

## CHAPTER 4. MODEL PATTERN OF HOUSING DEVELOPMENT (NAWALA HEEN ELA)

### 4-1 General

#### 4-1-1 Outline of District

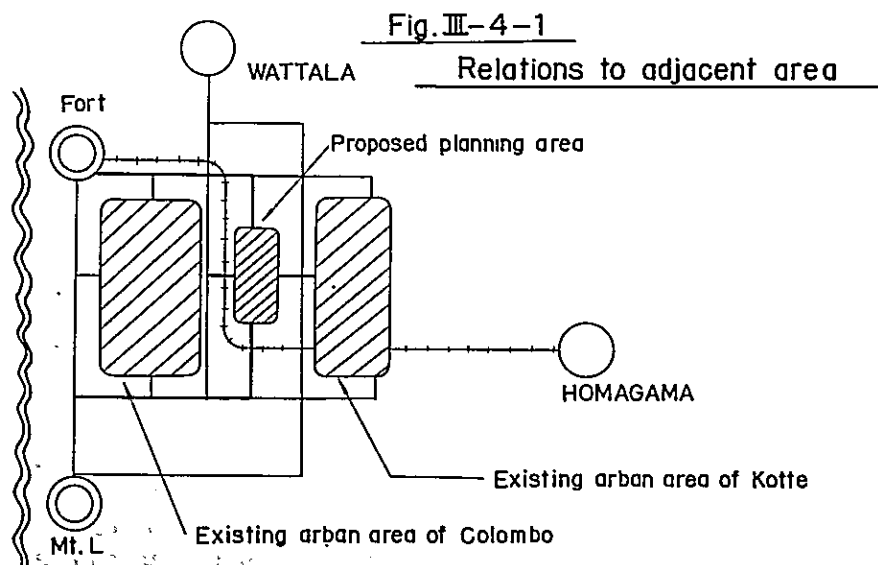
The planning district is situated at the point about 4 miles southeast of the center of Colombo Municipality and is a narrow strip stretching from north to south. The administrative boundary between Colombo Municipality and Kotte U.C. is provided by a river flowing from north to south almost in the center of the district.

As for the topography of the district, the marshy area along the river flowing from north to south in the center of the district is 2 feet above sea-level and subject to inundation at time of a flood. The present land use is classified as a grass land. On both sides of this marshy land there are hills 2 ~ 50 feet above sea-level.

These hilly areas are dotted with hamlets where buildings are standing at a considerably high density even to the points with no access roads. The majority of these buildings are dwellings but school buildings and stores are also seen sporadically.

#### 4-1-2 Relations to Adjacent Districts

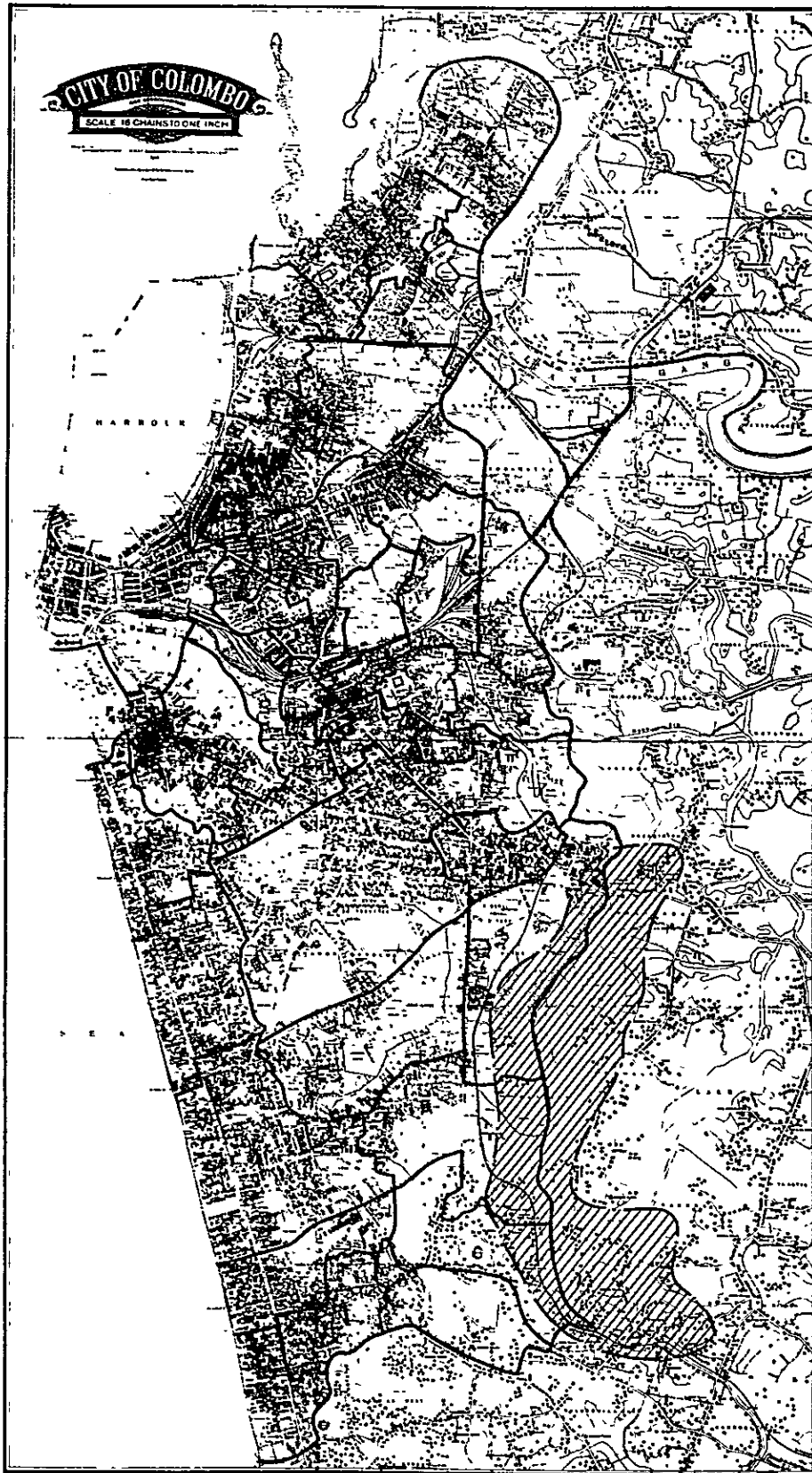
The planning area is flanked by the existing urban area of Colombo and Kotte U.C. and has close relations with the centers of the cities through railways and roads.



#### 4-1-3 Total Acreage of Planning Area

The total acreage of the planning area including the low land along the river and the hilly land on both sides of the low land is 1,000 acres. Of this, 350 acres or 35% is low land area.

Fig.III-4-2 Geographical location of proposed planning area



Total acreage of planning area:	1,000 acres
Low land area:	350 "
Hilly land:	650 "

Number of building in planning area: About 1,100

#### 4-2 Pilot Plan

##### 4-2-1 Characteristics of New Development Area

As previously mentioned, the planning area is within a radius of 4 miles from CBD of Colombo Municipality and can be reached in 30 minutes by bus from the CBD. As the topography of the area is featured by plane land and hilly land, an effective land use plan making the best use of the natural topography is desirable.

Though the district is originally a low land and subject to inundation at time of a flood, attention has been focused on this district recently as a prospective housing district in order to meet a growing demand for residential quarter. As the main objectives in developing this district, creation of a residential quarter for commuters travelling to CBD and Mt. Lavinia of Colombo City must be considered first. At the same time, however, efforts should be made to provide public facilities of various types for the residents in the limited district by aiming at establishing an efficient community with good environment, as well as to introduce various facilities for wide inner urban area which may be useful for the promotion of city functions in other districts or the entire Colombo region.

As examples of the facilities for wide inner urban area, administrative facilities, parks, and market facilities may be pointed out. Through introduction of these facilities, the new development area will be able to adapt itself to the existing urban area and promote town making integrated into the existing urban area without causing a friction.

##### 4-2-2 Land Use Plan

In the marshy land in the center of the planning area a river flows from north to south. Consequently, the soils in the low land area are considered to be the accumulation of alluvial. Because of the soft foundation, therefore, construction of multistoried buildings is not advisable. For the marshy land, therefore, a residential quarter comprising ordinary detached houses should be planned.

For the hilly land where the foundation is satisfactory and construction of multistoried buildings is possible, land use making the most of the natural feature of topography should be planned. In the hilly land, however, there is a considerably large number of dwellings already standing. If these existing hamlets are to be maintained as they are, creation of a new urban area with good environment can not be hoped for.

For this reason, development of the district should be planned to include both the low land area and the high land area. As the majority of the existing dwellings in the hilly lands are ordinary detached houses, they should be relocated to the low land area after completion of the development of the low land area.

For this purpose, development of the low land area must be started first and the development of the high land should follow the relocation of the dwellings.

As for the composition of the neighbourhood unit, it is not advisable to draw a unit line between the low land area and the high land area and separate them as a different community. A single community integrating various aspects of topography into a neighbourhood unit should be established. This also essential for balanced land use in planning residential quarter and public facilities.

In this case, careful planning must be made to promote the sense of social solidarity among the residents in the low land area and the high land area as the residents of a single community without friction. While the high land area has been inhabited from old times, the low land area is going to be developed as a new town. In order to create an efficient new town, a comprehensive town development project including the existing hamlets in the high land should be implemented.

In view of the fact that the project area presents such problems as the wide area transport system and inner drainage, the project should aim not only at providing land space to relieve the shortage of housing lots in face of a sharp increase of city population but also securing public facilities which are most needed in the backward region and incorporating in the land use plan for town making various facilities required for the benefit of the people in the adjacent area and for further growth of Colombo City.

