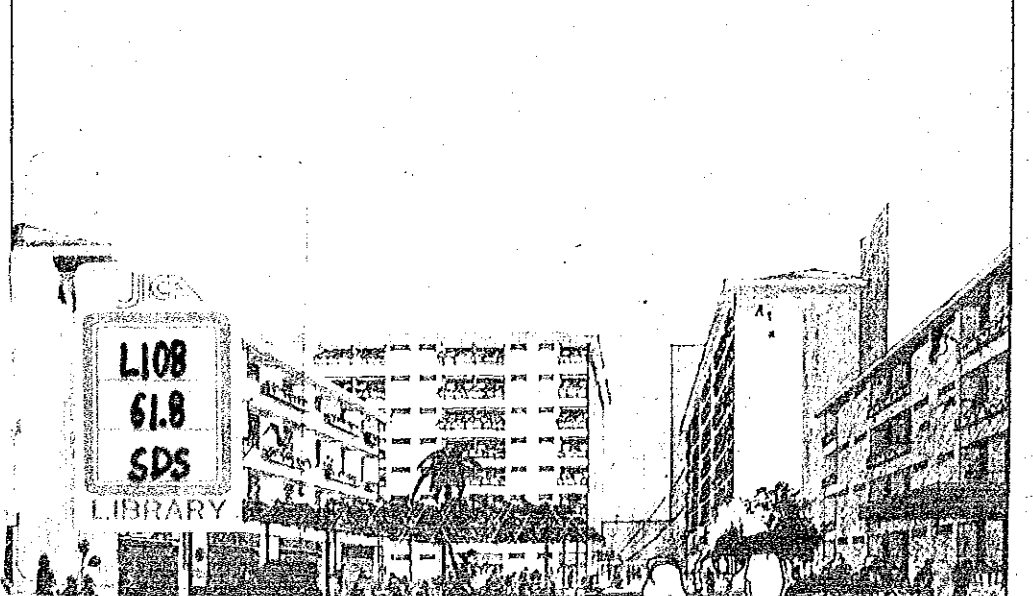
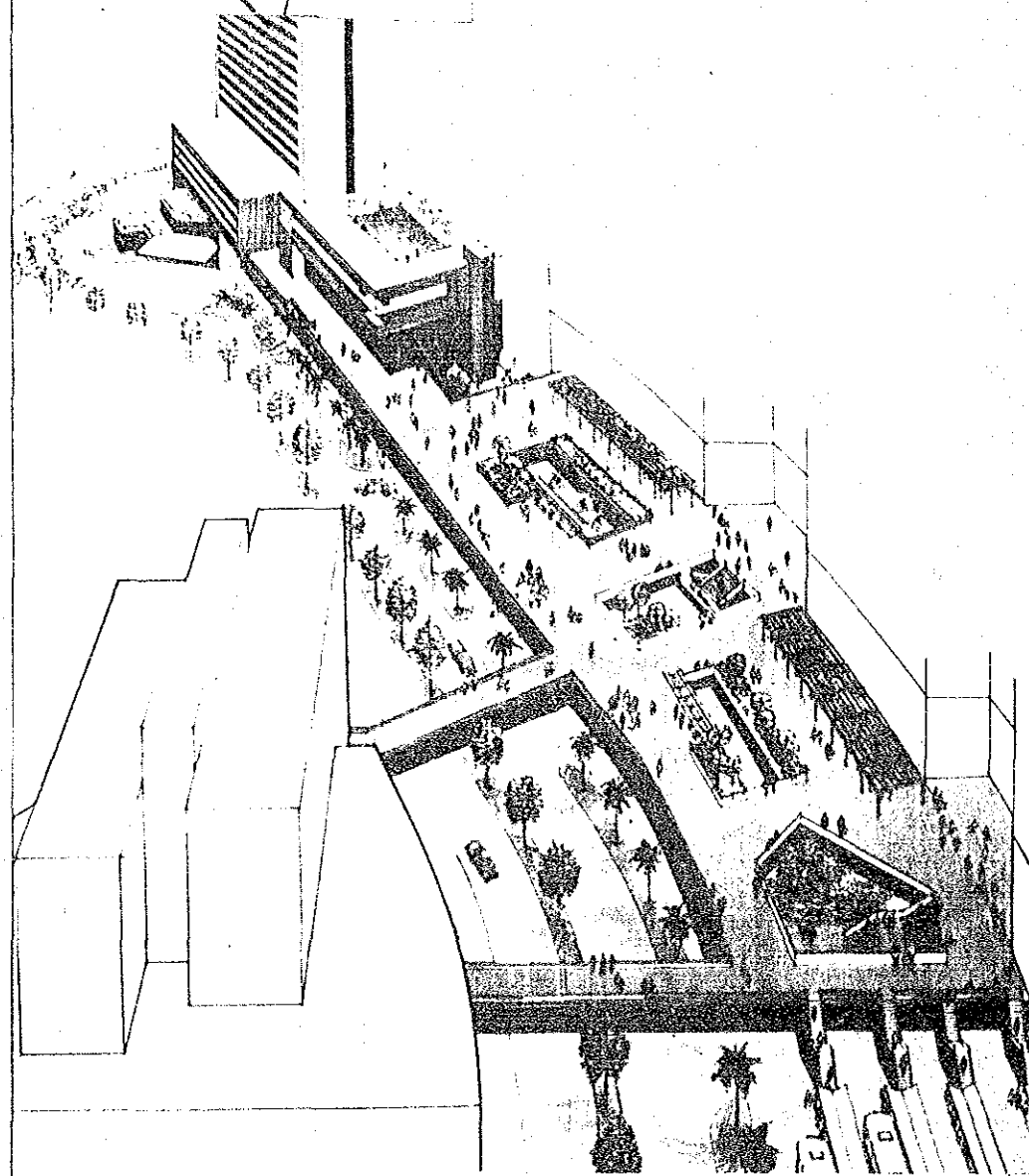


社会開発協力部報告書



No. 7

THE REPUBLIC OF INDONESIA

# Study on Urban Renewal Housing Project in Jakarta

FINAL REPORT  
VOLUME II: URBAN RENEWAL PLAN - MANGGARAI

DECEMBER, 1983

JAPAN INTERNATIONAL COOPERATION AGENCY

SDS

83-131 (3/4)

JICA LIBRARY



1034459L6J

**THE REPUBLIC OF INDONESIA**

**Study on  
Urban Renewal Housing Project  
in Jakarta**

**FINAL REPORT**

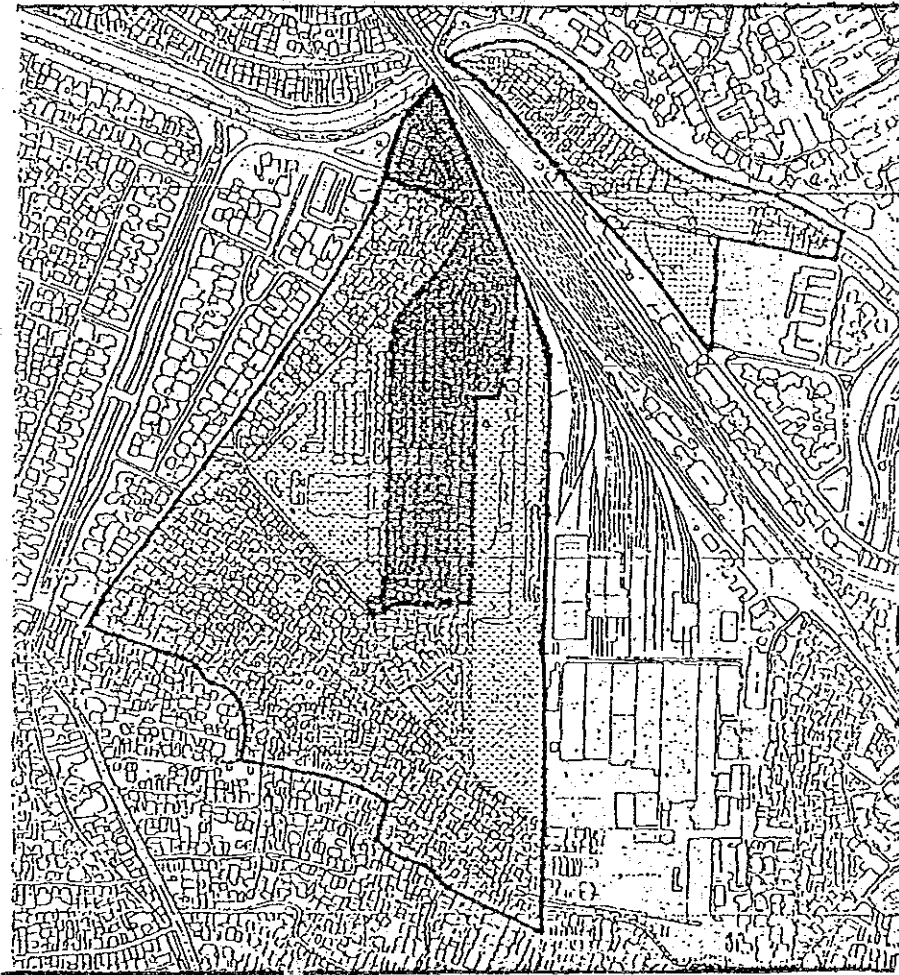
**VOLUME II : URBAN RENEWAL PLAN - MANGGARAI**

**DECEMBER, 1983**


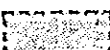
**JAPAN INTERNATIONAL COOPERATION AGENCY**

国際協力事業団	
受入 月日 84.6.20	L108
登録No. 10413	618
	SDS

# MANGGARAI



## LEGEND:

-  : STUDY AREA
-  : PROJECT SITE

## PRESENT CONDITIONS

### STUDY AREA

- \* Location : 4.5 Km Distant from the Civic Centre  
"National Monument – Monas".
- \* Area : About 43 Ha.
- \* Population : Total 27,000  
Density 620 person/Ha.

### PROJECT SITES

- \* Area : About 7.6 Ha.
- \* Population : Total 9,900  
Density 1,300 Person/Ha.

0 100 200 500M



LOCATION MAP OF THE STUDY AREAS & THE  
PROJECT SITES

BEFORE RENEWAL



▲ EXISTING MODEL OF SITE AREA

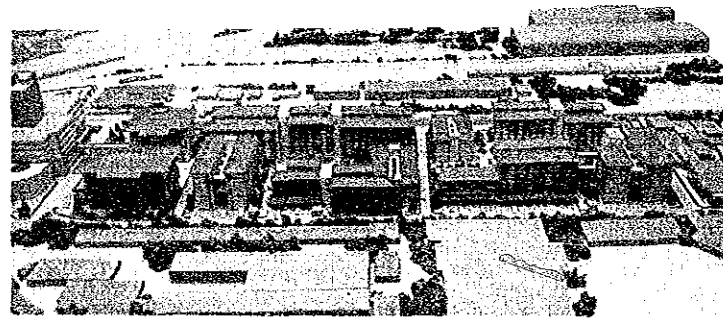


▲ PHOTO OF EXISTING CONDITION

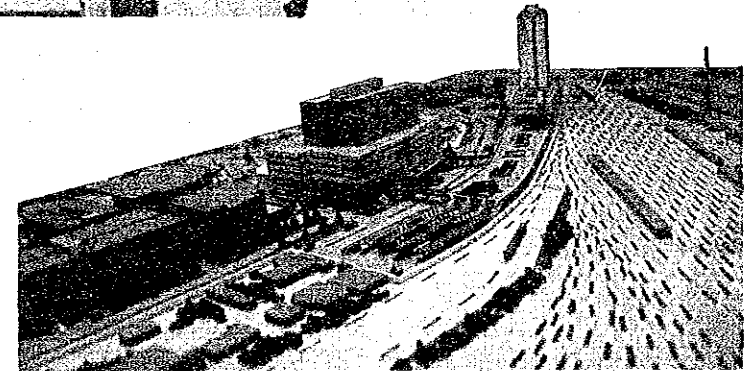
AFTER RENEWAL



▲ PLANNING MODEL OF TOTAL SITE AREA



◀ MODEL OF HOUSING BLOCK



▲ MODEL OF COMMERCIAL/BUSINESS BLOCK

MODEL OF BEFORE & AFTER RENEWAL – MANGGARAI

## TABLE OF CONTENTS

LOCATION MAP OF THE STUDY AREAS & THE PROJECT SITES . . .	i	CHAPTER 7: SOCIO-ECONOMIC ANALYSIS	
MODEL OF BEFORE & AFTER RENEWAL – MANGGARAI . . . . .	ii	7.1 Economic Evaluation . . . . .	7-1
TABLE OF CONTENTS . . . . .	iii	7.2 Social Benefit . . . . .	7-8
LIST OF TABLES AND FIGURES . . . . .	iv	7.3 Housing Affordability Analysis . . . . .	7-9
 CHAPTER 1: GENERAL CONSIDERATIONS		 CHAPTER 8: IMPLEMENTATION PLAN	
1.1 Background of the Study Area . . . . .	1-1	8.1 Implementation Schedule . . . . .	8-1
1.2 Characterization of the Study Area . . . . .	1-1	8.2 Temporary Housing Planning . . . . .	8-3
1.3 Preliminary DKI Jakarta Master Plan (1985 – 2005) . . . . .	1-2	8.3 Financial Schedule . . . . .	8-6
 CHAPTER 2: PRESENT CONDITIONS AND IDENTIFICATION OF PROBLEMS IN THE STUDY AREA		 APPENDICES	
2.1 Present Conditions . . . . .	2-1	A. Computer Output for Housing Affordability Analysis	
2.2 Identification of Problems . . . . .	2-7	B. Details of Local and Foreign Portions	
2.3 Priority Programmes . . . . .	2-10		
 CHAPTER 3: STRUCTURE PLAN AND SELECTION OF THE PROJECT SITE			
3.1 Structure Plan . . . . .	3-1		
3.2 Selection of the Project Site for Feasibility Study . . . . .	3-9		
 CHAPTER 4: PRESENT CONDITIONS AND IDENTIFICATION OF PROBLEMS IN THE PROJECT SITE			
4.1 Present Conditions . . . . .	4-1		
4.2 Identification of Problems . . . . .	4-5		
4.3 Priority Programmes . . . . .	4-7		
 CHAPTER 5: PRELIMINARY URBAN RENEWAL DESIGN			
5.1 Forecast of Future Demand . . . . .	5-1		
5.2 Strategy of Urban Renewal . . . . .	5-6		
5.3 Preliminary Urban Renewal Design . . . . .	5-8		
5.4 Preliminary Public Facility Design . . . . .	5-21		
 CHAPTER 6: FINANCIAL ANALYSIS			
6.1 Major Conditions for Analysis . . . . .	6-1		
6.2 Financial Calculation . . . . .	6-3		

LIST OF TABLES AND FIGURES

CHAPTER 1 : GENERAL CONSIDERATIONS

Fig. 1-1 : City Functions Surrounding Manggarai

CHAPTER 2 : PRESENT CONDITIONS AND IDENTIFICATION OF PROBLEMS IN THE STUDY AREA

- Fig. 2-1 : Population Trend of Kelurahans in the Past 4 Years
- Fig. 2-2 : Population Density of the Study Area
- Fig. 2-3 : Map of Land Use (1982)
- Fig. 2-4 : Public Utility Around the Study Area
- Fig. 2-5 : Community Facilities
- Fig. 2-6 : Bldg. Use
- Fig. 2-7 : Bldg. Structure
- Fig. 2-8 : Bldg. Conditions
- Fig. 2-9 : Number of Bldg. Storeys
- Fig. 2-10 : Road Network Surrounding the Study Area
- Fig. 2-11 : KIP (Kampungs Improvement Programme) and Neighbourhood Roads
- Fig. 2-12 : Land Ownership Registration "Manggarai"
- Fig. 2-13 : Identification of Major Urban Problems in the Study Area
- Fig. 2-14 : Zoning Map
- Fig. 2-15 : Priority Programmes in "Manggarai"

CHAPTER 3 : STRUCTURE PLAN AND SELECTION OF THE PROJECT SITE

- Fig. 3-1 : Flow Chart for Proposed Structure Plan
- Table 3-2 : The Comparison Table on Three Alternative Structure Plans
- Fig. 3-3 : The Proposed Structure Plan – Manggarai
- Table 3-4 : Comparison of Population between the Present and the Structure Plan
- Table 3-5 : Land Use in the Proposed Structure Plan
- Fig. 3-6 : Road Network
- Fig. 3-7 : Intensive Vertical Utilization System
- Fig. 3-8 : The Urban Renewal Methods – Manggarai
- Table 3-9 : The Construction Cost
- Table 3-10 : Building Construction Cost
- Fig. 3-11 : Building Construction Site Layout
- Fig. 3-12 : Work Flow Chart : Selection of the Site for F/S
- Fig. 3-13 : The Correlative Matrix for Evaluation of Physical Conditions

Table 3-14 : Criteria for Physical Conditions

Fig. 3-15 : Three Alternative Site Plan

Fig. 3-16 : Selection of Expected Feasibility Study Sites in Manggarai

Table 3-17 : Outline of the Alternatives

Table 3-18 : General Conditions of Project Finance – Manggarai

Table 3-19 : Selection of F/S Site with Accordance with Dominant Policy

Table 3-20 : Evaluation of the Alternative Feasibility Site – Manggarai

CHAPTER 4 : PRESENT CONDITIONS AND IDENTIFICATION OF PROBLEMS IN THE PROJECT SITE

- Fig. 4-1 : Present Situation in the Project Site
- Fig. 4-2 : Building Use
- Fig. 4-3 : Building Structure
- Fig. 4-4 : Building Age
- Fig. 4-5 : Number of Building Storeys
- Fig. 4-6 : KIP (Kampungs Improvement Programme)
- Fig. 4-7 : Community Facilities
- Fig. 4-8 : Population Distribution (Population Pyramide)
- Fig. 4-9 : Distribution of Household Income and Expenditure
- Fig. 4-10 : Land Ownership
- Fig. 4-11 : Building Ownership
- Fig. 4-12 : Identification of Problems
- Fig. 4-13 : Priority Programmes

CHAPTER 5 : PRELIMINARY URBAN RENEWAL DESIGN

- Table 5-1 : List of Public Markets around Manggarai
- Fig. 5-2 : Existing Public Markets and Trade Area
- Table 5-3 : Sales Amount from the Primary and Secondary Trade Area
- Table 5-4 : Community Facility Area based on the Criteria
- Fig. 5-5 : Passengers at Manggarai (in 2000)
- Table 5-6 : Required Space for Station Plaza
- Fig. 5-7 : Urban Renewal Concept Plan – Manggarai
- Table 5-8 : Floor Area and Facilities (A Block)
- Table 5-9 : Floor Area and Facilities (B Block)
- Fig. 5-10 : Building Layout Plan – Manggarai
- Fig. 5-11 : Layout Planning – Manggarai
- Fig. 5-12 : 2F Plan of A.B.C. Block – Manggarai
- Fig. 5-13 : 4F Plan of D.E. Block – Manggarai



