

**PATTAYA**  
**TOURISM**  
**DEVELOPMENT**  
**THAILAND**

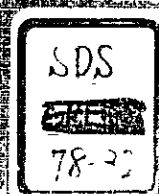
**DECEMBER 1978**

**FEASIBILITY STUDY**  
**FINAL REPORT**

**SUMMARY**

**TOURIST ORGANIZATION**  
**OF THAILAND**

**JAPAN INTERNATIONAL**  
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**SUMMARY**

**FEASIBILITY STUDY**      **DECEMBER 1978**      **FINAL REPORT**

# **PATTAYA TOURISM DEVELOPMENT**

国際協力事業団	
受入 月日 584. 9. 264	1220
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登録No. 09081	SDSs

## P R E F A C E

This report summarizes the results of study for Pattaya Tourism Development, Phase-1 up to 1986 on the economic and technical feasibility as an entire tourism development project. The project concerns to provide the infrastructures required for a currently developed beach resort, Pattaya, on the coastline of the Gulf of Thailand. The resort has now 3,600 hotel rooms whose number is expected to increase to 4,300 hotel rooms by 1986, which is the ending year of Phase I development.

The objective of the study is to establish a solid guideline for an orderly tourism development of the Pattaya resort area - one of the most important tourism developments in Thailand. The study has been executed in accordance with the agreed scope of work and is divided into two main stages of work: The first stage for the preparation of a master plan and the second stage for the preparation of a feasibility study. A report on the master plan in the first stage was submitted to the Government of Thailand in December, 1977.

Following the completion of the master plan in the first stage, a feasibility study was started as the second stage which covered sewerage system, solid waste disposal system, road and street system, port facilities, and storm water drainage system.

The total initial investment cost for the proposed public infrastructure of Phase-1 is estimated about 1,260 million Baht or US\$ 63 million in equivalent to cater to the residents and tourism industries in Pattaya.

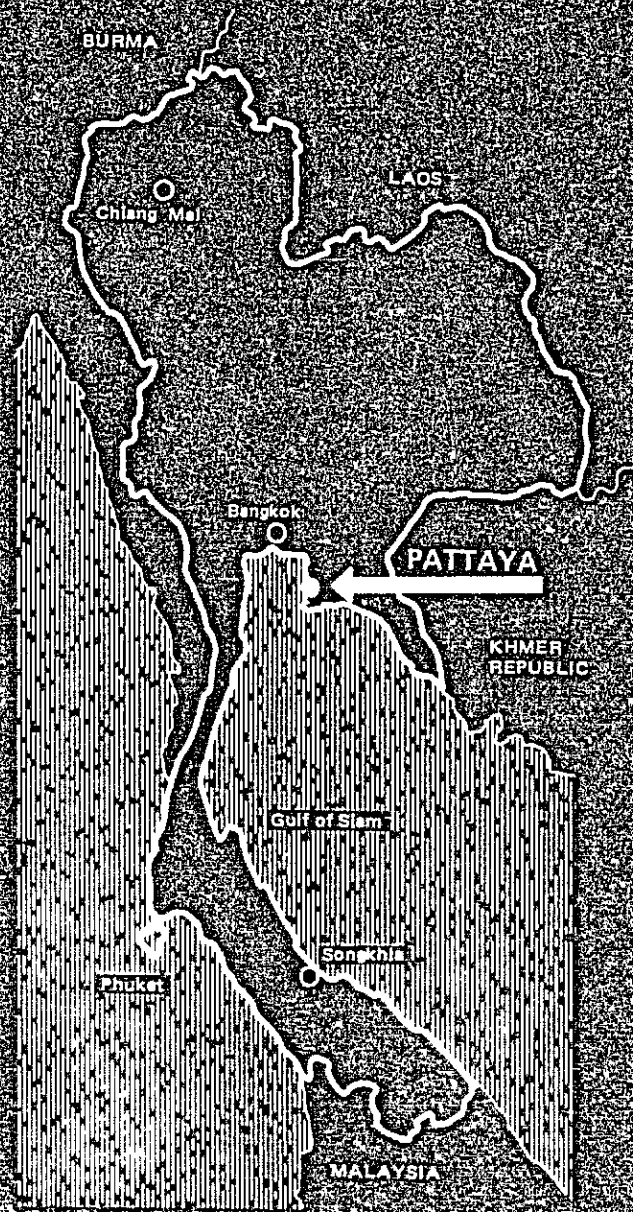
The internal economic return would be 15.3% on the basis of investment program and the financial rate of return would be 3.8%. According to these results, it is concluded that the project is sound and feasible from technical, economical and financial viewpoints.

Furthermore, there are such additional benefits earned from the public sector as large amount of net foreign exchange earnings (US\$ 930 million), increased employment, and increased income, all owing to the project. For the reasons described above, Pattaya Tourism Development Project should be considered as one of the most recommended projects to be implemented by the Government from the standpoint of the national economy.

## EXTRACTED KEY FACTORS AND RESULTS

- Project: Pattaya Tourism Development
- Location: 13° of the north latitude and 101° of the east longitude
- Approach: By Sukhumvit Highway, about 150 km from Bangkok
- Study Area: 2,800 hectare or 17,500 Rai in equivalent
- Beach: About 10 km long; for the resort area, 4 km long sand beach
- Temperature: Mean 27 Centigrade (highest 29, lowest 24)
- Rainfall: About 1,500 mm a year; rainy season April to October
- Wave: 0.3 - 0.5 meter in a 3-second period
- Population: 42,500 (1976), 58,100 (1986)
- Expenditure by a household: About 2,500 Baht/month or 125 US\$/month
- Hotel rooms: 3,600 rooms (1976), 4,300 rooms (1986)
- Tourist arrivals: 400 thousand (1976), 500 thousand (1986)
- Tourist expenditure: Foreign tourist 40.5 US\$/day Domestic tourist 31.2 US\$/day
- Length of stay: 1.5 days (1976), 2.5 days (1986)
- Occupancy rate: 32% (1976), 80% (1986)
- Gross operating profit Hotel: -15% of total sales (1976)  
+35% of total sales (1986)
- Tourist season: November to March for five months
  
- Components of the projects: Road and Street System, 38 km long  
Sewerage System, 6 million cubic meter/year  
Storm Water Drainage System: 4 km long  
Solid Waste Disposal System: 30,000 tons/year  
Port Facilities: 40 berths  
Water Supply System: 6 million cubic meter/year
- Contingencies: 7% for physical and 8% for price
- Initial investment: 1,260 million Baht or US\$ 63 million including land cost.
- Operation/Administration cost: 450 million Baht by 2006
- Utility charge: 2,380 million Baht by 2006  
46 Baht/day/hotel room, or US\$ 2.3 (1984)  
4 Baht/day/household, or US\$ 0.2 (1984)
- Incremental spending by tourists: 25 billion Baht or US\$ 1.3 billion by 2006
- Net foreign exchange earnings: US\$ 930 million by 2006
- Financial rate of return: 3.8%
- Economic rate of return: 15.3%
- Project management: By Pattaya Tourism Development Corporation
- Administrative: Pattaya Township
- Related organization: Tourist Organization of Thailand
- Implementation schedule: (1) Detailed Design 1979 to 1980  
(2) Construction 1980 to 1986  
(3) Partial operation of the project from 1980





Beach road in  
south Pattaya


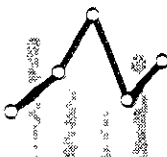
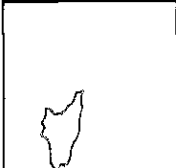




Downtown Pattaya



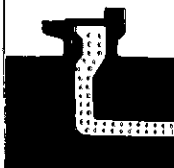
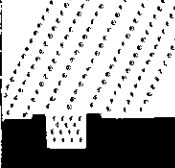






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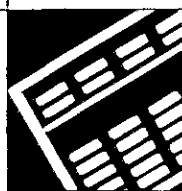