#### 1) Composition of neighbourhood unit

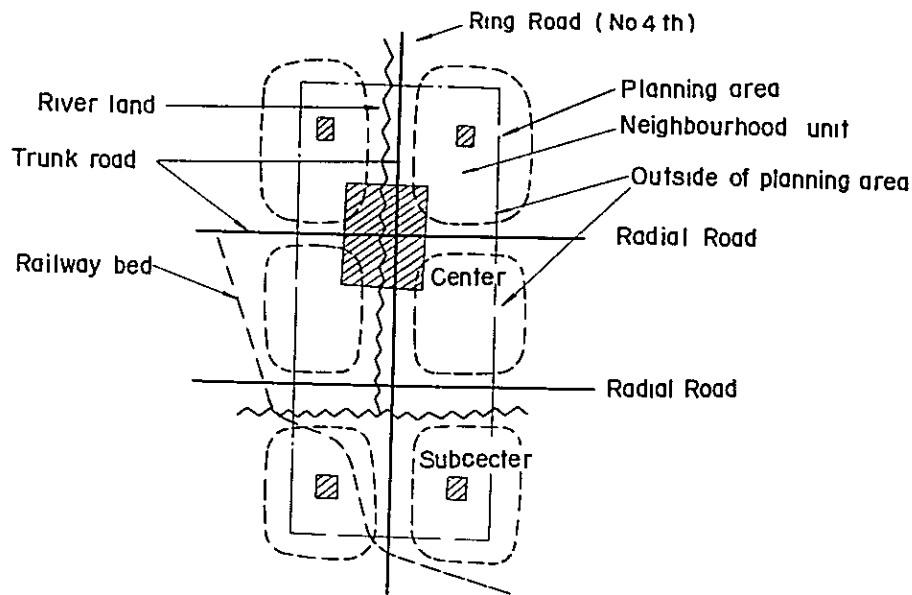
##### Preconditions

- (1) The development area is to be 750 acres in area and the future population is to be approximately 40,000.
- (2) The size of population of one neighbourhood unit is to be from 8,000 to 12,000.
- (3) Construction of a trunk road in the neighbourhood unit is to be avoided as much as possible. For this purpose, the composition of neighbourhood unit is to include part of the district not covered by the project.
- (4) A neighbourhood center is to be provided in each neighbourhood unit to give the role of the central function in daily life of the residents.

The planning area is rectangular in the shape stretching from north to south with a river and a wide area trunk road running almost at the center from north to south. In planning the composition of neighbourhood unit, therefore, use of these river and trunk road as a separator will make it possible to avoid the inclusion of through traffic in the neighbourhood unit and realize ideal composition of neighbourhood of better environment.

Regarding the area adjacent to the project, the part of the existing urban area and the area which is expected to be developed in the future is to be included in the neighbourhood even when they are located outside the project area, in relation with the trunk road network and the configuration and size of the neighbourhood unit.

Fig. III-4-3 Model pattern of neighbourhood units



2) Distribution of detached houses and flats

In order to plan three dimensional land use as a residential town, construction of multistoried buildings of combined use is required in addition to the plane detached houses.

As stated previously, construction of multistoried housings should be planned for the high land where foundation is satisfactory and the assignment of ordinary detached houses to the low land area is considered advisable economically.

On the condition that the total development area is 750 acres and the estimated population is 40,000 and also in consideration of the topography and geology of the project area, the land available for construction of flats is only about 140 acres. Therefore, the distribution of building is to be determined as follows.

Table III-4-1 Estimated Number of Buildings and the Forecast of Population

Type of buildings	No. of units	Estimated population	Remarks
Flats	4,500	22,500	5.0 persons/unit
Detached houses	3,000	16,500	5.5 persons/unit
Others (Combination of a dwelling and a store)	200	1,000	5.0 persons/unit

The land space required for the construction of 7,700 units in the project area for the proposed population of 40,000 is estimated as follows.

- (1) The average land space (net) required for each unit of the flats is to be 5 perch (about 125 m<sup>2</sup>).
- (2) The average land space (net) required for each unit of ordinary detached houses is to be 15 perches (about 375 m<sup>2</sup>).
  - a Total land space                4,500 units × 5 perches = 22,500 perches  
    required for flats          22,500/160 = 140 acres
  - b Total land space                3,000 units × 15 perches = 45,000 perches  
    required for ordinary         45,000/160 ÷ 280 acres  
    detached houses

#### 4-2-3 Traffic Planning

- (1) Mode of trip for commuters and students
  - o Commuting routes to CBD of Colombo City
  - o Commuting routes to Kotte, Mt. Lavinia
  - o Establishment of attendance routes for students
- (2) Traffic for Inter-city and inter-planning area
  - o Inter-city traffic flow
  - o Inter-planning area traffic flow (mainly the linkage of neighbourhood centers)
- (3) Through traffic

For the project area orientated to a residential town as a bed town of CBD of Colombo City, and such outlying cities as,, Kotte and Mt. Lavinia, the determination of the means of commuting transportation for the residents of the project area is a very important question.

As a means of commuting transportation in and around the city, railways and buses are being used mostly but passenger cars are also used though small in share in the total transport volume. As for the passenger car, it is obvious that it will play a vital role as the means of commuting transport in the future corresponding to the growth of national economy. Also with the improvement of road network, door to door transport will be possible and even high speed driving is conceivable. One of the disadvantages of passenger car, however, is that it is not suited for mass transportation.

As the project area has a railway line running around its perimeter and a ring road as a wide area trunk road in Colombo Region running almost in the center of the area from north to south, a means of mass transport to the CBD of Colombo City has been secured and the project area is within the reach of less than 30 minutes from CBD.

Given below are the conceivable commuting routes from the project area.

a) Commuting route to CBD of Colombo City

Though the use of railway is conceivable to commute to Fort at present, the use of buses and privately-owned cars is expected to increase in the future with the completion of ring roads. For the commuters using railways, use of buses will be unavoidable in view of the distance to the nearest railway stations. Also judging from the fact that the project area is within the reach of 30 minutes from the CBD by any means of transport, the bus route which directly connects to the CBD without transfer will become the most important route.

As for the commuting route to the CBD only by means of passenger cars, use of the proposed ring roads and radial roads is conceivable. However, in the event when the parking problems are still unsolved in the CBD, a ride to and from the railway station with wives or "the Kiss and turn" is conceivable.

b) Commuting route to the outlying cities

For long distance commuting, use of mainly the railway is conceivable but for short distance commuting (to Kotte and Mt. Lavinia), an increase in the use of passenger cars is expected following the improvements of road network and the diffusion of passenger cars. As the central districts of these outlying cities are industrial districts or place of employment, it is essential to provide a means of mass transport. In such an event, it will be advisable to rely mainly on bus transport in view of commuting distance. It will be necessary, therefore, to plan a bus route network in and around these outlying cities.

c) Establishment of attendance routes for students

The trunk road within the project area should be provided with a separate roadway and a side walk. As for the route to the school within the project area, foot ways for pedestrians is to be provided by linking schools, shopping facilities and residential quarters functionally.

(2) Traffic for inter-city and inter-planning area

The traffic generating within the project area has already been discussed in the previous paragraph (1).

A considerably large traffic generating in the outlying cities and only passing through the planning area is also conceivable. As one ring road of Colombo region and two radial roads are scheduled to pass through the planning area in the future, a considerably large traffic volume is expected on the three roads. Moreover, as the three roads are scheduled to cross one another at two points in the planning area, a careful planning must be made in controlling crossings. In such an event, it is advisable to avoid a grade crossing.

4-2-4 Policy for Implementation of Project

Though the main objective of the project is to create a new town as a residential town to meet growing demands for housings in the major cities, improvements of such public facilities as trunk roads and rivers are also important elements of the project from a broad point of view.

Because of the concentration of these important public facilities in the marshy land of the project area by coincidence, development of the marshy land area will contribute greatly not only to the supply of housing lots but also to the promotion of reorganization of the functional structure of the greater Colombo metropolitan area.

On the other hand, the hilly land surrounding the marshy land area has been urbanized to a considerable extent, the living environments are deteriorating. It is desirable, therefore, that redevelopment of the hilly land area is also taken up simultaneously with the development the marshy land area. In the event of simultaneous development, however, it is considered advisable to start the project with the low land first in view of financial problems accompanying the implementation of a large scale project and the handling of residents in the existing hamlets.

For the development of the hilly land area and for the realization of three dimensional land use, it is essential to redevelop sparsely populated hamlets in the hilly land and the transfer of the residents of the existing hamlets will pose a serious problem. This problem, however, will be readily solved by preceding the development of the marshy land area.

In allocating housing lots, the expense required for providing public facilities should be burdened by the residents of the project area on the principle of beneficiary's burden. However, for wide area public facilities (trunk roads and rivers for example), which benefit not only the residents of the project area but also the residents of the adjacent districts, investment by central government or municipal government is desirable.



Table III-4-2 Land Use Table (New development area)

Classification	Description	Acreage of develop. area		Remarks
		Area (acre)	Ratio (%)	
I. Public land	Road	123.75	16.5	
	Canal	36.25	4.8	
	Parks	27.50	3.7	
	Sub-total	187.50	25.0	
II. Land for common use	School	27.50	3.7	
	Commercial area	15.00	2.0	
	Government facilities	20.00	2.6	
	Sub-total	62.50	8.3	
III. Housing lot	Land for detached houses	350.00	46.7	
	Land for flats	150.00	20.0	
	Sub-total	500.00	66.7	
Total		750.00	100.0	

Table III-4-3 Population Distribution by Neighbourhood Unit

Neighborhood unit	Multistoried houses		Flats		Detached houses		Total	
	Population	No.	Population	No.	Population	No.	Population	No.
A	-	-	5,500	1,100	3,245	590	8,745	1,690
B	1,000	200	8,500	1,700	2,090	380	11,590	2,280
C	-	-	3,000	600	1,925	350	4,925	950
D	-	-	-	-	3,520	640	3,520	640
E	-	-	5,500	1,100	3,740	680	9,240	1,780
F	-	-	-	-	1,980	360	1,980	360
Total	1,000	200	22,500	4,500	16,500	3,000	40,000	7,200

Fig III-4-4 Standard section of a street (unit : feet)