- Fig. 5-14 : Section of Block A – Manggarai
- Fig. 5-15 : Section of Block B – Manggarai
- Table 5-16 : Comparison of before and after Renewal
- Fig. 5-17 : Area for Public Use – Manggarai
- Fig. 5-18 : Existing Road Network (North of Manggarai)
- Fig. 5-19 : Existing and Proposed Underpass
- Fig. 5-20 : Proposed Roads, Underpass and a Bridge
- Fig. 5-21 : Proposed Underpass & Bridge Plan in the North of Manggarai
- Fig. 5-22 : Proposed Bridge and Underpass (Manggarai)
- Fig. 5-23 : Flow Chart of Road Capacity Analysis
- Fig. 5-24 : Proposed Sanitary and Storm Water Drainage (Section-I only)
- Fig. 5-25 : Proposed Sanitary and Storm Water Drainage (Section-I and II)
- Fig. 5-26 : Existing Toilet System
- Fig. 5-27 : Proposed Toilet System

#### CHAPTER 6 : FINANCIAL ANALYSIS

- Fig. 6-1 : The Land Owned by PJKA
- Table 6-2 : The Summary of Financial Calculation (Section I + II)
- Table 6-3 : The Summary of Financial Calculation by Section
- Fig. 6-4 : Conditions of the Equivalent Exchange of Floor

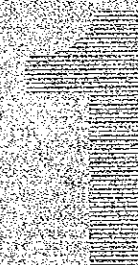
#### CHAPTER 7 : SOCIO-ECONOMIC ANALYSIS

- Table 7-1 : Number of Resettled Households
- Table 7-2 : Housing Benefit
- Table 7-3 : Floor Area of Business – Use Floor
- Table 7-4 : Annual Benefit of Business – Use Floor
- Table 7-5 : Parking Space and Annual Benefit
- Table 7-6 : Benefit of Station – Front Plaza and Bus Terminal Development
- Table 7-7 : Time Reduction Benefit of Underpass Improvement
- Table 7-8 : Economic Vehicle Operating Cost by Speed
- Table 7-9 : Vehicle Operating Reduction Benefit of Underpass Improvement
- Table 7-10 : Economic Benefit
- Table 7-11 : Construction Cost
- Table 7-12 : Operation and Maintenance Cost
- Table 7-13 : Calculation of N.P.V.
- Fig. 7-14 : Flow Chart of Housing Affordability Analysis
- Fig. 7-15 : Housing Affordability at Manggarai
- Fig. 7-16 : Housing Affordability at Manggarai (in case of all state land being given to inhabitants)

#### CHAPTER 8 : IMPLEMENTATION PLAN

- Fig. 8-1 : Construction Schedule
- Table 8-2 : Implementation Schedule and Annual Disbursement Schedule
- Fig. 8-3 : Flow Chart of Temporary Housing Planning (THP)
- Fig. 8-4 : Location Map: Proposed Temporary Housing Site
- Fig. 8-5 : Allocation of Temporary Housing Planning on Stage Basis
- Fig. 8-6 : Construction Cost by Local and Foreign Currencies
- Table 8-7 : Amount to be Prepared by the Government and Final Cash Balance
- Table 8-8 : Financial Schedule of Section I
- Table 8-9 : Financial Schedule of Section II
- Table 8-10 : Financial Schedule of Section I + II
- Table 8-11 : Cases for Sensitivity Analysis
- Table 8-12 : Disbursement Schedule
- Fig. 8-13 : Cumulative Cash Surplus and Deficit – Foreign Portion : 40%
- Fig. 8-14 : Cumulative Cash Surplus and Deficit – Foreign Portion : 50%

CHAPTER



GENERAL CONSIDERATIONS

## 1.1 BACKGROUND OF THE STUDY AREA

Before commencement of the JICA Study, a "Contact Mission" organized by JICA had discussions with the Indonesian Government regarding the selection of study areas. Of the several alternative areas, the city's Manggarai section was ultimately selected together with Kebon Melati section. The reasons why Manggarai was selected are as follows:

### Sub-centre Function

This area will be redeveloped to have a sub-central function, mainly linking with railway improvements. The proposed urban renewal should involve the developments of a station-front plaza in the west of the Manggarai station and access roads to the major existing road network of the city.

### Movement of Kompor (Kerosene Cooker) Factories

In the west of the station are a number of deteriorated row houses in which Kompors are being produced at present. According to a priority programme, these home industries are planned to move out to a new small industrial complex in Pulo Gadung in the near future. This will provide vacant land and gives a good chance to foster the urban renewal project.

### Improvement of Living Environment and Sewerage

In the north-east of the area are obsolete markets (Pasar) and extremely poor and crowded houses along the Kali Ciliwung, causing a water pollution of the river.

### Potential Land for the Urban Renewal

There exists the state land owned by PJKA and DKI which may be advantageously utilised for initiating an urban renewal project.

## 1.2 CHARACTERIZATION OF THE STUDY AREA

The characteristics of the city functions in the area surrounding Manggarai are shown in Fig. 1-1.

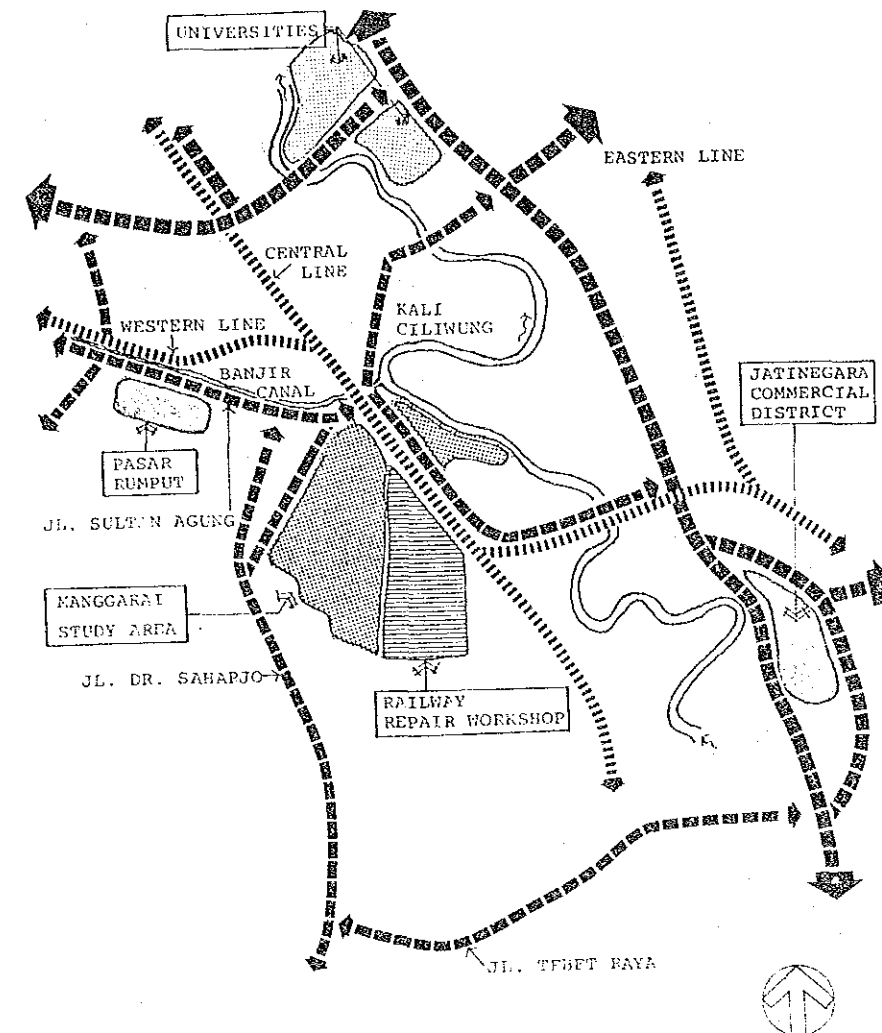


Fig. 1-1 CITY FUNCTIONS SURROUNDING MANGGARAI

The characteristics of the city functions surrounding the study area are different from those of Kebon Melati. There is no commercial impact on the area because commercial districts are located far from the area as shown in Fig. 1-1. There are railway repair workshops to the east of the area and if this land can be partly used

for a long range urban development, Manggarai will have great potential for urban development.

In the area, a residential sector and the industrial sector including home industrial, railway repair shop and car repairshop, are predominant functions. There are two vacant lots which have high potential for initiating the urban renewal project.

Transportation is one of the serious urban issues in DKI Jakarta, and hence railway improvement projects are being actively studied or implemented in JABOTABEK region.

A station-front plaza to provide adequate accessibility will be an important part of the project and should be constructed in coordination with the betterment programme of the Manggarai station in order to provide passengers with smooth transfer between road transportation and railway. Moreover, the Manggarai station will play the major role as the arrival terminal for long distance trains and a junction for commuting trains. A commercial sector will be developed surrounding the station front plaza and Pasar development and slum clearance should be actively pursued in the north of the railway.

### 1.3 PRELIMINARY DKI JAKARTA MASTER PLAN (1985 - 2005)

In accordance with the Master Plan for the year 2005, Manggarai is planned to be:

- Strategic location as a sub-centre having trade and business centre supported by infrastructure developments, such as railway and arterial road improvements;
- Commercial development through urban renewal implementation;
- Environment improvement area ranked as second priority in need of the improvements of public facilities and decent dwellings;
- Designated population density of over 500 persons/Ha, which is the highest category planned in the year 2005.

In addition an electric power station will be installed between 1985 and 1990 in order to provide additional electricity for supply to the commercial centre.

In conclusion, Manggarai would be redeveloped to have sub-centre functions closely linked with improvements of urban infrastructure.

Source: The Master Plan for the 2005 PRE RANCANGAN POLA DASAR TATA RUANG DEARCH DKI JAKARTA 2005, AUG. 1983, PEMERINTAH DAERAH KHUSUS IBU KOTA JAKARTA

CHAPTER

2

**PRESENT CONDITIONS AND IDENTIFICATION  
OF PROBLEMS IN THE STUDY AREA**

## 2.1 PRESENT CONDITIONS

### 2.1.1 Population

The administrative area covering the study area in Manggarai, consist of Kelurahan Manggarai and Kelurahan Manggarai Selatan.

As shown in Fig. 2-1, the population trends in both Kelurahanans show a gradual decrease through the past 4 years. It can be assumed that the general population trend in Manggarai will remain the same level from now. The population density is shown in Fig. 2-2.

Total Population	Total No. of Households	Average Household Size	Average Population Density
27,000 persons	5.2 families	5.2 persons/family	630 person/ha

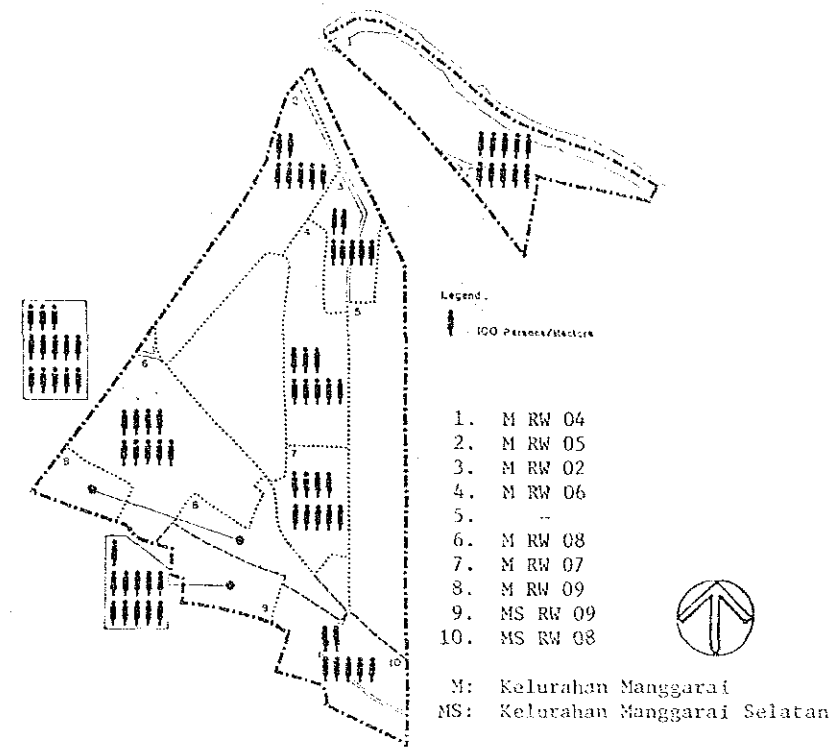


Fig. 2-2 POPULATION DENSITY OF THE STUDY AREA

### 2.1.2 Land Use

The present land use in the study area is basically divided into the PJK's land with the existing railway-related facilities in the east, and the high-density housing area in the west which includes the neighbourhood commercial area along Jl. Dr. Sabarjo (Ref. Fig. 2-3).

The land use in this area is characterised as follows:

- Residential areas account for 58%, implying predominant residential use of the area.
- Industrial land use accounts for 18%.
- Neighbourhood commercial use accounts for only 3%.

The present land use pattern is therefore regarded as a residential area inclusive of minor industrial use.

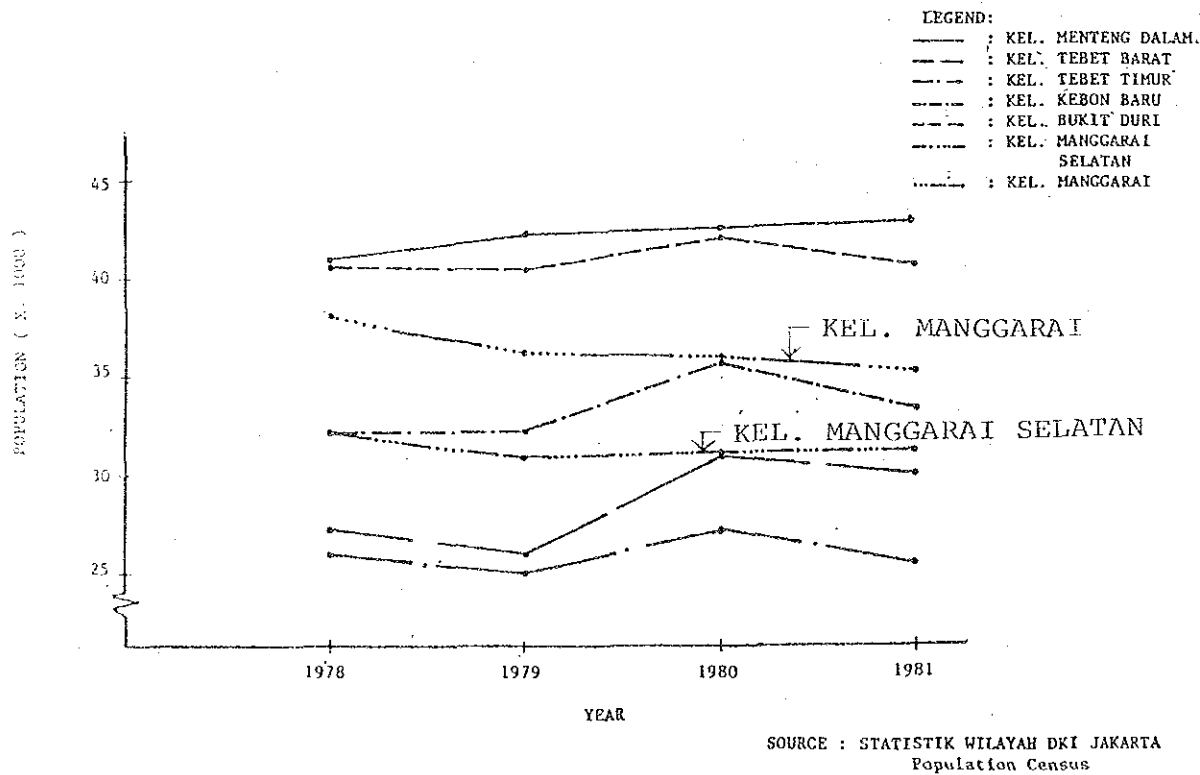


Fig. 2-1 POPULATION TREND OF KELURAHANS IN THE PAST 4 YEARS

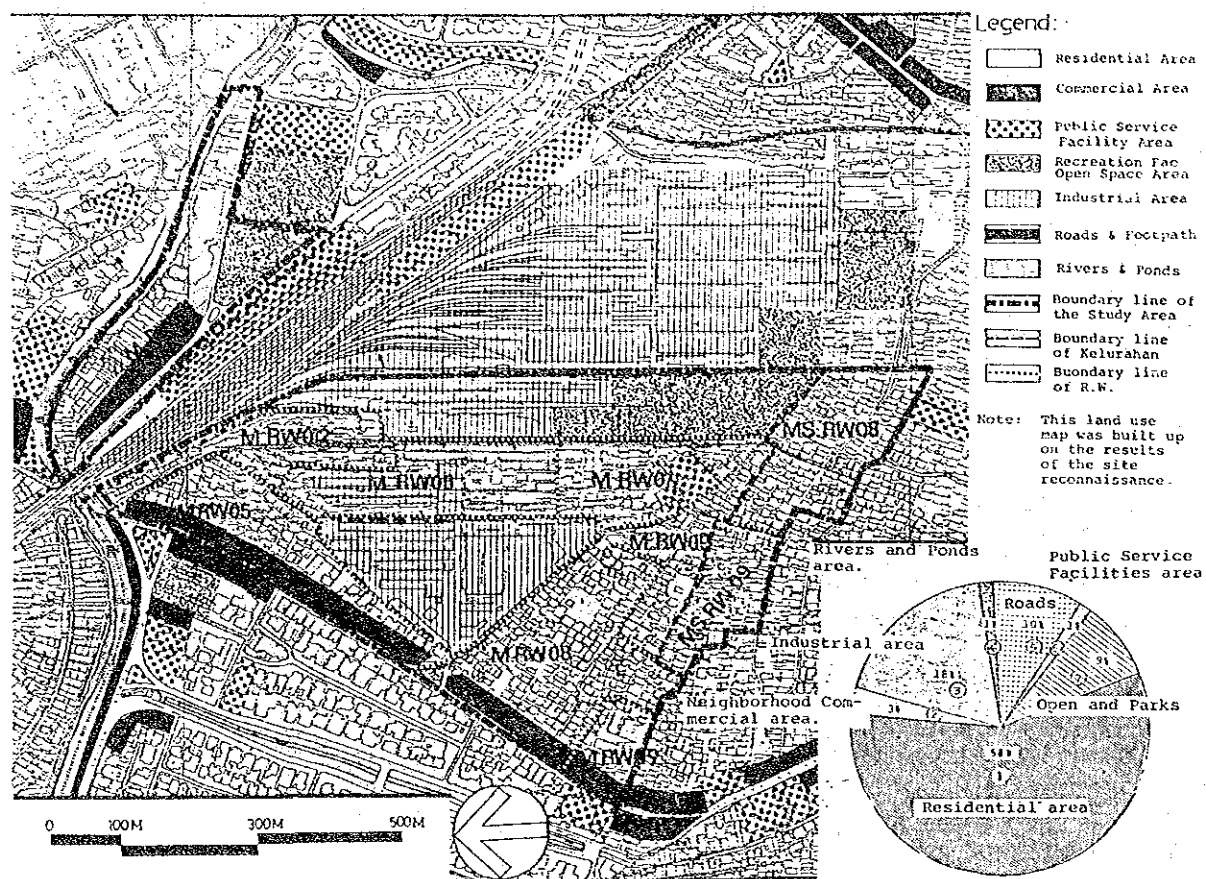


Fig. 2-3 MAP OF LAND USE (1982)

### 2.1.3 Public Utilities

Water supply pipes and gas pipes are shown in Fig. 2-4.