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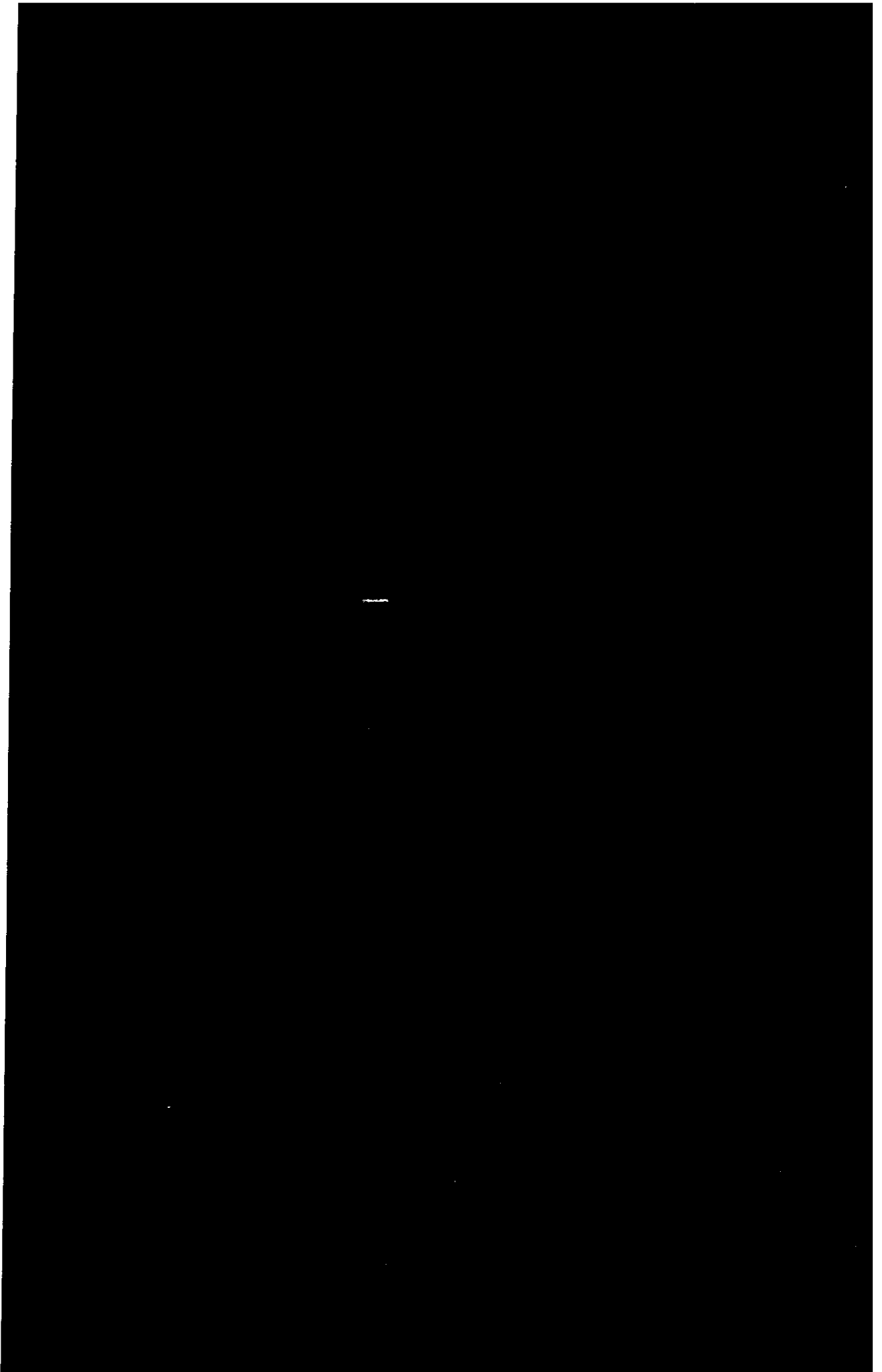
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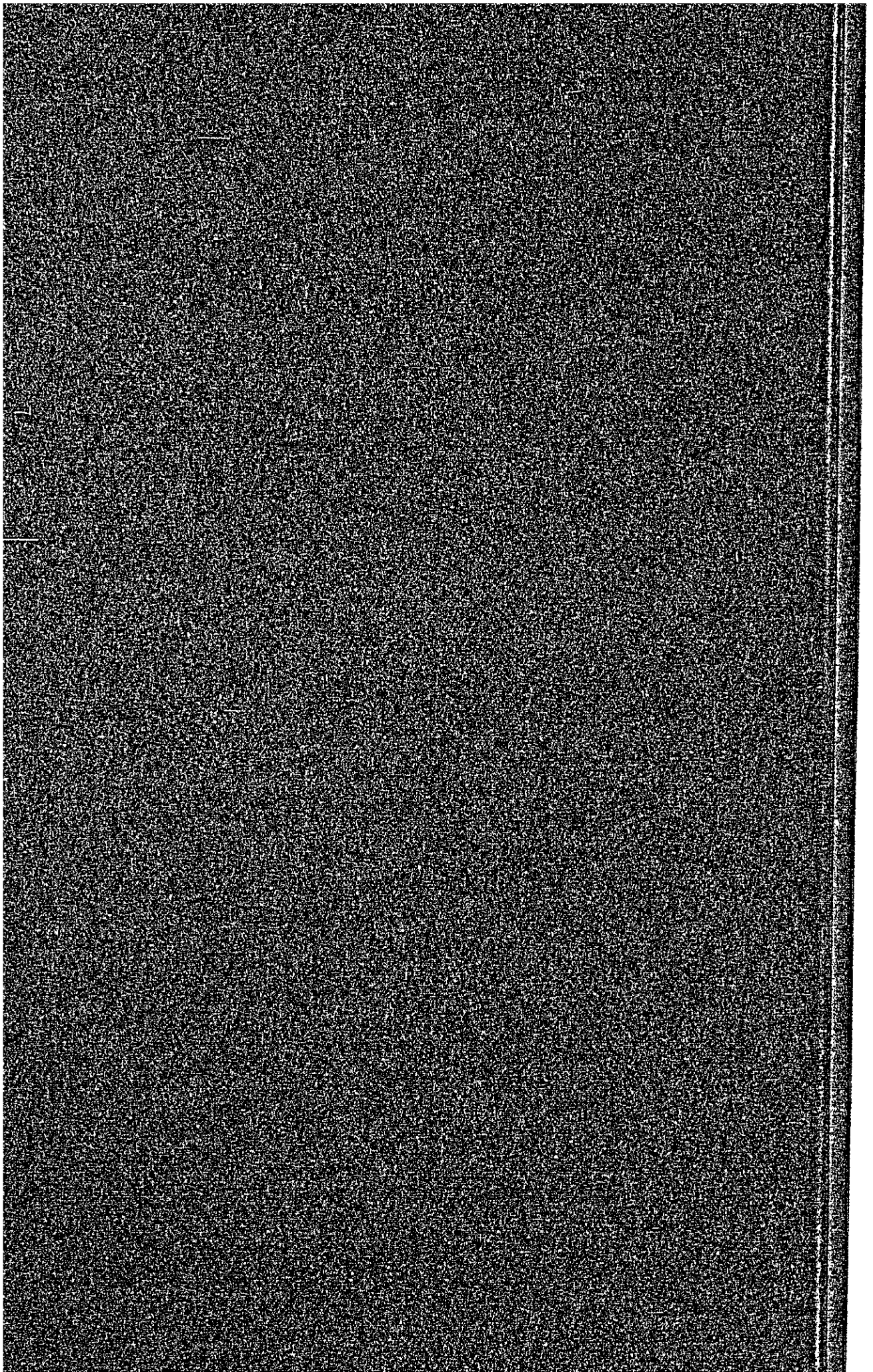
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## CHAPTER 1. INTRODUCTION



### General Background

Tourism has become one of the major sources of foreign exchange earnings for Thailand. Pattaya, being one of the most important international tourist resorts in the Kingdom, plays a large part in this industry. However, due to the lack of an integrated comprehensive development plan, an imbalance has developed between the supply and demand of facilities, particularly of the infrastructure, to such an extent that it has become a very acute problem in recent years.