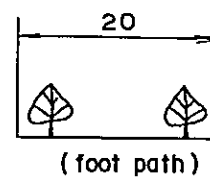
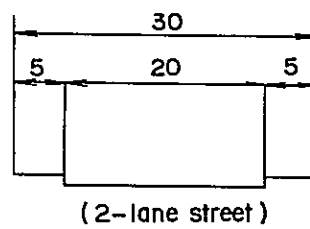
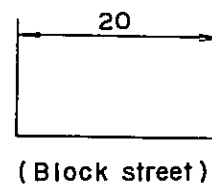
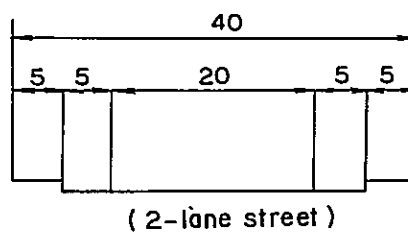
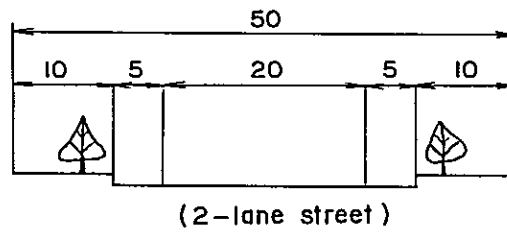
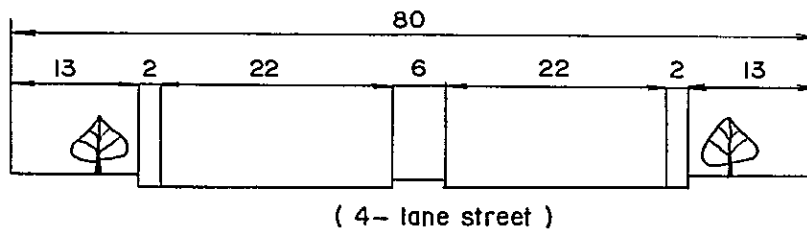
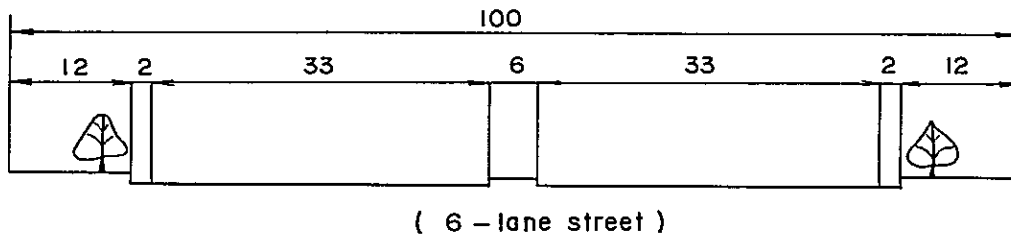


Fig. II-4-5 Boundary of planning area

MODEL PATTERN OF HOUSING DEVELOPMENT  
( HEEN ELA )

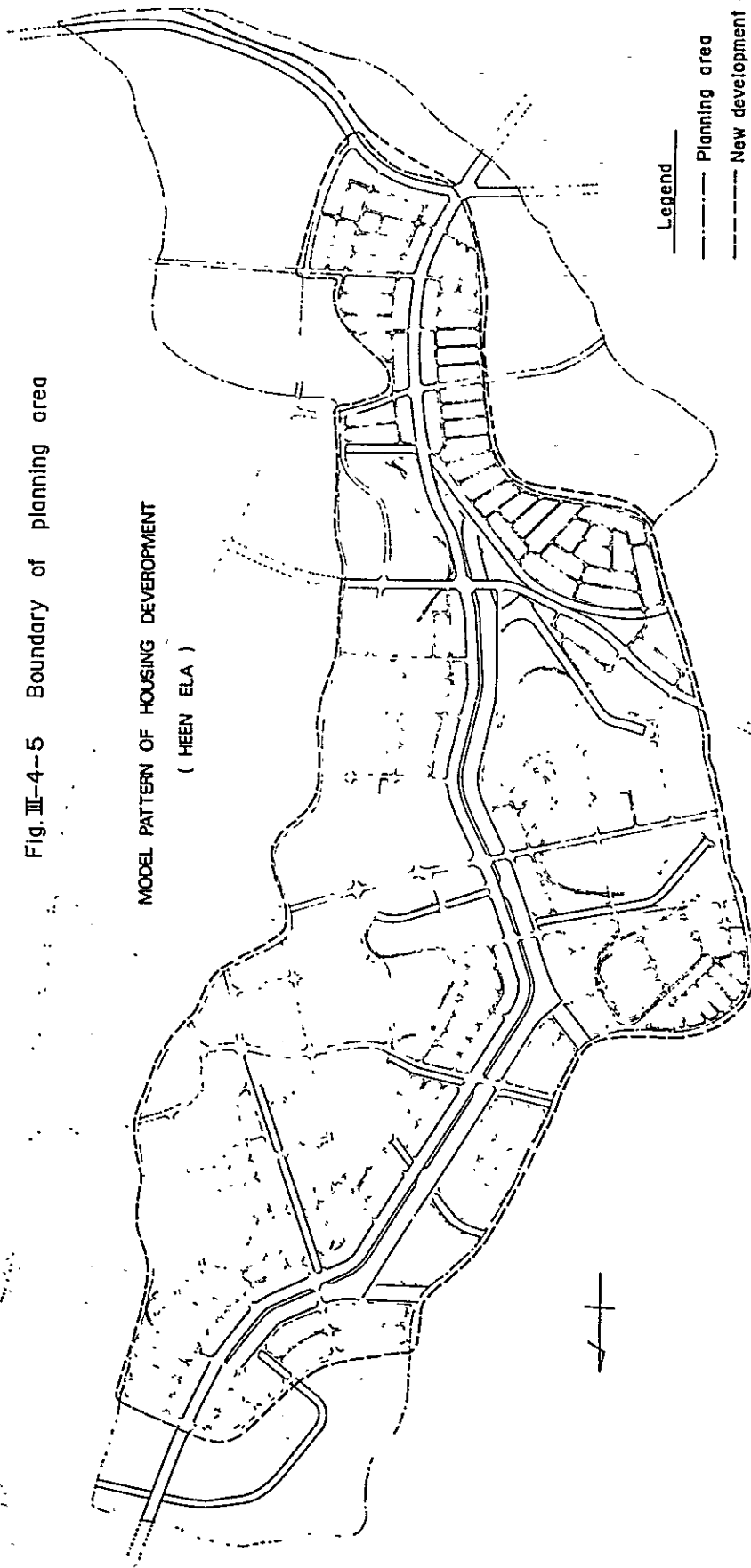
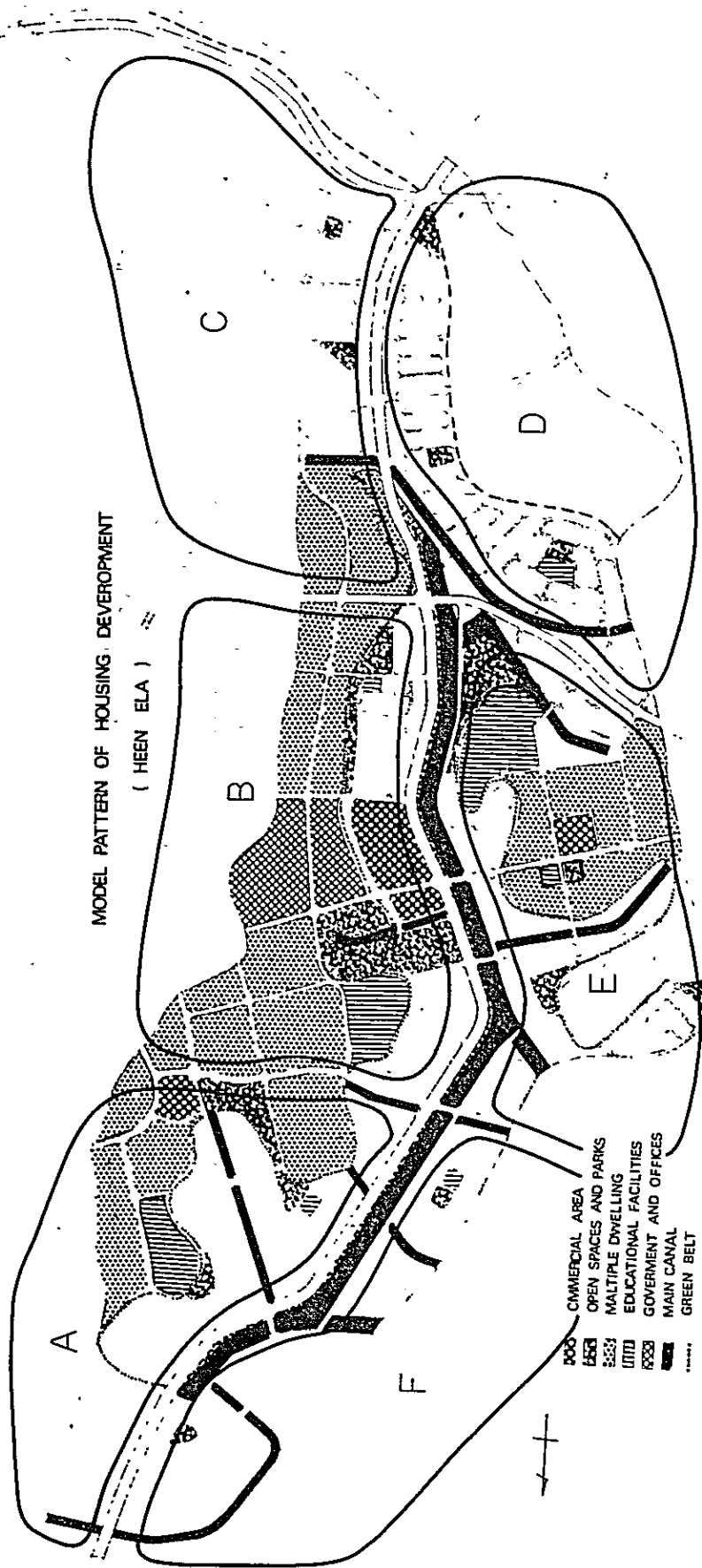


