CHAPTER 7

SOCIO-ECONOMIC ANALYSIS

7.1 ECONOMIC EVALUATION

7.1.1 General Conditions

Method of Evaluation

The purposes of urban renewal are to improve urban infrastructures and increase decent housing stocks in urban area. Through urban renewal, the urban functions to be assigned to the area will also be rearranged suitably.

In fact, the site in Kebon Melati has many low standard housing in insanitary living conditions and inadequate urban infrastructures as well, thus necessitating a comprehensive urban renewal project.

The key point to succeed in urban renewal projects is largely dependent upon how to produce development benefits coping with various conflicting requirements. The proposed urban renewal project is evaluated in terms of the net present value (NPV). Cost benefit ratio (B/C) and internal rate of return (IRR) are calculated only for reference.

Benefit

Benefits of the urban renewal project are composed of the following items.

- Housing
- Business use floor development
- Parking area development
- Infrastructure development or improvement

Cost

Project cost includes investment for construction, operation and maintenance cost, replacement cost and land acquisition cost. Financially, land acquisition cost is not enumerated in the right conversion system. However, the land and building values before renewal must be included in the economic project costs since the values are nullified by the urban renewal.

Project Life

Although buildings and infrastructures are considered to have more than 30 years physical life period, social life period is expected to be shorter than the physical life period. In this study, the project life is assumed to last until the year 2010, so that the maximum life period of buildings and infrastructures becomes 24 years.

Discount Rate

Considering the loan conditions for construction and the general interest rate available, annual discount rate is assumed to be 15%.

Price Indication

All costs and benefits are indicated at the price prevalent in year 1983.

7.1.2 Economic Benefit

Benefit of Housing

The existing housing conditions in Kebon Melati are of low standard. In this area, betterment of living environment and rebuilding of houses will increase better social capital stocks and thus contribute towards laying the foundation of the national economic development. Housing is a capital stock to provide living services and thus encourage labour force. It is necessary to make full use of the ability of labour force by improvement of their will to work and thus increase labour efficiency.

The benefit of betterment of living environment and rebuilding of houses is measured by the willingness to pay to get new houses. Usually, when inhabitants get newly-built houses, they borrow housing loan from the National Saving Bank (Bank Tabungan Negara = BTN). Considering their abilities for repayment, the bank decides the loan amount. According to the standard of BTN, the maximum loan amount is one third of the inhabitants' household income. This ratio is considered to be the same as the willingness to pay.

Therefore, the annual benefit of the betterment of living environment and rebuilding of houses is calculated by the following formula.

Benefit of housing = Average family income x 1/3 x Number of families

Number of households who resettle in the urban renewal area is estimated as 350 in the year 1987. In the urban renewal area, the average monthly household income is Rp.95,600, and the housing benefit is expected to be one third of the household income. The annual housing benefit is estimated as Rp.134 million.

Benefit of Business-use Floor

The business-use floor will be developed for use of commercial and business office facilities. In the urban renewal project, the floor for these facilities will be created by the development of vertical land use.

The business on the floor contributes towards enhancement of the national economy through commercial activities and services. The benefits from the floor are estimated as follows.

(1) Commercial

In Jakarta, the average sales amount of 1 sq.m. of commercial floor is Rp.100,000 of which profits before tax is about 23%. This amount is regarded as a floor productivity. The benefit from commercial floor is Rp.23,000 per one sq.m. The calculation formula of the benefit from commercial floor is as mentioned below.

Benefit of commercial floor = Productivity x Commercial floor area

(2) Business Office

Business office is not directly engaged in productive activities, but supports them. Economically, business office share part of the economic benefits from industrial activities. The benefit of office floor is assumed to be the same as the willingness to pay to get office space. The benefit of office floor is thus measured by the marketable rental price. In Jakarta, the average monthly rental price of office floor is thus measured by the marketable rental price. In Jakarta, the average monthly rental price of office floor is Rp.15,000 per sq.m., and this amount is regarded as the benefit or productivity of office floor. The calculation formula remains the same as the case of commercial floor, as shown in the following.

Benefit of office floor = Productivity x Office floor area

The business-use floor will be developed as shown in Table 7-1.

Table 7-1 FLOOR AREA OF BUSINESS-USE FLOOR

(Unit: sq.m.)

Year	Commercial		Office	
	Constructed	Accumulated	Constructed	Accumulated
1987	1,502	1,502	0	0
1988	0	1,502	10,720	10,720

As mentioned above, the monthly benefits of each floor use are Rp.23,000 per sq.m. for commercial and Rp.15,000 pe sq.m. for office. Therefore, the annual benefits of business-use floor become as shown in Table 7-2.

Table 7-2 ANNUAL BENEFIT OF BUSINESS-USE FLOOR

(Floor Area: sq.m., Benefit: mill. Rp.)

Year	Commercial		Office		Total Benefit
	Floor Area	Benefit	Floor Area	Benefit	
1987	1,502	415	0	0	415
1988	1,502	415	10,720	1,930	2,345

Benefit of Parking Area

Parking spaces serve for the customers of commercial area and visitors of business office. The benefit of parking is measured by the willingness to pay to park and expected to be the same as the parking fee which is Rp.200 for one parking.

On the average, one parking lot serves 5 times a day, and requires the space of 20 sq.m. The monthly benefit of parking is estimated as Rp.1,500 per sq.m.

The schedule of parking development is as shown in Table 7-3, and the benefit of parking is shown in the same table.

Table 7-3 PARKING SPACE AND ANNUAL BENEFIT

Year	Parking Space		Benefit
	Constructed	Accumulated	
	sq.m.	sq.m.	mill.Rp
1987	3,500	3,500	63
1982	1,300	4,800	86

Benefit of Infrastructure Development or Improvement

The benefits of infrastructure developments and improvements mainly come from the transportation benefit measured by the following items.

- Station front-plaza and bus terminal development
- New road development

Other infrastructure improvements such as service road improvement, sewerage improvement, piped water development, etc., serve for the improvement of living environment and business environment. Therefore, the benefits from these infrastructures are considered to be included in the housing benefit or the benefit of business-use floor.

(1) Station Front-plaza and Bus Terminal

With the development of station-front plaza and bus terminal, the railway passengers can reduce the travel time, as compared to the case without such development. The benefit of station-front plaza and bus terminal is measured by the time saving for railway passengers. The calculation formula is as shown below.

Benefit of station-front plaza and bus terminal =

Number of railway passengers x Saving time x Time value

It is expected that by the end of 1990, the proposed Karet station would be completed in the south of Kebon Melati. When the passengers use the station plaza or the bus terminal in the project site, they can save the travel time estimated as 5 minutes/day. Other conditions are considered to remain the same as Manggarai (Ref. 7.1.2 in Vol. II), and the benefit per person is Rp.12,500/year.

As the passengers of the Karet station is estimated 1/15 of the Manggarai station in JICA's report (February 1981), the passengers and the benefits are tabulated in Table 7–4.

Table 7–4 BENEFIT OF STATION FRONT AND BUS TERMINAL DEVELOPMENT

Year	No. of persons	Benefit Rp x 10^6/year	Year	No. of persons	Benefit Rp x 10^6/year
1987	2,100	26	1999	5,700	71
1988	2,400	30	2000	6,000	75
1989	2,700	34	2001	6,300	79
1990	3,000	38	2002	6,600	83
1991	3,300	41	2003	6,900	86
1992	3,600	45	2004	7,200	90
1993	3,900	49	2005	7,500	94
1994	4,200	53	2006	7,800	98
1995	4,500	56	2007	8,100	101
1996	4,800	60	2008	8,400	105
1997	5,100	64	2009	8,700	109
1998	5,400	68	2010	9,000	113

(2) New Road Development

After development of the new road which connect Jl. K.H. Mas Mansyur and Jl. M.H. Thamrin, the car users can reduce their travel time and operating cost. The benefit of the new road development is calculated by the following formula.

Benefit of new road development =

Number of vehicle passengers x Saving time x Time value
+ Number of vehicles x Saving operating cost

– Reduction of travel time

With the new road (18 m wide) and the new bridge (12 m wide), the cars can directly connect Jl. K.H. Mas Mansyur and Jl. Jenderal Sudirman.

Jl. K.H. Mas Mansyur ——— Jl. Jenderal Sudirman

Without the road and the bridge, they have to use the busy north road (Jl. Kebon Kacang Raya) or the south end of the Jl. K.H. Mas Mansyur.

The traffic volume is estimated as follows;

1991	10,000	cars/day
2000	15,000	cars/day
2010	15,000	cars/day

Time saving per day : 2 minutes/day (average)
Benefit per person in a year : Rp.5,000/year

Appling the same proportion of public bus and private car as used in Manggarai (Ref. 7.1.2 in Vol. II), car user's benefits are calculated as in Table 7–5.

Table 7–5 TIME REDUCTION BENEFIT OF NEW ROAD DEVELOPMENT

Year	No. of persons	Benefit Rp x 10^6/year	Year	No. of persons	Benefit Rp x 10^6/year
1987	193,000	950	1999	358,000	1,790
1988	207,000	1,020	2000	372,000	1,860
1989	220,000	1,090	2001	372,000	1,860
1990	234,000	1,160	2002	372,000	1,860
1991	248,000	1,240	2003	372,000	1,860
1992	262,000	1,310	2004	372,000	1,860
1993	276,000	1,380	2005	372,000	1,860
1994	289,000	1,445	2006	372,000	1,860
1995	303,000	1,515	2007	372,000	1,860
1996	317,000	1,585	2008	372,000	1,860
1997	331,000	1,655	2009	372,000	1,860
1998	344,000	1,720	2010	372,000	1,860

– Reduction of vehicle operating cost

With the 18 m wide road and the bridge, the cars can drive through the project site at the average speed of 40 km/hr. If the same cars use other roads, the average speed will slow down up to 20 km/hr approximately. The distance between Jl. K.H. Mas Mansyur and Jl. Talang Betutu is 400 m and this length will be considered

for the reduction of vehicle operating cost. According to the same method as used in Manggarai (Ref. 7.1.2 in Vol. II), the results are given in Table 7–6.