#### Water Supply

Main water supply pipes run along Jl. Minang Kabau in the west side and Jl. Sultan Agung running through Jl. Manggarai Utara 2, as shown. Only 10% of the inhabitants utilize it and the rest of the inhabitants get water from wells.

#### Electricity

80% of the inhabitants have electric lamps in their homes and the rest use spirit lamps and kerosene lamps.

#### Drainage and Sewage

40% of the inhabitants discharge sewage directly to the public channel (Riol Kota) and in particular, the residents who live along the Kali Ciliwung discharge sewage directly to the river.

#### Garbage Collection

Temporary garbage receiving stations are provided in the study area. Disordered garbage stations are seen in the study area due to insufficient garbage facilities. A lot of garbage is also seen in the drainage channel "Saluran Air" running through the study area.

#### Energy for Cooking

No city gas pipe system has been provided and all the inhabitants use kerosene cooker (Kompur) at home.

Note: The figures (%) mentioned above are obtained from the socio-economic survey conducted in Stage I.

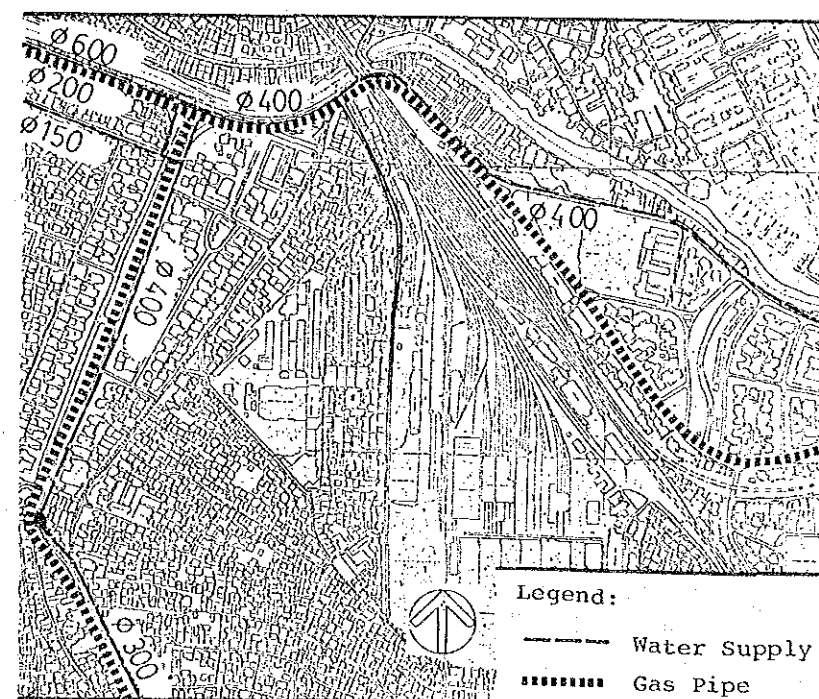


Fig. 2-4 PUBLIC UTILITY AROUND THE STUDY AREA

### 2.1.4 Community Facilities

Community facilities are important to provide the inhabitants with amenity, convenience and safety for everyday life. Community facility conditions such as educational, religious, shopping, health facilities located in the study area are given in Fig. 2-5.

For educational facilities, only two elementary schools are situated in the south of the study area. Religious facilities play an important part in the inhabitants' daily life and many religious facilities are seen in the study area. In connection with the religious facilities a good community relationship atmosphere is taking place in the study area.

\* The community facility data was derived from two Kelurahan: Manggarai and Manggarai Selatan.

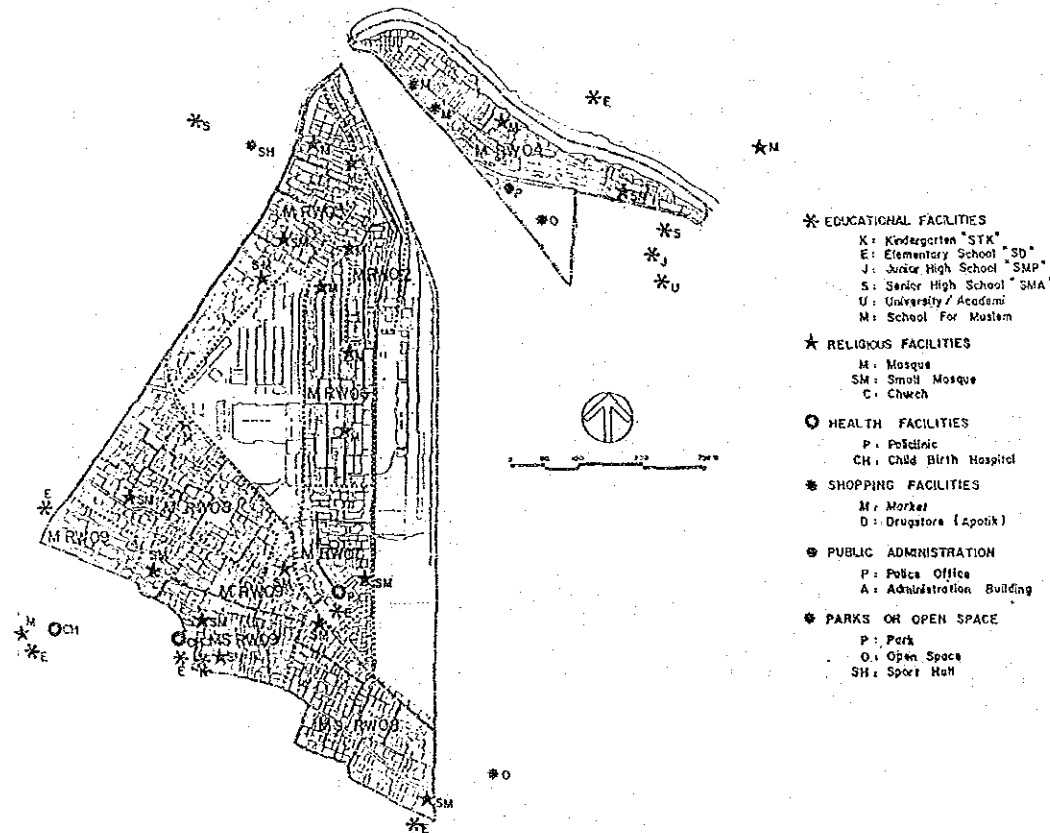


Fig. 2-5 COMMUNITY FACILITIES

### 2.1.5 Building Conditions

Building conditions are shown in the figures from 2-6 to 2-9. These conditions are characterised as follows.

#### Building Use;

Housing	Shops, Offices & Others	Home Industry
91%	8%	1%

#### Building Structure;

Permanent	Semi-Permanent	Temporary
30%	50%	20%

#### Building Conditions;

Good	Moderate	Bad
9%	48%	43%

#### No. of Building Storeys;

one storey	two storeys	above three storeys
82%	17.9%	0.1%

### 2.1.6 Road Network

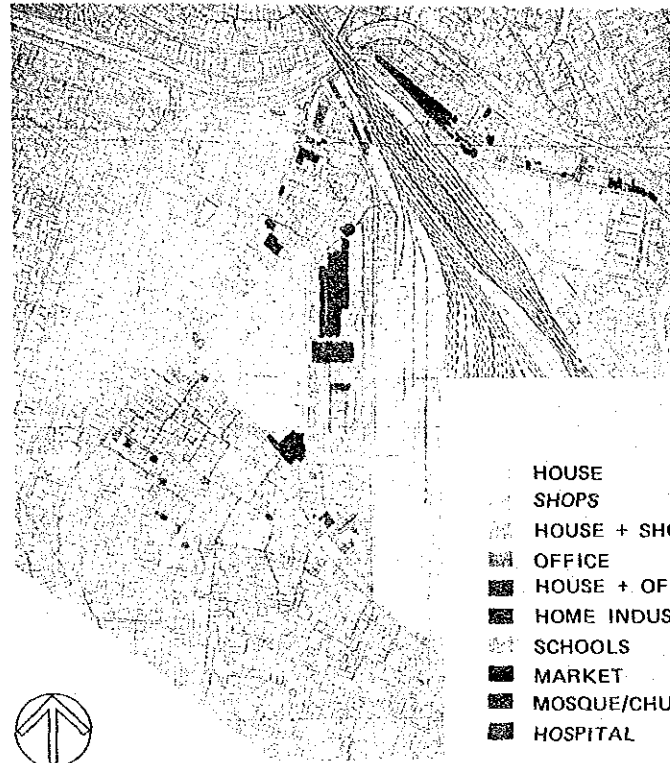
The study area lies between Jl. Dr. Saharjo and the State Railway as shown in Fig. 2-10. Jalan Minangkabau, a secondary road which lies south of the area, carried 15,300 PCU/24 hours in 1980, and is forecasted to carry 41,000 in the year 2000.

Jl. Dr. Saharjo is 7 m wide (2 lanes), and connects to Jl. S. Agung which passes under the railway. This underpass causes a traffic problem because the northern side is bounded by the Banjir Canal and the east side by the railway.

The study area is thoroughly covered by neighbourhood roads and KIP as shown in Fig. 2-11.

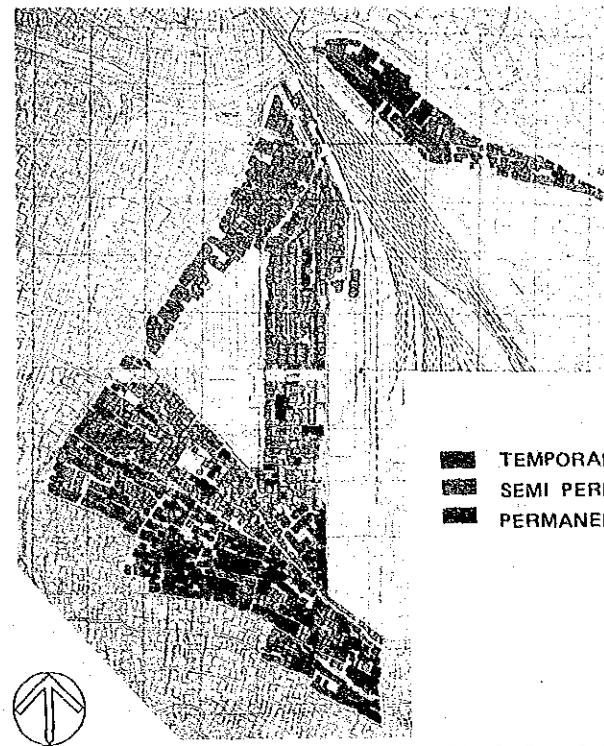
\* PCU: Passenger Car Unit





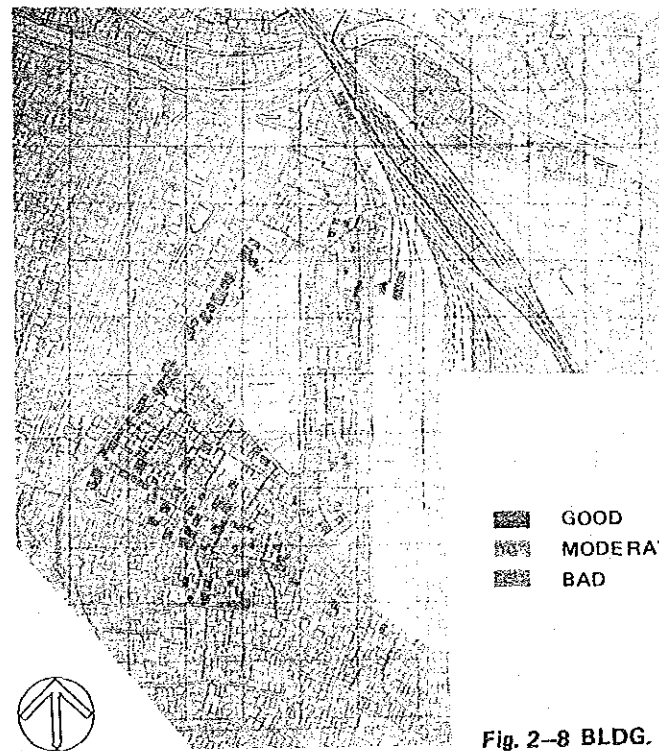
- HOUSE
- SHOPS
- HOUSE + SHOP
- OFFICE
- HOUSE + OFFICE
- HOME INDUSTRY
- SCHOOLS
- MARKET
- MOSQUE/CHURCH
- HOSPITAL

Fig. 2-6 BLDG. USE



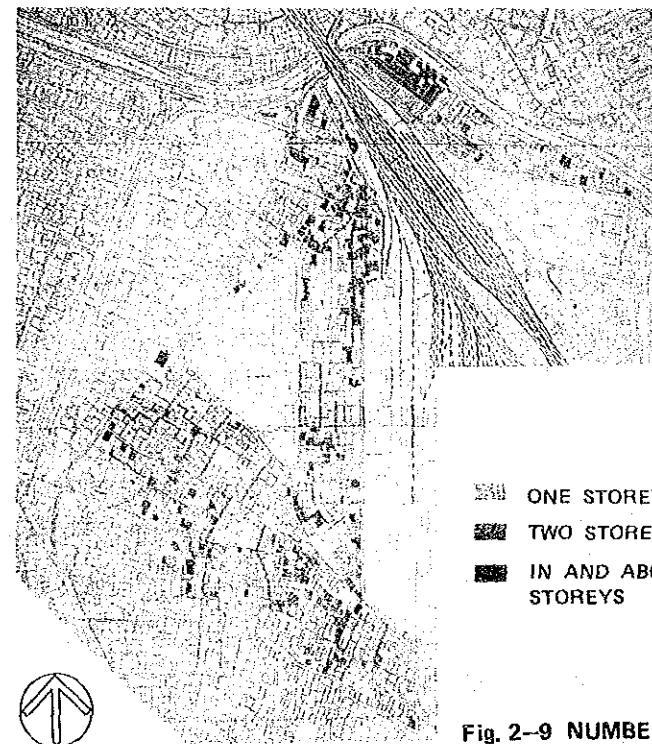
- TEMPORARY
- SEMI PERMANENT
- PERMANENT

Fig. 2-7 BLDG. STRUCTURE



- GOOD
- MODERATE
- BAD

Fig. 2-8 BLDG. CONDITIONS



- ONE STOREY
- TWO STOREYS
- IN AND ABOVE THREE STOREYS

Fig. 2-9 NUMBER OF BLDG. STOREYS

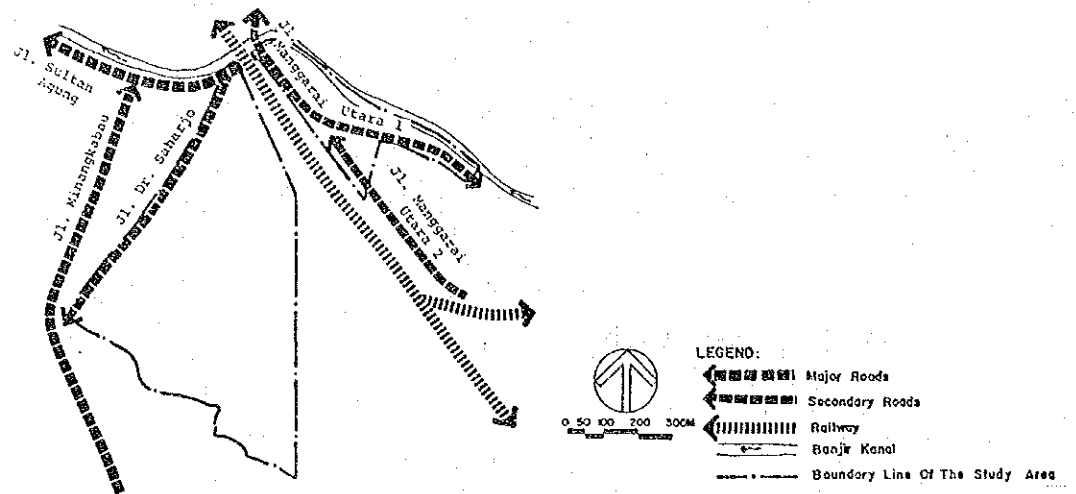


Fig. 2-10 ROAD NETWORK SURROUNDING THE STUDY AREA

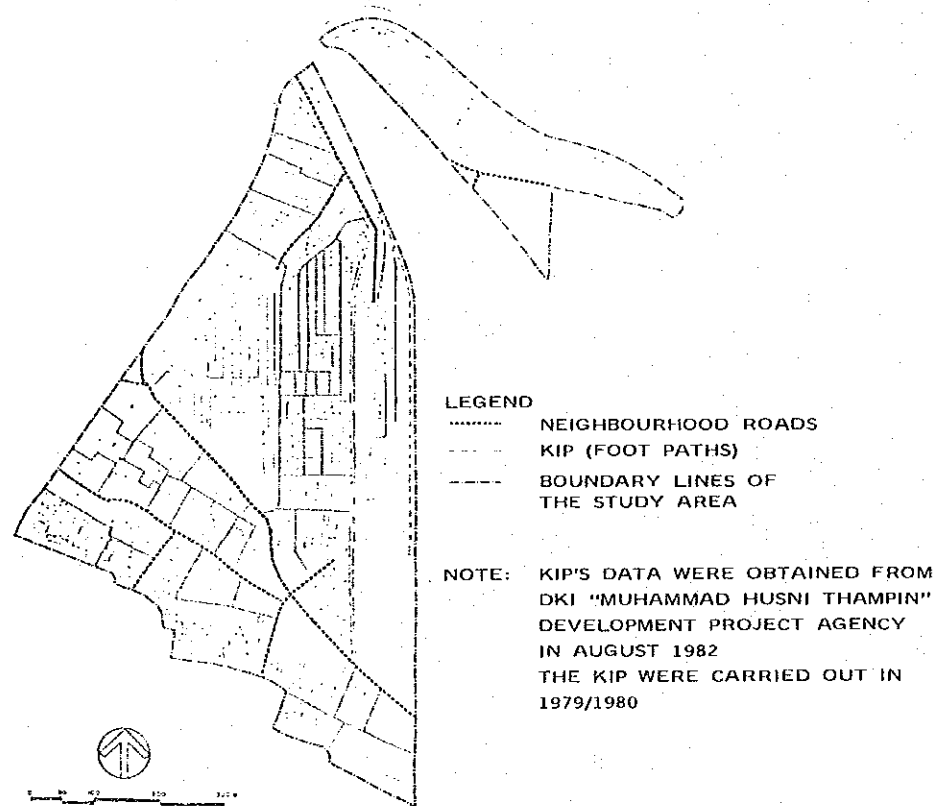


Fig. 2-11 KIP (Kampungs Improvement Programme) AND NEIGHBOURHOOD ROADS

## 2.1.7 Socio-Economic Conditions

### Household Size

From the survey by the study team, the number of household members who live in one dwelling unit is 6.8 persons on average. However, according to the statistical data from the Kelurahan office, the average family size in the study area is only 5.2 persons and there are therefore many houses in which more than two families are living. Considering the case of Kebon Kacang, most of the second families in the house are likely to be free co-occupants.

