

ANNEX 3. ROOM RATE

ANNEX 3. ROOM RATE

C O N T E N T S

	<u>Page</u>
3.1 Current Room Rate	3-1
3.2 Room Rate Discounted for Groups	3-1
3.3 Room Rate Discounted During Off-Season	3-2
3.4 Service Charge and Tax	3-2
3.5 Room Rate per Guest Considering Double Occupancy	3-2
Table 1. Accommodation in Pattaya First Class Hotel	3-3
2. Economy Class Hotel	3-5
3. Bungalow	3-6

ANNEX 3. ROOM RATE

3.1 Current Room Rate

Room rate in Pattaya is analysed here using the list of room rates revised by T.O.T. Pattaya Office in December 1977.

Pattaya accommodates first class hotels, economy class hotels, and bungalows. Their present numbers are as below:

Class #3	Total	Northern Pattaya	Southern Pattaya	Mid- Pattaya
First class hotel	2,851 ^{rooms}	2,075 ^{rooms}	0 ^{rooms}	776 ^{rooms}
Economy class hotel	450	450	0	0
Bungalow	517*2	376	141	0
	3,818	2,901	141	776

*1 This figure includes those under construction currently.

*2 Here 2 bedrooms are counted as 1 room. If 2 bedrooms are counted as 2 rooms, the figure will be 1,034 rooms.

*3 Some hotels have both hotel section and bungalow section. In such case they are classified into their main sections.

These figures are adjusted based on note *2 as following:

Class	Total	Northern Pattaya	Southern Pattaya	Mid- Pattaya
First class hotel	2,851 (66%)	2,075	0	776
Economy class hotel	450 (10%)	450	0	0
Bungalow	1,034 (24%)	752	282	0
	4,335(100%)	3,277	282	776

Table 1 shows the room rate as of December, 1977 classified into three categories above, and their weighted average.

Class	Baht/day	Dollar/day
First class hotel	445	22.25
Economy class hotel	181	9.05
Bungalow	143	7.15 *1
Average	407	20.45

*1 Rate for 2.5 bedrooms is divided by 2.5 to get the rate for 1 bedroom.

3.2 Room Rate Discounted for Groups

Here it can be assumed the rate of group tourists and individual tourists to be 60:40, and average discount rate for groups to be about 10%.

Tourist	Average discount rate	Weighted average
Group	60%	10%
Individual	40	0
		54.0%
		40.0
		94.0

Average rate $20.4 \times 0.94 = 19.18$ US Dollar/Room/day

3.3 Room Rate Discounted During Off-Season

Here it can be assumed 10% of the room rate is discounted for both tourist groups and individuals for the tourism off-season (7 months a year).

Off-season	7 month	$19.18 \times 90.0\%$	$= 17.26$	Dollar/Room/day
In-season	5		19.18	"

Then, annual discount rate will be,

$$10.0\% \times 7/12 = 5.8\%$$

and the average room rate will be,

$$19.18 \times 94.2\% = 18.07 \text{ Dollar/Room/day,}$$

Therefore, the current average room rate is estimated of 18 Dollar/Room/day (360 Baht).

3.4 Service Charge and Tax

Guests for hotels will spend a sum of the room rate and the following service charge and tax.

Type of Charge	Rate	Amount Added to Room Charge
Service charge	10%	1.80 Dollar/Room/day
Tax	8.25%	1.49 "
Total		3.29 "

The room rate including service charge and tax will be,

Basic room rate	18.07 Dollar/Room/day
Added charges	3.29
	<hr/> 21.36

21.3 Dollar/Room/day

3.5 Room Rate per Guest Considering Double Occupancy

If it can be assumed the double occupancy rate to be 1.6 persons per room, room rate per guest will be,

$$21.36 \div 1.6 = 13.3 \text{ Dollar/Room/day/person. or}$$
$$= 266 \text{ Baht/Room/day/person.}$$

Table 1. Accommodation in Pattaya

1. First class hotel

No.	① No. of rooms	② Daily Rates/Baht			③ Accumulate ③=①x②
		Single	Double	Suite	
1.	266	360 440	440 520 700	700 1,100 1,200 1,600 2,500	106,400
2.	220	400		1,000 1,200 2,400	88,000
3.	360	400 440 480	500 580	1,000 2,000	162,000
4.	78	250	300		21,450
5.	147	380 449	449	850 946	60,932
6.	112	340	380	700 800 1,000	40,320
7.	172	449	497	591 710	81,356
8.	520	450 580	450 580	1,000 1,400 1,800	234,000
9.	117	300	350		38,025
	84	700, 800, 900, 1,000, 1,100	2 bedroom 3 bedroom 4 bedroom		58,800
10.	276	639	639	1,419 2,602	176,364
11.	274	460 520 580	460 520 580	1,200 1,680 1,500-2,080	126,040

To be continued.

(First Class Hotel)

No.	① No. of rooms	② Daily Rates/Baht			③ Accumulate ③ = ① x ②
		Single	Double	Suite	
12.	116	390	430	550	47,560
		420	500	1,100	
13.	113	240	220	680	27,120
		280	280		
		320	360		
TOTAL	2,851	Average Rate	444.9 Baht	1,268,367	

2. Economy class hotel

No.	① No. of rooms	② Daily Rates/Baht			③ Accumulate ③ = ① x ②
		Single	Double	Suite	
1.	46	160 220 260			7,360
2.	8	150	250		1,600
3.	38	250	250		9,500
4.	14	500 600	2 bedroom 3 bedroom	260 360	3,640
5.	19	60 100		60 100	1,140
6.	10	80		120	1,000
7.	8	120		160	1,120
8.	30	270		270 360	8,100
9.	26	250		250	6,500
10.	14	100			1,400
11.	9 8	200 400	1 bedroom	200	5,100
12.	28	80 100 150		200	3,920
13.	28	80 100			2,240
14.	50	160		200 220 350	9,000
15.	24	120		160	3,360
TOTAL	360	Average Rate		180.5 Baht	64,980

3. Bungalow

No.	① No. of rooms	② Daily Rates/Baht		③ Accumulate ③ = ① x ②
		Single	Double	
1.	23	250	2 bedroom	5,750
		260		
		360	3 bedroom	
2.	42	250	2 bedroom	10,500
		350	3 bedroom	
		600	4 bedroom	
3.	18	250	2 bedroom	4,500
		400	3 bedroom	
		500		
4.	31		175	13,175
		200	1 bedroom	
			250	
		400	2 bedroom	
		450		
550	3 bedroom			
700	4 bedroom			
5.	35	550	2 bedroom	21,000
		650		
		750	3 bedroom	
		850		
	1,000			
6.	10		200	2,500
		100	1 bedroom	
		200	2 bedroom	
		300		
400	3 bedroom			
7.	22		160	3,960
			180	
			200	
8.	10	400	2 bedroom	4,500
		500		
8.	32	250	1 bedroom	9,600
		300		
		350	2 bedroom	
		300		
		330	3 bedroom	
500				

To be continued.

(Bungalow)

No.	① No. of rooms	② Daily Rates/Baht		③ Accumulate ③ = ① x ②
		Single	Double	
9.	7	60 100		1,100
	4	200	2 bedroom	
10.	6	700	2 bedroom	4,200
11.	18	550	3 bedroom	9,900
12.	24	600	3 bedroom	14,400
13.	9	160		1,440
14.	32	250 300 600	2) 3) bedroom 4)	8,000
15.	16	150 250		3,300
	6	250	2 bedroom	
16.	76	250 400	2 bedroom 3 bedroom	19,000
17.	24	390 460		48,000
		300	1 bedroom	
		450 550	2 bedroom	
	72	600-700 900-1,200	bedroom	
TOTAL	517	Average Rate	357.5 Baht	184,825

By T.O.T. Pattaya Office, 1977.

ANNEX 4. PROFITABILITY OF THE TOURISM INDUSTRY

C O N T E N T S

	<u>Page</u>
4.1 Hotel Industry	4-1
4.2 Other Tourism Related Industries	4-2
Table 1. Typical Profit and Loss Statement of Current Hotel Industries in Thailand (1975 to 1977)	4-4
2. Estimated Model Study -(1): Foreign Tourists Hotel,	4-5
3. do -(2): Domestic do ,	4-6
4. Summary of Model Studies	4-1
5. Sales Cost and Gross Operating Profit	4-7
6. Room Occupancy Rate and Gross Operating Profit	4-2
7. Share of Spending for the Related Industries	4-2
8. Estimated Gross Operating Profit for Hotel Industry in Pattaya	4-8
9. Gross Operating Profit in Related Tourism Industries	4-10
10. Cost Distribution of Sales in Hotel Industry (Model Study)	4-11
Fig. 1. Gross Operating Profit (G.O.P.) for Hotel Industry in Pattaya	4-9

ANNEX 4 PROFITABILITY OF THE TOURISM INDUSTRY

4.1 Hotel Industry

In hotel industry, it is generally believed desirable to maintain the room occupancy rate (R.O.R.) at 60% or a minimum of 50%. However, average R.O.R. of main hotels in Pattaya at present (1976) is estimated to be about 32%. If we consider the increase of visitors in the future, R.O.R. in 1980 will rise to 46%, and it will reach 80% in 1986.

Profitability of the hotel industry is analysed using by two factors such as Gross Operating Profit (G.O.P.) and R.O.R.

Present G.O.P. of hotels in Bangkok and Pattaya is shown in Table-1. The G.O.P.s of 2 major hotels in Pattaya are considerably low, but hotels in Bangkok seem to maintain 10% or higher G.O.P. than those in Pattaya.

Estimated G.O.P. of the hotel industry in Pattaya is as estimated model studies as shown in Table-2 and Table-3.

These Tables show the result of Gross Operation Profit Analysis of hotels, for international tourists who are expected to spend about 505 Baht a day in Hotel, and the other is for domestic tourists who will spend about 355 Baht a day in Hotel. The table 4 shows an item-by-item classification of the cost and expense of the industry.

Table 4. Summary of Model Studies

Items:	Million Baht/550 rooms/year	
	Foreign Tourists	Domestic Tourists
	Hotel	Hotel
1 Sales	150.7R	106.5R
2 Sales Cost	30.1R	21.2R
3 Payroll	20.0	15.9
4 Other Department Expenses	15.1R	10.6R
5 Undistributed Expenses	5.3R + 17.3	3.8R + 13.2
6 Total Cost and Expenses	50.5R + 37.3	35.6R + 29.1
7 Gross Operating Profit (1 - 6)	100.2R - 37.3	70.9R - 29.1

- Notes:
- * Expenditure items are estimated based on those for 1983 as shown in Annex 2.
 - * Per 550 rooms.
 - * Unit: million Baht.
 - * R = Room occupancy rate.
 - * Average annual sales per room = $(150.7R \times 0.74 + 106.5R \times 0.26) \div 550$
= 253.1R thousand Baht/room • year.

Therefore, the breakeven point of each hotel type can be obtained by solving the following equations:

Foreign Tourists Hotel ; $100.2R - 37.3 = 0$ thus, $R = 0.37 = 37\%$,

Domestic Tourists Hotel; $70.9R - 29.1 = 0$ thus, $R = 0.41 = 41\%$.

Accordingly, the critical Room Occupancy Rate is estimated to be 38% in average.

Table 6. Room Occupancy Rate and Gross Operating Profit

R.O.R		30%	40%	50%	60%	70%	80%	90%
G.O.P (%)	Foreign	-16.4	4.7	16.9	25.3	31.0	35.7	38.9
	Domestic	-25.1	-2.4	11.5	20.7	27.2	32.0	35.9
	Average*	-18.6	2.9	15.5	24.1	30.1	34.7	38.1

* The ratio of foreign and Domestic tourists (night-stay) to Pattaya is estimated to be 74% : 26% in 30 years, and the average described above is obtained by applying the ratio. Refer to Annex 12.

Through these investigations, it is found that when R.O.R. is lower than 50%, G.O.P. rises sharply with the rise of R.O.R.; on the other hand, when it becomes higher than 60%, the rise of G.O.P. becomes moderate.

From this finding it seems necessary for hotels in Pattaya to reach at least 50% to 60% of R.O.R., and about 20% of G.O.P in the near future.

4.2 Other Tourism Related Industries

In the related industries, tourists will spend money for foods, tourism activities and shopping, etc. Share of these spending is studied at Annex-2.

As spending pattern will fluctuate with a length of stay of tourists, namely the longer stay the less spending on daily expenditure for related tourism industries than hotel.

As the average length of stay of tourist up to the year of 2006 is about 2.8 days (nights), pattern for three day (night) stay is adopted for the analysis of the gross operation profit of the related industries.

An estimated spending pattern for three day (night) stay tourists is as follows:

Table 7. Share of Spending for the Related Industries

Spending Item	Share
1. Restaurants (food)	31.4%
2. Amenity and Inland Activities (tour)	34.6%
3. Shopping	34.0%
Total	100.0%

Cost study was made on three items above showing a breakdown with sales costs, operating costs, undistributed expenses and gross operating profit.

Table 8 shows an estimation of gross operating profit in the related industries. In average, a total cost will be about 87% of the total sales of the related industries and a gross operating profit rate will be about 13% of the total sales of the same sources.

It is estimated that expenditure by day trippers will distribute in the same pattern as night-stay visitors.

Table 2 Estimated Model Study - (1)
Room Occupancy Rate and Gross Operating Profit: Foreign Tourists Hotel

Condition: Double Occupancy Rate = 1.6 Tourists a Room
Expenditure = \$05 Baht a day (1983) Refer to Annex 2.
Number of Rooms = 550 Rooms

Annual Sales (full occupancy) = 1.6 x \$05 x 550 x 365
= 162.1 million Baht.

Business tax = 7.0% Unit: million Baht

	30	40	50	60	70	75	80	85	90	100	NOTE
1 Room Occupancy (%)											
<u>Sales: Expenditure</u>											
2 Room	20.3	27.1	34.0	40.7	47.5	50.9	54.2	57.6	61.0	67.8	2 x 0.45 = 1 x 67.8
3 Food	15.8	21.1	26.4	31.6	36.9	39.5	42.2	44.8	47.4	52.7	2 x 0.35 = 1 x 52.7
4 Beverage	4.5	6.0	7.6	9.1	10.6	11.3	12.1	12.8	13.6	15.1	2 x 0.10 = 1 x 15.1
5 Other	4.5	6.0	7.6	9.1	10.6	11.3	12.1	12.8	13.6	15.1	2 x 0.10 = 1 x 15.1
6 Total Sales	45.1	60.2	75.6	90.5	105.6	113.0	120.6	128.0	135.6	150.7	1 x 162.1 x 93% = 150.7
<u>Cost Expenses: Cost of Sales</u>											
7 Food	6.3	8.4	10.6	12.6	14.8	15.8	16.9	17.9	19.0	21.1	1 x 0.40
8 Beverage	1.4	1.8	2.3	2.7	3.2	3.4	3.6	3.8	4.1	4.5	2 x 0.30
9 Other	1.4	1.8	2.3	2.7	3.2	3.4	3.6	3.8	4.1	4.5	2 x 0.30
10 Sub-Total	9.1	12.0	15.2	18.0	21.2	22.6	24.1	25.5	27.2	30.1	2 x 0.20 = 1 x 30.1
11 Payroll	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
12 Other Department Expenses	4.5	6.0	7.6	9.1	10.6	11.3	12.0	12.8	13.6	15.1	2 x 0.10 = 1 x 15.1
13 Sub-Total of Cost and Expenses	33.6	38.0	42.8	47.1	51.8	53.9	56.1	58.3	60.8	65.2	20.0 + 1 x 45.2
14 <u>Gross Income</u>	11.5	22.2	32.8	43.4	53.8	59.1	64.5	69.7	74.8	85.5	2 - 13 = 1 x 105.5 = 20.7
<u>Undistributed Expenses</u>											
15 Administration and Management Fees	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	150.7 x 0.05 = 7.5
16 Promotion	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	150.7 x 0.02 = 3.0
17 Heat, Light, Power (Utilities)	4.9	5.3	5.7	6.1	6.5	6.7	6.8	7.0	7.2	7.6	150.7 x 0.025 = 3.8 150.7 = 3.8 + 1 x 3.8
18 Maintenance	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	150.7 x 0.02 = 3.0
19 Taxes and Duties	0.5	0.6	0.8	0.9	1.1	1.1	1.2	1.3	1.4	1.5	1 x 150.7 x 0.01 = 1 x 1.5
20 Sub-Total of Expenses	18.9	19.4	20.0	20.5	21.1	21.3	21.5	21.8	22.1	22.6	17.3 + 1 x 5.3
21 Total of Cost and Expenses	52.5	57.4	62.8	67.6	72.9	75.2	77.6	80.1	82.9	87.8	20 + 13 = 37.3 + 1 x 50.5
22 <u>Gross Operating Profit</u>	-7.4	2.8	12.8	22.9	32.7	37.8	43.0	47.9	52.7	62.9	2 - 21 = 1 x 100.2 = 67.3
	-16.4%	4.7%	16.9%	25.3%	31.0%	33.5%	35.7%	37.4%	38.9%	41.7%	

Table 3 Estimated Model Study - (2)
Room Occupancy Rate and Gross Operating Profit.: Domestic Tourists Hotel

		Condition: Double Occupancy Rate = 1.6 Tourists a Room Expenditure = 355 Baht a day (1985). Refer to Annex 2. Number of Rooms = 550 Rooms Annual Sales (full occupancy) = 1.6 x 355 x 550 x 365 = 113.9 million Baht Business Tax = 7.0%. Unit: million Bahts										NOTE	
		0.30	40	50	60	70	75	80	85	90	100		
1	Room Occupancy (%)	0.30	40	50	60	70	75	80	85	90	100		
<u>Sales: Expenditure</u>													
1	Room	14.3	19.1	23.9	28.6	33.4	35.8	38.2	40.5	42.9	47.7	2	$2 \times 0.45 = 1 \times 47.7$
4	Food	11.1	14.8	18.6	22.3	26.0	27.8	29.7	31.5	33.4	37.1	2	$2 \times 0.35 = 1 \times 37.1$
5	Beverage	3.2	4.2	5.3	6.4	7.4	8.0	8.5	9.0	9.5	10.6	2	$2 \times 0.10 = 1 \times 10.6$
6	Other	3.2	4.2	5.3	6.4	7.4	8.0	8.5	9.0	9.5	10.6	2	$2 \times 0.10 = 1 \times 10.6$
7	Total Sales	31.8	42.3	53.1	63.7	74.2	79.6	84.9	90.0	95.3	106.0	1	$1 \times 113.9 \times 93\% = 1 \times 106.0$
<u>Cost Expenses: Cost of Sales</u>													
7	Food	4.4	5.9	7.4	8.9	10.4	11.1	11.9	12.6	13.4	14.8	4	4×0.40
8	Beverage	1.0	1.3	1.6	1.9	2.2	2.4	2.6	2.7	2.9	3.2	5	5×0.30
9	Others	1.0	1.3	1.6	1.9	2.2	2.4	2.6	2.7	2.9	3.2	6	6×0.30
10	Sub-Total	6.4	8.5	10.6	12.7	14.8	15.9	17.0	18.0	19.1	21.2	2	$2 \times 0.20 = 1 \times 21.2$
11	Payroll	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	106.0	$106.0 \times 0.15 = 15.9$
12	Other Department Expenses	3.2	4.2	5.3	6.4	7.4	8.0	8.5	9.0	9.5	10.6	2	$2 \times 0.1 = 1 \times 10.6$
13	Sub-Total of Cost and Expenses	25.5	28.6	31.8	35.0	38.1	39.8	41.4	42.9	44.5	47.7	15.9	$15.9 + 1 \times 31.8$
14	Gross Income	6.3	13.7	21.3	28.7	36.1	39.8	43.5	47.1	50.8	58.3	2-13	$(1 \times 74.2 - 15.9)$
<u>Undistributed Expenses</u>													
15	Administration and Management Fees	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	106.0	$106.0 \times 0.06 = 6.3$
16	Promotion	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	106.0	$106.0 \times 0.02 = 2.1$
17	Heat, Light, Power (Utilities)	3.5	3.8	4.1	4.3	4.6	4.7	4.9	5.0	5.1	5.4	106.0	$106.0 \times 0.025 = 2.7$ $106.0 \times 2.7 = 1 \times 2.7$
18	Maintenance	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	106.0	$106.0 \times 0.02 = 2.1$
19	Taxes and Duties	0.3	0.4	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.1	1	$1 \times 106.0 \times 0.01 = 1 \times 1.1$
20	Sub-Total of Expenses	14.3	14.7	15.2	15.5	15.9	16.0	16.3	16.4	16.4	17.0	13.2	1×3.8
21	Total of Cost and Expenses	39.8	43.3	47.0	50.5	54.0	55.8	57.7	59.3	61.1	64.7	(29.1)	(1×35.6)
22	Gross Operating Profit	-8.0	-1.0	6.1	13.2	20.2	23.8	27.2	30.7	34.2	42.3	(1	$(1 \times 70.4 - 29.1)$
		-25.1%	-2.4%	11.5%	20.7%	27.2%	29.9%	32.0%	34.1%	35.9%	39.9%		

Table 5. Sales Cost and Gross Operating Profile

Model	No.	Item	Foreign Tourists Million Baht/ 550 room-year	Domestic Tourists Million Baht/ 550 room-year	Average Million Baht/ 550 room-year
for Hotel Room 550	1	Cost of Sales	30.1R	21.2R	28.2R
	2	Payroll	20.0	15.9	18.9
	3	Other Department Expenses	15.1R	10.6R	14.0R
	4	Subtotal (2 + 3)	20.0 + 15.1R	15.9 + 10.6R	18.9 + 14.0R
	5	Administration and Management	7.5	6.3	7.2
	6	Promotion	3.0	2.1	2.7
	7	Utilities	3.8 + 3.8R	2.7 + 2.7R	3.5 + 3.5R
	8	Maintenance	3.0	2.1	2.7
	9	Tax and duties	1.5R	1.1R	1.4R
	10	Subtotal (5 ~ 9)	17.3 + 5.3R	13.2 + 3.8R	16.1 + 4.9R
for One Room	11	Total (4 + 10)	37.3 + 20.4R	29.1 + 14.4R	35.0 + 18.9R
	12	Grand Total(1 + 11)	37.3 + 50.5R	29.1 + 35.6R	35.0 + 47.1R
	1	Cost of Sales	Thousand Baht/ room-year	Thousand Baht/ room-year	Thousand Baht/ room-year
	4	Subtotal (2 + 3)	54.7R	38.5R	51.3R
	10	Subtotal (5 ~ 9)	36.4 + 27.5R	28.9 + 19.3R	34.3 + 25.4R
	11	Total (4 + 10)	31.5 + 9.6R	24.0 + 6.9R	29.3 + 8.9R
12	Grand Total(1 + 11)	67.9 + 37.1R	52.9 + 26.2R	63.6 + 34.3R	
			67.9 + 91.8R	52.9 + 64.7R	63.6 + 85.6R

Note 1) R is room occupancy rate in %.

