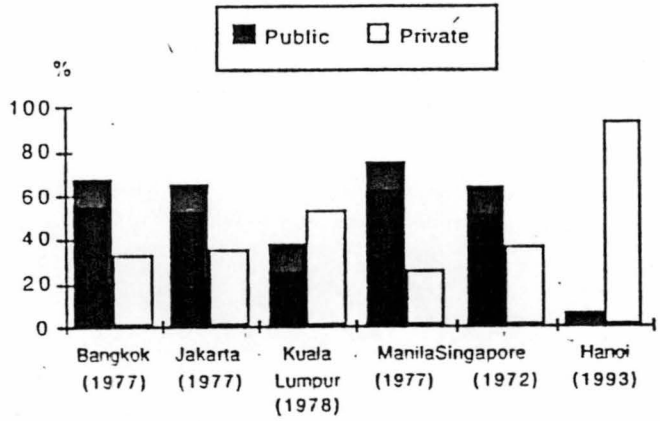


Figure 4.7. Modal split in Southeast Asian capitals at various years (Source: SIDA, 1993: 5).

A survey conducted on one day of March 1993 (SIDA, 1993: 56) indicated that public transport, including buses, lambrettas and cyclos[1] provided only 6 per cent of the recorded passenger trips. Private transport - bicycles and motorcycles - accounted for 80 per cent of trips. Cars (private and public) catered for 13 per cent of the passengers. The proportion can be seen in figure 4.8.

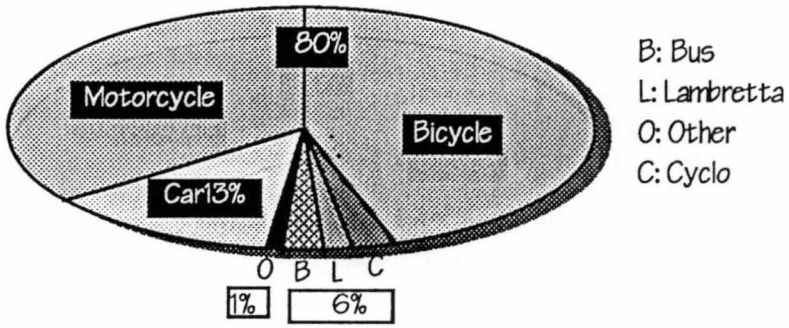


Figure 4.8. Proportion of passenger trips by various means of transportation in Hanoi, March 1993. (Source: SIDA, 1993: 55)

Most people living in public low-rise housing areas are ordinary government employees who mainly use motorcycles and bicycles. These vehicles crowd the already narrow streets in housing areas. Further, spaces for motorcycles and bicycles are always a considerable matter in every family, as they are usually kept within the house for security reasons.

[1] bicycle rickshaws

4.1.3. Water and Electricity Supply

i/ Water Supply

The water supply system is poor in Hanoi, especially in public housing areas. The problems exist in the capacity, quality, standard and mode of supplying water.

Due to the lack of initial funds for infrastructure, the water network in most residential areas has not been connected to individual houses. In 1987, just 50 per cent of households had running water. Of these, 20 per cent were individually connected and the remaining 80 per cent shared public taps with the average rate of 800-1 000 people per tap (Pham & Parenteau, 1991: 156). The remaining 50 per cent used either wells or took water from outside of their own housing complex. The situation is better today, however, the increase is very modest. Only 60 per cent of the population in the inner city is estimated to have clean water nowadays (Nguyen, T., 1995: 1).

The capacity and the quality of the water pipe system is inadequate. This system is thoroughly old which causes losses of up to 45 per cent. The lack of management and the uncontrolled utilization of public taps are other reasons for losing water, which makes the total water lost as much as 50 per cent of that supplied (Ke, 1990 in Pham, K. T., 1991: 53).

The average standard water supply is low - only 70 litres per person per day, compared with 200, 160 and 150 litres per person per day in Manila, Vientiane and Jakarta respectively (Dinh, 1992: 10). The problem of insufficient water is more crucial in summers when many people have to wait for a long time to get water from public taps, even at night. A study by the National Housing Program (NHP, 1982: 45) reveals that the average time for getting water in public housing areas in 1980 was 55 minutes. Half of households got water at night, of which only 56 per cent took place before 3.30 am. It was estimated that in one month in the summer of 1980, in one neighbourhood (approximately 5 000 inhabitants), time spent for water collection was the equivalent of 144 people working for the entire month (loc. cit.).

The quality of water is still substandard in Hanoi. This results from the shortage of chemicals for flocculation and disinfection, even if the water treatment facilities are good. Since 1985, the water supply system in Hanoi has been supported by the Finnish government to improve both quality and quantity. However, this project has concentrated mainly on new construction places and paid less attention to existing public housing areas, notably low-rise ones.

ii/ Electricity Supply

Electricity used to be one of the critical problems of Vietnam.

The problems were the lack of capacity, frequent brakedowns in supply and illegal connections by inhabitants.

During the 1980s, Vietnam had one of the lowest energy consumption per capita in the world. It was 109 KWh per person in 1989. Hanoi, however, had a higher consumption of 250 KWh (Andersson *et al*, 1991: 36). The problem of inadequate energy has been solved gradually throughout the 1980s and the electricity supply is much better today. The electricity demand can be met largely due to the operation of a new hydropower plant in Hoa Binh province.

4.1.4. Drainage and Sewerage System

The drainage and sewerage system is the biggest problem of all facing Hanoi today. This system is in very bad condition and capacity is inadequate. There is no separate drainage and sewerage system in Hanoi. Further, the main system is very old and in an advanced state of deterioration. A new system has been commenced but is insignificant in its extent. Between 1954 and 1985, only 35 kilometres were added to Hanoi's main system, yet this was a major period of housing construction (Institute of Municipal Engineering, 1991: 6).

Waste water flows directly into ponds, lakes and rivers without treatment (plate 4.3). This includes solid waste which causes severe health problems, especially at places adjacent to industrial areas and hospitals, and in flood season. As a result of parts of the city being located at below water level (the Red River) in flood season, flood waters in Hanoi often mix with waste water and flow out onto the streets.

Plate 4.3. Situation of sewerage and rubbish disposal in residential areas. (Source: Field Study, 1995)

In the flood season, there is always a situation of waterlogging. There were 35 and 43 locations under flood in

1984 and 1985 respectively (loc. cit.). Lakes and ponds hold water temporarily before it enters the rivers in the flood season. However, the areas of lakes and ponds are contracting dramatically due to the expansion of land for construction, and this is exacerbating the problem.

Another problem is the extreme shortage of lavatories in residential areas. According to Pham and Parenteau (1991: 156), the average number of lavatories in the city is one for every 30 persons. This rises to one for over 150 persons in some workers' housing areas. In public low-rise housing areas, most people share common toilets: these are usually double-vault latrines and hygienically unsound. Toilets consist of 16-20 places used by the residents of several rows of housing (figure 4.9).

4.1.5. Rubbish Disposal

In residential areas, only half of the rubbish generated is collected each day. This rubbish is not treated properly and is mainly used to fill lakes and ponds for use as construction sites (Nguyen, T., 1995: 1 and Institute of Municipal Engineering, 1991: 8). This situation obviously contaminates the environment, and reduces the areas of lakes and ponds in the city which, in turn, increases flooding and associated problems of hygiene. Uncollected rubbish remains in housing areas or on streets. In most areas, roads and streets become temporary locations for containing rubbish before collection (refer to plate 4.3).

Figure 4.9. Locations of public toilets (▬) in Tan Mai housing area. Scale 1/4000. (Source: Map B (02-06)-a, Hanoi Department of Construction, 1988)

4.1.6. Pollution Conditions

Pollution levels from all sources in Hanoi exceed acceptable standards. Dust levels are 4-10 times greater than

international standards. Noise and lead levels are double. CO_2 gas exceeds the basic standard by 2-4 times and SO_2 gas by up to 15 times (Le, 1993: 161 and Nga My, 1994: 79).

These high levels are mainly caused by industrial and domestic waste, motor vehicles and the dearth of greenery and water surfaces.

4. 2. COMMUNITY FACILITIES

Under the centrally planned and subsidised economic mechanism, most Vietnamese living in urban areas were government employees and their dependents. They were provided with housing and other necessities of living, like food and manufactured goods, by using tickets and coupons. Administration and other facilities such as health and cultural centres were also available without cost in each neighbourhood. At this time, a private sector did exist on a very small scale but there was a very big difference in prices between the private and public services and goods, the former sometimes being 10 to 20 times higher than in the public sector.

Community facilities like schools, kindergartens, hospitals and cultural buildings as well as shops and other services were barely adequate and never did meet the demands of the people in public housing areas. This was due to funds intended for community facilities being diverted for use on housing. Furthermore, public low-rise housing areas were usually built far from the city centre where most social services were located.

In the earlier public housing neighbourhoods (1955-1965), kindergartens were the only public buildings. Other facilities had to be accessed outside the areas and were few in number. The investment for these facilities should have been 18-20 per cent of the total capital for the neighbourhood, but in fact was only 4-5 per cent (NIURP, 1985: 21).

After the American war, in order to adhere to the neighbourhood concept, additional community facilities were built in public housing areas but were still insufficient to meet demands.

Under the centrally planned mechanism, many problems occurred in using public services. The two main ones were:

- People were required to use all facilities and buy their subsidised goods only in the neighbourhood in which they were registered. Otherwise, they had to pay an extra cost for the "irregular circumstance", which was unaffordable to many people.

■ The community services did not always provide sufficient food and other goods, both in quality and quantity. The designed capacity of these facilities was always one-half or even one-third of the real number of users. It resulted from the difference between the planned populations and the real numbers of people that followed. In one public housing area between 1963 and 1979, the number of households increased sevenfold whilst the community facilities remained static (NHP, 1982: 44).

At this time, people had to either spend a lot of time queuing to buy subsidised goods at the public facilities or buy them on the black market at higher prices. A study by the National Sociology Institute in 1980 shows that the average time for queuing to buy rice (the main food in Vietnam) in public housing areas was one hour on working days, and two hours at weekends (ibid, p. 98).

For reasons of time, most households especially the ones who had small children were forced to buy approximately 50 per cent of their foodstuffs, fruit and vegetables in private shops, of which many were far from home (usually on the way from work). (ibid, p. 97).

After the move to the mechanism of a partially free market economy (1986), people no longer had to rely only on subsidised goods. In today's multi-sector economy, people can shop or use facilities as they choose.

From 1975 to 1985, 300 kindergartens were built but only 85 were considered to be good and reasonable (Dang, T. H., 1985: 66). There were three main reasons children were not sent to public kindergartens:

- The quality of the kindergartens was poor, especially for weak children.
- There was insufficient capacity in some neighbourhoods.
- The locations were inconvenient for delivery and collecting of children (NHP, 1982: 104).

Under the new economic mechanism, people again have more choice. Many new services are operating whereas many old ones (substandard) are closing and others are unable to operate. Plates 4.4 and 4.5 show the circumstances of two kindergartens in Hanoi today.

Due to the shortage of land for construction, open spaces and green areas have been gradually built over. In Hanoi, the land used for greentrees is only 1.5-2 square metres per person compared to the recommended standard of 5-6 square metres per person for residential areas. According to the National Housing Program (NHP, 1982: 106), in 1976-1980 only 17 per cent of children had spaces for playing activities in public housing areas. The remaining 83 per cent had to play either within the flats (32.6 per cent), on corridors and stairs (29.1 per cent) or on the streets (21.3 per cent).

Plate 4.4. Hoa Hong, an example of a disused kindergarten. (Source: Field Study, 1995)

Plate 4.5. A functioning kindergarten in Truong Dinh neighbourhood (Source: Field Study, 1995).

4.3. EXISTING STOCK

Despite the massive housing program over the 39 years from 1954 to 1993, the population of the Hanoi inner city increased 4 times whilst the total housing stock only doubled. This circumstance led to a decrease in the average living area[1] per person, from approximately 5 square metres in 1954 to 2.4 square metres per person in 1975 (Nguyen, D. T., 1986: 7). This was mainly caused by the destruction of housing during wars and a simultaneous increase in population.

Since 1975, the situation has improved - According to Pham and Parenteau (1991: 156), the average living area in Hanoi in 1987 was 3.9 square metres per person: this included public and private housing. The central government, local authorities and many collective sectors have all invested in housing but the resulting stock does not yet meet people's needs.

The average living area had reached 5.7 square metres per person by 1993. It was less than average when compared with that of the whole country which was 7 square metres (in rural areas, it was 7.5 square metres and in urban areas, 5.8 square metres per person respectively). In Ho Chi Minh, the biggest city of Vietnam, the figure was 7.3 square metres (Housing Management Department, 1993: 2). This figure includes all housing stock - high-rise and low-rise, public and private. Improvement has been attained by mobilizing resources from all spheres of the society, including the private sector.

Although the situation is better today, the figure shows extremely low standards in Vietnam compared with the rest of the world. In 1976, the average usable floor space of dwellings in most socialist countries ranged between 50 and 70 square metres, for instance 69 square metres in Czechoslovakia, 65 square metres in Hungary and Yugoslavia. The numbers were much higher in many capitalist nations, for instance 122 square metres in Denmark, 120 square metres in America and 109 square metres in Sweden (CIDHEC (Paris) in Wynn, 1984: 4).

Standard living area is unequal in Hanoi. Some 35 per cent of the people have a living area of less than 4 square metres while more than one third have over 6 square metres. The polarization of the population with respect to standard living area is becoming more apparent over time (see table 4.1).

The problems are most serious in public housing areas, especially low-rise ones. A survey conducted in 1980 for 4 public low-rise housing areas in Hanoi, by the National

[1] Living area is the total area of living rooms, bedrooms and half an area of balcony or loggia, not including service areas.

Living area per person (Sq. m.)	Percentage of the population	
	1981	1989
<2	3.4	7.1
2-4	39.6	28.9
4-6	32	27.6
>6	25	36.4
Total	100	100

Table 4.1. Percentage of the population in relation to standard living area in Hanoi. (Source: Le et al, 1991 in Pham, K. T., 1991: 5)

Institute for Urban and Rural Planning (NIURP) shows that the average living area per head was 3.5 square metres; the lowest was 2.18 square metres (Van Chuong) and the highest only 4.2 square metres (Truong Dinh). In these areas, 74.6 per cent of the population had a living area of 2-6 square metres whereas 4.7 per cent had less than 2 square metres per person and only 20.6 per cent of households had a living area of 6-8 square metres. No family had a living area of more than 8 square metres per person in public low-rise housing areas (NIURP, 1985: 29). Table 4.2 indicates the standard living area in 4 low-rise housing areas.

In public housing areas, the majority of households have only 1 room for all activities. A few households have 3 rooms. Of the total flats provided between 1975 and 1980, 21 per cent of the households with 4 to 9 persons had only one room (NHP, 1982: 41). (For further details, see table 4.3)

Area	1-2 sq.m./p	2-4 sq.m./p	4-6 sq.m./p	6-8 sq.m./p
Kham Thien	3.5	30.8	39	26.7
Truong Dinh	6.05	42.65	31.5	19.8
Mai Huong	3.5	57.1	20	19.4
Van Chuong	5.7	44	34	16.5
Total	4.7	43.6	31	20.6

Table 4.2. Percentage of households in relation to standard living area in selected public housing areas. (Source: NIURP, 1985: 30)

Number of rooms	HOUSING AREAS				
	Kham Thien	Truong Dinh	Mai Huong	Van Chuong	Total
1	59.3	46.3	57	76.4	57
2	33.8	53.7	34	18.9	38
3	6.9	0	9	4.7	5

Table 4.3. Percentage of households in relation to the number of rooms. (Source: NIURP, 1985: 30)

Although the average living area was so low, 22.8 per cent of households also had to devote living space for work purposes. In these cases, an average of 31.8 per cent of the total living area was used for work (table 4.4).

Area	Percentage of families with working space at home	Percentage of living area devoted to work space
Kham Thien	34	24
Truong Dinh	9.1	22.8
Mai Huong	16.2	57
Van Chuong	32.1	23.6
Average	22.8	31.8

Table 4.4. Allocation of working space in public housing. (Source: NIURP, 1985: 32)

The situation is compounded by the fact that most public low-rise houses can only be described as semi-permanent or temporary. In 1991, 40 per cent of premises were considered to be in good condition. More than half of the stock (56 per cent) required repair or renovation. Temporary housing made up 70 per cent of stock (Pham & Parenteau, 1991: 156). All single storey houses which were built in the 1950s-1980s period were planned for only 5 to 10 years use, but many have been used for 30 to 40 years, and are still occupied today. All of these are in a serious condition of decay. Some repairs have been completed by the State and the occupants, but on a very small scale. Maintenance is generally inadequate.

4.4. TYPES OF DWELLING AND THEIR EVOLUTION

Public low-rise dwellings built in the period of the 1950s-1980s were funded by the State and collective sectors. The State usually constructed housing on the scale of a neighbourhood or larger. The collective sector invested in housing on smaller scales, e.g. group or row housing.

4.4.1. State-Funded Dwellings

During the 1950s-1980s, the State invested in both high-rise and low-rise public houses. High-rise housing was mainly constructed between 1960 and 1965 (the interval between the French war and the American war), and after 1975 (the reunification of the country) whilst low-rise housing was built throughout the period. All public housing was built within the guidelines as previously described (Chapter 3).

Within the context of these guidelines and the very poor economic conditions, public housing was built according to a "collective" model, that is, households shared common service areas, such as bathrooms, toilets and even kitchens.

However, the types of dwelling did develop and change gradually over time. This section examines the evolution of the patterns of low-rise housing in Hanoi.

In the period 1955-1960, single-storey, row houses were built with or without service areas. Typically a common service area (kitchens, bathrooms and water taps) was built in the middle of a complex consisting of two parallel rows of houses. Common toilets shared by even more extensive groups of houses were usually located at the periphery of the area (refer to figure 4.9). The internal area of each dwelling at this time consisted of a living space of 25.8 square metres (one and a half rooms, in figure 4.10) or 15.3 square metres (one room, in figure 4.11) and a small private kitchen outdoors. Every two families shared one bathroom with running water at common taps.

After 1960, the types of dwelling improved. Each household had a private kitchen and a bathroom. However, these were separate from the main room(s) and there was a common footpath crossing between the living spaces and service areas (figure 4.12). Later people divided the footpaths with fences or bushes to make private spaces, thus each family had a small courtyard (see figure 4.13). Nonetheless, people still had to use common water taps and toilets.

Between 1965 and 1972, due to the war, Hanoi had to be evacuated. Public housing received little investment and the types of dwelling showed no significant change. Some public buildings and neighbourhoods were commenced in the early 1970s, but these were often not completed until 1975-1980.

Building materials for low-rise public houses during the period of 1955-1972 were traditional, namely brick for walls and tile or fibrocement for roofs.

After January 1973 (cease-fire) and notably after 1975 the construction industry developed rapidly in Hanoi. Together with high-rise construction, public low-rise housing improved significantly. In this period the State's policy was to build low-cost dwellings in order to solve urgently the housing shortage.

With the aid of international organizations, two-storey dwellings, new techniques and materials were introduced. Building materials became a combination of traditional and modern materials. Houses were constructed with walls of brick or prefabricated concrete elements with roofs of tile or concrete (prefabricated or poured on site).

Dwellings were designed as independent units during this time. The typical dwelling had two parts: one part of two storeys and one single storey. Each household had living

Figure 4.10. Single-storey dwelling, for 8 households. Built in 1955-1960 (Source: IOG, 1976: 65)

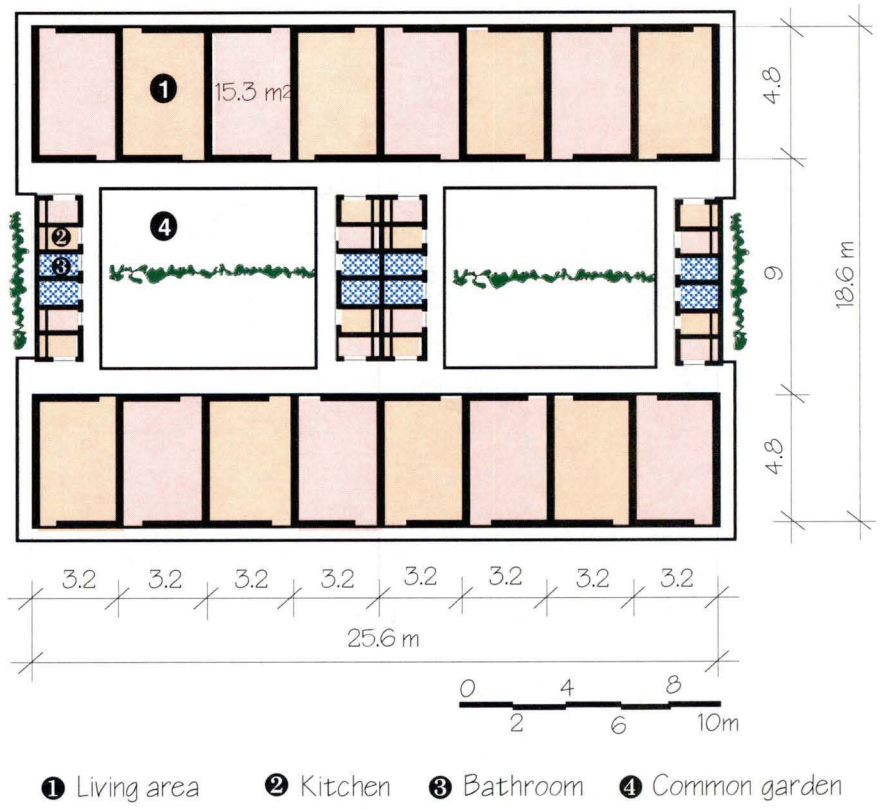


Figure 4.11. Single-storey dwelling, for 16 households. Built in 1955-1960 (Source: IOG, 1976: 66)

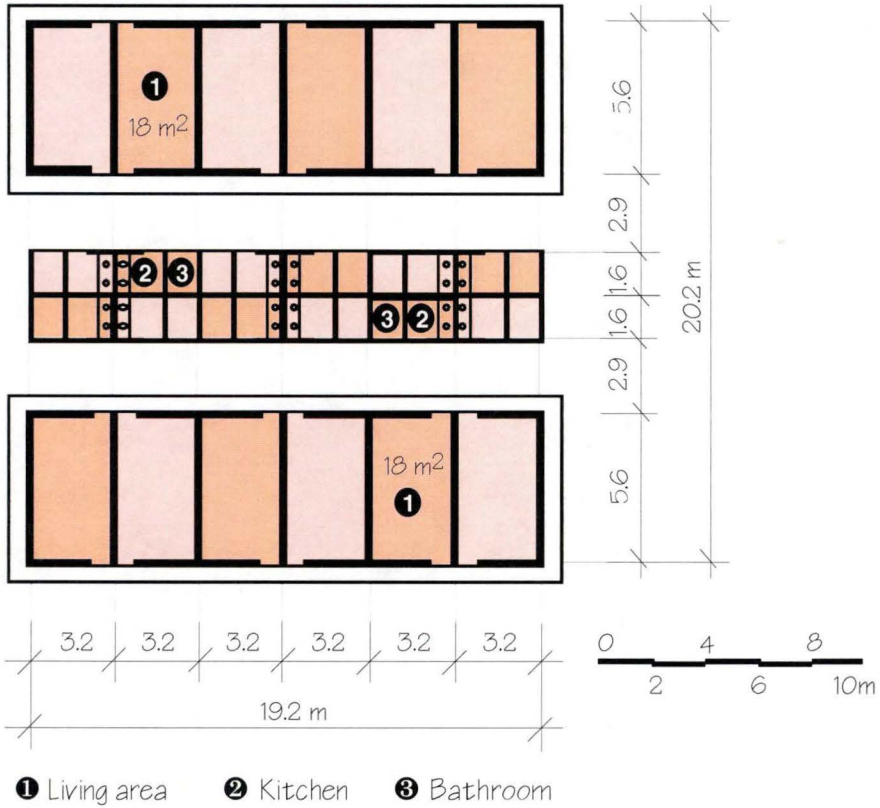


Figure 4.12. Single-storey dwelling, for 12 households. Built in 1960-1972 (Source: IOG, 1976: 28)

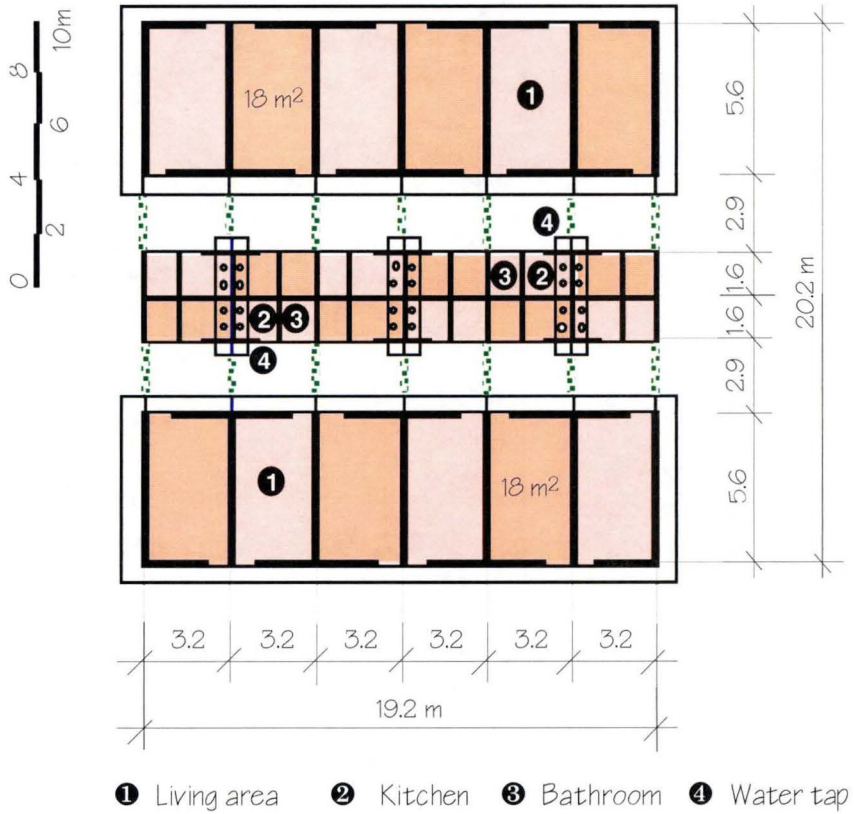
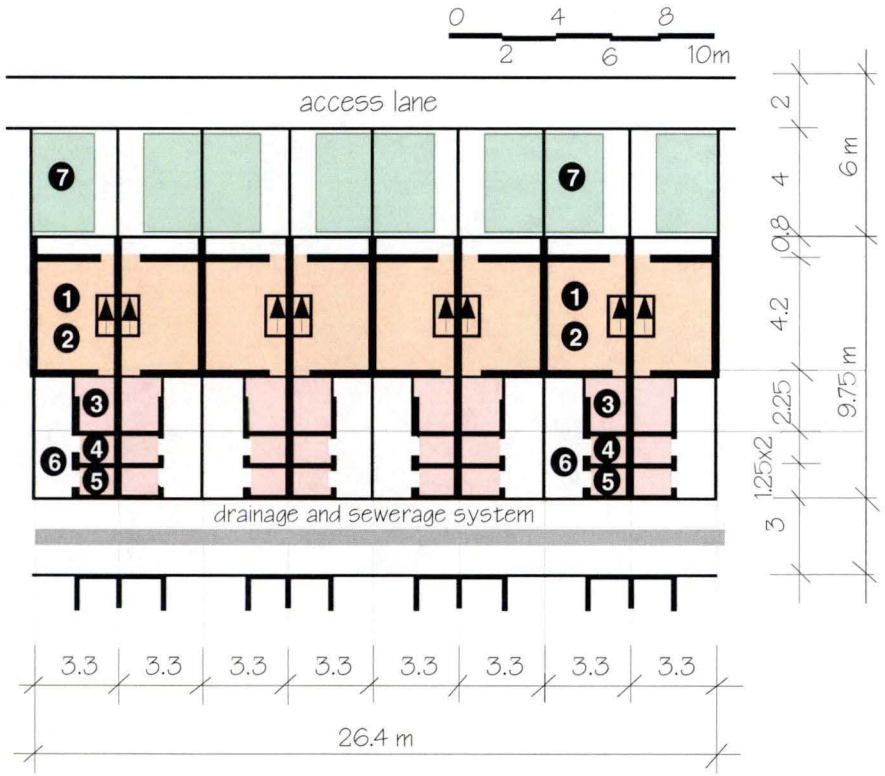


Figure 4.13. Single-storey dwelling, for 12 households with private courtyards. Built in 1960-1972 (Source: IOG,1976: 64)

spaces in the two-storey part, a private service area which included a kitchen, a toilet and a bathroom in the single storey part, plus a small garden. Nevertheless, the people still had to use common outdoor water taps. Figure 4.14 shows a row of dwelling units of this type. Details will be presented in the example neighbourhood (Chapter 6).



❶ ❷ Living spaces in the ground and the first floor, ❸ Kitchens, ❹ Bathrooms, ❺ Toilets, ❻ Courtyards, ❼ Gardens.

Figure 4.14. Two-storey "independent-dwelling" units. Built in 1970-1975 (Source: NIURP, 1985: 22)

In the period between 1975 and the beginning of the 1980s, the standard of low-rise housing improved. Dwelling units were independent with all service areas indoor (figure 4.15). However, due to the limited funds and the enormity of the housing problem, the standard living area remained low and the common housing situation remained that of rows of multi-households: this resulted in many uncomfortable and disadvantaged people.