### Income and Expenditure

Monthly income of the median class is 70,000 Rp. The percentage of the households whose income is more than 200,000 Rp. per month, is only 4 percent. The percentage of households that pay rental or leasehold fee is small and the fee is cheap. 54 percent of the renters and leaseholders pay less than 2,000 Rp. and this is less than 5 percent of their income.

### Land and House

The percentage of households which own both land and house is 46 percent, whilst 29 percent of households own only the house, and 13 percent of households are renters or leaseholders. Although the percentage of renters and leaseholders is small, their rights of living should be continued in the urban renewal. The percentage of the persons who complain that their houses are too small is 60 percent of the total and this percentage increases in inverse proportion to their floor space.

### Environment Conditions

The items that more than 30 percent of inhabitants consider to be lacking in their area are as follows;

- Largest percentage : Open space and green
- 2nd largest : Parking place
- 3rd largest : Sanitation environment
- 4th largest : Fire protection
- 5th largest : Traffic control
- 6th largest : Public nuisance

At present the population density is very high and houses of varying sizes stand close together.

### Economic Activities

29 percent of the households have a business in the area, amongst which stall is 67 percent or the largest percentage. Their lives are based on the local community and hence conservation of the fields of their activities or the offer of new job opportunities should be the requirements of the urban renewal. There is a market named "Pasar Lonter Lama" in front of the Manggarai station. The number of stall and venders in this market, is approximately 400. The land is owned by DKI Jakarta, but the buildings were constructed by themselves illegally. However, they have a sort of activity certification and pay charge to the Walikota Jakarta Selatan. Home (Kompur) industries are existing in the area between the railway repair-workshop of PJKA and the car repair-workshop of P.T. Wahan Bhakti Utama. But these industries are planned to move to the small industry complex in Pulo Gadung.

### Urban Renewal Sense in the Study Area

The average percentage who wish to return to the renewal area is 73 percent and this figure decreases in proportion to the income level.

### 2.1.8 Land Ownership

For planning of the urban renewal project, the land ownership survey is an important factor. Possibility of the project actualization is largely dependent on whether the majority of the area is owned by the government or by the citizens.

The data shown in Fig. 2-12 was obtained from the Walikota Jakarta Selatan of Agraria. Land ownership of the area is as follows;

Registered land	1 Ha
Owned by PJKA	15 Ha
P.T. Wahana Bhakti Utama	5 Ha
<b>Total</b>	<b>21 Ha</b>

Land acquisition of this area seems comparatively easy, because the large proportion is non-residential area, and owned by the public bodies.

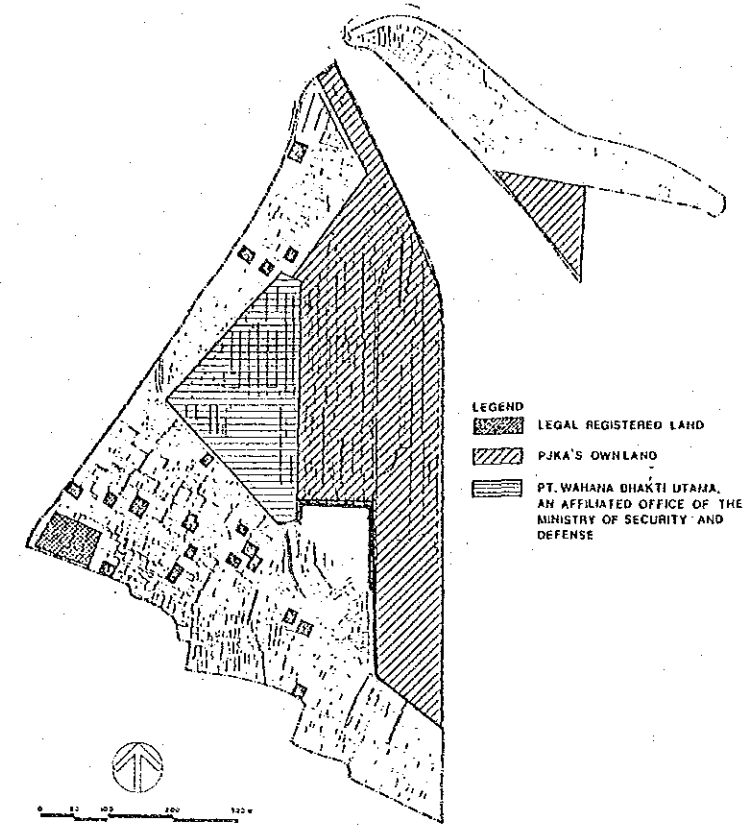


Fig. 2-12 LAND OWNERSHIP REGISTRATION "MANGGARAI"

## 2.2 IDENTIFICATION OF PROBLEMS

### 2.2.1 General

This Section deals with urban problems and zoning characteristics in and surrounding the study area. The following are general problems occurring in the study area according to the results of surveying present conditions. The major urban problems are shown in Fig. 2-13.

- Lack of Public Utilities such as piped water supply and sewage affecting sanitation, health, everyday life's convenience for the inhabitants.
- Extremely bad and dense dwellings are located along the Kali Ciliwung.
- Lack of playgrounds and parks.

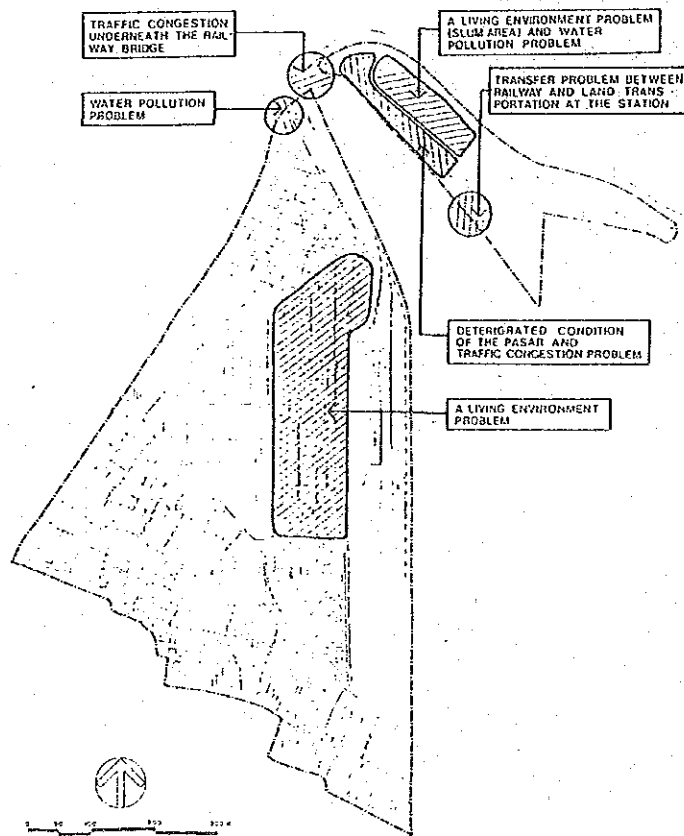


Fig. 2-13 IDENTIFICATION OF MAJOR URBAN PROBLEMS IN THE STUDY AREA

### 2.2.2 Zoning Characteristics and Problems

The study area has been divided into the zones of a similar land use having similar urban issues as shown in Fig. 2-14.

Detailed zoning characteristics and problems are explained as follows.

- NCD : Neighbourhood Commercial District
- RA : Residential Area
- PSFA : Public Service Facility Area
- LI : Light Industry "Home Industrial area"

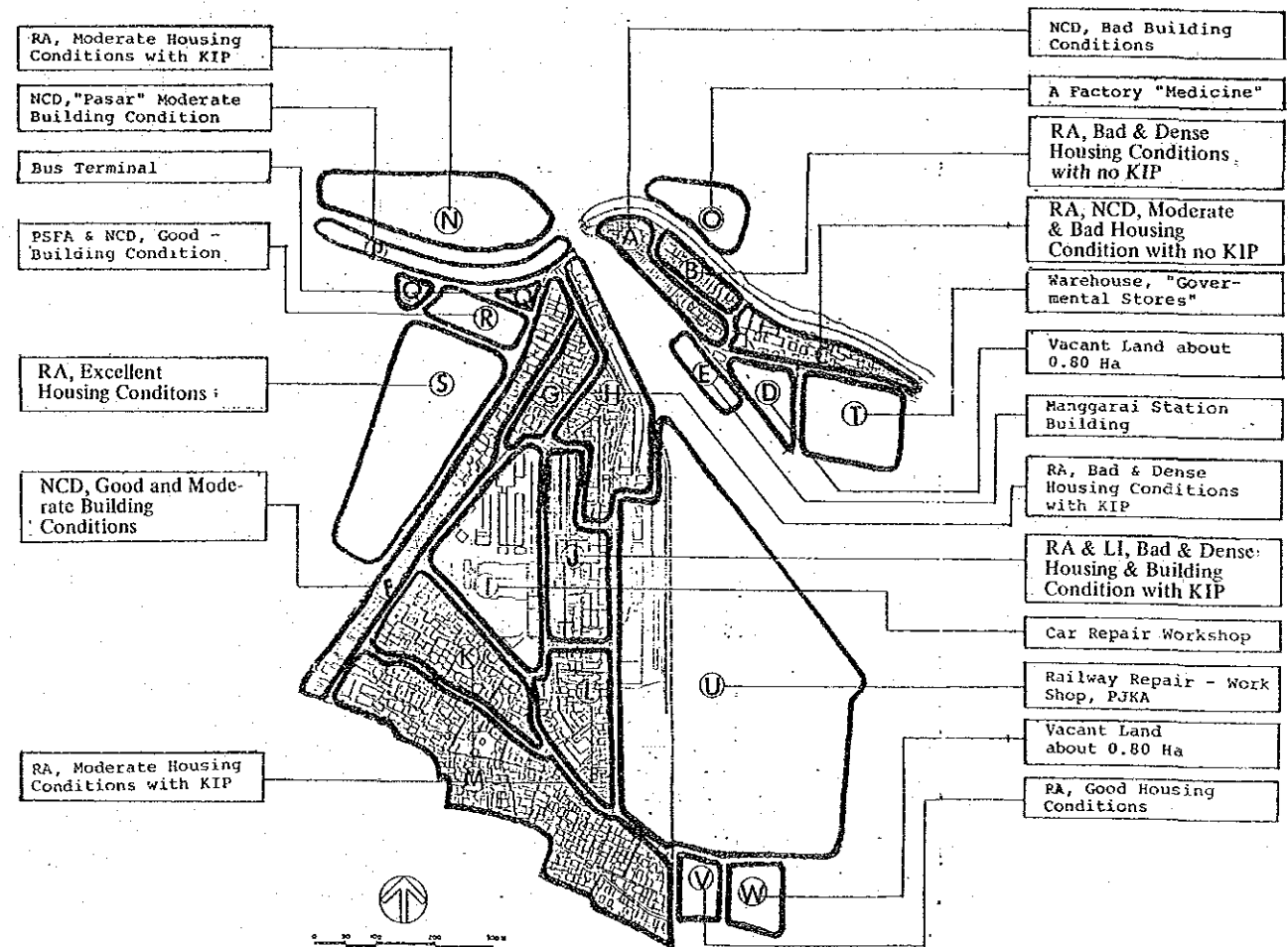


Fig. 2-14 ZONING MAP

**Zone A (NCD – Bad Bldg. Conditions)**

Public market “pasar” dealing mainly with foodstuffs such as vegetables, fruits, grains, etc. is located along Jalan Manggarai Utara, where traffic and shoppers are crowded. Most shoppers are local and the Pasar appears to be quite prosperous although it is in a deteriorated condition.

Traffic congestion is found at the railway bridge in the west side of this area. The major reason is that the street suddenly narrows in width to pass underneath the bridge.

**Zone B (RA – Bad & Dense Housing Conditions with no KIP)**

Bad and dense houses are situated along the Kali Ciliwung. Most of the houses are made of wood and bamboo and regarded as temporary structures.

KIP has not been carried out in this area, and between houses are only narrow footpaths that only one or two persons can pass through.

Those who live in this area are using the water from the Kali Ciliwung for washing, bathing (mandi), and toilet. Many temporary public toilets located along the Kali Ciliwung cause a water pollution problem.

The living environment is in a very bad condition.

**Zone C (RA & NCD – Moderate & Bad Housing Conditions with no KIP)**

Moderate sized shops are situated along Jl. Manggarai Utara-II.

KIP has not been carried out in this area. Behind the shops row houses and detached houses are located. Generally speaking, the houses are moderate quality.

Becak pool area with houses located around the middle of this area is in a bad living environment.

**Zone D (Vacant Land)**

Vacant land of about 0.8 Ha is located in front of the existing Manggarai station. This land can be utilized as a small-scale station plaza in the future.

A police station is situated just in front of the main entrance of the station.

**Zone E (Manggarai Station Bldg)**

The Manggarai station is planned to be developed within 5 years, according to JABOTABEK railway transportation plan.

An elevated railway programme for the Central Line and an electric railway system are also planned. This is one of the important priority programmes related to the Manggarai area.

A transfer problem between railway and land transportation such as buses, cars, etc. is found in the station.

**Zone F (NCD – Good and Moderate Bldg. Conditions)**

A neighbourhood commercial district is located along Jl. Dr. Saharjo. Most of the shops are good.

Jl. Dr. Saharjo is one way street where traffic congestion is seen.

**Zone G (RA - Bad and Dense Housing Conditions with KIP)**

KIP has been carried out in this area and some moderate housing conditions are found in the area, but many houses are still in a bad and dense conditions.

The living environment is bad in this area.

**Zone H (The Same as Zone G)**

This area is owned by PJKA, and KIP has been carried out. A few shops are found along the railway in the north side of this area. Some moderate houses are found, but most houses are bad and dense conditions.

A drainage channel running through this area gives out a bad smell because garbage and waste water are discharged directly into it.

The living environment is bad in this area.

**Zone I (Car Repair Workshop)**

A factory and car repair-workshop are located in the triangle of land and are utilized by PT Wahana Bhakti Utama which is an affiliated office of the Ministry of Security and Defense.

The land is 5 Ha and is potential land for the initiative of an urban renewal project in Manggarai.

It is essential to have inter-departmental discussions on the use of the land for the urban renewal project in Manggarai.

**Zone J (RA & LI – Bad & Dense Housing & Bldg. Conditions with KIP)**

KIP has been carried out in this area. The land and the row houses are owned by PJKA. The row houses and detached houses are in a bad condition.

Home industry producing cooking stoves is found in the row house.

The living environment is bad. Particularly, the row houses situated in the southeast as in Zone H.

The living environment is bad. Particularly, the row houses situated in the southeast of this area is a bad living atmosphere because no KIP has been carried out.

**Zone K, L and M (RA – Moderate Housing Conditions with KIP)**

KIP has been carried out in places where living environment is good.

Houses are mostly in a moderate condition in these areas, but some houses are bad in dense conditions. A good residential atmosphere is seen in many parts of these areas.

**Zone N (RA – Moderate Housing Conditions with KIP)**

KIP has been carried out in this area and the houses are in a moderate condition, although many houses are small. A good residential atmosphere is seen in this area.

**Zone O (A Factory)**

A medicine factory is located.

**Zone P (NCD – “Pasar” Moderate Bldg. Conditions)**

Public market (pasar), trading various kinds of goods such as foodstuffs, tools, instruments etc. is located along Jl. Sultan Agung, forming a neighbourhood commercial district.

**Zone Q (Bus Terminal)**

Two bus terminals are located adjacent to Jl. Sultan Agung, in front of the pasar.

**Zone R (PSFA & NCD – Bldg. Conditions)**

Shops, offices and recreational facilities are situated in this area.

**Zones S (RA – Excellent Housing Conditions)**

Luxurious houses are situated in this area and a good residential environment is seen.

**Zone T (Warehouse, “Government-own Stores”)**

Government-own warehouses are located in this area.

**Zone U (Railway-Repair Workshop)**

Railway repair-workshops owned by PJKA are located in the total area of about 19 Ha. They are planned to be partially developed, but scheduled to move to a sub-urban area in a long term development plan. After they move out, this area can be used for a more extensive Manggarai urban redevelopment.

**Zone V (RA – Good Housing Conditions)**

Housing lots with regular sizes have been built up in this area and housing conditions are good. A good residential atmosphere is seen in this area.

**Zone W (Vacant Land)**

Some luxurious detached houses are situated in the north of this area.

The south part is unoccupied land of about one hectare, where children enjoy playing soccer and other sports.

## 2.3 PRIORITY PROGRAMMES

### 2.3.1 General

The priority programmes which may directly or indirectly influence the study area are listed below and shown in Fig. 2-15.