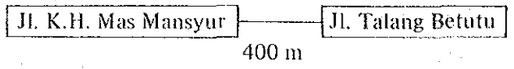


Table 7–6 VEHICLE OPERATING COST REDUCTION BENEFIT OF NEW ROAD DEVELOPMENT

Year	Benefit$_6$ Rp x 10^6/year	Year	Benefit$_6$ Rp x 10^6/year
1987	71	1999	125
1988	76	2000	129
1989	80	2001	129
1990	85	2002	129
1991	89	2003	129
1992	93	2004	129
1993	98	2005	129
1994	102	2006	129
1995	107	2007	129
1996	111	2008	129
1997	116	2009	129
1998	120	2010	129

Total Economic Benefit

As mentioned above, annual total economic benefit is as shown in Table 7–7.

Table 7–7 ECONOMIC BENEFIT

Unit: Million Rp.

Year	Housing	Business Use Floor	Parking	Infrastructure	Total
1987	134	415	63	1,047	1,659
1988	134	2,345	86	1,126	3,691
1989	134	2,345	86	1,204	3,769
1990	134	2,345	86	1,283	3,848
1991	134	2,345	86	1,370	3,935
1992	134	2,345	86	1,448	4,013
1993	134	2,345	86	1,527	4,092
1994	134	2,345	86	1,600	4,165
1995	134	2,345	86	1,678	4,243
1996	134	2,345	86	1,756	4,321
1997	134	2,345	86	1,835	4,400
1998	134	2,345	86	1,907	4,472
1999	134	2,345	86	1,986	4,551
2000	134	2,345	86	2,064	4,629
2001	134	2,345	86	2,068	4,633
2002	134	2,345	86	2,072	4,637
2003	134	2,345	86	2,075	4,640
2004	134	2,345	86	2,079	4,644
2005	134	2,345	86	2,083	4,648
2006	134	2,345	86	2,087	4,652
2007	134	2,345	86	2,090	4,655
2008	134	2,345	86	2,094	4,659
2009	134	2,345	86	2,098	4,663
2010	134	2,345	86	2,102	4,667

7.1.3 Economic Cost

In the economic evaluation, interest, insurance and tax, which are "transferred costs" in the national economy, must be excluded from the economic cost. According to the "Construction Establishments in Indonesia, 1977 (Central Statistic Office, 1979)", tax ratio in construction work is 5%. In this study, this ratio is used to exclude taxes from construction cost.

The annual construction cost is as shown in Table 7–8.

Table 7–8 CONSTRUCTION COST

Year	Financial Cost	Interest & Insurance	Tax	Land & Building Value	Economic Cost
1984	2,394	136	113	2,299	4,942
1985	6,927	393	327	0	7,647
1986	8,990	511	424	0	9,925
1987	2,141	122	101	0	2,364
Total	20,452	1,162	965	2,299	24,878

Operation and maintenance costs including reserves for replacement are assumed to be required equally in every year. The rates to construction cost are assumed as follows.

Housing	: 3%
Other buildings	: 5%
Infrastructure	: 2%

Annual operation and maintenance cost is as shown in Table 7–9.

Table 7–9 OPERATION AND MAINTENANCE COST

Unit: Million

Year	Low Grade Building	High Grade Building	Infra-structure	Total
1987	170	0	22	192
1988	170	350	22	542

7.1.4 Evaluation

As shown in Table 7–10, the net present value (NPV, present value of benefit – present value of cost is ▲Rp.4,106 million at 15% of annual discount rate. As the benefit is less than the cost at the present value, the urban renewal project has not good economic viability. Furthermore, the cost benefit ratio (B/C) and the internal rate of return (IRR) are calculated as shown below.

NPV	= ▲Rp.4,106 million	(Discount rate: 15%)
B/C	= 0.80	(Discount rate: 15%)
IRR	= 11.7%	

Table 7–10 CALCULATION OF N.P.V.

(unit : mill. Rp.)

YEAR	COST		BENEFIT		N.P.V.
	ACTUAL	DISCOUNT	ACTUAL	DISCOUNT	
1	4942	4297	0	0	4297-
2	7647	5782	0	0	5782-
3	9925	6526	0	0	6526-
4	2556	1461	1659	949	513-
5	542	269	3691	1835	1566
6	542	234	3769	1629	1395
7	542	204	3848	1447	1243
8	542	177	3935	1286	1109
9	542	154	4013	1141	987
10	542	134	4092	1011	878
11	542	116	4165	895	779
12	542	101	4243	793	692
13	542	88	4321	702	614
14	542	77	4400	622	545
15	542	67	4472	550	483
16	542	58	4551	486	428
17	542	50	4629	430	380
18	542	44	4633	374	331
19	542	38	4637	326	288
20	542	33	4640	284	250
21	542	29	4644	247	218
22	542	25	4648	215	190
23	542	22	4652	187	165
24	542	19	4655	163	144
25	542	16	4659	142	125
26	542	14	4663	123	109
27	542	12	4667	107	95
TOTAL	37536	20050	102286	15943	4106-

DISCOUNT RATE = 15.00 %/YEAR

7.2 SOCIAL BENEFITS

7.2.1 Effects on Neighbourhood Community

Continuation of Neighbourhood Community

The urban renewal project is a comprehensive project including urban infrastructure improvement and rebuilding of urban housing, to achieve suitable reassignment of urban functions.

Usually, in urban area, many people are often obliged to move out from infrastructure developments, when such infrastructure developments are implemented independently. Whilst, if the infrastructure developments are incorporated in an urban renewal project, the inhabitants affected can live on in the same area. During the construction period, they can live in temporary houses located near the project site, if they wish to stay there.

The urban renewal is, in principle, planned to resettle all inhabitants in the same place, thus preserving the existing neighbourhood community during the construction period as well as after the renewal.

Neighbourhood Community in Housing Block and Community Network

Although the urban renewal project will provide flats which are five-storey walk-up flats and eight-storey flats equipped with lift, open galleries will be provided between housing blocks to maintain good communication amongst the neighbours.

Also as some buildings are connected with open galleries a community network will be made broader by using open galleries. The functions of open galleries are similar to those of neighbourhood roads.

7.2.2 Other Social Benefits

Improvement of Sanitation Conditions

Through the improvement of sewerage and garbage collection system, sanitation conditions will be improved. At present, more than half of the inhabitants think the sanitation conditions as a problem.

Diarrhoea is caused by insanitary living conditions, mainly due to lack of sewerage and garbage collection system. And infection diseases spread under these conditions.

After the area is renewed, sanitation conditions will be improved and the inhabitants can keep their health. They will reduce medical expenditure and will work more efficiently.

Good Living Conditions

At present, two third of the inhabitants feel lack of community facilities, play ground, recreation facilities and meeting hall. In fact, there are only small open spaces in the urban renewal area.

Through vertical land use, public open spaces and the areas for community facilities will be created. After the renewal project, public open areas, such as play ground, garden, sports field and neighbourhood park, will be 1,600 sq.m., and the community facilities, such as kindergarten, elementary school, mosque, meeting hall and library will be provided in the urban renewal area.

Fire Protection

At present, low quality houses stand densely, and they are in danger of fire. More than half of the inhabitants feel that fire protection is inadequate.

After renewal, fire proof housing will be provided for inhabitants, and they will live without worrying about fire.

Green Area

At present, one or two-storey houses stand in high density, and there are only few space of green. About 70% of the inhabitants feel that more green and trees are necessary.

Through vertical land use of the urban renewal, water front park, green areas and green belts will be provided. Inhabitants can feel a restful atmosphere and enjoy the coolness under the tree shades.

7.3 HOUSING AFFFORDABILITY ANALYSIS

Housing affordability implys how many people can afford to get the house.

As mentioned in Manggarai (Ref. 7.3 in Vol. II), the same method is applied to the analysis for Kebon Melati.

The result is shown on Fig. 7–11 and the percentage of the unable-to-afford is 13% in average, which is considered acceptable. If lease holders want to buy new houses, about half of them are able to do so with the condition of using housing loans, according to the result of computer analysis.

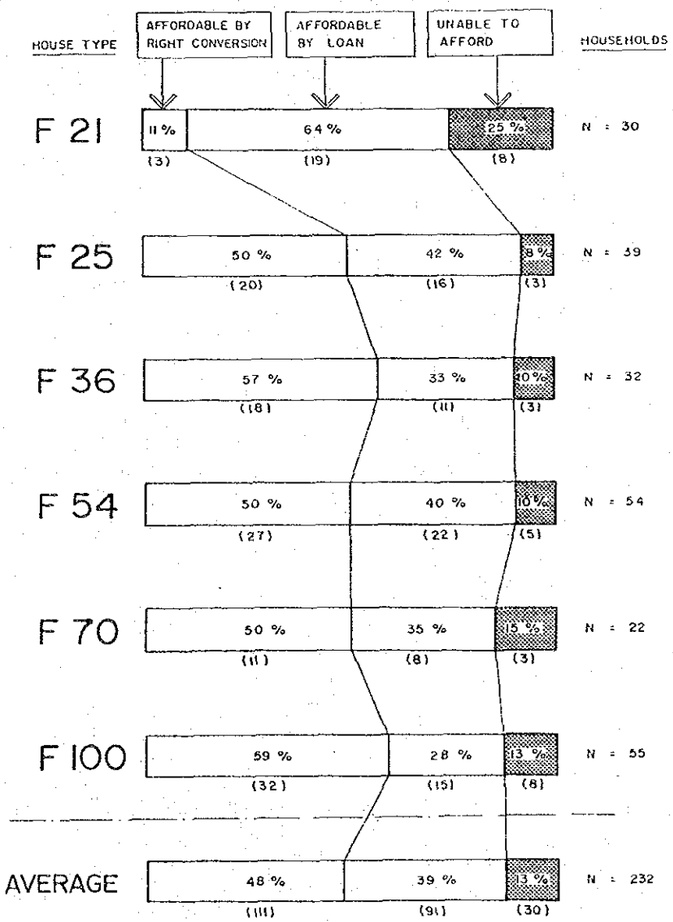


Fig. 7–11 HOUSING AFFORDABILITY AT KEBON MELATI

CHAPTER 6

IMPLEMENTATION PLAN

8.1 IMPLEMENTATION SCHEDULE

The total implementation period is 3.5 years as shown in Table 8–1. The construction of temporary housing should start immediately after the end of the planning period. The land preparation work includes demolition of existing houses and grading.

There are differences of the ground level over the site about 3.5 m, and thus embankment is needed in front of the station-front plaza along the new road. The construction of 8-storey flats and the embankment is the beginning work in the construction period.