2) Refer to Table 2 and Table 3.

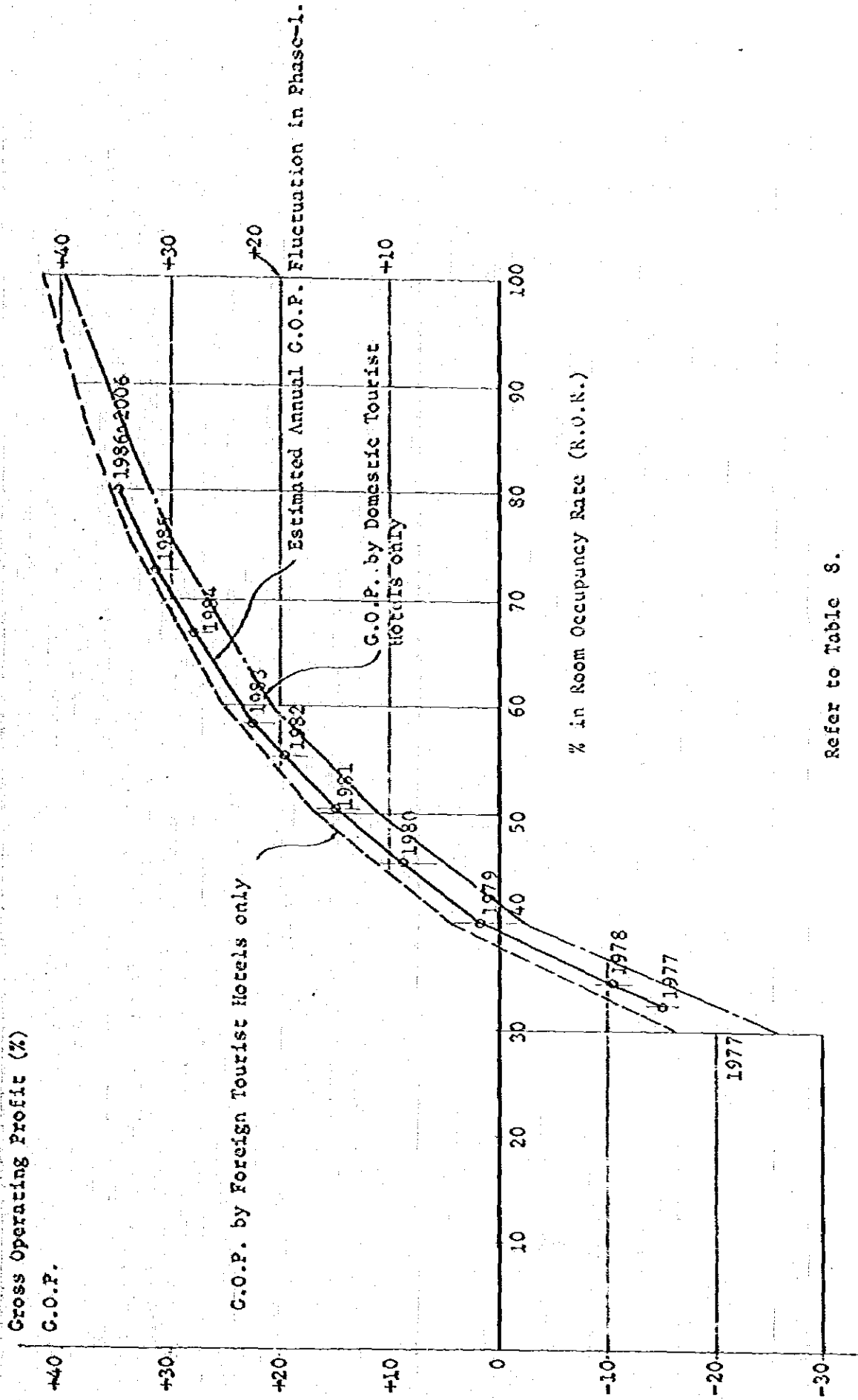
Table 8 Estimated Gross Operating Profit for Hotel Industry in Pallaya

No.	Year	Guest Night (unit: 1,000)		Ratio (1)+((1)+(2)) %	Room Occupancy Rate %	Gross Operation Profit %
		(1) Foreign	(2) Domestic			
1	1977	396	261	60.3	31.2	-15.0
2	1978	439	275	61.5	34.0	-10.5
3	1979	516	326	61.3	40.0	+ 2.0
4	1980	603	353	63.1	45.4	+ 9.0
5	1981	704	397	63.9	50.3	+15.0
6	1982	831	412	66.9	55.3	+20.0
7	1983	972	428	69.4	58.3	+23.0
8	1984	1,130	473	69.3	65.7	+28.0
9	1985	1,305	490	72.7	72.6	+31.0
10	1986	1,500	510	74.6	80.0	+34.5
11	1987		480		78.8	
12	1988					
13	1989					
14	1990					
15	1991					
16	1992					
17	1993					
18	1994					
19	1995					
20	1996					
21	1997					
22	1998					
23	1999					
24	2000					
25	2001					
26	2002					
27	2003					
28	2004					
29	2005					
30	2006	1,500	480	74.6	78.8	+34.5
Total		38,396	13,525	73.9	70.3	+28.7

Note: for the Guest Night, Refer to Table 9. Annex 12.

(Average)

Fig. 1 Gross Operating Profit (G.O.P.) for Hotel Industry in Pattaya



Refer to Table 8.

Table 9 Gross Operating Profit in Related Tourism Industries (%)

Cost Items	Restaurants		Amenity and Inland Activities		Shops		Average			
	*1 Ratio	*2 Spend. Share	*3 Share	Ratio	Spend. Share	Ratio		Spend. Share		
Sales Cost	40.0%	31.4%	12.6%	10.0%	34.6%	3.5%	60.0%	34.0%	20.4%	36.5%
Operating Cost	30.0	"	9.4	65.0	"	22.5	25.0	"	8.5	40.4
Undistributed Expenses	10.0	"	3.1	10.0	"	3.5	10.0	"	3.4	10.0
Total Cost	80.0	"	-	85.0	"	-	95.0	"	-	86.9
Gross Operating Profit	20.0%	"	-	15.0%	"	-	5.0%	"	-	13.1%

Note *1. Ratio for total sales (100%)
 *2. Spending a day by a tourist (three days of stay)
 Refer Annex-2.
 *3. Share of cost for each, (*1 x *2)

Table 10 Cost Distribution of Sales in Hotel Industry (Model Study)

Year	Room Occupancy Rate (R) %	Annual Total Sales million Baht *1	Payroll and Other Department Expenses		Undistributed Expenses		Percentage in Total Sales	Cost of Sales in Percentage	Total Cost and Expenses on Total Sales in %
			million Baht/550 Rooms	Percentage in Total Sales	million Baht/550 Rooms	Percentage in Total Sales			
1977	31.2%	43.4	18.9 + 14.R	53.7%	16.1 + 4.9R	40.6%	20.0%	114.3	
78	34.0	47.3	23.3	50.1	17.6	37.6		107.7	
79	40.0	55.6	23.7	44.1	17.8	32.6		96.7	
80	45.5	63.3	24.5	40.0	18.1	28.9		88.9	
81	50.3	70.0	25.3	37.0	18.3	26.9		83.9	
82	55.3	76.9	25.9	34.6	18.8	24.4		79.0	
83	58.3	81.1	26.6	33.4	18.8	23.4		76.8	
84	65.7	91.4	27.1	30.7	19.0	21.1		71.8	
85	72.6	101.0	28.1	28.8	19.3	19.5		68.3	
86	80.0	111.3	29.1	27.0	19.7	18.0		65.0	
87	78.7	109.5	30.1	27.3	20.0	18.2		65.5	
↓			↓	↓	↓	↓		↓	
2006	78.7	109.5	29.9	27.3	19.9	18.2		65.5	

Note 1) Refer to Table 7.

Note 2) Total sales in average: $150.7 \times 74\% + 106.0 \times 26\% = 111.5 + 27.6 = 139.1$ million Baht/550 Rooms. year

**ANNEX 5. IMPLEMENTATION SCHEDULE OF OTHER FACILITIES:
"CATEGORY - B"**

C O N T E N T S

	<u>Page</u>
Table 1. Implementation Schedule of Facilities	
in Main Amenity Core	5-1
2. do	
in Northern Core	5-1
3. do	
in Inland Activity Zones	5-2
4. do	
in Beach Facility (Ko Lan Island)	5-2
5. Implementation Schedule of Social	
Infrastructures	5-3
6. do	
in Hotels by Private Investment	5-3
7. do	
in Restaurants and Others by Private	
Investment	5-4

Table 3 Implementation Schedule of Facilities in Inland Activity Zones

Facilities	Unit in m ²	Schedule											
		1977	1978	1979	1980	1981	1982	1983	1984	1985	1986		
Northern Activity Zone	100,000												
Natural Zone	700,000												
Orchid Garden	40,000												
Central Activity Zone	40,000												
Elephant-at-Work Display	40,000												
Animal Park	50,000												
Botanical Garden	60,000												
Central Park	400,000												

Table 4 Implementation Schedule of Facilities in Beach Facility (Ko Lan Island)

Facilities	Unit in m ²	Schedule											
		1977	1978	1979	1980	1981	1982	1983	1984	1985	1986		
Earth Work	5,000												
Building	2,090												

Table 5 Implementation Schedule of Social Infrastructures

Facilities	Unit ₂ in m ²	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	
School		-----										
Community Facilities												
{ Communication Center		-----										
{ Post Office		-----										
{ Police Box		-----										
{ Fire Department		-----										
{ Hospital		-----										
Open Space												
{ City Park		-----										
{ Children Park		-----										
{ Promenade		-----										
Open Space												
{ Children Park		-----										
{ Promenade		-----										
School		-----										
Community Facilities												
{ Communication Center		-----										
{ Post Office		-----										
{ Police Box		-----										
{ Fire Department		-----										
{ Hospital		-----										
Open Space												
{ City Park		-----										
{ Children Park		-----										
{ Promenade		-----										

Table 6 Implementation Schedule of Facilities in Hotels by Private Investment

Facilities	Unit in m ²	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Earth Works											
Buildings											
Parking Areas											
Landscaping											
Facility in Ko Lun Island											

Table 7 Implementation Schedule of Facilities in Restaurants and Others by Private Investment

Facilities	Unit in m ²	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Earth Works											
Buildings											

ANNEX 6. PROJECT COST ESTIMATION

ANNEX 6. PROJECT COST ESTIMATION

C O N T E N T S

<u>Table</u>	<u>Page</u>
1. Total Project Cost	6-1
1.1 Total Project Cost by Infrastructure and Other Facilities ...	6-2
1.2 Total Project Cost of Infrastructure by Major Project Components Category A	6-3
1.3 Total Project Cost by Other Facilities, Category B	6-4
1.4 Breakdown of Project Cost of Infrastructure in Area	6-5
2. Construction Cost and Land Cost: Category A	6-6
2.1 Construction Cost: Public Sector: Phase-1, Category A	6-7
2.2 Land Cost : Public Sector: Phase-1, Category A	6-7
2.3 Construction Cost (1): Road and Street System: Phase-1	6-8
2.4 do (2): Sewerage System: Phase-1	6-9
2.5 do (3): Storm Water Drainage System: Phase-1	6-10
2.6 do (4): Solid Waste Disposal System: Phase-1	6-11
2.7 do (5): Port Facilities: Phase-1	6-12
2.8 do (6): Water Supply System: Phase-1	6-13
2.9 Annual Distribution of Construction and Land Cost: Tourism and Residential Areas	6-14
2.10 do : Tourism Area	6-15
2.11 do : Residential Area	6-16
2.12 Maintenance & Operation Cost: Residential and Tourism Area	6-17
2.13 do : Tourism Area	6-18
2.14 do : Residential Area	6-19
3. Construction Cost and Land Cost: Category B	6-20
3.1 Construction Cost and Land Cost: Phase-1, Category B	6-21
3.2 Construction Cost (1): Social Infrastructure	6-22
3.3 do (2): Amenity Cores	6-23
3.4 do (3): Activity Zones and Beach Facilities..	6-24
3.5 do (4): Hotels	6-25
3.6 do (5): Restaurants	6-26

		<u>Page</u>
3.7	Social Infrastructure (1): Total Cost for Three Residential Areas	6-27
3.8	do (2): Na Klua Town-A	6-28
3.9	do (3): Na Klua Town-B	6-29
3.10	do (4): Northern New Town	6-30
3.11	do (5): Land Acquisition	6-31
3.12	Breakdown of Construction Cost:	
	Main Amenity Core (Pattaya)	6-32
3.13	do : Northern Core (Pattaya)	6-33
3.14	do : Inland Activity Zones	6-34
3.15	do : Beach Facility (Ko Lan Island)	6-35
3.16	do : Hotels (Private)	6-36
3.17	do : Restaurants (Private)	6-37
3.18	Unit Cost for Amenity Core (Public)	6-38
3.19	do Inland Activity Zones (Public)	6-39
3.20	do Service Facility in Ko Lan Island	6-39
4.	Detailed Cost Estimation: Category A	6-40
4.1	Road and Street System	6-40
4.1.1	The Quantities of Construction-(1)	6-41
4.1.2	do -(2)	6-41
4.1.3	do -(3)	6-42
4.1.4	do -(4)	6-42
4.1.5	do -(5)	6-43
4.1.6	do -(6)	6-43
4.1.7	do -(7) Beach Road (T3) (Excluding Park Facility)	6-44
4.1.8	do -(8) Ko Lan Island	6-45
4.1.9	Unit Price-(1): Earth Work	6-46
4.1.10	do -(2): Instrument	6-47
4.1.11	Compensation	6-48
4.1.12	Land Price	6-49
4.1.13	Construction Cost for Tourism Area	6-50
4.1.14	do for Residential Area (Na Klua/Pattaya) ...	6-51
4.1.15	Maintenance and Operation Cost for Tourism Area (Pattaya) ..	6-52
4.1.16	do for Residential Area (Na Klua/Pattaya) ...	6-53
4.2	Sewerage System	6-54

	<u>Page</u>
4.2.1a Construction Cost of Sewerage System -(1)	6-55
4.2.1b do do -(2)	6-56
4.2.2 The Quantities of Construction -(1): Treatment Plant and Pumping Station	6-57
4.2.3 The Quantities of Construction -(2): Sewer Main and Branch	6-62
4.2.4 Operation & Maintenance Cost	6-69
4.3 Storm Water Drainage System	6-70
4.3.1 Phase 1 Construction and Land Costs for Storm Water Drainage System (Central Pattaya Area)	6-71
4.3.2 do (Southern Na Klua Area)	6-71
4.3.3 Quantity of Work (Phase 1 up to 1986)	6-72
4.3.4 Unit Cost by Work	6-72
4.4 Solid Waste Disposal System	6-73
4.4.1 Construction Cost	6-74
4.4.2 Maintenance & Operation Cost	6-75
4.5 Port Facilities	6-76
4.5.1 Construction Cost-(1) (Pier & Revetment)	6-77
4.5.2 do -(2)	6-78
4.5.3 do -(3)	6-79
4.5.4 do -(4)	6-80

1. Total Project Cost

Table 1.1 Total Project Cost by Infrastructure and Other Facilities

Unit: million Baht

Category	Land Acquisition ^{*3}	Civil Works and Equipment	Consulting Services	Total Physical Facilities	Project Administration	Total Project Cost	
						Cost	US\$ million
A: Infrastructure ^{*1}	221.8	706.9	65.3	994.0 (34%)	98.2	1,092.2	54.6
B: Other Facilities ^{*2}	633.7	961.1	96.1	1,690.9 (57%)	30.8	1,721.7	86.1
<u>Base Line Cost</u>	855.5	1,668.0	161.4	2,684.9	129.0	2,813.9	140.7
Physical Increase	-	117.0	11.3	128.3 (4%)	-	128.3	
Price Increase	-	133.7	12.9	146.6 (5%)	-	146.6	
<u>Contingencies Sub-Total</u>	-	250.7	24.2	274.9	-	274.9	13.8
Total Project Cost	855.5 (29%)	1,918.7 (65%)	185.6 (6%)	2,959.8 (100%)	129.0	3,088.8	154.5

Notes: *1 : Public Infrastructure such as Road and Street System, Sewerage System, Storm Water Drainage System, Solid Waste Collection and Disposal, Port Facilities and Water Supply System.
for Financial and Economic Analysis.

*2 : Other Facilities in Public Sector -- Tourism -- Amenity Core, Inland Activity Facilities.
-- Residential -- School, Hospital and Open space.

Other Facilities in Private Sector -- Tourism -- Hotels and Restaurants
for Economic Analysis.

*3 : No contingencies put on the land Acquisition.

Table 1.2 Total Project Cost of Infrastructure by Major Project Components
Category-A

Unit: million Baht

Major Project Components	Land Acquisition	Civil Works and Equipment	Consulting Services	Total Physical Facilities	Project Administration	Total Project Cost	
						Cost	US\$ million
Road and Street System	182.5	129.1	11.5	323.1 (29%)	26.0	349.1	17.4
Sewerage System	18.1	159.3	14.7	192.1 (17%)	19.9	212.0	10.6
Storm Water Drainage System	18.4	22.9	2.4	43.7 (4%)	5.6	49.3	2.5
Solid Waste Disposal System	0.6	19.7	1.8	22.1 (2%)	13.1	35.2	1.8
Port Facilities	-	53.6	5.4	59.0 (6%)	6.2	65.2	3.2
Water Supply System #1	2.2	322.3	29.5	354.0 (32%)	27.4	381.4	19.1
<u>Base Line Cost</u>	221.8	706.9	65.3	994.0	98.2	1,092.2	54.6
Physical Increase	-	49.5	4.6	54.1 (5%)	-	54.1	2.7
Price Increase	-	56.6	5.2	61.8 (5%)	-	61.8	3.1
<u>Contingencies</u>	-	106.1	9.8	115.9	-	115.9	5.8
<u>Sub-Total</u>							
Total Project Cost	221.8 (20%)	813.0 (73%)	75.1 (7%)	1,109.9 (100%)	98.2	1,208.1	60.4

Note #1 Cost on Water Supply System was estimated tentatively based on the study output by the Masterplan.