Fig. III-4-6 Composition of neighbourhood units



**MODEL PATTERN OF HOUSING DEVELOPMENT**  
( HEEN ELA )

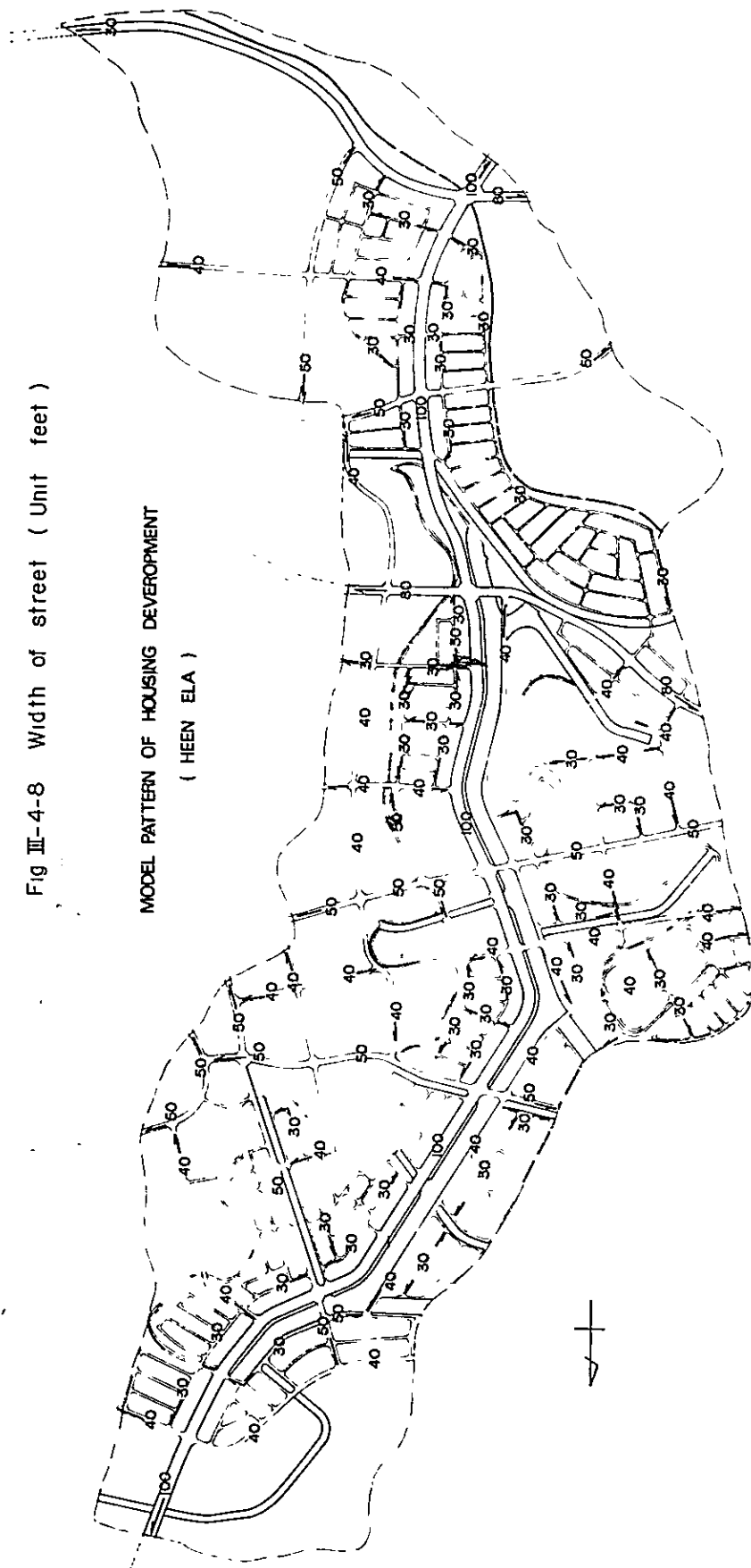
**Legend:**

- COMMERCIAL AREA
- OPEN SPACES AND PARKS
- MULTIPLE DWELLING
- EDUCATIONAL FACILITIES
- GOVERNMENT AND OFFICES
- MAIN CANAL
- GREEN BELT

**Key Data Points from Diagram:**

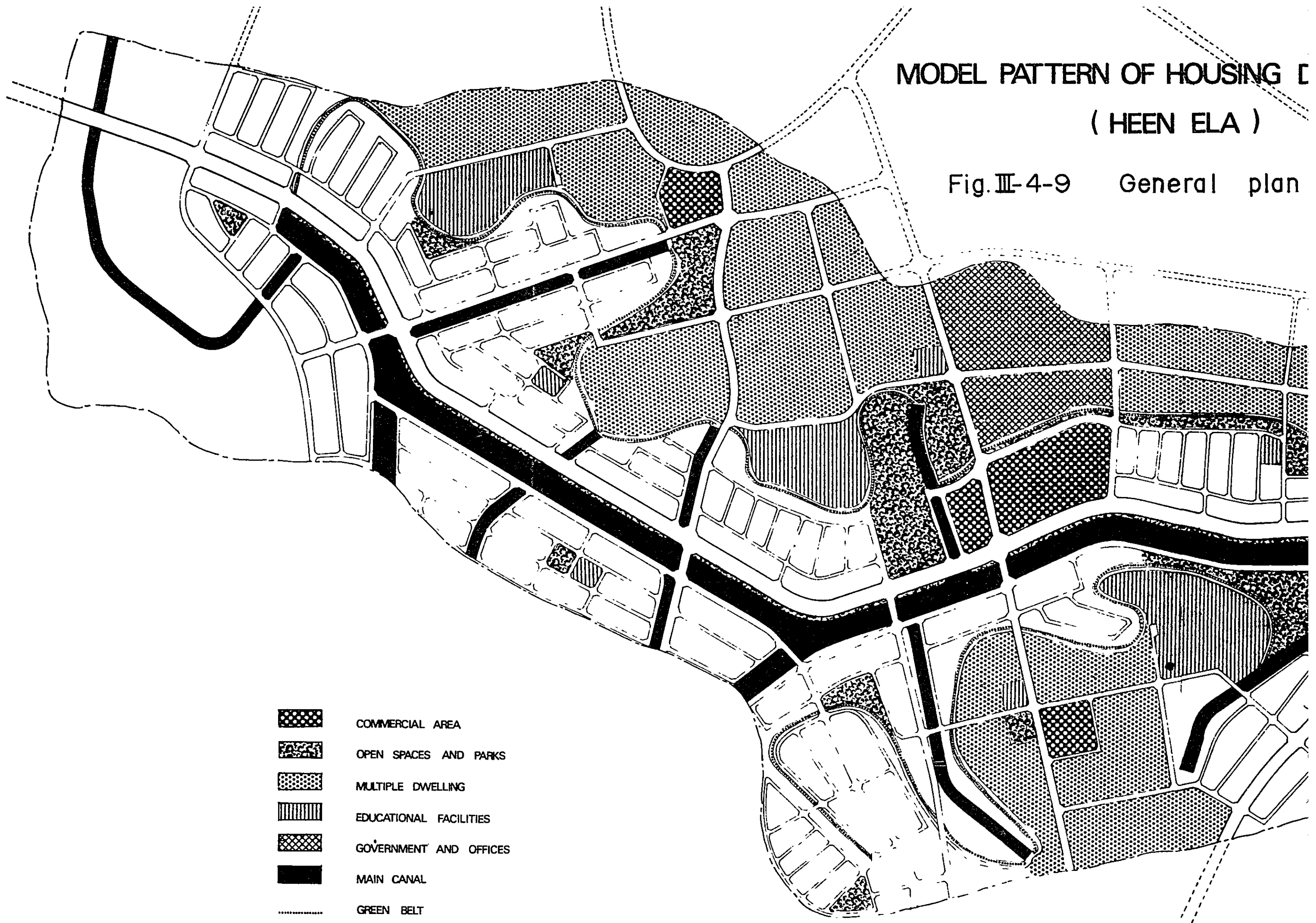
- 3500 persons / 700 houses
- 3245 persons / 390 houses
- 2000 persons / 400 houses
- 990 persons / 180 houses
- 275 persons / 50 houses
- 990 persons / 180 houses
- 1000 persons / 200 houses
- 5500 persons / 1100 houses
- 3000 persons / 600 houses
- 1100 persons / 200 houses
- 990 persons / 180 houses
- 2200 persons / 400 houses
- 1650 persons / 300 houses
- 990 persons / 180 houses
- 550 persons / 100 houses
- 330 persons / 60 houses
- 1925 persons / 350 houses
- 5500 persons / 1100 houses

Fig III-4-8 Width of street ( Unit feet )



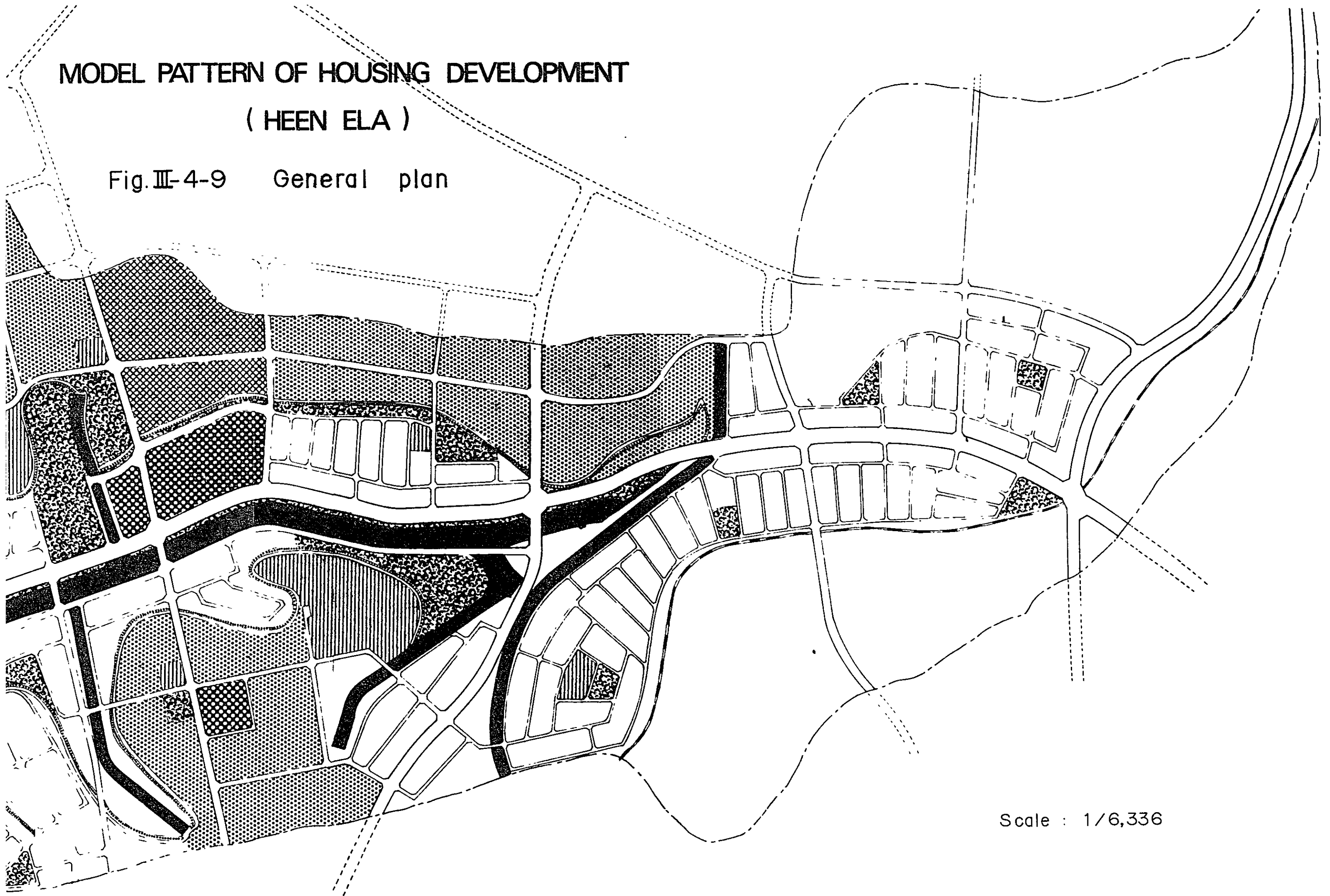
# MODEL PATTERN OF HOUSING I ( HEEN ELA )