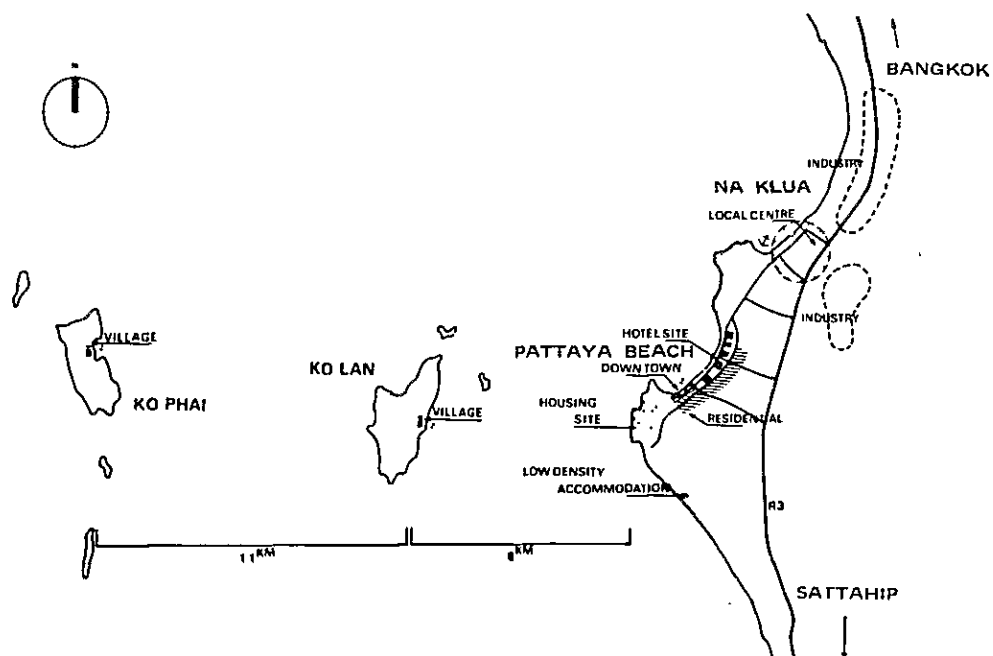
The Pattaya project area is a newly developed seaside resort on the east coast of the Gulf of Thailand, some 150km south of Bangkok. The study area includes the strip of existing tourist service facilities along the coastal area and the islands of Ko Lan and Ko Phai.

The main topographical feature of the study area is its overall flatness, with the exception of the small Pattaya Hill area towards the south. In spite of being in the tropical rain forest zone, it has a favorable climate for a beach resort with an annual average temperature of about 27°C.

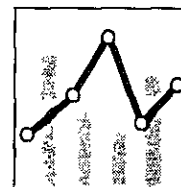
The current population of this area is about 42 thousand, of which about 17 thousand are employed. Although agricultural land occupies 63% of the total area, agriculture together with fisheries take up only 11% of the employed population, while the service-related sector occupies about 87%.

The tourist facilities include 11 major hotels in Pattaya with a total capacity of nearly 2,800 tourist class accommodations and a manpower of nearly 4,400 employees. The total capacity of minor hotels and bungalow type facilities amounts to another 800 accommodations.

Detailed descriptions of the physical characteristics and socio-economic conditions of the area are documented in the Master Plan.



## CHAPTER 2. TOURISM DEMAND



1) The number of tourist arrivals in Thailand has rapidly increased from 225 thousand in 1965 to 1,098,000 in 1976, at a phenomenal average annual growth rate of 15.5%. The million mark was reached in 1973, when Thailand ranked third in the Pacific and Asian region in the number of international visitors received. In 1975, Thailand was slightly exceeded by Malaysia and now ranks fourth in the Pacific and Asian region in the volume of international arrivals.

2) The volume of tourists into Pattaya has also rapidly increased in recent years. The total number of night staying tourists in Pattaya was estimated at 280 thousand for 1973, 360 thousand for 1974, and about 400 thousand for 1975 and 1976, including both international and resident tourists. The number of international tourists is estimated to be slightly over half the total volume.

Due to the large share of resident tourists, the seasonal fluctuation was much more conspicuous than the national average, so that the number of tourists in the peak months of December or January was nearly 3 times as large as the lowest months of June or September.

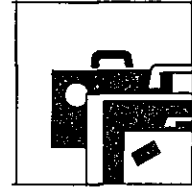
3) The future tourism demand of Thailand has been estimated by forecasting the future world volume of international tourists, the share of the future Pacific and Asian region, and the share of Thailand in the Pacific and Asian region. The volume of tourists into Pattaya is estimated for both international tourists and resident visitors by analysing the share of international tourism of Thailand into Pattaya and also the future pattern of growth of resident visitors. The results are summarized as follows:

Year	Future Tourist Volume				
	1976	1981	1986	1991	1996
World (millions)	213.0	268.3	309.3	360.5	417.0
Pacific & Asia (millions)	7.1	9.0	11.1	13.5	16.0
Thailand (thousands)	1,180	1,600	2,000	2,500	3,000
Pattaya (thousands)	400	600	800	1,000	1,200
International ( " )	210	352	500	588	660
Resident ( " )	190	248	300	412	540

4) The future hotel room requirements of Pattaya have been calculated from the assumed annual occupancy, the average peak and lowest month occupancies, the average length of stay separately for international and resident visitors and the average double occupancy per room. The future volume of day trip visitors has also been estimated. The results are as follows:

Year	Future Hotel Room Requirements in Pattaya		Volume of Day-Trip Visitors (in thousands)		
	Total Rooms Required	Additional Rooms Required	1981	1986	1996
1981	2,300	-	For the year 458	625	960
1986	4,300	700	Maximum per day 5.5	7.5	12.0
1991	6,600	3,000	Average per day 1.3	1.7	2.6
1996	8,700	5,100			

## CHAPTER 3. DEVELOPMENT PLAN



### 3.1 Development Policy

The development policy established for Pattaya is as follows:

- Pattaya should be maintained as an international tourist resort with adequate accommodation facilities to cater to international tourist demand.
- Pattaya should be developed into a resort with diversified ocean activities catering to all levels of ocean activity demand.
- Adequate supplementary inland activities should be provided.
- Domestic Thai tourists must also be catered for.

### 3.2 Development Goals

On the basis of the above development policy, the development goals have been established as follows:

- Maintenance of an environment compatible with international requirements.
- Safety and convenience for the tourists.
- Provision of an ample supply to meet demand.
- Control of the domestic day-trip tourists.
- Emphasis on a Thai atmosphere.



### 3.3 Landuse Plan

#### 1) Landuse policy

- The inland area will be conserved as much as possible to provide an opportunity to display the natural environment. Moreover, the swamps and other physical features in the study area will be efficiently utilized.
- The local community dispersed around the study area will be rationally included in the development plan.
- For the islands of Ko Lan and Ko Phai, the stress will be on nature, so that active development will be avoided and concentration will be made on the spot provision and improvement of facilities.

#### 2) Development structure

Various landuse allocations have been made to meet the requirements of the landuse policy.

- The existing hotel area will be maintained as the northern hotel area during Phase 1 (up to 1986) of the plan.  
A southern hotel area will be developed to the south of Pattaya Hill in Phase 2 (up to 1996) along with the existing bungalow area.
- The existing private cottage area to the north and the development on the western slope of Pattaya Hill will be controlled as low density private cottage areas.
- The existing downtown area will be improved to serve as the main amenity core. A northern core will be newly established at the northern end of the northern hotel area. In Phase 2, a southern core will be developed for the new development area.
- Na Klua village will remain as the main centre for the local community. A northern new town is planned to the east of the existing developed area to meet future population demand for the northern part of the study area. A further southern new town will be established to meet Phase 2 demand in the south.
- Inland activities will be concentrated in the northern activity zone to the rear of the existing complex, the central activity zone east of Pattaya Hill and the southern activity zone in the Phase 2 development area.
- Implementation of the back road will provide the key development axis for the various proposed plans.