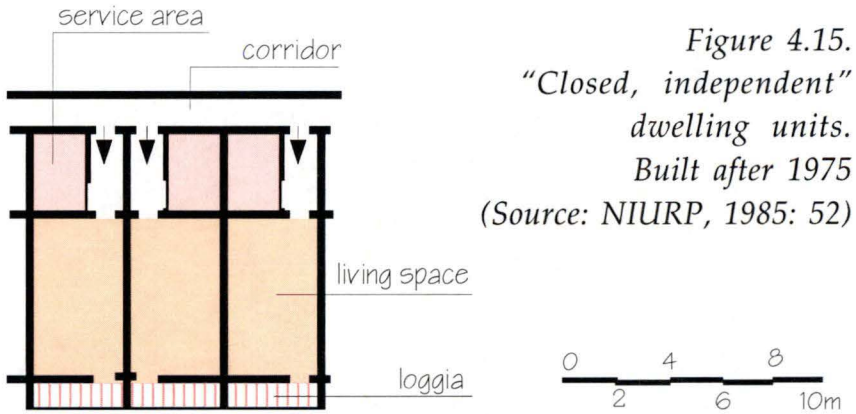
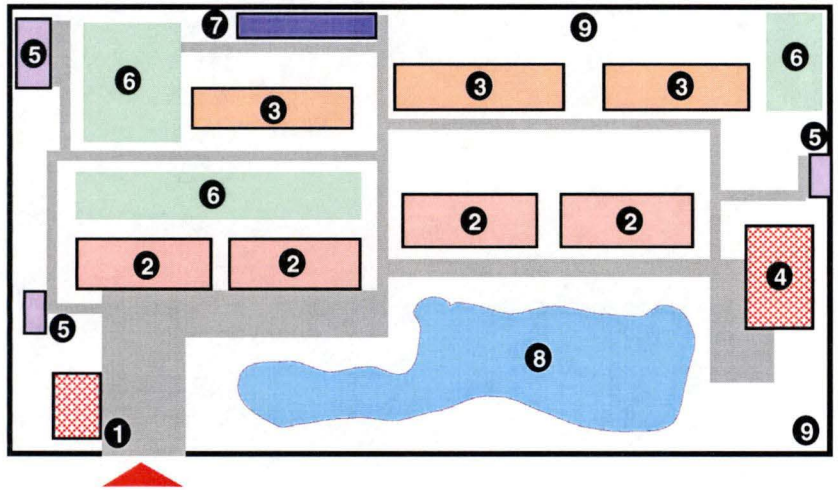


Figure 4.15. "Closed, independent" dwelling units. Built after 1975 (Source: NIURP, 1985: 52)

4.4.2. Collective-Funded Dwellings

Besides the State's investment in housing, collective sectors of the economy were also encouraged to invest their own capital in housing for their employees. Such housing areas were planned both inside and outside the working places. As in State housing, building materials were simple and traditional with walls of brick and roofs of tile or fibrocement. There were 2 types of collective-funded dwellings.

- In the first type, dwellings were laid out within the precinct of the work place, and were designed mainly for single employees who usually had only one room or shared the room with others. Residents used the same collective facilities as the working sector, such as refectories, bathrooms and toilets (figures 4.16 and 4.17).



❶ Gate and Reception, ❷ Working Buildings, ❸ Dwellings, ❹ Refectory and Kitchen, ❺ Toilets, ❻ Vegetable Gardens, ❼ Pigsty, ❽ Lake, ❾ Fences.

Figure 4.16. Housing and work place within the precinct of an office. (Source: NIURP, 1985: 10)

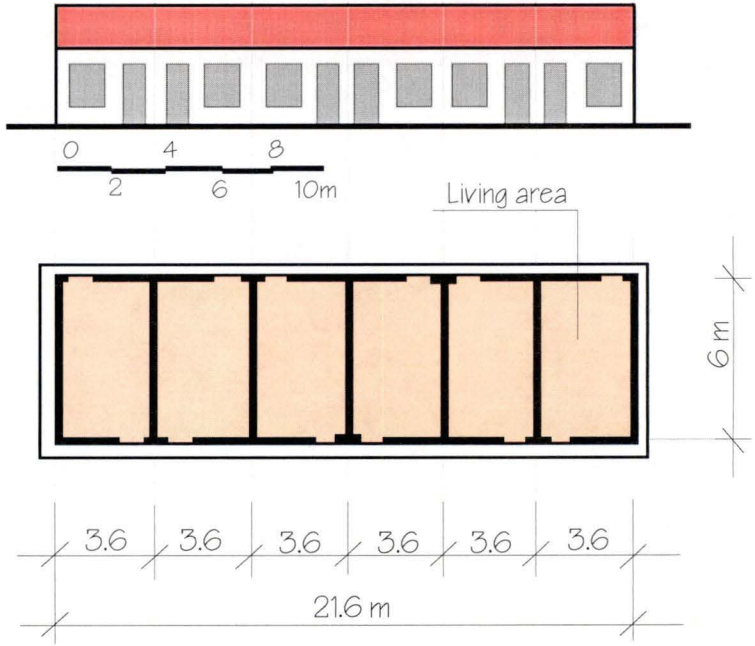


Figure 4.17. Collective-dwelling units -Type 1. (Source: IOG, 1976: 39)

This type of housing remains today. However, it is often occupied by families with the housing area separated from the work place by a fence. The residents build service areas within the areas of open space (plate 4.6).

Plate 4.6. Houses are within the site of the office. In the background is the office building. (Source: Field Study, 1995)

■ In the second type, housing was built outside the work place in public areas shared with other offices and companies. Land for this type of housing was distributed by the State. Investment was a joint-venture between the State and the collective sectors. These types of dwelling were designed in the same way as the state-funded dwellings described earlier. Plate 4.7 shows a housing area of this type.

Plate 4.7. A housing area of the Ministry of Energy, Hanoi. (Source: Field Study, 1995)

4.5. SUMMARY AND COMMENT

Public low-rise housing in Hanoi is the legacy of the central subsidised economic mechanism. Built in very difficult conditions, it is now in extremely poor condition. Problems occur at all levels, from that of the general context (e.g. the condition of infrastructure systems) to the physical condition of individual dwellings. Problems may be summarised as follows:

Roads and streets

These networks in residential areas are usually of a grid or tree-like branching pattern. Streets are narrow and insufficient for many essential and emergency services, including fire, ambulances and rubbish collection. Streets are of very poor quality and always encroached upon by expanded housing, and in some places, by uncollected rubbish. Roads are frequently congested even though the major means of movement are bicycles and motorcycles. Public transportation is very limited indeed.

Open space

Open spaces and green areas are grossly inadequate. The condition is very poor environmentally with excessive pollution of the environment, and small or non-existent play areas for children.

Public Utilities

Electricity supply is the only adequate service. Water supply is inferior, in both quality and quantity. The critical problems are the extensive sharing of common taps and the considerable loss of water through leakage.

The knottiest matter is the system of drainage and sewerage. The network is totally insufficient and is poor even by Third World standards. The use of common toilets, and open systems of drainage and sewerage contaminates the environment and is a serious health risk.

Community Services

The network of community services is also inadequate and has not met the demand for goods. Cultural and educational buildings have been extended insignificantly while the population has increased rapidly in most residential areas. The bureaucracy of the subsidised mechanism has prevented the satisfaction of residents' needs. Today under the mechanism of partially free market economy where supply is by public and private sectors, the problem continues due to lack of space for the various activities. This circumstance results in the people's encroachment upon the already narrow streets and spaces in order to carry out business which contributes further to congestion. It would not be incorrect to suggest that people will only stop violating the streets and spaces when no space is left for

them to violate. No penalty has been applied to their activities so far.

Overcrowding

Densities are acute with families frequently having no private room. There are also social problems with parents and children commonly having to sleep in the same room. Indeed, living and sleeping for all family members often occurs in one space.

Obsolescence

Most dwellings have exceeded their planned life-span, and are in a thoroughly deteriorated (and demolishable) condition. This causes occupants to feel unsafe and of low esteem. Utilisation of common facilities also results in discomfort for many people.

There have been housing repairs, both by authorities and individuals but these have not been sufficient to bring any marked improvement. Indeed, some improvements lead to worse conditions, for houses are expanded with even more temporary and low-cost materials than they were originally built with. This is often illegal construction.

Public Ownership

The policy of distributing housing free of charge was a burden for a poor State. At the same time there was no incentive for people to build their homes themselves. People, especially government employees, simply waited for their house allocation from the government.

All land and public housing belongs to the government, so that the occupants in public housing have not wanted to invest even in repairing their homes. Improvements that have occurred have mostly involved materials which are temporary and low-cost, like bamboo and bituminous paper. This has added to the safety problems and the chaotic nature of the areas.

Co-ordination

One of the difficulties of managing public housing areas is the co-operation between the various bodies involved in construction and management of public housing areas. For example, housing has been managed by local Councils, water supply by Water Factories, electricity by the Energy Department, schools by the Educational Department, cultural houses by Cultural Department, kindergartens by the Committee for Children, and so on.

Similar problems are to be found in the area of transportation. Too many organizations are involved in this sector and their works overlap and often conflict, for instance between the Ministry of Transportation and Communication, the Ministry of Construction and the

Hanoi People's Committee. Hanoi also lacks traffic rules and enforcement, which leads further to disorder and congestion on the streets. At the moment, there is "no comprehensive booklet or other document aimed at describing to the public what rules are applicable in Hanoi's traffic" (SIDA, 1993: 80).

4.6. CONCLUSION

The reasons for the above circumstances are both economic and policy based. The attempt to extend housing to all people in a poor war-time country was admirable but difficult to achieve. Poor materials and hasty construction associated with the idea of low-rise housing as temporary construction have aggravated the problem. Also, the idea of substantially "free" housing has itself limited funds for maintenance and hastened deterioration. Finally, the location of many housing areas on low-lying land led to waterlogging in the flood season and this has had further adverse effects upon the condition of the houses.

Public low-rise housing in Hanoi has provided home and shelter for the majority of the city's people, especially after the wars. However, due to the lack of initial capital and subsequent maintenance funds, hasty construction, and limited design and management experience, this housing today has many problems. These range in scope from the social to physical and in scale from whole neighbourhoods to individual dwellings.

To improve living conditions, all public low-rise housing areas must be upgraded. Solutions will have to cover all aspects of their construction and management from ownership through infrastructure to the dwellings themselves, and radical intervention is required.

There are two representative models of public low-rise housing areas in Hanoi: single-storey and two-storey houses. The latter model was mainly constructed using prefabricated concrete elements which is particularly problematic for upgrading. It is, on the other hand, too expensive to be demolished. It is also not easy to repair due to its structure. Yet it does provide a valuable resource. Chapter 6 will examine the particular problems of a two-storey, prefabricated housing area in Hanoi, namely the neighbourhood of Truong Dinh, with a view to framing a solution.

Chapter 5 HOUSING IN TRANSITION: THE NEW ECONOMIC MECHANISM (From 1986 to the Present)

5.1. HOUSING POLICY AND PUBLIC HOUSING IN TRANSITION

The Sixth Congress of the Communist Party of Vietnam held in 1986 offered a great turning-point in the nation's economic development. A decision was made to move from the subsidised economic mechanism to that of a partially free market economy. Since then the whole country, but notably Hanoi as the centre of the change, has been quick to undergo a major transformation. Housing policy in this new era is no exception.

In the centrally planned mechanism, the only two main legal sectors which took part in economic activities were the state and the collective sectors. During this time, all branches and sectors of the economy, including housing

were subsidised by the State. The government was responsible for housing provision and the people were wait-listed for allocation of a dwelling.

The government realised that it was not capable of solving housing problems itself and recognised that the people had enormous potential to develop their own housing. In 1985, the government formulated a policy for co-operation between the State and the people in the construction industry. This policy covers not only new construction, but also the renovation and maintenance of existing housing. It aims at mobilising the resources of the people, both labour and capital.

With the new economic mechanism, the State has relinquished the role of providing houses at virtually no cost and of building extensive public housing. As compensation for this change, government employees receive a higher allowance to cover expenditure on housing.

The significant aspect of the change in mechanism is that the government transfers responsibilities for housing from the State to the lower levels. As a result, the collective sector and the people themselves now take part in housing development with the State's assistance, facilitation and incentives. Housing built by individuals is known as "self-help housing".

With the boom in economic development, there is also a boom in house construction. Every sector builds and renovates houses in Hanoi. The government has not abandoned investment in housing altogether but participates by way of limited public houses and "State-Individual" housing. However, most self-help housing is now built by the private sector.

This section explains public and State-Individual housing, new construction and renovation. Self-help housing will also be covered in Section 5.2.

5.1.1. New Construction

i/ Public Housing

In the early stages of the new economic mechanism, the government continued to participate in public housing, but at a reduced scale of investment. Between 1986 and 1990, the living area built annually by the State equated to only a half that for the period 1975-1985 (Phung Minh, 1990 in Pham, K. T., 1991: 10). This was for people with priority needs. Rent was also applied to housing after 1986, although this is small, amounting to only 2-3 per cent of the occupant's income (Andersson *et al*, 1991: 18).

In addition, the government has constructed some new housing since 1987. This has been in the form of condominiums for sale. However, this type of housing is inflexible and unaffordable to many people, notably the poor.

ii/ State-Individual housing

State-Individual housing results from two processes:

- From co-operation between the State and people, and
- From co-operation between the collective sector and the people, with or without the assistance of the State.

In the first type, the State prepares and invests wholly or in part in land and the basic system of infrastructure. The people contribute investments and local governments contract with the relevant organisations to design and build houses. The people involved are government employees, army soldiers, co-operative members and labourers (including retired people).

In the second type, organisations (the collective sector) develop housing themselves with their own capital, and with or without the State's budget. For example, an office, company or university builds housing and distributes flats to its employees, who have contributed. These people are chosen in accordance with their working status and duration. Ownership belongs to the collective organisation where there is no assistance from the State (GoV, 1994a: 356).

To offer some flexibility of use and responsiveness to the economic resources of each household, the collective sector will usually construct only the basic parts of a building, such as the structure and systems of infrastructure. The people do the finishing work, such as interior decoration, and installation of service equipment. This type of construction has met people's demand and economic capability.

Land for housing is provided by the State, in conformity with the master plan of the city. The land is in State ownership and collective sector organizations must apply for the right to use the land. Due to the limited land available in urban areas and the great demand for housing, the collective sector invariably builds high-rise housing (i.e. 5 storeys in Hanoi) if it is the housing developer. However, it may also distribute land for individuals to build houses for themselves (see Section 5.2) and this is the type of situation where low-rise housing is built now.

5.1.2. Renovation

In old established public housing areas, there exists a State policy to assist individuals with housing renovation but no major work has been forthcoming under this policy. The

reason is that State funds are concentrated on new construction and, anyway, people are not keen to invest in any substantial way in houses which they do not own. The ownership of this type of housing remains with the government and the occupants have to pay a rent of about 2-3 per cent of their income which is insufficient for maintenance and administrative purposes.

In housing areas built by the collective sectors, people have to pay rents at the same rate as those in State housing. This rent goes to the collective sector organization which owns the houses. In some areas, the people contribute funds to the collective owner for the repair of their homes. In some instances, the people actually rebuild their homes, so that they may be classified as self-help housing.

5.2. SELF-HELP HOUSING

Self-help housing is a widespread phenomenon in Vietnam today. It is occurring everywhere in the cities and country. Self-help housing is not entirely a new phenomenon, especially in rural areas where housing has been constructed by local initiative, materials and labour.

In urban areas, the situation (until 1986) was different: the government provided housing and land was not for sale, with building materials controlled by the State. It was almost impossible to build a private house. Nevertheless, public houses were improved and expanded by the people. A 1980 survey showed that 34 per cent of households in public housing in Hanoi had extended their homes and in some places, this figure was as high as 45 per cent (NIURP, 1985: 30).

Since 1986, however, new housing policies have resulted in the government trying to assist, facilitate and encourage people to build houses themselves. The approach is:

- That people do what they can do themselves, and
- Government and local authorities support what people cannot do themselves.

This coincides with the introduction of the new economic mechanism and the three significant changes under the new mechanism are: i/ land is owned by the State but people can sell and buy the right of using it; ii/ building materials are made available on the open market; iii/ private entrepreneurs are allowed to compete with state-owned companies to construct housing and manufacture building materials.

5.2. 1. Land for Self-Help Housing

While all land remains in State ownership, land for self-

help housing comes from three sources: land distributed directly from the State, land in collective sector precincts and land transacted by the people (i.e. the land use right).

- The State provides land directly for government employees, army soldiers, co-operative members and labourers who are homeless or living in substandard conditions, that is, less than 2 square metres per person. Subdivision must conform to the master plan of the city, and plot areas range between 40 and 60 square metres per household. An example street block subdivision can be seen in figure 5.1. The State prepares the sites and provides the main streets and main power, water, drainage and sewerage networks. The people invest in the houses and reticulation of infrastructure to their houses from the "mains".

- Land used for development by the collective sector may either be land provided by the State, or land already located in the precinct of the collective organization. The organisation distributes the land to their employees. Plots again range between 40 and 60 square metres per household. In new developments, the people contribute to investments in the housing and connection of infrastructure. In existing areas, the collective sector reallocates land to the occupants who are then responsible for the repair of the existing infrastructure systems and for the upgrading of their homes.

- Today, even though all land belongs to the government, people can buy or sell the land use right. However, they have to pay a tax for the transaction of that right (5 per cent of the cost). Many self-help houses have been built on this kind of land (see plate 5.1).

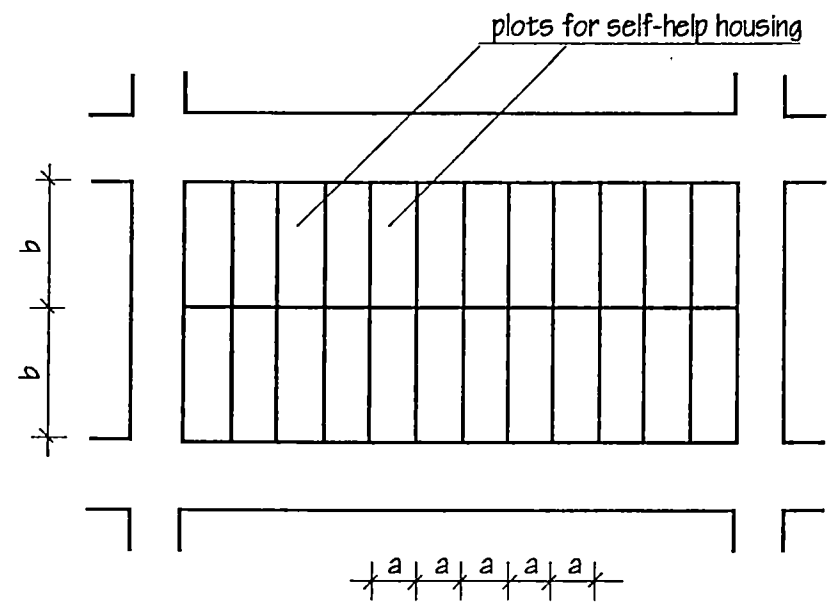


Figure 5.1. Example of subdivision for self-help housing
Note: a = 3.5-5.5 metres, b = 10-15 metres

5.2.2. Capital for Self-Help Housing

One of the surprises to many people in Vietnam today is the seeming disparity between national per capita income and the vigour of the self-help housing movements. Many houses are constructed at a cost of between US$20-30 000 whilst the Gross National Product (GNP) of the country is a mere US$200 per annum per head.

It is very difficult to assess where the money comes from. It should be noted that the national figure is an average while there are big discrepancies between urban and rural incomes. It is also worth noting here that there is no system of income tax in Vietnam. A 1995 Field Study suggested five major sources for private investment in housing:

- Money saved or property inherited by people from others.
- Money earned from overtime work. As the private sector is growing very fast in Vietnam, money can be earned through overtime work especially by those who have business skills.
- Money sent from family members who work overseas. At the moment, many Vietnamese work overseas, especially in Europe.
- Financial assistance gained from relatives living permanently overseas.
- Money borrowed from relatives and friends.

5.2.3. Self-Help Housing Construction

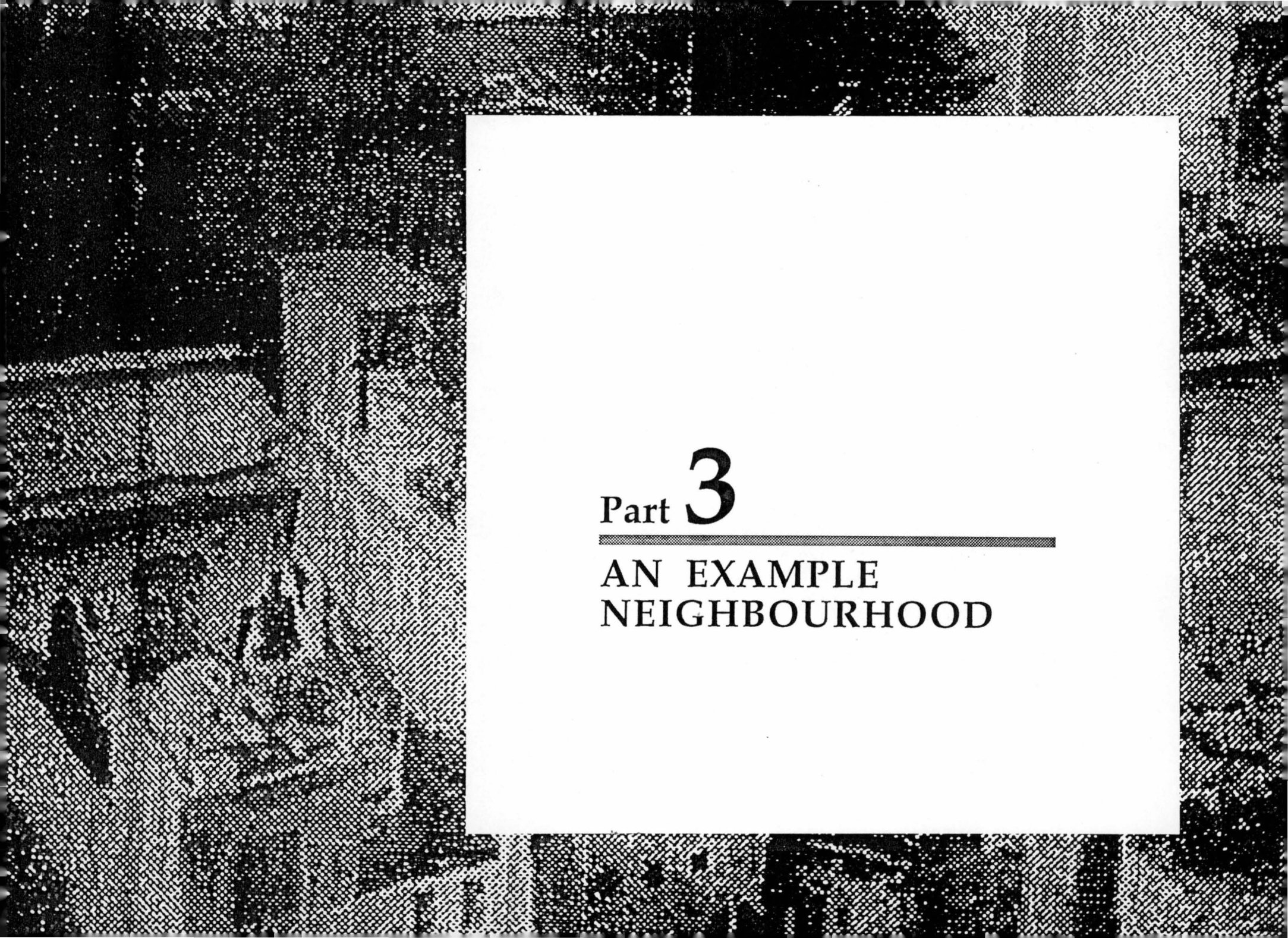
Under the new economic mechanism, self-help housing can be constructed by private builders, State-owned or private companies, or even by the people themselves. The people must contract with registered designers and plans must be approved by the authorities.

In response to the operating principles of a market economy and to meet the demands of customers, private shops and other services have also developed dramatically in residential areas in Hanoi, especially in low-rise ones (see plate 5.2). Although providing better services, this situation exacerbates the already narrow and crowded public low-rise neighbourhoods. Further , it cramps living areas of the residents.

In conclusion, the significance of this chapter is not only to explain housing development under the new economic mechanism but also to emphasise the resourcefulness of the people in generating funds for building and improving housing. This is especially the case where they are given long-term security in the right to use land for residential building. These factors are very important when considering future planning for the improvement of public low-rise housing areas.

Plate 5.1. Self-help housing in Hanoi. The wide doors are aimed at opening shops or services - Above. (Source: Field Study, 1995)

Plate 5.2. Many shops and services (where there are advertisements, some others have no ads.) exist in Truong Dinh neighbourhood - Right. (Source: Field Study, 1995)



Part 3

AN EXAMPLE NEIGHBOURHOOD

Chapter 6 TRUONG DINH, HANOI

6.1. INTRODUCTION

The neighbourhood urban typology was imported to Vietnam in the early 1960s. However, it was not applied to low-rise housing areas until the early 1970s. Since the 1970s, all new residential developments in Vietnam have been implemented to conform to this model.

Between 1970 and 1975, new building techniques and materials were used in public housing in Hanoi. Public housing was erected using prefabricated concrete elements.

Thus, besides the conventional housing construction methods, some residential areas have been built following the model of neighbourhood and using prefabricated materials. The housing area examined here is a residential neighbourhood which has both of these attributes. It is the two-storey, prefabricated neighbourhood of Truong Dinh.

Because of the general data shortages in Vietnam, this project relies upon available desktop data of the last decade and the results of my own field observations made early this year.

Truong Dinh neighbourhood was built in 1970-1975. It is located at the then new development site, 6 kilometres south of the city centre (figure 6.1). Like other public housing areas, houses in Truong Dinh were allocated to government employees.

During the 1970s-1980s, Truong Dinh neighbourhood (see figure 6.2) was viewed as the best example of a low-rise public housing area. It consisted of "closed and independent units" each with three different function areas: living, service and garden. Further, the neighbourhood has "a relatively good system of community facilities and infrastructure" at its centre (NIURP, 1985: 18).

6.2. GENERAL INFORMATION

Truong Dinh neighbourhood has an area of 11.8 hectares. It was designed for 4 400 inhabitants with a total living area of 24 600 square metres. The average area of all land use for each person was 26.8 square metres. The neighbourhood consists of 109 houses with two-storey living and single-storey service areas plus open space and community buildings (see figure 6.3).

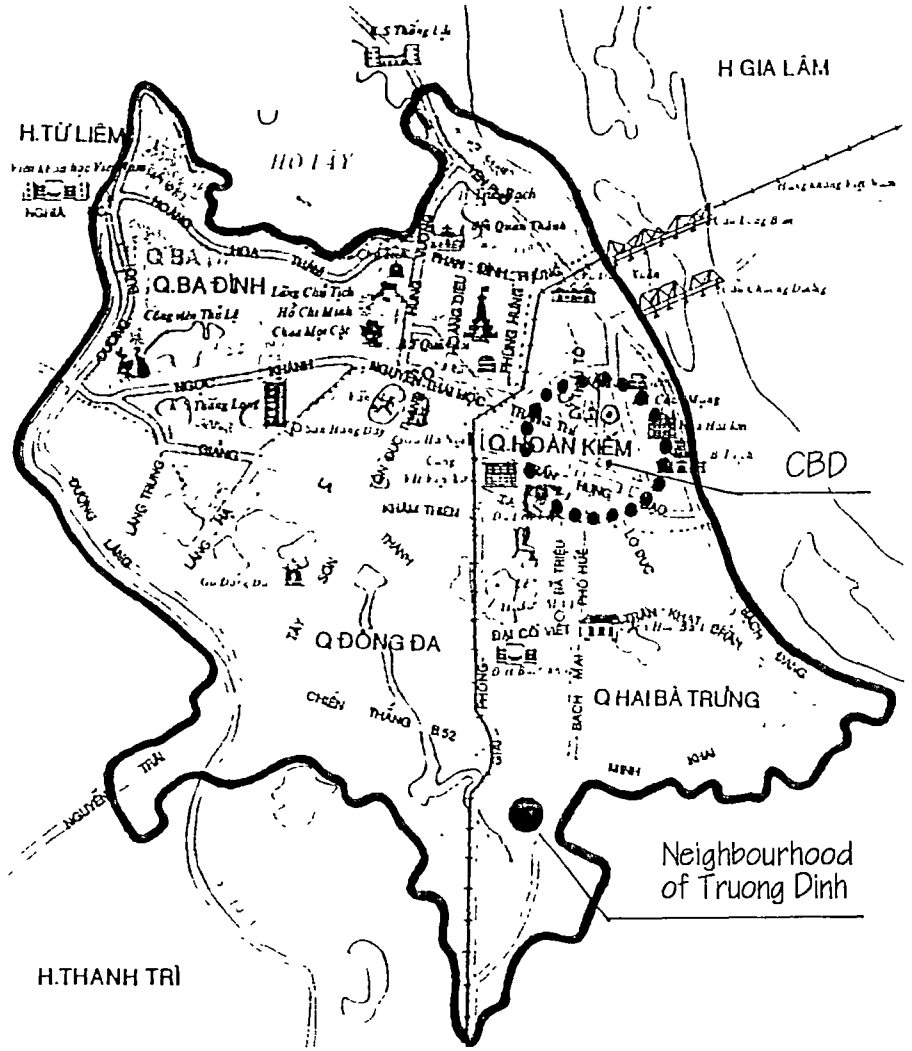


Figure 6.1. The location of Truong Dinh neighbourhood in the Hanoi inner city. Scale 1/75000. (Source: The Survey and Map Department of the State of Vietnam, 1990)

Although the standard living area intended for the design was 6 square metres per person, the figure for the first distribution in Truong Dinh was in fact 4.2 square metres. By the year 1975, 5 860 people had been allocated housing in the neighbourhood (i.e. 1460 more than the intended population). The original inhabitants of the neighbourhood comprised the following strata (social classes):

- Workers: People working in factories or enterprises,
- Intellectuals: People working in the research and educational sector,
- Officers: People working in other sectors (e.g. office workers), and
- Others: People like policemen, army soldiers.