The construction of shops (including pedestrian deck) and 12-storey office building should start sometime after the commencement of the embankment work.

The construction items around the Melati pond are the bridge over the pump station and the water-front park improvement, both of which should start 2 years after the starting of this project.

Table 8–1 IMPLEMENTATION SCHEDULE AND ANNUAL PROJECT COST

Implementation Schedule (Kebon Melati)

	Year 1	2	3	4	5	6	7	8	9	10
1. PLANNING										
2. TEMPORARY HOUSING		Construction & operation								
3. LAND PREPARATION		Demolition & grading								
4. CONSTRUCTION										
–BUILDING (HOUSING)										
–BUILDING (OFFICE)										
–INFRASTRUCTURE, ETC.		Embankment, road, station plaza, bridge, water supply, sewerage, etc.								

Annual Project Cost (Kebon Melati)

Items	1	2	3	4	5	6	7	8	9	10
Planning	1,086	0	0	0						
Temporary Housing	146	13	13	0						
Compensation	744	0	0	0						
Land Preparation	0	235	0	0						
Construction	0	5,466	7,406	1,767						
Overhead and Contingency	283	818	1,062	253						
Total 19,293*	2,259	6,534	8,480	2,020						

* Exclusive of interest

8.2 TEMPORARY HOUSING PLANNING

8.2.1 Preliminary Study on Temporary Housing Planning in Kebon Melati

Investigation of Empty Lands and Proposed Temporary Housing Sites

Two the temporary housing sites PTHS-1 and PTHS-2 have been chosen as proposed sites. In PTHS-2 are temporary houses for Kebon Kacang urban renewal project. Location of the proposed temporary housing sites, its conditions and expected temporary units to be planned, are explained in Fig. 8–2.

Proposed Procedure of Temporary Housing Allocation

The procedure including temporary housing allocation and its implementation schedule are mentioned in Fig. 8–3. Temporary resettlement rate was estimated as 60% according to the socio-economic survey results as stated below.

The socio-economic survey results in Stage II

"Where do you want to live temporarily?"

Temporary housing	62%
Relative's house	8%
Others	30%

Study on the Required Number of Units for Temporary Resettlement

The type of units and the floor area for temporary housing needed for accommodation should be confirmed through the socio-economic survey. The temporary housing planning should then be studied according to the survey results attempting to meet the inhabitant's desires as much as possible.

The socio-economic survey results in Stage II and the proposed criteria for the suitable number of units for temporary resettlement are explained as follows:

The socio-economic survey results		Criteria for the suitable number of temporary units according to the survey	
"How many floor area do you want to live temporarily?"		1 unit: 12.5 m²	
Less than 21 m²	21%	1 unit for one family	20%
22 – 36 m²	31%	2 units for one family	30%
37 – 54 m²			
Over 55 m²	17%	3 units for one family	50%
	32%		

Study on the required number of units:

No. of Families	No. of the units to be required		
210 families	210 x 0.20 x 1 unit	=	42 units
	210 x 0.30 x 2 units	=	126 units
	210 x 0.50 x 3 units	=	315 units
		=	483 units
	Total	=	490 units

Required temporary housing units : 490 units
Two proposed temporary housing sites : 660 units

Fig. 8–2 LOCATION MAP: PROPOSED TEMPORARY HOUSING SITE

In conclusion, it is confirmed that the proposed two temporary housing sites are enough to accommodate the required temporary housing units.

Unit size : 5 m x 2.5 m = 12.5 m²
Structure : Wood structure, one storey

Conditions of PTHS

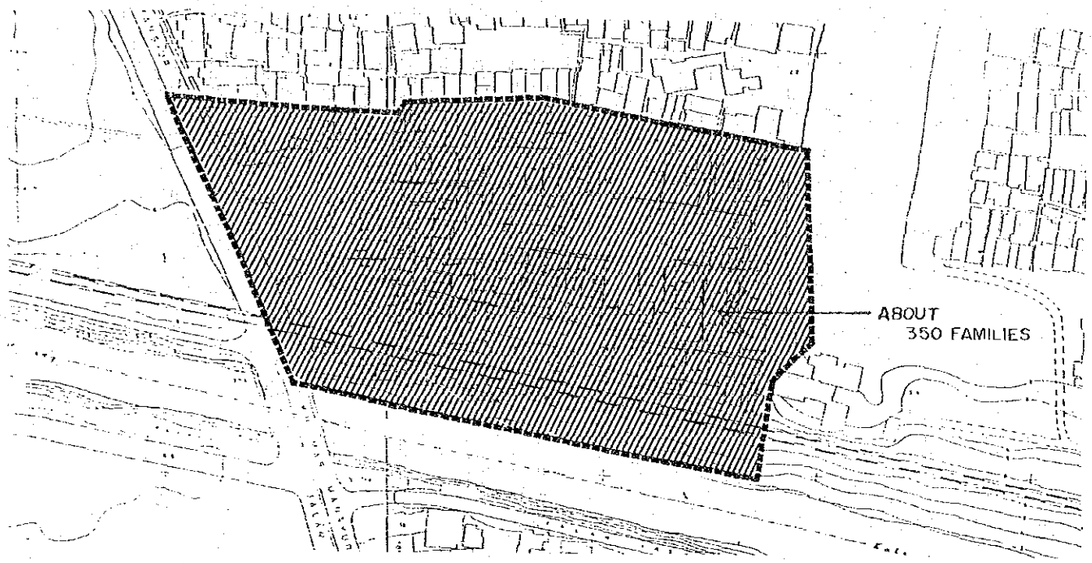
		PTHS–1	PTHS–2
Site area	=	0.6 Ha.	1.05 Ha.
Land ownership	=	DKI	DKI
Present conditions	=	Empty	Being occupied by temporary housing of Kebon Kacang project
Expected No. of units	=	240 units	420 units

Total units = PTHS–1 + PTHS–2 = 240 units + 420 units = 660 units

– Coverage rate = 60%
– Bldg. efficiency = 85%

Note: Calculation of expected number of units is the same procedure as in Manggarai.

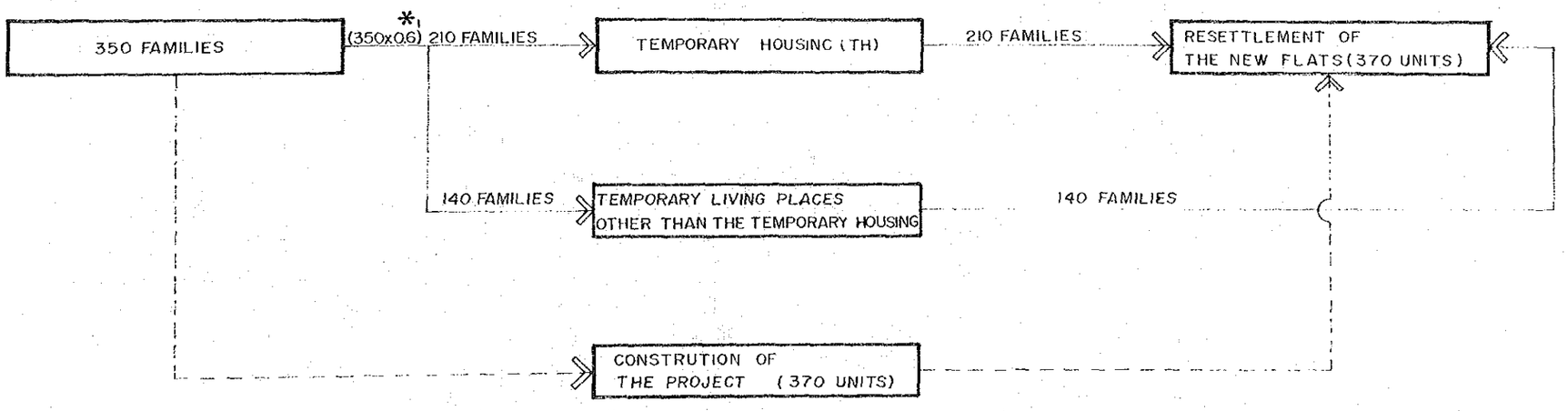
Fig. 8–3 ALLOCATION OF TEMPORARY HOUSING PLANNING



LEGEND :

$*_1$: Temporary resettlement ratio 60%. based on the socio-economic survey results in stage II.

PROPOSED PROCEDURE OF TEMPORARY HOUSING ALLOCATION IN KEBON MELATI



8.3 FINANCIAL SCHEDULE

8.3.1 Foreign and Local Cost Component

General

Foreign and local cost components are analysed and estimated for the financial schedule of the project.

The estimate is based on the preliminary design, and the terms and conditions are summarized as follows:

(1) All planning and construction works will be contracted with general consultants and contractors through international tender.

(2) The cost component is estimated at the prices prevalent in September 1983.

(3) The construction costs are first split into the following three components:

- Labour
- Material
- Equipment

Then, each component is split into,

- Foreign and
- Local

portions in terms of percentage. The financial schedule is proportionally divided into foreign and local portions prepared in Rupiah and U.S. dollars.

(4) The foreign portion mainly consists of the costs for;

- Salaries and wages of foreign personnel
- Overhead and profit of foreign firms
- Depreciation of construction equipment
- Steel pipe pile, steel sheet pile, steel H-beam and steel forms.
- Structural steel for building, bridge and underpass
- Lifts, air conditioner, pumps and boilers
- Fire protection, emergency generators
- Sanitary ware, interior material
- Curtain wall (Aluminium and glass)
- Tendon for prestressed concrete and reinforcement bars
- Bituminous material
- Traffic signals

(5) The local portion mainly consists of the cost of;

- Domestic materials such as cement, aggregate, timber, slate, concrete block, brick, wood, tile, etc.
- Salaries and wages of local personnel
- Overhead and profit of local firms
- Taxes

(6) The Indonesian tax and duty on imported equipment and materials are considered free because of the inter-government agreement.

(7) Exchange rate between U.S.$ and Indonesian Rupiah is U.S.$1.0 = Rp.980.0 based on the rate of September 1983.

Results

The results are summarized in Table 8-4. The foreign protion of the building construction cost accounts for only 37%, whilst the foreign portion of the infrastructure construction cost accounts for 58%. The foreign portion of the total cost results in approximately 40%.

The annual construction cost to be prepared in local and foreign currencies and the details of the calculation are shown in Appendix B.