#### 3) Development phase

A development plan has been prepared with the year 1976 as the base year and covering a period of 20 years upto 1996. It has been divided into two phases as follows:

\* Phase 1, 1977 to 1986  
Phase 2, 1987 to 1996

\* For the feasibility study.

4) Area

1. Study area

The area for the tourism development study of phase 1 and phase 2 covers the area about 500m to the east of the Sukhumvit Superhighway and extends north-south for about 16km. The islands of Ko Lan and Ko Phai as well as the surrounding minor islands are also included. The approximate total area is as shown below:

	<u>Phase 1</u>	<u>Phase 2</u>
Pattaya (mainland)	2,550 ha.	4,230 ha.
Ko Lan Island	220 ha.	520 ha.
Ko Phai Island	-	500 ha.
<hr/>		
Total	2,770 ha.	5,250 ha.

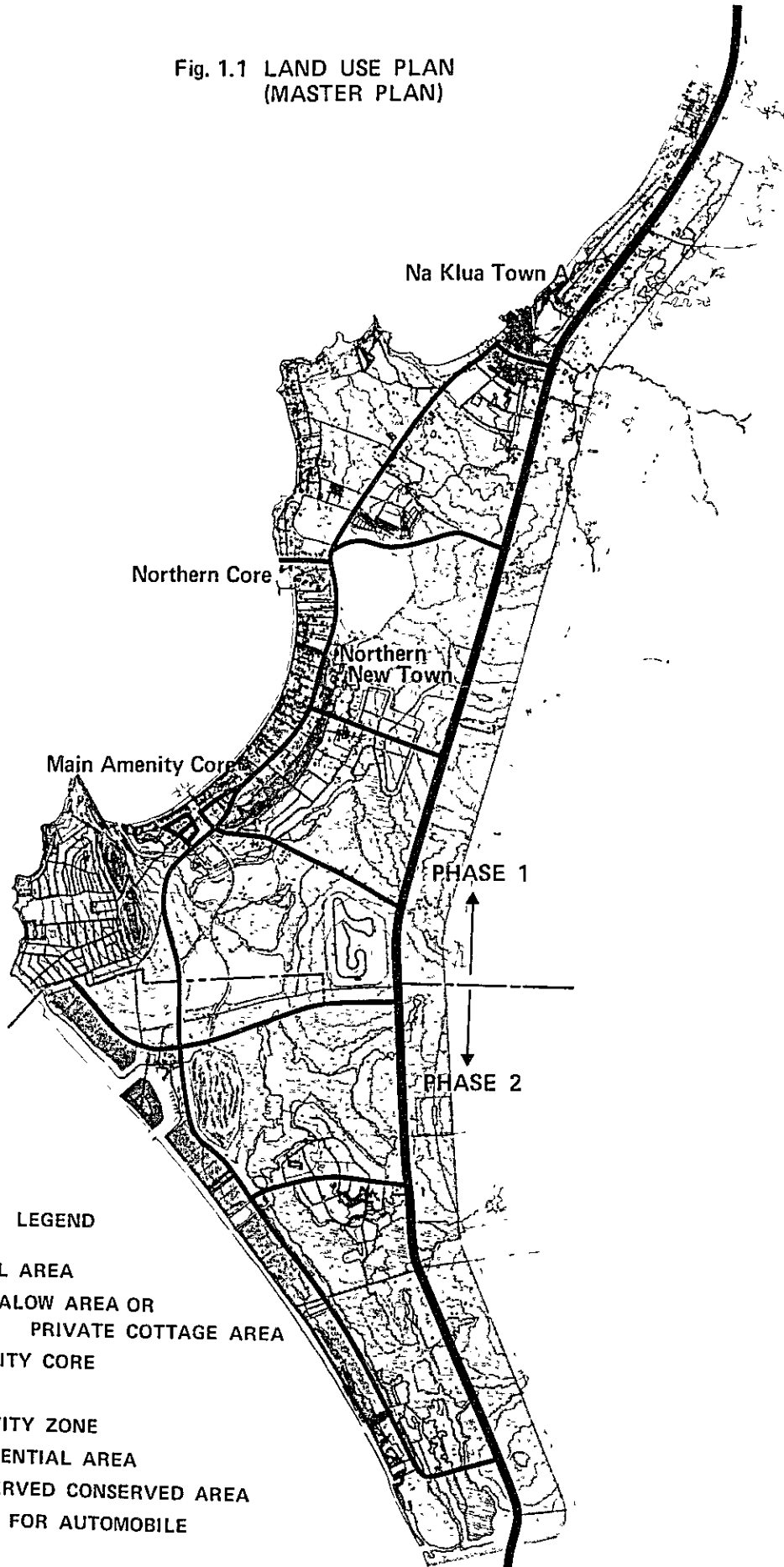
In the feasibility study period, some additional areas, to Master Plan such as the northernmost Buddhist college area and the set back area from the Sukhumvit Highway, are included.

2. Development area

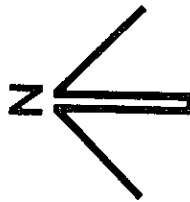
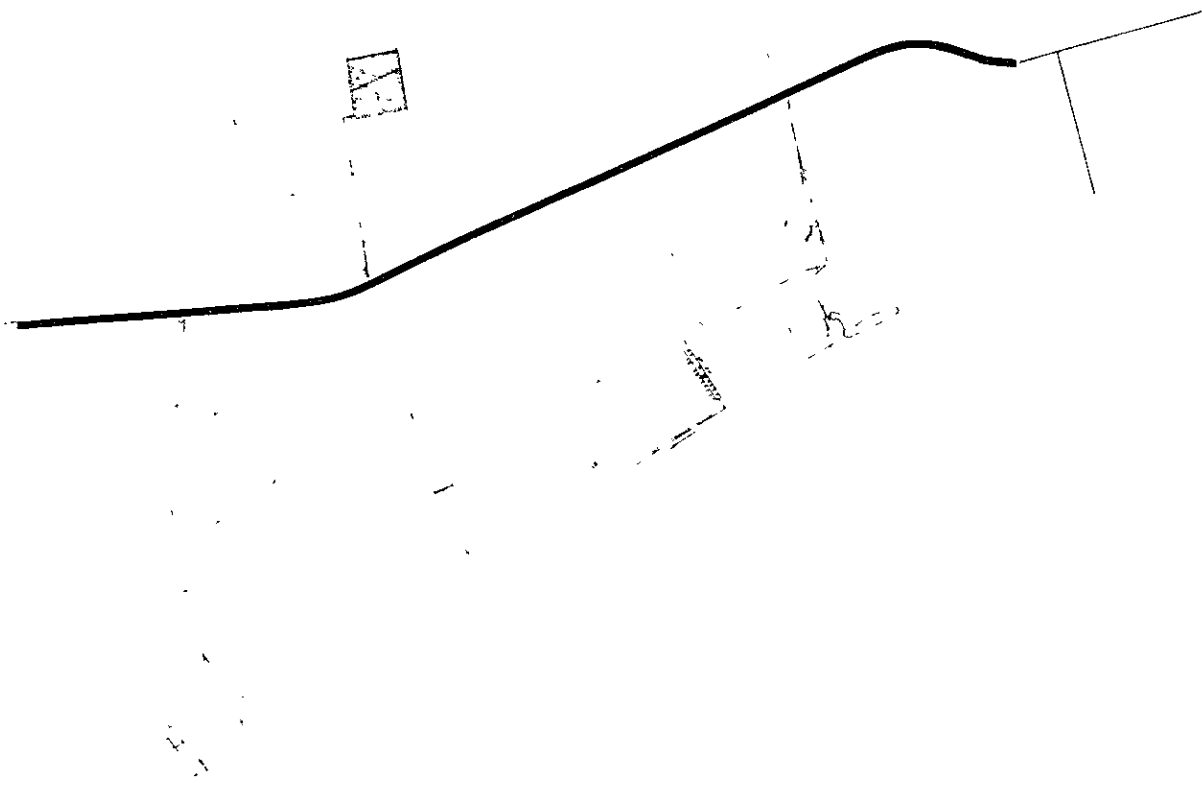
	<u>Phase 1 Study in ha.</u>	<u>Phase 2 in ha.</u>
Accommodation areas		
Hotels	55.3	116.3
Bungalows	-	84.0
Subtotal	55.3	200.3
Private cottage areas		
Northern	106.0	106.0
Central	98.0	98.0
Subtotal	204.0	204.0
Amenity cores		
Northern core	7.4	7.4
Main core	24.1	25.5
Southern core	-	10.9
Subtotal	31.5	43.8
Activity zones		
Northern A.Z.	80.0	80.0
Central A.Z.	89.0	195.0
Southern A.Z.	-	45.0
Central park	40.0	40.0
Southern park	-	20.0
Subtotal	209.0	380.0
Residential areas		
Na Klua town A	118.6	179.0
Na Klua town B	49.3	50.0
Northern New Town	75.1	120.0
Southern New Town	-	106.0
Subtotal	243.0	455.0
<hr/>		
Total	742.8 ha.	1,283.1 ha.