During the early settlement, households usually consisted of more than one social class due to the number of family members: 47.57 per cent of the households had two, and 28.16 per cent had three or more classes. Only 24.27 per cent were "simple" families, with one social class (NHP, 1982: 72).

The neighbourhood has changed significantly since it was formed. This includes the population density, and the form and condition of the building, and this is especially the case since the country adopted the new economic mechanism in 1986. However, no survey or study has been conducted since 1985 to show these changes.

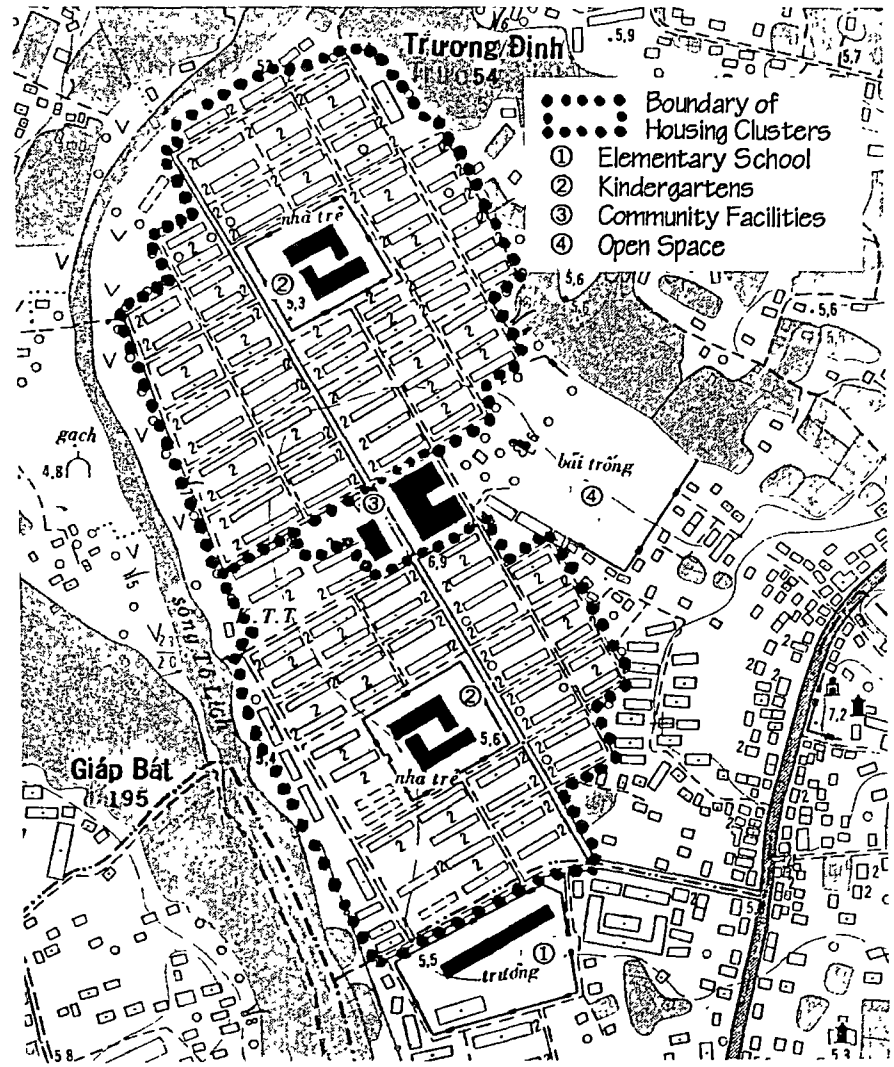
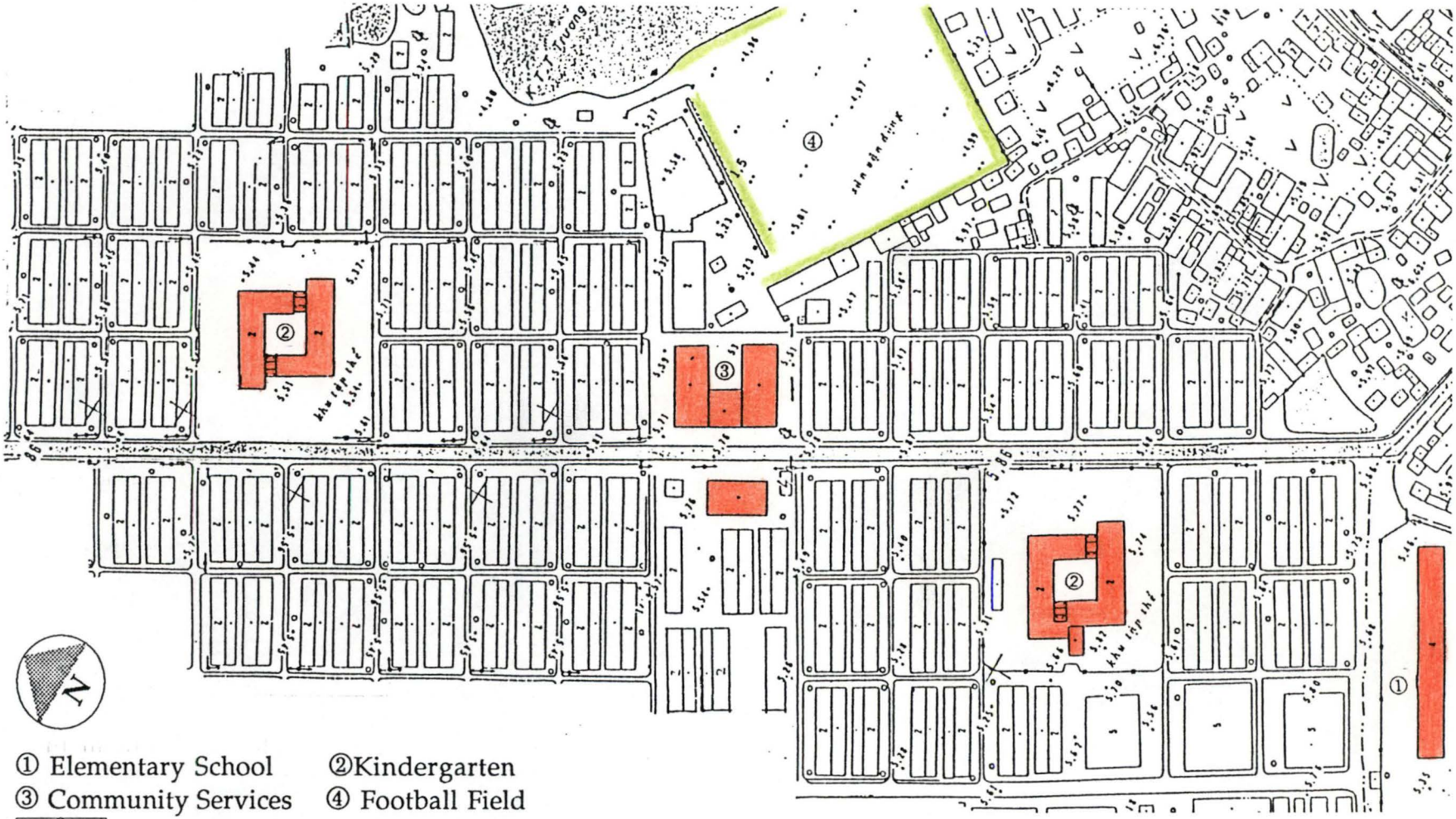


Figure 6.2. Map of Truong Dinh neighbourhood, scale 1/5000. (Source: The Survey and Map Department of the State of Vietnam, 1980, Map F-48a-116 (17))



① Elementary School ②Kindergarten
③ Community Services ④ Football Field
2 and single storey housing
Private housing

Figure 6.3. Map of Truong Dinh neighbourhood, scale 1/2000. (Source: The Survey and Map Department of the State of Vietnam, 1983, Map F-48a-116 (17-d))

6.3. STREETS AND OTHER PHYSICAL INFRASTRUCTURE

6.3.1. Streets and Open Spaces

In Truong Dinh, there are two kinds of streets: collector streets which connect the neighbourhood to the wider city, and access lanes which serve every dwelling unit. Service footpaths were designed for rubbish collection and infrastructure repairs: these were placed between the backs of housing rows.

The neighbourhood has a grid of streets, lanes and service paths (figure 6.5). The collector streets have a width of approximately 5 metres whilst the lanes are only 2 metres wide.

Like other public housing areas, due to the shortage of living area, the people in Truong Dinh have encroached upon all the available open spaces, including those areas designated for greentrees. Figure 6.6 shows the figure ground of the designed plan of the neighbourhood. Plates 6.1, 6.2 show today's situation. In the latter, the inhabitants have extended their homes up to the edges of streets and onto most footpaths, under which the system of infrastructure is located (see plates 6.3 , 6.4 and 6.5, and figure 6.4). The already narrow streets appear to be much narrower as a result of the extensions. To reduce the speed of motorcycles and to avoid accidents caused by them, the residents have put columns and blocks into the streets (usually of metal or brick, see plate 6.6).

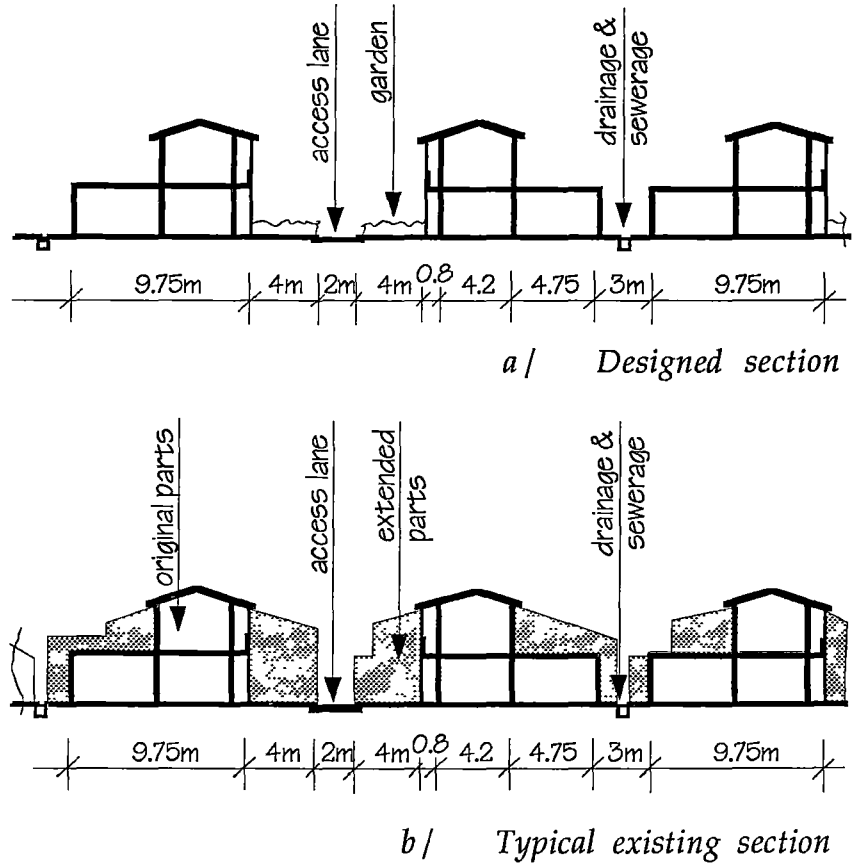


Figure 6.4. The situation of encroached open spaces. (Source: Field Study, 1995)

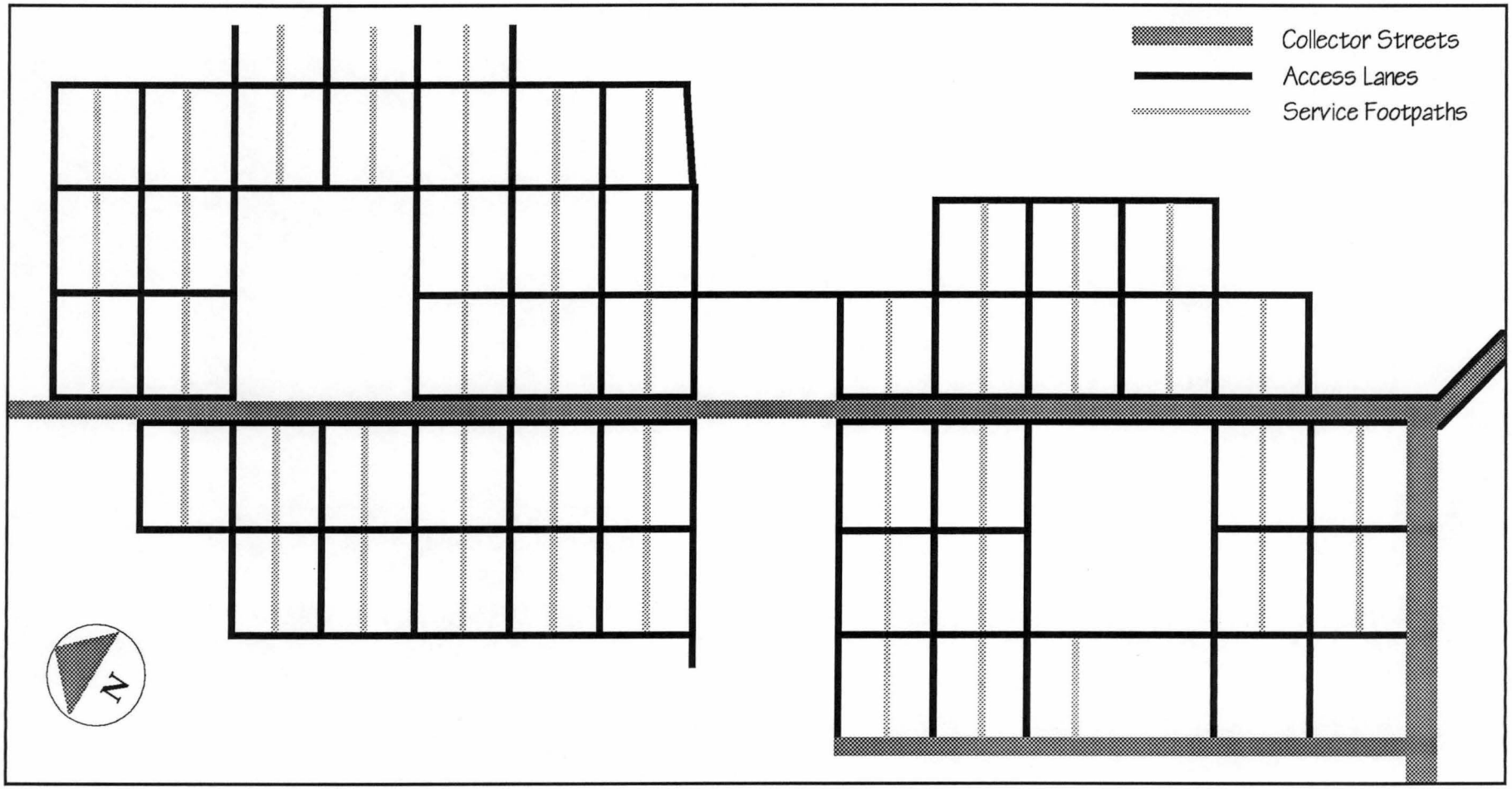


Figure 6.5. System of streets and footpaths in Truong Dinh. Scale 1/2000. (Source: Drawn on Map F-48a-116 (17-d), The Survey and Map Department of the State of Vietnam, 1983)

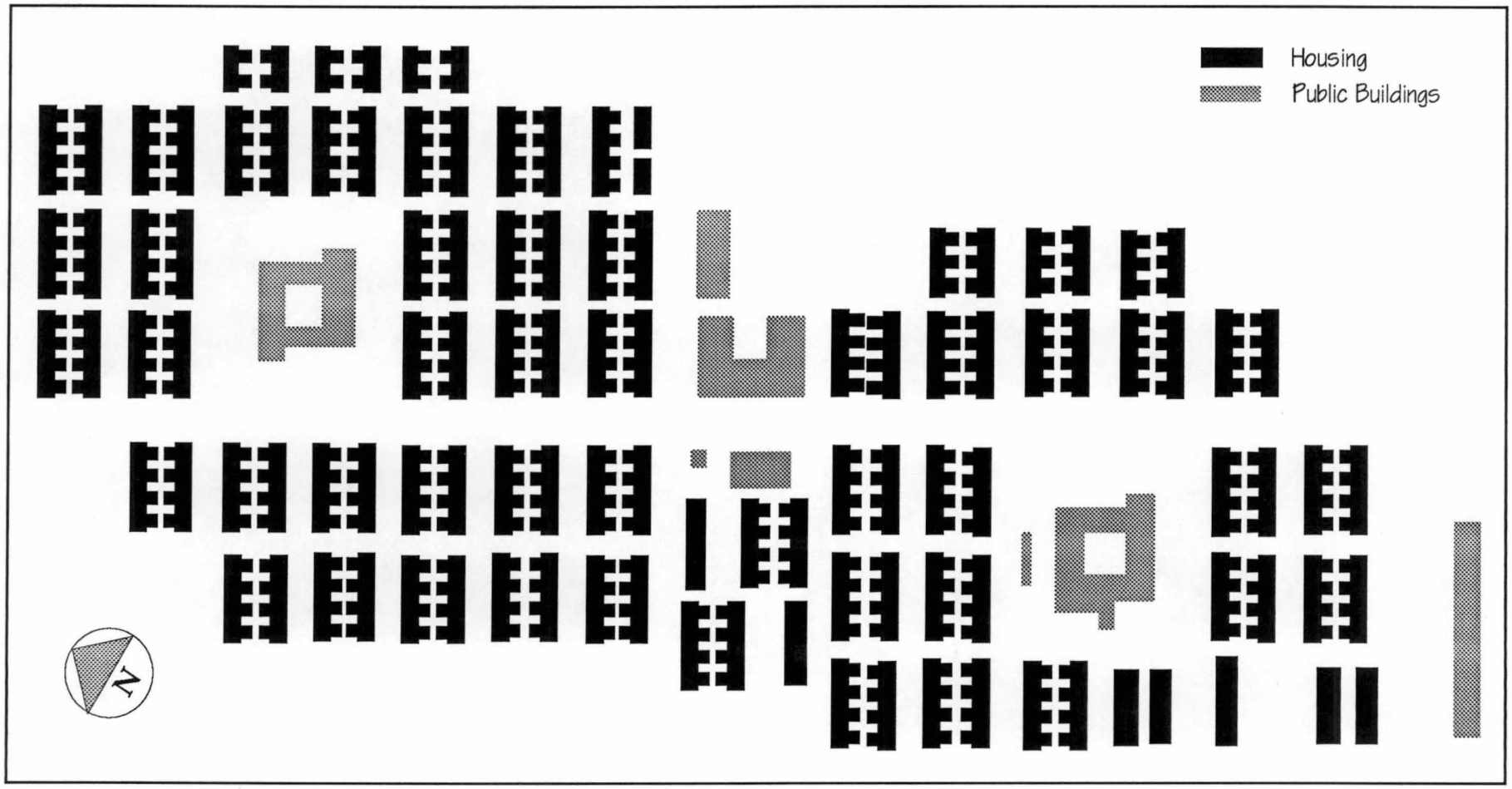


Figure 6.6. Figure ground of Truong Dinh neighbourhood, designed plan. Scale 1/2000. (Source: Drawn on Map F-48a-116 (17-d), The Survey and Map Department of the State of Vietnam, 1983)

Plates 6.1 and 6.2. Truong Dinh neighbourhood today.
Most open spaces have been encroached upon.
(Source: Field Study, 1995)

Plates 6.3 and 6.4. Houses encroach upon street and open space, where the gardens were located.
(Source: Field Study, 1995)

Plate 6.5. *Houses encroach upon footpath and infrastructure system - Left. (Source: Field Study, 1995)*

Plate 6.6. *A column placed in the street to reduce speed of motorcycles - Below. (Source: Field Study, 1995)*

6.3.2. Transportation

Truong Dinh is 6 kilometres from the city centre where the majority of the neighbourhood's inhabitants work. According to a study by the National Housing Program (NHP, 1982: 95) the average distance for people travelling to work from Truong Dinh was 5.2 kilometres and the time for one trip was 40 minutes due to the means of transport and street congestion. This 1982 study also shows that public buses catered for only 13 per cent of the neighbourhood's working people, including commuters. 75 per cent used bicycles, 8 per cent went on foot and 4 per cent went to work by other means: motorcycles, trams and office-owned cars (ibid, p. 96).

Today the circumstances have not changed dramatically. Public transport remains the minor carrier for working people (refer to Section 4.1). The majority of people still use motorcycles and bicycles although the number of motorcycles has increased since the 1982 study. Providing space for motorcycles and bicycles is problematic for they reduce each family's living space significantly.

6.3.3. Other Physical Infrastructure

Originally water was supplied to the neighbourhood through common taps. However, due to insufficient pressure, low capacity, and poor quality of the pipes, water supply has always been inadequate and irregular, especially in summers.

A study by the National Institute of Sociology in 1982 showed that in summers, the average time spent by each family queuing for water in Truong Dinh was 1 hour per day. Half of the people had to take water at night (NHP, 1982: 94). The study found that the utilisation of common taps also resulted in excessive water losses and poor hygiene: they contributed to fatigue and sometimes caused arguments between the residents. The location of taps was also the place for taking clean water, washing up and washing clothes, and even the place for children to bath. It was reported that "there is too little clean water whilst there is too much wasted water in the neighbourhood" (Nga My, 1994: 76).

Today most families in Truong Dinh connect the water supply network to their houses themselves without permission. To maintain a supply, however, they have to build underground tanks or use machines to pump water to roof-top tanks over the service areas.

Electricity supply in general has been inappropriate in the neighbourhood. The electricity network is an open system (see plate 6.7). The quality of wire and management are inadequate resulting in breaks in supply. In previous times, the electricity problem was that of insufficient supply capacity. Today, supply capacity is sufficient but the actual quality of the network remains a problem. Breaks in supply render the neighbourhood unsafe at night because street lights are frequently not operational.

As is common in the rest of Hanoi, drainage and sewerage in Truong Dinh is a combined network of closed (piped) and open (drains) systems. Mixed water (storm and waste water) usually flows onto the streets of the neighbourhood in rainy seasons. This water runs directly through the area to the nearby To Lich River without treatment.

The infrastructure reserves are usually encroached upon and frequently built over. The improvement of the old network cannot take place due to this encroachment whilst there is no available space for constructing a new system (refer to figure 6.4 and plates 6.5, 6.8).

In Truong Dinh, only 53.7 per cent of households have private toilets (see also Section 6.5) and the quality of these is poor. In 1985, only 6.3 per cent of the total toilets were lavatories, the remaining 93.7 per cent being mainly double-vault latrines (NIURP, 1985: 32). Today many families have improved their toilets but generally conditions throughout the neighbourhood are inadequate.

Rubbish is not completely collected everyday. It is mainly left on the streets or at available spaces in the neighbourhood, usually at the rear of housing rows (at the place of infrastructure system, see plate 6.8). This phenomenon is widespread in Hanoi. It results from the lack of tractors for rubbish collection and public dustbins, the limited space in the housing itself, as well as from the attitudes of the inhabitants.

These poor hygienic conditions together with the high densities of buildings and people in Truong Dinh combine to give rise to disease and biological hazards: flies, mosquitoes and rats plague the people. Dangerous animals such as snakes are also found in the neighbourhood.

Plate 6.7. Electricity network in the neighbourhood - Above (Source: Field Study, 1995)

Plate 6.8. Uncollected rubbish exists in the neighbourhood - Right (Source: Field Study, 1995)

6.4. COMMUNITY FACILITIES

Truong Dinh was the first public low-rise housing area in Hanoi constructed to adhere to the neighbourhood typology.

In theory, there was a complete system of community facilities in the neighbourhood centre like a school, kindergartens, shops for food and manufactured goods, and other daily services (refer to figure 6.2). Administrative management depended upon the number of inhabitants registered: 5 860 people in 1975. These people were, in theory, fully provided with services in their own neighbourhood, such as health care, school fees and administrative formalities. The school and kindergartens were designed sufficiently to serve all planned children of the neighbourhood. Being allocated housing and other living necessities with the "subsidised price", the people used tickets and coupons to buy food and manufactured goods mainly in their own neighbourhood centre.

In reality, under the subsidised economic mechanism which existed until 1986, community facilities did not meet the people's needs. There were insufficient commodities and a poor quality of services. For example, buying the basic commodity of rice was not an easy task. On working days, 12.7 per cent of the inhabitants had to wait for 96 minutes. The time for queuing was much longer on Sundays - 32.8 per cent of occupants had to spend 144 minutes to buy rice (NHP, 1982: 98). Buying fuel was similarly problematic: on some days the people had to leave the fuel station empty after queuing one or two hours, because no fuel had been delivered (loc. cit.). There were not enough fresh vegetables and fruits in the neighbourhood centre. Only 32.7 per cent of families were served in their centre: others had to buy elsewhere and from the hawkers, mostly on the way to or from work (5-6 kilometres from home).

The poor quality of services led to the unattractiveness of public facilities. Only 30 per cent of the inhabitants had their hair cut, 26.5 per cent had their clothes sewn and 20 per cent had their bicycles repaired in the neighbourhood centre (ibid, pp. 96-99). The remainder had to find these services elsewhere, at higher prices.

Taking part in other activities (in higher order centres) like going to the cinema or theatre was rare for the Truong Dinh residents. Only 4 per cent of the people went to these activities in 1982. The main reasons were the lack of public transport, unsafe streets, long distances to be travelled by bicycle at night and the fact that many people had to work overtime. The systems of higher order services were also inadequate in Hanoi, and concentrated only in the city centre. For example, during the 1960s and 1970s, no cinema was built in Hanoi (ibid, p. 104).

Compared to many parts of Hanoi, kindergartens in Truong Dinh were considered to be a good service during the years of the subsidised mechanism (refer to plate 4.5).

Nevertheless, in 1980 this service received only 65 per cent of the children. The rest were looked after by others, mostly relatives (see table 6.1). To send the children to private child care, people had to pay 1.5 times the average family income (theoretical salary). As a result, 5.8 per cent of children were found to be locked at home. These were at an age between kindergarten and school when no public organisations would look after them and the parents could not afford to send them to private carers. This circumstance was unsafe and damaging psychologically for the children.

Children looked after by public kindergartens		65.0%
Children looked after by other sectors:	Private sector	13.7%
	Grand parents	9.7%
	Brothers, sisters	5.8%
	Themselves at home	5.8%

Table 6.1. Child care in Truong Dinh in 1980. (Source: NHP, 1982: 105)

Other reasons given for some children not being sent to the kindergartens were:

- The poor quality of services (75 per cent of interviewees' comments)
- The time for taking children to and from the kindergartens (41 per cent)
- Carers already available (15.6 per cent) (ibid, p. 105).

For sport and recreation activities in Truong Dinh, there is a playground (open space) at the centre of the neighbourhood. Nevertheless, it has not been utilised effectively because of poor management and organization of activities. In housing clusters themselves, there are insufficient playgrounds, especially for children. A study by the National Institute of Sociology in 1982 (ibid, pp. 108-110) indicates that the official neighbourhood playgrounds met only 9.5 per cent of children's playing activities. 70.5 per cent took place in other spaces, usually far from their homes. The remaining 20 per cent of the children's activities took place on the streets and above the infrastructure systems which was considered hazardous from the viewpoints of security, safety and health.

The most important reason why children themselves disliked their neighbourhood was the lack of playgrounds (ibid, p. 111). Their five major reasons were:

- Lack of playgrounds: 36.5% of comments.
- Lack of living spaces: 35.1%.
- Lack of security: 27.7%.
- Lack of water: 27.0%.
- Lack of hygiene: 21.6%.

6.5. PHYSICAL CONDITIONS OF DWELLING

Housing in Truong Dinh was originally designed and erected in pairs of rows. Each house and row consisted of two parts - a double and a single storey. Living areas were sited in the two-storey part and faced the streets. The single storey part was used for service areas and located at the rear of living spaces (see figure 6.7).

Building materials used for all houses were 10 centimetres thick prefabricated concrete elements. Each element had a certain dimension to fit a segment of the building, for instance a floor slab of 4.2 metres by 3.3 metres. All elements were joined to each other and erected on the site by welding. Doors and windows were also produced in factories and erected on site.