Fig. III-4-9 General plan



MODEL PATTERN OF HOUSING DEVELOPMENT  
( HEEN ELA )

Fig. III-4-9 General plan



Scale : 1/6,336



Fig. III-5-1\

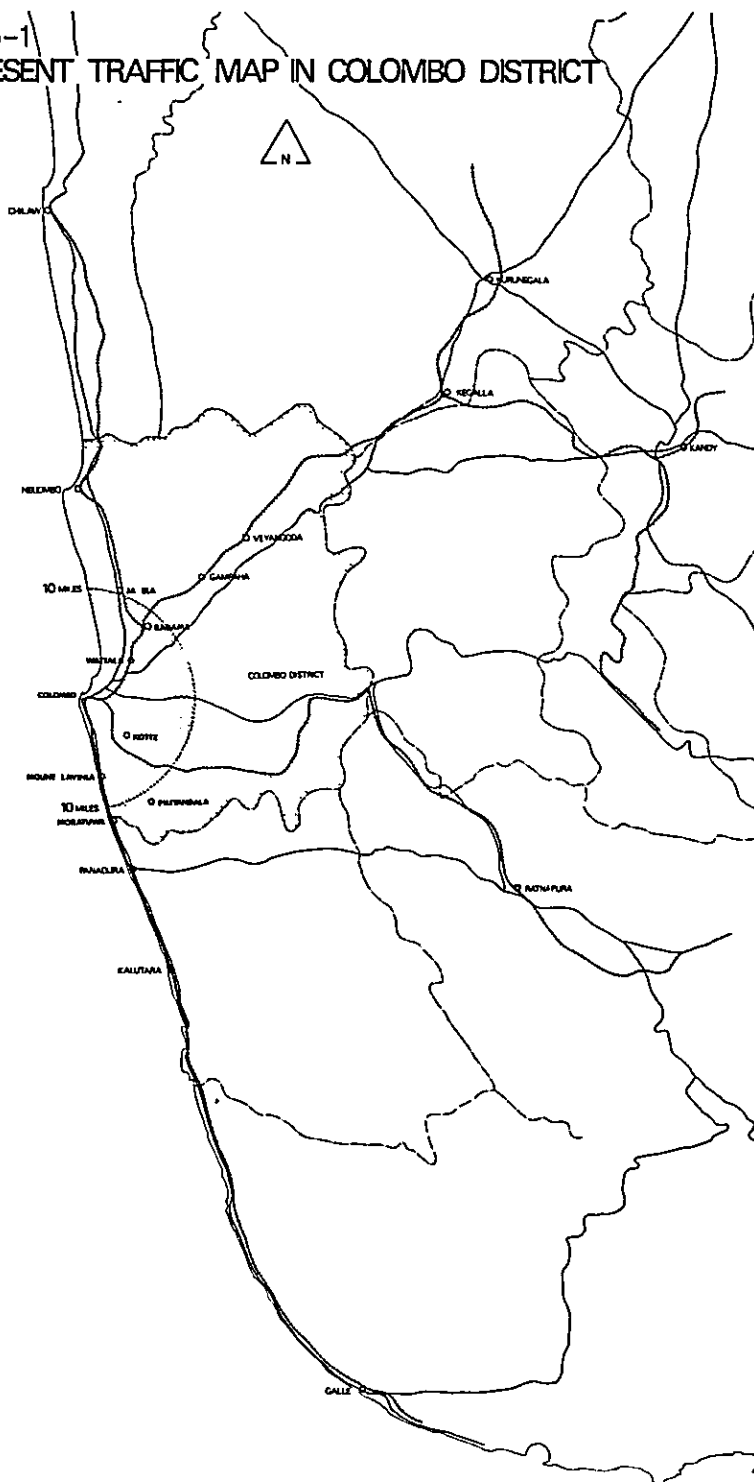


Fig III-5-2

# TIME CONTOUR MAP

-BY BUS-

14 MILES/HOUR

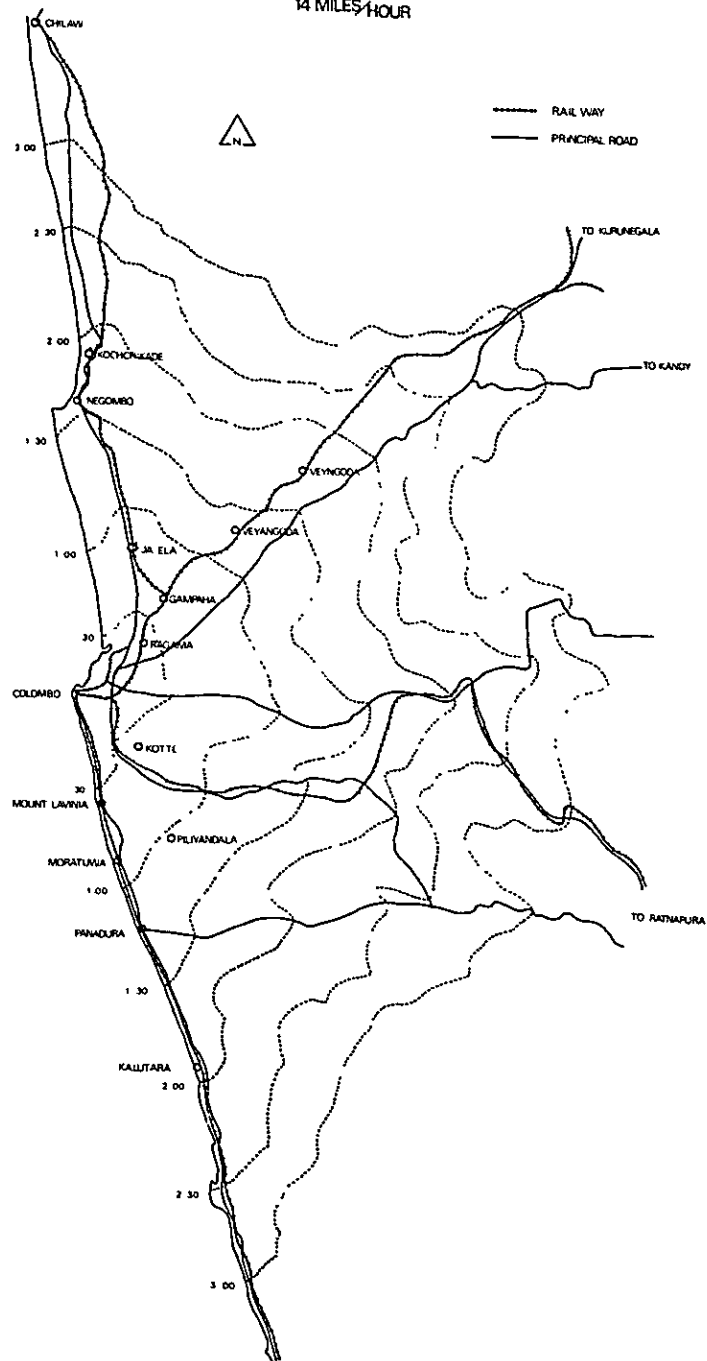


Fig. III-5-3  
TIME CONTOUR MAP  
BY BUS  
COLOMBO MUNICIPALITY



Fig III-5-4 Passengers entering Colombo Municipality  
by Buses (day)