\* Excluding Ko Lan Island

Fig. 1.1 LAND USE PLAN  
(MASTER PLAN)
















**FIG 1.2 LAND USE PLAN  
( FEASIBILITY STUDY )**



- LEGEND**
-  HOTEL AREA
  -  BUNGALOW AND PRIVATE COTTAGE AREA
  -  AMENITY CORE
  -  PARK
  -  ACTIVITY ZONE
  -  BEACH
  -  COMMERCIAL AREA
  -  RESIDENCIAL AREA
  -  CONSERVATION AREA

**FIG 1.2 LAND USE PLAN  
( FEASIBILITY STUDY )**



### 3.4 Accommodation Area

#### 1) Additional rooms and area required

On the basis of the survey team's analysis of tourism and accommodation facilities, additional room and area requirements for the next ten years are as follows:

Table 3.4.1 Additional Hotel Rooms and Area Required

	<u>1981</u>	<u>1986</u>
Total hotel rooms required	(3,600)	4,300
Additional rooms required (room)		
Hotels	0	700
Gross area required (ha.)		
Hotels	0	14

In the Phase 1 stage (up to 1986), only 700 hotel rooms will need to be constructed in the existing hotel area. To achieve the most efficient investment and to deal with unforeseen factors, it is recommended that adequate hotel distribution be maintained in the existing hotel area instead of expanding into the southern hotel area, from the standpoint of infrastructure investment and strengthening of the existing hotel area.

#### 2) Location

The central hotel and bungalow area has a beach of about 4km long with continuous low palm trees. The accommodation area is 200m to 400m wide behind the beach road. The concentrated hotel area is located in the northern half, while bungalows and private resort houses are located in the southern half of the area. The general perspective of this area is characterized as a plain beach line with coconut and other trees behind the sea line, with the exception of some high rise hotels.

### 3.5 Amenity Cores

#### 1) Function and location of amenity cores

Three areas with different natural features have been allocated to be amenity cores. The existing downtown area will be redeveloped as the main amenity core with additional amenity facilities. A northern core will be located in the area north of the Orchid Lodge Hotel. A southern core will be developed around the man-made seawater lagoon in Phase 2.

Development policies for the amenity cores in regard to their functional meaning and their characteristics are defined as follows:

##### 1. Main amenity core

- As a symbol zone
- As a starting base for inland activities
- As a departure base for Ko Lan island and other islands
- As a main entrance to the Pattaya beach resort area for foreign and local visitors

- As an action center
- As a cultural display center

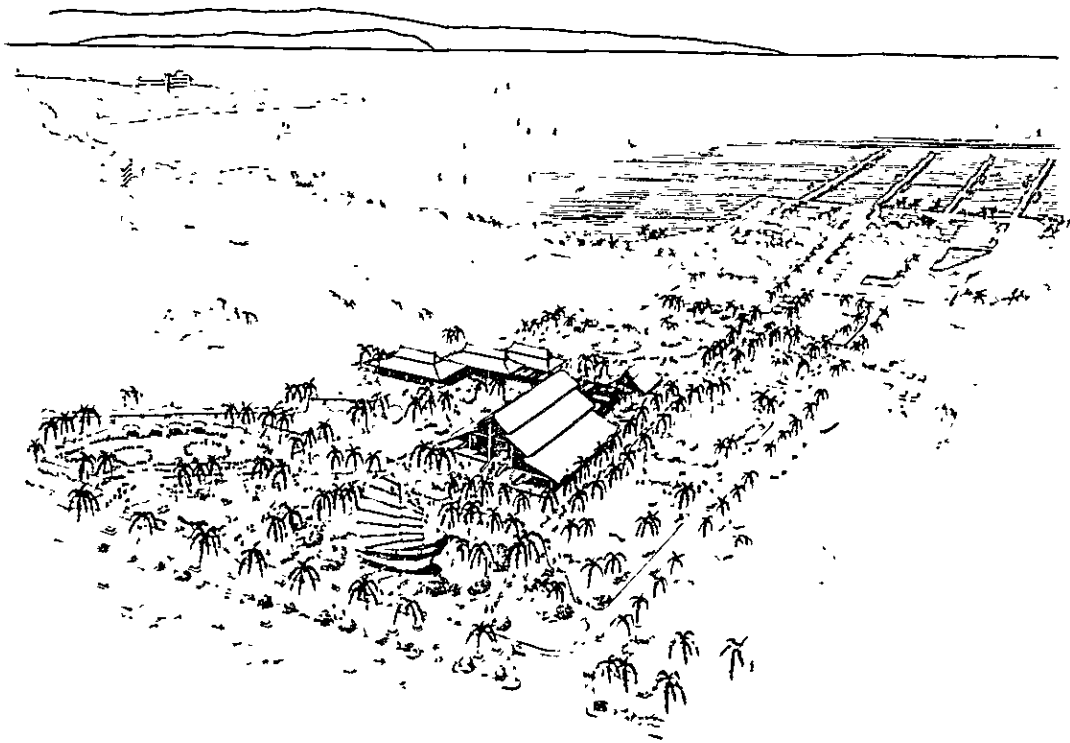
In summary, it is the place where foreign visitors and the local people and their culture meet. This is the place where the humane side of the Pattaya image should be fostered.

2) Northern core

1. A northern sub-core will be located on the present vacant site north of the Orchid Lodge Hotel. This sub-core is characterized as follows:

- As an ocean-related activity center
- As a boat mooring facility
- As a beach facility
- As a commercial facility with a park-like atmosphere.

2. A northern shopping center will serve as a new international market shopping center for foreign tourists. No entertainment facilities are recommended in this section. Basically this place should be oriented to families, couples and other non-action-seeking tourists. The existing physical and architectural character is not suitable for these types of projected customers. Future additions to this shopping center should be carefully studied to modify existing uninviting buildings so as to achieve an interesting shopping center with a specific character.



Main Amenity Core and Main Main Port

### 3.6 Beach and Ocean Activity Area

The existing usage pattern of Pattaya beach and Ko Lan is based on the rule of convenience first, as regards to both water front and sea surface usage. In Pattaya, the beach road and parking lots are so close to the beach that it offers very easy access. Tourists can get drinks and food from hawkers without moving and do not have to walk more than 10m to enjoy boats, which are directly launched from the beach.

This could be a great merit for Pattaya if it was not such a crowded beach resort. But with the growth of tourism, this merit will rapidly change into a demerit. Now, swimming and sun-bathing at the Pattaya beach are disturbed by noisy cars and motorcycles, impudent hawkers and the selfish mooring and boating of tourist boats. The rule of convenience first should be replaced by comfort and safety first.