Table 1.3 Total Project Cost by Other Facilities

Category 3

Unit: million Baht

Major Project Components	Land Acquisition	Civil Works and Equipment	Consulting Services	Total Physical Facilities	Project Administration	Total Project Cost	Total Project
							US\$ million
Public Amenity Core *1	258.0	130.0	13.0	401.0 (22%)	30.8	431.8	21.6
Social Infrastructure *2	140.6	235.3	23.5	399.4 (22%)	-	399.4	20.0
Hotel and Restaurant *3	235.1	595.8	59.6	890.5 (48%)	-	890.5	44.5
<u>Base Line Cost</u>	633.7	961.1	96.1	1,690.9	30.8	1,721.7	86.1
Physical Increase	-	67.5	6.7	74.2 (4%)	-	74.2	
Price Increase	-	77.1	7.7	84.8 (4%)	-	84.8	
<u>Contingencies</u>	-	144.6	14.4	159.0	-	159.0	8.0
<u>Sub-Total</u>	633.7 (34%)	1,105.7 (60%)	110.5 (6%)	1,849.9 (100%)	30.8	1,880.7	94.1
Total Project Cost							

Notes: *1 : Public Amenity Core Main Amenity Core, Northern Core. Inland Activity Zones, and Beach Facilities.

*2 : Social Infrastructure School and their related facilities, Community Facilities as Communication Center, Fire Department and Hospital and Open Space as City Park, Children Play Park and Promenade.

*3 : Hotel and Restaurant by Private Sector.

Table 1.4 Breakdown of Project Cost of Infrastructure in Areas

Category A

Unit: million Baht

Area	Land Acquisition		Civil Works and Equipment		Consulting Services		Total Physical Facilities		Project Administration		Total Project Cost		US\$ million				
	L	F	L	F	L	F	L	F	L	F	L	F					
Tourism Area	102.9	-	216.0	70.3	286.3	-	26.3	26.3	318.9	96.6	415.5 (37%)	48.8	-	367.7	96.6	464.3	23.2
Residential Area	118.9	-	322.7	98.0	420.7	-	39.0	39.0	441.6	137.0	578.6 (52%)	49.4	-	491.0	137.0	628.0	31.4
<u>Base Line Cost</u>	221.8	-	538.7	168.3	707.0	-	65.3	65.3	760.5	233.6	994.1	98.2	-	858.7	233.6	1,092.3	54.6
Physical Increase	-	-	37.7	11.8	49.5	-	4.6	4.6	37.7	16.4	54.1 (5%)	-	-	37.7	16.4	54.1	-
Price Increase	-	-	43.1	13.5	56.6	-	5.2	5.2	43.1	18.7	61.8 (6%)	-	-	43.1	18.7	61.8	-
<u>Contingencies</u> <u>Sub-Total</u>	-	-	80.8	25.3	106.1	-	9.8	9.8	80.8	35.1	115.9	-	-	80.8	35.1	115.9	5.8
Total Project Cost	221.8	-	619.5	193.6	813.1 (73%)	-	75.1	75.1 (7%)	841.3	268.7	1,110.0 (100%)	98.2	-	939.5	268.7	1,208.2	60.4

Note: L = Local Currency portion in million Baht

F = Foreign Currency portion in million Baht

T = Total

2. Construction Cost and Land Cost: Category A, Infrastructure

Table 2.1 Construction Cost : Public Sector : Phase-1

Category A
(excluding Land Cost)

Unit: x10³Baht

System	-	Tourism Area	Residential Area	Total
1. Road and Street	L	51,961	58,884	110,845
	F	13,579	4,660	18,239
	T	65,540	63,544	129,084 (18%)
2. Sewerage	L	39,928	82,136	122,064
	F	16,588	20,660	37,248
	T	56,516	102,796	159,312 (23%)
3. Storm Water Drainage *1	L	14,453	7,209	21,662
	F	940	338	1,278
	T	15,393	7,547	22,940 (3%)
4. Solid Waste Disposal	L	2,102	3,760	5,862
	F	5,625	8,200	13,825
	T	7,727	11,960	19,687 (3%)
5. Port Facilities	L	45,618	-	45,618
	F	7,986	-	7,986
	T	53,604	-	53,604 (8%)
6. Water Supply	L	61,922	170,671	232,593
	F	25,620	64,130	89,750
	T	87,542	234,801	322,343 (45%)
Total	L	215,984 (5%)	322,660 (6%)	538,644 (76%)
	F	70,338 (24%)	97,988 (24%)	168,326 (24%)
	T	286,322 (100%)	420,648 (100%)	706,970 (100%)
		(40%)	(60%)	(100%)

Notes:

L: Local Currency
F: Foreign Currency
T: Total

*1 Cost for collection trucks and other mechanical instrument are put on the operation cost.

Table 2.2 Land Cost : Public Sector : Phase-1

Category A

Unit: x10³Baht

System	Tourism	Residential	Total
1 Road and Street	80,064	102,427	182,491
2 Sewerage *2	5,016	13,067	18,083
3 Storm Water Drainage	17,137	1,306	18,443
4 Solid Waste Disposal	171	416	587
5 Port Facilities *1	-	-	-
6 Water Supply *2	549	1,691	2,240
Total	102,937	118,907	221,844

Note: *1 Port Facilities will install on the reclaimed land.

*2 Piping works such as distribution lines and sewer main etc, will be executed on the right of way of the road and street system.

Table 2.3 Construction Cost (1) : Road and Street System : Phase-1

Unit: x10³Baht

Works Road Categories	-	Tourism Area	Residential Area	Total
1. T-1 Arterial Tourism Road	L	29,238	-	29,238
	F	7,355	-	7,355
	T	36,593 (41,283)*	-	36,593 (41,283)
2. T-2 Tourism Road	L	5,838	-	5,838
	F	1,812	-	1,812
	T	7,650 (2,275)	-	7,650 (2,275)
3. T-3 Beach Promenade	L	6,588	-	6,588
	F	3,173	-	3,173
	T	9,761	-	9,761
4. T-4 Park Street	L	1,268	-	1,268
	F	249	-	249
	T	1,517 (749)	-	1,517 (749)
5. T-5 Tourism Access Street	L	6,442	-	6,442
	F	791	-	791
	T	7,233 (20,177)	-	7,233 (20,177)
6. T-6 Tourism Access Street	L	2,124	-	2,124
	F	122	-	122
	T	2,246 (15,456)	-	2,246 (15,456)
7. Ko Lan Island Tourism Promenade	L	463	-	463
	F	77	-	77
	T	540 (124)	-	540 (124)
8. R-1 Main Residential Road	L	-	19,654	19,654
	F	-	2,412	2,412
	T	-	22,066 (13,436)	22,066 (13,436)
9. R-2 Collector Street	L	-	39,230	39,230
	F	-	2,248	2,248
	T	-	41,478 (88,991)	41,478 (88,991)
Sub-Total	L	51,961	58,884	110,845
	F	13,579	4,660	18,239
	T	65,540	63,544	129,084
10. Land Cost	L	(80,064)	102,427	(182,491)
	F	-	-	-
	T	(80,064)	102,427	(182,491)
Total	L	132,025	161,311	293,336
	F	13,579	4,660	18,239
	T	145,604	165,971	311,575

L: Local Currency

F: Foreign Currency

T: Total

* Figures in parentheses show Land Cost.

Table 2.4 Construction Cost (2) : Sewerage System : Phase-1

Unit: x10³Baht

Works	-	Tourism Area	Residential Area	Total
1. Sewerage Pipeline	L	23,779	48,844	72,623
	F	4,046	8,962	13,008
	T	27,825	57,806	85,631
2. Pumping Station	L	5,266	2,911	8,177
	F	219	127	346
	T	5,485	3,038	8,523
3. Treatment Plant	L	8,423	28,215	36,638
	F	2,185	6,431	8,616
	T	10,608	34,646	45,254
4. Electric & Machinery	L	924	1,654	2,578
	F	3,789	5,140	8,929
	T	4,713	6,794	11,507
5. Piping System	L	-	512	512
	F	-	0	0
	T	-	512	512
6. Ko Lan Island (Purification Tanks)	L	1,536	-	1,536
	F	6,349	-	6,349
	T	7,885	-	7,885
Sub-Total	L	39,928	82,136	122,064
	F	16,588	20,660	37,248
	T	56,516	102,796	159,312
7. Land Cost	L	5,016	13,067	18,083
	F	-	-	-
	T	5,016	13,067	18,083
Total	L	44,944	95,203	140,147
	F	16,588	20,660	37,248
	T	61,532	115,863	177,395

L: Local Currency
 F: Foreign Currency
 T: Total

Table 2.5 Construction Cost (3) : Storm Water Drainage System : Phase-1

Works	-	Unit: x10 ³ Baht		
		Tourism Area	Residential Area	Total
1. Open Channel	L	6,333	4,462	10,795
	F	531	258	789
	T	6,864	4,720	11,584
2. Box Culvert	L	2,700	615	3,315
	F	53	12	65
	T	2,753	627	3,380
3. Weir (Spillway)	L	696	-	696
	F	24	-	24
	T	720	-	720
4. Branch Open Channel	L	4,265	2,132	6,397
	F	135	68	203
	T	4,400	2,200	6,600
5. Grading of Pond (at Central Park)	L	459	-	459
	F	197	-	197
	T	656	-	656
Sub-Total	L	14,453	7,209	21,662
	F	940	338	1,278
	T	15,393	7,547	22,940
6. Land Cost	L	17,137	1,306	18,443
	F	-	-	-
	T	17,137	1,306	18,443
Total	L	31,590	8,515	40,105
	F	940	338	1,278
	T	32,530	8,853	41,383

L: Local Currency
 F: Foreign Currency
 T: Total

Table 2.6 Construction Cost (4) : Solid Waste Disposal System : Phase-1

Unit: x10³Baht

Works		Tourism Area	Residential Area	Total
1. Pattaya *1	L	1,716	1,893	3,609
	F	3,891	4,116	8,007
	T	5,607	6,009	11,616
2. Na Klua *2	L	-	1,867	1,867
	F	-	4,084	4,084
	T	-	5,951	5,951
3. Ko Lan Island *3	L	386	-	386
	F	1,734	-	1,734
	T	2,120	-	2,120
Sub-Total	L	2,102	3,760	5,862
	F	5,625	8,200	13,825
	T	7,727	11,960	19,687
4. Land Cost	L	171	416	587
	F	-	-	-
	T	171	416	587
Total	L	2,273	4,176	6,449
	F	5,625	8,200	13,825
	T	7,898	12,376	20,274

Notes:

- L: Local Currency
- F: Foreign Currency
- T: Total

*1, *2 : Sanitary Landfill method is adopted for Mainland.

*3 : Incinerators will be installed in Ko Lan Island.

Table 2.7 Construction Cost (5) : Port Facilities : Phase-1

for Pattaya/Ko Lan Piers

Unit: x10³Baht

Works	-	Tourism Area	Residential Area	Total
1. Pier	L	11,605		11,605
	F	176	-	176
	T	11,781		11,781
2. Revetment [1]+[2]	L	7,587		7,587
	F	41	-	41
	T	7,628		7,628
3. Artificial Beach	L	622		622
	F	-	-	-
	T	622		622
4. Dredging	L	1,345		1,345
	F	3,552	-	3,552
	T	4,897		4,897
5. Land Reclamation	L	6,105		6,105
	F	1,628	-	1,628
	T	7,733		7,733
6. Navigation Aids	L	215		215
	F	1,630	-	1,630
	T	1,845		1,845
7. Administration Office	L	3,009		3,009
	F	-	-	-
	T	3,009		3,009
8. Park	L	771		771
	F	-	-	-
	T	771		771
9. Road and Lighting	L	679		679
	F	757	-	757
	T	1,436		1,436
10. Lanching Way	L	186		186
	F	-	-	-
	T	186		186
11. Ko Lan Island (Three Piers)	L	13,494		13,494
	F	202	-	202
	T	13,696		13,696
Total	L	45,618		45,618
	F	7,986	-	7,986
	T	53,604		53,604

L: Local Currency
 F: Foreign Currency
 T: Total

Table 2.8 Construction Cost (6) : Water Supply System : Phase-1

Works		Unit: x10 ³ Baht		
		Tourism Area	Residential Area	Total
1. Intake	L	1,105	3,335	4,440
	F	521	1,569	2,090
	T	1,626	4,904	6,530
2. Raw Water Main	L	2,175	6,555	8,730
	F	-	-	-
	T	2,175	6,555	8,730
3. Treatment Plant	L	25,859	77,956	103,815
	F	12,996	39,174	52,170
	T	38,855	117,130	155,985
4. Transmission Pipe	L	2,576	2,904	5,480
	F	3,182	3,588	6,770
	T	5,758	6,492	12,250
5. Service Reservoir	L	6,640	20,204	26,844
	F	-	-	-
	T	6,640	20,204	26,844
6. Electric & Instrument Pumping Well & House	L	7,110	23,144	30,254
	F	3,910	12,730	16,640
	T	11,020	35,874	46,894
7. Lifting Pump	L	170	552	722
	F	395	1,285	1,680
	T	565	1,837	2,402
8. Elevated Tank	L	6,845	21,421	28,266
	F	329	1,031	1,360
	T	7,174	22,452	29,626
9. Distribution Pipe	L	8,310	14,600	22,910
	F	4,287	4,753	9,040
	T	12,597	19,353	31,950
10. Ko Lan Island	L	1,132		1,132
	F	-		-
	T	1,132		1,132
Sub Total	L	61,922	170,671	232,593
	F	25,620	64,130	89,750
	T	87,542	234,801	322,343
11. Land Cost	L	549	1,691	2,240
	F	-	-	-
	T	549	1,691	2,240
Total	L	62,471	172,362	234,833
	F	25,620	64,130	89,750
	T	88,091	236,492	324,583

L: Local Currency
 F: Foreign Currency
 T: Total

Table 2.9 Annual Distribution of Construction and Land Cost: Tourism and Residential Areas

Unit: in 10³ baht

System No. Year	Road and Bridges		Waterage		Storm Water Drainage		Solid Waste Disposal		Port Facilities		Local	Sub Total	Foreign	Sub Total	Local	Sub Total	Foreign	Sub Total	Local	Sub Total	Foreign	Sub Total	TOTAL		
	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign														Local	Foreign
1 1977																									
2 1978																									
3 1979																									
4 1980	51,063 (99,039)	8,405	82,087 (18,003)	27,062	105,528 (18,003)			3,633 (300)	9,007	10,240 (300)				29,199 (=)	28,336 (=)	273,320 (7,260)	86,014	209,214 (2,240)				347,102 (119,948)	126,537	313,618 (119,948)	
5 1981	25,081 (49,031)	4,741	29,259 (49,031)	2,906	33,313 (=)			925 (417)	2,130	2,875 (417)				15,349 (=)	17,173 (=)	2,968 (=)	1,078	4,024 (=)				40,342 (34,003)	18,037	29,399 (34,003)	
6 1982	13,742 (19,205)	1,391	15,133 (19,205)	2,812	18,249 (=)			135 (=)	416	349 (=)				11,017 (1,282)	3,973 (=)	2,438 (=)	1,234	4,076 (=)				37,662 (18,037)	6,206	44,348 (18,037)	
7 1983	9,741 (11,689)	204	10,077 (11,689)	3,913	14,342 (=)			163 (=)	417	378 (=)				11,017 (1,282)	971 (=)	971 (=)	349	1,279 (=)				13,172 (11,689)	6,033	19,205 (11,689)	
8 1984	15,145 (13,390)	2,493	17,678 (13,390)	1,438	19,144 (=)			37 (=)	2	34 (=)				11,017 (1,282)	536 (=)	536 (=)	278	816 (=)				23,999 (13,390)	4,412	28,411 (13,390)	
9 1985	3,465 (1,037)	204	3,287 (1,037)	3,820	7,107 (=)			439 (=)	1,137	1,771 (=)				18,816 (=)	1,337 (=)	1,337 (=)	508	2,241 (=)				24,265 (1,037)	3,962	28,227 (1,037)	
10 1986																									
11 1987																									
20 1988																									
21 1989																									
30 2006																									
Total	110,965 (221,932)	18,240	129,085 (221,932)	37,687	159,717 (18,003)			3,662 (387)	13,823	19,967 (387)				45,616 (=)	53,906 (=)	257,392 (2,260)	98,732	377,364 (2,260)				538,666 (221,932)	168,228	707,277 (221,932)	

Note: Figures in the parentheses show the land cost.

Table 2.10 Annual Distribution of Construction and Land Cost : Tourism Area

Unit: million Baht

System No.	Year	Road and Street		Sewerage		Storm Water Drainage		Solid Waste Disposal		Port Facilities		Water Supply		LOCAL	FOREIGN	TOTAL
		Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign			
1	1977															
2	1978															
3	1979	79,449 (61,283)	7,407	20,326 (3,016)	4,213	24,274 (5,014)	6,213	7,076 (10,913)	3,914 (170)	7,076 (170)	26,339	2,339	26,339 (348)	79,453 (589)	61,143	374,373 (62,130)
4	1980	34,423 (36,387)	4,324	3,818	3,243	9,101	3,243	7,044 (10,913)	1,463 (1)	2,327	13,346	5,427	2,327	47,210 (47,246)	14,293	63,003 (67,498)
5	1981	79 (7)	-	2,082	2,075	4,137	2,075	7,643 (6,222)	137	181	3,473	640	3,473 (12)	2,448	3,319	29,092 (6,224)
6	1982	151 (12)	30	3,937	2,303	4,440	2,303	6,347 (6,222)	142	108	360	196	6,347 (12)	2,471	7,394 (12)	
7	1983	5,428 (1,275)	1,812	230	1,428	1,444	1,428	13	1	14	538	276	538 (2,275)	416	3,328	10,344 (3,275)
8	1984	71 (6)	-	7,233	1,474	4,451	1,474	163	493	636	363	147	363 (6)	550	2,128	30,038 (6)
9	1985							329	1,074	1,413	304	137	304 (64)	441	1,221	1,074
10	1986															
11	1987															
12	1988															
13	1989															
14	1990															
15	1991															
16	1992															
17	1993															
18	1994															
19	1995															
20	1996															
21	1997															
22	1998															
23	1999															
24	2000															
	Total	51,962 (80,064)	33,378	36,474 (3,016)	14,988	54,814 (3,016)	14,988	17,393 (17,337)	3,648	7,224 (171)	63,038	7,998	61,022 (348)	87,343 (349)	70,739	286,724 (102,937)

Note: Figures in the parenthesis show the land Cost.

Table 2.11 Annual Distribution of Construction and Land Cost: Residential Area

Unit: million

System No. Year	Road and Bridges		Buildings		Water Supply		Sewerage		Electricity		Telecommunications		Other		TOTAL
	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign	
1 1977															
2 1978															
3 1979															
4 1980	21,614 (17,654)	1,453	23,107 (19,107)	14,429	78,740 (55,067)	4,210	2,465 (1,130)	3,196 (1,136)	2,519 (436)	6,365	7,270 (410)	4,364	277,879 (1,891)	62,761	339,046 (72,828)
5 1981	9,048 (9,048)	427	9,475 (9,475)	711	4,210 (=)	4,210	2,465 (1,130)	3,196 (1,136)	2,519 (=)	287	386 (=)	821 (=)	289 (=)	146	14,906 (10,765)
6 1982	13,843 (10,699)	1,361	15,204 (12,068)	3,275	3,965 (=)	3,965	4,210 (1,70)	4,431 (1,70)	104 (=)	277	386 (=)	1,030 (=)	1,427 (=)	598	21,454 (10,398)
7 1983	4,878 (11,698)	208	5,086 (11,906)	1,773	2,342 (=)	2,342	4,210 (=)	4,431 (=)	104 (=)	277	386 (=)	1,030 (=)	794 (=)	703	8,211 (11,698)
8 1984	9,247 (11,111)	441	9,688 (11,552)	610	2,342 (=)	2,342	4,210 (=)	4,431 (=)	104 (=)	277	386 (=)	1,030 (=)	1,711 (=)	601	20,298 (11,111)
9 1985	2,362 (1,978)	204	2,566 (1,978)	2,362	12,087 (=)	12,087	4,210 (=)	4,431 (=)	276 (=)	819	1,115 (=)	1,115 (=)	1,711 (=)	401	20,298 (1,829)
10 1986															2,402 (=)
11 1987															373 (=)
20 1988															373 (=)
21 1989															373 (=)
22 1990															373 (=)
Total	96,483 (107,427)	4,667	101,150 (112,094)	20,459	197,403 (131,987)	7,209	7,209 (1,306)	7,209 (1,306)	3,760 (416)	9,199	11,919 (416)	11,919 (416)	274,401 (1,491)	64,133	638,534 (118,907)

Note: Figures in the parenthesis show the land cost.