For electricity, every dwelling unit had a connection with the open public network which remains today (refer to plate 6.7). Water pipes were not supplied originally to individual

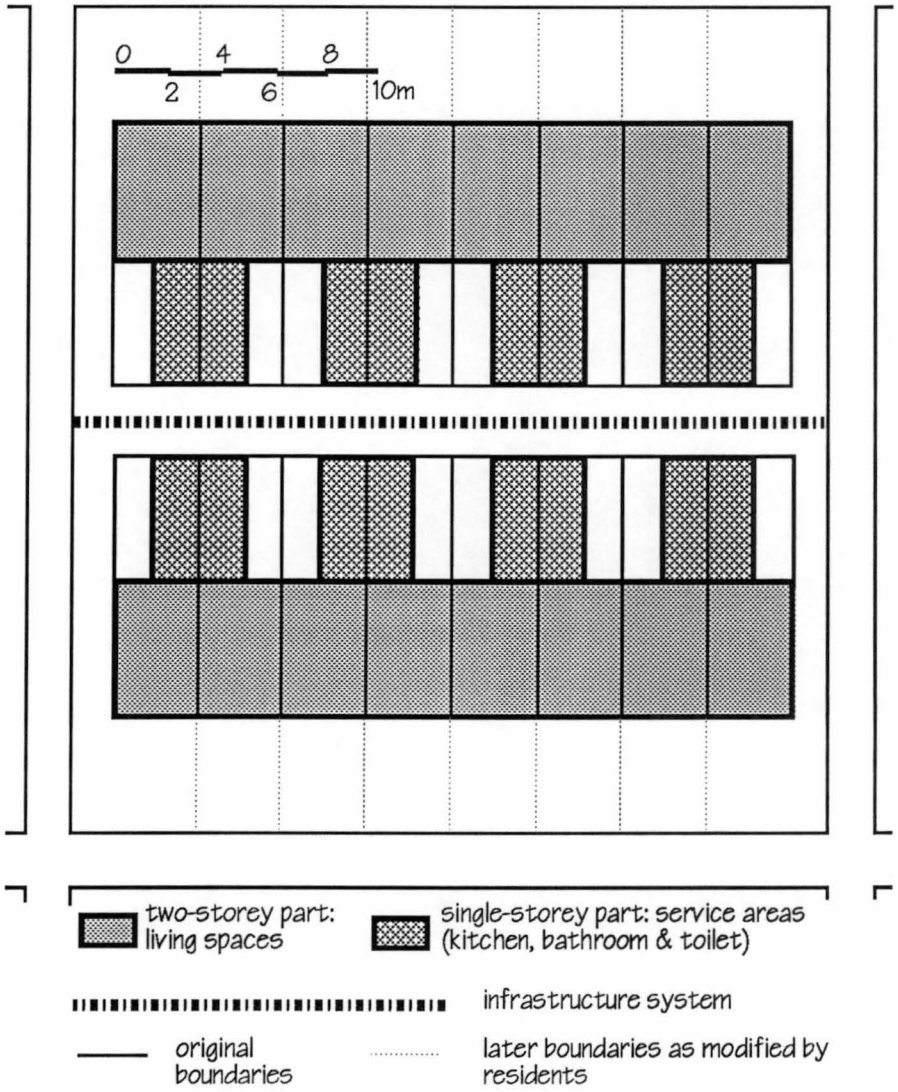


Figure 6.7. A pair of housing rows in Truong Dinh, designed plan.

households. Running water was provided through public tanks or taps. The sewerage and drainage was laid out at the rear of the buildings, mainly in open drains.

The open space adjacent to streets and in front of the dwellings' living areas was designed as public space. The rear space between two rows of buildings was intended for infrastructure systems and rubbish collection. Nevertheless, the people were quick to annex these spaces for their own use when they first settled.

Each building was planned for 8-10 families. Six households were allocated the middle units of the rows. The two units at the ends of the rows were allocated either for 2, 3, or 4 families depending upon the distribution standard for the inhabitants (see Appendix 1).

After distribution, each household in the middle of the building had a total living area of 27 square metres including both storeys. A small steep staircase occurred inside the living room (see figures 6.8 and 6.10). The service area (7.5 square metres) was outside and consisted of a kitchen, a bathroom and a toilet, plus a courtyard of 7.5 square metres. Each family had a garden of about 8-10 square metres. In Truong Dinh neighbourhood, these two-room dwelling units accounted for 53.7 per cent of the total households (NIURP, 1985: 31). This figure was the highest for any public housing area in Hanoi (refer to table 4.3). The remaining 46.3 per cent of the neighbourhood's households had only one room for all activities. They were allocated at the ends of the rows. Each family had a living room of 13.5 square metres, either on the ground or the first floor. In housing distribution, priority was given to people living on the ground floor by way of working status or number of family members (refer to Appendix 1). The garden was devoted to the family on the ground floor. The two families had to share a common service area (7.5 square metres) which consisted of a kitchen, a bathroom and a toilet, and a courtyard of 7.5 square metres. The stair for the first-floor family was within the courtyard (see figures 6.9 and 6.10).

In addition, on average each household has 2-3 motorbikes or bicycles which occupy approximately 3 square metres, thus reducing the 13.5 square metres of living space by 22.5 per cent.

Truong Dinh neighbourhood had the highest standard living area amongst public low-rise housing areas in Hanoi during the 1970s-1980s (4.2 square metres per person compared with 3.5 on average (NIURP, 1985: 29)). 8.64 per cent of the inhabitants lived in an area of less than 2 square metres whilst nobody had an area of more than 8 square metres. Thus while the average standard living area per

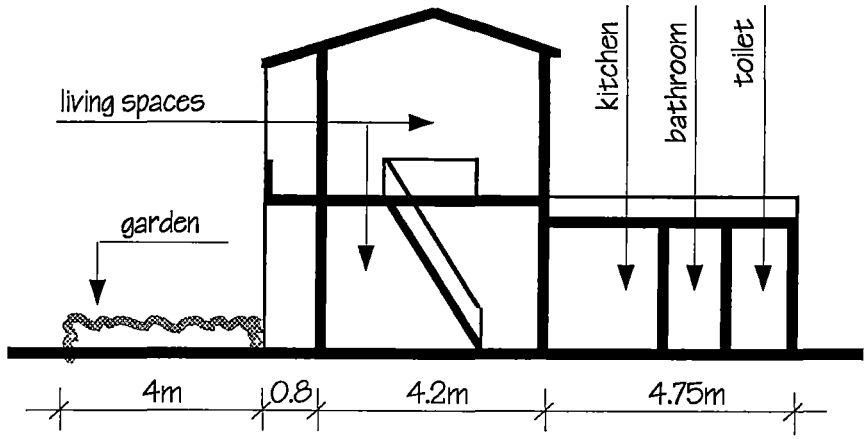


Figure 6.8. Original section of a two-room dwelling unit.

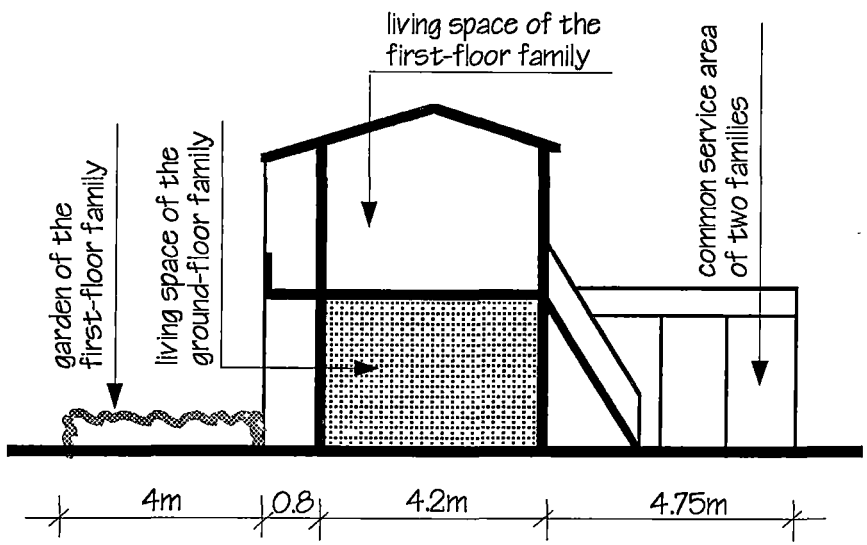


Figure 6.9. Original section of one-room dwelling units.

person was 4.2 square metres, it was unequal with respect to social classes. Generally, the Intellectual class was allocated larger living areas. The distribution in regard to living area per person can be seen in table 6.2.

Strata	Living area per person (square metre)				
	1-2	3-4	5-6	7-8	>8
Workers	4.55	48.87	30.68	15.9	0
Intellectuals	5	35	35	25	0
Officers	12.5	37.5	40	10	0
Others	12.5	50	25	12.5	0
Total	8.64	42.84	32.67	15.85	0

Table 6.2. Percentage of inhabitants in regard to the standard living area. (Source: NIURP, 1985: 31).

Occupying already narrow dwellings, many people devoted some of their habitable space to work purposes, in order to gain extra income. According to NIURP (ibid, p.32), Truong Dinh had the smallest number of households devoting living space to work purposes amongst the public housing areas in Hanoi in 1982 (9.1 per cent compared with the average number of 22.8, refer to table 4.4). These families devoted an average of 22.8 per cent of habitable space to work purposes (3.1 square metres out of 13.5). The majority of extra home-based work was in handicrafts and repairing household appliances.

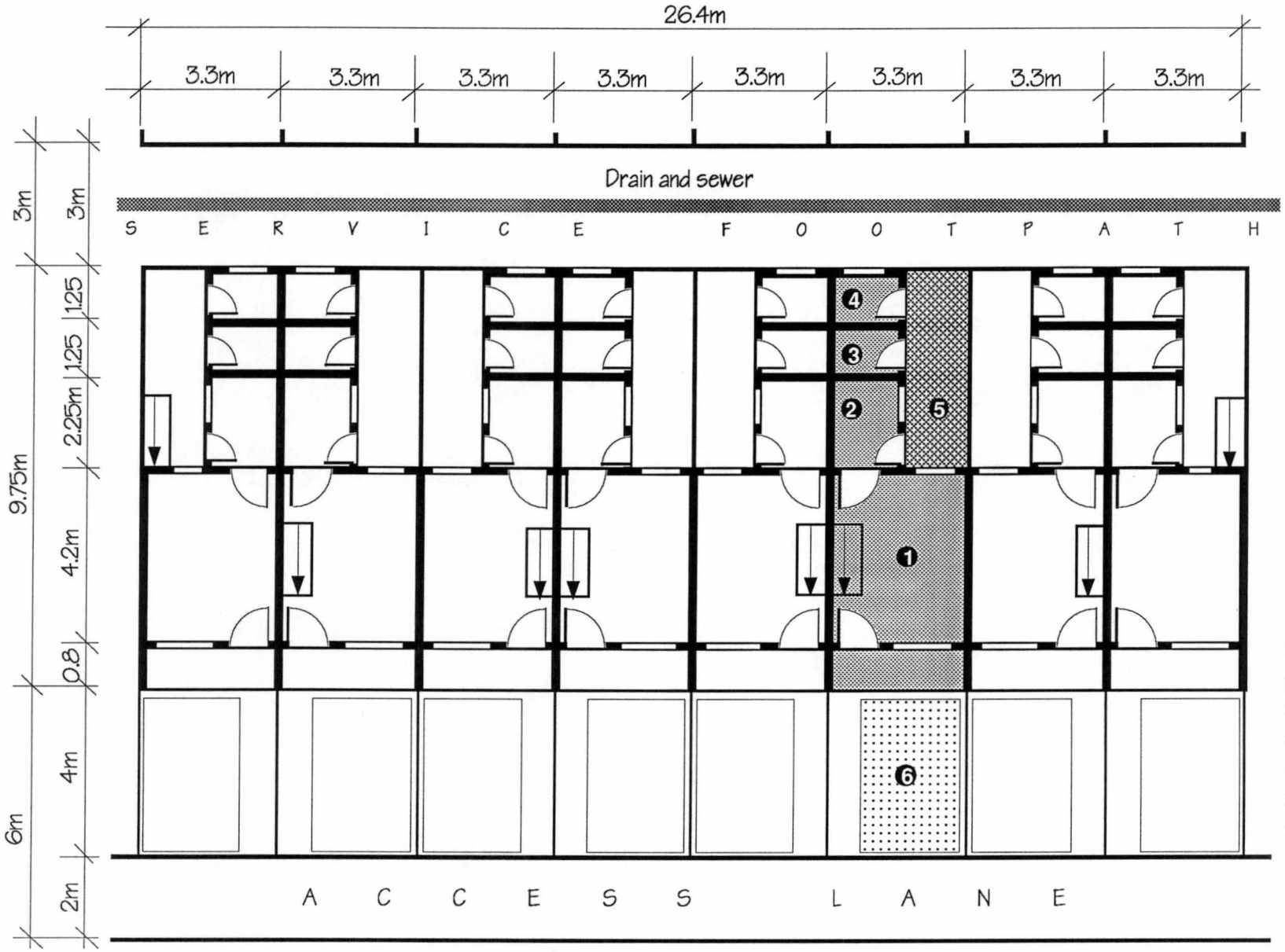


Figure 6.10.

An original row of dwelling units in Truong Dinh. Ground floor

❶ living space
❷ kitchen
❸ bathroom
❹ toilet
❺ courtyard
❻ garden

Further, because of the cramped living space, today most families in Truong Dinh have expanded their homes (Field Study, 1995). In an unofficial interview (Hanoi, January 1995), the Vice-Director of the National Institute for Urban and Rural Planning, Professor To Thi Minh Thong affirmed that although no survey had been conducted since 1985, the neighbourhood was viewed as having changed significantly in built form and in density of population. According to her, it was very difficult to recognise anything from the original neighbourhood - the people had changed it so much.

Due to the available land, Truong Dinh has the highest percentage of families extending their houses. In 1980 (i.e. after 5-7 years of settlement) 45 per cent of residents had expanded their homes (compared with an average of 34 per cent for all public low-rise housing areas in Hanoi). Workers expanded their housing most (52 per cent) whereas Intellectuals did least (38 per cent).

Strata	Workers	Intellectuals	Officers	Others
Percentage	52	38	48	40

Table 6.3. Percentage of dwellings expanded, by social class. (Source: NIURP, 1985: 30).

To comment on the quality of living in the neighbourhood, the result of the 1980 sociological survey indicated that only 38.2 per cent of the inhabitants felt satisfied. The considered reasons are shown in figure 6.11.

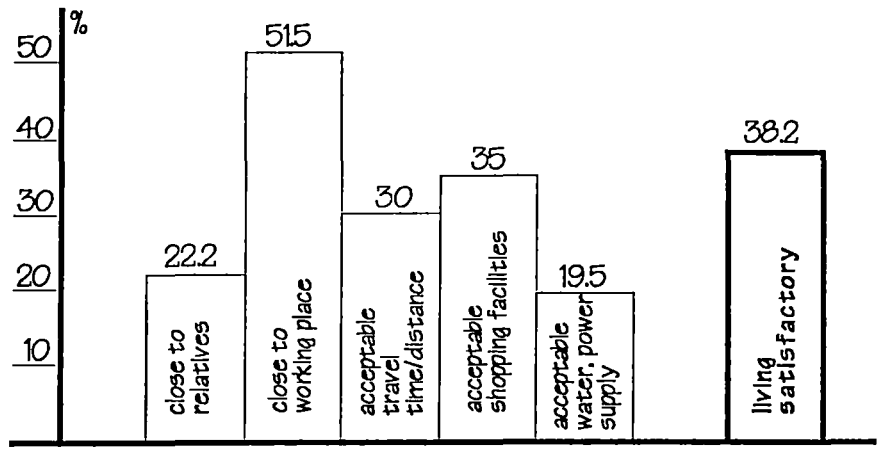


Figure 6.11. Percentage of people feeling satisfied with living in the neighbourhood. (Source: NIURP, 1985: 35)

The remaining 61.8 per cent of the inhabitants disliked living in the neighbourhood. They had the opposite feelings to the above group and some additional reasons, such as:

- The poor quality of the buildings, particularly the lack insulation on the roof, resulting in very hot conditions in summers.

- The size of living space is too small, for an effective layout of furniture.
- The steepness of the stair way is too dangerous for elderly people and children.

These reasons resulted in people preferring to live on one level, rather than in two rooms on two different floors. In the neighbourhood, 70 per cent of the inhabitants on average preferred to live on one floor.

Strata	Workers	Intellectuals	Officers	Others
Percentage	76	62	62	80

Table 6.4. Percentage of people preferring to live on one level, by social class. (Source: NIURP, 1985: 33).

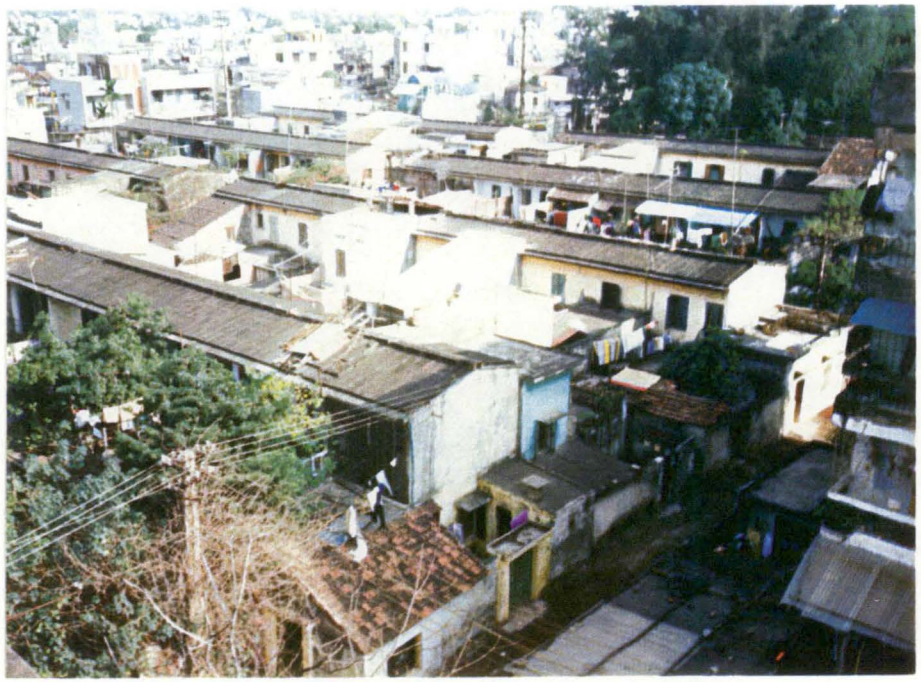
As mentioned earlier, due to lack of living space and the unclear policy of housing ownership as well as the policy for improving the neighbourhood, people expanded their homes without any guidelines. They extended their houses in an ad hoc manner with many kinds of building materials, mainly low-cost and temporary (see plates 6.9-6.16).

In previous times, people usually upgraded their homes on a small scale. Today, under the mechanism of a partially free market economy, many people can even afford to rebuild their houses.

Several two or three-storey houses have actually been built in the neighbourhood (refer to plates 6.1 and 6.2). These people could not afford to buy land[1], but they could spend money on rebuilding the house. Such activities are illegal in theory, yet they exist in practice. The "owners" have had to pay fines, but "the low US $30-US $50 fine falls short of being a sufficient deterrent for violators" (Ha Van Que in Australia Vietnam Science-Technology Link,*Vietnam Investment Review,* 13-19 February 1995, p. 29). In other words, the fine is so small compared with the cost of building that people are willing to pay.

Plate 6.16 shows an example of rebuilding in the neighbourhood. The occupant is a two-income family who can be classified as Officer. To rebuild the house, no permission was gained. Nonetheless, they paid the fine when construction was discovered by the authorities, and the building proceeded to completion.

[1] In fact, the "land use right", which can be sold or bought nowadays in Vietnam, see also Chapter 7.



Plates 6.9 and 6.10. People extend their homes to fill all available land.
(Source: Field Study, 1995)

Plates 6.11 and 6.12. People extend their homes by all available methods and materials. (Source: Field Study, 1995)

Plate 6.13. Insulation method for roof adopted by an occupant - Left. (Source: Field Study, 1995)

Plate 6.14. Two-storey housing extended by temporary building materials (i.e. bamboo and bituminous paper) - Below. (Source: Field Study, 1995)

Plate 6.15. Two-storey housing extended by brick walls and concrete roofs - Above. (Source: Field Study, 1995)

Plate 6.16. A two-storey house is being replaced: a concrete skeleton structure is inserted within the row prior to the removal of the old house - Right. (Source: Field Study, 1995)

In my field study (January 1995), the owner, Mr. Phan calculated the size and costs of building as follows:

- Site area[1] : 49 square metres
- Building area: 31 square metres (as the old flat)
- Floor area[1] : 95 square metres
- The total cost of the building: 95,000,000 Vietnamese Dong (equivalent to AU $11,580). This figure is the building cost of a house of quite good quality in Hanoi (1,000,000 VND (AU $122) per square metre).
- Design fees: 2,000,000 VND (AU $245).
- Fine: 550,000 VND (AU $65).
- Fees to provide structural support for two neighbours' flats: 4,000,000 VND (AU $485).

□ Total money spent on the building: 101,550,000 VND (equivalent to AU $12,375).

Resulting from this investment, with this amount of money, the family has a quite decent home which is three times larger than their original one. Furthermore, they still have a front garden of 8-10 square metres and a small space at the back for ventilation and light (figure 6.12).

According to the owner, the money spent for the building would buy only 20-25 square metres of land in a similar area at the current market price. To buy land (i.e. the land use right) in Hanoi is unaffordable to many people, especially government employees on salaries.

Mr. Phan revealed that the project was financed by family savings. They had been working for 30 years and living in the neighbourhood since it was built. Besides salaries, they worked overtime at home or in their offices, notably during recent times as a result of the new economic mechanism.

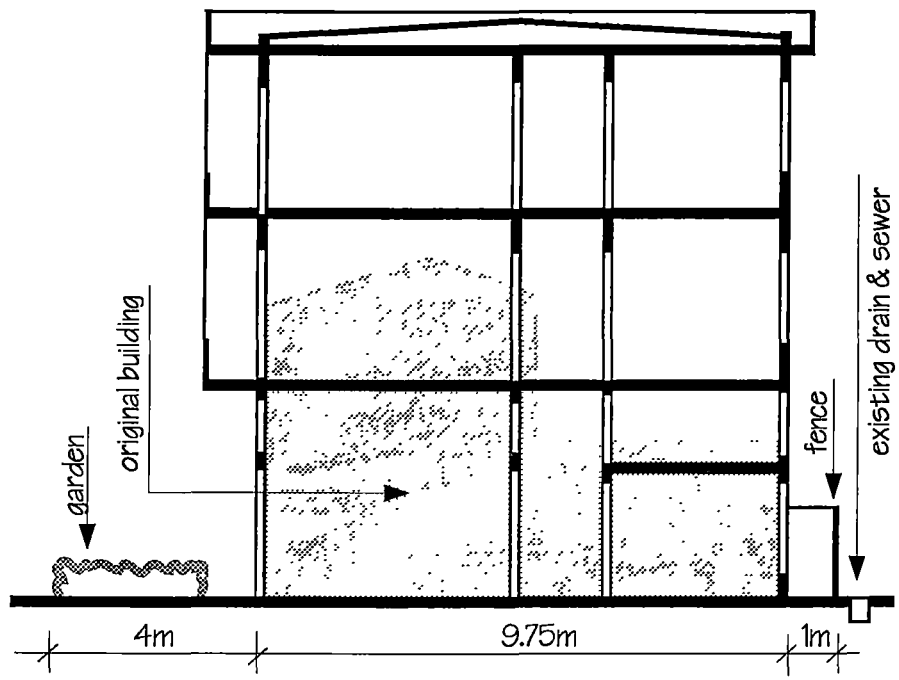


Figure 6.12. Section of new dwelling superimposed upon the old. (Source: Field Study, 1995)

[1] These terms are defined in "The City of Hobart Planning Scheme, 1982", (City of Hobart, 1991: 8-9)

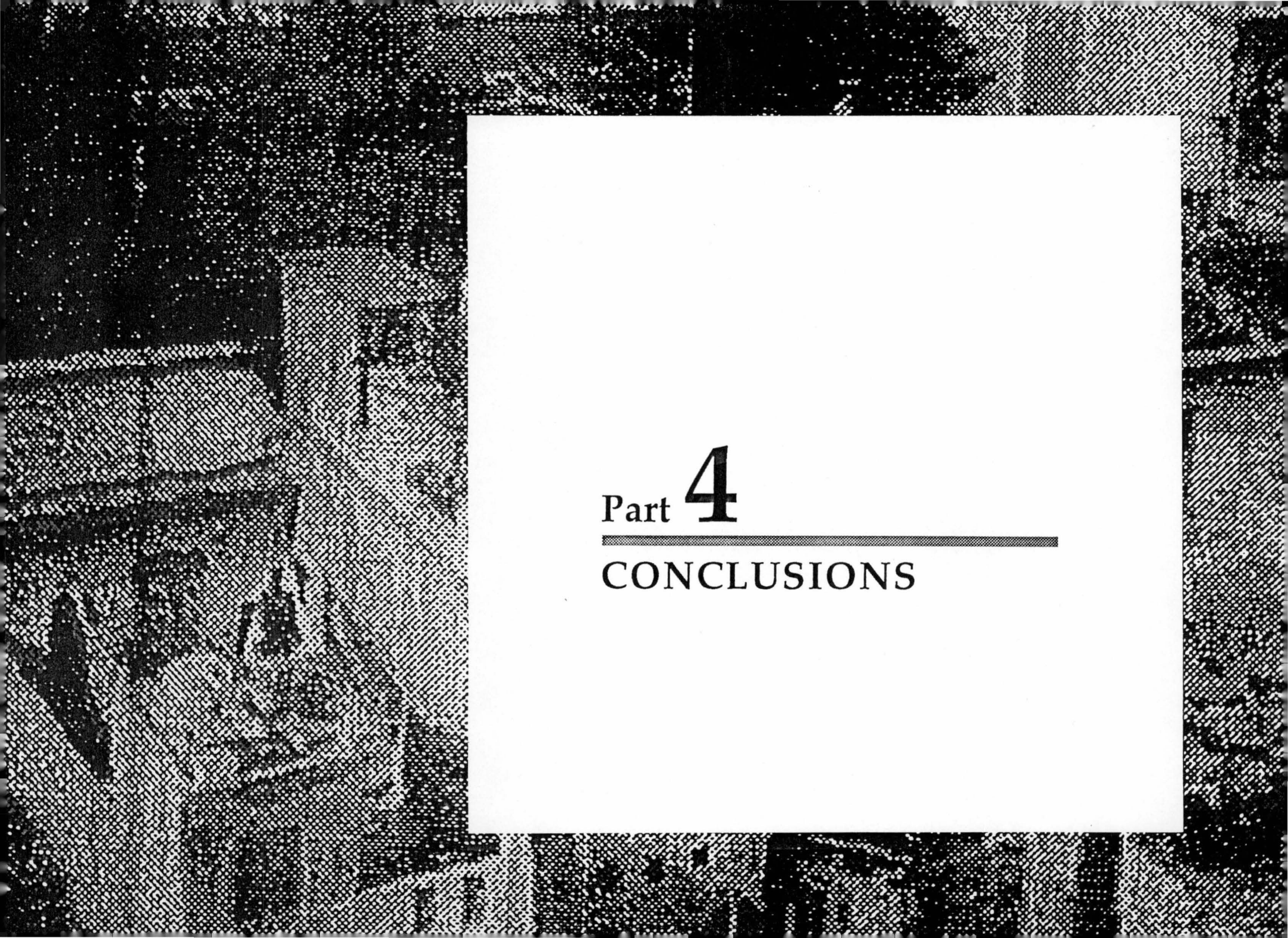
Commenting upon the general situation of the neighbourhood, they estimated that there were other people who could rebuild their homes by the same method. The stages of rebuilding were as follows:

1. The construction of a concrete skeleton structure.
2. The removal of the existing prefabricated elements (i.e. the demolition of the previous dwelling).
3. The insertion of prefabricated floor slabs (these can be bought from factories).
4. The building of brick walls, usually with a thickness of 110 millimetres (stretcher bond).
5. Finishing work.

Mr. Phan also pointed out that the improvements of buildings do not always need an architect's design. Some people can do it themselves and some builders can execute both design and construction on the site (these are either architects or building engineers.).

Mr. Phan did not want to comment upon the consequences of his building but he seemed to be very happy with the new house and its increased living space. He hoped the government would follow with appropriate initiatives to upgrade the area. Today many people are waiting in hope that such initiatives are taken to bring about improvements to the neighbourhood, including a policy of house-ownership and guidelines for upgrading the physical buildings.

Such rebuilding could result in larger open spaces, if the expansion is directed upward rather than by outward encroachment.



Part 4

CONCLUSIONS

Chapter 7 UPGRADING - PROBLEMS AND OPPORTUNITIES

7.1. PROBLEMS OF UPGRADING

It is by now obvious that Hanoi faces enormous environmental and planning problems. These are not restricted to public low-rise housing, which is the subject of this study, but cover all aspects of planning in the city. Further, the problems are not just physical in nature but also administrative, managerial and financial. The shortage of professional skills and adequate data also exacerbate this situation.

Recently, a Pre-Feasibility Team was sent by the Australian International Development Assistance Bureau (AIDAB) to assist Hanoi in enhancing the economic, social and environmental development of the city. This Team defined the existing problems of urban development in Hanoi as shown in figure 7.1.