### 2.3.2 Railway Improvements (Manggarai Station Programme)

In planning urban renewal in Manggarai the basic recognition on the future role of railway is a prerequisite to the development plan and is considered to have important meaning in that it will give vital influence on the future structure of the area.

Based on this recognition the plan recommends to implement the following programmes directly influencing the study area.

- Elevation of tracks between Jakarta Kota and Manggarai station (inclusive of the station compound) of the Central Line, and new construction of the station building at its original place.
- Operation of frequent commuting trains to satisfy the traffic demand utilising the Central, Western and Eastern Lines, and also the loop-operation of the Western and Eastern Lines by connecting these lines.
- After elevation of tracks and increase of the commuting trains, the long-distance trains can not enter the Central Line. Consequently, Manggarai would become the terminal for these trains.
- All the station fronts in JABOTABEK Area will be developed step by step. In implementing the programme, the basic idea of development plan, demarcation of station front, priority of stations, implementations schedule, etc. must be determined. The facilities should at least include;
  - car access/parking
  - bus terminal/stop
  - taxi stand
  - sidewalk and space for pedestrians
- The main buildings of the terminal stations for long-distance trains and of other main stations will be renovated or rebuilt. Part of the building space may be leased to outsiders as offices or shops or even a hotel business may be conducted, thus contributing to diversification of PJKA's revenues.

### 2.3.3 Roads Improvement

The following are the tentative programmes now planned by DKI Jakarta (Ref. Fig. 2-15).

- Jl. Sultan Agung having 12 m width with 2 lanes at present, will be expanded to 25 m right-of-way in future.
- Jl. Dr. Saharjo having 7 m width 2 lanes running along west side of the area at present, will be expanded to 18 m right-of-way in future.
- Jl. Dr. Saharjo having 20 m width with 4 lanes running the south of the area at present, will be expanded to 38 m right-of-way in future.

### 2.3.4 Sewerage Improvement

To collect the sanitary waste water now directly flowing into the Ciliwung River, Saluran Air and the Banjir Canal, new interceptor drains are planned to be installed as shown in Fig. 2-15.

### 2.3.5 Movement of the Home Industries (Kompur Factories)

The existing Kompur Factories are planned to move to the area for small industry complex in Pulo Gadung.

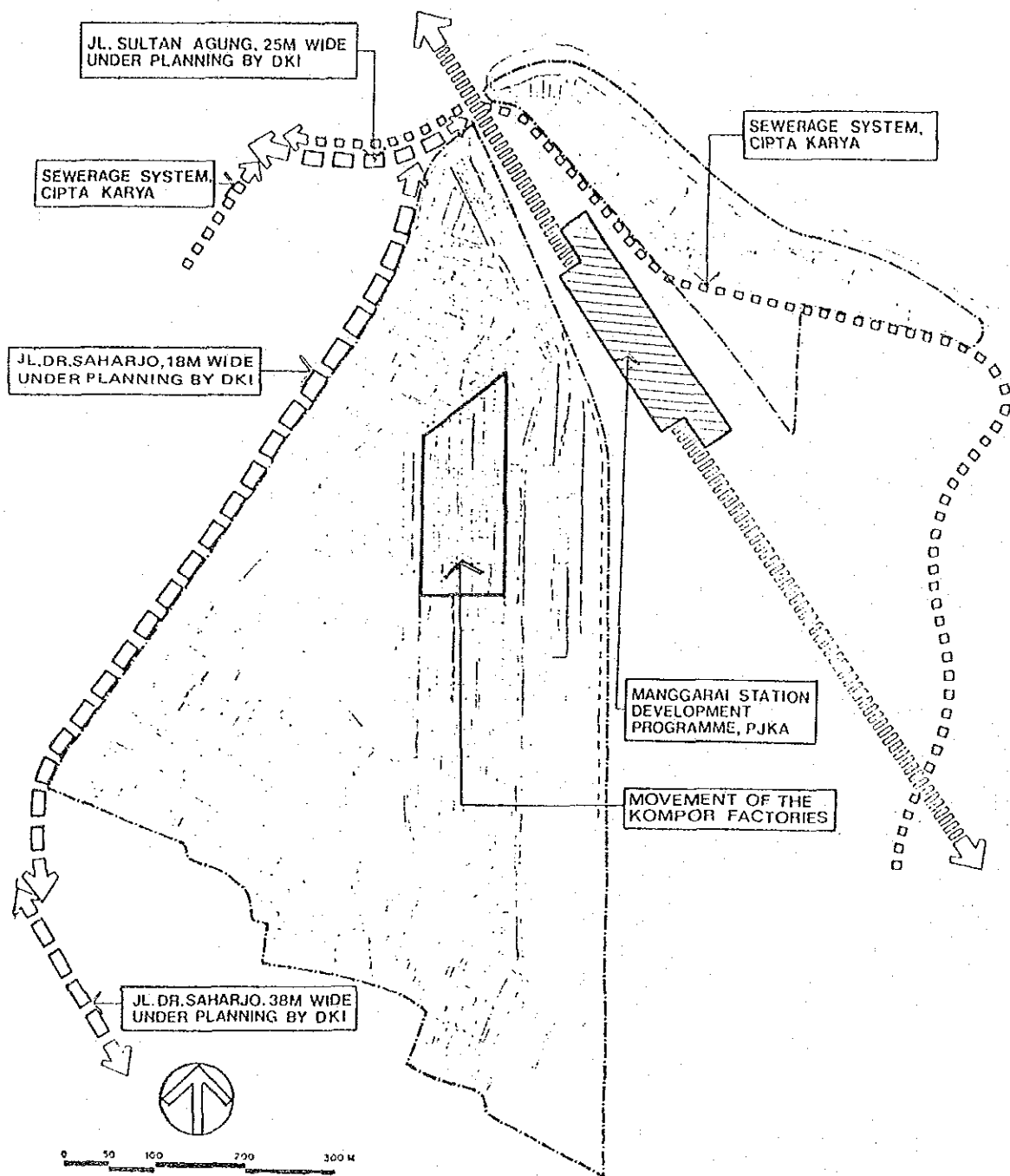
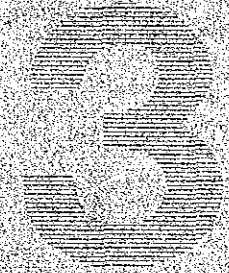


Fig. 2-15 PRIORITY PROGRAMMES IN "MANGGARAI"



CHAPTER



**STRUCTURE PLAN AND SELECTION OF THE PROJECT SITE**

### 3.1 STRUCTURE PLAN

#### 3.1.1 Planning Policies

##### Ultimate Goals

Manggarai is characterised as the contact point of both railway and road traffic and many have the potential to be developed as another nucleus of the future DKI Jakarta. This will help to mitigate over-dependence on the conventional CBD now located in Kota and along Jl. M.H. Thamrin.

The benefits that can be expected from this subcentre type redevelopment are as follows:

- Provision of easy access for commuting to and from Manggarai and other neighbouring areas particularly to the residents who are living in Depok and Klender where large-scale housing developments are being undertaken by the government.
- Provision of shopping facilities to the residents of Depok, Klender and the southern high-density area of Tebet, as well as travellers from rural areas.
- Mitigation of traffic congestion and the resultant pollution problems aggravating over the conventional CBD areas by shifting part of its functions to a new subcentre of the city.
- Generation of railway passengers by providing smooth connection between railway and road traffic (through bus stop/terminal) and by providing various urban functions such as business, shopping, amusement and tourist centres.
- Utilization of the land owned by the State Railway in a more cost-effective way, thus helping to diversify the revenues of the State Railway.

The Study Team understands that the future frame-work of DKI Jakarta will be diversified to be multi-nuclei, and based on this the Study Team is of the opinion that land readjustments, particularly in the west of the Manggarai station, should be carried out from now in order to avoid haphazard land use in the course of the creation of an urban nucleus in the future.

##### Planning Policies

Following planning policies are established on the basis of the general conditions of the study area, and urban betterment considerations such as safety, health, convenience, environmental quality and amenity.

- To promote a new commercial and business district surrounding the station plaza in the south side of the railway.

- To achieve and maintain a good living environment aimed at building up an attractive urban residential area.
- To provide sufficient drainage system along the Kali Ciliwung to contribute to the reduction in water pollution.
- To construct sufficient road network together with pedestrian ways to upgrade the accessibility to the area.
- To provide the inhabitants with safe piped water to assure health and sanitation.
- To provide the inhabitants with urban parks, especially playgrounds for children.
- To accommodate a desirable mix of residential and shopping activities in the neighbourhood commercial district.
- To maintain a Kampung community atmosphere with a human touch.
- To rehabilitate and rebuild the physically unsound residential area.
- To provide the inhabitants with adequate community facilities for their routine lives.

#### 3.1.2 Infrastructure Improvements

##### Major Concern of Infrastructure Improvement

Because of the lack of adequate infrastructure in DKI Jakarta, urban renewal has to include the infrastructure improvements. This is necessary, first to avoid haphazard development activities and secondly to ease the implementation, particularly in terms of land acquisition, by dealing with all works as a single project.

Manggarai which is characterised not only as a meeting point of railway traffic from all directions but also as a contact point of both railway and road traffic, has a potential to be redeveloped as an other nucleus of the city in the future.

It is therefore considered essential that in planning the urban renewal in Manggarai first priority should be given to the station-front development particularly in the west of the station where there is an existing bus terminal and the roads accessible to the major road network in the city.

##### Station Front Plaza

According to the Master Plan, upon completion of the elevation of the Central Line and operation system of the short-distance commuting railcars and the long-distance trains, the passengers getting on and off in the Manggarai station will drastically increase to more than 100,000 per day and this will be more than that of the Gambir station.

Taking into account the number of passengers, the station-front plaza utilized for passenger car access, bus terminal/stop, taxi stand, parking space, sidewalk and space for pedestrians should be provided to assure smooth connection between the railway and road traffics.

The traffic volume of the main access roads to the station-front plaza will, until arriving at the level of 100,000 passengers, remain less than 50,000 in PCU per day if modal-split to bus, motorcycle and other means is considered. It is therefore recommended that such access roads will require a right-of-way of 25 m at minimum.

### Underpass

It is recommended that this underpass at least be widened to 17.0 m and Jl. S. Agung should be smoothly connected to Jl. Tambak by improving its alignment and constructing a new bridge over the Ciliwung River upstream of the existing gate.

### 3.1.3 Alternative Structure Plans

#### General

In order to select the site appropriate for the subsequent feasibility studies, it is essential to research the development trends that the study area will follow in the future. A structure plan should be drawn up for this purpose to present the future potential developments in the area as basic concept plans.

However, a lack of sound information on demographic, social and economic aspects, coupled with inavailability of the future framework of DKI Jakarta supported by the city planning, makes it difficult to precisely project and estimate the future trends of the area. Thus it is inevitable to predict the probable development patterns based on the existing characteristics of the area as well as the priority development programmes which may give direct or indirect impacts over the area.

In this context, the structure plan hereinafter proposed is to be considered "behavioural"\* rather than "normative"\*, and will be subject to continual review depending upon the changing needs and conditions of the community.

The structure plan shall be planned in accordance with the work flow as shown in Fig. 3.1.

\* A "normative" approach implies a concern with how planners ought rationally to proceed in an ideal world, whereas a "behavioural" approach concentrates more upon the actual limitations that circumscribe the pursuit and achievement of rational action.

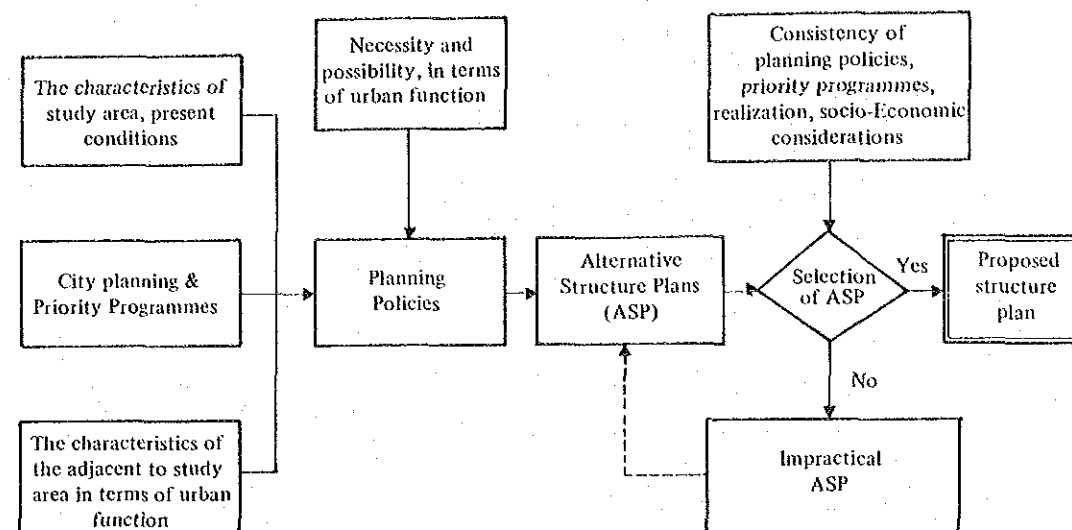


Fig. 3.1 FLOW CHART FOR PROPOSED STRUCTURE PLAN

#### Alternatives

Taking into consideration the local characteristics in and surrounding the study area, a residential/light industrial development concept will be proposed which is similar to the existing land-use. However, railway improvement projects are being studied as one of the high priority programmes and improvement of the Manggarai station and the construction of a station-front plaza, is expected within five years.

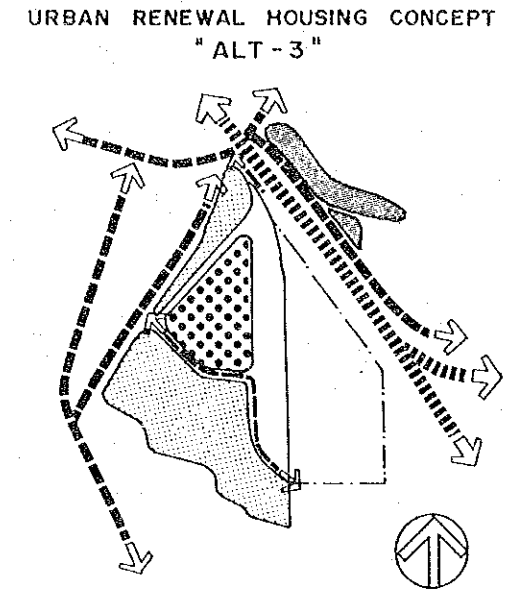
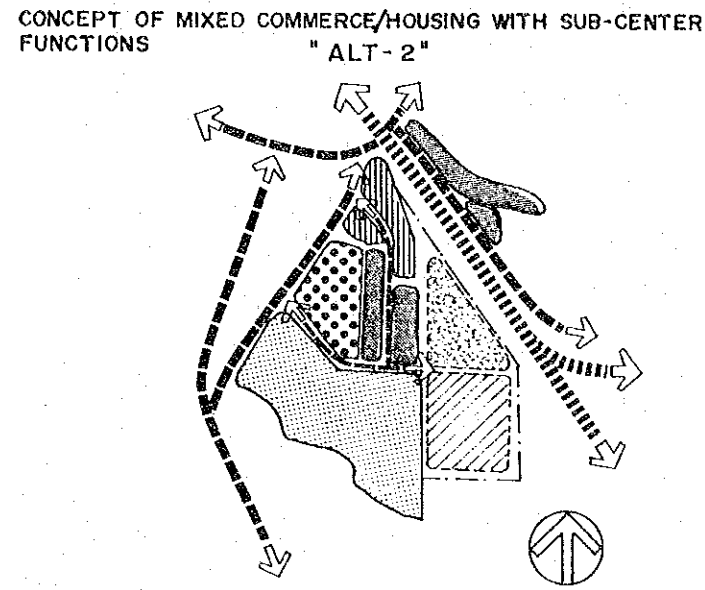
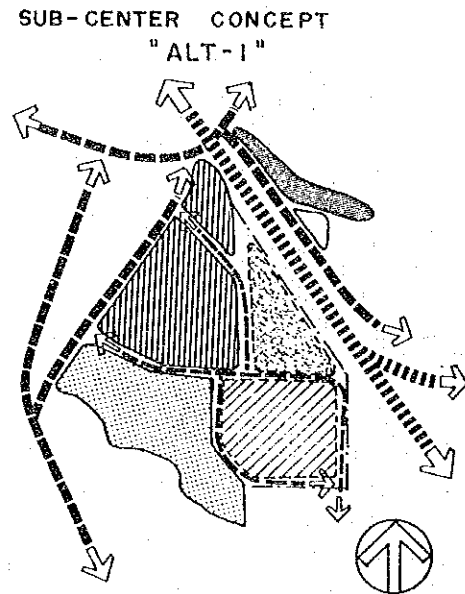
For alternative concept plans, commercial development adjacent to the station front plaza and urban renewal housing development are conceived accordingly.

Three alternative structure plans were prepared based on the results from the study on priority programmes, present conditions and planning policies. These alternatives are described as follows:

- Sub-centre concept = ALT - 1
- Concept of mixed commerce/housing with sub-centre functions = ALT - 2
- Urban Renewal Housing Concept = ALT - 3

The three alternative structure plans were examined based on the comparison table shown in Table 3-2. As a result of the comparison, a large commercial and business/residential development concept (ALT 2) is selected. The selected concept has two merits and these are that, it will not seriously destroy the existing structures, and that it has flexibility for commercial development in future.

Table 3--2 THE COMPARISON TABLE ON THREE ALTERNATIVE STRUCTURE PLANS



LEGEND:

Commercial and Business District (CBD)  
 NCD / Residential Area

Residential Development Areas (RDA)  
 Residential Block Development Areas

Reserved Land For CBD  
 Reserved Land For RDA

	ALT-1	ALT-2	ALT-3
1. Expansion of commercial and business district (CBD) in the future	●	●	X
2. Convenience of railway and road transportation.	●	●	●
3. Promotion of mixed land use between R.A and commercial area.	●	●	●
4. Contribution to resettlement for the inhabitants.	●	●	●
5. Consistency with the basic conceptual planning policies	●	●	●
6. Actualization of the programme	●	●	●
Evaluation	2	1	3

LEGEND

● Greatly Meeting  
● Meeting  
X Not Meeting

### 3.1.4 Proposed Structure Plan

#### General

The proposed structure plan is shown in Fig. 3-3.

#### Population

Population holding capacity and distribution in the study area are planned based upon the considerations mentioned below.

- To reaccommodate the existing population in the study area.
- To act as a receptacle to accommodate the people who are forced to move by other public works.
- After completion on the urban renewal project, the surplus flats (residual floors) will be sold to people from outside who can afford to buy them. Overall, the population in the study area will be increased.