Table 2.12 Maintenance & Operation Cost of Tourism and Residential Area

Category A Unit: million Bsh

No.	Year	Road	Sewerage	Storm Water	Solid Waste	Marine & Port	Water Supply	Total
1	1977	-	-	-	-	-	-	-
2	1978	-	-	-	-	-	-	-
3	1979	-	-	-	-	-	-	-
4	1980	-	-	-	1.7	-	-	1.7 (1.7)*
5	1981	0.3	1.5	-	2.0	0.3	4.5	8.6 (4.1)
6	1982	0.5	1.6	0.3	2.3	0.3	4.6	9.6 (5.0)
7	1983	0.6	1.7	0.3	2.6	0.3	4.7	10.2 (5.5)
8	1984	0.7	1.7	0.3	2.7	0.3	4.7	10.4 (5.7)
9	1985	0.7	1.8	0.3	3.1	0.3	4.8	11.0 (6.2)
10	1986	1.4	1.8	0.3	3.2	0.3	4.8	11.8 (7.0)
11	1987	1.6	1.8	0.3	4.3	0.3	4.8	13.1 (8.3)
12	1988	1.8	-	-	-	-	-	13.3 (8.5)
13	1989	1.9	-	-	-	-	-	13.4 (8.6)
14	1990	2.0	-	-	-	-	-	13.5 (8.7)
15	1991	2.1	-	-	-	-	-	13.6 (8.8)
16	1992	2.2	-	-	-	-	-	13.7 (8.9)
17	1993	-	-	-	-	-	-	-
18	1994	-	-	-	-	-	-	-
19	1995	-	-	-	-	-	-	-
20	1996	-	-	-	4.3	-	-	13.7 (8.9)
21	1997	-	-	-	5.7	-	-	15.1 (10.3)
22	1998	-	-	-	-	-	-	-
23	1999	-	-	-	-	-	-	-
24	2000	-	-	-	-	-	-	-
25	2001	-	-	-	-	-	-	-
26	2002	-	-	-	-	-	-	-
27	2003	-	-	-	-	-	-	-
28	2004	-	-	-	-	-	-	-
29	2005	2.2	1.8	0.3	5.7	0.3	4.8	15.1 (10.3)
30	2006	-	-	-	-	-	-	-
Total		46.6	46.1	7.5	117.6	7.8	124.1	349.7 (225.6)

Note: * Figures in the parenthesis show the cost excluding cost of water supply system.

Table 2.13 Maintenance & Operation Cost of Tourism Area

Unit: million Baht

No.	Year	Category A						Total
		Road	Sewerage	Storm Water	Solid Waste	Marine & Port	Water Supply	
1	1977	-	-	-	-	-	-	-
2	1978	-	-	-	-	-	-	-
3	1979	-	-	-	-	-	-	-
4	1980	-	-	-	0.5	-	0.5 (0.5)*	-
5	1981	0.3	0.4	-	0.8	0.3	3.5 (1.8)	-
6	1982	0.4	0.5	0.2	1.0	0.3	4.1 (2.4)	-
7	1983	0.6	0.5	0.2	1.1	0.3	4.4 (2.7)	-
8	1984	0.7	0.5	0.2	1.2	0.3	4.6 (2.9)	-
9	1985	0.7	0.5	0.2	1.4	0.3	4.8 (3.1)	-
10	1986	1.1	0.5	0.2	1.4	0.3	5.2 (3.5)	-
11	1987	1.3	0.5	0.2	1.7	0.3	5.7 (4.0)	-
12	1988	1.3	-	-	-	-	-	-
13	1989	1.3	-	-	-	-	-	-
14	1990	1.3	-	-	-	-	-	-
15	1991	1.3	-	-	-	-	-	-
16	1992	1.4	-	-	-	-	-	-
17	1993	-	-	-	-	-	-	-
18	1994	-	-	-	-	-	-	-
19	1995	-	-	-	1.7	-	5.8 (4.1)	-
20	1996	-	-	-	2.3	-	5.8 (4.1)	-
21	1997	-	-	-	2.3	-	6.4 (4.7)	-
22	1998	-	-	-	-	-	-	-
23	1999	-	-	-	-	-	-	-
24	2000	-	-	-	-	-	-	-
25	2001	-	-	-	-	-	-	-
26	2002	-	-	-	-	-	-	-
27	2003	-	-	-	-	-	-	-
28	2004	-	-	-	-	-	-	-
29	2005	1.4	0.5	0.2	2.3	0.3	6.4 (4.7)	-
30	2006	-	-	-	-	-	-	-
Total		31.3	12.9	5.0	47.4	7.8	44.2	148.6 (104.4)

Note: * Figures in the parenthesis show the cost excluding cost of water supply system.

3. Construction Cost and Land Cost: Category B

Table 3.1 Construction Cost and Land Cost : Phase-1, Category B.

Unit: million Baht

No.	Year	Social Infrastructure		Amenity Core		Activity Zones and Beach Facilities		Hotels		Restaurants		Total	
		Cost	Land	Cost	Land	Cost	Land	Cost	Land	Cost	Land	Cost	Land
1	1977	-	-	-	-	-	-	-	-	2.3	19.7	2.3	19.7
2	1978	-	-	-	-	-	-	-	-	2.4	19.7	2.4	19.7
3	1979	-	-	-	-	-	-	-	-	2.4	19.7	2.4	19.7
4	1980	94.3	60.9	6.2	15.9	-	-	121.8	37.5	3.5	19.7	225.8	134.0
5	1981	106.5	18.4	5.4	15.9	3.0	0.2	121.2	0	3.5	19.8	239.6	54.3
6	1982	20.1	14.2	6.6	15.9	20.2	29.3	200.5	0	3.5	19.8	250.9	79.2
7	1983	10.2	11.5	3.6	15.9	20.2	29.3	40.1	0	3.5	19.8	77.6	76.5
8	1984	1.8	11.0	3.7	15.9	17.2	29.3	40.1	0	3.5	19.8	66.3	76.0
9	1985	1.2	12.3	3.8	15.9	18.0	29.3	40.1	0	3.6	19.8	66.7	77.3
10	1986	1.2	12.3	3.9	15.9	18.2	29.3	-	-	3.8	19.8	27.1	77.3
Total		235.3	140.6	33.2	111.3	96.8	146.7	563.8	37.5	32.0	197.6	961.1	633.7

Table 3.2 Construction Cost (1) : Social Infrastructure

No.	Year	Unit: million Baht						
		Local ②	Foreign ③	④+⑤	U.L ⑥	Tax ⑦	⑧+⑨	Land
1	1977	-	-	-	-	-	-	-
2	1978	-	-	-	-	-	-	-
3	1979	-	-	-	-	-	-	-
4	1980	72.2	12.7	84.9	4.7	9.4	94.3	60.9
5	1981	81.5	14.4	95.9	5.3	10.6	106.5	18.4
6	1982	15.4	2.7	18.1	1.0	2.0	20.1	14.2
7	1983	7.8	1.4	9.2	0.5	1.0	10.2	11.5
8	1984	1.4	0.2	1.6	0.1	0.2	1.8	11.0
9	1985	0.9	0.2	1.1	0.1	0.1	1.2	12.3
10	1986	0.9	0.2	1.1	0.1	0.1	1.2	12.3
Total		180.1	31.8	211.9	11.8	23.4	235.3	140.6

Note 1: U.L shows unskilled laborer's wages in construction cost.

2: Social Infrastructure includes schools, community facilities and open spaces.

Table 3.3 Construction Cost (2): Amenity Cores

Unit: x 10³ Baht

No. Year	Main Amenity Core				Northern Core									
	Local ②	Foreign ③	U.L. ④ + ⑤	Tax ⑥	Local ⑦	Foreign ⑧	U.L. ⑨ + ⑩	Tax ⑪	Land					
1 1977														
2 1978														
3 1979														
4 1980	4,426.3	225.7	4,652.0	743.7	148.0	4,800.0	5,700.0	1,332.0	31.0	1,363.0	94.0	37.0	1,400.0	10,200.0
5 1981	4,369.9	273.7	4,643.6	703.7	156.4	4,800.0	5,700.0	465.8	103.0	568.8	18.9	31.2	600.0	10,200.0
6 1982	5,580.5	242.5	5,823.0	786.7	177.0	6,000.0	5,700.0	465.8	103.0	568.8	18.9	31.2	600.0	10,200.0
7 1983	2,649.5	242.5	2,892.0	173.6	108.0	3,000.0	5,700.0	465.8	103.0	568.8	18.9	31.2	600.0	10,200.0
8 1984	2,747.2	242.5	2,989.7	180.4	110.3	3,100.0	5,700.0	465.8	103.0	568.8	18.9	31.2	600.0	10,200.0
9 1985	2,747.2	242.5	2,989.7	180.4	110.3	3,100.0	5,700.0	545.6	118.5	664.1	24.7	35.3	700.0	10,200.0
10 1986	2,844.9	242.5	3,087.4	187.7	114.6	3,200.0	5,700.0	573.8	94.5	668.3	32.0	31.7	700.0	10,200.0
Total	25,365.5	1,711.9	27,077.4	2,956.2	924.6	28,000.0	39,900.0	4,314.6	656.0	4,970.6	226.3	228.8	5,200.0	71,400.0
Total														
1 1977														
2 1978														
3 1979														
4 1980	5,758.3	256.7	6,015.0	837.7	185.0	6,200.0	15,900.0							
5 1981	4,835.7	276.7	5,212.4	722.6	187.6	5,400.0	15,900.0							
6 1982	6,046.3	345.5	6,391.8	805.6	208.2	6,600.0	15,900.0							
7 1983	3,115.3	345.5	3,460.8	192.5	139.2	3,600.0	15,900.0							
8 1984	3,213.0	345.5	3,558.5	199.3	141.5	3,700.0	15,900.0							
9 1985	3,292.8	361.0	3,653.8	205.1	145.6	3,800.0	15,900.0							
10 1986	3,418.7	397.0	3,755.7	219.7	146.3	3,900.0	15,900.0							
Total	29,680.1	2,367.9	32,048.0	3,182.5	1,153.4	33,200.0	111,300.0							

Note: U.L shows unskilled laborer's wages in construction cost.

Table 3.4 Construction Cost (3): Activity Zones and Beach Facilities

Unit: x 10³ Baht

No.	Year	Inland Activity Zones				Beach Facilities (Ko Lan Island)								
		Local ④	Foreign ⑤	U.L ⑥	Tax ⑦	Local ④	Foreign ⑤	U.L ⑥	Tax ⑦					
1	1977	-	-	-	-	-	-	-	-					
2	1978	18,725.4	858.5	1,373.6	616.1	20,200.0	29,300.0	-	-					
3	1979	18,725.4	858.5	1,373.6	616.1	20,200.0	29,300.0	-	-					
4	1980	15,944.4	731.0	1,169.6	524.6	17,200.0	29,300.0	-	-					
5	1981	-	-	-	-	-	-	2,952.6	178.4	87.4	3,040.2			
6	1982	18,725.4	858.5	1,373.6	616.1	20,200.0	29,300.0	-	-					
7	1983	18,725.4	858.5	1,373.6	616.1	20,200.0	29,300.0	-	-					
8	1984	15,944.4	731.0	1,169.6	524.6	17,200.0	29,300.0	-	-					
9	1985	15,944.4	731.0	1,169.6	524.6	17,200.0	29,300.0	713.2	24.8	738.2	44.6	21.8	760.0	
10	1986	16,871.4	773.5	1,237.6	555.1	18,200.0	29,300.0	-	-	-	-	-	-	
Total		86,211.0	3,952.5	90,163.5	6,323.9	2,836.5	93,000.0	146,500.0	3,566.0	124.8	3,690.8	223.0	109.2	3,800.2

No.	Year	Inland Activity Zones				Beach Facilities (Ko Lan Island)				
		Local ④	Foreign ⑤	U.L ⑥	Tax ⑦	Local ④	Foreign ⑤	U.L ⑥	Tax ⑦	
1	1977	-	-	-	-	-	-	-	-	
2	1978	18,725.4	858.5	1,373.6	616.1	20,200.0	29,300.0	-	-	
3	1979	18,725.4	858.5	1,373.6	616.1	20,200.0	29,300.0	-	-	
4	1980	15,944.4	731.0	1,169.6	524.6	17,200.0	29,300.0	-	-	
5	1981	2,852.8	100.0	2,952.6	178.4	3,040.2	200.0	-	-	
6	1982	18,725.4	858.5	1,373.6	616.1	20,200.0	29,300.0	-	-	
7	1983	18,725.4	858.5	1,373.6	616.1	20,200.0	29,300.0	-	-	
8	1984	15,944.4	731.0	1,169.6	524.6	17,200.0	29,300.0	-	-	
9	1985	16,657.6	755.8	1,743.6	2,214.1	17,960.0	29,300.0	-	-	
10	1986	16,871.4	773.5	1,237.6	555.1	18,200.0	29,300.0	-	-	
Total		89,777.0	4,077.3	93,854.3	6,546.9	2,945.7	96,800.2	146,700.0	-	-

Note: U.L shows unskilled laborer's wages in construction cost.

Table 3.5 Construction Cost (4): Hotels

Unit: x 10³ Baht

No. Year	Hotel in Pattaya				Hotel in Ko Lan Island			
	Local	Foreign	U.I.	Tax	Local	Foreign	U.I.	Tax
1 1977	-	-	-	-	-	-	-	-
2 1978	-	-	-	-	-	-	-	-
3 1979	-	-	-	-	-	-	-	-
4 1980	94,715.7	17,038.8	111,754.5	6,550.0	10,045.5	121,800.0	37,500.0	-
5 1981	63,055.5	11,351.2	74,406.7	4,361.8	6,693.3	81,100.0	-	-
6 1982	124,634.4	22,462.4	147,096.8	8,665.2	13,303.2	160,400.0	-	-
7 1983	-	-	-	-	-	-	-	-
8 1984	-	-	-	-	-	-	-	-
9 1985	-	-	-	-	-	-	-	-
10 1986	-	-	-	-	-	-	-	-
Total	282,405.6	50,852.4	333,258.0	19,577.0	30,042.0	363,300.0	37,500.0	155,989.0

No. Year	Total			
	Local	Foreign	U.I.	Tax
1 1977	-	-	-	-
2 1978	-	-	-	-
3 1979	-	-	-	-
4 1980	94,715.7	17,038.8	111,754.5	6,550.0
5 1981	94,253.3	16,965.2	111,218.5	6,527.2
6 1982	155,832.2	28,076.4	183,908.6	10,830.6
7 1983	31,197.8	5,614.0	36,811.8	2,165.4
8 1984	31,197.8	5,614.0	36,811.8	2,165.4
9 1985	31,197.8	5,614.0	36,811.8	2,165.4
10 1986	-	-	-	-
Total	438,394.6	78,922.4	517,317.0	30,404.0

Note: U.I. shows unskilled laborer's wages in construction cost.

Table 3-6 Construction Cost (5): Restaurants

Unit: x 10³ Baht

No.	Year	Restaurants					Land	
		Local ③	Foreign ⑤	③+⑤	U.I. ④	Tax ⑥		③+④
1	1977	2,162.5	72.0	2,234.5	136.6	65.5	2,300.0	19,700.0
2	1978	2,260.2	72.0	2,332.2	143.4	67.8	2,400.0	19,700.0
3	1979	2,260.2	72.0	2,332.2	143.4	67.8	2,400.0	19,700.0
4	1980	3,334.9	72.0	3,406.9	218.6	93.1	3,500.0	19,700.0
5	1981	3,334.9	72.0	3,406.9	218.6	93.1	3,500.0	19,800.0
6	1982	3,334.9	72.0	3,406.9	218.6	93.1	3,500.0	19,800.0
7	1983	3,334.9	72.0	3,406.9	218.6	93.1	3,500.0	19,800.0
8	1984	3,334.9	72.0	3,406.9	218.6	93.1	3,500.0	19,800.0
9	1985	3,334.9	72.0	3,406.9	225.4	95.4	3,600.0	19,800.0
10	1986	3,599.8	96.0	3,695.8	232.3	104.2	3,800.0	19,800.0
	Total	30,389.8	744.0	31,133.8	1,643.2	866.2	32,000.0	197,600.0

Note: U.I shows unskilled laborer's wages in construction cost.

Table 3.7 Social Infrastructure (1): Total Cost for Three Residential Areas

Area	Facilities	Unit: million Bsh													
		1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Total			
Instrument	School	Schoolhouse				0.5	1.3	1.0	0.5					3.3	
		Gymnasium				0.1	0.4	0.2	0.1					0.8	
		Play Ground													
		Sub-total				0.6	1.7	1.2	0.6					4.1	
	Community Facilities	Communication Center							0.5						0.5
		Post Office							0.1						0.1
		Police Box							0.9						0.9
		Fire Department				1.8									1.8
		Hospital				37.6	35.0								72.6
		Sub-total				39.4	35.0	0.5							75.9
	Total	--	--	--	40.0	37.7	1.7	0.6	--	--	--	--	--	80.0	
Building	School	Schoolhouse				5.4	13.3	10.8	5.4					34.9	
		Gymnasium				1.4	4.2	2.8	1.4					9.8	
		Play Ground				0.1	0.4	0.2	0.1					0.8	
		Sub-total				6.9	17.9	13.8	6.9					45.5	
	Community Facilities	Communication Center							2.0						2.0
		Post Office							0.8						0.8
		Police Box							6.1						6.1
		Fire Department				1.2									1.2
		Hospital				43.0	40.0								83.0
		Sub-total				44.2	45.9	2.0							93.1
	Open Space	City Park				0.5	0.6		0.4						1.5
		Children Park				0.2	0.3	0.2	0.1	0.2					1.0
		Promenade				0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7		4.7
Sub-total					1.3	1.5	0.9	1.2	0.9	0.7	0.7	0.7		7.2	
	Total	--	--	--	52.4	66.3	16.7	8.1	0.9	0.7	0.7	0.7		145.8	
Earth Work	School				0.4	1.3	0.9	0.4						3.0	
	Community Facilities				0.3									0.3	
	Open Space	City Park				0.4	0.5		0.3						1.2
		Children Park				0.2	0.2	0.1	0.1	0.1					0.7
		Promenade				0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7		4.3
	Sub-total				1.1	1.2	0.7	1.0	0.8	0.7	0.7	0.7		6.2	
	Total	--	--	--	1.8	2.5	1.6	1.4	0.8	0.7	0.7	0.7		9.5	
Total	School				7.9	20.9	15.9	7.9						52.6	
	Community Facilities				83.9	82.9	2.5							169.3	
	Open Space				2.5	2.7	1.7	2.3	1.8	1.2	1.2	1.2		13.4	
	Total	--	--	--	94.3	106.5	20.1	10.2	1.8	1.2	1.2	1.2		235.3	