Table 8-4 CONSTRUCTION COST BY LOCAL AND FOREIGN CURRENCIES

Unit: Rp.1,000,000

Item	TOTAL		
	Local	Foreign	Total
Planning	304 (28%)	782 (72%)	1,086
Temporary Housing Construction	124 (85%)	22 (15%)	146
Temporary Housing Operation & Maintenance	22 (85%)	4 (15%)	26
Compensation	744 (100%)	0	744
Land Preparation	153 (65%)	82 (35%)	235
Building Construction	8,476 (63%)	4,857 (37%)	13,333
Infrastructure Construction	490 (42%)	686 (58%)	1,176
Landscaping	98 (75%)	33 (25%)	131
Overhead & Contingency	1,164 (48%)	1,252 (52%)	2,416
TOTAL	11,575 (60%)	7,718 (40%)	19,293

Note: Interest is excluded

8.3.2 Financial Schedule

General Assumptions

- Subsidy from the Government will be provided in each year according to the progress of implementation.
- One third of share defrayment will be received as advance payment at the planning stage, and the remainder will be received after the construction works be completed.
- A soft loan from foreign lending agencies will be available in each year. The amount of the foreign soft loan will be equivalent to the foreign portion of the total construction cost.

  The loan conditions of the foreign soft loan are assumed as follows.

  - Interest rate : 5% per annum
  - Grace period : 5 years
  - Amortization period : 20 years (including the grace period)

- The rights to the residual floor will be owned by the implementation body and the residual floor will be leased to tenants. In planning the financial schedule, occupancy ratio of the residual floor was assumed to be 90%.
- When the total amount of the above project finance becomes deficit against required expenditures, then the loan equivalent to the deficit will be borrowed from governmental bank. The loan conditions are assumed as follows.

  - Interest rate : 12% per annum
  - Grace period : 5 years
  - Amortization period : 20 years (including the grace period)

Results

The financial schedule for the project in Kebon Melati is shown in Table 8–5.

The rates of subsidy and share defrayment to the construction cost are 10% and 17% respectively. These amounts should be prepared by the Government (both Local and Central).

The amount of subsidy and share defrayment is 5,514 million Rp., and final cash balance is 5,369 million Rp. The final cash balance is able to recover 97% of the amount to be prepared by the Government.

For reference, the financial internal rate of return is calculated as 7.6%. If the mean interest rate of the loans acquired for construction funding is smaller than this rate, the project can produce surplus (profit) at the end of the amotization period and thus become financially sound and feasible.

Sensitivity Analysis

A sensitivity analysis was made to the financial schedule that will be greatly affected by the fluctuations of a foreign portion and the interest rate of domestic loan. The cases analysed are as shown in Table 8–6.

Table 8–6 CASES OF SENSITIVITY ANALYSIS

Foreign portion \ Interest rate of domestic loan	12%	14%	16%	18%
40%	Case 1 (Basic Case)	Case 2	Case 3	Case 4
50%	Case 5	Case 6	Case 7	Case 8

The foreign portion being 50% means that the foreign cost component involved in the building construction becomes 50% against the previous figure of 37% (Ref. Table 8–4). In this case, the foreign portion is totaled to Rp.9,528 million as calculated in Table 8–7.

Table 8–7 AMOUNT OF FOREIGN PORTION

(Million Rp.)

Foreign Portion	40%	50%
1st year	951	951
2nd year	2,549	3,255
3rd year	3,400	4,340
4th year	818	982
Total	7,718	9,528

The amounts of the cumulative cash surplus and deficit in each case are shown in Fig. 8–8 and Fig. 8–9. In the case of the foreign portion being 40%, cash flow would become deficit, at the interest rate of 14% (domestic loan), in the 5th year after completion of the construction. Whereas, in the case of the foreign portion being 50%, cash flow would become deficit, at the interest rate of 16%, in the 6th year after completion of the construction.

In the meantime, a life period of buildings would be over 30 years and the implementation body can keep receiving revenues from the residual floor even after ending the loan amortization. The cash deficit amount of Rp.11,636 million that comes out in the 17th year after completion of the construction with the conditions of 40% of the foreign portion and 18% of the interest rate, could be recovered in the 24th year after completion of the construction. Yet this naturally needs the capacity of the implementation body to financially support the project by that time. At any rate, in order to ensure the financial soundness of the project, it is quite essential that the implementation body has to make efforts to arrange as low-interest loan as possible and raise the occupancy rate of the residual floor.

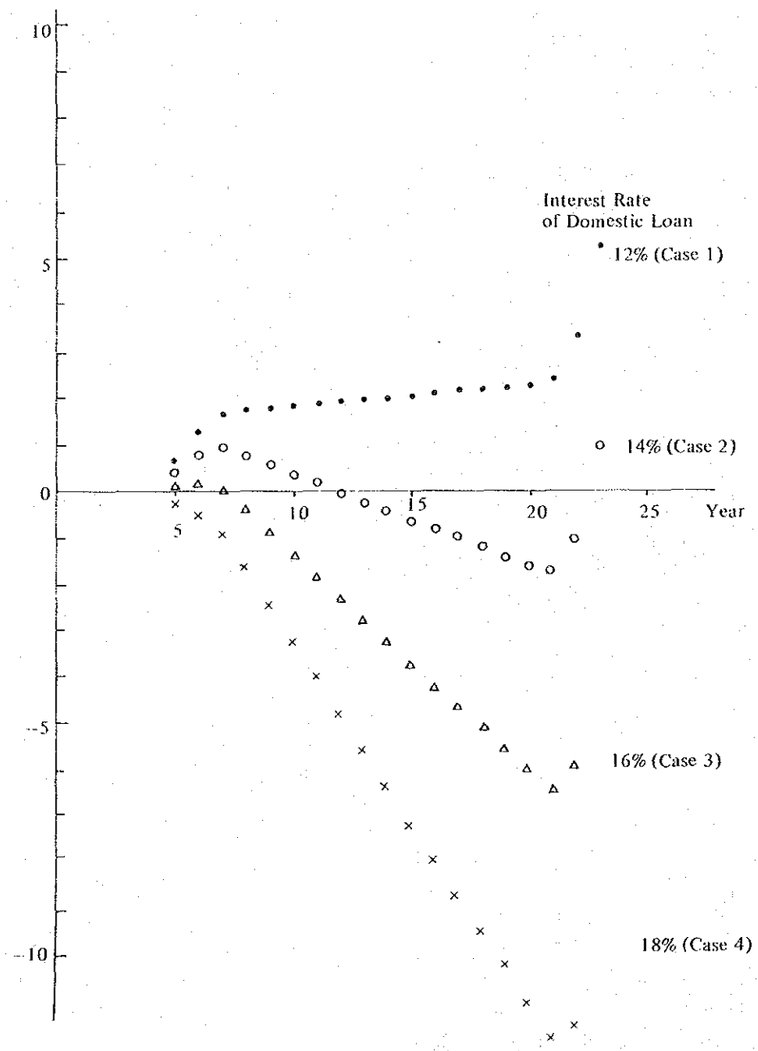


Fig. 8-8 CUMULATIVE CASH SURPLUS AND DEFICIT – FOREIGN PORTION: 40%

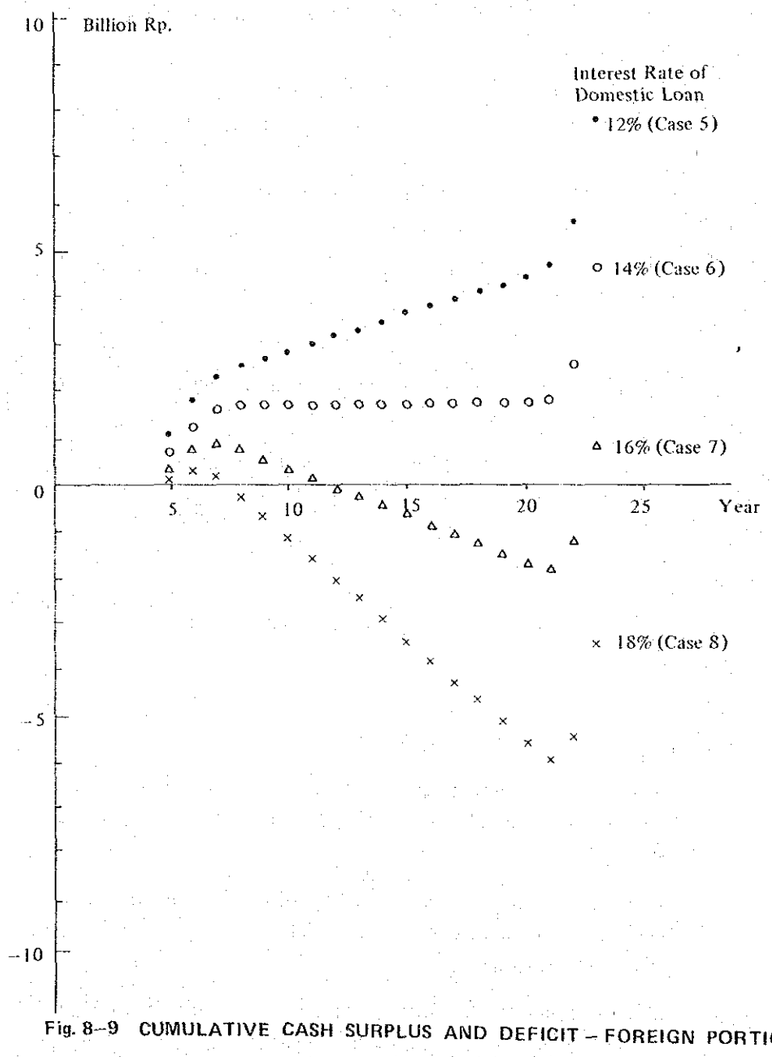


Fig. 8-9 CUMULATIVE CASH SURPLUS AND DEFICIT – FOREIGN PORTION: 50%

Table 8–5 FINANCIAL SCHEDULE

Unit : Rp.1,000,000.–

	Item \ Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Source of Fund	Balance at the Beginning	0	959	0	0	0	654	1,264	1,672	1,761	1,808	1,855	1,902	1,949	1,996	2,043
	Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Share Defrayment by DKI Jakarta	1,140	0	0	2,281	0	0	0	0	0	0	0	0	0	0	0
	Subsidy from Government	1,175	456	462	0	0	0	0	0	0	0	0	0	0	0	0
	Revenue from Rental Floor	0	0	0	330	2,153	2,153	2,153	2,153	2,153	2,153	2,153	2,153	2,153	2,153	2,153
	Foreign Loan	951	2,549	3,400	818	0	0	0	0	0	0	0	0	0	0	0
	Domestic Loan from Government Bank	0	3,119	6,065	90	0	0	0	0	0	0	0	0	0	0	0
	Total	3,266	7,083	9,927	3,519	2,153	2,807	3,417	3,825	3,914	3,961	4,008	4,055	4,102	4,149	4,196
Use of Fund	Implementation Cost	2,259	6,534	8,480	2,020	0	0	0	0	0	0	0	0	0	0	0
	Interest of Foreign Loan	48	175	345	386	386	386	384	375	359	340	320	298	276	253	228
	Interest of Domestic Loan	0	374	1,102	1,113	1,113	1,113	1,113	1,103	1,072	1,037	998	955	906	851	790
	Repayment of Foreign Loan	0	0	0	0	0	44	164	330	385	404	424	445	467	491	515
	Repayment of Domestic Loan	0	0	0	0	0	0	84	256	290	324	363	407	456	510	572
	Total	2,307	7,083	9,927	3,519	1,499	1,543	1,745	2,064	2,106	2,106	2,106	2,106	2,106	2,106	2,106
Balance at the End		959	0	0	0	654	1,264	1,672	1,761	1,808	1,855	1,902	1,949	1,996	2,043	2,090