The beaches in Pattaya and Ko Lan are essential to the tourism development of Pattaya. Therefore, improvement of the beach has a high priority in the development plan.

As regards ocean activities, sea surface usage has been determined by taking into account the capacity and nature of activities both on the beach and in the ocean, in line with the established development axes of (i) rest and relaxation, (ii) water contact activities and (iii) education.

Together with the zoning plan for the use of the sea surface, it is necessary also to establish regulations for the control of water surface usage to enable enforcement of the zoning plan, as illustrated in the following figure.

The control of the use of boats and the provision of beach activities in the service park will be important points to improve the beach. For this purpose, locations will be designated for the mooring of boats. The service park will be further bolstered by the construction of piers at two locations (in phases 1 and 2) and by the eventual completion of port construction in the main amenity core.

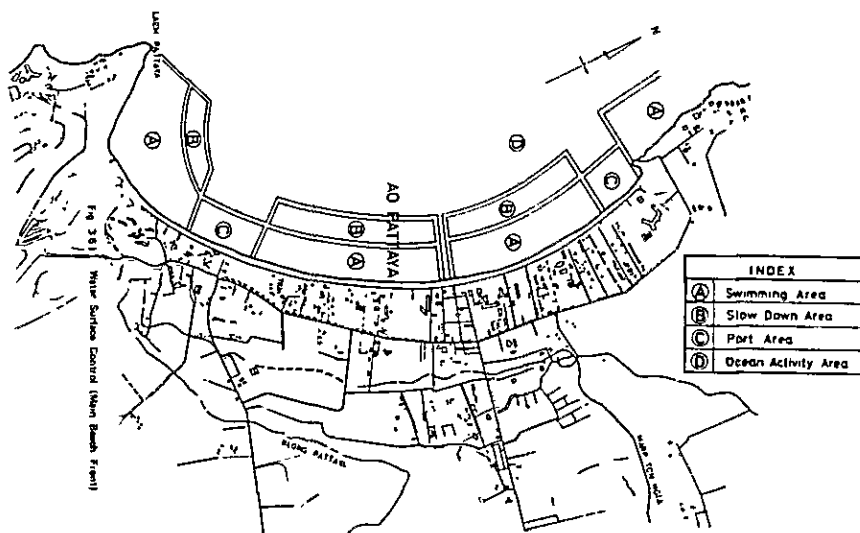


Fig. 1.3 Water Surface Control Plan

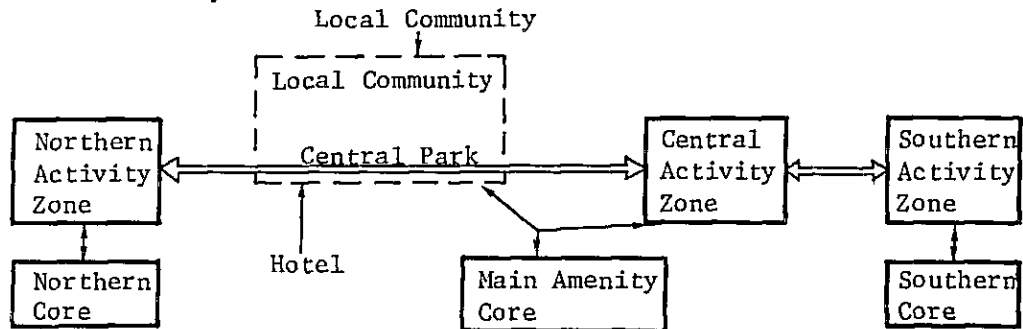
### 3.7 Inland Activity Area

The inland activity areas were planned with the following aims:

- To provide a supplement to ocean activities.
- To provide an activity area with a Thai flavor.
- To be available to the local community and day trip visitors.

The three inland activity areas (northern, central and southern) were planned with different characteristics to meet different requirements and thus forming an activity corridor as illustrated below:

#### Inland Activity Corridor



#### Characterization of the inland activity zone

- 1) Northern activity zone - Inland sports oriented
- 2) Central activity zone - Appreciation oriented
- 3) Southern activity zone - Ocean and inland sports oriented

### 3.8 Islands

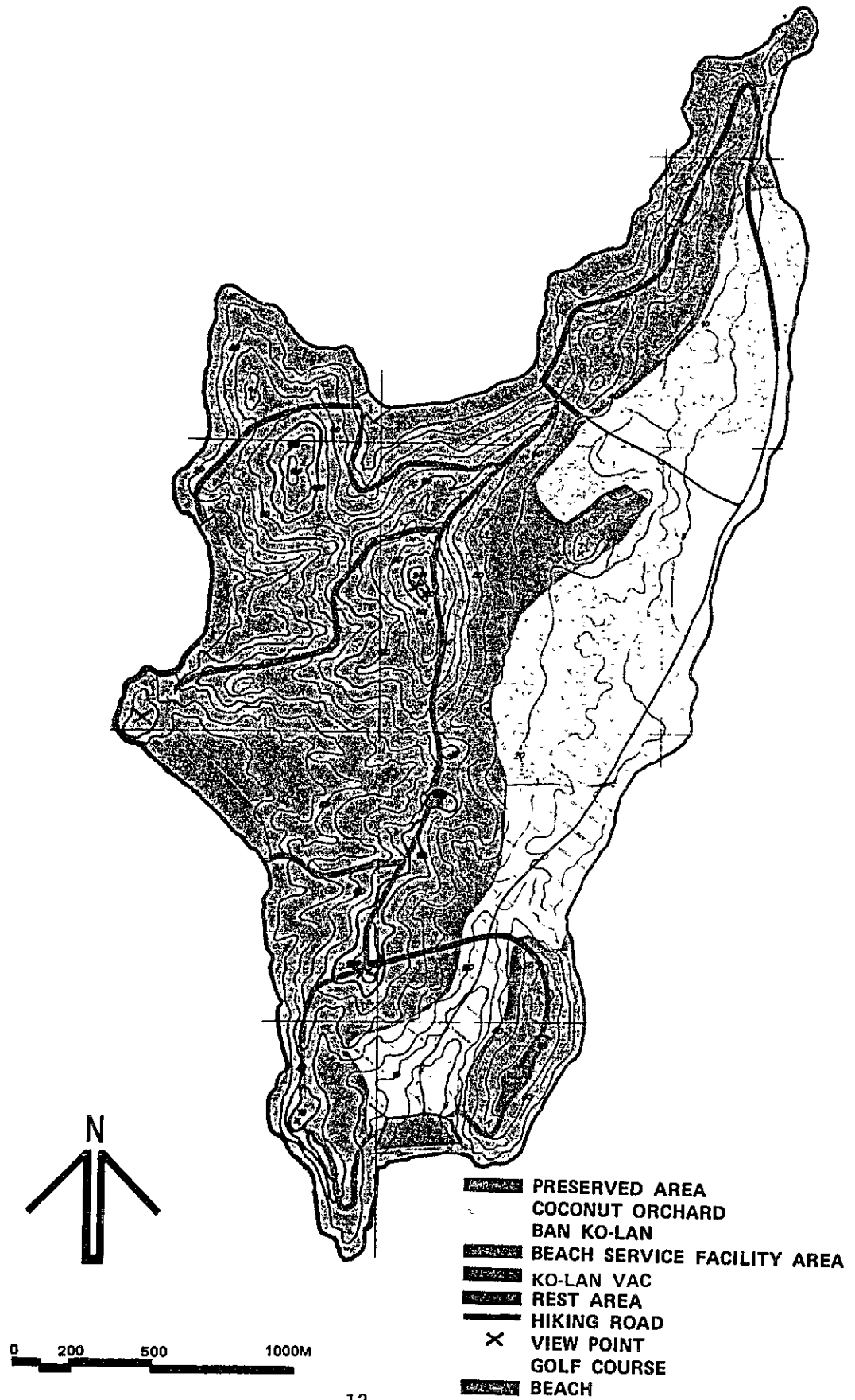
As for the development of the islands, the emphasis was on natural beauty and promotion of activities, while man-made facilities were kept to the minimum. According to this general development policy, the following planning concepts were established:

- 1) Promotion of tranquil beaches

The essential usage of the beaches is aimed at day camping, and service facilities are recommended to be of minimum scale. Accommodation facilities will be provided only at the Ko Lan Vac development area and other service facilities will be located in a manner based on these planning principles:

- |                         |   |  |
|-------------------------|---|--|
| Transportation facility | - | Pier   |
| Beach facilities        | - | Locker rooms, Changing rooms,<br>Shower rooms, Toilets |
| Safety facilities       | - | Police box, First aid station                          |
| Amenity facilities      | - | Shops, Restaurants                                     |

Fig. 1.4 Development Plan for Ko-Lan (Master Plan)





A cluster of service facilities will be provided in the area close to the pier to allow unified service development and to reserve the tranquil beach space for day campers. The service center is planned to be located between Sa Mae beach and Tien beach, and will be utilized by visitors to both beaches, which makes it possible for both beaches to be used all year round. Ko Lan Vac beach services will be privately provided by the developer.