Table 3.8 Social Infrastructure (2): Na Klua Town-A

Unit: million Baht

Area	Facilities	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Total	
Earth Work	School				0.4	0.4	0.4					1.2	
	Community Facilities				0.2							0.2	
	Open Space	City Park				0.4	0.5						0.9
		Children Park				0.2	0.1	0.1					0.4
		Promenade				0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.1
		Sub-total				0.9	0.9	0.4	0.3	0.3	0.3	0.3	3.4
Total				1.5	1.3	0.8	0.3	0.3	0.3	0.3	4.8		
Building	School	Schoolhouse				5.4	5.4	5.4					16.2
		Gymnasium				1.4	1.4	1.4					4.2
		Play Ground				0.1	0.1	0.1					0.3
		Sub-total				6.9	6.9	6.9					20.7
	Community Facilities	Communication Center						1.5					1.5
		Post Office						0.6					0.6
		Police Box						6.0					6.0
		Fire Department				1.2							1.2
		Hospital				40.0	40.0						80.0
		Sub-total				41.2	46.6	1.5					89.3
	Open Space	City Park				0.5	0.6						1.1
		Children Park				0.2	0.2	0.1					0.5
		Promenade				0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.1
		Sub-total				1.0	1.1	0.4	0.3	0.3	0.3	0.3	3.7
	Total				49.1	54.6	8.8	0.3	0.3	0.3	0.3		113.7
Instrument	School	Schoolhouse				0.5	0.5	0.5					1.5
		Gymnasium				0.1	0.1	0.1					0.3
		Play Ground											
		Sub-total				0.6	0.6	0.6					1.8
	Community Facilities	Communication Center						0.4					0.4
		Post Office						0.1					0.1
		Police Box						0.9					0.9
		Fire Department				1.8							1.8
		Hospital				35.0	35.0						70.0
Sub-total				36.8	36.0	0.4					73.2		
Total				37.4	36.6	1.0						75.0	
Total	School				7.9	7.9	7.9					23.7	
	Community Facilities				78.2	82.6	1.9					162.7	
	Open Space				1.9	2.0	0.8	0.6	0.6	0.6	0.6	7.1	
	Total				88.0	92.5	10.6	0.6	0.6	0.6	0.6	193.5	

Table 3.9 Social Infrastructure (3): Na Klua Town-B

Unit: million Baht

Work	Facilities	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Total
Building	Open Space				0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.4
	Children Park					0.1		0.1				0.2
	Promenade											
	Sub-total				0.2	0.2	0.3	0.2	0.3	0.2	0.2	1.6
	Total	-	-	-	0.2	0.2	0.3	0.2	0.3	0.2	0.2	1.6
Earth Work	Open Space				0.2	0.2	0.2	0.2	0.2	0.2	0.2	1.4
	Children Park					0.1		0.1				0.2
	Promenade											
	Sub-total				0.2	0.2	0.3	0.2	0.3	0.2	0.2	1.6
	Total	-	-	-	0.2	0.2	0.3	0.2	0.3	0.2	0.2	1.6
Total	Open Space				0.4	0.4	0.4	0.4	0.4	0.4	0.4	2.8
	Children Park					0.2		0.2				0.4
	Promenade											
	Sub-total				0.4	0.4	0.6	0.4	0.6	0.4	0.4	3.2
	Total	-	-	-	0.4	0.4	0.6	0.4	0.6	0.4	0.4	3.2

Table 3.10 Social Infrastructure (4): Northern New Town

Unit: million Baht

Area	Facilities	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Total	
Instrument	School	Schoolhouse				0.8	0.5	0.5				1.8	
		Gymnasium				0.3	0.1	0.1					0.5
		Play Ground											-
		Sub-total				1.1	0.6	0.6					2.3
	Community Facilities	Communication Center						0.1					0.1
		Post Office											-
		Police Box											-
		Fire Department											-
		Hospital				2.6							2.6
		Sub-total				2.6		0.1					
Total				2.6	1.1	0.7	0.6					5.0	
Building	School	Schoolhouse				7.9	5.4	5.4					18.7
		Gymnasium				2.8	1.4	1.4					5.6
		Play Ground				0.3	0.1	0.1					0.5
		Sub-total				11.0	6.9	6.9					24.8
	Community Facilities	Communication Center							0.5				0.5
		Post Office					0.2						0.2
		Police Box					0.1						0.1
		Fire Department											-
		Hospital				3.0							3.0
		Sub-total				3.0	0.3	0.5					
	Open Space	City Park							0.4				0.4
		Children Park					0.1		0.1	0.1			0.3
		Promenade				0.1	0.1	0.2	0.2	0.2	0.2	0.2	1.2
Sub-total					0.1	0.2	0.2	0.7	0.3	0.2	0.2	1.9	
Total				3.1	11.5	7.6	7.6	0.3	0.2	0.2		30.5	
Earth Work	School					0.8	0.4	0.4				1.6	
	Community Facilities				0.1								0.1
		City Park							0.3				0.3
	Open Space	Children Park				0.1		0.1	0.1				0.3
		Promenade				0.1	0.1	0.2	0.2	0.2	0.2	0.2	1.2
	Sub-total				0.1	0.1	0.2	0.6	0.3	0.2	0.2		1.7
Total				0.2	0.9	0.6	1.0	0.3	0.2	0.2		3.4	
Total	School					12.9	7.9	7.9				28.7	
	Community Facilities				5.7	0.3	0.6					6.6	
	Open Space				0.2	0.3	0.4	1.3	0.6	0.4	0.4	3.6	
	Total				5.9	13.5	8.9	9.2	0.6	0.4	0.4	38.9	

Table 3.11 Social Infrastructure (S): Land Acquisition

Unit: million Baht

Area	Facilities	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	Total	
Na Klua Town-A	School			20.0	0.6	0.6						21.2	
	Community Facilities			0.3								0.3	
	Open Space	City Park			22.5	0.7							23.2
		Children Park			5.2	3.5	0.1						8.8
		Promenade			8.3	10.0	10.0	10.0	10.0	10.1	10.1		68.5
Total			36.0	14.2	10.1	10.0	10.0	10.1	10.1			100.5	
Na Klua Town-B	Open Space	Children Park				0.7	0.1					0.8	
		Promenade			2.0	2.0	0.2	0.6	2.0	2.0		10.8	
		Sub-total			2.0	2.0	2.7	0.2	0.7	2.0	2.0		11.6
	Total			—	—	2.0	2.0	2.7	0.2	0.7	2.0	2.0	11.6
	School			1.1	0.6	0.6						2.3	
Northern New Town	Community Facilities			2.5								2.5	
	Open Space	City Park					0.4					0.4	
		Children Park			0.4		0.1	0.1					0.6
		Promenade			0.1	0.1	0.2	0.2	0.2	0.2	0.2		1.2
	Total			0.1	0.5	0.2	0.7	0.3	0.2	0.2		2.2	
School			—	—	2.6	1.6	0.8	1.3	0.3	0.2	0.2	7.0	
Total	School			20.0	1.7	1.2	0.6					23.5	
	Community Facilities			2.8								2.8	
	Open Space	City Park			22.5	0.7		0.4					23.6
		Children Park			5.2	3.9	0.8	0.1	0.2				10.2
		Promenade			10.4	12.1	12.2	10.4	10.8	12.3	12.3		80.5
Total			38.1	16.7	13.0	10.9	11.0	12.3	12.3		114.3		
				60.9	18.4	14.2	11.5	11.0	12.3	12.3		140.6	

Table 3.12 Breakdown of Construction Cost: Main Amenity Core (Pattaya)

UNICEF N. 107 BANG

Work	1980			1981			1982			1983			
	Local	Foreign	U.I.	Local	Foreign	U.I.	Local	Foreign	U.I.	Local	Foreign	U.I.	
Earth Works	69.5	74.0	93.5	6.5	100.0	208.5	72.0	280.5	19.5	300.0	208.5	72.0	280.5
Removal of Existing	586.2	-	266.2	13.8	600.0	488.5	-	488.5	100.0	500.0	488.5	-	488.5
Preparation	2,637.9	-	2,637.9	62.1	2,700.0	2,540.2	-	2,540.2	530.0	2,600.0	2,540.2	-	2,540.2
Sub-Total	3,224.1	-	3,224.1	75.9	3,300.0	3,026.7	-	3,026.7	620.0	3,100.0	3,026.7	-	3,026.7
Buildings and Others	137.2	31.2	168.4	12.6	11.0	700.0	137.2	31.2	168.4	12.6	11.0	700.0	137.2
Instrument and open space	97.7	-	97.7	7.3	2.3	100.0	97.7	-	97.7	7.3	2.3	100.0	97.7
Fencing	877.8	170.5	1,048.3	63.8	51.7	1,100.0	877.8	170.5	1,048.3	63.8	51.7	1,100.0	877.8
Pavement	1,132.7	201.7	1,334.4	83.7	65.6	1,400.0	1,132.7	201.7	1,334.4	83.7	65.6	1,400.0	1,132.7
Sub-Total	6,426.3	225.7	6,652.0	743.7	144.0	4,400.0	6,309.9	273.7	6,583.6	703.7	136.4	4,400.0	6,309.9
Total	9,650.4	299.7	9,950.1	819.6	544.0	7,700.0	9,336.6	547.4	9,884.0	807.3	572.4	7,700.0	9,336.6
Land Acquisition	-	-	-	-	-	3,700.0	-	-	-	-	-	3,700.0	-
Work	1984			1985			1986			1987			
Earth Works	208.5	72.0	280.5	19.5	300.0	208.5	72.0	280.5	19.5	300.0	208.5	72.0	280.5
Removal of Existing	97.7	-	97.7	7.3	2.3	100.0	97.7	-	97.7	7.3	2.3	100.0	97.7
Preparation	877.8	170.5	1,048.3	63.8	51.7	1,100.0	877.8	170.5	1,048.3	63.8	51.7	1,100.0	877.8
Sub-Total	2,747.2	262.5	2,989.7	140.4	110.5	3,100.0	2,747.2	262.5	2,989.7	140.4	110.5	3,100.0	2,747.2
Buildings and Others	1,563.2	-	1,563.2	104.3	26.8	1,600.0	1,563.2	-	1,563.2	104.3	26.8	1,600.0	1,563.2
Instrument and open space	97.7	-	97.7	7.3	2.3	100.0	97.7	-	97.7	7.3	2.3	100.0	97.7
Fencing	877.8	170.5	1,048.3	63.8	51.7	1,100.0	877.8	170.5	1,048.3	63.8	51.7	1,100.0	877.8
Pavement	975.5	170.5	1,146.0	71.1	54.0	1,200.0	975.5	170.5	1,146.0	71.1	54.0	1,200.0	975.5
Sub-Total	2,747.2	262.5	2,989.7	140.4	110.5	3,100.0	2,747.2	262.5	2,989.7	140.4	110.5	3,100.0	2,747.2
Total	5,490.4	525.0	6,015.4	280.7	221.0	6,200.0	5,490.4	525.0	6,015.4	280.7	221.0	6,200.0	5,490.4
Land Acquisition	-	-	-	-	-	3,700.0	-	-	-	-	-	3,700.0	-

Note: U.I. shows unskilled laborer's wages in construction cost.
 Local Foreign U.I. Construction cost without tax.
 Local Foreign U.I. Construction cost with tax.

Table 3.13 Breakdown of Construction Cost: Northern Core (Pattaya)

Unit: x 10³ Baht

	1980			1981			1982			1983			
	Local	Foreign	U.I. Tax	Local	Foreign	U.I. Tax	Local	Foreign	U.I. Tax	Local	Foreign	U.I. Tax	
Earth Works	208.5	72.0	286.5	19.5	300.0	208.5	72.0	280.5	19.5	300.0	208.5	72.0	280.5
Building and Other	3,074.7	1,074.7	75.1	23.3	3,100.0								
Instrument and Open Space	97.7	-	97.7	7.3	100.0	97.7	-	97.7	7.3	100.0	97.7	-	97.7
Facilities	159.6	31.0	190.6	11.6	200.0	159.6	31.0	190.6	11.6	200.0	159.6	31.0	190.6
Pavement	257.3	31.0	288.3	18.9	300.0	257.3	31.0	288.3	18.9	300.0	257.3	31.0	288.3
Sub-Total	1,332.0	31.0	1,363.0	37.0	1,400.0	1,332.0	31.0	1,363.0	37.0	1,400.0	1,332.0	31.0	1,363.0
Total	10,200.0		10,200.0		10,200.0	10,200.0		10,200.0		10,200.0	10,200.0		10,200.0
Land Acquisition													
Works													
Earth Works	208.5	72.0	280.5	19.5	300.0	208.5	72.0	280.5	19.5	300.0	208.5	72.0	280.5
Building and Other	97.7	-	97.7	7.3	100.0	97.7	-	97.7	7.3	100.0	97.7	-	97.7
Facilities	159.6	31.0	190.6	11.6	200.0	159.6	31.0	190.6	11.6	200.0	159.6	31.0	190.6
Pavement	257.3	31.0	288.3	18.9	300.0	257.3	31.0	288.3	18.9	300.0	257.3	31.0	288.3
Sub-Total	663.1	134.0	797.1	57.9	800.0	663.1	134.0	797.1	57.9	800.0	663.1	134.0	797.1
Total	10,200.0		10,200.0		10,200.0	10,200.0		10,200.0		10,200.0	10,200.0		10,200.0
Land Acquisition													

Note: U.I. shows unskilled laborer's wages in construction cost.

Table 3.14 Breakdown of Construction Cost : Inland Activity Zones

Unit: x 10³ Baht

Facilities	1982		1983		1984		1985		U.L.	Tax	⊕ + ⊕
	Local	Foreign	Local	Foreign	Local	Foreign	Local	Foreign			
Northern Activity Zone	3,708	170	3,878	272	4,000	3,708	170	3,878	272	122	4,000
Natural Zone	3,893.4	178.5	4,071.9	285.6	4,200	3,893.4	178.5	4,071.9	285.6	128.1	4,200
Orchid Garden	7,426	340	7,756	544	8,000	7,426	340	7,756	544	244	8,000
Elephant-work Display											
Animal Park											
Botanical Garden											
Central Park	3,708	170	3,878	272	4,000	3,708	170	3,878	272	122	4,000
Total Land	18,725.4	858.5	19,583.9	1,373.6	20,200	18,725.4	858.5	19,583.9	1,373.6	616.1	20,200
Grand Total					49,500					29,300	49,500
Northern Activity Zone	3,708	170	3,878	272	4,000	3,708	170	3,878	272	122	4,000
Natural Zone	3,893.4	178.5	4,071.9	285.6	4,200	3,893.4	178.5	4,071.9	285.6	128.1	4,200
Orchid Garden											
Elephant-work Display											
Animal Park											
Botanical Garden											
Central Activity Zone	4,635	212.5	4,847.5	340	5,000	4,635	212.5	4,847.5	340	152.5	5,000
Total Land	15,944.4	731.0	16,675.4	1,169.6	17,200	15,944.4	731.0	16,675.4	1,169.6	524.6	17,200
Grand Total					46,500					29,300	46,500
TOTAL											
Northern Activity Zone	3,708	170	3,878	272	4,000	3,708	170	3,878	272	122	4,000
Natural Zone	3,893.4	178.5	4,071.9	285.6	4,200	3,893.4	178.5	4,071.9	285.6	128.1	4,200
Orchid Garden											
Elephant-work Display											
Animal Park											
Botanical Garden											
Central Activity Zone	5,562	255	5,817	408	6,000	5,562	255	5,817	408	183	6,000
Total Land	16,871.4	773.5	17,644.9	1,237.6	18,200	16,871.4	773.5	17,644.9	1,237.6	555.1	18,200
Grand Total					47,500					29,300	47,500

Note: U.L. shows unskilled laborer's wages in construction cost.

Table 3.15 Breakdown of Construction Cost: Beach Facility (Ko Lan Island)
for each of Tavan-Beach and Samae-Beach

Unit: x 10³ Baht

Works	1981.				1985				Total									
	②	③	④	*1	②	③	④	*2	②	③	④	⑤	⑥	⑦				
	Local Foreign	① + ②	U.I. Tax	③ + ④	Local Foreign	① + ②	U.I. Tax	③ + ④	Local Foreign	① + ②	U.I. Tax	③ + ④	Local Foreign	① + ②	U.I. Tax	③ + ④		
Earth Works	144.6	50.0	194.5	-	13.5	208	36.1	12.4	48.6	-	3.4	52	180.7	62.4	243.1	-	16.9	260
Buildings	1,281.8	-	1,281.8	89.2	30.2	1,312	320.5	-	320.5	22.3	7.5	328	1,602.3	-	1,602.3	111.5	37.7	1,640
Total	1,426.4	50.0	1,476.3	89.2	43.7	1,520	356.6	12.4	369.1	22.3	10.9	380	1,783.0	62.4	1,845.4	111.5	54.6	1,900
Land						100						0						100
Grand Total	1,426.4	50.0	1,476.3	89.2	43.7	1,620	356.6	12.4	369.1	22.3	10.9	380	1,783.0	62.4	1,845.4	111.5	54.6	2,000

Note: U.I. shows unskilled laborer's wages in construction cost.

*1. ④ : Construction Cost without tax.

*2. ⑤ + ⑥ : Construction Cost with tax.

Table 3-16 Breakdown of Construction Cost: Hotels (Private)

Facility in Partways	1960			1961			1962			1963		
	Local	Foreign	U.L.	Local	Foreign	U.L.	Local	Foreign	U.L.	Local	Foreign	U.L.
Earth Works	350.0	192.0	742.0	347.5	320.0	667.5	32.5	300	300	603.5	312.0	2,713.9
Buildings	93,240.0	10,400.0	103,640.0	62,100.0	11,200.0	73,300.0	6,400.0	40,000	40,000	174,320.0	22,400.0	1,149,720.0
Parking Areas	225.8	48.8	274.6	157.2	31.2	188.4	12.6	11.6	200	316.6	62.4	378.8
Landscaping	645.0	-	645.0	390.8	-	390.8	29.2	4.2	400	144,634.4	22,462.4	167,096.8
Total	94,715.7	17,070.8	111,786.5	63,093.5	11,331.2	74,424.7	6,431.8	44,993.3	44,100	144,634.4	22,462.4	1,149,720.0
Land												
Grand Total												
Facility in Full Partways												
Earth Works												
Buildings												
Parking Areas												
Landscaping												
Total												
Land												
Grand Total												
Facility in Full Partways												
Earth Works												
Buildings												
Parking Areas												
Landscaping												
Total												
Land												
Grand Total												

Note: U.L. shows unutilized laborer's wages in construction cost.

Table 3-17 Breakdown of Construction Cost: Restaurants (Private)

Unit: x10³ baht

Works	1977				1978				1979			
	Local	Foreign	U.L.	Tax	Local	Foreign	U.L.	Tax	Local	Foreign	U.L.	Tax
Earth Works	208.5	72.0	-	19.5	208.5	72.0	-	19.5	208.5	72.0	-	19.5
Buildings	1,954.0	-	136.6	46.0	2,051.7	-	143.4	49.3	2,051.7	-	143.4	48.3
Total	2,162.5	72.0	136.6	65.5	2,300.2	72.0	143.4	67.8	2,300.2	72.0	143.4	67.8
Land	19,700.0											
	1981											
Earth Works	208.5	72.0	-	19.5	208.5	72.0	-	19.5	208.5	72.0	-	19.5
Buildings	3,126.4	-	218.6	73.6	3,126.4	-	218.6	73.6	3,126.4	-	218.6	73.6
Total	3,334.9	72.0	218.6	93.1	3,406.9	72.0	218.6	93.1	3,334.9	72.0	218.6	93.1
Land	19,800.0											
	1983											
Earth Works	208.5	72.0	-	19.5	208.5	72.0	-	19.5	208.5	72.0	-	19.5
Buildings	3,126.4	-	218.6	73.6	3,126.4	-	218.6	73.6	3,126.4	-	218.6	73.6
Total	3,334.9	72.0	218.6	93.1	3,406.9	72.0	218.6	93.1	3,334.9	72.0	218.6	93.1
Land	19,800.0											
	1985											
Earth Works	208.5	72.0	-	19.5	208.5	72.0	-	19.5	208.5	72.0	-	19.5
Buildings	3,126.4	-	218.6	73.6	3,126.4	-	218.6	73.6	3,126.4	-	218.6	73.6
Total	3,334.9	72.0	218.6	93.1	3,406.9	72.0	218.6	93.1	3,334.9	72.0	218.6	93.1
Land	19,800.0											
	TOTAL											
Earth Works	278.0	96.0	-	26.0	2,154.5	744.0	-	202.5	2,154.5	744.0	-	202.5
Buildings	3,321.8	-	3,321.8	232.3	28,235.3	-	28,235.3	1,643.2	28,235.3	-	28,235.3	1,643.2
Total	3,599.8	96.0	3,695.8	232.3	30,389.8	744.0	31,133.8	1,643.2	30,389.8	744.0	31,133.8	1,643.2
Land	197,600.0											

Note: U.L. shows unskilled laborer's wages in construction cost.