Population holding capacities in the proposed structure plan will be increased to more than the present population. Comparison of population between the present and the proposed structure plan is given in Table 3-4. This table gives the maximum population holding capacities, which can be accommodated in the study area. These should not be considered as the expected population in the long term plan.

Table 3-4 COMPARISON OF POPULATION BETWEEN THE PRESENT AND THE STRUCTURE PLAN

Items	The present (1982)	The proposed structure plan
Total population	about 27,000	about 38,000
No. Of household	about 5,200	about 7,600
Population density (Gross)	620 P/Ha	880 P/Ha

#### Land Use

The land use plan should be influenced by economical, social and public-welfare aspects as well as governmental policies basically. These aspects are all interrelated, and the land use plan should be determined taking into consideration the complicated interactions.

The land use composition is explained in Table 3-5.

The land use plan is determined based upon the following considerations.

- The present land use pattern would change into commercial and business districts due to an external impact by the Manggarai station development project in the west side of the railway.

- The present land use will basically remain as the same over the future because no significant specific economical and social external impacts are anticipated in the south of the study area.

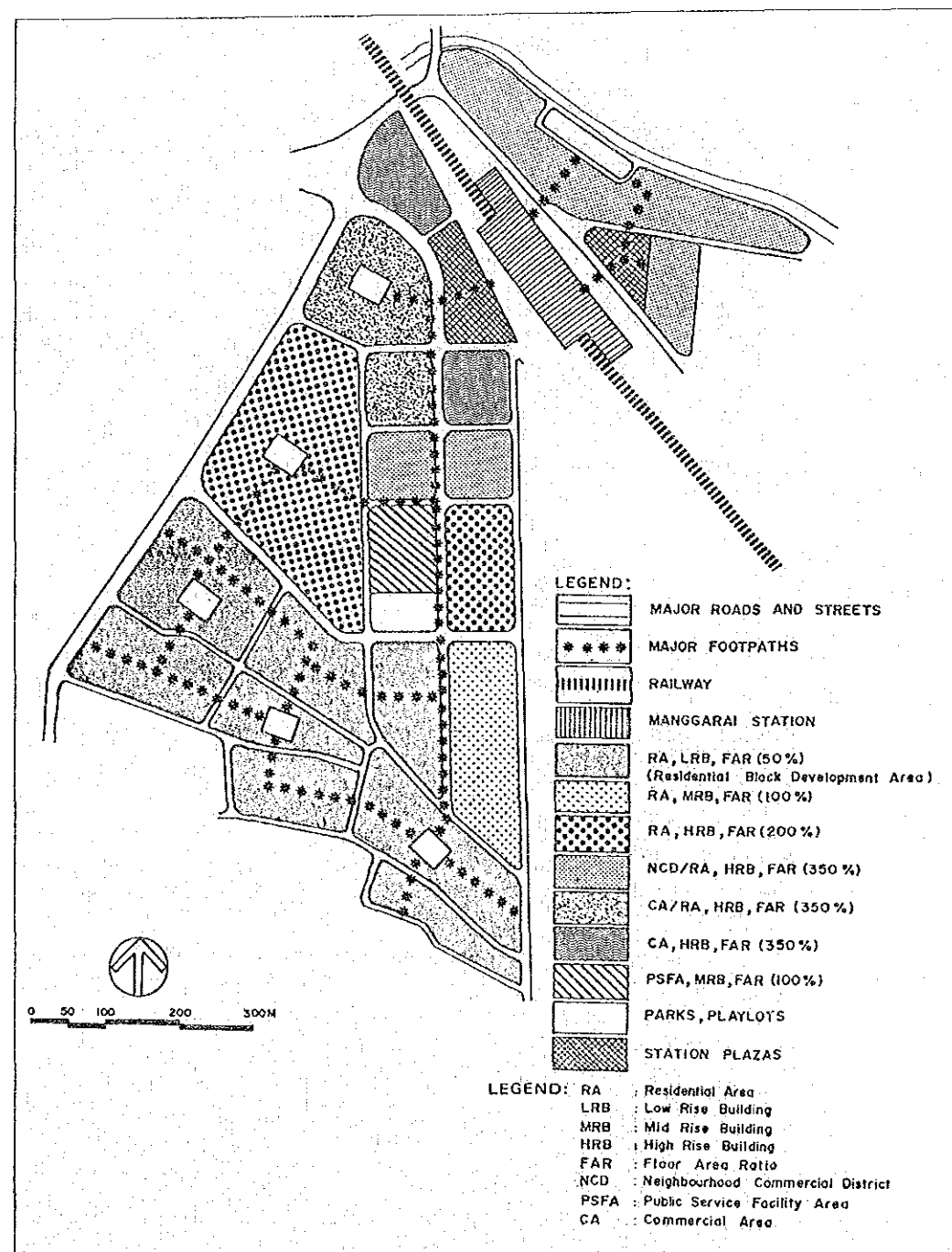


Fig. 3-3 THE PROPOSED STRUCTURE PLAN - MANGGARAI

Table 3-5 LAND USE IN THE PROPOSED STRUCTURE PLAN

Land Use	R A			C A	CA/RA	NCD/RA	PSFA	ROADS	Park incl, Station Plaza & Open Space	TOTAL
	LRB	MRB	HRB							
Areas	14.7 ha	2.1 ha	1.5 ha	2.0 ha	3.2 ha	4.9 ha	1.5 ha	6.0 ha	7.1 ha	43 ha
ho	18.3 ha									
%	43.0			5 %	7 %	11 %	3 %	14 %	17 %	100 %

LEGEND: RA : Residential Area  
 LRB : Low Rise Buildings  
 MRB : Mid Rise Buildings  
 HRB : High Rise Buildings  
 NCD : Neighbourhood Commercial District  
 PSFA : Public Service Facilities Area

- Mixed land use patterns (CA-Commercial Area/RA, NCD/RA, PSFA/RA, etc.) should be adopted to increase housing stocks and at the same time attain an intensive vertical utilization.
- Intensive land use (mid-rise and high-rise buildings) should be adopted to increase housing stocks.
- Preservation area and existing residential areas should be retained in the area where moderate to good houses with a good living environment exist at present.
- Existing neighbourhood commercial districts should be maintained because they contribute to the prosperity of the area.
- Preserved area for future urban renewal will be adopted in the west of the study area where car repair workshop is located.
- Playground including footpaths should be provided in the study area.
- Playlots should be provided in the preservation area.

**Road Network**

The road network as shown in Fig. 3-6 is planned considering a large-scale commercial and business development and services for the residential district as well.

**Community Facilities**

Adequate community facilities are a prerequisite to ensure a standard in the citizen's life. However, at present they are not sufficiently provided in the study area to meet the standards required by the criteria of Cipta Karya, DKI and PERUM

PERUMNAS\*. In the area, land acquisition to improve the community facilities is very difficult because of the high density of houses and lack of open spaces. Provision of the adequate community facilities should be pursued through the urban renewal project.

In order to utilize the urban land efficiently, it is recommended that the public facilities such as school, meeting place, kindergarten, health center, mosque and library should be built in a complex building or in the lower part of high rise building as shown in Fig. 3-7.

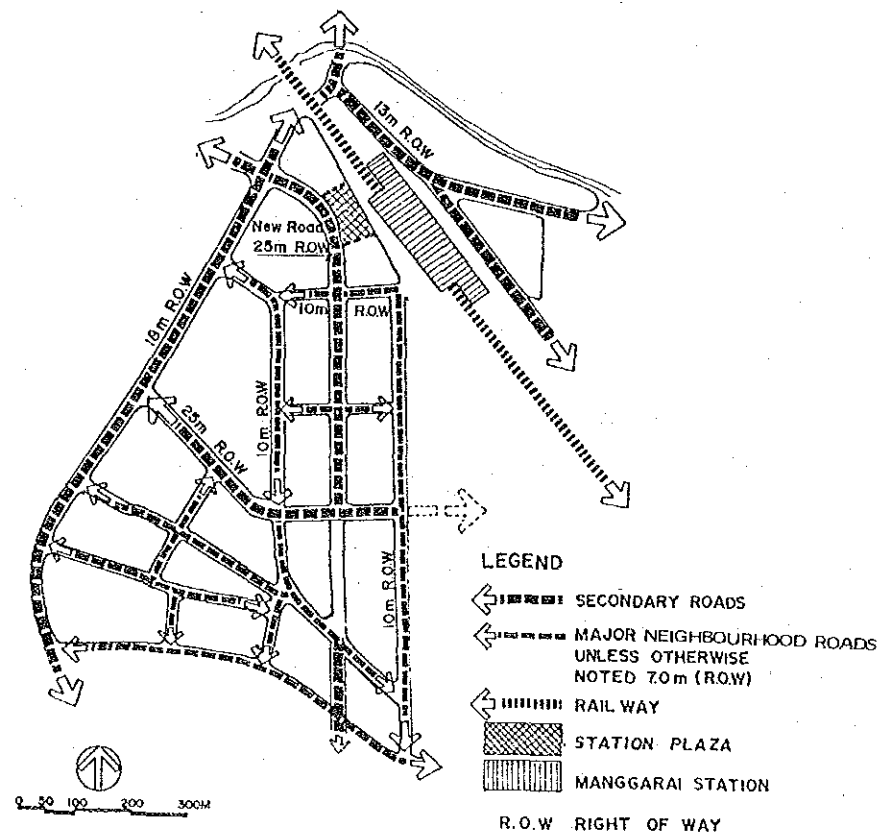


Fig. 3-6 ROAD NETWORK

\* The criteria for community facilities are explained in the Appendix of Vol. I General Considerations.

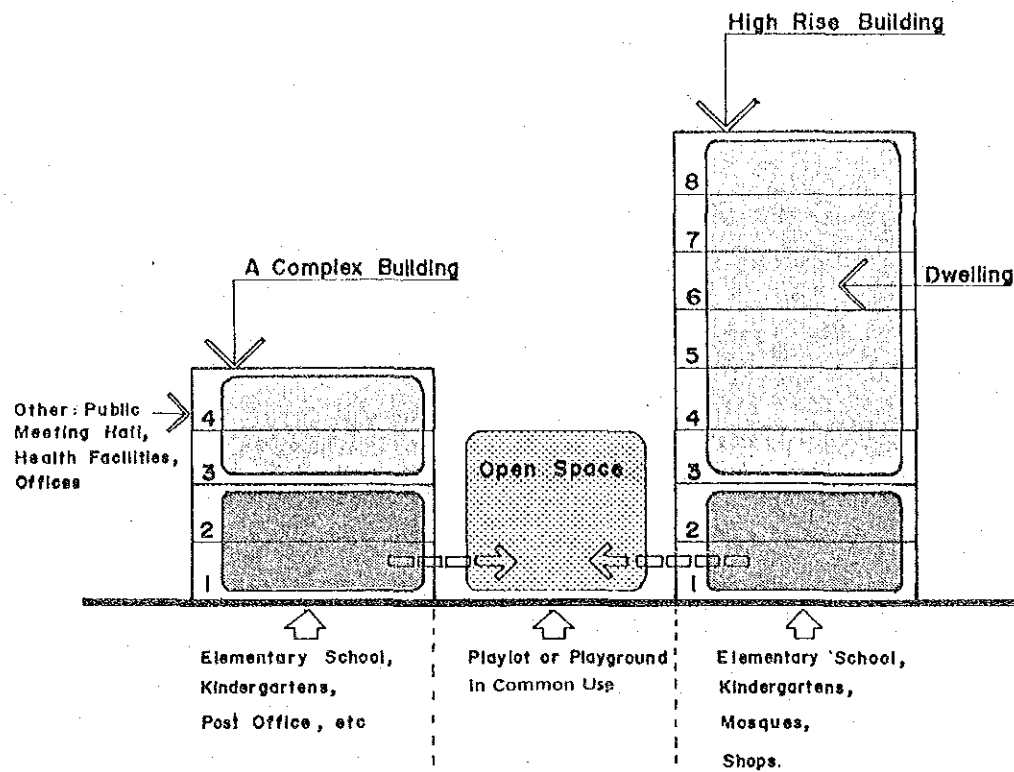


Fig. 3-7 INTENSIVE VERTICAL UTILIZATION SYSTEM

### 3.1.5 Proposed Urban Renewal Methods

Proposed urban renewal methods are categorized into seven classifications, namely; (Ref. Fig. 3-8)

- Station plaza/commercial district (CD) urban renewal,
- CD/housing urban renewal,
- Housing/NCD urban renewal,
- Road-side/river-side/NCD/housing urban renewal,
- Reserved areas for future urban renewal,
- Replotting development for the resettlements, and
- Preservation area.

#### Station plaza/commercial district urban renewal (a)

Multi-story commercial buildings will be constructed adjacent to the station plaza. The commercial district will be attractive for a large-scale commercial area, having good access to and from the railway station and other transportation such as public buses, passenger cars, etc.

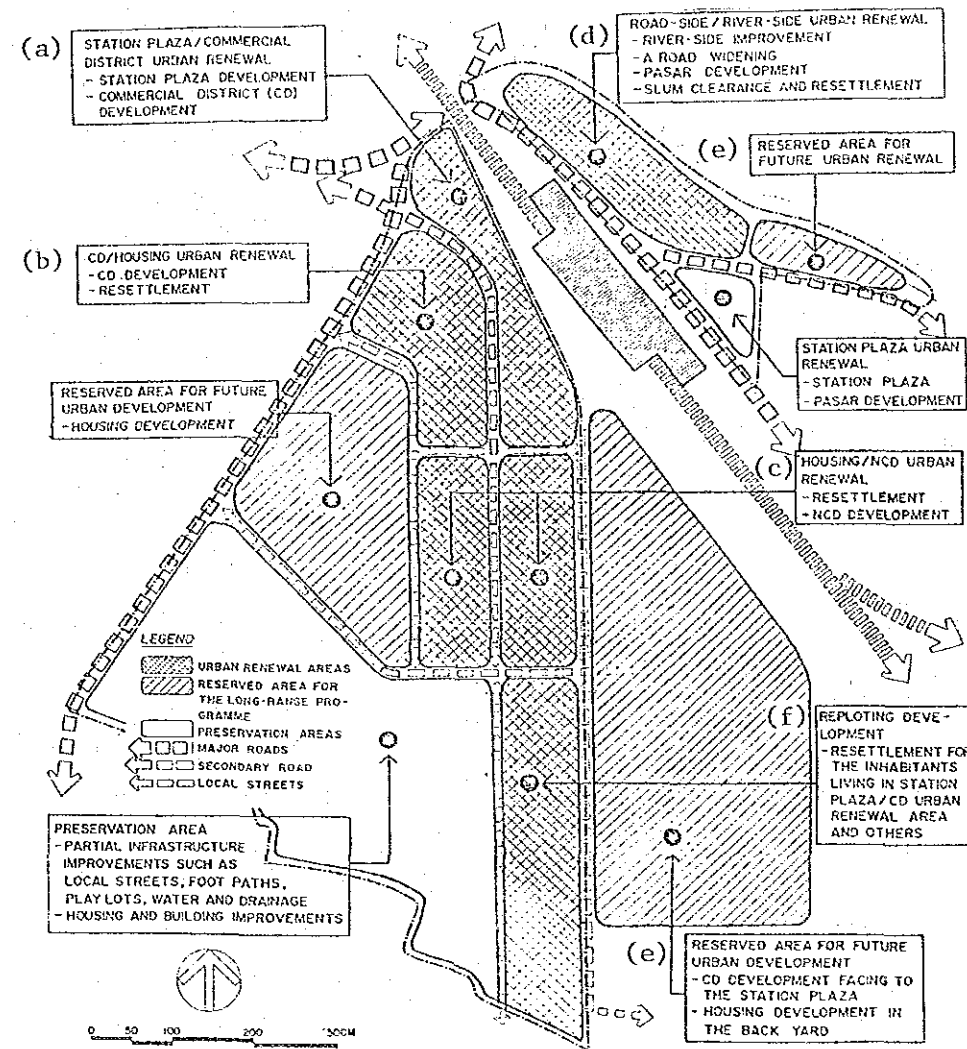


Fig. 3-8 THE URBAN RENEWAL METHODS - MANGGARAI

Expected commercial floor areas will be determined in accordance with future demand results. Existing drainage canal (Saluran Air) will be partly relocated along the new road of 25 m ROW.

#### CD/housing urban renewal and Housing/NCD urban renewal (b) & (c)

Multi-story buildings with lower parts for use of commercial and business sectors and upper parts for use of residential sector will be constructed in these areas.

#### Road-side/river-side/NCD housing urban renewal (d)

Multi-story buildings with the lower parts for use of pasar improvement project and the upper parts for housing will be constructed. Infrastructure works such as road widening and river-side improvement will be carried out together with the multi-story buildings.

#### Reserved areas for future urban renewal (e)

There are three reserved areas for the future urban renewal. The first is located to the north-east of the study area next to the road-side/river-side/NCD/housing urban renewal. In future this reserved area may be developed in a way similar to (c) Housing/NCD Urban Renewal.

The second reserved area is situated to the west, facing Jl. Dr. Sahardjo, and urban housing development may be proposed if PT. Wahana Bhakti Utama who owns the triangle of land, agrees to sell the land to the Implementation Body.

The third reserved area is located to the east of the study area where rail repair workshops are presently being operated, and this land is about 19 Ha with very high potential for urban renewal. If the land can be use even partly for urban renewal, Manggarai could be the nucleus of a commercial district with sub-centre functions and modern urban residential areas.

#### Replotting development for resettlement (f)

There is a vacant land of about 2.0 Ha in the southeast of the study area presently owned by PJKA and with very high potential for replotting development. It is hoped that replotting development for the inhabitants who are obliged to move out can be reaccommodated in this place, after PJKA's consent to utilize the land. Mid-rise building-apartments or maisonette type housing will be planned.

#### Preservation areas (residential block development areas) (g)

Infrastructures such as water supply, drainage system, neighbourhood roads, footpaths and playlots will be gradually developed in order to upgrade the living environment in the area.

In connection with the improvements of these infrastructures, bad or moderate houses will be rehabilitated and rebuilt on a spot-by-spot basis. Especially, to maintain the human touch community characteristics KIP-Type footpaths together with playlots will be actively developed. In other words, entry of cars will be controlled in this area.

#### 3.1.6 Construction Cost Estimates

The construction cost to be involved in realization of the structure plan was roughly estimated at the prevalent price in December 1982, and any inflated cost including interests was excluded from the construction cost. The results are summarized as Table 3-9 and the details of assumed housing and commercial buildings are shown in Table 3-10 and Fig. 3-11. Although land cost is estimated as shown in Table 3-9 for reference, it may not need to be counted in the case of right conversion. The cost must be subject to reestimation depending upon the method to be adopted for actual implementation.