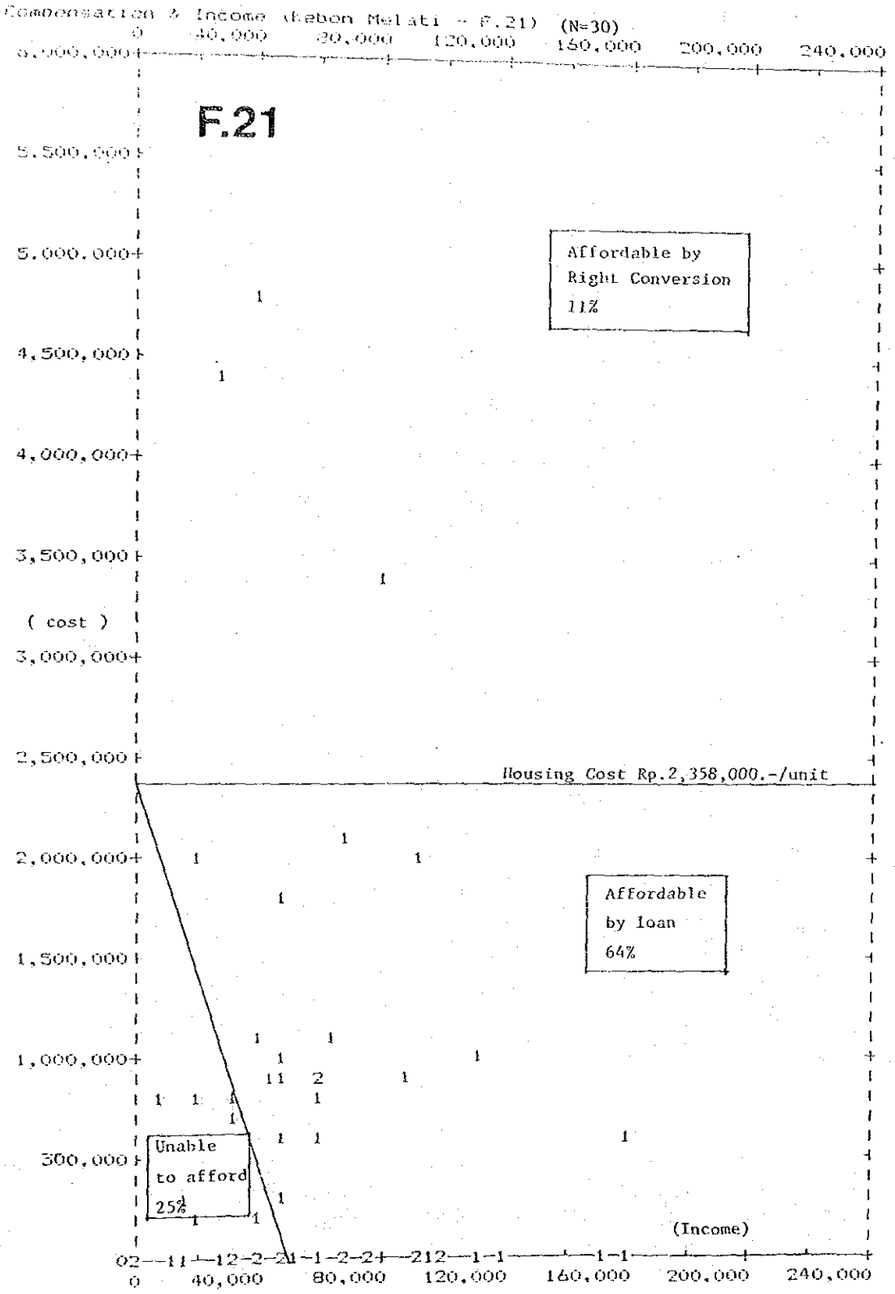
Table 8–5 FINANCIAL SCHEDULE (Continued)