Table 3.18 Unit Cost for Amenity Core (Public)

Main Amenity Core

Works		Area in m ²	Unit Cost Baht/m ²	Cost in 10 ³ Baht
Preparation	Removal of Existings	19,800	80	1,600
	Compensation	19,800	400	7,900
	Sub-total	-	-	9,500
Earth Work		64,000	30	1,900
Building	Multi Purpose Hall	1,800	1,450	2,610
	Handicraft Center	2,200	1,984	4,365
	Tourist Center	500	1,450	725
	Sub-total	-	-	7,700
Facilities	Landscaping	25,200	30	800
	Pavement	116,000	66	7,700
	Parking Area	5,700	72	400
	Sub-total	-	-	8,900
Total		-	-	28,000
Land Cost		44,000	-	39,900

Nothern Core

Works		Area in m ²	Unit Cost Baht/m ²	Cost in 10 ³ Baht
Earth Work		57,000	30	1,700
Building		750	1,450	1,100
Facilities	Landscaping	27,500	30	800
	Pavement	23,650	66	1,600
	Sub-total	-	-	2,400
Total		-	-	5,200
Land Cost		57,000	-	71,300

Table 3.19 Unit Cost for Inland Activity Zones (Public)

Works		Area in m ²	Unit Cost Baht/m ²	Cost in 10 ³ Baht
Northern Activity Zone	Sport Zone	100,000	200	20,000
	Natural Zone	700,000	30	21,000
Central Activity Zone	Orchid Garden	40,000	200	8,000
	Elephant-at-Work Display	40,000	200	8,000
	Animal Park	50,000	200	10,000
	Botanical Garden	60,000	100	6,000
Central Park		400,000	50	20,000
Total Cost		-	-	93,000
Land Cost		-	-	146,500

Table 3.20 Unit Cost for Service Facility in Ko Lan Island

Tavan Beach

Works	Area in m ²	Unit Cost Baht/m ²	Cost in 10 ³ Baht
Earth Work	5,000	52	260
Building	2,090	785	1,640
Total Cost	-	-	1,900
Land Cost	-	-	100

Samae Beach

Earth Work	5,000	52	260
Building	2,090	785	1,640
Total Cost	-	-	1,900
Land Cost	-	-	100

4. Detailed Cost Estimation: Category A.

4.1 Road and Street System

Table 4.1.1 The Quantities of Construction-(1)

Route No.	Total Length m	Cutting or Embankment m ³	Earth Work		Load m ²	Pavement		Drainage System		Crossing Pipe Ø1,000 m
			Slope m ²	Median m ³		Carriage Way m ²	Side Walk m ²	Concrete m ³	Form m ²	
T-1	5,959	93,583.9	21,538.2	13,765.3	113,245			8,582.93	39,852.73	142.7
T-2	2,325	14,194.1	5,349.1	5,370.8	4,764			1,451.91	6,355.39	47.2
T-4	1,200	11,134.4	6,047.1	-	12,456			136.83	616.89	-
T-5	470	16,205.9	3,356.3	-	6,877			455.92	2,326.97	-
T-5 (D1)	455	2,732.7	1,035.9	-	4,828			502.46	2,401.24	-
" (D2)	455	1,628.1	548.4	-	3,890			419.58	1,065.16	21.7
" (D3)	535	2,456.1	999.6	-	5,272			554.26	2,443.79	24.6
T-6 (D1)	270	814.8	420.9	-	1,229			227.92	1,059.22	-
" (D2)	700	1,881.3	1,203.3	-	6,451			723.20	3,453.70	-
" (D3)	193	252.0	63.7	-	2,100			19,935	955.55	-
T-3										
TOURISM AREA TOTAL	12,492	144,353.4	38,542.5	19,136.1	22,118.2			11,193.65	52,717.55	232.4
GRAND TOTAL	37,837	245,633.2	82,615.0	19,136.1	411,378			37,231.69	177,081.28	652.4

Note: Grand Total includes works in Tourism Area, Na Klea Town A and B and Northern New Town.

Table 4.1.2 The Quantities of Construction-(2)

Route No.	Total Length m	Open Deck			Bridge RC Slab m ²	Safety Facilities			Remarks
		Slope m ²	Excavation m ³	Load m ²		Traffic Sign Nos.	Lighting Nos.	Traffic Sign Nos.	
T-1	5,959	9,100	4,100	12,500	-		170		
T-2	2,325	3,000	1,500	4,200	-		61		
T-4	1,200	-	-	-	-		-		
T-5	470	-	-	-	-		3		
T-5 (D1)	455	-	-	-	-		9		
" (D2)	425	-	-	-	-		7		
" (D3)	535	-	-	-	-		9		
T-6 (D1)	270	-	-	-	-		4		
" (D2)	700	-	-	-	-		17		
" (D3)	193	-	-	-	-		4		
T-3									
TOURISM AREA TOTAL	12,492	12,100	5,600	16,700	0.0		371+62+53		
GRAND TOTAL	37,837	13,200	6,000	18,300	180.0		371+62+83		

Table 4.1.3

The Quantities of Construction-(3)

Route No.	Total Length m	Earth Work			Pavement			Drainage System		Pipe φ1,000 m
		Cutting or Embankment m ³	Slope m ²	Median m ³	Leak m ²	Carriage Way m ²	Side Walk m ²	Concrete m ³	Form m ²	
R-1 (A)	3,520	11,671.4	5,269.9	-	10,016	-	-	3,645.72	17,417.52	63.2
R-1 (B)	1,230	8,191.7	1,819.5	-	13,453	-	-	1,214.28	6,043.79	45.4
R-2 (A1)	749	2,515.3	670.5	-	2,041	-	-	775.96	3,708.30	43.2
" (A2)	314	628.3	450.4	-	3,032	-	-	325.30	1,554.62	21.6
" (A3)	144	747.6	60.2	-	1,323	-	-	149.18	712.95	-
" (A4)	141	394.4	85.4	-	1,307	-	-	145.04	698.09	-
R-2 (A1)	813	3,259.5	1,916.1	-	9,644	-	-	841.21	4,025.17	13.6
" (A2)	956	858.5	707.0	-	6,947	-	-	990.41	4,733.16	-
" (A3)	693	1,262.6	831.3	-	6,432	-	-	717.95	3,431.05	-
" (A4)	459	617.6	323.3	-	2,490	-	-	435.88	2,311.02	-
" (A5)	453	3,072.1	1,502.0	-	4,278	-	-	479.67	2,292.92	-
" (A5)	470	944.0	724.5	-	4,278	-	-	456.92	2,326.97	-
" (A7)	660	1,592.8	1,293.2	-	2,757	-	-	683.76	3,207.66	27.2
" (A8)	704	1,948.6	1,285.1	-	8,190	-	-	729.34	3,433.51	42.8
" (A9)	351	1,745.4	873.7	-	4,292	-	-	363.64	1,937.63	-
NA KUUA-A TOTAL	11,677	39,610.5	17,813.0	0.0	82,212	-	-	12,097.37	57,812.87	276.0
R-2 (B1)	690	2,358.5	1,098.7	-	6,366	-	-	714.84	3,416.19	13.6
" (B2)	815	6,076.3	1,509.5	-	7,815	-	-	844.34	4,035.07	13.6
" (B3)	679	3,481.9	1,337.4	-	6,387	-	-	703.44	3,361.73	-
" (B4)	660	1,417.9	598.4	-	3,655	-	-	704.48	3,368.68	-
NA KUUA-B TOTAL	2,864	13,264.6	4,544.0	0.0	24,176	-	-	2,967.10	14,179.67	27.2
NA KUUA TOTAL	14,541	52,875.1	22,357.0	0.0	113,330	-	-	15,064.47	71,992.54	303.2

Table 4.1.4

The Quantities of Construction-(4)

Route No.	Total Length m	Open Ditch			Bridge RC Slab m ²	Safety Facility			Remarks
		Slope m ²	Excavation m ³	Leak m ²		Traffic Signal Nos	Lighting Nos	Traffic Sign Nos	
R-1 (A)	3,520	1,100	400	1,600	-	4	59	-	
R-1 (B)	1,230	-	-	-	-	-	21	-	
R-2 (A1)	749	-	-	-	-	-	13	-	
" (A2)	314	-	-	-	-	1	6	-	
" (A3)	144	-	-	-	-	-	3	-	
" (A4)	141	-	-	-	-	-	3	-	
R-2 (A1)	813	-	-	-	-	-	14	-	
" (A2)	956	-	-	-	-	-	16	-	
" (A3)	693	-	-	-	1850	-	12	-	
" (A4)	459	-	-	-	-	-	8	-	
" (A5)	463	-	-	-	-	-	8	-	
" (A5)	470	-	-	-	-	-	8	-	
" (A7)	660	-	-	-	-	-	11	-	
" (A8)	704	-	-	-	-	-	11	-	
" (A9)	351	-	-	-	-	-	12	-	
NA KUUA-A TOTAL	11,677	1,100	400	1,600	1850	5	255	-	
R-2 (B1)	690	-	-	-	-	-	12	-	
" (B2)	815	-	-	-	-	-	14	-	
" (B3)	679	-	-	-	-	-	12	-	
" (B4)	660	-	-	-	-	-	12	-	
NA KUUA-B TOTAL	2,864	0	0	0	0.0	0	12	-	
NA KUUA TOTAL	14,541	1,100	400	1,600	1850	5	255	-	

Table 4.1.5 The Quantities of Construction-(5)

Route No.	Total Length m	Earth Work			Road m ²	Pavement		Drainage System		Crossing Pipe Ø1,000 m
		Cutting or Embankment m ³	Slope m ²	Median m ³		Carriage Way m ²	Side Walk m ²	Concrete m ³	Form m ²	
R-1 (C)	1,626	14,551.8	3,692.2	-	0			1,684.54	8,050.33	216
R-2 (C1)	854	2,510.3	1,475.2	-	4,930			854.74	4,228.16	-
" (C2)	495	2,011.5	1,160.5	-	4,192			512.82	2,450.15	-
" (C3)	170	630.5	315.4	-	1,018			176.12	841.67	-
" (C4)	1,063	2,145.7	1,113.3	-	11,626			1,101.22	5,262.92	136
" (C5)	430	2,822.0	718.7	-	4,943			445.48	2,128.93	-
" (C6)	183	1,321.5	597.9	-	1,182			187.59	906.64	-
" (C7)	687	3,320.1	1,636.9	-	5,000			111.73	3,401.34	438
" (C8)	460	3,074.5	1,375.1	-	4,372			476.56	2,227.46	136
" (C9)	670	4,602.9	1,933.3	-	5,630			634.12	3,317.17	-
" (C10)	1,700	3,644.4	2,597.0	-	13,526			1,761.20	8,416.70	-
" (C11)	428	451.1	452.6	-	2,342			443.41	2,119.03	-
" (C12)	363	1,041.3	668.4	-	2,114			376.07	1,797.22	-
" (C13)	323	1,316.2	835.4	-	3,619			334.63	1,599.18	-
" (C14)	295	3,314.2	1,222.6	-	4,048			325.62	1,660.55	136
" (C15)	166	1,692.5	518.3	-	550			155.43	742.65	-
" (C16)	691	2,439.2	1,591.9	-	7,684			715.88	3,421.84	136
NORTHERN										
NEW TOWN TOTAL	10,664	42,310.7	21,418.5	00	76,606			10,569.18	52,371.24	1168

Table 4.1.6 The Quantities of Construction-(6)

Route No.	Total Length m	Open Ditch			Bridge RC Slab m ²	Safety Facilities			Remarks	
		Slope m ²	Excavation m ³	Road m ²		Traffic Signal Nos.	Lighting Nos.	Traffic Sign Nos.		
R-1 (C)	1,626	-	-	-	-	-	28	-		
R-2 (C1)	854	-	-	-	-	-	33	-		
" (C2)	495	-	-	-	-	-	9	-		
" (C3)	170	-	-	-	-	-	3	-		
" (C4)	1,063	-	-	-	-	-	18	-		
" (C5)	430	-	-	-	-	-	8	-		
" (C6)	183	-	-	-	-	-	4	-		
" (C7)	687	-	-	-	-	-	12	-		
" (C8)	460	-	-	-	-	-	8	-		
" (C9)	670	-	-	-	-	-	12	-		
" (C10)	1,700	-	-	-	-	-	29	-		
" (C11)	428	-	-	-	-	-	8	-		
" (C12)	363	-	-	-	-	-	7	-		
" (C13)	323	-	-	-	-	-	6	-		
" (C14)	295	-	-	-	-	-	5	-		
" (C15)	166	-	-	-	-	-	3	-		
" (C16)	691	-	-	-	-	-	12	-		
NORTHERN										
NEW TOWN TOTAL	10,583	00	00	0	00	0	155	0		

Table 4.1.7 Quantities of Construction - (7)
Beach Road (T3)
(Excluding Park Facility)

1. Parking (Public)		
	Pavement	21,750 m ²
	Planting	1,150 m ²
		22,900 m ²
2. Bus Terminal		
	Pavement	3,940 m ²
	Planting	2,960 m ²
	Sidewalk	5,580 m ²
3. Beach Road Length		
	Section A (Wide)	860 m
	" B (Wide)	2,340 m
4. Road Lighting		
		3.2 km
		23 nos.
5. Road Sign		
		24 nos.
6. Parking		
	Pavement	148 m ²
	Planting	44 m ²
	Sidewalk	188 m ²

7 Park Facilities

	Quantity		Quantity
Service Park A			
Earth work	640 m ³	Snack	40 m ²
Side walk	700 m ²	Toilet	20 "
Parking for bicycle	60 "	Service house	50 "
Parking for rental bicycle	70 "	Retaining wall	100 "
Planting	420 "	Lighting	10 nos.

	Quantity		Quantity
Service Park B			
Earth work	720 m ³	Snack	40 m ²
Side walk	310 m ²	Toilet	20 "
Parking for bicycle	50 "	Service house	60 "
Parking for rental bicycle	45 "	Retaining wall	130 "
Planting	960 "	Lighting	12 nos.

	Quantity		Quantity
Satellite Park			
Earth work	-	Toilet	15 m ²
Side walk	170 m ²	Vending	7 "
Parking for bicycle	40 "	Retaining wall	-
Planting	100 "	Lighting	3 nos.

Table 4.1.8 Quantities of Construction - (8)
Kō Lan Island

		Total Length
R. Fishery v.	N	2,225 m
"	S	1,400
Total		3,625
Tien	a	425
Tien Ta-Van	b	1,100
Tien Samae	T	300 + 80
Hiking Road		4,200

Table 4.1.9 Unit Price - (1) Earth Work

Unit : Baht

Item	Unit	Equipment & Material (1)		Operating (2)		Unskilled Labour	Construction (4) Coat (4)=(1)+(2)+(3)		Tax (5)	Remarks
		Local	Foreign	Local	Foreign		Local	Foreign		
Form	m ²	181.53	-	58.62	-	16.02	255.97	-	6.03	60mm ² 262
Timbering	m ³	11.49	-	4.04	-	-	15.53	-	0.37	
Staging	m ³	15.79	-	5.47	-	-	21.26	-	0.50	
Surplus Soil by Dump Truck (6 c)	m ³	11.05	-	28.6	9.33	-	39.65	9.33	4.02	
Excavation by Hand	m ³	-	-	-	-	39.95	39.95	-	0.94	-
Embankment		-	-	36.14	12.49	-	36.14	12.49	3.37	52
Walling H=8 Both Side	m	63.12	-	2,052.03	519.23	-	2,052.03	519.23	107.49	2,741.87
Walling H=6m Both Side	m	31.57	-	1,025.98	259.61	-	1,027.55	259.61	53.74	
Walling H=15m		118.36	-	1,758.07	584.90	-	1,876.43	584.90	109.17	
Fence H=1.9m	m	278.84	-	22.96	-	-	301.80	-	7.10	
Concrete Pavement t=5cm	m ²	36.22	-	12.87	1.12	44.38	93.47	1.12	2.32	
Walling H=6.0m Both Side		47.35	-	1,539.02	389.42	-	1,586.37	389.42	80.61	
Sodding	m ²	20.52	-	-	-	1.66	22.18	-	0.52	22.7
Concrete	m ³	478.34	-	185.85	-	-	664.19	-	15.81	4508/m ³ 680
Excavation Bulldozer (10t)	m ³	0.90	-	9.45	4.6	-	10.34	4.6	0.81	
Excavation by Shovel (0.6m ³)	m ³	2.58	-	17.36	11.07	-	19.94	11.07	1.99	33
Pump Drainage (day) 10Pa	day	76.99	-	115.88	15.02	22.18	215.05	15.02	7.75	
Pump Drainage (day) 5Pa	day	36.10	-	117.87	2.0	-	155.97	2.0	4.03	
Reinforcement	t	9,499.4	-	998.5	-	249.1	10,747.0	-	253.0	11.0008/kg
Masonry		285.0	-	87.7	-	13.2	385.9	-	9.1	
Asphalt Concrete 1,093 X/m ³		533.93	-	131.46	163.95	213.57	878.96	163.95	50.36	
Base 307 X/m ³		149.97	-	42.41	52.75	46.90	239.28	52.75	14.97	
Sub Base 110 X/m ³		53.73	-	16.08	20.00	14.66	84.47	20.00	5.53	

Table 4.1.10 Unit Price - (2) Instrument

Unit : Baht

Item	Unit	Equipment & Material (1)		Operating (2)		Unskilled Labour	Construction (4) Cost (4)=(1)+(2)+(3)		Tax (5)	Total (4)+(5)
		Local	Foreign	Local	Foreign		Local	Foreign		
Lighting (1)	nos	13,189.5	-	1,245.7	-	219.8	14,655.0	-	345	15,000
" (2)	nos	-	18,356	5,209	-	274.0	5,479	18,356	2,881.4	26,716.4
" (3)	nos	-	16,289	4,628.4	-	243.6	4,872	16,289	2,557.6	23,718.6
Signal		6,839	5,950	3,908	-	1,954	12,701	5,950	1,349	20,000
Sign	m ²	586.20	-	439.65	-	146.55	1,172.4	-	27.6	1,200
Lighting (1)	km	448,445	-	42,353.8	-	7,473.2	498,270	-	11,730	510,000
" (2)	km	-	550,680	156,270	-	8,220	164,370	550,680	96,442	801,492
" (3)	km	-	456,092	129,595.2	-	6,820.8	136,416	456,092	71,612.8	664,150.8