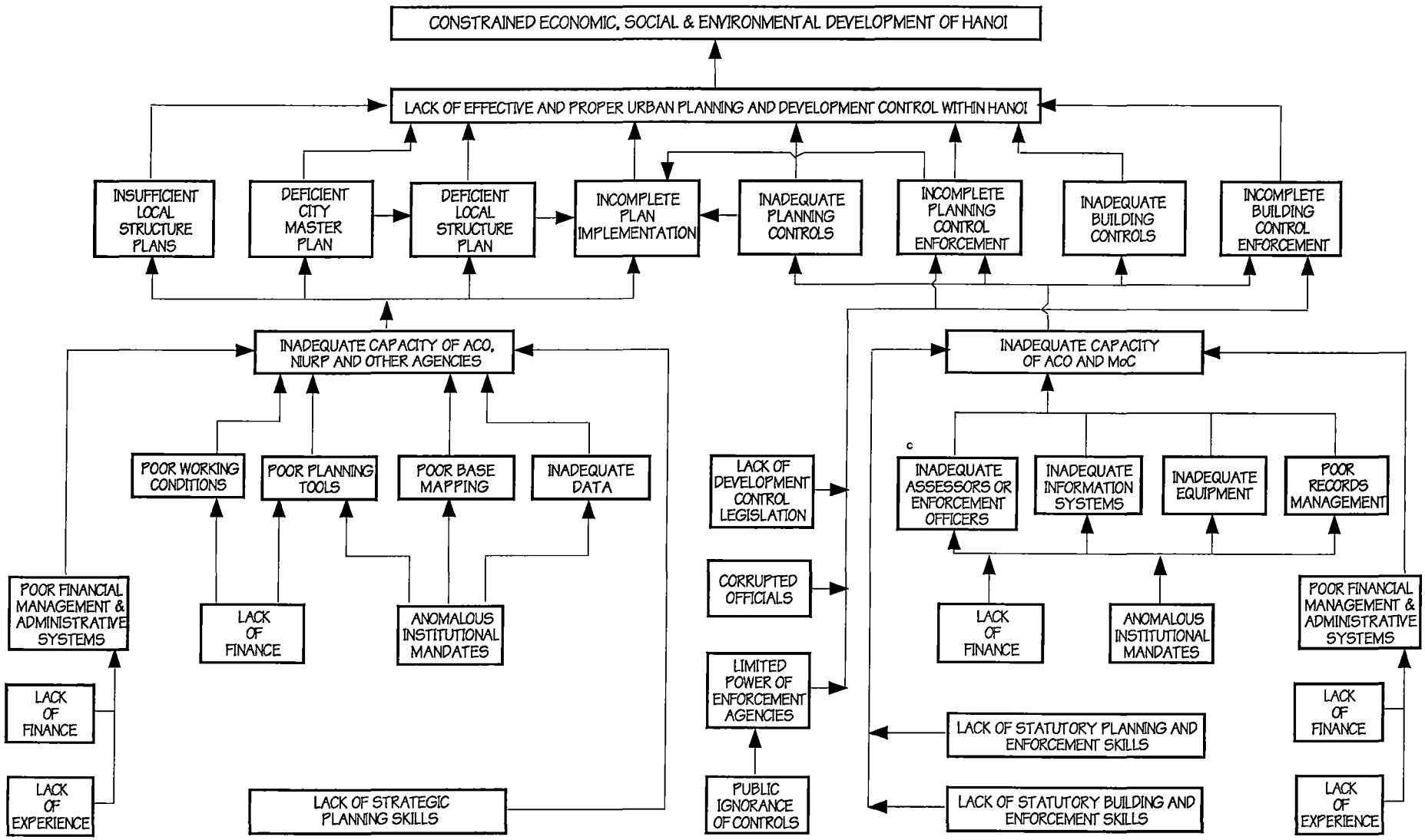


Figure 7.1. Problems affecting urban development in Hanoi. (Source: AIDAB, 1994: 9)

While this figure shows overall problems affecting urban development for the whole city, it is equally applicable to those affecting the improvement of public low-rise housing areas.

7.1.1. Resources

Vietnam is one of the poorest countries of the world with a US $200 per capita income per annum. As in most developing nations, the Vietnamese government has concentrated its limited resources on the development of the industrial and agricultural sectors. The proportion of funds for housing has been relatively small.

Providing free public housing was a burden for the government in previous times. Today, especially under the pressure of the partially free market economy, the government cannot afford to make comprehensive improvements to run-down housing areas, particularly low-rise ones. Unlike Hong Kong and Singapore which improve public housing by building whole estates of high-rise blocks, the Vietnamese government can, at most, invest in the major infrastructure networks (roads, water and power supply, drainage and sewerage) and a relatively small number of new houses. The lack of government finance and shortages of qualified professional staff render planning authorities incapable of managing effectively the planning and building processes.

At the same time, many people have shown a willingness to spend their own funds on improving or even rebuilding their homes (refer to Chapter 6). Nonetheless, not all people can take part in upgrading houses on a large scale. The are many low-income people who are unable to work overtime or have no supports. These people require some form of government aid.

Land is also a problem. Though densities of population and buildings are high in public low-rise housing areas, this situation must generally remain as the government cannot provide more land for residential purposes because of the overall shortage of land in the city and competing needs.

7.1.2. Policies of Land and Housing Ownership

The State owns all land and public housing in Vietnam. Further, there have been ineffective policies for renovation and the residents have had little incentive for improving their homes. As a consequence, where improvement or extension has occurred this has usually been done using substandard and temporary methods and materials. This has resulted in rapid deterioration of individual houses and, in turn, whole neighbourhoods.

7.1.3. Organization and Development Control

There has been no effective strategy nor mechanism for guiding improvement of public housing areas in the Master Plans of Hanoi, even in the latest plan which received the Government's assent in December 1993. This Plan (NIURP, 1993) implies that all public low-rise housing areas will simply remain in their present forms with their existing functions. While their condition continues to deteriorate, no proposals for improving these areas have been suggested so far.

Further, there has been an inability to apply those planning and building regulations that do exist. In fact, there is widespread public ignorance of these in Hanoi. This leads to illegal building activities and, as earlier described, residents have extended or repaired houses without permission. In some cases, they have even been fined, but proceeded with construction since the fines are so small.

Thus while many people have invested in extensions, these are rarely of adequate standard and most are illegal. Further, even if standards are adequate, residents cannot upgrade the public environment and infrastructure networks in their neighbourhoods. Moreover, they are unable to create consistency in development for whole neighbourhoods without guidance from professional experts.

There is the further complication of so many bodies being involved in different aspects of public housing development but each retreating from or passing sideways its responsibility with no tangible results. For instance, within a housing area, overlaps between management of many functional organizations (e.g. MoC, City Construction Department, Energy Department, Water Factories, etc) can be seen.

There is consequently an urgent need for the rationalisation of responsibilities.

7.1.4. Data and Maps

One of the biggest problems for planning in Vietnam and Hanoi is the lack of data. Necessary data which planning depends upon is not easily found in Hanoi planning agencies, including the Architect in Chief's Office (ACO) (AIDAB, 1994: 14). This data includes all types:

- Socio-Economic
- Demographic
- Geotechnical and topographical data
- Land ownership, and existing use and conditions
- Existing and proposed urban services
- Climatic conditions
- Natural resources
- Environmental conditions, and
- Financing and Politico-Institutional arrangements.

Another problem facing planning is poor base mapping. Maps in Hanoi have been produced by some various institutions:

- Army Mapping Company.
- The Survey and Map Department of the State of Vietnam.
- MoC's Union of Survey Companies.
- Survey Company, Hanoi Department of Construction.
- Cartographical and Geotechnical Company, ACO.

The first three institutions are the major official bodies for producing maps. However, they have not produced maps of Hanoi for a long time. While the city is changing rapidly, the Union of Survey Companies revealed that they had not created maps since 1971. In 1992, the Army Mapping Company and the MoC's Union of Survey Companies took aerial photographs at 12 500 feet which could produce photos eligible for alteration to 1:2 000 topographical maps by photogrammetry but they did not know whether the ACO had received those aerial photos (loc. cit.).

Most base maps used by the ACO have been produced by its Cartographical and Geotechnical Company or by the Survey Company, Hanoi Department of Construction. Although the national geodetic grid was established, these base maps are inadequate, lacking in survey control, funding and survey experience which reduce the usefulness of the mapping.

According to the Hanoi Department of Land and Building, 1990 (in Pham, K. T., 1991: 86) no cadastral work had been done since the early 1960s. Existing cadastral maps used were inherited from the French (i.e. from 1954 or before).

7.2. OPPORTUNITIES FOR UPGRADING

While Hanoi faces many problems in upgrading public low-rise housing areas, there are also some opportunities. Strengths can be identified in the State and with the people. The State has set up a series of policies for housing development, it has well established building techniques and equipment, as well as skilled labour. Many people are able to raise finance, provide labour resources and, most importantly, wish desperately to improve their homes.

7.2.1. The People

Given the opportunities, many people can now invest themselves in the rebuilding, extension or upgrading of their homes. As noted in Chapter 5, the major financial resources of the people are:

- Money saved or inherited.
- Money earned from overtime work.
- Money sent from overseas.
- Money borrowed from relatives and friends.

Most people can also take part in housing construction. Even though they may not have building knowledge or skills, they can do many manual tasks to assist skilled workers. This contribution can significantly reduce the costs of housing.

7.2.2. The State

In moving to the partially free market economy, the government has unburdened itself of the free provision of housing for its employees. Much of the capital for building public housing could now be transferred to concentrate on infrastructure networks and community facilities. According to *Decision 88-CP,* 17 August 1994, *on Urban Land Management and Utilization* (GoV, 1994b: 515), the State will invest in major networks and Housing Development Companies will deal with other developments (mostly houses) which will gain returns on their investments.

Since 1985, the Government has had a policy for construction and co-operation between the State and the people. This policy is aimed at mobilising resources of the people, both labour and capital. It is also aimed at a range of projects from new housing development to renovation of existing areas.

In 1989, the first bank for housing development was established in the city, the Hanoi Building Bank (HABUBANK). The responsibilities of this bank are:

- Lending money to construction enterprises.
- Investing directly in housing construction (for sale).

Though this bank has not until recently lent funds for self-help housing, it is a government body intended to give opportunities for housing. Since the United States lifted its veto on the World Bank and the Asian Development Bank to provide funds for Vietnam in July 1993 (Gillespie & Logan, 1995: 107), the HABUBANK is now able to receive loans from these banks to invest directly in housing construction as well as lending funds for housing development.

In recent times, the change in the economic mechanism has resulted in substantial changes in the housing sphere. The State has passed several ordinances with regard to housing industry, notably the *Ordinance on Housing 1991* and the *Law on Land 1993.* These ordinances officially concede land use rights and private house ownership, and allow provision of land for housing construction. Building materials can be sold or bought freely on the open market,

and construction can be executed by private entrepreneurs. In some collective-funded housing areas, the State has allowed government bodies to sell dwelling units to the occupants (HMD, 1993: 3-4).

These Ordinances allow for the improvement of all housing areas, especially low-rise ones. Articles 12 and 19 of the *Ordinance on Housing 1991* require the demolition of houses which are: i/ so decayed that they are in danger of collapse, ii/ are in an area needed for new construction according to the master plan, and iii/ have been built or renovated illegally (SRV, 1994b: 204 and 207). The implication is that most public low-rise housing can be demolished for rebuilding.

However, given the sheer quantities of public housing in Hanoi and the country's level of economic development, it would be unwise to view two-storey[1] public housing areas as anything but a resource. In spite of their poor condition, they can be revived. Demolition completely would be prohibitively expensive and unrealistic. A sensitive and sensible approach is required that involves the considerable resources of the State for investment in the public domain while harnessing the varying capacities of the people to invest in the housing itself.

[1] NB: Single storey housing areas are generally in poorer condition and far easier to demolish.

Chapter 8 TOWARDS A SOLUTION

The nature and problems of public low-rise housing areas in Hanoi, and particularly those of the example neighbourhood of Truong Dinh, have been discussed at length. The problems outlined are extensive, and both physical and social. On the other hand, there is a climate of opportunity in Vietnam for tackling these problems. Strengths can be found in all sectors of the society. These are the financial and labour potential of the people as well as the resources and new policies of the State.

This final chapter aims to develop approaches for the upgrading of public low-rise housing areas in Hanoi, and specifically Truong Dinh. The solution attempts to cover all relevant aspects, from policies of land use and housing ownership through social and physical infrastructure to the condition of the houses. Further, it suggests organisational roles for implementing the upgrading process, including investment and management.

A solution will be proposed for the example neighbourhood of Truong Dinh but the wider implications for public low-rise housing areas in Hanoi and Vietnam in general will also be drawn. Indeed, the policies for land use and housing ownership will embrace large and small scales - national, city and neighbourhood. Further, the last section will suggest roles for residents and participant organisations in the process of upgrading.

8.1. POLICIES OF LAND USE AND HOUSING OWNERSHIP

While moving to the new economic mechanism (i.e. of the partial market economy), the Government of Vietnam has promulgated new legislation related to land use and housing. Generally, this allows occupiers the right to use land for particular purposes, e.g. housing. It even allows for the sale of these rights but does not grant ownership which remains with the State.

8.1.1. Policy of Land Use

Private ownership of land is not permitted in Vietnam. Articles 17 and 18 of *Constitution 1992* (SRV, 1992: 20), and Article 1 of *Law on Land 1993* (SRV, 1994a: 6) clearly state that land is the property of the people as a whole and is placed under the exclusive administration of the State. Besides other functions, land is allotted to households and individuals for stable and permanent use. Further, land can be leased by individuals or families. On the other hand, in essential circumstances the State, through People's Committees (PCs), has the right to resume the use of land in the public interest. In this case, compensation would be given to the land users (Article 27, *Law on Land 1993*, (ibid, p. 19) and Article 23, *Constitution 1992*, (SRV, 1992: 22)).

There are in Vietnam advocates of full private ownership rights. However, the approximation to the Western leasehold system may have advantages.

"Leasehold tenure (a lease interest) gives the lessee the right to exclusively use and enjoy the land on payment of a rent for a specified time." (Archer, 1972: 5). This contrasts with "Freehold" which is the normal type of tenure in capitalist society. "Freehold tenure (a fee simple interest) gives the owner the right to exclusively control the land for his own benefit for an indefinite time." (loc.cit.).

In Australia, in a Submission to the Commission of Inquiry into Land Tenures in Canberra, leasehold tenure was viewed as having a number of advantages compared with freehold tenure. The following points were listed as 5 main advantages in relation to land for housing:

i/ It is an explicit and positive urban land tenure. As a contract agreement it can define the landholder's role.

ii/ The leasehold land rent system allows rent reviews to be made periodically, so that the rent charge and land values can be recovered by the lessor over time.

iii/ The land rent system with annual rent reviews allows the lessor to adopt a flexible land pricing policy at the beginning of the lease. Further, it encourages home ownership and reduces the lessee's cash outlay to obtain a site.

iv/ The lease with fixed periods allows the lessor to co-ordinate the end-of-lease dates of the sites in order to minimise social cost to facilitate comprehensive redevelopment.

v/ In the leasehold system, many lessees can have contract agreements with one lessor. Therefore, the lessor can provide common services for a group of these lessees. (Cities Commission, 1973: 13-15).

By applying leasehold tenure in Vietnam, the method of paying periodically for the lease would be affordable to many people, including most residents (mainly low-income) living in public low-rise areas. On the other hand, the State would remain the owner (continuity of existing practice) but would receive land rent on a regular basis. This would generate a fund for use in the improvement of infrastructure systems and community facilities.

a/ Terms and Conditions of Lease

Terms and conditions are the all important matters in any leasehold tenure agreement. This should cover period, purpose, development conditions, and land rent.

The lease terms and conditions might be guided by the following principles which would be consistent with the idea of encouraging the people to upgrade their own homes:

i/ The land belongs to the lessor and the buildings belong to the lessees. The lessee has the land use right during the fixed period of the lease, and is entitled to compensation at the end of the lease period for his building, except where the lease is extended or renewed. The land rent should be charged annually and based on the market value of the land.

ii/ Each contract agreement should encourage and assist the lessee to develop and use the land in accordance with the lessor's development program.

iii/ The lease should encourage and assist the lessee to use the land effectively and invest the greatest value in the building during the fixed period, by granting the lessee the right to transfer (sell) the lease. (Cities Commission, 1973: 20).

b/ The Form of Leasehold Tenure

For the application of leasehold tenure to public low-rise housing areas in Hanoi (i.e. including Truong Dinh

neighbourhood), the Hanoi PC would be considered as lessor and the existing occupants as lessees (land users). Elsewhere in Vietnam, the Municipal or Provincial PCs could similarly be considered as lessors.

In Truong Dinh, there is the complication that some dwellings at first floor level are units without private facilities. Here, the lessees should be those occupants living in ground floor units. There should therefore be policies for occupants living at first floor level. There are two possible solutions. Either these people could be reallocated to public high-rise housing areas which have recently been built; or they could be reallocated to other sites where they would also enjoy the leasehold system. There are approximately 200 families (in 109 houses) in this group. These would require a site area of about 8 000 square metres (based on the standard of 40 square metres of land per household). This solution is consistent with the National Strategy for Shelter to the Year 2 000, which aims to reduce the population density in populous areas (HMD, 1993: 10).

The solution for Truong Dinh can be applied to similar two-storey housing areas.

Elements which should be considered for inclusion in the leasehold tenure are:

i/ *Period of Lease.* This is a fixed period after which the site reverts to the lessor, or a new lease agreement made (Cities Commission, 1973: 22). In Hanoi, the appropriate period of lease may be 50 years to correlate with the official classification of housing. *Circular 05/BXD-TT,* 9 February 1993 of the MoC (1994: 248) may be interpreted to mean that upgraded or rebuilt houses in public housing areas are expected to have a life-span of up to 50 years (categories III and IV in the Circular).

ii/ *End-of-Lease Arrangement* whereby the lessee may receive compensation for his building improvement at the end of the lease (Cities Commission, 1973: 22).

iii/ *Lease Purpose Clause.* This may specify the land use for the site (loc.cit.). In public housing areas, the purpose of land use would be residential.

iv/ *Change-of-Purpose Arrangement.* The lessee should have no right to change the land use stated in the lease (ibid, p. 23).

v/ *Development Conditions* define the lessee's obligations to undertake building development to a minimum standard within a time period (loc. cit.). Houses must be built of solid rather than temporary building materials to ensure a good environment for the whole neighbourhood.

vi/ *Good Repair:* The lessee would have obligations to maintain the building in good repair during the lease period for the reasons stated above (loc. cit.).

vii/ A *Land Rent Charge* is a specified annual amount

payable for the site (loc. cit.). This amount would be defined by municipal or provincial governments, depending upon conditions of each site. Land rent for the Truong Dinh neighbourhood would be determined by the Hanoi PC according to a formula.

viii/ Periodic Rent Review. The period for rent review would be specified (no more than 5 years) to protect the lessor from the erosion of the real land value over time (loc. cit.).

ix/ A *Re-entry Clause* would define the lessor's right to repossess the site if the lessee failed to comply in a significant way with the terms and conditions of the lease (loc. cit.).

An Independent Public Review Board or Court of Law should be established to control the leasehold review and arbitrate in disputes.

In conclusion, leasehold tenure is suggested for all public low-rise housing areas as it offers a number of advantages over freehold tenure. It is consistent with the move towards a market economy and with the recent Vietnamese history of public ownership.

8.1.2. Policy of Housing Ownership

In the National Strategy for Shelter to the Year 2000, Clause 3.4 (HMD, 1993: 10) states that public housing should be sold to the occupants with the twin motivations of raising revenue and stimulating housing improvement. The policy is consistent with the now common observation that people maintain and upgrade their property when they have ownership. In other words, when "they have an investment in it (their house), they look after it" (Senior Principle Architect, *Straits Times, 1984* in Castells *et al,* 1990: 231). Little public housing has passed so far into private hands.

This project proposes that the houses in Truong Dinh (and by implication, houses in similar low-rise areas) should, where possible, be transferred to private ownership (to the occupants). This is to stimulate urgently-needed upgrading of the houses which the State can ill-afford but which families are increasingly in a position to effect.

The transfer of the housing would involve only a nominal fee in order to allow private resources to be directed towards improvement. In "exchange" for this virtual free transfer, house extensions that have encroached onto the public domain would be demolished to ensure the proper functioning of the street and space for the provision of new infrastructure. All of this would occur within the context of leasehold tenure as outlined in Section 8.1.1, which is itself proposed with several purposes: to maintain government control of planning, to generate funds for investment in the

public domain including infrastructure, and to ensure minimum standards of house upgrading.

At the same time, it should not be overlooked that there will be households which, for various reasons, will be unable to take up the responsibility of private ownership and alternative arrangements will be suggested for these people (see Section 8.4).

8.2. STREETS AND OTHER PHYSICAL INFRASTRUCTURE

8.2.1. Street Network

The street network is one of the most crucial components in any urban development. In public low-rise housing neighbourhoods, it serves the following vital functions:

i/ Place for the delivery of goods, including building materials for any housing improvement.

ii/ Space for installing infrastructure elements, such as water pipes, sewers.

iii/ Connection between the neighbourhood and the wider city, and for circulation within the area. It serves also public transport (bus routes and stops).

iv/ Access for emergency and utility vehicles.

v/ Space for ventilation and light.

Thus, the street network will affect all other components of housing areas, of which the most important is the housing itself.

It is proposed that the grid of collector streets and access lanes is retained. However, these streets and lanes should be widened (see figure 8.1). According to the *Regulations and Norms for Urban Physical Planning* (MoC, 1982: 107), the collector streets should have a width of 5.5 metres for 2 driveways; and 2 pavements, each of 2.25 metres[1]. Further, a new section of collector street could be added in the neighbourhood to reduce distances for access service. These would especially benefit emergency and utility vehicles.

Existing 2 metre access lanes should be replaced by wider streets which include pavements for pedestrians. These should be 6 metres wide, including pavements (1.5m + 3m + 1.5m) so as to meet the requirement of minimum distance between 2 housing rows, based on the fireproof rating of buildings (see Appendix 3). This would give pedestrian safety, and provide access for every household's motorcycle and bicycle, and emergency. Motorcycle speeds here would require restriction by the local authorities (may be 10 kilometre per hour maximum). For the purpose of light and ventilation, the heights of houses along these streets should not be higher than the distance between 2 rows (i.e. 6 metres) to conform to the regulations (ibid, p. 58).

[1] For 3 lanes of 0.75m each.

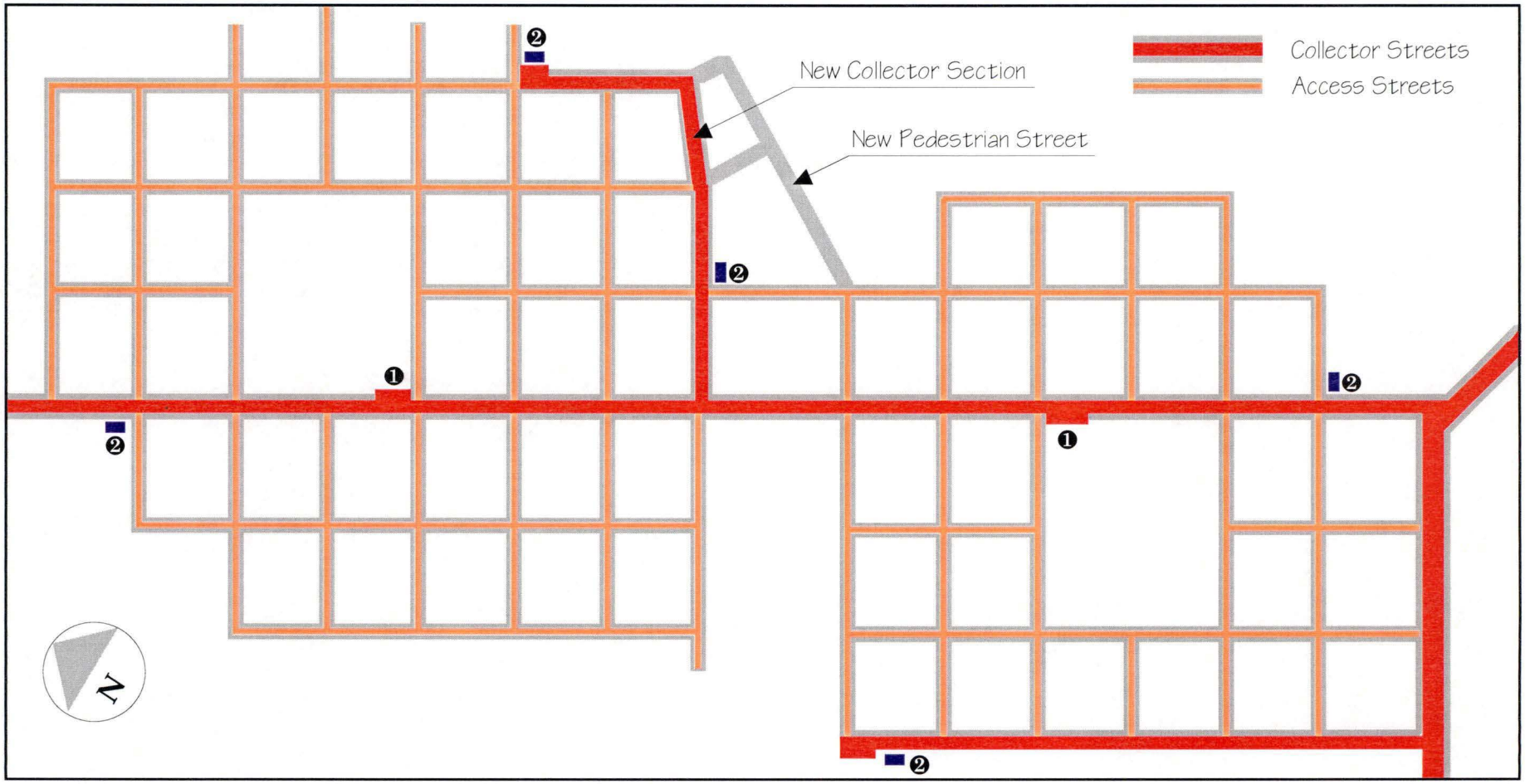


Figure 8.1. Proposed street network for Truong Dinh. Scale 1/2000. (Source: Drawn on Map F-48a-116 (17-d), The Survey and Map Department of the State of Vietnam, 1983)

❶ Bus stop ❷ Central waste receptacle

To realise this, all extended shelters onto the street area must be demolished. It complies with Articles 12 and 19 of the *Ordinance on Housing 1991* (SRV, 1994b: 204 and 207) to demolish decayed and illegal buildings.

At the same time, original service footpaths should be removed. This will effectively increase the site area for every family as well as reduce biological hazards (e.g. snakes and rats). It would also be consistent with new subdivision in Hanoi (refer to figure 5.1). Ventilation and light for the back part of housing would occur through courtyards (see Section 8.4).

8.2.2. Transportation

Public transport cannot be considered for a single neighbourhood in isolation. It is essential for Hanoi as a whole including Truong Dinh for the following reasons:

i/ It would increase the living space for each household, and reduce congestion on roads and streets. Households would have fewer motorcycles and bicycles: it is not expected that families would rid themselves of these but that their number would reduce. Also Hanoi's roads are at capacity.

ii/ It might be expected that pollution, noise and accidents caused by motorbikes in housing clusters would be reduced.

iii/ Also, it would facilitate more people taking part in higher-order activities (e.g. cinema or theatre) across the wider city, especially at night.

The most feasible public transport for Truong Dinh in the short term is the bus. Bus stops would be arranged in the neighbourhood as shown in figure 8.1. These points are approximately 200 metres from the furthest houses which results in reasonable walking distances and is appropriate for sending and collecting children from the kindergartens. This is also consistent with the theoretical model of neighbourhood. Further, these would facilitate the location of other activities at the neighbourhood centre (refer to Section 8.3).

As already inferred, public transport is not an issue for Truong Dinh alone but a matter for the whole city. To improve this, many factors have to be considered, especially changes to road and street networks with the possibility of bus priority in some form.

At the same time, while motorcycles and bicycles remain a main mode of transport, traffic rules and enforcement have to be strengthened. Traffic lights need to be installed at all major street intersections. Every motor-cyclist must have a licence (at the moment, only motor-cyclists of 70cc (or over) motorbikes need licence).

Although private cars tend to be increasing in the city, these should be excluded from public low-rise housing neighbourhoods.

8.2.3. Water and Electricity Supply

The present capacity of the water supply system cannot meet today's demand and the electricity network is in poor condition (see Section 6.3.3). Both systems in Truong Dinh have to be replaced by new ones to meet present and future demands of the residents. Water pipes must be connected to individual households. The new electricity network would be underground in the housing clusters (i.e. along access streets) but above ground elsewhere. In conjunction with general street improvements, water and electricity systems can be laid out under the streets in common trenches together with other infrastructure (sewers, communication cables and possibly gas pipes). These networks can be arranged as shown in figure 8.2.

The water pipes are planned along the access streets in parallel with housing rows: house connection points would be pre-installed (figure 8.3). At present, services are found at the rear of houses in service lanes. These areas would become available for house extensions while the new infrastructure would occur in reclaimed wider streets, resulting from the demolition of illegal encroachments onto these public spaces.

The new water networks should be connected to the city's system and the recently completed Phap Van Water Factory which is a project supported by the Finnish government and is 5 kilometres from Truong Dinh.

The layout of electricity cables can also be seen in figure 8.2. The electricity supply capacity is now sufficient in Vietnam, and especially in Hanoi. Street lights should be installed at every corner and at other strategic points in order to ensure security and safety.

8.2.4. Drainage and Sewerage System

According to Hanoi's Master Plan, combined drainage and sewerage systems will remain until 2010. Therefore, all of these networks must be piped, or at least covered, to avoid the present health hazards.

In Truong Dinh, it is proposed that pipes would be used for all drainage and sewerage networks and that these would be arranged together with other infrastructure, as previously indicated (see figures 8.4 and 8.5).

All common toilets within the housing clusters themselves should be removed and private toilets must become a standard item in each house. Public toilets would remain only in public areas like neighbourhood centres.