Table 3-9 THE CONSTRUCTION COST

Sub - Projects	Amount : (mill. Rp.)	Remarks
Urban Renewal Housing & Commercial Building	: 15.2 ha 62,103	: Including on-site infrastructure
Station Plaza	: 839	: North - 0.46ha South - 1.0ha
River Side Water Front Improvement	: 311	: l=370m
Municipality Road	: 331	: Planned by DKI Jakarta : Including the half of Jl. Saharjo
Other Road	: 3,370	: 6,100m of total length : ( w = 25m, 20m, 13m, 10m )
Major Footpath in the Preservation Area	: 320	: with gutter w=2.5m l=1800m
Play Lot in the Preservation Area	: 108	: 2,500 sq. meter x 4
Arterial Drainage	: 272	: Planned by Cipta Karya
Other Drainage	: 1,415	
Water Supply	: 472	
Land Cost	: 21,840	: 26.0ha Including compensatin : & land preparation
<b>T o t a l</b>	<b>: 91,381</b>	



Table 3-10 BUILDING CONSTRUCTION COST

No.	Site Area (ha)	Floor Area (sq. m.)			Cost (mill. Rp.)		
		Housing	Commerc.	Social	Building	Infra.	Total
1	1.0	-	35,000	-	7,477	334	7,811
2	1.0	-	35,000	-	7,477	334	7,811
3	2.2	64,800	11,500	700	11,055	757	11,812
4	1.8	31,300	4,000	700	3,935	558	4,493
5	0.8	14,100	1,500	400	1,753	248	2,001
6	1.5	-	-	4,200	510	345	855
7	1.5	29,700	-	300	3,121	465	3,586
8	2.1	41,000	-	1,000	4,384	651	3,035
9	2.0	60,200	9,000	800	10,524	688	11,212
10	0.6	17,000	3,600	400	3,358	206	3,564
11	0.7	22,700	11,800	-	3,682	241	3,923
Total	15.2	280,800	111,400	8,500	57,276	4,827	62,103

Note : Land cost is excluded

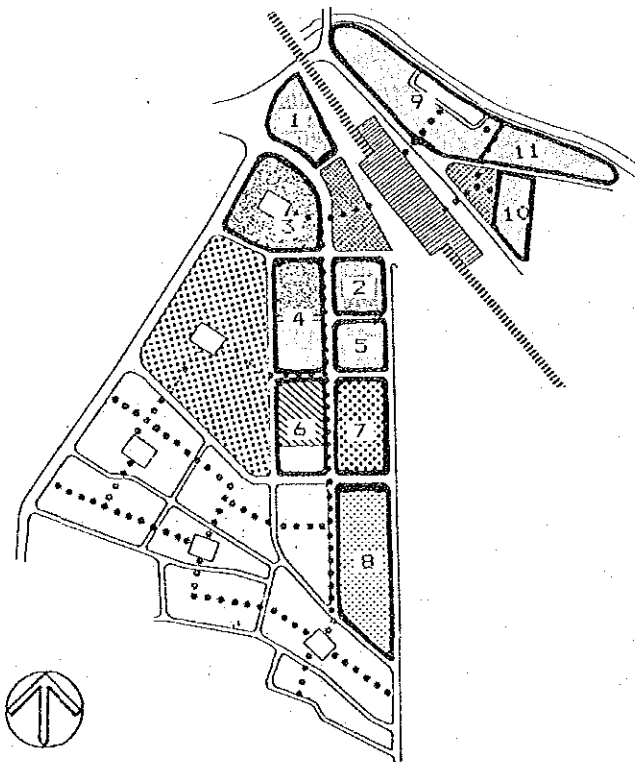


Fig. 3-11 BLDG. CONSTRUCTION SITE LAYOUT

REFERENCES

1. The DKI Jakarta Master Plan, The DKI Jakarta Regional Council, 1977.
2. Structural Development Strategy, DKI Jakarta 1985-2005 (Laporan Strategy Pengembangan Struktur Jakarta Tahun 2005, Rencana Induk DKI JKT 1985-2005) DKI, JKT, April 1982.
3. The initial plan of urban housing renewal of Kebon Kacang - Kebon Melati, Tanah Abang District, Direktorat Perumahan, May 1979.
4. Jabotabek Metropolitan Development Plan, Directorate of Urban and Regional Planning, Dec. 1981.
5. Jakarta Planning Atlas 1975, Dinas Tata Kota, Dec. 1977.
6. The Study of Low Cost Housing Project in Cengkareng, JICA, March 1980.
7. The Master Plan for the Year 2005, Aug. 1983.

## 3.2 SELECTION OF THE PROJECT SITE FOR FEASIBILITY STUDY

### 3.2.1 Criteria for Selection of Sites

#### General

Essentially, a decision on selecting the sites to be renewed or redeveloped should be based on the dual argument of necessity and possibility of the project.

A determination on necessity is derived from urban planning considerations, whilst that on possibility is related to the institutional programme for the implementation.

Accordingly, a procedure was adopted in which the study on alternative sites is based on a view-point of necessity, whilst evaluation of the alternatives is based on the viewpoint of possibility of the project.

Moreover, it is important that the sites selected in this study should be adequate for a project also centering on housing renewals. If the other projects such as a station plaza development and a large-scale commercial project are evaluated to be necessary in the context of the structure plan for the study area, these can be considered as equally important projects to the housing renewal projects.

The above general concept and work flow chart are shown in Fig. 3-12.

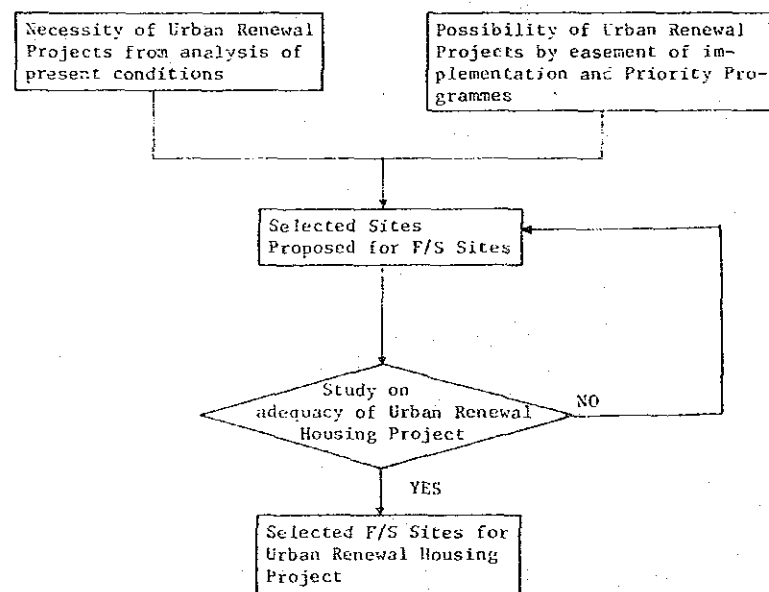


Fig. 3-12 WORK FLOW CHART: SELECTION OF THE SITE FOR F/S

#### General Preconditions for Criteria

Some general preconditions are taken into account in selection of F/S sites and these are as follows:

- An optimum size for the project site should be recognized from an implementation point of view as well as from an urban planning viewpoint.  
The Study Team considered that at least 4 hectares should be planned as an entirety in order to ensure development benefits to the surrounding areas.  
It should be noted that a smaller action may be easier to undertaken, but that a proper development benefit cannot necessarily be expected.
- The areas anticipated to change due to the execution of projects such as major roads, water ways, new railway, etc., are better to be nominated as possible sites, because of the necessity for some countermeasures against the influence of the projects.
- The areas already improved by KIP are given low priority for urgent renewal sites, but in these areas some additional improvement projects should be carried out if they are necessary.

The above three aspects are basic preconditions prior to consideration on the criteria for site selection.

#### Functional Criteria

Before finalizing a decision of site selection, the following arguments should be considered from a functional point of view.

- (1) The area to be selected should possess an obvious main function or use such as commercial, housing or industrial use etc., because a clear function will result in beneficial development to the surroundings.
- (2) The infrastructures to be developed within the site should be linked with a wide-regional structure, planned in order to make the best use of development investments.  
Accordingly, the planned system in the site should function as a sub-system of the entirety.
- (3) The three major factors for evaluation of the site are made as follows.
  - Contribution to the priority policies and programmes
    - Increase of adequate housing stock
    - Station-front plaza

- Main road development
- River side improvement
- Flood control improvement
- Sewerage improvement
- Easiness of the project implementation
  - Land and bldg. ownership
  - Inhabitants' consent to the project
  - Coordination with relevant agencies
- Project Finance
  - Efficiency of subsidy
  - Efficiency of defrayment
  - Revenue-producing project

### Physical Criteria

An identification of inadequate physical conditions is derived from a relationship between conditions of the public service facilities and dwellings.

The Study Team tried to evaluate a grade of inadequacy of physical conditions in a correlative matrix between both factors as shown in Fig. 3-13.

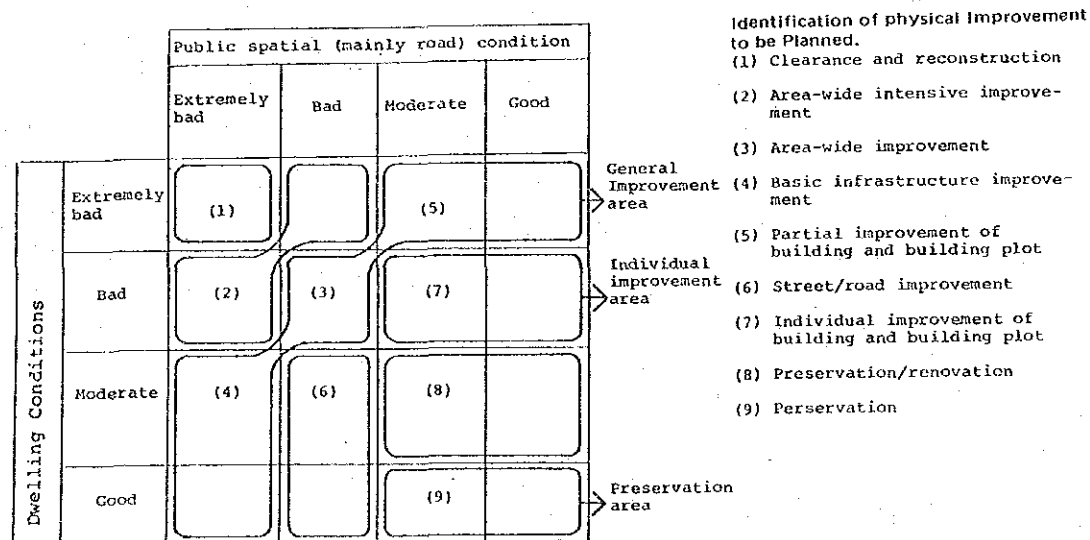


Fig. 3-13 THE CORRELATIVE MATRIX FOR EVALUATION OF PHYSICAL CONDITIONS

General speaking, the criteria for an evaluation of welling conditions comprises four (4) factors as shown in Table 3-14. Similarly the criteria for public service facilities comprise seven (7) factors as shown in the same table.

Table 3-14 CRITERIA FOR PHYSICAL CONDITIONS

Factor	Level for Decision of Adequacy
<b>For Dwelling Conditions</b>	
- Dwelling Unit	- Age - Type of structure - Scale
- Dwelling Unit Density	- 60 units/ha and over
- Population Density	- 600* prs/ha and over
- Safety and sanitation	- From site reconnaissance and questionnaire survey
<b>For Public Serive Facilities</b>	
- Drainage and Severage	- None
- Piped Water Supply	- None
- Streets Density	- 10%** and less
- Public Space	
- Accessibility to Major roads	
- Public Nuisance	
- Schools	

Notes: \* The density of Kampung is assumed to be 450 to 600 prs/ha. In the case of more than 600 prs/ha, some inadequacy of housing environment is anticipated.

\*\* Derived from the Japanese definition for inadequate housing area.

In this study, concerning the argument of necessity and possibility for the selection of expected F/S sites, they are made as follows:

- Necessity: No KIP area, bad bldg. cluster, temporary housing cluster, bldg. high density, road density.
- Possibility: Priority programmes, empty land

### 3.2.2 Alternative Sites

#### General

Three alternative sites for feasibility study were selected according to the procedure shown in Fig. 3-16. The alternatives are shown in Fig. 3-15.

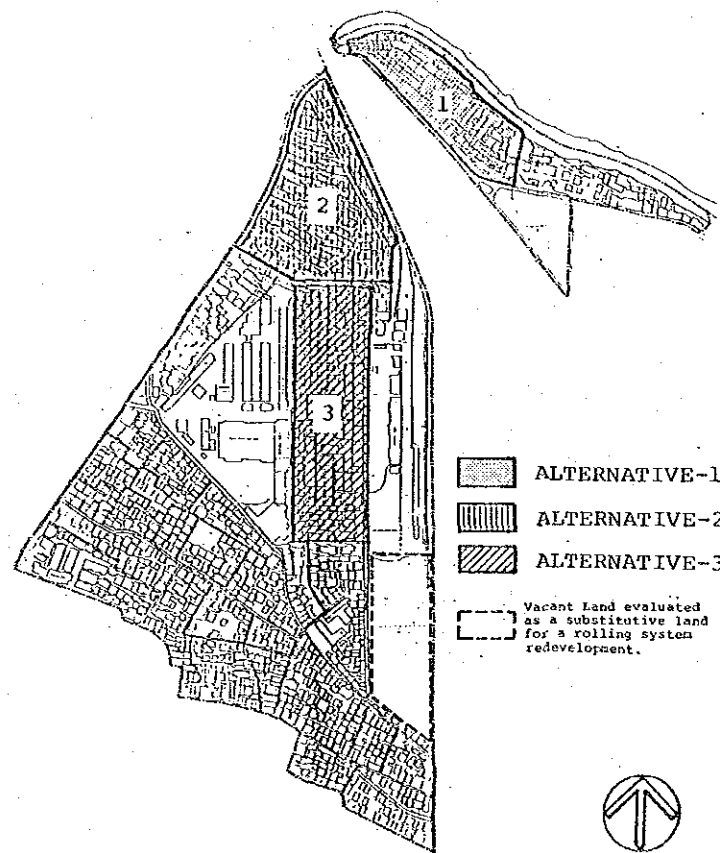


Fig. 3-15 THREE ALTERNATIVE SITES PLAN

#### Alternatives

##### (1) Alternative - 1

The northern part of the railway station, 2.9 Ha, is defined to be alternative-1. This area is a high density and time-worn market area, and inside of the market a slum is existing.

In accordance with the encouragement of the Manggarai railway station, this area should be renewed so as to make the land use more effective.

Moreover, the present population density about 1,000 persons/ha and the number of houses is assumed to be about 460 units. About 85% of the buildings are evaluated to be in a bad building condition.

##### (2) Alternative - 2

The selected area faces to the western side of Manggarai rail way station and the car repair workshop. The area is assumed to be around 4.7 Ha with about 3,200 persons.

Although the building condition in this area is comparatively fair judging from the share of bad buildings 15%, the development level of infrastructure is remarkably low.

This area is subject to the influence of the railway development, especially the development of station-front plaza. In correspondence to the increase of railway passengers, the accessibility from the western area to the station and the connection between the west and the east areas will be indispensable to be ensured.

In a linkage with that development, a new commercial core should be established in parallel with housing renewal in this area.

##### (3) Alternative - 3

The selected area is around 5.9 Ha and the inhabitants are assumed to be about 3,700 persons.

Most of this area was already improved based on KIP, however, the living environment is still evaluated to be comparatively bad. This area is also subject to the influence of the railway development, especially the utilization of the land owned by PJKA. As mentioned in the structure plan, the potential of land-use conversion to business and commercial areas is evaluated to be remarkably high.

#### 3.2.3 Evaluation and Selection of the Site

##### Outline of the Alternatives

Prior to the evaluation, various actions incorporated into each alternative are identified and after that a comprehensive decision will be made on the selection.

Conceivable major projects involved in the alternative sites are integrated as shown in Fig. 3-17 and Table 3-18. As is evident in the same figure and table, the project of Alternative-1 includes the water front improvement of the Ciliwung River as well as the housing and commercial development and the station plaza development. The water front improvement is better to comprise a bank improvement and a project for reduction of water pollution.

Alternative-2 includes several relevant development projects such as a station plaza and commercial building development.

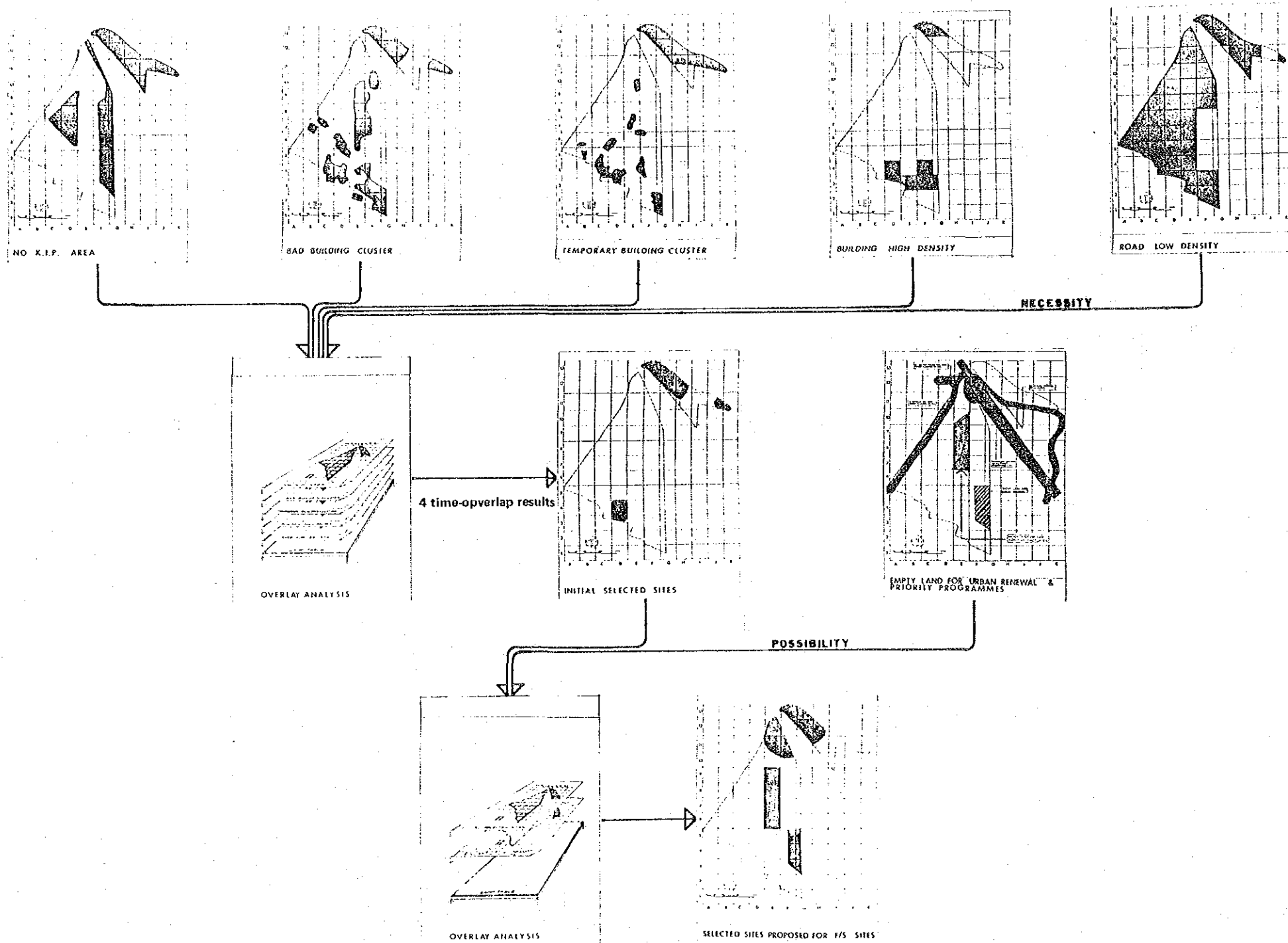


Fig. 3-16 SELECTION OF EXPECTED FEASIBILITY STUDY SITES IN MANGGARAI

In the case of Alternative-3, several methods of housing renewal are conceivable stage by stage, considering the utilization of the existing vacant land of 2.1 Ha facing to the southern boundary of this site.