Table 4.1.11 Compensation

Compensation

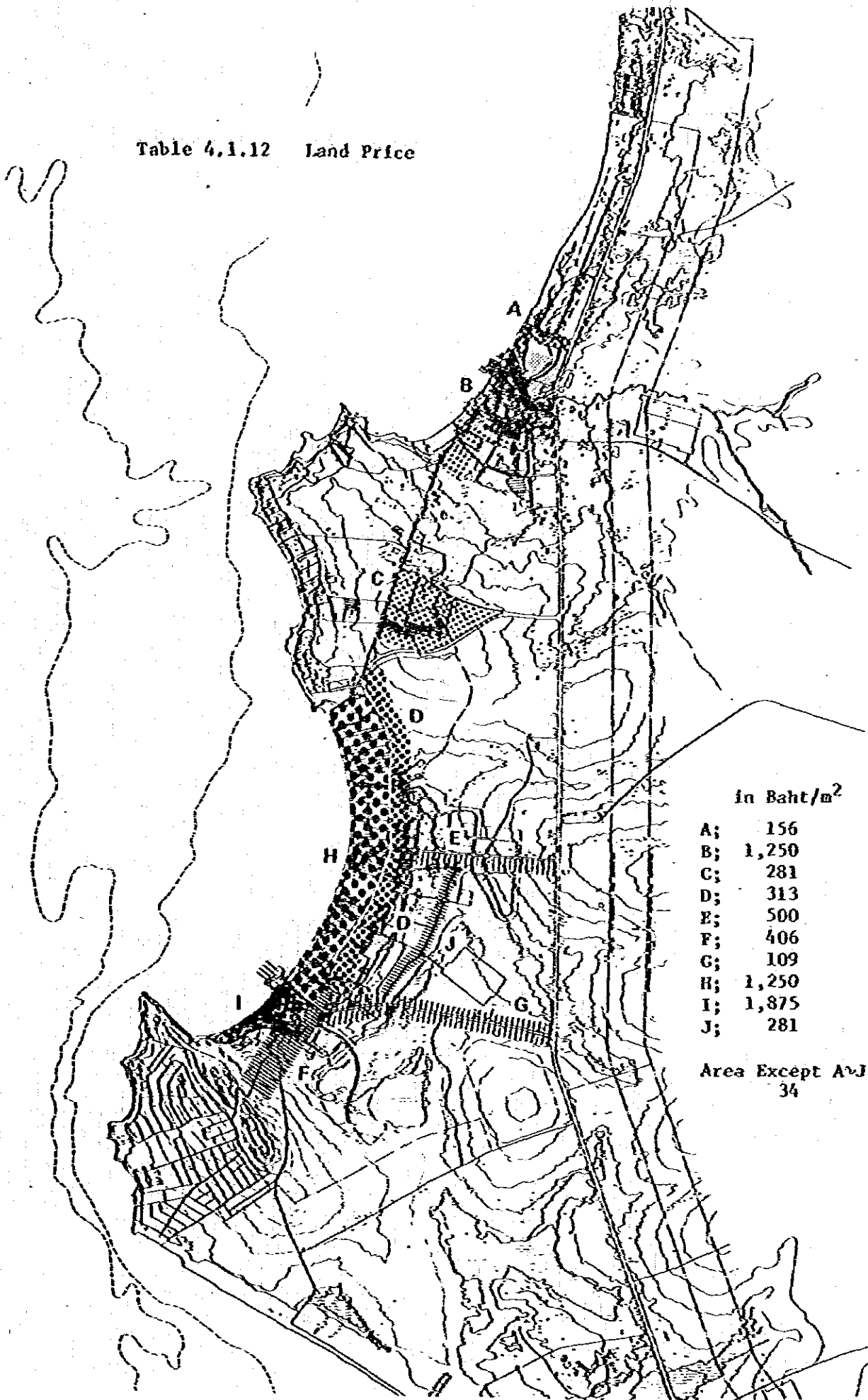
- Remaining price for building	400 ₺/m ²
- Compensation for removal of personal property	50 ₺/m ²
- Business compensation	500 ₺/m ²

Construction Cost for Removal

R.C. 200 ₺/m²

Wooden 80 ₺/m²

Table 4.1.12 Land Price



	in Baht/m ²
A;	156
B;	1,250
C;	281
D;	313
E;	500
F;	406
G;	109
H;	1,250
I;	1,875
J;	281

Area Except A & J
34

Table 4.1.14 Construction Cost for Residential Area (Na Klua/Pattaya)

Remarks
 1. U.L. = Cost for Unskilled Labor
 2. Cost in Thousand Baht

WORKS	TOTAL					1989					1991					1992					1993					1994					1995										
	CIVIL WORKS	EQUIP. MENT	COST WITHOUT TAX	TAX	COST WITH TAX	U.L.	CIVIL WORKS	EQUIP. MENT	COST WITHOUT TAX	TAX	COST WITH TAX	U.L.	CIVIL WORKS	EQUIP. MENT	COST WITHOUT TAX	TAX	COST WITH TAX	U.L.	CIVIL WORKS	EQUIP. MENT	COST WITHOUT TAX	TAX	COST WITH TAX	U.L.	CIVIL WORKS	EQUIP. MENT	COST WITHOUT TAX	TAX	COST WITH TAX	U.L.	CIVIL WORKS	EQUIP. MENT	COST WITHOUT TAX	TAX	COST WITH TAX	U.L.					
NA KLUA R-1	LOCAL		17,724.0	652.0	18,376.0	1,654.4			3,297.4	76.1	3,373.5	431.0			1,151.2	54.7	1,205.9	134.3			5,845.2	421.2	6,266.4	1,054.3																	
	FOREIGN		1,764.2		1,764.2				474.5		474.5				149.3		149.3				1,139.6		1,139.6																		
	TOTAL		19,488.2	652.0	20,140.2	1,654.4			3,771.9	76.1	3,848.0	431.0			1,300.5	54.7	1,355.2	134.3			6,985.2	421.2	7,406.0	1,054.3																	
R-2	LOCAL		20,738.1	714.5	21,452.6	1,531.8			10,664.3	268.2	10,932.5	820.4			3,425.8	117.3	3,543.1	255.7			2,711.8	93.4	2,805.2	263.2			3,924.2	135.4	4,059.6	254.8											
	FOREIGN		1,229.4		1,229.4				639.5		639.5				284.3		284.3				169.8		169.8																		
	TOTAL		21,967.5	714.5	22,682.0	1,531.8			11,303.8	268.2	11,572.0	820.4			3,710.1	117.3	3,827.4	255.7			2,881.6	93.4	2,975.0	263.2			4,094.0	135.4	4,229.4	254.8											
SUB-TOTAL	LOCAL		38,476.1	1,366.5	39,842.6	3,163.6			14,368.7	344.3	14,711.0	1,241.8			4,541.6	172.0	4,713.5	365.2			3,423.6	116.8	3,540.4	326.4			7,848.4	270.8	8,119.2	509.6											
	FOREIGN		1,993.6		1,993.6				1,114.0		1,114.0				353.6		353.6				1,039.6		1,039.6																		
	TOTAL		40,469.7	1,366.5	41,836.2	3,163.6			15,482.7	344.3	15,825.0	1,241.8			4,895.2	172.0	5,067.1	365.2			4,463.2	116.8	4,580.0	326.4			8,887.4	270.8	9,169.2	509.6											
TOTAL (CONST. + LAND)	LOCAL		37,484.5	0,364.5	37,849.0	3,158.2			13,254.7	344.3	13,609.0	1,234.8			4,188.0	172.0	4,360.0	363.8			3,313.8	116.8	3,430.6	323.2			7,523.6	270.8	7,794.4	509.6											
	FOREIGN																																								
	TOTAL		37,484.5	0,364.5	37,849.0	3,158.2			13,254.7	344.3	13,609.0	1,234.8			4,188.0	172.0	4,360.0	363.8			3,313.8	116.8	3,430.6	323.2			7,523.6	270.8	7,794.4	509.6											
PATTAYA R-1	LOCAL		3,431.5	139.3	3,570.8	588.0																																			
	FOREIGN		477.5		477.5																																				
	TOTAL		3,909.0	139.3	4,048.3	588.0																																			
R-2	LOCAL		17,185.2	592.1	17,777.3	1,274.3			4,254.0	112.4	4,366.4	413.5			1,201.7	44.6	1,246.3	36.9			4,311.4	145.8	4,457.2	317.6			1,762.8	63.7	1,826.5	132.1					3,443.3	118.6	3,561.9	254.8			
	FOREIGN		1,818.7		1,818.7				302.4		302.4				78.7		78.7				258.1		258.1																		
	TOTAL		19,003.9	592.1	19,596.0	1,274.3			4,556.4	112.4	4,668.8	413.5			1,280.4	44.6	1,325.0	36.9			4,569.5	145.8	4,715.3	317.6			1,811.3	63.7	1,875.0	132.1					3,701.7	118.6	3,820.3	254.8			
SUB-TOTAL	LOCAL		22,221.4	831.4	23,052.8	1,311.0			8,518.0	224.8	8,742.8	451.5			2,403.4	89.2	2,492.6	73.8			8,622.8	161.6	8,784.4	349.2			3,524.6	126.5	3,651.1	164.3					3,443.3	118.6	3,561.9	254.8			
	FOREIGN		1,666.2		1,666.2				302.4		302.4				78.7		78.7				258.1		258.1																		
	TOTAL		23,887.6	831.4	24,719.0	1,311.0			8,820.4	224.8	9,045.2	451.5			2,482.1	89.2	2,571.3	73.8			8,880.9	161.6	9,042.5	349.2			3,782.7	126.5	3,909.2	164.3					3,701.7	118.6	3,820.3	254.8			
TOTAL (CONST. + LAND)	LOCAL		21,555.4	831.4	22,386.8	1,311.0			8,215.6	224.8	8,440.4	451.5			2,324.7	89.2	2,413.9	73.8			8,364.7	161.6	8,526.3	349.2			3,406.1	126.5	3,532.6	164.3					3,443.3	118.6	3,561.9	254.8			
	FOREIGN																																								
	TOTAL		21,555.4	831.4	22,386.8	1,311.0			8,215.6	224.8	8,440.4	451.5			2,324.7	89.2	2,413.9	73.8			8,364.7	161.6	8,526.3	349.2			3,406.1	126.5	3,532.6	164.3					3,443.3	118.6	3,561.9	254.8			
3 + 8 TOTAL OF CONSTRUCTION	LOCAL		54,855.3	2,217.9	57,073.2	5,292.2			28,667.2	764.7	29,431.9	1,711.5			8,311.7	214.6	8,526.3	456.0			33,254.6	567.6	33,822.2	1,311.1			4,474.6	154.1	4,628.7	335.3					3,443.3	118.6	3,561.9	254.8			
	FOREIGN		4,632.2		4,632.2				1,421.6		1,421.6				426.7		426.7				1,395.4		1,395.4																		
	TOTAL		61,487.5	2,217.9	61,705.4	5,292.2			30,088.8	764.7	30,853.5	1,711.5			8,738.4	214.6	8,953.0	456.0			34,650.0	567.6	35,217.6	1,311.1			4,901.0	154.1	5,053.1	335.3					3,701.7	118.6	3,820.3	254.8			
GRAND TOTAL OF RESIDENT	LOCAL		41,243.1	1,117.9	42,361.0	3,324.2			17,063.3	363.3	17,426.6	1,111.1			5,174.4	154.1	5,328.5	385.3			18,079.9	265.7	18,345.6	740.6			2,252.1	97.9	2,350.0	127.3					2,252.1	97.9	2,350.0	127.3			
	FOREIGN																																								
	TOTAL		41,243.1	1,117.9	42,361.0	3,324.2			17,063.3	363.3	17,426.6	1,111.1			5,174.4	154.1	5,328.5	385.3			18,079.9	265.7	18,345.6	740.6			2,252.1	97.9	2,350.0	127.3					2,252.1	97.9	2,350.0	127.3			

Table 4.1.1.16 Maintenance and Operation Cost for Residential Area (Na Klua/Pattaya)

Unit in Thousand Baht

Kind	1980	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
Na Klua A	Pavement						59	84		190	206	206						
	Drainage						61	85	127	139	156							
	Lighting	7	10	15	16	18	18	12	25	27	30							
	Planting																	
Na Klua B	Signal							0.1	0.8	0.8	1.0							
	Sign						0.11	0.19	0.52	0.56	0.58							
	Total	7	10	15	16	18	150.11	186.3	319.3	357.4	393.6	393.6						
	Pavement						21	21	21	21	21	28	105	105				
Na Klua C	Drainage						29	29	29	29	29	29	29	29				
	Lighting	3	3	3	3	4	6	6	6	6	6	6	6	6				
	Planting						4	4	4	4	4	4	4	4				
	Signal																	
Na Klua (A+B)	Sign						0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08				
	Total	3	3	3	3	4	60.1	60.1	60.1	60.1	67.1	74.1	74.1					
	Total	10	13	18	19	22	210.2	246.4	379.4	417.5	460.7	467.7						
	Pavement						27	33	50	60	103	117						
Pattaya	Drainage						45	55	84	96	118	141						
	Lighting	5	6	9	10	12	15	9	11	16	18	22	26					
	Planting																	
	Signal										0.4							
Grand Total	Sign						0.09	0.11	0.16	0.17	0.27	0.31						
	Total	5	6	9	10	12	96.1	114.1	150.2	174.2	200.7	284.7	284.7					
	Total	15	19	27	29	34	306.3	360.5	529.6	591.7	661.4	752.4	752.4					

4.2 Sewerage System

Table 4.2.1a Construction Cost of Sewerage System - (1)

Unit: thousand Baht

Items	TOTAL			1980			1981			1982			1983			1984			1985			
	Cost without S&P	Fun	Cost with S&P	Cost without S&P	Fun	Cost with S&P	Cost without S&P	Fun	Cost with S&P	Cost without S&P	Fun	Cost with S&P	Cost without S&P	Fun	Cost with S&P	Cost without S&P	Fun	Cost with S&P	Cost without S&P	Fun	Cost with S&P	
Revenue pipeline	3494.7	1977.5	5472.2	2830.7	2685	5515.7	1861	3002.6	4862.3	33.2	457	338.7	473	34	513	300.9	132	374	300.9	132	374	200
Local	3494.7	1977.5	5472.2	2830.7	2685	5515.7	1861	3002.6	4862.3	33.2	457	338.7	473	34	513	300.9	132	374	300.9	132	374	200
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3494.7	1977.5	5472.2	2830.7	2685	5515.7	1861	3002.6	4862.3	33.2	457	338.7	473	34	513	300.9	132	374	300.9	132	374	200
Treatment plant	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8
Local	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8	2387	4107.8	1720.8
Land cost (including Pumping Station)	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924
Local	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924	924	1848	924
Total (1)	6215.5	4394.5	10609.9	5561.2	5307	15923.5	3722	5907.6	9724.1	67.4	914	777.4	943	68	1026	601.8	264	748	601.8	264	748	200
Local	6215.5	4394.5	10609.9	5561.2	5307	15923.5	3722	5907.6	9724.1	67.4	914	777.4	943	68	1026	601.8	264	748	601.8	264	748	200
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	6215.5	4394.5	10609.9	5561.2	5307	15923.5	3722	5907.6	9724.1	67.4	914	777.4	943	68	1026	601.8	264	748	601.8	264	748	200
Revenue pipeline	3497.2	777.5	4274.7	3186.4	2987	6173.4	2273	3815.4	7988.8	48.3	577	430.7	634	51	587	483.9	185	668	483.9	185	668	200
Local	3497.2	777.5	4274.7	3186.4	2987	6173.4	2273	3815.4	7988.8	48.3	577	430.7	634	51	587	483.9	185	668	483.9	185	668	200
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3497.2	777.5	4274.7	3186.4	2987	6173.4	2273	3815.4	7988.8	48.3	577	430.7	634	51	587	483.9	185	668	483.9	185	668	200
Treatment plant	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874
Local	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874
Land cost (including Pumping Station)	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543
Local	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543
Sub total (Freight)	2794.2	1801.3	4595.5	2410.6	2212.5	4623.1	1516.3	3157.4	6342.6	101.7	1017	1118.4	1368	101	1119	1017.8	386	1404	1017.8	386	1404	200
Local	2794.2	1801.3	4595.5	2410.6	2212.5	4623.1	1516.3	3157.4	6342.6	101.7	1017	1118.4	1368	101	1119	1017.8	386	1404	1017.8	386	1404	200
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2794.2	1801.3	4595.5	2410.6	2212.5	4623.1	1516.3	3157.4	6342.6	101.7	1017	1118.4	1368	101	1119	1017.8	386	1404	1017.8	386	1404	200
Revenue pipeline	2793.1	705.9	3499	2420.8	2268.9	4689.7	1516.3	3157.4	6342.6	101.7	1017	1118.4	1368	101	1119	1017.8	386	1404	1017.8	386	1404	200
Local	2793.1	705.9	3499	2420.8	2268.9	4689.7	1516.3	3157.4	6342.6	101.7	1017	1118.4	1368	101	1119	1017.8	386	1404	1017.8	386	1404	200
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2793.1	705.9	3499	2420.8	2268.9	4689.7	1516.3	3157.4	6342.6	101.7	1017	1118.4	1368	101	1119	1017.8	386	1404	1017.8	386	1404	200
Treatment plant	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874
Local	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874	2671	4545	1874
Land cost (including Pumping Station)	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543
Local	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543	3543	7086	3543

- to be continued -

**Table 4.2.2 The Quantity of Construction
Treatment Plant and Pumping Station**

NA. KUDA. TREATMENT PLANT	Works	Unit	Total	1980	1981	1982	1983	1984	1985	Remarks	
	1. Cost of land										
	Purchase of land	m ²	239,100	239,100							
	Transfer of houses	"	10,412	10,412							
	2. Pond construction										
	Deforestation	m ²	239,100	239,100							
	Excavation (bulldozer)	m ³	69,950	69,950							
	Banking	"	140,670	140,670							
	Resouiding of alignment in the pond	m ²	24,120	24,120							
	Concrete block pitching at alignment	"	10,830	10,830							
Clay-pitching in the pond	"	95,956	95,956								
Gravel road	"	22,673	22,673								
Sodding	"	61,588	61,588								
Alignment	"	8,624	8,624								
Fence	"	2,122	2,122								
Unwatering work	5ps day	960	960								

NA. KUDA. TREATMENT PLANT	Works	Unit	Total	1980	1981	1982	1983	1984	1985	Remarks	
	3. Structures										
	Concrete	m ³	1,265	1,265							
	levelling concrete	"	45.7	45.7							
	Reinforcement	t	104.0	104.0							
	Form (frame)	m ²	5,205.7	5,205.7							
	Cobblestone	m ³	273.8	273.8							
	Staging	m ³	727	727							
	Timbering	"	1,125	1,125							
	Excavation with timbering 1-6a	"	157	157							
	Unwatering work 5ps	day	130	130							
	Unwatering work 10ps	"	192	192							
	Building (RC)	m ²	759	759							
	Building (wooden)	"	60	60							
	Gate 400x100	unit	12	12							
	Excavation (shore)	m ³	11,585	11,585							
	Backfilling	"	9,850	9,850							
	Removal of surplus soil	"	1,735	1,735							
	4. Piping										
	Reinforced prestressed concrete (600)	m	178	178							

- to be continued -

Works	Unit	Total	1980	1981	1982	1983	1984	1985	Remarks	
NA. KELIA TREATMENT PLANT	Reinforced prestressed concrete Ø700	m	70	70						
	Asbestos Ø300	"	459	459						
	Asbestos Ø200	"	750	750						
	Excavation (shovel)	m ³	250	250						
	Backfilling	"	215	215						
	Removal of surplus soil	"	35	35						
	Unwatering work 5ps	day	20	20						
	<u>5. Mechanics, electric</u>									
	Electricity-receiving equipment	unit	1	1						
	Impounding pump 37KV	"	3	3						
	Return pump 5.5KV	"	2	2						
	Instrumenting, pumping devices	"	1	1						
	<u>1. Cost for land</u>									
	Purchase of land	m ²	183,500	183,500						
Transfer of houses	"	331	331							
<u>2. Food construction</u>										
Deforestation	m ²	183,500	183,500							
Excavation (bulldozer)	m ³	65,550	37,930	21,170	5,550			900		

- to be continued -

Works	Unit	Total	1980	1981	1982	1983	1984	1985	Remarks	
PATTANA TREATMENT PLANT	Banking	m ³	165,450	35,950	1,650	34,420			93,430	
	Removal of surplus soil	"	1,970	1,970	-	-			-	
	Reoulding of alignment in the pond	m ²	27,492	6,873	6,873	6,873			6,873	
	Concrete block pitching at alignment	"	12,360	3,090	3,090	3,090			3,090	
	Clay-pitching in the pond	"	95,884	23,971	23,971	23,971			23,971	
	Gravel road	"	20,619	12,449	641	2,863			4,666	
	Sodding	"	42,978						42,978	
	Alignment reoulding	"	5,768						5,768	
	Fence	"	1,772						1,772	
	Unwatering work 5ps	day	845	458	264	74			20	
	<u>3. Structures</u>									
	Concrete	m ³	371.6	312.6	19.6	19.6			19.6	
	Reinforcing concrete	m ³	23.5	19.5	1.5	1.5			1.5	
	Cobblestone	"	45.0	45.0						
Form (frame)	m ²	2,592.6	2,113.9	158.9	158.9			158.9		
Reinforcement	t	33.1	28.3	1.6	1.6			1.6		
Staging	m ³	170	170							
Timbering	"	197	197							
Gate 400x500	unit	16	4	4	4					

- to be continued -

Works	Unit	Total	1950	1951	1952	1953	1954	1955	Remarks
Building (RC)	m ²	544	544						
Building (wooden)	"	60	60						
Excavation (shovel)	m ³	1,371	1,371						
Backfilling	"	1,604	1,604						
Removal of surplus soil	"	357	357						
Dewatering work Sps	day	131	131						
4. Piping									
Reinforced prestressed concrete #600	m	445	445						
Reinforced prestressed concrete #100	"	70	70						
Asbestos #300	"	653	182	122	122			182	
Asbestos #150	"	450	430						
Excavation (shovel)	m ³	200	200						
Backfilling	m ³	161	161						
Removal of surplus soil	m ³	39	39						
Dewatering work Sps	day	20	20						
5. Discharging water channel									
Cost for land	m ²	5,175	5,175						
Masonry	m ²	4,530	4,530						