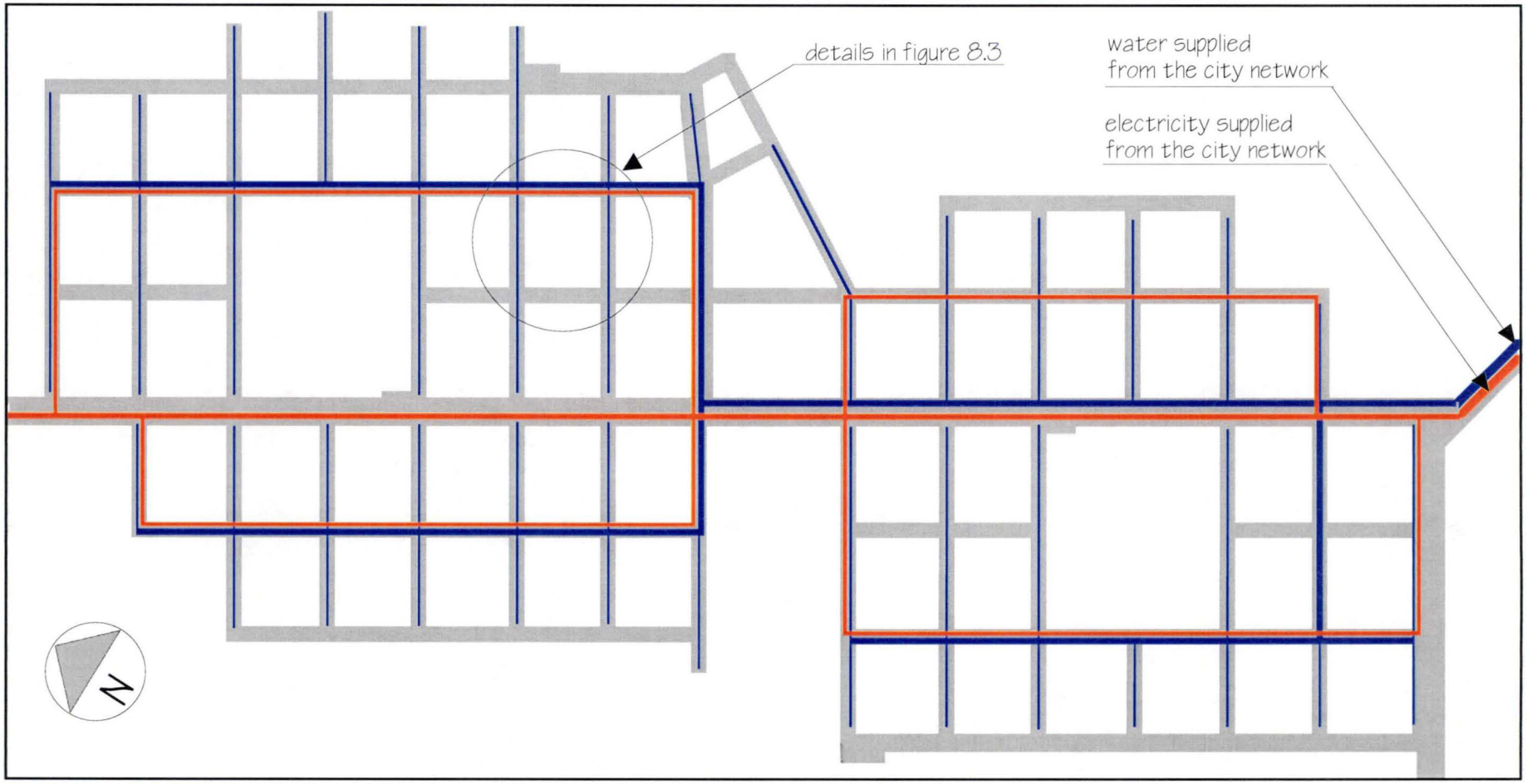


Figure 8.2. Proposed water and electricity network for Truong Dinh. Scale 1/2000. (Source: Drawn on Map F-48a-116 (17-d), The Survey and Map Department of the State of Vietnam, 1983)

Major and minor water supply pipes

Major electricity supply cables (above ground)

Minor electricity supply cables (under ground)

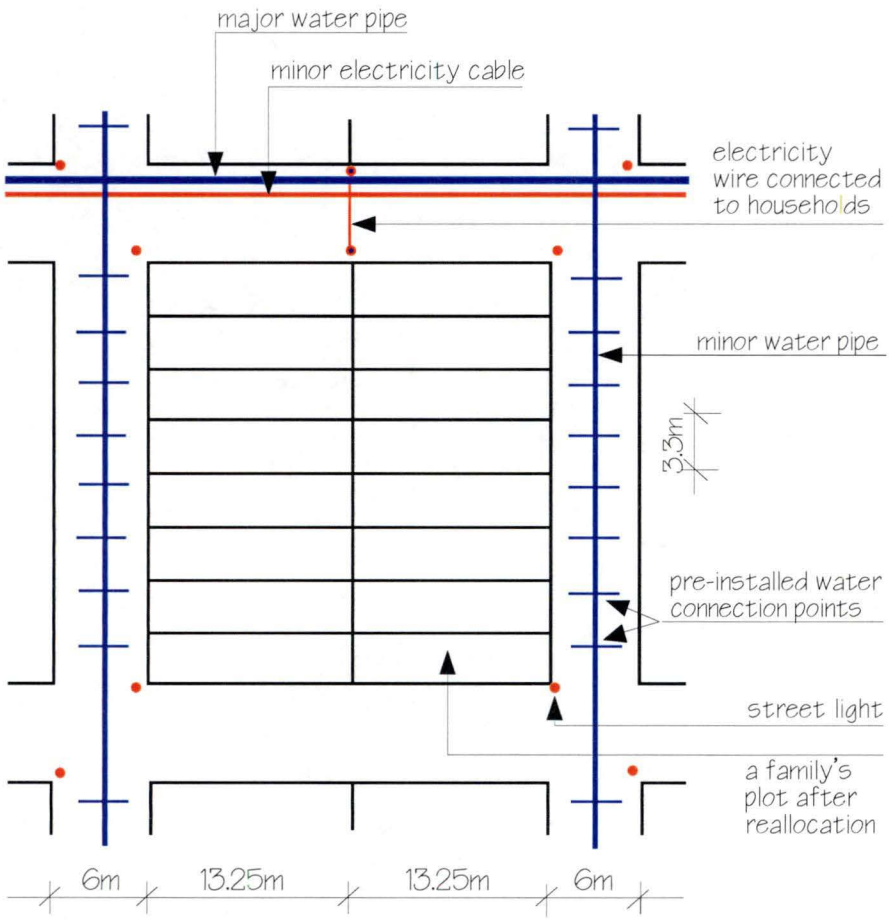


Figure 8.3. Layout of water and electricity network for one housing block in Truong Dinh.

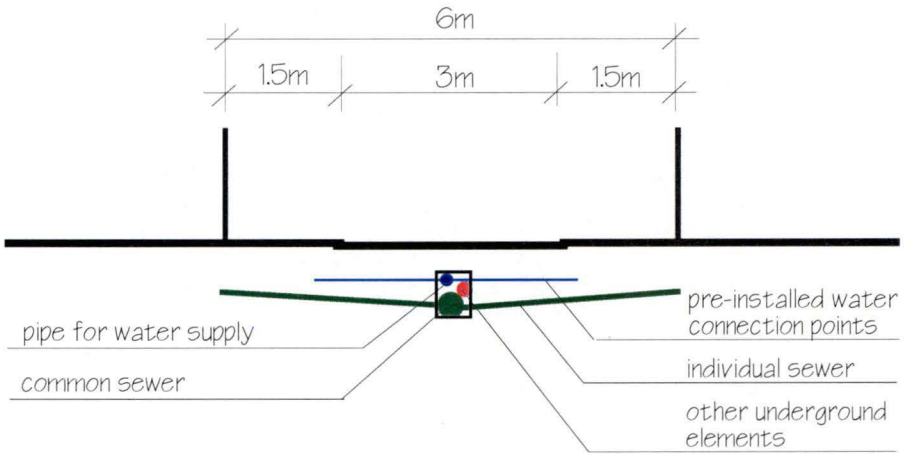


Figure 8.4. Section of access street with infrastructure system in Truong Dinh.

Where facilities are installed in the houses as part of the upgrading process, double-vault latrines must be avoided. To improve health and environment, toilets built must conform to technical and hygienic standards. This matter would be examined by professional officers when approving developments.

8.2.5. Rubbish Disposal

Rubbish in neighbourhoods should be accumulated in central waste receptacles, located adjacent to collector streets. (see figure 8.1). Also, penalties are essential to deter rubbish being dumped randomly and especially into rivers.

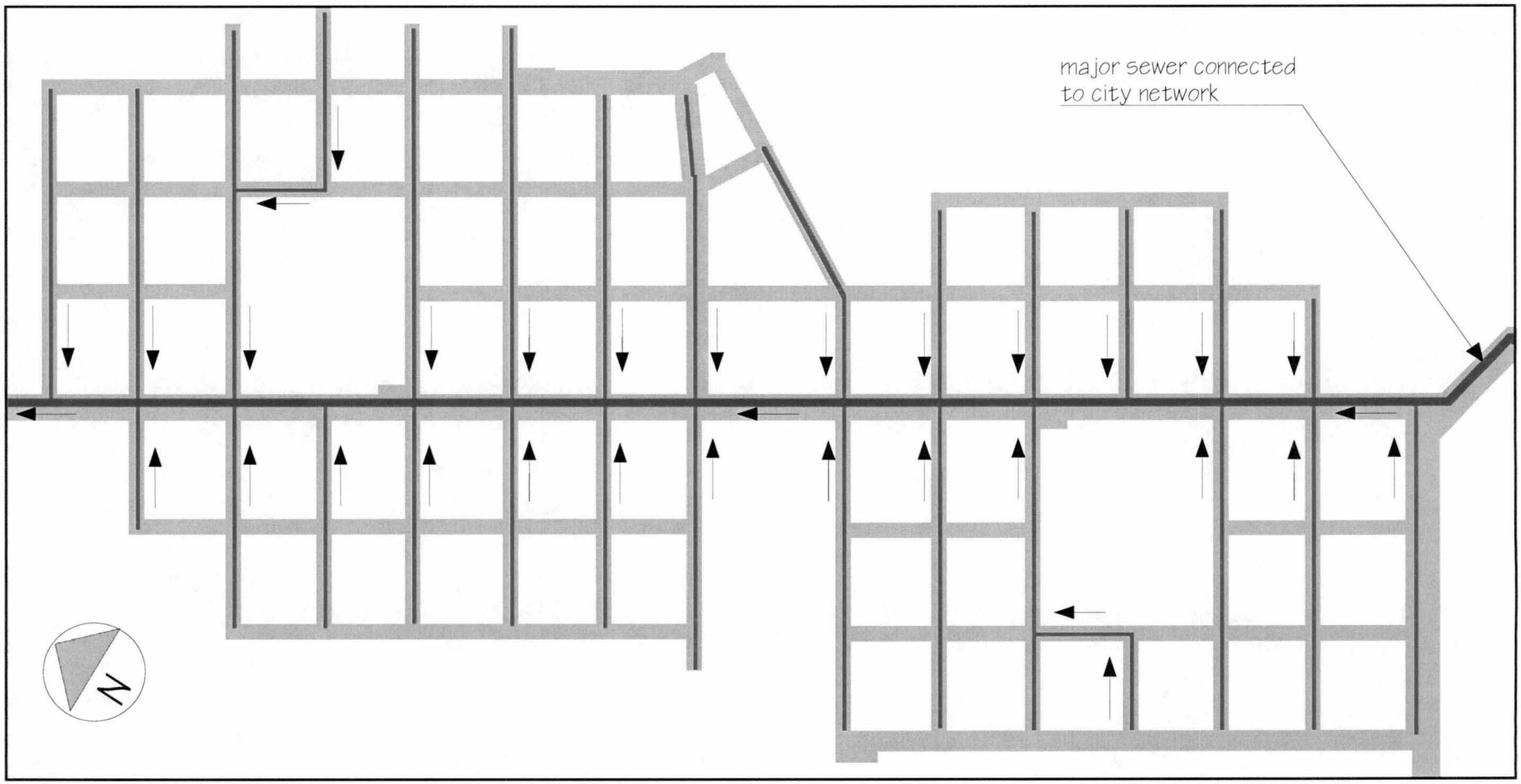


Figure 8.5. Proposed drainage and sewerage network for Truong Dinh. Scale 1/2000. (Source: Drawn on Map F-48a-116 (17-d),The Survey and Map Department of the State of Vietnam, 1983)

Major and minor sewers, with the direction of waste and storm water flows

Perhaps the most important matter, however, is that of rubbish collection equipment. The government must invest in adequately equipped tractors. This issue affects the whole city, not only Truong Dinh and other housing areas. Further, the possibility of factories for processing of rubbish should be explored, especially in the larger cities.

8.3. COMMUNITY FACILITIES

8.3.1. School

The elementary school in Truong Dinh was designed for 26 classes and about 1050 children. Today, due to the increased population, many children have to go to schools outside the neighbourhood. Another factor affecting schools is changes to the training system in Vietnam. Since 1990, 2 grades (i.e. school years) have been added to the system. Elementary schools have two levels. In previous times, level One comprised grades 1-4, level Two consisted of grades 5-7. Now, level One has 5 grades (for children 6-11 years old) and level Two has 4 grades (age 11-15).

At the same time, limited land in the neighbourhood does not allow for the school to be extended easily (refer to figure 6.2). It is proposed that the existing school (a 4-storey building) should serve only those neighbourhood children who are in the first 5 grades. Second level children should be bussed to new schools in adjacent areas. The buses can arrive and depart at the proposed public bus stops (see figures 8.1 and 8.6).

8.3.2. Kindergartens

As outlined earlier, Truong Dinh has quite good kindergarten buildings (see plate 4.5). The need is to improve the quality of services (i.e. equipment, toys, etc.) and introduce flexible times to attract the neighbourhood's children.

The local government, and other involved cultural and educational organisations should invest considerably in the improvement of equipment in the kindergartens. Moreover, given the guidelines that "the State and people combine to work together", some funds could be raised from residents who have children of kindergarten age.

The time for collecting and delivering children has to be flexible. Many residents in the neighbourhood work at irregular times (i.e. starting very early in the morning, from about 6 am. or finishing in the evening, about 8 pm.). These people must be allowed to send or collect children to the kindergartens at that time.

To increase the child care capacity of the neighbourhood and to meet demands of the multi-sector economic mechanism, private child care needs also to be facilitated. This service can be more flexible as child carers are able to work at their own home. However, these people must be registered and controlled by government guidelines: this would involve approved training standards and costs which are comparable to those at public kindergartens. It is the government's responsibility to contribute to the costs of child carers.

An example of child care that the Truong Dinh neighbourhood could follow is that of Tasmanian local governments. Private child carers are registered by the local authority and fees charged for each child are stipulated by the council. Parents have to pay part of the cost, depending upon their particular circumstances, like income and number of children in the family. The scheme also indicates fees for looking after children at extended times and weekends (Glenorchy City Council, 1994).

8.3.3. Other Community Facilities

All daily services should be reorganised in Truong Dinh neighbourhood. These services include:

- Shops for food and manufactured goods
- Other daily services.
- Cultural and sporting activities.

i/ Shops for food and manufactured goods

In the highly competitive partially free market economy of today, State-owned shops have difficulty meeting the demands of residents. This is partly due to shortages of goods and food. Also, there are no incentives for employees in the public sector to reorganise and improve productivity as incomes are fixed irrespective of performance. Another factor is that the existing building is itself insufficient for doing business in the market economy, in terms of standards and capacity.

To compensate for these deficiencies, many residents open private shops in their homes. This service partly meets the people's need in the neighbourhood. It also reduces considerably the already cramped living areas as well as the privacy of these families themselves, and impacts upon the living environment of neighbours (e.g. noise and crowding).

Thus, shops for food and manufactured goods have to be reorganised in Truong Dinh. The old buildings should be demolished and shopping activities relocated in a complex which includes other daily services in the neighbourhood centre (see figure 8.6). The shopping that now occurs in private residences and is scattered throughout the neighbourhood, should also be concentrated at the centre. Premises would be utilised for both public and private sectors, and become available for renting while houses would return to their residential functions.

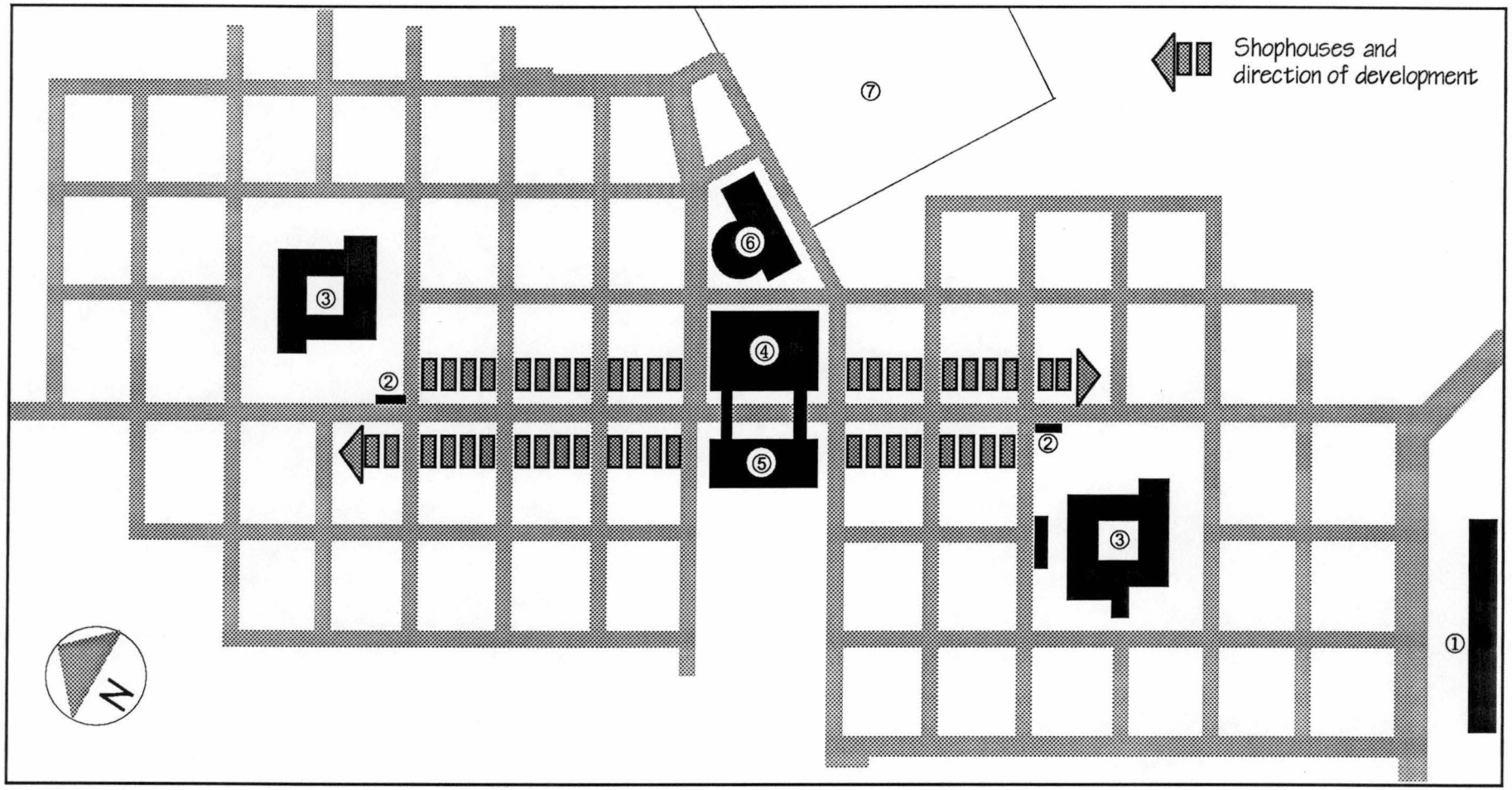


Figure 8.6. Proposed community facilities network for Truong Dinh. Scale 1/2000. (Source: Drawn on Map F-48a-116 (17-d),The Survey and Map Department of the State of Vietnam, 1983)

① Elementary school for first level (5 first grades) ② School bus stops for second level (4 grades) ③ Kindergartens ④ Shops
⑤ Other daily services ⑥ Cultural and Sporting services ⑦ Play ground

Further retail and service development can be accumulated along the main collector street out from the existing centre according to demand. This strategy (see arrows representing shophouses in figure 8.6) will increase the service capacity of the neighbourhood and encourage the people to do business. This would also be consistent with the improvement of housing (see Section 8.4). The development of these facilities would combine with the central complex, and expand along the main collector street to form a convenient linear neighbourhood service centre (figure 8.6). It would bring to the neighbourhood the traditional streets and lifestyle (refer to chapter 2) and yet remain consistent with the form and character of the Stein-inspired planned neighbourhood.

ii/ Other Daily Services

Other daily services needed within the neighbourhood include Health Care Centre, Post Office, Bank, and Administration Office. These are public sector services. Other services such as home appliances repair, laundry or hairdressing can be provided by both public and private sectors. The proposed location of these services is also shown in figure 8.6.

iii/ Cultural and sporting activities

The existing playground should be maintained for the sporting activities of all residents in the neighbourhood and also the school. A new pedestrian street needs to be formed to serve the facility. Besides the open space, other desirable facilities are an indoor hall for light sports such as table tennis and chess, and a small library and club for cultural activities. Again, figure 8.6 shows the layout of these activities.

8.4. HOUSING

Housing is the most substantial component in the improvement of any public low-rise housing area. As a two-storey neighbourhood, housing in Truong Dinh is typically problematic. It is too expensive to be demolished for rebuilding and yet offers very poor conditions for living. However, it must be viewed as a resource to be upgraded in order to improve the living conditions of its residents.

Within the context of leasehold for land and home ownership as already discussed, the main proposal of this project is a framework to facilitate the improvement of houses through the actions of individual households. In such a system, changes to houses would vary from one to another. However for the sake of character, amenity and safety of the neighbourhood, some guidelines are essential to control change. Illegal ad hoc building under public ownership is evidence of this need.

One aim of these proposals is to modify the houses to take on some characteristics of the traditional urban "tube house" (see Chapter 2), especially its courtyard and ventilation conditions which were an effective response to local climate and culture. In Vietnam, households are large (see Section 1.3) and the number of small rooms should be increased in dwelling units in order to create more privacy for more family members.

This project suggests general guidelines for the whole neighbourhood (e.g. setback, height). It proceeds by way of examples of change, graded according to the resources of households. However, it should be noted that the examples, as drawn, set only a general pattern of development, within which details could vary considerably.

The three main components of the proposals are: the subdivision, and the public and private domains.

i/ Subdivision

Complying with other elements proposed by this study (e.g. streets, water supply, space for ventilation and light), it is suggested plots for all families be re-subdivided. Figure 8.7 shows a comparison between the original and proposed site of a housing block (i.e. pair of housing rows).

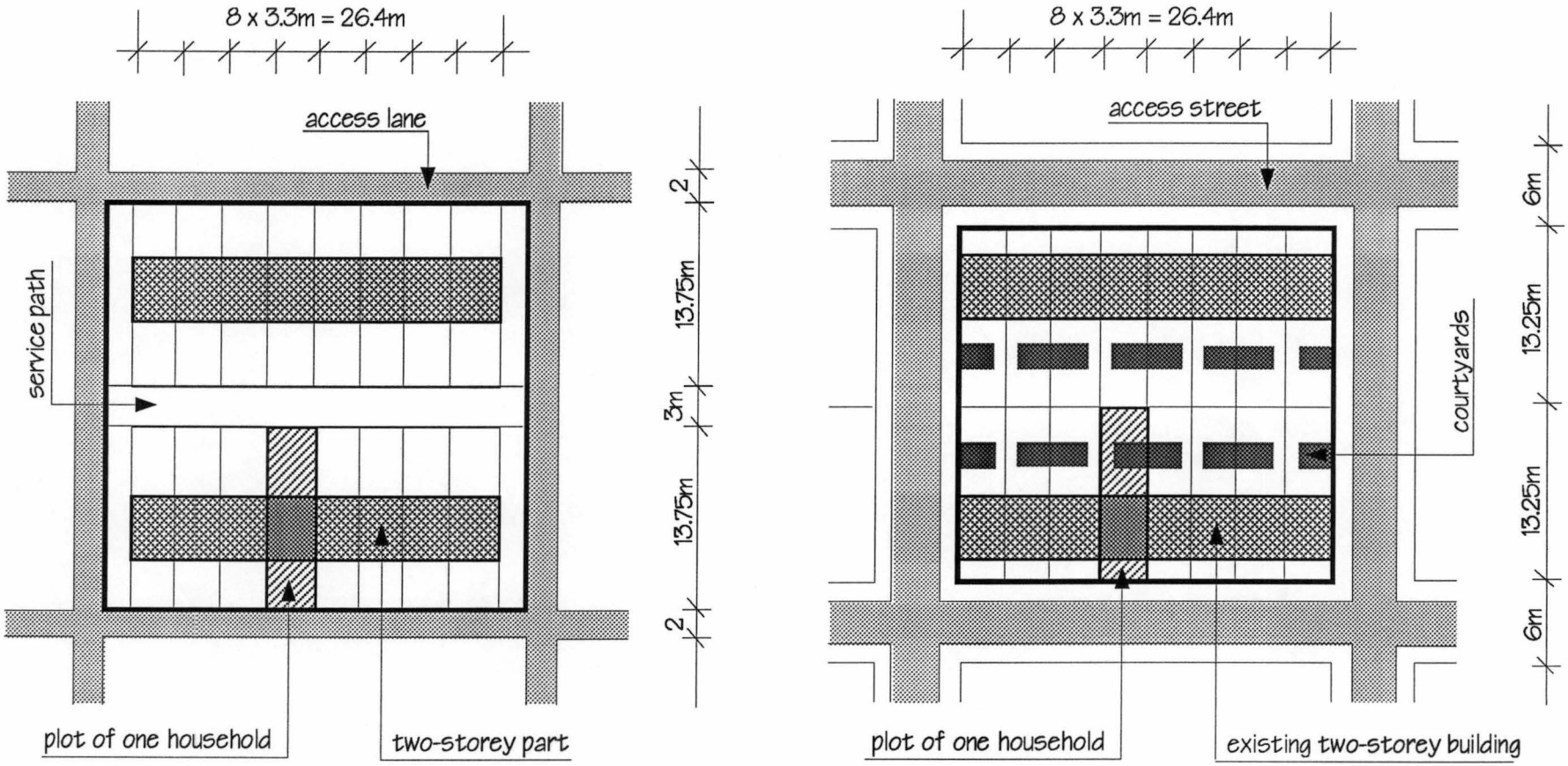
ii/ Public Domain

Consistent with the subdivision, sections of houses which have encroached onto the public areas would be demolished. At the same time, the street "rehabilitation" would occur and this would cover the upgrading of the two most important infrastructure services: water and sewerage, including connection points for extensions to individual households.

iii/ Private Domain

To improve the public environment, water and sewerage connections to houses would be compulsory and constructed by individual families. Otherwise the houses would be upgraded according to the wishes and resources of each household. However, it is assumed that there are four broad groups within the area and solutions are proposed for each.

- Group One: Residents who can replace the old dwelling units by rebuilding new housing (Like Mr. Phan's case, see Section 6.5).
- Group Two: Residents who cannot demolish the old dwelling units but can invest in upgrading the houses on a substantial scale.
- Group Three: Residents who can invest only in upgrading the dwelling units in minor ways.
- Group Four: Residents who can neither afford to upgrade their housing nor enjoy the leasehold system, nor pay for the existing house.



a / Original Subdivision

b / Proposed Subdivision

Figure 8.7. Layout of one housing block in Truong Dinh. Before and after proposal.

8.4.1. Group One: Rebuilding Housing

This model acknowledges that there are residents of Mr. Phan's resources and initiative, and therefore with the potential to rebuild (see Section 6.5).

Residents in this group need to be relocated to particular housing blocks defined by the planning authority. This would involve the reallocation or exchange of dwelling units between residents. This should result from an initial survey of residents, and be controlled and managed by the City People's Committee. Sites of these blocks would be along the main collector street out from the centre. Houses may be located either along the main collector street where shophouses will be allowed or on plots immediately adjacent but facing the access streets (see figures 8.6 and 8.8). The former homeowners would be able to do business themselves or rent their shop spaces to others. Occupying more lucrative plots, resulting from their commercial land potential, these people would pay more in land rent. However, the plot area of all houses within this new subdivision would be equal, as shown in figure 8.8.

This group would build following the demolition of a housing block. The design of new housing must be approved by the Architect in Chief's Office. The houses may be designed by different architects or families may combine to employ one architect.

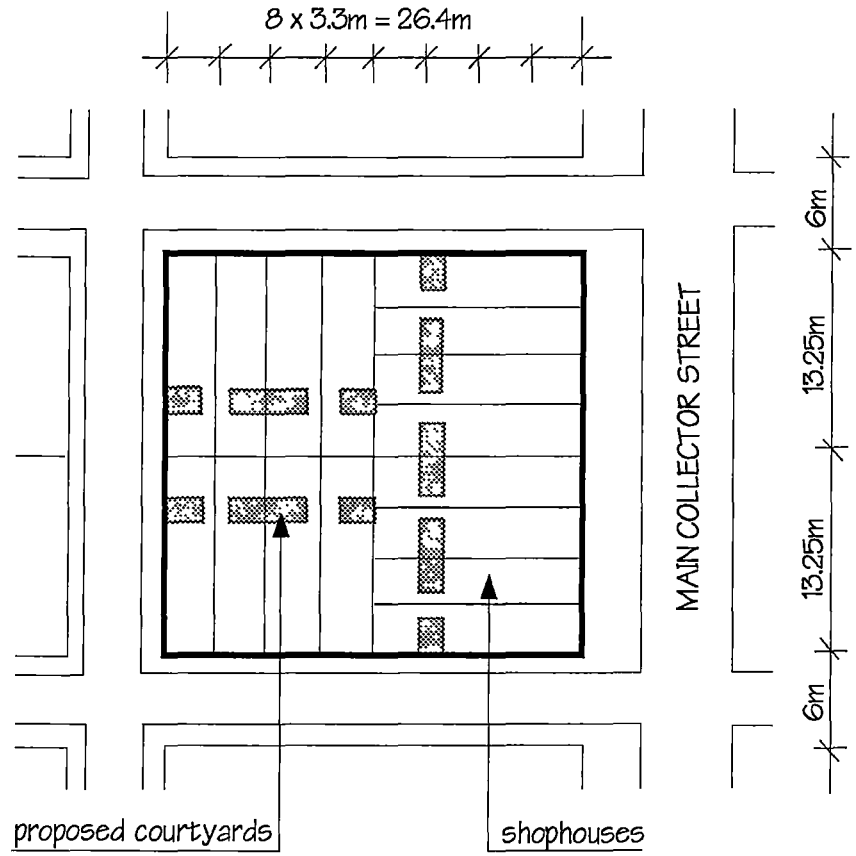


Figure 8.8. Subdivision for Group One in Truong Dinh. Shophouses are encouraged along the main collector street only.