2) Safety measures

Similar zoning control regulations will be enforced on the beaches on Ko Lan Island for the safety of visitors and to maintain a comfortable beach activity area.

3) Provision of inland hiking routes

Establishment of a hiking network as an extension of day camping activities will add attraction to the beach activities. Hiking routes and view terraces should be strategically selected to enable appreciation of natural beauty of the surrounding area.

4) Provision of a transportation system

Accessibility by ferry boats to mainland Pattaya should be improved and unnecessary expansion of the mooring area by ever-increasing uncontrolled boats should be eliminated by means of pier and regulations.

5) Ban Ko Lan as a service town

Until now, Ban Ko Lan village has been growing as a fishing village. However, taking into consideration the trend toward the movement of tourism-related population to this village, service functions for the tourism industry will be added to the fishing functions of the village.

Summary of service areas:

Sa Mae beach service area

Facilities	<u>Area in m<sup>2</sup></u>		
	<u>1981</u>	<u>1986</u>	<u>1996</u>
- Shops & restaurants	1,280	1,610	2,310
- Police & first aid station	30	30	30
- Bath house	348	426	620
Total building area	1,653	2,066	2,960
Total land area	4,100	5,200	7,400

Ta Van beach service area

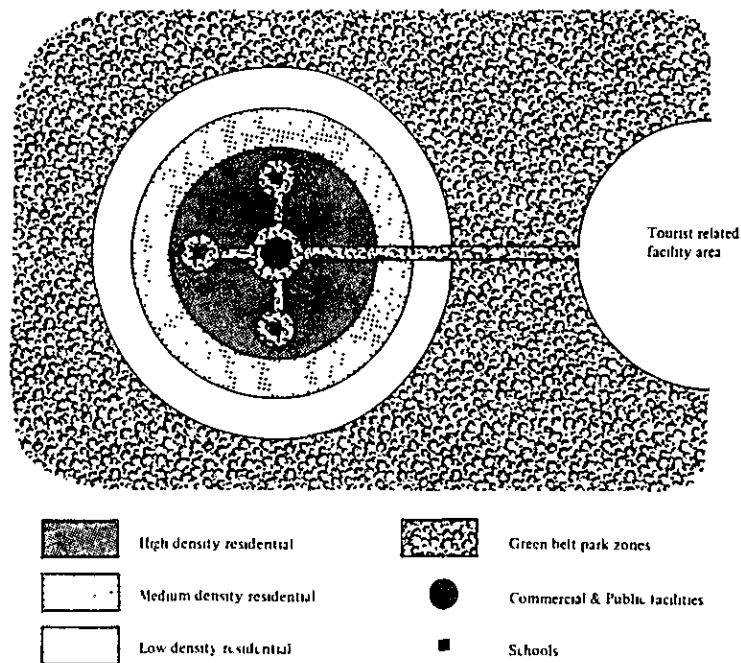
Facilities	<u>Area in m<sup>2</sup></u>		
	<u>1981</u>	<u>1986</u>	<u>1996</u>
- Shops & restaurants	900	1,130	1,620
- Police and first aid station	30	30	30
- Bath house	246	306	444
Total building area	1,176	1,466	2,094
Total land area	2,900	3,700	5,200

### 3.9 Residential Area

1) The plan for the residential area was made on the basis of the following policies:

- Separation of the international tourist complex and the local residential areas.
- Improvement of the living environment.
- Conservation of natural beauty.
- Less disturbance on the existing property line.
- Suppression of the social mobilization of the population.
- Variety of housing types and low density appearance of the housing area.

2) The neighborhood physical planning concepts are illustrated in the following diagram and the residential landuse plan was established according to these policies and concepts.



3) The proposed approximate density, landuse composition and distribution of future population are as follows:

a. Approx. density

	New Towns	Na Klua Town A
Gross density	100 per/ha.	120 per/ha.
Net density	150 per/ha.	200 per/ha.

b. Land use composition

Categories	New Towns	Na Klua Town A
Residential areas	65.0	46.0
Commercial	3.0	11.0
Public Facilities	7.0	17.0
Open Spaces	8.0	9.0
Streets	17.0	17.0
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>