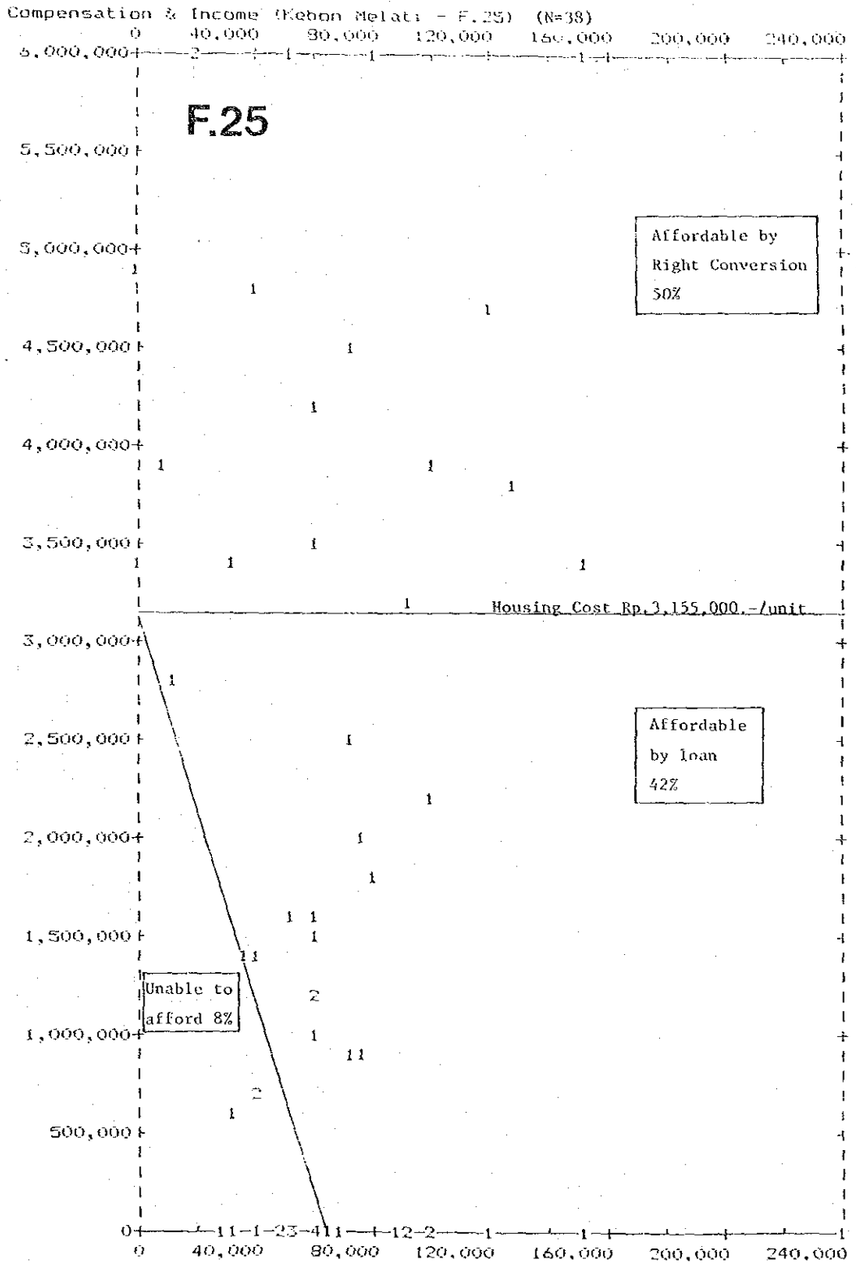
Unit : Rp.1,000,000.–

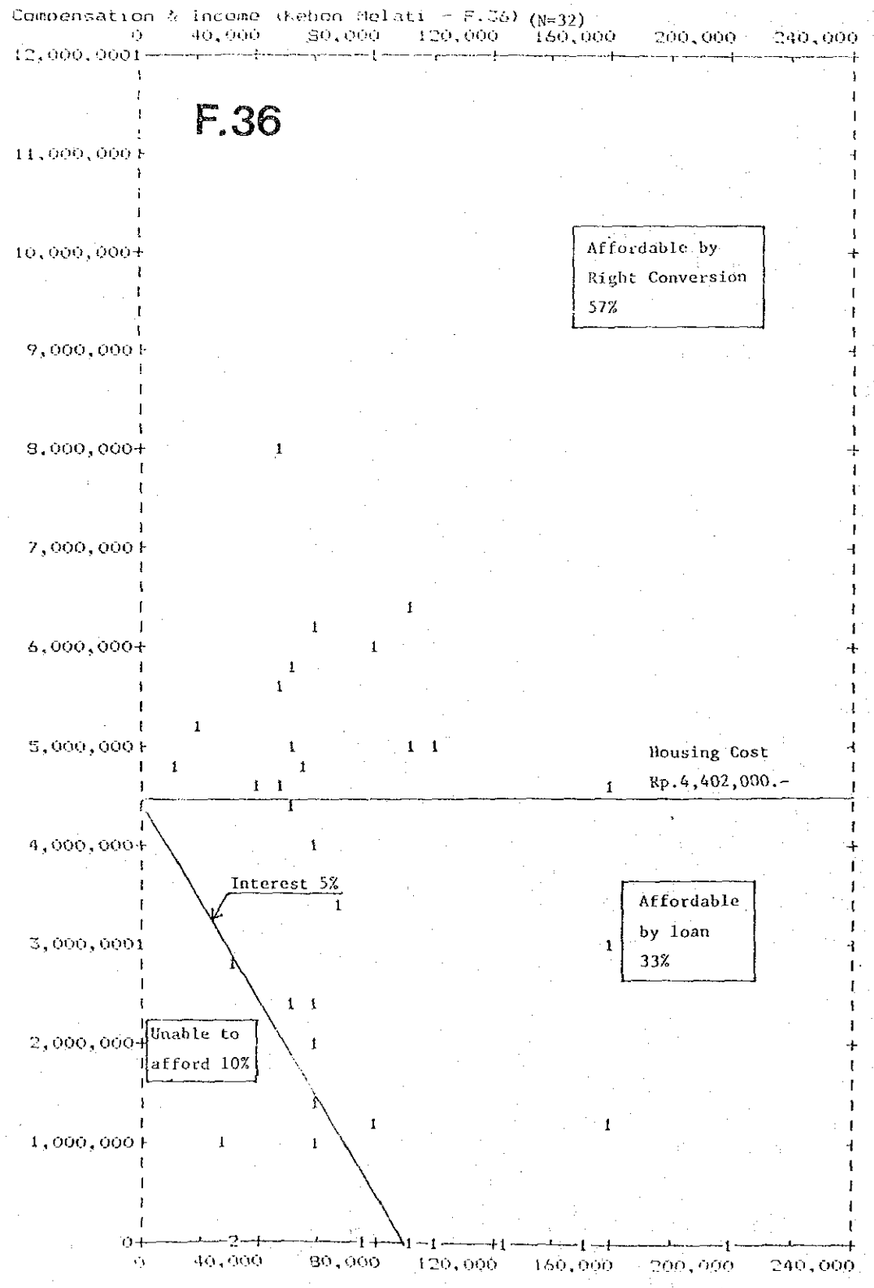
Item		Year 16	17	18	19	20	21	22	23							TOTAL
Source of Fund	Balance at the Beginning	2,090	2,137	2,184	2,231	2,278	2,325	2,465	3,308							
	Equity	0	0	0	0	0	0	0	0							0
	Share Defrayment by DKI Jakarta	0	0	0	0	0	0	0	0							3,421
	Subsidy from Government	0	0	0	0	0	0	0	0							2,093
	Revenue from Rental Floor	2,153	2,153	2,153	2,153	2,153	2,153	2,153	2,153							
	Foreign Loan	0	0	0	0	0	0	0	0							7,718
	Domestic Loan from Government Bank	0	0	0	0	0	0	0	0							9,274
	Total	4,243	4,290	4,337	4,384	4,431	4,478	4,618	5,461							
Use of Fund	Implementation Cost	0	0	0	0	0	0	0	0							19,293
	Interest of Foreign Loan	202	175	147	117	86	53	23	4							
	Interest of Domestic Loan	721	645	559	462	354	233	98	1							
	Repayment of Foreign Loan	541	568	597	626	658	599	583	75							
	Repayment of Domestic Loan	640	717	803	899	1,007	1,128	806	12							
	Total	2,106	2,106	2,106	2,106	2,106	2,013	1,510	92							
Balance at the End		2,137	2,184	2,231	2,278	2,325	2,465	3,308	5,369							5,369

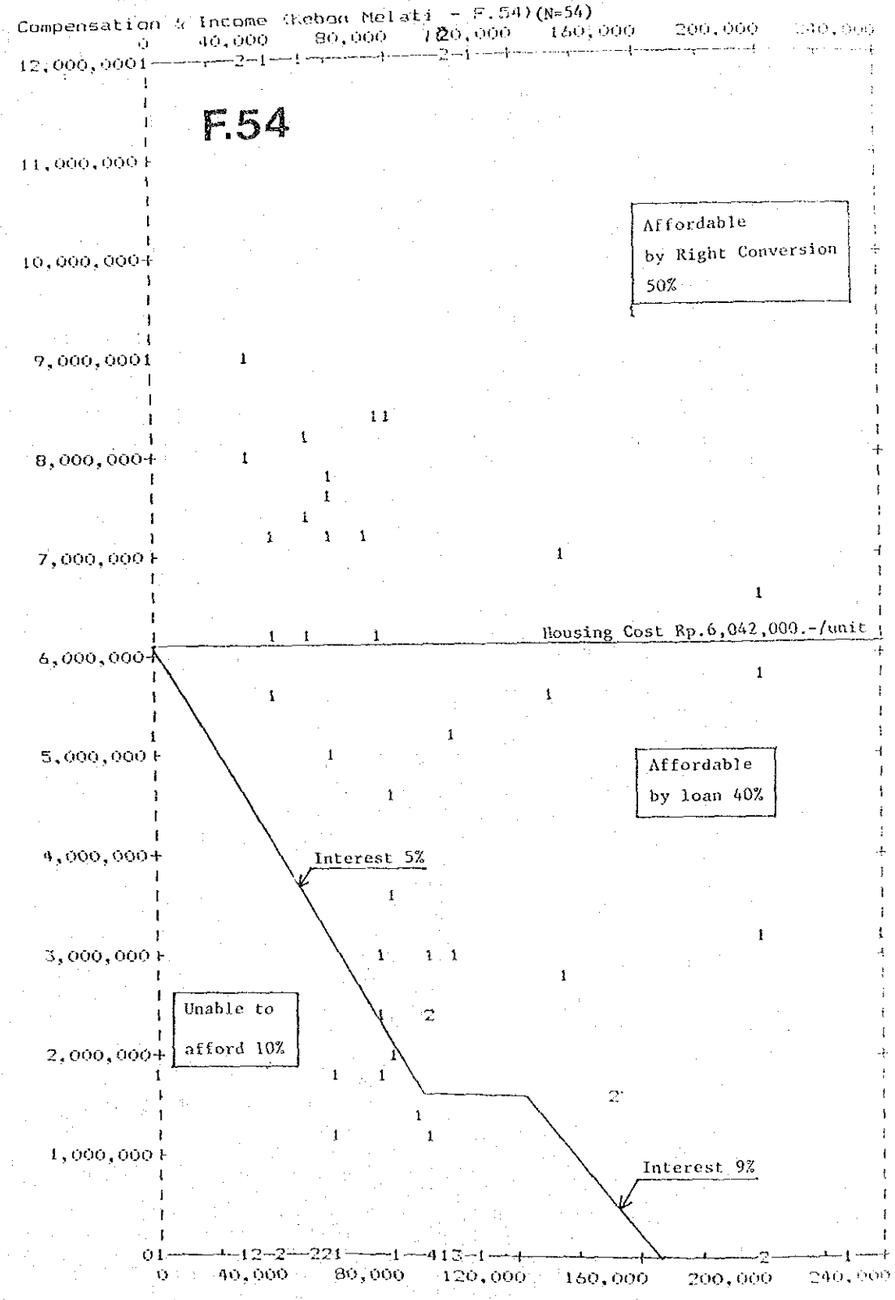
APPENDICES

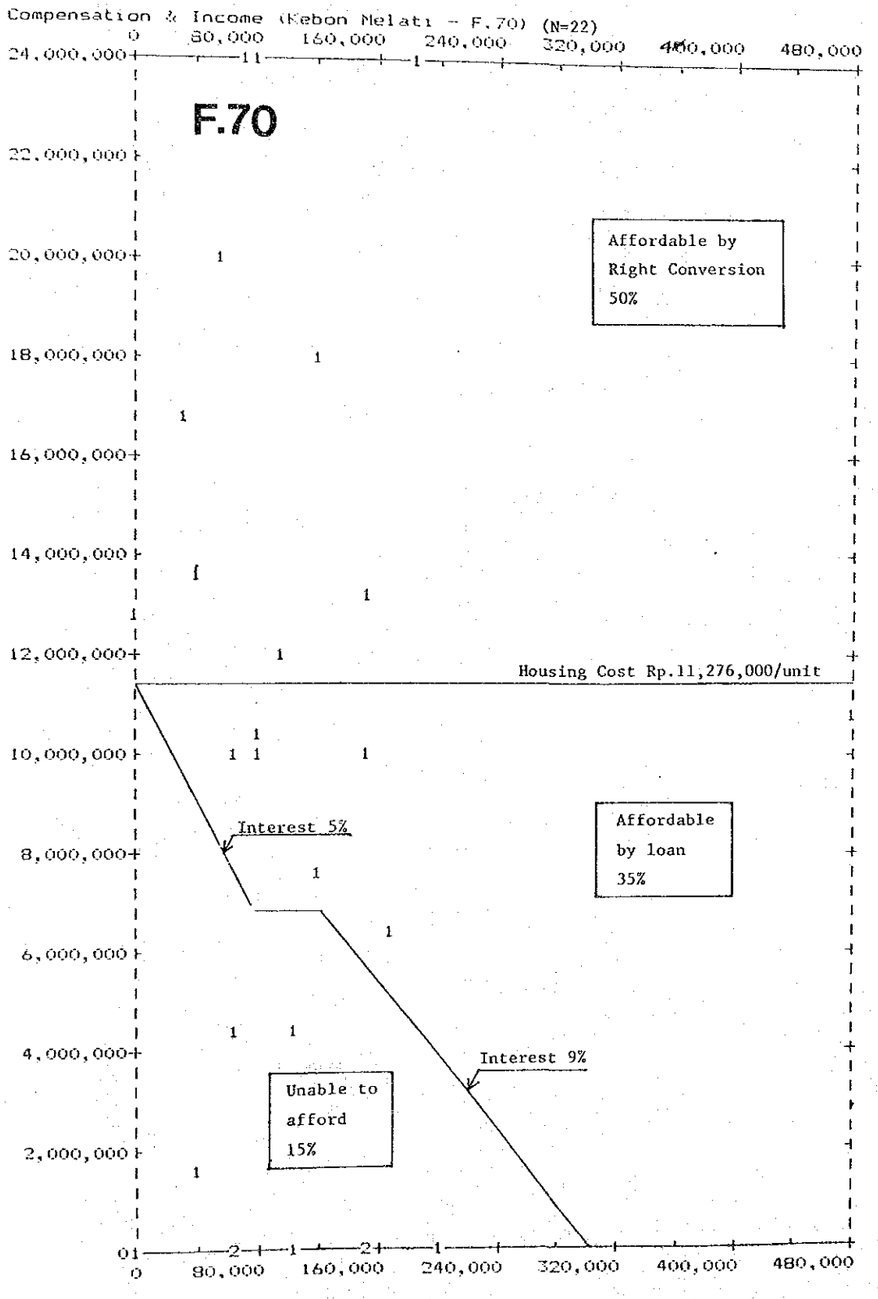
APPENDIX A COMPUTER OUTPUT FOR HOUSING AFFORDABILITY ANALYSIS
(Number of Households)