To achieve optimum harmony and economy, it is preferable that all units in a block should be built together and designed by one architect. By this method, it is likely that each family would reduce its expenditure and have its living areas increased. This would result from the use of party walls and avoid the costs of additional structural supports for the benefit of neighbours'. For instance, Mr. Phan had to pay for the provision of structural support for two neighbouring units and the width of his own house was reduced. This is an important consideration in Hanoi, with implications even for furniture layout. In a dwelling of only 3.3 m width, Mr. Phan would have gained 16 centimetres in width through a co-operative project and have been able to use the cheaper brick construction: he was forced to use more expensive (1.5 times) concrete.

In design, the internal layout of each unit can be varied to meet the needs of each household, but the facade of a row should have some measure of architectural harmony and the heights of buildings must conform to the regulations and norms of the government. For instance, where the distance between two rows of houses is 6 metres, the maximum height is also 6 metres (refer to Section 8.2) at the street boundaries. The height of any house in Truong Dinh must not exceed 10 metres (i.e. 3 storeys).

Figure 8.9 shows an example plan of two houses in a row of eight, which conform to the same plan. In each unit, the floor area is 97 square metres (compared with an area of 34.5 square metres of that which it replaced). A small courtyard of 3.2 square metres is provided for ventilation and light, and a place for outdoor activities which meet the Vietnamese lifestyle.

This model also encourages occupants to plant greenery on the roof of the buildings while following the standard height. The area of terrace could vary according to the wishes of each family (see figure 8.10).

For shophouses, the plan can be modified from the above example (in figure 8.9) with the ground floor as shown in figure 8.11.

8.4.2. Group Two: Substantial Upgrading

This group consists of those residents who cannot demolish entirely their existing dwelling units but can invest in upgrading them with substantial improvements. It is too expensive for them to demolish and rebuild the two-storey part of the house. In most cases, however, the original single-storey part has been extended, usually in an unsatisfactory (i.e. hazardous) manner (refer to plates 6.1 and 6.2). It is this part of the house upon which

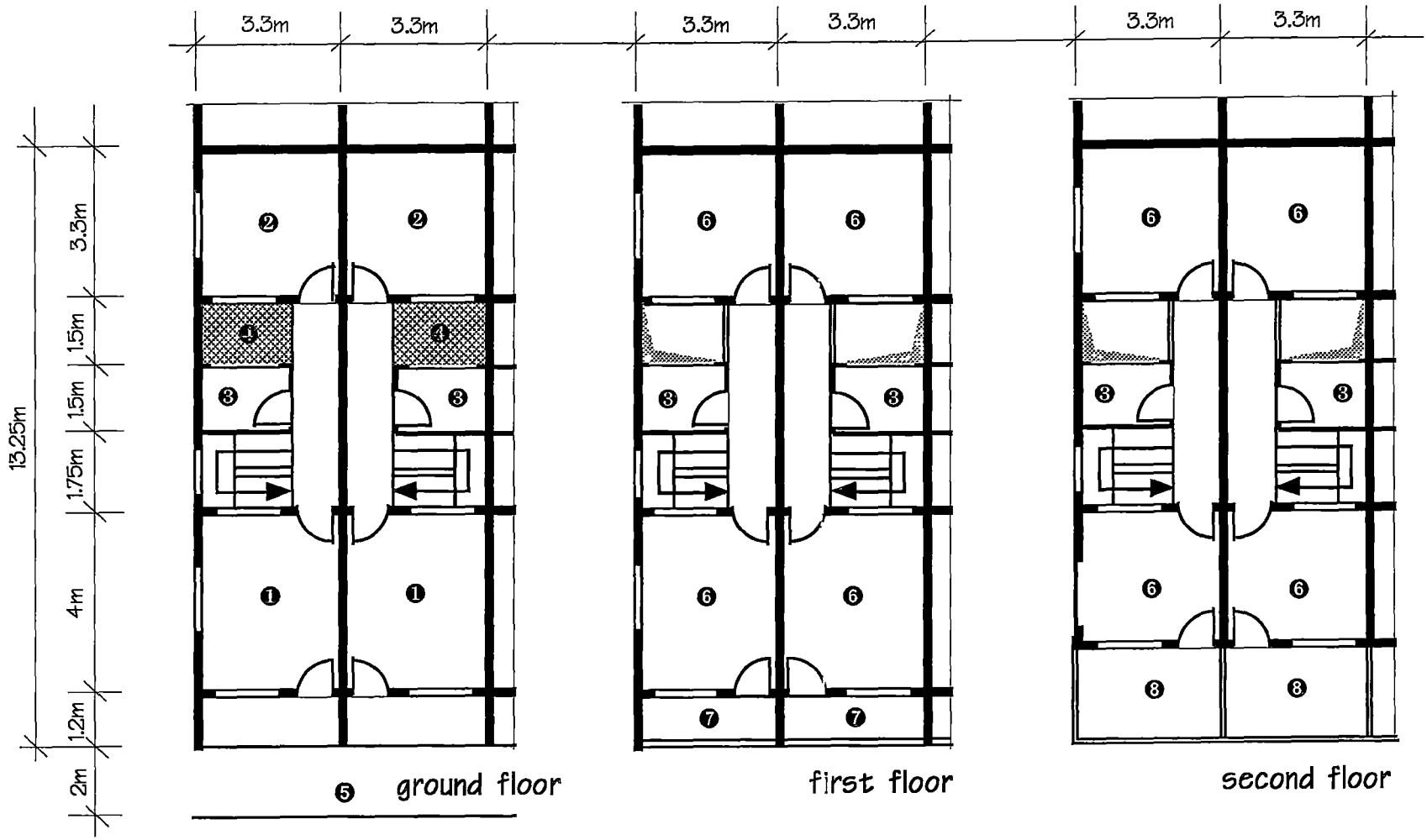


Figure 8.9. Example plan of two houses for rebuilding in Truong Dinh

❶ Living room ❷ Kitchen, Dining room ❸ Toilet, bathroom ❹ Courtyard
❺ Pavement of Access Street ❻ Bedroom ❼ Balcony ❽ Terrace

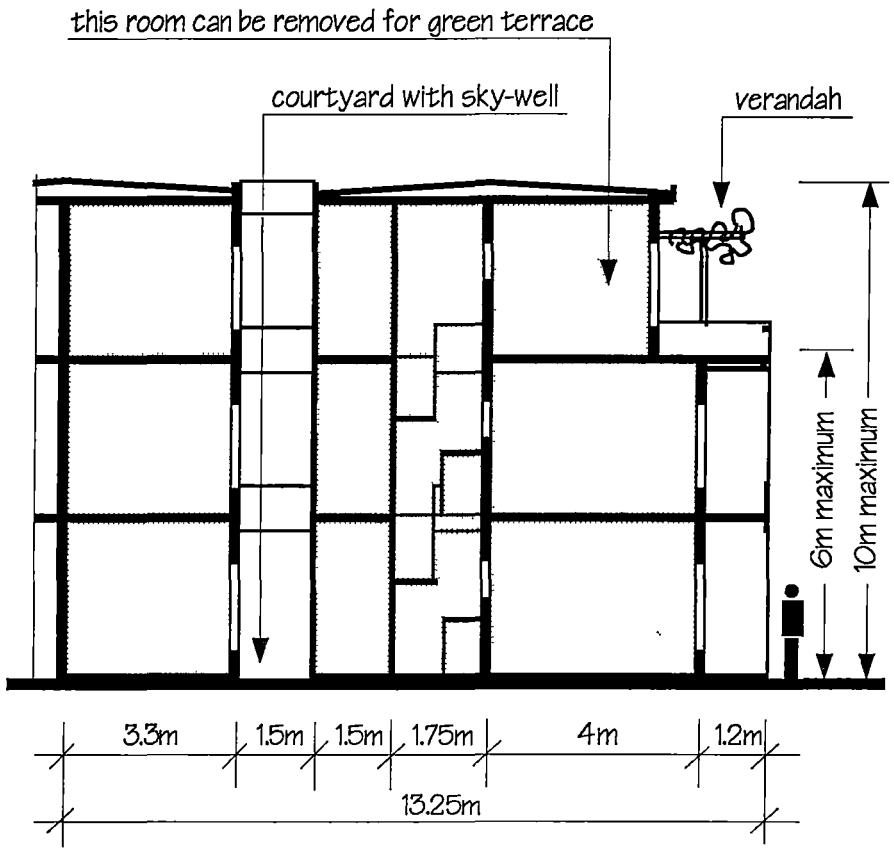


Figure 8.10 Proposed section for rebuilding

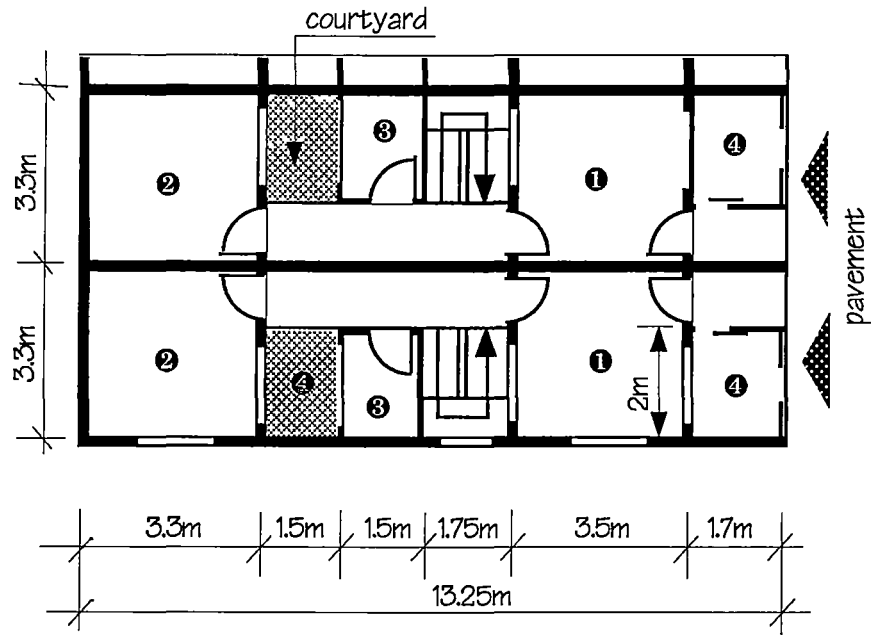


Figure 8.11. Plan of the ground floor of shophouses
❶ living room ❷ kitchen ❸ toilet, bathroom ❹ shop space

improvement should be concentrated. Further, by the rearrangement of sites (see figure 8.7b), each house could extend back over what was originally the rear service path.

The residents in this group can build progressively to extend their houses out from the original "core" at both the front and rear of the sites. Such extensions can take place individually and at different scales depending upon specific

wishes and resources of each household. This would certainly increase living areas and certainly improve living conditions if the new construction is controlled to the required standard. Figure 8.12 indicates an example of a solution for a typical dwelling in this group.

8.4.3. Group Three: Minor Upgrading

Group Three proposals are aimed to accommodate the lower-income residents in the neighbourhood who can invest only in minor upgrading. Here, investment will mainly be concentrated on the repair of their homes. The most important work would be the upgrading of the service area, although this may progressively be extended to such items as a heat-proof layer on the roof and even rebuilding over part of the demolished front section of the house.

The upgraded parts should be built of solid materials to comply with the conditions of leasehold on land tenure and the material fireproof rates (in Truong Dinh these rates are I and II, see Appendix 3). According to local tradition, a solid ground floor level has commonly been built to support a further storey at a future date - i.e. to accommodate gradual improvement.

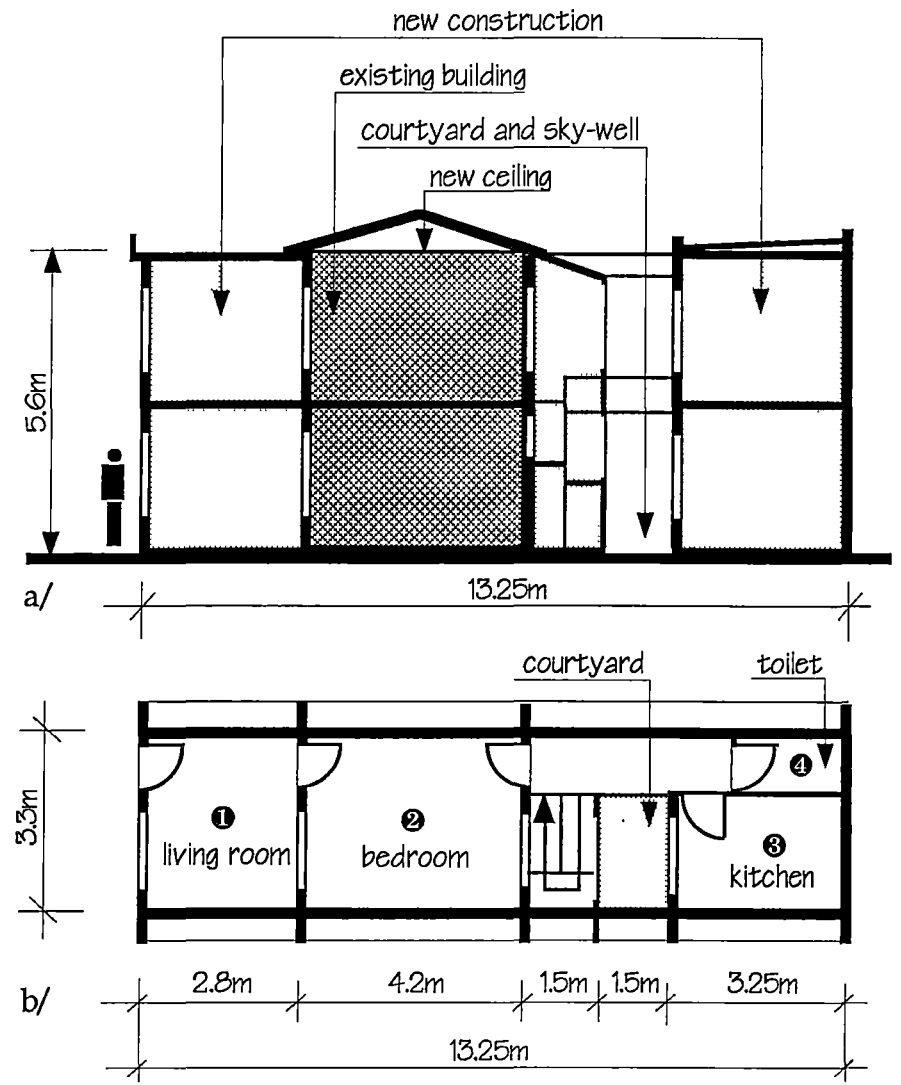


Figure 8.12. Example of upgrading housing on substantial scale. a/ Section b/ Plan of ground floor

8.4.4. Group Four: The Poor

Group Four includes the lowest-income residents (the poor) in the neighbourhood who can neither afford to improve their housing nor enjoy the leasehold system, nor pay for existing houses. In other words, they cannot take part financially in the upgrading process.

For this group, houses and other services would be upgraded by the government and local authorities in return for rent. These should be relocated in common blocks in order to reduce the upgrading costs. This may also facilitate the reallocation of sites to residents in Group One for rebuilding.

In conclusion, the study recognises four group of Truong Dinh residents arranged according to their abilities to carry out housing improvements. These would have to be identified by survey as a first stage in the planning process. Graded solutions are proposed to satisfy the needs of the different groups - from minor (essentially service areas) to complete rebuilding for lower and higher income groups respectively. All housing improvements need to be consistent with the government guidelines and regulations, the start of which are suggested here. The approach is designed to meet requirements as outlined by Nigel Oram (1979: 44). He identifies four basic housing requirements:

1. Shelter from the elements and from intruders
2. Security from the dangers of fire and building collapse
3. Conditions which promote good health
4. Adequate space and privacy.

Truong Dinh is one of many two-storey public housing developments in Hanoi and Vietnam, and there are implications from this study for other areas. Indeed, the proposals for Truong Dinh could be applied to similar two-storey public prefabricated housing areas. However, it is suggested that Truong Dinh be commenced as a trial area and the results monitored in order to improve the process for application elsewhere.

Similar approaches could be adopted for like-housing built by the collective sector. However, all houses rebuilt or upgraded should follow the common guidelines and regulations of government and not those of ad hoc agencies. This would allow standard application across the whole city or town.

8.5. ORGANIZATION FOR IMPLEMENTATION

Housing is not only a physical but also a major social issue. It is not an individual responsibility but one that involves the whole of society. Consequently, it has to be dealt with by central and local government, and public and private sectors (Cherry, 1974: 66). Thus, while the proposal here is one of transferring much public low-rise housing from State to private ownership, people will still need assistance and the government must continue to play a critical role in housing. The government must organise processes of upgrading and assist where people cannot help themselves. Further, only the government can effect major improvements in major infrastructure networks and the provision of community facilities.

A general policy of co-operative enterprise between the State and people was introduced in 1985. However, as far as housing is concerned, this policy has concentrated very much on new building and has had an insignificant effect on existing public low-rise housing areas.

With the policies for land tenure, housing ownership, and the physical upgrading of neighbourhoods and individual houses proposed by this project, new structures of responsibility must be established within government for implementation and management. This section puts forward an idea for that structure, using the example neighbourhood of Truong Dinh. It will identify key departments and agencies, and the roles that each must play in terms of initiatives, investment, construction and management.

8.5.1. Bodies Involved in Upgrading the Neighbourhood of Truong Dinh

To achieve successfully the improvement of Truong Dinh, it is necessary to mobilise the resources of the central and local government, professional bodies and residents. However, to avoid overlap between them, particular roles of each body will be proposed. Five major bodies are identified to effect the upgrading process:

1. The Central Government
2. The City: Hanoi People's Committee
3. The People's Committee of Hai Ba Trung District (which Truong Dinh belongs to)
4. Hanoi Building Bank
5. Residents of Truong Dinh neighbourhood

Clear roles must be assigned to each body as duplication of tasks and inefficiency needs to be avoided.

8.5.2. Roles and responsibilities.

i/ The Central Government
Based on the *Constitution 1992,* the *Ordinance on Housing 1991* and the *Law on Land 1993,* the central government's role is to offer policies of land use and house ownership. Leasehold on land and the transfer of housing ownership to residents would be applied to public low-rise housing areas. Further, the central government would set up building laws, stipulating procedures and regulations for the upgrading of this type of housing.

ii/ The City: Hanoi People's Committee
The role of the City is to fulfil the policies of the central government: it thus becomes the key organisation for the actual implementation of central policy, including investment in the major infrastructural elements of the neighbourhood.

For the application of the leasehold of land, the People's Committee (PC) would be the lessor and the residents the lessees. The PC would set the particular terms and conditions of the lease, and define the initial land rent and the period for review. It would also receive payment (albeit nominal) from the sale of existing houses to residents. Funds from land rents and house sales would be held by the Hanoi Building Bank and the City PC would empower the District PC to utilise these for neighbourhood development.

The City would thus be responsible for the co-ordination of related professional bodies engaged in the improvement of the neighbourhood. It would direct these bodies to assist the people with building and equipment (from building companies) and technical staff (planners, architects and engineers from designing centres). Further, it would be responsible for approving the upgrading plan of the neighbourhood, which would be submitted by the Architect in Chief's Office (ACO).

An important role of the City is to invest in the major networks of infrastructure and community facilities. This includes the street network, lighting, bus system, major pipes for water, power lines for electricity, major sewers and any other underground elements (refer to figures 8.1, 8.2, 8.4 and 8.5). Further, the City is responsible for providing other services through its Departments, such as tractors for rubbish collection, or developing factories for processing rubbish. The community facilities include all central buildings, such as the school, cultural and health facilities, and daily service building (refer to figure 8.6).

iii/ The People's Committee of Hai Ba Trung District
The People's Committee of Hai Ba Trung District (DPC), to which Truong Dinh belongs, would have the most direct

role in neighbourhood improvement. Under the City PC, this local authority would have the responsibility for contracting with relevant professional bodies to execute the redevelopment, and managing the neighbourhood.

The process of upgrading the neighbourhood and the other responsibilities can be further outlined as follows:

- The process would depend on an initial survey, conducted to identify the economic conditions of residents, and their capacities and willingness to participate in the program: these would be classified into four groups as proposed in Section 8.4. The survey would determine the number of housing blocks to be demolished for Group One residents and the plan for reallocation. It would also determine the number of households in Group Four in need of continuing government assistance. This work would be conducted by the Survey and Measure Company of the Hanoi Department of Construction (DoC).

- The DPC would contract with a designing centre to prepare a detailed plan (scale 1/2 000) of the whole neighbourhood, including community facilities and physical infrastructure. According to *Decision 91-CP*, 17 August 1994 of the Government on *Regulations of Urban Planning Management* (GoV, 1994c: 540), this plan must conform to the Hanoi Master Plan 2010 and be evaluated by the ACO. It needs the approval of the City PC.

The designs of housing blocks or of individual houses can be carried out by various designers, depending upon the choice of residents. These must be approved by the ACO and in turn, given building permits.

- Following the survey and approval of the neighbourhood plan, the DPC would estimate required funds for the main improvements to the area: these would be raised from land rent and house sales, and invested by the City PC. At the same time, estimates for the minor networks of electricity and water supply would be made, and of resident contributions for these.

It is suggested that the DPC would be empowered to utilise the City's funds from the above sources for the neighbourhood improvements.

- The DPC would then contract with other bodies to execute the work. These would include:

- The Department of Transport and Public Works for construction of all streets and major infrastructure networks. It would also provide public and school buses as well as tractors for rubbish collection, and machinery for such tasks as the periodic cleaning up of the To Lich River and possible factories for processing rubbish. For these latter tasks, co-operation with other neighbourhoods of the District would be necessary.

Under the new economic mechanism, public transport (buses or other means) could be operated by either public (the government) or private (individuals or private companies) sectors. However, for the latter operators, matters such as fares and operational timetable would be set by the government.

- The DoC would be responsible for all building inspection and quality control in the provision of infrastructure systems and community facilities. The DoC would also provide building materials and organise building companies to upgrade and rebuild the community service buildings. Houses may be built by either public or private companies.

Due to the multi-sector involvement in construction, the DoC must exercise strict control over development. Realistic penalties are an effective device to deter illegal activities. As in most countries, including Australia, building work conducted without permission or not in accordance with approval should be penalised.[1]

- Other City Departments to be involved in neighbourhood improvement are: the Electricity Department and the Water Factory for the supply of electricity and water, the Cultural Department for guiding cultural activities, and the Department of Education and Training for offering training and other programs.

Another important role of the DPC is the ongoing management and co-ordination of the neighbourhood after the initial upgrading. This is to avoid the duplication of tasks between bodies. The DPC would be the only organisation responsible for overall neighbourhood management.

iv/ Hanoi Building Bank (HABUBANK)

The Hanoi Building Bank is responsible for the funding of housing development in the City.

At present, the bank lends money for public construction enterprises and invests directly in housing construction for private sale. The HABUBANK should also be permitted to lend funds to private individuals for new building and housing improvements. Further, it should also have the capacity to assist poorer households which might receive means-tested lower interest finance.

According to the National Strategy for Shelter to the Year 2 000 (HMD, 1993: 21), the bank's lending is based on three

[1] For instance, in Australia building work conducted without a permit is penalised up to 500 penalty units* (for a corporation) and 100 penalty units (for other cases). These penalties are also applied to building work that is not in accordance with approval (Australian Uniform Building Regulations Co-ordinating Council, 1991: 53).
* "penalty unit" means $100 (Commonwealth of Australia, 1993: 3457).

principles:

- Borrowers must have a necessary proportion,
- Borrowers must have capacity to return funds and be insured by communities or employers, and
- The bank must maintain its capital.

At the moment, the HABUBANK lends amounts ranging between 30 and 70 per cent of housing costs to public construction enterprises. The interest rate is 7 per cent per year over a period of 10-15 years (HABUBANK, 1991).

It is proposed that the HABUBANK should lend funds to individuals, with interest rates of also 7 per cent or less, depending upon the economic condition of each family (as identified by the survey), for up to 25 years. The sums borrowed could also be up to 80 per cent of housing costs with houses as the mortgage.[1]

v/ Residents of Truong Dinh neighbourhood

Within the framework of the new economic mechanism, residents play an important role in the process of upgrading housing. It is clearly stated in the National Strategy for Shelter to the year 2000 that:

> "housing development is an interest and responsibility of the people and is conducted by them, while the State encourages and gives opportunities for them to build their own homes in conformity with the plan." (HMD, 1993: 6).

The crucial role of the residents is in preparing the resources, both finance and labour, for the upgrading of their houses. The residents will be the lessees who sign the land leases with the City PC. They will need to take part in a consultation process which assesses existing conditions and prepares detailed proposals for housing design. They should also be involved in the choice of designers and builders. They may take part in building their homes themselves, using their own skills and labour. Their main obligation is to build, extend and/or improve their homes in conformity with the guidelines and regulations of the government.

Residents' funds will cover:

- Land rent and costs of existing housing.
- Costs of reticulation of infrastructure systems (minor networks and individual connections)
- Costs of house improvement.

In brief, to upgrade the Truong Dinh neighbourhood, several bodies need to be involved. These include the central government, city and district authorities, related professional organizations at city level, and neighbourhood

[1] In Australia, many banks offer home loans up to 80 per cent of housing and land cost, and payments are made at fortnightly intervals. Information derived from interviews with the Commonwealth, ANZ, Westpac, National and Trust Banks, 1995.

households. Each would have a specific role to play in the improvement process, covering policy, investment, management and construction. While these recommendations arise out of the study of one neighbourhood, they could equally apply to other similar neighbourhoods. However, it is recognised that planning and development are processes of learning, and the experience and evaluation of a trial project in a neighbourhood such as Truong Dinh should result in improved models in the future.

Tables 8.1.1, 8.1.2 and 8.1.3 sum up the responsibilities of the main bodies involved in the upgrading of the Truong Dinh neighbourhood. This model has wider implications for public low-rise housing areas in Hanoi and Vietnam. However, it's application would vary depending upon each specific circumstance.

Main Bodies \ Major Functions		Land Use						Existing Housing						New Housing									
		Policy Making	Rent Definition	Lessor	Lessees	Rent Holding	Manag't & Maint'nce	Policy Making	Cost Definition	Seller	Buyers	Fund Holding	Manag't & Maint'nce	Surveying	Planning Approval	Designing	Approval	Building Permit	Investment	Building Materials	Construction	Inspection	Manag't & Maint'nce
Central Government		■						■															
Municipal Level	City People's Committee		■	■					■	■					■								
	Architect in Chief's Office																■	■					
	Department of Construction													■							■	■	
	Building Bank					■						■							■				
District People's Committee							■						■										■
Residents					■						■								■				
At all levels*	Building Material Providers																			■			
	Designing Centres															■							
	Building Brigades																				■		

Table 8.1.1. Proposed responsibilities for the upgrading of the neighbourhood of Truong Dinh (Land Use and Housing).

* Building material supplies, design and building services are available at central, municipal and district levels of government as well as in the private sector. Under the new economic mechanism, these can compete with each other for work.

- Manag't & Maint'nce: Management and Maintenance

Main Bodies \ Major Functions		Electricity Supply														Water Supply													
		Major Network[1]							Minor Network[2]							Major Network							Minor Network[2]						
		Designing	Approval	Investment	Construction	Inspection	Supply	Manag't & Maint'nce	Designing	Approval	Contribution	Construction	Supply	Inspection	Manag't & Maint'nce	Designing	Approval	Investment	Construction	Inspection	Supply	Manag't & Maint'nce	Designing	Approval	Contribution	Construction	Supply	Inspection	Manag't & Maint'nce
Municipal Level	City People's Committee			■														■											
	Architect in Chief's Office		■							■							■							■					
	Department of Construction					■								■						■								■	
	Dep't of Transport & Public Works				■														■										
	Electricity Department						■						■																
	Water Factories																				■						■		
	Building Bank			■														■											
District People's Committee								■							■							■							■
Residents											■														■				
At all levels*	Building Material Providers																												
	Designing Centres	■							■							■							■						
	Building Brigades											■														■			

Table 8.1.2. Proposed responsibilities for the upgrading of the neighbourhood of Truong Dinh (Physical Infrastructure).

[1] This includes Street Lights, [2] This includes individual connections

* Building material supplies, design and building services are available at central, municipal and district levels of government as well as in the private sector. Under the new economic mechanism, these can compete with each other for work.

- Manag't & Maint'nce: Management and Maintenance

Main Bodies \ Major Functions		Street Network							Transport			Rubbish Disposal				
		Designing	Approval	Investment	Building Materials	Construction	Inspection	Manag't & Maint'nce	Investment	Implementation	Manag't & Maint'nce	Investment	Construction	Collection	Treatment	Manag't & Maint'nce
Municipal Level	City People's Committee			■					■			■				
	Architect in Chief's Office		■													
	Department of Construction						■						■			
	Dep't of Transport & Public Works					■				■				■	■	
	Building Bank			■					■			■				
District People's Committee								■			■					■
Residents														■		
At all levels*	Building Material Providers				■											
	Designing Centres	■														
	Building Brigades					■										

Table 8.1.2. Proposed responsibilities for the upgrading of the neighbourhood of Truong Dinh (Physical Infrastructure, continued).