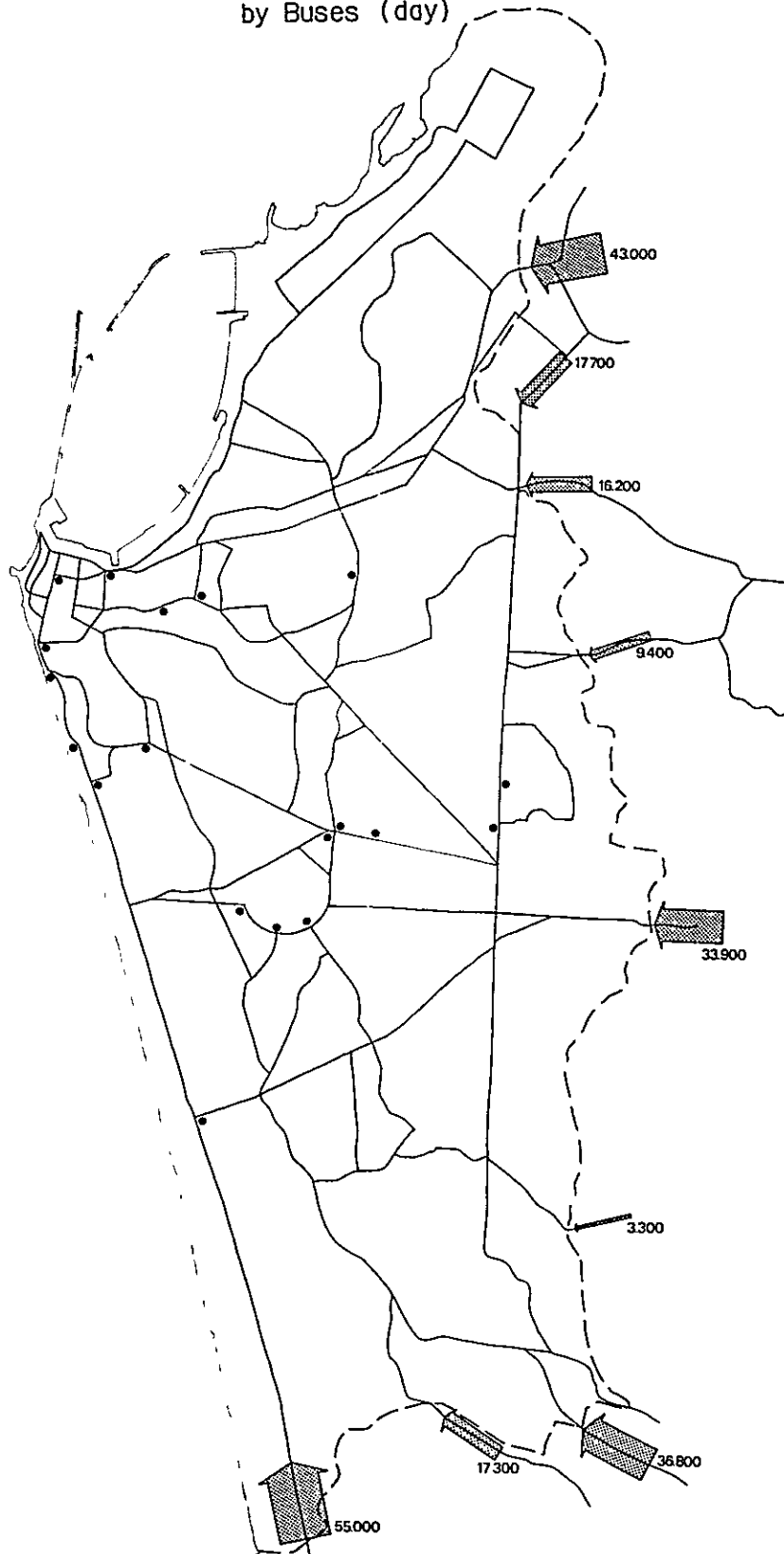


Fig.III-5-5  
 COLOMBO CITY  
 AND  
 SUBURBAN  
 BUS ROUTES

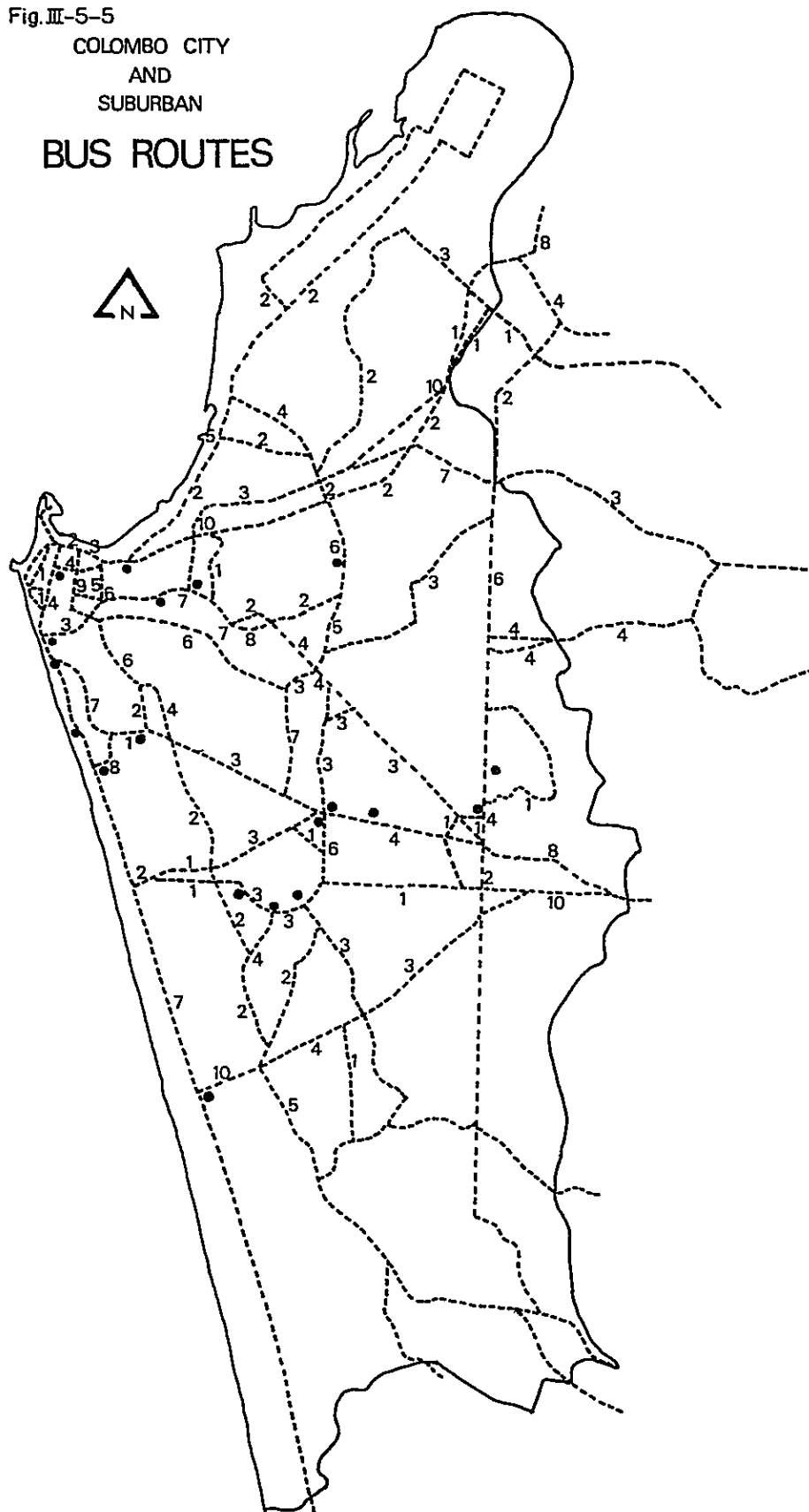


Fig III-5-6

**PRESENT USE ZONING  
BY LAW**

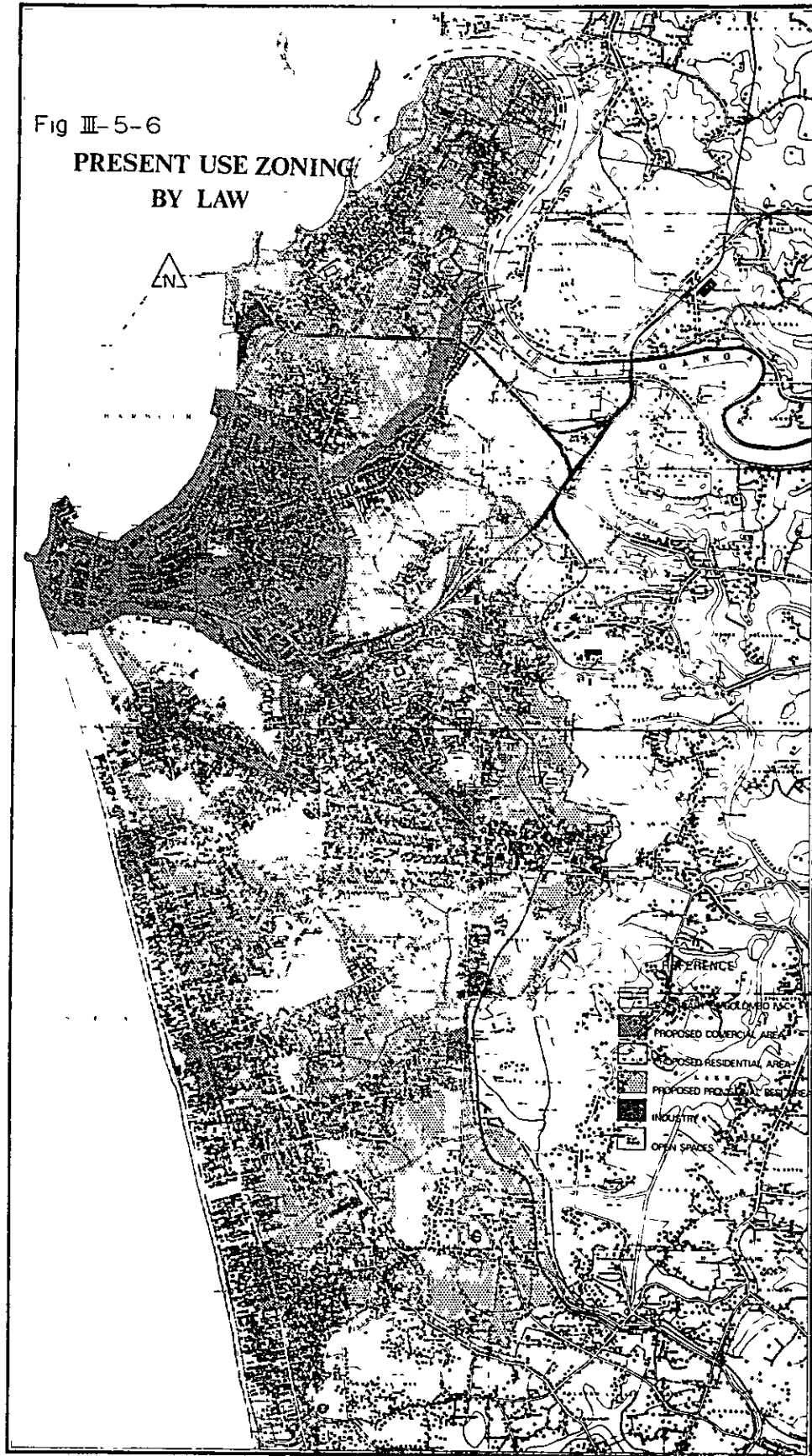


Fig III-5-7 Location of marshes in and around colombo