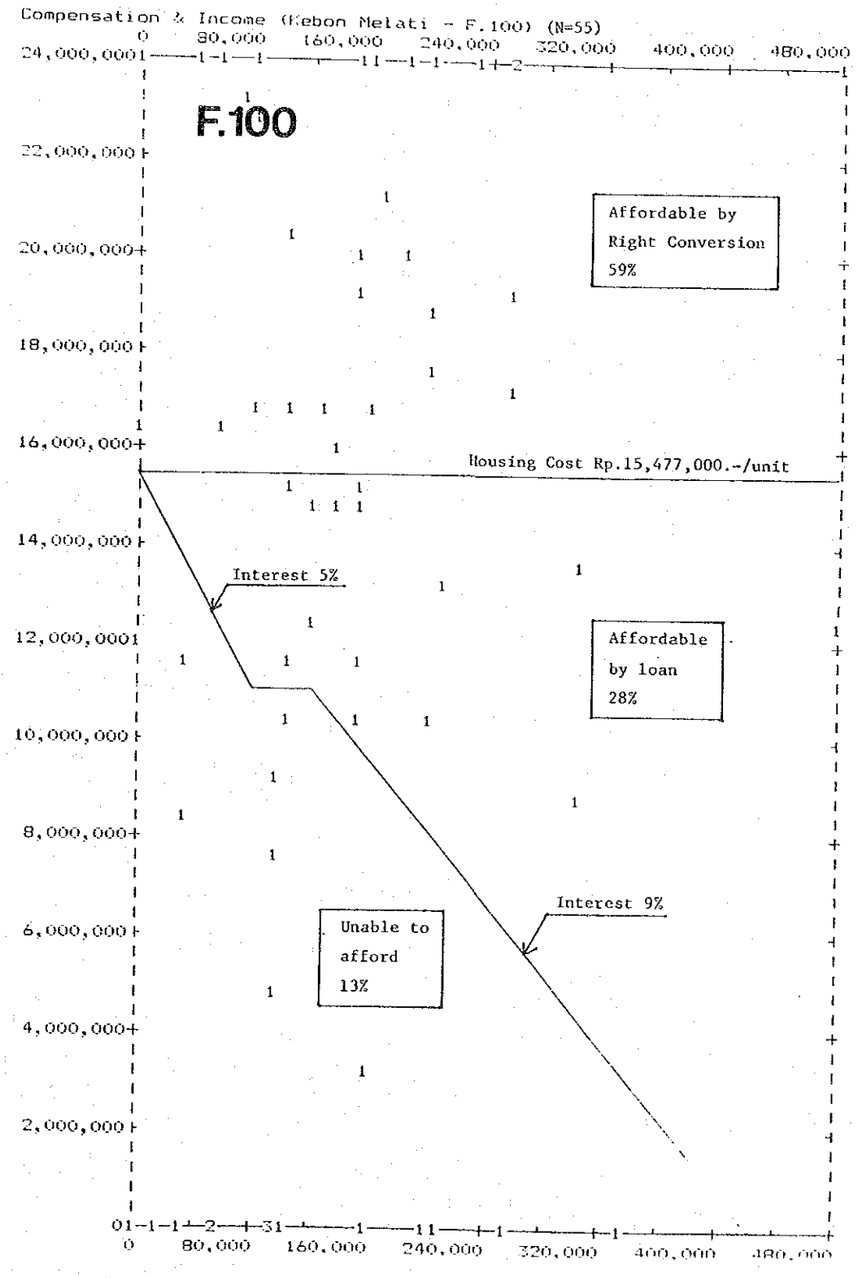





Compensation & Income (Kebon Melati - F.36) (N=32)
F.36
Affordable by
Right Conversion
57%
Housing Cost
Rp.4,402,000.-
Interest 5%
Affordable
by loan
33%
Unable to
afford 10%
12,000,000
11,000,000
10,000,000
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
40,000
80,000
120,000
160,000
200,000
240,000


Compensation & Income (Kebon Melati - F.54)(N=54)
F.54
Affordable
by Right Conversion
50%
Housing Cost Rp.6,042,000.-/unit
Affordable
by loan 40%
Interest 5%
Unable to
afford 10%
Interest 9%
12,000,000
11,000,000
10,000,000
9,000,000
8,000,000
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
40,000
80,000
120,000
160,000
200,000
240,000


Compensation & Income (Kebon Melati - F.70) (N=22)
F.70
Affordable by Right Conversion 50%
Housing Cost Rp.11,276,000/unit
Interest 5%
Interest 9%
Affordable by loan 35%
Unable to afford 15%
24,000,000
22,000,000
20,000,000
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
80,000
160,000
240,000
320,000
400,000
480,000


Compensation & Income (Kebon Melati - F.100) (N=55)
F.100
Affordable by Right Conversion 59%
Housing Cost Rp.15,477,000.-/unit
Interest 5%
Interest 9%
Affordable by loan 28%
Unable to afford 13%
24,000,000
22,000,000
20,000,000
18,000,000
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
80,000
160,000
240,000
320,000
400,000
480,000

APPENDIX B: DETAILS OF LOCAL AND FOREIGN PORTIONS

1. ANNUAL CONSTRUCTION COST BY LOCAL AND FOREIGN CURRENCIES

Table B-1 CONSTRUCTION COST BY LOCAL AND FOREIGN CURRENCY : Kebon Melati

Unit : Rp. 1,000,000, ( )=US$ 1,000

Item	1st year			2nd year			3rd year			4th year						TOTAL		
	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
Planning	304	782 (798)	1,086													304	782 (798)	1,086
Temporary Housing Construc-tion	124	22 (22)	146													124	22 (22)	146
Temporary Housing Operation & Mainte-nance				11	2 (2)	13	11	2 (2)	13							22	4 (4)	26
Compen-sation	744	0 (0)	744													744	0 (0)	744
Land Pre-paration				153	82 (84)	235										153	82 (84)	235
Building Construc-tion				3,212	1,801 (1,838)	5,013	4,282	2,402 (2,451)	6,684	982	654 (667)	1,636				8,476	4,857 (4,956)	13,333
Infra-structure Construc-tion				215	240 (245)	455	275	446 (455)	721							490	686 (700)	1,176
Land-scaping										98	33 (34)	131				98	33 (34)	131
Overhead & Contin-gency	136	147 (150)	283	394	424 (432)	818	512	550	1,062	122	131 (134)	253				1,164	1,252 (1,277)	2,416
Total	1,308	951 (970)	2,259	3,985	2,549 (2,601)	6,534	5,080	3,400 (3,469)	8,480	1,202	818 (835)	2,020				11,575	7,718 (7,875)	19,293

US$ 1.0 = Rp. 980.0

Note : Interest is excluded

2. DETAILS OF LOCAL AND FOREIGN PORTION

(1) REVENUE AND EXPENDITURE

Revenue	(*1000Rp.)	Expenditure	(*1000Rp.)
Subsidy	2,078,680	Planning	1,085,810
Share defrayment	3,420,590	Land Preparation	235,300
Sales of reserved floor	14,952,700	Compensation	743,591
		Construction	14,638,600
		Maintenance	171,600
		Overhead, etc.	951,507
		Contingency	1,463,860
		Interest	1,161,780
Total (Revenue)	20,452,000	Total (Expenditure)	20,452,000

(Share defrayment - Share defrayment by public facility management authorities)

(2) BREAKDOWN OF EXPENDITURE

A : PLANNING

			Foreign (%)	Local (%)
Project Planning	=	439,160	80	20
Soil Investigation	=	980	15	85
Implementation Planning	=	512,350	80	20
Legalization to Local Government	=	133,320	15	85
TOTAL		1,085,810	72	28

B : LAND PREPARATION

			Foreign (%)	Local (%)
Building Clearance	=	130,780	35	65
Grading	=	104,520	35	65
TOTAL		235,300	35	65

C : COMPENSATION

			Foreign (%)	Local (%)
Land Compensation (for dislocator)	=	612,420	0	100
Building Compensation (for dislocator)	=	103,700	0	100
Other Compensation	=	27,470	0	100
TOTAL		743,590	0	100

D : CONSTRUCTION

			Foreign (%)	Local (%)
Building Construction	=	13,332,400	35	65
On-site Infrastructure	=	436,000	25	75
Off-site Infrastructure	=	870,200	70	30
TOTAL		14,638,600	38	62

E : MAINTENANCE

			Foreign (%)	Local (%)
Temporary House Construction	=	171,600	15	85
Others	=	0	-	-
TOTAL		171,600	15	85

F : OVERHEAD, ETC.

		Foreign (%)	Local (%)
Overhead	731,900	70	30
Investment for Allocation	219,560	70	30
Others	0	-	-
TOTAL	951,460	70	30

G : CONTINGENCY

		Foreign (%)	Local (%)
contingency	1,463,860		
TOTAL	1,463,860	40	60

H : INTEREST

		Foreign (%)	Local (%)
Interest	1,161,780		
TOTAL	1,161,780	0	100
GRAND TOTAL	20,452,000	38	62

(x1,000Rp.)

(Foreign 7,717,000)

(Local 12,735,000)

(3) BREAKDOWN OF CONSTRUCTION COST (x 1,000 Rp.)