* Building material supplies, design and building services are available at central, municipal and district levels of government as well as in the private sector. Under the new economic mechanism, these can compete with each other for work.

■ This would also be operated by the private sector.

- Manag't & Maint'nce: Management and Maintenance

Main Bodies \ Major Functions		School								Kindergartens, Child Cares									Cultural Activities							
		Programs	Designing	Approval	Investment	Building Materials	Construction	Inspection	Manag't & Maint'nce	Programs	Designing	Approval	Investment	Building Materials	Construction	Inspection	Implementation	Manag't & Maint'nce	Designing	Approval	Investment	Building Materials	Construction	Inspection	Organization	Manag't & Maint'nce
Municipal Level	City People's Committee				■								■								■					
	Architect in Chief's Office			■								■								■						
	Department of Construction						■	■							■	■							■	■		
	Dep't of Education and Training	■								■																
	Cultural Department																								■	
	Building Bank				■								■								■					
District People's Committee									■								■	■								■
Residents													■				■									
At all levels*	Building Material Providers					■								■								■				
	Designing Centres		■								■								■							
	Building Brigades						■								■								■			

Table 8.1.3. Proposed responsibilities for the upgrading of the neighbourhood of Truong Dinh (Community Facilities).

* Building material supplies, design and building services are available at central, municipal and district levels of government as well as in the private sector. Under the new economic mechanism, these can compete with each other for work.

- Manag't & Maint'nce: Management and Maintenance

Main Bodies \ Major Functions		Sporting Facilities								Shops								Other Daily Services							
		Designing	Approval	Investment	Building Materials	Construction	Inspection	Organization	Manag't & Maint'nce	Designing	Approval	Investment	Building Materials	Construction	Inspection	Implementation	Manag't & Maint'nce	Designing	Approval	Investment	Building Materials	Construction	Inspection	Implementation	Manag't & Maint'nce
Municipal Level	City People's Committee			■								■								■					
	Architect in Chief's Office		■								■								■						
	Department of Construction					■	■							■	■							■	■		
	Department of Sports							■																	
	Building Bank			■								■								■					
District People's Committee									■			■				■	■			■				■	■
Residents												■				■				■				■	
At all levels*	Building Material Providers				■								■								■				
	Designing Centres	■								■								■							
	Building Brigades					■								■								■			

Table 8.1.3. Proposed responsibilities for the upgrading of the neighbourhood of Truong Dinh (Community Facilities, continued).

* Building material supplies, design and building services are available at central, municipal and district levels of government as well as in the private sector. Under the new economic mechanism, these can compete with each other for work.

- Manag't & Maint'nce: Management and Maintenance

8.6. CONCLUSIONS

Housing is a basic concern for all human beings. It is especially so when conditions are crowded and a health-risk. The main objective of this project is to propose ways of upgrading the living conditions of the residents of overcrowded and unhealthy public low-rise housing areas of Hanoi, using Truong Dinh as an example neighbourhood.

The project has examined housing in Hanoi from the late feudal period to the present day. However, the emphasis has been on public low-rise housing neighbourhoods built during the Communist era (1954-1986). Like most other socialist countries, public housing in Vietnam during this period was built using the neighbourhood typology, a combination of Perry, Stein and early European Modernist models with some modifications, according to local conditions.

As a matter of socialist policy, public housing in Hanoi was built in considerable quantity and provided free of charge to government employees from the 1950s through to the 1980s. However, due to the enormous housing demands during and after the wars, and the poor economic condition of the country, public housing was built to very low standards. Further, most of this stock has not been maintained and exceeded its designated life-span, which has led to serious decay.

The problems of Hanoi's public low-rise housing occur not only in the housing itself, but also in the wider urban fabric, namely in the quality of public space, physical infrastructure systems and community facilities. They extend also to areas of maintenance and management. To address these problems, there are added difficulties resulting from inadequate data. Yet at the same time, opportunities for upgrading have been identified arising from the economic capacity and initiative of residents and the recent overhaul of State policies.

The project, while examining the general situation, proposes a solution for upgrading using the example neighbourhood of Truong Dinh. The proposed solutions cover many areas, including land tenure, land use, house ownership, the physical upgrading of community facilities and infrastructure, and the improvement of individual houses. Leasehold on land tenure and extensive private home ownership are suggested as well as the improvement of houses from individual household resources. Improvement of the whole neighbourhood is also proposed by means dependent upon a cooperative processes involving the State and residents. Further, the project

identifies the roles of the various bodies to be involved in the upgrading process of the neighbourhood.

While the solution here is for the Truong Dinh neighbourhood, it is suggested that the general approach might be applied to public low-rise housing areas generally. However, the specific physical solution (as distinct from the general framework) may be varied according to the particular conditions of each area, Also, in applying the proposal, a detailed survey of residents' personal situations, capacities and preferences would be needed. Finally, the proposal should be tried and evaluated in selected neighbourhoods in order to improve the process for wider application.

APPENDICES

Appendix 1. NORMS FOR URBAN HOUSING ALLOCATION

For urban housing allocation in Vietnam, an average living standard of 4 square metres per person[1] was applied from the 1960s to the 1980s. Living areas did, however, vary according to one's status and duration of working. Government employees were classified into five categories:

- Category A: Ministers onwards.
- Category B: Vice-Ministers and the like.
- Category C: Head, deputy-head of departments, institutes under ministries.
- Category D: Persons holding some function in the working sectors, e. g. head of a division.
- Category E: Normally for persons with bachelor degree downwards.

- A living space of at least 6 square metres was allotted for a government employee and that of 3-3.5 square metres was allocated for each dependent. The total living area of a household was distributed according to employees' category and number of family members. The standard for new housing distribution in Vietnamese urban centres is shown in table A1.1.

[1] This figure includes the total area of living rooms and bedrooms, not including service areas.

Dwelling Unit		Number of family members, one of them in the following category				
Number of rooms	Living Area (sq. m.)	A*	B*	C*	D*	E
1	15-16					2 - 3 - 4
2	20-24				2 - 3 - 4	5 - 6 - 7
2-3	28-32			2 - 3 - 4	5 - 6 - 7	8 - 9
3	36-40		2 - 3 - 4	5 - 6 - 7	8 - 9	10 &10+
3	42-48		5 - 6 - 7	8 - 9	10 &10+	
4	50-55	2 - 3 - 4	8 - 9	10 &10+		
4-5	55-65	5 - 6 - 7	10 &10+			
5-6	65-75	8 - 9				
5-6	75-85	10 &10+				

Table A1.1. Standard for housing allocation. Source: Ministers Council Office, 1978.

*Note: * If the family has two or more members of the same category, housing will be allocated at a higher level. For example, two members of a family who are in category D will be allocated as a person in category C.*

Appendix 2. INTERNATIONAL EXPERIENCES

Providing sufficient housing for people has been one of the biggest problems in the world. Housing crises have occurred in almost every nation at one time or another and for various reasons. Europe, America and Japan encountered housing problems after World War II. Housing problems are still a tough matter which developing countries are today struggling to cope with.

Many governments have intervened in housing by building public housing. Public housing has met a substantial part of the housing needs of a large group of people throughout the world. The two dominant reasons for state intervention in housing are: addressing a housing shortage and aiding the poor.

Public housing construction in the world can be examined in three groups of nations:

- Developed capitalist countries
- Eastern European Socialist nations (the ex-USSR "block")
- Developing countries.

Each country has its policy for housing construction. The policy depends mainly upon political, socio-economic conditions. This appendix offers a brief review of public housing from three angles:

- Public housing stock
- Investment in public housing
- Public housing provision.

A.1.1. Public Housing in the Developed Capitalist Countries

Housing shortages were severe in Europe and Japan after World War II. 22 per cent of the prewar housing stock was destroyed. In some combatant countries like West Germany, France, Greece and Japan, the damage caused by the war was very extensive. Greece lost 50 per cent of its housing stock and Japan lost more than 4 million housing units (McGuire, 1981: 5). In West Germany, 18 percent of housing stock was devastated (Steammler, 1984: 222).

In some other European and North American countries, such as Great Britain, Switzerland, America and Canada, the housing shortage was less severe due to the fact that fighting did not occur on their land. None the less, the housing shortages resulted from the lack of new construction during the war, the increase in population and urbanization.

On the other hand, housing stock in several countries like Australia was not destroyed by the war. The Australian government intervened in public housing to help the poor and to improve its general housing conditions.

i/ Public Housing Stock

Sweden led the developed countries in public housing construction. During the 1970s, 90 per cent of Swedish housing stock was underwritten by the state (Fuerst, 1974a: 17). Also according to Fuerst (1974b: 178), approximately 35 per cent of all British housing belonged to the public sector. 33 per cent of all housing in West Germany and Denmark was under public, union or co-operative auspices. Public housing in France occupied 15 percent of housing stock and one-third of the 1970s production. In Israel, government, union and co-operative housing accounted for more than 50 per cent of the country's housing stock.

Compared with most developed countries, public housing in Australia constitutes a relatively small percentage of total housing stock. The average number was approximately 6 percent in 1989 (Department of Health, Housing , Local Government and Community Services, 1993: 13). This figure varied dramatically from state to state. Queensland had the smallest proportion of only 3 per cent, while the highest was in Northern Territory, at 22 per cent.

The percentage of dwellings constructed by government, union and co-operative investors in some developed countries from 1953 to 1981 can be seen in table A2.1 (Sources compiled from the United Nations, Canadian Mortgage and Housing Corporation, and Japan Ministry of Construction in McGuire, 1981, pp. 79, 101, 118, 143, 159, 178, 190 and 215, and Wynn, 1984: 6-7).

ii/ Investment in Public Housing

Investment in housing in most countries tends to correlate with their state of economic development. In developed nations, the housing investment is appraised by the percentage of Gross Domestic Product (GDP) devoted to housing. For instance in United States, the proportion of GDP devoted to housing during the 1960s-1970s was between 3 and 4 per cent. The peak was of more than 5 per cent in 1951. Meanwhile the Japanese government was the developed nations' leading investor in housing followed by France. Japan devoted more than 9 per cent of its GDP to housing and the figure in France was more than 8 per cent (McGuire, 1981: 23). The figures for Australia, Italy and Finland in 1981 were respectively 4.6, 4.2 and 6 (Conroy, 1987: 18).

Figure A2.1 shows the percentage of GDP invested in housing for some developed countries between 1965 and 1978. The housing investment in certain years for these countries from 1953 to 1978 can be seen in table A2.2.

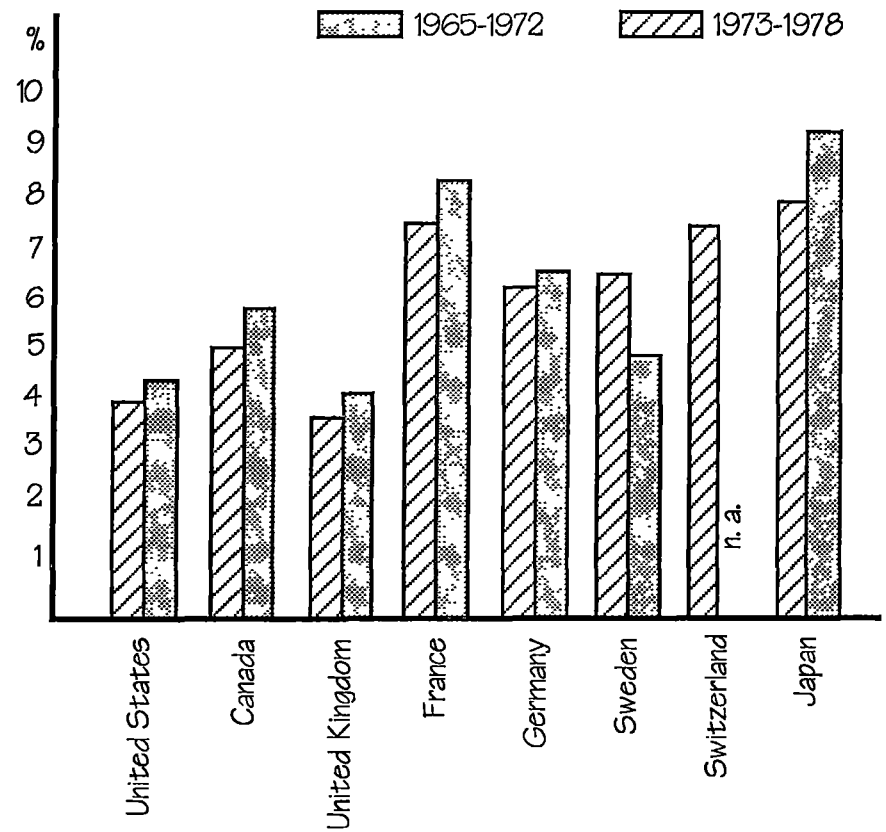


Figure A2.1. Percentage of GDP invested in housing for selected developed countries (1965-1978), Source: McGuire, 1981: 22.

COUNTRY	TYPE OF INVESTOR	1950	1953	1960	1965	1966	1970	1975	1976	1977	1978	1979	1980	1981
USA.	Public Authorities		3.3	3.4	2.4		2.3			0.1				
CANADA	Direct Government Public Assisted		- -	- -	0.6 19		0.9 30.3				0.9 65			
UK.	Local Authorities Other Authorities		74.2 5.2	42.2 1.5	41.7 2.3		48.6 3.3			45.2 9.6				32.3 10.8
W. GERMANY	Public-Housing Authorities Housing Ass. & Cooperatives		4.9 38.9	2.7 26.1	3.2 25.4		2.3 18.5		3.1 13.1			1.2 8.3		
DENMARK	State & Municipalities Housing Associations						2.2 27.3							3 31.4
FRANCE	State (Reconstruction) Public Bodies		30.5 20.9	4 30.3	1.2 30.2		0.7 32.2		1.3 21.6					1 19
PORTUGAL	State & Local Authorities Semipublic Bodies Housing Cooperatives						6 4.4 0.2						13.7 0.1 1.2	
SPAIN	State & Local Authorities Other Public Bodies						2.9 3.9	2.6 5						
SWITZERLAND	Public Bodies Cooperatives		0.6 15.9	2.6 12.6	2.7 11.9		2.5 13.7			3.5 8.3				
SWEDEN	State & Local Authorities Semipublic Bodies Cooperatives		38.7 - 20.6	31.1 - 29.5	41.1 - 22.2		4.3 38.3 15.6			1.6 16.9 9.7				
JAPAN	Public Housing	38.2		30.5		37.1	37.1	40.8						

Table A2.1. Percentage of dwellings constructed in the selected developed countries, by type of investor.

Country \ year	1953	1960	1965	1970	1976	1977	1978
USA	4.1	4.5	4.1	3.2		4.7	
CANADA		4.7	4.8	4.1			5.7
UK.	3.7	3	3.6	2.9		3.3	
W. GERMANY	5.1	5.4	5.2	5.4	5.5		
FRANCE	3.5	4.7	6.7	6.9	7.2		
SWITZERLAND	5	7.1	7.3	6.7			
SWEDEN	5	5	6.2	4.9		3.9	
JAPAN			4.2	6.1	7.1		

Table A2.2. Housing construction as a percentage of GDP in selected developed countries. (Source: McGuire, 1981, pp. 79, 101, 118, 143, 159, 178, 190 and 215).

iii/ Public Housing Provision

In developed countries, governments provide housing generally for low-income people. Public housing is mainly for rent. The rent is commonly between 15 and 25 per cent of family's income. Nonetheless, the figure has varied considerably both between countries and over time.

During the 1960s and 1970s in Sweden, rent of about 10 per cent of household's income was considered a proper figure while in the United States, this was 20 per cent (McGuire, 1981: 8). It was no more than 20 per cent in Denmark and from 15 to 18 per cent in West Germany (Fuerst, 1974b: 195).

In 1988, average rent for public housing in Australia was 12.6 per cent of the household's income. Many Australian low-income earners live in public housing. According to the National Housing Strategy, more than 50 per cent of all low-income earners were spending over 25 per cent of income on housing. It was reported that:

- 24 per cent were spending over 25 per cent of income
- 20 per cent were spending over 30 % of income, and
- 8 per cent were spending over 50 % of income.

(Department of Health, Housing , Local Government and Community Services, 1993: 17).

A.1.2. Public Housing in Eastern European Socialist Nations (the ex-USSR "block")

Most of the Eastern European countries were swept by World War II. After the war, these countries shared housing shortages with Western Europe. In the Soviet Union, over 25 million people lost their houses. More than 20 per cent of housing stock was destroyed and 3.3 million people were rendered homeless in Yugoslavia. 10 per cent of all houses of East Germany were devastated (Samodayev, 1974: 110; Bassin, 1984: 157 and Steammler 1984: 222).

i/ Public Housing Stock

In these socialist countries, providing housing for people was defined as a task of governments (1950s-1980s). Public housing was built, owned and maintained by the State. It was not a commodity which was bought or sold on the free market.

In Eastern Europe, the majority of housing was constructed by either the State or co-operatives. Compared with the West, the percentage of investment in public housing in Eastern European countries between the 1950s and the 1980s was therefore higher. The highest and lowest figures were in the Soviet Union and Yugoslavia respectively.

Amongst Socialist countries, Vietnam had the most public housing stock during 1954-1986. In 1983, 42 per cent of the country's housing stock was public housing (Pham, V. T., 1987: 46).

Table A2.3 indicates the percentage of dwellings constructed by the State, enterprise and co-operative investors in selected Eastern European Countries from 1953 to 1981.

COUNTRY	TYPE OF INVESTOR	1953	1955	1957	1960	1961	1964	1965	1970	1971	1976	1977	1979	1981
USSR	State & Cooperative		41.3				48.5	67.8	76			81.7		
YUGOSLAVIA	State	23.8			42.1			36.5	34.5		40.6	41	38.1	
CZECHOSLOVAKIA	State Enterprises Cooperatives	70.4			58.6 6.3 11.5			29.9 0.3 46.5	19.3 17 38.2			24.5 22.1 24.3		
EAST GERMANY	State Cooperatives			79 13		35 59			75.8 20.9	80 15				50 32.9
POLAND	State Cooperatives								23.5 48.9					17.3 58.1

Table A2.3. Percentage of dwellings constructed in selected Eastern European countries, by type of investor. (Sources compiled from the United Nations in McGuire, 1981, pp. 204, 208 and 209, Wynn, 1984: 7, and Steammler, 1984: 236).

ii/ Investment in Housing

To overcome the housing shortage especially after war, socialist governments invested most in housing. In general, the Soviet Union devoted the most capital to housing. Between 1955 and 1977, average housing investment accounted for 15.9 per cent of gross domestic product (GDP). However, in 1953 Czechoslovakia spent 22.5 per cent of its GDP on housing, a figure 5.5 times as high as that for the United States (McGuire, 1981, pp. 79, 204 and 209).

In socialist countries, the other indicator to define the level of housing investment was the proportion of total capital construction spent on housing. The figures for selected Eastern European countries are shown in table A2.4.

Country \ year	1950	1955	1960	1965	1970
POLAND	11.7	15.1	19.2	14.4	14.2
BULGARIA	21	17.6	14.1	11.9	9.7
SOVIET UNION	18.1	18.8	22.5	16.9	16.4
EAST GERMANY	-	11.7	11.8	7.8	5.8
MONGOLIA	10.4	6.8	11.1	23.5	8.5
RUMANIA	11.2	11.7	15.6	10.7	9.7

Table A2.4. Housing construction as a percentage of total capital construction in selected Eastern European countries. (Source: Pham, V. T., 1987: 7).

Compared to other socialist countries, Vietnam spent the least on the construction of public housing. Between 1960 and 1985, the proportion of total capital construction spent on housing in Vietnam was only about 3 per cent annually (Nguyen, D. T., 1986: 6). However, due to the cheap labour and poor quality of housing, the country had built a considerable quantity of houses.

iii/ Public Housing Provision

In socialist countries, funds to produce housing mainly came from the national budget. Public housing was viewed as a social right. Rents were very low and considered as "only a partial economic compensation for the use of a flat" (Muhlmann, 1977 in Steammler, 1984: 237). In Czechoslovakia for example, the housing policy stated that:

> The principle aim of housing policy in the Czechoslovak Socialist Republic (CSSR) is the satisfaction of the housing needs of all social groups of the population while endeavouring that the housing needs of every citizen be satisfied with an adequate standard, corresponding with the possibility of the national economy. (McGuire, 1981: 208).

To achieve the aim of the socialist system in housing provision, housing costs only a small proportion of people's income. Rents were usually less than 10 per cent of income

in socialist countries. The highest rent was found in Hungary, where it ranged between 10 and 12 per cent of family's income (Gaspar, 1974: 131).

According to McGuire (1981: 202), in other countries, rents were typically 4 to 6 per cent. It was 5 per cent in Czechoslovakia, 5 to 6 per cent in the Soviet Union. It was boasted in 1981 that rents in the Soviet Union had not risen for 75 years.

The 1979 statistics in East Germany reported that people had to pay only 3.7 per cent of their income for rent, electricity and gas. The rent contributed one third of the state's running costs for housing maintenance and management (Honecker, 1975 in Steammler, 1984: 237).

Rent in Yugoslavia fluctuated over time. A study by Bassin (1984: 160-164) reports that it was 10 per cent of income in 1955, 7 per cent in 1958 and dropped to 4 per cent in 1959. However, it climbed again in the 1970s-1980s to 6 per cent of family's income.

In Vietnam, under the subsidised economic mechanism (1954-1986), although the country was very poor economically, the government provided housing free of charge for its employees. Now, under the new economic mechanism, people living in public housing have to pay a rent. However, it is very small - only 2-3 per cent of the allottees' income (Andersson et al, 1991: 18).

A.1.3. Public Housing in Developing Countries

In developing countries located in Asia, Africa, Latin America and the Pacific, housing shortages have been mainly caused by low national productivities and high population growth rates plus serious climates.
Data of the World Bank and the United Nations in Grimes (1976: 118-125) shows that in 1970, per capita income per annum in developing countries ranged from US $980 (Venezuela) to US $60 (Rwanda).

On the other hand, population growth rates in developing countries were and are still very high. According to Pham, V. T. (1987: 22), while the population growth rate was low in developed countries (e.g. 1.1; 1.5 and 1.6 per cent per year in West Germany, England and Italy respectively), it was high in developing countries. For example, it was 5 per cent per year in some countries like Ethiopia and Gambia in Africa, 4.9 per cent in Afghanistan and Yemen (Asia), and 4.6 per cent in Dominican Republic (Latin America).

The population of developing nations in Asia and the Pacific accounted for 53 per cent of total world population in 1980. During the 1970s, the annual population growth rates

were about 2-2.5 per cent (Conroy, 1987: 5). As in most Asian developing countries, the population growth rate in Vietnam was around 2.3 per cent annually (Pham, V. T., 1987: 3) and is still 2.2 per cent today (Ministry of Labour - Invalids & Social Affairs, 1994: 31).

Many people living in third world countries are extremely poor. The World Bank estimated that:

> In 1985 about 80 per cent of households living in absolute poverty were found in rural regions; but, by the end of the 1990s, nearly half of the absolute poor are likely to be living in urban areas. The number of households living in destitution in Asian cities is expected to increase from a little more than 12 million in 1975 to nearly 38 million by the end of the 1990s. If the average Asian household size remains at about 6 people, more than 228 million city dwellers will be living in absolute poverty by the year 2000. (Rondinelli, 1986 in Conroy, 1987: 9).

In developing countries, housing is not only in short supply, but is also lacking in quality. Many people live in slums and squatter settlements. In some places, these figures make up 80-90 per cent of the total population. The housing situations in selected cities in certain years can be seen in table A2.5 (Sources compiled from Jain & Tiemann, 1973; Grebler, 1973; World Bank Atlas, 1973 and the United Nations, 1974 in Conroy, 1987: 116-117). These figures

COUNTRY	CITY	Percentage of occupied dwellings with 3 or more persons a room in urban areas	Slums and squatter settlements as per cent of city population
Brazil	Brazilia	2.8 (1969)	41 (1970)
Cameroon	Douala	Not available	80 (1970)
Ecuador	Guayaquil	39.9 (1962)	49 (1969)
Ethiopia	Addis Ababa	n. a.	90 (1968)
Ghana	Accra	n. a.	53 (1968)
Ivory Coast	Abijian	n. a.	60 (1964)
Indonesia	Jakarta	n. a.	26 (1972)
Kenya	Nairobi	41.1 (1962)	33 (1970)
Korea (South)	Seoul	58.9 (1960)	30 (1970)
Malaysia	Kuala Lumpur	n. a.	37 (1971)
Mexico	Mexico City	47.4 (1960)	46 (1970)
Morocco	Casablance	34.4 (1971)	70 (1971)
Nigeria	Ibadan	n. a.	75 (1971)
Pakistan	Karachi	59 (1960)	23 (1970)
Peru	Lima	33.7 (1961)	40 (1970)
Philippines	Manila	30.1 (1967)	35 (1972)
Somalia	Mogadishu	n. a.	77 (1967)
Srilanka	Colombo	n. a.	43 (1968)
Togo	Lome	n. a.	75 (1970)
Turkey	Ankara	29.2 (1965)	60 (1970)
Venezuela	Caracas	n. a.	40 (1969)
Vietnam	Hanoi	Not available	Not available

Table A2.5. Housing situations in selected cities of developing countries, various years.

compare with data on public housing in Vietnam during the period 1954-1986. In Hanoi, many households had only one room for all activities. Of the total dwelling units provided in the 5 years 1975-1980, 21 per cent of the families with 4 to 9 members had only one room (NHP, 1982: 41).

i/ Public Housing Stock

In most developing countries, the governments prefer to put scarce resources into the industrial and agricultural developments rather than into housing, especially in the early stages of national economic development (McGuire, 1981: 17). In the 1950s, many countries gained their independence and started to construct their economy. To solve housing problems, most governments concentrated on upgrading the stock of slums and squatters.

In developing countries, public housing was built with very limited resources. During the 1970s, the rates of housing production were only 2 to 3 dwelling units per 1 000 inhabitants per annum (Conroy, 1987: 17). These figures seemed to be insignificant in the countries with huge population growths. Meanwhile the average figure in developed countries and the United Nations' standard for housing construction in developing countries was between 8 and 10 dwellings per thousand people (loc. cit.).

Furthermore, housing solutions were inappropriate in these countries. According to Mayo, Malpezzi and Gross (1986) in Conroy (1987: 33), public housing in developing countries during the 1950s-1960s did not work:

> Until the early 1970s housing policy in developing countries often followed the model of many industrial nations: relying on heavily subsidised blocks of public housing with high standards of construction and infrastructure; zoning and building standards that discouraged housing with lower standards; and, in many cases, destruction of slum areas and squatter settlements in the name of either "law and order" or "urban renewal", and:
> Public housing did not reach most of the rapidly growing urban populations, because the programs were too expensive. Despite large subsidies, however, public housing often went unoccupied for long periods - a result of poor location, inadequate infrastructure, or rents that, even with subsidies, were higher than people could afford. At the same time, zoning and building standards were widely flouted, and squatter settlements proliferated. Informal, illegal or unregistered housing became the main source of new housing in many cities.

ii/ Investment in Public Housing

Due to the low national productivities, public housing was invested in with a small proportion of GDP. It was usually 2

to 5 per cent in most developing countries (Grimes, 1976: 31). Table A2.6 shows the percentage of GDP spent on housing investment of some cities and countries in various years, from 1970 to 1981. Sources compiled from Jain & Tiemann, 1973; Grebler, 1973; World Bank Atlas, 1973 and the United Nations, 1974 in Conroy (1987: 116-117), and the United Nations, 1984 and the World Bank, 1983 in Grimes (1976: 18).

iii/ Public Housing Provision

In third world nations, a small proportion of population lives in public housing. Households pay only 5 to 10 per cent of their income for housing (Mayo, Malpezzi and Gross, 1986 in Conroy, 1987: 23). Further, due to poor economic conditions, very limited data is available for most developing countries and it is impossible to make reliable current comparisons.

COUNTRY	CITY	Housing construction as percentage of country GDP	YEAR
Bolivia		3.2	1979
Botswana		3.4	1980
Chile	Santiago	2.82	1970
Colombia	Bogota	3.76	1970
Fiji		6.7	1972
Ghana	Accra	4.76	1970
Hongkong		4.2	1981
Iran		8.9	1980
Kenya	Nairobi	2.92	1970
Korea (South)		3.4	1981
Mexico		4.4	1981
Panama	Panama City	4.4	1970
Peru		4.8	1981
Philippines		4	1981
Puerto Rico		2	1981
Singapore		4	1981
Srilanka		3.5	1981
Thailand		2.9	1981
Turkey	Ankara	3.97	1970
Venezuela	Caracas	4.32	1970
Vietnam	Hanoi	not available	not available

Table A2.6. Housing investment in selected developing countries (and cities), various years.

Appendix 3. MINIMUM DISTANCE BETWEEN TWO BUILDINGS ACROSS THE STREET.

Fireproof Rate of a Building	Fireproof Rate of Adjacent Building			
	I & II	III	IV	V
I & II	6	8	10	10
III	8	8	10	10
IV	10	10	12	15
V	10	10	15	15

Table A3.1. Source: Regulations and Norms for Urban Physical Planning (MoC, 1982: 59).

The fireproof rate of a building depends upon building materials. Building materials in rates I and II include:

Natural or artificial stone,
Brick,
Concrete,
Armoured concrete,
Steel. (Source: Ibid, pp.194-197)

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