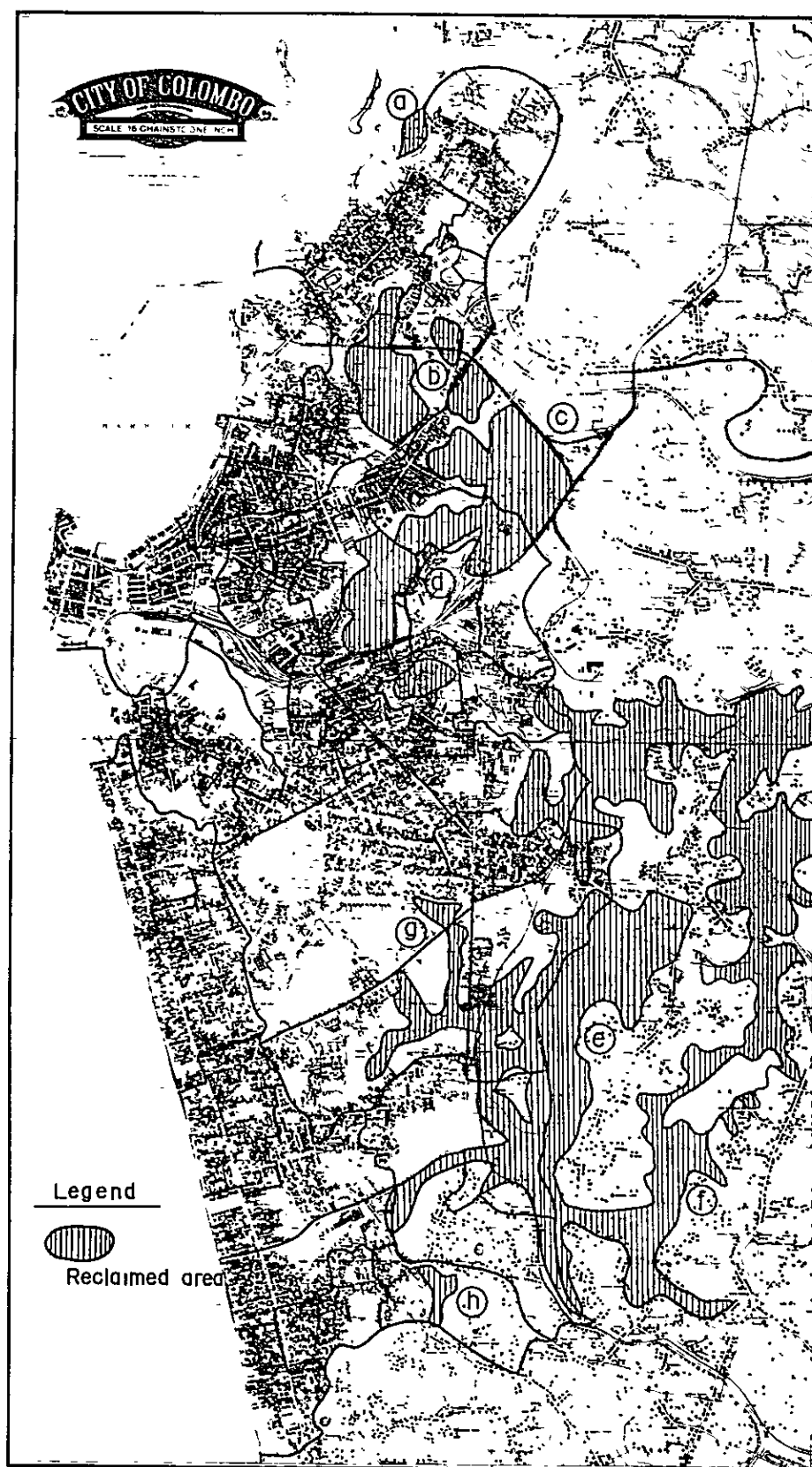


Fig III-5-8

Contour Map For Land Valuation

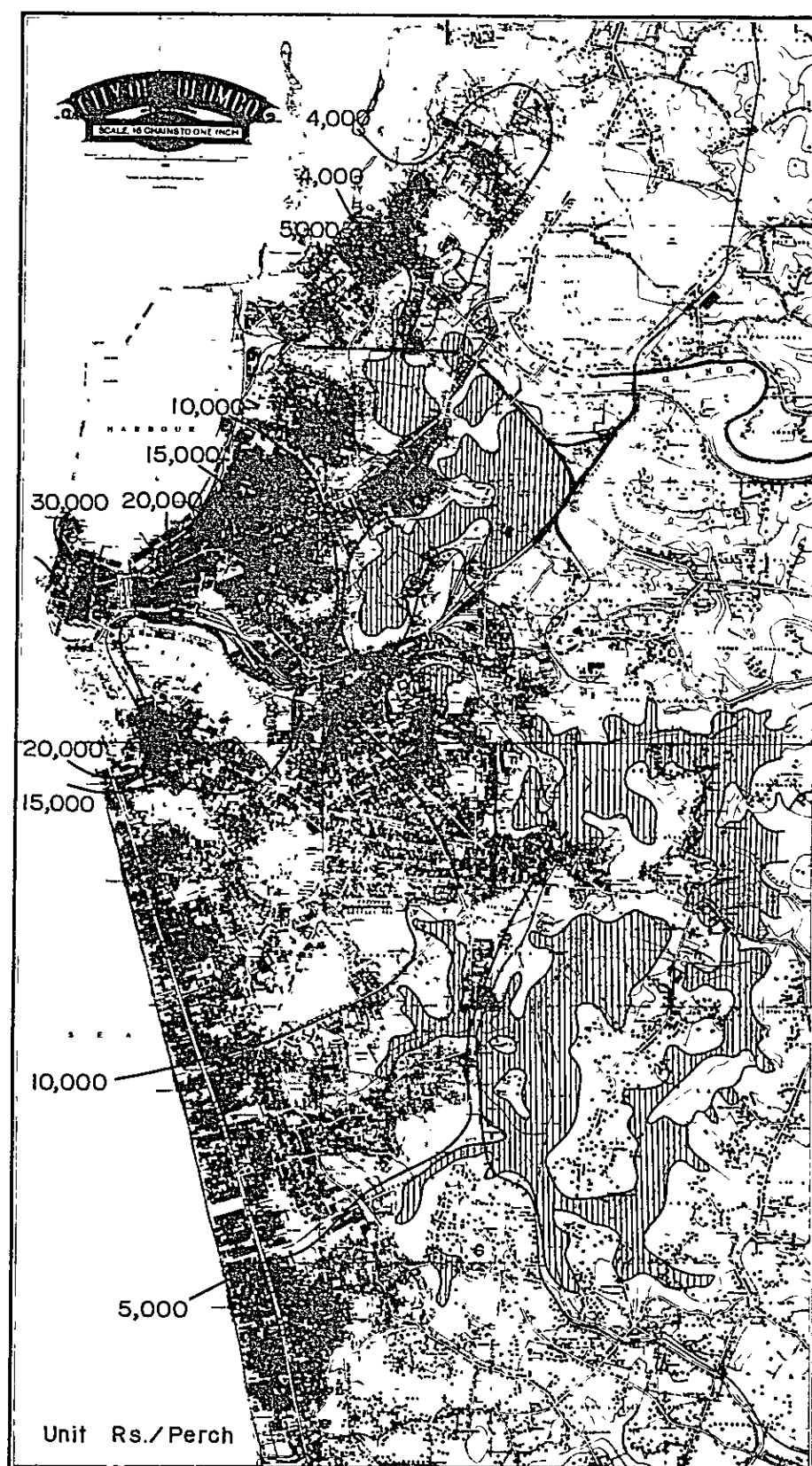




Fig III-5-9 Number of Eating Houses by Ward

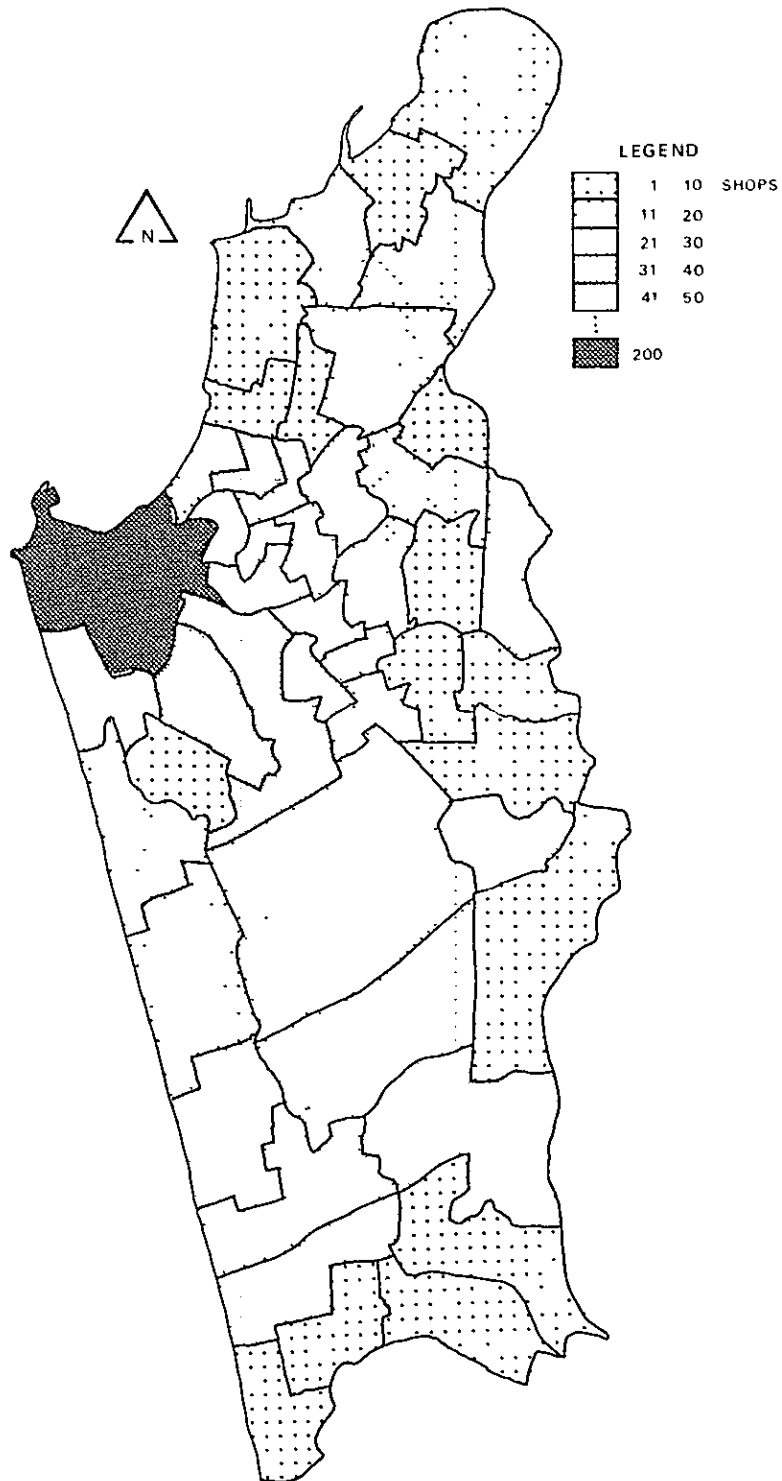


Fig. III-5-10  
SPHERE OF SERVICES

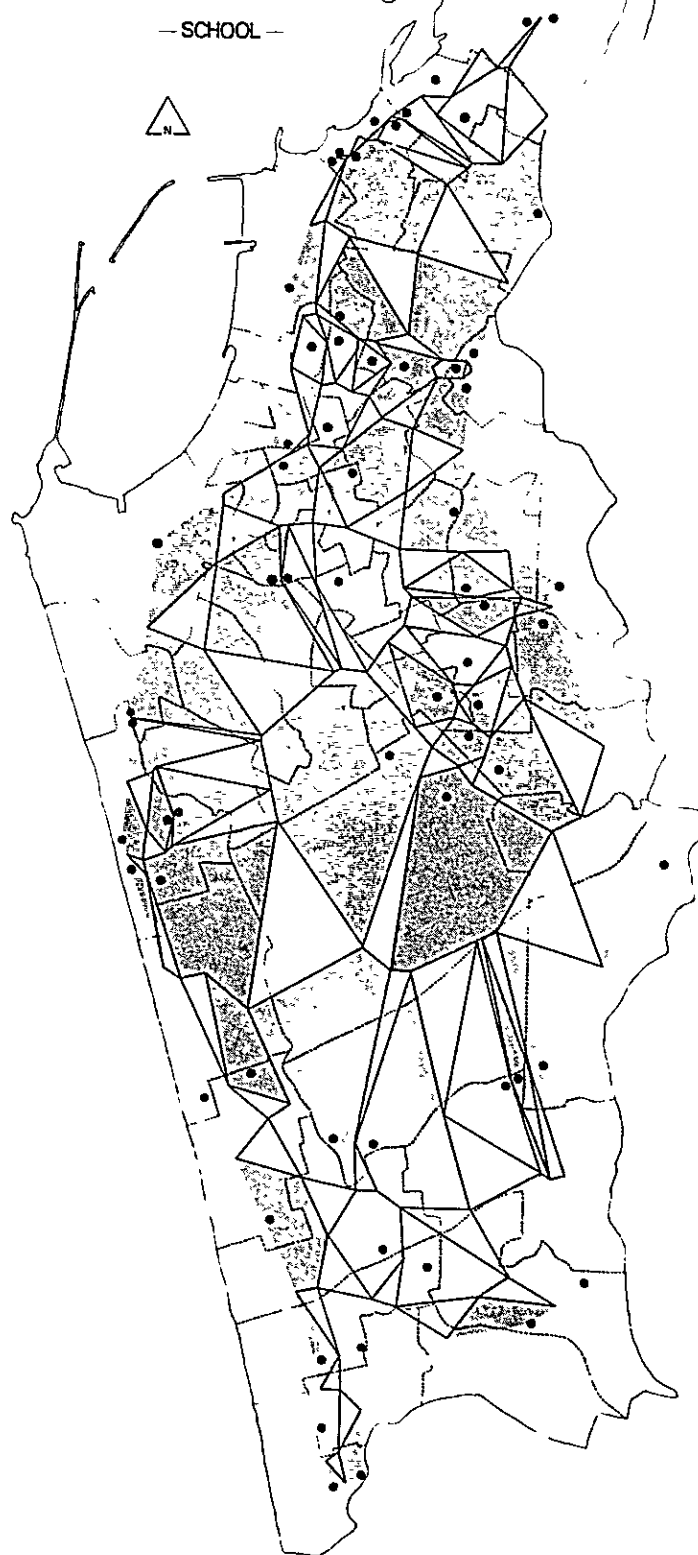