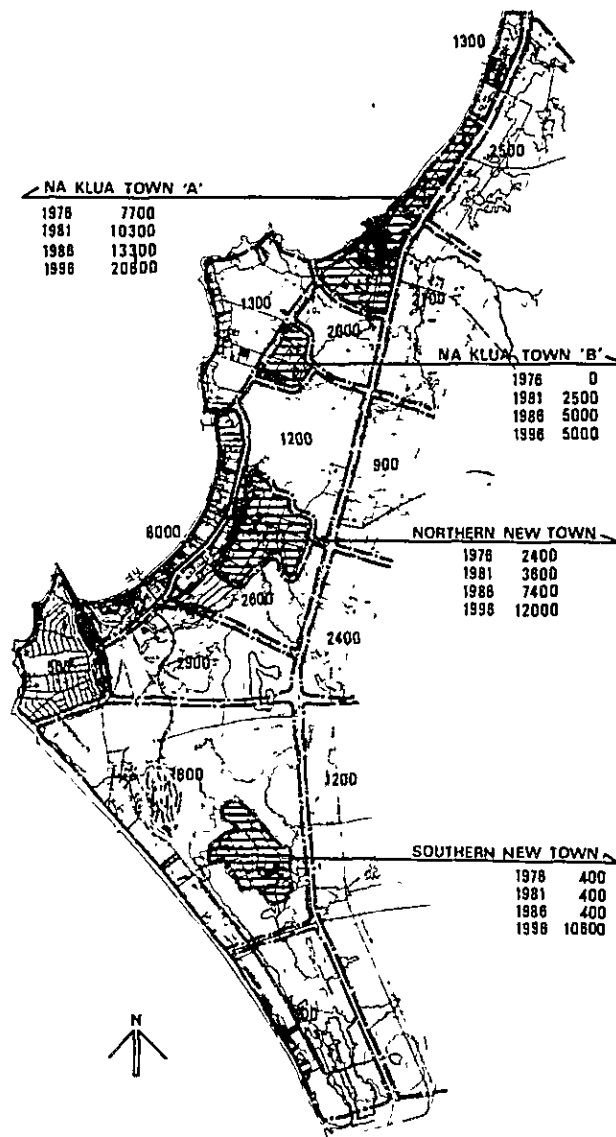


Fig. 1.5 Distribution of Future Population

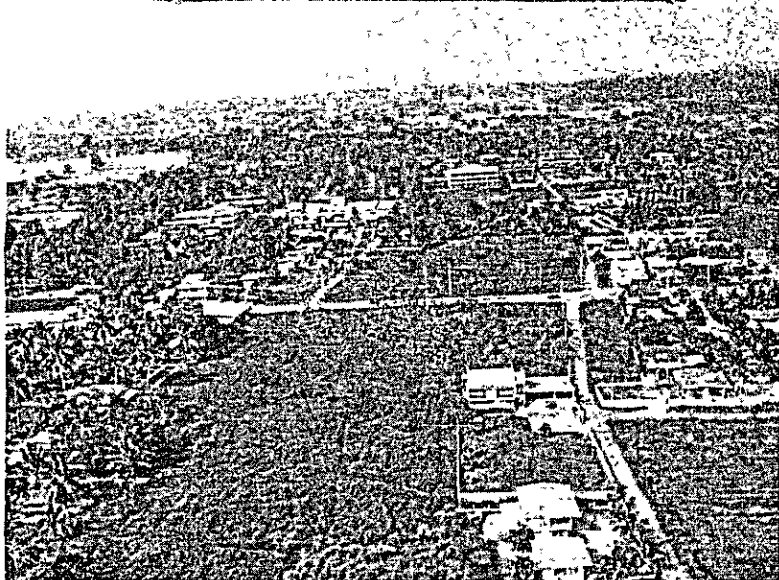
Location of Na Klua  
Town A



Location of Na Klua  
Town B



Location of Northern  
New Town



### 3.10 Zoning Regulations, Architecture and Landscape

Zoning regulations are necessary for the creation and preservation of the environment, effective investment, promotion of tourism resources and safety purposes.

The proposed zoning regulations are composed of five sections:

- (i) Development and preservation areas.
- (ii) Type of use of the occupancy areas.
- (iii) Regulation of structures.
- (iv) Planned public facility areas.
- (v) Special zone areas.

It is recommended that an implementation of zoning regulations be conducted with legal support through appropriate legislative measures, enforced through the establishment of an enforcing organization.

Architecture and landscape considerations are most important to ensure that the resort will be developed to meet the requirements of the development policy. For this purpose, it is necessary to establish building standard regulations for buildings, environmental control and aesthetics.

A conceptual landscaping plan is illustrated in the following figure 1.6.

### 3.11 The Environment

Adverse effects on the environment, both within the project area as well as the surrounding area, are not expected to arise by the development of Pattaya.

Care should be taken, however, to ensure that industrial development in the Laem Chabang region does not destroy the environment of the countryside.

The sea is of greater concern, for the whole coastline is being seriously polluted, notably by waste water from nearby Tapioca factories, tourist related facilities, and residents' homes.

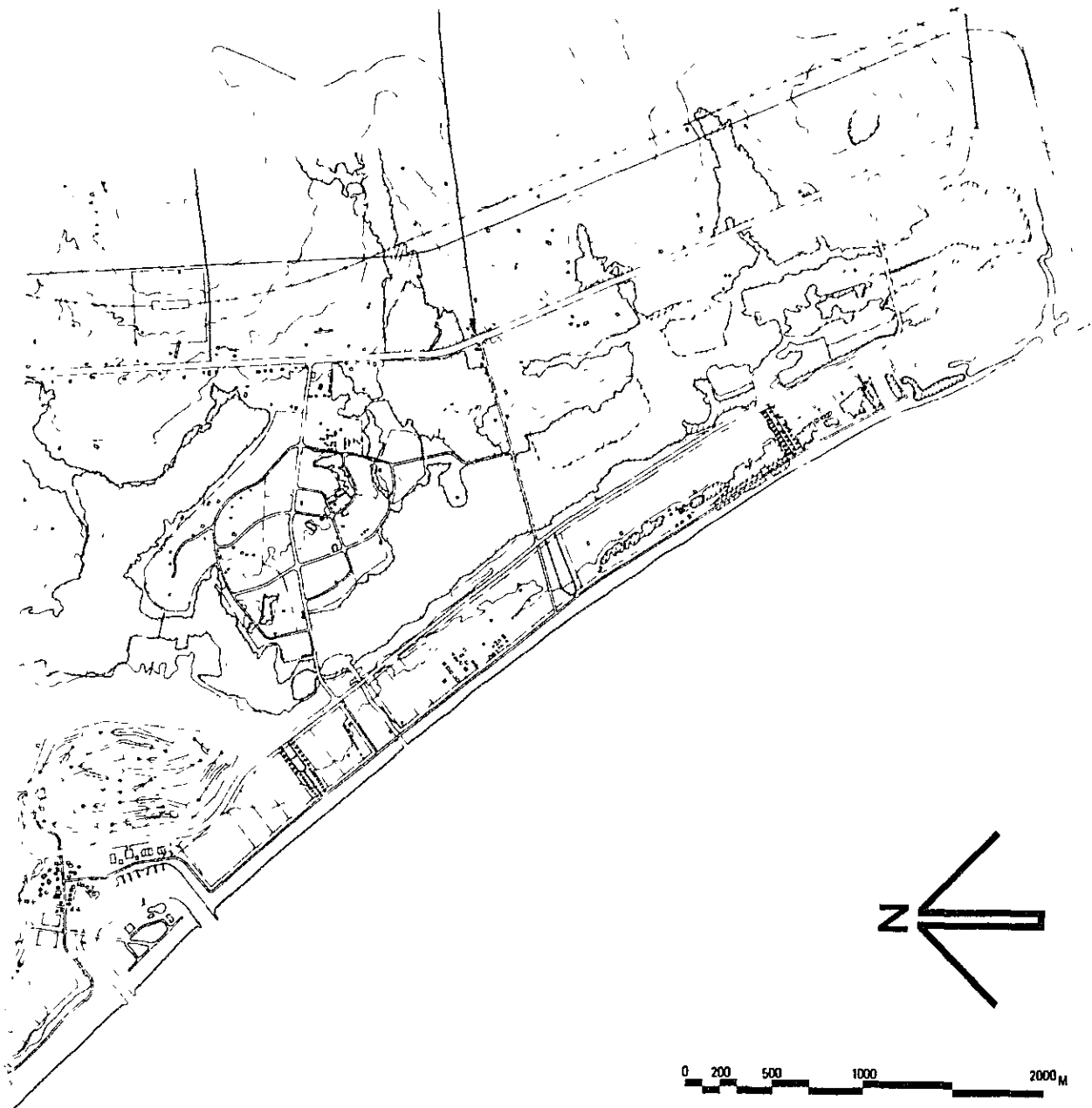
Industrial and household waste water treatment and sewerage systems are, therefore, most important for maintaining the water quality in Pattaya.

Since the whole Gulf of Thailand is becoming polluted, thus affecting Pattaya, it is also important that the government establish a national policy for preserving the water quality of the upper part of the gulf.

As regards the proposed deep-sea port and industrial estate in Laem Chabang, measures should be taken to control the routes of boats, to strictly regulate oil and waste water discharge and to prevent such discharges by engineering means from flowing into Pattaya.

The uncontrolled discharge of waste water by the Tapioca factories in the region should also be placed under restrictions stipulating pre-treatment and specific criteria of water quality levels.

A system which sets up criteria for the water quality of the region and provides regular monitoring should be set up.

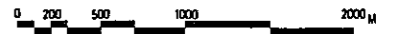
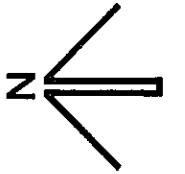


**FIG 1.6 LANDSCAPING PLAN  
( MASTER PLAN )**



**LEGEND**

- PALM TREE AND OTHER ROADSIDE TREE
- ▨ PARK AND GENERAL LANDSCAPING AREA
- ▩ WATER PLANT—LOTUS AND WATER LILLY
- ▧ SYMBOL ZONE—BOUGAINVILLEA AND ORCHID
- ▦ RIVER, POND AND STORM WATER CHANNEL
- ▤ SHOPPING PARK DEVELOPMENT
- ▣ BEACH DEVELOPMENT
- ▢ LANDMARK AREA
- ⊞ BUFFER ZONE FOR SEWAGE TREATMENT PLANT



**FIG 1.6 LANDSCAPING PLAN  
( MASTER PLAN )**