- to be continued -

Works	Unit	Total	1950	1951	1952	1953	1954	1955	Remarks
Banking	m ³	7,270	7,270						
Excavation (shovel)	"	2,770	2,770						
Excavation (manpower)	"	310	310						
Backfilling	"	925	925						
Concrete	"	51.8	51.8						
Reinforcement	t	5.2	5.2						
Form (frame)	m ²	214	214						
Cobblestone	m ³	11.1	11.1						
Levelling concrete	"	5.5	5.5						
Timbering	m ³	36	36						
Staging	"	64	64						
6. Mechanics, electric									
Electricity-receiving equipment	unit	1	1						
Return pump	"	2	2						
Instrumenting, pumping devices	"	1	1						
1. Cost for land									
Purchase of land	m ²	800	800						
2. Civil engineering works									
Excavation (shovel)	m ³	3,459.9	3,459.9						

- to be continued -

PUMPING STATION (NA XLVA)	Works	Unit	Total	1980	1981	1982	1983	1984	1985	Remarks
	Removal of surplus soil	m ³	1,910.2	1,910.2						
Piping	"	1,549.7	1,549.7							
Earth-filling E=12	"	54.4	54.4							
Earth-filling E=11.5	"	54.4	54.4							
Unwatering work 10ps day		198	198							
Concrete	m ³	687.4	687.4							
Reinforcement	t	82.4	82.4							
Staging	m ³	989	989							
Timbering	"	1,185	1,185							
Form (frame)	m ²	1,826	1,826							
Levelling concrete	m ³	24.4	24.4							
Cobblestone	"	73.4	73.4							
Reusing (RC)	m ²	200	200							
Sodding	"	600	600							
Fence	"	150	150							
3. Mechanics, electricis										
No. 1 Pump	unit	2	2							
No. 3 Pump	"	3	2				1			
Instrumenting, pump- ing devices	"	3	1							
Cominater	"	2	2							

- to be continued -

PUMPING STATION (PANTAVA)	Works	Unit	Total	1980	1981	1982	1983	1984	1985	Remarks
	1. Cost for land									
Purchase of land	m ²	1,620	1,620							
2. Discharging water channel										
Excavation (shovel)	m ³	5,878.1	5,878.1							
Removal of surplus soil	"	3,284.6	3,284.6							
Backfilling	"	2,593.5	2,593.5							
Discharging water channel E=10	"	54.4	54.4							
Discharging water channel E=7	"	54.4	54.4							
Discharging water channel E=9.3	"	54.4	54.4							
Discharging water channel E=13	"	56.4	56.4							
Unwatering work 10ps day		339	339							
Concrete	m ³	1,209.0	1,209.0							
Reinforcement	t	145.0	145.0							
Staging	m ³	1,737	1,737							
Timbering	"	2,083	2,083							
Form (frame)	m ²	3,211	3,211							
Levelling concrete	m ³	50.1	50.1							
Cobblestone	"	150.6	150.6							

- to be continued -

	Works	Unit	Total	1980	1981	1982	1983	1984	1985	Remarks	
PUMPING STATION (PANTAYA)	Masonry (RC)		410	410							
	Sodding		1,210	1,210							
	Fence		302	302							
	3. Mechanics, electric										
	No. 2 Pump	unit	3	2	1						
	No. 3 Pump	"	2	2							
	No. 4 Pump	"	2	2							
	No. 5 Pump	"	4	2	1	1					
	Instrumenting, pumping devices	"	1	1							
Comminuter	"	4	4								
Ko Lan Island	1. Tavan Beach										
	Purification tank (for 100 persons)	unit	3		3						
	Excavation	m ³	145.6		145.6						
	Backfilling	"	121.0		121.0						
	Removal of surplus soil	"	24.6		24.6						
	2. Sa Mae & Tien Beach										
Purification tank (for 100 persons)	unit	4		4							

- to be continued -

	Works	Unit	Total	1980	1981	1982	1983	1984	1985	Remarks	
Ko Lan Island	Excavation	m ³	174.8		174.8						
	Backfilling	"	142.0		142.0						
	Removal of surplus soil	"	32.8		32.8						
	3. Kolan Village										
	Purification tank (for 7 persons)	unit	470		117	117	117	119			
	Excavation	m ³	1,787		445	445	445	452			

- to be continued -

Table 4.2.3 The Quantities of Construction - (2)

Zone: Pattaya

Area: Hotel Pipe: Main

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1980	500	10	41	39	2	1		Pressure pipe
	600	1,961	8,034	7,745	289	29		
	300	763	855	801	54			
	300	1,110	3,283	3,205	78	22	2	
	250	315	562	546	16	7		
	200	937	1,474	1,443	31	22		
	Total			14,249	13,779	470	81	
1981	400	573	1,564	1,492	72	9		
	300	693	1,485	1,438	47	16		
	250	1,228	3,162	3,111	51	27		
	200	212	239	233	6	6		
	Total			6,450	6,274	176	58	
1982	250	243	512	500	12	5		

Zone: Pattaya

Area: Hotel Pipe: Branch

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1980	250	275	413	398	13	6		
	200	3,810	4,767	4,647	120	76	2	
	Total		5,178	5,045	133	82	2	
1981	200	1,657	1,605	1,553	52	31		
1982	300	368	1,185	1,158	27	8		
	200	3,215	4,059	3,947	102	63		
	Total		5,234	5,105	129	71		
1983	200	1,762	1,495	1,440	55	33		
1985	250	589	1,723	1,694	29	12		
	200	567	560	542	18	12		
	Total		2,283	2,236	47	24		

Zone: Pattaya

Area: Bungalow

Pipe: Main

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1984	200	270	267	258	9	6		

Zone: Pattaya

Area: Resident

Pipe: Main

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1980	700	10	107	103	4	1		
	600	1,187	6,676	6,341	335	18		
	500	199	692	653	39	4		
	400	277	958	953	35	4	2	
	300	348	804	780	24	8		
	200	815	800	774	26	17		
	Total		10,067	9,604	463	52		

Zone: Pattaya

Area: Bungalow Pipe: Branch

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1984	250	1,150	1,242	1,185	57	24		
	200	1,005	1,281	1,249	32	23		
	150	455	342	334	8			
	Total		2,865	2,768	97	47		

Zone: Pattaya

Area: Resident Pipe: Branch

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1980	200	1,655	2,047	1,993	54	36		
1981	200	938	912	912	30	20		
1982	300	550	1,133	1,095	38	12		
	200	357	390	378	12	7		
	Total		1,523	1,473	50	19		
1983	200	938	1,243	1,214	29	17		
1985	300	1,685	5,605	5,444	161	34		
	200	1,329	1,679	1,637	42	28		
	Total		7,284	7,081	203	62		

Zone: Pattaya

Area: Resident

Pipe: Branch (emergency road)

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1981	200	3,828	3,850	3,721	119	81		
1982	200	250	213	205	8	5		
1983	200	2,195	2,032	1,962	70	59		
1984	200	1,200	1,077	1,038	39	29		

Area: Town "A"

Pipe: Main

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1980	800	160	1,649	1,569	80	3		
	700	1,333	10,198	9,685	513	13		
	600	215	773	713	60	3	2	
	500	619	1,090	968	122			
	500	1,289	4,969	4,715	254	21		
	400	261	1,133	1,100	33	4		
	300	927	3,393	3,328	65	21		
	250	50	15	14	1			
	250	550	1,110	1,082	28	13		
	200	220	302	294	8	4	2	
	Total		24,632	23,468	1,164	82	4	
1982	250	313	354	338	16	7		
1985	300	600	3,206	3,164	42	12		

Zone: Na Klua

Area: Town "B"

Pipe: Main

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1980	300	1,730	2,948	2,826	122	36		
	250	2,347	6,505	6,389	116	50		
	Total		9,453	9,215	238	86		
1982	250	848	1,815	1,773	42	17		
	200	285	233	224	9	7		
	Total		2,048	1,997	51	24		
1983	200	516	655	629	16	10		

Zone: Na Klua

Area: Town "A"

Pipe: Branch

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1980	400	3,490	7,724	7,286	438	70		
	300	2,523	5,940	5,763	177	51		
	250	2,043	4,173	4,074	99	44		
	200	4,689	4,557	4,405	152	105		
	Total		22,395	21,528	866	270		
1981	300	735	2,624	2,571	53	17		
	250	120	131	125	6	3		
	200	228	203	195	8	5		
	Total		2,958	2,891	67	25		
1985	300	683	3,841	3,793	48	14		

Zone: Na Klua

Area: Town "A"

Pipe: Branch (emergency road)

Year	Pipe diameter (m)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1981	200	2,420	2,307	2,235	72	54		
1982	200	1,925	2,278	2,217	61	61		
1984	200	280	239	230	9	6		

Zone: Na Klua

Area: Bungalow

Pipe: Branch

Year	Pipe diameter (m)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1983	250	390	421	402	19	8	Pressure pipe	
	200	510	581	565	16	11		
	100	354	255	252	3			
	Total		1,257	1,219	38	19		

Zone: Na Kluu

Area: Town "B"

Pipe: Branch

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1980	250	42	109	107	2	1		
	200	3,111	3,078	2,975	103	66		
	Total		3,187	3,082	105	67		
1981	200	400	351	338	13	8		
1983	250	300	668	653	15	7		
	200	589	617	598	19	13		
	Total		1,285	1,251	34	20		

Zone: Na Kluu

Area: Town "B"

Pipe: Branch (emergency road)

Year	Pipe diameter (mm)	Pipe length (m)	Earthwork (m ³)			Manhole (each)		Remarks
			Excavation	Backfill	Removal	General	Special	
1981	200	890	772	765	27	20		
1982	200	1,355	1,120	1,078	42	30		
1984	200	460	351	337	14	9		

Table 4.2.4 Operation & Maintenance Cost

	R/year						
Item	1981	1982	1983	1984	1985	1986	
% XLVA	Treatment station, electricity fee	216,692	216,692	216,692	216,692	216,692	
	Relay pump No.1	47,532	47,532	47,532	47,532	47,532	
	No.2	-	-	-	-	-	
	No.3	82,716	82,716	82,716	103,224	103,224	
	chlorine treatment	28,612	32,036	35,460	38,150	38,883	
PATAYA	Personnel expense	382,800	382,800	382,800	382,800	382,800	
	Maintenance costs	67,364	67,364	67,364	75,978	75,978	
Total	825,716	829,140	832,564	864,376	865,109	866,088	
PATAYA	Treatment station, electricity fee	41,100	41,100	41,100	41,100	41,100	
	Relay pump No.1	-	-	-	-	-	
	No.2	-	-	-	-	-	
	No.3	69,252	89,916	89,916	89,916	89,916	
	No.4	10,194	10,194	10,194	10,194	10,194	
% XLVA	No.5	35,286	35,286	35,286	35,286	35,286	
	No.6	78,144	147,820	217,497	217,497	217,497	
chlorine treatment	8,070	20,298	27,145	31,547	34,237		
Personnel expense	382,800	382,800	382,800	382,800	382,800		
Maintenance costs	49,537	67,167	77,022	77,022	77,022		
Total	674,383	794,581	880,960	885,362	888,052	892,454	
Grand total	1,500,099	1,623,721	1,713,524	1,749,738	1,753,161	1,758,542	

4.3 Storm Water Drainage System

Table 4.3.1 Phase 1 Construction and Land Costs for Storm Water Drainage System (Central Pattaya Area)

WORKS		(Unit: 1,000 Baht)											
		TOTAL				1981				1982			
		COST WITHOUT TAX	TAX	COST WITH TAX	U.L.	COST WITHOUT TAX	TAX	COST WITH TAX	U.L.	COST WITHOUT TAX	TAX	COST WITH TAX	U.L.
1. Main Open Channel	LOCAL	6,073	260	6,333	291	3,573	127	3,700	158	2,500	133	2,633	133
	FOREIGN	531	-	531	-	201	-	201	-	330	-	330	-
	TOTAL	6,604	260	6,864	291	3,774	127	3,901	158	2,830	133	2,963	133
2. Box Culvert	LOCAL	2,627	73	2,700	79	1,849	52	1,901	56	778	21	799	23
	FOREIGN	53	-	53	-	39	-	39	-	14	-	14	-
	TOTAL	2,680	73	2,753	79	1,888	52	1,940	56	792	21	813	23
3. Spillway	LOCAL	675	21	696	22	100	3	103	3	575	18	593	18
	FOREIGN	24	-	24	-	2	-	2	-	22	-	22	-
	TOTAL	699	21	720	22	102	3	105	3	597	18	615	18
4. Branch Open Channel	LOCAL	4,136	129	4,265	155	1,034	32	1,066	39	3,102	97	3,199	116
	FOREIGN	135	-	135	-	34	-	34	-	101	-	101	-
	TOTAL	4,271	129	4,400	155	1,068	32	1,100	39	3,203	97	3,300	116
5. Land Grading of Regulating Pond	LOCAL	426	33	459	-	-	-	-	-	426	33	459	-
	FOREIGN	197	-	197	-	-	-	-	-	197	-	197	-
	TOTAL	623	33	656	-	-	-	-	-	623	33	656	-
Sub-total	LOCAL	13,937	516	14,453	546	6,556	214	6,770	255	7,331	302	7,633	290
	FOREIGN	910	-	910	-	276	-	276	-	654	-	654	-
	TOTAL	14,847	516	15,363	546	6,832	214	7,046	255	7,985	302	8,287	290
6. Land Costs	LOCAL	17,137	-	17,137	-	10,915	-	10,915	-	6,222	-	6,222	-
	FOREIGN	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL	17,137	-	17,137	-	10,915	-	10,915	-	6,222	-	6,222	-
Total	LOCAL	31,074	516	31,590	546	17,471	214	17,685	255	13,603	302	13,905	290
	FOREIGN	910	-	910	-	276	-	276	-	654	-	654	-
	TOTAL	32,014	516	32,500	546	17,747	214	17,961	255	14,257	302	14,559	290

*U.L.: Unskilled labor

Table 4.3.2 Phase 1 Construction and Land Costs for Storm Water Drainage System (Southern Na Klua Area)

WORKS		(Unit: 1,000 Baht)											
		TOTAL				1981				1982			
		COST WITHOUT TAX	TAX	COST WITH TAX	U.L.	COST WITHOUT TAX	TAX	COST WITH TAX	U.L.	COST WITHOUT TAX	TAX	COST WITH TAX	U.L.
1. Main Open Channel	LOCAL	4,304	158	4,462	182	1,233	51	1,284	62	3,071	107	3,178	120
	FOREIGN	258	-	258	-	103	-	103	-	153	-	153	-
	TOTAL	4,562	158	4,720	182	1,336	51	1,387	62	3,224	107	3,331	120
2. Box Culvert	LOCAL	598	17	615	18	598	17	615	18	-	-	-	-
	FOREIGN	12	-	12	-	12	-	12	-	-	-	-	-
	TOTAL	610	17	627	18	610	17	627	18	-	-	-	-
3. Branch Open Channel	LOCAL	2,068	64	2,132	78	1,034	32	1,066	39	1,034	32	1,066	39
	FOREIGN	68	-	68	-	34	-	34	-	34	-	34	-
	TOTAL	2,136	64	2,200	78	1,068	32	1,100	39	1,068	32	1,100	39
Sub-total	LOCAL	6,970	239	7,209	278	2,865	100	2,965	119	4,105	139	4,244	159
	FOREIGN	338	-	338	-	151	-	151	-	187	-	187	-
	TOTAL	7,308	239	7,547	278	3,016	100	3,116	119	4,292	139	4,431	159
4. Land Costs	LOCAL	1,306	-	1,306	-	1,136	-	1,136	-	170	-	170	-
	FOREIGN	-	-	-	-	-	-	-	-	-	-	-	-
	TOTAL	1,306	-	1,306	-	1,136	-	1,136	-	170	-	170	-
Total	LOCAL	8,276	239	8,515	278	4,001	100	4,101	119	4,275	139	4,414	159
	FOREIGN	338	-	338	-	151	-	151	-	187	-	187	-
	TOTAL	8,614	239	8,853	278	4,152	100	4,252	119	4,462	139	4,601	159
Grand Total	LOCAL	39,350	755	40,105	824	21,472	314	21,786	375	17,878	441	18,319	449
	FOREIGN	1,278	-	1,278	-	427	-	427	-	851	-	851	-
	TOTAL	40,628	755	41,383	824	21,899	314	22,213	375	18,729	441	19,170	449

*U.L.: Unskilled labor

Table 4.3.3 Quantity of Work (Phase 1 up to 1986)

Item		#1 Excavation	Residual Soil	Concrete	Formwork	Reinforcement	Cobble Steones	Leveling Concrete	Banking	#2 Masonry	Pavement	Timbering	Staging	Grading	#3 Land
		(m ³)	(m ³)	(m ³)	(m ³)	(t)	(m ³)	(m ³)	(m ³)	(m ²)	(m ²)	(m ³)	(m ³)	(m ²)	(m ²)
Central Pattaya Area	Main Open Channel	822,050 ∇ 2,450	22,030	-	-	-	-	-	2,420	5,630	4,764	-	-	-	24,900
	Box Culvert	81,845 ∇ 205	2,050	1,128	2,327	90.38	253	127	-	-	-	1,434	786	-	-
	Spillway	8830 ∇ 92	922	341	355	20.60	125	63	-	-	-	-	-	-	-
	Branch Open Channel	26,300 ∇ 700	7,000	-	-	-	-	-	-	9,600	-	-	-	-	6,800
	Land Grading of Regulating Pond	-	-	-	-	-	-	-	-	-	-	-	-	165,000	165,000
	Total	831,025 ∇ 3,447	32,052	1,469	2,712	110.98	378	190	2,420	15,230	4,764	1,434	786	165,000	195,700
Southern Na Klua Area	Main Open Channel	811,183 ∇ 1,240	11,390	-	-	-	-	-	1,030	4,500	1,455	-	-	-	9,503
	Box Culvert	4423 ∇ 47	470	258	528	20.67	56	28	-	-	-	169	147	-	-
	Branch Open Channel	83,150 ∇ 350	3,500	-	-	-	-	-	-	4,600	-	-	-	-	3,600
	Total	814,753 ∇ 1,637	15,360	258	528	20.67	56	28	1,030	9,300	1,455	169	147	-	12,908

- #1 A: Mechanical excavation, ∇: Manual excavation
 #2 Main open channel: t = 70cm, Branch open channel: t = 35cm
 #3 The land required for the box culverts and spillways is included in the land for the road system and main open channel work, respectively.

Table 4.3.4 Unit Cost by Work

Work	Unit	Machine and Material Cost		Operation Cost		Labor Cost	Tax
		Local Currency (B)	Foreign Currency (B)	Local Currency (B)	Foreign Currency (B)	Local Currency (B)	Local Currency (B)
Mechanical Excavation	m ³	2.58	-	17.35	11.07	-	1.99
Manual Excavation	m ³	-	-	-	-	39.95	0.94
Residual soil	m ³	11.05	-	28.60	9.33	-	4.02
Banking	m ³	-	-	36.14	12.49	-	3.37
Concrete	m ³	478.34	-	185.85	-	-	15.81
Formwork	m ²	181.33	-	58.62	-	16.02	6.03
Reinforcement	t	9,499.40	-	938.50	-	249.10	253.00
Cobblestones	m ³	149.97	-	42.41	52.75	45.90	14.97
Leveling concrete	m ³	478.34	-	185.85	-	-	15.81
Masonry (main open channel)	m ²	570.00	-	175.40	-	26.40	18.20
Masonry (branch open channel)	m ²	285.00	-	87.70	-	13.20	9.10
Pavement	m ²	29.99	-	8.44	-	9.38	2.99
Timbering	m ³	11.45	-	4.04	-	-	0.37
Staging	m ³	15.79	-	5.47	-	-	0.50
Land Grading of Regulating Pond	m ²	0.20	-	2.40	-	-	0.20

4.4 Solid Waste Disposal System