Fig II-5-11  
SPHERE OF SERVICES

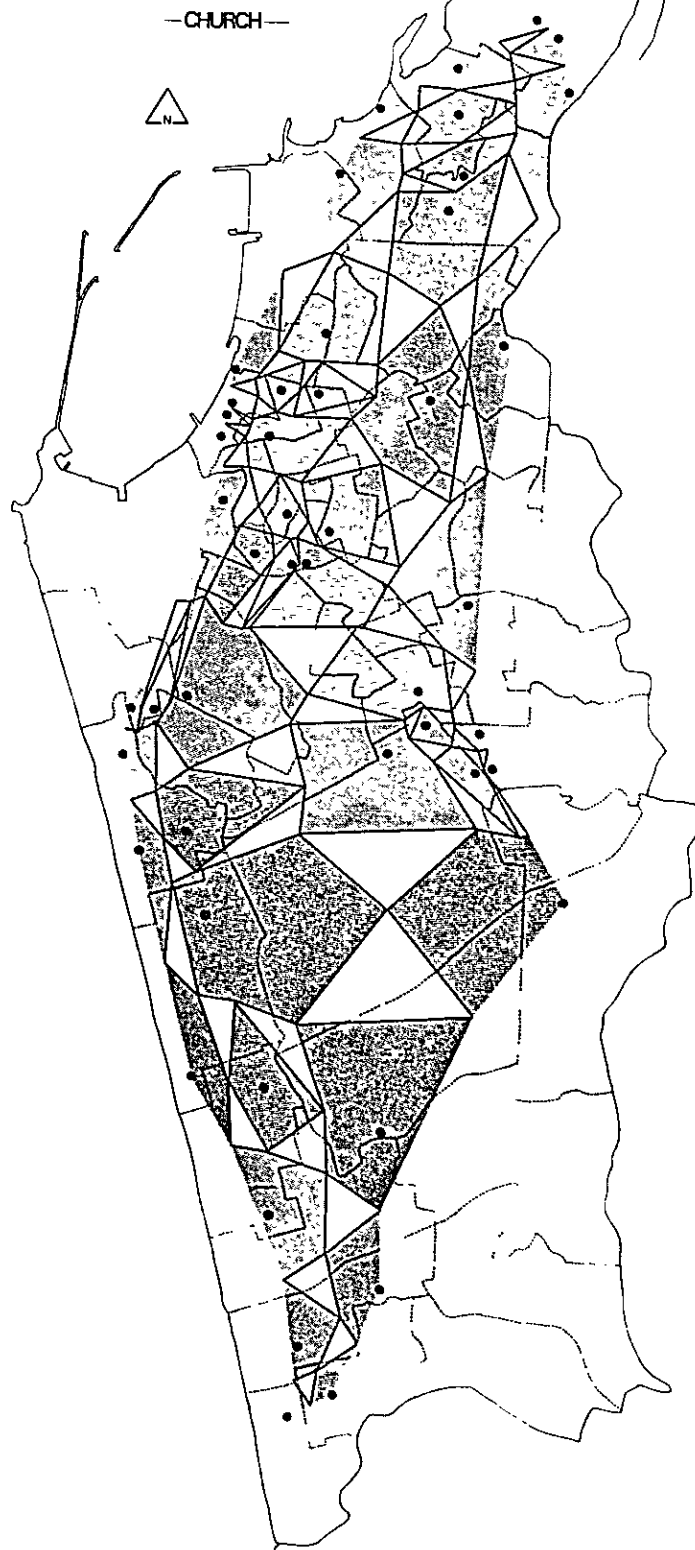


Fig. III-5-12

SPHERE OF SERVICES

BUDDHIST TEMPLE  
HINDU TEMPLE

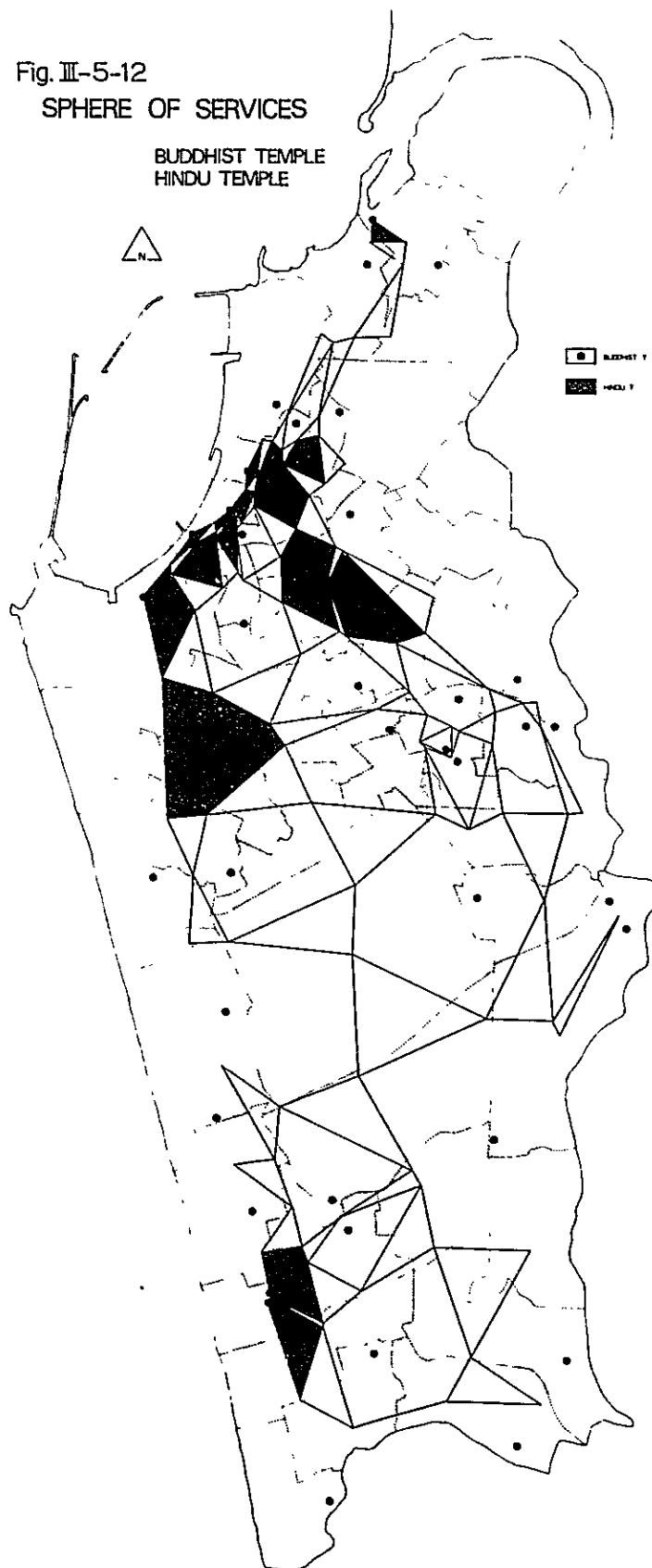


Table III-5-1 Organization Chart of Colombo District  
Reclamation and Development Board