#### Selection of F/S Site

The decision on selection of the F/S site basically depends on the kinds of dominant planning policies (Ref. Table 3-19).

**Table 3-19 SELECTION OF F/S SITE IN ACCORDANCE WITH DOMINANT POLICY**

Case of Dominant Policy	Alternative 1	Alternative 2	Alternative 3
a. Housing Renewal		●	●
b. Development of Infrastructure	●	●	
c. Encouragement of Urban function or Facilities		●	
d. Countermeasure against present problems	●		●
e. Countermeasure against anticipated future problems		●	
f. Financial Feasibility		●	
g. Easiness of Implementation			●

Generally speaking all the projects to be proposed in Manggarai area are related with the encouragement of railway station function. The necessity of formation of a sub-centre mentioned in the structure plan is also derived from the context of development of the intensive railway system.

In this meaning, a decision on selecting the F/S site would rather be based on not only the characteristics of the locations but also easiness, possibility and timing of the implementation.

The following are basic considerations for the decision:

- The project of Alternative 1 and Alternative 2 are suitable for a model of the development of a railway station front area to cope with the future mass-transportation network system.
- The project of Alternatives 1 and 2 are more beneficial if executed in relation with the station plaza development, because of a commercial encouragement incorporated in the project.

- The site of Alternative 3 has already been improved with KIP, so that the renewal of this site is not so urgent compared with Alternative 1.
- Basically the project in Alternatives 2 and 3 are related with the utilization of the land owned by PJKA and the land-use conversion of that land is indefinite at present. A series of discussions for adjustment is necessary between the relevant authorities but meanwhile Alternative 1 can be independently executed.
- In the site of Alternatives 2 and 3, several useful redevelopment methods can be attempted. However, development of the area should be implemented under a long-term programme, and simultaneously sufficient and continuous administrative guidance and budget is indispensable.

On the other hand, the project of Alternative 1 is an appropriate scale for action and it is expected that the completion of the project will contribute to the development of surrounding areas because of the formation of new commercial core.

The alternatives were evaluated in accordance with the criteria, as shown in Table 3-20.

Consequently, if taking importance to possibility and easiness of the implementation of the project, Alternative 3 is better to be selected. However, if accounting much of the project finance Alternative 2 is to be selected. If taking into consideration necessity, Alternative 1 is better to be selected.

Especially in the case of Alternative 2, the planning consensus for the station plaza with PJKA should be obtained prior to the site planning.

#### 3.2.4 Selection of Site for Feasibility Study by the Government

In April 1983, JICA received the official notice on the Government's decision on the site for the subsequent feasibility study in Stage II, i.e. Alternative 3 in Manggarai. Of the three alternative sites recommended in the Interim Report, the Government ultimately chose this alternative taking into consideration the following points.

- In the light of the absolute shortage of housing in urban area, priority should be given to the housing development that may be realised by the implementation of Alternative 3.
- Prior development of housing can provide a "receptacle" to accommodate the people who will be affected by the future implementation of Alternative 2 which involves major infrastructure improvements such as station-front plaza, access roads, and rechanneling and reconstruction of the Saluran Air.

- Alternative 2 should be planned and implemented in close coordination with the PJKA's improvement programmes of railways and the Manggarai station; however, those programmes have not been materialised yet and remain to be seen.
- The implementation cost to be involved in Alternative 3 is relatively small as compared with other alternatives.

The Government decision was, however, modified to expand the area for development of station-front plaza including some commercial functions (eastern half of Alternative 2), as a result of the discussions with the representatives of the Coordination Committee and the Steering Committee of the Government. This expansion of the site in Manggarai was considered to enhance the economic benefits of the project which may enable "cross-subsidization", and to generate significant impacts over the surrounding area towards future redevelopment as a sub-centre of the city.

In the course of the subsequent studies, the site in Manggarai was further slightly modified with the acceptance by the Government, taking into consideration the present conditions made clear by the physical inventory, as well as the necessity to realise more efficient cross-subsidization within the project.


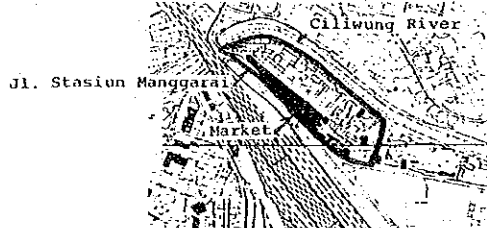
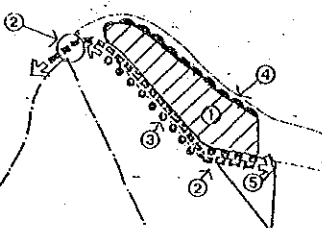
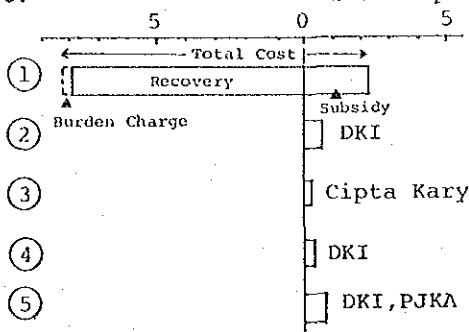
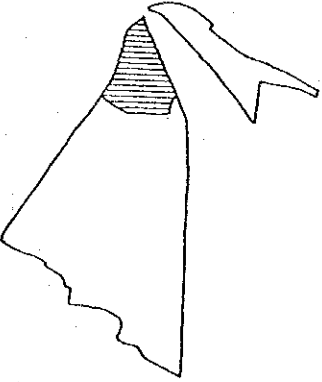
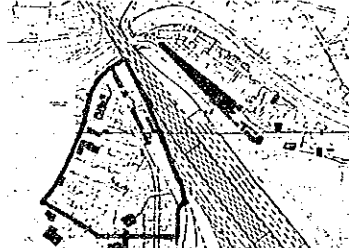
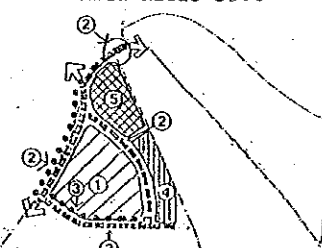
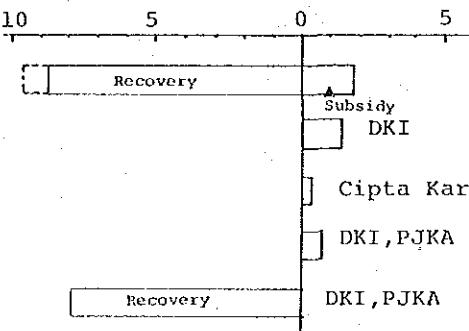
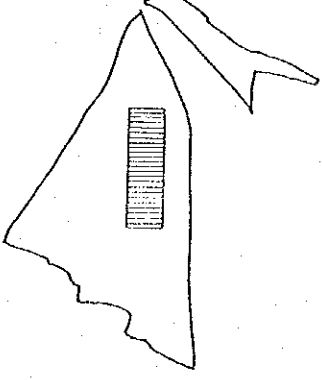
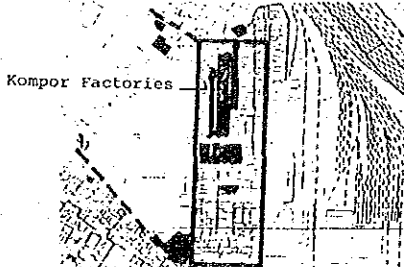
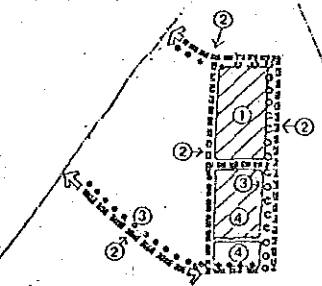
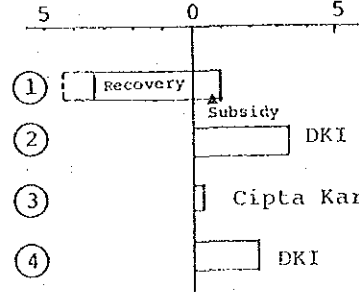
Alternatives	Present Conditions	Proposals	Implementation Cost & Method
<p><b>ALT-1</b></p> 	<p>Area Affected by the Project: 2.9 Ha            Site Area for Housing &amp; Mixed Use Bldgs.: 2.0 Ha            Population Affected by the Project: 2,900 PP            Existing Floor Area: 16,400 M<sup>2</sup>            Existing Buildings: Mostly housing with shops on Jl. Stasiun Manggarai. (in bad condition: 84 %)</p> 	<p>① Urban Renewal Housing (Mixed Use)            ② Road            ③ Drainage &amp; Sewerage            ④ Water Front            ⑤ Station Plaza</p> <p>Floor Area Ratio 350%</p> 	<p>Implementation Cost: bill. Rp.</p>  <p>Method: Road-side Redevelopment Project + Implementation Type Renewal Project with Improvement of Ciliwung River &amp; Manggarai Station Plaza Development</p>
<p><b>ALT-2</b></p> 	<p>Area Affected by the Project: 4.7 Ha            Site Area for Housing &amp; Mixed Use Bldgs.: 2.2 Ha            Population Affected by the Project: 3,200 PP            Existing Floor Area: 25,100 M<sup>2</sup>            Existing Buildings: Mostly Housing. (in bad condition: 15 %)</p> 	<p>① Urban Renewal Housing (Mixed Use)            ② Road            ③ Drainage &amp; Sewerage            ④ Station Plaza (Including Bus Terminal)            ⑤ Commercial Building</p> <p>Floor Area Ratio 350%</p> 	<p>Implementation Cost: bill. Rp.</p>  <p>Method: Replace &amp; Construction Type Redevelopment with Manggarai Station Plaza &amp; Station Bldg.</p>
<p><b>ALT-3</b></p> 	<p>Area Affected by the Project: 5.9 Ha            Site Area for Housing: 1.8 Ha            Population Affected by the Project: 3,700 PP            Existing Floor Area: 17,200 M<sup>2</sup>            Existing Buildings: Kompox (stoves) factories and housing. (in bad condition: 45 %)</p> 	<p>① Urban Renewal Housing            ② Road            ③ Drainage &amp; Sewerage            ④ Community Facilities</p> <p>Floor area Ratio 250%</p> 	<p>Implementation Cost: bill. Rp.</p>  <p>Method: Residential Block Redevelopment on Former Site of Kompox Factories</p>

Fig. 3-17 OUTLINE OF THE ALTERNATIVES

\* Staging of the implementation



Table 3-18 GENERAL CONDITIONS OF PROJECT FINANCE - MANGGARAI

ALT - 1	ALT - 2	ALT - 3
<p>Before</p> <p>Private Use Floor : 16,400 sq. m.</p> <p>After</p> <p>Private Use Floor : 52,500 sq. m.</p> <p>Housing Floor : 45,300 sq. m. ( 19,700 sq. m. for Resettlers ) (If All F-21 --- 2,200 units) (If All F-42 --- 1,100 units)</p> <p>Commercial Floor: 7,200 sq. m.</p>	<p>Before</p> <p>Private Use Floor : 25,100 sq. m.</p> <p>After</p> <p>Private Use Floor : 84,100 sq. m.</p> <p>Housing Floor : 48,600 sq. m. ( 30,200 sq. m. for Resettlers ) (If All F-21 --- 2,300 units) (If All F-42 --- 1,200 units)</p> <p>Commercial Floor: 35,500 sq. m.</p>	<p>Before</p> <p>Private Use Floor : 17,200 sq. m. (for Conversion Right)</p> <p>After</p> <p>Private Use Floor : 33,800 sq. m.</p> <p>Housing Floor : 29,800 sq. m. ( 20,600 sq. m. for Resettlers ) (If All F-21 --- 1,400 units) (If All F-42 --- 700 units)</p> <p>Commercial Floor: 4,000 sq. m.</p>
PROJECT COST (mill. Rp.)		
ITEMS : TOTAL SUBSIDY BURDEN(%) CHARGE : REMARKS		
<p>ENVIRONMENT IMPROVEMENT</p> <p>Road : 321 - 321 : DKI Jakarta</p> <p>Water Supply : 14 - 14 : PAM</p> <p>Drainage &amp; Sewerage : 240 - 240 : Cipta Karya</p> <p>Water Front Improv. : 311 - 311 : DKI Jakarta</p> <p>Station Plaza : 213 - 213 : DKI Jakarta , PJKA</p> <p>Social Facilities : - - - : -</p> <p>LAND COST : 781 - 285 : DKI Jakarta , PJKA</p> <p>BUILDING CONSTRUCTION (***)</p> <p>Housing &amp; Commercial : 9,714 - 2,216 - : ( 21.1 % ) PERUM</p> <p>Social &amp; Infra. : 786 - - : PERUMNAS</p>	<p>ENVIRONMENT IMPROVEMENT</p> <p>Road : 615 - 615 : DKI Jakarta</p> <p>Water Supply : 34 - 34 : PAM</p> <p>Drainage &amp; Sewerage : 236 - 236 : Cipta Karya</p> <p>Water Front Improv. : - - - : -</p> <p>Station Plaza : 287 - 287 : DKI Jakarta , PJKA</p> <p>Station Building : 7,811 - 7,811 : DKI Jakarta , PJKA</p> <p>LAND COST : 857 - 857 : DKI Jakarta , PJKA</p> <p>BUILDING CONSTRUCTION (***)</p> <p>Housing &amp; Commercial : 10,717 - 1,945 - : ( 16.8 % ) PERUM</p> <p>Social &amp; Infra. : 843 - - : PERUMNAS</p>	<p>ENVIRONMENT IMPROVEMENT</p> <p>Road : 1,278 - 1,278 : DKI Jakarta</p> <p>Water Supply : 51 - 51 : PAM</p> <p>Drainage &amp; Sewerage : 356 - 356 : Cipta Karya</p> <p>Water Front Improv. : - - - : -</p> <p>Station Plaza : - - - : -</p> <p>Social Facilities : 871 - 871 : DKI Jakarta</p> <p>LAND COST : 3,444 - 890 : DKI Jakarta</p> <p>BUILDING CONSTRUCTION (***)</p> <p>Housing &amp; Commercial : 4,764 - 1,078 - : ( 19.9 % ) PERUM</p> <p>Social &amp; Infra. : 644 - - : PERUMNAS</p>
<p>(*) : Burden Charge by Authorities Concerned</p> <p>(**) : Revenue for Urban Renewal Project</p> <p>(***) : For Adjust Max. Sales Price of Residual Floor to be 200,000 Rp/sq.m.</p>	<p>(*) : Burden Charge by Authorities Concerned</p> <p>(**) : Revenue for Urban Renewal Project</p> <p>(***) : For Adjust Max. Sales Price of Residual Floor to be 200,000 Rp/sq.m.</p>	<p>(*) : Burden Charge by Authorities Concerned</p> <p>(**) : Revenue for Urban Renewal Project</p> <p>(***) : For Adjust Max. Sales Price of Residual Floor to be 200,000 Rp/sq.m.</p>
<p>Total Project Cost : 12,095 mill.Rp.</p> <p>Burd. Charge by R. A. : 285 ( 3% )</p> <p>Urban Renewal Housing : 10,500 --- Revenue of Resid. F. : 7,999 (76%)</p> <p>Subsidy : 2,216 (21%)</p> <p>Relevant Public Work : 1,595 --- by Relevant Authorities (+285)</p> <p>Subsidy / Private Floor = 42,200 Rp./sq.m.</p> <p>Subsidy / Housing Floor = 48,900 Rp./sq.m.</p>	<p>Total Project Cost : 20,543 mill.Rp.</p> <p>Burd. Charge by R. A. : 857 ( 4% )</p> <p>Urban Renewal Housing : 19,371 --- Revenue of Resid. F. : 16,569 (86%)</p> <p>&amp; Station Building Subsidy : 1,945 (10%)</p> <p>Relevant Public Work : 1,172 --- by Relevant Authorities (+857)</p> <p>Subsidy / Private Floor = 23,100 Rp./sq.m.</p> <p>Subsidy / Housing Floor = 40,000 Rp./sq.m.</p>	<p>Total Project Cost : 10,518 mill.Rp.</p> <p>Burd. Charge by R. A. : 890 (16%)</p> <p>Urban Renewal Housing : 5,408 --- Revenue of Resid. F. : 3,440 (64%)</p> <p>Subsidy : 1,078 (20%)</p> <p>Relevant Public Work : 5,110 --- by Relevant Authorities (+890)</p> <p>Subsidy / Private Floor = 31,900 Rp./sq.m.</p> <p>Subsidy / Housing Floor = 36,200 Rp./sq.m.</p>