(a) Building Construction

Item	Cost	Foreign (%)	Local (%)
House (1)	1,736,640	30	70
House (2)	2,295,590	30	70
House (3)	237,151	30	70
Office	7,361,670	40	60
Shop	1,377,170	40	60
Parking	324,211	25	75
TOTAL	13,332,400	35	65
(Foreign	4,857,470)		
(Local	8,474,930)		

(b) On-site Infrastructure

Item	Cost	Foreign (%)	Local (%)
Water, Electric and Gas Supply	-	-	-
Sewerage, Garbage	-	-	-
Landscaping	-	-	-
TOTAL	436,000	25	75
(Foreign	109,000)		
(Local	327,000)		

(c) Off-site Infrastructure

Item	Cost	Foreign (%)	Local (%)
1. Demolition of existing KIP	4,300	95	5
2. Land Preparation	2,600	95	5
3. Earth Work	51,000	90	10
4. Bridge and Underpass	380,000	80	20
5. Station Plaza	81,000	60	40
6. Drainage	116,000	50	50
7. Road	152,000	80	20
8. Fresh Water	72,000	50	50
9. Electricity	7,200	50	50
10. Telephone	3,600	50	50
TOTAL	870,200	70	30
(Foreign	609,100)		
(Local	261,100)		

3. DETAIL OF COST COMPONENT

P : Proportion (x1/10)
F : Foreign Portion (x1/10)
L : Local Portion (x1/10)

Item		Material			Labour			Equipment			F(%)	L(%)
		P	F	L	P	F	L	P	F	L		
A : Planning												
Project Planning		1	8	2	8	8	2	1	8	2	80	20
Soil Investigation		1	3	7	8	1	9	1	3	7	15	85
Implementing Planning		1	8	2	8	8	2	1	8	2	80	20
Legalization to local Government		1	2	8	8	1	9	1	2	8	15	85
B : Land Preparation												
Building Clearance		2	3	7	4	1	9	4	6	4	35	65
Grading		2	2	8	4	1	9	4	6	4	35	65
C : Compensation												
Land Compensation											0	100
Bldg. Compensation											0	100
Other Compensation											0	100
D : Construction	%										38	62
D_1 Building Construction											36	64
(a) House (8F)*1											30	70
Structure	65	5	2	8	3	1	9	2	7	3	27	73
Exterior	10	4	2	8	4	1	9	2	5	5	22	78
Interior	5	4	2	8	4	1	9	2	5	5	22	78
Equipment & Others	13	5	5	5	3	1	9	2	5	5	38	62
Lift	7	6	9	1	3	5	5	1	8	2	77	23
(b) House (5F)												
Structure	70	5	2	8	3	1	9	2	7	3	27	73
Exterior	10	4	2	8	4	1	9	2	5	5	22	78
Interior	5	4	2	8	4	1	9	2	5	5	22	78
Equipment & Others	15	5	5	5	3	1	9	2	5	5	38	62

*1 Common to House (1), (2) (3) in Kebon Melati

Item		Material			Labour			Equipment			F(%)	L(%)
		P	F	L	P	F	L	P	F	L		
(c) House, Shop (8F)	(%)										35	65
Structure	60	5	2	8	3	1	9	2	7	3	27	73
Exterior	10	4	3	7	4	1	9	2	5	5	26	74
Interior	10	4	3	7	4	1	9	2	5	5	26	74
Equipment & others	18	5	6	4	3	2	8	2	5	5	46	54
Lift	2	6	9	1	3	5	5	1	8	2	77	23
(d) Office, Shop (12F) *2											40	60
Structure	45	5	3	7	3	2	8	2	7	3	35	65
Exterior	15	4	4	6	4	1	9	2	5	5	30	70
Interior	15	4	3	7	4	1	9	2	5	5	26	74
Equipment & others	22	5	6	4	3	2	8	2	5	5	46	54
Lift	3	6	9	1	3	5	5	1	8	2	77	23
(e) Business											40	60
Structure	45	5	4	6	3	2	8	2	7	3	40	60
Exterior	15	4	4	6	4	1	9	2	5	5	30	70
Interior	15	4	3	7	4	1	9	2	5	5	26	74
Equipment & others	22	5	7	3	3	2	8	2	5	5	51	49
Lift	3	6	9	1	3	5	5	1	8	2	77	23
(f) School											30	70
Structure	70	5	2	8	3	1	9	2	7	3	27	73
Exterior	10	4	2	8	4	1	9	2	5	5	22	78
Interior	5	4	2	8	4	1	9	2	5	5	22	78
Equipment & others	15	5	5	5	3	1	9	2	5	5	38	62

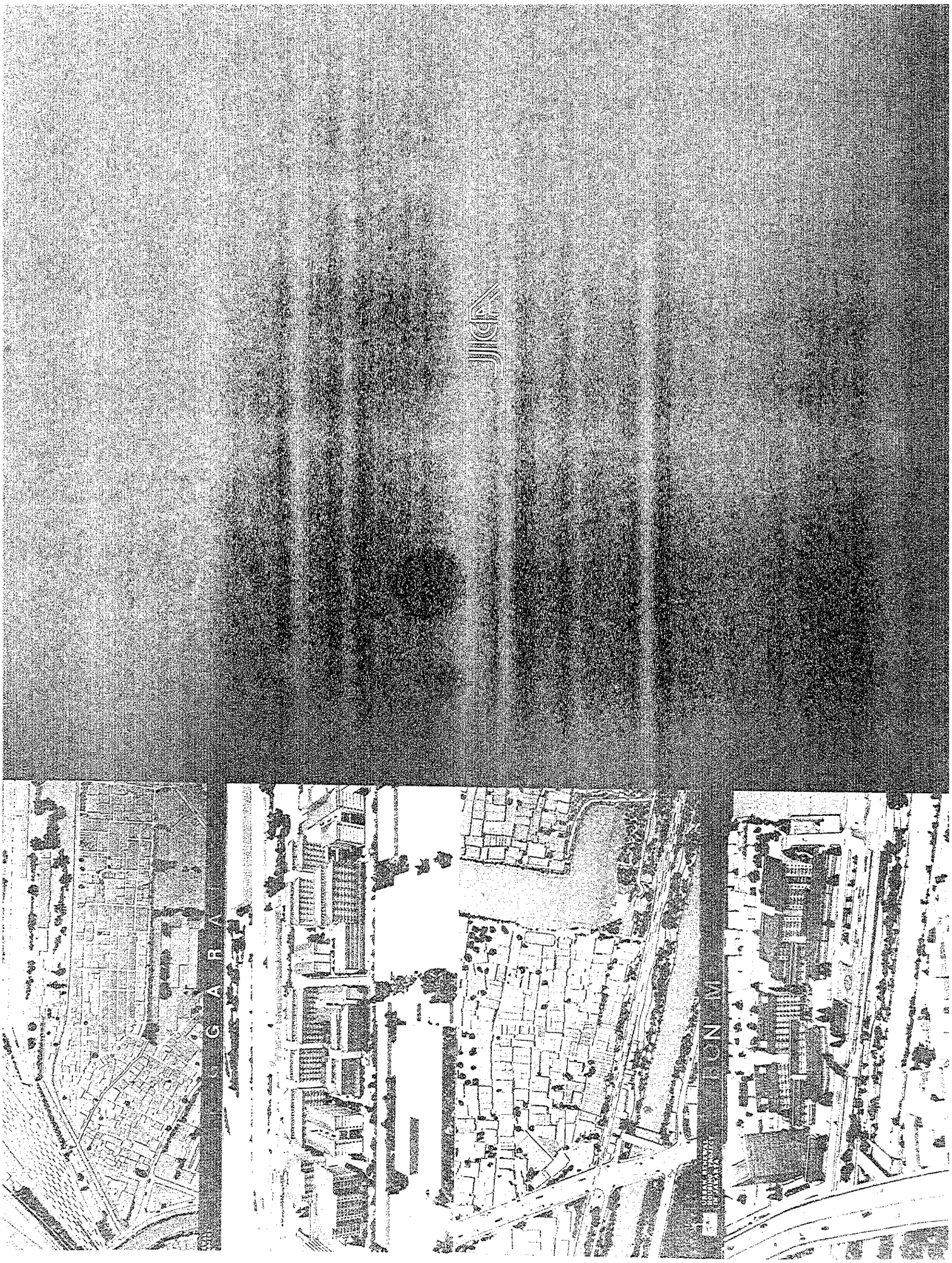
*2 Common to Office and Shop in Kebon Melati

Detail of Cost Component (Cont'd)

P : Proportion (x1/10)
F : Foreign Portion (x1/10)
L : Local Portion (x1/10)

Item		Material			Labour			Equipment			F(%)	L(%)
		P	F	L	P	F	L	P	F	L		
(g) Parking	%										25	75
Structure	80	5	2	8	3	1	9	2	7	3	27	73
Exterior	5	4	2	8	4	1	9	2	5	5	22	78
Interior	5	4	2	8	4	1	9	2	5	5	22	78
Equipment & others	10	5	5	5	3	1	9	2	5	5	38	62
D2: On-site Infra-structure											25	75
Water, Electric & Gas Supply	40	5	3	7	3	1	9	2	5	5	28	72
Sewerage, Carbage	40	5	2	8	3	1	9	2	5	5	23	77
Landscaping	20	4	1	9	4	1	9	2	5	5	18	82
D3: Off-site Infra-structure											70	30
1. Demolition		0			1	5	5	9	10	0	95	5
2. Land prepa-ration		0			1	5	5	9	10	0	95	5
3. Earth work		0			1	8	2	9	9	1	90	10
4. Bridge and Underpass		4	6	4	1	5	5	5	10	0	80	20
5. Concrete cover for canal		4	4	6	1	5	5	5	10	0	70	30
6. Station Plaza		6	4	6	1	5	5	3	10	0	60	40
7. Drainage		5	3	7	2	5	5	3	8	2	50	50
8. Road		4	6	4	1	5	5	5	10	0	80	20
9. Fresh water		7	4	6	1	5	5	2	8	2	50	50
10. Electricity		7	7	3	1	0	10	2	0	10	50	50
11. Telephone		7	7	3	1	0	10	2	0	10	50	50

Item		Material			Labour			Equipment			F(%)	L(%)
		P	F	L	P	F	L	P	F	L		
E : Maintenance	(%)											
E_1 Temporary housing											15	85
Construction	90	6	1	9	3	1	9	1	5	5	14	86
Operation	10	4	1	9	5	1	9	1	5	5	14	86
F : Overhead, etc.											70	30
F_1 Overhead		0			10	7	3	0			70	30
F_2 Investment for allocation		0			0			10	7	3	70	30
G : Contingency											40	60
H : Interest											0	100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